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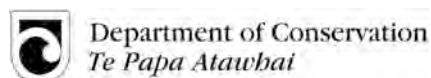
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## **Coastal planning and conservation: what next for Victoria's eastern coastline?**

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### **Abstract**

This paper examines the existing models for coastal planning for Victoria's eastern coastline. Integrated Coastal (Zone) Management (ICM) has been a popular model in Australia since 2001, but has achieved limited success. It has provided overall policy statements that may or may not result in strategic planning for environmental issues at the local level for Victoria's eastern coastline. More recently, intensification of building in designated townships has driven strategic planning that claims to consider ICM. This planning has time horizons of 15 to 25 years. Environmental threats and concerns are biodiversity, retention of vegetation quality, encroachment on wetlands, visitor pressure, impacts on Ramsar listed wetland sites, changes to coastal processes, water quantity in streams and estuaries, climate change and water quality. Some environmental concerns and threats are addressed under previous planning with strict targets linked to beneficial uses like the State Environment Protection Policy (Waters of Victoria) which sets out water quality targets. This paper looks at the above environmental threats to assess if they have been addressed in strategic planning for Victoria's eastern coastline. It makes recommendations on how sustainability and environmental considerations can be further strengthened in coastal planning for the area.

**Key words:** Australia, Coastal planning, conservation, integrated coastal management, strategic planning, Victoria

## Introduction

The stark reality for Victoria's coastline is the relative absence of development in areas between townships. Statutory planning has sought to halt strip development and concentrate building in key areas termed "activity nodes". These activity nodes have existing infrastructure and the proposal is to intensify development within them (Gippsland Coastal Board 2002). In particular the Victorian Coastal Strategy suggests coastal development be directed away from sensitive areas and managed within defined existing settlements (The State of Victoria, Victorian Coastal Council 2002). Statutory planners attempt to keep up with controls and sustainability for their local government areas against an ever increasing number of applications for building and development.

96% of the land immediately adjacent to the seawater edge on the coastline is held by the Victorian Minister for Environment and Conservation on behalf of the Crown for all Victorians. One third of this coastal Crown land is reserved as national park under the National Parks Act 1975 and managed by Parks Victoria. The majority of the remaining coastal Crown land is reserved under the Crown Land (Reserves) Act 1978 for a variety of public purposes; generally for the protection of the coast. Management of these reserves is usually by a Committee of Management, appointed by the Minister. Only 4% of the immediate coastline is privately owned (The State of Victoria, Victorian Coastal Council, 2002).

This paper looks at the coastal planning for the Eastern Coast of Victoria, some 40% of Victoria's coast. This area, depicted in Figure 1, is 700 kilometres of coastline from San Remo near Phillip Island to the New South Wales border, including the Gippsland Lakes. For the purposes of this paper the definition of the Victorian coast used by the Victorian Coastal Strategy 2002 will be used. This defines the Victorian Coast as including the sea and the seabed to the State limit of three nautical miles or 5.5 kilometres; and land and inland waters within the coastal catchment (The State of Victoria, Victorian Coastal Council 2002). Of the land and inland waters within the coastal catchments approximately 31% is privately owned. There are six marine national parks and a marine sanctuary at Beware Reef which cover approximately 5 percent of Victoria's eastern coast (Gippsland Coastal Board 2002).

Figure 1 - Map of Victoria, Australia depicting the area of Victoria's Eastern Coastline



As stated above, out of 2000 kilometres of coast that makes up Victoria's coastline, the area to the Eastern Coast is approximately 40% of the Victorian coast. The value of this area to the community continues to grow as there is movement of households from the city environment to the coast, the so-called "sea change" phenomenon within Australia. There is evidence of a link between residential property premiums and proximity to the Victorian coast. Residents and visitors pay premiums in land prices or accommodation rates respectively. Overnight visitors to the coast in Victoria pay a premium that equates to \$700 million per annum (Spillar Gibban Swan Pty Ltd cited in The State of Victoria, Victorian Coastal Council 2002).

This value to the community of the coast has prompted investigation into planning for the coast and the extent to which major environmental concerns have already been addressed by existing planning. Over 80% of the Victorian population visited the coast in 2002 (The State of Victoria, Victorian Coastal Council 2002).

### **PLANNING MODELS FOR VICTORIA'S EASTERN COASTLINE**

Integrated Coastal Zone Management (ICM) was introduced into Australia following its adoption as part of Agenda 21 at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992. ICM seeks to integrate the planning and management of the coastal environment to produce a holistic plan for a coastal area. In practice this involves the integration of planning and management by the coordination of activities of the various government agencies and nongovernment organisations in the coastal zone. It also involves coordination of the coastal and marine activities at the National, State and local government levels (The State of Victoria, Victorian Coastal Council 2002). This is important in Australia with its seven states and territories, and 78 local government entities.

In any ICZM plan, environmental issues become one consideration while stakeholders represent many conflicting objectives. However, it would be expected that explicit recognition of environmental issues is a forerunner to a successful plan. As noted by Varghese et al. (2008:73) "a well designed ICZM plan for an area can foster socio-economic growth while preserving the ecological balance". In Victoria, one of the southern states of Australia, ICM is primarily expressed by the Coastal Strategy for Victoria 2002, a document accepted at the National level of Australia.

The Coastal Strategy of Victoria 2002 seeks to establish principles that underpin decision making that protects the public interest values of the coast. It is a key document and guides all decision making. The strategy defines relationships and lines of responsibility for Lead Agents responsible for the coast of Victoria. Most of these lead Agents are government agencies except for key advisory bodies. The key advisory bodies are the overarching Victorian Coastal Council and three Regional Coastal Boards. All of these entities are directly responsible for reporting to the Minister for the Environment (The State of Victoria, Victorian Coastal Council 2002).

Victoria's eastern coastline has the advisory body of the Gippsland Coastal Board which has produced a series of plans commencing with the Gippsland Lakes Coastal Action Plan in 1999. The Gippsland Coastal Board came into existence prior to the production of the Coastal Strategy for Victoria. Its primary function is to develop Coastal Action Plans. It was formed in 1996 under the Coastal Management Act 1995 (Gippsland Coastal Board 2003).

The Gippsland Coastal Board prepared the Gippsland Lakes Coastal Action Plan in 1999. This document details the actions to be undertaken by a wide range of organisations, and also sets the long-term objectives and strategic direction for land managers in the Gippsland Lakes region and the wider catchment. The Gippsland Coastal Board went on to complete the Integrated Coastal Planning for Gippsland – Coastal Action Plan in 2002 and the Draft Gippsland Estuaries Coastal Action Plan in 2006. The Gippsland Coastal Board is also involved in other catchment plans that have impact on private land. An example of this is the West Gippsland Native Vegetation Plan 2003, developed by the West Gippsland Catchment Group.

Planning also occurs in Victoria to regulate and manage the use and development of land in Victoria. Strategic planning involves setting policies and frameworks for infrastructure so that investment can occur. Statutory planning is a regulatory function that involves setting laws, policies and regulations for land. These become state planning regulations (Planning Institute Australia 2004). Local planning overlays are required to implement state planning regulations and environmental overlays for sensitive environmental areas have been implemented. Local policies and planning schemes have been developed and in the case of Victoria's Eastern Coast, overlays of the broad land types and allowed land use have been prepared in Municipal Strategic Statements (MSS).

More recently, Urban Development Frameworks have been developed to translate the broad aims of Municipal Strategic Statements (MSS) and planning schemes to practical urban design action at the local level. An Urban Design Framework is a vehicle to help a community to set an overall direction for a particular place or locality. A series of 19 Urban Design Frameworks have been developed for coastal towns along Victoria's Eastern Coast in the last two years. Titled Urban Development Framework for Gippsland Towns, all of these plans have been established predominately with the objective, under the Victorian Coastal Strategy, of providing "activity nodes". Development appears to be the overarching objective of these plans. Fundamental to the Urban Development Framework is the adoption of a long term view. The time frame that has been adopted for the Urban Development Framework for Gippsland is 15 to 25 years.

A further report to the Urban Development Frameworks has been developed as an ancillary component. It is a desktop study to provide some guidance for between settlements along the Eastern coastline and the future development. The Between Settlements report looks at the adequacy of local Planning Schemes to address future planning issues. It concludes that the local planning schemes are not adequate, especially with regard to future siting of tourism developments. This

study covers the coastline area of discussion under this paper which is some 40% of Victoria's coastline (East Gippsland Shire Council, Wellington Shire Council and Department of Sustainability and Environment 2007a).

## ENVIRONMENTAL CONCERNS AND THREATS

The environmental issues of the coast and coastal planning are well known throughout Australia. Biodiversity, retention of vegetation quality, encroachment on wetlands, visitor pressure, impacts on Ramsar listed wetland sites, changes to coastal processes, water quantity in streams and estuaries, climate change and water quality issues from diffuse sources in the catchments are major environmental issues.

Biodiversity is the retention of diversity of fauna and flora in the coastal area. This includes the marine environment using the definition for coast found in the Victorian Coastal Strategy 2002. It is important to include ecological complexes for fauna and flora, diversity within species, and ecosystems (State of Victoria, Victorian Coastal Council 2002). Retention of vegetation quality is related to biodiversity. It is now possible to get information on Ecological Vegetation Classes for most of Victoria including the percentage of remaining indigenous vegetation.

Encroachment on wetlands is listed here as a separate issue as large sections of wetlands remain well protected, however incremental destruction of wetlands continues. This usually involves the filling in of wetlands.

Visitor pressure on the coast has been largely undefined and is a "sleeping issue" in the environmental stakes. It was estimated in 1999 that over 70 million visits are made to the coast each year by Victorians alone (TQA Research Pty Ltd 2000). The impacts on the coast from visitor pressure range from the building of infrastructure to wildlife disturbance from pet dogs.

Impacts on Ramsar listed wetlands have been singled out in this paper because of the international obligations associated with these sites. The obligation relates to the integrity of the ecological processes of these wetlands and other significant criteria.

Changes to coastal processes have always been debated as natural forces give way to changes in coastal processes. The issue referred to here is man made changes affecting coastal processes. An example of this is changes to sand bars and embankments protecting estuaries.

Water Quality in Victoria has been well monitored over time with the Water Quality Network for Victoria. The establishment of beneficial uses for water has paved the way for the establishment of targets for water quality. Point sources of pollution leading to changes in water quality can be distinguished from diffuse sources. Environmental flows for streams will alter the effects of water quality, particularly from point sources.

More recently, climate change has been an identifiable issue in planning even though evidence of its existence has been in literature for 10 to 15 years. Climate change is referred to by Coastal Strategy of Victoria 2002 as the largest issue for the coast. This selection of environmental concerns and threats when addressed would substantially improve the coastal environment. A review of the current strategic plans for the Eastern Coast of Victoria was undertaken to assess which of the strategies and plans have the environmental concerns as a primary objective.

## EXPLICIT RECOGNITION OF ENVIRONMENTAL ISSUES

Fundamental to addressing the environmental concerns of the coast is the explicit recognition of environmental issues in the objectives of the strategic plans. Table 1 indicates an analysis of environmental issues for six major types of strategic plans for Victoria's eastern coast. Management plans across both private and public land have been selected in this analysis.

Table 1 – Explicit recognition of environmental issues in the objectives of a strategic plan

Plan:	GLCAP	Vic coastal strategy	ICP-CAP	Draft Estuaries Coastal Action Plan	SEPP Waters of Victoria	Urban Dev Frame
<b>Date of Strategic Plan:</b>	1999	2002	2002	2006	1988	2005 to 2007
<b>Environmental Concern:</b>						
Biodiversity	←	✓	→←	✓	x	←
Retention of Vegetation Quality	←	✓	→←	✓	x	←
Encroachment on wetlands	x	x	→←	✓	x	→←
Visitor Pressure	x	x	→←	x	x	✓
Impacts on Ramsar wetland sites	→←	x	→←	✓	✓	←
Changes to coastal processes	→←	x	→←	→←	x	←
Water Quality in streams & estuaries	→←	→←	x	✓	□	←
Climate change	←	x	x	x	x	✓
Water quality, includes actions for catchment management of nutrients	←	→←	x	→←	✓	←

KEY: ✓ = Explicitly addressed as a major objective; ← = Addressed to a minor extent  
 →← = Addressed to some extent; x = Not addressed;  
 □ = Major changes to this environmental concern resulting from the strategic plan

Abbreviations for Table 1:

**GLCAP:** Gippsland Coastal Board 1999 *Gippsland Lakes Coastal Action Plan*;

**Vic Coastal Strategy:** The State of Victoria, Victorian Coastal Council, 2002 *Victorian Coastal Strategy*;

**IPC-CAP:** Gippsland Coastal Board 2002 *Integrated Coastal Planning for Gippsland- Coastal Action Plan*;

**Draft Estuaries Coastal Action Plan:** Gippsland Coastal Board & West Gippsland Catchment Management Authority 2006 *Draft Estuaries Coastal Action Plan*;

**SEPP Waters of Victoria:** Env. Protection Agency 1988, *State Environment Protection Policy (Waters of Victoria)*;

**Urban Dev Frame-** Urban Development Frameworks for Gippsland Towns, 2005 - 2007

Table 1 shows the lack of consistency across the six plans in objectives explicitly addressing the environmental concerns. The overarching Victorian Coastal Strategy 2002 explicitly refers to Biodiversity and Retention of Vegetation as part of its fundamental objectives. The other environmental issues, including climate change, are not so comprehensively addressed.

Coastal Action Plans are reported as the implementation of the Victorian Coastal Policy with a key function to implement “activity nodes” and avoid strip development along the coast (Connell and Wagner, 2006). The two earlier Coastal Action Plans reviewed in Table 1 have environmental concerns that are addressed to some degree. They rely on impact development rating for environmental and physical impact of development proposals in conjunction with local structure planning processes. Some of the criteria appear to be less stringent for the areas outside existing townships. The approach is an operational planning methodology.

The other Coastal Action Plan reviewed, the Draft Gippsland Estuaries Coastal Action Plan, which is currently a draft plan, addresses the 25 estuaries along the Eastern coast. These areas are small and discrete catchments. Many of these catchments are less than 15 square kilometers. While the draft plans address nearly all of the environmental issues with a comprehensive approach, the jurisdiction is for small catchments of public land. Notably this plan does not have climate change as one of its objectives.

The State Environment Protection Policy (Waters of Victoria) covers the whole of Victoria and has explicit objectives relating to water quality to provide the statewide statutory water policy framework. In the case of point sources of pollution for streams and estuaries, beneficial uses are protected with enforcement. In the case of catchments and diffuse pollution, the emphasis is on Catchment Management Authorities and Coastal Action Plans to put in place actions that will meet the specified beneficial uses. One such Coastal Action Plan, The Gippsland Lakes – Coastal Action Plan 1999 does not have water quality as an explicit objective. The draft estuaries plan does include an explicit objective relating to water quality, however this plan is for smaller areas of public land.

The Urban Development Frameworks in Table 1 address some environmental concerns to a minor extent. Their objectives relate to protection of significant environmental sites and confining development to “access nodes” where there is already significant development and infrastructure.

Climate change does not appear in environmental objectives at the strategic level in most of the plans reviewed. Its appearance in Urban Design Frameworks as a key issue is encouraging. Climate change studies have been undertaken at the request of the Gippsland Coastal Board. These studies are restricted to effects on wind surge and sea level change. They start to suggest effects on wetlands and coastal processes.

In summary, ICM for the Victorian Coast translates environmental concerns as objectives from policy to planning predominantly for the smaller parcels of public land. Water quality has beneficial uses objectives that have been prescribed as objectives with a review mechanism. Urban Development Frameworks and local planning schemes in the area offer an impact assessment and operational planning response. The analysis in Table 1 shows the State Environmental Protection Policy - Waters of Victoria as the only plan producing a major change to the environmental concerns as a result of a strategic plan. This gives plenty of scope for frameworks for the future.

## **FRAMEWORKS FOR THE FUTURE**

The long history of management planning in Victoria, experience in statutory planning and databases of natural resource information, both at the State and Commonwealth levels, give optimism to addressing environmental issues for the eastern coast of Victoria.

### **Explicit objectives for the environment in strategic planning**

Fundamental to the success of addressing environmental issues is the establishment of strategic planning with the environmental concerns as its explicit objectives. It is clear that the Victorian Coastal Strategy requires establishment of current strategic planning with these explicit objectives under its broad policy framework. Unless these explicit objectives are put into strategic planning that covers land use and the built environment, government officers acting for the environment will be reduced to making superficial comments on options that are already well developed. An example of this is Urban Development Frameworks that are a visionary picture of development for 15 to 25 years in advance.

### **Decision support framework**

It is questionable, whether the existing natural resource data, models and assessment tools are being used to their maximum effect. The Commonwealth's Resources and Assessment Report of 2002 is an extensive resource on catchments, estuaries and rivers in Australia. It includes models of estuaries and catchments that are also reflected in extensive state databases.

This paper points to the lack of environmental issues explicitly expressed as objectives in plans. This indicates that resource data, models and predictive material may be under utilized as practitioners are forced into more reactive than proactive approaches.

Decision Analysis is a process that allows examination of decisions in a structured and efficient manner (Heizer and Render 2006). Linking of databases to a structured framework of attributes that would need to be considered under a certain planning scenario could provide a valuable tool. The important aspect of decision analysis that would be useful is the generation of options and analysis. Using decision trees and influence diagrams would allow detail of possible options and identify the best decision to make. Decision Analysis has the capacity to use powerful analytical techniques developed at universities over the past thirty years (Heizer and Render 2006). In the case of the Victoria's eastern coast, key biophysical process drivers would be compared to natural resource systems and management issues.

In particular, the built environment is an issue having a large effect on estuaries throughout Australia (Commonwealth of Australia 2002). The area that this paper addresses has some of the most pristine

estuaries in Australia. This issue alone points clearly to the need to include catchments and private land on the coast in a planning framework with explicit objectives for the environment at a strategic level that allows maximum inputs of data, resources and models. The future issues of energy and water requirements and associated impacts on the coast further exacerbate this requirement.

### **Strategic Environmental Assessment**

In 2001, the European Union legislated for Strategic Environmental Assessment (SEA) to be implemented by member states by 21 July 2004. A number of steps must be undertaken as part of a strategic environmental assessment (Sheate, Byron and Smith 2004). This also brought into question what type of plans would need to undergo a SEA in the European Union countries. With this directive now applying to areas including land use planning, water and energy, it is of merit to look at methodologies that may be useful to Australia.

The concept of SEA is attractive for environmental issues and Victoria's eastern coast as it has the capacity to analyse after a study has been completed and provide a feedback loop. Criteria could also then be identified for monitoring over time. Such is the case of Urban Development Framework documents for Victoria's eastern coast that have already been produced with 15 to 25 year timeframes. It is of note that the only plan analysed in this paper that fitted the criteria of producing major changes to an environmental issue over time has been the State Environmental Protection Policy - Waters of Victoria. This framework has been declared since 1988 with objectives and monitoring over time. It would appear that the approach of feed back loops and designated criteria is successful.

### **The Future**

As time increases, the pressures on the catchments of estuaries and the coastline in Australia will rapidly escalate and new models of planning will be required. The built environment, energy, water and climate change are some of the major future pressures. This paper calls for new models of planning to be brought forward as quickly as possible to address environmental issues and strategically target investment.

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