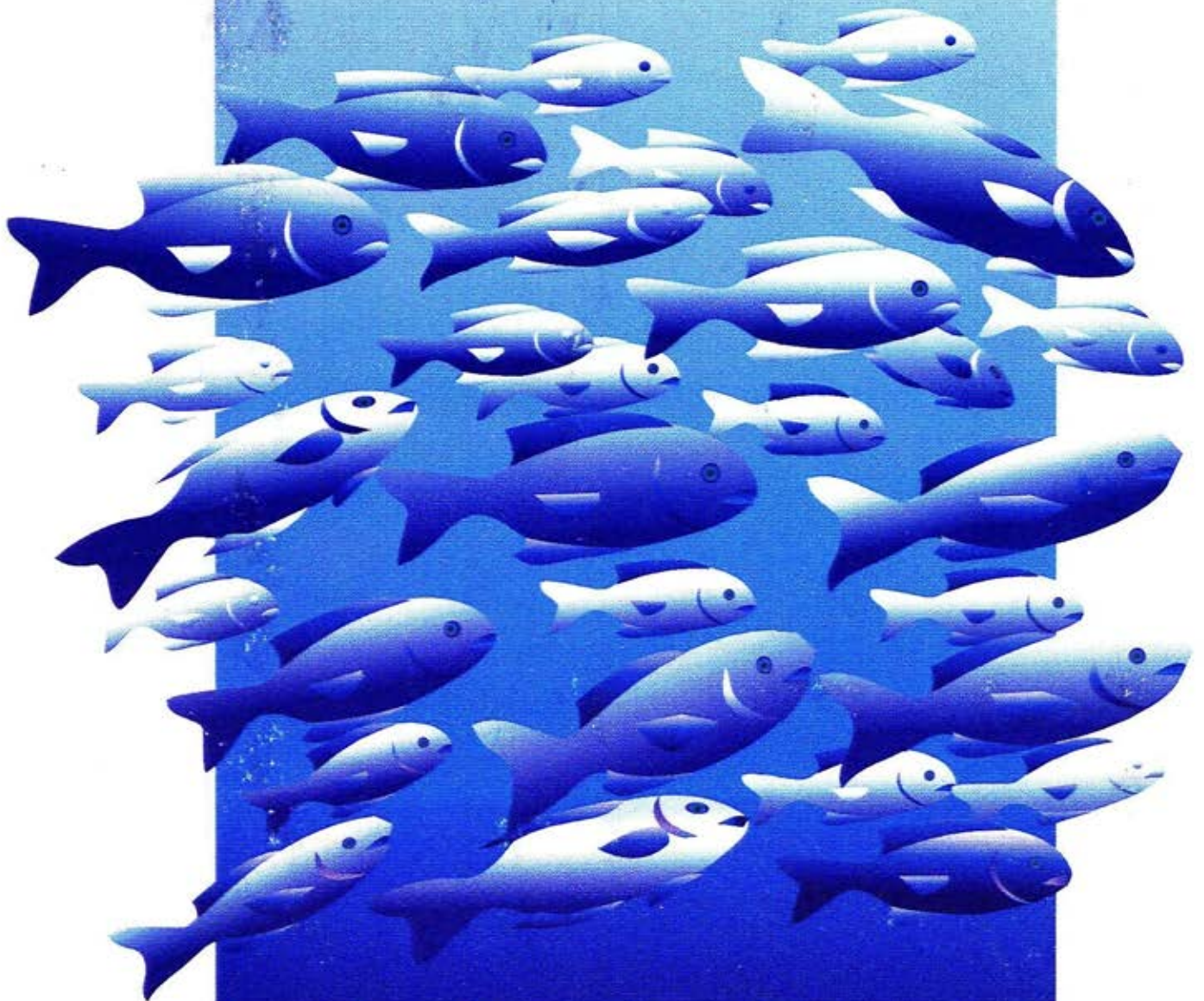


# MARINE & COASTAL

*Special Investigation  
Draft Final Recommendations*



LAND CONSERVATION COUNCIL

# MARINE COASTAL

*Special Investigation  
Draft Final Recommendations*

*June 1996*

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Price: \$7.50

Cover design by Brouhaha Design and Copywriters,  
based on a photograph by Steve Frlan.

ISBN: 0 7241 9282 4

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## **Summary of Draft Final Recommendations**

Council has carried out an investigation of Victoria's marine, coastal and estuarine area.

To provide for the protection of significant environmental values and the sustainable use of these areas, Council has recommended:

- \* a framework for strategic planning – objectives, planning principles and management guidelines – for the whole of Victoria's marine, coastal and estuarine area
- \* 20 marine parks, encompassing the major habitats of Victoria's five biophysical marine regions as well as its three major bays
- \* 21 sanctuary zones within the marine parks, to provide the highest level of habitat protection
- \* zoning of existing Coastal Reserves into Coastal Recreation and Coastal Protection Zones
- \* reservation of all other marine areas as Coastal Waters Reserve, to ensure clear management responsibility and active management
- \* eight Preferred Marine Aquaculture Areas to provide opportunities for this use.

The marine parks encompass 195,300 ha, or 19%, of Victoria's marine area, 55,000 ha of which is within existing marine protected areas.

### **Submissions Invited**

Submissions on the Draft Final Recommendations are invited – closing date is 16 August 1996.



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# 1. INTRODUCTION

This report contains the Land Conservation Council's Draft Final Recommendations for Victoria's marine, estuarine and coastal area. The recommendations provide for the protection of significant environmental values and the sustainable use of the area's resources.

Chapter 2 contains general recommendations, while Chapters 3 to 8 contain more specific recommendations. The implications of the Council's recommendations are summarised below. Accompanying the text is a map at the scale of 1:350,000, Map A, which covers the entire Victorian coast and gives a broad view of the recommendations for specific areas. Additional information on area boundaries is available from the Council.

## The Land Conservation Council

The Land Conservation Council was established by the *Land Conservation Act 1970*. One of its main functions as defined by the Act is to carry out investigations for, and make recommendations to the Victorian Government, about the use of public land in order to provide for the balanced use of land in Victoria.

## Terms of Reference for the Investigation

On 24 September 1991, the Land Conservation Council was required by the Victorian Government to conduct the following investigation:

*The Governor-in-Council, under Section 8 of the Land Conservation Act 1970, requires the Land Conservation Council to carry out an investigation of marine, coastal and estuarine areas in the State of Victoria and to make recommendations by 30 November 1994 on the protection of significant environmental values and the sustainable use of these areas.*

*The area to be investigated extends from the Victorian offshore territorial limit (5.5 km) to a distance of approximately 1 km inland from the high-water mark; it includes the land (terrain, and overlying water) affected by marine, estuarine, and coastal processes. Islands surrounded by marine and estuarine*

*waters are included in the investigation. On French and Phillip Islands the landward boundary of the area is approximately 1 km inland from the high-water mark.*

*The bed and associated waters of the Gippsland Lakes are excluded from the investigation.*

*Recommendations will apply only to public land.*

*In making recommendations to provide for the balanced use of land in Victoria, the Council is to have regard to the social and economic implications relevant to its recommendations.*

Subsequently the completion date for the investigation was extended to 31 December 1996.

## Scope of the Recommendations

In accordance with the *Land Conservation Act 1970*, these recommendations cover 'public land' as defined by the Act. In general, land vested in public authorities is included. Freehold land, including municipal freehold, is not subject to these recommendations, nor is Crown land within cities and rural cities.

## Previous Recommendations for Terrestrial Areas

Council has, during its previous regional investigations, prepared Final Recommendations for all terrestrial public land areas abutting the coast. It has recommended that about half of the coastline be included within the State's park system as national, State or coastal parks. These areas encompass and represent the full range of land systems found along the coast, other than land systems only found predominantly on freehold land or very small and localised land systems. Other areas have been recommended as nature conservation reserves, natural features reserves and various other categories.

These previous recommendations, most of which have been approved by Government, are listed in Table 1.1 and indicated on Map A. Areas

**Table 1.1: Council's Previous Recommendations for Terrestrial Areas within 1 km of the Coast, other than for Marine Parks and Coastal Reserves**

Category	Area or length of coastline	Category	Area or length of coastline
<b>Land Conservation Council category<sup>2</sup></b>			
Reference Area		The Gurdies	200 ha
Stony Creek	370 ha	Western Port	1650 ha
French Island -- north	570 ha	Reef Island and Bass River	150 ha
French Island -- east	290 ha	Yanakie	7 ha
Anser Island	80 ha	First and Second Islands	23 ha
Baawang	600 ha	Natural Features Reserve	
Barga	1030 ha	Wildlife Reserve (State Game Reserve)	
Seal Creek	905 ha	Lake Gillcar	20 ha
National Park		Serpentine Creek	62 ha
Port Campbell	68 km	Lake Connewarre	3100 ha
Cape Otway	11 km	Freshwater Swamp	34 ha
Mornington Peninsula	38 km	Newhaven Swamp	45 ha
Wilson's Promontory	96 km	Jack Smith Lake	2465 ha
The Lakes	15 km	Lake Denison	80 ha
Croajingolong	93 km	Ewing Marsh	6700 ha
French Island	69 km	Lake Corringale	980 ha
State Park		Public Land Water Frontage Reserve (various)	minor
Angahook-Lorne	22 km	Bushland Reserve (various)	minor
Lake Tyers	9 km	Community Use Area	
Coastal Park		Education Area	
Discovery Bay	93 km	Eumeralla	313 ha
Bay of Islands	34 km	Cape Conran	780 ha
Venus Bay -- Waratah Bay	53 km	Recreation Reserve (various)	minor
Gippsland Lakes	83 km	Earth Resources	
Sydenham Inlet	39 km	Mineral and stone production reserves (various)	minor
Nature Conservation Reserve		Alcoa lease area	5960 ha
Tyrendarra	150 ha	State Forest	
Lawrence Rocks	1 ha	Marlo	59 ha
Lady Julia Percy Island	150 ha	Mallacoota	2290 ha
Yambuk	103 ha	Glengaire	48 ha
Krambruk	16 ha	Service and Utilities (various)	minor
Wongarra	64 ha	Uncategorised public land (various)	minor
Angahook	50 ha	<b>Other categories of land</b>	
Anglesea	1000 ha	Crown land within cities and rural cities (not public land under the <i>Land Conservation Act 1970</i> )	168 km
Lonsdale Lakes	150 ha	Private land (above high-water mark only)	extensive area
Swan Bay to Flinders Point	250 ha	Commonwealth land	22 km
The Spit	300 ha		
Portarlington	50 ha		
St Leonards	24 ha		
Limeburners Bay	30 ha		
Mud Island	56 ha		
Grantville	120 ha		

Notes :

1. Council's recommendations for marine parks and coastal reserves are in Chapters 5 and 7.
2. The categories are those adopted by Council in its Final Recommendations for the Melbourne Area, District 2 Review.

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recommended in the past as marine and coastal parks and coastal reserves are considered in Chapters 5 and 7.

## Background

The coast plays a significant part in the lives of most Victorians. A summer holiday by the sea is a part of the lifestyle of many of us, and it is important that water be suitable for swimming and the fish safe to eat. The State's fish and shellfish industries make a valuable contribution to the economy. The little penguin, southern right whale and other marine animals are growing tourist attractions. Coastal and marine waters are used for shipping, and the major ports are vital for trade.

In Victoria, most of the coastline is public land and therefore accessible for the enjoyment of all. At the same time, as population, leisure time and tourism increase, the coast is coming under greater pressure from different uses. Despite these increased pressures, our coast and marine areas remain relatively undisturbed by major or destructive developments when compared with many coastal areas in other parts of the world. However, environmental stresses are already clearly evident in Victoria's marine waters, as described in the major findings of the State of the Marine Environment Report for Australia, *Our Sea, Our Future*.

In Victoria, debates over the use of marine, estuarine and coastal environments have been similar to those raised at national and international forums. They cover issues such as the discharge of sewage to coastal waters, the risk of oil and other spills, the concentrations of heavy metals and hydrocarbons in marine sediments (such as those of Port Phillip Bay), algal blooms, changes to coastal estuaries as a result of vegetation clearance and river regulation, the status and allocation of fish stocks, the introduction of exotic organisms from ballast water discharges, and the conservation of marine and coastal flora and fauna.

It is therefore timely and important to plan for the wise use and management of Victoria's marine, estuarine and coastal areas and to ensure the protection of natural resources, sustainable harvesting of fish, and environmentally sensitive development. The task is to determine how to use such resources on a sustainable basis, and to achieve appropriate planning and management.

Coastal planning for diverse uses on a sustainable basis has not yet been applied to the

entire Victorian coast. To be effective, planning must take into account activities beyond Victoria's marine, estuarine and coastal areas, such as in the adjoining Commonwealth and State waters and in the catchments draining to the sea. This wider scope is particularly important for marine and estuarine areas because of the connectivity of biophysical marine systems with the interface between land and sea and across administrative boundaries. This relationship is described in the Descriptive Report as a transition zone in which many natural processes occur, rather than the distinct boundary that it is often considered to be in intergovernmental legislative and administrative arrangements.

## Recent Initiatives in Marine and Coastal Planning

This section outlines major initiatives that have occurred since the release of the Descriptive Report in June 1993. It is current at April 1996.

The Resource Assessment Commission's **Coastal Zone Inquiry** was the most comprehensive national inquiry into the use and management of Australia's coastal zone resources. The final report, released in November 1993, focused on integrated coastal-zone management arrangements and provided 65 recommendations. These included details for a National Coastal Action Program to be implemented by the three levels of government in consultation with community and industry groups that have responsibility for, or interests in, coastal-zone management.

The **National State of the Marine Environment Report** was prepared as part of the Commonwealth's Ocean Rescue 2000 program. The report, *Our Sea, Our Future*, was released in February 1995. It describes Australia's marine environment, issues related to its sustainable use and environmental status, and directions for the future. Detailed technical papers were also produced.

In May 1995 the Commonwealth Government released its coastal policy, **Living on the Coast**. The aim of the policy is to promote ecologically sustainable use of Australia's coastal zone. It defines specific objectives for sustainable resource use, resource conservation, public participation, and knowledge and understanding, and establishes principles to guide decision making. The policy sets out a program of specific practical improvements to coastal management, and promotes the participation of

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Aboriginal and Torres Strait Islander peoples in coastal management.

Within Victoria, the emphasis on Port Phillip Bay has continued. **Protecting Water Quality in Port Phillip Bay**, a document incorporating a revised State Environment Protection Policy for Port Phillip Bay, was released by the Environment Protection Authority for comment in February 1995. The draft Schedule to the Policy addresses the key aspects of the control of diffuse source contamination from both urban and rural areas and the need to build on the substantial achievements of the last 20 years in controlling point sources. The draft Schedule seeks to ensure that activities capable of polluting the Bay are identified and addressed so that major environmental damage is prevented. The nutrient enrichment of the Bay is a particular concern. The final Policy is now being prepared.

The **Port Phillip Bay Environmental Study** is continuing. This study is examining Port Phillip Bay as a system, providing the scientific information needed to address the key management issues facing the Bay. A number of technical papers have been produced, additional field surveys are currently under way, and a numerical predictive model is being developed.

A process to develop a **Port Phillip Bay Fisheries Management Plan** was initiated in July 1995. Amongst other things, it will specifically address the sustainable use of fish stocks and the conservation of their supporting habitats, compatibility with management plans for marine protected areas, and the equitable allocation of fish stocks between user groups. A series of information bulletins are being produced and background papers prepared.

**Management plans** for other marine areas and for specific fish species have been developed by the Department of Natural Resources and the Environment and its predecessors. These are listed below.

The management plan for **Corner Inlet and Nooramunga Marine and Coastal Parks** is being developed. The plan will highlight the resources and provide objectives for their conservation and use, reconcile conflicting activities and interests, specify appropriate management, and facilitate public understanding of and involvement in marine and coastal environments.

The development of the **Corner Inlet Fisheries Management Plan**, covering Corner Inlet and Nooramunga, commenced in October 1993. The plan will review the management of the commercial and recreational fishery, address any issues or conflicts, ensure that the use of the fish resource is sustainable, and ensure that the management of the fishery is consistent with other conservation planning objectives. A draft plan was released for public comment in November 1995.

Both the Corner Inlet plans relate to the same area and are being developed in a coordinated manner.

Three detailed option papers for the **Victorian Southern Rock Lobster Fishery** were released in August 1995 for comment. These covered input controls, output controls and recreational fishing. Meetings with industry were held in November 1995. More recently an economic study on the fishery has been carried out.

A background and issues paper for the **Victorian Abalone Fishery** was released in December 1993, and a workshop to discuss management arrangements was held in August 1994. A draft plan is now being prepared.

The management plan for the **Victorian Eel Fishery** was released in mid 1995.

With respect to the **Victorian Scallop Fishery**, the Government announced in March 1996 that it was committed to a total ban on scallop dredging in Port Phillip Bay, with no new scallop dredging licences to be issued and all existing licences to be repurchased by the end of 1997.

Management planning by the Australian Fisheries Management Authority for the **Southern Shark Fishery**, part of which is in Victorian waters, commenced in 1993. Its aim is to ensure that fishing is consistent with the principles of ecologically sustainable development, that fisheries resources are efficiently utilised, and that management is efficient and cost-effective.

Fisheries arrangements under the **Offshore Constitutional Settlement** are being implemented for fisheries adjacent to Victoria, including those for crustaceans, molluscs, scallops, fin fish, pelagic species, sharks and echinoderms. The arrangements will rationalise the management of fisheries in southern Australian waters, facilitate ecologically sustain-

able development, and provide a clearer division of responsibility between governments. This will reduce the need for the involvement of multiple government agencies in the management of specific fisheries, and will result in simplified and more effective management. Agreements for tuna, rock lobster, abalone and scallops are in place.

Other major initiatives since the descriptive report was published include:

- The *Catchment and Land Protection Act* 1994, which provides the basis for the integrated management and protection of catchments, encourages community participation in the management of land and water resources, establishes a system of controls on noxious weeds and pest animals, and repeals and amends various Acts concerning catchment and land management. The intention of the Act is to improve catchment management. This should reduce catchment-based impacts (such as sedimentation and poor water quality) on bays, inlets and estuaries.
- A new *Fisheries Act*, passed by the Victorian Parliament in November 1995. It provides a framework for the sustainable management of commercial and recreational fishing and the aquaculture industry. It includes provisions which will enable users to have a more direct involvement in management decisions (including the establishment of a Fisheries Co-Management Council). Other provisions cover the preparation of fishery management plans, fishery licences, quotas, and closures, and the declaration of protected aquatic biota, noxious aquatic species and fishery reserves.
- The *Coastal Management Act* 1995, which provides for coordinated strategic planning and management of the Victorian coast. It provides for the establishment of a Coastal and Bay Management Council and several Regional Coastal Boards to carry out the coordinating function. The boards will prepare and implement coastal action plans and provide a coordinated approach to approvals for the use and development of coastal Crown land.

### Legislative and Administrative Arrangements

Victorian legislative and administrative arrangements current at April 1993 were outlined in the Descriptive Report. However, there have been several recent changes; a revised description of these arrangements is given in Appendix 1 and 2. Commonwealth arrangements were also

outlined in the Descriptive Report. A description of the Victorian territorial boundary is given in Appendix 3.

### Australian Heritage Commission and the National Estate

A statutory authority, the Australian Heritage Commission, was established under the *Australian Heritage Commission Act* 1975 to identify the National Estate and advise the Commonwealth on its protection. The National Estate is defined in the Act as 'those places, being components of the natural and cultural environment of Australia, that have aesthetic, historical, scientific or social significance or other special value for future generations, as well as for the present community'. Australia's National Estate is thus a broad concept that covers a variety of places, including many areas of the Victorian coast, ranging in size from existing national parks to individual historic buildings in coastal towns.

The Council's process is independent of the *Heritage Commission* process. The Council has ensured that areas recommended for protection or resource use meet its own established criteria. Its recommendations also take socio-economic factors into account in determining the balanced use of land. (This is not a requirement of the Commission's process.)

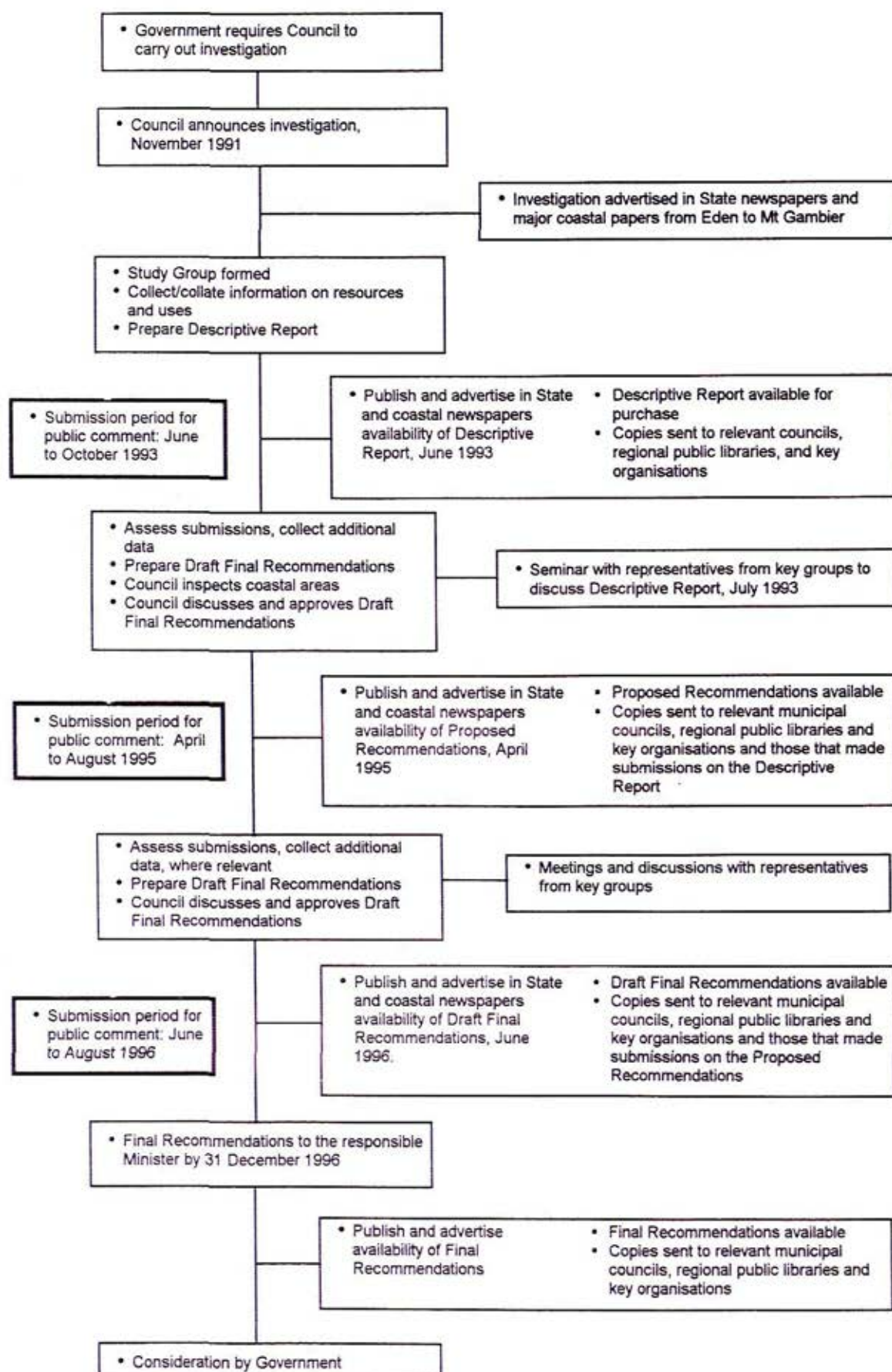
### The Consultation Program

The investigation process is shown in Figure 1.1. The consultation program is a key part of the investigation process.

A four-and-a-half month submission period (closing on 29 October 1993) followed the release of the Descriptive Report on 10 June 1993. (The submission period initially closed on 9 September 1993, but was extended in recognition that this was the first time a major planning exercise had been carried out for Victoria's entire coastline and marine waters.) During and following this first submission period the Council received 146 submissions and over 20 letters.

In July 1993 the Council conducted a seminar attended by representatives of over 50 key community, industry, conservation, recreation, Aboriginal and Government organisations. This provided the opportunity for people with different interests and perspectives to meet and hear a range of views about marine and coastal areas.

**Figure 1.1: The Marine and Coastal Special Investigation Process**



The Council also met separately with key non-government groups and local, State and Commonwealth organisations. The Council's Chairman attended public meetings, convened at the request of Local Government, to facilitate community input to the investigation.

The Chairman and some Council members also attended a meeting with representatives of Aboriginal communities to discuss issues of interest to them.

At the time of the first submission period, the Council was conducting a Review of the Melbourne Area, District 2. It decided to consider certain marine and coastal issues in the Melbourne study area as part of the Marine and Coastal Special Investigation.

Following consideration of the submissions, the Council prepared and published its Proposed Recommendations in April 1995. Copies were sent to all coastal municipalities, regional libraries, over 100 different interest groups, and a wide range of Government departments, as well as distributed through some 20 sales outlets across Victoria. Press releases were sent to nearly 100 different media outlets and advertisements were taken out in the metropolitan and regional press as well as in a number of special interest magazines. The Chairman conducted more than 20 media interviews.

Nearly 30 briefings and meetings were held. Many were with professional fishery groups, and others were with a range of other interest groups and some Government agencies.

Written submissions were received from a cross-section of the community; see Table 1.2 for a summary of the sources of submissions, and Appendix 4 for a detailed list.

The submission period on the Proposed Recommendations closed on 31 August 1995, allowing almost 20 weeks for public response. During and following this second submission period the Council received 739 submissions and letters commenting on the Proposed Recommendations.

Submissions, letters and notes from meetings were considered by the Council prior to the preparation of these Draft Final Recommendations. A summary of the comments made in the first round of submissions (in response to the Descriptive Report) was provided in the Proposed Recommendations. The next section briefly summarises the views raised in the

submissions and letters in response to the Proposed Recommendations. Table 1.3 provides a broad listing of the issues raised; a full summary is provided in Appendix 5.

**Table 1.2: Sources of Submissions**

Source	Number of submissions
<b>Place of origin</b>	
Melbourne	192
Coastal Victoria	470
Hinterland Victoria	54
Interstate	12
Overseas	1
Not known	10
<b>Type of group</b>	
Aboriginal groups	see note
Academic	18
Community	10
Conservation	65
Industry/Commerce	87
Individual	438
Local Government	9
Recreation	76
State Government	17
Other	19

Note:

A separate report was received outlining the views of some 19 Aboriginal communities and groups.

All submissions received by the Council were available for public inspection at its office. The content of any submission marked by the author as 'confidential' was made available under the *Freedom of Information Act 1982*, but only after the removal of any information that would identify authorship.

Council appreciates the significant time and effort put into the preparation of the submissions.

## Outline of Issues Raised

### *Sanctuary Zones*

Most submissions focused on issues associated with the proposed conservation and sanctuary zones. Overall, the concept of marine parks and sanctuary zones was supported but views differed considerably about the optimum size and the activities allowed in these areas. The sanctuary zones were considered by many to be too small in terms of their individual size and the percentage representation of Victoria's marine environment. Many believed that sanctuary zones should have a management regime similar

**Table 1.3: Issues Raised in Second Submissions**

Issue	Number commenting
Aboriginal interests	9
Ballast water and introduced biota	18
Bays, inlets and estuaries (general)	84
Biophysical representation	20
Catchment effect	8
Coastal reserve	52
Commercial fishing	212
Compliance	32
Conservation issues - renewable energy resources, miscellaneous	68
Cultural heritage	1
Conservation zones	53
Development and infra structure	17
Dredging	4
Dynamics of the coast	1
Earth resources, including oil and gas	68
Education	6
Environmental impact	6
General Protection Zone	22
General Use Zone	14
Legislation	66
Management	83
Management plans	36
Marine parks	330
Mariculture	22
Monitoring	10
Port Associated	4
Ports and shipping	4
Public/private land interface	4
recreational fishing	207
Recreation and tourism	51
Research	34
Risk Assessment	1
Site specific information	256
Special Management Areas	14
Socio-economic implications	17
Services, Utilities and Facilities Zone	2
Sanctuary Zone	122
Visual Resources	6
Water Quality	32
Zoning/reservation	150
Other	20

Note: Includes submissions and letters received after closing date.

to terrestrial Reference Areas; that is, not be subject to human use or activity, other than for limited comparative research. Where sanctuary zones conflicted with recreational and commercial fishing, some submissions suggested alternative areas.

The location of sanctuary zones raised many comments. Some believed that sanctuary zones should be located in more accessible areas to provide for use and enjoyment, and to allow a feeling of ownership to develop within local communities. Less remote sanctuary zones would be also easier to police and to study.

Many respondents considered that the enforcement of the 'no-take' provisions in sanctuary zones was a major problem.

#### *Fishing in Conservation Zones*

The issue most frequently raised about the conservation zones related to fishing. Some respondents wanted no or limited restrictions on recreational and commercial fishing in these zones. They stressed the importance of fishing to Victoria's economy, the threat to fishers' livelihood if fishing was prohibited in conservation zones, and the environmental harmlessness of at least some fishing techniques. Those who believed that no fishing should take place in these areas quoted the apparent damage that some fishing caused to habitat and fish stocks, particularly in bays such as Western Port, Corner Inlet/Nooramunga and Andersons Inlet and argued that fishing is not compatible with the objectives of conservation zones.

#### *Other uses in Conservation Zones*

Comments were made that the proposed recommendations were more concerned with economic rather than environmental considerations. Views were also expressed about the inconsistency of allowing earth resources, including oil and gas exploration and extraction, and fishing in conservation zones while prohibiting activities such as spearfishing, seaweed harvesting and the passage of ships.

The majority of those who commented on conservation zones were uncertain about which uses would be allowed in the future, and concerned about the potential outcomes and unknown time-frames for the development of management plans. Many called for clear and definite rules for conservation zones and other zones.

A view often expressed was that the proposed zones were too complex and there were too many zones. A number of submissions suggested that marine parks should be reserved, as are terrestrial national parks, under the *National Parks Act 1975*.

### New parks

A number of new parks was proposed. These included areas that respondents considered to be inadequately protected in the Bays, Inlets and Estuaries and Otways biophysical regions, areas with special environmental values and specific use areas. Proposed special environmental areas included seagrass and mangrove habitats; wildlife areas for waders, seals, penguins, whales and dolphins; natural habitat for rock lobster and abalone; and fossil sites and scenic sites. The specific use areas included, for example, recreational fishing and scientific research sites. Detailed information was provided on the environmental values of many of the coastal reserves, and additional coastal areas were suggested for protection.

### Other issues

The lack of and need for more research and monitoring was noted by many respondents. Monitoring of proposed parks, existing uses of the marine environment, and introduced marine pests was considered important. Other issues of concern included the value and impact of commercial and recreational fishing, the quality of marine waters with respect to sewage discharges, dredging and catchment effects, the benefits and disadvantages of artificial reefs, and finding suitable sites for mariculture.

### Development of the Recommendations

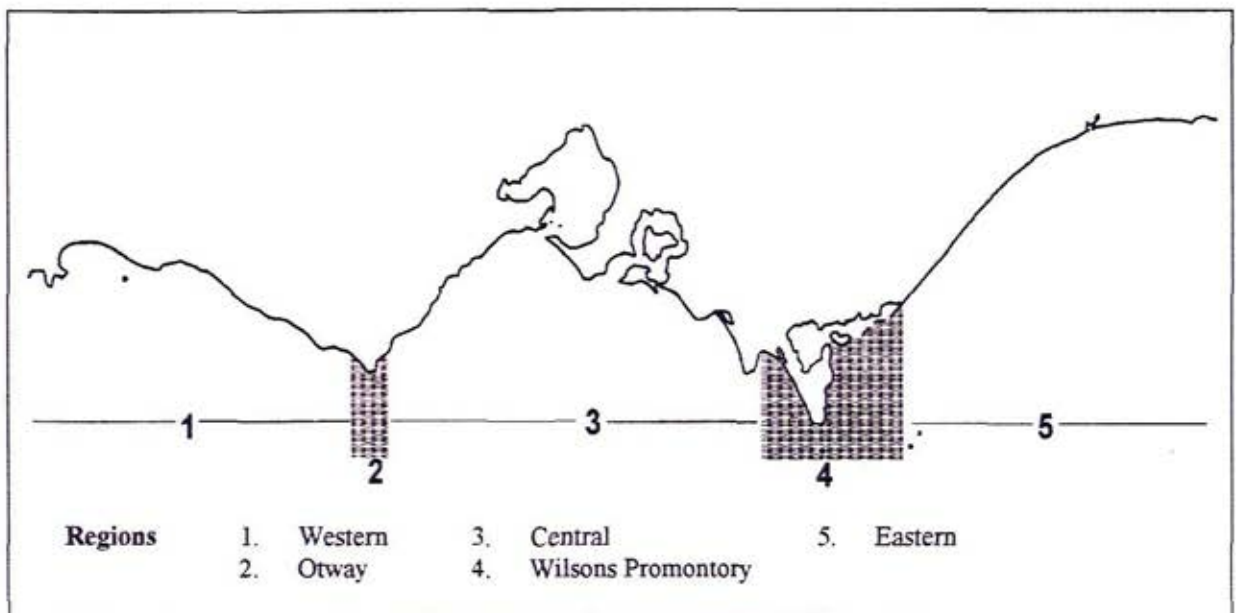
Many studies and reports have shown that the administrative arrangements and legislation

applying to the coast and marine areas are complex and often confusing to the public, and create difficulties for those who are responsible for using and managing these areas. Administrative and legislative responsibilities often overlap and management objectives can conflict. It has been claimed that to address these issues alone would substantially improve coastal management.

The Council believes that the protection of important marine and coastal values and the sustainable use of resources must be based on an integrated approach, not only to Victoria's marine, estuarine and coastal area as a whole, but also to catchments that drain to the coast and to the sea beyond the Victorian territorial limit. This planning framework must be linked to clear management objectives must be implemented by a properly resourced agency or agencies with well defined and legislated responsibilities. To this end a key recommendation, outlined in Chapter 3, is that there be a single responsible authority (Department of Natural Resources and Environment) for all of Victoria's marine and coastal area, other than the major ports.

This framework would provide the context for preparing planning guidelines that cover the wide range of activities that may affect or promote the sustainable use of Victoria's marine, estuarine and coastal area, and the economic, recreation and conservation opportunities that it provides the community now and in the future. These recommendations are also outlined in Chapter 3. Chapter 4 lists additional specific recommendations for bays, inlets and estuaries.

Figure 1.2: Biophysical Regionalisation of Victoria's Open Coast Waters



Council has used a biophysical regionalisation or classification of marine and coastal environments to enable a systematic approach to be taken in its recommendations for this environment. This is similar to Council's approach to terrestrial environments, where biophysical regionalisation based on 'land systems' has been used.

For Victoria's marine environment, the Council and the former Department of Conservation and Natural Resources jointly developed a biophysical regionalisation with the help of external consultants. This process links with Ocean Rescue 2000 program initiatives of the Commonwealth Government. The process used and the resulting regionalisation is described in more detail in Appendix 6. The biophysical regionalisation identified six regions (Figure 1.2 - see previous page).

A five-step process was used to identify and select representative areas in order to protect significant environmental values. In the context of this investigation, 'representativeness' refers to the identification of areas containing examples of the range of marine habitats within each biophysical region. The steps were:

- 1 Subdivide biophysical regions according to the eight major habitat types identified in the Descriptive Report (see also Table 1.4). Intertidal rocky shores and subtidal rocky reef habitats were also subdivided according to major rock types of the substrate.
- 2 Identify specific coastline and offshore sections for each biophysical region/habitat combination that have known significant biological or ecological values. (See also Appendix 7.)
- 3 Using areas with known values as a core, delimit sections of the coast from high water to the territorial limit in order to include the variability associated with increasing water depth and distance from shore.
- 4 For those sections of the coast where clear alternative areas exist, choose the area in the best environmental condition and least conflict with incompatible facilities or activities.
- 5 Consider the social and economic implications of choosing particular areas and the identified range of appropriate uses.

**Table 1.4: Major Habitats by Biophysical Region**

Habitat	Bays, inlets and estuaries	Open Coast Regions				
		Western	Otway	Central	Wilsons Promontory	Eastern
Intertidal rocky shores <sup>2</sup>						
Subtidal rocky reefs <sup>2</sup>	minor					
Seagrass beds			minor			none known
Mangroves		not present	not present	not present	not present	not present
Intertidal sandy beaches						
Sheltered intertidal flats		not present	not present	not present	not present	not present
Subtidal soft substrata						
Pelagic environment						

Notes:

1 Shading indicates habitat/region combinations that occur along the Victorian coast.

2 Major substratum rock types are basalt, granite, limestone, calcarenite and sandstone.

Chapter 5 contains recommendations for marine parks, while chapters 6 to 8 contain recommendations for the sustainable use and protection of environmental values for the remainder of the areas along the coast. In providing recommendations for these protected

areas, the Council emphasises that they form part of Victoria's marine, estuarine and coastal area, and cannot be managed in isolation from it or become the only focus of management actions and community interest, thereby leaving the rest to 'fend for itself'. However, this does not mean

that planning actions are necessarily of equal priority across the entire planning area.

In addition to seeking and responding to submissions, the Council's Draft Final Recommendations have responded to the results and conclusions of a number of specially commissioned studies. The studies include:

- *Environmental Inventory of Victoria's Marine Ecosystems -- Stage One: Biophysical Classification Final Report* (VIMS et al. 1994)
- *Environmental Inventory of Victoria's Marine Ecosystems -- Stage Two: A Physical Classification of Bass Strait Waters* (Hamilton 1994)
- *Occurrence of Selected Species of Intertidal and Shallow subtidal Invertebrates at Victorian Locations* (Handreck and O'Hara 1994)
- *Saltwater Recreational Fishing in Victoria: A Questionnaire Survey of Recreational Fishers* (Craig 1994)
- *Sites with Important Biological and Ecological Values* (LCC 1994)
- *Consultation with Victoria's Coastal Aboriginal Communities* (Mullett 1994, 1995)
- *Fishing Techniques and Their Impacts* (Moulton 1996)
- *Principles for Traditional Use of Victoria's Marine and Coastal Areas* (Harding and Rawlinson 1996)
- *A Socio-economic Study of Coastal Towns* (TBA Planners 1996)
- *Offshore Survey of Selected Areas* (VFRI 1996).

Copies of all of these additional studies have been lodged with the Department of Infrastructure library and are available at that library for viewing or from it by inter-library loan.

Council also co-operated with Department of Natural Resources and Environment (National Parks Service) in a project using satellite imagery to map Victoria's nearshore marine habitats. The initial part of the project was undertaken by Dr Hugh Kirkman of the CSIRO's Division of Fisheries.

### **Social and Economic Implications of the Draft Final Recommendations**

During the later stages of the preparation of the Draft Final Recommendations, the Council commissioned McLennan Magasanik Associates Pty Ltd to undertake a social and economic

assessment of the Draft Final Recommendations for the Marine and Coastal Special Investigation. The consultant's report, *A Social and Economic Assessment of Draft Final Recommendations*, can be inspected at the Department of Infrastructure library and is available through this library for inter-library loan. This assessment of social and economic implications was taken into account in the framing of the Draft Final Recommendations.

The consultant's summary of findings is included in full as Appendix 8. An overview of the conclusions of the consultant's report is as follows:

The consultants concluded that the principal benefit from implementing the recommendations would be conservation and enhancement of the value of the environmental resource. Benefits for marine aquaculture were considered to be potentially large. Other benefits are associated with increased tourism and recreation. The principal costs identified are associated with constraints on certain uses in some zones - mainly commercial fishing and oil and gas production. Benefits outweighed costs.

The marine parks and sanctuary zones account for the main commercial impacts. It was noted that commercial activity is constrained in only a few marine parks. Impacts are greater in sanctuary zones where all commercial resource utilisation activity is prohibited.

With respect to social impacts it was concluded that the recommendations would result in both beneficial and adverse impacts. Improvements in environmental amenity were considered to be beneficial to the community as a whole, and positive spin-offs due to employment as a result of increased tourism and recreation were identified. Other job gains identified were associated with stimuli to economic activity, such as marine aquaculture. Also identified were adverse impacts on employment, mainly from reductions in commercial fishing and on the area available to those who participate in certain forms of recreation. Job gains were estimated to substantially outweigh job losses.

The consultants also noted that the benefits, particularly recreation and tourism, will probably occur locally and offset adverse local impacts from the curtailment of other commercial activity, mainly commercial fishing.

The consultants stressed that their quantitative estimates are only indicative.

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## 2. GENERAL RECOMMENDATIONS

**Recommendation I** qualifies those in the body of this document.

The Council wishes to stress the need for adequate resourcing and efficient management for the protection of Victoria's marine, estuarine and coastal area. It has made its recommendations on the assumption that sufficient staff and finance will be provided for appropriate management. Unless these resources are provided, the Council's recommendations cannot be effectively implemented.

The Council expects that further study and investigation may identify additional areas with special values and discover new earth resources. In addition, new uses of existing resources may also be discovered. Present planning cannot specifically provide for the conservation of these values or the utilisation of these resources.

It is also recognised that enforcement is a difficult task and involves significant resources, and that new resources will be required where the intensity of management increases as a result of these recommendations. However, the Government has the responsibility to manage the area irrespective of the current or recommended use.

Irrespective of the source of resources, Council considers that higher priority must be given to the management of Victoria's marine environment than in the past. The Council therefore recommends:

- I That the public authorities responsible for managing and protecting Victoria's marine, estuarine and coastal area be allocated the resources necessary for the task.

**Recommendations II to V** concern the implementation of recommendations.

The Council recognises that, in some cases, existing legislation may have to be amended or new legislation passed in order to effectively implement some recommendations. It is aware that this may result in a delay before some of its recommendations can be implemented. The Council is concerned that, where implementation of the recommendations involves a change of land tenure, actions during the delay period could affect identified values or reduce management efficiency.

- II That, until the formal procedures for the implementation of those recommendations approved by Government are completed, the present legal status and management responsibilities continue, except that the area be managed in accordance with the approved recommendations.
- III That the boundaries of areas, if they have not been precisely surveyed, be subject to minor modifications and other adjustments that may be deemed necessary.
- IV That in cases where occupation does not agree with title, the Department of Natural Resources and Environment may at its discretion make minor adjustments to boundaries of public land when implementing these recommendations.
- V That where areas of public land are not specifically referred to in these recommendations, present legal uses and tenure continue, pending further review.

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### 3. MANAGEMENT GUIDELINES FOR VICTORIA'S MARINE, ESTUARINE AND COASTAL AREA

Victoria's Marine, Estuarine and Coastal Area contains a wide variety of habitats. They include sandy beaches, cliffs, shore platforms, extensive subtidal reefs, soft-bottom sediments, open water with a range of pelagic environments and bays, inlets and estuaries with mangroves, intertidal flats and channels, and seagrass meadows. Along the State's 2,000 km coastline are more than 80 named islands, ranging from small islands of less than 1 ha (such as Lawrence Rocks) to the largest, French Island (17,300 ha).

Victorian coastal waters within the 5.5 km (three nautical mile) territorial limit cover more than 10,000 sq km and, at the territorial limit, range from 20 to 110 m deep.

Bays, inlets and estuaries comprise over 30 semi-enclosed water bodies which cover more than 3,100 sq km. The largest is Port Phillip Bay (1,950 sq km), but most are much smaller than 40 sq km – the size of the fifth largest, Mallacoota Inlet.

The marine, estuarine and coastal environment forms one of the State's most valuable natural assets. It is of incomparable importance for recreation, tourism, commerce and industry, scientific research, education and conservation, as well as for its own intrinsic value.

Most Victorians live within a short drive of the coast. Excellent recreational fishing opportunities, internationally recognised surfing venues, and the wildlife and scenic beauty of our coastline are major tourist attractions. Victoria's major ports handle domestic and international trade, and are the home ports for many fleets that fish Bass Strait. The abalone, rock lobster and scallop fisheries are major export industries, and parts of the Victorian seabed are highly prospective for oil and gas. The annual value of oil and gas production in adjacent Commonwealth waters is approximately \$3500 million.

The rocky reefs of Australia's temperate waters (including Victoria) have a very high species

diversity and a high proportion of endemic species. The soft subtidal sediments are also very diverse, and some offshore communities are among the most diverse known anywhere in the world.

Because the great majority of the coastline and the subtidal sea-floor is publicly owned, there is a significant opportunity to develop a coordinated planning approach for the area.

#### A Framework for Strategic Planning

The Council wishes to emphasise the importance of integrated planning across the whole of Victoria's marine and coastal environments, including the bays, inlets and estuaries as well as the adjacent foreshore land and catchments that drain to the coast. It has therefore provided a set of recommendations relevant to the entire marine, estuarine and coastal area, and has also addressed the issue of activities in catchments that drain to the coast. These recommendations provide a strategic planning framework for Victoria's marine and coastal environment. Underpinning this strategic planning framework are the concepts of land use allocation, biodiversity conservation, and recognition of time scale. In making its recommendations, the Council was conscious of the wide range of views presented in submissions. These varied from an 'activities-based approach' (where planning and management outcomes are achieved by the use of performance standards implemented by self-regulation or enforced under legislation) to the designation of a system of zones or reserves over the entire area, where the uses are specified by legislation. Other proposals suggested various combinations of these two approaches.

When considering the various approaches and developing its recommendations, the Council has taken account of the strengths and weaknesses of different approaches (particularly in regard to short-term and potential long-term social, economic and conservation outcomes) and has kept in mind the principles of ecologically

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sustainable development and the appropriateness of taking a precautionary approach. While addressing the immediate needs of the current generation in relation to local and regional issues, the Council considers it must look 50 to 100 years ahead when considering State, national and international issues. It has adopted a small number of park and reserve categories, with the objectives defined for each category. Recommendations are provided as to appropriate resource uses and activities, although emphasis is given to the role of management planning and community involvement in the detailed implementation of Council's recommendations.

The Council believes that decisions regarding management of the marine, estuarine and coastal area and its resources should, primarily, consider whether a proposed use or development contributes to the achievement of the objectives for the area. A primary management principle is that serious or irreversible damage to the environment must be avoided. Decision-making is to be guided by careful evaluation and an assessment of the risk levels and consequences of various options, including the accumulation of adverse effects on other uses and users and the environment.

The Council's recommendations for the entire Victorian marine, estuarine and coastal area have been developed with the intention of conserving biological diversity at three levels (ecosystem, species and genetic) and conserving essential ecological processes, while allowing for appropriate sustainable use.

### **Coordinated Management**

In its Proposed Recommendations, the Council emphasised the desirability of creating a focused body, with its authority established by legislation, to overcome the existing fragmentation of responsibility and legislative deficiencies in coastal management. The option of developing a new *Marine and Estuarine Management Act* as 'umbrella' legislation for the management of Victoria's marine and estuarine

areas was discussed, but it was decided to recommend that these recommendations be implemented through existing legislation, with amendments as required.

Council notes that the *Coastal Management Act 1995* establishes a coastal planning and management system which covers Victoria's coastal and marine environment to its territorial limits (5.5 km offshore), and considers that the Victorian Coastal and Bay Management Council established under the Act is well placed to ensure that coastal planning is coordinated and that priorities are established. Together with the transfer of the responsibility of the smaller ports to the Department of Natural Resources and Environment, the new *Fisheries Act 1995* (which provides for the ecologically sustainable management of Victoria's fisheries) and the provisions of the *Catchment and Land Protection Act 1994*, Council believes that the opportunity for coordinated management is well established. However, there will need to be close liaison between the Victorian Coastal and Bay Management Council and Regional Boards, the Fisheries Co-Management Council (established under the *Fisheries Act 1995*) and the Catchment and Land Protection Council and Regional Boards. These bodies have different levels of responsibility, according to the tenure or reservation of an area.

At present marine, estuarine and coastal environments can be reserved under a number of Acts (see Appendix 1), but much of Victoria's marine, estuarine and coastal area is not reserved at all. A key thrust of the Council's recommendations is that the whole of the Victoria's marine, estuarine and coastal area be reserved. Details of the recommended reservation categories are included in Chapters 5 to 8.

It is important to note that all recommendations made by Council for Victoria's marine, estuarine and coastal area are for public land only; public land includes the seabed and overlying waters.

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## OBJECTIVES FOR VICTORIA'S MARINE, ESTUARINE AND COASTAL AREA

### RECOMMENDATIONS

- M1** That the public land of Victoria's marine, estuarine and coastal area be used to:
- (i) conserve natural ecosystems and their associated biota;
  - (ii) maintain the water quality characteristics of natural ecosystems and, where these are degraded, progressively improve them;
  - (iii) protect features of archaeological, historical, cultural, geological and geomorphological, and landscape significance;
  - (iv) provide opportunities for open-space recreation, education, and the tourism industry;
  - (v) provide opportunities for sustainable harvesting of fish and other biota from wild stock;
  - (vi) provide opportunities for marine aquaculture;
  - (vii) provide for the exploration and extraction of earth resources, including oil and gas;
  - (viii) provide for the development of renewable energy resources;
  - (ix) provide for shipping operations and associated port infrastructure and navigation aids;
  - (x) provide for sea-floor pipelines, communication links, and other necessary service and utility infrastructure;
- that
- (xi) the discharge of waste may be permitted under licence, after relevant social, economic and environmental factors and other alternatives have been considered;
- and that
- (xii) the area be managed in accordance with the planning principles, management guidelines and recommendations outlined below, unless otherwise specified in the recommendations contained in Chapters 5 to 8.
- M2** That the above objectives and the planning principles for Victoria's marine estuarine and coastal area (see Recommendation M4) be incorporated in legislation.
- M3** That the public land of Victoria's marine, estuarine and coastal area remain public land, be reserved as recommended in Chapters 5 to 8, and, other than the major ports, be the responsibility of the Department of Natural Resources and Environment or its delegated agents.

#### Notes:

- 1 The incorporation of the recommended objectives and planning principles for Victoria's marine, estuarine and coastal area into legislation will ensure that these are taken into account by managers and planners.
- 2 The major ports, as defined in Chapter 8, are the Ports of Portland, Geelong, Melbourne and Hastings.
- 3 While Council has recommended that the Department of Natural Resources and Environment be responsible for the management of the public land of Victoria's marine, estuarine and coastal area, other Government agencies such as the Environment Protection Authority will continue to have responsibility for those aspects of marine and coastal management defined under their respective legislation.

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## **PLANNING PRINCIPLES FOR VICTORIA'S MARINE, ESTUARINE AND COASTAL AREA**

The planning principles recommended below, together with the management guidelines outlined in the following section, will assist the sustainable use of resources, help protect significant environmental values, and maximise long-term social and economic benefits within the Area. The principles are particularly relevant for assessing how resources are allocated between the recommended public land uses for the Area. They reflect Council's endorsement of the appropriateness of a precautionary approach in the management of the marine and coastal environment.

### **RECOMMENDATION**

**M4** That

- (i) resource use assessment and allocation must take into consideration:
  - (a) links between terrestrial and marine systems
  - (b) the identification of all values of resources
  - (c) the impacts of uses on those values
  - (d) long term impacts
  - (e) cumulative impacts;
- (ii) uses with a high risk of adverse impact only be permitted if there are overwhelming grounds for proceeding;
- (iii) other uses be considered in a conservative and cautious manner;
- (iv) priority be given to uses and development:
  - (a) with the greatest long term community benefit
  - (b) which are particularly dependant on coastal locations or coastal resources
  - (c) that provide for the greatest range of appropriate beneficial uses, including protection of environmental values, whilst minimising conflict between uses
  - (d) which are in accordance with pre-determined strategic plans;
- (v) resource uses be monitored to ensure impact assessments are accurate;
- (vi) public access to the coast for recreation, tourism and other public activities be maintained;
- (vii) the costs of development be borne by the development proponents;
- (viii) natural physical processes be safeguarded;
- (ix) uses have minimal adverse impacts on regional biological diversity and processes, sites of significance, and areas subject to international agreements;
- (x) disposal of waste be limited to the quantity and quality that will not create long-term degradation.

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## MANAGEMENT GUIDELINES AND RECOMMENDATIONS FOR VICTORIA'S MARINE, ESTUARINE AND COASTAL AREA

For convenience, the management guidelines and recommendations for specific action are described under the following headings:

- Aboriginal Interests
- Catchment Planning
- Coastal Dynamics
- Community Education and Involvement
- Compliance
- Development and Infrastructure
- Earth Resources
- Environmental Quality
- Habitat and Species Conservation
- Harvesting and Production of Marine Biological Resources
- Heritage Values
- Introduced Plants and Animals
- Marine Aquaculture
- Recreation
- Research, Inventory, Monitoring and Auditing
- Risk Assessment and Management
- Tourism
- Visual Resources.

Most of the subject areas are interrelated and must be considered together when decisions are being made about the future management of the marine and coastal environment. For example, recommendations relevant to fish management are found in many sections including habitat and species conservation, environmental quality, introduced plants and animals, harvesting and production of marine resources and compliance.

The following management guidelines add to and complement the objectives and planning principles outlined in Recommendations M1 to M4.

### ABORIGINAL INTERESTS

A number of Aboriginal communities and organisations have an active interest in coastal issues across the State or for particular areas. As part of its consultative process for this investigation, Council members and staff met with representatives of these groups.

A major outcome from these early meetings was a request to appoint a Liaison Officer to consult with the various communities regarding their interest in the investigation. Funding for this position was provided by the Commonwealth's Contract Employment Program for Aboriginals

in Natural and Cultural Resource Management. The liaison Officer contacted the Aboriginal communities following the publication of the Descriptive Report and the Proposed Recommendations.

Along with many other groups and individuals, Aboriginal communities expressed concern about environmental quality, management of catchments that drain to the coast, the status of a range of natural resources (including fish), and the need for an integrated approach to coastal planning.

Access to land and sea (including access to marine resources) is of particular interest to Aboriginal communities and they express a strong desire for consultation with them on coastal management to be given higher priority. The creation of opportunities for greater involvement in land and fishery resource management was suggested, and the desire was expressed that Aboriginal cultural needs and views need to be considered when the exploitation of knowledge, sites and resources is being proposed by others.

During the consultation process a number of areas along Victoria's coastline were identified by the Aboriginal communities as having important cultural significance to them. Activities being carried out by the Aboriginal communities today, such as attendance, accessing fish and shellfish, camping, managing and ceremonial practices, all contribute to their cultural importance.

#### *Protection and management of Aboriginal places, sites and objects*

The identification, protection and management of Aboriginal places, sites, and objects are provided for by two pieces of legislation, as described below.

#### *The Aboriginal and Torres Strait Islander Heritage Protection Act 1984*

This Commonwealth Act was developed specifically to increase the decision-making role of Aboriginal communities in the protection and management of their cultural heritage (including archaeological sites and objects, traditional places of significance and intellectual property).

The regulations made under the Act define the boundaries of the 'local Aboriginal communities' which have standing under the legislation. All parts of Victoria are covered by 'local community areas' and under the Act these communities have the right to request the Minister to make declarations to protect endangered Aboriginal places or objects. The declarations may contain any conditions considered necessary or appropriate to protect the place, site or place; for example, control over access or prohibition of disturbance. These provisions have been used in two recent Victorian cases on coastal land at Portland and at Port Fairy. Penalties for contravening declarations under the Act are considerable.

Local Aboriginal communities may also enter into *Cultural Heritage Agreements* with landowners or managers, where appropriate, to protect sites or objects.

The Act therefore provides a basis for protecting Aboriginal cultural property in Victoria. However, it also enables a person or organisation to apply to the relevant community for consent to legally disturb or damage a site, although it is not clear what sites or objects are included in this provision.

Difficulties arise from the interpretation of the definitions for 'Aboriginal object' and 'Aboriginal place' and which of these can be defined as being of 'particular significance to Aboriginals in accordance with Aboriginal tradition'. Aboriginal Affairs Victoria considers that the Commonwealth Act mirrors the 'blanket' protection provided by the Victorian Act (described below), which covers all Aboriginal sites and relics on both public and private land.

#### *Archaeological and Aboriginal Relics Preservation Act 1972*

Under this State legislation, all archaeological relics and sites are protected under the Act. Damage or disturbance (whether deliberate or inadvertent) without a permit is prohibited.

Under the Act, important sites can be declared *permanent or temporary Archaeological Areas*, restricting access and providing suitable management arrangements. Only nine such areas have been declared (one of which is on the coast at Thunder Point in western Victoria); the small number reflects the time-consuming procedures

involved and indicates that declaration may not be the most suitable means of achieving protection.

The Council believes that the provisions in these Acts are sufficient to provide for the protection of Aboriginal places and relics. However, Aboriginal communities see the legislative mechanisms as a last resort and would prefer to be involved in discussion and assist with management at a very early stage, rather than invoking the provisions in the legislation when a problem arises.

#### *Involvement in site management*

Under the Commonwealth Act, land managers must involve the Aboriginal community in the identification, protection and management of *places, sites and objects of particular cultural significance*. Communities also wish to be involved with land managers in the protection of other sites, but there is no formal mechanism through which this can occur.

There is a need for improved communication and consultation mechanisms between Aboriginal communities, Aboriginal Affairs Victoria and the Department of Natural Resources and Environment and other agencies. It is clear that the major threat to places, sites and objects is a lack of information about their location and significance. Aboriginal people are often best placed to provide this information to land managers, but it may also mean that Aboriginal communities need to ensure appropriate access by land managers to sites to allow values to be properly protected and maintained.

The Council is aware that similar problems occur on private land and that more effective communication between private landowners and Aboriginal communities is also necessary. This could be an appropriate role for local government.

Aboriginal communities are also seeking a more active involvement in the day-to-day management of places, sites and objects, and in their appropriate interpretation. The Council believes that this is a valuable resource for land managers and planners and can lead to *cooperative management and protection* that would benefit both the land managers and the Aboriginal community. The Council supports further development of cooperative ventures of this nature.

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### *Involvement in coastal management*

The Victorian Government recently enacted two major pieces of legislation affecting coastal management – the *Coastal Management Act 1995* and the *Fisheries Act 1995*. Among other things, the *Coastal Management Act 1995* establishes a Victorian Coastal and Bay Management Council which is to prepare a Statewide Coastal Strategy, and provide advice to the Minister on coastal development proposals, coastal action plans and management plans, and priorities for funding. Under the Act, the Council must include a person from the community with experience in issues relating to indigenous peoples; the newly appointed Council includes a member of Victoria's Aboriginal community.

A key part of the *Fisheries Act 1995* is also the establishment of a State-wide coordinating and advisory body. In appointing persons to this body, the Fisheries Co-Management Council, the Act requires the Minister to have regard to the inclusion of a person with experience and knowledge in traditional fishing uses. Moreover, the objectives of the Act include the facilitation of access to fisheries resources for traditional use, and requires that fishery management plans have regard to, amongst other things, traditional use.

Council believes that the direct involvement of Aboriginal communities in these important Statewide bodies will be of mutual benefit to the communities and to the management of the coast and its fisheries. Where opportunities arise, Council advocates similar direct involvement in other coordinating bodies, such as the Catchment and Land Protection Council and Boards.

### *Traditional use and ownership*

In the context of Australia's relatively short European history, the term 'traditional use' is interpreted as applying only to Aboriginal people.

A number of issues raised by Aboriginal communities stem from the view that Aboriginal people have a traditional right to ownership or use of the land and the sea and the resources they contain.

The Commonwealth Government has recently established the Native Title Claims Tribunal under the *Native Title Act 1993*, and all claims

to establish such titles for land and resources are to be considered by that Tribunal. The Council believes that any claims of this nature raised by Aboriginal communities in Victoria should be referred to the Tribunal, and that associated issues (such as the allocation of royalties from the use of marine resources) can only be determined after the resolution of native title claims. The Council also emphasises that these recommendations are not intended to influence, in any way, future claims for native title.

In Victoria, traditional use comprises two main types of activities:

- subsistence activities related to places
- the maintenance of indigenous culture, including spiritual beliefs, ceremonial practices and totemic relationships together with traditional fishing and hunting skills.

The allocation of marine resources, and the need for traditional uses to be recognised in the allocation process, has also been raised as an issue. Throughout these recommendations, the Council has essentially determined that decisions regarding the allocation of resources should be made through the management planning processes, and traditional uses should be included in these processes.

The Council believes that the following principles should be applied in relation to the traditional use of coastal and marine areas:

- the interests and rights of indigenous users of marine and coastal resources should be recognised
- resource conservation and sustainability, together with public safety, should be the overriding planning and management considerations in coastal areas; and may require some restriction of traditional uses
- Aboriginal communities must have equal opportunity in consultation and involvement in marine and coastal resource management
- marine and coastal resources should be generally managed for multiple uses, to minimise conflicts between users and to avoid the need for priority setting between traditional and non-traditional uses.
- laws and policies should not unnecessarily restrict or inhibit traditional uses.
- traditional cultural purposes be facilitated by legislative exemptions where possible.

In recognising the interests of Aboriginal people, Council wishes to emphasise the importance of the following recommendations being implemented in a spirit of cooperation.

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## ABORIGINAL INTERESTS

### RECOMMENDATIONS

- M5 That planning and management decisions be based on the above principles.
- M6 That the Department of Natural Resources and Environment, coastal boards, local Government, Aboriginal Affairs Victoria and Aboriginal communities continue to work together to improve their communication links to ensure more effective identification, protection and management of areas of cultural significance to Aboriginal communities on public land.
- M7 That Aboriginal communities be given the opportunity to become directly involved in the management of marine and coastal areas and their resources, including participation in local management bodies or involvement in cooperative ventures.
- M8 That the Department of Natural Resources and Environment, in collaboration with Aboriginal communities and Aboriginal Affairs Victoria, undertakes a study into the nature of traditional uses along the Victorian coastal and marine areas.
- M9 That the Department of Natural Resources and Environment, in conjunction with the Fisheries Co-Management Council and the Coastal and Bay Management Council, review laws and policies restricting or inhibiting traditional cultural use of public land in coastal and marine areas, with a view to removing unnecessary restrictions.

### CATCHMENT PLANNING

The quality of the marine and coastal environment depends not only on sound planning and management of public land, but also on the nature of uses of adjoining private land and in catchments that drain to the coast. Poor decisions on private land can adversely affect public land values. The converse is also true.

Although the Council's recommendations relate only to public land, issues such as habitat protection, foreshore erosion, weed control, protection of visual resources and the control of inputs of nutrients, toxicants and sediments from coastal catchments require an integrated approach that is based on sound land-use planning and management for all land, irrespective of tenure.

The provisions of the *Catchment and Land Protection Act 1994* provide an excellent opportunity to apply this approach. One of the major functions of the Regional Catchment and Land Protection Boards established under the Act is the preparation of regional catchment strategies and the coordination and monitoring of their implementation. Once approved, these strategies must be taken into account by land managers and may be incorporated into planning schemes and State Environment Protection Policies. The strategies apply in various degrees to all land, irrespective of tenure.

Five Regional Catchment and Land Protection Boards are responsible for catchment regions

draining to the Victorian coastline. The Council considers that the needs of the marine and coastal area must be addressed in catchment management planning, and stresses the importance of the participation of the Regional Coastal Boards (established under the *Coastal Management Act 1995*) in the development of the regional catchment strategies.

On a more local scale, development on private land can have both direct and indirect impacts on adjoining public land and water. The impacts may arise from vegetation clearance, run-off, polluted groundwater, or visual impacts. Conversely, developments on public lands and water can affect private land. The impacts could include traffic generation and noise.

The *Coastal Management Act 1995* enables an application for use and development under the *Planning and Environment Act 1987* to be deemed to meet the requirements for an application for consent under the *Coastal Management Act*. Council notes that this provides an opportunity for reducing the overlap of consent processes and for dealing directly with the impacts on adjoining land of different tenure under one approval process.

Council recognises the importance of municipal planning schemes in achieving land management objectives, and considers that the provisions of planning schemes established under the *Planning and Environment Act 1987* should reflect all relevant Government approved Land Conservation Council recommendations and be consistent with them.

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## CATCHMENT PLANNING

### RECOMMENDATIONS

**M10** That catchment planning ensure that:

- (i) measures to address the impacts of land management and use on the marine and coastal environment are effectively coordinated;
- (ii) the quality of water entering the marine environment is monitored and, where necessary, improved;
- (iii) the possible impacts of development on adjoining land of different tenure is specifically considered;
- (iv) the protection of habitats and visual resources, the mitigation of foreshore erosion, and the control of pest plants and animals are taken into account.

**M11** That in preparing a regional catchment strategy, the Regional Catchment and Land Protection Board consults with the respective Regional Coastal Board with respect to land-based activity which may have an impact on the marine and coastal environment.

## COASTAL DYNAMICS

The coast is an ever-changing environment shaped by wind, rain, waves and ocean swells, tidal currents and river flows. Natural sand movement up and down the coast and between foredunes and offshore areas constantly reshapes beaches, dunes and offshore sandbars. Storms and floods can cause particularly rapid changes. In addition, many sections of Victoria's coast have limited sand supply, so they experience net erosion and landward retreat of the shoreline. Council's attention has been drawn to a number of sites where shoreline erosion issues are of particular concern, including Portland Bay, McCrae, Somers and the north-eastern shore of Western Port.

Interference with coastal processes (such as through the construction of artificial structures) often exacerbates the extent of natural change. Breakwaters and groynes intercept natural sediment movement along the shoreline, causing major localised accumulation and starving adjacent beaches of the sediments that would normally replenish them. This interference has resulted in the loss of facilities and private and public land, and costs to the community through attempts to rectify the problems. Indeed, the

structures may fail to achieve their original objective.

The impact of dredging and dredge spoil disposal has, in general, been poorly monitored, but where large volumes of material are involved, the overall impact is likely to be significant.

Management decisions must take into account both the natural dynamics of the land-sea interface and the changes that can occur as a result of inappropriate activities or development. The 'greenhouse effect', the phrase used to describe the effect of human-induced increases in levels of certain gases in the atmosphere, may induce a range of coastal responses such as variations in extremes of storm and flood events and, in particular, a rise in sea level.

Areas along the open coast and in bays, inlets and estuaries that are vulnerable to coastal retreat or flooding have been identified by the *Coastal Vulnerability Study*, prepared by the Port of Melbourne Authority in 1992. Developments in these vulnerable areas require particular scrutiny to avoid human-induced change and structures that will be threatened by coastal retreat.

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## COASTAL DYNAMICS RECOMMENDATIONS

**M12** That planning and management ensure that:

- (i) the dynamics of the land–sea interface are taken into account;
- (ii) areas which are vulnerable to coastal retreat or flooding are identified and used accordingly;
- (iii) all dredging and dredge-spoil disposal proposals, including beach renourishment proposals, are subject to specific consideration of their effect on coastal and marine processes;
- (iv) *strategies are in place to address issues relating to existing assets located in areas vulnerable to coastal erosion or inundation;*
- (v) modification of beach and dune environments be avoided;
- (vi) use of structures be avoided wherever possible;
- (vii) maintenance programs are in place for all protection works and structures.

**M13** That a dredging code of practice be prepared by the Environment Protection Authority, in conjunction with port and channel managers, to assist in the good design and conduct of dredging (see Note 2).

**M14** That information on sea-level and coastline changes be reviewed by the Department of Natural Resources and Environment on an ongoing basis, to provide a basis for the assessment of the adequacy of development controls and management strategies.

Notes:

- 1 Recommendations regarding coastal dynamics and coastal development are included in the section on Development and Infrastructure.
- 2 An independent review of the Trial Dredge Protocol has recommended that such a code of practice be prepared (see also Recommendation M35).

### COMMUNITY EDUCATION AND INVOLVEMENT

Those who use and enjoy the marine and coastal environment have a direct interest in its maintenance. An informed community that appreciates and understands the values, diversity and sensitivity of marine and coastal environments and the impact of different uses will facilitate the enjoyment of users as well as the achievement of planning and management goals. Active participation in planning, management and implementation is to the benefit of all concerned.

However, because many people rarely have the chance to experience the marine environment, it is often less appreciated and understood by the community. Those involved in a particular activity may have excellent knowledge about the needs of that activity but less knowledge about its impact on other users and resources.

Effective community education is therefore an essential part of any strategy to protect and ensure sustainable use of the marine environment.

A number of existing programs, notably Landcare, enable people to be directly involved in local planning and management. The Victorian Government's 'Coast Action' program enables the community to have a direct input into local project planning and a direct involvement in the rehabilitation of the coast. Coast Action coordinators have been appointed and they have facilitated the establishment and provision of support to an increasing number of local Coast Action Groups. The groups are involved in the restoration of vegetation, installation of upgraded beach access, erosion control, monitoring of change and in public education and interpretation. The Department of Natural Resources and Environment provides training, and financial and technical support.

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Another program of community involvement being developed by the Victorian Government is a 'Fish for the Future' program modelled on the Landcare concept. It aims to help ensure that sustainable fish levels are maintained.

At a national level, the Coastcare program is being established under the umbrella of the National Landcare Program. It is designed to *build on existing community activities and accommodate existing management responsibilities and arrangements.* Another Commonwealth initiative is the application of an 'Integrated Local Area Planning' (ILAP) approach to local area and regional governance. It emphasises processes that are driven by implementation from the bottom up, and which are concerned not only with planning but with the ongoing management of activities. It fosters partnerships between the three spheres of government, with community involvement as an integral component. An ILAP project covering Western Port was initiated in mid 1995. Its

aim is to facilitate the implementation of the Western Port Bay Strategy by using the ILAP framework to clarify and integrate management and community processes.

This type of community involvement not only increases the level of awareness and enjoyment of the marine and coastal environment, but should also enhance the development of a sense of *community responsibility and stewardship* for the marine and coastal environment and its management.

The Council considers it important that such community education, awareness and involvement programs are supported and that they continue to encourage the understanding of marine, estuarine and coastal environments, the resources and values it contains, the economic, social and conservation benefits of its sustainable use, and an awareness of those activities which adversely affect these benefits.

## COMMUNITY EDUCATION AND INVOLVEMENT RECOMMENDATIONS

**M15** That planning and management ensure that:

- (i) marine education organisations are consulted;
- (ii) community education, awareness and involvement programs form an integral part of strategy plans and management plans;
- (iii) provision is made for the evaluation of education and awareness programs;
- (iv) effective opportunities for public consultation and participation are provided.

**M16** That local communities be encouraged to share direct responsibility for the management of local coastal areas and the implementation of management strategies.

## COMPLIANCE

A high level of compliance with laws and regulations is essential for the protection of marine and coastal environments and the sustainable use of its resources. A lack of compliance can make some goals (such as the sustainable use of fish stocks, protection of habitats, maintenance of environmental quality and the protection of cultural resources) very difficult or impossible to achieve. If a considerable proportion of the resource is affected, the damage could be irreversible and have significant social and economic impacts.

Illegal taking of some marine resources is already a significant problem. Fish poaching in some of Victoria's fisheries (e.g. abalone) is a major threat to stocks and the sustainable management of the resource. Sound, *implementable and adequately funded* compliance strategies are essential to address illegal fishing and non-compliance with regulations for protecting and managing marine resources.

Enforcement can be assisted by people who use marine and coastal areas. In isolated or remote areas, for example, abalone fishers have assisted with surveillance. Close to populated areas, dive charter boats and other marine tourism

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operators, commercial fishers and, most importantly, the general public can and do help. However, official surveillance and enforcement of regulations will always be needed.

When there is a feeling of public ownership of marine parks and other marine areas, people can feel responsible for the care of these areas. Respect for local areas often leads to respect for areas in more remote locations and to an overall higher compliance. Community-based programs for voluntarily reporting possible offences should be established and made widely available.

The difficulty of achieving compliance in marine and coastal areas is recognised, with enforcement particularly difficult in isolated or

remote areas. A particular problem with offences that occur at sea is that it may be difficult to identify and retrieve evidence, or to detect offences that occur underwater.

A number of Government initiatives address the issue of adequate compliance. Recently, \$1 million was provided to the former Department of Conservation and Natural Resources to employ 13 additional fisheries and wildlife enforcement staff. This resulted in about 2000 penalty infringement notices being issued during 1994-95. Wider powers to seize property under the new *Fisheries Act* 1995 have led to the seizure of equipment, and these improved provisions are expected to be a significant deterrent to potential offenders.

## COMPLIANCE

### RECOMMENDATIONS

**M17** That planning and management ensure that:

- (i) clear objectives for compliance be established and compliance strategies, including enforcement, are developed to meet those objectives;
- (ii) managing agencies continue to recognise the importance of education and extension as integral components of a compliance strategy;
- (iii) priorities for compliance and enforcement be in accordance with the risk that offences pose to the values and sustainable use of the marine, estuarine and coastal areas;
- (iv) compliance strategies contain provisions for community involvement and self-regulation

**M18** That the general framework, including the legislation for enforcement, be periodically reviewed to ensure that the objectives are being achieved in an efficient manner and in accordance with established priorities.

## DEVELOPMENT AND INFRASTRUCTURE

Public land above high water along much of Victoria's coastline is generally narrow, and natural processes and human activity are causing beach erosion and coastal retreat in many areas. While the foreshore is thus continuing to diminish, demands for its use and further development are increasing.

Poor planning of some developments and associated infrastructure has led to irreversible changes in marine and coastal environments, and it is often the general community that has to absorb the resulting loss of natural amenity and economic costs. Both public and private land have been affected in this way. In particular,

poorly sited buildings and other structures in coastal areas can initiate or rapidly accelerate erosion problems, and nearby beaches or infrastructure may be threatened as a result. Any development on foreshore land needs to be set back far enough from the existing shoreline to ensure that the useful life of structures is not reduced by coastal recession.

Decisions about the future use and development of foreshore and nearshore areas must consider the natural dynamics of the land-sea interface and take into account the fact that changes in the position of the coastline occur both naturally and as a result of human uses. Human-induced changes must therefore be avoided, or provision must be made for mitigating any adverse impacts. For example, a decision to build a structure which will affect sediment transport

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along the coast might include a budget allocation to enable ongoing transfer of sediment past the development to ensure replenishment of beaches.

The coast is also subjected to a range of conflicts between desired uses and their respective supporting facilities. The coastline is a naturally attractive place for recreation, and is the essential location of a number of maritime industries and transport systems. Development and infrastructure may be largely for use by an individual (e.g. an aquaculture pen) or a group or organisation (e.g. a boat club clubhouse), and may be generally available for a fee (e.g. a marina berth) or free to all (e.g. a beach path). A balance is required. Chapter 7 further discusses uses considered appropriate on the coast and approaches to non-coastal dependent uses.

Unlike the terrestrial area of Victoria, virtually all the coastal land and the entire marine area is public land. The Council believes that this circumstance offers significant opportunities for ensuring that the use and development of this resource is sound and appropriate and that it results in a high level of public benefit.

The envisaged State Coastal Strategy and the Coastal Action Plans under the *Coastal Management Act 1995* provide appropriate mechanisms for establishing clear directions and priorities for the development and facilitation of recreational use and tourism. This mechanism is enhanced by the legislative requirement to involve interested individuals and organisations in their preparation.

## DEVELOPMENT AND INFRASTRUCTURE

### RECOMMENDATIONS

**M19** That planning and development approval processes ensure that:

- (i) effective public consultation and participation occurs;
- (ii) the design of developments maintains equitable public access to land and water;
- (iii) marine and coastal processes are taken into account and disruption to those processes are avoided or minimised;
- (iv) an assessment of the visual impact, including that of any associated infrastructure, is incorporated;
- (v) the mitigation of environmental impacts is addressed;
- (vi) approaches to the removal of structures, site restoration, or facility re-use, in the event of their abandonment, obsolescence or destruction, be addressed;
- (vii) an analysis of vulnerability to erosion, inundation and coastal instability is undertaken (see Recommendation M21);
- (viii) development is consistent with approved strategies, coastal action plans or management plans.

**M20** That

- (i) the proponent of any structure likely to cause interference with sediment movements be required to demonstrate that any potential adverse impacts, including off-site impacts, have been addressed and that provisions for mitigation have been incorporated in the proposal;
- (ii) proponents and/or owners of coastal developments accept liability for any off-site impacts that could reasonably have been anticipated at the time of approval, and proponents and/or owners provide ongoing funding, where necessary, to overcome any adverse impacts.

**M21** That coastal setbacks be developed based on vulnerability to erosion, sea-level rise, inundation and coastal instability and which use a minimum 50-year time-frame (see Note 1).

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**M22** That when development proposals that may have an impact on marine and coastal habitats are considered, the hierarchy of management options given below be applied to either mitigate the impact or ensure that there is 'no net loss' in environmental quality of the habitat:

- (i) initially the aim will be to maintain without disruption the environmental quality of the habitat. This may be achieved by:
    - (a) encouraging the proponent to redesign the project
    - (b) selecting an alternative site
    - (c) mitigating potential damages using proven techniques, such as the installation of adequate pollution minimisation and control techniques;
  - (ii) if it proves impossible or impractical to maintain the same level of environmental quality of the habitat using the above approach, and the significance of the development is higher than the significance of other values, the following alternatives should be pursued:
    - (a) restoration of degraded natural habitat at or near the site
    - (b) or if (a) is not feasible, restoration of habitat in a different locality;
- and
- (iii) to ensure that the above hierarchy of management options operates in an effective manner, the associated costs be met by the proponent.

**M23** That the Department of Natural Resources and Environment undertake an audit to establish which existing developments are causing change to the coastline, and which developments are currently adversely affected by coastal processes and, where such effects are identified, that the following management responses be considered:

- (i) continued maintenance of the development;
- (ii) removal or relocation;
- (iii) purchase of alternative facilities or land.

Notes:

- 1 The Council is aware that setback provisions have been developed for some areas of Victoria and have been applied in other States, and it believes these provide a useful starting point.
- 2 Recommendations M12 and M14 regarding coastal dynamics and Recommendation M76 regarding visual resources are also particularly relevant to development and infrastructure.

## **EARTH RESOURCES**

The orderly identification and utilisation of earth resources provides a significant benefit to the Victorian community. The potential for finding new economic mineral resources along the coast or in marine areas is generally low; other earth resources such as dimension stone, limestone, and sand for construction and glass-making have more potential.

The extraction of earth resources can have major (often localised) impacts on the values of an area, including environmental values. Although sand and gravel resources suitable for general construction occur offshore, there are extensive terrestrial resources comparatively close to the major urban areas, so the need for utilising offshore resources, particularly given the high extraction costs and potential environmental impact, is unlikely in the foreseeable future.

Of the potential earth resources in Victoria's marine, estuarine and coastal area, oil and gas are currently considered to be the most prospective. Oil and gas production has so far been carried out almost exclusively in Commonwealth waters, with few tenements made available for exploration within the 5.5 km limit of the State waters. Much of this inshore area is now, however, considered highly prospective in the light of recent discoveries, and there is interest in having such areas made available for exploration and, potentially, production.

Exploration for oil and gas usually involves the acquisition of seismic data followed by the drilling of one or more exploration wells. If successful (as are about one in ten) one or more appraisal wells may be drilled. Exploration drilling is a transient activity (taking from one day to two months) and may occupy an area up

to 80 m by 80 m, although directly affecting a much smaller area of seabed.

Oil and gas production involves larger platforms or submerged seabed facilities which remain in place for the life of the well, produce much larger volumes of drilling muds and cuttings, and requires sea-floor pipelines from the drill site to onshore treatment facilities. The life of a field is usually 10 to 30 years.

The effect of exploration and production of offshore oil and gas resources on the marine environment is an issue of widespread community interest and debate. In 1994, as a contribution to this debate, the then Australian Petroleum Exploration Association published a report, *Environmental Implications of Offshore Oil and Gas Development in Australia – The Findings of an Independent Scientific Review*, which summarises the extent of available knowledge about this issue.

The disposal of drilling muds and cuttings is of growing international interest and concern. It is technically feasible to discharge no drilling muds and cuttings – as at 1994 more than 30 drilling rigs around the world were capable of this. Zero discharge would, however, be technically difficult and costly for the industry in Victoria. In the Victorian context, unlike a number of areas elsewhere, the drilling muds are water-based. Some additives and occasionally (subject to strict conditions) oil-based lubricants are discharged with the drilling fluids.

The prevention and control of oil spills is another important issue. However, oil spills arising from oil and gas exploration and production, other than very minor spillage, are very rare in Australia – virtually all spillage is from shipping. Planning in relation to oil spills is further considered under Recommendations M33 and M34.

The industry is aware of the need to have high standards of environmental practice and the management of environmental risk as a normal part of their operations. An industry code of environmental practice was adopted in 1977 and is subject to periodic review. A number of companies undertake or support environmental research activities.

The Victorian *Environmental Effects Act 1978* provides, at the discretion of the Minister for Planning, for the preparation of an Environmental Effects Statement (EES) by the proponents of works capable of having a significant effect on the environment, and the consideration of such effects by the responsible decision-makers. Where an environmental assessment is required under State and Commonwealth legislation, coordinated assessment would normally be expected – as is specified in the Inter-Governmental Agreement on the Environment. The former Department of Planning and Development and Department of Agriculture, Energy and Minerals developed draft guidelines to assist the mining industry in preparing an EES. These are currently under review, and the preparation of guidelines for the petroleum industry are also proposed. A Works Approval under the *Environment Protection Act 1970* might also be required.

The administrative provisions affecting the exploration and extraction of earth resources are defined in a number of Acts, all of which have been amended in recent years. The 1993 amendments to the *Mineral Resources Development Act 1990* identified three main categories of Crown land with regard to exploration and extraction: exempted (exploration and mining not permitted); restricted (consent required from the Minister responsible for the land); and unrestricted (referral required to the Minister responsible for the land). Similar categories are applied by the *Extractive Industries Act 1995* and, in effect, by the *Petroleum Act 1958* (although the *Petroleum (Submerged Lands) Act 1982*, which covers oil and gas extraction in the coastal waters of Victoria, essentially has no such requirements). The Council has adopted this general framework for the exploration and extraction of all earth resources. Its recommended allocation of its land-use categories and zones to each such grouping is detailed below; additional requirements for particular categories and zones are specified in Chapters 5 to 8.

Council has not provided specific recommendations regarding use of Victoria's marine and coastal area for the development of tidal, wind or geothermal energy sources. However, relevant recommendations are given in the Development and Infrastructure section.

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## EARTH RESOURCES

### RECOMMENDATIONS

- M24** That exploration and extraction of earth resources be subject to meeting the detailed requirements for each category outlined in Chapters 5 to 8; and that the following classifications (see Note 1) for the purposes of earth resources apply:
- (i) exempted Crown land (exploration and extraction not permitted)
    - (a) marine park (specified oil and gas exploration may be permitted in marine parks, outside sanctuary zones – see Recommendation A1 (viii) and (ix) for details)
    - (b) coastal reserves;
  - (ii) restricted Crown land (exploration and extraction subject to the consent of Minister responsible for the reserve)
    - (a) coastal waters – special management zone;
  - (iii) unrestricted Crown land (exploration and extraction subject to consultation with the Minister responsible for the reserve);
    - (a) coastal waters – general use zone  
– port access zone
    - (b) service and utilities reserves.
- M25** That planners and managers ensure that:
- (i) all operators have an approved environmental management plan in place to cover waste management, monitor discharges and key environmental indicators, assess and minimise environmental impacts and risks (taking into account the area affected, decommissioning and rehabilitation), and provide response mechanisms;
  - (ii) exploration and extraction is carried out using the best available technology;
  - (iii) drilling undertaken as part of exploration or extraction activities is conducted in a manner such that, in normal operating mode, there is minimal discharge of only non-hazardous, non-toxic drilling cuttings and muds to the marine environment and no discharge in marine parks and special management zones;
  - (iv) installations are removed when they cease to be operational or when an oil or gas field is abandoned, unless the manager seeks the retention of structures for the creation or maintenance of habitat and the structures are unlikely to be a hazard to shipping or to restrict current fishery techniques (see Note 4).
- M26** That appropriate licence conditions be established, following public consultation, by the Department of Natural Resources and Environment before a marine area is released for exploration, and that such licence conditions be consistent with the objectives of the respective park or reserve and zoning and aim to minimise environmental risks, disturbance to natural systems and impacts on other users.
- M27** That any proposal for the extraction of any earth resource be subject to an Environment Effects Statement (EES) or, if an EES is not required by the Minister for Planning, an appropriate environmental study, which is to be made available for public comment (see Note 3).
- M28** The Government seek industry contribution to the compilation of a publicly accessible biological inventory and monitoring database, and a program to fill data gaps to enable the assessment of the environmental consequences of the offshore extraction of earth resources; the program to be conducted as a tripartite arrangement between industry, government and research agencies.

#### Notes:

- 1 The terms 'exempted Crown land', 'restricted Crown land' and 'unrestricted Crown land' are as defined in the *Mineral Resources Development Act 1990*.

- 2 'Stone' is defined under the *Extractive Industries Act* 1995 as 'sandstone, freestone or other building stone, basalt, granite, limestone, or rock of any kind ordinarily used for building manufacture or construction purposes, quartz (other than quartz crystals), slate, gravel, clay (other than fine clay, bentonite or kaolin), sand, earth, soil or other similar materials'.
- 3 Council is aware that the provision for requiring the consent of, or consultation with, the Minister responsible for management, other than for areas subject to the *National Parks Act* 1975, will require amendment of the *Petroleum Act* 1958 and *Petroleum (Submerged Lands) Act* 1982, and that the exclusion of stone and mineral exploration and extraction from marine parks will require amendment to Schedule 3 of the *Mineral Resources Development Act* 1993.
- 4 International Maritime Organisation (1988) guidelines, and the APEA *Code of Environmental Practice – Onshore and Offshore* (1991) provide for the removal of infrastructure to a depth of 55 m. Council's recommendation includes all Victorian waters within the 5.5 km (three nautical mile) limit; that is, areas up to 110 m deep.

## ENVIRONMENTAL QUALITY

A wide range of activities have the potential to degrade the quality of the marine environment, particularly water quality. A high standard of water quality is essential for uses such as recreation, fish harvesting and nature conservation. In the past the sea has been seen by many as a convenient and free dumping ground for a wide variety of wastes, with an almost unlimited capacity to absorb them. It is now recognised that this is not the case for most forms of waste, particularly in areas that have a limited water exchange, such as estuaries.

In recent years the quality of discharged waters has been progressively improved. Bodies responsible for managing waste are working towards meeting the current Government policy that all coastal sewage discharges receive secondary treatment by 1997. The Environment Protection Authority licence conditions may now require the discharger to monitor not only the quality of wastes but also of the receiving environment. For example, water authorities responsible for ocean outfalls such as Boags Rocks, Wonthaggi, Black Rock, Cowes and Latrobe Valley must monitor the biological effects in the receiving environment.

On releasing the 1994 report *Reforming Victoria's Water Industry – Report of the Working Group on Effluent Standards and Compliance for Waterways*, the Government made a commitment to implement the report's recommendations. Water authorities, who are the main dischargers to the marine environment, are expected in the next three or five years to ensure that discharges from sewage treatment

works do not create adverse impacts on the environment or endanger public health. Detailed Strategic Wastewater Management Plans for the management of wastes will be prepared, adopting the principles of waste minimisation and the goals established in State Environment Protection Policies. Water authorities are also to develop appropriate monitoring and reporting systems.

It is now recognised that there are major economic and planning benefits to be gained from waste management strategies that involve re-use and reduction at the source. The principles of waste minimisation, expressed in the Government's current Industrial Waste Minimisation Policy, include waste avoidance and maximisation of re-use opportunities, and (where waste avoidance cannot be achieved) waste treatment by reducing contaminants through modern treatment technology.

The ultimate goal for protecting the marine environment is zero waste discharge. The implementation of this goal will require considerable investment over a long period. However, waste management planning should provide for a progressive reduction in discharges to the marine environment.

Diffuse sources from catchments that drain to the coast have been identified as a significant risk to the environmental quality of the estuaries to which they drain. While there are established catchment management techniques for reducing sediment, nutrient and toxicant loads, there is no method of measuring the success of these techniques in terms of the condition of Victoria's inlets, estuaries and bays.

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## ENVIRONMENTAL QUALITY

### RECOMMENDATIONS

M29 That planning and management ensure that:

- (i) the principles of waste minimisation expressed in the Government's current Industrial Waste Minimisation Policy continue to be implemented and that waste minimisation priorities be adopted in the following order: waste avoidance, waste reduction, waste re-use and recycling, waste treatment, and improved methods of waste disposal (including land disposal);
- (ii) a strategy is developed for phasing out the disposal of waste to marine and estuarine waters. Where this is not practical, that the environmental standards which apply to these wastes be progressively improved;
- (iii) State Environment Protection Policies and waste discharge licence conditions are reviewed regularly, with the emphasis on the maximisation of re-use activities and the improvement of standards as outlined above;
- (iv) the environmental impact of shipping operations and associated facilities is minimised, that environmental monitoring and auditing is established, and contingency plans for spills are developed for each port and for the Victorian coastline;
- (v) provisions are developed for appropriate waste treatment and recycling facilities, such as pump-out stations for disposal of wastes from pleasure craft.

M30 All coastal sewage discharges receive secondary treatment by 1997 (see Note 1);

and that

- (i) current secondary treated waste discharges to marine waters be allowed to continue subject to ongoing water quality monitoring, including toxicity studies and ecological impact surveys approved by the Environment Protection Authority, the findings of which should be progressively incorporated into licence conditions;
- (ii) if zero discharge to the marine environment is ultimately not practicable, existing discharges continue subject to the reduction of contaminants through the adoption of modern treatment technology.

M31 That in addition to the Environment Protection Authority's Works Approval process, proposals for major new discharges to the marine and coastal environment be subject to the preparation of an Environment Effects Statement or, if an Environment Effects Statement is not required by the Minister for Planning, an appropriate environmental study which is to be made available for public comment.

M32 That the recommended marine parks be added to Schedule A1 of the State Environmental Protection Policy – Waters of Victoria to provide the highest level of protection.

M33 That spill response planning:

- (i) include an assessment of the biological sensitivity of marine and coastal habitats to the effects of a spill and clean-up operations (see Note 2);
- (ii) be the responsibility of a specific designated authority.

M34 That a digital atlas identifying areas sensitive to spills be prepared and maintained by the Department of Natural Resources and Environment and be made generally available.

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- M35** That all dredging proposals be subject to planning approval as planning schemes are extended to cover coastal waters, with the Environment Protection Authority to be a Referral Authority (providing technical input and advice), with proposed major dredging works subject to an Environment Effects Statement or, if this is not required by the Minister for Planning and Local Government, an appropriate environmental study which is to be made available for public comment. Ongoing maintenance dredging operations are to be subject to dredging strategies approved under the planning process.
- M36** That the Environment Protection Authority, together with the Department of Natural Resources and Environment and other relevant organisations:
- (i) continue to identify and improve water quality criteria and other environmental criteria (including biological parameters) and improve monitoring standards covering suspended and particulate matter, nutrients, toxicants and indicator biota in the waters of bays, inlets and estuaries;
- and that
- (ii) catchment management programs be progressively implemented to enable these standards to be met, and priority be given to the management of stormwater run-off in catchments draining urban areas.
- M37** That water authorities, in consultation with the Environment Protection Authority and the Department of Natural Resources and Environment, develop appropriate monitoring and reporting systems for environmental performance; the results to be available to their communities and to State and local Government.
- M38** That all parties that generate, treat or dispose of wastes to the marine environment be audited for the implementation of the Industrial Waste Minimisation Policy and State Environment Protection Policies.
- M39** That the Environment Protection Authority ensure that a process is developed for reporting on the outcome of environmental waste monitoring programs and the extent to which policies and management plans are being implemented by responsible authorities.

Notes:

- 1 Current Government policy is that all coastal sewage discharges will receive secondary treatment by 1977.
- 2 Council is aware of the environmental management plans and oil-spill contingency plans that have been (or are being) developed by companies operating in State and Commonwealth waters along the Victorian coast.

## HABITAT AND SPECIES CONSERVATION

The survival of individual species and communities of species depends directly on the protection of their habitats. Several marine habitats, mainly in the bays and estuaries (e.g. seagrass meadows), are under threat, and the losses to date have had economic, social and conservation implications. Marine and coastal habitats can be affected by many activities, including those that result in reduced water quality, burial under sediments and other direct disturbances to the seabed, and the introduction of pest plants and animals. Habitat conservation programs must systematically address these issues for all habitats.

The *Flora and Fauna Guarantee Act 1988* provides for the protection of threatened species and communities. The new *Fisheries Act 1995* provides for the protection of aquatic habitat and species, mainly for fisheries purposes. Under this Act, fisheries reserves can be declared for spawning, hatching or nursery, for critical habitat areas, and for species which are defined under the Act as protected aquatic biota. The *Wildlife Act 1975* provides for the protection of fauna (except fish).

The removal of biomass (such as fish, shellfish and seaweed) from the ecosystem by harvesting can affect the functioning of the ecosystem through changing predator-prey relationships and other ecological associations. When, for

example, fish (including non-target species) are caught, it is important to ensure not only that the remaining population is self-sustaining but also it is sufficient to maintain the integrity of the ecosystem. For example, species such as abalone and rock lobster are often 'keystone' species within their environment. That is, they are top predators or important herbivores in the local food web and their removal may have a significant effect on biodiversity and community structure. It is important that the community structure and ecological relationships of the harvested species, together with the associated species, be studied and understood to identify and manage unintended and adverse impacts of harvesting. The creation of the recommended marine parks offers an opportunity to conduct comparative studies in adjoining harvesting and no-take research areas.

The need to improve the protection of species abundance and diversity was recognised internationally by the Convention on Biological Diversity, which was ratified by Australia in 1993. Australia's approach to meeting its

responsibilities under this Convention is reflected in the National Strategy for the Conservation of Australia's Biological Diversity. The goal of the Strategy is to ensure that Australia's biological diversity survives and flourishes, including the diversity of species and their genetic variability. Without adequate genetic variability a species is less able to evolve or adapt to changing environments, and is likely to be more vulnerable to changing conditions such as climate change or new diseases.

Council recognises that one of the important strategies for the protection of habitats and species is by the establishment of conservation reserves. Habitat and species conservation for specific areas are addressed in Chapters 5 to 7.

A number of recommendations in other parts of this chapter are also relevant to habitat and species protection; for example, recommendations under Environmental Quality, Introduced Plants and Animals, and Harvesting and Production of Marine Resources.

## HABITAT AND SPECIES CONSERVATION

### RECOMMENDATIONS

M40 That planning and management ensure that:

- (i) where biomass is to be harvested, sufficient stocks of target species, and those that may be harvested or affected incidentally, are retained in the environment to ensure that the integrity of the ecosystem is maintained;
- (ii) new information on threatened species and habitats is assessed and incorporated into decision-making.

M41 That the *Flora and Fauna Guarantee Act 1988* continue to be used to protect threatened marine, estuarine and coastal and marine flora, fauna and indigenous communities and habitat.

M42 That research be undertaken to identify the impacts of harvesting of abalone, rock lobster and other species on community structure and biodiversity in marine parks.

## HARVESTING AND PRODUCTION OF MARINE BIOLOGICAL RESOURCES

A wide range of resources are harvested along the Victorian coast, including many types of fish, seaweed and seagrass. In these recommendations 'fish' is as defined in the *Fisheries Act 1995*; that is, including scale and cartilaginous fish, aquatic molluscs, crustaceans and echinoderms. The harvesting of any fish has implications for the conservation of ecosystems, habitats and species, and in some instances the

fishing techniques and current catches of certain species may be unsustainable. It is essential that these implications are addressed in fisheries management plans.

The *Fisheries Act 1995* will facilitate the sustainable use of Victoria's fisheries resources and provide for greater involvement of commercial, recreational, conservation and other users in the management of fisheries. The main changes to previous Fisheries legislation are the establishment of a Fisheries Co-Management Council to oversee the preparation of fisheries management plans, provisions for the

declaration of four peak bodies representing commercial and recreational fishing, aquaculture and conservation interests, and provisions for the establishment of fisheries reserves for the protection of critical fisheries habitats such as spawning and nursery habitats. The Council's recommendations take into account the new approaches laid down in this legislation.

The development of fisheries management plans includes a formal process that includes community consultation and the consideration of biological and ecological aspects.

The Offshore Constitutional Settlement (OCS) allows for agreements between the Commonwealth and the States and Territories regarding fisheries management. Some fisheries occurring in Victorian waters are part of more wide-ranging fisheries conducted mainly in Commonwealth waters. Others are conducted mainly in Victorian waters but extend into Commonwealth waters or the waters of other States. The OCS agreements provide for these fisheries to be managed by the most appropriate body, rather than being split between jurisdictions. The agreements provide the opportunity to rationalise fisheries management and facilitate ecologically sustainable resource use. However, the legal implications for marine protected areas that have been or may be established by the State is unclear. Discussions on this issue are now being held as further OCS agreements are being considered.

In Victoria, the new Peak Recreational Fishing Body was established in February 1994. This provides a forum for the views of recreational fishers regarding resource management issues. A National Policy on Recreational Fishing in Australia was finalised in December 1994 after a nation-wide public consultation process. It sets out principles and goals for recreational fishing.

Catch and effort data are vital for fisheries management, but the data are not always reliable and they are not systematically validated. Unlike commercial fisheries, recreational fishers are not required to provide catch and effort information to fisheries managers. Thus, determining the total amount of fish harvested in Victoria's marine waters is difficult to estimate (even if excellent commercial catch and effort data were

available) because of unknown but sometimes large illegal catches and the unknown recreational catch. Appropriate data should be collected for both commercial and recreational fisheries. For commercial fisheries, the provision of data must be an essential condition of licences.

An indication of the level of recreational catch can, and to a limited extent has been, obtained by creel surveys (direct interviews with fishers and inspection of catch), as well as by aerial and household census. A review of available survey data undertaken by the Council indicated that in the last 20 years there have been 19 surveys undertaken in Victoria covering different locations and periods of time and employing different methods. It can be concluded from such surveys that recreational fishing is a notable part of the pressure on the total fishery resources: surveys of some areas found that the recreational catch equalled 50 to 100% of the commercial catch for species harvested by both groups.

Commercial fishing involves a range of fishing techniques, each of which has a different level of physical impact the seabed and the bycatch taken. After this issue was raised in submissions, the Council undertook a review of current fishing techniques and their impacts. It concluded that four main fishing techniques affect the seabed: otter-board trawling, Danish seining, haul seining and scallop dredging. These techniques also have potentially significant bycatches, except scallop dredging, which has a variable but generally low bycatch (see Appendix 9).

There are indications that the coming decades will see a change in emphasis from the harvesting of wild stock to the breeding and farming of selected species. The Government's fishing policy states that the initial identification of a range of suitable marine agriculture sites will be undertaken by the Council. (See the Council's recommendations for marine aquaculture later in this chapter.) Other recommendations that provide for the sustainable management of marine resources are included in the Environmental Quality section and the Introduced Plants and Animals section in this chapter.

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## HARVESTING AND PRODUCTION OF MARINE BIOLOGICAL RESOURCES

### RECOMMENDATIONS

**M43** That fishery planning ensures that:

- (i) the allocation of fish resources recognises all user groups, including consumptive recreational, commercial and traditional users, and no-take users;
- (ii) fish stocks, including target and non-target species, be managed to be sustainable in the long term, with sustainability demonstrated at the following levels: ecosystem, habitat, and species.

**M44** That fisheries management be undertaken through formally approved management plans which provide opportunities for community-wide input and are consistent with the objectives outlined in Recommendation M1; and that they be in place within five years of the acceptance of these recommendations by Government (see Note).

**M45** That critical fisheries habitats, particularly spawning and nursery habitats, continue to be identified, and the conservation of these habitats be addressed in fisheries management plans.

**M46** That the development of fisheries management plans where fishing involves towing a dredge or similar implement along the sea-floor, such as scallop dredging, otter-board trawling and Danish seining, should include:

- (i) an assessment of the impact of these techniques on the seabed;
- (ii) the consideration of introducing less damaging technology;
- (iii) the establishment of control sites;

**M47** That

- (i) fish catch and effort data, including information on retained and discarded bycatch, be collected and analysed in a manner that provides a reliable basis for providing sustainable resource use by both the commercial and recreational sectors as appropriate;

and that

- (ii) a quality assurance program be implemented to ensure the accuracy of the catch and effort data and to progressively improve its spatial and temporal resolution.

**M48** That the fisheries manager publishes a report each year on the state of fish stocks and an assessment of the extent to which they are being managed sustainably, including the extent to which factors other than fishing are affecting sustainability.

**M49** That commercial harvesting proposals on non-fish resources such as seaweed and seagrass harvesting be subject to an environmental assessment by the Department of Natural Resources and Environment that takes account of the physical, environmental and ecological processes and involves community consultation.

**M50** That the application of the Shellfish Protection Regulations be reviewed to ensure that areas and species are adequately protected throughout the State.

Note:

The Fisheries Co-Management Council has the role of overseeing the preparation of fisheries management plans.

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## HERITAGE VALUES

### *Cultural heritage*

The cultural resources of Victoria's marine and coastal area reflect human occupation and association spanning more than 13,000 years. Evidence of this human association is very diverse, ranging from shell middens to shipwrecks. Many resources are sensitive to disturbance, and activities which cause disturbance can only be managed when their locations are known. Since this can only be established by ongoing surveys, the continued allocation of resources to identify significant places of particular vulnerability is essential.

A range of existing legislation requires land managers to provide for the protection and conservation of heritage places. While not a legislative requirement, the correct interpretation of sites is also important. Designated Aboriginal communities have responsibilities for Aboriginal places and sites and it is critical their advice and approval is sought before the public interpretation of these places, sites and objects. The legislation and processes involved are outlined in the Aboriginal Interests section earlier in this chapter.

There are often new opportunities for access to and interpretation of cultural sites. The recent transfer of a number of historic lighthouses from the Australian Maritime Safety Authority to the State Government is an excellent example.

### *Natural heritage*

Natural heritage sites, include biological features

(discussed under Habitat and Species Conservation earlier in this chapter) and geological and geomorphological features. Many geological and geomorphological sites (such as the volcanic features at Cape Bridgewater) are large and robust, and would be affected only by major earthworks. However, some are more localised and sensitive to disturbance; for example, Fossil Beach on the Mornington Peninsula and Dinosaur Cove near Cape Otway.

### *Heritage site registers*

A register of Aboriginal places and sites under the *Archaeological and Aboriginal Relics Act 1972* is maintained by the Aboriginal Heritage Unit of Aboriginal Affairs Victoria. The new *Heritage Act 1995* provides for the establishment of a Victorian Heritage Register. This register will comprise sites listed on the registers of the *Historic Buildings Act 1981* and *Historic Shipwrecks Act 1981*, as well as post-contact sites listed under the *Archaeological and Aboriginal Relics Act 1972*. This new register is being assembled by Heritage Victoria, which is part of the Department of Infrastructure.

The Australian Heritage Commission is responsible for maintaining a register of the National Estate. Places nominated for listing on the register must go through a rigorous assessment process before being accepted for listing. The register aims to include all aspects of Australia's natural and cultural heritage. A World Heritage List is maintained under the auspices of the World Heritage Convention. There are currently no Victorian places on the World Heritage List.

## HERITAGE VALUES

### RECOMMENDATIONS

**M51** That planning and management ensure that:

- (i) places, sites and objects on Government heritage registers be protected and conserved;
- (ii) other places, sites and objects with heritage value or potential heritage value are taken into account and considered for protection;
- (iii) relevant community interest groups are encouraged to participate in the identification of cultural values and heritage sites;
- (iv) relevant community interest groups are consulted, particularly in regard to the interpretation of and public access to heritage sites.

**M52** That the relevant Government agencies:

- (i) continue to identify, assess and document heritage places in coastal areas;
- (ii) periodically review their registers of heritage places to establish a priority list of significant places to guide the allocation of resources.

## INTRODUCED PLANTS AND ANIMALS

Unless controlled, introduced plants and animals can become pests and greatly alter marine and coastal environments, affecting habitats, displacing indigenous species and disrupting ecosystems. Substantial and irreversible economic and social impacts may result if, for example, fisheries are affected and species become less abundant or unsafe to eat. Three particular threats confront Victoria's fisheries: toxic dinoflagellates, sabella worm, and the recently introduced Northern Pacific sea-star.

Introduced toxic dinoflagellates were first identified in Port Phillip Bay in 1986. Since 1988 several toxic blooms have occurred, making shellfish such as mussels and scallops unsafe to eat and causing several temporary closures of mussel farms and scallop harvesting.

*Sabella spallanzanii*, a large marine tubeworm, was first noticed in Corio Bay in 1988. It is now the dominant tubeworm species in Corio Bay substrate and is spreading into Port Phillip Bay. Apart from having the potentially serious environmental consequences on nutrient cycling in Port Phillip Bay, the sabella worm may adversely affect scallop and snapper fisheries.

The Northern Pacific sea-star, *Asterias amurensis*, a species introduced to Tasmania, is now one of the dominant species in the Derwent Estuary in Hobart. It is a voracious predator on many species of invertebrates. If it becomes established in Victoria it would pose a significant threat to Victoria's bays and inlets, especially to mussel farming and the scallop fishery. Two individuals have been found in Port Phillip Bay.

At least twenty introduced marine species are known to occur in Victorian waters. It is likely that ballast water discharges and ship fouling are the major vectors for introduction. However, shipping is not the only agent for the introduction of species. For example, the pest

plant *Spartina*, which grows in intertidal areas of Corner, Shallow and Anderson Inlets, Western Port and elsewhere, was deliberately introduced to see if it would grow in Australia. Later it was re-introduced to stabilise the mudflats and to provide feed for stock. *Spartina* is of particular concern because of its impact on wading birds, recreation and other values.

Once established in the marine and coastal environment, pest species are particularly difficult to control. The introduction of pest species through ballast water has been recognised as a particular problem worldwide, and is being addressed by a number of initiatives. An Interim Ballast Water Management Advisory Council has been established to provide a national focus for ballast water management in Australian waters.

The Victorian Parliamentary Environment and Natural Resources Committee commenced its Inquiry into Ballast Water in August 1995. The terms of reference include inquiring into and recommending on:

- the movement and management of ballast water
- the potential environmental impacts of ballast water practices and measures to minimise them
- the adequacy of existing legislation
- an effective and integrated approach for addressing ballast water issues for all Victorian, interstate and international stakeholders.

A number of issues associated with pest species are already being investigated, or are proposed for investigation, in Victoria. These include determining the presence of pest species in the major ports, mapping of the sabella worm in Port Phillip Bay, monitoring for the Northern Pacific sea-star, and a number of associated ecological impact studies. The provisions in the *Fisheries Act 1995* relating to the introduction, holding or release of noxious fish in Victorian waters were specifically created to prevent the introduction and to control the spread of marine pests.

## INTRODUCED PLANTS AND ANIMALS

### RECOMMENDATIONS

- M53** That enforceable and consistent Commonwealth and State standards and codes of conduct to control the risk of introducing marine organisms from ballast water and ship fouling be developed, and their effectiveness monitored.

**M54** That the Department of Natural Resources and Environment be the agency responsible for the monitoring and management of introduced marine organisms.

**M55** That the Department of Natural Resources and Environment, in consultation with the Environment Protection Authority, undertake monitoring of all introduced marine species, including their distribution and rate of spread; review ecological, social and economic implications; investigate new introductions and how they become established; and identify control methods and measure their success.

**M56** That the Department of Natural Resources and Environment should:

- (i) finalise guidelines and implement measures to control the spread of *Spartina* and other pest species in areas where they are already established and to prevent their entry into new areas;
- (ii) conduct studies on the impact of the sabella worm on the ecology of Port Phillip Bay;
- (iii) continue to develop codes of conduct for the appropriate treatment of seawater associated with the live fish trade between Tasmania and Victoria to limit introduction of the Northern Pacific sea star to Victoria's marine environment.

## MARINE AQUACULTURE

Marine aquaculture (mariculture) is the controlled cultivation and harvesting, or farming, of fish, shellfish and other aquatic species, including seaweed, utilising marine water as a growing medium. This relatively new industry in Victoria is currently valued at about \$1 million per annum and is based mainly on the production of long-line cultivated mussels.

Mussels are cultivated in areas within the Geelong Arm and at smaller sites off Beaumaris, Dromana and Mount Martha in Port Phillip Bay. An area off Flinders has also been established for mussel culture but has only been partially utilised. Other existing marine aquaculture activities include the development of a Pacific oyster farming industry in salt production lagoons at Avalon and trials for abalone cultivation off the Kilcunda coast.

Although the production levels from marine aquaculture are low in comparison to most other States, the industry could expand significantly in Victoria and, among other benefits, may reduce our dependence on wild fish stocks.

The Fisheries Branch of the Department of Natural Resources and Environment is working with other agencies and the aquaculture industry to develop a Victorian Aquaculture Strategy to facilitate the development of aquaculture in Victoria. The *Fisheries Act* 1995 provides for the licensing and regulation of aquaculture.

The Council's recommendations recognise marine aquaculture as an appropriate activity within parts of Victoria's marine, estuarine and

coastal area. The Council considers it is appropriate that areas be identified within the Coastal Waters Reserve where marine aquaculture is to be encouraged.

### *Types of marine aquaculture*

There are two broad types of marine aquaculture:

- (i) Extensive marine aquaculture, where growth is dependent on naturally available food in the water column. For example:
  - (a) cultivation of oysters, mussels, clams, scallops or seaweed grown on structures such as racks, long-lines and mesh in intertidal or subtidal areas;
  - (b) cultivation of species such as abalone, sea urchins, rock lobster or fish stocked for on-growing (i.e. post-hatchery) at sea. Species may be held in midwater or submerged cages or confined to natural or artificial reefs.
- (ii) Intensive marine aquaculture, where cultivation is undertaken in controlled conditions and the growth of the stock is promoted by the addition of food supplements. For example:
  - (a) the cultivation of species in tanks, lagoons, raceways or ponds constructed on land. Marine water is pumped or diverted into the holding structures and subsequently discharged to the sea or utilised elsewhere;
  - (b) the cultivation of stock, usually scale fish, confined in floating pens at sea.

While only some of these methods have been tested or undertaken in Victoria, all are considered to be technically feasible in the State's marine waters.

### *Operational needs*

The development and management of marine aquaculture methods depends on many factors, including those related (but not exclusive) to:

- suitable water quality and supply
- security of land or water tenure
- the availability of onshore infrastructure such as roads, services and boat access to water
- access to near-coastal land for facilities such as hatcheries or storage and maintenance sheds
- good access to processing and marketing facilities.

### *Issues*

A major factor considered to be limiting the development of marine aquaculture in Victoria has been the availability of, and access to, suitable sites that provide good growing conditions. Identifying specific sites that are suitable for marine aquaculture involves detailed site analyses and experimentation. The combination of physical and biological requirements for cultivation (particularly those relating to water quality, flow, depth and nutrient supply) depend on the method of marine aquaculture used. For example, site conditions for extensive abalone cultivation on artificial reefs are likely to be quite different from those needed for the intensive cultivation of fish in floating, caged pens at sea. Similarly, the impacts of marine aquaculture on other beneficial uses and values, and those constraints that limit industry growth, are diverse and differ between each type of operation, but are also site-specific.

Some methods of marine aquaculture, if mismanaged, have the potential to contribute to excessive nutrient enrichment, affecting the ambient biological and chemical properties of the water and bottom sediments. Surface structures (such as buoys, racks exposed at low tide and mooring equipment) may affect visual amenity or present obstructions to the passage of craft.

Intertidal and subtidal areas are often zones of high environmental sensitivity. These can include productive seagrass areas or habitat for roosting and breeding waders and other seabirds,

which could be adversely affected by marine aquaculture. Where non-indigenous species are utilised in a marine aquaculture operation, the risk of escape, and the possible establishment of wild populations, is also an issue.

### *Preferred marine aquaculture areas*

In identifying marine aquaculture areas, the Council recognised the need for these to be of sufficient size to provide the flexibility for industry to investigate specific sites where marine aquaculture is viable, both economically and technically, and where potential adverse impacts can be minimised.

The identified areas were mostly in the major bays and inlets because conditions that prevail along the State's high-energy coastline are generally not suitable for types of marine aquaculture that rely on surface structures such as pens or racks, nor for the cultivation of filter feeders such as oysters and mussels. Some methods of extensive marine aquaculture can be undertaken in coastal waters, including abalone, rock lobster, or sea-urchin cultivation in midwater or submerged cages or on reefs, but the site conditions for these methods are too broad to be identified at present.

The potential for marine aquaculture is not restricted to public water or public land. Previous studies have indicated that many areas of near-coast freehold land are suitable, particularly for intensive marine aquaculture or for hatcheries. In these instances, easements over coastal public land might be required in order to obtain and discharge seawater.

While discrete sites with potential for marine aquaculture may exist elsewhere throughout Victoria's marine, estuarine and coastal areas, areas for marine aquaculture in Port Phillip Bay, Western Port and Corner Inlet, and to a lesser extent in smaller inlets such as Anderson Inlet and Mallacoota Inlet, have been identified (see Chapter 6).

The granting of a licence outside the identified preferred marine aquaculture areas is not precluded by the following recommendations. However, in such areas the assessment process will need to take into account other existing and potential uses, including boating and shipping, recreational and commercial fishing, diving, swimming, and the conservation of natural, cultural and landscape values.

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## MARINE AQUACULTURE

### RECOMMENDATIONS

**M57** That marine aquaculture be permitted, other than in marine parks (except for the designated area within A17 Corner Inlet – Nooramunga) and Special Management Zones of the Coastal Waters Reserve, subject to an aquaculture permit or licence, and that:

- (i) the approvals process provide the opportunity for community comment;
- (ii) other uses of the area not be unnecessarily limited, except where they affect the safe, secure and efficient operation of a marine aquaculture venture;
- (iii) indigenous species, and only stock local to the area, be used to ensure the protection of genetic diversity,

*but*

the use of non-indigenous stock be permitted within Preferred Marine Aquaculture Areas subject to the demonstration that there is negligible risk of the establishment of feral populations through the escape of eggs, larvae, juveniles or adults;

- (iv) the control of species that prey on marine aquaculture stock be initially through exclusion; and that other means be permitted only when control by exclusion has been demonstrated not to be feasible using best available technology, and then only subject to approval by the Department of Natural Resources and Environment;
- (v) no therapeutic chemicals, pesticides or polluting substances be added to the marine environment, except that formulated food may be used in localised intensive operations subject to Environment Protection Authority approval;
- (vi) quarantine guidelines be developed and enforced to protect the marine ecosystem and marine aquaculture stock from the spread of pathogens and other pest plants and animals;
- (vii) in providing tenure for marine aquaculture or any other form of marine farming, wild stocks within the tenured area remain the property of the community;
- (viii) marine aquaculture licences be subject to adequate environmental monitoring and that the proponent participates in and contributes to the cost of these programs;
- (ix) the managing agency ensure that the conditions of a licence, such as a bond, provide for the proponent to undertake restoration of the site should the venture be abandoned or destroyed.

**M58** That marine aquaculture be directed towards the Preferred Marine Aquaculture Areas identified in Chapter 6, and that, in these areas:

- (i) the managing agency, in consultation with industry, community and other stakeholders, identify specific sites, methods and levels of use, taking into account such issues as:
  - environmental values
  - other values and interests
  - safe passage of vessels
  - coastal processes
  - separation of sites (see Note)
  - proximity to effluent outfalls
  - supporting infrastructure and access to water;
- (ii) the managing agency, with the industry, community and other stakeholders, create and implement appropriate guidelines that specify conditions on the siting, construction and maintenance of structures, and operational requirements on Crown land and Victorian territorial waters, including those that relate to:
  - other values and interests
  - the height, colour and uniformity to reduce visual impact
  - the cumulative effects on visual amenity from additional licences and operations
  - noise control

- refuse disposal
- use formulated foods
- removal of structures and site rehabilitation
- use of non-indigenous species
- minimisation of impacts on existing recreational use;

and that

- (iii) a quality assurance program be undertaken to maintain water and product quality at acceptable standards;
- (iv) applications for marine aquaculture sites, as defined in M58(i), within 'preferred marine aquaculture areas' which meet the guidelines established by the process set out in M58(ii), will be considered to have met the requirements of M57(i).

Note:

It is the Council's intention that sites defined within the 'preferred marine aquaculture areas' encompass only a small proportion of the designated area.

## RECREATION

Victoria's coast and waters offer outstanding opportunities for an extensive range of recreational activities. The Council believes that most activities that depend on coastal or marine environments or are enhanced by them can be accommodated somewhere without detriment to other values and uses.

The importance of the marine environment for a wide range of recreational pursuits, such as surfing, swimming, boating, yachting, wind-surfing, recreational fishing and wildlife viewing, is well recognised (see Chapter 1). Of particular interest is the increasing popularity of scuba diving and snorkelling. There are 27 dive clubs affiliated with the Scuba Divers Federation of Victoria, and many people (mostly snorkellers) who do not belong to clubs participate in these activities.

Where a particular recreational activity may conflict with management objectives, the Council has made specific recommendations. Otherwise, details concerning appropriate levels of recreational activity and the need for

separation of different activities are left to the management planning processes.

The provision of recreational opportunities and the interaction between different recreational activities and other users require ongoing management to ensure that social and economic benefits are maximised while environmental values are protected. Some issues, such as safety, habitat protection, the economic benefits of organised events, and the management of conflict between recreational activities which were highlighted in submissions, need to be specifically addressed by the resource managers and the agencies involved in regulating recreational activities. While the Council advocates the use of codes of practice to assist in addressing such issues, it acknowledges that there will be a continuing need for formal regulations to be promulgated and enforced.

Often the impact of a recreational activity lies not in the activity itself, but in the facilities sought for the activity. The Council has recommended guidelines for such facilities in the Development and Infrastructure section earlier in this chapter.

## RECREATION

### RECOMMENDATIONS

**M59** That planning and management ensure that:

- (i) public land continue to be available for a wide range of recreational uses;
- (ii) a range of recreational opportunity settings are provided and maintained;
- (iii) special attention is given to the cumulative impact of small changes that may affect recreational settings;
- (iv) the compatibility of various recreational activities with each other is considered, and provision is made for all appropriate recreational interests;
- (v) safety considerations are addressed;

- (vi) demand, especially peak demand, is managed to ensure that the recreational and other values of the resource are maintained;
- (vii) user groups are involved in the planning and management process;
- (viii) development should not preclude public access to the foreshore or offshore areas, other than to meet safety and security requirements which cannot be achieved in other ways.

**M60** That codes of practice should be developed with relevant recreation bodies to encourage responsible recreational use of marine and coastal areas.

**M61** That appropriate community uses of recreational resources be encouraged through the preparation and publication of information about these resources.

Note:

Recommendations relevant to recreational fishing issues are also covered in the section on Harvesting and Production of Marine Biological Resources; other relevant recommendations are made in the Tourism section.

## RESEARCH, INVENTORY, MONITORING AND AUDITING

The responsible use and management of marine resources depends upon a good information base about the resources. During this investigation the Council identified a lack of data on the marine environment, particularly biological data.

In the absence of information, some decisions may need to be conservative because of the high levels of risk attached to them. The Council believes that some data, such as those acquired through *airborne remote sensing*, can at comparatively modest cost improve the confidence with which some decisions can be made. Other data, particularly biological data, will take longer and be more costly to obtain. However, it is important that new information is assimilated into the management process and used to make better decisions. Only in this way can Victorians optimise the social and economic benefits of the marine, estuarine and coastal environment while protecting significant environmental values.

The involvement of people with an interest and expertise in marine issues in collecting data and measuring change is particularly important. Their involvement can provide valuable information, foster local commitment to the marine environment, and lead to an awareness of environmental problems and solutions. For this information to become a useful part of an overall inventory and monitoring program, data must be collected to agreed standards and priorities. This may involve training volunteers and providing specialised equipment for their use.

### *Research*

Research is an essential component of environmental management. There is considerable scope for research into the biology and ecology of marine biota and communities. Governments have a responsibility to support research, both directly and through encouragement of those parts of the private sector that have a direct interest in the marine, estuarine and coastal environment.

### *Inventory*

The priority in coming years should be the integrated collection of broad-scale natural resource data using a systems approach. To facilitate the use of marine data, existing and new data should continue to be consolidated into modern data management systems such as a geographic information system. This information will provide the basis for monitoring.

### *Monitoring*

Monitoring is a process of continuous or repetitive measurement for defined purposes, of one or elements of the environment according to prearranged schedules in space and time. Its purpose is to provide long-term data on natural and human-caused trends or changes, which is necessary for the responsible use and management of marine and coastal resources.

Monitoring programs have to be designed with management objectives in mind and in the context of the available resources. Since funds and other resources are likely to be limiting, key indicators must be chosen which not only take into account the specific issues local to the area

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or management program, but also allow for comparison with other areas. An adequate monitoring program should contain the following elements:

- the objectives of the program
- the indicators to be measured
- the level of change to be detected by indicators
- the level of certainty about the detected change
- the timing and location of monitoring.

Monitoring programs should be undertaken as appropriate by Government, industry, research organisations or the community. Wherever possible, the program should provide for community input and participation. The

evaluation of monitoring programs should be part of any management plan.

### *Auditing*

Monitoring programs should provide the data necessary to carry out audits of the effectiveness of management strategies. Recommendations relating to the monitoring of marine resources are also given in other sections of this chapter: Environmental Monitoring – M29(iv), M30(i), M36(i) and (ii), M37; Introduced Plants and Animals – M54; Harvesting and Production of Marine Biological Resources – M46(iii), M47(i); Marine Aquaculture – M57(viii); and Coastal Dynamics – M14. Monitoring in sanctuary zones is also mentioned in Chapter 5.

## RESEARCH, INVENTORY, MONITORING AND AUDITING

### RECOMMENDATIONS

- M62** That the Government, in consultation with industry, research and community organisations, establish a framework for the acquisition, quality control, analysis and retrieval of environmental data relating to Victoria's marine, estuarine and coastal resources, and coordinate a program of integrated data collection.
- M63** That the Department of Natural Resources and Environment ensures that the framework is developed within one year after the Government's acceptance of these recommendations and that implementation commence immediately thereafter.
- M64** That responsible agencies ensures that:
- (i) data collected by volunteers as part of an overall Government monitoring program be collected according to standards and priorities agreed by the custodian of the data;
  - (ii) the data collection program includes the distribution and biological character of marine habitats within the context of the biophysical regions, and the influence of the subtidal rocky reef geology and particle size of sandy beaches and soft substrates on marine life;
  - (iii) the results of monitoring and auditing be used to progressively refine management activities.
- M65** That the Department of Natural Resources and Environment, in consultation with the Environment Protection Authority and other relevant organisations, establish a systematic network of monitoring sites and a set of appropriate indicators (for example, physical, chemical and biological indicators) in order to monitor the state of the marine and coastal environment and the sustainable use of Victoria's marine and coastal resources.
- M66** That priority be given to establishing and maintaining monitoring programs:
- (i) for marine parks and sanctuary zones to determine the extent to which these reserves are meeting their objectives;
  - (ii) for areas of resource use to help assess whether sustainability is being achieved.
- M67** That where data collection, research and monitoring is associated with resource use, the 'user pays' principle should apply as appropriate.

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**M68** That whenever public resources and funds are involved in acquisition of information, the information be made available in the public domain.

Note:

- 1 The non-harvesting site at St Leonards is important for assessing the impact of scallop harvesting, and should be maintained.

## **RISK ASSESSMENT AND MANAGEMENT**

Many activities pose a risk to the sustainable use and protection of the significant values of Victoria's marine, estuarine and coastal area, and these risks need to be assessed and managed. In the absence of a systematic and coordinated approach to the management of the risks, the Council has chosen to place a priority on those activities that pose a particular risk to the functioning of major ecosystems.

Action statements and management plans prepared under the *Flora and Fauna guarantee Act* 1988 provide a mechanism to manage potentially threatening processes and listed species and communities. Only one marine community has been listed, and an action statement prepared; no management plans have been developed for potentially threatening processes relating to the marine and estuarine environments, to date.

## **RISK ASSESSMENT AND MANAGEMENT RECOMMENDATIONS**

**M69** That the Department of Natural Resources and Environment develop methods to assess and report each year on risks to the conservation and sustainable use of marine and coastal resources within Victoria's marine, estuarine and coastal area. The Department should also develop action plans to address them, including an assessment to ensure that priority is given to those risks that will result in the greatest long-term, widespread and potentially irreversible damage.

**M70** That the immediate priorities for action be an examination of:

- (i) nutrient and other inputs to waters, particularly in semi-enclosed waters such as Port Phillip Bay and Western Port;
- (ii) the introduction and spread of marine pests, including algae (especially dinoflagellates), sea-star (especially the Northern Pacific sea-star, *Asterias amurensis*), molluscs, polychaetes (especially the sabella worm, *Sabella spallanzanii*), fishes and *Spartina*;
- (iii) past and present changes in catchment uses and the loss of indigenous riparian vegetation which affect run-off patterns and may result in erosion, sediment deposition and the degradation or loss of marine habitats;
- (iv) coastal erosion and loss of foreshore land;
- (v) dredging and spoil disposal in semi-enclosed waters;
- (vi) excessive fishing effort and techniques that significantly affect habitat or affect non-target species or size ranges;
- (vii) potential hazards associated with the transportation and handling of petroleum and other products;
- (viii) changes in coastal populations, visitor use and demand for coastal resources.

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## TOURISM

Coastal and marine tourism, both international and domestic, is a fast-growing industry. Australia's extensive areas of relatively undisturbed coast, sea and reefs are assuming greater importance not only for local and international tourism. For the majority of Victoria's coastal townships, tourism is based primarily on the presence of high-quality swimming and surfing beaches. Spectacular scenery along the Victorian coast is also a major attraction for tourism and is mostly readily accessible. In particular, the Great Ocean Road is a world-class tourist asset whose attraction relies on rugged and unspoilt vistas along the coastline and nearshore marine areas. Tourism based on the attractions of the marine environment is of increasing importance, especially for non-domestic markets.

Much of the marine and coastal tourism in Victoria is based on natural attractions such as wildlife watching and charter services for diving, fishing and scenic tours. Wildlife watching has grown rapidly in recent years, notably dolphin-watching tours on Port Phillip Bay and whale-watching at Warrnambool. The 'Penguin Parade' at Phillip Island is the most popular wildlife attraction in the State. Diving operations have likewise experienced rapid growth.

Historic features such as lighthouses, historic coastal towns such as Port Fairy, museums and information centres that provide information about maritime and natural history (for example Flagstaff Hill Maritime Village at Warrnambool) are all of growing importance and potential. Interpretive talks and guided activities are provided by the Department of Natural Resources and Environment (National Parks Service) in national parks and other reserves on the coast.

Victoria's coastline has been identified in Tourism Victoria's strategic business plan (published in 1994) as a competitive strength of the State. The challenge is to identify tourism opportunities and strategies that capitalise on these opportunities while ensuring that the integrity of the natural systems of the coast remain intact.

Tourism Victoria has prepared a tourism development strategy for the Great Ocean Road, in cooperation with regional communities, and has a program for the preparation of similar regional strategies to cover all of Victoria, including its coastal areas.

The Department of Natural Resources and Environment has an important role in providing tourism opportunities and delivering tourism services. It is developing a Tourism and Visitor Service Strategy to guide its activities in this area.

One of the responsibilities of the Victorian Coastal and Bay Management Council is to prepare a Victorian Coastal Strategy. Tourism is a key issue for the strategy, as well as for the application of the new coastal planning and management processes of the *Coastal Management Act 1995*.

The Tourism Development Plan for the Great Ocean Road aims to encourage sensitive development that conserves and complements the natural and cultural heritage of the coastal environment and emphasises the importance of providing stimulating, accurate and balanced information and interpretation.

Current initiatives for public land include upgrading or developing viewing platforms at Logans Beach in Warrnambool (whales), at Griffiths Island (short-tailed shearwaters) and Cape Bridgewater (seal colony). A number of other potential areas where wildlife can be viewed include Lawrence Rocks for seabirds, Lady Julia Percy Island for seals and shearwaters, and tidal flats at Swan Bay for seabirds.

Other major tourism initiatives include further development at Phillip Island; expressions of interest have been called for the redevelopment of visitor facilities at the Nobbies.

Port Phillip Bay is considered to have largely unrealised tourism potential for boating, and in particular is a magnificent yachting venue. The provision of additional infrastructure such as marinas and safe havens will help to realise this potential. It is nevertheless important that sediment movement, turbidity, dredging and spoil disposal are addressed in the planning of this infrastructure. The recreational fishery of the bay is a particularly significant recreational asset and an important contributor to tourism.

Remote and little-disturbed coastlines and marine environments offer particular opportunities for nature-based tourism and adventure activities, with public land an important focus of this activity.

The quality of natural and cultural resources on which tourism depends is particularly important

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to the tourism industry. Facilities such as accommodation, transport, car parks, water supply and sewage treatment need to be planned, located and managed in a manner which avoids or minimises adverse impacts on the natural values which provided the initial attraction. Moreover, the often narrow strip of coastal public land is itself part of the natural resource, and tourist facilities should be designed to encourage the appropriate use and enjoyment of this resource rather than occupy or dominate it.

Wildlife watching and diving activities also need to be carefully managed to ensure that wildlife and seascapes are adequately protected and that the economic and social benefits of these activities continue to flow.

The quality of the natural and cultural resources can also be affected by the level of visitor use. The level of use can also affect the quality of some types of visitor experience, such as the appreciation of remote areas. Much of the coastal tourism activity and related infrastructure is expected to be concentrated in the recommended coastal recreation zones (See Chapter 7 - Coastal Reserve).

Many aspects of tourism are closely related to recreational activities. A number of Council's recommended guidelines for recreation, outlined earlier in this chapter, are also relevant to the tourism industry, including involvement in the preparation of codes of practice.

## **TOURISM**

### **RECOMMENDATIONS**

- M71** That in providing for tourism, planners, managers and Local Government ensure that:
- (i) tourism development provides for a range of experiences and levels of use, reflecting the variety of Victoria's natural features and the sensitivity of these features to change;
  - (ii) tourist facilities are focussed at the major coastal towns (being those sectors of the coastal reserve recommended as coastal recreation zone - see Chapter 7) or, where appropriate, in small development nodes within some of the major parks and reserves;
  - (iii) tourism infrastructure is of high quality, and is sited at strategic points of robust physical capability and not located within, or detracting from, areas of high landscape quality;
  - (iv) public land tourism and associated infra-structure complements, rather than duplicating or competing with opportunities on private land;
  - (v) close liaison is maintained with ecotourism operators and that any permit granted requires that ecotourism activities be carried out in a manner that protects the natural and cultural values of the areas accessed;
  - (vi) where tourism activity occurs on public land that, where practicable, a contribution be made, by the tourist operator or individual tourist as appropriate, which can be applied to the maintenance and protection of the area or value being accessed.
- M72** That the Victorian Coastal and Bay Management Council, in consultation with Tourism Victoria, identify tourism infrastructure needs including provision for additional marinas and safe havens in Port Phillip Bay.
- M73** That, where relevant, guidelines be established by the Department of Natural Resources and Environment in association with other relevant organisations to ensure that wildlife watching activities are sustainable, that individual animals or populations are not unduly affected and that economic and social benefits are maintained.
- M74** That information and interpretation are provided to raise awareness of the environmental values and provide guidance on the protection and care of areas used for tourism.

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## VISUAL RESOURCES

Much of the Victorian coast is visually spectacular and of world renown. It provides a significant backdrop for many recreational and tourist opportunities, and consequently has important commercial and social values. The protection of this resource relies, in part, on the identification of the significant visual landscapes along the coast, particularly those most sensitive to change.

As most management and planning decisions on both public and private land have visual consequences, it is important that an assessment of the visual impact is a standard part of the decision-making process. A wide range of visual resource management tools are available to managers and planners. Their use will assist in

the maintenance and, where necessary following changes in land use, the restoration of the visual resource. Siting and design guidelines, such as those published by the former Port Phillip Authority, are particularly useful.

A comprehensive and comparative assessment of visual resources along the Victorian coast needs to be undertaken. Major sections of the Victorian coastline have been assessed for their visual value on a broad scale (such as work done by the former Department of Conservation Forests and Lands) with some sections assessed at a more detailed scale (such as the landscape study undertaken across the former Shire of Woorayl). However, the assessment methods have not been consistent, and much of the coastline has not been assessed. Very little work has been undertaken on underwater landscapes.

## VISUAL RESOURCES

### RECOMMENDATIONS

**M75** That planning and management ensure that:

- (i) the visual values of the marine and coastal environment, including the underwater environment, are recognised and protected;
- (ii) visual resources as seen from offshore and onshore, and from private land as well as public land, are taken into consideration;
- (iii) special emphasis is given to the protection of the outstanding natural landscape qualities of coastlines previously identified by Council as 'scenic coasts' (see Note) - until the results of the assessment recommended below is carried out;
- (iv) when the results of the assessment recommended below are known, that identified sensitive and significant visual resources are protected.

**M76** That a comprehensive and comparative assessment of visual resources along the Victorian coast be undertaken to identify areas where these resources are sensitive to change, and to identify those that are significant and require protection.

Note:

Council's review of its land-use classification system, as outlined in the Melbourne Area District 2 Review Final Recommendations, concluded that the Scenic Coast category be discontinued. The category had not been systematically applied and was derived solely from a consideration of natural landscape elements. Sections of the coast previously recommended as scenic coast include Warmambool to Lorne (167 km); Lorne to Point Roadknight (24 km); Point Nepean to West Head, Flinders (46 km); Griffith Point, San Remo, to Black Head, Kilcunda (10 km); Cape Paterson to Entrance Point including Wilsons Promontory (180 km); Lake Corringale to Pearl Point (45 km); Tamboon Inlet to Mallacoota Inlet (78 km); and Lake Barracoota to Cape Howe (12 km).

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## 4. GUIDELINES FOR BAYS, INLETS AND ESTUARIES

Bays, inlets and estuaries have biophysical characteristics that clearly distinguish them from the open coast, and they function to a large extent as separate ecological units. They are typified by predominantly soft substrates, restricted water exchange patterns and low wave energy. Two habitat types – mangroves and intertidal flats with associated channel systems – occur only in these areas. Intertidal flats and adjacent shorelines provide feeding areas and sheltered roost sites that are needed by large numbers of migratory and resident wading birds. Bays, inlets and estuaries are also breeding and nursery areas for many fish species, including many species of commercial and recreational importance.

As well as fulfilling a unique ecological role, bays, inlets and estuaries are a major recreational resource, being used for a wide range of water-based activities such as swimming, sailing, power-boating and fishing. They also support valuable commercial fisheries and provide opportunities for marine agriculture.

Many of Victoria's coastal towns and cities are concentrated around the larger bays and inlets; most of the State's population lives on or close to Port Phillip Bay and Western Port. These two bays are also the focus of major ports and associated facilities, at Geelong, Melbourne and Hastings.

In the past, some bays, inlets and estuaries have been used as places to dispose of industrial and domestic wastes, leading to the long-term contamination of sediments and reduced water quality. They also receive stormwater, litter, nutrients and sediments from their catchments and other sources. Water diversions from their catchments have further changed their ecological processes, as have dredging and the disposal of spoil. There is evidence that the bays, inlets and estuaries have not been used sustainably, and the failure to do so has been at considerable economic and social cost. Popular swimming beaches have been closed in summer because of water pollution; seagrass beds have been lost, leading to reduction in some fish catches; and beaches have disappeared following

the building of structures that affect the movement of sand.

It is important that access to bays, inlets and estuaries provides a balance between the needs of recreation, commercial use and nature conservation, and that particular uses do not lead to conflict with other sectors or further adverse changes to the environment, and does not hinder the restoration of degraded areas.

### Planning and Management

The management of some areas within bays, inlets and estuaries are subject to international obligations to protect a number of bird species (such as the Ramsar Convention on Wetlands of International Importance and bilateral agreements with Japan and China). The Council's recommended guidelines will help meet these obligations. The recommended parks also encompass large parts of those Ramsar sites which occur on public land. Strategic planning documents for the major bays address these obligations, along with many other issues.

The 1992 *Western Port Bay Strategy* recognised the impact of catchment activities on the bay and recommended actions to address these impacts, establishing priorities and identifying responsible agencies, but there has been no systematic approach to its implementation. The strategy contains many valuable recommendations, but would be strengthened by a further consideration of the impact of the South-East Growth Corridor on the bay, future requirements for effluent treatment infrastructure, and the need to maintain the levee banks in the Kooweerup area. The strategy should also examine the environmental carrying capacity of the bay and how this may affect its ability to cope with the expansion of boating and fishing activities and associated facilities. With these qualifications, the Council endorses the general direction of the strategy.

Strategic planning documents such as *Making the Most of the Bay* have been produced for Port Phillip Bay, but many of these are specific to shoreline activities or only cover particular catchments that drain to the bay. To date there

has been no plan that has focused on the integrated use of the bay itself and the catchments that drain into it. As noted in Chapter 1, however, the bay is currently the focus of a major CSIRO study, funded by Melbourne Water, to determine its environmental status in relation to nutrients and toxicants, and thus provide the basis for the long-term management of point source and diffuse source inputs. The study will be completed in 1996. More particularly, the Environment Protection Authority is completing a review of its State Environment Protection Policy for Port Phillip Bay. The draft (released for public comment in February 1995) proposed that the Department of Conservation and Natural Resources (now part of the Department of Natural Resources and Environment) should prepare an environmental management plan which establishes responsibilities, resources, priorities and timelines for a range of management activities within the catchment and the bay.

Management plans have been prepared for some of Victoria's other inlets and estuaries, but these also tend to focus on the shoreline rather than the water body or the total estuarine system. The Council also acknowledges that some of its previous recommendations accepted by Government for these areas have not been successfully implemented, including those for Wildlife Management Cooperative Areas in Western Port and Mallacoota Inlet. These failures have arisen largely because no single agency was accountable for the overall sustainable use of these areas, and because of the lack of coordination of activities in the catchments.

### Representation

Council's biophysical regionalisation of Victoria's marine, estuarine and coastal environments (see Appendix 6) defined six major regions, one of which was 'Bays, Inlets and Estuaries'. Council has sought to represent the major habitats found in each biophysical region within its park system. The regionalisation process grouped bays, inlets and estuaries together because their biophysical features are clearly different from the open coast. Biophysically, individual bays, inlets and estuaries are very different from each other, and the larger bays cannot be considered as substitutes for each other.

Four broad groupings within this biophysical region can be defined:

- bays – large semi-enclosed waters

- inlets – smaller semi-enclosed waters
- lagoons – seasonally or entirely enclosed water bodies
- estuaries – tidal mouths of rivers.

There is considerable variation within each grouping. There are differences in physical morphology (such as between barrier and drowned river forms), and there is a continuum of physical processes operating, from marine processes through to those subject mainly to fluvial processes: open bays/inlets, lagoons, estuarine lagoons, estuaries, river deltas.

In addition, a variety of biological habitats occur; these include the eight major marine types, as described in Table 1.4 of the Descriptive Report: seagrass beds, mangroves, intertidal mud flats and channels, intertidal sandy beaches, subtidal sand sheets, intertidal shore platforms, subtidal rocky reefs, and the pelagic environment.

The regime of water flow into an estuary is also important. Other differences may reflect the influence of the river basin or the adjoining coastal (physical) region.

While the available information is neither systematic nor easily comparable (especially for the smaller estuaries), at a broad scale the main types of bays, inlets, lagoons and estuaries are clearly discernible, and Council considers it important that the variation of these environments be represented within the parks and reserves system. However, it is acknowledged that this representation may not be ideal, given the limited knowledge about the smaller estuaries and the often much-modified nature of the larger inlets, lagoons and estuaries.

The three major bays (Port Phillip Bay, Western Port and Corner Inlet) appear to form a distinct group, and the eight major marine habitat types listed above can be readily identified within these bays. Examples of each of the marine habitats that occur in Victorian bays, as well as examples of the main types of seagrass beds, have been included in the recommended marine park system (see Chapter 5).

Most of Victoria's inlets, lagoons and larger estuaries, have been heavily modified and thus are of limited potential for inclusion within the parks and reserves system. Those which are less modified are listed in Table 4.1. While there are comparatively few in the list, they do provide examples of much of the variation, as outlined above, found in these environments.

**Table 4.1: Overview of Victoria's Less Modified Inlets, Lagoons and Major Estuaries (excluding Port Phillip Bay, Western Port and Corner Inlet).**

<b>Eastern Victoria</b>	
Mallacoota Inlet – an estuarine lagoon with a largely undisturbed catchment and extensive tidal delta. One of Victoria's largest drowned river valleys.	Recommended as Coastal Waters Reserve – mainly Special Management Zone.
Easby Creek, Red River, Benedore River – the least modified estuaries in Victoria; drowned river valleys	Within Croajingolong National Park, part of a designated wilderness area and essentially natural catchment
Wingan Inlet – classic estuarine lagoon, small drowned river valley with barrier	Within Croajingolong National Park
Tamboon Inlet – a large relatively unmodified barrier estuarine lagoon, with river delta	Within Croajingolong National Park
Sydenham Inlet – a barrier estuarine lagoon, with well developed swamp encroachment	Within previously recommended Sydenham Inlet/Cape Conran Coastal Park, also part of a Heritage River
Lake Tyers – a large drowned river valley estuarine lagoon. Extensive tidal delta, much of coastline vegetation is intact	See Recommendation N5 below
<b>Central Victoria</b>	
Shallow Inlet – barrier inlet, tidal-mudflats, important wader habitat	A declared marine and coastal park
Andersons Inlet – barrier inlet, tidal-mudflats, important wader habitat	Recommended as Coastal Waters Reserve – part Special Management Zone
Nooramunga – barrier inlet, tidal-mudflats, important wader habitat, most of shoreline vegetation is intact, includes barrier islands	Within the Nooramunga Marine and Coastal Park
<b>Western Victoria</b>	
Aire River – river estuary retains shore vegetation, relatively undisturbed catchment	Within a designated Heritage River
Curdies Inlet – a shallow estuarine lagoon, retains fringing reed swamp vegetation	Part of Coastal Reserve – recommended as Coastal Protection Zone
Belfast Lough – a shallow estuarine lagoon, shoreline vegetation disturbed	Part of Coastal reserve – recommended as Coastal Protection Zone
Lake Yambuk – a shallow estuarine lagoon, retains extensive areas of shoreline reed swamp vegetation	See Recommendation N4 below
Glenelg River – river estuary, with tidal lagoon	Within Discovery Bay Coastal Park, also a designated Heritage River

Of the 14 areas in Table 4.1, 12 are already protected (or have been recommended for protection) at a level commensurate with their existing condition. However, Lake Yambuk and Lake Tyers are high-value areas with little protection. None of Victoria's inlets or coastal lagoons west of Port Phillip Bay are within the State's nature conservation reserve system.

The Council is recommending that Lake Yambuk (the least modified estuarine lagoon in this half of the State) be included in a natural features reserve. A description of this area is provided in Box 4.1. The Council's standard recommendation for natural features reserves is given in Box 4.2.

#### **Box 4.1: Lake Yambuk Description**

Lake Yambuk is an estuarine lagoon with slightly more than 1 sq. km of open water. It lies behind a series of dune ridges and calcarenite formations on low-lying land. The lake is of particular interest as it is one of the few estuarine lagoons in western Victoria that is not bridged at the mouth, nor modified by permanent engineering works.

The lake has a fluctuating sandy outlet channel and is occasionally closed by sand deposition in the summer. The lake is opened naturally when floodwaters breach the barrier.

The lake is fringed with extensive reeds and rush swamps, and a small amount of saltmarsh is associated with the estuary. The endangered orange-bellied parrot and the blue-winged parrot have been observed in this area. Lake Yambuk provides habitat and feeding grounds for waders (including the migratory sanderling) and marsh-dependent species such as ducks, bitterns, crakes and egrets. Nesting is most common near the entrance. The lake is also an important drought refuge.

The Eumeralla Creek, which drains into Lake Yambuk, is a stronghold for the potentially threatened dwarf galaxias. This fish relies on the estuarine wetlands for breeding grounds.

The Lake Yambuk estuary is a popular fishing locality in summer. Road access to the shore is available at several places, with a boat ramp providing for small craft. A picnic area has been developed near the mouth of the lake and camping facilities are located on adjoining Crown land.

Farming is the dominant land use around the lake, and much of the catchment has been cleared of vegetation for that purpose. The natural cycle of entrance opening and closure has been modified by artificial opening, sometimes annually, to prevent floodwaters from damaging farmland. An advisory committee of community representatives has recently been established to assist in determining the most effective way of dealing with the flooding and artificial breaching.

Early European records indicate that the lake and the inflowing Shaw River were highly productive food sources extensively utilised by Aboriginal people at that time. At least one midden site has been recorded. Aboriginal people retain an active interest in this area today. The local Aboriginal community has recently acquired most of the farmland on the western side of the lake and undertaken extensive restoration works. The community is developing a project, under an Australian Nature Conservation Agency program, for a conservation area centred on Yambuk covering both public and freehold lands.

Council is also recommending that the waters of Lake Tyers be added to its previously recommended Lake Tyers State Park. The lake and its riparian environs are relatively

unmodified and Council believes that the integration of management of the water body with the surrounding park will ensure the maintenance and enhancement of this estuarine lagoon and provide for representation of a major drowned river valley in the park and reserve system. A description of this area is provided in Box 4.3.

Very few of the estuaries or their catchments along the coast are essentially unmodified, and many are used for a wide range of purposes. Only those in far East Gippsland, between Wingan Inlet and the Betka River (particularly the Easby, Red and Benedore estuaries) are essentially unmodified; the Council's 'Rivers and Streams' and 'Wilderness' investigations identified the catchments for these estuaries as having very high biophysical naturalness and remoteness.

Given the high level of protection already afforded to these areas and the fact that very few other similar estuaries are in such condition, the Council believes that they should remain free of human influence as far as possible to provide a benchmark against which the condition of other estuaries can be measured. In this context, the Council considers that the harvesting of biological resources, including fishing, in these three small estuaries should not be permitted.

#### **Box 4.2: The Council's Standard Recommendation for Natural Features Reserves**

That they be used to:

- (i) protect natural features and values;
- (ii) provide opportunities:
  - (a) for picnicking and, where relevant, angling
  - (b) on wetlands, where specified and subject to other relevant limitations, for hunting
  - (c) for more intensive recreation such as camping where specified below;
- (iii) conserve indigenous flora and fauna;
- (iv) maintain scenic features and landscapes;
- (v) provide protection for cultural heritage features and associations;
- (vi) preserve features of geological and geomorphological interest.

Note:

Hunting would not be permitted at Lake Yambuk, and angling and camping would be permitted.

#### **Box 4.3: Lake Tyers Description**

Lake Tyers is a branched lagoon formed by the submergence of two incised valleys, which form the Toorloo and Nowa Nowa Arms. The technical name for such formations is ria, and Lake Tyers is the second largest ria on the Gippsland coast and includes a regionally significant tidal delta. In the past the entrance has closed for up to several years before being breached by storm waves.

The lake's catchment is in good condition, with 70% of land within 1 km of major streams being forested.

The two groups of deltaic islands in the lake are thought to represent different regimes of frequency of the entrance opening and closure cycle. The inner group are vegetated by graminoid species and banksias which might be partly submerged if the entrance is closed for a number of months. The second group tend to reflect the current regime of artificially opening the entrance, which is now not uncommon. This group consists of migrating sandy shoals.

The shoreline of the lake has outcropping Tertiary calcareous sediments, which form cliffs up to a gorge-like 30 metres high in the northern section of the Nowa Nowa Arm. Riparian vegetation is almost continuous except at the small township of Lake Tyers.

Small areas of seagrass and intertidal flats have been mapped in Lake Tyers. Lake Tyers is important for waterbirds, including trans-equatorial migrants such as the grey plover, lesser golden plover and ruddy turnstone. The lake is also important for other migratory waders, which use the shallow margins and

*(continued)*

ephemeral islands near the entrance sand barrier. The estuary wetlands support a small colony of little terns (*Sterna albifrons*) which have had limited breeding success due to various disturbances. A pair of white-bellied sea eagles nest on the main shore of the lake.

Lake Tyers is of considerable historical and scientific significance, largely because of its proximity to the culturally important Lake Tyers Aboriginal settlement, which was established in the late 1850s and was a focus of the Gippsland Aboriginal community. The former settlement is now owned by the local Aboriginal community. Evidence of earlier use of the lake environs and its islands remains in the form of scarred trees, middens and other artefacts.

Boat ramps at the Lake Tyers township and on the Toorloo Arm provide access to the main lake. Shoreline access elsewhere is mostly limited, and the Nowa Nowa Arm is little modified. The lake is the core of Council's previously recommended Lake Tyers - Nowa Nowa State Park and provides opportunities for most forms of water-based recreation including boating, fishing, swimming and canoeing.

Numerous commercial operators are licensed to fish in Lake Tyers, which is part of the larger Gippsland Lakes licensed area. However, the commercial net fishery in the lake is small. Under current regulations, the lake is open to commercial fishing only between April and September.

Part of the Nowa Nowa Arm has potential for marine aquaculture.

## **GUIDELINES FOR BAYS, INLETS AND ESTUARIES**

### **RECOMMENDATIONS**

- N1** That, in addition to the recommendations provided in Chapter 3, the following recommendations apply to bays, inlets and estuaries:
- (i) they be planned and managed in an integrated and sustainable manner, recognising that they and their catchments function as complex ecological units;
  - (ii) where appropriate, they continue to be used for a wide range of activities and the production of goods and services required by the community;
  - (iii) the conservation of seagrasses, intertidal flats, saltmarshes, mangroves, reefs and critical habitat for wading birds and fish be given management priority;
  - (iv) agencies responsible for the allocation of water within catchments that drain to the coast consider the environmental water requirements of bays, inlets and estuaries and address this issue when planning the use of water resources;
  - (v) artificial changes to the openings of river and estuary mouths, particularly those that may become closed periodically, continue to be subject to a permit issued by the Department of Natural Resources and Environment following consideration of environmental and other relevant factors;

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- (vi) priority be given to:
- (a) reducing sediment and nutrient input to bays, inlets and estuaries, particularly Port Phillip Bay and Western Port;
  - (b) implementation and review of the relevant State Environment Protection Policies;
  - (c) street litter reduction programs, together with the installation of litter traps to reduce stormwater based rubbish;
  - (d) addressing the need for, and impact of, dredging and spoil disposal, including that undertaken for beach renourishment.
- N2 That the Department of Natural Resources and Environment , in close liaison with the Environment Protection Authority and (where relevant) Melbourne Parks and Waterways, coordinate an integrated approach to management planning for Victoria's three major embayments (Port Phillip Bay, Western Port and Corner Inlet), as well as for Mallacoota Inlet, and that such planning ensure the long-term sustainable use of these ecosystems; and that
- (i) the environmental management plan proposed by the Environment Protection Authority in its draft State Environmental Protection Policy for Port Phillip Bay be prepared by the Department of Natural Resources and Environment ;
  - (ii) the *Western Port Bay Strategy* be implemented, subject to the qualifications described above;
  - (iii) the Department of Natural Resources and Environment, in close consultation with other relevant government agencies, local government and community groups, review the implementation of the *Western Port Bay Strategy* to determine the extent to which actions have been implemented, to identify the impediments to implementation, and consider the need to review priorities or reallocate responsibilities or resources;
  - (iv) current planning processes in the Corner Inlet and Nooramunga area for fisheries and the marine and coastal park be integrated and extended to cover the entire area, including port use and catchment-related issues;
  - (v) a management plan be prepared for Mallacoota Inlet to address environmental and resource use issues, including water quality, management of the inlet mouth, recreational and commercial fishing, and the protection of environmentally sensitive areas.
- N3 That the Easby, Red and Benedore estuaries and their catchments be used in accordance with existing Government-approved recommendations and that the harvesting of biological resources be excluded.
- N4 That Lake Yambuk be a natural features reserve.
- N5 That the bed and waters of Lake Tyers be added to the adjoining Lake Tyers State Park (as previously recommended by Council), that commercial fishing be permitted to continue until phased out under existing arrangements, and that the whole park be managed by the Department of Natural Resources and Environment in consultation with the Aboriginal community.
- N6 That the other inlets, lagoons and estuaries listed in Table 4.1 be used in accordance with the respective Government-approved recommendations and that each be managed in a manner which ensures that their existing environmental condition be maintained and, where necessary, improved.

Notes:

- 1 The preparation of a fisheries management plan for Port Phillip Bay commenced in July 1995.
- 2 The small camping area on the eastern side of Lake Yambuk may continue to be used for that purpose.

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- 3 The management of Lake Yambuk reserve should be integrated with the management of adjoining lands.
  - 4 The Council is aware that the existing commercial fishing licences at Lake Tyers are not transferable.
  - 5 A number of sites in the Nowa Nowa Arm of Lake Tyers have been identified as having potential for marine aquaculture. The culturing of molluscs, such as mussels and native flat oysters, may be permitted in localised areas at the discretion of the manager.
  - 6 Recommendation N6 does not apply to the Council's previous recommendations for Wildlife Co-operative Areas.

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## 5. MARINE PARKS AND SANCTUARY ZONES

Substantial areas of Victoria's public lands and waters are in a relatively natural state. However, the number of people using these areas for recreation is increasing (and will probably continue to do so), and there is increasing pressure for the use of public land and waters in ways that would change its condition. Council believes that it is essential to reserve viable samples of the various land and vegetation types, seabed habitats and pelagic environments now, together with the outstanding natural features that occur on public land. These areas can best be reserved in a system of parks.

While parts of Victoria's marine and coastal environment have been extensively modified, much remains essentially natural and contains examples of the landscape and flora and fauna that have remained largely undisturbed since European settlement. These areas are a valuable part of our heritage. Dedicating a substantial representation of them for nature conservation provides for the benefit, education and enjoyment of present and future generations, and is a major consideration in determining that areas should be reserved as parks.

A marine park is an area of coastal, intertidal, or subtidal land and overlying waters that, because of its nature or the nature of the waters that cover it, or because of its natural environment, is of conservation or scientific significance and contributes to the provision of a system representing the range of marine and coastal habitats of the State.

Marine parks need to be large enough to contain viable examples of the range of marine environments along the Victorian coast. A small or narrow area may not adequately protect the full range of values, and may be less capable of withstanding the impacts of pollution, habitat change and other activities in adjoining areas.

The marine park category includes areas recommended in the past by Council as marine and coastal parks.

### Park Management

All parks need to be managed to ensure that the purposes for which they were reserved are being met, with the preparation and implementation of park management plans an essential park management task. The park manager should be responsible for the planning process and ensure that opportunity is provided for extensive public involvement, including the relevant Aboriginal communities. Other planning processes must also play an important role in marine park management, including fishery management planning. These other planning processes need to ensure that the special values of the park and the park objectives are taken into account.

The management aims for particular areas or zones within parks need to be clearly established; the conservation of native flora, fauna and natural features would be one such aim. This should include the identification and strict protection of significant ecological systems, and the development and use of techniques to enable species of particular interest to be studied and special flora and fauna values to be maintained or enhanced. The control or eradication of introduced species would also be required.

Another major reason for reserving an area as a park is to provide for the public's enjoyment and understanding of the marine and coastal environment, and therefore to maintain public access. Additional access might be encouraged by providing information and interpretation and the development of nature trails. The development of facilities would be confined to a small portion of the park.

To ensure that the importance of protecting and conserving the intrinsic values of parks is recognised through management, the Council has recommended that all parks be included in a schedule to the *National Parks Act 1975*.

### Nature Conservation Values

Information on the nature conservation values of the recommended marine parks has been drawn from many sources, including published and unpublished references and submissions. To

complement this information, the Council commissioned the Victorian Fisheries Research Institute to undertake a survey of selected areas. The survey used sophisticated sonar devices and a special remote video system developed especially for the project, both of which were linked to a satellite-based Global Positioning System and computer recording system. The resulting video material and computer-enhanced digital data provided information on the nature of substrates, including the presence of reefs, and general descriptions of the biological communities.

The Council also cooperated with the Department of Natural Resources and Environment (National Parks Service) in a project that used satellite imagery to map and describe Victoria's marine habitats. Diving surveys are currently under way, by the Museum of Victoria, as part of this project.

The marine parks offer exciting opportunities for further scientific discoveries. Appropriate protection measures will need to be identified and implemented by the manager as part of the management of special nature conservation values.

### Uses and Activities

In addition to recommending the main objectives for the uses of marine parks, the Council has made recommendations about a number of key uses that it believes should and should not be permitted. However, it has not attempted to make recommendations for all possible activities: this detail is the role of the land manager. In considering the appropriateness or otherwise of various activities, the manager will need to ensure that they contribute to the achievement of the park objectives as recommended by the Council.

### Recreational Use

Marine parks offer a wide range of opportunities for recreational use and enjoyment within an environment that is totally different from those in terrestrial parks. Existing marine parks continue to attract an increasing number of visitors. Shore-based visitors enjoy and experience intertidal and shallow subtidal environments; accessibility to the deeper underwater park environments is facilitated by the growth in the numbers of qualified divers (the industry estimates a growth rate of 25% per annum) and a growth in charter and tour-boat ecotourism.

The Council believes that the park system should offer a wide range of recreational uses. There is a place not only for activities such as photography, animal-watching and nature study, but also for scuba-diving and boat cruising. Individual parks will offer different recreational opportunities; some will be readily accessible, while others will provide more challenging recreation because of their remoteness or hazardous waves and currents.

The Council also recognises that recreational fishing is an existing and popular activity in many of the proposed marine parks and has recommended that recreational line-fishing be permitted. The Council has, however, recognised that this activity affects fish, particularly boat-based fishing that targets sedentary reef species, and has ensured that 'no take' areas are included in the recommended parks system.

It is particularly important that the level of access to the park be compatible with the objectives of the park and the maintenance of the identified values. One potential human effect on coastal and marine environments is incidental damage from recreation and tourism. The locations and levels of use for the various recreational activities must be addressed and determined in the management plans for marine parks. Likewise, the location and scale of any facilities or structures should be addressed in the management plan. Minor jetties or mooring points and interpretive facilities may be desirable and appropriate within small development sites, whereas large-scale works would generally not be appropriate.

### Traditional Use

Traditional use by Aboriginal communities of the marine and coastal environment arises from needs for place-related subsistence and the maintenance of indigenous culture, including spiritual beliefs, ceremonial practices, and traditional fishing and hunting skills. Areas identified by Victorian Aboriginal communities as having important cultural significance to them, including areas which are currently used by the communities, are within the recommended marine parks. (Note: 'traditional use' in the context of the marine park recommendations excludes commercial activities.)

### Commercial Fishing

The Council is aware that many of the recommended parks are currently used by the commercial fishing industry, and that their

resources contribute a significant proportion of the catch. The main users are the abalone industry, which operates almost entirely in State waters (less than 30 metres deep), and the rock lobster industry, which operates in both State and deeper offshore Commonwealth waters. Compared with some techniques used in other sectors, such as otter-board trawling, Danish-seining and haul seining, the techniques used to take abalone and rock lobster have a relatively small physical impact on the seabed and have a small to negligible bycatch. All harvesting techniques do, however, have potential ecological impacts.

The abalone industry has undergone a significant restructuring in recent years to ensure that the catch is sustainable. The rock lobster industry is just entering a restructuring process and faces a reduction of catch to reach sustainable levels. The industry has argued that a reduction in the area available to it will either result in greater fishing pressure being placed on areas outside the parks system or require a reduction in the total effort. The Council has taken the view that, in parks which contain resources of particular importance to the abalone and rock lobster industries, these resources remain available for harvesting except if they are within a Sanctuary Zone.

Other commercial fishing techniques with relatively low seabed and bycatch impacts, such as purse seining, squid jigging, mesh-netting and long-lining, are used in some of the recommended marine parks, and Council is recommending that these use be allowed to continue, except within a Sanctuary Zone.

### Sanctuary Zones

The Council believes it important that some areas be given the highest level of protection as part of the conservation of biodiversity. The Council also considers it important to identify areas as benchmarks for scientific reference, to enable the study of unmodified natural features and processes and act as reference points for assessing the impacts of change in other areas arising from discharges, harvesting, or recreational use.

In identifying these Sanctuary Zones, the Council has sought to include typical examples of the range of marine environments, recommended that they not be tampered with and that natural processes be allowed to continue undisturbed. The Council considers that these highly protected areas should be located within

larger marine parks and that this would also facilitate their management and provide a buffer from damaging processes.

The recommendations for Sanctuary Zones are at the end of this chapter.

### Marine Parks System

The Council is recommending that a system of 20 marine parks be established along the Victorian coast and that they include areas of higher protection set aside as Sanctuary Zones. This park system provides a representation of the major biophysical regions and habitats within Victoria's marine, estuarine and coastal environment (see Table 5.1) and provides for a range of outstanding opportunities for recreation, education and enjoyment by the community. The process for selecting the parks is described in Appendix 6.

#### Marine Parks

A2	Lady Julia Percy Island
A3	Lake Gilliear
A4	Port Campbell
A5	Glenaire
A6	Point Addis
A7	Harold Holt
A8	Port Phillip Heads
A9	Port Phillip Bay
A10	The Nobbies
A11	North Western Port
A12	Rhyll - Newhaven
A13	Bunurong
A14	Cape Liptrap
A15	Shallow Inlet
A16	Wilson's Promontory
A17	Corner Inlet - Nooramunga
A18	Point Ricardo
A19	Point Hicks
A20	Rame Head
A21	Cape Howe

Of these 20 marine parks, five will incorporate the existing marine and coastal parks and reserves of Harold Holt (Port Phillip Bay), Bunurong, Shallow Inlet, Wilson's Promontory and Corner Inlet - Nooramunga:

All recommended parks extend to 200 m below the seabed. No shipping channels or port areas are included in the marine parks, other than the deepwater channel into Barry Beach and Port Welshpool (A17 Corner Inlet - Nooramunga). The general locations of the parks are shown on Map A. Detailed maps for each marine park are available from the Council. A summary of Council's uses and activity recommendations for marine parks is provided in Table 5.2.

# VICTORIA'S HIDDEN TREASURES

There are many surprises below the surface of the waters along our coast. Kelp forests reach the height of many terrestrial forests and Victorian reefs display colour and variety reminiscent of tropical areas. These photo pages give an indication of the environment that can be found in the recommended marine parks.

Underwater version of London Bridge off Port Campbell  
Photo: Phil Doak



Victoria's underwater reefs often match the variety and colour of the Great Barrier Reef  
Photo: Steve Frlan



A spotted porcupine fish in its kelp habitat common in the Port Phillip Heads area  
Photo: Steve Frlan



Dusky morwong among the algae  
Photo: Steve Frlan



One of the common but difficult to see marine creatures at Port Campbell – this sea-spider is about 2.5 cm in diameter  
Photo: Phil Doak

# VICTORIA'S HIDDEN TREASURES



Yellow zoanthids – flower-like marine animals from Port Phillip Heads  
*Photo: Steve Frlan*

A diver and a Victorian scaly fin meet off Point Nepean  
*Photo: Steve Frlan*



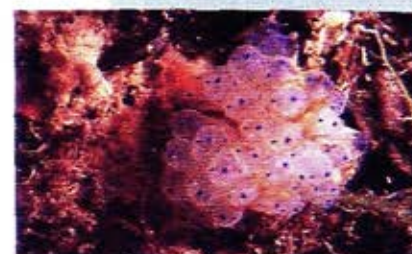
This jewel anemone prefers shady, undercover areas such as can be found under rock ledges at Wilsons Promontory  
*Photo: Steve Frlan*

A banjo shark in its typical habitat of seagrass beds common in Swan Bay  
*Photo: Steve Frlan*



Spectacular granite reefs at Wilsons Promontory – blue throated wrasse among yellow zoanthids  
*Photo: Bill Boyle*

One of the sea-squirts – a delicate blue flask ascidian off Point Lonsdale ocean coastline  
*Photo: Steve Frlan*



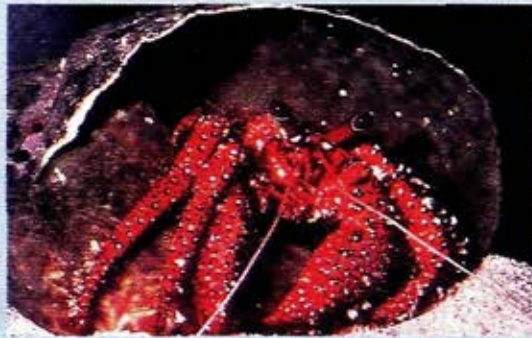
A more colourful relative of the garden snail: this nudibranch or sea-slug is seen here in the Wilsons Promontory area  
*Photo: Bill Boyle*

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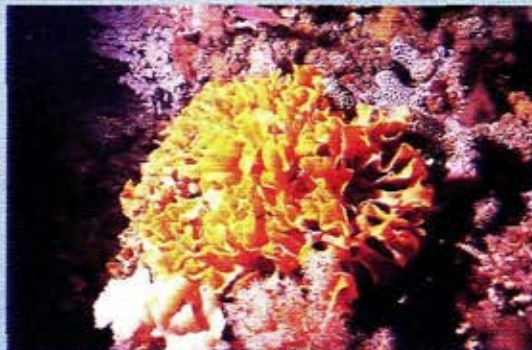
More familiar inhabitants of the underwater world; these Nectria and Mosaic (*Plectaster*) sea-stars are found at Cape Liptrap  
*Photo: Steve Frlan*

One of the many types of sponges found in Victorian waters  
*Photo: Steve Frlan*



Hermit crab in its adopted home  
*Photo: Steve Frlan*

A colourful and delicate animal sighted at Port Phillip Heads – orange lace coral  
*Photo: Steve Frlan*



# VICTORIA'S HIDDEN TREASURES



Kelp forests provide a habitat for many fish, for example this Australian endemic old wives (*Enoplosus armatus*)  
*Photo: Steve Frlan*

Fronde of this kelp form an impressive underwater forest  
*Photo: Steve Frlan*



The inquisitive and popular Australian fur-seals are at home at the Skerries  
*Photo: Steve Frlan*

The eastern blue groper occurs from Mallacoota to Wilsons Promontory – it can reach a size of 1.2 metres  
*Photo: Bill Boyle*



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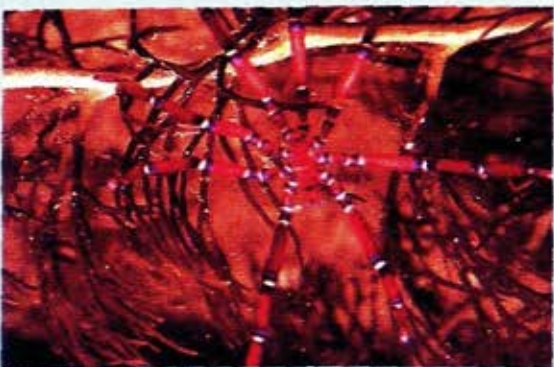
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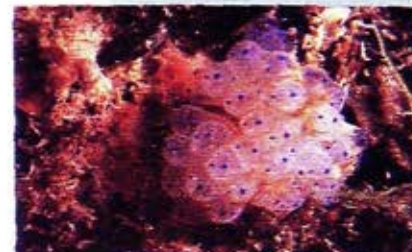
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*Photo: Bill Boyle*

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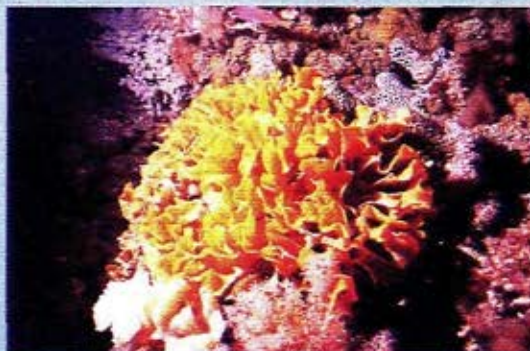
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Hermit crab in its adopted home  
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A colourful and delicate animal sighted at Port Phillip Heads - orange lace coral  
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The eastern blue groper occurs from Mallacoota to Wilsons Promontory – it can reach a size of 1.2 metres  
*Photo: Bill Boyle*




Table 5.1: Habitats Represented in Each Marine Park

Marine park	Habitat									
	Intertidal rocky shores and subtidal rocky reefs					Seagrass beds	Mangroves	Intertidal sandy beaches	Sheltered intertidal flats	Subtidal soft substrate
Basalt substrate	Granite substrate	Limestone substrate	Calcareenite substrate	Sandstone substrate						
<b>Western Biophysical Region</b>										
A2 Lady Julia Percy Island										
A3 Lake Gilleard								minor		minor
A4 Port Campbell										
<b>Otway Biophysical Region</b>										
A5 Glenaire						minor				
<b>Central Biophysical Region</b>										
A6 Point Addis										
A7 Harold Holt										
A10 The Nobbies										minor
A13 Bunurong										minor
A14 Cape Liptrap			minor		(+ greenstone)			minor		
<b>Wilson's Promontory Biophysical Region</b>										
A16 Wilson's Promontory										
<b>Eastern Biophysical Region</b>										
A18 Point Ricardo										
A19 Pt Hicks										
A20 Rame Head										
A21 Cape Howe		minor								
<b>Port Phillip Bay</b>										
A8 Port Phillip Heads										
A9 Port Phillip Bay						minor				
<b>Western Port</b>										
A11 North Western Port										
A12 Rhyll - Newhaven							minor			minor
<b>Corner Inlet</b>										
A17 Corner Inlet - Nooramunga										
<b>Smaller inlets</b>										
A15 Shallow Inlet										minor

Legend:

 Habitat represented in the marine park

 minor Some habitat occurs in the marine park

 Very minor occurrence or habitat not recorded in the marine park

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## MARINE PARKS

### RECOMMENDATIONS

A1 That the areas described below and shown on Map A be used, unless inconsistent with the recommendations below, in accordance with the principles and guidelines for Victoria's marine, estuarine and coastal area as outlined in Chapter 3 of this report, and that they be used:

- (i) primarily to conserve and protect ecosystems and processes, and the associated fauna and flora and their habitats in their natural state;
- (ii) to provide opportunities for recreation and education and promote enjoyment and understanding of natural environments, where consistent with (i);
- (iii) to provide for other uses, at sustainable levels, as determined below;

*Recommendations (iv) to (xiii) apply outside Sanctuary Zones*

that

(iv) the following forms of recreational and commercial fishing be the only forms permitted:

- (a) shore-based line-fishing;
- (b) boat-based line-fishing;
- (c) abalone and rock lobster fishing;
- (d) commercial purse seining, squid jigging, mesh-netting and long-lining;
- (e) modified haul seining in A15 Shallow Inlet and A17 Corner Inlet – Nooramunga;

subject to other conditions (such as the length of the season, size and bag limits) to be determined for each park by the manager in consultation with the Fisheries Branch of the Department of Natural Resources and Environment;

- (v) bait harvesting not be permitted other than recreational bait gathering by hand pump in areas designated by the manager, commercial bait gathering for pilchards in A8 Port Phillip Heads and A9 Port Phillip Bay, and bait gathering by commercial fishers in outer coast parks (A2–A7, A10, A13–14, A16, A18–21) where it is part of a permitted commercial fishing operation;
- (vi) they continue to be available for traditional fishing, hunting, gathering, and ceremonial activities by Aboriginal people;
- (vii) they be available, if necessary, as sources of biota for restocking depleted areas either by natural or artificial means;
- (viii) oil and gas exploration from an aeroplane or vessel (including hydrophone surveys) that does not cause disturbance to the sea floor or biota and is essential for the completion of wider exploration programs be permitted;
- (ix) exploratory drilling for oil and gas be permitted subject to detailed environmental assessment, strict conditions and Cabinet approval;
- (x) oil and gas extraction not be permitted;
- (xi) exploration and extraction of minerals and stone not be permitted;
- (xii) other uses that cause disturbance to the sea-floor or biota (such as dredging and spoil disposal and seaweed harvesting), marine aquaculture (other than the designated area in A17 Corner Inlet – Nooramunga), use of jet-skis and new point source waste discharges, not be permitted;
- (xiii) new sea-floor cables and pipelines be permitted, subject to:
  - (a) an Environment Effects Statement or, if an EES is not required by the Minister for Planning and Local Government, an appropriate environmental study which is to be made available for public comment

- (b) the consent of the Minister responsible for the management of the park, and only after alternatives outside the park have been considered and the relevant Ministers are satisfied that no other alternative is available;

that

- (xiv) a management plan be prepared for each marine park by the manager, after public consultation, outlining the strategies to be taken to achieve the objectives of the park, and be in place within three years of the Government's acceptance of these recommendations;
- (xv) levels of use for the various activities appropriate to the parks be determined through a management planning process, and kept under regular review, in consultation with other interested parties including, where relevant, education groups and recreational and commercial fishers, and, in particular, address activities which potentially conflict with the aesthetic enjoyment of the park and the appreciation of their natural environment, such as motorboat racing and water-skiing;

and that they be permanently reserved under Section 4 of the *Crown Land (Reserves) Act 1978*, be included in a schedule to the *National Parks Act 1975*, and be managed by the National Parks Service in consultation with the relevant fisheries authorities.

Notes:

- 1 The management of adjacent coastal land should be compatible with the objective of protecting these marine ecosystems.
- 2 Where a marine park adjoins an existing national park which extends offshore to the mean low-water mark or to 150 m from the high-water mark, the intertidal area is excluded from the marine park.
- 3 The reservation of an area as a marine park does not affect the powers of the Marine Board with respect to navigational matters, particularly those associated with the provision and maintenance of navigational aids, in accordance with its responsibilities under the provisions of the *Marine Act 1958*.

## INDIVIDUAL PARK RECOMMENDATIONS

### A2 LADY JULIA PERCY ISLAND

The focus of the proposed Lady Julia Percy Island Marine Park is Lady Julia Percy Island, which is of cultural importance to Aboriginal communities. The park includes the offshore waters surrounding the Island and extends to the mainland.

#### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (basaltic) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Western Biophysical Region (see Table 5.1).

Basaltic reefs lie off the mainland and off Lady Julia Percy Island. The substrate between the mainland and the island consists mainly of broken basalt reef and some coarse sand. Marine vegetation dominates subtidal reef structures; between the mainland and the island it includes green, red and occasionally brown algae. The reefs in waters less than 30 m deep are covered

by a thick, highly diverse carpet of foliose green and red algae. The sharply dropping reefs off the southern and eastern sides of Lady Julia Percy Island are covered by a dense kelp canopy which provides an excellent habitat for other forms of marine life. On the northern side of the island there is also an area of fine, hard packed sand that constitutes an additional subtidal habitat.

Lady Julia Percy Island is home to the second largest and most remote of the nine breeding colonies of Australian fur seals in Victoria. Lady Julia Percy Island is also a breeding site for colonies of little penguins, fairy prions, common diving-petrels and short-tailed shearwaters.

#### *Recreation*

The area around Lady Julia Percy Island is popular with snorkellers and scuba divers; some divers consider the underwater environment around the island the most spectacular in Victoria. The mainland side of the island can be dived almost all year. The nearest boat access points are Port Fairy, Portland and Warrnambool. Access to the shore is limited.

**Table 5.2: Summary of Marine Park Use Recommendations**

Use or activity <sup>1,2</sup>	Outside Sanctuary Zones	Within Sanctuary Zones
Nature observation	Permitted	Permitted
Snorkelling, scuba diving	Permitted	Permitted
Swimming, surfing	Permitted	Permitted
Wind surfing, sailing or other non-motorised boating	Permitted	Permitted
Boating using motorised craft	Permitted	Permitted, except in B8, B10, B14, B19 <sup>3</sup>
Use of jet-skis	Not permitted	Not permitted
Recreational shore-based and boat-based line-fishing	Permitted <sup>3</sup>	Not permitted
Recreational and commercial abalone and rock lobster fishing	Permitted <sup>3</sup>	Not permitted
Commercial line-fishing, purse seining, squid jigging, mesh-netting, and long-lining	Permitted <sup>3</sup>	Not permitted
Haul seining	Not permitted, except in A15, A18 <sup>3</sup>	Not permitted
Other forms of fishing, including spearfishing	Not permitted <sup>4</sup>	Not Permitted
Recreational bait gathering by hand pump	Permitted <sup>3</sup>	Not permitted
Defined types of bait gathering by commercial fishers	Permitted <sup>3</sup>	Not permitted
Other forms of bait harvesting	Not permitted <sup>4</sup>	Not permitted
Seaweed harvesting	Not permitted	Not permitted
Marine aquaculture	Not permitted, except in A17 <sup>3</sup>	Not permitted
Use of biota for restocking	Permitted <sup>3</sup>	Not permitted
Traditional fishing, hunting and gathering	Permitted	Not permitted
Non-manipulative research	Permitted	Permitted <sup>3</sup>
Oil and gas exploration that does not cause disturbance to the sea floor or biota	Permitted <sup>3</sup>	Not permitted
Exploratory drilling for oil and gas	Permitted <sup>3</sup>	Not permitted
Oil and gas extraction	Not permitted	Not permitted
Exploration and extraction of minerals and stone	Not permitted	Not permitted
Dredging and spoil disposal	Not permitted	Not permitted
New sea-floor cables and pipelines	Permitted <sup>3</sup>	Not permitted
New point source waste discharges	Not permitted	Not permitted
Other uses that cause disturbance to the sea-floor	Not permitted	Not permitted

**\*\* THIS TABLE IS A SUMMARY ONLY - SEE THE RECOMMENDATIONS FOR DETAILS \*\***

Notes:

1. All uses to be at sustainable levels and carried out in accordance with the guidelines outlined in Chapter 3.
2. For those uses and activities not specified in the recommendations, managers and users should be guided by Council's use objectives for marine parks and sanctuary zones - Recommendation A1(i) and (ii), and B1(i).
3. These uses and activities are subject to conditions - see the recommendations for details
4. The taking of flounder with hand held spear is permitted in three parks (A12, A15 and A17), and bait netting for prawns is permitted in one park (A15) - see the recommendations for details.

### *Commercial use*

Charter boat operators take tourists to view the seals – an activity of growing popularity. Abalone and rock lobster are harvested within the park. Occasional mesh-netting and long-lining also takes place, as does trolling, squid jigging and otter-board trawling. Otter-board trawling is to be excluded

The park is within an area considered to be highly prospective for oil and gas.

### *Alternatives*

This marine park provides representation of the intertidal and subtidal rocky basaltic reef habitats in the Western Biophysical Region. Council's offshore survey showed that the sanctuary zone of the previously recommended marine park at Discovery Bay had very little basalt reef. Other potential sanctuary zones encompassing basalt reef were investigated, including areas at Cape Duquesne, Cape Bridgewater, and off Cape Nelson. All have high levels of resource harvesting.

#### **RECOMMENDATION**

A2 That the area of 16,500 ha indicated on Map A be used in accordance with Recommendation A1.

Note:

The park includes the B2 Lady Julia Percy Island Sanctuary Zone.

#### **A3 LAKE GILLEAR**

The proposed Lake Gillear Marine Park lies between Logans Beach and Childers Cove, and abuts the Council's previously recommended Bay of Islands Coastal Park.

### *Biophysical representation and other nature conservation values*

This area provides for representation of rocky (calcarenite) intertidal and subtidal habitats within the Western Biophysical Region (see Table 5.1). Intertidal sandy beach and subtidal soft substrate habitats also occur.

The park is characteristic of a larger area of calcarenite habitat extending from west of Warrnambool to Childers Cove, which has a

high diversity of intertidal and shallow subtidal invertebrates. High-profile (>1 m) calcarenite reefs occur in the shallower waters of the park; farther offshore, extending to the Victorian territorial limit, are calcarenite platforms interspersed with sand patches. These reefs are well-covered by a diversity of algae, and in deeper waters (more than 30 metres) by sessile animals, mainly sponges. The algal cover of some of the high-profile shallow reefs (between 6 and 13 metres water depth) is particularly prolific; it is so dense that the underlying hard substrate cannot be observed. Algal diversity is high, and many large foliose red, brown and green species are represented.

### *Recreation*

The most popular and accessible point is Childers Cove, an area with safe swimming beaches and protected coves used for sightseeing, fishing and diving. Land access to the western portion of the park is via a track adjacent to Lake Gillear. Some fishing occurs at the nearby rocky platform and there is some recreational boat-based fishing for sweep, snapper, reef fish and rock lobster. Boats can be launched at Warrnambool, 5 to 10 km west of the park. The sea conditions are, however, often difficult, with a high swell – fishers go out only on the relatively few calm days.

### *Commercial use*

Abalone and rock lobster are harvested within the park. Long-lining and mesh-netting for scale fish is also carried out. The park is within an area considered highly prospective for oil and gas.

#### **RECOMMENDATION**

A3 That the area of 7800 ha (extending 5.5 km seaward from the high-water mark) indicated on Map A be used in accordance with Recommendation A1.

Note

The park includes the B3 Lake Gillear Sanctuary Zone.

#### **A4 PORT CAMPBELL**

The proposed Port Campbell Marine Park extends from east of Port Campbell to Gibsons

Steps, and abuts Port Campbell National Park.

#### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (limestone) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Western Biophysical Region (see Table 5.1). The area contains good examples of the well-known and spectacular limestone cliffs, and is characteristic of a larger area which extends from Childers Cove to Gibsons Steps that has the highest diversity of intertidal and shallow subtidal invertebrates on limestone in Victoria.

The landscape visible from the land extends under water along deeply guttered and eroded limestone reefs and extensive limestone platforms. Other substrates include sandy sediments with areas of fine sand, coarse sand, and coarse shell rubble. All these substrates provide diverse habitats for marine life. Shallow waters, at 7 metres depth, include reefs covered by many algal species. In the waters about 20 metres deep, the reefs are covered by a rich canopy of brown algae (e.g. *Ecklonia radiata*), and in slightly deeper waters by red algae. The seabed at depths below 50 metres includes reefs with sessile animals (such as sponges and bryozoans).

The shoreline of the park and the rock stacks and islands adjoining the park shelter breeding colonies of a number of seabird species. The short-tailed shearwater breeds on Muttonbird Island, and there are little penguin breeding colonies on the adjacent coastline. Black-faced shags breed at several sites along the park shoreline.

The area includes sites of geological and geomorphological significance, displaying coastal erosion processes and karst topography. The adjacent coastline encompasses sites of significance for flora and fauna species, and provides significant beach habitat for shorebirds.

#### *Recreation*

The clifftops provide ready access to lookouts and spectacular views across the park. Boats are used for pleasure cruising, fishing, snorkelling and diving (including visiting the wreck of the *Loch Ard*, which is within the park). There is little recreational boat-based fishing in the park because of the heavy seas, the need to use larger

boats, and difficult access. The only boat launching site near the park is Port Campbell, but this is not suitable for larger boats.

Access from the land to the intertidal zone is very difficult due to the sheer cliff faces, but some rock fishing occurs from the clifftops. The two accessible beaches are at Sherbrook River (used by a relatively small number of local fishers) and at Loch Ard Gorge (used by a small number of people for swimming, snorkelling, and sometimes scuba-diving). The main swimming area is Port Campbell beach, outside the park.

Shipwrecks within the zone are testaments the hazardous nature of the coastline. Notable among the wrecks is the *Loch Ard*. Although sea conditions are often unsuitable, the wreck sites are visited by recreational divers.

#### *Commercial use*

The charter boat services based at Port Campbell offer close viewing of the spectacular coastal formations from the water. Abalone and rock lobster are harvested within the park, and there is also some squid jigging, long-lining, mesh-netting and trolling. The park is within an area considered highly prospective for oil and gas.

### **RECOMMENDATION**

- A4 That the area of 6400 ha (extending 5.5 km seaward from the high-water mark) indicated on Map A be used in accordance with Recommendation A1.

Note:

The park includes the B4 Port Campbell Sanctuary Zone.

### **A5 GLENAIRE**

The proposed Glenaire Marine Park lies between Lion Headland and Lake Craven, abutting Otway National Park.

#### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (sandstone) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Otway Biophysical

Region (see Table 5.1). There is also seagrass bed habitat within the park.

The park contains a range of coastal orientations and microhabitats with extensive nearshore rock platforms. These platforms are characterised by a high diversity of intertidal and shallow subtidal invertebrates, including some of the most diverse assemblages in the State on sandstone substrates (particularly Point Flinders, Rocky Cove and Deep Sea Cove). A sparse cover of the seagrass *Heterozostera tasmanica* is present at 13m depth off Deep Sea Cove – an unusual occurrence of this seagrass on a high-energy coast.

The seabed in the park includes nearshore reefs and sand substrate. The only known moderately large offshore reefs occur at Rotten Point and west of Aire River estuary. The reef at Rotten Point is covered by a thick and diverse collection of sponges, bryozoans and gorgonians.

#### **Recreation**

The park provides opportunities for recreational fishing, surfing, snorkelling and occasional scuba-diving. The most popular recreational destination for surfing, beach and rock fishing is Johanna Beach, which is also the most accessible site. The more remote but also popular areas for rock fishing and scuba-diving are Lion Headland, Rotten Point, Dinosaur Cove and (outside the park) the Aire River estuary.

Access from land to the coastline is limited. Johanna Beach is the only area that can be reached by two-wheel-drive vehicles. Other access to the coast includes a road to Glenaire and a walking track from there to Castle Cove. Lion Headland, Rotten Point and Dinosaur Cove, and Aire River estuary can be reached by four-wheel-drive roads and walking tracks.

Boat based fishing opportunities are few because sea conditions can restrict access from the nearest boat launching facilities at Port Campbell or Apollo Bay. Boat access for small boats, however, is available at Aire River.

#### **Commercial use**

Abalone and rock lobster are harvested within the park, and there is limited trolling, some mesh-netting, and squid jigging. The park is within an area considered to be highly prospective for oil and gas.

### **RECOMMENDATION**

**A5** That the area of 10,250 ha (extending 5.5 km seaward from the high-water mark) indicated on Map A be used in accordance with Recommendation A1.

Note:

The park includes the B5 Glenaire Sanctuary Zone.

### **A6 POINT ADDIS**

The proposed Point Addis Park lies between Demons Bluff headland and Bells Beach. It abuts an extensive area of remnant vegetation known as the Iron Bark Basin, a municipal reserve.

#### ***Biophysical representation and other nature conservation values***

This park provides for representation of rocky (limestone) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Central Biophysical Region (see Table 5.1).

The park adjoins rugged cliffs and bluffs with species-rich heathlands and coastal scrub, with wide sandy beach systems to the east and west of the Point Addis headland. The Point Addis limestone is of State geological significance.

The seabed habitats include a nearshore limestone reef, an adjacent region of limestone cobbles embedded in coarse sand, and an offshore sand area. All these surfaces are covered to various degrees with algae and invertebrates. Some areas support rich and diverse invertebrate communities at a depth of 40 to 50 metres, including dense invertebrate clumps of sponges, bryozoans, ascidians and hydroids. The Ingoldsby reefs near the western boundary of the park have particularly interesting marine life, including the leafy sea-dragon.

#### **Recreation**

An easily accessible lookout at Point Addis provides excellent views over the park. Surfers frequent Addiscott Beach and Bells Beach, and scuba-diving and snorkelling enthusiasts find the Ingoldsby reefs an excellent site. There are a number of swimming beaches in the park; the expansive Addiscott beach is popular for

surfing, swimming and relaxing. The park has a number of excellent surfing beaches, including part of the internationally acclaimed Bells Beach. Surf fishing is popular and is carried out mostly between Black Rock and the cliffs of Point Addis. Other recreation in the area includes hang-gliding and para-gliding.

#### *Commercial uses*

Abalone and rock lobster harvesting occurs within the park, along with limited squid jigging, long-lining and mesh-netting. The area is within a prospective oil and gas basin.

### **RECOMMENDATION**

**A6** That the area of 4700 ha (extending 5.5 km seaward from high water mark) indicated on Map A be used in accordance with Recommendation A1.

Notes:

- 1 The park includes the B6 Point Addis Sanctuary Zone.
- 2 There is a prescribed optional dress beach at the edge of this park.

### **A7 HAROLD HOLT**

The proposed Harold Holt Marine Park lies between Point Nepean and Portsea back beach. It incorporates the southern part of the existing Point Nepean Marine Reserve and abuts the Mornington Peninsula National Park.

#### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (calcarene) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Central Biophysical Region (see Table 5.1).

The area contains extensive intertidal shore platforms, including rock pools and surge channels, interspersed with sandy beaches. It has a diversity of intertidal and subtidal invertebrates, with significant populations of certain fauna, such as colonial ascidians, sponges and bryozoans.

The intertidal areas within the park have been protected from human access since the turn of the century. Cheviot Beach has become a crucial

reference site for studies of human-induced change to intertidal communities.

There are small areas of reef in the park. These include areas of nearshore reef and some offshore reefs at 17 metres depth. The offshore reefs provide anchorage for a light cover of kelp, and sparse clumps of erect green macroalgae occur on coarse sand adjacent to the reefs. The predominant substrates include fine and coarse sand sediments.

The adjoining Mornington Peninsula National Park includes a number of sites of geological and geomorphological significance, with the coastline including part of a more extensive area of significance supporting sooty oystercatchers and roosting sites for gulls and terns.

#### *Recreation*

The rugged London Bridge and associated rock pools and reefs at the eastern edge of the park form a readily accessible and popular area. There is also good access to reefs at Point Nepean. Shore access elsewhere within the park is restricted. It is a popular area for sport diving for abalone and rock lobster, and boat fishing for pelagic species. The adjoining national park is one of the State's most visited parks, and spectacular views can be obtained of the rugged coastline, reefs and kelp beds.

The wreck of the *Sierra Nevada*, off Portsea back beach, is occasionally visited by scuba divers when seas are favourable.

#### *Commercial use*

Abalone and rock lobster are harvested within the park. Some squid jigging, long-lining, mesh-netting and trolling occurs, along with some haul-seining and inshore otter-board trawling. The latter two activities are to be precluded. The area is on the edge of the Otway basin, which is prospective for oil and gas.

### **RECOMMENDATION**

**A7** That the area of 3700 ha (extending 5.5 km seaward from high water mark) indicated on Map A be used in accordance with Recommendation A1.

Note:

The park includes the B7 Harold Holt Sanctuary Zone.

## A8 PORT PHILLIP HEADS

The recommended Port Phillip Head Marine Park extends across the entrance of Port Phillip Bay, encompassing Edwards Point and Mud Island Wildlife Reserves, South Channel Island, and a number of the reserves forming the existing Harold Holt Marine Reserve (Point Lonsdale, Popes Eye, Swan Bay and Mud Island).

### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (calcarenite) intertidal and subtidal habitats, seagrass bed habitat, intertidal sandy beaches, sheltered intertidal flat habitat and subtidal soft substrate habitat within Port Phillip Bay.

This agglomeration of sites includes occurrences of calcarenite reef within Port Phillip Bay, a range of sediment types, and a range of different situations with respect to degree of exposure to ocean swell, current strength and water depth. The heads region south of Nepean Bar, for example, is flushed at each tide, while Swan Bay has a much more gentle and modest tidal exchange.

The calcarenite reef occurs extensively in the Heads sector of the park, from the intertidal zone to a depth of about 70 – 80 m, and provides habitat for prolific marine flora and fauna. The reef ranges from flat expanses to extensive vertical faces and ledges. It is interspersed with patches of sandy sediments which add to the variety of habitats available.

The Point Lonsdale intertidal platform is part of a section which has the highest recorded invertebrate diversity of any calcarenite reef in Victoria. Some dense populations of the kelp *Macrocystis angustifolia* grow on subtidal reefs, particularly on the Point Lonsdale side of The Rip. This kelp occurs only sporadically on the Victorian coast and is of interest due to its large size and rapid growth. It grows to over 10 metres in height, and its upper canopy provides habitat for a range of fish and invertebrate species. The reefs support many types of algae. An area of exceptional sponge diversity known as The Sponge Garden is within this sector of the park. The Port Phillip Heads region is the type locality for a number of organisms, including about 10% of all known Australian hydroids.

The open-water sector of the park contains various soft sediment habitats punctuated by artificial bluestone structures, which have been colonised by species favouring hard substrates and now support high-diversity reef-like biotic assemblages. The circular formation known as Popes Eye which has both exposed and sheltered areas and in some respects is an artificial microcosm of the Heads reef environment. *Macrocystis* occurs at Popes Eye, and seals are often seen in the area. Popes Eye and South Channel Island are important breeding sites for birds, notably Australasian gannets at Popes Eye and White-faced storm petrels and little penguins at South Channel Island. Bottlenose dolphins are often seen in the southern Port Phillip Bay region, and researchers believe that there is a stretch of water close to the shore east of Point Nepean which is a mating, birthing and rearing area important for bottlenose dolphins.

Seagrass meadows in the park are best represented in the Swan Bay sector, where four species (*Heterozostera tasmanica*, *Zostera muelleri*, *Halophila australis* and *H. decipiens*) occur in high densities. The distributions of these species depends on water depth and turbidity. *Heterozostera tasmanica* is the dominant species in the deeper, lowest-energy regions, but is replaced by *Zostera muelleri* in shallower water. The seagrass habitat of Swan Bay is important for black swans and a number of commercially harvested fish species, including stranger, rough leatherjacket, six-spined leatherjacket, flounder, King George whiting and adult rock flathead. (Forty-four fish species have been recorded in Swan Bay.) *H. tasmanica* beds are also found in the Mud Island area. An area of *Amphibolis* seagrass exists on Victory Shoal in the north of Lonsdale Bight and also on the eastern side of the heads.

The fine sand to mud sediments exposed between tides in Swan Bay and on the Mud Island provide excellent bird habitat for a range of species, including endangered and long-distance migratory species. Swan Bay is considered second only to Corner Inlet in terms of its national and international importance for waders.

The park includes a number of interesting and important sites for marine species and offers excellent opportunities to study these sites. Much of the park abuts areas of intermittent but significant remnant vegetation, including that at Mornington Peninsula National Park and Point Lonsdale.

The area has numerous sites of geological and geomorphological significance. The incised entrance to the Bay and the Point Nepean rock platform are of State significance.

### Recreation

This park area is a 'Mecca' for scuba divers, snorkellers, marine photographers and naturalists because of the extraordinarily high diversity in habitats and corresponding biotic assemblages. A number of sites are favoured by divers, including natural features such as Lonsdale Wall and Portsea Hole and artificial structures such as Popes Eye, South Channel Island and the wrecks of ships and a submarine.

The area is used for educational and scientific purposes by a number of Government and private organisations. The potential value of the park to marine and fisheries research is high.

Beach access is possible at most locations, and shore-based recreation is very popular. The intertidal platforms in the Heads sector are well used by marine naturalists. Swimming is common (particularly in the summer months) at sandy beaches, mainly on the Mornington Peninsula.

Recreational fishing from boat and shore occurs throughout the park. Boat anglers most commonly catch sand flathead, King George whiting and calamari, while shoreline anglers typically catch a wider variety of species, the most significant being calamari, sand flathead, garfish and snapper. Amateur collection of abalone and rock lobster is popular in the area. Boats can be launched from a large facility at Queenscliff and from smaller local launching sites at Swan Bay, Portsea and farther east.

The entrance to Port Phillip Bay is a difficult area for navigation. There are a number of shipwrecks in the park which are of interest historically and (in some cases) for divers. They include the *William Salthouse*, *Mountain Maid* and *Empress of the Seas*. The lighthouses at the Heads are also important historical and cultural features.

### Commercial use

A significant and largely seasonal dive charter industry operates from Portsea, Sorrento and Queenscliff, with up to 20 boats working the dive sites in summer. The majority of popular dive sites in Port Phillip Bay are within the

park. Charter boats also target 'seal tours' to South Channel Light and 'swim with the dolphins' tours. This activity has seen rapid growth in recent years.

Abalone and rock lobster are harvested commercially on the calcarenite reefs; sections of the Heads are highly productive. This fishing activity will be able to continue within the park. Trolling catches have been recorded in the Heads region for pelagic species such as pike and cuta. Occasional long-lining is undertaken west of Mud Island and squid jigging has been recorded. Some beach seining takes place in the Swan Bay sector and other beaches off Mornington Peninsula, and haul-seining has also been recorded; the more damaging forms of commercial fishing are to be excluded. The commercially valued species are not restricted to the park and can be harvested elsewhere. Scallop-dredging has been undertaken in the area but is to cease, like elsewhere in the Bay, by the Government decision of March 1996.

In the past a small trial marine aquaculture operation was carried out in the north-west of Swan Bay, and shellgrit was extracted at a site adjacent to the southern corner of Swan Bay. Both uses have ceased.

Shipping channels run through the area. The shipping routes to the Port of Melbourne and Geelong separate the main blocks of the park. The channels are necessarily modified to maintain safe navigable water and have different priorities for management. The Council has recommended that these channels be Port Access Zones of the Coastal Waters Reserve (see Chapter 6). South Channel requires regular maintenance dredging, and the associated dredging spoil sites to the east and west of the channel, and a spoil site in Lonsdale Bay, have also been excluded from the park.

## RECOMMENDATIONS

A8 That the area of 13,700 ha indicated on Map A be used in accordance with Recommendation A1 for marine parks;

and that

- (i) provision be made for the ongoing use of existing boat ramps and public jetties at Swan Bay, Point Lonsdale and Portsea;

(continued)

- (ii) enhanced channel marking be undertaken to limit inadvertent boating activity across intertidal mudflat areas;
- (iii) an advisory committee, comprising representatives of relevant user and interest groups be established to assist management planning.

Notes:

- 1 The park includes the B8 Swan Bay, B9 Popes Eye and B10 Ticonderoga Bay Sanctuary Zones.
- 2 The park includes the narrow public land strip which surrounds Swan Bay, together with the Edwards Point sand spit.
- 3 Changes to existing regulations prohibiting line-fishing in certain parts of the park are not proposed.

## A9 PORT PHILLIP BAY

The proposed Port Phillip Bay Marine Park comprises four separate sectors which together provide a representation of the main habitats in the north and eastern parts of the Bay.

### A9(a) Point Cook and Williamstown

These sectors of the park includes the existing marine reserves at Williamstown and Point Cook. An addition to the Point Cook Marine Reserve has been recommended to encompass subtidal soft substrate habitat and additional reef. This section abuts the Point Cook Coastal Park.

#### *Biophysical representation and other nature conservation values*

These two sectors provide representation of rocky (basalt) intertidal and subtidal habitats, mangrove habitat, intertidal sandy beaches and subtidal soft substrate habitats within Port Phillip Bay. Seagrass bed habitat also occurs in the area (see Table 5.1).

The Williamstown area supports an unusually diverse array of habitats including rocky basalt reef, seagrass beds, intertidal flats, mangroves and saltmarsh. The reef has a diverse algal community and associated fauna; the size and abundance of many of the invertebrate species appears to be an anomaly compared to the

surrounding area. The softer subtidal sediments are fine clayey sands which support a high species richness. There are features of regional geological and geomorphological significance in the area including the shore platform and lava blister.

The intertidal area contains the largest occurrences of white mangrove (*Avicennia marina*) in Port Phillip Bay. This is a unique occurrence of mangroves on basalt boulder substrate. The basalt platform is also a roosting site for migratory waders.

Basalt reefs occur off Point Cook in two to three metres of water. The reefs support a community of algae and associated epibenthic fauna of high diversity. Sponges, bryozoans, sea-stars, sea-urchins, anemones, ascidians, shellfish, crustaceans, molluscs, sharks, skates and fishes occur in this area. The softer substrates include a variety of sands and clayey sands. There are few epibenthic species on the fine sands close to shore, but the clayey medium and undifferentiated sand sediments farther offshore characteristically have a high species richness. The adjoining Point Cook Coastal Park supports saline marsh and saltpan vegetation that is important waterbird habitat.

#### *Recreation*

Both sectors are within a larger area that is very popular for recreational fishing which is predominantly boat-based, although shore fishing is also popular. The most common target species for boat anglers are King George whiting and snapper, but sand flathead is the most common catch, followed by King George whiting and garfish. About half of the shoreline anglers do not fish for a particular species, and garfish and yellow-eye mullet are most often brought in.

The saltmarsh and saltflats of the adjoining Point Cook Coastal Park provide important habitat for a number of bird species, including the endangered orange-bellied parrot. This area is popular for bird-watching and other forms of passive recreation.

The reef is rather flat and shallow, so swimming is not popular, but snorkelling and shallow scuba-diving are common. The area's faunal diversity is of particular interest.

An educational and interpretative summer program involving the intertidal zone at Point Cook is run by Melbourne Parks and Waterways.

### *Commercial use*

The Point Cook and Williamstown areas contain patches of reef from which abalone is harvested. Purse-seining occurs in the more seaward parts of the Point Cook sector, with low levels of long-lining, mesh-netting, trolling, haul seining (to be precluded) and scallop-dredging also recorded for this sector. Scallop-dredging is to cease in accordance with Government policy to ban this activity in Port Phillip Bay.

#### **A9(b) Ricketts Point**

The Ricketts Point sector is located at Ricketts Point, Beaumaris, and extends offshore for around 4 km.

#### *Biophysical representation and other nature conservation values*

This sector provides representation of rocky (sandstone) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within Port Phillip Bay (see Table 5.1).

The area includes a good section of the Tertiary sedimentary reef that outcrops at a number of locations on the north and eastern shores of Port Phillip Bay. A variety of soft sediment habitats are included, ranging from coarse sands through clayey sands to silt and mud. The offshore reefs have a very high floral and faunal diversity, while the soft sediments in the park have a wider range of diversity. Soft sediments with high species richness occur along the southern margin of the park, extending into Beaumaris Bay. Although the species richness of this section of coast is generally very high, the accessible intertidal reef fauna at Ricketts Point has been degraded by collecting.

The Beaumaris cliffs are the site of an internationally significant late Miocene fossil site.

There are significant remnants of coast scrub and woodland vegetation along the coastal reserve which adjoins the park. This vegetation forms the core of a regionally important bird habitat.

#### *Recreation*

This sector provides opportunities for a variety of recreation, including swimming and snorkelling, although swimming is more popular at adjacent sandy beaches. Recreational fishing is also very popular, both from boats and from

shore. As in other sectors of the park, the most common target species for boat-based anglers are King George whiting and snapper, although sand flathead is the species most caught, followed by King George whiting and garfish. About half of the shoreline fishers do not target a particular species, and garfish and yellow-eye mullet are most often brought in.

A number of facilities are located on the adjoining coastal reserve west of Ricketts Point, and there is a small boat shed and jetty on Beaumaris Bay.

#### *Commercial use*

Abalone are harvested from the offshore reefs along this stretch of coast, but the park does not include the more extensive reef area. Long-lining occurs, along with a small amount of rock lobster harvesting, mesh-netting, trolling, purse seining, haul seining and scallop dredging. The last two techniques are to be precluded, scallop dredging being banned by a recent State Government policy decision.

#### **A9(c) Mount Martha**

This sector lies on the eastern edge of the Bay between Mount Martha and Safety Beach, extending offshore for about 6 km.

#### *Biophysical representation and other nature conservation values*

This sector provides representation of rocky (granite) intertidal and subtidal habitats, and subtidal soft substrate habitats within Port Phillip Bay (see Table 5.1).

The area takes in the least modified example of granitic reef in Port Phillip Bay and is the only area to include a section of the fine silty mud sediments towards the centre of the Bay. Other soft substrates in the sector are coarse to medium sand sediment habitats between the reef and the muds. The coarser sediments support a higher species diversity than do those tending towards silt-sized particles. The reefs support a high diversity of marine flora and fauna. The adjoining coastal reserve, while narrow, supports significant remnant woodland vegetation on the cliff-top.

#### *Recreation*

Recreational fishing is typically popular in this region, both from the shore and from boats. The

most common target species for boat anglers are King George whiting and snapper, although sand flathead (70%) and calamari are more commonly brought in. Approximately half of the shoreline anglers do not target a particular species, and sand flathead and garfish are most often caught. Other activities include scuba-diving and snorkelling, often associated with spearfishing.

Land access to this section of the coast is via tracks leading down the cliff slopes from The Esplanade, and from adjacent beaches. Boat-based access is facilitated by nearby boat ramps at Safety Beach and Morning-ton. The latter site also provides marina facilities. There are excellent opportunities for sightseeing and other shore-based recreation, although nearby sandy beaches are more popular for swimming and picnicking.

#### *Commercial use*

The area includes some offshore reef where abalone is harvested, however, the reef continues on either side of the park. The western extremity of the park includes the edge of a scallop-harvesting bed. The intersecting area is very small in the context of the entire scallop bed. Scallop-dredging is to cease, in accordance with Government policy for Port Phillip Bay. Long-lining, mesh-netting, trolling, purse-seining and haul seining also occur.

### RECOMMENDATIONS

A9 That the area of 4850 ha indicated on Map A be used in accordance with Recommendation A1;

and that

- (i) an advisory committee, comprising representatives of relevant user and interest groups, be established to assist management planning.

Note:

This park includes the B11 Point Cook and B12 Ricketts Point Sanctuary Zones.

### A10 THE NOBBIES

The proposed Nobbies Marine Park is centred on the Summerland Peninsula of Phillip Island and includes The Nobbies, Seal Rocks,

Summerland Bay and Kitty Miller Bay. It abuts the Phillip Island State Park, a new park recommended by Council as part of its Melbourne Area District 2 Review investigation.

#### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (basalt) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Central Biophysical Region (see Table 5.1).

The seabed of the park is varied. It includes shallow (about 10 metres deep) coarse sand covered by a dense growth of erect foliose green algae (*Caulerpa* sp.), basalt reef and a cobble dominated by moderately dense kelp canopies (*Ecklonia radiata* and *Phyllospora comosa*), and basalt reef covered by foliose green algae. Areas of bare sand and basalt cobble with no attached macroflora or macrofauna are also present.

The Summerland Peninsula, which the park surrounds, has the largest colony of little penguins in Victoria and significant numbers of short-tailed shearwaters. Seal Rocks, also surrounded by the park, supports the largest colony of Australian fur-seals in the world (12,000 individuals, or 22 per cent of the world population) and the only Victorian breeding site of the kelp gull.

#### *Recreation*

The wide range of recreational activities undertaken within the park include swimming, surfing, bird-watching, photography, snorkelling and scuba-diving. The area is popular for rock fishing, particularly from the protected western shores between the Nobbies and Cowrie Beach. Point Grant on the Summerland Peninsula provides expansive views of the rugged coastline and offshore reefs and is the main tourist access point for visitors to the Penguin Parade Reserve. A proposed major visitor centre on this headland would provide an opportunity to enhance the access and interpretation of the marine environment.

#### *Commercial use*

Abalone and rock lobster are harvested within the park. Squid jigging and Danish-seining occurs in the deeper sectors of the park.

## Alternatives

Council investigated a potential sanctuary zone on the north side of the Summerland Peninsula to provide representation of the intertidal and subtidal rocky basaltic reef habitats in the Central Biophysical Region. Council's offshore survey indicated that there were extensive sand patches and little reef and cobble in this area and the dense kelp canopies of the southern reefs were not observed on the reefs in the north.

### RECOMMENDATION

A10 That the area of 5050 ha (extending 5.5 km seaward from high water mark) indicated on Map A be used in accordance with Recommendation A1.

#### Notes:

- 1 The park includes the B13 Nobbies Sanctuary Zone.
- 2 Council is aware of proposals for a major tourist facility to be developed on the edge of the park at the Nobbies.

### A11 NORTH WESTERN PORT

The proposed North Western Port Marine Park extends along the northern and north-eastern shoreline of French Island, encompassing the tidal divide of the bay. On the landward side it abuts the Council's previously recommended French Island National Park, and includes Crawfish Rock.

#### *Biophysical representation and other nature conservation values*

This park provides for representation of seagrass bed habitat, mangrove habitat, intertidal sandy beaches, sheltered intertidal flat habitat, and subtidal soft substrate habitats within Western Port. In particular, it provides a good example of a well-developed tidal channel system that is more complex than elsewhere in the bay. Channel depths, profiles and orientations vary considerably, thus contributing to the high diversity of habitats.

The dominant seagrass species are *Zostera muelleri* at shallower depths and *Heterozostera tasmanica* at greater depths. While extensive areas of seagrass beds were lost during the late 1970s and early 1980s and there was some

subsequent redistribution of sediment, the major channel system remains intact and there are now signs of regrowth of formerly denuded seagrass areas. The park contains areas, notably on the north western shoreline of French Island, where no loss of seagrass has been recorded. In the southern part of the park there are extensive areas of macro-algae such as *Caulerpa cactoides*.

The park contains small sectors of rocky intertidal habitat, notably at Red Bluff. These consist of sandstone substrata, with isolated sandy intertidal and subtidal habitats at Blue Gum Point and Pioneer Bay.

The tidal range in the region is more than 3 m, and the intertidal flats are particularly well developed. The tidal watershed here is of State (possibly national) geological and geomorphological significance. The dynamics of the area are a key influence on the nature of tidal flow elsewhere in Western Port, being the headwaters of the two main drainage systems of the Bay. A complex network of ebb and flood channels are incised into the expansive intertidal mud and sandflats that dominate this northern part of the Bay.

Stockyard Point is one of the most distinctive medium-size cusped forelands in the State. The migrating offshore subtidal sand bars provide additional material which contributes to the active growth of the recurved spit at the end of the foreland. The Lang Lang River delta is also of geomorphological significance.

The intertidal flats are significant wader foraging habitat and are used by the 32 migratory species regularly recorded at Western Port. Five of the bay's 13 high-tide roosting sites are included within the park's boundaries. Those at Stockyard Point and Barralier Island are particularly vulnerable to disturbance. The park encompasses a major part of the Ramsar wetland areas of Western Port.

The protection of a number of the wader species and their habitat is subject to a number of international obligations (see A17 Corner Inlet - Nooramunga Marine Park). The elements of wader habitat needing protection are the undisturbed high-tide roosting sites and nearby feeding areas. The beds of algae and seagrass found on the intertidal flats and shallow inshore waters provide the main feeding areas for the waders.

The adjoining shoreline within the French Island State Park comprises an extensive mangrove and saltmarsh fringe.

Crawfish Rock, on the north-western margin of the park, is an unusual littoral-sublittoral reef with a high floral and faunal diversity. It has a number of distinct communities, characterised by differing combinations of light, current energy and substrata. Many deepwater species of algae, hydroids and sponges occur here at unusually shallow depths. There are more than 500 species present, including 150 sponges, 123 algae, 40 hydroids and 34 ascidians.

### *Recreation*

The park is comparatively well served by boat access points: Tooradin in the north, Lang Lang in the east and Corinella in the south. Much of the area is, however, accessible only by small boat, except at high tide. Access to the park at low tide is restricted by the extensive areas of soft mud. The sandy sectors, such as those off Blue Gum Point, French Island, and Stockyard Point and Pioneer Bay, are fairly remote but are accessible by foot. Adjoining elevated areas at Red Bluff and Jam Jerrup are, however, readily accessible by vehicle and offer panoramic views across the park.

There is boat-based line-fishing for King George whiting, flounder, and other estuarine species, mostly in the deeper channels towards the boundaries of the park.

### *Commercial use*

Commercial fishers, mainly from Tooradin, fish the area using haul-seining. Target species include King George whiting, rock flathead and flounder. Fishing effort is focused on the deeper channels to the west. Haul seining is to be excluded from the park. Mesh-netting is also carried out, with low levels of long-lining and trolling recorded.

### *Management planning*

In Chapter 4 the Council makes a number of recommendations for Western Port, including the desirability of integrated management planning for the whole bay. It is important that management planning for the park is undertaken in this bay-wide context. Grazing on the foreshore is an issue that the Regional Catchment and Land Protection Board needs to address.

## RECOMMENDATIONS

**A11** That the area of 11,000 ha indicated on Map A be used in accordance with Recommendation A1,

and that

- (i) provision be made for the ongoing use of the existing boat ramp and jetty at Lang Lang beach;
- (ii) channel marking be improved to limit inadvertent boating activity across intertidal mudflat areas.

Notes:

- 1 A narrow strip of public land in the north-east between Yallock River and Lang Lang Beach is included in the park.
- 2 The park includes the B14 Western Port Sanctuary Zone.

## A12 RHYLL – NEWHAVEN

The proposed Rhyll – Newhaven Marine Park encompasses the broad intertidal flats between Rhyll and Newhaven, as well as those at San Remo.

The park mostly abuts the Phillip Island State Park recommended by Council in its Melbourne Area, District 2 Review Final Recommendations. Churchill Island is part of the recommended state park and is surrounded by the marine park. The marine park does not include the developed foreshore areas adjoining the Rhyll, Newhaven and San Remo townships.

### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (basalt) habitats, seagrass bed habitat, mangrove habitat, and sheltered intertidal flat habitat within Western Port. Mangrove and subtidal soft substrate habitats also occur.

The park includes *Zostera* and *Heterozostera* seagrass beds, intertidal rock platforms and sandy beaches, intertidal mudflats and tidal channels, and mangrove communities along some sections of the shoreline. Onshore, the zone is backed by saltmarshes and cliffs.

The mudflats support a variety of seagrasses and algae but are dominated by *Zostera muelleri* and *Heterozostera tasmanica* beds. The seagrass *Amphibolis antarctica* and a green alga (*Caulerpa* sp.) have also been recorded. The area is a highly significant roosting and feeding site for migratory wading birds, and supports a moderately rich invertebrate fauna.

The park contains a number of geological and geomorphological sites of significance, including features indicative of higher sea levels and examples of active and relic marine cliffs.

The protection of the intertidal habitats provided by the marine park will complement the protection previously recommended by the Council for the other habitats of Phillip Island.

The San Remo sector of the park appears to be unique among the intertidal and shallow subtidal sites in Victoria, and possibly in southern Australia, and has been listed as a threatened community under the *Flora and Fauna Guarantee Act 1988*. The site comprises an extremely rich opisthobranch and bryozoan community: 125 species of opisthobranchs have been recorded at San Remo, of which eight are known only from this site.

The site's diverse substrata (including patches of sand, mud, boulders, and vesicular weathered basalt), the north-facing aspect, the low wave energy and proximity to a fast-flowing tidal channel are some of the factors that contribute to the existence of this apparently rare community. The site includes the edge of the fast-flowing tidal channel which is the most diverse part of the community.

### Recreation

The park's location at the edge of Phillip Island, between two holiday townships, means that it is ideally located for those seeking to explore the intertidal environments of Western Port. Although much of the area is bordered by farmland and is therefore difficult to reach directly from the shore, easy access is available at Pleasant Point, Churchill Island and Newhaven. The cliffs and adjoining shorelines at these locations are reasonably popular with walkers and sightseers and offer expansive views across the marine park and beyond, as well as access to intertidal reefs.

The waters of the park are readily accessible by boat from both Rhyll and Newhaven and are

popular with recreational fishers familiar with the channel system in the area. Some flounder spearing also occurs.

### Commercial use

The intertidal flats are occasionally fished commercially, mostly on the outer edge of the flats but also across them. The main technique is haul-seining, which is to be excluded from the park along with mesh-netting. Long-lining and trolling have also been recorded.

## RECOMMENDATIONS

A12 That the area of 1700 ha indicated on Map A be used in accordance with Recommendation A1;

and that

- (i) the taking of flounder with a hand-held spear be permitted in locations to be determined by the manager.

### Notes:

- 1 The park is set back 150 metres from the high-water mark around the townships of Rhyll and Newhaven.
- 2 The whole of the San Remo sector of the park encompasses the rich opisthobranch community listed as a threatened community under the *Flora and Fauna Guarantee Act 1988*. Council understands that the required protection for this community precludes a proposed marina development.

## A13 BUNURONG

The proposed Bunurong Marine Park lies in the Cape Paterson – Inverloch area. It incorporates the existing Bunurong Marine Park (whose seaward boundary extends 1 km offshore), and an additional offshore area (extending to the edge of the State's territorial sea, 5.5 km seaward of the low-water mark), and abuts a coastal reserve.

### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (sandstone) intertidal and subtidal habitats, intertidal sandy beaches and seagrass bed habitats within the Central Biophysical Region

(see Table 5.1). Subtidal soft substrate habitat also occurs.

Bunurong has extensive intertidal rock platforms and subtidal rocky reefs, which extend several kilometres from shore but which are in relatively shallow water. These platforms and reefs include numerous microhabitats interspersed with sandy and shelly sediments.

Major habitats and biological communities include *intertidal rocky shores*; subtidal rocky reefs dominated by a brown alga (*Cystophora* sp.) community with many green and red algae; *Amphibolis antarctica* seagrass; rocky reefs dominated by sponges and bryozoans; and sandy beaches. The complex topography of the extensive intertidal and subtidal rocky areas within the park has enabled a rich and diverse marine flora and fauna to develop. Such extensive platforms are uncommon along the Victorian coast.

The park is characteristic of this section of coastline, which has by far the most diverse intertidal and shallow subtidal invertebrate fauna recorded in eastern Victoria. A high proportion of some invertebrate species included in the 1984 Marine Research Group database occur here: for example, 7 of 8 brittle stars, 9 of 11 sea-cucumbers, 8 of 11 barnacles, all 5 sea-anemones, and 15 of 20 chitons. According to the Marine Research Group, the chiton fauna between Harmers Haven to Flat Rocks is matched by only one other locality in Victoria: Western Port. This area appears to also be a particularly rich location for sponges and bryozoans.

The park includes a fossil dinosaur locality at Eagles Nest, and provides habitat for peregrine falcons and hooded plovers. Much of the park is backed by boulder beaches and high cliffs. The adjoining coastal reserve supports important remnant coastal and dune vegetation.

### Recreation

Bunurong is a popular snorkelling and scuba-diving area. Flat Rocks and Cape Paterson are particularly popular recreational destinations and have excellent foreshore camping facilities nearby. They provide excellent diving conditions, including good access, clear water and colourful marine life. Bunurong marine park has a number of swimming beaches, such as Shack Bay and Eagles Nest as well as at Cape Paterson. Access to the park is excellent and a number of viewing platforms have been

constructed to allow for watching the picturesque beaches, cliffs and extensive rock platforms.

Some recreational fishing occurs in the park outside the existing Sanctuary Zone, including boat-fishing for yellowtail kingfish and thresher sharks, diving for abalone and rock lobster, and spearfishing.

### Commercial use

Commercial fishing is currently excluded from the existing Sanctuary Zone in the zone between the high-water mark and 1 km offshore. Some abalone and rock lobster is harvested farther offshore. Limited squid jigging, long-lining, mesh-netting, and trolling occurs. Danish-seining is to be precluded.

## RECOMMENDATION

**A13** That the area of 5050 ha (extending 5.5 km seaward from the high-water mark) indicated on Map A be used in accordance with Recommendation A1;

and that

- (i) the manager review the use of motorised boats in heavily used parts of the park.

Notes:

- 1 The park includes the B15 Bunurong Sanctuary Zone.
- 2 It is not the Council's intention that existing regulations restricting recreational fishing be changed.
- 3 The Council is aware that there is an artificial pool on the shore platform at Cape Paterson. This may continue to be used.

## A14 CAPE LIPTRAP

The recommended Cape Liptrap Marine Park lies between Cape Liptrap and Walkerville and abuts the Council's previously recommended Point Smyth - Waratah Bay Coastal Park.

### Biophysical representation and other nature conservation values

The park area is the largest of only two sections of Victorian coast with outcropping Cambrian greenstone. Other substrata in the area include

rocky limestone and sandstone, sandy beaches and soft substrate subtidal habitats.

The rugged Cape Liptrap cliffs and shore platforms are among the best exposures of Cambrian rocks in the State. Spectacular views along the coastline can be obtained from around of the Cape Liptrap lighthouse.

The park generally has a high diversity of intertidal and shallow subtidal invertebrates. The substratum to about 30 metres depth includes heavy unbroken reef, or reef with large boulders and rock slabs forming gutters up to 2 to 3 metres. The gutter floors are often filled with coarse sand. Thick canopies of the large brown kelps *Ecklonia radiata* and *Phyllospora comosa* dominate the rock substrata, although other algae, particularly encrusting corallines and foliose reds, are present. The bottom farther offshore, to about 40 metres depth, includes rounded cobbles embedded in coarse sand. The cobbles are encrusted with coralline algae, with some kelp, ascidians and sponges present.

#### **Recreation**

The rock stacks and associated shore platforms in the vicinity of Bells Point can be reached at low tide from Walkerville. Fishing from boats, mainly for whiting, is popular but limited largely to the Walkerville area because of the easy access. Some boats are also launched at Maitland Beach, although the access and sea conditions there are more difficult. Maitland Beach is also popular for surf-fishing and diving. Recreational abalone and rock lobster fishing occurs on rocky reefs throughout the area.

#### **Commercial use**

Some abalone and rock lobster harvesting occurs within the area. Danish-seining occurs, but is to be precluded.

### **RECOMMENDATION**

**A14** That the area of 4650 ha (extending 5.5 km seaward from the high-water mark) indicated on Map A be used in accordance with Recommendation A1.

#### **Note**

The park includes the B16 Cape Liptrap Sanctuary Zone.

## **A15 SHALLOW INLET**

The recommended Shallow Inlet Marine Park corresponds largely with the existing Shallow Inlet Marine and Coastal Park, which was created following the Government's acceptance of Council's South Gippsland Area, District 2 Final Recommendations. The sand spit which separates the inlet from Waratah Bay has been recommended for addition to the existing park.

#### ***Biophysical representation and other nature conservation values***

Shallow Inlet encompasses intertidal beaches, sheltered intertidal flat habitat and *Zostera* and *Heterozostera* seagrass beds. The area is an important nursery area for a number of fish species. It also provides habitat for many species of migratory and resident waders and, together with Corner Inlet, has been ranked by the Royal Australasian Ornithologists Union as part of the most important area for wading birds in Victoria.

The protection of a number of the wader species and their habitat is subject to international obligations (see A17 Corner Inlet – Nooramunga Marine Park). The elements of wader habitat that need to be protected are undisturbed high-tide roosting sites and nearby feeding areas. The beds of algae and seagrass found on the intertidal flats and shallow inshore waters provide the main feeding areas for waders.

Surrounding the waters of the inlet is a reasonably intact sequence of vegetation types, of saltmarsh, heaths and coastal scrub and woodlands.

#### **Recreation**

The shallow and sheltered waters of the inlet make the park a safe and popular area for a range of recreation activities, including line-fishing, boating, swimming and windsurfing. Most recreational fishing takes place from small motorised boats. Ready access to the inlet is available from Sandy Point on the western side or Yanakie on the eastern side.

#### **Commercial use**

The area is fished commercially, mainly using various types of haul-seining.

## RECOMMENDATION

A15 That the area of 2350 ha indicated on Map A be used in accordance with Recommendation A1;

and that

- (i) the taking of flounder with a hand-held spear and bait-netting for prawns be permitted in locations to be determined by the manager;
- (ii) commercial fishing for fin fish species using haul-seining techniques be permitted, if gear and methods are modified to ensure minimal damage to seagrass beds; the timing and length of the season, size and bag limits and other conditions to be determined by the manager. This fishing is to be phased out in the longer term (see Note 2).

and that

- (iii) the existing community consultative group continue, to assist management planning.

Notes:

- 1 The park incorporates the narrow public land strip which surrounds the inlet, including a small camping ground. This use may continue subject to the requirements of the manager.
- 2 The commercial fishing licences endorsed to permit fishing in the inlet are not transferable.

## A16 WILSONS PROMONTORY

The recommended Wilsons Promontory Marine Park includes the existing Wilsons Promontory Marine Park and Marine Reserve and an additional area extending offshore to the south.

### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (granitic and calcarenite) intertidal and subtidal habitats, seagrass bed habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Wilsons Promontory Biophysical Region (see Table 5.1).

The granite cliffs at Wilsons Promontory, plunging abruptly to the sea-floor, and its sandy beaches sloping gradually to depths of 30 to 50 metres within 3 km offshore, create distinct combinations of habitats and biological communities which are uncommon along the Victorian coast. Off South East Point, for example, there are offshore reefs covered with kelp and sessile animals, and prolific in fish, while at 80 m depth there are extensive sponge gardens on flat shell rubble.

An extensive system of submerged dunes occurs off the western coast of Wilsons Promontory, from near Shallow Inlet to Darby Beach. These calcareous ridges are interspersed with sandy sediments and provide a range of habitats. There are areas of rough sculptured calcarenite between Shellback Island and the mainland, including heavily eroded high platform reefs raised above a sandy bottom and reefs with three-metre-high gutters separated by wide, sandy floors.

The marine life within the park includes *Phyllospora-Ecklonia* kelp communities on high-energy, wave-exposed subtidal rock faces and platforms, with numerous fish species within and red and green algae beneath the kelp canopy; various densities of sessile invertebrates, including ascidians, gorgonians, sponges, bryozoans, sea-stars, scapens on rocky and soft substrates; variety of fish; and seagrass communities.

At least four species of seagrass are found throughout the park. *Amphibolis antarctica* occurs at depths of 6 to 9 m; and extensive beds have been recorded near Shellback Island and in Waterloo Bay. *Heterozostera tasmanica* ranges from shallow water to 21 m depth in Oberon Bay, and *Halophila ovalis* has been found in Waterloo Bay at depths of 9 m or more. *Posidonia* seagrass has been recorded at Great Glennie Island; it is known from only three other localities in Victoria and occurs extensively only at Corner Inlet.

Sandy beaches generally contain specialised fauna but are characterised by a relatively low diversity. There is a presumed, but not yet analysed, rich infauna of polychaetes and crustaceans in the 20 to 50 m depth range offshore from Wilsons Promontory; examples are included in the park.

A number of rare or uncommon marine plants occur. The kelp *Durvillea potatorum*,

more common west of Wilsons Promontory, is particularly well developed here.

The highly diverse coastal vegetation adjacent to the park demonstrates links with Tasmanian vegetation, with many species reaching the northern limit of their range here. Areas adjacent to the park also provide nesting sites for white-bellied sea-eagles and is important for the hooded plover in Victoria.

The park surrounds a number of islands around Wilsons Promontory. These are used for breeding by Australian fur-seals and many oceanic birds, including little penguins, short-tailed shearwaters, fairy prions, silver gulls and Pacific gulls.

#### *Recreation*

The park is popular for swimming, surfing, windsurfing, sunbathing, diving and snorkelling. Snorkelling and scuba-diving are becoming increasingly popular as ways to appreciate the underwater environment and are particularly popular at Norman Bay, Leonard Bay and Refuge Cove. Altogether 34 diving sites have been described, many of those near shipwreck sites. Norman Beach, close to the Tidal River Resort, is the most popular swimming, surfing and sailboarding beach, followed by Squeaky, Whisky and Darby beaches.

Wilsons Promontory is also popular for boating. Boats are launched from sites west of Wilsons Promontory and from boat ramps at Corner Inlet. Within the park, boat-fishing targets yellowtail kingfish and thresher sharks. There is also recreational shore-fishing, for example at Tidal River. A relatively small amount of recreational diving for rock lobster and abalone occurs.

#### *Commercial use*

Charter boats operate in waters around Wilsons Promontory, providing opportunities for sight-seeing, diving or fishing. Rock lobster and abalone are harvested from the park, and there is also purse-seining for salmon and bait, haul seining (beach seining) for salmon and Danish-seining in park waters. Small amounts of long-lining, otter-board trawling and fishing for the live-fish trade also occur. Danish-seining, haul seining and otter-board trawling are to be excluded from the park.

#### *Other issues*

The South East Point lighthouse was recently transferred from the Commonwealth to Victoria. This lighthouse is situated immediately adjacent to the marine park. The Council believes that the use of this facility should be compatible with the values of the Wilsons Promontory National Park and the recommended marine park. It could, for example, provide opportunities for a research and interpretation centre.

### **RECOMMENDATION**

**A16** That the area of 24,500 ha indicated on Map A be used in accordance with Recommendation A1.

#### *Notes:*

- 1 The park includes the B17 Shellback Island Sanctuary Zone, B18 Wilsons Promontory Sanctuary Zone.
- 2 The southern boundary of marine park is defined by the inshore shipping traffic zone defined on Admiralty Chart AUS 801.

### **A17 CORNER INLET – NOORAMUNGA**

This park encompasses the existing Corner Inlet and Nooramunga Marine and Coastal Parks, together with additional areas of deeper channel and adjoining mudflats around the entrance to Corner Inlet. The existing parks were created following the Government's acceptance of Council's South Gippsland Area, District 2 Final Recommendations.

#### *Biophysical representation and other nature conservation values*

This park provides for representation of seagrass bed habitat, mangrove habitat, intertidal sandy beaches, sheltered intertidal flat habitat, and subtidal soft substrate habitats. The park includes extensive tidal channel systems with a complex system of barrier islands and lagoons.

It encompasses a complex marine ecosystem with a diversity of habitats and biological communities. The seagrass meadows are dominated by the broad-leaf seagrass *Posidonia australis*.

*Posidonia* seagrasses occur in Victoria mainly to the east of Wilsons Promontory, with the Corner Inlet and Nooramunga Marine Parks providing the only representation of the community in Council's recommended marine park system. The *Posidonia* meadows occur mainly on the edges of tidal channels, and are far more extensive than any known elsewhere in Victoria. They are the most faunally diverse of all habitats studied in the Corner Inlet - Nooramunga area. The diversity of invertebrate communities in soft sediments is also high. *Zostera muelleri* and *Heterozostera tasmanica* seagrasses also occur throughout the park, the latter in the deeper, mainly subtidal, areas.

Mangrove communities of *Avicennia marina* occur throughout the Nooramunga sector and along the northern margin of Corner Inlet. More localised areas occur farther south towards Wilsons Promontory, where the most southerly mangrove stands in the world occur, at Millers Landing.

The park includes habitat for a range of marine invertebrates and is very important as a spawning, nursery and feeding habitat for a variety of fish, including King George whiting, calamari, rock flathead, dusky flathead, flounder and sea garfish; and less so for Australian salmon, yellow-eye mullet, pilchards and silver trevally.

The park is also important as a feeding and roosting area for international migratory waders. The park provides breeding, feeding, and resting areas for oceanic birds, such as fairy, little, crested and Caspian terns. Corner Inlet is the most important area for waders in Victoria both in terms of numbers and species diversity. It supports up to 50% of Victoria's migratory waders and 21.5% of Victoria's total wading bird population.

The birds feed when intertidal flats are exposed and conserve energy by using roosting sites at high tide, close to feeding areas. Beaches, rocky outcrops and other high points provide high-tide roosting sites. Their feeding areas may include intertidal flats, lagoons or other shallow inshore waters where beds of algae or seagrasses provide food for the waders.

Some species are unable to exploit alternative areas if their traditional sites are disturbed or become unsuitable; roosting birds are very susceptible to disturbance from people coming too near, and by boats approaching or landing

near the roosting sites at high tide. The waders' use of feeding areas, especially those closest to the roosts which provide the longest feeding time, is also very sensitive to activities which may disturb bird feeding patterns or the flats themselves.

The whole of the park is within a wetland listed under the Ramsar Convention, to which Australia is a signatory. The protection of a number of the wader species and their habitat is also subject to international obligations under bilateral agreements with both Japan and China.

The terrestrial lands of the park surrounding the water body contain extensive areas of saltmarsh and, in places, *Melaleuca* thickets, heaths and eucalypt woodlands. These communities also occur on the barrier islands within the park and support a range of fauna.

The marine park also contains a number of sites of geological and geomorphological significance. The barrier island system of the Nooramunga sector has been classified as of national importance, and the entire Corner Inlet sector is of State significance. Individual sites of significance include the sequence of beach ridges on Snake Island, the barrier island of Clonmel Island, and the tidal entrances and deltas in the east of the park. Some of the mangrove islands, river estuaries and headlands are also geomorphologically significant.

### Recreation

The Corner Inlet/Nooramunga area as a whole is regarded as one of the best recreational fishing areas in Victoria. Nearly all fishing is boat-based because of the limited shoreline access. Boat access is available, mainly from Port Welshpool and Port Franklin but also from Duck Point via Middle Channel. Other launching locations for small fishing boats are Port Albert, Manns Beach and McLoughlins Beach. Port Albert or McLoughlins Beach are used mainly by those who wish to fish outside the inlet along Ninety Mile Beach.

The amount of recreational fishing in the inlet has increased significantly in recent years. In general, most fishing tends to take place in the deeper channels. King George whiting and flathead are the species most often sought, with a much smaller number of anglers targeting snapper, gummy shark and Australian salmon. A major recreational fishing activity is hand-spearing for flounder.

## Commercial use

The Corner Inlet–Nooramunga area supports the third-largest bay or inlet commercial fin fishery in Victoria. Thirty-three commercial licence holders are currently endorsed to fish in the inlet, although this will be reduced to 20 under the existing licence consolidation policy. The commercial fishing effort is spread throughout the inlet, targeting more than 20 species. The main fishing methods are mesh-netting and, to an increasing extent, haul-seining. The exact location (for example, channel, channel edge or shallows) depends on the species sought and the techniques employed. The total recorded catch has remained fairly constant over the past 50 years, although this pattern is not necessarily followed for all species and some catches have actually increased. A voluntary code of practice is in place which limits fishing effort.

Some charter boats offer diving and fishing expeditions in the inlet.

Parts of the Nooramunga sector of the park are considered to offer good potential for rack cultivation of shellfish. Pilot studies have identified the area around Sunday Island as having particular potential for this activity.

### RECOMMENDATION

A17 That the area of 52,450 ha indicated on Map A be used in accordance with Recommendation A1;

and that:

- (i) the taking of flounder with a hand-held spear be permitted in locations to be determined by the manager (see Note 2);
- (ii) commercial fishing for fin fish species by mesh-netting and haul-seining using single boat 'ring-netting' shots (if gear and methods are modified to ensure minimal damage to seagrass beds) be permitted, the timing and length of the season, size and bag limits and other conditions to be determined by the manager;

*(continued)*

- (iii) opportunities for marine aquaculture be provided in the area hatched on Map A, subject to the process and conditions required for Preferred Marine Aquaculture Areas as outlined in Chapter 3;

and that

- (iv) provision be made for the ongoing use of the existing boat ramps and jetties at Townsends Point, Robertsons Beach, Manns Beach and McLoughlins Beach;
- (v) channel marking be improved to limit inadvertent boating activity across intertidal mudflat areas;
- (vi) the existing community consultative group be continued, to assist management planning.

Notes:

- 1 The park includes the narrow public land strip which surrounds the entire water body, as well as all of the islands other than Sunday Island, which is freehold and the islands in the Corner Inlet sector which form part of the Wilsons Promontory National Park. The camping ground at Townsends Bluff is not included, nor are the foreshore areas of Port Franklin, Port Welshpool and Port Albert (the last being within the existing Nooramunga Marine and Coastal Park) and the port areas of Barry Beach and Port Welshpool and their associated maintained access channels.
- 2 It is not the Council's intention that existing regulations prohibiting flounder spearing in the Corner Inlet sector of the park be changed.
- 3 This is the only marine park in which marine aquaculture is to be permitted. Council is aware that it may be necessary to make specific legislative provision for long-term leases to be issued to ensure security for any marine aquaculture operation. It is Council's intention that the individual aquaculture sites would occupy a small proportion of the total permitted area.
- 4 The park includes the B19 Corner Inlet Sanctuary Zone.

## A18 POINT RICARDO

The proposed Point Ricardo Marine Park lies between Marlo and Cape Conran. It abuts the Sydenham Inlet – Cape Conran Coastal Park.

### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (calcareous) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Eastern Biophysical Region (see Table 5.1).

The broken, low-relief calcareous reefs within the park may be remnants of dune systems that formed when sea-levels were lower. Unbroken, probably granitic, reefs also occur. The calcareous reefs support populations of sponges, bryozoans and ascidians. Those with higher relief support a more diverse reef flora and fauna.

Two previous studies that included the park found an exceptionally high diversity of subtidal soft sediment fauna – higher than has been found in any survey of similar substrata anywhere in the world. In total, 570 species have been identified within 6 km of the shore from three areas: east of Lake Tyers, off Waygara (near Marlo), and off Cabbage Tree (between Point Ricardo and Cape Conran). The park (which includes the Cabbage Tree site) is considered representative of the species diversity characterising the Lake Tyers to Cape Conran area.

The park adjoins sites significant for a number of flora and fauna species which occur in a relatively undisturbed primary dune scrub, and in sedgeland, herbland and wetland habitats. The area from Point Ricardo to Wingan Inlet is of national significance for terrestrial flora and fauna.

### *Recreation*

The park offers a range of recreational opportunities. Good boat access to the park can be obtained from boat ramps at nearby Marlo and Cape Conran. While the areas at the extremes of the park receive relatively high visitation, the central sector of the park offers more remote experience.

Point Ricardo is the most popular location for surf-fishing in the park, and fishing is also undertaken at the eastern extremity of the park

near Cape Conran. The remainder of the park is not a significant destination for beach fishing, due primarily to its relatively limited accessibility. The access from land is limited to Point Ricardo and Cape Conran.

### *Commercial use*

Some limited abalone and rock lobster harvesting occurs within the area. Abalone fishers from Mallacoota use this area occasionally and one rock lobster fisher operates here. Some otter-board trawling also occurs, as do low levels of long-lining, mesh-netting, purse-seining and Danish-seining. Danish-seining and otter-board trawling are to be excluded from the park. The area is within an area considered highly prospective for oil and gas.

## RECOMMENDATION

**A18** That the area of 5100 ha (extending 5.5 km seaward from high water mark) indicated on Map A be used in accordance with Recommendation A1.

### *Note:*

The park includes the B20 Cabbage Tree Sanctuary Zone.

## A19 POINT HICKS

This park extends 1 km offshore and is centred around Point Hicks. The park abuts Croajingolong National Park. It is narrower than other recommended marine parks providing protection of mainly recreational values and it complements the Rame Head Marine Park.

### *Biophysical representation and other nature conservation values*

This area is within the Eastern Biophysical Region (see Table 5.1) and contains rocky granitic reefs, inter-tidal sandy beaches and soft substrate subtidal habitats.

Point Hicks has a high diversity of intertidal invertebrates. The known nearshore reefs consist of large smooth boulders covered with kelp canopies, sponges and ascidians. Most of the seabed in the remainder of the park consists of silt and coarse sand.

The park adjoins significant sites for a number of flora and fauna species, including waterbirds and amphibians in wetland habitats.

### *Recreation*

The rich marine life of the Point Hicks area, its colorful algal growth and wide variety of reef fishes offers an attractive site for snorkelling. The indentations of the coastline provide a wide range of such snorkelling opportunity. The area is readily accessible, with good road access to the park available from Cann River, an hours drive away.

Two camping areas, at the mouths of the Thurra and Mueller Rivers, adjoin the park. These also provide a focus of day visitor use. The ocean beaches at these localities are of high quality, with the walk from the mouth of the Thurra River to the nearby Point Hicks lighthouse also popular. At Mueller River there is safe swimming and canoeing in the Inlet.

Campers based at the major camping area at Thurra River and the large numbers of day visitors provide a considerable potential for marine and land based interpretation programs. The nearby lighthouse reserve has potential to become a focus for recreation and marine interpretive programs as well as a convenient base from which to conduct marine research.

Fishing is popular and salmon, gummy shark and occasional flathead are sought from beaches adjacent to the Thurra and Mueller River camping areas. Fishing of the estuaries adjoining the marine park is also popular.

### *Commercial use*

Rock lobster and abalone are harvested in the park.

### *Other issues*

Ownership of the Point Hicks lighthouse reserve has been recently transferred from the Commonwealth to Victoria. The lighthouse is situated immediately adjacent to the marine park. The Council believes that the future use of this facility should be compatible with the values of the Croajingolong National Park and the recommended marine park.

## RECOMMENDATION

**A19** That the area of 1000 ha, indicated on Map A, be used in accordance with Recommendation A1 outlined above.

## A20 RAME HEAD

The recommended Rame Head Marine Park extends from west of Rame Head to the mouth of Red River. The park abuts Croajingolong National Park, including the declared Sandpatch wilderness area.

### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (granitic) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Eastern Biophysical Region (see Table 5.1).

The rocky coast of East Gippsland is of considerable biogeographic interest because it occurs close to the boundary of two continental-scale biogeographic provinces. There is considerable affinity between the faunal assemblages of intertidal rocky shores in eastern Victoria and those in southern New South Wales. This is probably related to higher sea temperatures resulting from the pronounced influence here of the relatively warmer East Australian Current. This biogeographic boundary is probably also associated with past major geological and climatic events which have resulted in the broad configuration of Bass Strait.

Rame Head has one of the highest recorded diversity of intertidal invertebrates found on granite substrates in Victoria. One of the small nearshore reefs is known to be covered by a light kelp canopy and sparsely covered by ascidians, and is also associated with rich and diverse fish communities. The substratum recorded in this area is mostly sand covered by silt. At a depth of about 80 metres, on the extremity of the park, there are extremely diverse aggregate clumps of sessile animals, up to two metres in diameter. These clumps, comprising sponges, hydroids, bryozoans and gorgonians, provide excellent habitats for other organisms, including many species of small fish and crinoids.

The park adjoins significant sites for a number of flora and fauna species, including species of waterbirds and amphibians in wetland habitats.

The Skerries, small islands off Wingan Inlet, support breeding colonies of crested terns and Australian fur-seals.

### *Recreation*

Public roads adjacent to the area provide access to Wingan Inlet and, during summer, to the rear of Petrel Point beach on a four-wheel-drive track. A number of walking tracks lead to the beaches (for example, at Petrel Point and Red River) but walking along the coast is challenging because of rugged cliffs and a number of deep, wide gutters.

While boat access is mostly limited because of the distance from the launching ramps at Cape Conran and Mallacoota, there is access for small boats via Wingan Inlet. A small camping ground at Wingan Inlet adjoins the park.

The main recreational activity in the park is nature observation. For example, one of the great attractions is observing Australian fur-seals on the Skerries either from the shore, boat, or while scuba-diving. Many seabirds, such as gannets, giant petrels, terns and cormorants, can be seen quite frequently. Generally, the underwater scenery is spectacular and recreational diving is popular.

There is some ocean-beach fishing for Australian salmon, tailor, and occasionally gummy shark (at, for example, Wingan Inlet and Fly Cove immediately west of Rame Head). Recreational diving for abalone and rock lobster, and spearfishing, also occurs but to a limited extent.

### *Commercial use*

Rock lobster and, in particular, abalone are harvested from the park. Some Danish-seining and otter-board trawling also occurs within the park in the deeper offshore sectors. These techniques are to be excluded from the park. Purse seining has also been recorded, and sea urchin harvesting may occur.

### *Alternatives*

Council investigated a number of possible sites for a park and sanctuary zone to provide representation of, in particular, the intertidal and

subtidal rocky granite reef habitats in the Eastern Biophysical Region. These sites included Point Hicks and Clinton Rocks. Council's offshore survey indicated that there was little reef in the Clinton Rocks area. The reefs of Point Hicks and Rame Head were comparable. Council resolved to retain its previously recommended park and sanctuary zone at Rame Head, but also recommended a smaller narrow marine park at Point Hicks without a sanctuary zone.

## RECOMMENDATION

**A20** That the area of 8450 ha (extending 5.5 km seaward from high water mark) indicated on Map A be used in accordance with Recommendation A1.

Note:

The park includes the B21 Rame Head Sanctuary Zone.

## A21 CAPE HOWE

The proposed Cape Howe Marine Park lies at the eastern extremity of the State, at the New South Wales border. It abuts the Cape Howe wilderness area of the Croajingolong National Park.

### *Biophysical representation and other nature conservation values*

This park provides for representation of rocky (sandstone) intertidal and subtidal habitats, intertidal sandy beaches and subtidal soft substrate habitats within the Eastern Biophysical Region (see Table 5.1). Rocky (granitic) habitats also occur.

Like the Rame Head area, this section of coastline is of considerable biogeographic interest, for the reasons previously outlined in the description of Rame Head Marine Park.

The park contains a high diversity of intertidal and shallow subtidal invertebrate species. A number of 'New South Wales' species not recorded elsewhere in Victoria occur this region. Offshore sandstone reefs observed in the park to about 50 metres depth are known to be heavily covered by a diverse array of sponges, hydroids, ascidians and gorgonians. Sparse patches of red algae are encountered on some reefs. Further

offshore, the seabed includes soft substrata composed of shell rubble and silt.

This park, as do others that contain some shallow coastal waters with rocky reef habitat, provides important breeding, nursery and feeding grounds for sedentary, territorial reef fish such as leatherjackets, wrasses, boarfish, dusky morwong, rock cod, rock ling, flathead and grass whiting. It also likely to be an important nursery and feeding ground for more mobile species such as Australian salmon, short-fin and long-fin sea pikes, barracouta, juvenile blue and spotted warehou, blue mackerel, yellowtail kingfish, yellowtail scad and calamari squid.

Gabo Island, which is surrounded by the marine park, is home to the largest little penguin breeding colony in the State.

### *Recreation*

Most of the coast consists of sandy beaches with interspersed intertidal rocky reefs, very remote from vehicle access. They can, however, be reached by walking along the shoreline.

Boating access from Mallacoota Inlet to the park can be difficult and this therefore limits offshore boating to some extent. Most of the boat-based recreational fishing from Mallacoota occurs between Gabo Island and Mallacoota. Fish taken include flathead, snapper, bream and kingfish. The area, particularly around Gabo Island, is used by recreational abalone and rock lobster divers and for spearfishing.

### *Commercial use*

Rock lobster and abalone are harvested from the park. The South-East Trawl fishery operates in waters deeper than 60 m (2 to 3 km offshore) on suitable seabeds. Danish-seine boats from Lakes Entrance and trawlers from Eden also fish the area, but these activities, together with haul seining, are to be excluded. Other commercial fishery techniques recorded in the park are long-lining and mesh-netting for scale fish, trolling, and purse-seining.

### *Other issues*

The Gabo Island lighthouse, immediately adjacent to the park, was transferred from the Commonwealth to Victoria in late 1995. The Council believes that this facility could provide opportunities for a research and interpretation centre and should be managed so that it is

compatible with the values of the Croajingolong National Park and the recommended marine park.

## **RECOMMENDATION**

**A21** That the area of 6100 ha (extending 5.5 km seaward from high water mark) indicated on Map A be used in accordance with Recommendation A1.

### Notes:

- 1 The park includes the B22 Cape Howe Sanctuary Zone.
- 2 The eastern boundary of the park abuts the New South Wales border.
- 3 Council is aware that the New South Wales Government is investigating the abutting area as a potential marine park.

## **SANCTUARY ZONES**

The Council considers it important that some areas be given the highest level of protection as part of the protection of biodiversity. The identification of areas as benchmarks for scientific reference is also considered an important planning principle. While this has been mainly applied to terrestrial systems, the principle is equally important for marine systems. For example, the assessment of the implications of scallop fishing in Port Phillip Bay would have been assisted if suitable areas had remained unutilised to provide a baseline for comparison with utilised areas.

Terrestrial reference areas are tracts of public land containing viable samples of one or more land types that are relatively undisturbed and that are reserved in perpetuity. People concerned with studying land for particular comparative purposes may then refer to such areas, especially when attempting to solve problems arising from the use of land. In the marine context, areas set aside for scientific reference should include typical examples of the range of marine environments, including those that have been used elsewhere for activities such as fishing, dredging and spoil disposal, and intensive recreation. The causes and effects of human alteration and utilisation now and in the future can be measured against relatively stable natural environments located within such areas.

The Council acknowledges that areas set aside for scientific reference in the marine

environment will be managed in a different way from terrestrial reference areas, given that it will be necessary to allow a greater range of uses in the marine areas. For this reason the Council is proposing to use the term Sanctuary Zone to distinguish these marine areas from terrestrial reference areas.

In common with references and standards used in other fields, Sanctuary Zones should not be tampered with, and natural processes should be allowed to continue undisturbed. They should be large enough to be viable.

Setting aside such areas will enable continued study of natural features and processes; for example, the interrelationship of flora, fauna and habitat. In marine areas there are many uses that require benchmark sites if their impacts are to be assessed. These include physical, chemical and biological impacts of changes in water quality due to discharges; changes due to the harvesting of a particular size and species of fish or shellfish; and impacts of human trampling on intertidal rock platforms.

In the marine environment, Sanctuary Zones may act as nursery areas and be a potential source of replenishment of marine resources through natural movement to adjacent waters.

The Council is proposing that Sanctuary Zones be proclaimed under the *Reference Areas Act 1978*, which provides for the Minister to issue directives for protection, control and management. An advisory committee, established under the Act, assists the Minister.

All Sanctuary Zones are within recommended marine parks to facilitate their management and, in most cases, to provide a buffer from threatening processes. As with the other areas within marine parks, Sanctuary Zones extend 200 metres below the sea-floor, and most extend offshore to the Victorian territorial limit of 5.5 km. Detailed maps of each Sanctuary Zone are included in the back of this report. The biophysical regions referred to in the zone descriptions are described in Table 5.1.

## SANCTUARY ZONES

### RECOMMENDATIONS

**B1** That the areas listed and described below and indicated on Map A be used to:

- (i) maintain natural ecosystems as a reference to which those concerned with studying the marine environment for particular comparative purposes may be permitted to refer, especially when attempting to solve problems arising from the use of the marine environment

that the following activities be permitted:

- (ii) nature observation, scuba-diving, snorkelling, surfing, swimming, boats using sail and other non-motorised craft, and wind-surfing
- (iii) boating using motorised craft, subject to the timing and season, speed and mooring restrictions, and other conditions to be determined by the manager, unless where specifically not permitted in particular marine parks in accordance with Recommendations B8, B10, B14 and B19 below;
- (iv) non-manipulative research, subject to permit;

that

- (v) other uses and activities not be permitted;

and that they be proclaimed under the *Reference Areas Act 1978*.

Note:

- 1 Council considers that it would be desirable for the *Reference Areas Act 1978* to be amended to specifically refer to the sanctuary zones as a special form of reference area.

### Sanctuary Zones

B2	Lady Julia Percy Island
B3	Lake Gilllear
B4	Port Campbell
B5	Glenaire
B6	Point Addis
B7	Harold Holt
B8	Swan Bay
B9	Popes Eye
B10	Ticonderoga Bay
B11	Point Cook
B12	Ricketts Point
B13	The Nobbies
B14	Western Port
B15	Bunurong
B16	Cape Liptrap
B17	Shellback Island
B18	Wilson's Promontory
B19	Corner Inlet
B20	Cabbage Tree
B21	Rame Head
B22	Cape Howe

#### B2 Lady Julia Percy Island

This Sanctuary Zone encompasses part of the Lady Julia Percy Island reef and extends to the mainland. It is within the Lady Julia Percy Island Marine Park and includes examples of rocky (basaltic) and soft substrate intertidal and subtidal habitats within the Western Biophysical Region.

#### B3 Lake Gilllear

This Sanctuary Zone lies to the west of Childers Cove. It is within the Lake Gilllear Marine Park and contains examples of rocky (calcarene) intertidal and subtidal habitats and soft substrate subtidal habitat within the Western Biophysical Region.

#### B4 Port Campbell

This Sanctuary Zone lies between Broken Head and Gibsons Steps. It is within the Port Campbell Marine Park and includes examples of rocky (limestone) and soft substrate intertidal and subtidal habitats within the Western Biophysical Region.

#### B5 Glenaire

This Sanctuary Zone is centred on Rotten Point. It is within the Glenaire Marine Park and contains examples of rocky (sandstone) intertidal and subtidal habitats and soft substrate subtidal habitat within the Otway Biophysical Region.

#### B6 Point Addis

This Sanctuary Zone is centred on Point Addis (but excludes the Addiscott Beach). It is within the Point Addis Marine Park and contains examples of rocky (limestone) intertidal and subtidal habitats and soft substrate subtidal habitat within the Central Biophysical Region.

#### B7 Harold Holt

This Sanctuary Zone extends from Borg Rock to London Bridge. It is within the Harold Holt Marine Park. It contains examples of rocky (calcarene) intertidal and subtidal habitats and soft substrate subtidal habitats within the Central Biophysical Region.

#### B8 Swan Bay

This zone is within the Port Phillip Heads Marine Park and includes examples of *Heterozostera* and *Zostera* seagrass beds and intertidal and subtidal mudflats. It abuts a wide zone of relatively unmodified saltmarsh and includes (on its eastern edge, near Black Billy Point at the mouth of Swan Bay) a high tide roost used by waders.

### RECOMMENDATION

B8 That the Swan Bay Sanctuary Zone be used in accordance with recommendation B1, and that:

- (i) boating using motorised craft not be permitted, other than when necessary for public safety.

#### B9 Popes Eye

Popes Eye, although an artificial bluestone structure, has nonetheless been colonised over time by a diversity of species that prefer hard substrata. This Sanctuary Zone offers a special opportunity to observe such marine environments in Port Phillip Bay. A number of bird species breed there and seals are often sighted in its vicinity. It provides a special opportunity for interpretation, learning and enjoyment.

#### B10 Ticonderoga Bay

This Sanctuary Zone is within the Port Phillip Heads Marine Park, on the northern edge of

Point Nepean. It includes examples of intertidal and subtidal rocky reef, intertidal sandy beaches, and subtidal soft sediment habitats within Port Phillip Bay. The zone also encompasses a stretch of water which is a nursery area for bottlenose dolphins.

#### RECOMMENDATION

**B10** That the Ticonderoga Bay Sanctuary Zone be used in accordance with recommendation B1 and that:

- (i) boating using motorised craft be subject to strict speed restriction and, where necessary, periodic exclusion, to ensure that the dolphins are not disturbed.

#### **B11 Point Cook and B12 Ricketts Point**

These two Sanctuary Zones provide high-level protection to examples of the two main reef habitats occurring in the northern part of Port Phillip Bay. The two habitats represented are intertidal and subtidal reefs of basalt (Point Cook) and sandstone (Ricketts Point). They are both readily accessible and, with appropriate management, provide a special opportunity for interpretation, learning and enjoyment.

#### **B13 The Nobbies**

This Sanctuary Zone is centred on Summerland Bay and extends offshore to the edge of the territorial waters. It is within the Nobbies Marine Park and includes examples of rocky (basalt) and soft substrate intertidal and subtidal habitats within the Central Biophysical Region.

#### **B14 Western Port**

This Sanctuary Zone is within the North Western Port Marine Park on the northern edge of French Island. The zone includes examples of *Heterozostera* and *Zostera* seagrass beds, mangrove communities, and intertidal and subtidal mudflats and channel systems. It abuts one of the least-disturbed shorelines of the Bay and includes seagrass beds that were amongst those least affected by the dieback of the late 1970s and early 1980s.

#### RECOMMENDATION

**B14** That the Western Port Sanctuary Zone be used in accordance with recommendation B1 and that:

- (i) boating using motorised craft not be permitted south of the main channel which divides the Sanctuary Zone, other than when necessary for public safety.

#### **B15 Bunurong**

This Sanctuary Zone extends west from Eagles Nest and is within the Bunurong Marine Park. It includes examples of rocky (sandstone) and soft substrate intertidal and subtidal habitats within the Central Biophysical Region.

#### **B16 Cape Liptrap**

This Sanctuary Zone lies east of Cape Liptrap. It is within the Cape Liptrap Marine Park and contains examples of rocky (greenstone) intertidal and subtidal habitats and soft substrate subtidal habitat within the Central Biophysical Region.

#### **B17 Shellback Island**

This Sanctuary Zone extends offshore from Darby Beach and includes Shellback Island. It is within Wilsons Promontory Marine Park and contain examples of rocky (calcarenite) and soft substrate intertidal and subtidal habitats within the Wilsons Promontory Biophysical Region. Shellback Island itself is granite.

#### **B18 Wilsons Promontory**

This Sanctuary Zone extends south from Cape Wellington and includes Waterloo Bay and an area offshore from South East Point. It is within Wilsons Promontory Marine Park and contain examples of rocky (granitic) and soft substrate intertidal and subtidal habitats within the Wilsons Promontory Biophysical Region.

#### **B19 Corner Inlet**

The Sanctuary Zone extends south from Cape Wellington and includes Waterloo Bay and an is on the southern edge of Corner Inlet within the Corner Inlet - Nooramunga Marine Park. It abuts the Wilsons Promontory National Park,

the adjoining part of which is a declared wilderness area. The zone includes examples of *Posidonia* seagrass beds, intertidal sandy beaches, and intertidal mudflats. Three of the more significant wader roosts of the Corner Inlet – Nooramunga area are included in the zone.

#### RECOMMENDATION

**B19** That the Corner Inlet Sanctuary zone be used in accordance with recommendation B1 and that:

- (i) boating using motorised craft not be permitted, other than when necessary for public safety.

#### **B20 Cabbage Tree**

This Sanctuary Zone lies due south of Cabbage Tree. It is within the Point Ricardo Marine Park

and includes examples of soft substrate intertidal and subtidal habitats and rocky (calcarenite) subtidal habitat within the Eastern Biophysical Region.

#### **B21 Rame Head**

This Sanctuary Zone extends eastward from Wingan Point for some 3 km, but excludes The Skerries. It is within the Rame Head Marine Park and includes examples of rocky (granite) and soft substrate intertidal and subtidal habitats within the Eastern Biophysical Region.

#### **B22 Cape Howe**

This Sanctuary Zone extends from the Victoria – New South Wales border to the west of Iron Prince Reef. It is within Cape Howe Marine Park and contains examples of rocky (sandstone) and soft substrate intertidal and subtidal habitats within the Eastern Biophysical Region.

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## 6. COASTAL WATERS RESERVE

The Coastal Waters Reserve occupies the major portion of Victoria's marine area. The primary objective for the reserve is to provide for a diverse range of recreational and commercial activities that are compatible with the zone's long-term sustainable use and the integrated management of Victoria's marine, estuarine and

coastal area. While most of the reserve is envisaged to be available for multiple uses (the General Use Zone), priority is to be given to particular uses in certain parts of the reserve (the Port Access Zone, Special Management Zone and Preferred Marine Aquaculture Areas).

### COASTAL WATERS RESERVE

#### RECOMMENDATION

- C1 That the area shown on Map A be used:
- (i) to provide for a diverse range of recreational and commercial activities that are compatible with the maintenance of the long-term sustainability of the marine environment;
  - (ii) in accordance with the principles and guidelines for Victoria's marine, estuarine and coastal area as outlined in Chapters 3 and 4 of this report;
- that
- (iii) the values of the Special Management Zones, as defined below, be protected;
- and that the area be permanently reserved under the *Crown Land (Reserves) Act 1978* and managed by the Department of Natural Resources and Environment.

#### GENERAL USE ZONES

The majority of the Coastal Waters Reserve has been zoned General Use.

#### RECOMMENDATION

- C2 That the areas shown on Map A be used in accordance with Recommendation C1 and that all existing legal uses or activities be permitted, subject to:
- (i) the maintenance of long-term sustainability;
  - (ii) the compatibility of different uses of the same area; and
  - (iii) the achievement of the integrated management of all zones in Victoria's marine, estuarine and coastal area.

#### PORT ACCESS ZONES

This zone encompasses the maintained channels to the State's major ports and associated anchorage and spoil disposal areas.

#### RECOMMENDATION

- C3 That the areas listed below and shown on Map A be used, where applicable and unless inconsistent with the recommendations below, in accordance with Recommendation C1, and to:
- (i) provide for the safe navigation of vessels and for shipping access to ports;
- and that
- (ii) periodic maintenance dredging and capital works dredging be permitted, provided they are in accordance with the guidelines outlined in Chapter 3 of this report.

Note:

The recently established Victorian Channels Authority is responsible for the management of the port access channels.

### Port Access Zones

- 1 Port Phillip Heads (The Rip, West Channel and South Channel)
- 2 Geelong Arm (Hopetoun, Wilson Spit, Point Richards and Point Wilson Shipping Channels)
- 3 Port of Melbourne (Station Pier and Webb Dock/Yarra River Shipping Channels)
- 4 Western Port (Western Passage and North Arm)
- 5 Port Welshpool (Lewis Channel and Barry Beach Channel)

## SPECIAL MANAGEMENT ZONES

The Special Management Zone has been established in order to ensure that areas of special value are identified and that they are managed appropriately.

The areas recommended for inclusion within Special Management Zones contain a range of special values, including:

- particularly diverse intertidal rocky shores and shallow subtidal reefs, which extend to 1 m below low-tide level and have a high diversity of marine invertebrates
- bays and inlets which provide important seagrass habitat for invertebrates and fish and intertidal habitat for migratory wading birds, or which contain significant marine and estuarine ecosystems
- areas that provide important opportunities for snorkelling and diving associated with the enjoyment and understanding of natural environments, being those with interesting or spectacular underwater scenery, clear water and varied and colourful marine life; most sites are accessible by boat and some from the shore, providing safer conditions for less experienced snorkellers and divers; most are less than 10 ha
- nursery and 'haul-out' areas for marine mammals such as seals, dolphins, and whales
- areas of special value for recreational or commercial fisheries, such as spawning, hatching or nursery areas.

Individual sites may contain one or more of these values.

### Management Issues

Although each site has different management requirements, a number of generally applicable

issues will need to be addressed by the manager. These include:

- the trampling effect of large numbers of people visiting an intertidal rocky shore
- collection of intertidal flora and, in particular, fauna, which can have major impacts on the diversity and abundance of organisms in intertidal areas
- the removal of marine biota, particularly of sedentary and territorial species, which would diminish the values of these sites for the observation of marine life
- feeding of fish and other marine life, which may have a number of undesirable effects: it may alter the behaviour of marine fauna by making them aggressive and dependent on supplied food, and by attracting large numbers of primarily carnivorous fish; it may create an artificial situation where the opportunity to observe normal species interactions is lost; and some common human foods known to be detrimental to fish health
- the possible need to control other recreational activities or the level of use associated with some sites, to ensure that the quality of experience for snorkellers and divers is maintained
- activities which cause disturbance to the seabed and the associated seagrass habitat
- noise, wave action and direct disturbance associated with boats (including jet-skis), which can adversely affect waders at intertidal roosts, seagrass, shallow reef communities, and marine mammals
- the potential impact of mesh-netting, long-lining and other commercial fishing techniques, such as craypot lines, on marine mammals, particularly near nursery and haul areas.

To address these issues, a range of management tools and techniques will be needed, including a balance of information and regulation. The provision of information to help protect these areas, and public education about the values of the areas and ways in which the community can assist with their protection, are critical. However, the maintenance of site values may require restrictions on other activities, particularly those which cause disturbance to the seabed, involve the removal of biological resources, or affect water quality.

Detailed maps of each Special Management Zone are available on request from the Council.

## SPECIAL MANAGEMENT ZONES

### RECOMMENDATIONS

C4 That the Special Management Zones listed and described below and shown on Map A be used, where applicable and unless inconsistent with the recommendations below, in accordance with Recommendation C1, and to:

- (i) protect the identified special values described below;
- (ii) provide for passive recreation, education and scientific study and other uses if they are consistent with (i) above, and in ways that minimally affect the area, or as otherwise specified;

and that

- (iii) each Special Management Zone be subject to a management plan which identifies appropriate protection measures. The plans are to be prepared in consultation with the community and be in place within three years of the Government's acceptance of these recommendations;
- (iv) minerals and stone and oil/gas exploration be permitted, subject to:
  - (a) an approved environmental management plan
  - (b) the consent of the Minister responsible for the management of the zone;
- (v) minerals and stone and oil/gas extraction be permitted, subject to:
  - (a) an Environmental Effects Statement, or if an EES is not required by the Minister for Planning, an appropriate environmental study which is to be made available for public comment
  - (b) the consent of the Minister responsible for the management of the zone.

C5 That where additional sites with special values are identified, that consideration be given to including such sites within a special management zone.

Note:

The Fisheries Reserve provisions of the *Fisheries Act 1995* may be an appropriate mechanism to implement some of the recommended Special Management Zones. The Council is aware that the *Fisheries Act 1995* will require amendment to provide for fisheries reserves to be established in the Coastal Waters Reserve (being a reserve under the *Crown Lands (Reserves) Act 1978*).

#### Special Management Zones

- C6 Cape Bridgewater
- C7 Murrells Beach
- C8 Cape Nelson
- C9 Portland Bay
- C10 Port Fairy
- C11 Mills Reef - Killarney Beach
- C12 Logans Beach
- C13 Little Henty Reefs, Marengo
- C14 Cape Patton
- C15 Eagles Nest Reef, Aireys Inlet
- C16 Point Danger, Torquay
- C17 Point Impossible
- C18 Capel Sound
- C19 Mushroom Reef, Flinders
- C20 Honeysuckle Reef, Shoreham
- C21 Bass River Delta
- C22 Shelly Beach, Kilcunda
- C23 Andersons Inlet (parts)
- C24 Cape Conran
- C25 Mallacoota Inlet (parts)

#### C6 Cape Bridgewater

This area encompasses a colony of Australian fur-seals approximately 1.5 km north of Cape Bridgewater. It is one of only two mainland seal colonies and may be the only mainland breeding colony in Australia. Because the site is protected from December storms, the seals avoid being washed off the rocks (which frequently occurs at island-based colonies).

Notes:

- 1 Council is aware that a viewing platform has been recently constructed above this site.
- 2 Seine-netting, mesh-netting and long-lining should not occur close to this site.

#### C7 Murrells Beach

This area at the eastern end of Bridgewater Bay encompasses little-disturbed beach and basalt reef systems, with an array of biological communities present. It also offers outstanding opportunities for remote area recreation.

## C8 Cape Nelson

This area encompasses one of only two known fur-seal haul-out areas on the Victorian mainland.

### Note:

Seine-netting, mesh-netting and long-lining should not occur close to this site.

## C9 Portland Bay

This area incorporates an extensive *Amphibolis* seagrass meadow which is located between 1 km and 4 km offshore in Portland Bay.

The seagrass ecosystem represents the main biological and ecological values of this site, which is the only known area of *Amphibolis* seagrass on the open coast in Victoria. The site is also one of only two locations where the rare brown alga *Cystophora cymodocea* occurs. This species is an epiphyte on *Amphibolis antarctica*.

### Note:

It is important that sand transport operations associated with the maintenance of Portland harbour are carried out in a manner that does not affect the seagrass.

## C10 Port Fairy

The basaltic shore platforms and shallow subtidal reefs at Port Fairy have the highest recorded invertebrate diversity in western Victoria, exceeded in the State only by the sites at Flinders and Shoreham (see C19 and C20). The zone includes the Pea Soup area.

## C11 Mills Reef - Killarney Beach

The basaltic shore platforms and shallow a subtidal reefs offer habitat for a diversity of reef fish and seabed flora.

The emerged shore platform, indicating the high Holocene sea-level, is of geological and geomorphological significance. The reefs provide a breeding site for the crested tern (a species with few breeding sites in Victoria) and silver gull. A number of migratory waders make use of the area, and are found particularly on the wetlands in the adjoining coastal reserve.

### Note:

Restrictions may need to be placed on the level of recreational fishers, including spearfishing, to ensure the protection of reef fish species.

## C12 Logans Beach

The Logans Beach area, near Warrnambool, is a southern right whale breeding and nursery area. This whale is listed as an endangered species both at a National and a State level. It was listed under the *Flora and Fauna Guarantee Act* (1988) in 1990, but its critical habitat under this Act has not yet been determined. The whales congregate in this area every year from about May to October and breed approximately every three years. The exact boundaries of the breeding area are not known, but whales with their young are often seen at Logans Beach. The whales move along the shore between a point 2 km east of Warrnambool (south of Lake Gilliear) and Port Fairy, up to 1.5 km offshore.

### Note:

The Council is aware of a code of practice signed between commercial fishers and the former Department of Conservation and Natural Resources. The code includes a fishing-free zone while whales are present in the Logans Beach area.

## C13 Little Henty Reefs, Marengo

The Little Henty Reefs are two small reefs at Marengo, near Apollo Bay, that provide excellent diving and snorkelling opportunities, mainly for experienced divers. The values of the reefs at this site were identified in submissions to the Council.

The Henty reefs are the only offshore reefs between Cape Schanck and Peterborough that are exposed at low tide and therefore have a good mix of nearshore and offshore subtidal species. The leeward side of the reefs is relatively sheltered and can provide protected conditions unusual for the reef habitat in this high-wave-energy coastline. In suitable weather the reefs are readily accessible by boat from the harbour at Apollo Bay, or by swimming.

Because of their location and configuration, the reefs provide a wide variety of microhabitats in a very small area. Bull kelps and other seaweeds grow densely on the reefs, with an abundance of soft corals, sponges and marine invertebrates. Preliminary surveys indicate there is similar but more diverse assemblage of reef fish compared with other inshore reefs along the Otway coastline. Australian fur-seals use the reefs as a resting area, and seabirds use them for feeding and resting.

The remains of two ships wrecked on the reefs provide additional interest for divers.

Note:

Restrictions may need to be placed on the level of recreational fishing, including spearfishing, to ensure the protection of reef fish species.

#### C14 Cape Patton

The offshore subtidal sandstone reef to about 10 m depth is dissected by ledges, cracks and gutters, and is abundant in fish, algae and abalone. The kelps *Phyllospora* and the biologically important forest-forming giant kelp *Macrocystis* provide the dominant cover.

#### C15 Eagles Nest Reef, Aireys Inlet

This series of shallow, offshore limestone reefs provides opportunities to observe prolific marine life in its natural environment. The site can be reached from the beach, and when weather and sea conditions are suitable it is a good location for snorkellers and divers.

#### C16 Point Danger, Torquay

In addition to having the typically high invertebrate diversity for limestone substrates recorded in Victoria, Point Danger has a very rich opisthobranch (sea-slug) fauna. Of the 96 species of opisthobranchs recorded from this site, approximately 20% are undescribed and 20 species do not occur at the San Remo site.

Note:

Given this site's proximity to a high-use recreational area, special controls and management approaches are likely to be required.

#### C17 Pt Impossible

The area offshore from Pt Impossible consists of predominantly limestone reefs. The reefs vary from flat to quite rough and contain hollows, spurs, grooves, undercuts, crevices, ledges and overhangs, providing a variety of habitats. The marine life is extremely diverse and includes *Macrocystis angustifolia* forests and 70 species of other algae. The area is also abundant in invertebrates.

#### C18 Capel Sound

The soft, sandy substrates of Capel Sound have an abundance and diversity of sponges which is unmatched on sands elsewhere in Port Phillip

Bay. The seagrass *Heterozostera tasmanica* is present.

Note:

Scallop-dredging (which has been permitted in the past in the vicinity) is to cease under recent Government policy for Port Phillip Bay.

#### C19 Mushroom Reef, Flinders

Mushroom Reef at Flinders and Honeysuckle Reef at Shoreham support the most diverse rocky intertidal communities in Victoria. This high diversity may be due to the particularly rich variety of micro-habitats that often occur on basalt substrates (through various substrate textures and crevices) and the range of coastal orientations that provide a combination of exposed and sheltered environments.

The subtidal reef also provides excellent opportunities for underwater recreation. The kelp beds in the shallow waters shelter a variety of small fish, the larger species becoming more abundant in the deeper water. Seagrass beds and a sea dragon colony have also been reported. The site is easily accessible from the beach for both snorkellers and divers, and nearby headlands provide some protection from rough weather.

Note:

Given this site's proximity to a high-use recreational area, special controls and management approaches are likely to be required. In particular, restrictions may need to be placed on the level of recreational fishing, including spearfishing, to ensure the protection of reef fish species.

#### C20 Honeysuckle Reef, Shoreham

Honeysuckle Reef provides a wide range of microhabitats and, along with Mushroom Reef, supports the most diverse intertidal rocky reef community in Victoria.

Note:

Given this site's proximity to a high-use recreational area, special controls and management approaches are likely to be required.

#### C21 Bass River Delta

This zone encompasses an extensive intertidal flat that forms part of the geomorphologically significant delta of the Bass River. The alga *Caulerpa cactoides* occurs there, as well as

seagrasses. The intertidal flats provide foraging areas for waders associated with the adjoining high-tide roost site on Reef Island.

### **C22 Shelly Beach, Kilcunda**

The spectacular rocky subtidal area at Shelly Beach, with its interesting array of marine life, is readily accessible and provides an interesting location for snorkellers and divers.

### **C23 Andersons Inlet (parts)**

Anderson Inlet is recognised by the Royal Australasian Ornithologists Union as the sixth most important area in Victoria for international migratory wading birds, and is thought to have the eighth largest population of waders in Victoria. The migratory waders include knots, plovers, sandpipers and numerous other species.

The zone encompasses the five nest sites and the adjoining intertidal flats. These areas also contain seagrass beds and function as fish nursery areas.

Note:

Council previously recommended this area as a Wildlife Management Cooperative Area.

### **C24 Cape Conran**

Cape Conran provides an interesting and relatively accessible site for divers, who can see the beds of bull kelp and steep granite drop-offs with a rich array of marine life. Water clarity is generally good.

### **C25 Mallacoota Inlet (parts)**

Mallacoota Inlet is the largest estuarine lagoon system in south-eastern Australia, and provides habitat for a wide range of flora and fauna. A wide variety of birds depend on the inlet, including Caspian, little, fairy and crested terns, which breed on Goodwin Sands. Some of these birds are listed under the bilateral JAMBA agreement. At least two species of seagrasses occur in Mallacoota Inlet and provide habitat for fish species. The zone includes the tidal delta area at the entrance to the inlet, and the Goodwin Sands. Both these areas are of geological and geomorphological significance.

Notes:

- 1 Council previously recommended the inlet as a Wildlife Management Cooperative Area.

- 2 Fisheries planning for this inlet will need to ensure a balance between recreational and commercial fishing, aquaculture, and nature conservation values.

## **PREFERRED MARINE AQUACULTURE AREAS**

Preferred Marine Aquaculture Areas have been identified by the Council where opportunities for the development of this activity can be undertaken as a priority use. They are an overlay to recommended use categories. Within these areas, suitable sites are to be determined through a process of consultation between the managing agency, industry, and members of the community who have an interest in the use or amenity of the area. This process will allow site-specific issues to be addressed in order to minimise both the environmental, visual, and aesthetic impacts and any potential conflicts with other users.

### **Recommended Preferred Marine Aquaculture Areas**

Council's recommended Preferred Marine Aquaculture Areas were selected from areas identified on the basis of operational requirements and general site characteristics, and giving recognition to:

- the need to protect and maintain the inherent natural, cultural and landscape values of the coastline
- the existing and potential, uses such as commercial fishing activities, recreational pursuits, tourism and shipping
- the need to maintain a consistent approach towards the longer-term management of these values and uses.

The Council does not regard marine aquaculture as being consistent with the management objectives of Marine Parks or the Special Management Zones of the Coastal Waters Reserve, although for the purposes of integrated management has recommended that this use be permitted in the Corner Inlet – Nooramunga Marine Park (see Recommendation A17). The Council considers it is an appropriate use elsewhere in Victoria's marine, estuarine and coastal area and, in particular, supports its development in the Preferred Marine Aquaculture Areas.

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## PREFERRED MARINE AQUACULTURE AREAS

### RECOMMENDATIONS

**C27** That the Preferred Marine Aquaculture Areas described below and shown on Map A and in the detailed plans at the back of this report be available to provide opportunities for marine aquaculture in accordance with the process and conditions outlined in Chapter 3.

Notes:

- 1 It is Council's intention that sites defined within the Preferred Marine Aquaculture Areas encompass only a small part of the designated area.
- 2 It may be necessary to restrict other uses in the near vicinity of individual marine aquaculture sites.

#### Area 1 – Geelong Arm of Port Phillip Bay

This area encompasses three sectors, and includes the existing sites established off Clifton Springs and Grassy Point. These sectors extend across the Geelong Arm but avoid the high use port and recreational areas and the environmentally sensitive inshore intertidal flats.

The Geelong Arm area is suitable for long-line culture of bivalves and has potential for seaweed, fin fish and abalone culture. However, the impacts of algal blooms causing bitter taste in mussels and the accumulation of cadmium in native oysters may limit further development of these species in this area.

#### Area 2 – East Port Phillip Bay

This area of the Bay includes three sectors taking in three small existing mussel farm sites, but unlike the Geelong Arm area, is not affected by the periodic problems of harmful algal blooms. The sectors of this Preferred Marine Aquaculture Area are offset from the coast to minimise adverse impacts on visual amenity and conservation values, and to reduce potential conflicts with other uses, such as boating and swimming.

Suitable marine aquaculture uses within this area include bivalve culture on long lines, seaweed culture using mesh racks, scallop culture and possibly fish and abalone culture in floating pens.

#### Area 3 – North-west Western Port

This area includes intertidal zones and channels in the north of the bay. The area has a number of access points, such as Tooradin, Blind Bight and Warneet, and has opportunities for shellfish culture on racks and possibly fish culture in deeper water where tidal flow is suitable. There is also scope for siting land-based facilities on adjoining freehold land.

#### Area 4 – South-east Western Port

This area encompasses the waters between north-eastern Phillip Island, French Island and Coronet Bay. Potential sites exist within this area for the offshore culture of mussels or fish, while expanses of intertidal zones provide opportunities for oyster culture.

#### Area 5 – Flinders

The Flinders Preferred Marine Aquaculture Area includes an established area that has previously been set aside for marine aquaculture. Forty-four sites, each of 3 ha, are evenly spaced over a total area of 300 ha.

A small number of sites within the Flinders area used currently being used, solely for mussel culture on long-lines. The area is, however, relatively exposed to open ocean conditions which can lead to equipment damage and maintenance and harvesting difficulties. Other methods that may be suitable in this area include fish cultivation in pens and abalone cultivation in submerged cages.

#### Area 6 – Anderson Inlet

This area contains expansive intertidal environments along both sides of the estuary. The area is suitable for the culture of shellfish, although the estuarine conditions would not suit the culture of the native oyster. The area is divided into five sectors.

#### Area 7 – Sunday Island, Corner Inlet

Surveys and scientific trials indicate that the intertidal flats and channel area has a high potential for shellfish culture.

Note:

This area is within the existing marine and coastal park (see Chapter 5, Recommendation A17).

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### **Area 8 – Mallacoota Inlet**

The conditions for culturing oysters in intertidal areas, and fin fish species such as bream and tailor in the deeper sites, is regarded as good. Opportunities may also exist for bivalve or shellfish culture in some of the deeper sites. The Goodwin Sands are a sensitive site of biological significance and have been excluded.

### **Potential offshore coastal sites**

While not recommending them for inclusion in Preferred Marine Aquaculture Areas, the Council notes that Bridgewater Bay, Nelson Bay, Kilcunda coast and Waratah Bay have particular potential for offshore submerged cage cultivation of abalone, rock lobster, fish or sea urchins, and to a lesser extent for the intensive cultivation of fish in floating cages.

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## 7. COASTAL RESERVE

Victoria is extremely fortunate that, along most of its coastline, the beach and immediate foreshore remain in public ownership and are available for public use. This is a priceless asset which is not enjoyed in many other parts of the world. It is important that this asset is used wisely and that access to, and use of, the coast remains available to all.

The Council's past recommendations for public land along the Victorian coast reflect a wide range of values and uses. At one end of the spectrum are areas with high environmental values that the Council has recommended be included in categories where protection of their natural features and values is the primary management aim (such as national and State parks, nature conservation reserves and reference areas). At the other end of the spectrum are areas required for major ports and port-related industrial developments. The Council's Services and Utilities Reserve category recognises the need for these latter uses.

The Council's Coastal Reserve category provides protection for and recognition of, the often narrow public foreshore area. This area, while often without the outstanding natural values of those areas within Council's parks and nature conservation reserve system, is a focus of recreational use and enjoyment and supports an often fragile coastal ecosystem and landscape. It provides for a wide range of uses.

The Council is recommending that some 540 km (28%) of the length of Victoria's coastline (see Map A), being that portion not within parks and other reserves which provide for a narrower range of land use objectives, be Coastal Reserve.

The recommended coastal reserves encompass some of the State's primary coastal recreation resources. They are the focus for recreational uses such as swimming, fishing, boating scuba-diving and snorkelling, picnicking, sightseeing, relaxing and camping. Consequently, they are also the focus for facilities associated with these uses, such as navigation aids, piers and jetties, marinas and camping grounds. The use of coastal reserves, especially those in and around metropolitan Melbourne on Port Phillip Bay and Western Port, can be expected to increase.

These reserves also cover a wide diversity of land types, including areas which support flora or fauna of State or national significance, sites of special historic and cultural significance, and sections of coastline that are noted for their scenic and informal nature-based recreation values. There are also areas of reclaimed land, pipeline and drainage easements, and areas that have been degraded by inappropriate uses.

### Zoning

Some of the wide range of uses permitted in Council's Coastal Reserve category are incompatible with each other. For example, boat launching and swimming are both consistent with the objectives of the reserve, but they are incompatible with each other and need to be provided for at different locations. In addition, some uses may not be appropriate in a particular location or stretch of coast: uses appropriate on the coastal reserve at Rosebud may not be appropriate on the coastal reserve at Shoreham, nor along the Ninety Mile Beach.

Zoning assists in resolving potential conflicts by indicating which management objectives have priority in particular areas. It thus also provides a basis for assessing future proposals for use and development.

Two zones within the Coastal Reserve category are recommended: one with a focus on the conservation and protection of natural values, and one with a focus on recreational use and associated development. For both zones, detailed planning would be achieved through the processes outlined in the *Coastal Management Act 1995*. The characteristics of the zones are described below.

### Coastal Protection Zone

Most areas included in this zone are in a relatively natural condition. It includes areas which have botanical, zoological, geological or geomorphological significance; important archaeological or historic sites; and fragile sectors that are particularly sensitive to modification. In many included in the zone, road access is limited and only basic visitor facilities, if any, are available.

The primary aim of the Coastal Protection Zone is to protect natural and cultural values. Opportunities may exist to improve public access, provided this is compatible with the protection of identified values.

The Council has assessed the representation of the State's land systems and ecological vegetation classes along the coast within its previously recommended parks and nature conservation reserve system, and concluded that, other than for some land systems and ecological vegetation classes that are of restricted distribution or mainly occur on freehold land, the representation is comprehensive and adequate. The coastal protection zones will complement this system.

Facilities that are generally not appropriate in Coastal Protection Zones include formal picnic areas, playgrounds, camping grounds, major car-parking areas, and boat-launching facilities. In order to maintain the values of this zone, existing facilities of this nature should not be extended, and facilities that are in disuse or disrepair and are without historic or cultural value should be removed.

### Coastal Recreation Zone

Coastal Recreation Zones are areas that can provide recreational opportunities for large numbers of people without undue loss of natural or cultural values. They mostly adjoin residential areas or holiday-orientated townships, and generally provide direct access to the safer beaches and waters.

Detailed management planning will determine areas within the zone which would be appropriate for more intensive recreation (e.g. boat-launching ramps and sailing clubs, or organised events such as surf carnivals), while taking into account the need to balance uses to ensure that opportunities for public access for activities such as swimming, surfing, sightseeing and picnicking are maintained. Detailed management planning would also ensure that where areas of special environmental values occur, they are protected.

### Public Facilities

The following public facilities are appropriate in coastal recreation zones provided they do not interfere with public access or significantly impinge on other values:

- picnic and barbecue facilities
- car-parking areas for beach users
- toilet and change-room facilities

- camping areas
- boat launching and mooring facilities
- constructed lookouts and shelters
- grassed and paved areas, non-indigenous plantings
- renourished beaches
- food outlets.

It is recommended that areas within the zone suitable for appropriate development be identified. The Victorian Coastal Strategy to be developed by the Victorian Coastal and Bay Management Council with community and agency input should provide the framework for the designation of appropriate development sites. In developing these areas, the aim should be to enhance the experience of users by providing high-quality facilities which complement the coastal setting. Continued public access and enjoyment of the coast should remain the overriding priority.

The areas of intense development, although containing facilities catering for large numbers of people, are likely to be relatively localised. The identification of locations where intense development might proceed would give greater certainty to the community than the current system, where development proposals in all areas within coastal reserves are considered in an *ad hoc* manner. Proposals would still be subject to other necessary planning approvals processes.

### Exclusive Use and Private Structures

In many parts of the world, developers or their clients have sought and gained exclusive access to parts of the beach or foreshore. This can significantly reduce the enjoyment of other users. The Council believes that development rights in coastal reserves should not confer exclusive access rights to any organisation or its clients at the expense of public access and enjoyment.

The Council is aware that many permanent and temporary structures and facilities owned and operated by individuals, clubs or other organisations currently occupy coastal reserves or are proposed to be built within them. Structures and facilities such as surf life-saving clubhouses and marinas are considered appropriate within coastal recreation zones, provided they are sited to take account of other uses and values of the coast, and provided that community access is not restricted unduly.

Other facilities in coastal reserves, including bowling clubs, golf clubs, tennis clubs and other

sporting clubs where water-based activities are not the primary focus, were established many years ago. Given that coastal public land is a scarce resource and demand for its use is increasing, but recognising the long-standing use of some of these facilities, the Council believes that, wherever possible, alternative sites for these facilities should be identified with a view to phasing out their use in coastal reserves. New facilities of this type should not be permitted in coastal reserves.

The Council is also aware that many privately owned structures in coastal reserves, such as bathing boxes and boatsheds, are not available for public use. As well as constituting an exclusive use of a limited public resource, these structures can be visually intrusive, restrict public access, use and enjoyment of the beach area, and cause or aggravate erosion. In accordance with its long-standing policy on private structures, the Council believes that these structures, other than those of demonstrated heritage or cultural significance, should be phased out.

#### Delegated Management

The Department of Natural Resources and Environment is responsible for managing most of Victoria's foreshore. The Department is able to delegate management of extensive sections of Coastal Reserve to Committees of Management, and has done so. These committees, which may consist of elected members of the public or be the local municipal council, generally focus their work on the more developed foreshore areas. The role, number and boundaries of Committees of Management are being reviewed by the Department.

Local 'Friends' groups and, more recently, 'Coast Action' groups have been established, and while having no formal powers or responsibilities they have an increasingly important role in the care of coastal reserves. There is also scope for the increased involvement of Aboriginal communities in coastal reserve management.

Since July 1995, the Department of Natural Resources and Environment has had the funding and overall responsibility for Victoria's local ports, now known as 'designated ports'. The day-to-day management of these areas will be undertaken by local committees of management; while designated port facilities within Port Phillip Bay and Western Port are proposed to come under management of Melbourne Parks and Waterways. These areas mostly coincide

with the more developed sectors of Victoria's coastal reserves. The designated ports include facilities such as piers and jetties which were once integral parts of the State's transport system. Today their primary use is mostly for recreation and tourism and, in some instances, the commercial fishing industry. Designation will not affect the actual tenure of the land (which remains Coastal Reserve), but managers will also have powers and responsibilities under the *Marine Act* 1988.

#### Potential Port Development Areas

Areas currently used by the major commercial ports are discussed in Chapter 8. The Council is of the opinion that coastal areas that are not currently required for port purposes, but which have a high capability for such use in the longer term, should be managed as part of the Coastal Reserve until they are required for port development. As discussed in Chapter 8, these include areas at Point Lillias in Port Phillip Bay and Tyabb in Western Port.

#### Boundaries

Council's recommendations for coastal reserves made in previous investigations state that their seaward boundary be the low-water mark. However, the seaward boundaries of the areas actually reserved may be the low-water mark, the high-water mark, or 600 metres to seaward of the high-water mark. The Council has reviewed the boundaries of coastal reserves in the context of an integrated marine and coastal approach.

Most activities undertaken on the developed sectors of Victoria's coastline, such as swimming, boat launching and mooring, beach renourishment and other coastal erosion works, boat speed restriction zones and designated port areas, extend across the intertidal area but are within 600 metres of the high-water mark. The Council has adopted this as the seaward boundary for coastal reserves where they are zoned as Coastal Recreation.

The Council has generally adopted the high-water mark as the seaward boundary for coastal reserves where they are zoned as Coastal Protection, acknowledging that the intertidal area is appropriately included in the adjoining, more marine-oriented Coastal Waters Reserve.

Inland boundaries extend to the boundaries of abutting freehold land.

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## COASTAL RESERVES RECOMMENDATIONS

- D1** That, where applicable and unless inconsistent with the recommendations below, the coastal reserves shown on Map A be used in accordance with the principles and guidelines for the Victorian marine, estuarine and coastal area in Chapter 3, and continue to be used to:
- (i) provide opportunities for recreation associated with the coast for large numbers of people at appropriate sites, and also for activities related to enjoying and understanding nature;
  - (ii) protect and conserve coastal landscapes, ecosystems and significant geological, geomorphological, historical and cultural features for public enjoyment and inspiration and for education and scientific study;
  - (iii) ensure the protection and conservation of important aquatic and terrestrial fauna and flora;
  - (iv) provide access and facilities for fishing and boating, together with the necessary navigation aids;
- furthermore that:
- (v) new roads be located far enough inland to avoid damaging sensitive environments or impairing the scenic qualities of the coastal landscape;
  - (vi) no new non-coastal dependent facilities be permitted and, wherever possible, existing non-coastal dependent facilities should be removed from the coastal reserve (see Note 1);
  - (vii) the extraction of earth resources not be permitted;
  - (viii) coastal reserves be zoned, as shown on Map A, and used in accordance with the recommendations for each zone, as described below;

and that coastal reserves be permanently reserved, except where specified below, under the *Crown Land (Reserves) Act 1978* and managed by the Department of Natural Resources and Environment.

### Notes:

- 1 The Council believes that any review of facilities should be the role of the Victorian Coastal and Bay Management Council and the Regional Coastal Boards.
- 2 Coastal Crown land associated with the Ports of Portland, Geelong and Hastings not currently required for port purposes but having high capability for such use in the longer term, are to be temporarily reserved, pending their requirement for port development.
- 3 The recommended coastal reserves include five areas previously recommended by Council as recreation reserves (being mostly coastal camping grounds): at Kennett and Cumberland Rivers (Recommendations 04, 05, Corangamite), Seaspray (Recommendation 6d, South Gippsland Area District 2), and Bastion Point (Recommendation L4, East Gippsland Review); 'township land' at Walkerville and a 'pipeline easement' (Recommendations T2 and S1 respectively, South Gippsland Area District 2).

## COASTAL PROTECTION ZONES RECOMMENDATION

- D2** That the areas listed below and indicated on Map A be used in accordance with Recommendation D1, and in accordance with the following objectives:
- (i) protect and conserve coastal landscapes, ecosystems and significant geological, geomorphological, historical and cultural features for public enjoyment and inspiration and for education and scientific study;
  - (ii) ensure the protection and conservation of important aquatic and terrestrial fauna and flora;
  - (iii) provide opportunities for recreation associated with the coast and related to enjoying and understanding natural and cultural values consistent with (i) and (ii) above;
- furthermore that
- (iv) facilities for intensive use should not be located in this zone;
- and that their seaward boundary be the high-water mark.

### Coastal Protection Zones

Nelson Bay  
Point Danger  
Double Corner  
Narrawong West  
Narrawong East  
Fitzroy River  
The Craigs  
Old Cemetery  
Griffiths Island  
Belfast Lough  
Port Fairy Bay  
Mills Reef  
Armstrong Bay  
Curdies Inlet  
Storm Point  
Mounts Bay  
Falls  
Cape Patton  
Settlement Creek  
Teddy Lookout  
Reedy Creek  
Cinema Point  
Aireys Inlet  
Point Addis  
The Steps  
Point Impossible  
Breamlea - 13th Beach  
Buckley Park  
Shortlands Bluff  
Mt Martha  
Manton Creek

Harris  
Coles Beach  
Merricks Creek  
Somers  
Woolleys Beach  
Jacks Beach  
Old Tyabb  
Tyabb East  
Rutherford Inlet  
Sawtells Inlet  
Lang Lang Beach/Jam Jerrup  
Grantville  
Old Settlement  
South Corinella  
Andersons Peninsula  
Woolamai Waters  
Griffith Point  
Eagles Nest  
Kilcunda - Cape Paterson  
Andersons Inlet  
Sandy Point  
Point Franklin  
Reeves Beach  
Jack Smith Lake  
McGaurans Beach  
Lake Bunga  
Fishermans Landing  
Lake Corringale  
Snowy River  
Motts Beach  
Betka River  
Karbeethong

## COASTAL RECREATION ZONES

### RECOMMENDATION

D3 That the areas listed below and indicated on Map A and in the detailed plans at the back of this report, be used in accordance with Recommendation D1, and in accordance with the following objectives:

- (i) provide opportunities for recreation associated with the coast for large numbers of people;
- (ii) provide access and facilities for fishing and boating (including slipways, marinas and minor dry storage areas), together with the necessary navigation aids;
- (iii) provide for structures and facilities such as surf life-saving, sailing and boating clubhouses and food services provided they are sited to take account of other uses and values of the coast and provided community access is not restricted unduly;

and that

- (iv) the identified special features described in the schedule below be protected;
- (v) the management planning process involve community consultation to identify areas within the Coastal Recreation Zone in which more intensive development can be undertaken;
- (vi) where consistent with zone objectives, major development projects (such as jetties, marinas, seawalls, reclamation and non-maintenance dredging) be permitted subject to detailed environmental studies and public consultation by the proponent before the work is commenced;

(continued)

## Coastal Recreation Zones Recommendation (continued)

(vii) public access to the zone be maintained and protected;

and that their seaward boundary be 600 metres seaward of the high-water mark, or as described in the schedule below.

### Note:

It is not Council's intention that the whole of the Coastal Recreation Zones be made available for intensive recreation and associated activities.

#### Coastal Recreation Zones

Bridgewater Bay  
Portland  
Narrawong  
Port Fairy  
Killarney Beach  
Warrnambool  
Peterborough  
Apollo Bay/Skenes Creek  
Kennett River  
Wye River  
Lorne  
Eastern View – Fairhaven  
Anglesea  
Bells Beach  
Torquay  
Barwon Heads  
Port Lonsdale  
Queenscliff  
Portarlinton – St Leonards  
Clifton Springs  
Geelong/Corio Bay  
Werribee South  
Altona/Williamstown  
Port Melbourne – Sandringham  
Mordialloc – Chelsea  
Frankston  
Mt Eliza - Mornington  
Mt Martha  
Safety Beach – Portsea

Flinders  
Shoreham  
Point Leo  
Merricks Beach/Balnarring Beach  
Somers  
Stony Point  
Hastings  
Yaringa  
Cannons Creek/Warneet/Blind Bight  
Tooradin  
Corinella  
Coronet Bay  
San Remo  
Newhaven  
Rhyll  
Ventnor – Cowes  
Tankerton/Red Bluff  
Cape Paterson  
Inverloch  
Walkerville  
Waratah Bay  
Port Franklin  
Port Albert  
Woodside Beach  
Seaspray  
Lakes Entrance  
Lake Tyers  
Marlo  
Mallacoota

## SCHEDULE OF SPECIAL FEATURES TO BE PROTECTED IN THE COASTAL RECREATION ZONES

A full listing of sites of geological and geomorphological significance and sites of biological significance based on specially commissioned studies were included as Appendix I and IV respectively in Council's Marine and Coastal Special Investigation Descriptive Report (1993). These listings and the following schedule will need to be continually updated as new information becomes available. There is also a need for a comprehensive assessment of historic values. Many of the recreation zones also contain areas that are of cultural significance to Aboriginal communities and are of archaeological interest. Such values also need to be respected. The schedule also provides details of the zone boundaries; detailed plans are included at the back of this report.

### Bridgewater Bay

This zone needs to be managed in a manner complementary to Council's previously recommended Discovery Bay Coastal Park, which adjoins the zone.

### Portland

Although the cliff-top areas are much modified, the cliffs and bluffs of this zone are of geological and geomorphological significance. They are, however, subject to slumping, so any development in this zone will need to be

carefully sited. Areas of remnant she-oak woodland and native grasses should be protected. Crown land currently vested in the Port of Portland Authority that is not required for port purposes could be added to the zone.

### Narrawong

It is important that the water quality of the Surrey River be maintained at a level suitable for primary contact activities.

### **Port Fairy**

This zone includes the coastal reserve on the ocean beach and within the mouth of the Moyne River; the latter area encompasses the 'designated port' of Port Fairy. Continued provision for the fishing fleet will be required. The zone includes a number of significant structures associated with the area's maritime history, and an old battery; these features should be protected. Additional development on the dune system should be avoided.

### **Killarney Beach**

While many of the facilities in this zone require improvement, it is an important access point to a biologically diverse marine area of particular interest to fishers. The dune systems and wetland areas are both sensitive and have a range of values.

### **Warrnambool**

The main breakwater and boat launching area of the zone are within a 'designated port'. The recommended coastal reserve extends only to the high-water mark, but the existing reserve extends beyond the LCC's study area into the adjoining City of Warrnambool.

### **Peterborough**

Council is aware that part of this zone has been developed as a golf course. The zone includes a sector of limestone cliffs, shore platforms and reefs that should be protected. Cliff top karst topography should be maintained, as should those features at Peterborough Point illustrative of sea level change.

### **Apollo Bay/Skenes Creek**

This zone includes the 'designated port' at Apollo Bay harbour, for which a range of development opportunities have been identified in a recent management plan.

### **Kennett River**

The emerged shore platform, illustrative of sea-level change, should be maintained. The camping ground was previously recommended by Council in its Final Recommendations for the Corangamite Study Area to be a recreation reserve.

### **Wye River**

The emerged shore platform, illustrative of sea-level change, should be maintained.

### **Lorne**

This zone includes the 'designated port' area centred on the jetty. The extensive wave-cut shore platform should be maintained.

### **Eastern View - Fairhaven**

Remnant coastal scrub communities in this sector provide habitat for the rare swamp antechinus (*Antechinus minimus*) and rufous bristlebird (*Dasyornis broadbenti*); these communities should be protected.

### **Anglesea**

The saltmarsh bordering the Anglesea River is the only extensive area of this community in the Otway region. The exposure of the type section of the Angahook

member should be maintained, as should the dune calcarenite ridge and shore platforms of Point Roadknight.

### **Bells Beach**

Bells Beach is not only an internationally important surfing venue, but retains coastal scrub communities on the exposed cliff faces. Together with its good exposures of geological formations and highly erodible soils, this means that any development needs to be carried out in a constrained and sensitive manner and that events need to be managed to ensure that the natural values are not degraded.

### **Torquay**

The intertidal limestone reefs of Point Danger have a high diversity of invertebrates and a very rich opisthobranch (sea-slug) fauna; these values must be protected. Yellow Rock provides good geological exposures which should be maintained.

### **Barwon Heads**

The calcarenite bluff and associated shore platforms are both of geological and landscape interest and should be protected. The zone includes a small jetty within a 'designated port'. The recommended coastal reserve is seaward of the high-water mark only, but the existing reserve extends beyond the LCC's study area into the adjoining City of Greater Geelong.

### **Port Lonsdale**

The calcarenite cliffs and shore platforms are of both of geological and landscape interest and should be protected. The zone includes a 'designated port'. The recommended coastal reserve is seaward of high-water mark only but the reserve extends into the adjoining City of Greater Geelong.

### **Queenscliff**

This zone, which is a 'designated port', includes a range of port facilities, and is the base for an important fishing fleet and a growing charter and ferry service sector.

### **Portarlington - St Leonards**

The recommended coastal reserve is seaward of the high-water mark only, but the reserve extends into the adjoining City of Greater Geelong. The shore platforms at Portarlington are of geological interest and should be protected.

### **Clifton Springs**

The recommended coastal reserve is seaward of the high-water mark only, but the reserve extends into the adjoining City of Greater Geelong. Limestone reef at Clifton Springs is of geological interest and should be protected.

### **Geelong/Corio Bay**

The recommended coastal reserve is seaward of high-water mark only, but the reserve extends into the adjoining City of Greater Geelong.

(continued)

## *Schedule of Special Features (continued)*

### **Werribee South**

The recommended coastal reserve is seaward of the high-water mark only, but the reserve extends into the

adjoining City of Wyndham. It has been identified in the past as a potential site for a marina facility to serve the western sector of the Bay. The river mouth provides an exposure of important and unusual deltaic sediments that should be protected.

### **Altona/Williamstown**

The recommended coastal reserve is seaward of the high-water mark only, but the reserve extends into the adjoining City of Hobsons Bay.

### **Port Melbourne – Sandringham**

The recommended coastal reserve is seaward of the high-water mark only, but the reserve extends into the adjoining Cities. The emerged shore platform and associated shell beds at Picnic Rock are of geomorphological interest and should be protected.

### **Mordialloc – Chelsea**

The recommended coastal reserve is seaward of the high-water mark only, but the reserve extends into the adjoining Cities.

### **Frankston**

The recommended coastal reserve is seaward of the high-water mark only, but the reserve extends into the adjoining City of Frankston. Existing and proposed improved regional boat launching and mooring facilities occur in the zone.

### **Mt Eliza – Mornington**

Remnant tea-tree scrub, banksia woodland and saltmarsh should be retained. In places the boundary of the adjoining freehold land extends to the high-water mark. Mornington harbour is a focus of boating activity.

### **Mt Martha**

Remnant vegetation should be maintained and the environs of Balcombe Creek protected.

### **Safety Beach – Portsea**

Remnant vegetation should be maintained and the natural dynamics of the beach and dune systems should be respected. The seaward boundary in the Portsea sector is the high-water mark, being the boundary of the abutting Port Phillip Heads Marine Park. In places the adjoining freehold land extends to the high-water mark.

### **Flinders**

The landscape values of the visually sensitive cliff-top areas need to be protected.

### **Shoreham/Point Leo**

Remnant vegetation should be protected and the dynamic beach and dune system respected.

### **Merricks Beach/Balnarring Beach**

Additional development is constrained by the need to protect remnant vegetation and respect the dynamic beach

and dune systems. The shore platform off Palmers Bluff supports a high diversity of invertebrates and small fish, and is to be protected.

### **Somers**

Remnant native vegetation is to be protected. Development on dune environments will need to take into account the dynamics of the beach-dune system.

### **Stony Point**

This zone encompasses a regional boat ramp facility and camping area. Additional development is constrained by the adjoining Port of Hastings facilities.

### **Hastings**

This zone includes the Hastings marina and modified township foreshore areas.

### **Yaringa**

This existing boating facility is surrounded by environmentally sensitive areas and has limited, if any, capacity for extension. The zone is defined by the current lease area and its channel access.

### **Cannons Creek/Warneet/Blind Bight**

The recommended coastal reserve extends only to the high-water mark, but the existing reserve extends beyond the Land Conservation Council's study area into the adjoining municipality - City of Casey. The seaward boundary of the Cannons Creek/Warneet sector extends to centre of the channel of Rutherford Inlet.

### **Tooradin**

The recommended coastal reserve extends only to the high-water mark, but the existing reserve extends into the adjoining City of Casey. Its seaward boundary extends to the centre of Sawtells Inlet. Extant mangrove and saltmarsh communities are to be protected.

### **Corinella**

In addition to providing a sheltered boat access area, this zone includes the historic precinct of Settlement Point and remnant she-oak woodlands, which are to be protected.

### **Coronet Bay**

The boundary of the adjoining freehold land extends to the high-water mark.

### **San Remo**

The zone includes a range of facilities of particular importance to the fishing industry. Additional development is constrained by the need to protect the fauna of the intertidal mudflats north of the Phillip Island bridge. The seaward boundary extends to the edge of the channel.

### **Newhaven**

This boating and port facility node has the potential for further development. Its seaward boundary, where it abuts the recommended Western Port Marine Park, is 150 metres seaward of the high-water mark, being the park boundary.

### **Rhyll**

This is a recreational boating node whose cliff and cliff-top areas are of special landscape interest. The seaward boundary, where it abuts the Rhyll - Newhaven Marine Park, is 150 metres seaward of the high-water mark, being the park boundary.

### **Ventnor - Cowes**

Additional development will need to respect the dynamic beach and dune systems.

### **Tankerton/Red Bluff**

These two small zones encompass key access points for the island community. Their seaward boundary extends to 150 metres from the high-water mark, which corresponds to the boundary of the adjoining French Island State Park.

### **Cape Paterson**

This zone encompasses the main beach access and camping area of Cape Paterson. Its seaward boundary is the high-water mark, which is the boundary of the abutting Bunurong Marine Park.

### **Inverloch**

Remnant vegetation should be protected. Development will need to be tempered by the dynamics of the beach and dune systems of this coastal recreation zone. The seaward boundary extends to the edge of the offshore channel.

### **Walkerville**

This zone was been previously recommended by Council in its Final Recommendations for the South Gippsland 2 Area to be 'township land'. The intertidal sandstone reefs have a high diversity of invertebrates, which are to be protected.

### **Waratah Bay**

Part of this zone has been previously recommended by Council in its Final Recommendations for the South Gippsland 2 Area to be part of the Venus Bay - Waratah Bay Coastal Park. This section encompasses a camping ground on the edge of the park adjoining the township of Waratah Bay.

### **Port Franklin**

The wharf and mooring facilities will need to be retained and the mudflat and mangrove communities in and around the zone protected. It includes the adjoining channel.

### **Port Albert**

This is a mainly recreational node whose port facilities serve both recreational and commercial fishing sectors,

being within a 'designated port'. Additional development will need to be tempered by the area's low terrain and periodic inundation. The recommended zone is to be excluded from the existing Nooramunga Marine and Coastal Park (see also recommendation A17). Much of the abutting freehold lands extend to the high-water mark.

### **Woodside Beach**

Development should avoid the dune system of the Ninety Mile Beach barrier, part of which lies within this zone.

### **Seaspray**

Development will need to avoid the dune system of the Ninety Mile Beach barrier, part of which lies within this zone, and recognise the flood hazard posed by the adjoining Merrimans Creek. The Merrimans Creek delta is of geomorphological interest. This zone, which largely coincides with the camping ground, was previously recommended by the Council in its Final Recommendations for the South Gippsland District 1 Study Area to be a recreation reserve.

### **Lakes Entrance**

The prograding cusped foreland at the entrance is of geomorphological interest, as is the outer barrier and abutting coastal lagoon foreshore of Cunninghame Arm. Further development of this zone will need to respect these features, together with the dynamic dune system of the Ninety Mile Beach barrier, part of which lies within this zone. The coastal reserve extends into the Gippsland Lakes region, which is excluded from the marine and coastal study area.

### **Lake Tyers**

The entrance and tidal delta of Lake Tyers is of geomorphological interest. Any further development of this zone will need to respect this feature. Its seaward boundary is 100 m from the high-water mark, which corresponds to the boundary of the Council's recommended addition to the Lake Tyers State Park.

### **Marlo**

The dynamic Snowy River entrance is considered to be of State geomorphological significance; special care is required when contemplating any activity which may affect its natural dynamics. The zone includes a small jetty and boat launching area which is within a 'designated port'.

### **Mallacoota**

The tidal delta is of geomorphological interest. This zone includes part of a 'designated port'. Its seaward boundary extends to the edge of the offshore channel.

### **Notes:**

- 1 Port Phillip Bay, other than that part of the bay within the Ports of Geelong and the Melbourne, and the 'designated port' of Queenscliff, is a 'designated port'. Where the coastline abuts a municipality which is a City, Council's study area boundary is the high-water mark.
- 2 The whole of Western Port, other than the 'Port of Hastings' is a 'designated port'.

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## 8. SERVICES AND UTILITIES RESERVE

In marine and coastal areas, services and utilities on public land include shipping and port facilities and the associated infrastructure and navigational aids; roads; pipelines; sewerage outfalls and treatment plants; electricity installations; and communications and survey structures. Other than the major port areas, most of these services and utilities occupy small areas of land and are provided for by easements or licensing provisions within a range of land-use categories (mostly coastal reserves or, in some instances, parks).

### Ports

Victoria is served by four major commercial ports: Melbourne, Geelong, Portland and Hastings. These ports, other than those parts of the Ports of Melbourne and Geelong above the high-water mark, are within the Council's study area.

The ports cater for commercial shipping, coastal trading, the offshore oil and gas industry, commercial fishing and recreational boating. In particular each of the commercial ports provides deep, protected waters suitable for shipping, and accessibility to markets and raw materials. The surrounding areas have been developed for port infrastructure and associated industries.

Under the recently proclaimed *Port Services Act* 1995, control of the ports will change, with new arrangements to replace the three existing port authorities. The Port of Portland has been sold, and the onshore port assets of the Ports at Geelong and (probably) Hastings have or will be offered for sale to private enterprise. The onshore port assets of the Port of Melbourne will become the responsibility of the newly established Melbourne Ports Corporation.

A new statutory authority, the Victorian Channels Authority (to be known as Channel Corp) has been established. It has responsibility for all channels in Port Phillip Bay and the Ports of Melbourne and Geelong, associated navigation aids and the movement of vessels. The channels will be retained in public ownership. It

is envisaged that agreements will be made to delegate the day-to-day management of the underwater assets associated with the Ports of Portland and Hastings to their new owners.

The *Marine Act* 1988, as amended, retains the authority of the Marine Board for navigation aids and the safety of vessels, the operation of boating, and the licensing of harbour masters (who are responsible for controlling vessel movements within defined State waters).

Commercial shipping trade is extremely important to Victoria. The Port of Melbourne is the largest container port in the southern hemisphere and, in 1988, ranked 27th in the world in terms of container throughput. The Port of Hastings is used by more than 300 merchant ships a year in excess of 2500 tonnes, and trades predominantly in petroleum products. The Port of Geelong trades in a variety of cargoes, including petroleum products, steel, woodchips, grain and fertiliser. Portland operates primarily for grain export and to service the nearby aluminium smelter.

The future requirements for the development of these four ports have been reviewed as part of the Victorian Ports Land Use Plan planning process. It has been recognised that, in view of the capacity available at these facilities and the existing investment in their infrastructure, the only reason for considering the development of port facilities at a new site would be to decrease the risk associated with handling hazardous materials. The planning also recognises the uncertainty in predicting future port requirements, and the consequent importance of maintaining options to use sites close to existing ports that would enable further development in the very long term. Point Lillias in Port Phillip Bay and Tyabb in Western Port are two such sites. The ports of Geelong, Portland and Hastings also have the capacity for further expansion.

Nevertheless, some areas within the major ports that are not required for future port use have been identified. Such areas may have nature conservation or scenic values or be sites of

community use (notably beach areas). It is intended that such areas will remain in public ownership and have not, or will not, be offered for sale as part of the port restructuring process. Other areas that might not be required by the new port operators could be suitable for other commercial or service and utility use, or could have some public land value.

In reviewing current shipping activities and port operations, it is important not only that port requirements are identified, but that other issues are addressed. These include:

- environmental values in port areas
- water quality
- implications of dredging and spoil disposal
- public safety
- the use of anti-fouling agents
- the transfer of marine organisms in ballast water and by other means
- impact on recreational opportunities
- the amenity of nearby urban areas.

Relevant recommendations covering such issues are contained in Chapter 3.

#### **Port Welshpool/Barry Beach**

While not a major commercial port, this port services an offshore fishing fleet, coastal trading and exploration vessels, and recreational boats. Access is by a maintained channel. A harbour has been developed in a dredged basin, and associated onshore support facilities have been built on reclaimed land. The nearby Barry Beach terminal and its dredged basin were developed to service the offshore gas and oil industry of Bass Strait. The Crown land component is operated under a lease and a licence.

#### **Other Port Facilities**

Additional harbour facilities, especially facilities for commercial fishing and recreational boating,

are provided elsewhere in a number of development nodes along the coastline. These include berthing and mooring facilities, boat ramps, slipways, and associated breakwaters and piers. These areas were previously the responsibility of the Port Authorities but now come under the control of the Department of Natural Resources and Environment. They are also discussed in Chapter 7.

#### **Access Channels**

Each of the major commercial ports is accessed by maintained channels. These currently come under the responsibility of the Victorian Channels Authority. Such channels traverse or include areas with a range of non-port values. Council has recommended that the channels be included within the Coastal Waters Reserve, with the channel function emphasised by their inclusion within a port access zone - see Chapter 6.

#### **Other Services and Utilities**

The Council has made a number of recommendations in previous investigations that are relevant to other services and utilities in marine and coastal areas. Except where indicated in these recommendations, no change is proposed for the areas currently used for these purposes. It is intended that existing legal uses and tenure should continue.

Relevant recommendations are contained in Chapter 3, particularly in the Environmental Quality, Recreation, Visual Resources, Coastal Dynamics, and Development and Infrastructure sections. Issues relating to dredge-spoil disposal and wastewater discharge are especially significant in the marine environment, and are also discussed in Chapter 3.

## **SERVICES AND UTILITIES RESERVE – PORTS**

### **RECOMMENDATIONS**

E1 That, where applicable and unless inconsistent with the recommendations below, the service and utility reserves – ports listed below and shown on Map A be used in accordance with the principles and guidelines for the Victorian marine, estuarine and coastal area in Chapter 3, and continue to be used for:

- (i) public services and utilities associated with port development;

furthermore that

- (ii) the Port of Hastings area be used for those purposes approved by the Government following publication of the Melbourne Area, District 2 Review Final Recommendations.

*(continued)*

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- E2 Should a public land area or building and site used for service or utility purposes no longer be required for its primary designated use, it be assessed for its natural, recreational and cultural heritage values, and capability for other public uses, as part of the process of consideration for reclassification outlined in the Council's Melbourne Area, District 2 Review Final Recommendations (see Note 1).
- E3 Areas not currently required for port purposes, but which may be required in the future, be managed in the interim by the Department of Natural Resources and Environment to maintain or restore their conservation, recreation or other community values while maintaining options for future port use (see Note 2).

Notes:

- 1 It is not Council's intention that any public land below high water mark be alienated.
- 2 Council has recommended that these areas be temporarily reserved as coastal reserve - see Chapter 7.

**Service and Utility Reserves – Ports**

Port of Portland  
Port of Geelong  
Port of Melbourne  
Port of Hastings  
Port of Port Welshpool/Barry Beach

Notes:

- 1 The landward sections of the ports of Melbourne and Geelong lie within city boundaries and are therefore outside the study area. However, the Council believes that the management of port areas within and beyond city boundaries needs to be considered in an integrated manner.
- 2 Those portions of the Ports of Portland and Geelong that have been sold are excluded.

## Appendix 1

# PRINCIPAL VICTORIAN LEGISLATION FOR THE COAST <sup>1</sup>

Act	Aim	Responsible Minister <sup>2</sup> /Agency
Archaeological and Aboriginal Relics Act 1972	Provides for the recording and protection of archaeological sites and Aboriginal relics.	AA/HS
Catchment and Land Protection Act 1994	Provides a framework for the integrated management and protection of catchments; encourages community participation in the management of land and water resources; sets up a system of controls on noxious weeds and pest animals; and repeals and amends various Acts concerning catchment and land management.	CLM/NRE
Coastal Management Act 1995	Provides for coordinated strategic planning and management of the Victorian coast; for the establishment of a Coastal and Bay Management Council and several Regional Coastal Boards; preparation and implementation of coastal action plans; and a coordinated approach to approvals for the use and development of coastal Crown land.	CLM/NRE
Conservation, Forests and Lands Act 1986	Provides for land management codes of practice and other administrative arrangements for Crown land.	CLM/NRE
Crown Land (Reserves) Act 1978	Provides for the management of reserved Crown land. It specifies conditions for the use and lease of Crown land and the establishment of committees of management; establishes the Coastal Management and Coordination Committee, which advises the Minister for Conservation and Environment on development works on all coastal Crown land (excluding Port Phillip Bay, national and State parks, and land vested in port authorities) and is empowered to develop management plans and reserve land for the purpose of environment protection.	CLM/NRE
Environment Protection Act 1970	Establishes the Environment Protection Authority. Outlines its powers, duties, and responsibilities and makes provision for the protection of the environment.	CLM/EPA
Environmental Effects Act 1978	Provides for works likely to have a significant effect upon the environment to be subject to an environmental effects statement.	PLG/DI
Extractive Industries Act 1966	Provides for the issue of licences and leases and safe operating standards for extractive industry, the rehabilitation of land effected; and maximising the use of the non-renewable stone resources while minimising impact on the environment. To be replaced by the <i>Extractive Industries Development Act 1995</i> .	AR/NRE
Fisheries Act 1995	Provides a framework for the sustainable management of commercial and recreational fishing and the aquaculture industry; and includes provisions which will enable users to have a more direct involvement in management decisions (including the establishment of a Fisheries Co-Management Council). Other provisions cover the preparation of fishery management plans, fishery licences, quotas and closures, and the declaration of protected aquatic biota, noxious aquatic species and fishery reserves.	AR/NRE
Flora and Fauna Guarantee Act 1988	Provides for Victoria's flora and fauna, except for specified taxa to survive, flourish and retain their potential for evolutionary development in the wild; the conservation communities; the management of threatening processes; sustainable use; and maintenance of genetic diversity.	CLM/NRE
Forests Act 1958	Provides for the management and protection of State forests.	CLM/NRE
Heritage Rivers Act 1992	Concerned with use and protection of significant rivers.	CLM/NRE
Historic Buildings Act 1981	Establishes the Historic Buildings Council and outlines its powers, duties and responsibilities, including the establishment of a register of historic 'buildings'.	PLG/DI

**Appendix 1 - Principal Victorian Legislation for the Coast (continued)**

Act	Aim	Responsible Minister <sup>2</sup> /Agency
Historic Shipwrecks Act 1981	Applies to wrecks on dryland and in internal waters (within the baseline) and allows for controls on access to designated historic shipwrecks.	PLG/DI
Land Act 1958	Provides for the granting of leases and licences for various uses of Crown land.	CLM/NRE
Land Conservation (Vehicle Control) Act 1972	Restricts the use of vehicles off formed roads and in sensitive areas, including the coastline.	CLM/NRE
Land Conservation Act 1970	Establishes the Land Conservation Council and outlines its powers, duties, and responsibilities.	CLM/LCC
Litter Act 1987	Prohibit and regulates the deposit of litter in the environment of Victoria.	CLM/Various
Marine Act 1988 <sup>3</sup>	Covers the registration of vessels and the pollution of State waters; implementation of certain international conventions, and the efficient and safe operation of vessels on State waters. Sets standards for the provision and maintenance of navigation aids and for dredging and maintenance of channels in State waters; and establishes the Marine Board. It applies to all Victorian recreational and commercial fishery vessels, and other commercial vessels on intrastate voyages.	RP/MSV
Mineral Resources Development Act 1990	Encourages an economically viable mining industry which makes the best use of mineral resources in a way that is compatible with the economic, social and environmental objectives of the State. It specifies the nature of consent required for activities on categories of public land.	AR/DI
National Parks Act 1975	Provides for the creation, protection, and management of national, State, and wilderness parks and other parks and reserves.	CLM/NRE
Petroleum (Submerged Lands) Act 1982	Regulates offshore exploration and production of oil and gas. This Act is 'mirror' legislation to the Commonwealth PSLA 1967 and operates in the area between mean low-water mark (outside the 'baseline') to the three nautical mile limit. Major matters covered by the Act include the: relationship between the Commonwealth and the State Acts' jurisdiction and management; issue of Exploration Permits, Retention Leases, and Production Licences for Petroleum, and the issue of Pipeline Licences.	AR/NRE
Petroleum Act 1958	Regulates onshore exploration and production of oil and gas and waters within the 'baseline' such as Port Phillip Bay, Western Port and Corner Inlet.	AR/NRE
Pipelines Act 1967	Selects the on-shore route from low-water mark for pipelines to be laid within Victoria. Prescribes engineering standards to be used in construction and operation of the pipelines.	AR/NRE
Planning and Environment Act 1987	Provides a framework for planning the use, development, and protection of land in Victoria. The Act has a number of aims related to environmental protection, social equity, and facilitation of appropriate development. Auspices planning schemes.	PLG/DI
Pollution of Waters by Oil and Noxious Substances Act 1986	Covers the pollution of State waters. Amendments of 1995 regulate the discharge of oils, oil mixtures and other undesirable substances into State waters.	RP/EPA
Port Services Act 1995 <sup>4</sup>	Puts into place new arrangements to replace the three existing port authorities, establishes the Melbourne Port Corporation and Victorian Channels Authority and provides for the regulation of port services.	RP/MPC; VCA
Reference Areas Act 1978	Provides for the reservation in perpetuity of reference areas: areas of public land to be preserved in its natural state as far as possible because the area is of ecological interest and significance; and the establishment of the Reference Areas Advisory Committee.	CLM/NRE
Underseas Mineral Resources Act 1963	Provides for the exploration and development of mineral resources within and beyond Victoria's territorial limit	AR/NRE

## Appendix 1 - Principal Victorian Legislation for the Coast (continued)

Act	Aim	Responsible Minister <sup>2</sup> /Agency
Victorian Conservation Trust Act 1972	Enables the establishment of conservation covenants on land titles and the tax-deductible donation of land or money for conservation purposes.	CLM/NRE
Victorian Institute of Marine Sciences Act 1974	Establishes the Institute and provides for its mandate in marine research and education.	AR/VIMS
Water Act 1989	Includes provision for the integrated management of all elements of the terrestrial phase of the water cycle; the protection and enhancement of the environmental qualities of water ways and their in-stream uses; and the protection of catchment conditions.	AR/NRE
Wildlife Act 1975	Enables the establishment of controls over the taking of wildlife.	CLM/NRE

### Abbreviations

#### Minister

AA	Minister for Aboriginal Affairs
AR	Minister for Agriculture and Resources
CLM	Minister for Conservation and Land Management
PLG	Minister for Planning and Local Government
RP	Minister for Roads and Ports

#### Agency:

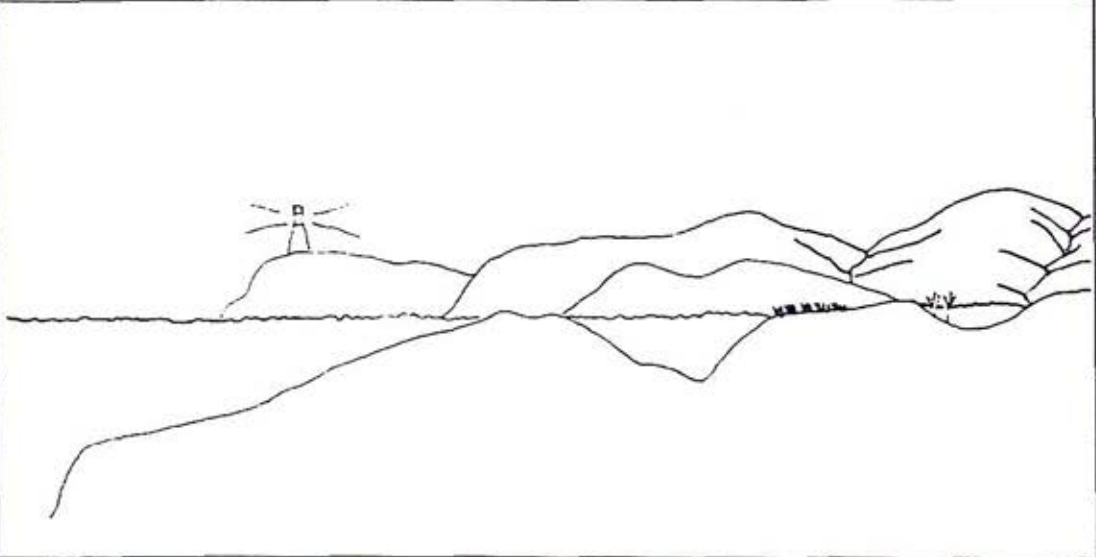
DI	Department of Infrastructure
EPA	Environment Protection Authority
HS	Department of Human Services
LCC	Land Conservation Council
MBV	Marine Board of Victoria
MPC	Melbourne Port Corporation
NRE	Department of Natural Resources and Environment
VCA	Victorian Channel Authority
VIMS	Victorian Institute of Marine Sciences

#### Notes:

1. This listing is current as at April 1996.
2. The responsibility for some legislation is split or shared between Ministers. The Minister responsible for the majority of the Act is listed.
3. Under the provisions of the *Marine Act* 19878, local bodies such as Government Departments, municipal councils and authorised Committees of Management can be appointed as 'local authorities'. These local authorities are able to enforce certain provisions of the *Marine Act* 1988 as they impact on the waters under their control. They are also able to recommend local vessel-operating rules to the Board for consideration and approval - they cannot make the rules themselves and the Board cannot make rules of its own volition. Any such rules made under the Act must relate to the 'efficient and safe operation of vessels'.
4. A number of provisions from the *Port of Melbourne Authority Act* 1958, the *Port of Geelong Authority Act* 1958, and the *Port of Portland Authority Act* 1958 still apply.
5. This appendix incorporates the 'machinery of Government' changes of 3 April 1996. The former Departments of *Planning and Development and Transport* are now part of the *Department of Infrastructure* under the Minister for Planning and Local Government, the Minister for Transport and the Minister for Roads and Ports; the former Departments of *Agriculture, Energy and Minerals and Conservation and Natural Resources* are now within the *Department of Natural Resources and Environment* under the Minister for Agriculture and Resources and the Minister for Conservation and Land Management.

## Appendix 2

### PRINCIPAL VICTORIAN RESOURCE PLANNING AND MANAGEMENT AGENCIES FOR THE COAST



Commonwealth waters	State waters	Foreshore, bays and inlets	Coastal hinterland
NRE - Flora, Fauna and Fisheries Division <sup>1</sup>			
NRE - National Parks Service			
NRE - Petroleum and Minerals Group <sup>2</sup>			
Victorian Coastal and Bay Management Council			
DI - Heritage Victoria <sup>2</sup>			
DI - Planning Group, Environment Effects <sup>3</sup>			
Ports authorities and operators, Victorian Channels Corporation			
Marine Board or delegated local authority			
Local Government <sup>4</sup>			
HS - Aboriginal Affairs Victoria			
Environment Protection Authority			
LCC (public land only)			

**Notes:**

- 1 Commonwealth waters for some fisheries only.
- 2 On behalf of the Commonwealth in Commonwealth waters.
- 3 On behalf of the Commonwealth in Commonwealth waters for Environmental Effect Assessments only.
- 4 600m offshore in Port Phillip Bay.
- 5 This appendix incorporates the 'machinery of Government' changes of 3 April 1996. The former Departments of Planning and Development and Transport are now part of the Department of Infrastructure under the Minister for Planning and Local Government, the Minister for Transport and the Minister for Roads and Ports; the former Departments of Agriculture, Energy and Minerals and Conservation and Natural Resources are now within the Department of Natural Resources and Environment under the Minister for Agriculture and Resources and the Minister for Conservation and Land Management.
- 6 See Appendix 1 for explanation of agency abbreviations.

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## Appendix 3

### VICTORIAN TERRITORIAL BOUNDARY

Matters related to the territorial boundary are complex and are subject to confirmation in the Courts.

In 1995, the Surveyor General of Victoria advised the Council of the following:

"the sovereignty of Victoria is limited to its emergent land (mainland and islands) and to its Coastal Waters. The Coastal Waters (or Victoria's territorial sea) extend three nautical miles to the seaward of low-water mark (specifically Lowest Astronomical Tide), to the seaward of connecting lines across estuaries and mouths of bays as set out in Article 7 of the Convention on the Territorial Sea and to the seaward of proclaimed 'baselines'. Only one such baseline has been proclaimed for the Victorian coastline. It is located to the south-west of Wilsons Promontory, such that the baseline is formed by a series of lines joining the following islands and incorporates the outer Low-water mark coastline of each - South Point on the mainland to Wattle Island, thence to Kanowna Island, Cleft Island, Citadel Island and the Glennie Group, to Norman Island and rejoining the mainland at Tongue Point (see the Commonwealth Gazette of 9 February 1983).

The boundary between Victorian and Tasmanian sovereignty derives from the separation of Van Diemen's Land from New South Wales in 1825. At its inception, Victoria's seaward boundary appears to have been overlooked or at least so obvious as to not require stating.

The statute separating Van Diemen's Land referred to the parallel of latitude 39°12'S and this parallel has been accepted as the dividing line between the States. However, several legal opinions suggest that the purpose of this line is to divide the islands of Bass Strait into those of Victoria and those of Tasmania, not to divide the seabed.

It is also likely that this reference to latitude 39°12'S should be taken as being by astronomical determination, not in terms of the Australian Geodetic Datum (AGD66) as has been the practice in recent times. The astronomical parallel lies about 50 metres north of the AGD66 parallel.

Further, early coastal charts depicted the southern-most point of land of Wilsons Promontory [latitude 39°08'18"S (AGD66)] being close to 39° 12' south latitude.

By any definition, Forty Foot Rock is clearly within Tasmanian jurisdiction. For the Hogan Group: Seal Rock is clearly north of 39°12'S by either definition; Boundary Islet (previously North East Islet and 150 m long) is divided by the 39°12' (AGD66) and probably also divided by the 39°12' astronomical determination. The rocks to the north of Twin Islets (possibly those charted as N(North) Boulder in 1886 by HMS *Myrmidon*) are probably just north of latitude 39°12' and thus probably Victorian.

An opinion by the Victorian Government Solicitor in 1987 has argued that the boundary between New South Wales and Victoria seaward of Cape Howe was never defined and certainly is not the extension of the line from Forest Hill (headwaters of the Murray River) to Cape Howe. By deduction he determined that the seaward boundary line would be at right angles to the tangent to the coast at the low-water mark.

Although this opinion has been used and accepted in several court cases, this definition has yet to be referred to New South Wales for comment and agreement.

Similarly, the seaward boundary between Victoria and South Australia would also be at right angles to the tangent to this coast at the low-water mark.

In respect to the status of Victoria's sovereignty offshore from Commonwealth land, e.g. Gabo Island and other lighthouse reserves, the reserves are part of Victoria being Victorian freehold land for which the Commonwealth holds title. The land has never been ceded or annexed to the Commonwealth, in the same manner as the Australian Capital Territory or at Jervis Bay. The coastline around Commonwealth reserves is the land boundary of Victoria. Victoria's Coastal Waters are continuous along the entire coastline and are not interrupted by the presence of Commonwealth reserves."

Note that the ownership of Victoria's ten lighthouse reserves has recently transferred from the Commonwealth to the State.

## Appendix 4(a): Submissions Received from Interest Groups and Other Organisations

Organisation	1st Sub number	2nd Sub number
<b>Academic Institutions</b>		
AUSTRALIAN MARINE SCIENCES ASSOC INC (VICTORIAN BRANCH)		095
AUSTRALIAN NATIONAL UNIVERSITY	037	
BALLARAT UNIVERSITY		390
BELLARINE SECONDARY COLLEGE ENVIRONMENTAL COMMITTEE		633
DEAKIN UNIVERSITY (CONSTABLE)		L005
DEAKIN UNIVERSITY (SHERWOOD)		L019
DEAKIN UNIVERSITY (WESCOTT)		085
LATROBE UNIVERSITY		588
MELBOURNE UNIVERSITY		602
QUEENSCLIFF MARINE STATION		473
VICTORIA UNIVERSITY OF TECHNOLOGY (BIRD)		060
VICTORIA UNIVERSITY OF TECHNOLOGY (TALMAN)		068
VICTORIA UNIVERSITY OF TECHNOLOGY (CAMPBELL)		069
VICTORIAN INSTITUTE OF MARINE SCIENCE		590
<b>Community Groups</b>		
AIREYS INLET AND DISTRICT ASSOCIATION INC	008	
BRIDGEWATER BAY COAST ACTION GROUP		650
FORESHORE RESIDENTS ASSOCIATION INC	L009	
FOSTER COMMUNITY CONSULTATIVE COMMITTEE		571
GIPSY POINT RATE PAYERS ASSOCIATION		067/408
INVERLOCH RESIDENTS AND RATEPAYERS ASSOCIATION INC		349
INVERLOCH RESIDENTS DEVELOPMENT ASSOCIATION		647
MANN'S BEACH IMPROVEMENT COMMITTEE INC	035	
MARENGO ASSOCIATION	014	
OTWAY FORUM		446
QUEENSCLIFF COMMUNITY ASSOCIATION		L027
SOUTH EASTERN PENINSULA RESIDENTS ASSOCIATION		451
WALKERVILLE RATEPAYERS' ASSOCIATION INC	028	233
WYE RIVER & SEPARATION CREEK PROGRESS ASSOCIATION	095	236
<b>Conservation Groups</b>		
11 CONSERVATION & RECREATIONAL GROUPS		697
AIREYS INLET & DISTRICT ASSOCIATION INC		120
ALLIES OF LOCAL FLORA	005	
ANGAIR INC	041	324
AQUATIC NATURALISTS SOCIETY		393
AUSTRALIA CONSERVATION FOUNDATION		148
AUSTRALASIAN WADER STUDIES GROUP		L024
BIRD OBSERVERS CLUB OF AUSTRALIA	107	112
BLACKBURN AND DISTRICT TREE PRESERVATION SOCIETY		308
BUSH CARE		292
CAULFIELD ENVIRONMENT GROUP	131	
CHILDERS COVE PROGRESS & TOURIST ASSOCIATION INC	026	
COASTAL AND MARINE COALITION		533
DOLPHIN RESEARCH PROJECT		696
ENVIRONMENT VICTORIA INC		215
FRIENDS OF COOLART		444
FRIENDS OF THE EARTH	143	652
FIELD NATURALISTS CLUB OF VIC		268

Organisation	1st Sub number	2nd Sub number
FRIENDS OF FRENCH ISLAND STATE PARK		094
FRIENDS OF MALLACOOTA		640
FRIENDS OF PORT PHILLIP FORESHORE		L016
FRIENDS OF THE COASTAL RESERVE AIREYS INLET		044
FRIENDS OF THE PROM		305
FRIENDS OF THE SOUTHERN RIGHT WHALE		108
FRIENDS OF THE WILLIAMSTOWN WETLANDS		159
FRIENDS OF WARNEET		634
GEELONG ENVIRONMENT COUNCIL		363
GEELONG FIELD NATURALISTS CLUB		409
GREENPEACE	123	
INDIGENOUS FLORA AND FAUNA ASSOCIATION		615
JAN JUC COAST ACTION GROUP		248
LATROBE VALLEY FIELD NATURALISTS CLUB INC	029	014
MARENGO COAST ASSOCIATION INC		030
MARINE AND COASTAL SOCIETY	092	688
MARINE EDUCATION SOCIETY OF AUSTRALASIA	125	
MARINE RESEARCH GROUP OF VICTORIA INC	082	064
MARITIME ARCHAEOLOGY ASSOCIATION OF VICTORIA	119	
MORDIALLOC BEAUMARIS CONSERVATION LEAGUE INC		306
MORNINGTON ENVIRONMENT ASSOCIATION		580
MOUNT ELIZA ASSOCIATION FOR ENVIRONMENTAL CARE		599
NATIONAL THREATENED SPECIES NETWORK (VICTORIA)		685
NATURAL ENVIRONMENT INC		021
NATURAL RESOURCES CONSERVATION LEAGUE OF VICTORIA	L011	
OTWAY FORUM	054	
PASCOE VALE NATURALISTS		157
PENGUIN STUDY GROUP		630
PHILLIP ISLAND CONSERVATION SOCIETY INC		407
PHILLIP ISLAND HOODED PLOVER STUDY GROUP	079	
PORT CAMPBELL ENVIRONMENTAL GROUP		575
PORT PHILLIP CONSERVATION COUNCIL INC		180
PORT PHILLIP BAY DOLPHIN RESEARCH INC	102	
PORTLAND FIELD NATURALIST CLUB		605
PROJECT JONAH VICTORIA		683
ROYAL AUSTRALASIAN ORNITHOLOGISTS UNION	049	291
SEYMOUR ENVIRONMENT GROUP		052
SORRENTO-PORTSEA-BLAIRGOWRIE CONSERVATION GROUP		235
SOUTH GIPPSLAND CONSERVATION SOCIETY INC (LEONGATHA)		194
SOUTH GIPPSLAND CONSERVATION SOCIETY INC (BASS VALLEY AND DISTRICT BRANCH)		241
SOUTH GIPPSLAND CONSERVATION SOCIETY (INVERLOCH BRANCH)		321
SOUTH WEST ENVIRONMENTAL ACTION GROUP INC		320
SURFERS APPRECIATING NATURAL ENVIRONMENT		641
SWAN BAY ENVIRONMENT ASSOCIATION INC	051	275
TORQUAY ACTION GROUP		537
UPPER BEACONSFIELD CONSERVATION GROUP		424
VICTORIAN NATIONAL PARKS ASSOCIATION	120	639
VICTORIAN SPELEOLOGICAL ASSOCIATION INC	074	
WARRNAMBOOL FIELD NATURALISTS CLUB		675

## LIST OF SUBMISSIONS

## Appendix 4

Appendix 4(a): Submissions Received from Interest Groups and Other Organisations (continued)

Organisation	1st Sub number	2nd Sub number
WESTERN VICTORIAN CONSERVATION COMMITTEE		584
WESTERNPORT AND PENINSULA PROTECTION COUNCIL		454
WORLD WIDE FUND FOR NATURE (AUSTRALIA)		L022
<b>Recreational Groups</b>		
ALLANSFORD AND DISTRICT ANGLING CLUB INC		101
ANGLESEA MOTOR YACHT CLUB INC	089	
AUSTRALIAN ANGLERS ASSOCIATION (VICTORIAN DIVISION)		648
AUSTRALIAN DEER ASSOCIATION		352
AUSTRALIAN UNDERWATER FEDERATION (VICTORIAN BRANCH)		381
AUSTRALIAN UNDERWATER FEDERATION (VICTORIAN BRANCH): SCIENTIFIC DIVISION		434
BAMBRA OUTDOOR EDUCATION CENTRE		888
BAY CITY DIVERS CLUB		519
CAMPERDOWN ANGLING CLUB		441
CARDINIA CREEK BOAT CLUB INC		182
COASTAL VILLIAGES ANGLING CLUB		572
COBDEN AMATEUR ANGLING CLUB		080
CORNER INLET BOAT CLUB INC		244
DEVILS ELBOW AMATEUR FISHING CLUB		206
DIVE CENTRE, BLAIRGOWRIE & COASTAL ADVENTURE EDUCATION		040
FEDERATION OF VICTORIAN WALKING CLUBS	059	679
FRANKSTON ANGLERS AND BOAT OWNERS CLUB INC	061	027
GEEELONG SKINDIVERS CLUB		887
HAMILTON SKIN & SCUBA DIVING CLUB		383
INTERDIVE		445
KNOX CLUB SPORTFISHING CLUB		643
KOO WEE RUP BOAT CLUB INC		078
KOROIT & DISTRICT ANGLING CLUB	115	L028
LAKESIDE ANGLERS CLUB INC		350
LEONGATHA ANGLING CLUB		L017
MALLACOOTA AND DISTRICT ANGLING CLUB	069	636
MALLACOOTA SURF RIDERS INC	055	
MARINE DIVING GROUP	109	
MAROONDAH BUSHWALKING CLUB INC		184
NISSAN FOUR WHEEL DRIVE CLUB OF VICTORIA INC	090	
OFFBEAT 4X4 CLUB	063	
PORT CAMPBELL BOAT CLUB		410
PORT CAMPBELL DIVING CLUB		137
PORT WELSHPOOL & DISTRICT ANGLING CLUB		155
PRESTON ANGLING CLUB & FISH PROTECTION SOCIETY INC	062	
RECREATIONAL FISHERIES COUNCIL OF VICTORIA	117	
RHYLL PHILLIP ISLAND ANGLING CLUB		573
SANDRINGHAM & DISTRICT FORESHORE RECREATIONAL COUNCIL		642
SANDRINGHAM YACHT CLUB		L029
SCUBA DIVERS FEDERATION OF VICTORIA INC	072	354
SEAFORD LIFE SAVING CLUB	058	
SOUTH GIPPSLAND BOARDRIDING CLUB	L022	
SOUTH GIPPSLAND GAME FISHING CLUB INC	129	592
SOUTH WESTERN FLY FISHERS' CLUB		550

Organisation	1st Sub number	2nd Sub number
SOUTH WESTERN DISTRICT ASSOCIATION OF ANGLING CLUBS	132	178
SURFRIDER FOUNDATION AUSTRALIA (VICTORIAN BRANCH)		677
TOC H VICTORIA		881
TOORADIN ANGLING CLUB		394
TOORAK ANGLING CLUB		158
VICTORIA ACCOCIATION OF FOUR WHEEL DRIVE CLUBS		L026
VICTORIAN CANOE ASSOCIATION	118	594
VICTORIAN FOSSICKERS CLUB INC	019	
VICTORIAN HORSE COUNCIL INCORPORATED		036
VICTORIAN METAL DETECTOR AND PROSPECTOR ASSOCIATION	038	574
VICTORIAN RECREATIONAL FISHING PEAK BODY		678
VICTORIAN RIFLE ASSOCIATION INC	103	
VICTORIAN SEA KAYAK CLUB INC		273
VICTORIAN SEEKERS CLUB	071	
WARRNAMBOOL OFFSHORE & LIGHT GAME FISHING CLUB		520
WARRNAMBOOL SUB-AQUA CLUB		055
WESTERN DISTRICT ASSOCIATION OF ANGLING CLUBS		588
WESTERNPORT ANGLING CLUB		156
WESTERNPORT FIELD & GAME ASSOCIATION INC	091	
<b>Industry/Commercial Groups</b>		
12 APOSTLES TOURISM ASSOCIATION		528
ABALONE FISHERMANS CO-OPERATIVE LTD.	L012	
ABALONE SHELLFISH ENTERPRISES LTD		406
ADVENTURE DOWN UNDER		396
ASSOCIATED DIVING INDUSTRIES		116
AUSTRALIAN PETROLEUM EXPLORATION ASSOCIATION		689
BAY CITY SCUBA		402
BEACHCOMBER CARAVAN PARK	145	
BHP PETROLEUM AUSTRALIA/ASIA REGION		649
CENTRAL GIPPSLAND DEVELOPMENT BOARD		442
CHILDERS COVE PROGRESS & TOURIST ASSOCIATION INC		287
COMPLEAT ANGLER		074
DIVE EXPERIENCE PTY. LTD.	122	
ESSO AUSTRALIA		601
GEEELONG DIVE & OUTDOOR CENTRE		811
GLENELG RIVER CRUISES	108	
KIKORIO PTY LTD/SEATREES FARM		339
LAKES ENTRANCE FISHERMEN'S COOPERATIVE SOCIETY		635
MELBOURNE DIVING SCHOOL		211
MINER'S DEN	053	
MITCHELSON FISHERIES PTY LTD		110
NELSON PROFESSIONAL FISHERMAN'S ASSOCIATION		585
PARADISE DIVERS VIC		303
PENINSULA SURF CENTRE		217
PORT CAMPBELL PROFESSIONAL FISHERMEN'S ASSOCIATION		589
POLPERRO CHARTER SERVICE		160
PORT FRANKLIN FISHING ASSOCIATION		136
PORT PHILLIP & WESTERNPORT BAY PROFESSIONAL FISHERMENS ASSOCIATION	113	

## Appendix 4(a): Submissions Received from Interest Groups and Other Organisations (continued)

Organisation	1st Sub number	2nd Sub number
PORTLAND PROFESSIONAL FISHERMENS ASSOCIATION		448
RHYLL PROGRESS ASSOCIATION		344
RHYLL TRADERS ASSOCIATION		343
QUIKSILVER	040	
RIVER-VU CARAVAN PARK	L019	
SCHOMBERG DIVE SERVICES		476
SHARKBUSTERS INTERNATIONAL	001	001
SOUTH GIPPSLAND AQUACULTURE IND. COMMITTEE		185
TOORADIN MARINE LIFE CENTRE		096
TOURISM MOUNT GAMBIER	121	
TORQUAY SURF INDUSTRY ASSOCIATION		680
VICTORIAN ABALONE DIVERS ASSOCIATION		453
VICTORIAN FISHING INDUSTRY FEDERATION	L006	452
VICTORIAN PRAWN TRAWL ASSOCIATION		690
VICTORIAN SCALLOP PRODUCERS ASSOCIATION INC		353
WARATAH PARK COUNTRY HOUSE	112	
WARRNAMBOOL PROFESSIONAL FISHERMAN'S ASSOCIATION		294
WESTERN ABALONE DIVERS ASSOCIATION		032
WESTERN PORT RENT-A-BOAT & MARINE CENTRE		437
WESTERNPORT DEVELOPMENT COUNCIL		455
<b>Municipal Councils</b>		
BAYSIDE COUNCILS ASSOCIATION		036
BOROUGH OF QUEENSCLIFFE		450
CARDINIA SHIRE COUNCIL		075
CITY OF MOUNT GAMBIER	124	
CITY OF PORT MELBOURNE	141	
CITY OF PORTLAND	105	
CITY OF SALE	076	
CITY OF SANDRINGHAM	045	
CORANGAMITE SHIRE		L021
EAST GIPPSLAND SHIRE COUNCIL		423
MORNINGTON PENINSULA SHIRE COUNCIL		058
MUNICIPAL CONSERVATION ASSOC		176
SHIRE OF HASTINGS	017	
SHIRE OF HEYTESBURY	027	
SHIRE OF HEYWOOD	030/093	
SHIRE OF ORBOST	111	
SHIRE OF ROSEDALE	016	
SHIRE OF TAMBO	L007	
SHIRE OF WARRNAMBOOL	004	
SOUTH GIPPSLAND SHIRE COUNCIL		115
SURF COAST SHIRE		L020
<b>State Government Departments and Agencies</b>		
BARWON REGION WATER AUTHORITY		440
COLAC REGION WATER AUTHORITY		070
CORANGAMITE CATCHMENT AND LAND PROTECTION BOARD		610
DEPARTMENT OF AGRICULTURE, ENERGY & MINERALS		651
DEPARTMENT OF BUSINESS AND EMPLOYMENT		538
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES	L015	443

Organisation	1st Sub number	2nd Sub number
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (REFERENCE AREAS ADVISORY COMMITTEE)		568
EAST GIPPSLAND REGIONAL CATCHMENT & LAND PROTECTION BOARD		676
EAST GIPPSLAND RIVER MANAGEMENT BOARD		031
ENVIRONMENT PROTECTION AUTHORITY	139	
MARINE BOARD OF VICTORIA	022	
MELBOURNE WATER		L001
PORT AUTHORITY (GIPPSLAND REGION)		539
PORT OF HASTINGS		540
PORT OF MELBOURNE AUTHORITY	070	684
PORT PHILLIP REGIONAL CATHMENT AND LAND PROTECTION BOARD		449
PORTLAND COAST REGION WATER AUTHORITY		447
SOUTH GIPPSLAND WATER BOARD	078	
SOUTH WEST WATER AUTHORITY		020
SOUTHERN RURAL WATERS		667
TOURISM VICTORIA		010
WESTERNPORT REGIONAL PLANNING & COORDINATION COMMITTEE	015	
<b>Other Groups</b>		
AIREYS INLET FORESHORE RESERVE COMMITTEE OF MANAGEMENT	046	395
AUSTRALIAN DEMOCRATS		168
AUSTRALIAN DEMOCRATS (VICTORIAN DIVISION)		691
AUSTRALIAN FISHERIES MANAGEMENT AUTHORITY		017
AUSTRALIAN HERITAGE COMMISSION		356
BALNARRING FORESHORE AND PARKS RESERVES COMMITTEE OF MANAGEMENT INC	031	
BUNGA HAVEN INC		212
CENTRAL GIPPSLAND ABORIGINAL HEALTH AND HOUSING COOPERATIVE LTD	L018	
CORNER INLET AND PORT ALBERT FISHING CONSULTATIVE COUNCIL		522
FAIRHAVEN FORESHORE COMMITTEE		283
GIPPSLAND LAKES MANAGEMENT COUNCIL		534
GREAT BARRIER REEF MARINE PARK AUTHORITY		347
HMAS CERBERUS		403
NELSON RESERVES COMMITTEE OF MANAGEMENT INC	099	
NSW NATIONAL PARKS AND WILDLIFE SERVICE		L018
OCEAN GROVE FORESHORE COMMITTEE INC	L010	
PARKDALE RESEARCH		532
PHILLIP ISLAND PENGUIN RESERVE	130	399
SHALLOW INLET CAMPING AND RECREATION RESERVE INC		319
TORQUAY PUBLIC RESERVES COMMITTEE OF MANAGEMENT INC	018	
VENUS BAY & ANDERSON INLET FORESHORE COMMITTEE OF MANAGEMENT	033	
WALKERVILLE FORESHORE RESERVE COMMITTEE OF MANAGEMENT	066	338
WEST GIPPSLAND ABORIGINAL COMMUNITY CO-OPERATIVE	056	
Note: The views of many Aboriginal communities and groups were included in two consolidated reports - see Chapter 3: Aboriginal Interests.		

### Appendix 4(b): Submissions from Individuals

Name	Inits	1st Sub number	2nd Sub number
AALBERS	A.		051
ADAMS	S. & K.		541
ADLAM	A.J.		366
AGAR	M.	060	
ALEXANDER	T.		084
ALLEN	D.R.J.		L002
AMBROSE	H.		L025
ANDERSON	J.		668
ANDRES	E.		100
ANDREWS	P.		105
ANEDDA	N & J.		063
ANKETELL	T.		114
ARENDSSEN	C.		376
ARMISTEAD	R.		367
ARMSTRONG	J.		336
ARNOTT	F.		596
ASHTON	P.H.	036	
ATKINS	D. & G.	050	
ATKINS	D.N.		239
ATTWILL	J. & P.		315
AYRES	S.		456
BAGLEY	L.J.		012
BALINKSY	J.		238
BALINSKY	A.		225
BALLANTYNE	R.		669
BANKS	C.		596
BANNER	R.		559
BARBER	M.		016
BARKLEY	D.		107
BARNETT	J.		281
BARRINGTON	D.P.		073
BARTHOLOMEW	A.J.		405
BARTON	C.M.		050
BARWICK	R.		666
BATTEN	G.		415
BATTEN	Y.		422
BATTLE	P.		125
BEEKHUIZEN	C.	126	
BELL	J.		430
BELL	P.J.		389
BELL	S.		556
BETTLES	P.		457
BIGGS	B.		301
BIGGS	D.		231
BIRRELL	B.		365
BLACK	J.		379
BLAKE	L.		035
BLUNDEN	N.		165
BOND	B.J.	010	
BOOTH	J.A.		237
BOROWIAK	J.P.	009	008
BORRIE	I.F. & W.H.		183

Name	Inits	1st Sub number	2nd Sub number
BOWDEN	J.A.		054
BOWERMAN	A.		203
BOWMAN	M.		561
BREWSTER	O.G. & E.P.		151
BRIGANTI	S.		190
BRONSTEIN	H.		340
BROTHWELL	L. & J.		311
BROWN	W.F.	003	
BRUCE	R.		261
BRUTON	A.M.		056
BRYANT	A.		331
BRYL AND OTHERS	H.	L005	
BUCKINGHAM	R.		579
BUDGE	H.		024
BURLEIGH	R.J.		265
BUSTARD	C.	137	
BUTCHER	T. & L.		188
BUTT	G.	L001	
CAFARELLA	D. & M.		523
CAMERON	G.		L003
CAMERON	L.		570
CAPE	R.	011	
CARD	J.		616
CAROLIN	R.		663
CARTER	L.W.		562
CASEMENT	D.		267
CASEMENT	G.B.		309
CASEMENT	S.B.		461
CASHMERE	R.		524
CHAMBERLAIN MLC	B.		384
CHANDLER	A.		525
CHAPMAN	A.E.		202
CHAPMAN	G.		458
CHAPMAN	M.		435
CHAPPLE	J.L.	067	087
CHILTON	S.		432
CHISMA	D.		459
CHITTLEBOROUGH	R.G.		665
CHURCHILL	M.		460
CLARK	A.		698
CLARK	L.		165
CLARKE	F.R.	L004	286
CLARKE	P.G.		104
CLEARY	J.L.		584
CLEAVER	N.		567
CLEMANN	D.O.		243
COCHRANE	J.W.		436
COLE	R.W.		267
CONSIDINE	J.		557
CONWAY	B.A.	006	351
CORNEY	R.		192
CRIPPS	G.A.		521

Name	Inits	1st Sub number	2nd Sub number
CROMB	M.J.		091
CROMB	S.N.		093
CURRAN	T.		488
CURTIS	H.		617
CURTIS	V.	085	
CUTTLER	J.		362
CUTTRESS	S.		431
DALTON	F.		564
DANCE	N.		549
DAVIDSON	C.		462
DAVIES	K.A.		247
DAVINE	K.		154
DAVIS	D.		053
DAVIS	R.		209
DE JONG	J.		600
DE LORENZO	M.		230
DIXON	K.T.		242
DOUGLAS	A. & L.	081	
DOUGLAS	J.D.		082
DOUGLAS	M.C.		169
DUMSDAY	N.		463
DUNN	A.J.		464
DURHAM	G.		175
DUTKER	D.S.		380
DZEDINS	A.J.		618
EALEY	E.H.M.		283
EASTERBROOK	R.		099
EATHER	P.		206
EDGE	N.D.		560
EDWARDS	E.P.		079
EDWARDS	G.		543
ELFORD	O.		465
ELLIOTT	C.J.		164
EMIN	P.G.		113
ESTCOURT	M.F.		L004
FAHEY	J.		L006
FAKOS	E.		313
FARING	V.		506
FARNELL	B.		206
FARQUHAR	W.T. & S.		205
FERGUSON	E.A.		220
FERGUSON	R.W.		429
FISK	A.G.		372
FISK	K.		535
FISK	L.		373
FISK	N.J.		536
FOGARTY	M.		207
FORRESTER	J.		276
FORSTER	K.		404
FORSYTH	P.		360
FRASER	S.		619
FRENCH	H.		174

Name	Inits	1st Sub number	2nd Sub number
FRENCH	L.		278
FROST	H.		072
FROST	R.		071
FULLERTON	H.L.		142
FULTON	G.		131
GAGE	R.		271
GARLAND	E.R. & B.M.		042
GARLAND	S.		041
GAZAN	J.		310
GELL	A.		527
GERANT	T.		216
GIDDINS	J.		018
GIDDY	D.		058
GILBERT	R.J.	021	
GILLIES	I.		061
GILLIES	I.C.	023	
GODFREY	T.	088	
GOTHARD	W.M.		102
GOUGH	P.		147
GRAHAM-MEASOR	R.	075	
GRANGE	N.		L007
GRANT	J.		150
GRAY	C.		034
GRIFFITH	M.		234
HAFFENDEN	S.		047
HALL	J.		307
HANLEY	M.F. & C.		103
HANSON	C.W.	073	066
HARKER	J.		664
HARLEY	R.J.		197
HART	A.		670
HARTY	C.	083	
HARTY	C. & T.		006
HAWKINS	J.		355
HAWKINS	R.		009
HAYES	D.		210
HAYES	W.	L014	
HAYES	W.	L017	
HAYHOW	W.A.		143
HEATHCOTE	J.		298
HENDERSON	A.G.	068	
HEWITT	N.		671
HICKEY	O.		468
HILL	P.W.		122
HILL	R.		519
HOBBS	M.		317
HOBSON	M.D.		274
HODGSON	R.A. & M.J.		232
HOLMES	B.		421
HORN	E.L.		254
HOWARD	M. & G.		414

## Appendix 4(b): Submissions from Individuals (continued)

Name	Inits	1st Sub number	2nd Sub number
HOWIE	R.A.		348
HOWLETT	J.		472
HUMPHRIS	V.		255
HUPFAUF	G.		378
HURST	D.		689
HUTCHINGS	P.W.		367
IMREI	M.		700
INGRAM	C.		386
INGRAM	J.		1006
IRVING	R.		022
JACKSON	G.		297
JACOBSON	D.		398
JANELE-MITCHELL	O.		467
JENNINGS	R.		603
JEREMIAH	L.		318
JOHN	R.		252
JOHNSON	B.N.		420
JOHNSON	C.		1009
JOHNSTON	H.		468
JOINER	R.		368
JOLLY	G.		258
JONES	A. & R.	096	
JONES	R.S.		469
KARGE	E.F.		087
KAVANAGH	M.		362
KAYE	R.		065
KEDDALL	D.		470
KENWOOD	D.		213
KENWOOD	J.		662
KEOWN	S.		672
KERMOND	R.		620
KERR	A.		661
KERR	S.		039
KIBRIA	G.		162
KIDD	P.		146
KING	J.		295
KLINGLER	W. & H.		152
KOS	R.		227
KRAUSE	P.		701
KURZ	P.		043
LACCE	K.		133
LACY	R.		550
LAMPE	P.	086	
LANDRIGAN	T.		474
LANG	N.M.		660
LANTANA	D.		528
LARK	D.		471
LAUGHLIN	B.A.		019
LAWSON	P.		659
LE MAITRE	M.		253
LEDITSCHKE	R.		181
LEE	K.	039	

Name	Inits	1st Sub number	2nd Sub number
LEES	S.A.		284
LEGG	G.		132
LEIBSCHER	C.		621
LESKE	G.		098
LESTER	R.		196
LESTER	W.J.		201
LEWIS	L.W.		172
LEWIS	N.E.		046
LEWIS	R.		005
LIDDELL	J.		548
LINFORD	C.		L010
LODGE	D.		411
LOFTUS-HILLS	L.		604
LOGAN	T.B.		566
LONGMORE	S.		L011
LUCAS	J.W.		282
MACDONALD	C.M.	L013	
MACDONALD	R.D.		370
MacKENZIE	C.		658
MACKIE	R.		013
MACQUEEN	A.		280
MACTAGGART	P.		364
MAGGS	G.		140
MAHONEY	S.		433
MANSON	F.		475
MARCH	A.	094	
MARROTT	R.		657
MARSHALL	A.E.		656
MARTIN	A.		326
MASON	A.		569
MATTHEWS	O.J.	116	
MATTHEWS	T.M.	052	
MAY	J.R.		170
McCLEARY	A.		606
MCDONALD	D.	134	
MCDONALD	M.		323
MCDONNELL	J.		653
MCDOWALL	Q.S.		269
MCFARLANE	C.C.	110	
MCGLEAF	B.		126
MCGOLDRICK	B.		346
MCKEE	E.		118
MCKENZIE	A.		477
MCKINNON	T.		427
McKINNON	T. & J.	101	
McNABB	J.		063
McNABB	J.W.	064	
MENKE	G.		290
MERORY	M.		163
MERRETT	M.R.		478
MILES	L.	047	
MILLAR	J.H.		479

Name	Inits	1st Sub number	2nd Sub number
MINIHAN	J.		578
MITCHELL	C.		037
MITCHELL	F.		279
MOLAN	A.		412
MONCRIEFF	A.		480
MOORE	C.H.	L003	
MOORE	K.	007	
MOORE	P.J.		371
MORAVEC	M.		702
MORGAN	K.		322
MORRIS	M.		296
MORRISON	D.J.		011
MORROW	J.		481
MORTIMER	R.		545
MOSKEL	M.J.		186
MOSSE	P. & J.		388
MOTHERWELL	B & J.		179
MOUNSEY	A.E.		250
MULLETT	C.		709
MUMFORD	R.T.		419
MURFIT	K.J.		277
MURPHY	K.		482
MURRAY	D.		425
MUTCH	L.B. & M.S.	L016	
NAPHTHINE	D.	140	
NATION	W.H.		260
NEILSON	I.		622
NELSON	D.		089
NELSON	D.A.		123
NEUFARTH	N.		623
NEVILL	J.		028
NEWELL	B.S.		624
NEWNHAM	R.	L023	
NEWTON	P.		807
NOBLE	I.D.		023
NORMAN	M.D.		124
O'HARA	T.	L020	
O'NEILL	J.		377
O'SHANNASSY	K.		654
OTOOLE	M.	012	
OAKLEY	T. & M.		300
OLLINGTON	L.D.		327
PARKER	A.M.		413
PARKER	R.		625
PARRY	G.	L031	
PARSONS	A.		256
PARSONS	N.		141
PEARSON	J.W.	044	
PEASE	R.		149
PEEL	G.S.		259
PEEL	M.		003
PEEL	P.		262

Name	Inits	1st Sub number	2nd Sub number
PENNINGTON	T.		704
PETTERSON	I.		L012
PETTERSON	R.		204
PHILLIPS	J.		682
PHILLIPS	M.		193
PICKIN	J.		057
PINELLI	L.		177
PITCHER	J.		062
PLANTINGA	A.		705
PLOZZA	K.		119
PLUMB	G.		025
PLUMB	M.		026
PLUMMER	A.		626
PORTER	C.		439
PORTO	R.	042	
PRICE	D.		583
PROUD	L.		703
PULHAM	C.T.		542
PURCELL	M.		483
QUARRELL	G.		224
QUIRK	G.		293
RAISON	B.P. & E.		428
RANDALL	M.		484
RANGLES	J.		302
RANTALL	A.R.		251
RATCLIFFE	T.		109
RAYNER	P.		608
REDMOND	K.		199
REDMOND	W.		200
REID	O.		270
REILLY	S.		551
RICHARDSON	A.		708
RICHARDSON	C.		416
RICHTER	K.		490
RIDGEWAY	B.	144	
RIDGWAY	B.	020	
RIDSDALE	G.		328
RILEY	L. & B.	097	
ROACH	P.		228
ROBB	D.J.	100	
ROBBINS	D.		487
ROBBINS	J.		488
ROBBINS	K.		489
ROBBINS	N.		485
ROBERTS	T.		219
ROBERTSON	P.	057	
ROBILLIARD	R.A.		214
ROBINSON	F.		391
RODELL	R.		582
RODGERS-WILSON	P.J.		491
RODRIGUE	M.		590
ROSENGREN	N.		598

Appendix 4(b): Submissions from Individuals (continued)

Name	Inits	1st Sub number	2nd Sub number
ROWE	D		587
ROWE	V		609
ROWLTON	A		332
ROXBURGH	T.W.		627
RUDGE	J.		546
RUMBALARA	E	L013	
RUTHERFORD	J		L014
RYAN	D		161
SADLER	D		492
SANDOV	P.		426
SASSE	W.H.F.		086
SAUNDER	G	025	
SCOBLE	C.		529
SCOTT	M.		312
SCOTT	V.		015
SEARL	C.M.		229
SEDDON	D.E		127
SEDDON	M.		167
SEDDON	M.G.		128
SEDDON	R.		166
SEMMENS	R.B.		417
SHARP	L		628
SHARP	P		629
SHERWIN	C		708
SHORLAND	G.		374
SIFFORD	A.		145
SIMM	A		092
SIMON	R.		198
SIZELAND	D.M.	084	
SKENE	B		577
SLATER	A.		552
SMALLSMAN	G.	087	
SMALLWOOD	R.		246
SMITH	A.		088
SMITH	B.	048	
SMITH	C.G.	127	304
SMITH	G.		135

Name	Inits	1st Sub number	2nd Sub number
SMITH	I.	080	
SMITH	I.	080	
SMITH	R.		045
SNEATH	A.E. & P.R.	065	
SNIDER	P.		337
SPOKES	A.		286
SPOKES	H.		325
SPOKES	K.		438
SPOKES	S.		265
SPRUZEN	F.		249
STANLEY	H.		049
STEPHENS	N.F. & H.		090
STEPHENSON	K.		222
STEVENS	J.		257
STEVENS	R. & M.	128	
STEVENSON	J		644
STEWART	R.		106
STRAUSS	R.		375
STUDD	A. & W.	146	
SUMMERS	G.		286
SUNDERLAND	K		813
SWALLOW	G.		144
SWALLOW	P		130
SWAN	A.M.	135	400
SWAN	J.M.	024	
SWANSON	D.J.		002
TARRAY	R.		081
TAYLOR	G.F.	L002	493
THODAY	R.		630
THOMAS	A.		117
THOMAS	I		831
THOMAS	N.D.		578
THOMPSON	A.D.		612
THOMPSON	D.W.		397
THOMSON	A. & C.	L008	
THOMSON	H		645
THOMSON	P.		189

Name	Inits	1st Sub number	2nd Sub number
THRELFALL	P.		494
THORNTON	D.		465
TIEMAN	L.E.	034	
TIERING	D.		563
TOBIN	M & H.		077
TOMLIN	L.R.		048
TORRESAN	E.		187
TORRY	M.S.		221
TOUSSAT	J.		385
TOZER	M.		530
TREW	P.		389
TSERUJAVSKI	N.		314
TUCKER	B		673
TUCKER	N.	013	076
TUDDENHAM	W.G.		284
TURNER	D.		359
TURNER	M.		347
TWYFORD	K		L015
UEBERGANG	T.W.		558
VAN BOOM	T.	002	
VAN BOOM	T. & M.		004
VAN DER HORST	R		674
VANDEREE	R		632
VEAL	S		694
VIRTANEN	O.	136	
VOROS	S.		518
WADE	D.	032	
WADHAM	B		693
WALKER	J		L030
WALKER-SMITH	G.		591
WALSH	B.		129
WARD		104	
WARD	B.H.	106	
WARD	L.G.	114	
WARNEKE	J.		418
WARREN	G.		554
WASTERVAL	B.R. & E.S.		226

Name	Inits	1st Sub number	2nd Sub number
WATSON	D.B.		547
WATSON	K.		565
WELLARD	M.		299
WELSBY	P.		240
WERNER	G.F.	138	033
WESCOTT	G.C.	043	
WESTERN	A.		173
WESTON	M.		390
WHELAN	H.	133	341
WHITE	M.D.		007
WHITEWAY	B.	L021	
WIGHTER	C.M.		496
WILKINSON	M.		216
WILLIAMS	B		555
WILLIAMS	D.		330
WILLIAMSON	K		581
WILMINK	G.		497
WILSON	I.B.		329
WILSON	J.		361
WILSON	N		614
WINES	J.		553
WINES	S.		401
WINWARD	J.		245
WOODAK	T		692
WOOD	H		648
WREN	W.A.		595
WRIGHT	E.		289
WRIGHT	P.	077	
YORK	P.		531

Note: Submissions received with no name or where the name was illegible are not included. Some submissions were in the form of signed petitions.

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## Appendix 5

### ISSUES RAISED FOLLOWING THE RELEASE OF THE PROPOSED RECOMMENDATIONS

This is a summary of issues raised following the release of the Proposed Recommendations in April 1995. It does not contain a response by the Council. The inclusion of issues in this section does not imply Council's endorsement or rejection of the opinions expressed. The Council is aware that some statements in submissions may not be factually correct.

To simplify the presentation, the issues raised have been grouped under the headings listed below. The headings are listed alphabetically and not according to the importance of issues raised. It is acknowledged that some issues are interrelated and some topics could have been equally considered under different headings. The headings are:

- Aboriginal Issues
- Activities in Conservation and Sanctuary Zones
- Bays, Inlets and Estuaries
- Environmental Quality
- Legislation
- Management and Management Plans
- Marine Aquaculture
- Park System
- Recreation and Tourism
- Research and Monitoring
- Zoning
- Other Issues

#### Aboriginal Issues

Disappointment was expressed by some about the inadequate coverage of Aboriginal issues. Additional recommendations were suggested regarding the involvement of Aboriginal communities in the identification, documentation and significance of Aboriginal cultural heritage places, recognising that the cultural heritage places were 'first and foremost Aboriginal business'. It was suggested that there should be greater awareness and respect for such areas of cultural significance by land managers and the community.

The desirability of developing appropriate protocols which would recognise and protect cultural property rights was proposed, as was the inclusion of consultation with Aboriginal communities as part of management strategies. Community consultation, it was emphasised, should specifically include input from those communities who do not have representation on

existing councils, boards, authorities, and other community interest groups.

Greater involvement in management and decision making on all land use issues by Aboriginal communities was sought, and in particular, the return of benefits from commercial resource exploitation and the opportunity for Aboriginal entry to restricted fisheries. Suggestions were also made on creating indigenous ecotourism enterprises.

#### Activities in Conservation and Sanctuary Zones

A wide range of views was expressed about activities permitted or not permitted in conservation zones. The issue most frequently raised was the uncertainty about what would actually be permitted and, in particular, what would happen to fishing. Those involved in commercial and recreational fishing wanted assurance that fishing will continue. They stressed the importance of fishing to Victoria's economy, the threat to fisher's livelihood if fishing was prohibited and that a number of fishing techniques were environmentally benign. Some believed that conservation zones were not necessary if ecologically sustainable development principles were implemented, others declared that in many high energy offshore areas nature itself provided sufficient protection without the need for further restrictions. Some suggested that instead of closing areas to fishing, bag or size limits could be introduced. Marine resources could also be protected by monitoring and by the introduction of marine angling licences.

Varying views on the impact of different fishing techniques were expressed, with totally opposite views being sometimes expressed about the same technique. For example scallop dredging, spearfishing, cray fishing, commercial netting in bays and Danish seining were all considered harmful by some and benign by others.

Some believed that only recreational fishing should be allowed in some areas as it caused much less impact on target and non-target fish. Others pointed out that the number of recreational fishers is increasing, that recreational fishers are not familiar with the environment and therefore likely to cause an impact. The unacceptable and increasing volume of rubbish discarded by both professional and recreational fishers was often criticised.

Those who sought the banning of fishing in conservation zones referred to the damage that some fishing caused to the habitat and fish stocks, particularly in bays, and argued that fishing is not compatible with the objectives of marine parks.

Suggestions were made about relocating, shifting or contracting the proposed sanctuary and conservation zones to avoid resource implications as perceived by existing users. The areas where resource implications were perceived to be the highest included Moonlight Head, Nobbies, Wilsons Promontory and Ewing Marsh. The comments were made mainly about the sanctuary zones.

Decline in fish numbers was mentioned by many fishers including stocks of snapper, whiting, gummy shark, school shark, mullet, bream, mulloway; overall fish stocks between Nelson and Portland; overfished flounder, leatherjacket and ling in Westernport; declining black bream in Mallacoota; rock lobster numbers and sizes decreasing in the Port Campbell area; fish stocks diminishing, especially in the last few years, in Corner Inlet, Port Albert, Curdies Inlet and Western Port - possibly due to commercial netters. On the other hand comments were made that Lakes Entrance fisheries have been stable for many years.

A considerable number of submissions expressed the view that fishing did not adversely affect wading birds.

Activities such as marine aquaculture, installation of sea-floor cables and pipelines, coastal engineering works and earth resources exploration and extraction were considered by some as not compatible with the objectives of the conservation zones as they are likely to disturb or damage the marine environment. Others submitted that if those uses were carried out with care and subject to full environmental assessment that it was inappropriate to restrict such uses. The apparent inconsistency of

allowing commercial fishing while prohibiting uses such as spearfishing and seaweed harvesting was also commented on.

Conservation zones, some submissions argued, should be equivalent to terrestrial national parks where no extractive activities were allowed. The view was put that the proposed recommendations were overly concerned with the economic considerations rather than environmental considerations. Uneasiness was expressed about taking only a short term view of social and economic implications. It is easier and less economically demanding to protect areas now, before they become threatened or endangered.

The main reason for creating sanctuary zones was seen by many as retaining areas where marine processes and habitat are maintained in a near-natural state and which can serve as scientific reference areas. The protection of natural areas for the regeneration of fish and shellfish stock was supported as was the preservation of biodiversity including genetic diversity. Increased fish numbers and fishery refuges were also listed as values of sanctuary zones. Many cited Popes Eye as an example of the beneficial effects of no-take areas where the number and variety of fish increased and also the Rye area where marine life increased dramatically after the moratorium on scallop dredging was implemented.

In general, sanctuary zones were considered to be the marine equivalent to reference areas, that is, not subject to human use or activity, other than for limited comparative research. Many submissions questioned allowing a wider range of activities in sanctuary zones compared to Reference areas. The possibility of removing biota for restocking and gas and oil exploration were particularly criticised. Some opinions were expressed that abalone diving, as an environmentally friendly activity, should be allowed to continue in sanctuary zones.

### **Bays, Inlets and Estuaries**

Concern was raised that there was inadequate protection for different types of bays, inlets and estuaries, in particular, for Port Phillip Bay. An associated issue was that classification of bays, inlets and estuaries into one biophysical region did not do justice to their variety. For example, it was asserted, that the estuaries in western Victoria are quite different from the estuaries in eastern Victoria and a classification system was proposed.

A number of groups combined to present a proposal for a large marine park at the southern end of Port Phillip Bay.

Many submissions criticised the lack of sanctuary zones in bays, inlets and estuaries.

Other comments about bays, inlets and estuaries related to their environmental quality and those activities which were believed appropriate or not appropriate in parks. These issues are summarised in relevant sections below.

### **Environmental Quality**

The quality of marine waters was of concern to many, particularly in respect of sewage discharges, ballast water, dredging and catchment effects.

#### ***Sewage discharges***

Two issues - the introduction of better treatment for marine discharges and the eventual phasing out of ocean discharges - were often raised. Some submissions proposed that target dates be set close in the future for achieving both of these measures. Others pointed to the high social and economic implications and to the lack of a demonstrated benefit to the environment.

Concerns were also raised about the inadequacy of the recommendation about new sewage discharges being subject to either an Environment Effects Statement or an 'appropriate environmental study' without clearly defining what such study would involve. A number of submissions listed the detrimental effects of the existing discharges that had been observed. These were said to include deformed fish and crays, serious depletion of kelp beds and other algae, and high incidence of ear, nose and eye infections sustained after surfing in the area affected by the ocean discharge. The Boags Rocks, Black Rock and Anglesea discharges were most often mentioned. The need for research on the effects of discharges on the marine and coastal environment was emphasised.

#### ***Ballast water***

The threat to the marine environment, commercial fishing and aquaculture of introduced organisms transported in ballast water was considered by many to be serious and needing to be addressed urgently. Suggestions were made that proper disposal of ballast water should be mandatory and breaches subject to heavy

penalties. The nomination of a specific Government minister to handle the issue was called for.

The recommendations of the Environment and Natural Resources Committee requiring mandatory treatment of ballast water were often supported, with an example of the inadequacy of the existing voluntary controls claiming 80% of ships as not complying with these controls. Introduced species which were considered particularly serious threats to the marine environment included *Sabella* worm, *Spartina* grass (notably in Andersons Inlet) and toxic dinoflagellates (infecting mussels).

#### ***Catchment effects***

The need to take additional measures to improve the quality of the run-off water entering the marine environment, in particular the bays, was emphasised. Coordination of catchment, coastal and marine management was seen as of particular importance.

Concern about run-off water arose from the presence of harmful chemicals such as pesticides, fertilisers and suspended solids that cause siltation. Settling ponds were suggested as a way to deal with this problem.

#### ***Dredging***

Dredging in Western Port and Corner Inlet was thought by some to have contributed to the disappearance of seagrasses in some areas. On the other hand comments were made that dredging volumes are quite small compared to natural sediment movement and the overall impact is not likely to be significant, especially with respect to small boat harbours. It was also asserted that the Environment Protection Authority already effectively manages dredging in Victorian Ports through the Dredge Protocol, and that the issue of contamination of sediments by upstream pollutants is much more important.

Scallop dredging and its effects was another issue often raised. Many reported seeing devastating effects of scallop dredging on marine life in areas such as Beaumaris, Rye and other areas in the southern end of Port Phillip Bay. Others believed that scallop dredging has a minimal environmental impact and that it may help to control *Sabella* worm.

#### **Legislation**

It was believed by many that the conservation zones should be given a status similar to

terrestrial National parks and be reserved under *National Parks Act 1975*. A number of other Acts were suggested to be used for various purposes for Victoria's marine and estuarine area; *Water Act 1989* to be used for river mouth openings; *Catchment and Land Protection Act 1994* for managing catchment effects, amended *Flora and Fauna Guarantee Act 1988* with a 'vulnerable category' and the *Fisheries Act 1995* provisions for the establishment of fishery reserves for the prevention of habitat decline. The *Fisheries Act 1995* was also suggested to be used for protection of specific species under the Protected Aquatic Biota provisions. It was also suggested that the areas protected under Ramsar Convention and areas utilised by birds protected by JAMBA and CAMBA be given legislative protection.

Clarification was sought on how the recommendations related to the *Coastal Management Act 1995* and to the management plans to be developed by the Regional Coastal Boards established under that Act.

A point was made that under the Offshore Constitutional Settlement, Commonwealth fisheries legislation may override Victorian legislation and that there was a need to resolve this issue.

### **Management and Management Plans**

The Council was commended by some for its State-wide approach to planning and for recommending one authority to manage the entire Victorian marine and estuarine area. On the other hand Council was criticised by others for the lack of integrated approach to marine and coastal management, and omission of recommendations on coastal portions of existing marine and coastal parks.

Many submissions commented on the need for coordinated and integrated management within Victoria's entire marine and estuarine area, and to ensure total catchment management. The difficulty of achieving this was often raised, for example the potential problem of coordinating the activities of the Coastal and Bay Management Council, its Regional Coastal Boards, the Catchment and Land Protection Council and its Boards, and the Department of Conservation and Natural Resources. The integrated Local Area Planning (ILAP) approach, involving all levels of Government, was suggested as an appropriate coordinating mechanism.

The management of Victoria's coastline, some submitted, should be a shared responsibility of all levels of Governments but primarily of local Government and their communities and where appropriate, the indigenous communities. The need for recognition of Committees of Management and the greater role that should be given to them was raised. At the same time, the potentially narrow focus and lack of expertise of the Committees of Management was raised as a concern.

A view was expressed by a wide range of groups that the LCC was placing too much reliance on management plans to sort out permitted activities. Delegation and deferral of decisions about resource use was considered to create unnecessary uncertainty for all and was likely to lead to inconsistency between parks in different areas and confusion to users. Management plans were noted as being notoriously long in their preparation. The permitted uses for each zone were sought to provide clear directions for management agencies and to avoid confusion.

Views differed on who should manage marine parks, some believed that this should be responsibility of the National Parks Service, others suggested a marine management group established in the Department of Conservation and Natural Resources including the Fisheries Branch.

Suggestions were made for the management of specific areas: the management of the Penguin Reserve and the Nobbies marine park should be fully integrated in the course of the preparation of management plans for both areas. The land required for future port development should be managed by port authorities not the Department of Conservation and Natural Resources, and that special management areas should be managed by Committees of Management.

Effective enforcement, particularly of no-take provisions, was considered an important and difficult management issue. Many commented that all provisions, and in particular provisions relating to fishing, must be enforced and appropriate funding must be provided. Education was considered, by some, a powerful and additional tool to enforcement, by others, an alternative to prohibitions. The view was put that adequate enforcement is unlikely to occur and that as a consequence it is unreasonable to preclude existing commercial use - poachers would be the ones to gain most from the no-take areas.

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Management measures ensuring that fishing did not cause depletion of existing stocks were proposed, for example closed seasons and bag limits for both recreational and commercial fishing.

### **Marine Aquaculture**

The development of the marine aquaculture (mariculture) industry in Victoria was advocated by some as a real opportunity which required facilitation and management. It was suggested that specific marine aquaculture zones and leases be established. Some suggested that marine aquaculture areas be located in general use zones and be surrounded by appropriate buffers so as not to restrict boating, wind surfing and other recreational activities.

Concerns were expressed about the impact that marine aquaculture may have on the environment including increased wastes, artificial feeds, the likelihood of interbreeding between farmed and wild organisms, culling of natural predators including birds and seals, the use of chemicals and antibiotics to control disease and the risk of introducing disease to the marine environment.

The alienation of Crown land was also seen as a negative aspect and it was commented that marine aquaculture should not be allowed in special management areas and marine parks.

The use of Pacific oyster - an exotic species, was questioned in particular, and its potential to become feral was highlighted. Examples of areas in NSW and Tasmania where the Pacific oyster had spread and had become a pest were given. Others maintained that the culture of Pacific oyster in appropriate areas would be environmentally safe and would provide considerable economic benefits. Many supported marine aquaculture of only indigenous species and only after proper assessment of the proposed site, including baseline study and public consultation. Some advocated application of the Environment Effects Statement process.

### **Park System**

While there was much support for the concept of marine parks, views differed considerably on many aspects of the proposed parks. Comments were made in respect of the size, location, legislation and adequacy of biophysical representation. In addition a number of areas

considered to have special values were suggested as new parks.

### ***Size***

The comments on size related mainly to sanctuary zones. They were considered by many to be too small in terms of their individual size and overall percentage representation of the Victoria's marine environment. Some believed that they were too small to provide undisturbed examples of ecosystems, and sustain breeding populations for replenishment of adjacent areas. It was suggested that the two kilometre width be increased to include greater percentage of shallow coastal waters - the areas most susceptible to human impacts. Views were expressed that sanctuary zones should represent 10% of Victoria's marine environment. Others considered that such percentages were arbitrary. Additional no-take areas were advocated with submissions quoting benefits of no-take areas in New Zealand, the proportion of no-take areas in the Great Barrier Reef Marine Park, and to the precautionary principle.

### ***Location***

The location of sanctuary zones and marine parks in general raised many comments. Some believed that at least some such areas should be more accessible so they can be readily enjoyed by people, and to allow a feeling of ownership to develop within local communities.

It was suggested, that less remote sanctuary zones, in particular, would be also easier to police and to study. Enforcement of no-take provisions was considered to be a major problem. Comments were also made that all sanctuary zones be surrounded and buffered by conservation zones and adjoin national or State parks on land.

Many comments were made about the need for boundaries of sanctuary and conservation zones to be clearly defined not just on maps but to be identifiable in the field.

### ***Biophysical representation***

Concern was expressed that the representation of sanctuary zones in biophysical regions was inadequate. Areas of particular concern included the absence of representation of the Otway Biophysical Region, and the major bays of Port Phillip Bay and Western Port and in particular their seagrass and mangroves.

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### *Existing marine parks*

Strong opinions were given that the existing marine reserves should be protected at their current level and not be downgraded. Areas of particular concern were Bunurong, Popes Eye, Point Lonsdale, Swan Bay, Point Nepean and Wilsons Promontory.

### *Proposals for new parks*

Additional areas were suggested as new parks or identified as needing protection. These included areas of special environmental values within Port Phillip Bay and Western Port, particularly to give protection to seagrass, mangrove and wader habitats (especially Ramsar sites); seal protection was advocated for Skerries, Cape Bridgewater, and Lady Julia Percy Island. Lady Julia Percy Island was also highlighted as an area with many other special values.

Other areas suggested were Logans Beach for whales; Point Nepean area for dolphins; Port Campbell area for rock lobster and abalone natural habitat; islands off Wilsons Promontory for penguins; and the area around Killarney for wader habitat protection. Anderson and Mallacoota inlets were suggested as important fish breeding and reference areas. Other sites included fossil sites, such as Dinosaur Cove in the Otways.

The southern end of Port Phillip Bay, the area from Armstrong Bay to Warrnambool, Ingoldsby reef near Anglesea, and Waratah Bay, and areas between Lorne and Airey's Inlet, and between Anglesea and Torquay were described as having environmental values and worthy of protection.

In some instances detailed information on environmental values was provided in support of the proposed parks.

### *Recreation and Tourism*

The recreational pursuits most often commented on included recreational fishing, diving and boating. Recreational fishing and spearfishing were mainly considered in relation to these activities occurring in the proposed parks. Artificial reefs were suggested to enhance and promote diving opportunities, others saw these as inappropriate in little modified areas.

Many who commented on boating stressed the difference between motorised boating and other forms of boating. The non-motorised boats, it

was considered, do not cause any environment impact. On the other hand the impact of motorised crafts on seagrass, their noise level and associated rubbish pollution were of concern. The amount of rubbish was particularly high in some places (eg Refuge Cove) and took away the pleasure of diving. Some suggested that motor boating not be permitted in parks. There was also a call to ban jet skis particularly in bays and areas which were used for surfing, snorkelling and diving.

Controls on boating were also called for in areas frequented by dolphins and whales. Comments were made that wildlife watching needed to be carefully managed to ensure adequate protection of wildlife. The need to acknowledge the impact of recreation and tourism on conservation was sought, as was management control that ensured that natural values which provided the basis for the recreation and tourism industries were maintained.

Provision of services for recreation and tourism was considered essential, including facilities in National Parks. There were others, who believed that the facilities in National Parks should be restricted only to low impact camping. An issue often raised was the transfer of the lighthouses to the Victorian Government, and the uses and activities which would be allowed after the transfer.

Some believed that recreational activities and particularly tourism were not sufficiently covered in Proposed Recommendations. Tourist activities, in general, needed more mention.

### **Research and Monitoring**

A number of submissions argued that if sanctuary zones were to operate effectively as reference or control sites for impact monitoring, they should not be subject to any human use or activity, other than for limited comparative research.

The desirability of each sanctuary zone being subject to a baseline study and a subsequent monitoring program was also raised.

Some submissions stated that additional sanctuary zones are required for establishing monitoring sites to measure human impact in areas of heavy use, such as in Western Port and around Anglesea.

Several sites in Port Phillip Bay used for research in the past or currently monitored by

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various bodies were suggested as locations for control sites and therefore as sanctuary zones.

Sites in Port Phillip Bay that had been closed to scallop dredging were suggested as possible reference areas - to monitor and assess the impact of this fishing technique. Suggested sites included areas at Indented Head and Capel Sound (Rosebud) which are currently not available to this fishery.

Research and monitoring was called for in regard to specific issues such as the spread of exotic marine pests, the impact of commercial fishing, dredging, run-off and recreational fishing. Some suggested that areas which are very productive for fish but inaccessible for fishing should be set aside as no-take areas for such monitoring.

Other submissions suggested that funding for monitoring the impacts of various exploitative activities should be based on 'user-pays' principle and that, where possible, such monitoring should start prior to undertaking these activities.

Comments were made on the lack of a common framework for monitoring Victoria's marine environment. The lack of specific objectives for proposed monitoring was highlighted.

### **Zoning**

It was stated by some that the proposed zones were too complex and that there were too many of them. The purpose of proposed zones was considered unclear, as were the activities which were allowed.

The absence of any details on uses and activities for general protection zones and special management areas was of concern.

A range of suggestions was made to amend the zoning system: for instance sanctuary zones should be equivalent to terrestrial reference

areas; conservation zones be equivalent to terrestrial national parks with no extractive activities and exclusion of marine aquaculture; general protection zones be equivalent to terrestrial regional parks with clearly defined permitted uses; and that special management areas be covered by a reservation and not only by a management plan.

Other submissions supported the proposed zoning system while some questioned the need for the General Protection Zone.

### **Other Issues**

The port areas, especially port development areas, were, according to some, classified incorrectly. Examples were given of inappropriate zoning of the Port of Hastings. The need for port privatisation to be addressed was raised. Navigational aids should be allowed to occur wherever they were needed. The mapping of the ports and channels was unclear for some, and it was thought that it is not obvious where public service utilities were located.

Some believed that there should be areas dedicated to recreational fishing and scientific research. There was also uncertainty about the landward boundaries of zoned areas.

Rezoning of parts of some coastal reserves from recreation zone to protection zone was suggested, of particular concern was the zoning around Airey's Inlet and Lakes Entrance.

Other issues raised included consideration of both recreational and commercial fishery activity in relation to the economies of small towns, accuracy of commercial fishing data, provision of a detailed framework for dealing with threatening processes, phasing out of uses which will not be permitted, compensation for exclusion of existing commercial activities and consistency with Melbourne Area District 2 Review Final Recommendations

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## Appendix 6

### BIOPHYSICAL REPRESENTATION

The basis of any use or management of marine resources must be an understanding of their distribution, abundance and factors affecting their ongoing survival, use, or potential for use. Within the marine environment, such information is unknown for many resources, is limited in extent and may be difficult and expensive to obtain.

The marine environment is a complex system with many interactions both within and external to it. A regionalisation or classification that groups similar areas together within relatively homogeneous but distinctive regions in terms of their biological and physical characteristics can facilitate planning and management. It also assists the planners and managers of such areas and regions, and the community, in understanding the complexities of the marine environment. Such regionalisations also enable a systematic approach to planning, inventory and audit of the marine environment and its resources.

*In the terrestrial environment, the Council has developed regionalisations on the basis of physical and biological attributes to derive what are known as 'land systems'. These regions or areas have similar geology, topography, climate, and vegetation assemblages. At a broader scale, a group of land systems makes up a 'geomorphic unit', which is an area of land with similar large-scale geomorphological characteristics.*

Over the past 30 years or so other terrestrial regionalisations have been developed to assist in the classification and mapping of flora and fauna.

These terrestrial regionalisations have been progressively enhanced as the volume of data has increased and techniques for data storage and manipulation have improved. This has been coupled with a general increase in the conceptual understanding of the systems. However, it is clear that there is no single correct regionalisation: the outcome depends largely on the data analysed and the extent of the area to which the regionalisation applies. Whatever the outcome, it must be clearly understood how it was derived and the limitations on interpretation that this may impose.

In an Australian marine context, Ray and 'McCormick-Ray in a 1992 consultancy report for the then Australian National Parks and Wildlife Service, described a national regionalisation, developed in 1985, that identifies six biogeographic regions. Victoria is a part of one such region. This is of limited value when planning the use and management of Victoria's marine waters, but it does provide a framework on which to construct a more detailed biophysical classification specific to this State.

Marine regionalisations funded under the Ocean Rescue 2000 program, an initiative of the Commonwealth Government, are currently under development in each State. The desirability of developing an agreed national biogeographic regionalisation soon became apparent and the Australian Nature Conservation Agency (ANCA) coordinated its development. Following a series of technical meetings and workshops between the Commonwealth and State agencies an interim biogeographic regionalisation for Australia (Thackway and Cresswell 1995) has been published. A continental scale regionalisation is also being developed by the Commonwealth for waters within the 200 nautical mile Economic Exclusion Zone. Regionalisations have also been developed and used for marine planning in countries such as New Zealand and Canada.

For Victoria's marine environment, the Council and then Department of Conservation and Natural Resources jointly initiated the development of a biophysical regionalisation using external consultants. The results of this work was used in the national regionalisation report.

#### **Development of the Biophysical Regionalisation of Victoria's Marine Environment**

The development of the regionalisation is briefly described here. More detail is provided in reports listed at the end of the chapter, which are available from the libraries of the Department of Infrastructure and the Department of Natural Resources and Environment.

It was decided to first develop a regionalisation based on the physical parameters and then consider the biological data in order to produce a biophysical regionalisation if possible. This approach reflected the greater detail and availability of relevant physical data sets.

### *Physical regionalisation*

The analysis of physical components considered bathymetry (including offshore gradient), geology and geomorphology (including coastal orientation), tidal characteristics (including tidal sea levels and currents), sea-surface temperature, and waves.

Given that the bays, inlets, and estuaries, as a group, are so physically different from the open coast it was considered unnecessary to quantitatively prove this to be the case. It was, therefore, decided to develop a physical classification for only the open-ocean coast.

Graphs and scatter plots were used to assist the interpretation of the geographic variation of the physical data. These showed that major sections of the coast were clearly distinguishable from each other. This was supported by statistical analysis of the data.

Six physical regions were identified following consideration of the physical data:

- Bays, inlets and estuaries
- South Australian border to Cape Otway
- Cape Otway Region (about 25km west to east) which occurs around Cape Otway
- Cape Otway to Wilsons Promontory
- Wilsons Promontory (about 75km west to east) which occurs between about Cape Liptrap and the Ninety Mile Beach
- Wilsons Promontory to the New South Wales border.

It should be noted that the Cape Otway and Wilsons Promontory regions have characteristics that are both unique to the regions and also transitional between the adjacent regions. The influence of these entrances to Bass Strait is also evident in the regionalisation for Bass Strait as a whole, which is discussed in Hamilton (1994).

### *Biological regionalisation*

The data used for the biological classification were primarily based on records of the Marine Research Group for the distribution of 282 common intertidal invertebrates. Distribution data were compiled for 95 grid cells which were about 15km long and based on latitude and

longitude intersections of the coastline. This data was analysed statistically.

In summary three main biological regions were identified:

- Bays, inlets and estuaries
- South Australian border to Wilsons Promontory; South Australian border to Cape Otway is a weakly defined subset of this region
- Wilsons Promontory to the New South Wales border.

### *Biophysical regionalisation*

The biophysical classification was derived by manually overlaying the physical and biological classifications.

As a result of the overlay process, no additional regions were distinguished. The geographic concordance of regions identified from physical and biological regionalisations does not necessarily constitute a cause and effect relationship between the biology and the prevailing physical conditions. However, it should be noted that the division between the open coast and bays, inlets and estuaries arising from statistical analysis of the biological data is consistent with the separation based on the qualitative consideration of physical parameters.

The biophysical regionalisation adopted of six regions:

- Western - South Australian border to near Cape Otway
- Otway - which occurs around Cape Otway (about 25km west to east)
- Central - Cape Otway to Wilsons Promontory
- Wilsons Promontory - which occurs between about Cape Liptrap and about the Ninety Mile Beach (about 75km west to east)
- Eastern - Wilsons Promontory (Ninety Mile Beach) to the New South Wales border
- Bays, inlets and estuaries: there was no differentiation made between the individual water bodies.

The open coast regions are shown in Figure 1.2 (see Chapter 1).

### *Identification of Representative Areas*

Council has sought to represent the major habitats found in each biophysical region within its park system.

Representativeness in the context of this investigation refers to the identification of areas containing examples of the range of marine habitats within each biophysical region. The Descriptive Report describes the major marine habitats along the Victorian coast (see also Table 1.4 and below). The procedure for the identification of marine representative areas to provide for the protection of significant environmental values is outlined in the five steps below.

#### *Step 1*

Subdivide biophysical regions according to the eight major habitat types identified in the Descriptive Report (see also Table A6.1). Forty-eight potential region-habitat combinations were identified. Intertidal rocky shores and subtidal rocky reef habitats were also subdivided according to major rock types of the substrate (see Table A6.2).

#### *Step 2*

Identify specific coastline and offshore sections for each biophysical region/habitat combination that have known biological or ecological values (see also Appendix 7).

#### *Step 3*

Using areas with known values as a core, delimit sections of the coast from high water to the territorial limit to include the variability associated with increasing water depth and distance from shore.

#### *Step 4*

For these sections of the coast where clear alternative areas exist, choose the area in the best environmental condition and adjust longshore boundaries to avoid incompatible facilities or activities.

#### *Step 5*

Consider the social and economic implications of choosing particular areas and the identified range of appropriate uses.

While the biophysical regionalisation clearly identified bays, inlets and estuaries as different from the open-ocean coast, it did not seek to distinguish between individual bays, inlets and estuaries. There are number of features specific to bays, inlets and estuaries. Two very important habitats – mangroves and sheltered intertidal flats, including tidal channels systems – occur only in bays, inlets and estuaries. Other characteristic features include extensive areas of seagrasses and restricted water exchange patterns. While the predominant substrates in bays, inlets and estuaries are soft sediments with

corresponding flora and fauna, the major bays include 'intertidal rocky shore' and 'subtidal rocky reef' habitats with a number of different substrate types clearly discernible in Port Phillip Bay.

### **Issues Related to the Representation of Habitats**

As noted above, Council has sought to represent the major habitats in each biophysical region within its park system. The following specific issues were addressed when considering the representation of habitats in the five steps outlined above.

#### *Intertidal rocky shores*

A characteristic feature of intertidal rocky shores is a distinctive zonation of organisms. Specific flora and fauna are often confined to a particular zone. Unless the intertidal area was already included within an adjoining park, the complete zonation was represented in the marine park.

The Marine Research Group (Handreck and O'Hara, 1994) showed that intertidal invertebrate diversity varied with the following rock types: basalt, granite, limestone, calcarenite and sandstone. Floral diversity and composition are also likely to be influenced by substrate rock type. Representation of each of the five substrate rock types, where present, was sought in each biophysical region (see Table 5.2).

#### *Subtidal rocky reefs*

Although the relation between substrate rock type and the biology of offshore subtidal rocky reefs has not been studied specifically, it appears that the flora and fauna on subtidal rocky reefs may differ according to rock type in a similar way to that of intertidal rocky shores. Subtidal reefs also display differences in erosion patterns resulting in differing textures, sizes and shapes of microhabitats which are strongly influenced by rock type. However, for a given rock type the erosion patterns may differ between intertidal and subtidal areas.

Intertidal rocky shores and subtidal rocky reefs in the same area often, but not always consist of the same broad rock type. Therefore, by including the adjacent offshore area the subtidal reefs of a particular rock type will also generally be represented. This assumption for reef areas was applied with care, as it also assumes that subtidal reefs occur in the adjacent areas.

In some areas, nearshore geology can be determined with some certainty. For example, the granite islands off Wilsons Promontory, and basalt islands such as Lawrence Rocks, Lady Julia Percy Island offshore from Portland and Port Fairy respectively, provide a good indication of the rock type of offshore rocky reef habitat. In addition, the rock type of some subtidal reefs is known from specific underwater studies.

#### *Seagrasses*

This habitat has an extensive distribution in bays, inlets and estuaries, but on the open coast has not been systematically mapped. Wherever practicable, this habitat was included in representative areas.

#### *Mangroves*

Wherever practicable, this habitat was included in representative areas. It is not present on the open coast.

#### *Intertidal sandy beaches*

The paucity of data on this habitat did not allow the identification of sandy beaches with important ecological and biological values. It is, however, a distinct and important habitat characterised by low diversity of specialised fauna. Some data indicate that major differences may occur between ocean beaches only a few kilometres apart. In some instances intertidal sandy beach habitat was included in mainly rocky areas identified as having important ecological and biological values. Where this did not occur, and it was appropriate, adjacent sandy beaches were included by extending the core areas identified in Step 3 above.

#### *Sheltered intertidal flats*

This habitat only occurs within bays, inlets and estuaries. It can be divided into two categories - sand flats and mud flats. Sand flats may be comprised of different sized sand and silt particles; variation in infauna may be correlated with such differences.

#### *Subtidal soft strata*

This habitat can be considered as a spectrum from sandy to muddy sediment. Sediment type is believed to be extremely important in controlling species distribution and community structure.

#### *Pelagic environments*

Pelagic environments within Victorian waters are unlikely to be uniform. Although there are no systematic studies of Victorian marine waters, based on work in other geographic regions such as the tropics, larvae and other propagules for example probably have very patchy distributions and are most likely confined to limited areas. However, an absence of distributional and site-specific data, particularly for zooplankton, phytoplankton or for adult fish, means it is impossible to make definite statements. As representative areas were extended to the territorial limit to include variation in sea-floor habitats with depth, the inclusion of the overlying water should therefore incorporate the variability of this habitat.

#### *Variation in sea-floor habitats with water depth*

It is also known that the flora and fauna on subtidal rocky reefs change with depth, and as the sea-floor slopes away from the coastline with distance from shore. Algal species change with increasing depth, from green through brown to red. Plant life declines due to reduced light penetration at about 20m depth, sometimes extending to 50m in clear water. In addition, nearshore areas are subject to the dissipating energy of incoming waves, currents and the abrasive effect of mobile sand. This also leads to variations in the particle size and structure of soft sediments and consequently changes in biology.

Along the Victorian open coast the sea slopes gently offshore. At the territorial limit, water depth varies from about 30m to 110m, although in some areas like Wilsons Promontory the water depth increases rapidly at first. Therefore, by extending areas from the shoreline to the territorial limit, the biological variability of subtidal rocky reef habitat and subtidal soft substrate habitat related to water depth is incorporated.

#### *Variation in orientation and wave energy*

It is known that variation in shoreline orientation and wave energy climate can have a major influence on biological communities. Where ever possible this variation was represented.

#### *Other considerations*

In the offshore direction the size of representative areas along the open coast is restricted to 5.5km, the limit of Victorian territorial jurisdiction.

In the longshore direction, the initial long-shore size was that originally identified in the 'Sites of Biological and Ecological Importance' paper (see Appendix 7). The choice of location and size of representative areas was also determined by the degree of naturalness. Of the area itself and the adjoining hinterland.

Where there was a choice in the long-shore boundaries of an area, or in choosing between two locations which equally represented habitats in a region, areas of known disturbance, particularly from ocean outfalls, were avoided.

While other activities occur along the coast which may disturb natural processes, they tend to be more widespread and could not be as easily incorporated into the decision-making process at an early stage. They were, however, considered in finalising the proposed number and location of representative areas.

Using the information available to Council, social and economic issues were identified by determining the current and potential use of the area for recreation, fisheries, earth resources, and other services and utilities.

**Table A6.1: Major Habitats by Biophysical Region**

Habitat	Bays inlets and estuaries	Open Coast Regions				
		Western	Otway	Central	Wilsons Promontory	Eastern
Intertidal rocky shores						
Subtidal rocky reefs	Minor					
Seagrass beds			Minor			None known
Mangroves		Not present	Not present	Not present	Not present	Not present
Intertidal sandy beaches						
Sheltered intertidal flats		Not present	Not present	Not present	Not present	Not present
Subtidal soft substrata						
Pelagic environment						

Note:

Shading indicates habitat/region combinations that occur along the Victorian coast.

**Table A6.2: Major Substrate Rock Types by Biophysical Region**

Substrate rock type	Bays	Open Coast Region				
		Western	Otway	Central	Wilsons Promontory	Eastern
Basalt			Not present		Not present	Not present
Granite		Not present	Not present	Minor		
Limestone	Minor		Not present	Minor	Not present	Not present
Calcarenite			Not present		Offshore reefs only	Offshore reefs only
Sandstone					Minor	

Notes:

1. Shading indicates areas where a particular substrate occurs.
2. Occurrences of the five major substrate rock types occur in some but not all bays, inlets and estuaries.

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Thackway, R., and Cresswell, I.D. (1995), *An Interim Biogeographic Regionalisation for Australia: A Framework for Setting Priorities in the National Reserves System Cooperative Program*. Australian Nature conservation Agency, Canberra.

Victorian Institute of Marine Sciences, Consulting Environmental Engineers, Dames and Moore, Museum of Victoria (1994), *Environmental Inventory of Victoria's Marine Ecosystem - Stage 1: Biophysical Classification*. An unpublished report to the Land Conservation Council and Department of Conservation and Natural Resources

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## Appendix 7

# PROCESS FOR THE IDENTIFICATION OF SITES WITH IMPORTANT BIOLOGICAL AND ECOLOGICAL VALUES

The Descriptive Report identified the paucity of marine biological data as an issue. The level of biological data for the whole Victorian marine environment allowed only a general description of eight marine habitats, primarily defined by tidal level, substrate type, exposure to wave energy, and, where applicable, dominant flora. They were: intertidal rocky shores; subtidal rocky reefs; seagrass beds; sheltered intertidal flats; mangroves; inter-tidal sandy beaches; subtidal soft substrates; and pelagic environments. Data that would allow distinctions to be made between areas within the same habitat, were generally not available.

Submissions to the Descriptive Report suggested that there may be additional data that the Council could use that may assist with a systematic description of the biology of the marine environment. A *pro forma* was developed to allow data to be compiled so that a consistent comparison could be made across the entire coast. To assist individuals and organisations to provide biological data a list of values, criteria and levels of significance that could be used to define biological sites was compiled. The availability of this list was indicated in the third newsletter for the investigation.

The Council also commissioned a report from the Marine Research Group on the biology of the intertidal rocky shore habitat (Handreck and O'Hara, 1994; Occurrence of selected species of intertidal and shallow subtidal invertebrates at Victorian locations). The report was based on 282 species of well known intertidal and shallow subtidal macro-invertebrates, recorded at some 215 locations along the Victorian coast. The diversity of these invertebrates on rocky shores and shallow subtidal reefs varied with substrate rock type: basalt, granite, limestone, calcarenite and sandstone. Consequently, the coast was divided into sections on the basis of predominant substrate and each section described in terms of the number of species recorded, sampling effort, substrate type and wave energy regime. Some areas were found to have a particularly high diversity of species.

Using all the relevant data that could be located, and the report by the Marine Research Group, a working paper *Sites with Important Biological and Ecological Values* was prepared by the Council. Five criteria were used to systematically assess and compare all data. They were:

- high diversity of habitats
- high diversity of species
- habitats for rare, endangered, uncommon, depleted species
- nursery, feeding, breeding or rest areas
- rare or unique habitats.

The paper was sent to peak groups inviting comments on the technical accuracy of the material and whether any relevant data sources had been overlooked.

Of all data and studies used for identification of the sites of biological and ecological importance, the study by the Marine Research Group, although limited to one faunal group – common intertidal invertebrates – was the only high resolution, marine biological dataset which covered the entire Victorian coastline. Other studies of the Victorian coast included an inventory of estuaries and overviews of shorebirds and seabirds. Most of the other sources were studies containing detailed data on marine intertidal and subtidal flora and fauna but limited to specific areas. These areas were Portland, Port Phillip Bay, Western Port, Bunurong, Wilsons Promontory, Corner Inlet/Nooramunga, Ninety Mile Beach, and East Gippsland.

Most of the studies reported varied greatly not only in the quality of the data but also in data collection methods, sampling strategies, different levels of taxonomic identification, and in ways data had been analysed.

The available data could, however, be compared cautiously, with appropriate qualifications, particularly in regard to varying quality of the information. The revised working paper identified 18 large sites, eight sites important as seabird colonies and three additional small sites

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with a high diversity of intertidal invertebrates. The working paper can be inspected at Council's offices. This information was then used by Council to assist in the development of the Proposed Recommendations.

The search for available data confirmed that the knowledge of Victoria's marine communities is poor in comparison with terrestrial vegetation communities. Detailed descriptions have only been produced for a few major habitat types and no State-wide survey has been carried out. Few quantitative data have been collected. Particular regions or specific groups of flora and fauna have received detailed attention, but many information gaps remain. Several factors, that are not restricted to Victorian or Australian circumstances for that matter, account for this poor state of knowledge: taxonomic

impediments, restricted biological sampling, selective nature of available data, inaccessibility of many marine environments, and the high cost of scientific survey.

Subsequent to the Proposed Recommendations, Council commissioned the Victorian Fisheries Research Institute to undertake a study to identify and describe subtidal substrates occurring in selected offshore areas of Victoria's coastline. This study, utilising a hydro-acoustic benthic classification system and a submersible video camera, provided qualitative information on habitat type and benthic community representation. While principally undertaken to assist Council in delineating and comparing potential Sanctuary Zones, the study also identified a number of interesting biological features.

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## Appendix 8

### SUMMARY OF IMPLICATIONS OF THE DRAFT FINAL RECOMMENDATIONS

The following is the Summary of the social and economic implications of Council's Draft Final Recommendations from the report prepared by McLennan Magasanik Associates Pty Ltd, titled *Socio-economic Assessment of Draft Final Recommendations covering Marine, Estuarine and Coastal Areas in Victoria*.

#### 1. Introduction

This report assesses the merits from the point of view of the community of the Land Conservation Council (LCC) draft recommendations in relation to marine coastal and estuarine areas in Victoria. The analysis examines costs and benefits flowing from their implementation and likely impacts on the economy through changes in employment and production.

The study has been undertaken for the LCC by McLennan Magasanik Associates Pty Ltd.

Detailed information for the analysis is substantially lacking so the quantitative estimates that have been generated are only indicative. The value of the results lies in the relativity between the numbers. Thus, where an estimate has a significant effect on overall results, that significance would not likely change with more detailed knowledge.

#### 2. Sources of Cost and Benefit

##### *Marine Parks and Sanctuary Zones*

These account for the main commercial impacts. Within marine parks commercial activity is constrained in only a few parks. Impacts are greater in sanctuary zones where all commercial resource utilisation activity is prohibited. Benefits arise from conservation and enhancement of the environmental resource, some forms of tourism and recreation use. The table lists those marine parks and sanctuary zones where activity is constrained, together with forgone revenues.

##### **Forgone annual revenues from commercial activities - affected marine parks and sanctuary zones (1)**

###### *Affected marine parks*

A2	Lady Julia Percy Island	Increased oil and gas development costs: \$65,000
A3	Lake Gillear	Increased oil and gas development costs: \$65,000.
A4	Port Campbell	Increased oil and gas development costs: \$260,000
A8	Port Phillip Heads	Exclusion of jet skis. Impact: \$30,000
A11	North Western Port	Exclusion of haul seining. Impact: \$150,000
A12	Rhyll-Newhaven	Exclusion of haul seining. Impact: \$20,000
A16	Wilson's Promontory	Exclusion of beach seining. Impact: \$250,000
A18	Point Ricardo	Exclusion of Danish seine fishing and trawling. Impact: \$60,000

###### *Affected sanctuary zones*

B2	Lady Julia Percy Island	Abalone: \$340,000 Lobster: \$30,000
B3	Lake Gillear	Abalone: \$25,000 Lobster: \$30,000

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B4	Port Campbell	Boat charters, other recreation support: \$45,000 Abalone: \$45,000 Lobster: \$90,000
B5	Glenaire	Abalone: \$65,000 Lobster: \$47,000
B6	Point Addis	Diving: \$10,000 Abalone: \$5,000 Lobster: \$8,000
B7	Harold Holt	Abalone: \$80,000 Lobster: \$34,000
B10	Ticonderoga Bay	Charter boats, recreation support: \$70,000 Abalone: \$1,000 Lobster: \$3,000
B11	Point Cook	Diving: \$10,000 Abalone: \$115,000
B12	Ricketts Point	Abalone: \$1,000
B13	The Nobbies	Abalone: \$105,000 Lobster: \$6,000 Diving: \$20,000
B15	Bunurong	Abalone: \$3,000 Lobster: \$20,000
B16	Cape Liptrap	Diving: \$20,000 Abalone: \$10,000 Lobster: \$3,000
B17	Shellback Island	Lobster: \$10,000
B18	Wilsons Promontory	Abalone: \$55,000 Lobster: \$5,000 Seining: some seining - included in A6 above
B20	Cabbage Tree	Lobster: \$3,000
B21	Rame Head	Abalone: \$120,000 Lobster: \$3,000
B22	Cape Howe	Abalone: \$145,000 Lobster: \$3,000

---

(1) Any forgone revenues associated with marine parks and sanctuary zones that are not listed in this table are small.

### *Special management zones*

Benefits derive from enhancement of the environmental resource. Costs - mainly constraints on commercial activity - are real but small, as not much activity occurs in these zones. Lost revenues are unlikely to exceed \$50,000 annually.

### *Preferred marine aquaculture areas*

Designation of preferred marine aquaculture areas removes a considerable impediment as it is currently difficult to get permits. Net benefits derive from removal of existing impediments and associated efficiency gains.

### *Coastal reserves, services and utilities reserves*

Insofar as the recommendations recognise and accommodate existing activity there is negligible economic cost or benefit associated with them.

---

### 3. Summary Findings

#### *Benefits*

##### *(i) Conservation and enhancement of environmental amenity*

If the alternative is deterioration of the marine and coastal resource the evidence from comparable analysis elsewhere is that the community would be willing to pay a significant amount to ensure this does not occur. It would also be willing to pay for environmental conservation and enhancement such as associated with sanctuary zones, although the level of such payment is unclear.

Estimated benefit (willingness to pay): \$100m/year

##### *(ii) Stimulus to tourism and recreation*

There will be some increase in activity over and above what otherwise would occur. That increase will flow from the 'signposting' provided by designation of the various zones, and associated promotion and enhancement of facilities.

Benefit: say, \$200,000+ annually, but might be greater.

##### *(iii) Stimulus to marine aquaculture*

One of the main impediments to marine aquaculture in Victoria is getting the necessary permits. Designation of preferred marine aquaculture areas will remove this impediment and the concentration or co-location of activities in these areas will increase efficiencies and lower unit costs through sharing of information. Marine aquaculture is highly prospective and current industry revenues could lift from \$1m annually at present to better than \$25m by the turn of the century.

Benefit: \$1m on an annualised basis.

##### *(iv) Conservation of aboriginal and heritage values*

If the alternative is deterioration, protection of these values will have benefit for those affected.

Benefit: maintenance or increase in well-being. No value estimated.

##### *(v) Community education*

Expenditure of resources on community education will lead to a greater knowledge and capacity to enjoy the coastal environment. Of itself this will lead to greater visitation and a greater value being attached to overall environmental amenity.

Benefit: maintenance or increase in well-being. No value estimated but could be significant.

#### *Costs*

##### *(i) Commercial fishing*

Forgone fishing revenues associated with marine parks, mainly due to banning of haul and Danish seining, amount to \$480,000 annually. Forgone fishing revenues associated with sanctuary zones, mainly due to reductions in abalone and rock lobster fishing, amount to \$1.4m annually. This may be offset to some extent by the sanctuary zones providing recruitment for fish stocks harvested in adjacent areas.

Cost: forgone benefit: marine parks - \$100,000 annually  
sanctuary zones - \$350,000 annually

##### *(ii) Tourism and recreation*

Constraints on certain commercial tourism and recreation activities are imposed in some zones, mainly by sanctuary zones. Constrained activities include diving-based recreational fishing, jet-skiing and recreational fishing. Estimated annual forgone revenues: \$205,000.

Cost: forgone benefit: \$40,000 annually

*(iii) Oil and gas*

A number of zones - particularly west of Port Phillip Bay - are in areas that are prospective or highly prospective for oil and gas discovery. Exploration drilling is permitted in marine parks but not sanctuary zones. Production drilling is not permitted in either. The impact of prohibition on sanctuary zones is negligible given their small size and often difficult terrain. Costs are based on the probability of finding a resource that would optimally be extracted via drilling in a marine park, and the extra cost of deviated or directional drilling from outside the park. A total cost of \$2.5m is indicated. Annualised, this amounts to about \$400,000.

Cost: \$400,000, annualised basis.

*(iv) Implementation*

To implement the recommendations may require re-organisation of existing procedures for the conserving and enhancing the amenity of Victoria's coast. Where activities are prohibited (mainly the sanctuary zones) there will undoubtedly be increased costs for surveillance and ensuring compliance. There may be efficiencies from designation of the zones as recommended, in that such designation signposts priorities, and channels interest on the part of the community. Any directly attributable net increase in outlays on management and operation should be assessed as a cost. Of course, any level of expenditure will seek justification against the overall benefits it is aimed to secure.

Costs: Not estimated.

**Social Impacts**

There are beneficial social impacts:

- improvements in environmental amenity will be beneficial to the community as a whole.
- there will be positive spin-offs due to employment as a result of increased tourism and recreation. Those beneficial impacts will likely occur locally and offset adverse local impacts from the curtailment of other commercial activity, mainly commercial fishing.

There will be adverse impacts on employment, mainly from reductions in commercial fishing and on the area available to those who participate in certain forms of recreation.

Job gains will be associated with stimulus to economic activity (eg, marine aquaculture) as well as activities which represent costs - increased costs of oil and gas development and implementation measures (including education initiatives).

The following summarises estimated job gains and losses.

**Jobs gains and losses**

Activity	Direct	Indirect	Total
<b>Job losses</b>			
Fishing	13	37	50
Recreation	4	8	12
<b>Job gains</b>			
Marine aquaculture	100-150	----- not estimated -----	
Tourism and recreation	20-200	----- not estimated -----	
Oil and gas development	-----	not estimated -----	
Implementation and education	-----	not estimated -----	

**4. Concluding Note**

In summary, the principal benefit from implementing the recommendations is conservation and enhancement of the value of the environmental resource. Benefits from marine aquaculture are potentially large. There are also associated tourism and recreation benefits. The principal costs are associated with constraints on incompatible uses - mainly commercial fishing and oil and gas production.

## Appendix 9

# SUMMARY OF FISHING IMPACT BY TECHNIQUE

Fishing method	Impact on seabed/benthos	Cause of impacts	Relative rating of impact (1)	Discarded bycatch	Rating of impact (2)
TRAWLING - OTTER (prawns)	resuspended sediments. physical disturbances. community changes (removal/scatter of benthos)	(otter boards, (bottom chains (	low-med med med	variable but usually high	med-high
TRAWLING - OTTER (bugs)	resuspended sediments. physical disturbances. community changes (removal/scatter of benthos)	(otter boards, (bottom chains (	low -med med med	variable but can be high	med
TRAWLING - OTTER (dem. fish)	resuspended sediments. physical disturbances. community changes (removal/scatter of benthos)	(otter boards, (bobbin gear (	med med med	variable but usually high	med
SALTWATER RECREATIONAL FISHING	community changes (removal of benthos)	bait collection	low	variable but higher with shore fishing	low-med
SEINING - PURSE	nil (accidental)			minor	low
SEINING - DANISH	resuspended sediments. physical disturbances. community changes (removal/scatter of benthos)	(leaded haul ropes, (footrope weights (	low - med med med	variable but usually high	med -high
SEINING - HAUL	resuspended sediments. physical disturbances. community changes (removal/scatter of benthos)	(footrope weights ( (	low-med low low	variable but usually high	low-med
ABALONE DIVING	change in macroalgal comm over long term	removal of abalone	low	nil	N/A
DREDGING - SCALLOPS	resuspended sediments. physical disturbances. community changes (removal/scatter of benthos)	(scraper plate, (toothed bars, (skid bars	med med med	variable but generally low	low
SQUID JIGGING	nil			nil	N/A
MESH NETTING (FISH- MULTI)	abrasion of gear on bottom	weights	low	variable but often released	low
MESH NETTING (FISH - MONO)	abrasion of gear on bottom	weights	low	variable but not high	low
LONG-LINING	abrasion of gear on bottom	weights	low	variable but not high	low
ROCK LOBSTER TRAPPING	abrasion of gear on bottom	pots	low	minor	low
TRAPS (FISH)	abrasion of gear on bottom	traps	low	minor	low

Notes:

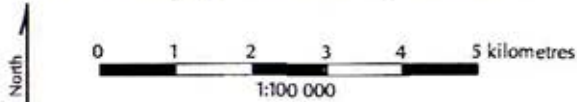
- 1 High = potential to lead to long-term changes or significance changes in short term  
 Med. = potential to cause significant localised changes or minor long term changes  
 Low = potential to cause only minor disturbances locally
- 2 High = potential to have inter - fisheries effects or long-term ecological changes  
 Med. = potential to cause significant localised or minor long-term ecological changes  
 Low = potential to cause only minor and localised changes
- 3 The ratings of seabed/benthos impacts and levels of bycatch of Saltwater Recreational Fishing is based on an estimate of angler effort per quarter per year (Barnham, 1995). Impacts on seabed/benthos and levels of bycatch for all other methods are independent of fishing effort, except for abalone fishing.







Source: Fishing Techniques and Their Impacts: A Background Report to the Land Conservation Council; P. Moulton, 1996.



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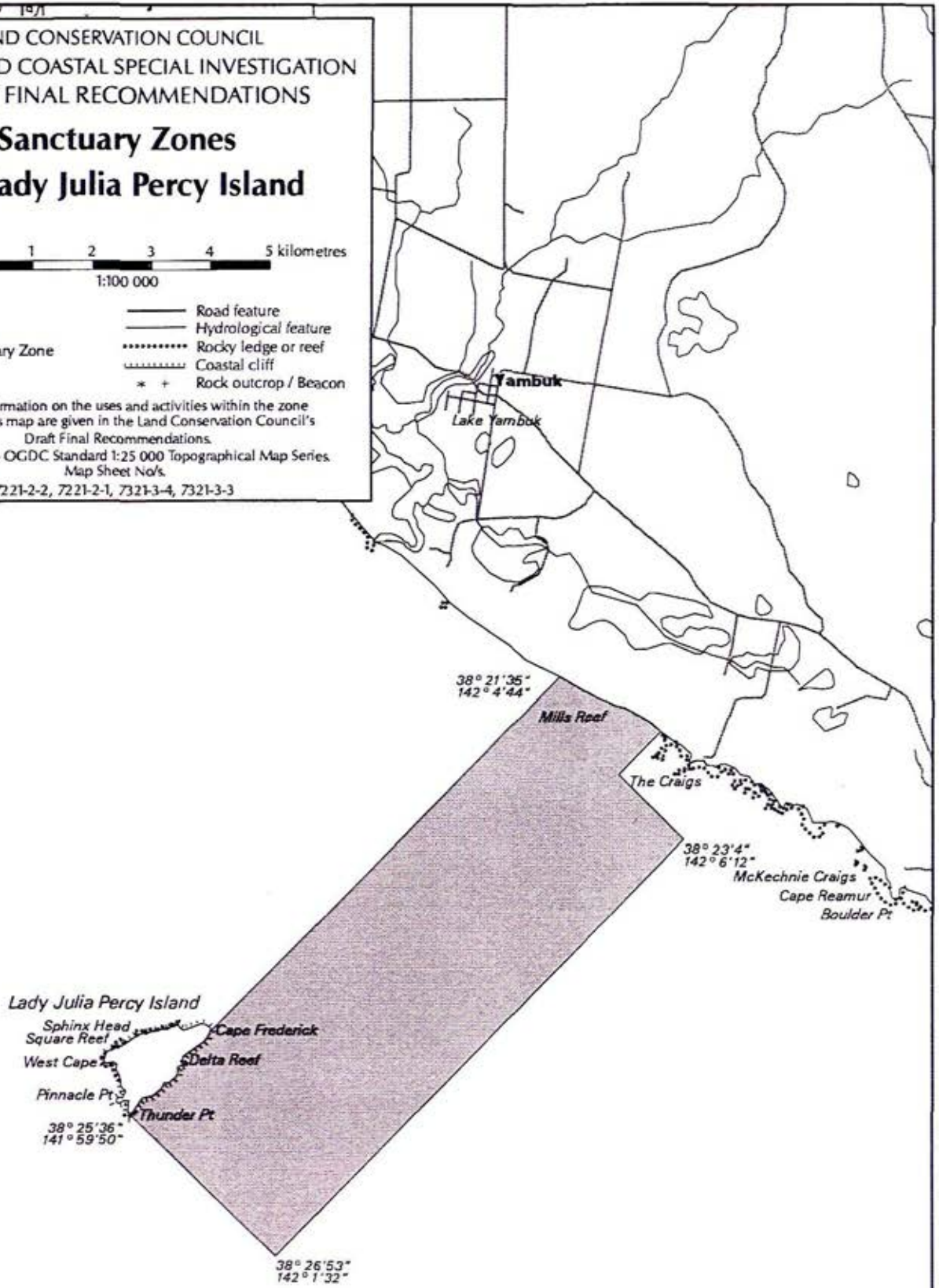
**Sanctuary Zones**  
**B2 Lady Julia Percy Island**

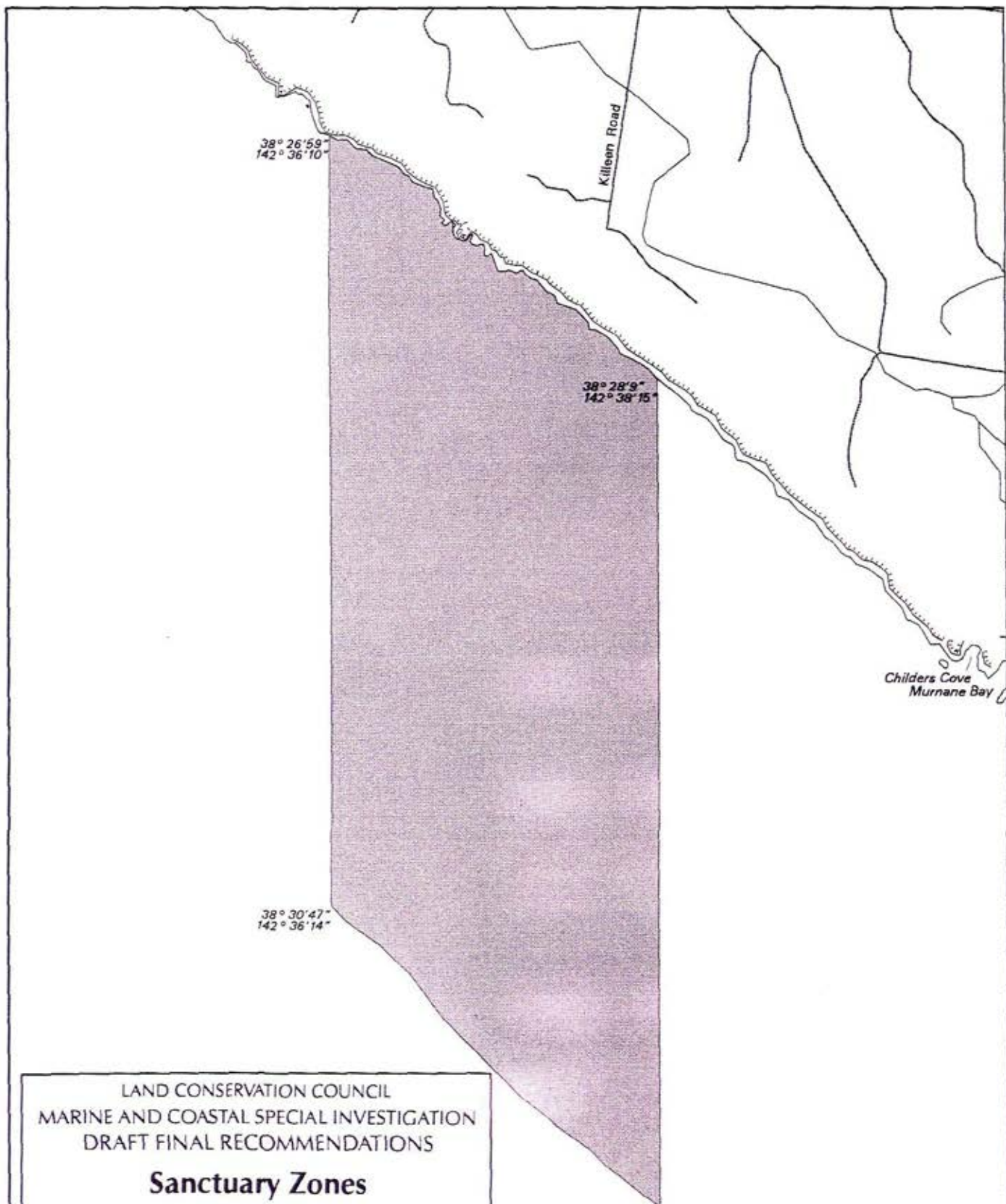


-  Sanctuary Zone
-  Road feature
-  Hydrological feature
-  Rocky ledge or reef
-  Coastal cliff
-  Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

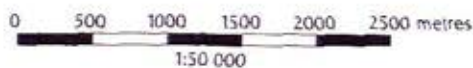
Base Information - O.G.D.C. Standard 1:25 000 Topographical Map Series  
Map Sheet No's.  
7221-2-2, 7221-2-1, 7321-3-4, 7321-3-3











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**Sanctuary Zones**  
**B3 Lake Gillear**

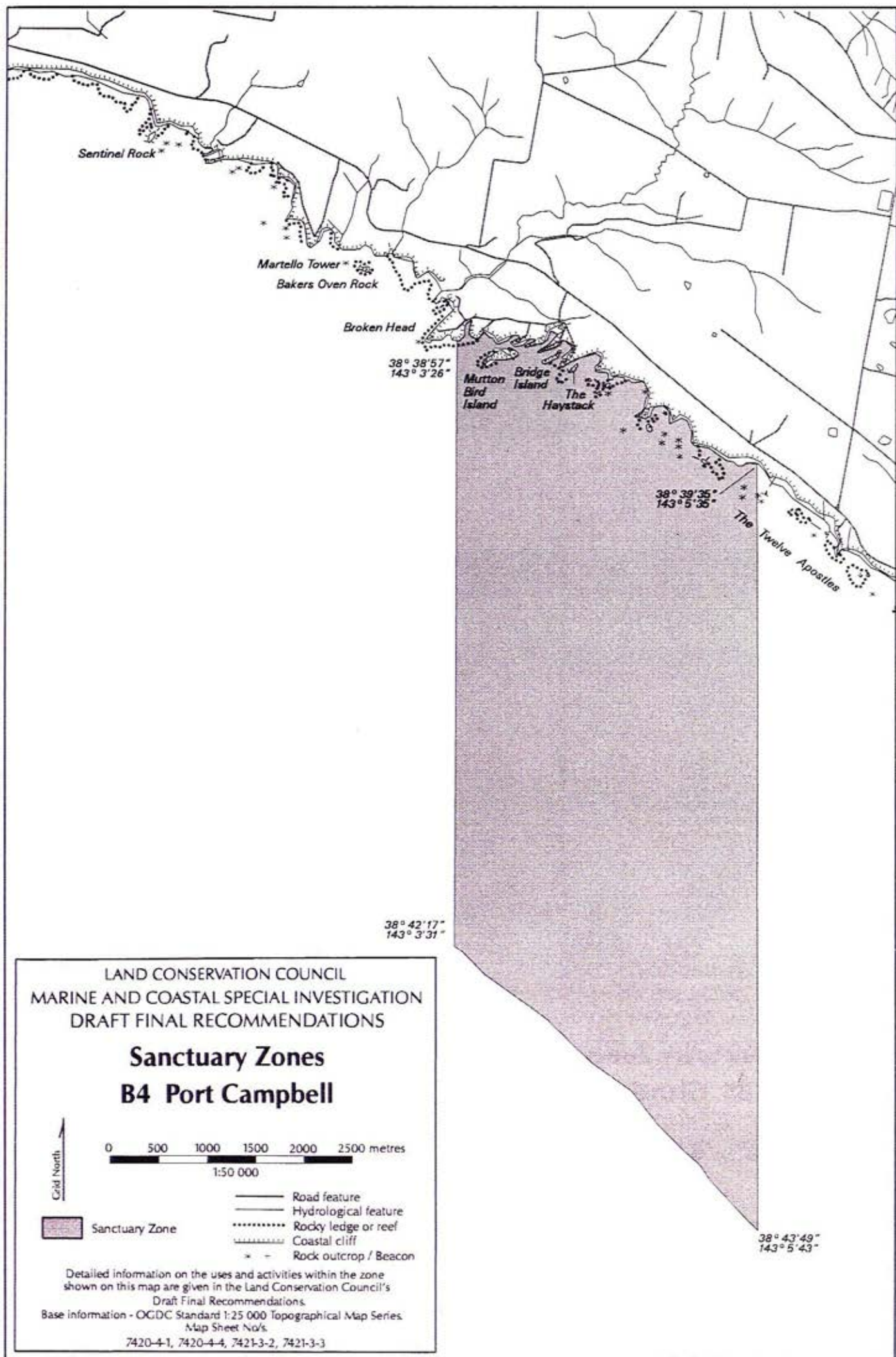


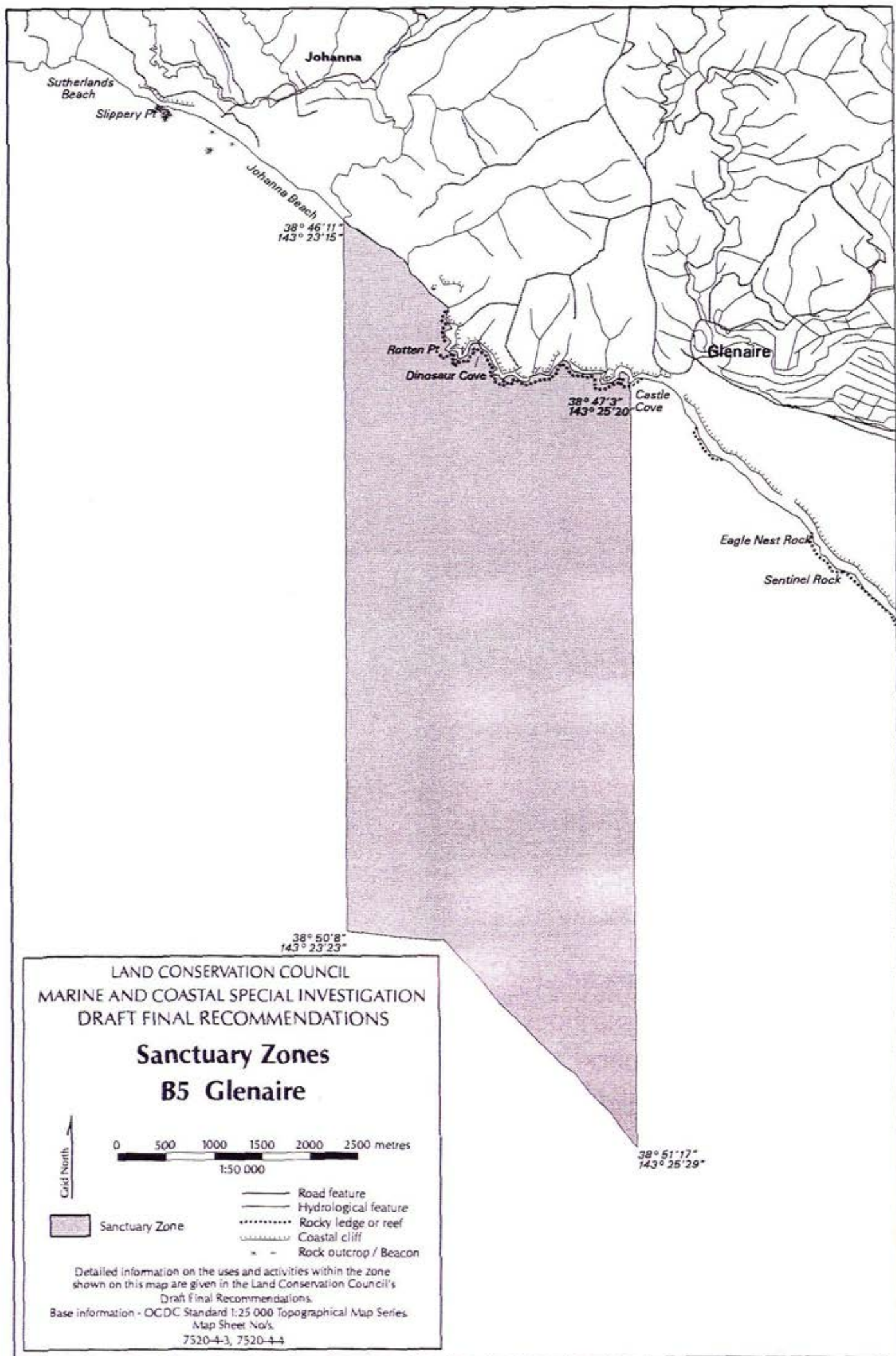
-  Sanctuary Zone
-  Road feature
-  Hydrological feature
-  Rocky ledge or reef
-  Coastal cliff
-  Rock outcrop / Beacon

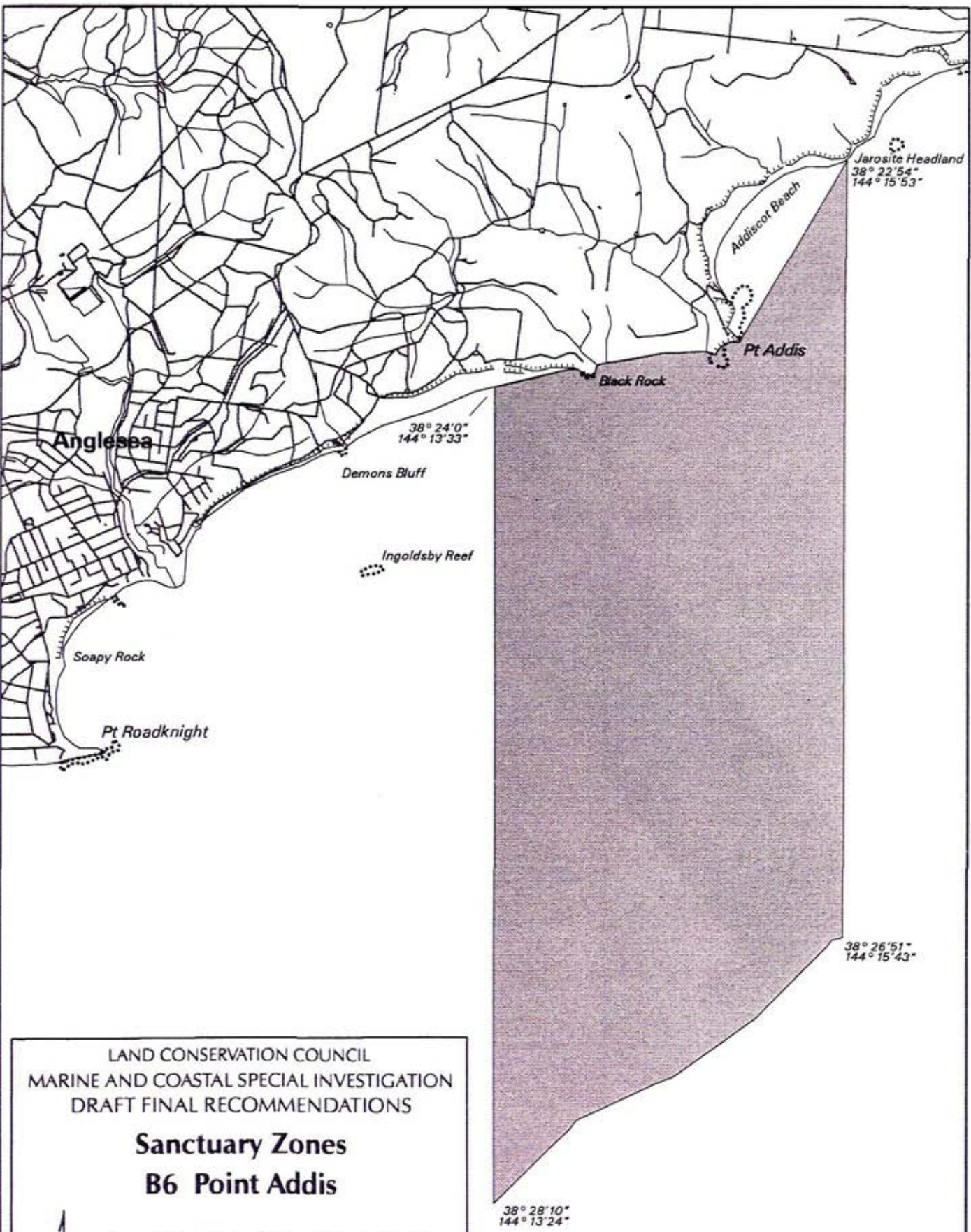
Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDC Standard 1:25 000 Topographical Map Series, Map Sheet No's.

7420-4-4, 7420-4-1, 7421-3-3, 7421-3-2

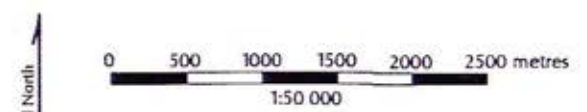












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**Sanctuary Zones**  
**B6 Point Addis**



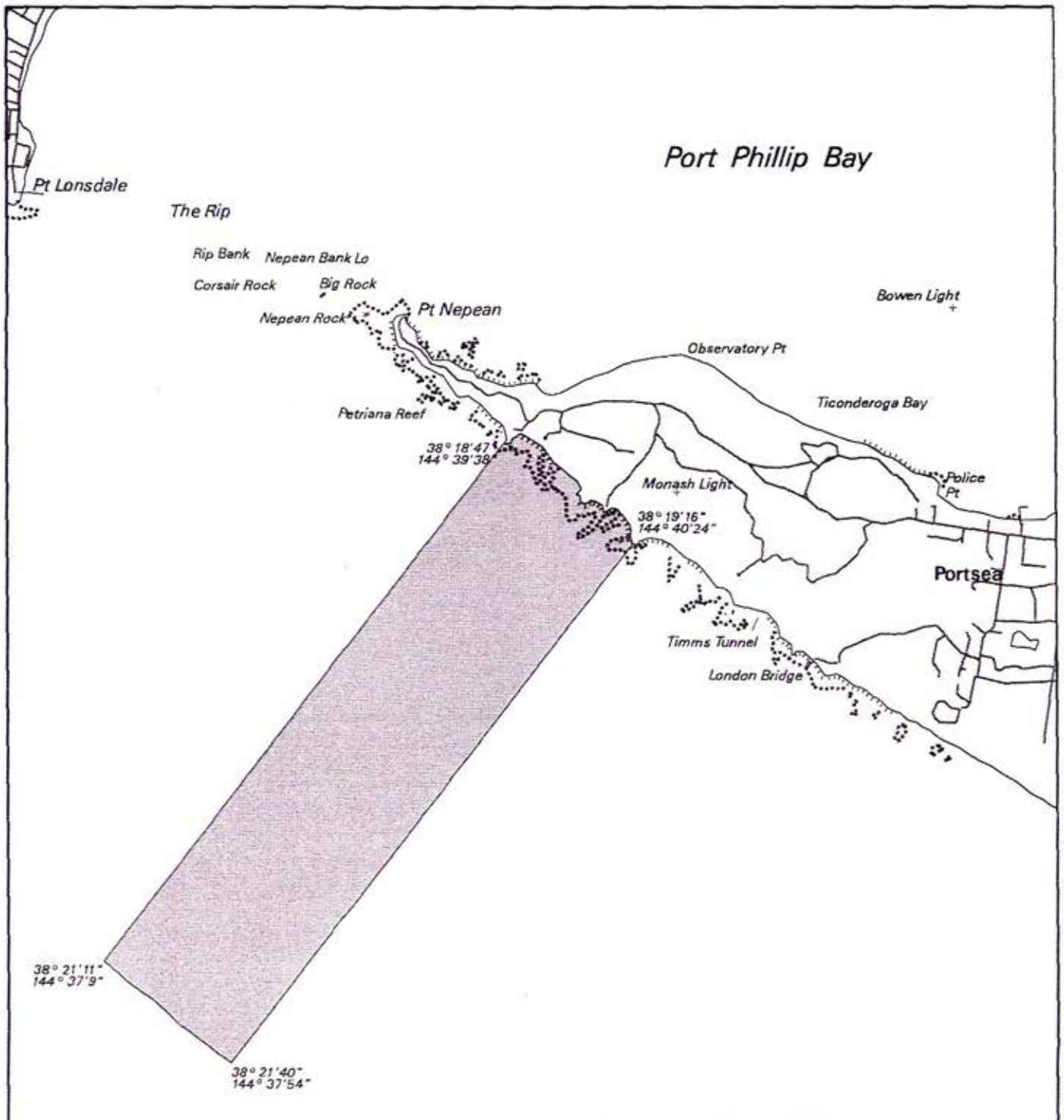
-  Sanctuary Zone
-  Road feature
-  Hydrological feature
-  Rocky ledge or reef
-  Coastal cliff
-  Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDG Standard 1:25 000 Topographical Map Series, Map Sheet No/s.

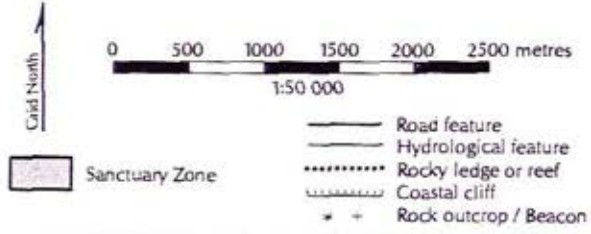
7721-3-2, 7721-2-3, 7721-3-1, 7721-2-4

# Port Phillip Bay



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## Sanctuary Zones B7 Harold Holt



Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.  
 Base information - OGDC Standard 1:25 000 Topographical Map Series, Map Sheet No's. 7821-3-1, 7821-3-4

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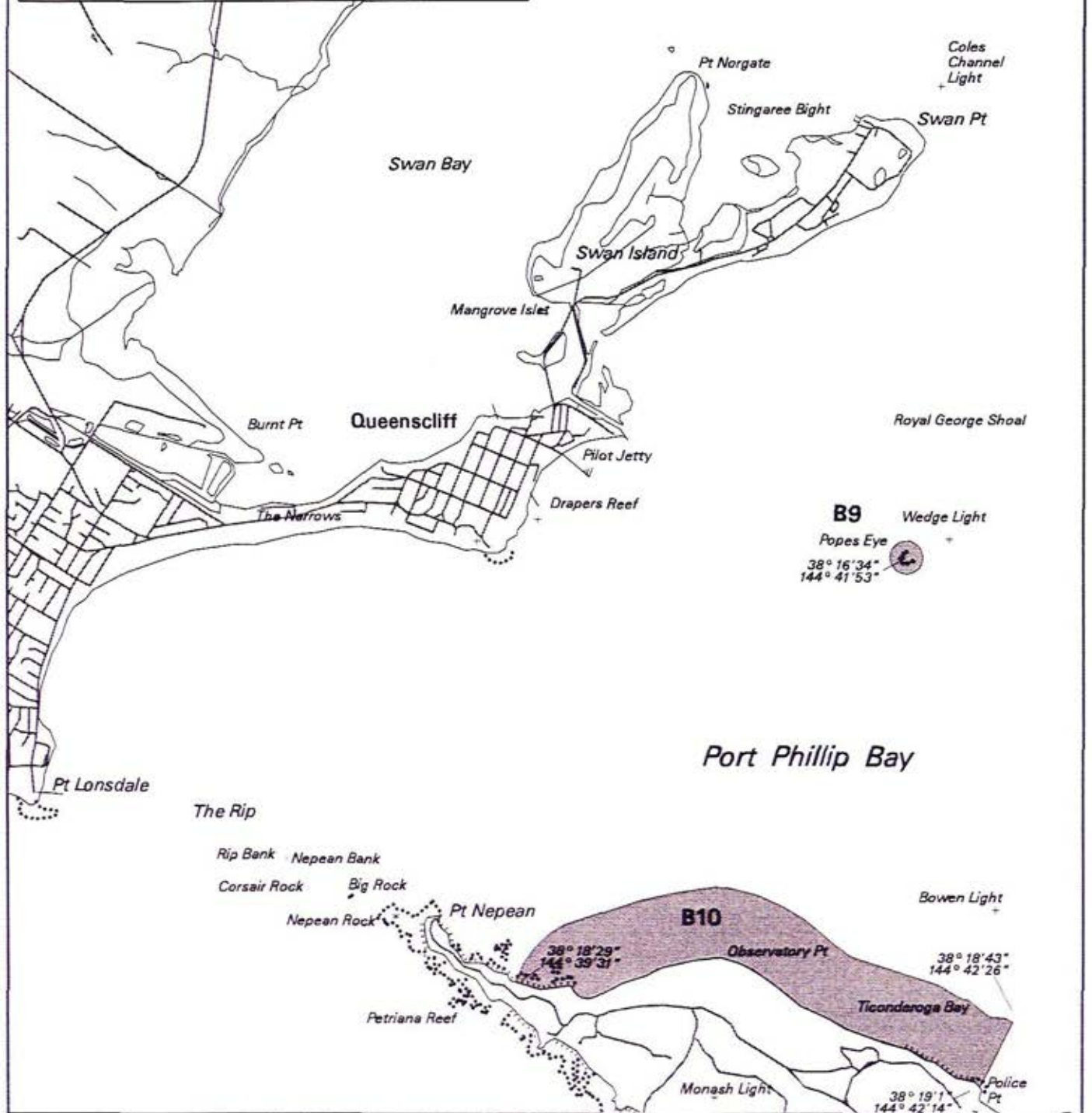
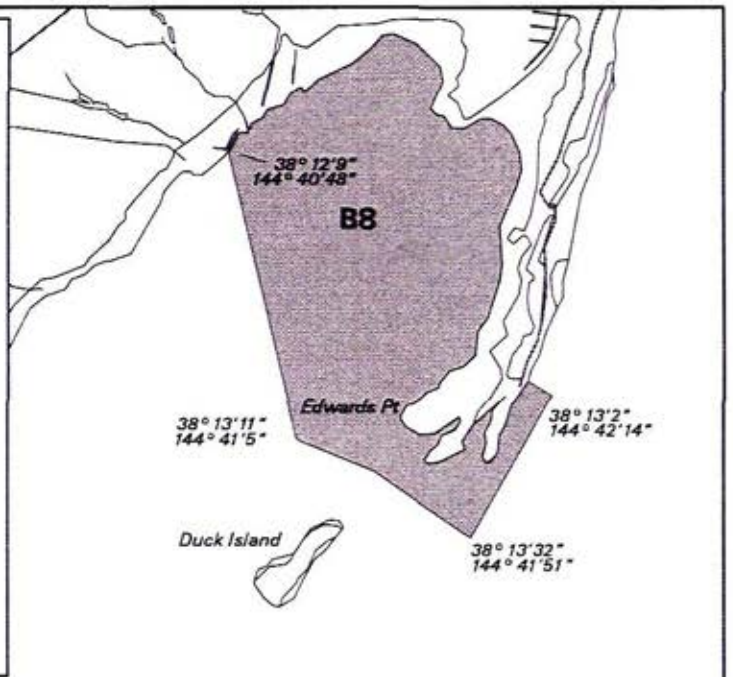
**Sanctuary Zones**  
**B8 Swan Bay**  
**B9 Popes Eye**  
**B10 Ticonderoga Bay**

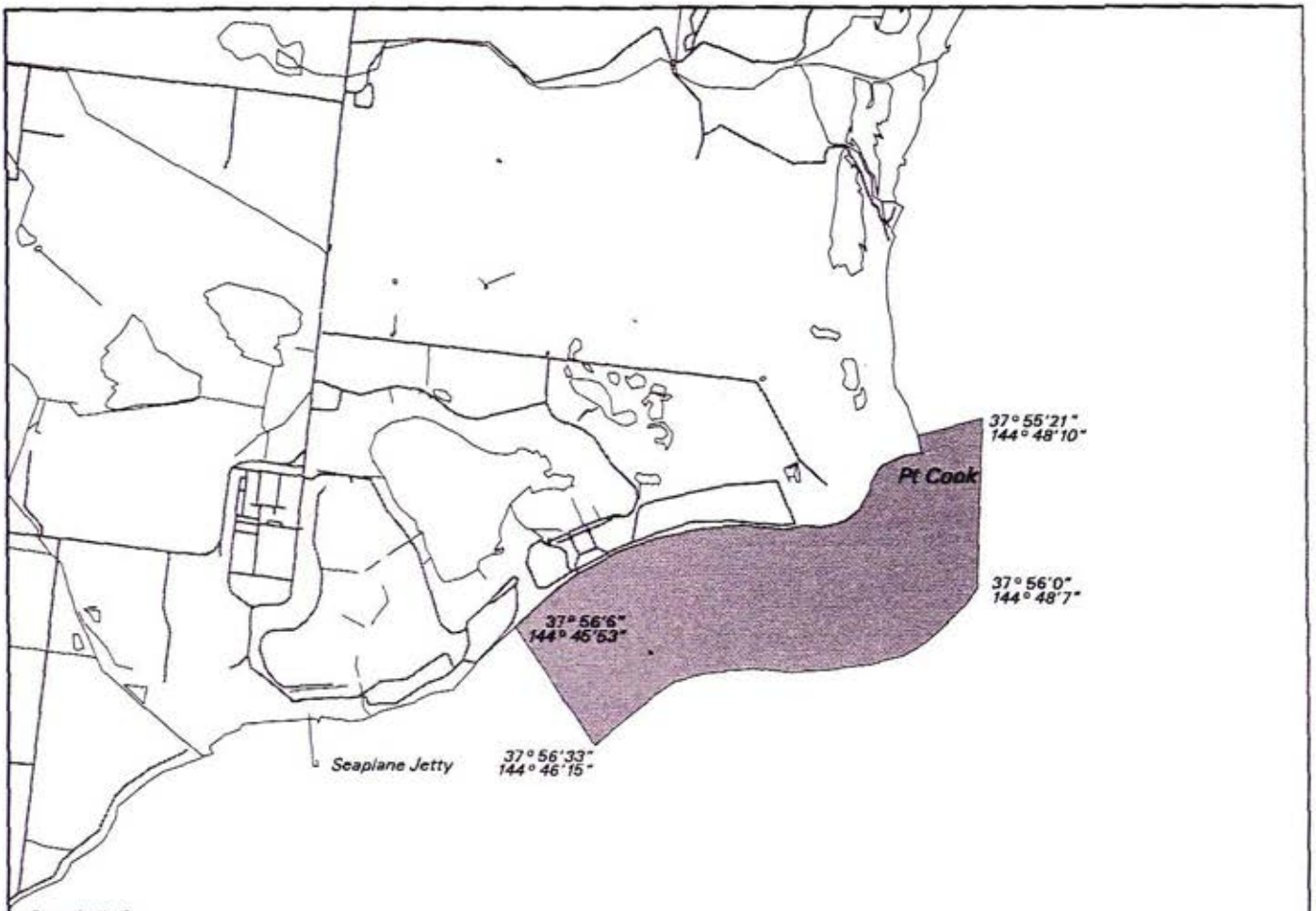


- Sanctuary Zone
- Road feature
- Hydrological feature
- Rocky ledge or reef
- Coastal cliff
- Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDC Standard 1:25 000 Topographical Map Series  
Map Sheet No's.  
7821-3-1, 7821-4-2





Campbells Cove







*Port Phillip Bay*

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## Sanctuary Zones B11 Point Cook

Grid North ↑

0 500 1000 1500 2000 2500 metres  
 1:50 000

	Sanctuary Zone		Road feature
			Hydrological feature
			Rocky ledge or reef
			Coastal cliff
			Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDC Standard 1:25 000 Topographical Map Series.  
 Map Sheet No's  
 7822-2-3, 7822-3-2

Sandringham Harbour

Picnic Pt

Sandringham

Highbett

Moorabbin East

Half Moon Bay

Black Rock

Quiet Corner  
37° 59' 0" 145° 1' 0"

Beaumaris

37° 59' 19" 145° 0' 27"

Beaumaris Bay

Ricketts Pt

Watkins Bay

Table Rock Pt

37° 59' 58" 145° 2' 17"

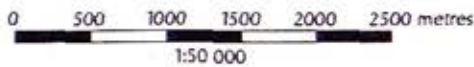
38° 0' 18" 145° 1' 43"

Port Phillip Bay

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**Sanctuary Zones**  
**B12 Ricketts Point**

Grid North

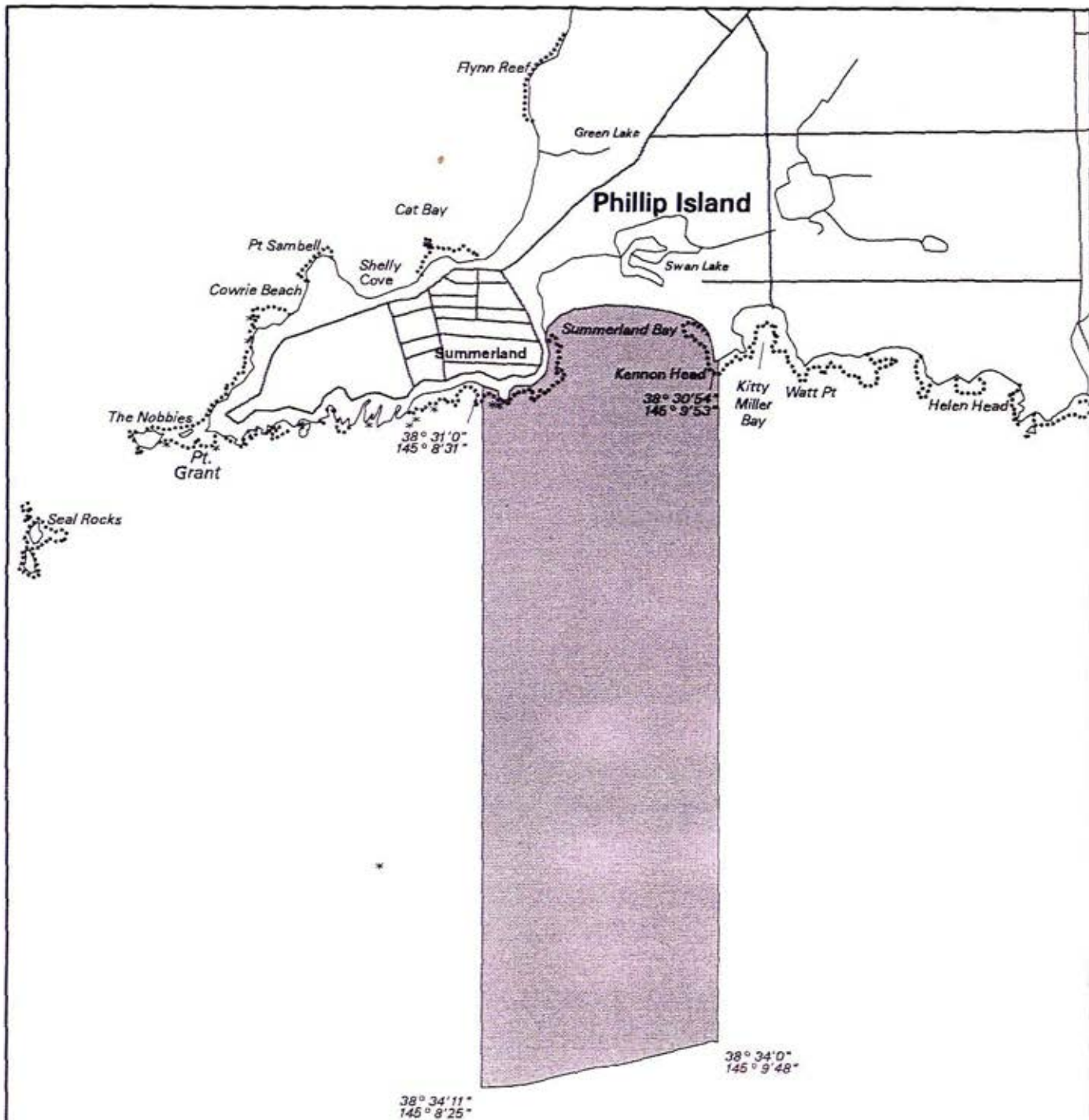


 Sanctuary Zone

-  Road feature
-  Hydrological feature
-  Rocky ledge or reef
-  Coastal cliff
-  Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

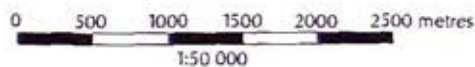
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Map Sheet No/s.  
7922-3-3, 7921-4-4



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**Sanctuary Zones**  
**B13 The Nobbies**

Grid North



Sanctuary Zone

- Road feature
- Hydrological feature
- ..... Rocky ledge or reef
- Coastal cliff
- \* = Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDC Standard 1:25 000 Topographical Map Series  
Map Sheet No's

7920-4-1, 7920-4-4, 7921-3-2

Charing Cross Island

Western Port

38° 17' 8"  
145° 21' 13"

38° 17' 20"  
145° 23' 47"

38° 18' 6"  
145° 20' 12"

38° 18' 25"  
145° 23' 50"

The Duck Splash

Clump Lagoon

French Island

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### Sanctuary Zones B14 Western Port

Grid North

0 500 1000 1500 2000 2500 metres

1:50 000

Sanctuary Zone

- Road feature
- Hydrological feature
- ..... Rocky ledge or reef
- ~~~~~ Coastal cliff
- \* + Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

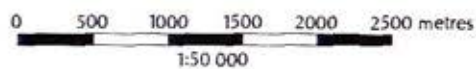
Base information - OGDC Standard 1:25 000 Topographical Map Series.  
Map Sheet No's.

7921-2-4

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**Sanctuary Zones**  
**B15 Bunurong**

Grid North

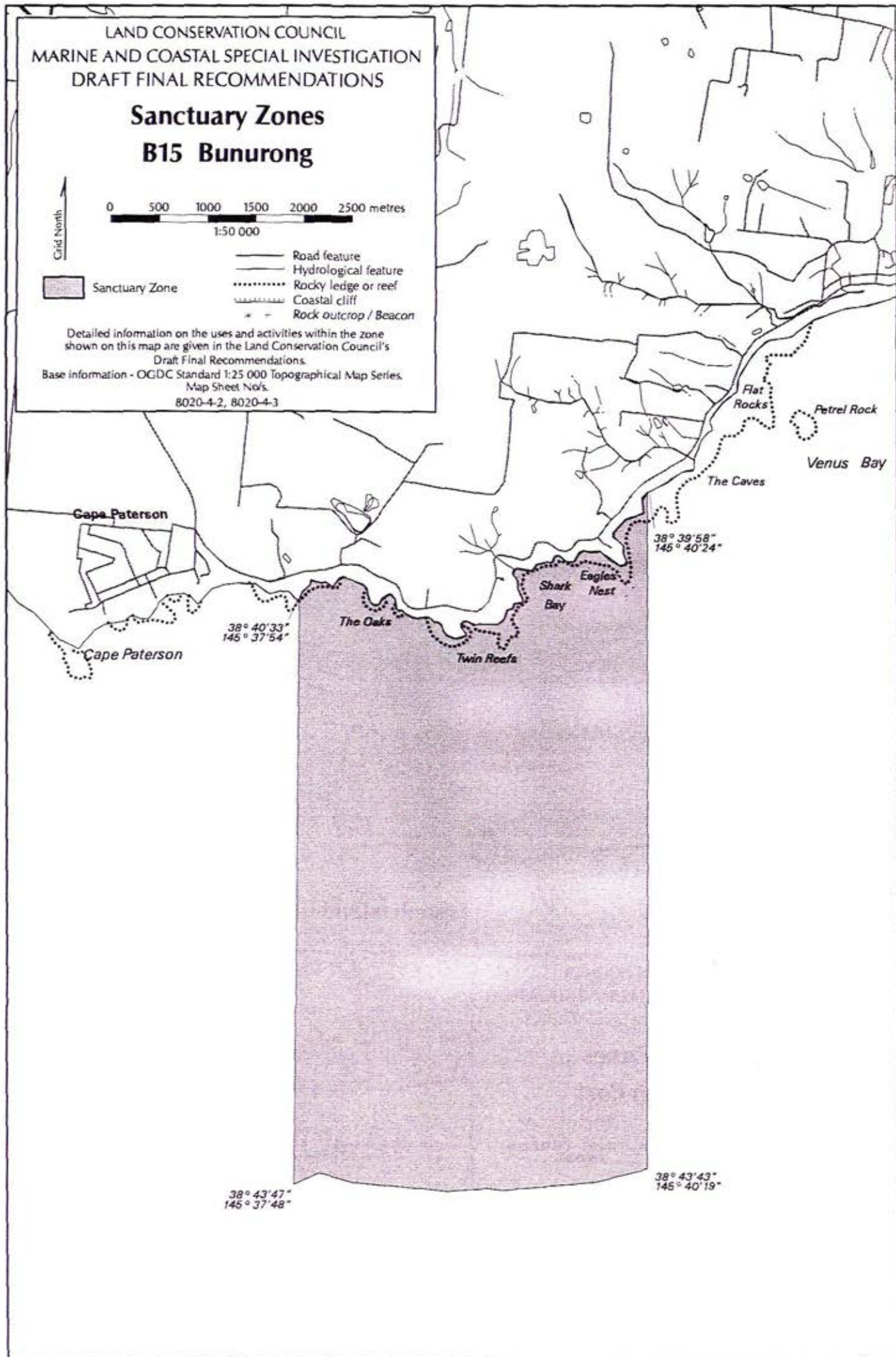


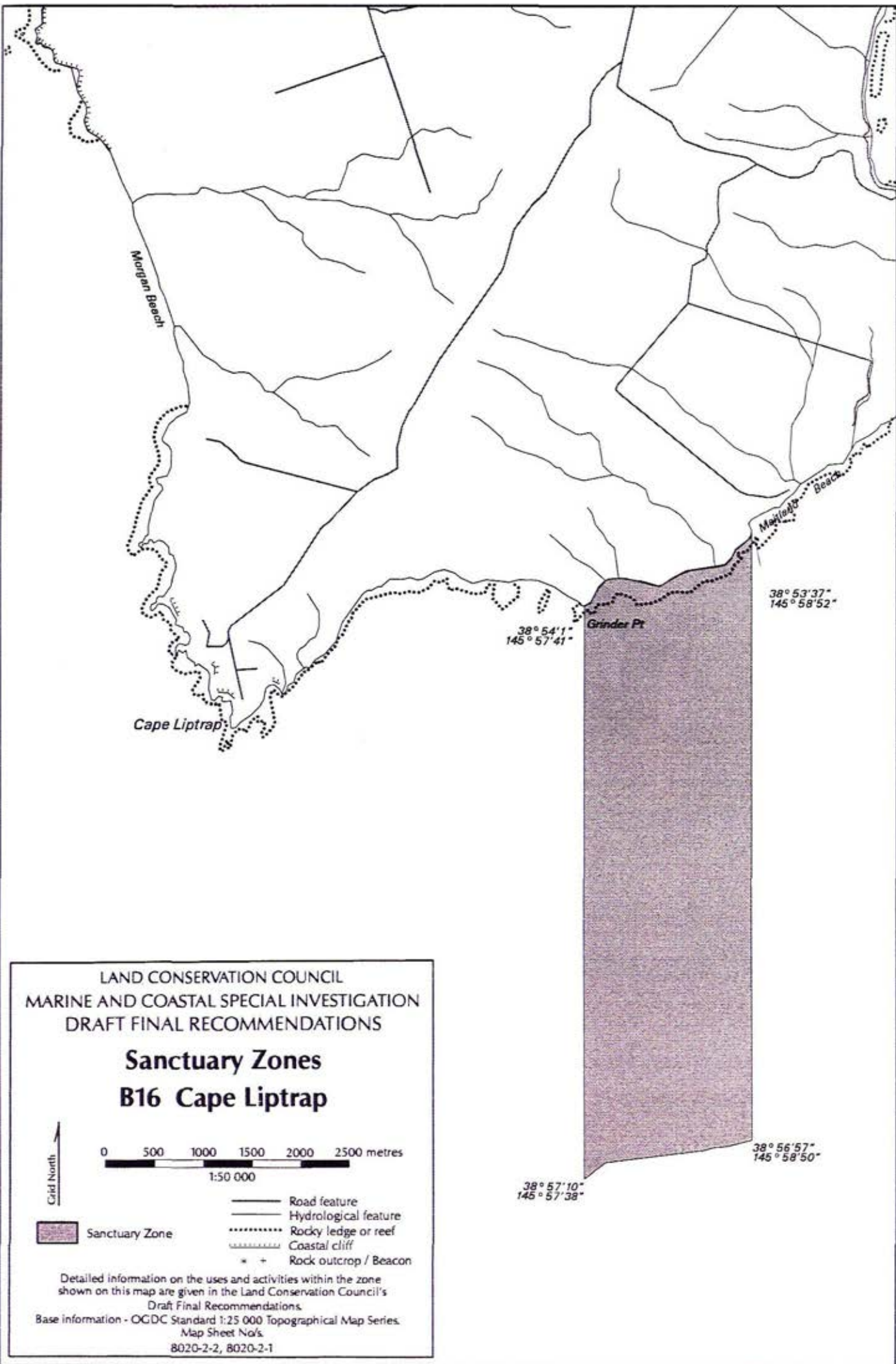
Sanctuary Zone

- Road feature
- Hydrological feature
- ..... Rocky ledge or reef
- Coastal cliff
- \* - Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDC Standard 1:25 000 Topographical Map Series,  
Map Sheet No's.  
8020-4-2, 8020-4-3

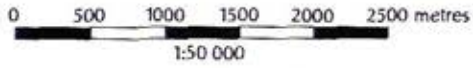




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**Sanctuary Zones**  
**B17 Shellback Island**

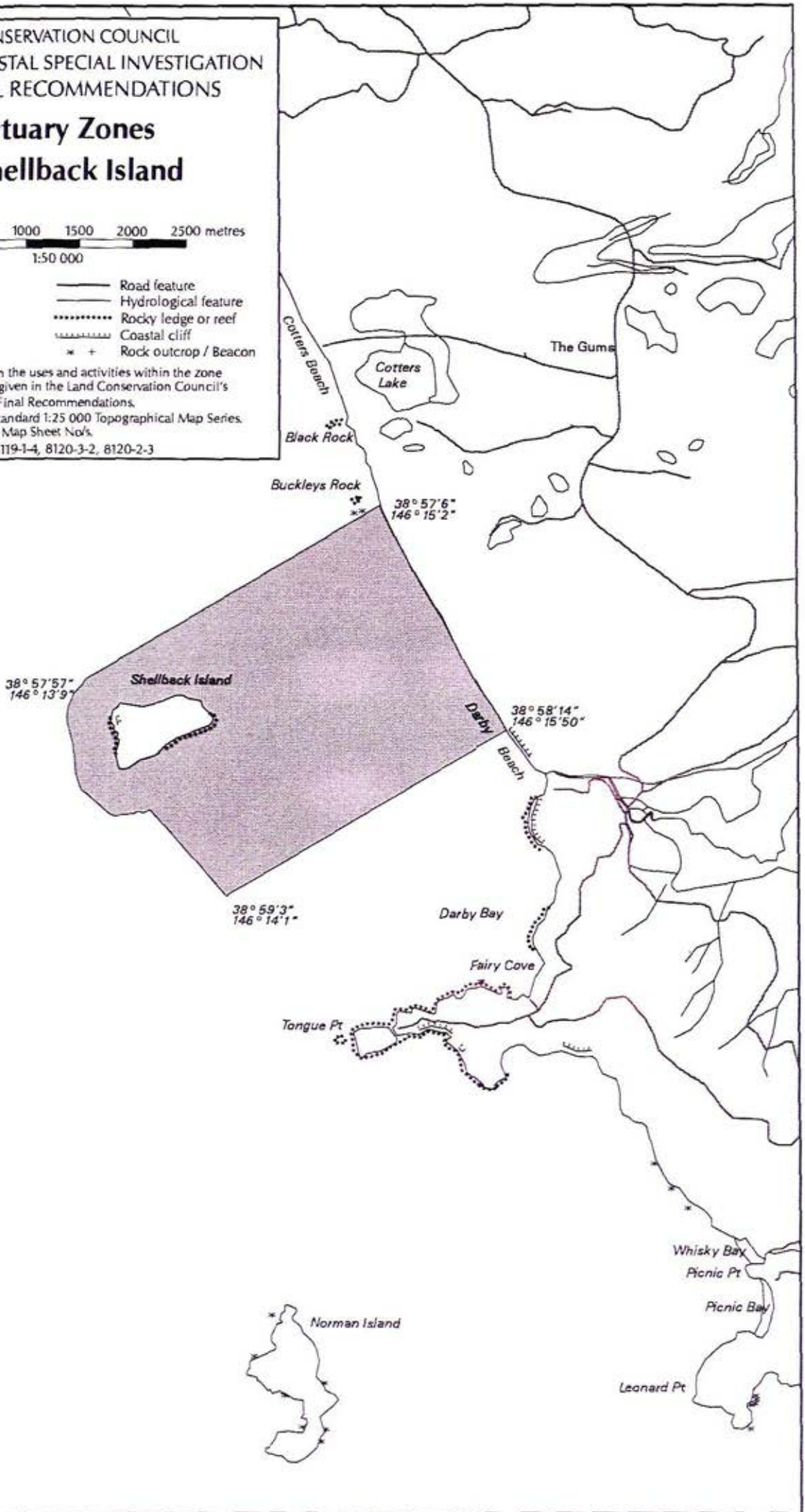
Grid North

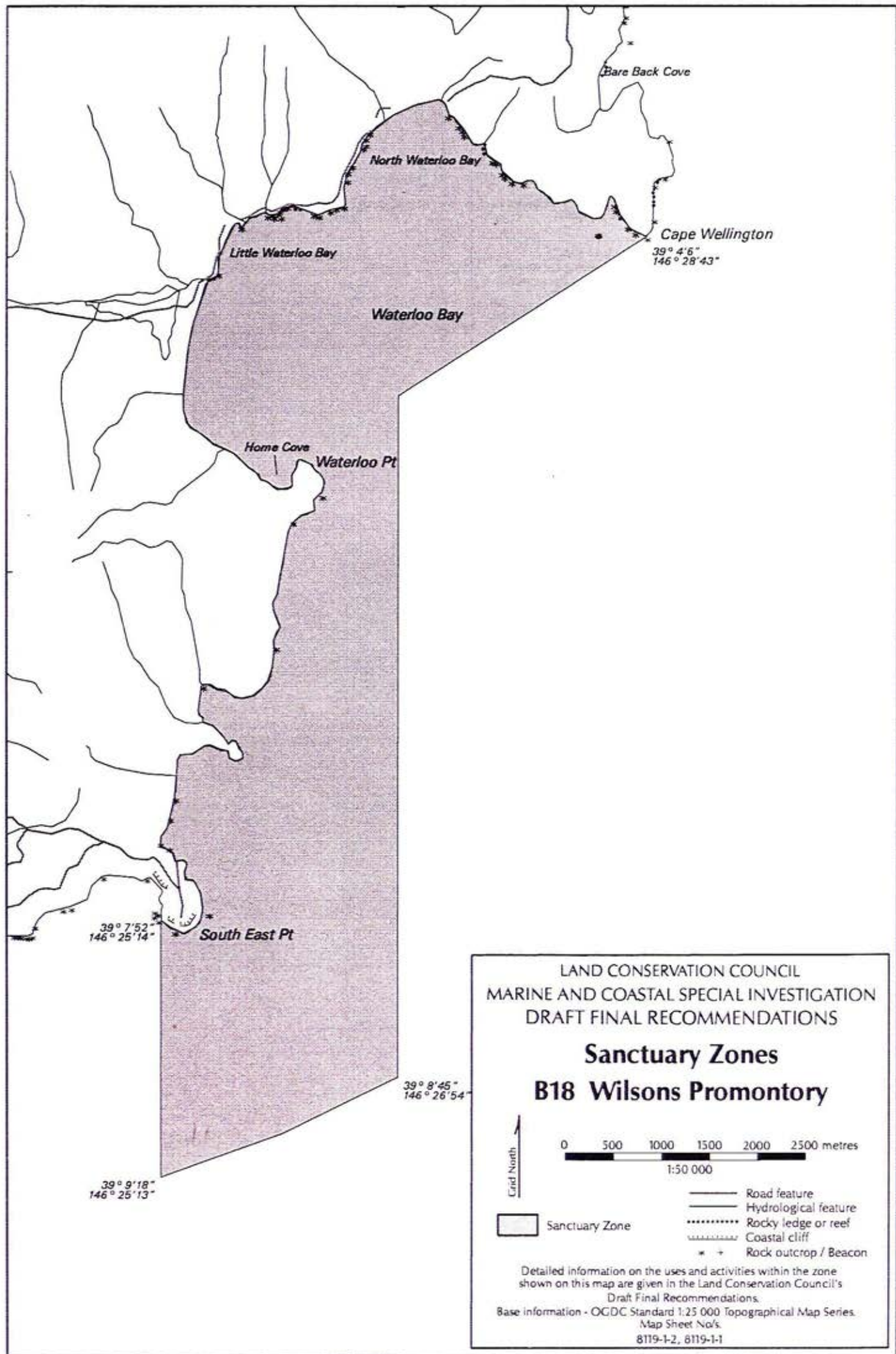


Sanctuary Zone

- Road feature
- Hydrological feature
- ..... Rocky ledge or reef
- Coastal cliff
- \* + Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.  
Base information - OGDC Standard 1:25 000 Topographical Map Series.  
Map Sheet No's  
8119-4-1, 8119-1-4, 8120-3-2, 8120-2-3











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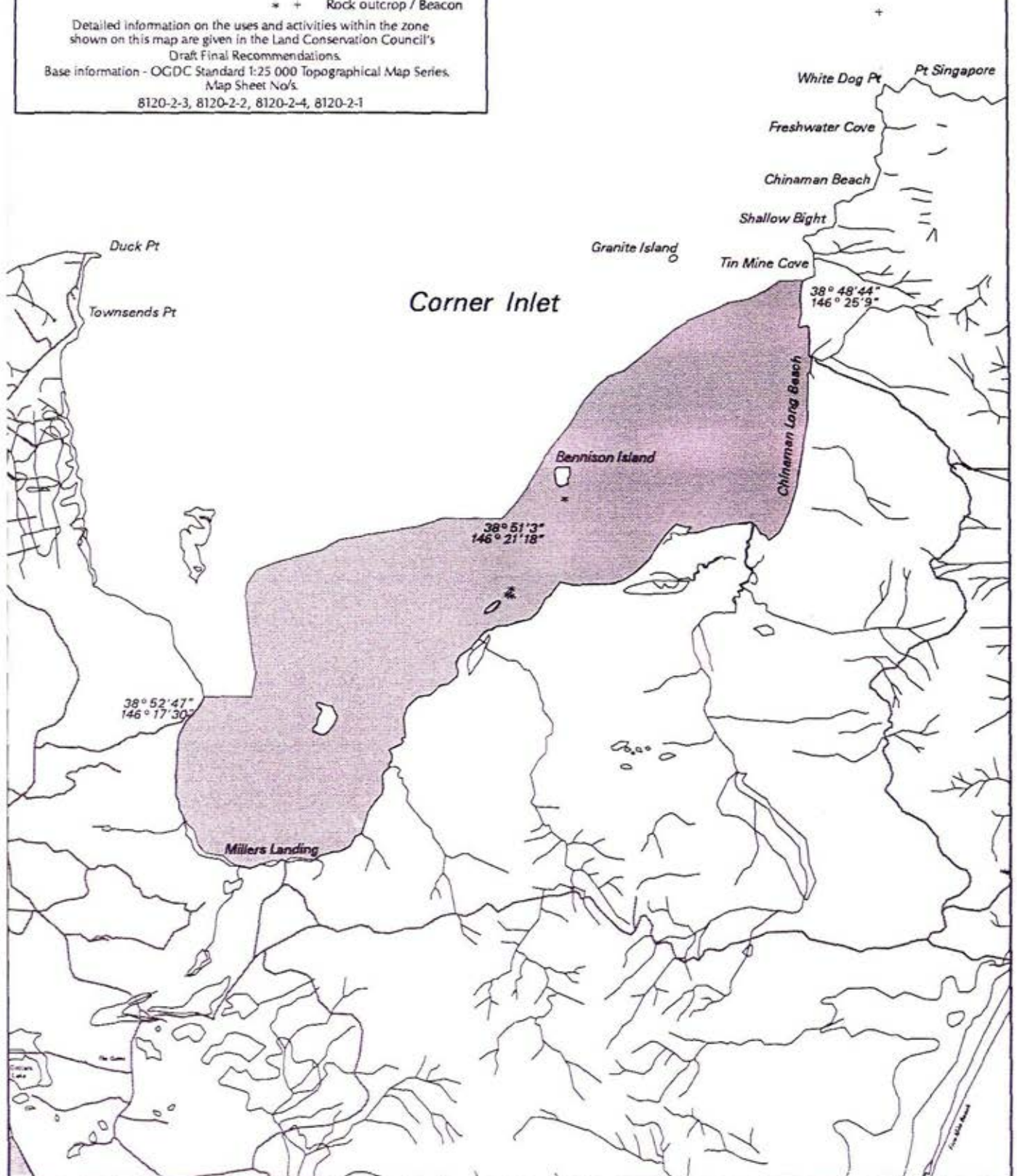
**Sanctuary Zones**  
**B19 Corner Inlet**



-  Sanctuary Zone
-  Road feature
-  Hydrological feature
-  Rocky ledge or reef
-  Coastal cliff
-  Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDC Standard 1:25 000 Topographical Map Series.  
Map Sheet No's.  
8120-2-3, 8120-2-2, 8120-2-4, 8120-2-1



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**Sanctuary Zones**  
**B20 Cabbage Tree**

Grid North

0 500 1000 1500 2000 2500 metres  
1:50 000



Sanctuary Zone

- Road feature
- Hydrological feature
- ..... Rocky ledge or reef
- ~~~~~ Coastal cliff
- \* + Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDG Standard 1:25 000 Topographical Map Series.  
Map Sheet No/s  
8622-3-4, 8622-3-1

Ricardo Beach

Pt Ricardo

Jackson

37° 48' 19"  
148° 38' 52"

Beach

37° 48' 10"  
148° 40' 54"

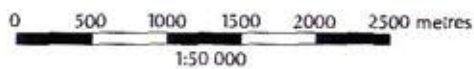
37° 51' 24"  
148° 38' 56"

37° 51' 10"  
148° 40' 59"

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# Sanctuary Zones B21 Rame Head

Grid North



 Sanctuary Zone

-  Road feature
-  Hydrological feature
-  Rocky ledge or reef
-  Coastal cliff
-  Rock outcrop / Beacon

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDC Standard 1:25 000 Topographical Map Series.  
Map Sheet No's.  
8822-3-4, 8822-4-3

Wingan inlet

Wingan Pt

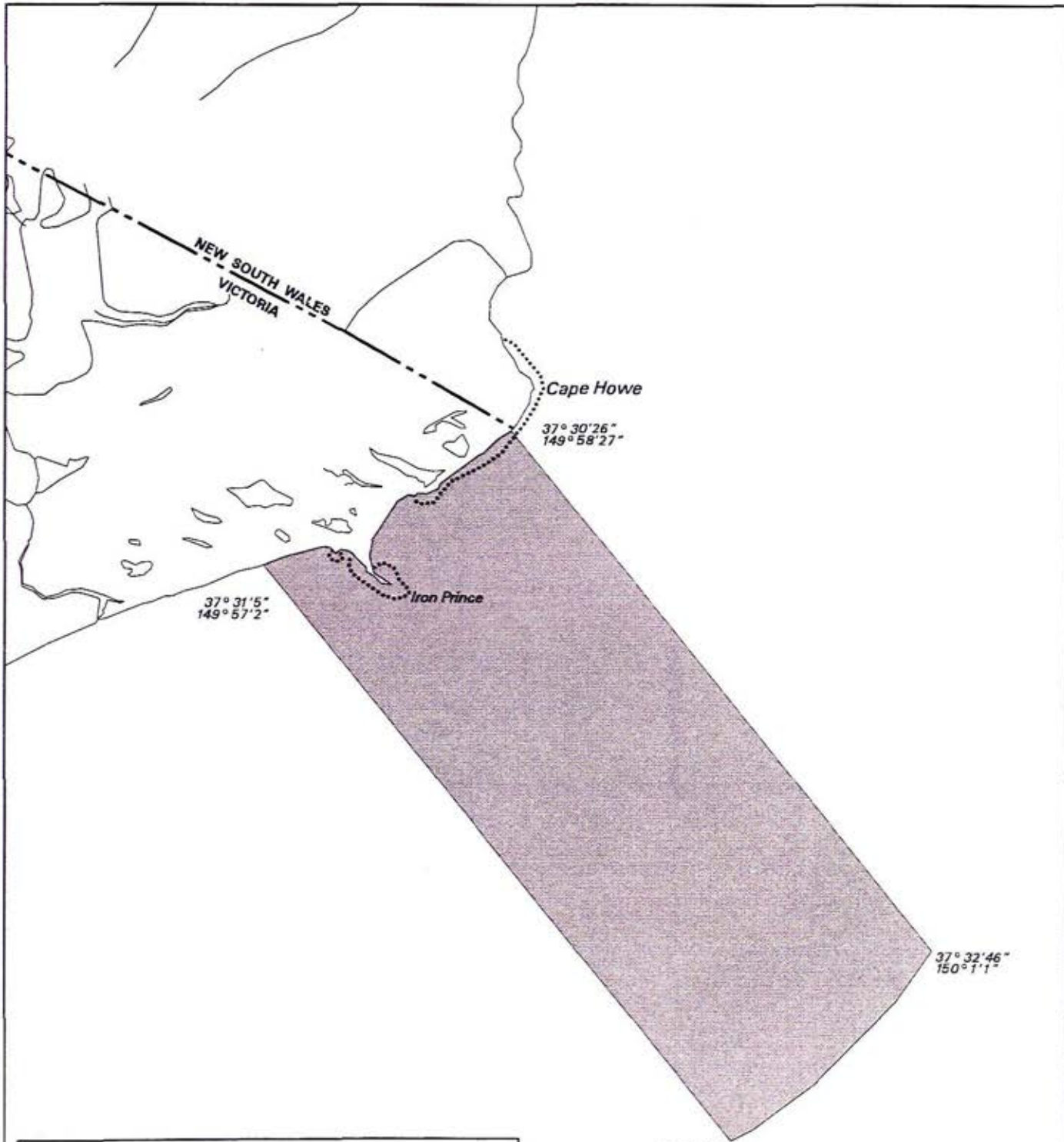
The Skerries

37° 45' 0"  
149° 30' 54"

37° 44' 4"  
149° 32' 30"

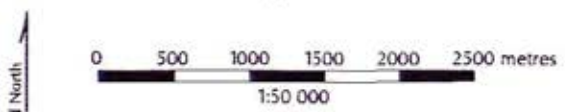
37° 46' 39"  
149° 34' 32"







37° 47' 56"  
149° 33' 13"



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**Sanctuary Zones**  
**B22 Cape Howe**




-  Sanctuary Zone
-  Road feature
-  Hydrological feature
-  Rocky ledge or reef
-  Coastal cliff
-  Rock outcrop / Beacon


Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.  
Base information - OGDG Standard 1:25 000 Topographical Map Series.  
Map Sheet No's  
8822-1-2 8823-2-2

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## Preferred Marine Aquaculture Areas Area 1 Geelong Arm of Port Phillip Bay



Grid North



0 1 2 3 4 5 kilometres

1:100 000

<p>Preferred Marine Aquaculture Areas</p>	<p>— Road feature</p> <p>— Hydrological feature</p> <p>— Bathymetry</p>
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Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGD Standard 1:25 000 Topographical Map Series.

AUSLIG 1 : 100 000 Map Sheet No/s.  
7721 7821

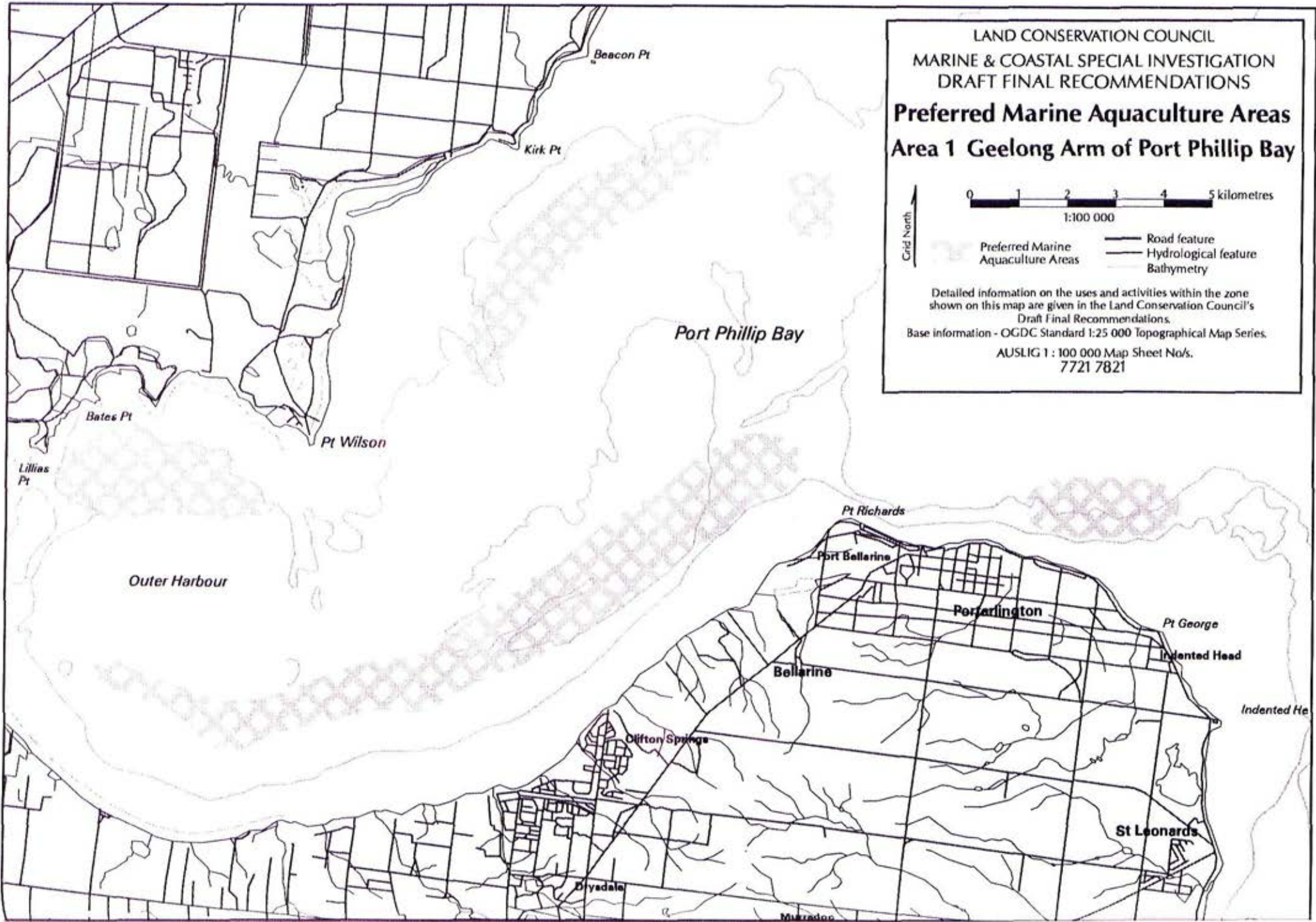


Table Rock Pt

Mordialloc

Aspendale Gardens

Aspendale

Edithvale

Chelsea Heights

Chelsea

Bangholm

Bonbeach

Patterson Lakes

Port Phillip Bay

Carrum

Seaford

Seaford South

Frankston North

Karingal

Frankston

Davey Pt

Canadian Bay

Frankston Res.

Schnapper Pt

Linley Pt

Mornington

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 DRAFT FINAL RECOMMENDATIONS

**Preferred Marine Aquaculture Areas**  
**Area 2 East Port Phillip Bay**  
**North Sheet**

0 1 2 3 4 5 kilometres  
 1:100 000

Grid North ↑

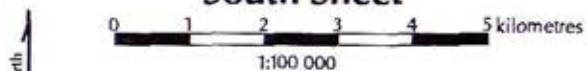
Preferred Marine Aquaculture Areas ——— Road feature  
 ——— Hydrological feature  
 Bathymetry

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DRAFT FINAL RECOMMENDATIONS

**Preferred Marine Aquaculture Areas**

**Area 2 East Port Phillip Bay  
South Sheet**



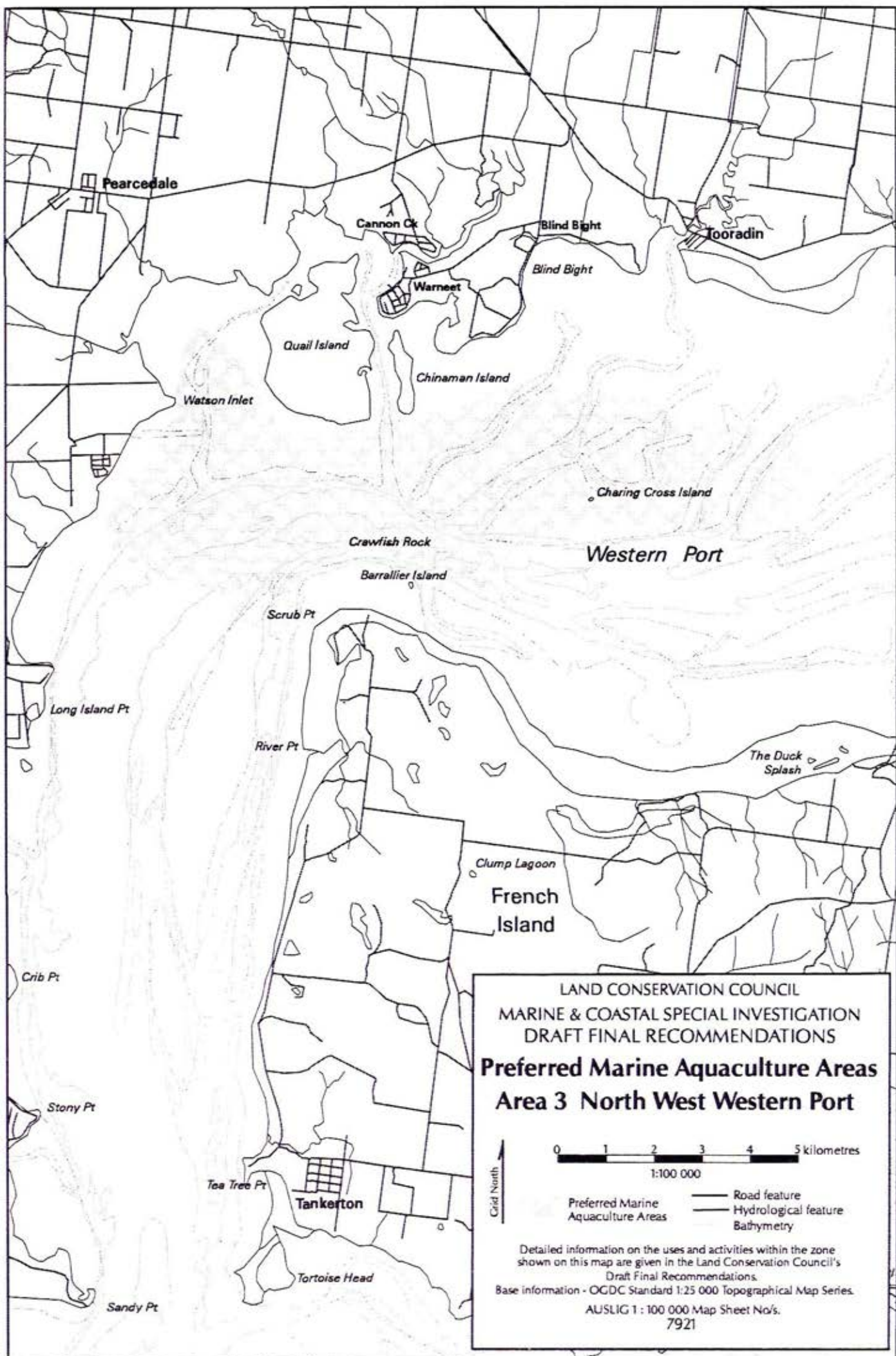
- Preferred Marine Aquaculture Areas
- Road feature
- Hydrological feature
- Bathymetry

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AUSLIG 1: 100 000 Map Sheet No/s.  
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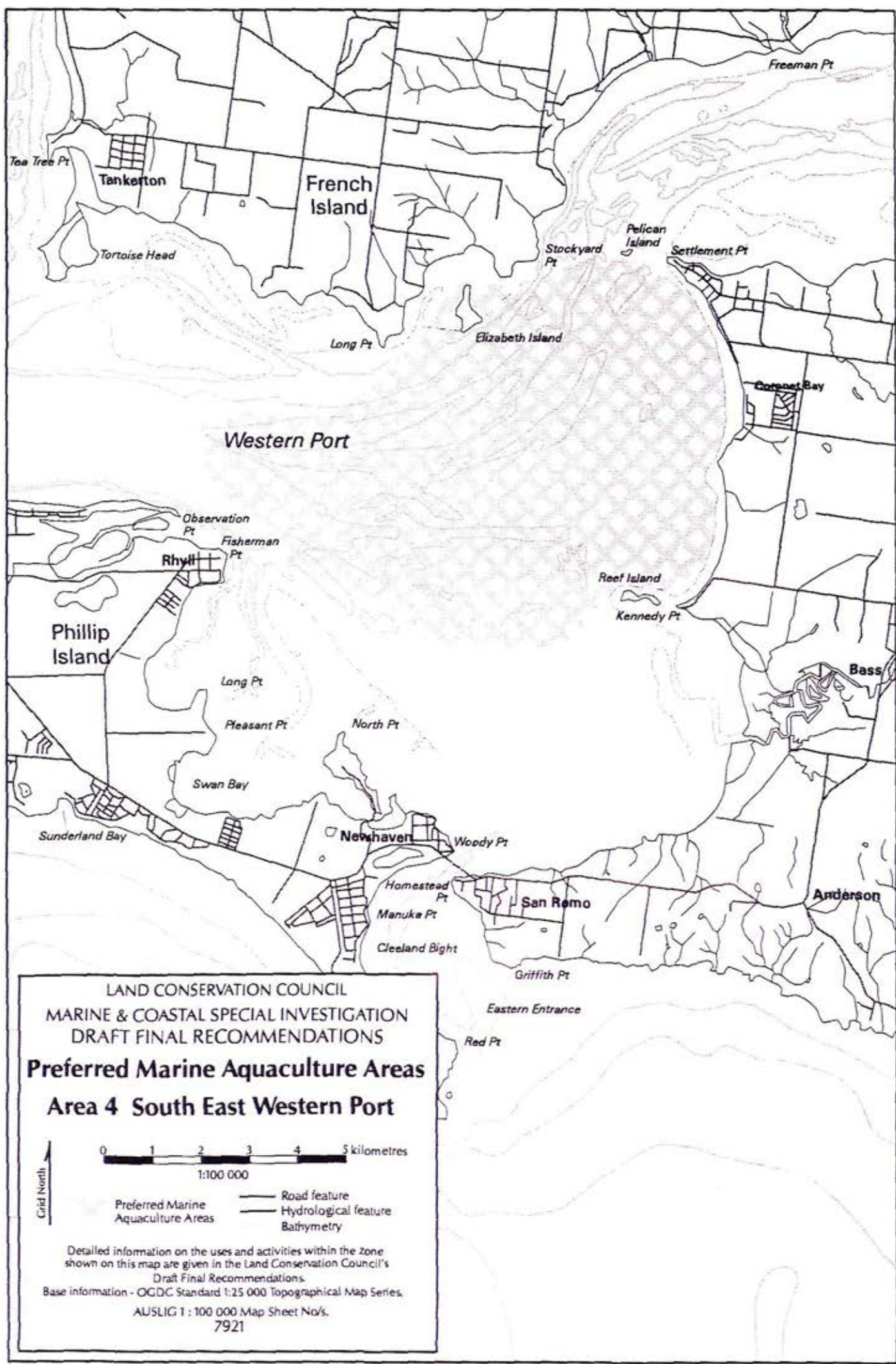


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 DRAFT FINAL RECOMMENDATIONS  
**Preferred Marine Aquaculture Areas**  
**Area 3 North West Western Port**



- Preferred Marine Aquaculture Areas
- Road feature
- Hydrological feature
- Bathymetry

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 AUSLIG 1: 100 000 Map Sheet No/s.  
 7921



Western Port

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**Preferred Marine Aquaculture Areas**  
**Area 4 South East Western Port**

0 1 2 3 4 5 kilometres  
 1:100 000

Grid North ↑

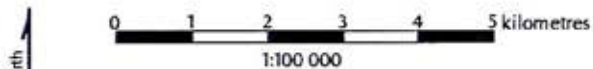
Preferred Marine Aquaculture Areas	— Road feature
	— Hydrological feature
	— Bathymetry

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

Base information - OGDC Standard 1:25 000 Topographical Map Series.  
 AUSLIG 1: 100 000 Map Sheet No's.  
 7921

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**Preferred Marine Aquaculture Areas  
Area 5 Flinders**

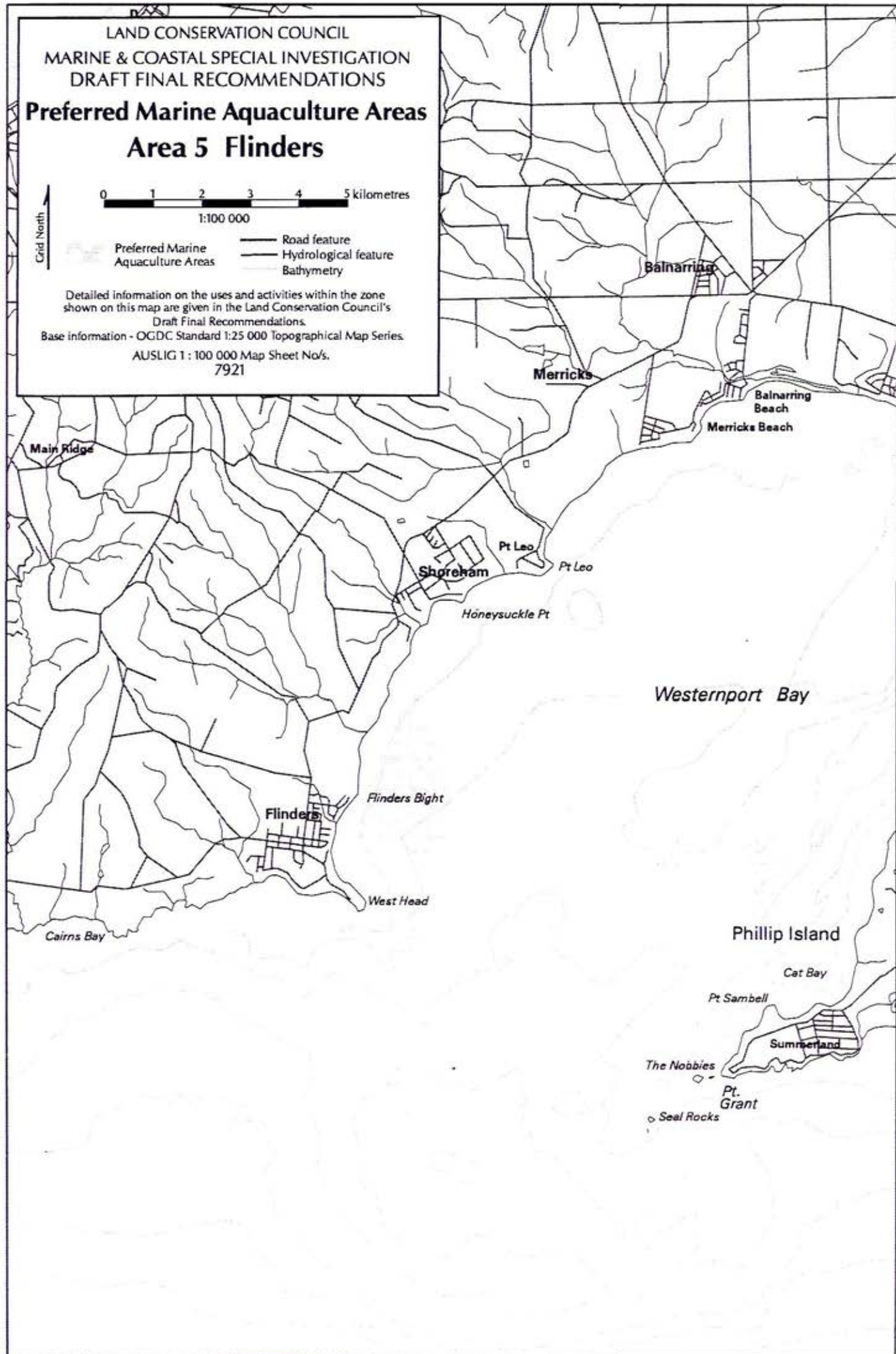


Preferred Marine Aquaculture Areas  
Road feature  
Hydrological feature  
Bathymetry

Detailed information on the uses and activities within the zone shown on this map are given in the Land Conservation Council's Draft Final Recommendations.

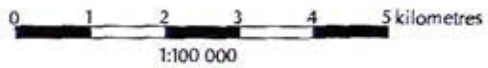
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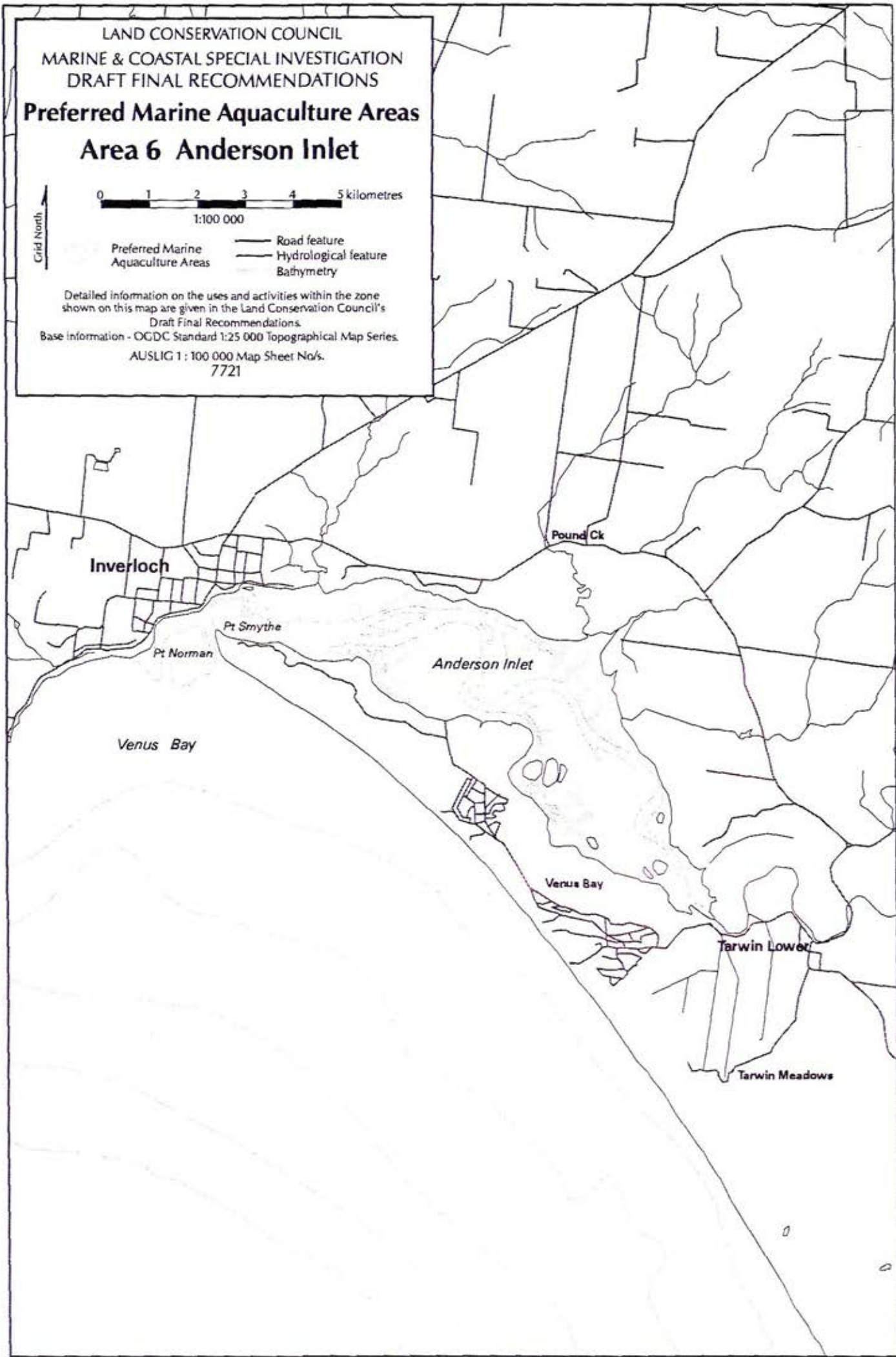
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MARINE & COASTAL SPECIAL INVESTIGATION  
DRAFT FINAL RECOMMENDATIONS  
**Preferred Marine Aquaculture Areas**  
**Area 6 Anderson Inlet**

Grid North



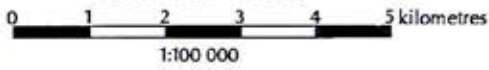
- Preferred Marine Aquaculture Areas
- Road feature
- Hydrological feature
- Bathymetry

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7721



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**Preferred Marine Aquaculture Areas**  
**Area 7 Sunday Island,**  
**Corner Inlet**



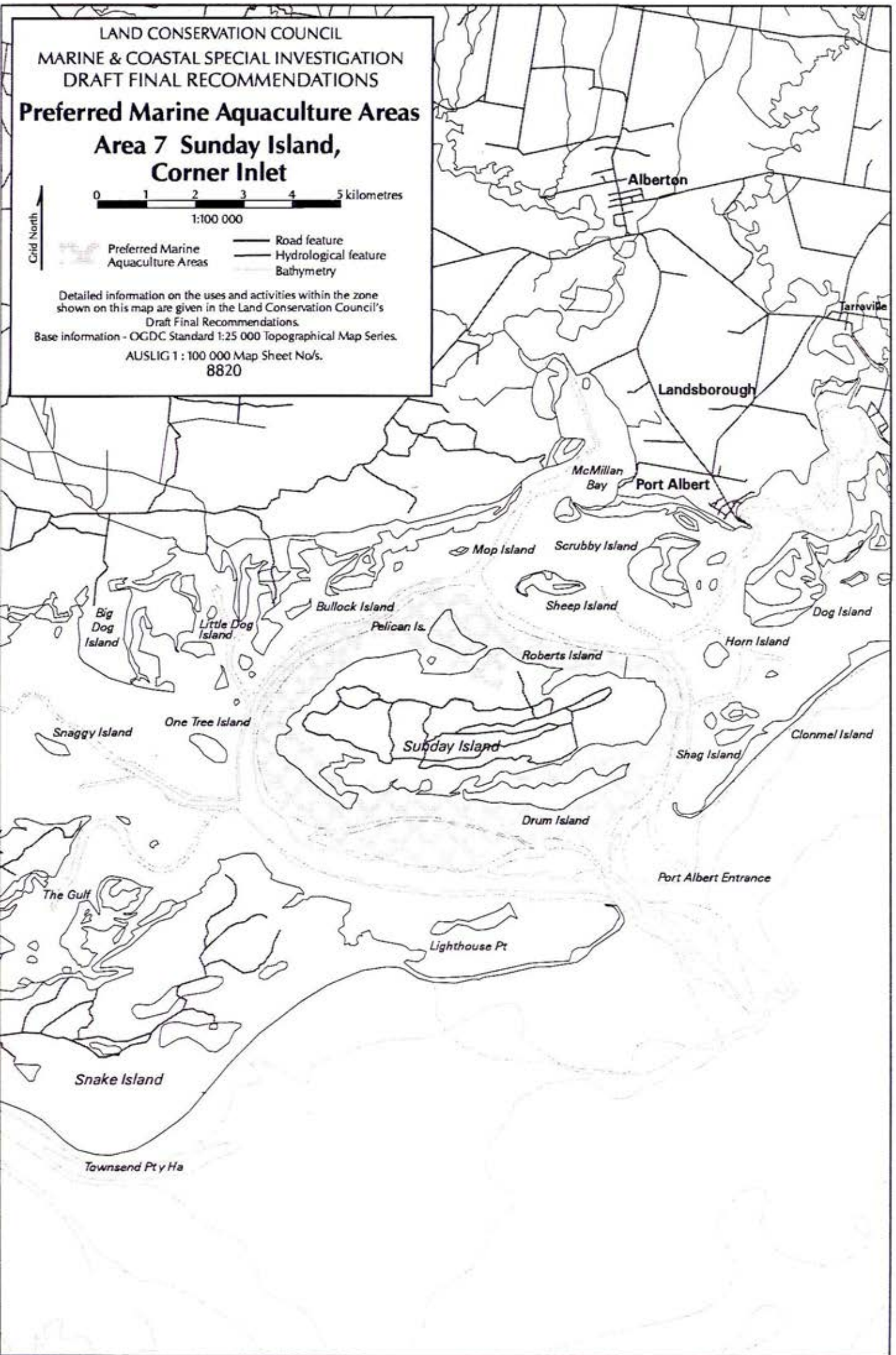
Preferred Marine  
Aquaculture Areas

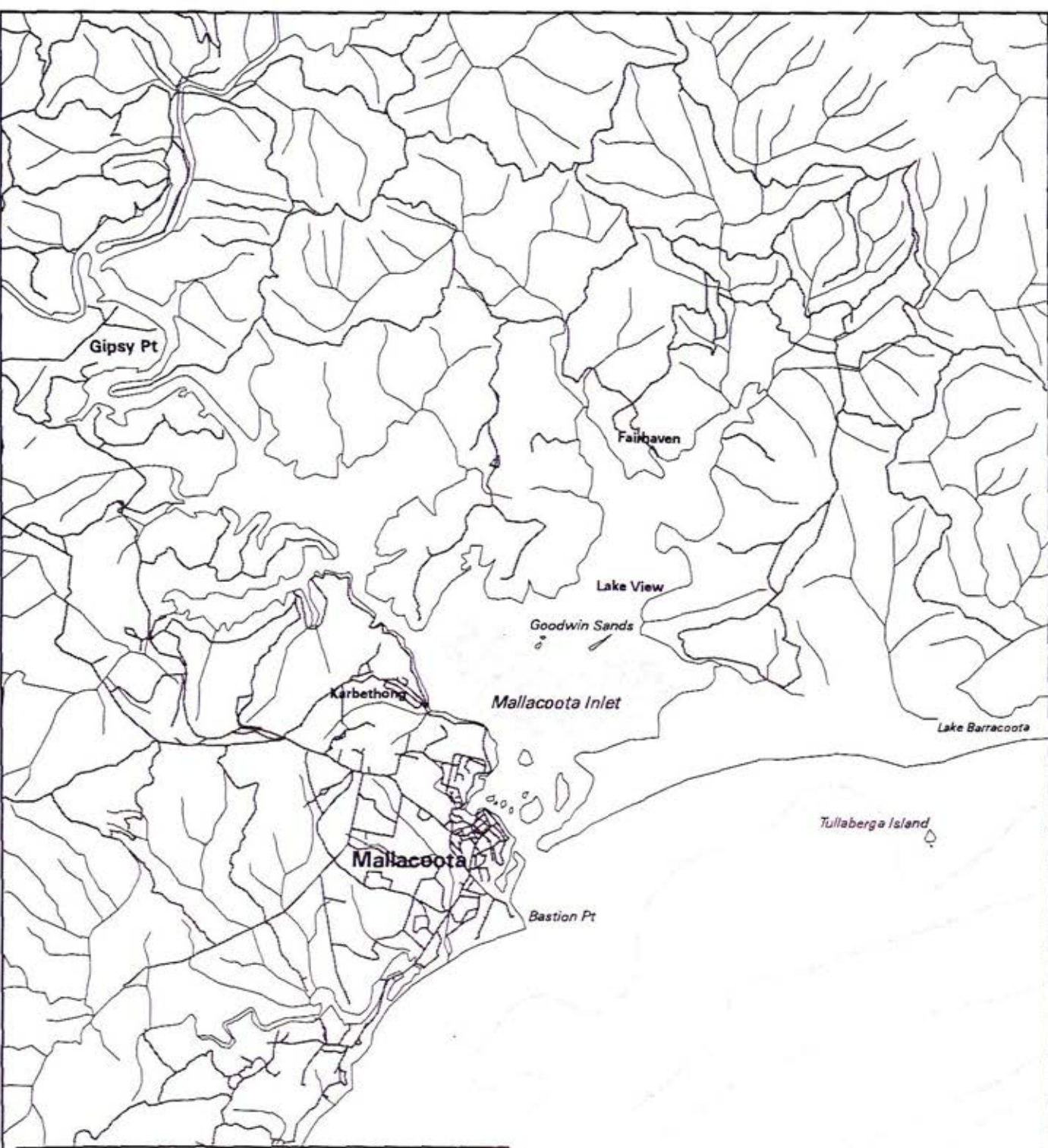
— Road feature  
— Hydrological feature  
- - Bathymetry

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8820





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 DRAFT FINAL RECOMMENDATIONS

**Preferred Marine Aquaculture Areas**  
**Area 8 Mallacoota Inlet**

0 1 2 3 4 5 kilometres  
 1:100 000

Grid North

Preferred Marine Aquaculture Areas	— Road feature
	— Hydrological feature
	— Bathymetry

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AUSLIG 1: 100 000 Map Sheet No/s.  
 8822 8823