
The Investigation



1.1 Introduction

Victoria's marine and coastal environments

The Victorian marine and coastal environment is unique in its natural diversity – nowhere else in Australia is there such a rich diversity of flora and fauna, and cultural sites and landscapes, along such a compact and easily accessible coast. Spectacular coastal landscapes and marine animals such as the little penguin, southern right whale and Australian fur seal are major attractions.

Victoria has the highest population-to-coastline ratio of all the Australian states and territories. The coast has two major embayments, Port Phillip and Western Port; the largest estuarine lakes system in the southern hemisphere, the Gippsland Lakes; the large shallow lagoon system of Corner Inlet/Nooramunga; and numerous smaller inlets and coastal streams.

In addition to its environmental values, the marine and coastal environment is a valuable economic resource. Victoria's commercial fish and shellfish industries generate jobs, exports and income. Recreational fishing, boating and sightseeing are important leisure activities, and together with tourism, provide significant economic benefits to coastal towns. Coastal and marine waters are used for shipping and the major ports are vital for trade.

However, signs are emerging of problems resulting from use of marine resources and land use practices in catchments. The cumulative effects of commercial and recreational fishing are demonstrable for many fish and shellfish stocks in Victorian waters, and evidence of overfishing is available for at least two important fisheries: sharks and rock lobster (Winstanley 1996).

Other problems in Victoria's marine environment arise from the concentration of population and industry around the two bays, and agricultural use and development of the catchments draining to the coast. These problems are aggravated by the physical disturbances to marine environments from shipping and related works, coastal development and fishing, and by the introduction of exotic species.

The investigation process

The Victorian Government asked the Environment Conservation Council to carry out an investigation of Victoria's marine, coastal and estuarine areas.

The investigation builds on earlier work by the Land Conservation Council.

The Land Conservation Council, which was established by the *Land Conservation Act 1970*, commenced an investigation of Victoria's marine, coastal and estuarine areas under terms of reference provided by the Government in September 1991.

In June 1997 the *Land Conservation Act 1970* was repealed and replaced by the *Environment Conservation Council Act 1997*. Under this Act the Land Conservation Council ceased to exist and the Environment Conservation Council was established to respond to specific references from the relevant Minister.

The flowchart on pages 4–5 outlines the investigation process of the LCC and the ECC, highlighting formal opportunities for public input over the past nine years. In addition, the LCC and the ECC have received substantial informal input outside these periods. The investigation has received about 4500 written submissions.

Reports issued by the LCC

During the initial investigation, which began in late 1991, the LCC produced a number of important reports, in particular:

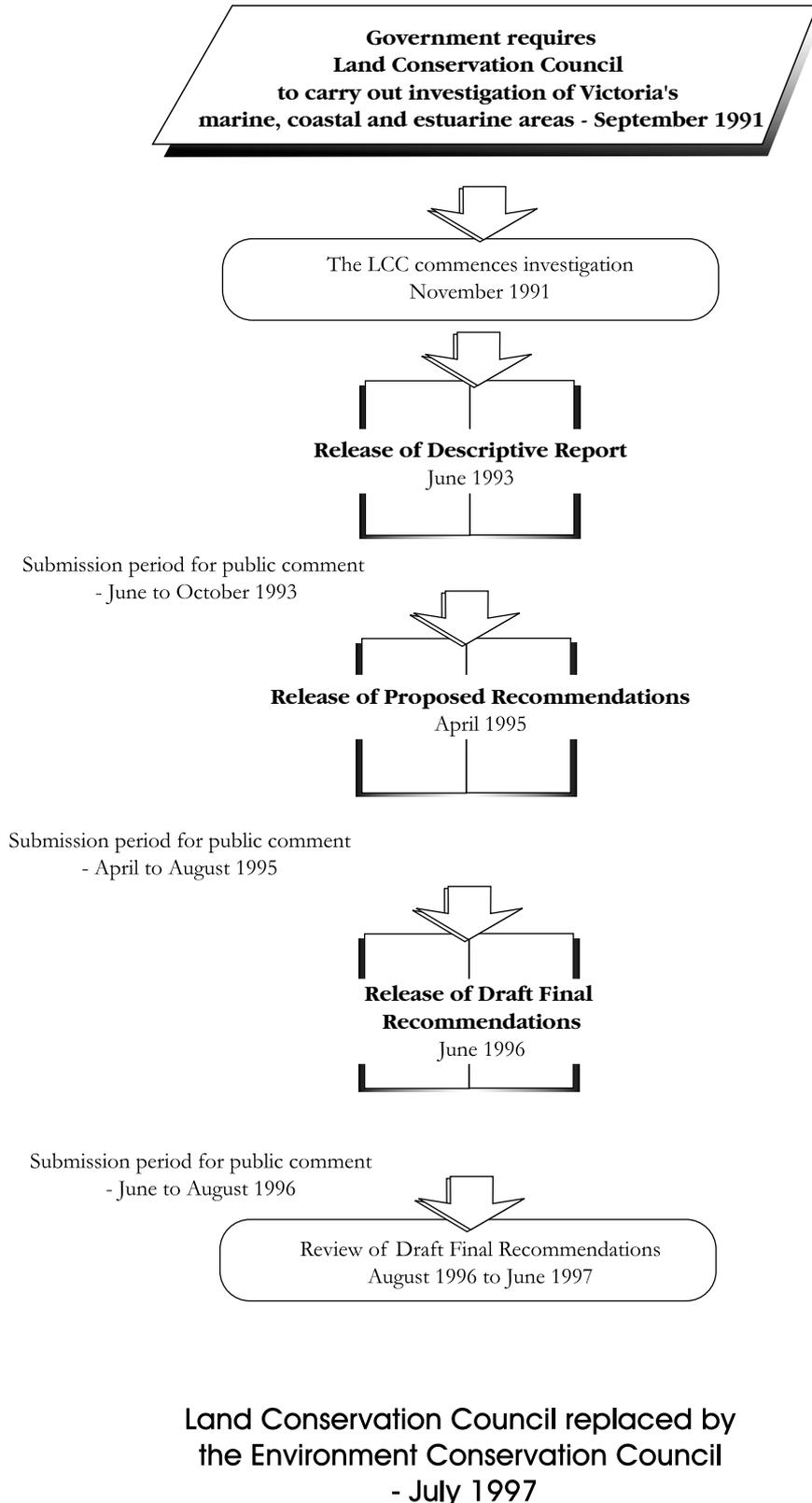
- Marine and Coastal Special Investigation Descriptive Report, June 1993
- Marine and Coastal Special Investigation Proposed Recommendations, April 1995
- Marine and Coastal Special Investigation Draft Final Recommendations, June 1996.

Each of these reports was widely distributed for public comment. The LCC commissioned various studies and research projects which added considerably to our knowledge of the marine environment.

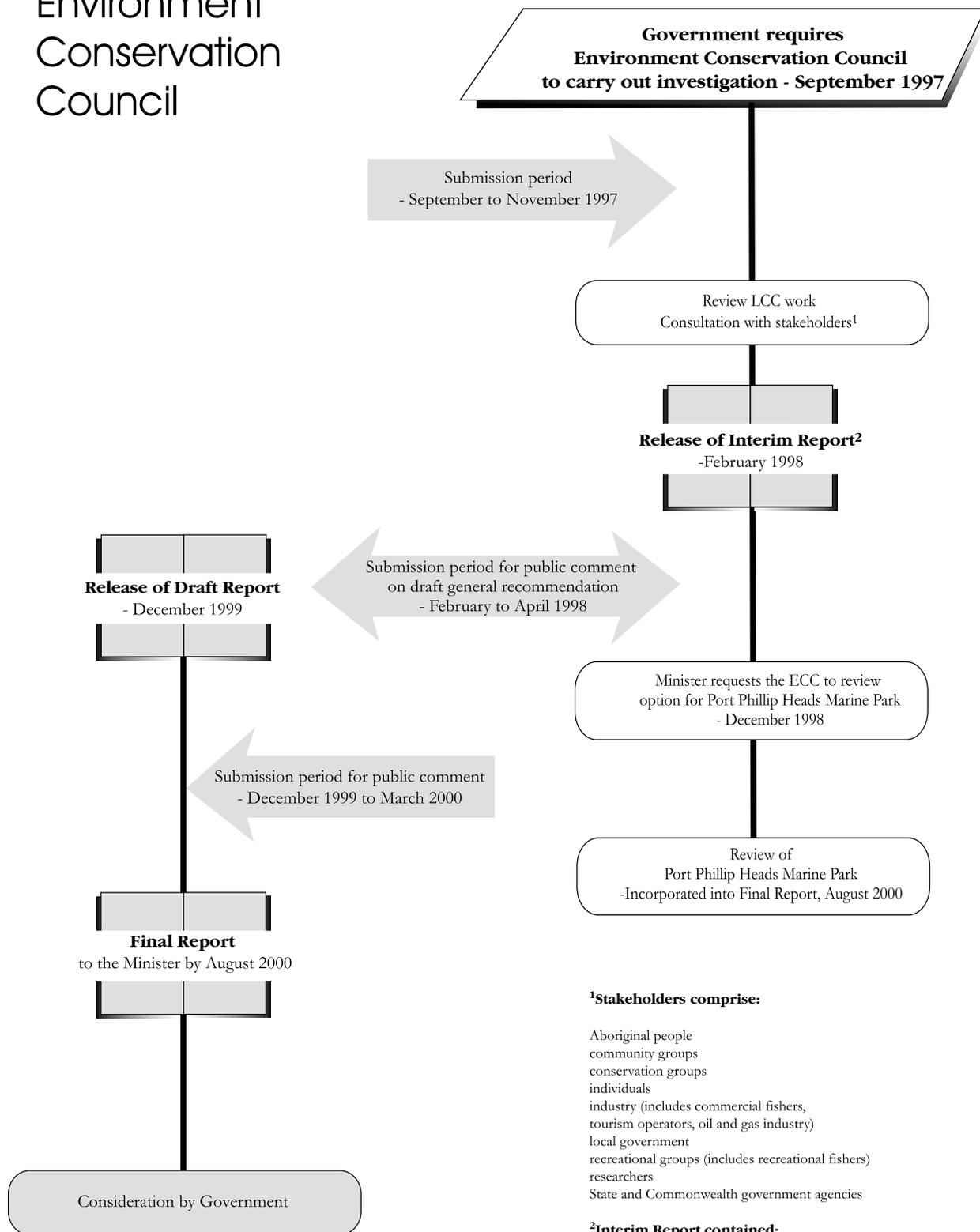
The LCC's Draft Final Recommendations (1996) included 21 recommendations for multiple-use marine parks and 22 recommendations for sanctuary (or highly protected) zones within the marine parks. Eight preferred marine aquaculture areas were also recommended. The LCC was in the process of considering submissions received following publication of the Draft Final Recommendations when it was replaced by the ECC. The ECC has access to all of the past work of the LCC and has made extensive use of it in the current investigation.



Land Conservation Council



Environment Conservation Council



¹Stakeholders comprise:

- Aboriginal people
- community groups
- conservation groups
- individuals
- industry (includes commercial fishers, tourism operators, oil and gas industry)
- local government
- recreational groups (includes recreational fishers)
- researchers
- State and Commonwealth government agencies

²Interim Report contained:

final recommendations for Port Phillip Heads Marine Park and two aquaculture areas as well as draft general recommendations



The ECC's terms of reference

The Minister for Conservation and Land Management provided terms of reference to the ECC in 1997 for the investigation of Victoria's marine, coastal and estuarine areas. In particular, the terms of reference (quoted in full on page 7) required the Council to make recommendations on two matters:

- a representative system of marine parks, and
- areas suitable for marine aquaculture.

The ECC was required to provide an interim report recommending at least one marine park and at least one marine aquaculture area.

The ECC has produced two reports:

- Marine, Coastal and Estuarine Investigation Interim Report, February 1998
- Marine Coastal and Estuarine Investigation Draft Report, December 1999

The Interim Report, released in February 1998, recommended the establishment of a Port Phillip Heads Marine Park and two aquaculture areas, one in and one adjoining Port Phillip Bay.

As part of the Interim Report, the ECC also asked for public comment on:

- objectives and management guidelines for Victoria's marine, coastal and estuarine areas,
- principles for the selection and management of marine parks, and
- principles and criteria for selection and management of marine aquaculture areas.

The 236 submissions received in response to the invitation for public comment were taken into account in framing the draft recommendations.

The recommendations for the two aquaculture areas contained in the Interim Report are currently being considered by Government (see pages 131 and 134 for more details on these areas).

In May 1999 the Minister extended the time for the ECC to submit the report on the investigation to 30 June 2000, and directed the ECC to take into account the recently announced voluntary buy-back of commercial fishing licences, and further development of Commonwealth/State processes related to Australia's Oceans Policy.

The ECC released its Draft Report for public comment in December 1999. The recommendations built on the work of the LCC between 1991 and 1997, and took into account work done by the Victorian Coastal Council and the development of Australia's Oceans Policy.

The ECC's Draft Report included recommendations for marine protected areas, including twelve highly protected marine national parks and eleven marine sanctuaries (about 6.2% of Victoria's waters); and marine aquaculture areas, including eight aquaculture zones. The Draft Report also detailed proposals for management of marine waters and coastal land.

About 2500 written submissions were received commenting on the Draft Report, including about 120 letters received after the closing date (see Appendix 1 for the list of submissions).

In June 2000 the Minister approved a two month extension (until 31 August 2000) for the Final Report, to enable completion of socio-economic assessments and additional consultation related to Aboriginal interests and commercial fisheries values.

Review of the Port Phillip Heads Marine Park

In December 1998 the then Minister, under section 17(3) of the Act, requested that the ECC review the recommendation for Port Phillip Heads Marine Park, having regard to the incompatibility of incorporating major shipping channels in a marine park. The ECC's recommendation on this matter is included in Part Three as Recommendation A4.



Terms of Reference for the Environment Conservation Council's Investigation of Victoria's Marine, Coastal and Estuarine Areas

The Minister, under Section 17 of the Environment Conservation Council Act 1997 requires the Environment Conservation Council to complete a Marine and Coastal Special Investigation by 31 August 2000¹.

The investigation area extends from the Victorian offshore territorial limit (3 nautical miles) to a distance of approximately 1 km inland from the high-water, it includes the land (terrain, and overlying water) affected by marine, coastal and estuarine processes. Islands surrounded by marine and estuarine water are included in the investigation. On French Island 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. Land within cities and rural cities may be included at the discretion of the Council.

The Council is to investigate this area and make recommendations on the protection of significant environmental values and the sustainable use of these areas with priority given to:

- (a) a preferred approach and priorities for the progressive establishment of a representative system of marine parks in the State of Victoria; and
- (b) areas suitable for marine aquaculture, which can be developed on an environmentally sustainable basis.

In making these recommendations the Council is to have regard to:

- (a) the matters to be taken into account in investigations as provided in Section 20 of the Environment Conservation Council Act 1997;
- (b) the work undertaken by the Land Conservation Council and the Victorian Coastal Council; and
- (c) the Prime Minister's announcement on 3 March 1997 of the development of an Australian Oceans Policy.

The Council is to provide an interim report by 31 January 1998² recommending options for the early establishment of at least one marine park and at least one area suitable for the priority development of marine aquaculture.

The Terms of Reference were amended on (31 May 1999) as follows:

The ECC is to take into account the recently announced voluntary buyback of commercial fishing licences and further development of Commonwealth/State processes related to Australia's Oceans Policy.

¹ Originally 30 June 1998

² Originally 30 November 1997

What is the ECC required to consider in its investigations?

Under section 20 of the *Environment Conservation Council Act 1997*, the Council must have regard to:

- the ability of any existing or proposed development or use of the land or resources to be ecologically sustainable and economically viable;
- the economic and social value of any existing or proposed development or use of the land or resources;
- the existence of and need to conserve and protect any areas of ecological, historical, cultural or recreational value or areas of landscape significance on the land;
- the need for the creation and preservation of a comprehensive, adequate and representative system of parks and reserves within the State;
- any international obligations entered into by the Commonwealth and any national agreements entered into with or obligations undertaken in conjunction with the Commonwealth and the other States and Territories which relate to the subject matter of the investigation; and
- the need to protect and conserve biodiversity.



1.2 Addressing the terms of reference

In this report the ECC addresses the two priorities established in its terms of reference, that is recommendations for a representative system of marine parks in Victoria, and for areas suitable for marine aquaculture.

Marine protected areas

The ECC recommends improving the protection of the marine environment through the establishment of a system of marine protected areas, supported by good environmental management practices over the whole of Victoria's marine area. These two elements are complementary, ensuring good overall management of our marine areas.

A cornerstone of the recommended system is the establishment of 13 highly protected marine national parks and 11 marine sanctuaries. Throughout the investigation, while some stakeholders have strongly supported the need for highly protected areas, others have argued that it is not necessary to establish areas of high protection, analogous to terrestrial national parks, in order to protect the marine environment.

The ECC strongly believes that, not only is it necessary, but that it would be highly irresponsible not to set aside some small proportion of Victoria's marine area to be maintained in as natural a state as possible. Protected area strategies are well accepted for the terrestrial environment, and also feature as a key component of every existing national and international strategy for protection and sustainable use of the marine environment.

In making these recommendations, the ECC acknowledges that there are social and economic implications arising from the establishment of highly protected areas. These potential impacts have been taken into account as far as possible, while still meeting the objectives for a comprehensive, adequate and representative system of marine protected areas.

The ECC is of the strong opinion that the environmental, social and economic implications of failing to set aside highly protected areas are significant and potentially irreversible, although less easily quantified than immediate financial costs.

About 6.2% of Victoria's marine area is recommended to be set aside in highly protected areas and, while this is seen by some stakeholders as barely adequate, the ECC considers that it represents a balance that is acceptable to the broad community at this time.

Victoria's marine environment is managed for multiple uses. Marine protected areas are only one component of marine environmental management, and the ECC highlights existing and developing programs addressing critical environmental issues such as catchment management, fisheries management, introduced marine pests and marine pollution.

Marine aquaculture areas

In order to facilitate the development of marine aquaculture in Victoria, the ECC is recommending 12 marine aquaculture zones (including two previous recommendations) where aquaculture can be developed on an environmentally sustainable basis.

Preparing the recommendations for aquaculture areas has been a difficult task, for technical, environmental and social reasons. It is clear from community input throughout the investigation, that there is widespread concern about the development of aquaculture in open marine waters, although there is considerable support for land-based aquaculture. Competing uses are issues for some stakeholders, but the major concern is the environmental risk potentially associated with marine aquaculture. From an industry perspective relatively few areas in Victoria appear to be suitable for existing species and technologies and, of those few, several areas are ruled out because of their high conservation values or their environmental sensitivity; for example, Ramsar wetlands.

Accordingly the ECC is recommending 12 aquaculture zones, based largely on existing licence areas, and is further recommending that detailed monitoring programs are developed and implemented to clarify and document the nature and degree of the environmental impacts, including recovery times, prior to the consideration of any additional areas. Wide availability of the results of monitoring will assist in responsible management of marine aquaculture and may allay some of the community concerns in future.



The ECC believes that an environmentally sensitive aquaculture industry has the potential to contribute substantially to the Victorian economy, and encourages the further development of land-based aquaculture of marine species.

Major changes since the Draft Report

As a result of input received from the community and additional information available since the release of the Draft Report in December 1999, significant changes have been made to the recommendations.

The main changes are listed below and are summarised in tables at the end of the Executive Summary.

- In response to public input, an expanded discussion and recommendations relating to protection, use and management of Victoria's marine and coastal area.
- A number of changes to marine national park boundaries have been made to address user issues, to improve habitat representation and to provide for easier identification of boundaries.
- Commercial fishing estimates have been re-assessed, and a socio-economic assessment of impacts on coastal towns and the broader community has been completed.
- Minor changes have been made to marine sanctuaries and special management areas and additional special management areas have been proposed.
- Existing multiple-use parks will retain their current names and management arrangements.
- A number of changes have been made to aquaculture zone boundaries to address user issues.
- Aquaculture investigation areas have either been removed or a smaller zone identified.

Broad issues raised in submissions received on the Draft Report and Council's response are discussed in Appendix 2.

1.3 Policy context

The recommendations in this report have been developed in the context of international, national and State obligations and programs. Many strategies and plans, such as the Victorian Coastal Strategy, the Biodiversity Strategy and the Victorian Aquaculture Strategy, address aspects of marine, coastal and estuarine management in detail. A major initiative at the Commonwealth level is the development of Australia's Oceans Policy. Some of the key strategies and programs are outlined below.

National and State policy context

Victorian Coastal Strategy (1997)

The Victorian Coastal Council (VCC) was appointed under the *Coastal Management Act* 1995. One of the VCC's major tasks was to prepare a strategic plan for the whole of the Victorian coast. That plan, the Victorian Coastal Strategy, was released in November 1997.

The Victorian Coastal Strategy provides a framework to ensure the following outcomes for Victoria's coast:

- ensure the sustainable use of natural resources,
- ensure the protection of significant environmental features of the coast,
- provide clear direction for the future use of the coast including the marine environment, and
- identify suitable development areas and development opportunities on the coast.

When preparing the plan, the Victorian Coastal Council liaised closely with both the LCC and the ECC to ensure compatibility between the studies. Although there was some overlap, generally the VCC placed greatest emphasis on the land, whereas the LCC/ECC investigations are more strongly related to the marine environment. Another significant difference is that the LCC/ECC investigations are confined to public land whereas VCC planning relates to public and private land.

Victoria's Biodiversity Strategy (1997)

Victoria's strategy for the conservation of biodiversity was released in 1997, and included marine, coastal and estuarine environments. The strategy emphasises:

- systematic prevention or reduction of the causes of biodiversity decline or loss;



- ecologically sustainable management of public lands and waters by government agencies in association with resource based industries;
- cooperative management of biodiversity on private land, in partnership with landholders, the community, catchment management authorities and local government;
- every community and bioregion forming an integral part of our living wealth; and
- a reporting framework for monitoring progress.

Victorian Aquaculture Strategy (1998)

The purpose of this strategy, released in late 1998, is to develop a profitable, diverse, ecologically sustainable and well-managed aquaculture industry. The Victorian Aquaculture Strategy aims to provide a framework for the development of the Victorian aquaculture industry by (among other things):

- assisting in the identification and development of new areas for aquaculture;
- implementing effective environmental management performance standards; and
- establishing supportive legislative, policy and administrative frameworks.

State Environment Protection Policies (SEPPs)

SEPPs are key statutory instruments in Victoria for the protection of environmental quality, developed with extensive community and stakeholder consultation. SEPPs provide a statutory framework for the protection of beneficial uses identified, and a program of plans, works and activities which, when implemented will protect beneficial uses. *SEPP (Waters of Victoria)* (1988) is the overarching policy for Victoria's fresh and marine waters. Activities which affect or have the potential to affect the environment, must be planned and operated according to SEPP provisions. The policy provides for the control of point source discharges and diffuse sources of pollution, application of catchment management principles, monitoring, development of codes of practice, research and public education and participation.

Australia's Oceans Policy

The Commonwealth Government released Australia's Oceans Policy in December 1998, and announced the

allocation of \$50 million over three years for a range of actions associated with its implementation.

Central to the policy is ecosystem-based management of Australia's marine jurisdiction to be implemented through a regional marine planning process. Regional Marine Plans, based on large marine ecosystems, are intended to integrate sectoral commercial interests and conservation requirements. In developing Regional Marine Plans, the Commonwealth is seeking the participation of the relevant states and territories, to ensure, as far as possible, the integration of planning and management across State and Commonwealth waters.

The first Regional Marine Plan, to be prepared for the South-east Exclusive Economic Zone, was announced by the Federal Government in April 2000. The plan will cover an area of 2 million square kilometres of ocean off Victoria, Tasmania, southern New South Wales and eastern South Australia. A formal scoping paper is currently being prepared setting out details of the Government's intentions for the South-east Regional Marine Plan and the consultation process which will be used. State governments have not yet endorsed the Oceans Policy and the Regional Marine Planning process.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

This Act, which came into force on 16 July 2000, identifies six matters of national environmental significance (NES):

- World Heritage properties
- wetlands of international importance (Ramsar wetlands)
- nationally threatened species and ecological communities
- internationally listed migratory species
- nuclear actions
- Commonwealth marine areas.

Activities, or actions, which may have a significant impact on a matter of NES, will be subject to Commonwealth assessment and approval, unless State assessment processes have been accredited by the Commonwealth.

Major activities and actions in Victoria, with a potential significant impact on a matter of NES in



the marine and coastal environment, will be subject to assessment and approval under the Act. It is therefore possible that new developments, such as marine aquaculture operations, may require assessment and approval under the Act if, for example, the proposal is in a Ramsar listed area.

Fisheries management under the Offshore Constitutional Settlement

The Offshore Constitutional Settlement (OCS) allows for arrangements to be made between the States and the Commonwealth on resource and conservation matters for marine waters (except bays, inlets and estuaries). This simplifies the management of resources, particularly those that straddle the State/Commonwealth boundary. For the purposes of fisheries management the OCS provides for the Commonwealth to be given jurisdiction for specified fisheries within Victorian territorial waters, and vice versa. Victoria's territorial waters extend seawards to three nautical miles from high water mark. For example, Victoria manages some Commonwealth waters with respect to abalone, and the Commonwealth manages some Victorian waters with respect to royal red prawns.

Adjustments to Commonwealth fisheries arrangements may be necessary as a result of Victorian Government decisions on establishment and management of marine protected areas. The Memorandum of Understanding accompanying the OCS arrangements between Victoria and the Commonwealth ensures such decisions are able to be implemented.

International listings of important conservation areas

There are three ways in which areas in Australia may receive international recognition for their conservation values: under the World Heritage Convention, the Convention on Wetlands of International Importance (the Ramsar Convention), and the UNESCO Biosphere Reserves Program. Although these designations do not have a legal foundation, they act as 'overlays' for areas with a range of land tenures, not all of which may be recognised as protected areas.

There are currently no World Heritage Areas in Victoria.

Wetlands of International Importance

The Ramsar Convention aims to promote the conservation of wetlands and waterfowl, to establish nature reserves on wetlands, to provide adequately for their protection and management and to train personnel competent in the fields of wetland research and management. Four coastal marine areas in Victoria are designated as Wetlands of International Importance under the Ramsar Convention:

- Port Phillip Bay (western shoreline) and Bellarine Peninsula
- Western Port
- Corner Inlet (includes the Nooramunga area)
- Gippsland Lakes.

Two other international agreements that act to protect migratory birds are the Japan-Australia Migratory Birds Agreement (JAMBA) and the China-Australia Migratory Birds Agreement (CAMBA). The Agreements recognise that certain species of birds migrate between the two countries and that both countries will conserve the habitats of these species.

Biosphere Reserves

Biosphere Reserves are areas nominated by a UNESCO member state which, because of their characteristic plants and animals and the way they are used by humans, have been given international recognition by the Man and the Biosphere Programme of UNESCO. A Biosphere Reserve contains gradations of areas which have been modified by human activity, with a core area or areas devoted to long-term protection, and one or more surrounding buffer zones in which activities compatible with the conservation objectives may be carried out.

Two coastal areas in Victoria have been designated as Biosphere Reserves by UNESCO:

- Croajingolong National Park, and
- Wilsons Promontory National Park.



1.4 Consultation and information

Consultation program

During the preparation of the final recommendations, the ECC sought input from community and industry groups, government agencies and interested individuals. The recommendations in this report conclude a nine-year process which has included six formal periods for public comment and ongoing consultation with a broad range of stakeholders.

The ECC has taken into account about 4500 written submissions and letters made to both the former LCC and the present Council. This huge resource of information and informed comment has been enormously valuable in helping the ECC finalise its recommendations.

An Advisory Group was established by Council for the investigation to provide input and advice regarding technical issues associated with developing its recommendations. The ECC Chairman convened Advisory Group meetings. The Advisory Group is an expertise-based group (not a representative group), whose members include individuals from State and Federal Government agencies, and people with backgrounds in conservation, the aquaculture industry, recreational fishing, commercial fishing, research and rural communities.

In addition to inviting submissions, the ECC has been active in conducting public meetings and briefings. These have been undertaken for Aboriginal groups, industry organisations, conservation groups, user groups, local communities, concerned individuals and government agencies.

Prior to formulating its draft recommendations released for public comment in December 1999, the ECC and staff conducted meetings in coastal regions of Victoria to discuss the proposed content of the draft recommendations and to help resolve any outstanding issues.

Following the release of the Draft Report, a series of briefings was conducted, public meetings were held in 15 locations along the Victoria coast, and Council met with peak organisations to discuss their submissions. Council's response to major issues raised during the investigation can be found in Appendix 2.

Mirimbiak Nations Aboriginal Corporation was commissioned by the ECC to facilitate input from Aboriginal groups on the recommendations in the Draft Report. A summary of their report, prepared with the participation of all Victorian Aboriginal coastal communities, is included at Appendix 3.

Information sources

In addition to input provided through written submissions and the consultation program, the work of the ECC is based on the best available information, obtained through collation of existing data and specially commissioned research.

Several studies have been commissioned by the ECC or LCC, and other research projects have also provided valuable information. The key information sources which contributed to the development of the recommendations are referenced throughout the report. A full list of references is also provided commencing on page 135.

1.5 Economic and social assessments

As part of its task of making recommendations on the balanced use of public land and resources, the ECC must take into account economic and social values. The ECC must also balance local, regional, State and national interests as well as those of present and future generations.

Whilst there are a number of ways to assess the social and economic impacts of the ECC's recommendations, most methods have limitations. In particular, social and environmental impacts are very difficult to incorporate in most analyses, and there is a tendency to focus on readily identifiable impacts, which are more likely to be short-term financial losses or gains. For example, how costs and benefits of particular decisions are distributed amongst different groups within society is an important consideration, but is not easily assessed.

Most cost-benefit analyses also struggle with 'pricing' environmental values although there is no doubt that, as a society, we place a high value on them. While socio-economic analyses are useful ways of structuring the assessment of resource issues, no technique can express, aggregate, weigh and compare the values of all the costs and benefits associated with alternative uses of land, water or resources.



Although there is continual development of techniques to inform and assist policy-makers, there is no generally accepted methodology available at present that eliminates the need for governments to interpret community values and goals when making final judgements about resource use options.

Information on other social and economic impacts of the recommended marine protected areas has been gained through discussions with community groups and individuals, local government and other government agencies. This information, although generally qualitative rather than quantitative, has been extremely useful in developing and refining recommendations.

Both the ECC and the LCC have commissioned social and economic assessments throughout this investigation (see references 240, 241, 242, 254, 366). An overview of the social and economic implications of the final recommendations is provided in Appendix 4. More detailed information is provided for specific areas in the recommendations in Part Three.

Social and economic implications for coastal communities

Economic data available for the Victorian coast and marine areas comprises information on tourism, commercial and recreational fishing, and extraction of petroleum and minerals. Social data includes information on population, occupations, incomes, and preferences for various activities, but data specific to the coast cannot readily be extracted from the general Victorian information.

The social and economic characteristics of the major population centres along the Victorian coast vary greatly. Outside Melbourne and Geelong, major activities associated with coastal population centres include agriculture, fisheries (including mariculture), tourism, recreation, industry, commerce, and petroleum production. Other important activities include the provision of support services, such as schools, medical and other community facilities.

Many coastal towns and settlements across Victoria have undergone significant change in recent years in response to changing social and economic conditions. The relative significance of different economic activities to local, regional and State economies varies enormously. Large coastal towns

and cities, such as Warrnambool and Portland in western Victoria, have a broader economic base than smaller coastal towns such as Mallacoota and Marlo in east Gippsland. The socio-economic framework of many coastal towns and cities is complex with numerous links both within and beyond the coastal area.

Many of Victoria's coastal towns are relatively small in area and in population, with key economic activities closely linked to the marine-based assets as well as the servicing of local residents and visitors. The coast provides many opportunities for commercial fishing, recreational fishing, diving and numerous other recreational pursuits and general tourist activity. While these features are important to the underlying structure of the coastal townships, the global shift from primary industry to service economies has influenced the profile of many of these towns. As a result, there may be structural changes in particular sectors of a small town's economy (such as a reduction in farming activity in the surrounding area) yet the growth in other activities (such as tourism or retirement living) means that losses resulting from the structural change are more than remedied by the growth in 'new' areas.

Although it is difficult to assess the effects of the creation of a marine national park on local communities, positive social and economic outcomes are commonly associated with terrestrial national parks, largely through conservation and enhancement of the environmental resource, and in many areas, through stimulus to tourism and some forms of recreation.



Many coastal communities are relatively small, with key economic activities closely linked to the marine and coastal environment. Photo: Hania Bibrowska



In some areas creation of a park can provide a focus for attracting visitors and be used as a marketing tool to boost tourism in the area. There have certainly been major benefits to some local communities from the creation of terrestrial parks, but the extent to which this will occur for marine parks is less clear, although international, and some local experience, has been very positive. For example, the only existing fully protected marine area of any significant size in Victoria is within the Bunurong Marine Park. Despite some strong opposition prior to the creation of the park in 1991, the area now appears to be well supported locally and enhances the overall natural tourism assets of the region.

The independent consultants' report concludes that any net tourism benefits arising from the ECC's recommendations are likely to be very small in the short term and not measurable in terms of new jobs and incomes (see Appendix 4).

The consultants further conclude that the restrictions on recreational fishing resulting from the ECC's recommendations are unlikely to have any serious adverse effect on recreational fishing expenditures in the State. For local communities, there may be some isolated impacts where visits from fishers may decline and therefore their associated spending levels would be reduced. However these impacts should be limited as alternative fishing areas exist which are accessible. In some cases popular recreational fishing areas have been deliberately excluded from areas proposed for protection. In any event, most fishers are relatively mobile with cars and/or boats, and will tend to find alternative fishing locations. The economic impact is therefore likely to be small. Moreover, most towns do not rely heavily on recreational fishing spending, and they will continue to draw holiday-makers who are attracted by a range of factors.

The impact on commercial fishing (see following section) of the ECC's recommendations for marine protected areas may result in employment loss of around 0.3% in some coastal communities if the catch cannot be made up from other areas. The independent consultants concluded that the impacts on commercial fishing are unlikely to have lasting adverse impacts on coastal towns since the towns do not have a strong reliance on commercial fishing (except Mallacoota), and are generally reliant on a

wider servicing role for local and surrounding resident populations and for visitors. Although critically important for some individual fishers, the net effect on a town's economy is not expected to be significant.

Implications for commercial fisheries

An assessment of the value of fisheries resources in, and adjacent to, the recommended parks was undertaken by MAFRI prior to the release of the Draft Report, and summarised in that report. Some of these figures have been challenged by the commercial fishing industry and individual fishers. In discussion with the fishing industry, it is apparent that some of the concerns relate to the citation of a single year's catch estimates rather than estimates over a longer time period, the price used for values, and the absence of an estimate of the flow-on implications for regional communities and the State as a whole. The fisheries catch estimates have been reviewed and are presented in Appendix 5 to give a fuller picture of the fishery. A discussion of flow-on implications for coastal towns has been included in the independent socio-economic assessment in Appendix 4.

However, the consultants noted that there is no complete or consistent database of the numbers of people employed in the fishing industry, the numbers of boats and processing plants in particular locations, or seasonality factors etc. The absence of such an industry-wide database is a major limitation in assessing the flow-on impacts of policy decisions.

The annual value of commercial fisheries in the recommended marine national parks and marine sanctuaries in this report is estimated to be approximately \$7 million, being about \$5.4 million for abalone, about \$1 million for rock lobster and \$0.6 million for other fisheries. This is estimated to represent about 11% of the Victorian abalone fishery, 6–7% of the Victorian rock lobster fishery, and about 5% of the scalefish landed.

It is important to note that these figures are based on the estimated yield of the fishery in the recommended areas, and do not necessarily translate to a financial loss to the fishery. For example, some fish eg Australian Salmon, are not resident in a particular area and will continue to be caught outside the parks. For abalone, effort will need to be redirected to areas outside the



recommended parks. If this is not possible because all the areas outside the parks are fully exploited, adjustment to the Total Allowable Catch may be necessary. It is possible that, for the rock lobster fishery, marine national parks may lead in the longer term, to stock enhancement in adjacent areas. In some overseas cases 'no-take' marine reserves have been used as a management tool for this purpose.

Commercial fisheries in Victoria include both the wild fisheries (abalone, rock lobster and scalefish) and marine aquaculture. The ECC's recommendations for marine aquaculture areas will facilitate the development of a larger marine aquaculture industry with potentially large economic benefits.

Displacement effects, adjustment issues and compensation

Some submissions highlighted potential problems following the implementation of recommendations for highly protected marine parks, if commercial fishers responded to the imposition of restrictions by increasing catch and effort beyond sustainable limits in adjacent fished areas.

Fisheries structural adjustment is accelerated adjustment of a particular fishery's industry structure to achieve particular biological, economic or social outcomes (Metzner and Rawlinson 1998). The process may or may not involve the use of public or private funds. The primary biological impetus for adjustment programs has been stock depletion. Economic factors motivating adjustment include increasing overcapitalisation. An increasing number of adjustment programs have resulted from political decisions to reallocate fisheries resources from the commercial to the recreational sector or to the non-consumptive sector (the environment).

It is appropriate for the community to contribute to adjustment schemes on the grounds of broader environmental or social objectives. For example if such an adjustment process leaves a particular region or individual socially or economically disadvantaged, it is appropriate to use public funds for retraining or relocation of displaced industry participants in order to reduce the long-term costs.

The ECC believes that where implementation of recommendations for marine national parks and marine sanctuaries may result in displacement effects on adjoining fished areas as fishers shift effort to accommodate the new restrictions, or

where a sector of the industry or a local community is disproportionately affected and experiences hardship, industry adjustment may be required. As some fisheries, eg rock lobster, are already facing restructure for other reasons, it is not possible or appropriate at this time to determine the extent of adjustment required as a result of implementation of recommendations and whether the use of public funds is justified.

There are a number of methods to assist in structural adjustment, including existing social adjustment programs, and several ways of financing fisheries adjustment.

Recommendations

- R1** Government establish a process to evaluate the requirement for, possible mechanisms and level of adjustment that may be required where individuals or local communities are disproportionately affected as a result of the implementation of recommendations for marine national parks and marine sanctuaries.
- R2** Government encourage and assist the fishing industry to develop an industry database which includes the regular collection of sector and regional industry characteristics including employment data.

Implementation costs

Management costs associated with implementation of the ECC's recommendations for marine protected areas include the following major elements:

- infrastructure – establishment and maintenance (some of the costs are boats, onshore and offshore markers and so on);
- publicity, extension and interpretation;
- compliance – linked with publicity and extension, and includes surveillance and enforcement and visitor management;
- performance reporting – includes biological monitoring and visitor use monitoring; and
- park management planning.



Detailed costings are not provided for implementation, as discussions with management agencies suggest that there is a range of funding scenarios depending on how much integration can be achieved with existing programs.

Some infrastructure is already in place in some locations, and there is already some capacity in agencies for publicity, extension and management planning. There may be some ability to partially meet establishment costs of a performance monitoring system from within current statewide programs, although park monitoring would require additional funds. However although integration with existing programs should be explored, implementation of the recommendations will comprise a significant addition to Victoria's protected areas estate. Marine park planning and management is a relatively new area for park managers, requiring different infrastructure and expertise, and will require new funding.

Although resource requirements are not provided in detail, the ECC acknowledges the strong community feeling about the importance of resourcing marine compliance programs, and stresses again the need to provide adequate resources to effectively manage marine and coastal areas, both within and outside marine protected areas. It is also likely that more effective enforcement, particularly for abalone theft, would offset loss of fishing grounds resulting from creation of highly protected areas.

Some costs associated with implementation of recommendations for marine aquaculture areas may be partially absorbed from within existing statewide programs, and other costs will be partially or completely offset by industry contributions through aquaculture licence fees. Other costs, such as those associated with monitoring and preparation of management plans will require additional funding.

