Foreword

The coast is…
"Unknown – a mystery undervalued, when revealed – fascinating."
Coastal resident

Aboriginal people have been custodians of the Victorian coast for tens of thousands of years. Many culturally significant and sacred sites still exist along the entire coastline, reflecting its immense importance to Indigenous peoples and traditional owners.

Today, Victoria's coast and its bays are popular for recreation, residential living, holidaying, retiring and second home ownership. Our passion for the coast creates ongoing and increasing pressures on the very aesthetic, cultural and environmental values we love.

The Victorian Coastal Council is committed to a long-term vision to ensure these values are not compromised by short-term decisions. This is the aim of the Victorian Coastal Strategy.

This is the third Victorian Coastal Strategy. It has the same vision and core principles as the two previous strategies – published in 1997 and 2002 – but includes new key actions for the next five years. It also has new directions on adapting to climate change, marine planning, and management and settlement planning – to prevent urban sprawl along the coast.

The challenge to develop sustainable coastal communities in existing townships is outlined, and there are recommendations for better supporting coastal local governments.

The Victorian Coastal Council consulted with a wide range of stakeholders along the coast to develop this strategy. Community views obtained from recent market research feature in the margins throughout the document.

The Victorian Coastal Strategy will help us to keep ahead of emerging issues, particularly in relation to climate change. The vision and core principles of the strategy will always remain – that the conservation of the coast is central to our economic and social needs.

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ACTIONS

Figures and tables

What will this strategy do?

The coast is… *"Pristine, natural. I value it as it is in its natural condition and needs to be kept that way, with funding to ensure longevity of flora, fauna, wildlife and ocean creatures."*

Coastal resident

This strategy offers a vision for the coast for the next 100 years and beyond, with new actions for the next five years focusing on emerging challenges such as climate change. It has a hierarchy of principles to guide decision-making and planning, and gives stronger direction on existing coastal issues.

The Victorian Coastal Strategy 10 years on

This is the third Victorian Coastal Strategy. Since the release of the first strategy in 1997, a number of key achievements have strengthened the way we manage the Victorian coast.

- Protected areas on the coast have been expanded and 13 marine national parks and 11 marine sanctuaries were proclaimed in 2002.
- The *Coastal Spaces* (2006) recommendations helped to manage growth on the coast, protect the spaces between towns and maintain the character of settlements.
- A network of coastal planners was introduced and continues to oversee decisions on coastal Crown land.
- Volunteer effort and community interest in the coast continued to increase, supported by a network of coastal facilitators.
- Eighteen coastal action plans were developed by regional coastal boards to implement the strategy at the regional and local level.
- Five regional catchment strategies were developed out to three nautical miles, linking the top of the catchment with the marine environment.

Review of the 2002 Victorian Coastal Strategy

Feedback from coastal stakeholders during a review in 2006 showed that:

- there is strong support for the strategy's hierarchy of principles
- it has been a good foundation for local and regional planning on the coast
- the capacity of coastal managers varies significantly along the coast
- local government has not enjoyed the profile it perhaps deserves for its crucial role in planning and management over both private and public land
- there is a lack of coordination for decision-making over the marine environment
- there was little direction for climate change response in the strategy.

New directions

While many issues remain, new challenges are emerging. This 2007 strategy presents new actions for:

- understanding and adapting to climate change
- better coordinating planning and management in the marine environment
- supporting an increase in the capacity of local government as decision-makers, planners and managers
- accommodating the projected increase in growth along the coast.

There are also new actions for issues that continue to challenge coastal and marine managers, such as access, protecting biodiversity and preventing marine pest establishment.

Objectives of this strategy

In Victoria, coastal planning and management is guided by the *Coastal Management Act 1995*. The Act directs the Victorian Coastal Strategy to provide for long-term planning of the Victorian coast by:

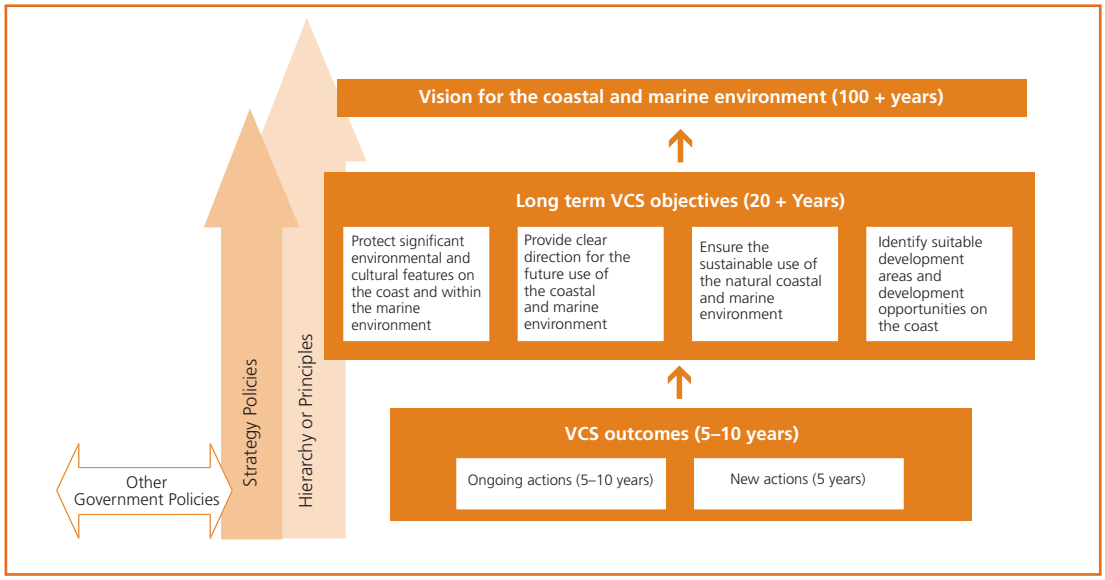
- ensuring significant environmental features are protected
- giving clear direction for future use, including the marine environment
- ensuring sustainable use of natural coastal resources
- identifying suitable development areas and opportunities.

These objectives create a four-tiered hierarchy of principles and guide the intent of the actions. Figure 2 shows how this strategy contributes to these objectives and the vision for the Victorian coast.

The coast is… *"Peace. Beauty. Rich animal and plant life. Spiritually refreshing."*

Coastal resident

Figure 2: Relationship of this strategy to the vision for the Victorian coast. The vision for the Victorian coast is a multi-generational one. This strategy is the key to achieving this, but other strategies and policies will help by focusing on specific issues and locations on the coast.



This strategy complements and relies on existing government policy about planning and development on and near the coast, such as *Melbourne 2030*, the *Great Ocean Road Regional Strategy (2004)* and *Coastal Spaces (2006)*. Regional catchment strategies for the five adjacent catchments give directions for reducing catchment impacts on the coast. Existing regulations control specific impacts, such as water quality. This strategy does not replace these, but seeks to complement them, address gaps and highlight priorities for issues that are otherwise not well covered. Appendix A lists other relevant international, national, state, regional and local policies.

Where does the coast begin and end?

This strategy covers coastal Crown land and private land. Coastal Crown land includes the sea and seabed to the state limit – three nautical miles or 5.5 km. Freehold or private land includes land and inland waters in the coastal catchment that influence the coast. Those influences range from visual to drainage impacts.

This strategy gives direction for planning, development and/or managing the impacts of activities on and in the:

- foreshore – or coastal Crown land 200m from the high water mark
- coastal hinterland – on private and public land next to and within critical views of the foreshore and near shore marine environment
- catchment – up to the top of the catchment
- marine environment – includes the near shore environment, the seabed and marine waters out to the state limit or 5.5 km.

This means that this strategy addresses all activities or processes that may impact on coastal and marine areas. References to 'the coast' include the marine environment.

Using this strategy

Planners, decision-makers and managers will use this strategy. As the government's framework for long-term, effective stewardship of the Victorian coast, it relies on effective partnerships between stakeholders.

Decision-makers and planners will be guided by:

- the hierarchy of principles (page 17)
- any issue-specific policies in the actions section
- the specific principles in Figure 8.

Coastal managers will be:

- informed by the hierarchy of principles
- guided largely by the actions section.

What is the value of the coast?

The coast is…*"Unique, beautiful, cleansing, incredible. I value the marine environment just as much the coastal environment. Even though I don't know a lot about what's out there I appreciate that it's an important part of our planet."*

Coastal resident

A dynamic environment

Victoria's coast supports a diverse range of ecosystems along its 2,000 km length.

The south coast of Australia is the only major south-facing coastline in the world and has been isolated for about 65 million years. This isolation has meant many species have evolved that only exist in south-eastern and southern Australian waters. Reefs systems, seagrass beds, towering kelp forests, sponge gardens, intertidal rock platforms and other habitat support the world's largest diversity of red and brown seaweeds, sea mosses, crabs, shrimps and sea squirts. Recent marine mapping has shown previously unexplored seascapes and new communities.

Offshore islands are significant havens for birds such as penguins, shearwaters, Australasian gannets and orange-bellied parrots. Australian fur seals are found in large colonies on many of Victoria's islands and coastline.

There are about 123 bays, inlets and estuaries – varying in water area from around 1 km^2 to 2,000 km^2. Estuaries are important for fish spawning or as nursery grounds. Saltmarshes, mangroves and wetlands have important nesting and feeding grounds for migratory wading birds.

Ecosystems on the foreshore and hinterland vary greatly. Beaches large and small give way to dune systems. In the swales behind the dunes, woodlands commonly exist, with some small pockets of threatened coastal Moonah woodlands still surviving. In other parts, dry forests can be found down to the beach edge and coastal heath exists along cliffs and rocky coasts.

These ecosystems are all dynamic, constantly buffered by the currents and winds the weather brings. But the impacts of human activity continue to cause serious decline in marine and terrestrial flora and fauna, and climate change will increasingly magnify the effects of these human pressures.

Economic contribution of the coast

Victoria's diverse coastal, estuarine and marine environments support a wide range of environmental services that are essential for our economy and livelihood. A recent study estimated some of the commercial and intrinsic economic contributions the coast makes to Victoria's economy each year (URS, 2007).

Some of these environmental services include water purification, climate regulation, nutrient cycling and the provision of food such as fish. A number of Victoria's industries depend on these services, such as coastal tourism which rely on the visual aesthetics and recreational opportunities of the coast.

In 2003, total employment within the tourism industry in coastal areas, not including Melbourne, was 13,250 people – contributing $908 million to Victoria's economy. The coastal tourism industry is growing at a much higher rate than Victoria as a whole. There has been an 18 per cent increase in tourism employment in coastal regions between 1997 and 2003, compared to nine per cent for the whole of Victoria.

Commercial ports, shipping, commercial fishing, aquaculture and wind energy industries also rely directly on coastal natural assets. Together with coastal tourism, these industries contribute over $2.8 billion a year to our economy. If you include the petroleum industry, the total value is over $5.8 billion, and although most of the industry's raw resources are outside our state waters, much of the handling, processing and refining operations are in the coastal zone.

The value of informal recreation such as walking, sightseeing and other activities has been estimated at more than $1.9 billion. This shows how significant coastal ecosystem services are, and how their value can be even more significant than that of commercial industries. It also shows how protecting natural coastal ecosystems is crucial for their inherent value and their contribution to Victoria's economy.

What is our vision?

"The coast is beautiful, huge. I miss it when I visit relatives inland. The sounds from the ocean are terrific. I could sit there for hours."

Coastal resident

A biologically rich, diverse coastal and marine environment for our use and enjoyment today and for our children tomorrow

Our connection with the coast

Today, as for thousands of years, we treasure the Victorian coast. We live and work in communities along it or spend our leisure time there. We are lucky so much of our coastline is quite intact and most of it is in public hands, making it open to all.

Most people have special memories of beach holidays with families and friends: swimming and playing, rock hopping, and bush adventuring. Many of us have looked with wonder at middens in the dunes and on cliff tops, imagining the gatherings Aboriginal people shared around campfires there long ago.

Each of us has a favourite spot – it may be the endless beaches and fishing towns of East Gippsland, the peace and quiet of the Gippsland Lakes and Corner Inlet, the granite coast and wild bush of the 'Prom', or the holiday feel of Phillip Island and its rollicking penguins and seals. Then there is the seagrass and bird habitats of Western Port, and Port Phillip Bay's enormous playground set amongst sandy beaches, heritage and maritime landscapes and shipping terminals. While the surf beaches and maritime history of the west coast and the magnificent Great Ocean Road can never be forgotten.

There is a sense of remoteness and distance from clutter and noise, even around Port Phillip Bay at the end of a long day in the office. We love the silence at night or the sound of waves against the beach.

The coast is a symbol of getting away from it all – by walking quietly in the bush and spotting wildlife, sitting on a headland and taking in a sunset or a moonrise, running along the beach with the dog, diving to the depths beneath the surface, sipping a coffee, reading the paper, watching the weather roll in or soaking in the salty air.

What will our coast look like when we achieve our vision?

We will still do the things we love, and experience the coast as we do now.

Our communities will keep their distinctive character and beach-side feel, even when they are developed. We will be able to experience the wildness of the coast between one town and the next. Metropolitan beaches will be more intensively used, varying from the cosmopolitan to the truly laid-back.

The water will always be clean. The sea will nourish an incredible diversity of fish, seagrasses, mammals, crustaceans and other plants and animals – and we will know so much more about them.

The shape of our coast will move and change as more and more storms buffet it due to climate change. Skilled coastal planners and managers will lessen the costs of damage to our roads, drains and other facilities. Coastal plants and animals will gradually move further inland with the advancing sea, and Indigenous people will share a strong role in managing this change.

The coast will increasingly become an important economic hub. It will have sustainable commercial fishing and aquaculture, provide quality tourism experiences, support well-located wind, wave and tidal generation, host bustling ports and shipping terminals, and support an ever growing population.

This third Victorian Coastal Strategy represents our generation's determination to continue to look after our coast and sustain its environmental, social and economic health.

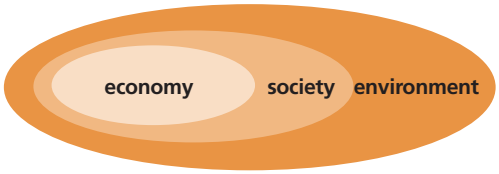
What underpins this strategy?

The coast is… *"A place where you can go whenever you want. A place where you can go to think, and have fun."*
Coastal resident

Understanding coastal and marine physical and ecological processes is essential to effectively plan and manage the coast. Ecologically sustainable development needs strongly coordinated approaches to integrated coastal zone management, ecosystem based management and adaptive management.

Ecologically sustainable development (ESD)

Usually defined as sustainable development, ESD 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (Bruntland, 1987). It includes caring for the environment, economic performance and social responsibility – often called the triple bottom line. It is also 'not cheating on our children' (Chambers et al., 2000).



Our economy and our society fundamentally rely on the environment.

Integrated coastal zone management (ICZM)

ICZM applies ESD by integrating coastal planning and management across the land/sea and the private/public land interfaces, see Figure 3. This means integrating the activities of:

- various government agencies, industry, non-government organisations and communities along the coastal zone – horizontal integration
- Commonwealth, state and local governments and the community – vertical integration.

Ecosystem-based management (EBM)

EBM is becoming a popular international approach for coastal and marine management. It aims to protect and manage the environment, recognising that humans and human needs are an integral part of the system. It seeks to manage human impacts in an ecosystem – at any scale from an ocean, to a bioregion or a local estuary.

Adaptive management

This is learning from management actions to improve the next stage of management. The challenge is how to manage emerging challenges where there is no full scientific knowledge. It is systematic and means continuously improving our planning and management approaches.

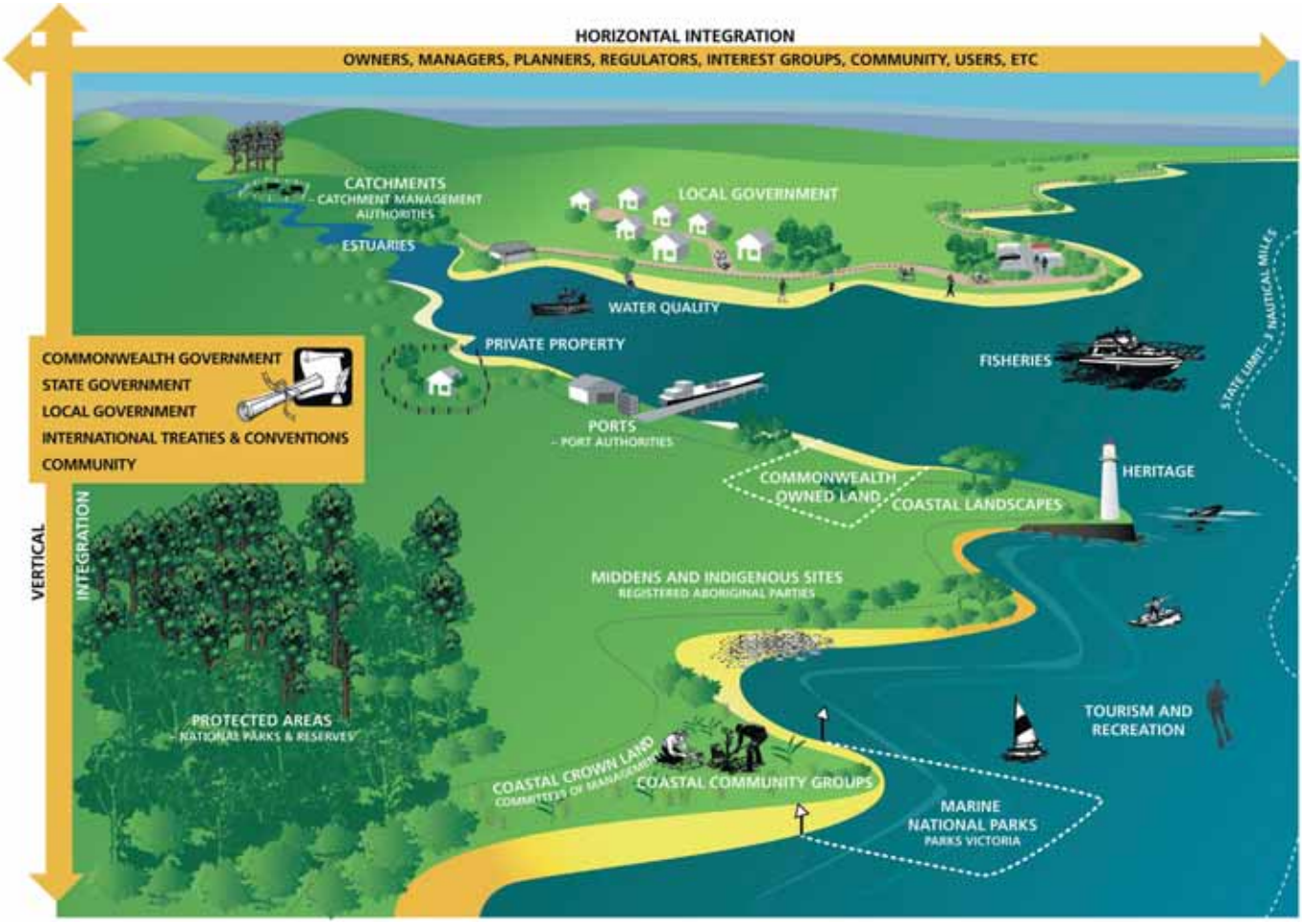
ICZM – International and national context

The 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro discussed marine and coastal issues of major importance to the planet. Chapter 17 of Agenda 21 – the conference's global action plan – was entirely devoted to coastal and marine management.

At the conference nations committed to implementing ICZM. The Australian Government's framework for a national cooperative approach to integrated coastal zone management (2006) offers a set of national priorities and sets the scene for an agreed approach on ICZM in each state.

See the relevant international, national and state agreements, conventions and strategies in Appendix A.

Figure 3: Integrated coastal zone management in Victoria – a snapshot of uses, issues, land tenure and reservations that are managed and planned for along our coast.



Who does what along the coast?

"Seeing the Red Bluff cliffs and out to sea on the way home is a glorious panorama. It gives me a feeling of freedom"

Elwood resident

Responsible agencies and groups will implement this strategy using existing statutory mechanisms.

On the coast, there are always:

- owners
- planners concerned with the future
- managers
- agencies that regulate use and behaviour
- community and Indigenous interests.

Figure 4 shows the relationships of these stakeholders.

The owners

Unlike many developed areas of the world, Victoria is blessed with a legacy of 96 per cent of coastal Crown land in public ownership. Coastal Crown land is held by the Victorian Minister for Environment and Climate Change for all Victorians.

The planners

The large number of agencies with an interest in Victoria's coast is reflected in the number of authorities whose planning affects the coast or marine environment, either directly or indirectly. Key laws for strategic and statutory planning include the *Coastal Management Act 1995* and the *Planning and Environment Act 1987*. Local governments also have a significant role in planning control over private land.

The managers

One third of Victoria's coastal Crown land is reserved as national park, coastal park, marine national park or marine sanctuary under the *National Parks Act 1975*. Parks Victoria manages this under national park management plans. Most of the remaining coastal Crown land is reserved under the *Crown Land (Reserves) Act 1978* for various public purposes, and generally protected. Management committees appointed by the Minister usually manage these reserves. A committee can have local community representatives or be from an agency, such as a municipal council, Parks Victoria or the Department of Sustainability and Environment.

The Department of Sustainability and Environment manages small areas of 'unreserved' public land along the foreshore and most of the seabed.

The regulators

Other laws guide how specific coastal uses and spaces are managed, where these have a large affect on matters of environmental and cultural significance. They include the *Heritage Act 1985*, the *Flora and Fauna Guarantee Act 1988*, the *Aboriginal Heritage Act 2006*, the *Fisheries Act 1995*, the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the *Native Title Act 1993* and the Historic *Shipwrecks Act 1976*. Each Act influences matters of environmental and cultural significance along the coast.

Community interests

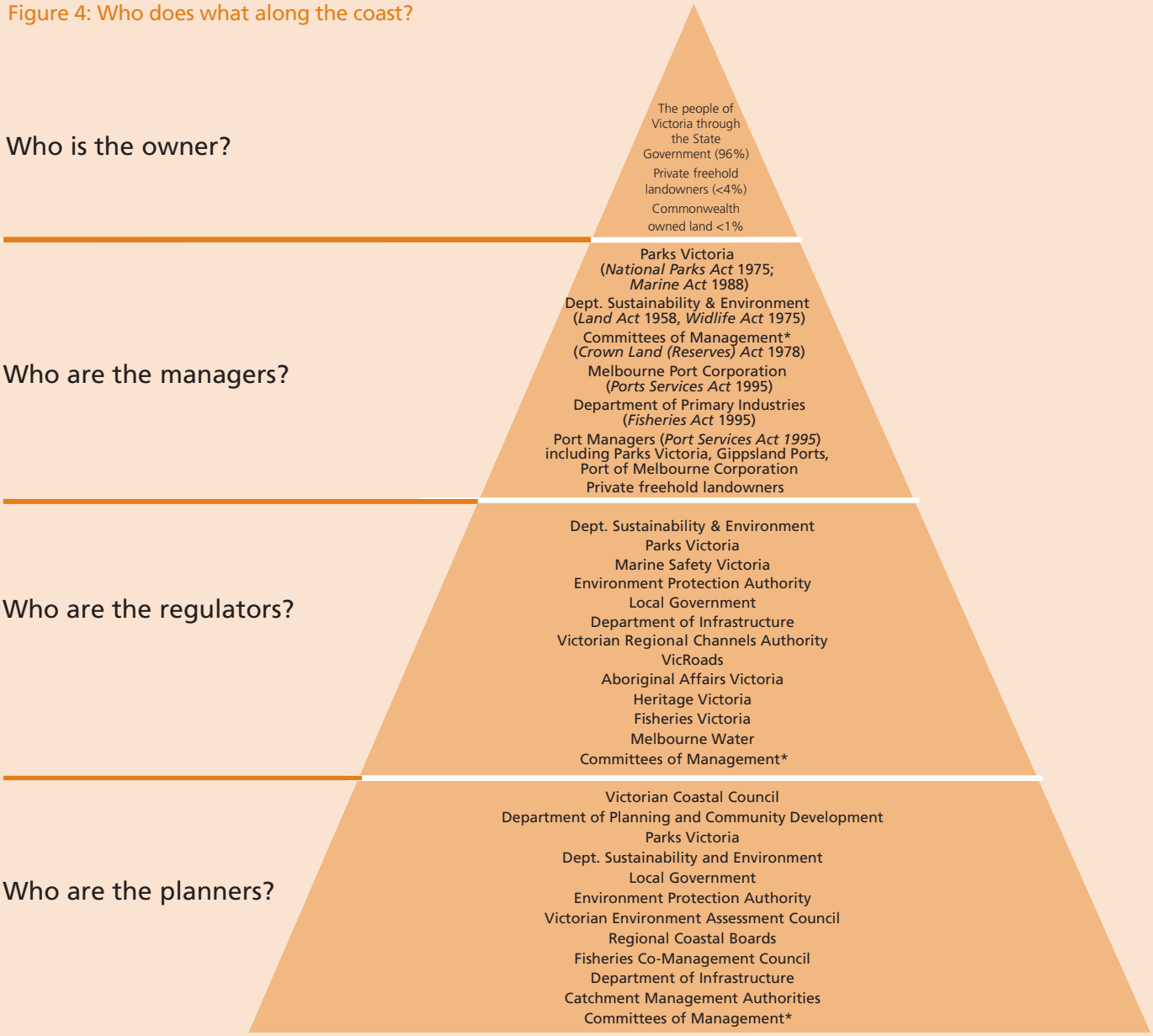
The role of the community is vital. Local people have a crucial role in coastal planning and management by being part of open decision-making processes. Active communities create more robust coastal management and more connected coastal communities. Common activities include volunteering in local conservation projects, being on public management committees and being active in groups, such as life saving, water access and safety, education and training. Nearly 20,000 coastal volunteers in over 200 coastal community groups care for our coast each year.

Indigenous interests

Indigenous coastal communities also have a key role in planning and managing coastal areas and deciding about coastal resources. They participate in decision-making forums and native title-related negotiations, such as land use and cooperative management agreements. The recent native title determination for the Gunditjmara people in south-western Victoria will affect coastal planning and management in this area.

Aboriginal organisations may also be registered Aboriginal parties (RAPs) under the *Aboriginal Heritage Act 2006*, with responsibilities for Aboriginal cultural heritage along the coast. Under this law, RAPs have rights and responsibilities for certain land use, development and management activities that also have implications for coastal land managers and planners.

Figure 4: Who does what along the coast?



* Committees of Management include municipal councils, Department of Sustainability and Environment, Parks Victoria and locally appointed committees.

FUTURE CHALLENGES

Climate change

Climate change is a real and serious threat – with an expected increase in atmospheric temperature, rising sea levels, and increasingly frequent and more severe weather events. The CSIRO has reported on the impacts we can expect in coming years – impacts which are already apparent on Victoria's coast.

In its *Fourth Assessment Report* (2007) the Intergovernmental Panel on Climate Change (IPCC) stated that: 'warming of the atmosphere is now unequivocal' and 'is very likely due to the observed increase in anthropogenic (human-induced) greenhouse gas concentrations in the atmosphere'. The concentrations of greenhouse gases, such as carbon dioxide, are likely to reach more than double pre-industrial levels during the second half of this century, largely because of the increased rate at which we are burning fossil fuels.

Global temperatures increased by 0.74°C between 1906 and 2005, with 11 of the 12 warmest years since 1850 occurring in the last 12 years. The range of projected globally-averaged surface warming for the end of the 21st century is between 1.0 – 6.3°C. In Victoria, the temperature has already increased by 0.8°C to 1.0°C since 1950.

This has accelerated the rate at which glaciers and polar ice caps melt and triggered the thermal expansion of oceans. It has caused global sea levels to rise at a rate of 3 mm per year from 1993 to 2003. Around Australia, sea levels rose about 1.2 mm per year during the 20th century.

Global sea levels are likely to continue to rise throughout this century, with an average increase of 18 to 59 cm by 2095. But melting ice sheets may add an extra 10 to 20 cm to this figure, taking it to 79 cm. Melting Greenland and Antarctic ice sheets may cause an even higher rise, but scientists cannot yet measure this accurately. Because of the thermal properties of water, sea levels will likely continue to rise even if we stabilise greenhouse gas emissions in the atmosphere.

Recent research, shown in Figure 5, shows that since 1990 sea level has risen faster than what the models have projected, closely following the upper limit of projections. This suggests the need for a management approach which considers at least a mid-range, if not an upper range scenario. Therefore, for planning purposes we will assume a sea level rise of approximately 0.4 to 0.8 m by the end of the century.

Extreme weather events from climate change are a heightened risk to coastal infrastructure such as roads, piers and jetties. With storm surges and severe waves created by severe storms causing higher and more frequent extreme sea level events, damaging storm surges will push water levels further inland.

'Small increases in sea level can mean large increases in damage costs.'

After assessing the Gippsland coastline, the CSIRO predicted that a one-in-100 year extreme sea level or storm event could occur around every five years by 2070. Contributing to this would be an increase in the height of the one-in-100 year storm surge and an increase in mean sea level rise under a worst case scenario. Small increases in sea level can mean large increases in damage costs. This may have serious implications for existing infrastructure and building and planning guidelines, as drainage, roads, seawalls, jetties and other infrastructure are generally built to withstand a one-in-100 year event.

"Near Melbourne and regional cities like Geelong – the coast is fragile and needs to have more evidenced based research to inform improved conservation in future – rather than loving the coast to death."

Elwood resident

Rising sea levels and extreme weather have already begun to affect our coastline and there are expectations that:

- low-lying coastal terrain will be inundated more often and more severely
- sandy shorelines will retreat at around 50 to 100 times the vertical rise in sea level through erosion, with dune systems moving landward
- saltwater will move further into coastal wetlands and estuaries, causing severe damage
- marine and coastal plants and animals are likely to be lost, as there is limited capacity for them to migrate across Bass Strait.

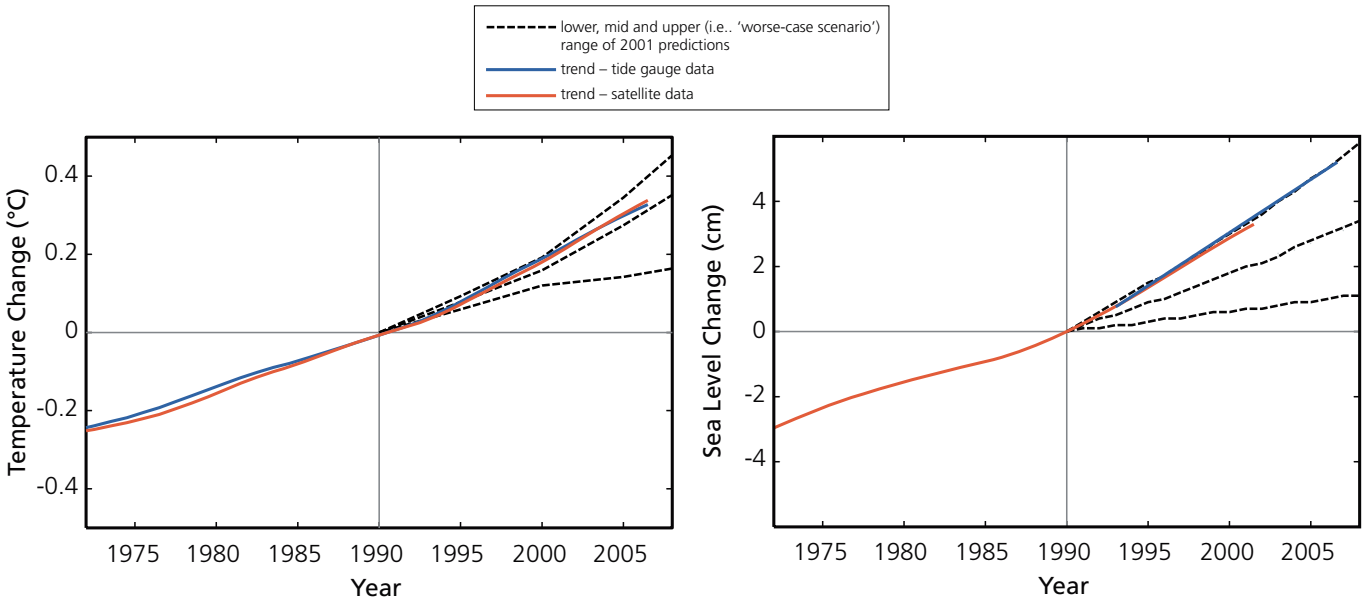
Higher temperatures may make the landscape more vulnerable to fire, with more of extreme and very high fire danger days predicted. Coastal settlements will likely be as vulnerable as inland settlements to this risk.

Studies are investigating the effect of climate change on the Victorian coastline to identify potential adaptation options. These studies will inform local and state governments, and feed into a national coastal vulnerability assessment.

They will also create new actions for land managers and planners. This strategy has a range of important actions to help prepare Victoria's communities for the increased level of risk to people and infrastructure, biodiversity impacts and economic impacts.

"...since 1990 sea level has risen faster than what the models have projected, closely following the upper limit of projections."

Figure 5: A comparison between recent temperature and sea level trends with predictions made in 2001. This shows that both temperature and sea level trends are increasing at the upper limit of the projections presented in IPCC (2001) (graphic modified from Rahmstorf *et al*., 2007).



Population and demographic trends

"We retired here and can enjoy our retirement. Here it's lovely; you can walk along the beach, it's a great lifestyle."

Inverloch resident

Seasonal patterns of movement and the age of people living in Victoria's coastal settlements varies significantly, reflecting the different land uses. Understanding how these patterns change affects how we plan and manage change on the coast.

Victoria's coast has a growing share of Victoria's population and grew more than 10 per cent from 1991 to 2001. In the four years to 2005, its population grew 1.3 per cent a year compared to an average of 1.1 per cent for the state overall. This pattern is expected to continue at lower rates as the population ages.

How does the population of coastal Victoria vary at different times of the year?

The populations of coastal towns vary greatly during the year because of seasons, festivals and major events. Figure 6 compares the growth in peak populations in some towns. Towns that experienced particularly high peaks in 2006 included Port Fairy, Lorne and most Great Ocean Road townships, Cowes, Inverloch, Venus Bay, Metung and Lake Tyers.

Figure 7 shows the high number of vacant dwellings, with over 13,000 dwellings unoccupied during winter. Many of these are likely to be holiday homes used part-time, seasonally or rented out for parts of the year.

This seasonal use has implications for servicing and infrastructure in peak times, as well as the fabric of local communities (see Box 1).

Table 1: Summary of historical and projected population trends (1991, 2001, 2011)

	Population			Actual Change 1991–2001		Projected Change 2001–2011	
Area	1991	2001	2011	Net	%	Net	%
Coastal Victoria	889,613	980,050	1,063,099	90,437	10.2	83,049	7.8
Share of Victoria's population (%)	20.1	20.5	20.8	–	–	–	–
Victoria	4,420,373	4,770,414	5,099,070	350,041	7.9	328,656	6.4

* Coastal Victoria is defined by statistical local areas.

Figure 6: Peak population estimates for selected towns 2006

Sources: DSE Towns in Time data based on ABS Census 2006; AAA Tourist accommodation data 2007

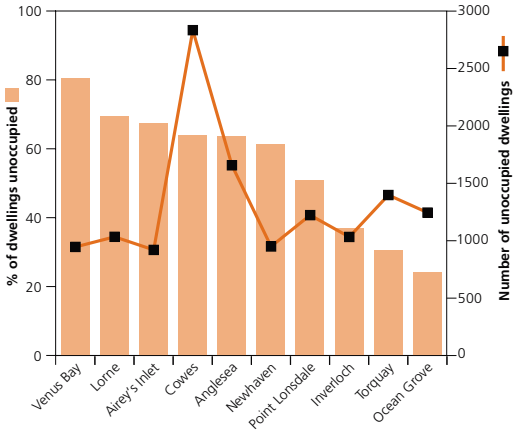
NOTE: Peak population estimates take into account potential population should unoccupied dwellings and tourist accommodation be utilised. A count of unoccupied dwellings is provided by the ABS Census and this number has been multiplied by the average household size for regional Victoria in 2006 (2.59 persons). Tourist accommodation data has been obtained from AAA Tourism and the number of persons in tourist accommodation determined on the basis of either 2 persons per bedroom, or a person capacity where this was stated.

Map prepared by Fiona McKenzie Spatial Analayis & Research Branch DPCD October 2007

The coast is…*"Beautiful, wild, pristine, loud, peace. I value all the different things the coast gives us and how it always makes me feel alive."*

Coastal resident

Figure 7: Unoccupied dwellings in selected coastal settlements 2001



Source: Victorian Government Regional Matters 2005 based on ABS Census 2001

Box 1: Coastal population fluctuations study: Phillip Island and Torquay.

The Victorian Government commissioned a study of coastal population fluctuations in two locations – Torquay and Phillip Island (SGS 2007; Urban Enterprise 2007). Its aim was to find out the scale of population fluctuations over one year and to understand how fluctuations affected service delivery, planning and the environment.

Not surprisingly, very strong peak populations occurred in the summer months, particularly during holidays and events. In 2005, Phillip Island had a resident population of 8,904, but during summer weekends this became 34,235 – almost four times the resident population. Torquay had a resident population of 14,053, which swelled to 29,098 during summer weekends in 2005.

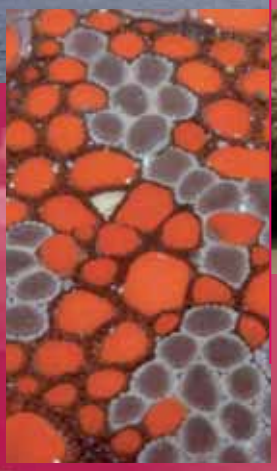
This created implications for water supply, waste collection, public recreational facilities, traffic and congestion, anti-social behaviour, increased crime rates, increased demand on emergency management, and disturbance to wildlife and vegetation.

Key trends and emerging demographic issues

Overall we can expect:

- an ageing population needing specialised facilities and services
- a drop in the average number of people in each household, but more houses as the population ages and families shrink
- higher population in many areas, with holiday homes converted to permanent residences
- pressure in some areas to increase housing densities – most notably in Melbourne and in key holiday areas, such as the Mornington Peninsula, Surf and Bass Coasts
- rising issues with housing affordability
- key coastal growth areas being 60 to 90 minutes drive from Melbourne
- growth impacts from strategic transport improvements
- coastal Victoria to continue growing at faster rates than Victoria as a whole, increasing its share of total population
- Melbourne's population to rise by about one million people by 2030
- coastal visitor numbers to escalate through improved mobility and regional access
- the continued growth of the international tourist market, with nature-based tourism expected to grow from 1.03 million visitors in 2005 to 1.46 million in 2012
- more coastal visitor numbers at peak times, with increasing popularity of festivals and major events
- in the longer term, a higher coastal population as people move away from warmer inland temperatures.

THE PRINCIPLES



Hierarchy of principles for coastal, estuarine and marine planning and management

This hierarchy of principles guides strategic planning at the regional, local and site level, and decisions about private and public land development, including estuarine and marine waters. The principles have been used since the first Victorian Coastal Strategy in 1997 and have been progressively strengthened and clarified over the last decade.

How is this hierarchy used?

This hierarchy is for state and local governments, planners, regulators and managers. Coastal development decisions must consider protecting significant features foremost, then the intentions of plans, and how to ensure sustainable use. By satisfying these requirements, development will be suitable and in the community's interests. Community involvement is key to each level of the hierarchy.

Figure 8 gives more information on the second and fourth principles.

Hierarchy of principles for coastal, estuarine and marine planning and management

1 Protect significant environmental and cultural features

This principle is about identifying then protecting, conserving and improving biological diversity, physical diversity and ecological integrity.

This principle seeks to:

- identify and document significant features
- protect and conserve biological and ecological integrity[1]
- protect, conserve and restore geological, geomorphological, cultural, landscape, scientific, historical and diverse physical features
- maintain and improve marine and estuarine water quality
- strengthen the involvement of Aboriginal communities in protecting and managing Aboriginal sites
- avoid interfering with natural systems that shape the coast
- retain and protect largely inaccessible parts of the coast to preserve their ecological integrity.

1 *Environment Protection Act* 1970

2 Give clear direction for the future

This principle is about integrating coastal zone planning and management through local and regional plans for long-term environmental, social and economic sustainability.

This principle seeks to:

- invoke the precautionary principle if threats of serious or irreversible environmental damage exist – a lack of full scientific certainty is not a reason for postponing measures to prevent environmental degradation[2]
- implement integrated coastal zone management (ICZM)
- provide long-term planning for the coast (see Figure 8)
- identify accountability for managing the coastal and marine environment
- increase the estate of coastal public land through land swaps, donations and purchases
- integrate marine and estuarine values and actions with planning where land-based impacts are likely to happen
- Plan for a sea level rise of between 0.4 to 0.8 m by the end of this century, recognising the current trend towards the upper limit and any updated projections, and allow for more storm events of greater intensities (see pages 13-14).

2 The precautionary principle – *National Strategy for Ecologically Sustainable Development (1992)*

3 Sustainable use of natural coastal resources

This principle is about using the environment in an ecologically sustainable way to ensure intergenerational equity. It is also about meeting the needs of people today without compromising our future generations. Decisions about Victoria's coastal and marine environment must consider its sustained and future use. This includes commercial enterprise on public land, fishing, agriculture, tourism, recreation and transport.

This principle seeks to:

- adopt the waste management hierarchy[3]
- charge market-based rent, rates and taxes for all commercial uses of coastal Crown land to encourage competitive neutrality and discourage it as a cheap alternative to private land[4]
- maintain public access to coastal Crown land unless to protect resources, security or safety[5]
- manage community use of foreshore land, buildings and other assets to return the greatest public benefit while protecting heritage values[6]
- avoid inappropriate developments and short-term decisions that could compromise the long-term public benefit of the coastal and marine environment
- avoid or reduce activities that poorly affect natural coastal, marine and estuarine processes
- lessen downstream or off site effects and work more with natural forces
- recover the cost of long-term coastal, estuarine and marine use or damage with a polluter-pays approach.[7]

3 *Environment Protection Act* 1970
4 DSE Crown Land Leasing Policy
5 Ibid
6 Ibid.

7 *Environment Protection Act* 1970

4 Suitable development on the coast

This principle aims to firstly provide an environmental, social and/or economic benefit and then enhance the community's use of the coast. Development must bring benefits. As infrastructure such as dwellings, buildings, drainage, roads and electricity, is generally built to last up to 100 years, current planning must consider climate change. Figure 8 discusses the notion of suitable development – on coastal Crown land it will generally be coastal dependent or closely related to coastal dependent uses.

This principle seeks to:

- define the extent of a settlement, where there is no settlement boundary, by the extent of existing urban zoned land and land previously identified for future urban settlement[8]
- direct residential and other urban development and infrastructure to settlements that can accommodate growth[9]
- avoid linear urban sprawl along the coastal edge and ribbon rural development to preserve non-urban use and values, such as visual landscape, environmental, agricultural and recreational qualities[10]
- protect significant scenic coastal vistas and views by avoiding their development[11]
- encourage coastal development at sites defined in Figure 8
- avoid developing low lying areas and land subsidence areas where future peak flooding, king tides, erosion, wind or wave action will affect infrastructure
- set back development to accommodate predicted climate change impacts and be a buffer for biodiversity adaptation.

8 *Coastal Spaces (2006)*
9 *Victoria Planning Provisions* (Clause 15.08 State Planning Policy Framework)
10 Ibid.

11 *Coastal Spaces Landscape Assessment Study (2006)*

"I think it's gorgeous, the [Port Melbourne] development is fantastic. It's designed to bring people to the beach. I bring my kids to experience it. It's not the same as living in Torquay, it's a city beach. I think it's great."

Elwood resident

Figure 8: Planning for use and development

This section explains and expands on the second and fourth tier principles. It details an approach to coastal planning and development on both private and public land.

Coastal planning

This strategy will be most effective where it is given effect in regional and local plans. Coastal action plans and regional planning will implement it at a regional level. Management plans will spell out actions at the local reserve level, while local planning policies will guide decisions on the character and health of the marine and coastal environment.

Planning:

- is vertically and horizontally integrated across government jurisdictions (see Figure 3)
- sets clear objectives at a local or regional level
- is lead by a coastal agency
- follows ESD principles
- uses the best available scientific understanding, recognising that this may be limited
- has meaningful community involvement
- is adequately resourced
- integrates coastal plans and policies in line with this strategy, planning schemes and regional catchment strategies to focus on regional or local coastal issues
- encourages using cost recovery and user-pays options for services and facilities
- identifies settlement boundaries.

Private land development

What is suitable or appropriate development?

Appropriate coastal development is development that meets the principles of this strategy:

- the extent of settlements is defined
- areas between settlements remain largely undeveloped
- the extent of recreational nodes is defined.

Such development:

- protects and rehabilitates the natural environment and biodiversity
- improves environmental, social and economic values
- recognises and avoids the accumulated impacts of poor decision-making and actions over time
- respects the character of coastal settlements
- protects and complements visually significant landscapes, views and vistas
- retains existing subdivision patterns and non-urban uses between settlements, except where old subdivisions have been assessed as inappropriate
- identifies and avoids impacts on predictable adverse environmental processes and effects including storm surges, river and coastal flooding, erosion, landslip, salinity, sea level rise, disturbance of acid sulfate soils, wildfire or geotechnical risk
- is sensitively sited and designed, sympathetic to the coastal landscape and in line with the *Coastal Spaces Landscape Assessment Study* (2006) and the *Siting and Design Guidelines for Structures on the Victorian Coast* (1998)
- minimises public risk
- is set back from the coast to accommodate both the upper limit predictions of sea level rise and an additional buffer for protecting biodiversity
- is not on primary sand dunes
- minimises its impact on receiving water quality
- has no offsite impacts
- helps to improve sites or existing developments with poor environmental or social performance
- meets coastal planning strategies and plans and relevant planning schemes.

Urban settlements

Port Phillip Bay urban settlements already use much coastal land. Some areas may be close to, or at maximum capacity. The key issue is the relationship between private land development and public foreshores, such as issues of overshadowing beaches, design, amenity, congestion, capacity and illegally clearing vegetation. Local governments are key players in this.

Non urban settlements

With remaining coastal areas, settlements and protected landscapes need limits and decisions need to be made about facilities.

Where is development on the coast appropriate?

This strategy focuses on protecting the coastal environment and its sustainable use. It aims to direct development and infrastructure away from the coast and manage it within existing settlements, and recreational nodes on public land.

Using this strategy to develop these areas will:

- reduce the overall impact of use and development, and protect more sensitive areas
- contain use and development to certain locations
- define the scale of use
- properly establish boundaries for development
- manage development pressures
- give a focus for use and for coastal facilities.

In most cases, existing settlements and activity and recreational nodes will meet sustainable development principles. Regional coastal boards, local governments, committees of management and Parks Victoria oversee this with a range of plans. The intervening lands will remain in non urban use.

Existing settlements (activity nodes)

Figure 1 describes the role and function of each coastal settlement, ranging from regional cities and district towns, to small hamlets and rural district settlements – the glossary (page 50) gives these definitions.

The Coastal Settlement Framework in Figures 12a and 12b (pages 43 and 44) outlines the spatial growth capacity of each coastal settlement outside Melbourne, and:

- covers the capacity to sustain spatial growth
- includes settlements to be managed within their environments
- is a framework for infrastructure investment
- recognises relationships between coastal and hinterland settlements.

In 50 to 100 years, climate change may make some settlements unviable. Vulnerable settlements may be subject to negative impacts in the short term. Any planning to accommodate this change must meet the criteria for new settlements.

New settlements

Any new settlement needs broader regional policy and planning, such as future reviews of this strategy, and a whole-of-government approach. New settlements need:

- to marry housing needs with regional settlement strategies
- to support sustainable and economically viable settlements, communities, infrastructure and services
- high quality, ecologically sustainable developments that benefit the state
- no or minor impact on sustaining current natural resources, including productive agricultural land, water, mineral and energy resources
- no or minor impact on current visual and environmental qualities, such as landscape features, water quality, cultural heritage, native vegetation and habitat and biodiversity values
- no or minor impact on Aboriginal cultural heritage values.

Public land use and development

Recreational nodes

Recreational nodes are on public land, outside existing settlements and high use areas around Port Phillip Bay, that:

- generally have a high recreation and water activity use
- may be developed in line with ecologically sustainable development principles outlined in this strategy
- have priorities to redevelop or expand facilities or sites for a greater public benefit
- offer coastal and marine access, containing boat ramps and harbours
- include recreational infrastructure that can sustainably support further development.

Regional coastal boards, with local governments, management committees and Parks Victoria, define recreational nodes. Coastal action plans and management plans under the *Coastal Management Act 1995* define activity nodes and their associated planning.

Coastal dependent uses

These uses, and their associated infrastructure, include boat ramps, surf clubs, yacht clubs, boathouses, ports and harbours. They give people access to the coast and should reflect safety, recreation and industry needs. These uses are not needed at all locations along the coast and some uses may be better located inland.

Coastal Crown land may be the only substantial open space in certain areas. Between settlements and between high uses areas around Port Phillip Bay, there is less flexibility about allowed uses. These will be directed to settlements or to high use areas around Port Phillip Bay.

Coastal Crown land use will be in line with this strategy's development criteria and will:

- be directed to activity nodes in existing settlements, apart from Port Phillip Bay, after consulting with the community
- be directed to activity nodes in urban settlements around Port Phillip Bay in line with *Melbourne 2030*
- allow flexibility in topographically confined communities with limited public space
- be less flexible in areas with readily available public space
- fulfil a demonstrated demand in high use areas around Port Phillip Bay to suitably manage demand where necessary
- accommodate traffic demands and car parking needs
- be accessible by public transport, where appropriate
- not create a sense of exclusivity or change public access to coastal reserves
- structures will not block sight lines
- not be vulnerable to climate change risk
- seek to enhance public access to the coast
- complement, not compete with surrounding uses
- be maintained
- not limit open space
- be designed to accommodate climate change risk

Where possible, relocate or investigate the relocation of non-coastal dependent uses.

THE ACTIONS

The outcomes and actions for this strategy have four major themes.

1. **Natural onshore environments**
2. **Marine environments**
3. **People using the coast**
4. **People living on the coast**

For each theme, the strategy identifies:

- **Challenges** – the pressures.
- **Outcomes** – five-year aims, to contribute to the strategy's 20 year vision.
- **Policy** – challenge-specific statements to guide decision-making and planning.
- **New actions** – new projects to be implemented within five years.
- **Ongoing actions** – day-to-day business activities for coastal managers, planners and decision makers and actions already underway.

Each theme has a range of specific numbered focus areas, such as wetlands and estuaries, maintaining and improving biodiversity, Indigenous heritage and infrastructure on the coast.

The policy and ongoing actions listed only highlight key issues – they are not exhaustive. The policy statements are a combination of new policies, policies from previous versions of the strategy and other related policies.

Each new action indicates its intended scale of effect – either state, regional or local.

The primary agency accountable for each action is listed first, followed by major stakeholders with an interest or responsibility: **DSE**, CMA, CoM. Listed agencies include all their divisions and delegation. The Department of Primary Industries (DPI) covers Fisheries Victoria. Full titles are in the acronyms section.

Not all organisations and groups involved in coastal management can be listed as there are so many. But we acknowledge the vital role that many smaller community-based groups will play in achieving these actions.

These actions will not be achieved without funding and resources, particularly in relation to a number of actions for biodiversity and marine management. Please see page 45.

Part 1: Natural onshore environments

1.1 Maintaining and improving coastal biodiversity

Challenges

Victoria's coast contains a wide range of habitats supporting a diversity of plants and animals. There are large dune systems, saltmarsh, mangroves, woodlands, windswept cliff tops, heathlands and dry forests.

A key challenge is to maintain healthy and diverse coastal ecosystems where the coast is in high demand. Coastal habitat in those locations tends to gradually fragment or is lost as development occurs over time. Introduced animals, such as cats and foxes, and environmental weeds cause gradual declines in indigenous species. A number of species and communities are already threatened, including the coastal Moonah woodland and the orange-bellied parrot. Managing these pressures is more complex when coastal areas adjoin privately-owned land.

The distinctions between coastal habitats are often fine scale and sometimes not well recognised, resulting in poor scientific understanding of the quality of remnant coastal vegetation.

Outcome – to improve the extent and condition of coastal biodiversity.

Policy

- Implement the Victorian native vegetation framework.[12]
- Manage the comprehensive and representative system of parks and reserves to help protect Victoria's biodiversity.
- Revegetate and landscape using locally endemic species.
- Ensure shorebird high tide roosts and beach nesting species are not disturbed.
- Maintain, restore and enhance threatened communities and species.

New actions

1.1.1. Investigate a program to check and report on the condition of coastal and estuarine habitat at appropriate sites across the state (**DSE**, PV, CMA) **local/regional**.

1.1.2. Investigate the development of a program of large-scale and local-scale connectivity across public and private land and between coastal and inland vegetation (**DSE**, CMA, LG) **state**.

1.1.3. Seek opportunities for finer scale mapping of ecological vegetation class habitat along the coast (**DSE**, CMA, PV) **local**.

Ongoing actions

- Use planning schemes to protect, and address threats to, significant coastal environments and restrict the development or disturbance of significant sites (**LG**, DPCD, DSE).
- Restore, rehabilitate and nurture coastal biodiversity and vegetation under regionally and locally determined priorities (**DSE**, CMA, CoM, community).
- Strategically manage weeds and pest animals on local and regional scales (**land managers**).

12 *Victorian Native Vegetation Framework: A Framework for Action* (2002)

The coast is…*"Pristine, natural. I value it as it is in its natural condition and needs to be kept that way"*

Coastal resident

1.2 Climate change

Challenges

Current threats to coastal biodiversity are expected to increase with climate change and new approaches are needed to increase its resilience. The breeding cycles and feeding patterns of some species are thought to already be affected. Changing rainfall patterns will affect runoff and flow patterns into estuaries and wetlands. More research is required to understand the impacts of climate change on biodiversity. Management responses to these issues will rely on implementing upcoming policy for land health and biodiversity. In some areas, the management of private land next to coastal Crown land may become an important option for managing coastal biodiversity.

The effects of sea level rise and inundation will be buffered by a range of natural coastal features and coastal vegetation on a narrow band of coastal Crown land. Migration will be possible for more mobile species, but will be limited in areas where habitat fragmentation occurs. North-east Australian coastal species can move south as temperatures rise, but there are limited opportunities for Victorian species to migrate across Bass Strait to cooler locations.

Outcome – to develop and implement strategies to manage the impacts of climate change.

New actions

1.2.1 Finish modelling of predicted vulnerability of the coast to climate change and distribute mapping to coastal managers (**DSE**, CMA, RCB, PV) **regional/local**.

1.2.2 Determine which coastal habitats and species are vulnerable to climate change (**DSE**, CMA) **state/local**.

1.1.2 Investigate the development of a program of large-scale and local-scale connectivity across public and private land and between coastal and inland vegetation (**DSE**, CMA, LG) **state**.

1.2.3 Plan a coastal tender program that encourages landholders to protect existing habitat and absorb the migration of vulnerable habitats from public land onto private property (**DSE**, CMA, LG, PV) **state/regional**.

Ongoing actions

- Improve scientific understanding of the impacts of climate change on coastal species, vegetation communities, wetlands and estuaries (**DSE**, PV, CMA, RCB).

1.3 Wetlands and estuaries

Challenges

Victoria's coastal wetlands and estuaries are noted for their habitat diversity with freshwater, brackish and saline aquatic ecosystems often in close proximity. They support abundant wildlife, such as migratory shorebirds, waterbirds and fish, and unique wetland vegetation communities, such as saltmarsh, mangroves and reed beds. Estuaries have highly productive fisheries and are crucial to the commercial fishing industry. Some of the most important wetlands in Victoria are on the coast. This includes the five Ramsar sites – wetlands of international importance – and another 18 wetlands of national importance. There are 83 estuaries along the coast, including brackish mouths of rivers and streams, inlets, small bays and coastal barrier lagoons.

Wetlands are sediment traps and filter nutrients from catchments, protecting rivers and marine areas from many potentially threatening processes. Many coastal towns and cities surround wetlands or estuaries. This exposes them to intensive levels of recreation and use, illegal estuary mouth openings, changes in river flow regimes, run-off of catchment nutrients, possible pollution events such as oil spills, invasion by weeds or pests, and salinisation. Wetlands and estuaries on private land are potentially exposed to further agriculture and development threats. These environments are particularly susceptible to climate change impacts, such as lower rainfall, increased temperatures and increased storm events.

Outcome – to improve the habitat of native plants and animals in coastal wetlands and estuaries.

Policy

- Protect the viability of ecological communities and wild populations of native plants and animals that depend on wetlands and estuaries.
- Ensure rivers are ecologically healthy, replenishing productive estuaries.
- Maintain the ecological integrity of coastal Ramsar sites.
- Promote the conservation of all coastal wetlands.
- Ensure the impacts of land use and management on the marine and estuarine environment are addressed in regional catchment strategies.[13]

New actions

1.3.1 Develop a sustainable wetlands strategy to protect coastal wetlands (**DSE**, CMA, PV, DPI) **state**.

1.3.2 Develop a state native fish plan for coastal rivers (**DSE**, CMA) **state**.

1.3.3 Develop asset prioritisation approaches for coastal wetlands and estuaries (**DSE**, CMA, RCB) **state**.

1.3.4 Coordinate estuary and waterway planning and management to better manage artificial estuary mouth openings and apply environmental flow allocations to priority estuaries across the state (**DSE**, CMA, land managers) **state**.

Ongoing actions

- Implement the *Gippsland Lakes Future Directions and Action Plan* under the *Gippsland Lakes Rescue Package* (**DSE**, Gippsland Lakes Taskforce, CMA, RCB).
- Implement priority actions for estuaries identified in regional river health strategies (**DSE**, CMA).
- Contribute to the implementation of the *National Wildlife Conservation Plan for Migratory Shorebirds* (**DSE**).
- Implement strategic management plans for coastal Ramsar sites (**DSE**, land managers).

13 *Marine, Coastal and Estuarine Investigation* (2000)

The coast is…*"An opportunity to enjoy the water and the environment that goes with it. I value it as being readily available to all."*

Coastal resident

1.4 Catchment management

Challenges

Coastal, estuarine and marine natural resource management relies on funding of priorities in regional catchment strategies. Understanding of coastal issues at the catchment level is growing, although it varies from catchment to catchment.

Outcome – to include a suite of coastal, estuarine and marine issues in regional catchment strategies.

New actions

1.4.1 Make sure revised regional catchment strategies adequately cover coastal marine and estuarine targets and issues (**CMA**, RCB, PV) **regional**.

1.4.2 Develop close affiliations with catchment management authorities through mechanisms such as joint meetings (**VCC**, **RCB**, CMA) **regional**.

Ongoing actions

- Ensure catchment management authorities have access to coastal, estuarine and marine expertise (**CMA**, RCB).
- Develop marine estuarine and coastal technical reference groups to, where appropriate, review regional catchment strategies and develop and assess funding priorities (**CMA**, RCB, DSE, PV).
- Advocate for the inclusion of coastal, estuarine and marine issues in catchment-related policy that determines priorities for natural resource management at a state and national level (**VCC**, DSE).

1.5 Information and research

Challenges

A key challenge for land managers is monitoring the effect of human use and intervention on near shore coastal environments. Monitoring programs commonly incorporate the coast into broader programs and it can be hard to detect changes to coastal ecosystems.

The ecological impacts of coastal development are poorly understood. Fragmenting coastal ecosystems for development affects wildlife movement and seed dispersal. The genetic diversity of plant species has a better chance of survival with larger remnant vegetation than smaller fragmented remnants, but the requirements of many species are unknown.

Outcome – to have a monitoring and research program that informs coastal planning and management and the community.

New actions

1.5.1 Design a regular reporting system for the health of the Victorian coastal marine and estuarine environment (**DSE**, PV, CMA, EPA, MW, CES, LG) *state*.

1.5.2 Design a coastal, estuarine and **marine** monitoring approach and data system that gives information to assist planning and management and integrates with national monitoring and reporting needs (**DSE**, VCC, EPA, PV) **state**.

Ongoing actions

- Continue to encourage research into coastal and estuarine biodiversity and its key threats (**DSE**, DPI, EPA, universities)

Part 2: Marine environments

2.1 Maintaining and improving biodiversity

Challenges

Victoria shares a unique marine environment with the rest of southern Australia. It supports the world's highest diversity of red and brown seaweeds, sea mosses, crabs and shrimps, and sea squirts. Ninety to 95 per cent of our marine plants and animals are found nowhere else in the world. These marine communities are as distinctly Australian as our terrestrial plants and animals.

Marine national parks and marine sanctuaries now protect 5.3 per cent of Victoria's coastal waters. They safeguard important marine habitats and species, significant natural features, cultural heritage and aesthetic values. Continued management of these areas is important, but there needs to be an increased focus on managing the remaining 95 per cent of the marine environment. Industries, such as fishing, rely on the health of this environment.

Our knowledge of Victoria's marine communities is relatively limited and this constrains our ability to effectively plan and manage them. We need to build our understanding of how ecologically important communities vary 'naturally' over time – and which ecological processes are responsible – so we can better predict how marine systems respond to human pressures.

Outcome – to improve our understanding of marine biodiversity and our ability to sustainably manage marine systems.

Policy

- Ensure the impacts of land use and management on the marine and estuarine environment are addressed in regional catchment strategies.
- Prohibit seismic testing in Victoria's marine national parks and marine sanctuaries.
- Maintain the comprehensive and representative system of marine national parks and marine sanctuaries to ensure Victoria's marine biodiversity is protected.
- Maintain, restore and enhance threatened communities and species.

New actions

2.1.1 Identify an approach for describing marine biodiversity that best guides planning and management (**VCC**, DSE) **state**.

2.1.2 Review the representation of marine habitats in Victoria's marine national parks and marine sanctuaries and note any gaps (**DSE**, DPI, PV) **state**.

2.1.3 Support targeted marine and estuarine biodiversity research to advise key biodiversity management approaches (**DSE**) **state**.

Ongoing actions

- Encourage research to better understand Victoria's marine and estuarine biodiversity – including targeted fish species – and the key threats faced (**DSE**, DPI, EPA, universities).
- Implement marine national park management plans (**PV**, relevant agencies).

"Everything costs money in Melbourne – but here it's free. What you might see in a rock pool is just great."

Inverloch resident

2.2 Climate change

Challenges

Climate change is likely to have significant and less obvious impacts on the marine environment. Increases to seawater acidity may not allow some marine animals to produce shells and skeletons, and may affect biodiversity and fisheries. Changes to rainfall patterns will affect how catchment-derived nutrients, sediments and toxins are delivered to marine environments. Changes in seawater temperature may alter ocean currents, and could affect distributions of marine animals and plants. These are significant social and economic challenges, especially for the fisheries industry.

Adaptation strategies should be precautionary, planning for the upper limits of predictions. Management programs that can help vulnerable systems and improve the resilience of the marine environment are preferred. This means working with the scientific community to identify and encourage research for future planning.

Outcome – to develop and implement strategies to manage the impacts of climate change.

New actions

1.2.1 Finish modelling of predicted vulnerability of the coast to climate change and distribute mapping to coastal managers (**DSE**, CMA, RCB, PV) **regional/local.**

2.2.1 Review existing science and encourage new research on marine ecosystem impacts from climatic variability (**VCC**, DSE, EPA, RCB) **state**.

2.2.2 Develop and apply adaptive actions for the marine impacts of climate change (**DSE**, EPA, RCB, Coastal CMA, Melbourne Water) **state**.

Ongoing actions

- Consider climate change impacts in marine environment planning and assessment processes (**DSE**, EPA).
- Continue modelling and predictions of climate change impacts on East Gippsland and Western Port (**RCB**, DSE, EPA).

2.3 Integrated planning and management

Challenges

We need to continue to develop and improve the approaches and tools we use for planning and managing the marine environment. Consistency with established terrestrial approaches is desirable for some management issues, but others will require tailoring for marine habitats. Linkages between management frameworks for catchments, waterways, coastal and marine systems are crucial to effectively tackle cross-environment threats. Regional catchment strategies provide this important integration at a regional scale.

The policy frameworks and tools for planning and managing Victoria's marine environment range from statewide approaches, such as this strategy and state environment protection policy, to approaches focussing at a smaller scale or on particular sectors, uses or threats. Coordinating marine management, planning and implementation is a priority to reduce conflicts in values, uses, and approaches across government, industry sectors and community. In some cases, land-based management and planning includes the marine environment, such as local governments with boundaries 600 m offshore and the French Island National Park that is 100 m offshore.

Outcome – for institutional and policy frameworks to better integrate planning and management for the marine environment and the catchment-coast-marine spectrum.

Policy

- Apply a cross-sectoral and integrated approach to decisions of resource use.

New actions

2.3.1 Consider improvements to Victoria's marine institutional, planning, management and decision-making framework (*see Box 2*) (**DSE**, VCC, EPA, DPI, RCB, DOI) **state**.

2.3.2 Assess whether cross-environment policy frameworks, such as the waste management hierarchy (**EPA**, water authorities, ports, PV), and threatened species management approach are appropriate for the marine environment (**DSE**) **state**.

2.3.3 Ensure revised regional catchment strategies adequately cover marine and water quality targets and issues (**CMA**, DSE, RCB, PV) **regional**.

2.3.4 Consolidate and integrate frameworks and programs to address land based sources of marine pollution to the Bays, Gippsland Lakes and other priority areas (**MW**, **EPA**, **DSE**, **RCB**, LG, PV, CMA) **regional**.

Ongoing actions

- Review SEPPs (**EPA**) and develop CAPs (**RCB**) for priority relevant locations and/or issues, set clear targets and coordinate action.
- Apply catchment actions to help achieve marine targets through regional catchment strategies and associated programs (**CMA**, MW, DSE, DPI, RCB).
- Encourage foreshore managers and local government to extend management and planning scheme boundaries – notionally 600 m – for a planning framework in the near shore and marine environment, in consultation with the community (**land managers**, RCB, DPCD).
- Ensure revised regional catchment strategies adequately cover marine and water quality targets and issues (**CMA**, DSE, RCB, PV).

2.4 Identifying priorities for management and planning

Challenges

We invest resources for marine management to:

- manage uses and reduce threats
- research key ecological processes
- monitor and report to help guide management.

This means making decisions about priorities, such as taking management actions or mapping or researching marine ecosystems to better understand underlying ecological processes.

The challenge is to prioritise investment of available resources to best act on threats to marine values, and identify areas in urgent need of additional resources. The approaches we use need to reflect linkages between catchments and marine environments, but also capture the complexity of a marine ecosystem.

Outcome – to have adequate resources for marine management and target these to achieve the best benefits.

New actions

2.4.1 Develop a framework for prioritising management actions for the marine environment, including assets such as biodiversity and fish habitats, threats to assets, and benefits from management actions (**DSE**, VCC, PV) **state**.

2.4.2 Investigate how market-based instruments could help cost-effectively direct investment to improve marine management (**DSE**) **state**.

2.4.3 Investigate approaches for developing marine environmental targets where SEPP targets are not available (**DSE**, EPA, VCC, CMA, RCB) **state**.

1.5.2 Design a coastal, estuarine and marine monitoring approach and data system that gives information to assist planning and management and integrates with national monitoring and reporting needs (**DSE**, VCC, EPA, PV) **state**.

Ongoing actions

- Finish a prioritised plan of catchment actions that aims to achieve waterway and bay management targets for Port Phillip Bay and Western Port in the Better Bays and Waterways plan (**EPA**, **MW**, relevant agencies).

Box 2: Improving marine management

Key questions to ask could include:

Do we need better collaboration between agencies and industry sectors to manage key issues?

- Which key issues will benefit from better collaboration?
- What arrangements will help improve collaboration?
- Do we need clearer leadership?

How are decisions made on marine, estuarine and coastal issues?

- Are all uses and interests taken into account?
- Can we improve integration, collaboration and leadership in making decisions? If so, how?
- Can we improve the way we set priorities?

Outcomes may be:

1. More integrated approaches to policy, planning and management where this will create better management of valuable marine resources. This will resolve conflicts over competing uses and make sure that key risks are properly managed.
2. More clearly described processes for decision-making and more clearly defined responsibilities for policy, planning and management activities.

Marine pest: *Undaria pinnatifida* – Japanese Kelp (Photography CSIRO Marine and Atmospheric Research)

The coast is…
"Enjoyable, amazing, beautiful, resourceful. I value its locality and how I always enjoy it."
Coastal resident

2.5 Managing resources and threats

Challenges

Victoria's marine waters support a range of uses including commercial and recreational fishing, aquaculture, recreation, tourism and shipping. Many of these can threaten biodiversity and need to be effectively managed. Threats include input of nutrients, toxins, sediment, exotic species, physical changes to habitats, over use and climate change impacts.

The key threats to marine biodiversity vary along Victoria's coast. Some threats stem from upstream catchments or activities in local marine and estuarine areas, while others – such as marine pests – may be introduced from further afield by shipping and boating movements. Multiple uses can result in a range of threats occurring in an area, which can have synergistic effects. The challenge is to better understand existing and emerging threats and their sources so we can improve how we manage them.

Outcome

– to manage multiple uses in a long-term sustainability framework.

Policy

- Prevent new marine pest introductions as the preferred strategy to eradication.
- Seek continuous improvement in the quality of discharges, including stormwater and wastewater, which negatively impact on marine environments.
- Develop and manage Victoria's fisheries resources in an ecologically sustainable development framework to ensure fish now and for the future.[14]
- Sustain healthy fish resources and the ecosystems on which they depend.[15]
- Reduce theft and illegal fishing methods through education and enforcement.[16]
- Encourage the non-extractive use of our living marine resources.[17]

New actions

2.5.1 Update and improve Victoria's protocols for marine pest incursions, including a rapid response to new incursions (**DSE**, DPI), meeting obligations under a national system to prevent and manage marine pests (**EPA**, **DSE**, **DOI**), and supporting national best practice guidelines for managing biofouling across stakeholder groups (**EPA**, DOI, DPI) **state**.

2.5.2 Identify an approach to monitoring marine pest distributions in Port Phillip Bay for ongoing assessment of nutrient management risks (**DSE**, EPA) **regional**.

2.5.3 Increase understanding of impacts of estuaries and catchments on Victoria's marine environment for catchment management (**DSE**, VCC, EPA) **state**.

2.5.4 Apply the national fisheries ESD reporting framework to developing and reviewing management plans for all significant fisheries in Victoria – commercial and inland – supported by risk-based assessment of priority sustainability, economic, social and governance issues in each fishery (**DPI**) **state**.

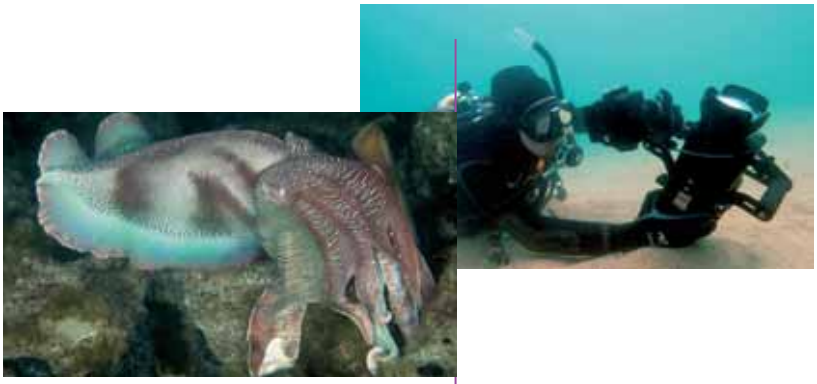
2.5.5 Improve capacity to monitor and assess key recreational fisheries to help management decision-making for sustainable use (**DPI**) **state**.

2.5.6 Improve understanding of habitat and environment requirements for key fisheries resources, and be an advocate to protect essential fisheries habitat using management tools (**DPI**, DSE, EPA, RCB, CMA) **state**.

2.5.7 Increase the water enforcement presence in marine national parks and sanctuaries, and high use areas (**PV**) **state**.

2.5.8 Finalise and implement guidelines for making decisions about the installation of artificial reefs for fisheries purposes (**DPI**, **DSE**, PV, TV) **state**.

14 Fisheries Victoria Positioning Statement 2006–2010
15 Ecosystem-based Fisheries Management: A Policy Statement 2006–2010.
16 Victoria's Biodiversity Directions in Management (1997)
17 Ibid.



Ongoing actions

- Review existing restrictions on collecting intertidal molluscs and other invertebrates for Victoria's central coast as part of a 10 year review and remake all fisheries regulations (**DPI**).
- Do an initial three yearly review of management plans for the Aquaculture Fisheries Reserves, taking into account environmental monitoring results, to be publicly reported. All Port Phillip Bay aquaculture sites will be developed in line with SEPP requirements (**DPI**).
- Improve dredging practices through long-term maintenance dredging strategies in line with the best practice environmental management guidelines for dredging (**EPA**, **DSE**, land managers).
- Finish and apply the Victorian Aquaculture Strategy (**AAG**, DPI)

2.6 Informed management

Challenges

Good science, focused on management priorities, is fundamental to marine policy and for assessing how effective management strategies are. It also improves our understanding of marine ecosystems and helps to identify new issues.

Strong links ensure scientists understand the specific management needs for information and help to transfer knowledge effectively to policy makers and others. The community's involvement in management activities is vital, and should be fostered through education and good communication with scientists and policy makers.

Pressures on marine ecosystems continue from catchment activities, climate change impacts and new developments, including the Hastings port facility. Planning and decision-making can be difficult because we understand marine ecosystems less than land ecosystems. Strategic investment can improve our understanding of marine ecosystems.

Victoria's marine environment is large, but its scientific base is small and largely concentrated around Port Phillip Bay. We need to understand and address gaps in our expertise.

Outcome – to have a strong scientific base that is well matched to the needs of marine management along Victoria's coast, responds to emerging issues, and contributes to community understanding and engagement.

New actions

2.6.1 Develop a science and research strategy to help guide investment in Victoria's marine ecosystems, including identifying emerging strategic issues and funding options (**DSE**, VCC, RCB, EPA, DPI, Universities) **state**.

2.6.2 Determine future technical needs and the strengths and weaknesses of the current scientific base (**VCC**, DSE, EPA) **state**.

2.6.3 Improve access to marine information (**DSE**, **EPA**, **PV**, land managers) **state**.

Ongoing actions

- Broker independent scientific advice from a network of experts to monitor emerging scientific issues and assist with effective marine and estuarine management in Victoria (**VCC**, VMSC) **state**.
- Support school and education activities (**DSE**, DPI, MW).

Part 3: People using the coast

"Crowds are a major problem, and the fact I feel people are not necessarily respecting the environment, so it requires cooperation between people on the beach which is a shared space."

Coastal resident

3.1 Access

Challenges

The Victorian public owns 96 per cent of Victoria's coastal foreshore. A range of opportunities to experience the coast will continue to be offered to the entire community, including the young, aged and the physically disadvantaged.

Many parts of the coast are accessible with high quality facilities, however some access points are inappropriate. They may not be maintained adequately, the level of allowable access may not match the capacity of that particular coastal environment, they may create further environmental or cultural site degradation or they may be unsafe. Some areas can only support minimal or no access to maintain ecological integrity.

A key challenge is to provide access in a way that is safe, can be maintained in the long-term, and protects coastal biodiversity.

Outcome

– to provide appropriate and high quality access to the coast.

Policy

- Offer fewer, but more well-maintained, environmentally sensitive and safe access points.
- Cater for various access needs and levels of mobility, but not maximum service levels everywhere.
- Prohibit off-road access on to beaches and coastal Crown land by private vehicles.[18]
- Have direct coastal access roads as feeder roads and avoid running roads parallel to the coast.
- Remove or relocate existing parallel roads, or poorly located roads or car parks where possible.
- Minimise traffic impacts on resident and visitor enjoyment of the coast including 'park and ride' schemes, township by-passes and minimal car parking on foreshore land.
- Encourage other types of transport in coastal townships, such as walking and cycling.

New actions

3.1.1 Finish and apply a coastal access decision-making tool for land managers (**DSE**, RCB, VCC, CoM, LG) **local**.

3.1.2 Facilitate regional approaches to improve and rationalise access to and on the coast (**VCC**, RCB, DSE, land managers, LG) **regional**.

Ongoing actions

- Patrol and enforce areas where private vehicles access beaches (**LG**, **PV**, DSE).
- Set priority areas for all mobility access needs (**land managers**).
- Carry out improvement works along the coast to provide safe beaches (**land managers**).

3.2 Recreational and informal use

Challenges

Recent research shows the top three activities for Victorians visiting the coast are short walks or strolls, swimming and boogie boarding, and picnicking and relaxing. Recreational fishing continues to be a key attraction. For bayside dwellers, the coast is an important place to unwind. Informal infrastructure, such as jetties and piers, seawalls and dual use paths, often support these recreational activities. But appropriate facilities are not always provided because of the limited resources of management committees.

Outcome

– to offer an appropriate standard and level of service for recreational use across coastal Crown land.

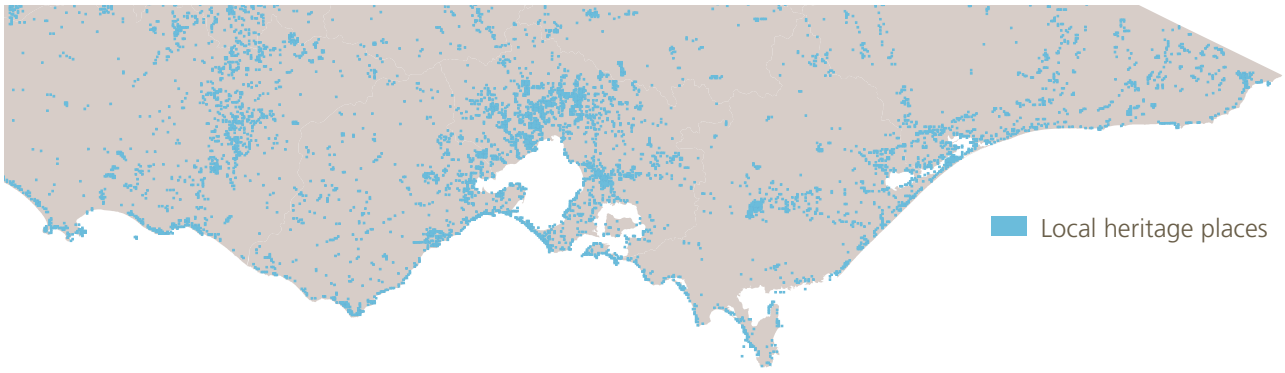
New actions

3.2.1 Develop a levels of service framework for the coast, based on the existing Parks Victoria model (**DSE**, CoM, LG, PV) **state**.

3.1.1 Finish and apply a coastal access decision-making tool for land managers (**DSE**, RCB, VCC, CoM, LG) **local**.

18 Land Conservation (Vehicle Control) Regulations, 2003

Figure 9: Aboriginal cultural heritage places along the Victorian coast 2005



Source: AAV 2005 Aboriginal Cultural Heritage Places

3.3 Education, awareness and stewardship

Challenges

The health and wellbeing of Victoria's coastal and marine environment is enhanced if the community is aware of, understands and appreciates marine and coastal ecosystems and cultural heritage.

Education is central to understanding Victoria's marine and coastal environments. Community engagement and participation in decision-making contributes strongly to how the coast is managed, shapes the character of coastal settlements, and promotes a sense of community ownership of the coast. These also inform the community about coastal issues and decision-making processes. A more informed community is more likely to participate in future processes or on-ground conservation.

Outcome

– to increase community understanding and awareness of coastal and marine issues.

Policy

- Seek greater community participation in planning, management and decision-making.
- Encourage and assist the broader community to be actively involved in the conservation and rehabilitation of Victoria's natural and cultural coastal environment.

New actions

3.3.1 Convene a marine and coastal education committee to coordinate statewide education activities and priorities, and develop a marine and coastal education strategy with key education providers (**VCC**, DSE, PV, DEECD) **state**.

3.3.2 Actively seek opportunities to engage young people and people of diverse cultural backgrounds in coastal education, management and planning (**Coast Action/Coastcare**, RCB, VCC, DSE, PV) **local**.

3.3.3 Do five yearly social research to measure community awareness of the coastal and marine environment (**DSE**) **state**.

Ongoing actions

- Facilitate joint program delivery from education providers (**VCC**, DSE, PV, DPI).
- Undertake communication and marketing campaigns to raise awareness of coastal issues (**VCC**, RCB, DSE, DPI, PV).
- Run marine and coastal ecology courses for marine and coastal managers, tourism operators, community groups and local governments (**DSE**, PV, RCB).
- Support school and education activities (DSE, DPI, DEECD, MW).
- Support community monitoring, conservation and management activities (**land managers**).

3.4 Indigenous heritage

Challenges

The coast is very significant to Indigenous people. Thousands of Aboriginal cultural heritage places are recorded along the Victorian coast and we continue to find more. Lack of awareness of their significance to Indigenous people, and the important relationship between coastal and sea country and Indigenous people, affects the preservation of Aboriginal cultural identity. The Victorian *Aboriginal Heritage Act* 2006 recognises Aboriginal people as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage. The recent native title determination for the Gunditjmara people of western Victoria will have implications for coastal planning and management. Other native title claims are also pending over significant parts of the coast.

Outcome

– to better recognise and protect Indigenous cultural heritage along the coast.

Policy

- Protect Indigenous heritage sites from harm in consultation with relevant groups and/or registered Aboriginal parties (RAPs).[19]
- Recognise Indigenous people as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage.[20]

New actions

3.4.1 Support professional development programs to help coastal managers implement the *Aboriginal Heritage Act* 2006 (**AAV**, DSE) **local**.

3.4.2 Consult with RAPs and traditional owners as key stakeholders in developing new coastal action plans (**RCB**, VCC, community) **local**.

3.4.3 Review coastal action plans to reflect the implications of native title claims along the coast (**RCB**, AAV, LG, DSE) **regional**.

3.4.4 Support future cooperative land management agreements on coastal Crown land and joint management in national parks (**AAV**, RCB, DSE, PV, VCC, LG) **local**.

Ongoing actions

- Build relationships between coastal and marine managers and RAPs and traditional owners (**land managers**).
- Restrict access where Aboriginal cultural sites or places exist, in line with the *Aboriginal Heritage Act* 2006 and the access decision-making guide (**land managers**).

19 *Aboriginal Heritage Act* 2006.
20 Ibid.

"The coast has become more populated and popular in the last 5 years. It's not as easy to find a secluded area."

Warrnambool resident

3.5 Tourism and visitation

Challenges

Domestic and international tourism is extremely important for local communities and the economy along the Victorian coast. Eighty-seven per cent of Victorians have visited the coast at least once in the last 12 months (IPSOS, 2007), including all visits by residents. Going to the beach is the most popular nature-based activity for all domestic and international visitors, representing about half of visits (*International Visitor Survey* and *National Visitor Survey*, 2005). *Victoria's Nature-based Tourism Strategy Draft Plan* (2007) highlights growing consumer demand for ecologically sustainable development tourism and unique experiences in the environment.

A key challenge is the delicate balance between providing built facilities to satisfy market demand and the footprint of built infrastructure on the coast. Nature-based tourism offers the opportunity to experience the coastal and marine environment in unique ways, and can increase visitors' appreciation of this environment. Built facilities to support this industry generally require a natural setting, and this has to be balanced with the need to reduce development between townships.

Outcome

– to improve and enhance the experience and understanding of tourists and visitors to the coast.

Policy

- Support tourism that benefits the local community and statewide and regional economies without damaging the coast or detracting from other users' experience of the coast.
- Support tourism ventures on coastal Crown land that have an incentive to protect the coast through best practice – in preference to ventures not dependent on a coastal location.
- Avoid extending township boundaries for lifestyle-related residential developments, such as golf courses, marinas and canal estates.[21]

New actions

3.5.1 Use planning frameworks to determine additional tourism development needs and best practice environmentally sustainable approaches for tourism developments on coastal Crown land (**DSE**, LG, TV, RCB, PV, RTB) regional/**local**.

3.5.2 Develop appropriate guidelines for planning and evaluating bona fide tourism developments outside existing urban settlements (**DSE**, TV, LG, PV, RCB, RTB) **state**.

3.5.3 Develop key coastal walks as a component of the Great Victorian Coastal Walk (**DSE**, PV, DIRRD) **state/regional**.

3.5.4 Support and train tourism operators to reduce the environmental impact of business operations (**TV**) **regional**.

3.5.5 Encourage the use of existing built infrastructure such as surf clubs to service year-round community and visitor needs (**DSE**, PV, LG, CoM) **local**.

3.5.6 Finalise and implement Victoria's Nature-based Tourism Strategy (**TV**, DSE, PV, RTB).

Ongoing actions

- Support and encourage high quality and appropriate visitor/tourist and nature-based tourism accommodation and services (**TV**, DSE).
- Control or moderate aircraft operations, including scenic flights and whale watching, by developing fly-neighbourly agreements with operators to lessen impacts on wildlife and protect the amenity of coastal visitors and residents (**LG**, DSE, PV, VicRoads).
- Engage all stakeholders in designing and installing interpretative signage and experiences at key locations (**land manager**, PV, TV, DSE).

21 *Coastal Spaces* (2006)

3.6 Safety, risk and climate change

Challenges

Beach users, boat goers, sightseers, coastal managers and coastal community group volunteers are all exposed to a range of risks on the coast. Ageing infrastructure, weather and beach conditions, natural processes such as erosion, geology such as unstable cliffs, and the nature of works performed present risks to users and managers. These risks include injury, loss and damage.

Increased storm events in the coming years potentially increase the risk of coastal erosion, causing unstable cliffs and shorelines. This is likely to impact on infrastructure and the safety of beach users. An increase in visitation – combined with these risks – is likely to result in more emergency events.

Adapting to these risks will be a long-term challenge. In the shorter term, modelling and greater understanding of the potential risk is necessary. Possible responses in the future might include the need for climate change risk assessments for all new developments near the coast. Adaptive measures and planning will need to account for worst case scenario predictions.

Outcome

– to reduce injury, loss or damage to beach users, coastal managers or coastal volunteers.

Policy

- Locate, or investigate relocating, infrastructure further inland from erosion and/or flood prone sites.
- Use temporary or demountable infrastructure at erosion and flood-prone sites if relocation is not feasible.

New actions

1.2.1 Finish modelling of predicted vulnerability of the coast to climate change and distribute mapping to coastal managers (**DSE**, CMA, RCB, PV) **regional/local**.

Ongoing actions

- Do risk audits on coastal Crown land (**land managers**).
- Implement programs to help coastal managers address risks with ageing infrastructure, aquatic safety, access, and emergency response (**DSE**, **MSV**, LG, CoM, ESTA).

3.7 Beach renourishment and protection

Challenges

Beach sand is constantly moving as part of a natural, dynamic environment. Many Port Phillip Bay beaches protect the foreshore and public infrastructure from the effects of coastal erosion. While erosion is a natural process, many of these beaches are artificial and require ongoing renourishment. Engineering solutions, such as groynes and seawalls, are sometimes effective but can cause erosion problems further along the coast if they are not well-designed and sited. These traditional solutions may no longer be feasible options along the Victorian coast under the impacts of climate change. Changing weather patterns will increase the frequency and severity of storms and the incidences of beach loss.

Outcome

– to protect public infrastructure near or on the coast from coastal erosion and storm activity or relocate it further inland in a more stable location.

Policy

- Prioritise funding for coastal protection works where there is a significant public benefit.
- Do beach renourishment works, including highest use and safe beaches, protection of significant assets and risk management.

New actions

3.7.1 Use ongoing funding to assist coastal managers with beach renourishment priorities in Port Phillip Bay (**DSE**, LG, CoM) **local**.

3.7.2 Develop a long-term approach for managing climate change impacts (**DSE**, land managers) **state**.

Ongoing actions

- Provide emergency funds for beach renourishment after severe storm events in line with established priorities (**DSE**, LG, CoM).

3.8 Boating

Challenges

Boating is an important recreational and social outlet for many people. Boat registration is increasing faster than population growth, largely because of an ageing, affluent population and high levels of disposable income. The safety of boat users is paramount and we need to manage demand to avoid exceeding the capacity of the coastal and marine environment.

Outcome – to have safe boating facilities that are appropriately designed and sited for the local environment.

Policy

- Ensure that boating use meets safety requirements, conservation aims, fisheries management, demand for use and quality of experience for beach users.
- Avoid providing open water ramps, access or facilities and direct any new or redeveloped boating facilities to safe, sheltered locations with protection from strong prevailing winds and high energy sea conditions in line with boating coastal action plans.
- Where boating facilities already exist or must unavoidably be located with direct access into open water, all reasonable safety precautions must be taken to minimise risk to users and the surrounding environment.
- Consider facility needs and long-term maintenance requirements, such as toilets, local area amenity, car parking, traffic control and dredging, when providing boating facilities.
- Maximise regional boating facilities that provide all tide and all weather facilities where feasible, having regard to safety, construction and maintenance costs.

New actions

3.8.1 Support and implement boating coastal action plans across Victoria (**RCB**, LG, CoM, MSV) **regional**.

3.8.2 Implement the boating zone framework across coastal waters (**PV**, **port managers**, MSV).

Ongoing actions

- Communicate marine regulations and safety through compliance signage and education programs (**MSV**, PV).
- Have effluent disposal facilities at strategic boating locations to reduce sewage discharge from boats (**RCB**, MSV, EPA, land manager).
- Coordinate grant programs for boating facilities (**MSV**, DSE, DOI, DIIRD).
- Consider the recreational boating facilities hierarchy in Figure 11 (page 42) when deciding on new access or removing existing inappropriate access (**land managers**).

3.9 Coastal Crown land caravan parks and camping grounds

Challenges

There are 84 caravan parks and camping grounds on Crown land along Victoria's coast that offer safe, low-key and affordable holiday experiences. Demand for sites has increased at peak locations – particularly over the last five years – with 100 per cent occupancy at peak times, but as little as 10 to 20 per cent during off-peak. Maintenance requirements and demand for higher quality facilities continues to grow. Expenditure must be balanced with other priorities, such as environmental management and wastewater management. The closure of caravan parks on private land is increasing demand for coastal Crown land parks. The long-term capacity of existing parks and opportunities for new parks needs to be considered.

The *Caravan and Camping Parks on Coastal Crown Land Reference Group Report* (2006) addresses these issues.

Outcome – to develop management plans for most coastal Crown land caravan parks and camping grounds.

Policy

- Ensure low-cost accommodation options for coastal experiences are maintained.
- Discourage long-term exclusive occupancy (more than 12 months) of coastal caravan and camping sites.

New actions

3.9.1 Apply the recommendations of the *Caravan and Camping Parks on Coastal Crown Land Reference Group Report*, including developing best practice management guidelines, finalising leasing allocation policy, and giving guidance to park managers on managing annual site permits (**DSE**, CoM) **state**.

Ongoing actions

- Administer funding for caravan and camping park infrastructure repairs, maintenance, replacement and planning (**DSE**, CoM).

3.10 Cultural heritage

Challenges

Historic buildings and places – ranging from Aboriginal mission stations to shipwrecks and buildings – influence the character of Victoria's coast. In some settlements, such as Queenscliff and Port Fairy, heritage places are one of the main attractions. They enhance our understanding of the past, aid social cohesion and help communities build strong futures. Victoria's heritage strategy recognises that places of cultural significance range from past and present Aboriginal traditions to places created by early and recent settlers.

Outcome – to identify and protect historic buildings and places on the coast and underwater.

Policy

- Re-use historic buildings, features and sites as the preferred strategy to ensure long-term conservation.
- Encourage tourism ventures that use historic buildings and features.

New actions

3.10.1 Develop a strategy to respond to likely impacts of climate change on heritage places, including Indigenous historic sites (**HV**, DSE, AAV) **state**.

Ongoing actions

- Identify historic sites and places on public land and include them on asset registers (**HV**, PV, LG, Aboriginal communities).
- Provide interpretation of historic sites (**land managers**).
- Support professional development programs that help coastal managers protect heritage sites on public and private land (**HV**, DSE, RCB).
- Implement the Victorian heritage strategy (**HV**, land managers).

3.11 Coastal management capacity

Challenges

Approaches to coastal management are inconsistent along the coast and depend on resources, skill levels of decision makers and competing management priorities. Although different approaches can complement the local needs of a community, a core range of skills and expertise is required to understand and effectively manage the coast.

Local governments have a crucial responsibility for the coast over both private and public land. They make daily decisions that influence the character, amenity and environmental health of coastal communities. Volunteers also contribute enormously to the delivery of coastal management and marine monitoring activities on Victoria's coast.

Outcome – to have coastal and/or marine expertise in every coastal management agency, including local government.

New actions

3.11.1 Consider improvements to Victoria's coastal planning and management arrangements (**DSE**, **VCC**, RCB, DPCD, land managers) **state**.

3.11.2 Investigate offering cadetships to support training for coastal engineers (**DSE**) **state**.

3.11.3 Develop a coastal component of the Victorian local sustainability accord with local governments (**DSE**, LG) **state**.

3.11.4 Host regional coastal forums for local governments and coastal managers (**RCB**, DSE, VCC) **regional**.

Ongoing actions

- Host annual coastal awards for excellence (**VCC**, DSE).
- Deliver coastal manager forums and conferences (**DSE**, VCC, RCB).
- Support coastal community groups with a coastal facilitator network (**DSE** & **CMA**).
- Run marine and coastal ecology courses for marine and coastal managers, tourism operators and local governments (**DSE**, PV, RCB).

Part 4: People living on the coast

"The coast is a big part of our lives. I have two kids and they love the water. Any chance to visit the beach, we will do it. Every good night we walk on the Strand and past the cafes … I was born in Lebanon and we lived near the water. Dad decided to settle near water, for sailing, fishing and water based activities. If you are born near the water, you want to be close to it. I feel out of my depth when I'm away from the water."

Elwood resident

4.1 Planning for use and development

Challenges

The character of coastal settlements and communities has been shaped by a range of different influences, so each is unique. Preserving this character during times of rapid change is a great challenge. Around Port Phillip Bay, the key issue is managing recreation use and demand in the long-term as the population grows beyond four million in the coming years.

In the last five to 10 years the Victorian coast has become more popular with 'sea changers' and visitors. An increasing challenge for local governments is balancing the increased demand on services from permanent residents and visitors with the need to maintain the character of communities. Patterns of second home ownership along the coast continue, with many of these owners non-permanent residents. The capacity of these people to make a contribution to the fabric of these communities is usually limited.

The risk of exposing acid sulfate soils has the potential to restrict development in some areas. Disturbing coastal acid sulfate soils can cause the corrosion of buildings and infrastructure. It can also impact heavily on plant growth, on estuarine and marine water quality, and on fauna – by causing fish kills. It is estimated acid sulfate soils exist along a high proportion of low lying areas along the coast.

The Coastal Spaces Initiative (2006) responds to many of these pressures with policies to minimise development between townships. It also highlights the need for a range of other planning investigations. Figures 12a and 12b outline the 'settlement framework' for coastal settlements, showing the role and purpose of each town.

Outcome

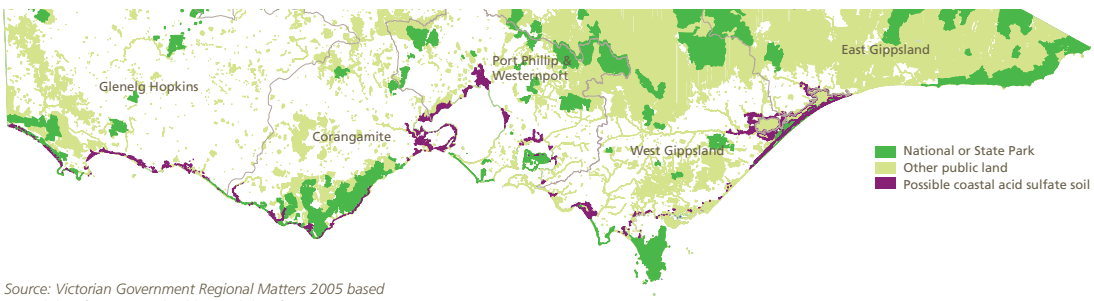
– to properly site and design coastal infrastructure, developments and settlements.

Policy

- Carry out urban renewal and development in existing settlements to reduce urban sprawl, and improve environmental, economic and social outcomes.[22]
- Avoid disturbing coastal acid sulfate soils.[23]
- Ensure any development proposed near, or on coastal acid sulfate soils shows it will avoid any disturbance.
- Facilitate the multiple use of sites and existing infrastructure, without over-use.
- Incorporate water sensitive urban design techniques in developments.[24]
- Do not develop canal estates if they risk changing natural systems, processes and hydrology, create a sense of exclusiveness, create inundation or risk infrastructure integrity through climate change, expose acid sulfate soils, or encourage the eutrophication of water bodies linked to natural systems.

22 *Victoria Planning Provisions* (Clause 15.08 State Planning Policy Framework)
23 *National Strategy for the Management of Coastal Acid Sulfate Soils* (2000).
24 *Victoria Planning Provisions* (Clause 15.08 State Planning Policy Framework)

Figure 10: Estimated extent of coastal acid sulfate soils. Coastal catchment management regions 2005



Source: Victorian Government Regional Matters 2005 based on soil data from DPI and Public Land data from DSE

New actions

4.1.1 Identify and promote sustainable, sensitive and sympathetic siting and design for built infrastructure on foreshore and coastal areas (**VCC**, DSE, RCB) **state**.

4.1.2 Do an audit for applying this strategy in planning schemes across the state (**DPCD**, **VCC**, RCB, DSE) **state**.

4.1.3 Deliver training to planning authorities for effective coastal management and decision-making (**VCC**, DPCD, RCB, DSE) **local**.

4.1.4 Assess and report on local governments with successful coastal planning and management models (**DPCD**, **DSE**, **VCC**, RCB, LG).

4.1.5 Investigate the impacts of population growth on coastal public land in growth areas such as the Bellarine Peninsula (**DPCD**, LG, VCC, RCB).

4.1.6 Complete and implement settlement planning across the coast (**LG**, DSE) **local**.

4.1.7 Continue to identify activity and recreation nodes (**RCB**, land managers) **regional**.

4.1.8 Facilitate the development of sustainable coastal communities in existing townships (*see Box 3*) (**DPCD**, VCC, RCB, DSE, LG) **local**.

4.1.9 Implement the significant landscape assessment study recommendations (**DPCD**, LG, RCB) **local**.

4.1.10 Analyse peak and seasonal populations in coastal settlements and the service implications of these fluctuations (**DPCD**, LG, RCB) **state**.

4.1.11 Develop a statewide strategy for managing coastal acid sulfate soils (**DSE**, EPA, DPI) **state**.

4.1.12 Develop planning tools for managing coastal acid sulfate soils (**DPCD**, **DSE**, EPA, DPI, LG) **state**.

4.1.13 Recognise excellence in coastal planning by local governments in the annual coastal awards (**VCC**, **DSE**, DPCD) **state**.

Ongoing actions

- Apply this strategy at a local level through local governments developing planning policy frameworks and coastal management plans in line with the hierarchy of principles and Figure 8 (**LG**, DPCD, DSE, RCB).
- Apply this strategy at a regional level in coastal action plans and other planning processes in line with the hierarchy of principles and Figure 8 (**RCB**, LG, CMA, DPCD, DSE, PV).
- Do management planning on coastal Crown land in line with indicative land use in Figure 1 (**land managers**).
- Develop guidelines for restructuring old and inappropriate subdivisions to reduce development impacts on the environment (**DPCD**, **DSE**, LG, RCB).
- Monitor how the hierarchy of principles are used in decision-making through annual forums (**VCC**, RCB).

Box 3: Sustainable communities – for existing townships and suburbs

Features of a sustainable coastal community could include:

- a sense of community, even in communities where many residents are not permanent
- buildings oriented north with a reduced footprint, minimal earthworks, using recycled and local materials
- building design that is sensitive and sympathetic to coastal landscapes
- holiday housing and tourist accommodation used throughout the year
- a small development footprint
- energy efficiency
- transport for local and regional needs
- ease of walking
- elderly resident housing in close proximity to services and amenities
- development set back from the coast to accommodate coastal features, vegetation and climate change impacts
- development set back from low lying areas
- 100 per cent re-use of stormwater and wastewater
- local and regional produce and products consumed in preference
- ample open space to support walking and bike trails, connecting all of the community and neighbouring suburbs or settlements
- Indigenous vegetation
- clear settlement boundaries in peri-urban and outer coastal areas with increased density to accommodate population growth, and no ribbon development between settlements
- protected and celebrated Indigenous heritage sites
- historic buildings used and maintained, and significant places protected and celebrated
- sufficient affordable housing
- community involved in management, planning and decision-making
- the character of settlement maintained while change is accommodated.

"I use the coast for fitness, that's very important"

Mornington resident

4.2 Climate change

Challenges

Climate change poses a range of new challenges to the way communities are planned and how the coast is used. Fire regimes are likely to change, with increases in the number of extreme fire danger days during summer. Water availability will potentially constrain the growth of many coastal towns. These impacts – and increased storm surges and flooding – are likely to impact on billions of dollars worth of public infrastructure such as electricity, roads, jetties and seawalls.

Understanding the economic implications of climate change for Victoria is crucial. Coastal tourism, fisheries and other industries will be affected. Responses, which will include protecting infrastructure and relocating it further inland, are likely to be expensive. Setbacks for development will prevent future losses. Migration of populations from warmer climates to the temperate Victorian coast is likely to place further pressure on coastal environments.

Programs for funding adaptation responses to climate change on the coast will be developed in the coming years. All coastal land managers and stakeholders will need to work cooperatively to conduct modelling and research and develop adaptation responses.

Land managers will need new skills to understand, respond to and manage climate change risks on the coast. In the short-term, all Victorian land managers will need to understand potential impacts to the coast and begin planning adaptation responses.

Outcome

– to develop and implement strategies to manage the impacts of climate change.

Policy

- Plan for a sea level rise of between 0.4 to 0.8 m by the end of this century, recognising the current trend towards the upper limit and any updated projections, and allow for more storm events of greater intensities (see pages 13-14).

New actions

4.2.1 Develop and deliver training programs for land managers on coastal vulnerability (**DSE**, DPC) **local**.

4.2.2 Develop land manager capacity for climate risk management (**DSE**, VCC, RCB, LG, CoM) **local**.

4.2.3 Develop planning tools to help adapt land use and biodiversity to climate change (**DSE**, RCBs, LG, PV, CMA) **state**.

4.2.4 Develop coastal action plans or other regional responses to climate change (**RCB**, DSE, PV, LG, CMA, CoM, Port Authorities) **regional**.

4.2.5 Investigate the predicted economic impacts of climate change on the coast (**DSE**, DPCD, land managers, DOI, DIIRD, PV, Ports, LG) **state**.

4.2.6 Develop and implement a regular monitoring program for coastline movement, species loss and weather events (**DSE**, BoM, CSIRO) **state**.

4.3 Infrastructure on the coast

Challenges

Various facilities and infrastructure support visits to, and use of the coast. These include seawalls, piers, jetties, toilet blocks, picnic areas, boating facilities, bollards, car parks and signage. There is often limited funding to maintain these assets once they are built and their condition varies significantly. In the future, we will need to relocate some of these assets to avoid impacts from climate change.

Outcome – to improve asset management and resource efficiency for coastal infrastructure.

Policy

- Incorporate measures to widen community access and use of coastal and water-based facilities and experiences in coastal Crown land leases.
- Direct revenue from coastal Crown land, coastal waters or the seabed to coastal management and to protecting, developing and maintaining infrastructure, as the relevant manager decides. [25]

New actions

4.3.1 Develop a register of assets and asset condition on coastal Crown land (**land managers**) **state**.

3.2.1 Develop a levels of service framework, based on the existing Parks Victoria model (**DSE**, PV, CoM, LG, VCC, RCB) **state**.

Ongoing actions

- Fund the ongoing maintenance of piers and jetties (**DSE**, DoI, MAV, PV).

4.4 Ports

Challenges

Commercial ports are significant contributors to the state's economy, with the Port of Melbourne the largest container port in Australia. Local ports have different drivers to larger ports – they have commercial importance to the fishing industry and are important to recreation and tourism. Commercial ports and local ports, as well as piers and jetties, are all part of an integrated network of access to the coast.

Climate change presents challenges to most port-related infrastructure. The current proposal to deepen a channel in Port Phillip Bay will allow much larger vessels into the Port of Melbourne. Approval of this project is subject to environmental assessment and approvals.

Outcome – to have all ports running productively without detracting from local amenity, recreation and environmental values.

New action

4.4.1 Engage with port authorities to implement this strategy (**RCB**, DSE, DoI, Port Authorities, PV) **regional**.

Ongoing actions

- Review the draft local ports strategy (**DSE**, MSV, EPA, DoI, LG, CoM, PV).
- Fund the ongoing maintenance of local ports (**DSE**, DoI, MAV).
- Contribute to a review of the ports services regulations for local ports (**DSE**, DoI, CoM, PV).

25 DSE Crown land leasing policy

4.5 Future issues

Challenges

Land subsidence is potentially crucial to the Gippsland region because of the extraction of large quantities of groundwater, soil and natural gas. Current incidence of subsidence is, however, yet to be conclusively proven. Subsidence can cause greater flooding, particularly if compounded by the likely impacts of climate change and increased dampening of low-lying areas. Development in low-lying areas needs to consider land subsidence.

Water availability is an increasing concern for growing coastal settlements. Seawater desalination and recycling wastewater could provide new supplies of water. A desalination plant will be built on the coast by the end of 2011 to supplement Melbourne's water supply.

Reducing greenhouse gas emissions is crucial for combating future climate change impacts. Alternative energy sources are a legitimate option for reducing emissions. Wind and wave energy – requiring locations near or on the coastline – will continue to be subject to comprehensive planning assessment. Wave energy sites will need to consider noise and impacts to wildlife. The Australian Government is considering mechanisms, including carbon trading, for encouraging industry to reduce emissions. Public land is a potential 'carbon sink' for absorbing the major greenhouse gas, carbon dioxide.

Reducing greenhouse gases will require significant action from both governments and the wider community. For example, the public transport network will need to increase so that people can reduce their reliance on motor vehicles as their primary means of visiting the coast.

Outcome – to provide leadership on stakeholder awareness so that emerging issues are fully considered.

New actions

4.5.1 Give expert advice during the assessment of environmental impacts, and the siting and design of a desalination plant (**DSE**, EPA, VCC) **regional/state.**

4.5.2 Establish and facilitate a future forum with key stakeholders to investigate emerging issues (**VCC**, RCB, DSE) **state**.

Ongoing actions

- Implement the *Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria* (2002) (**DPCD**, LG).

Figure 11: Recreational boating facilities hierarchy 2030

Figure 12a: Coastal settlement framework: spatial growth management (western)

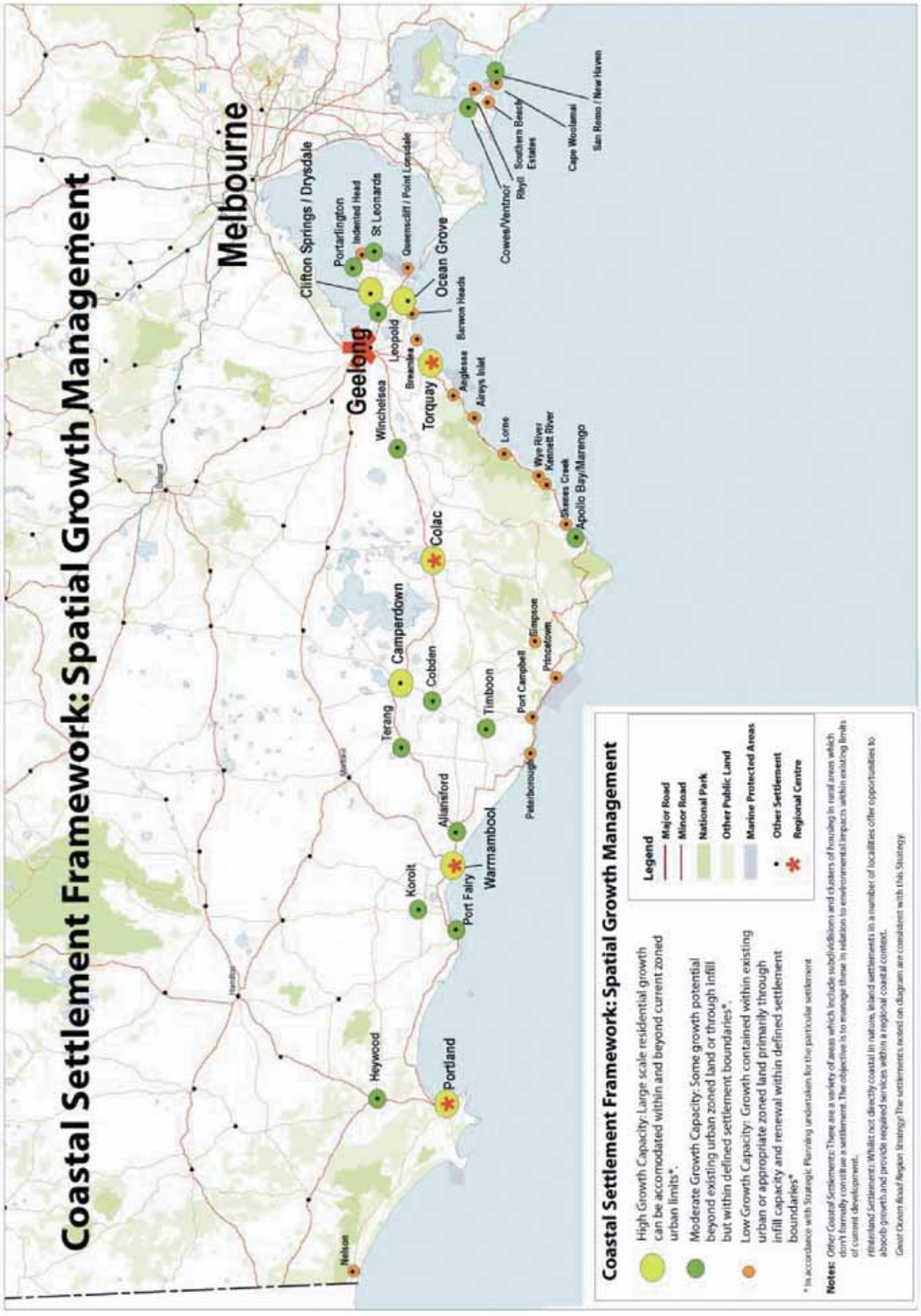
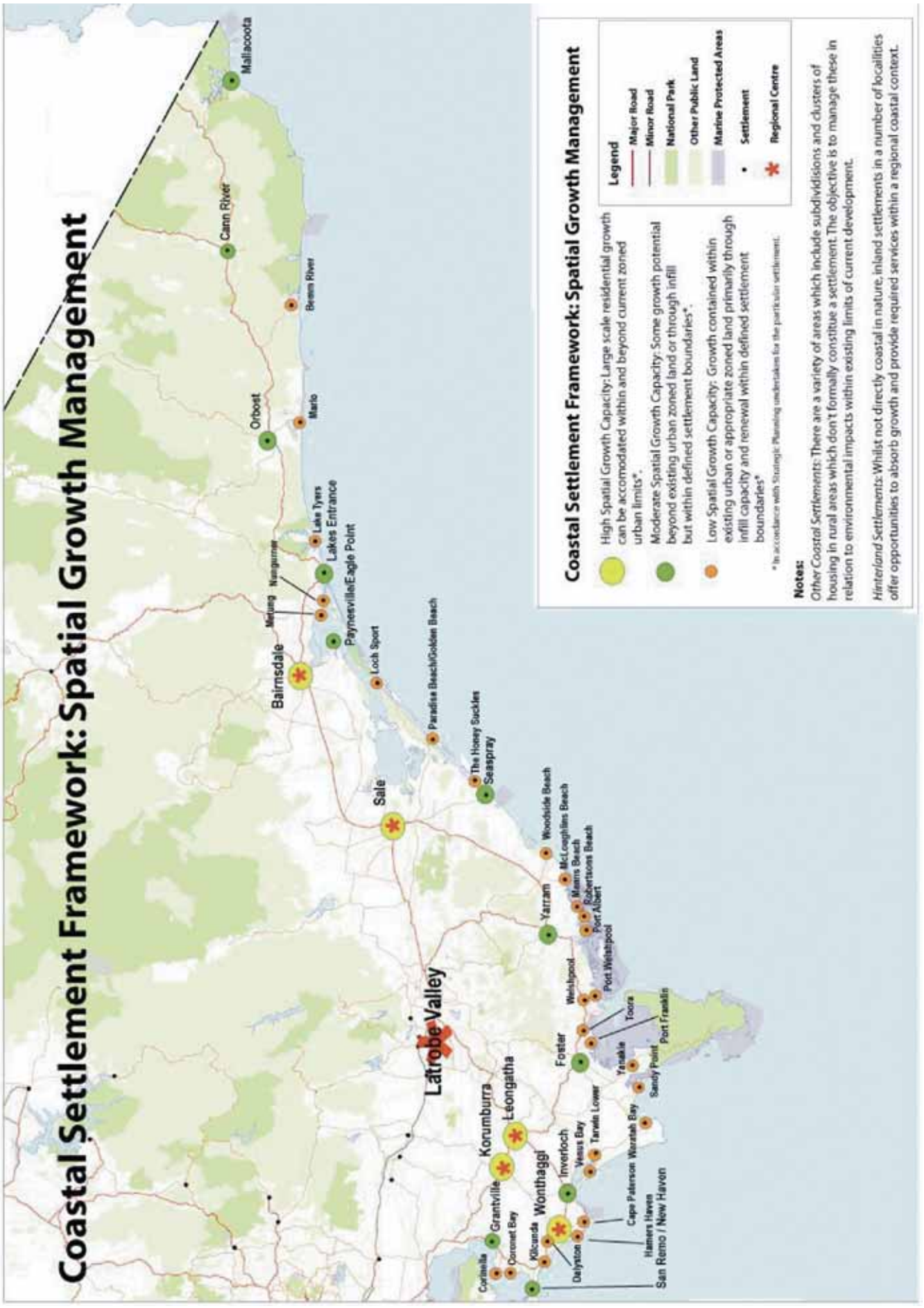


Figure 12b: Coastal settlement framework: spatial growth management (eastern)



INTEGRATION AND IMPLEMENTATION

This strategy will be successfully implemented if it has the coordinated commitment of the lead agents, partners and stakeholders who have responsibilities and interests in the coast.

Many actions identified are part of existing programs being run by various agencies, while others are new actions. This strategy gives guidance on coordination and integration, and developing a common understanding between stakeholders so the vision for the future becomes a reality.

I value… "*Lots of fish and other sea creatures, particularly those living in protected areas, to ensure their ongoing existence. I value action to ensure the protection of these species, to have them around for future* generations."

Coastal resident

The role of the lead agent, partner and stakeholder

The lead agent for each action has primary responsibility for making sure that an action happens. They need to form partnerships with other agencies or groups, particularly where there are legal responsibilities. Partners are identified for each objective and associated actions.

See Appendix B for the relationship between relevant state government agencies and their reporting arrangements.

Lead agents, partners and stakeholders include:

- The **community** – a principal stakeholder, as most outcomes and actions in this strategy depend on community support. Ownership is encouraged through being involved in decision-making, as well as participating in programs such as Coast Action/Coastcare and the Marine and Coastal Community Network. Networks encourage individuals and communities to engage with coastal issues, and be an important link between the community and government.
- **State government departments and agencies** – will continue to develop and set statewide policy and strategic directions for natural resource management and planning decisions.
- **Victorian Coastal Council and Regional Coastal Boards** – will coordinate how this strategy is implemented and work with the lead agents for each action to assess progress. The council will make sure this strategy is relevant and responds to regional issues in a statewide context. Boards will give advice on coastal development and management issues. A key mechanism for this is the coastal action plans, developed under the *Coastal Management Act 1995*. Boards will ensure that plans are implemented. The community is represented on both the council and all three boards.
- **Local government** – will play a major role in implementing this strategy, mainly through planning decisions. This includes developing municipal strategic statements and local planning schemes. Local government also acts as a management committee for many coastal reserves and offers infrastructure to enhance conservation, recreation, business and tourism objectives.
- **Delegated managers** – these include the Department of Sustainability and Environment, Parks Victoria and committees of management. They have a valuable role in managing coastal reserves and marine areas, and provide a vital link to the community by encouraging people to be part of coastal management and this strategy's vision.
- **Australian Government** – will continue coordinating and developing national policy and funding various programs in partnership with the states and territories. Other roles include ensuring Australia meets its obligations under international agreements.
- **Statutory authorities and key advisory bodies** – these include catchment management authorities and Parks Victoria. They will be responsible for coordinating many actions in this strategy on catchment and waterway management and recreational boating. Advisory bodies will also work with their stakeholders to give input.
- **Land managers** – these include delegated managers through management committees, local government, DSE, and Parks Victoria.

This strategy outlines key principles for planning and decision-making, and specific actions. It assumes that good, sound coastal management practices will continue, by building on existing knowledge and skills. Coastal managers need to be adaptive and their plans must consider many future scenarios, especially climate change.

Integration

There is overlap between this strategy's four themes, particularly where action is needed to address climate change through improved management and planning in both the marine and coastal environments.

New actions

2.3.1 Consider improvements to Victoria's marine institutional, planning, management and decision-making framework (*see Box 2*) (**DSE**, VCC, EPA, DPI, RCB, DOI) **state**.

3.11.1 Consider improvements to Victoria's coastal planning and management arrangements (**DSE**, **VCC**, RCB, DPCD, land managers) **state**.

Funding

Much of this strategy is about providing clear direction for managing the coast, and improving existing systems and processes for already-allocated resources. This should produce better-directed resources for coastal works. A key to successfully implementing the strategy is a strong commitment from stakeholders, and the efficient and effective use of funds. Funding will continue through annual budget processes.

There is further scope for investment from the government and private sectors, particularly in infrastructure development.

Several directions in this strategy – which suggest using Crown land on the coast for commercial activities – require competitive neutrality. Its managers or occupiers will not have any undue advantage over businesses on private land. Any funds generated from such activity will go towards managing coastal reserves in line with the Crown Land (Reserves) Act 1978.

Coastal managers will be encouraged to look into cost recovery and user-pays options for services and facilities, and consult with the community. This does not mean charging for visiting the beach, but possibly for ancillary services. Providing facilities for everyday beach use is clearly a public benefit.

New actions

5.1 Investigate opportunities for more sustainable funding models (**VCC**, **DSE**).

Implementation

This strategy offers a path for leadership and coordinated action by agencies and groups who are largely guided by existing laws. The Victorian Coastal Council will continue to coordinate the strategy between lead agents.

Outcome – to complete or commence all actions in this strategy.

New actions

5.2 Host regular state coastal conferences for all stakeholders, including the community (**VCC**, RCB, LG) **state**.

5.3 Host an annual forum to review progress in implementing this strategy and publish outcomes in Victorian Coastal Council annual reports (**VCC**, RCB, lead agents) **state**.

5.4 Evaluate the effectiveness and progress on the strategy's key indicators by 2013 (**VCC**, RCB, all lead agencies) **state**.

Monitoring and evaluation

Before 2013, the Victorian Coastal Council will evaluate this strategy and revise it if needed. All lead agents will be asked contribute to this process and show the impact of their actions.

Key indicators may be:

- housing and accommodation occupancy rate trends
- the new settlement boundaries that have been identified
- demonstrated greater public awareness of the marine and coastal environment
- larger community participation in coastal conservation
- the ratio of population growth compared to building growth
- the environmental condition indicators that inform other policy processes.

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Lead agent	Issue	Action
AAV	Indigenous heritage	3.4.1, 3.4.4
CMA	Artificial estuary entrance management	1.3.4
	Catchment management	1.4.1
	Integrated marine planning and management	2.3.3
	Water quality	2.3.3
	Wetlands and estuaries	1.3.4
Coast Action/Coastcare (DSE)	Education, awareness and stewardship	3.3.2
DPCD	Coastal acid sulphate soils	4.1.12
	Coastal development and townships – siting and design	4.1.9
	Planning for use and development	4.1.4, 4.1.5, 4.1.9, 4.1.10, 4.1.12
DPI	Fisheries and aquaculture	2.5.4, 2.5.5, 2.5.6, 2.5.8
	Marine threats and resources	2.5.5, 2.5.6, 2.5.8
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	Beach renourishment and protection	3.7.1, 3.7.2
	Capacity building	3.11.1, 3.11.2, 3.11.3, 4.2.1, 4.2.2
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	Coastal biodiversity	1.1.1, 1.1.2, 1.1.3, 1.2.3
	Caravan parks and camping grounds on coastal Crown land	3.9.1
	Desalination	4.5.1
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	Informed marine management	2.6.1, 2.6.3
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	Marine biodiversity	2.1.1
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Issue	Action
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Glossary

Activity nodes	existing developed areas in a modified and resilient environment most able to meet ecologically sustainable development principles for coastal planning and management.
Aquaculture	cultivation of fish, molluscs and other aquatic organisms in fresh or salt water for human use.
Beach renourishment	a technique used to restore an eroding or lost beach, involving placing appropriately sourced sand on the shoreline to widen the beach, for the purpose of protecting adjoining natural and man-made assets.
Biodiversity	the diversity of plants, animals and micro-organisms and the ecosystems they form.
Biofouling	the undesirable settlement and growth of microorganisms, plants, algae, and animals on submerged structures, especially ships' hulls. Biofouling also occurs on the surfaces of living marine organisms.
Biological diversity	the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity in species, between species and of ecosystems.
Bioregion	an area that reflects underlying environmental and ecological features.
Canal estate	any development that requires a constructed waterway, canal or water body that is then inundated by or drains to a natural water body.
Carbon sinks	natural or man-made systems that absorb and store carbon dioxide from the atmosphere, such as trees, plants and the oceans.
Catchment	the area of land that drains to a watercourse or estuary.
Climate change	changes in climate attributed to the human-induced increase in concentration of greenhouse gases in the atmosphere. Climate change involves increases in temperature, sea level, and increased frequency of severe weather events such as storms.
Coast (Victorian)	broadly defined in this strategy to include: the sea and the seabed to the state limit three nautical miles or 5.5 km; land and inland waters in the coastal catchment.
Coastal acid sulfate soils	found in low-lying coastal areas these contain high concentrations of iron sulfates. Relatively harmless in their undisturbed (submerged) state, these soils produce and release large quantities of sulphuric acid when exposed to oxygen through excavation, dredging or drainage, detrimentally impacting coastal and marine environs.
Coastal action plan	identifies strategic directions and objectives for use and development in a region or part of a region to facilitate recreational use and tourism, and to provide for protection and enhancement of significant features coast, including the marine environment.
Coastal dependent use	uses, and associated infrastructure, which depend on the coasts' natural assets and could not take place at any other location.
Coastline	generally where the land meets the sea.
Committee of management	appointed under the *Crown Land (Reserves) Act 1978* to manage reserved Crown land on behalf of the Minister. For coastal land, committees are either an agency, such as the local municipality, Parks Victoria or the Department of Sustainability and Environment, or appointed through an expression of interest process.
Crown land	public land not vested in a public authority, including land temporarily or permanently reserved under the *Crown Land (Reserves) Act 1978*.
District town	settlements with large and diverse populations. All essential services are provided to surrounding settlements. Variety of housing and moderate employment base. Popular visitor destinations, closer to Melbourne popular retirement destinations.
Ecosystem based management	An approach that seeks to manage human impacts in an ecosystem, at any scale from an ocean, to a bioregion, to a local estuary.
Ecological vegetation class (EVC)	one or a number of floristic (plant) communities that exist under a common regime of ecological processes in a particular environment. Approximately 300 EVCs have been described for Victoria.

Ecologically sustainable development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Ecologically sustainable use	the use of a species or ecosystem which allows it to naturally renew.
Ecosystem	a dynamic complex of organisms in a community and their associated non-living environment.
Effluent	a liquid, partially or completely treated or in its natural state, flowing from a water or sewage treatment plant.
Endemic	native to a particular area and not found naturally anywhere else.
Environmental flow	minimum flows of water (by volume and season) necessary to maintain all aquatic life.
Estuary	inlet or river mouth influenced by tides and freshwater inputs from a catchment.
Fire regime	the patterns of fire (frequency, intensity and seasonality) that have an impact on an ecosystem.
Foreshore	the coastal fringe; generally the land between the coastal road and the low water mark.
Freehold land	refer to 'private land'.
Geomorphology	science of the evolution of landforms and geological formations and the processes that shape them.
Habitat	the preferred location or 'home' for each species of plant and animal.
Hamlet	settlements with low, seasonal population levels, located in a singular urban zone. Generally no sewer connection or major services, and limited accommodation. High levels of holiday home ownership closer to Melbourne.
Historic building	site, building or group of buildings with aesthetic, historic, scientific or social value for present or future generations.
Indigenous people	people descended from Aboriginal tribes in Australia.
Indigenous species	species that occur naturally in a region.
Infrastructure	physical structures which facilitate use of the coast, such as roads, paths, toilet blocks.
Integrated coastal zone management (ICZM)	a framework that attempts to integrate planning and management in a region, such as the State of Victoria, across the land and sea interface and the private and public land interface, to treat the coastal zone as one biophysical entity.
Intertidal zone	area between low and high tide which is subject to daily changes in physical and biological conditions from tide movement (also known as littoral zone).
Marine national park	highly protected areas reserved and managed under the *National Parks Act 1975* that represent the range of marine environments in Victoria, and in which no fishing, extractive or damaging activities are allowed.
Marine pest	refer to 'pest'.
Marine sanctuary	small, highly protected areas reserved and managed under the *National Parks Act 1975* to protect special values, and in which no fishing, extractive or damaging activities are allowed.
Municipal strategic statement	a concise statement of the key strategic planning, land use and development objectives for a municipality that includes strategies and actions for achieving those objectives.
Nature-based tourism	tourism that relies on experiences directly related to natural attractions.
Pest	plant or animal which is or has potential to become a serious threat to indigenous flora and fauna.
Planning scheme overlay	additional requirements to a planning zone which provide for specific development issues or policy matters.
Planning scheme	legal instrument, developed by municipalities under the *Planning and Environment Act 1987*, that sets out policy and requirements for use, development and protection of land. It consists of a written document and any maps and plans it refers to.

Glossary

Private land	land under freehold tenure (privately owned).
Public land	unalienated land of the Crown (refer to Crown land) or land vested in a public authority.
Recreational nodes	areas outside established settlements on coastal public land that have priority for recreation and water related activities or improved facilities and can be developed consistent with ESD principles of this Strategy.
Regional centre	a settlement with large, diverse population and housing base with all essential services, including education, hospitals and interchange points for public transport. Large employment bases with strong connections with surrounding settlements.
Registered Aboriginal Parties (RAPs)	determined by the Aboriginal Heritage Council with important roles and functions in managing and protecting Aboriginal cultural heritage in Victoria under the *Aboriginal Heritage Act 2006*.
Remnant vegetation	remaining natural vegetation.
Rural district	settlement with a cluster of housing on smaller rural sized lots in non-urban zones. Generally they provide no water or sewer connections and no services.
Sediment	insoluble material suspended in water that contains mainly particles derived from rock, soil and organic material.
Sewage	household and commercial wastewater containing human or trade waste.
Sewerage	the system which facilitates the collection, transport, treatment and discharge of sewage.
Stakeholders	individual or group with a vested interest in or affected by a project or process.
Stormwater	runoff from land during and following rain. Stormwater removes accumulated material including litter, soil, nutrients, pathogens, chemicals, pesticides, oils and grease.
Subdivision	division of land into two or more parts which can be separately sold.
Subsidence	the sinking or lowering of the earth's surface.
Sustainability	refer to 'ecologically sustainable development'
Town	a settlement with population levels that vary in line with general services. Diversity of demography and housing. Moderate to high levels holiday home ownership. Popular retirement/lifestyle destination closer to Melbourne. Basic medical facilities. Strong employment relationship with larger settlements nearby.
Village	a settlement with moderate population levels and seasonal fluctuations. Access to basic services. Sewer connections vary. Moderate to high levels of holiday home ownership in settlements closer to Melbourne or regional centres.
Wetland	land where saturation by water is the dominant factor for soil type and plant and animal communities, such as, tidal areas, saltmarshes and mangroves.

Acronyms

AAG **Aquaculture Advisory Group**
Provide advice to the Minister for Agriculture about the promotion and development of Victorian aquaculture.

AAV **Aboriginal Affairs Victoria**
Central point of advice on all aspects of Aboriginal affairs in Victoria.

BoM **Bureau of Metrology**
Observes Australian weather and climate and provides meteorological, hydrological and oceanographic services.

CCB **Central Coastal Board**
See 'regional coastal boards' on page 46

CES **Commissioner for Environmental Sustainability**
An independent body that advocates, audits and reports on environmental sustainability.

CMA **Catchment Management Authority**
Established under the *Catchment and Land Protection Act 1994* to achieve integrated and sustainable catchment management. There are five coastal CMAs in Victoria.

CoM **Committee of Management**
Appointed to manage, maintain, improve and control coastal Crown land reserves.

CSIRO **Commonwealth Scientific and Industrial Research Organisation**
Australia's peak research organisation which provides scientific solutions to industry, governments and communities around the world.

DEECD **Department of Education and Early Childhood Development**
Provides policy and planning for the delivery of education across the state.

DIIRD **Department of Innovation, Industry and Regional Development**
Provides leadership for Victorian economic and regional development.

DOI **Department of Infrastructure**
Main provider of essential infrastructure in Victoria, such as commercial ports, channels, and roads.

DPC **Department of Premier and Cabinet**
Provides a leadership role in the identification and implementation of the strategic directions of Victorian Government.

DPCD **Department of Planning and Community Development**
Responsible for land use planning and environmental assessment.

DPI **Department of Primary Industries**
Promotes the sustainable development of primary industries including fisheries, agriculture, forests, petroleum, minerals and energy

DSE **Department of Sustainability and Environment**
Responsible for the sustainable management of public land, water resources, climate change, bushfires, forests and ecosystems.

EPA **Environment Protection Authority**
An independent statutory authority set up to prevent and control pollution on land, in water and air, and industrial noise.

GCB **Gippsland Coastal Board**
See 'regional coastal board' on page 46.

HV **Heritage Victoria**
Manage historic shipwrecks and relics recommend places and objects for inclusion in the Victorian Heritage Register.

IMCRA **Interim Marine and Coastal Regionalisation for Australia**
Spatial framework for classifying Australia's marine environment into bioregions.

LG **Local government**
Significant influence over coastal planning and management through planning controls on private and public land, local by-law regulations and many are appointed committees of management over foreshore areas. There are 22 coastal municipalities in Victoria.

MAV **Municipal Association of Victoria**
The peak representative and advocacy body for Victoria's municipal councils.

MSV **Marine Safety Victoria**
Coordinates waterway management and vessel standards. Funds the improvement and development of associated infrastructure.

MW **Melbourne Water**
Manages Melbourne's water supply catchments, sewage treatment, rivers, creeks and major drainage systems throughout the Port Phillip and Westernport region.

PV **Parks Victoria**
Established under the *Parks Victoria Act 1998* to provide services to the State for the management of parks, reserves, and other land. Parks Victoria are delegated managers for approximately 70 per cent of coastal Crown land, as well as marine national parks and marine sanctuaries.

RCB **Regional Coastal Board**
See 'regional coastal boards' page 46.

RTB **Regional tourism body**
Bodies that advocate, promote and support the development of regional tourism.

SEPP **State Environment Protection Policies**
Prepared under the *Environment Protection Act 1970* to provide the leadership, legal and statutory basis for improving water quality in the marine environment.

TV **Tourism Victoria**
Develops and markets Victoria as a premium tourist destination for Australian and international travellers.

VCC **Victorian Coastal Council**
See 'Victorian Coastal Council' on page 46.

VMSC **Victorian Marine Science Consortium**
A consortium of five Victorian tertiary institutions which aims to foster marine science research and teaching.

WCB **Western Coastal Board**
See 'regional coastal boards' on page 46.

References

"I have a holiday house in Torquay – and it's now like a suburb of Melbourne. People used to think beach-side was yucky – now in the last 25 years everyone wants a piece of it."

Elwood resident

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Appendix A: International, national and state conventions and strategies

"Even though we enjoy tourism, let's keep it as natural as we can. We should be limiting development. If we care about tourism then we need to look after the environment too."

Elwood resident

International

- Agreement for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment between the Government of Australia and the Government of Japan (JAMBA), 1974.
- Agreement for the Protection of Migratory Birds and their Environment between the Governments of Australia and the People's Republic of China (CAMBA), 1986.
- Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (SPREP), 1986 and related protocols.
- Convention for the Protection of the World Cultural and Natural Heritage, 1972.
- Convention on Biological Diversity, 1992.
- Convention on International Trade in Endangered Species (CITES), 1973.
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), 1979.
- Convention on the Conservation of Nature in the South Pacific (Apia Convention), 1976.
- Convention on Wetlands of International Importance (Ramsar Convention), 1971.
- Food and Agriculture Organization of the United Nations (FAO) International Code of Conduct for Sustainable Fishing, 1995.
- Global Program of Action for the Protection of the Marine Environment From Land-Based Activities, 1995.
- International Convention for the Prevention of Pollution from Ships (MARPOL), 1973/78.
- International Convention for the Safety of Life at Sea (SOLAS), 1974.
- International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC), 1990.
- International Convention on Prevention of Marine Pollution by Dumping of Wastes and other Matter (London Dumping Convention), 1972.
- Kyoto Declaration and Plan of Action on the Sustainable Contribution of Fisheries to Food Security, 1997.
- South Pacific Regional Environment Program (SPREP) Protocol concerning co-operation in Combating Pollution Emergencies in the South Pacific Region, 1986.
- South Pacific Regional Environment Program (SPREP) Protocol for the prevention of Pollution of the South Pacific Region by Dumping, 1986.
- The Jakarta Mandate on Marine and Coastal Biological Diversity, 1995.
- The United Nations Convention on the Law of the Sea (UNCLOS), 1982.
- UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995.
- United Nations Commission on Environment and Development (UNCED), 1992.
- Agenda 21, Chapter 17 (Covers the protection and use of oceans, seas and coastal areas), 1992.
- United Nations Framework Convention on Climatic Change, 1992.

National

- Australia's Ocean Policy, 1998.
- Environmental Education for a Sustainable Future: National Action Plan 2000.
- Good Practice Guidelines for Integrated Coastal Planning, 1998.
- Living on the Coast: Commonwealth Coastal Policy, 1998.
- National Biodiversity and Climate Change Action Plan 2004–2007.
- National Cooperative Approach to Integrated Coastal Zone Management – Framework and Implementation Plan, 2006.
- National policy for the translocation of live aquatic organisms – Issues, principles and guidelines, 1999.
- National Strategy for Ecologically Sustainable Development, 1992.
- National Strategy for the Conservation of Australia's Biological Diversity, 1996.
- National Strategy for the Management of Coastal Acid Sulfate Soils, 2000.
- National Strategy on Aquaculture, 1994.
- The Framework for Marine and Estuarine Water Quality Protection, 2002.
- The Inter-Governmental agreement on the Environment (IGAE), 1992.
- The National Greenhouse Strategy, 1998.

Appendix A (cont.)

I'm concerned about…
"The chance we will lose the natural beauty of the Victorian coastline by over-development. I think it is people who will have a negative impact on the coastline by overdeveloping and not leaving it to its natural beauty."

Coastal resident

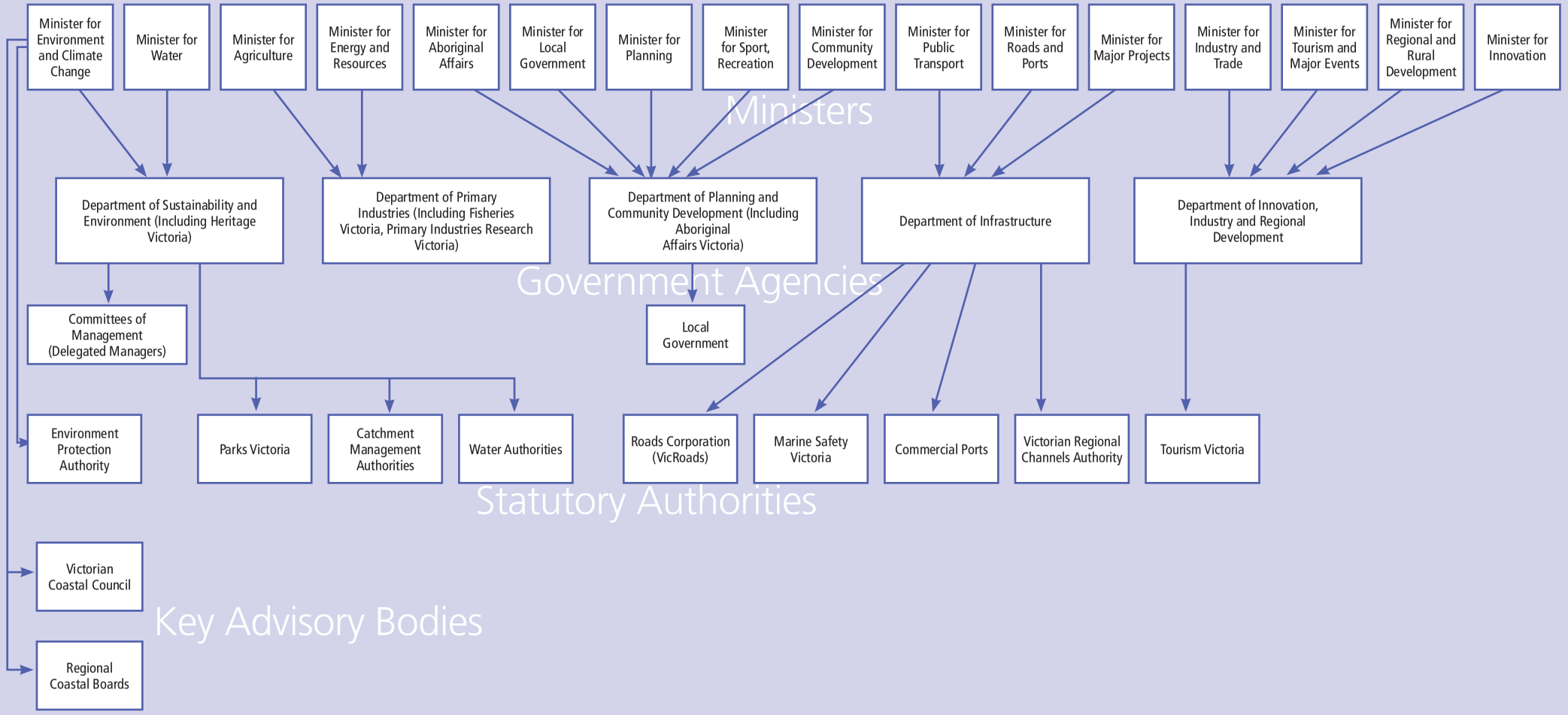
State

- Caravan and Camping Parks on Coastal Crown Land – Reference Group Report 2006.
- Coast Action Strategy 2004–2010.
- Coastal Spaces Landscape Assessment Study – State Overview Report, 2006.
- Coastal Spaces – Recommendations 2006.
- Victorian Trails Strategy 2005–2010.
- Growing Victoria Together – A vision for 2010 and beyond.
- Landscape Setting Types for the Victorian Coast, 1998.
- Victoria's Nature Based Tourism Strategy Draft Plan 2007–2011.
- Our Environment, Our Future – Sustainability Action Statement 2006.
- Siting and Design Guidelines for Structures on the Victorian Coast, 1998.
- State environment protection policies.
- Victorian Heritage Strategy, 2006.
- Victorian Heritage Strategy: Shipwrecks, 2005.
- Victoria's Biodiversity: Directions in Management, 1997.
- Victoria's Biodiversity: Our Living Wealth, 1997.
- Victoria's Biodiversity: Sustaining Our Living Wealth, 1997.
- Native Vegetation Management: A Framework for action, 2002.
- Victorian Planning Provisions.
- Victorian Ports Strategic Study, 2001.
- Victoria's System of Marine National Parks and Marine Sanctuaries – Management Strategy 2003–2010.
- Victorian Flood Strategy (in preparation)

Local/Regional

- Coastal action plans – including:
- Anglesea Coastal Action Plan
- Boating Coastal Action Plan for the Central Region
- Central South West Estuaries Coastal Action Plan
- Central South West Regional Coastal Action Plan
- Corio Bay Coastal Action Plan
- Estuaries Coastal Action Plan – Gippsland
- Gippsland Boating Coastal Action Plan
- Gippsland Lakes Coastal Action Plan
- Glenelg Coastal Action Plan
- Integrated Coastal Planning for Gippsland Coastal Action Plan
- Lorne Coastal Action Plan
- Mornington Peninsula – Mt Eliza to Portsea Coastal Action Plan
- Moyne Coastal Action Plan
- Skenes Creek to Marengo Coastal Action Plan
- South West Estuaries Coastal Action Plan
- South West Victoria Regional Coastal Action Plan
- Warrnambool Coastal Action Plan.
- Linking people and spaces, 2002: A strategy for Melbourne's open space network.
- Fisheries and park management plans and strategies.
- Great Ocean Road Region – A Land Use and Transport Strategy, 2004.
- Management plans for foreshore areas and national parks and reserves.
- Metropolitan Strategy for Melbourne (i.e. Melbourne 2030).
- Planning schemes – Municipal Strategic Statements.
- Regional catchment strategies and catchment action programs.

Appendix B: Relationships and lines of responsibility between lead agents



There are other key bodies actively involved in implementing the Victorian Coastal Strategy in various partnerships. These include but are not limited to the Fisheries Co-Management Council, the Victorian Catchment Management Council, the Aboriginal Heritage Council, Life Saving Victoria and the Royal Life Saving Society, Boating Industry Association, Historic Shipwrecks Advisory Committee, Australian Government, research and academic institutes, community and Coast Action/Coastcare groups, non-government organisations, business and industry peak groups.

Have your say on the 2007 draft Victorian Coastal Strategy before December 31 2007

The Victorian Coastal Council invites you to help shape this strategy. You can attend a workshop during November, make an online submission or post your comments to Council's office. For more information about this and about workshops in your area, go to www.vcc.vic.gov.au.

In commenting on the strategy, you might like to consider:

- What do you expect it to do?
- Do you agree with the vision?
- Is it clear how it will be used and applied?
- What other agencies or organisations could help implement the actions?
- Is the direction on climate change clear?
- Is there clear direction for appropriate development and use of the coast?
- Are there any other important coastal issues to be considered?
- What actions need to be given priority?
- Are there any areas for further action or improvement in general?

Please send your comments to:

Victorian Coastal Strategy
Reply Paid 500
East Melbourne, Victoria 8002
submissions@vcc.vic.gov.au