



APPENDICES

APPENDIX 1: THE POLICY CONTEXT

The Government has demonstrated in *Australia's Oceans Policy* its commitment to maintaining the health of ocean ecosystems and their marine biological diversity. With new and enhanced management arrangements, these goals can be achieved, meeting a broad range of economic, social and cultural needs well into the future. Management agencies, industry and stakeholders have already advanced oceans management practices and have worked together to address cross-sectoral issues. Implementation of *Australia's Oceans Policy* and regional marine planning builds on this progress.

In 1998, *Australia's Oceans Policy* outlined the challenges we face in ensuring ecologically sustainable use of our marine resources:

Urban and infrastructure development in the coastal zone, together with the development of marine industries, continue to place increasing demands on our coastline and oceans. Past management practices have not allowed us to assess and ameliorate the cumulative impacts of our actions on ocean health and productivity.

If we were to continue without integrating our oceans planning and management we could not be confident that Australia would avoid the spiral of marine resource degradation that has been witnessed in so much of the rest of the world.

The collapse of a number of major marine ecosystems and fisheries resources in the northern hemisphere, with the associated economic damage and social dislocation, is a stark warning of the vulnerability of marine systems. In Australian waters, the degrading of our unique temperate seagrasses and serious declines in stock of important commercial fish species such as southern bluefin tuna, southern sharks, orange roughy and gemfish, show that we are not immune from such threats.

The Commonwealth and all State and Territory governments have made commitments in the past under the National Strategy for Ecologically Sustainable Development which are relevant to Australia's Oceans Policy. In applying that Strategy to our oceans, the emphasis to date has been on actions within the separate sectors, such as fisheries, petroleum, and protected areas. While progress has been made, until now management and decision-making have not been integrated across the various sectoral interests.

Management of our oceans purely on an industry-by-industry basis will not be sustainable in the long run. Activities such as fishing, tourism, shipping, aquaculture, coastal development and petroleum production must be collectively managed to be compatible with each other and with the ecological health of the oceans.

(Australia's Oceans Policy, vol. 1, 1998, p. 11.)

Since these policy statements regarding ecologically sustainable development and related approaches were made, agencies have made significant advances in building these principles into their legislative and regulatory frameworks.

In October 2001 the High Court decided that native title rights and interests can be recognised in offshore areas (the Croker decision – *The Commonwealth v. Yarmirr* (2001) 184 ALR 113). Among the native title rights and interests that were recognised in the Croker decision were the rights to fish, hunt and gather for non-commercial purposes, and to visit and protect places of cultural or spiritual importance in the claimed area. The possibility that native title rights and interests might exist in the South-east Marine Region must be taken into account in regional marine planning.

With *Australia's Oceans Policy*, the Government is furthering its commitment to ecologically sustainable development. This has resulted in a commitment to integrated and ecosystem-based planning and management for multiple uses of our oceans. In working towards this goal, the Commonwealth and all State and Territory governments continue to pursue improved coordination so that jurisdictional boundaries do not become barriers to effective planning and management. Key principles relevant to *Australia's Oceans Policy* are summarised in the box overleaf.



KEY PRINCIPLES AT A GLANCE

Ecologically sustainable development (ESD) is defined in *Australia's National Strategy for Ecologically Sustainable Development*, 1992, as 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.' All Australian governments have agreed to pursue ESD through their policies and regulations.

'With *Australia's Oceans Policy*, the Government is introducing a refinement of the commitment to ecologically sustainable development. The Government is committed to integrated ecosystem-based planning and management for multiple uses of our oceans' (*Australia's Oceans Policy*, 1998, vol. 1, p. 11).

For more detail, see: *Australia's Oceans Policy*, 1998, vol. 1, pp. 11, 19. *Oceans Policy: Principles and Processes*, 2003, pp. 2, 11, 13, 19.

Ecosystem-based management (EBM) is a management approach that recognises that maintaining the structure and function of ecosystems is vital and that human uses and ecosystem health are interdependent.

Australia's Oceans Policy recognises that 'ocean ecosystem health and integrity is fundamental to ecologically sustainable development' (*Australia's Oceans Policy*, 1998, vol 1, p. 19.) Understanding and minimising the consequences of human activities on ecosystem integrity should be a primary consideration in making management decisions.

For more detail, see: *Australia's Oceans Policy*, 1998, vol. 1, pp. 10, 19. *Oceans Policy: Principles and Processes*, 2003, pp. 2, 13.

Integrated oceans management (IOM) is an approach that recognises that planning and management need to be integrated across sectoral agencies and spheres of government to satisfy the social, economic and ecological objectives of ESD. It is necessary because marine-based activities may overlap or interact, needing consideration of all uses and values, and an understanding of cumulative impacts on the ecosystem.

For more detail, see: *Australia's Oceans Policy*, 1998, vol. 1, pp. 4, 11, 21. *Oceans Policy: Principles and Processes*, 2003, pp. 3, 5, 13.

Multiple-use management (MUM) in the marine environment is an approach which aims to achieve integration and an acceptable balance of outcomes across the full range of ocean uses (*Australia's Oceans Policy*, 1998, vol. 2, p. 47).

For more detail, see: *Australia's Oceans Policy*, 1998, vol. 2, pp. 37, 43, 44, 47.



APPENDIX 2: THE REGIONAL MARINE PLANNING PROCESS TO DATE

PROCESS

This Plan represents a major milestone under *Australia's Oceans Policy*.

Following the announcement of *Australia's Oceans Policy* in the International Year of the Ocean in 1998, the Australian Government began work on the first large-scale integrated marine planning and management process in the world.

The first step was to scope the Plan, which described in broad terms what the *South-east Regional Marine Plan* should do and how it should be developed.

Next came the assessment phase, during which a vast amount of information was collected on the biological, physical, economic, community, Indigenous and management characteristics of the Region. This led to a series of assessment reports that provided the first comprehensive understanding of the Region.

With a sound information base provided through the assessment phase, the next step was to identify planning issues and objectives for the Region.

The options phase of the process required the articulation of objectives, identification of issues and development of recommendations through close consultation with stakeholders and government agencies. Representatives from recreational and commercial fishing, aquaculture, petroleum, conservation, tourism, shipping and ports, and community and Indigenous groups have been key players in the process.

The *Draft South-east Regional Marine Plan* was publicly released on 18 July 2003, and was accompanied by a media advertising campaign in all capital cities and coastal centres in the Region.

The draft Plan was released for a three-month period of public consultation. During this time, staff from the National Oceans Office visited regional centres to obtain input from the general community and to incorporate their views into the south-east regional marine planning process. On conclusion of this period, over 70 submissions were received. These submissions were summarised in the *Draft South-east Regional Marine Plan Submissions Report*. The submissions and feedback gained during regional and stakeholder meetings have been used in finalising the *South-east Regional Marine Plan*.

PARTICIPATION

Through the South-east States Consultative Working Group, the four States in the South-east Marine Region – Tasmania, South Australia, Victoria and New South Wales – have been involved in the process and will be investigating more formal engagement into the future. The need for their involvement is reflected in actions such as pursuing common goals and approaches for the management of Regional fisheries resources that extend across jurisdictions, and collaboration on measures to reduce land-based sources of marine pollution.

Stakeholder involvement began with the South-east Steering Committee, an expert-based group appointed by the National Oceans Ministerial Board (NOMB). It advised on the planning process, providing strong input, particularly during the assessment phase.

The NOMB also appointed the National Oceans Advisory Group (NOAG), comprising mainly non-government representatives from industry, scientific research and the conservation sector. The group meets regularly to advise Ministers and the National Oceans Office on issues affecting *Australia's Oceans Policy*. The 19-member group reports directly to the NOMB.



An ongoing commitment to engage stakeholders was also reflected in the formation of the South-east Regional Marine Plan Working Group. The experience of the Working Group members was used to identify Regional objectives, clarify the issues in the South-east Marine Region and propose actions to address the issues. The outcomes of the Working Group were significant in the development of the *South-east Regional Marine Plan*.

To ensure effective engagement with such a wide variety of stakeholders and interest groups, the National Oceans Office has employed a range of communication mechanisms. A number of technical working groups were formed from experts from a range of sectors with the aim of producing a credible information base on which to build the Plan. A number of communication products have been developed, including computer-enhanced images of the seafloor, and websites, to engage adults and children.



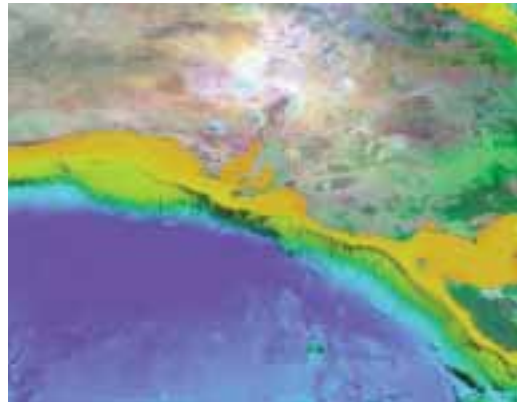
APPENDIX 3: DESCRIPTION OF THE SOUTH-EAST MARINE REGION

The South-east Marine Region brings together three large marine domains (large-scale marine ecosystems): the South-eastern, the South Tasman Rise and Macquarie domains.

It covers more than two million square kilometres of water off Victoria, Tasmania (including Macquarie Island), southern New South Wales around the town of Bermagui (south of latitude 36°48'S) and eastern South Australia from around Victor Harbor east.

Geologically, the South-east Marine Region has been partly shaped by the catchment of Australia's major river systems from Victoria, Tasmania and the Murray-Darling Basin, a land area in excess of 1.2 million square kilometres. These river systems provide inputs

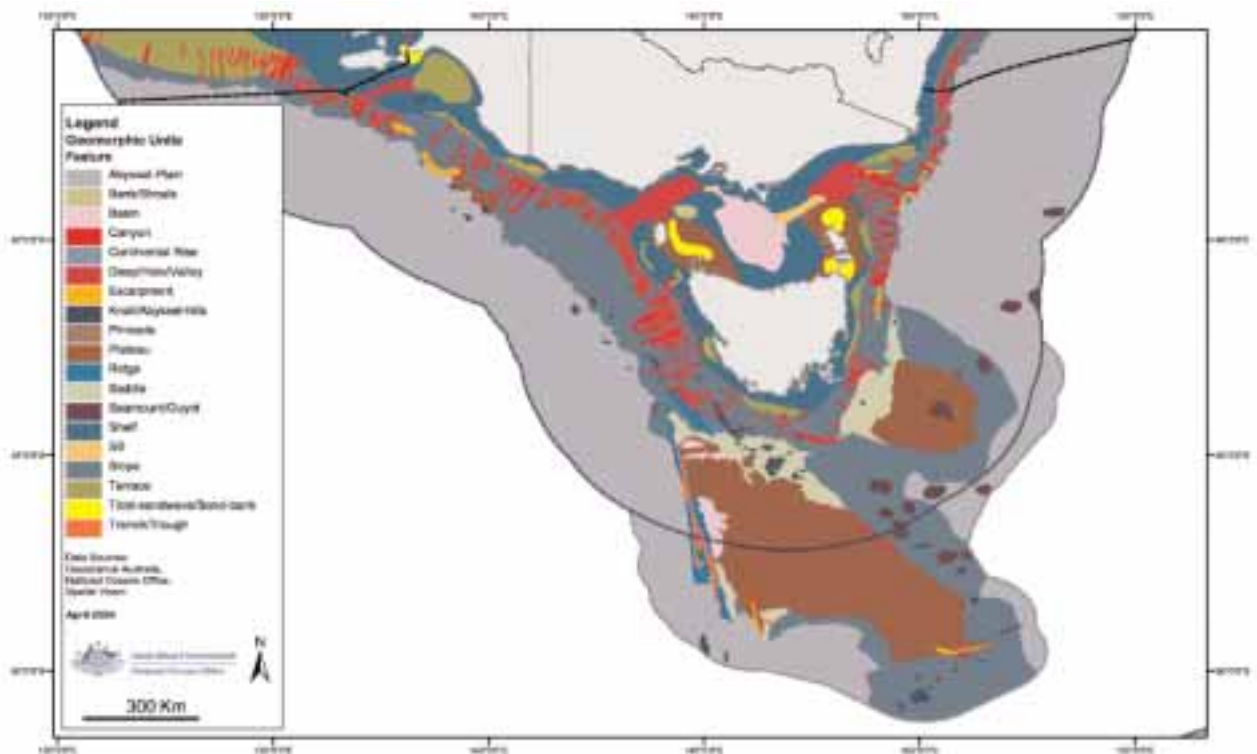
Appendix 3, Figure 2: Murray Canyons



into coastal ecosystems and have helped to shape underwater features at times of lower sea levels. Examples of this are the canyon structures at the eastern end of Bass Strait and the spectacular Murray Canyons, a geological marvel bigger than the Grand Canyon (see Appendix 3, Figure 2).

The water depth in the Region varies from the vast shallow expanse of Bass Strait, averaging 60 metres deep, to the Hjort Trench, near Macquarie Island, where the sea floor lies 6700 metres below the surface.

Appendix 3, Figure 1: Geomorphic features on the south-east continental margin. The South-east Marine Region includes both inshore (State) waters (from the low-water mark to three nautical miles) and Commonwealth waters (from three to 200 nautical miles), as well as the continental shelf beyond the Exclusive Economic Zone. While the Region includes State coastal waters, the South-east Regional Marine Plan focuses on Commonwealth waters. Source, Geoscience Australia, National Oceans Office, 2003 (see Map Disclaimer on inside front cover).





Other key geological features of the Region include the upper continental shelf, where water depths are generally less than 200 metres, seamount structures off southern Tasmania, the sunken continental shelf known as the South Tasman Rise south of Tasmania, and the steep continental slope (see Appendix 3, Figures 1 and 3).

There are three major ocean currents in the Region. The East Australian Current is a southward-flowing open ocean current that brings warm water from as far north as the Coral Sea off North Queensland. The Zeehan Current flows southward on the continental shelf, transporting warmer water down the west coast of Tasmania, and the Antarctic Circumpolar Current is an eastward flowing current that gains strength south of Tasmania and passes Macquarie Island as it circles the globe.

The interactions of these currents result in complex water flows that determine species composition, distributions and dispersal, controlling the movement of sediments and nutrients and influencing the seasonal variations in salinity and temperature.

Where the currents converge, there is a mixing of cool and warm waters, resulting in upwellings of nutrient-rich waters that provide a source of food for many marine species (see Appendix 3, Figures 4a and 4b).

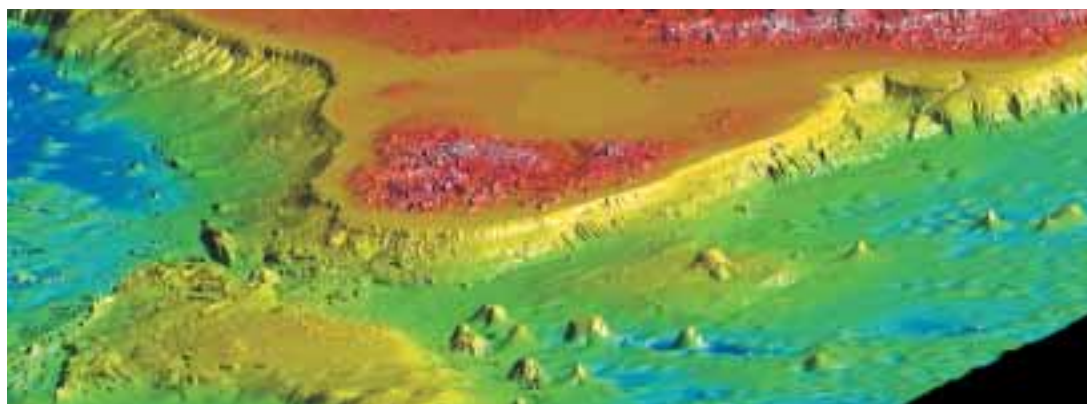
The ecosystems of the South-east Marine Region also clearly demonstrate the ecosystem continuum from

catchments to the coast to the ocean, as energy and impacts from the land are transferred to near-shore habitats and from there to the deeper water marine systems via ocean currents and species that move freely from ocean to coast (see Appendix 3, Figure 5).

The South-east Marine Region contains much of Australia's temperate seagrass meadows – the largest in the world. The Region also features rocky reefs and splendid underwater forests of seaweed known as giant kelp, which can form a canopy up to 30 metres above the seabed. Kelp forests and seagrass meadows are critical primary production ecosystems within the Region, receiving nutrient and sediment inputs from the land, and supplying food energy through direct food and detritus chains to other marine systems further offshore. It is also known that the Region's estuarine seagrass meadows and rocky reefs play a critical role in the lifecycles of many marine species found in the Region. Many commercially and recreationally fished species within the South-east Marine Region rely on estuarine and other near-shore environments for part of their lifecycle. Seamount habitats in the Region also support a host of species, including the commercially significant orange roughy (see Appendix 3, Figure 6).

The diversity of marine life in the South-east Marine Region is remarkable by global standards. Southern

Appendix 3, Figure 3: *The seafloor contains many spectacular features that are illustrated by the bathymetry (water depths) of the South-east Marine Region, prepared for the National Oceans Office by Geoscience Australia. Dry land is indicated by the red, with Tasmania in the middle of the image. Bass Strait and the continental shelf around the Region stretch from the land to the shelf break, where the seafloor slopes away towards the abyssal depths. Large seamounts (underwater volcanoes) dot the deep seafloor in the South-east Marine Region and the continental block of the South Tasman Rise appears in the lower left of the image (south of Tasmania).*





Australia is also notable for the large numbers of endemic organisms – species that are found nowhere else in the world. For instance, Southern Australia has the most diverse marine benthic flora in the world and 62% of its macroalgae are thought to be endemic. Further, the fish fauna of southern temperate Australia consists of about 600 species, of which 85% are believed to be endemic and 11% are shared only with neighbouring New Zealand.

Marine invertebrates include a great variety of groups such as sponges, crabs, seastars, anemones, octopus, squid and molluscs. Collectively, their species considerably outnumber the vertebrates. Vertebrates include some of the best-known marine animals of

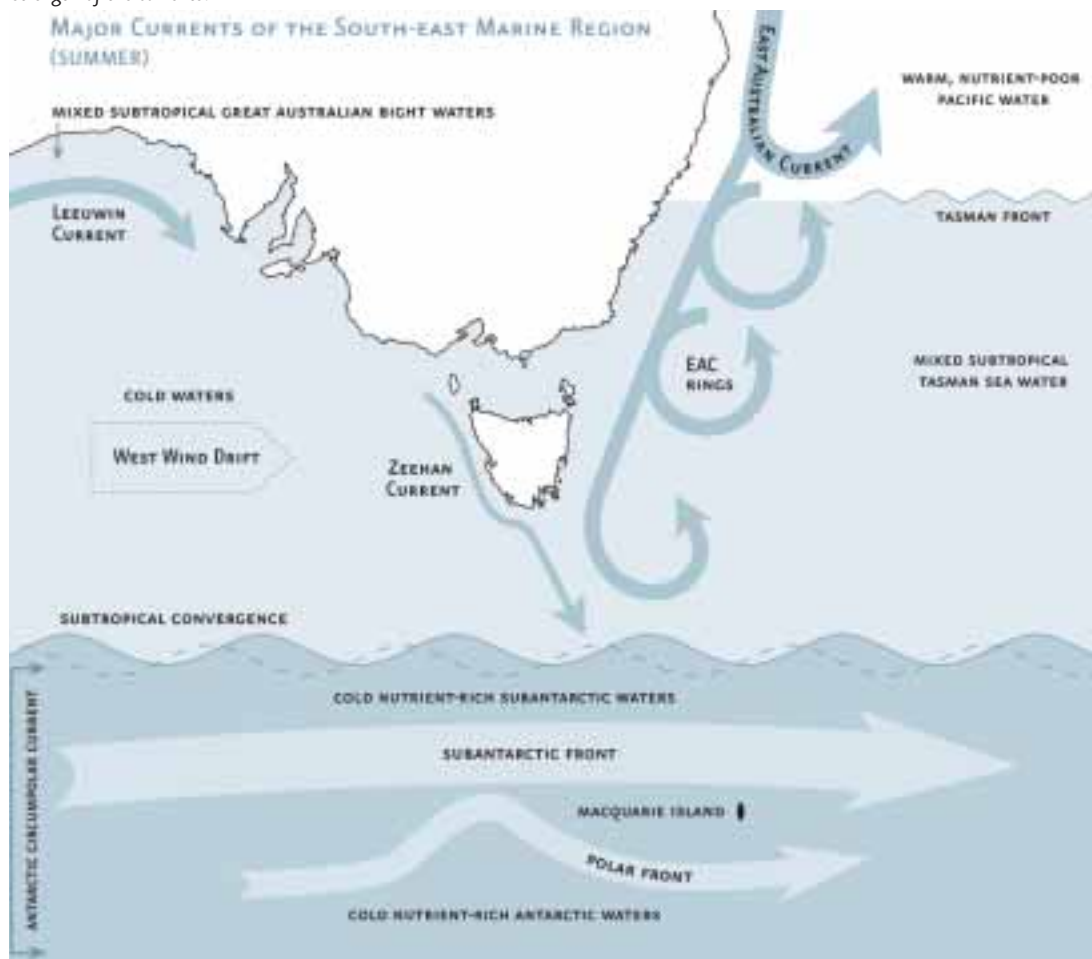
the South-east Marine Region – whales, dolphins, seals and many fish of commercial significance.

More than 20 species of migratory seabirds spend time in the Region. Macquarie Island is a major sub-Antarctic breeding ground for seals and migratory seabirds.

Within the South-east Marine Region there are more than 45 wetlands of national importance. Ten of these are internationally recognised as critical habitat for migratory birds (sites listed under the Ramsar Convention), including the Coorong in South Australia, Gippsland Lakes and Western Port in Victoria, Moulting Lagoon in Tasmania and Merimbula Lake in New South Wales.

More than 120 species in the South-east Marine Region are listed as having conservation significance under State or Commonwealth legislation.

Appendix 3, Figure 4a: The main surface currents and water masses of the South-east Marine Region in summer. The dark shaded areas are typically high in nutrients needed for primary productivity (nitrates and phosphates). The size of the arrows represents the strength of the currents.





Introduced marine species are those that occur outside their natural or historical ranges. In the South-east Marine Region, 115 species are recorded as being introduced. Of the 115 known introduced marine species in the Region, 11 have been recognised as pests (introduced marine pests).

Some of Australia's most important cultural relics in the form of shipwrecks and ancient evidence of Indigenous habitation can also be found in the Region. Such historical evidence tangibly reflects the cultural importance of the Region to people throughout time.

HUMAN USE AND VALUES

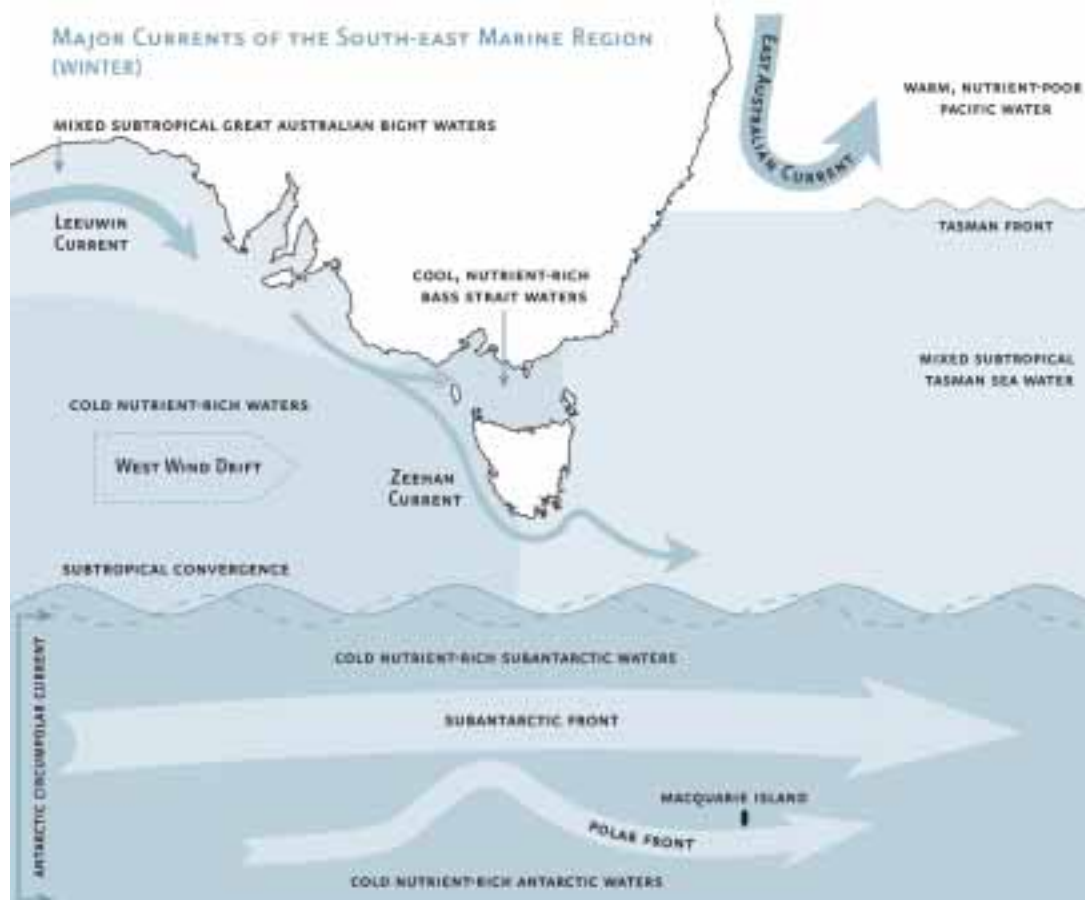
The South-east Marine Region is used for a diverse and extensive range of activities. Table 1 lists and describes these uses in more detail.

The most important uses in terms of their financial and employment contributions are the petroleum, tourism, shipping, ports and fisheries industries.

There are many other uses which may be becoming more important or are of specific importance to local communities or to Australia's cultural identity.

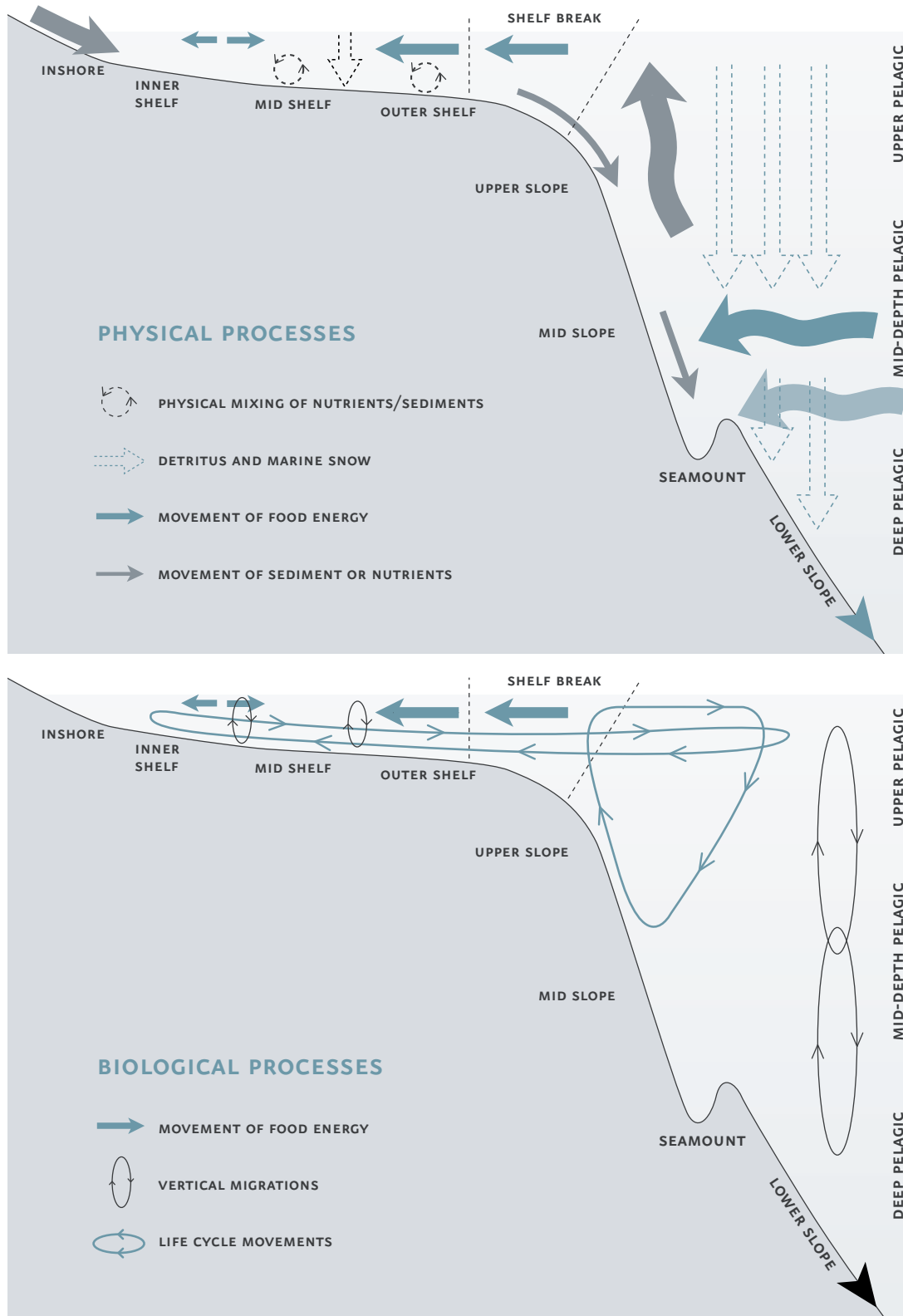
As well as considering the financial value of uses within the Region, there are also values that, while not signalled through a market, are important for social, cultural and environmental reasons. For instance, the values people place on the natural beauty and mystery of the ocean generally have no associated monetary values.

Appendix 3, Figure 4b: The main surface currents and water masses of the South-east Marine Region in winter. Cold Southern ocean waters are much higher in nutrients than the warmer waters of the tropics and subtropics.





Appendix 3, Figure 5: Regional links between marine ecosystem types, physical processes (top) and biological processes (bottom)





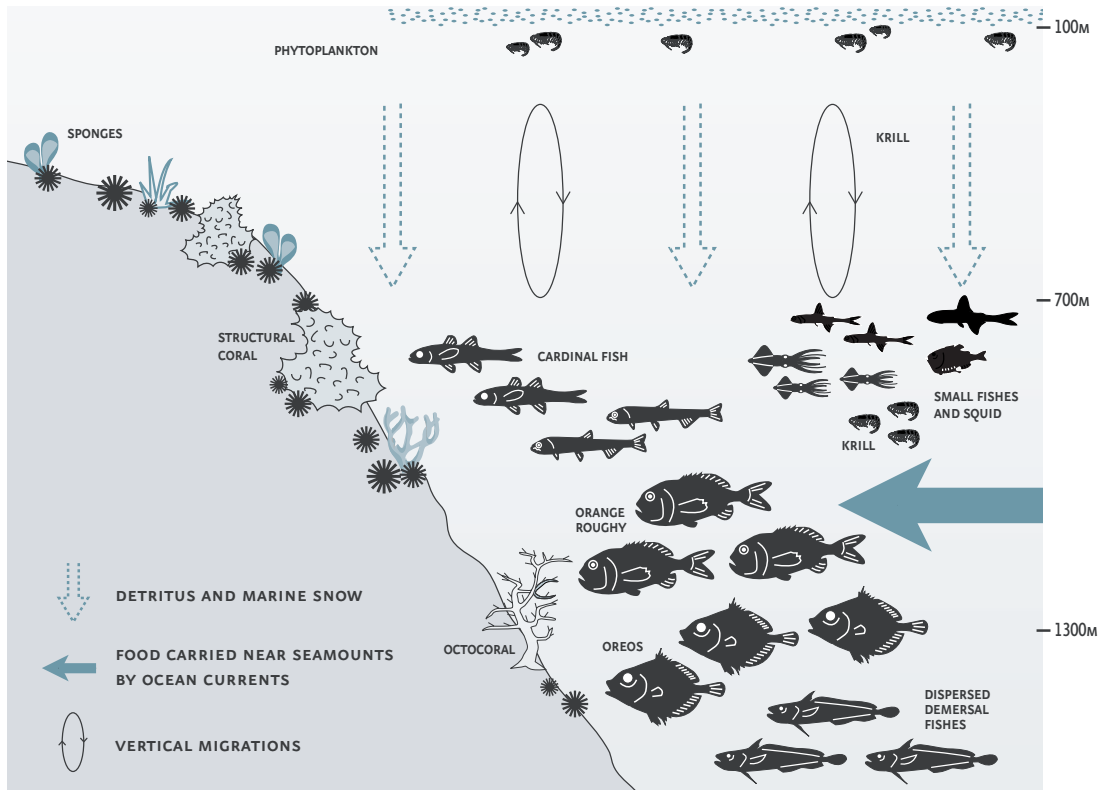
Today, including greater Melbourne, more than 3.5 million people live in the towns and cities along the coastline of the Region. Its communities are socially and economically diverse (see Appendix 3, Figure 7), and specific demographic findings indicate that:

- parts of the Region, particularly in the east, have high unemployment, low population growth and an aging population;
- there is a strong population trend of migration to the coast, which poses new challenges for Regional communities;
- coastal communities to the west of Melbourne and Hobart (when compared with those of the east) have lower unemployment and higher average weekly incomes;
- Indigenous people comprise a little less than 3% of the total population, with the highest concentration of Indigenous people located on Flinders Island; and
- there are strong links between the coastal communities in the Region and how the surrounding marine environment is used.

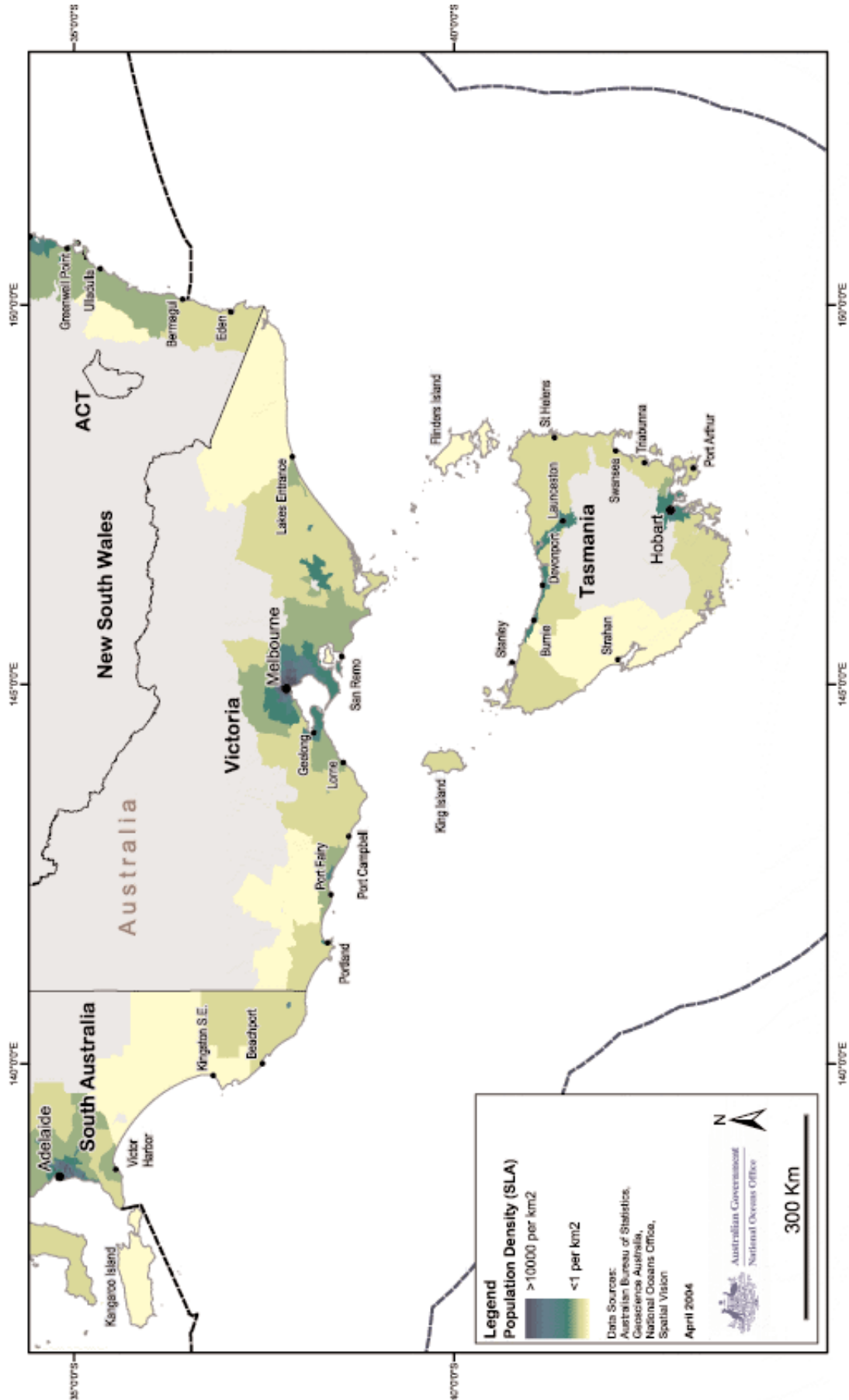
An assessment of Regional community values found that, overall, the community highly values environmental sustainability, biodiversity and the use of resources to secure future sustainable economic benefits. Community members express strong support for more policing of the resources of the Region, and for improving knowledge of the Region and its resources through more funding for science. There is also a desire for greater community participation in decision making and management, and for more public education about the Region.

The Region's ecosystems provide a number of environmental services such as carbon storage, waste recycling and habitat for commercially significant fish. While these services are traditionally not expressed in dollar terms, they are of substantial value to society.

Appendix 3, Figure 6: Conceptual model of seamount ecosystems



Appendix 3, Figure 7: Total population in the South-east Marine Region





Appendix 3, Table 1: Range of uses in the South-east Marine Region (in alphabetical order)

Use	Brief explanation
Aquaculture	<p>Aquaculture production is spread throughout the inshore coastal waters within the South-east Marine Region. There are currently no aquaculture activities in Commonwealth waters in the Region, however there is potential for operations to move offshore in the future. Important aquaculture activities include the farming of Atlantic salmon and ocean trout, and culturing of edible oysters, although leases for mussel culturing and abalone farming have increased in the Region. Salmonoid production from the Region accounts for a high proportion of the total Australian aquaculture tonnage. Two species of edible oysters are produced in the Region: Pacific oysters in Tasmania and South Australia, and Sydney rock oysters in southern New South Wales. Blue mussels are also being cultured in Victoria, Tasmania, South Australia and New South Wales.</p> <p>Aquaculture production in the Region represented around 20% of Australian aquaculture production by value in 2002–03, with an estimated \$135 million worth of produce. The aquaculture industry has also created many direct and indirect jobs for local communities.</p>
Biotechnology	<p>Biotechnology is a broad term for a group of technologies based on applied biological science and includes any technique that uses living organisms (or parts of organisms) to make or modify products, to improve plants and animals, or to develop micro-organisms for specific uses. It has diverse existing and potential applications in medicine, agriculture, food processing, manufacturing, energy production and environmental management.</p> <p>The estimated value of the international biotechnology industry (pharmaceuticals, nutraceuticals, agrochemicals and industrial or biomedical agents) was in excess of \$US200 billion in 2001. The Australian biotechnology industry is comparably small (but expanding rapidly), with a market capitalisation of almost \$15.5 billion. There are over 120 biological sample collection sites in the Region for the biotechnology industry.</p>
Commercial fisheries	<p>Over 30 Commonwealth, State or jointly managed open ocean fisheries operate in the South-east Marine Region. An array of methods and gears are used to capture fish (including molluscs and crustaceans), including bottom fishing gears such as bottom longline and trawl, and pelagic fishing gear that operates in the water column, such as purse seine and pelagic longline.</p> <p>Commercial fishing in the Region is not spread evenly across all waters but is concentrated in inshore coastal waters (mainly State fisheries) and along the continental slope, mainly in Commonwealth fisheries. The Commonwealth fisheries within the Region are the Bass Strait Central Zone Scallop Fishery, Southern and Eastern Scalefish and Shark Fishery which incorporates the South East Trawl Fishery, the Great Australian Bight Trawl Fishery and the Gillnet Hook and Trap Fishery (formerly the Southern Shark Fishery and South East Non Trawl Fishery), Southern Squid Jig Fishery, Small Pelagics Fishery, Eastern Tuna and Billfish Fishery, South Tasman Rise Fishery, Antarctic Fishery, Southern Tuna and Billfish Fishery and the Southern Bluefin Tuna Fishery. In addition, significant State fisheries within the Region include the Abalone Fishery and the Rock Lobster Fishery.</p> <p>Commercial fishing is an important component of the Region's coastal economy. Activities such as repair yards, dock handling, transportation, boat construction, fish processing and commercial trade, and the supply of marine gear such as nets and rigging, all add significantly to the Region's employment and economic activity.</p> <p>In 2002–03, the total gross value of fisheries production (including molluscs and crustaceans) from the South-east Marine Region, in both Commonwealth and South-east State waters, is estimated to have been \$396 million, made up of \$317 million from South-east State waters and \$79 million from Commonwealth waters. This represented an estimated 20% of the total gross value of Australian fisheries production in 2002–03.</p>



<p>Conservation</p>	<p>Conservation is the protection, maintenance, management, ecologically sustainable use, restoration and enhancement of the natural environment. The Australian Committee for the World Conservation Union (IUCN) expands this definition to include the understanding and enjoyment of Australia's natural and cultural heritage.</p> <p>Conservation measures in the Region are applied through a range of mechanisms such as legislative requirements or through industry-initiated codes of practice to ensure the long-term sustainability of available resources and the surrounding environment.</p> <p>The principles of ecologically sustainable development (ESD) are embedded in the statutory management arrangements for several major activities to ensure a comprehensive basis for the protection and sustainable use of natural resources across the Region. There are legislative and managerial requirements that provide for, amongst other things:</p> <ul style="list-style-type: none"> • independent environmental assessment of all Commonwealth and export fisheries to enhance the ecological sustainability of fisheries management; • strict protection from human interference for a wide range of threatened, endangered and protected marine species; • development of recovery plans for species such as great white and grey nurse sharks that have experienced severe human impacts in the past; • development of fishery Bycatch Action Plans to minimise bycatch and any other adverse impacts of fishing on the marine environment; and • development of comprehensive environmental protection plans for major resource extraction activities such as mineral, oil and gas exploration and development. <p>Protection of important and representative marine areas and listed marine species is a key aspect of Australian and State/Territory government policies. There are numerous inshore, State-managed marine protected areas (MPAs). Two Commonwealth MPAs have been declared in the South-east Marine Region.</p>
<p>Defence</p>	<p>The Australian Defence Force operations span three broad categories – military, constabulary and diplomatic. Australian Defence Force activities in the Region include transit of naval vessels, training exercises, shipbuilding and repairs, hydrographic survey, surveillance and enforcement, and search and rescue.</p> <p>There are currently no Royal Australian Navy vessels based in the South-east Marine Region. The Region is host to one commissioned establishment (HMAS Cerberus at Crib Point, Victoria) and two non-commissioned establishments (the East Coast Armaments complex at Port Wilson, Victoria, and Naval Headquarters in Hobart, Tasmania). HMAS Cerberus is Australia's largest Naval Training Base and has the capacity to support the operations of minor war vessels (mine warfare ships, landing craft, hydrographic survey vessels and patrol boats).</p>
<p>Emerging industries</p>	<p>Clean renewable energy resources are becoming increasingly attractive, not just for environmental reasons but also because hydrocarbon resources are finite and are likely to become increasingly expensive. A number of renewable energy resources are being explored around the world, and those applicable within the Region include wave and wind power.</p>
<p>Indigenous people</p>	<p>Many Indigenous people depend directly on marine resources for food and income.</p> <p>Most parts of coastal Australia are of continuing cultural and spiritual significance to Indigenous people, who engage in subsistence hunting, fishing and gathering. Fishing is an important part of Indigenous culture, using a variety of methods and equipment including hand gathering, lines, rods and reels, nets, traps and spears. Indigenous fishing targets a range of species of fish, shellfish, crabs and worms that are used for food, medicine or bait. Abalone, crab and lobster harvesting are recognised as an important part of the Indigenous fisheries. Indigenous people in south-eastern Australia engage in fishing and shellfish collecting on a regular basis and are involved in commercial fishing activities.</p>



Marine education	Formal education facilities in the Region include universities and colleges in Tasmania and Melbourne that offer courses and research opportunities in areas such as marine biology and ecology, aquaculture, maritime transport and marine engineering, marine resource management, and related areas such as law, economics and the social sciences.
Marine heritage	The South-east Marine Region has many natural, cultural and maritime heritage places, including coastlines, islands and reefs; Indigenous clan estates and coastal middens; and shipwrecks, lighthouses, customs houses, coastal fortifications and penal settlements. Conservation and interpretation of this heritage helps us to understand and appreciate our culture and history. Macquarie Island, including the waters out to 12 nautical miles, was listed for its natural values as a World Heritage Area in 1997 on the basis of its outstanding marine natural heritage, including unusual geological features and aesthetic values.
Marine research	<p>A broad range of field science is carried out in the Region aboard a diverse array of research vessels, from small dinghies, motor boats and inflatable craft, to larger sea-going vessels for offshore biological, oceanographic and geological research. Australian Government and State government research agencies, museums, universities and industries are active in the Region, undertaking inshore surveys, offshore biological research, seafloor mapping and physical oceanography.</p> <p>Surveys sponsored by the National Oceans Office have extended the coverage of seafloor maps of the Region and our understanding of the structural features of the deep-sea habitats.</p>
Oceans waste disposal	Oceans are the recipients of a cocktail of by-products from land-based production and consumption activities. Materials that have been dumped in the South-east Marine Region include chemicals, ammunition and industrial waste, as well as nearly 50 vessels that have been either abandoned or deliberately scuttled. Dumping of about six million tonnes of jarosite occurred from Pasmenco's zinc smelter in Hobart from 1966 to 1997. Dumping at sea in Australia is now highly regulated and permits are required.
Offshore minerals	There has been limited exploration for minerals in the Region since the 1960s. Exploration licences have been granted in the past for areas off northern, western and southern Tasmania, Flinders Island, King Island and Great Oyster Bay. No commercial exploitation followed this exploration activity. The single current exploration licence for offshore minerals in the South-east Marine Region is for cassiterite (tin) in Ringarooma Bay off north-east Tasmania.
Petroleum	<p>For over 30 years, the South-east Marine Region has been Australia's major petroleum producing region. While oil reserves within the Gippsland Basin are in decline, gas is still plentiful and production rates are increasing. It is also likely that petroleum developments in the Region will continue to grow. Exploration activity is widespread throughout the Gippsland, Otway, Sorrell and Bass Basins.</p> <p>The petroleum industry spent an estimated \$157 million on exploration and \$84 million on drilling for development and production activities in 2002–03 in the Region, including expenditure on:</p> <ul style="list-style-type: none"> • 4185 square kilometres of 3D and 3525 km of 2D seismic exploration; • 10 exploration wells totalling a drilling depth of 16 430 metres; and • 13 development wells totalling a depth of 22 142 metres.



	<p>Since production in Bass Strait began in 1966, about 3.7 billion barrels of oil and condensate and 5.8 trillion cubic feet of gas have been produced. In January 2003, remaining proven reserves were estimated at 499 million barrels of oil and condensate and 5802 billion cubic feet of natural gas. In 2002, 43.4 million barrels of oil valued at \$1.9 billion, and 219 billion cubic feet of gas valued at \$438 million were produced from the Gippsland Basin in Bass Strait.</p> <p>There is a substantial submarine petroleum pipeline network of 500 kilometres conveying petroleum products from offshore production facilities within Bass Strait to the Longford gas plant in Sale (Victoria) for processing and transmission.</p>
Ports and marinas	<p>Ports and marinas in the Region support many marine-based industries, including shipping, fishing, and petroleum production, as well as recreational activities. Major shipping ports for freight traffic in the Region include: Portland, Geelong, Melbourne, Hastings (Victoria); Port Latta, Burnie, Devonport, Bell Bay, Spring Bay and Hobart (Tasmania); and Eden (New South Wales). In 2002–03 the ports of the Region accounted for 46% by value of Australia's total exports from ports, and 10% by weight – a total of approximately \$43 billion and 56 million tonnes respectively. The south-eastern ports also accounted for 70% of imports by value and 50% by weight – over \$67 million and 31 million tonnes respectively. In 2002–03 the Port of Melbourne alone handled international cargo (imports and exports) to the value of over \$97 billion.</p> <p>Melbourne and Devonport are the primary passenger ports within the Region due to the Melbourne–Devonport and Devonport–Sydney routes of the TT Lines <i>Spirit of Tasmania I, II & III</i>. There are also numerous minor ports within the South-east Marine Region that are important to commercial and recreation fishing vessels, yachts and other pleasure crafts. These ports offer supplies, services and refuge for these vessels. Important fishing ports include: Strahan (Tasmania), Lakes Entrance (Victoria), Eden (New South Wales) and Robe (South Australia).</p>
Recreational fishing	<p>Recreational fishing attracts the highest participation level of any outdoor recreational activity. Research suggests that an estimated 3.36 million Australians, aged five years or older, undertook recreational fishing activities at least once in the 12 months prior to May 2000, and that recreational anglers undertook approximately 23 million fishing days per annum. Within the South-east Marine Region, Tasmania has the highest participation rate in recreational fishing with 29.3% of the population over the age of five years fishing at least once a year.</p> <p>Most recreational fishing takes place near the coast in bays and estuaries; however, the amount of offshore recreational fishing activities is increasing. Some of the most popular locations for recreational fishing in the Region are: Twofold Bay, Eden, Wonboyn (New South Wales); Mallacoota, Gippsland Lakes, Corner Inlet, Western Port Bay, Port Phillip Bay, Portland Bay (Victoria); Tamar River, Great Oyster Bay, D'Entrecasteaux Channel, Storm Bay, Derwent River, Huon Channel (Tasmania); and the Coorong, and Victor Harbor (South Australia).</p> <p>Recreational fishers use a variety of fishing gear and target a wide range of species including finfish, small baitfish, crabs and lobsters, prawns and yabbies, squid, cuttlefish and octopus, and other molluscs. Within the Region, Victoria fishers caught 9.6 million finfish and 3.5 million prawns and yabbies were caught in the year prior to May 2000.</p>
Shipping	<p>Shipping activities in the Region encompass cargo shipping, passenger shipping, and ship/boat building and repair activities. The Region is home to some of Australia's busiest shipping routes: the Bass Strait and east–west and west–east international trading routes. This traffic includes international and coastal cargo trade, passenger services, and cargo and vehicular ferry services across Bass Strait. Cargo shipping alone accounted for nearly 9000 ship movements in the Region in 2000–01.</p>



	<p>Shipbuilding and boatbuilding are distinguished from one another by the tonnage of the vessels they serve. Shipbuilding and associated activities in the Region service vessels with over 50 tonnes displacement, and include drydock operation, hull cleaning, ship repairing, shipyards, shipbuilding and ship wrecking. In 2001–02 there were 15 shipyard establishments in the Region. Boatbuilding and associated activities service vessels under 50 tonnes displacement, and include boat repairs, yacht construction, boatbuilding, dinghy manufacturing and sailboat manufacturing. In 2002–03 there were 14 boatbuilding establishments in the South-east Marine Region.</p> <p>The South-east Marine Region includes three major shipyards: INCAT in Hobart, which builds large wave-piercing catamarans; Tenix Defence Systems in Williamstown which builds warships; and Commercial Catamarans in Lakes Entrance in Gippsland, which builds medium-sized catamarans, mostly for commercial fishing.</p>
Submarine cables and energy transmission lines	<p>Submarine cables in the Region are limited to the subsea floor of Bass Strait between Tasmania and the Australian mainland. Currently, in Bass Strait there is an operational submarine cable in place (a Telstra fibre optic cable installed in 1995) as well as several obsolete telegraph and telephone cables. The Bass Strait natural gas transmission pipeline project, owned by Alinta Energy, features a 744 km subsea and underground pipeline that will transport natural gas from Victoria across Bass Strait to Hobart in Tasmania's south and Port Latta on Tasmania's north-west coast.</p>
Surveillance	<p>Surveillance flights are conducted by Coastwatch aircraft in the Region. The majority of identified sightings are Australian fishing vessels, foreign fishing vessels, cargo vessels and yachts. Significant incidents, other than fisheries infringements, are rare. There were no arrests resulting from aerial surveillance in the Region during the period from 1997 to 2002.</p>
Tourism and offshore charter	<p>The Region and adjacent coastal waters attract both domestic and international tourists. Recognising the diversity in environments and range of ocean, marine and coastal based activities in the Region, visitors can participate in a wide range of activities including diving, charter boating, recreational boating, cruise ship visits, yacht racing, going to the beach, surfing, coastal sightseeing, swimming, fishing and wildlife watching.</p> <p>Initial calculations indicate that nationally the direct value of marine tourism was around \$9.1 billion in 2000–01, with marine tourism directly employing around 210 000 people. The indirect value-adding of marine tourism and employment is estimated at about \$23 billion. Marine tourism employs about 497 000 people, making it and the petroleum industry the two most valuable marine-based industries in Australia. Within the Region, marine tourism generated over \$2.6 billion in value-added services in 2000–01. In addition it directly generated over 60 000 jobs.</p>

For more detailed information, see the *South-east Regional Marine Plan* assessment report, *Resources: Using the Ocean*.



APPENDIX 4: REFERENCES AND RESOURCES

Appendix 4 lists relevant resources that were produced for or referenced in the development of the *South-east Regional Marine Plan*.

AUSTRALIA'S OCEANS POLICY DEVELOPMENT PAPERS

Commonwealth of Australia (1997). *Australia's Oceans, New Horizons, Oceans Policy Consultation Paper*. Environment Australia, Canberra.

Commonwealth of Australia (1998). *Australia's Oceans Policy, an Issues Paper Caring, Using, Understanding*. Environment Australia, Canberra.

Commonwealth of Australia (1998). *Australia's Oceans Policy, Report of the Ministerial Advisory Group on Oceans Policy*. Environment Australia, Canberra.

AUSTRALIA'S OCEANS POLICY BACKGROUND PAPERS

Commonwealth of Australia (1997). *Australia's Oceans Policy, Oceans Planning and Management. Background Paper 1, Ocean Facts and Figures: A Primer on Australia's Oceans and Exclusive Economic Zone*. Environment Australia, Canberra.

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AUSTRALIA'S OCEANS POLICY ISSUES PAPERS

Commonwealth of Australia (1997). *Australia's Oceans Policy, Oceans Planning and Management. Issues Paper 1, Multiple-use Management in the Australian Marine Environment: Principles, Definitions and Elements*. Environment Australia, Canberra.

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AUSTRALIA'S OCEANS POLICY PAPERS

N00 (National Oceans Office) (2003). *Oceans Policy: Principles and Processes*. Hobart.
[http://www.oceans.gov.au/pdf/5061_OceansPolicy.pdf]



AUSTRALIA'S OCEANS POLICY

Commonwealth of Australia (1998). *Australia's Oceans Policy. Volume 1*. Environment Australia, Canberra.

[http://www.oceans.gov.au/content_policy_v1/policyv1.pdf]

Commonwealth of Australia (1998). *Australia's Oceans Policy. Volume 2. Specific Sectoral Measures*. Environment Australia, Canberra.

[http://www.oceans.gov.au/content_policy_v2/policyv2.pdf]

SOUTH-EAST MARINE REGION DESCRIPTION PAPERS

NOO (National Oceans Office) (2000). *Snapshot of the South-east, Description Paper*. Hobart.

[http://www.oceans.gov.au/se_description_paper.jsp]

SOUTH-EAST MARINE REGION SCOPING PAPERS

NOO (National Oceans Office) (2001). *South-east Regional Marine Plan Scoping Paper*. Hobart.

[http://www.oceans.gov.au/se_scoping_paper.jsp]

SOUTH-EAST MARINE REGION ASSESSMENT PAPERS

NOO (National Oceans Office) (2002). *Resources: using the ocean*. Assessment Series. Hobart.

[http://www.oceans.gov.au/pdf/using_ocean.pdf]

NOO (National Oceans Office) (2002). *Impacts: Identifying disturbances*. Assessment Series. Hobart.

[http://www.oceans.gov.au/pdf/identifying_disturbances.pdf]

NOO (National Oceans Office) (2002). *Resources – Macquarie Island's picture*. Assessment Series. Hobart.

[http://www.oceans.gov.au/pdf/macquarie_island.pdf]

NOO (National Oceans Office) (2002). *Communities – connecting with the ocean*. Assessment Series. Hobart.

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NOO (National Oceans Office) (2002). *Ocean management – the legal framework*. Assessment Series. Hobart.

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[http://www.oceans.gov.au/pdf/summarypaper_se_marine.pdf]

SOUTH-EAST MARINE REGION DISCUSSION PAPERS

NOO (National Oceans Office) (2002). *A discussion paper for advancing the South-east Regional Marine Plan*. Hobart.

[http://www.oceans.gov.au/pdf/discussionpaper_se_marine.pdf]

SOUTH-EAST REGIONAL MARINE PLAN – DRAFT AND SUBMISSION PAPERS

NOO (National Oceans Office) (2003). *The Draft South-east Regional Marine Plan, Implementing Australia's Oceans Policy in the South-east Marine Region*. Hobart.

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NOO (National Oceans Office). 2004. *Draft South-east Regional Marine Plan, Submissions Report*, January 2004.

[http://www.oceans.gov.au/pdf/DRF_Submissions%20Report_280104_final.pdf]

SOUTH-EAST MARINE USES PAPERS

Larcombe, J., Brooks, K., Charalambou, C., Fenton, M., Fisher, M., and Summerson, R. (2002). *Marine Matters – Atlas of marine activities and coastal communities in Australia's South East Marine Region*, Bureau of Rural Sciences, Canberra.



APPENDIX 5: GLOSSARY OF TERMS

ABARE	Australian Bureau of Agriculture and Resource Economics
AFMA	Australian Fisheries Management Authority
AGO	Australian Greenhouse Office
AMEA	Australian Marine Education Alliance
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZLIC	Australian and New Zealand Spatial Information Council
APPEA	Australian Petroleum Production and Exploration Association
ASDI	Australian Spatial Data Infrastructure
ASIC	Australian Seafood Industry Council
ATC	Australian Transport Council
ATSIS	Aboriginal and Torres Strait Islander Services
AUSMEPA	Australian Marine Environment Protection Association
BAOI	Broad Areas of Interest
BRS	Bureau of Rural Sciences
BTRE	Bureau of Transport and Regional Economics
CAR	Comprehensive, Adequate and Representative [system, etc.]
CCI	Coastal Catchment Initiative
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
DEH	Department of the Environment and Heritage
DEST	Department of Education, Science and Training
DITR	Department of Industry, Tourism and Resources
DOTARS	Department of Transport and Regional Services
EBM	Ecosystem-based Management
EEZ	Exclusive Economic Zone
EMS	Environmental Management System
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESD	Ecologically Sustainable Development
FRDC	Fisheries Research and Development Corporation



IMP	Introduced Marine Pest
IMS	Introduced Marine Species
IOM	Integrated Oceans Management
IOP	Integrated Oceans Process
IUCN	World Conservation Union
MDC	Marine Discovery Centre
MUM	Multiple-use Management
MPA	Marine Protected Area
NAP	National Action Plan for Salinity and Water Quality
NEPM	National Environment Protection Measure
NHT	National Heritage Trust
NIMPCG	National Introduced Marine Pests Coordination Group
NOAG	National Oceans Advisory Group
NOMB	National Oceans Ministerial Board
NOO	National Oceans Office
NRMMC	Natural Resource Management Ministerial Council
NRSMPA	National Representative System of Marine Protected Areas
NWQMS	National Water Quality Management Strategy
OBOM	Oceans Board of Management
OCS	Offshore Constitutional Settlement
OPSAG	Oceans Policy Science Advisory Group
PIMC	Primary Industries Ministerial Council
PSLA	<i>Petroleum (Submerged Lands) Act 1967</i>
RMP	Regional Marine Plan
SEMR	South-east Marine Region
SERMP	<i>South-east Regional Marine Plan</i>