

FAMILY RANUNCULACEAE

Ranunculus inundatus
Ranunculus rivularis

FAMILY RESTIONACEAE

Empodisma minus
Hypolaena fastigata
Leptocarpus tenax
Lepyrodia gracilis
Lepyrodia muelleri
Lepyrodia scariosa
Restio complanatus
Restio dimorphus
Restio fastigiatus
Restio fimbriatus
Restio gracilis
Restio pallens
Restio tetraphyllus

FAMILY RUTACEAE

Boronia parviflora

FAMILY SCROPHULARIACEAE

Bacopa monnieri
Mimulus repens

FAMILY THELYPTERIDACEAE

Cyclosorus interruptus

FAMILY TYPHACEAE

Typha domingensis
Typha orientalis

FAMILY XANTHORRHOEACEAE

Xanthorrhoea resinosa

FAMILY XYRIDACEAE

Xyris complanata
Xyris gracilis
Xyris juncea
Xyris operculata

A PLANNING METHODOLOGY FOR PROTECTING SALTMARSH, MANGROVE AND SEAGRASS WETLANDS IN NEW SOUTH WALES AND VICTORIA

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ABSTRACT

A planning methodology is outlined for the integrated protection of saltmarsh, mangrove and seagrass wetlands in New South Wales and Victoria. The planning methodology consists of a number of steps supported by statewide planning and statutory policy and wetland mapping to identify and locate these important wetlands.

The planning methodology comprises protective land use and waterway zoning and development control provisions for managing new land and waterway uses and developments. Followed by the development of management plans that can manage existing land and waterway uses and developments, which may affect saltmarsh, mangrove and seagrass wetlands.

Keywords: saltmarsh, mangrove, seagrass, wetlands, planning, methodology, zoning, development, management.

INTRODUCTION

Saltmarsh, mangrove and seagrass vegetation communities are susceptible to a range of natural and anthropogenic processes that can alter their distribution and survival. These processes can be associated with new or existing land uses and development activities occurring within the

catchment of the wetland or within the wetland itself. New land uses can include residential, industrial and recreational use of land while new development can include construction of roads, drains and building works.

Existing land uses can include farming activities and residential suburbia while existing development can include stormwater and sewerage treatment infrastructure, dams and road pavements. Planning and management authorities have grappled with these processes for many years. However, the tools used to deal with these processes has relied upon statutory and non statutory instruments associated with planning and conservation legislation which may deal with new land uses and developments adequately, but not necessarily existing land uses and developments.

This paper sets out to express a planning methodology that can be used by planning and management authorities to protect saltmarsh, mangrove and seagrass communities in an integrated manner. The planning methodology is not new, but needs to be clearly outlined to demonstrate that implementing such a protective planning methodology is feasible and practical. The methodology can be implemented under any legislative jurisdiction and examples of how it can be implemented in New South Wales and Victoria are provided.

It is important to note that although this paper deals specifically with saltmarsh, mangrove and seagrass wetlands, the planning methodology is just that, a methodology that can be applied to a broad range of wetlands both coastal and freshwater. However, this paper has focused on estuarine wetland communities for the purposes of clarity in demonstrating why and how the planning methodology can be applied to provide integrated protection for saltmarsh, mangrove and seagrass wetlands.

PLANNING METHODOLOGY

The planning methodology for protecting saltmarsh, mangrove and seagrass wetlands is predicated on the ability to map existing wetland areas. The location of saltmarsh, mangrove and seagrass vegetation needs to be identified in order to apply some of the outcomes from implementing the planning methodology.

The planning methodology involves a tiered structure, which utilises statutory and non-statutory mechanisms to provide the integration for protecting saltmarsh, mangrove and seagrass wetlands.

The planning methodology for integrated protection of saltmarsh, mangrove and seagrass wetlands is outlined in Table 1. The foundation of the planning methodology is supported by policies at a State Government level such as the NSW Coastal Policy and Wetland Management Policy and the Victorian Coastal Strategy and Biodiversity Strategy. These statewide policies are in turn supported by statewide statutory controls such as State Environmental Planning Policy no. 14 - Coastal Wetlands (SEPP 14) in NSW (Department of Environment and Planning, 1985) and State

Environment Protection Policy - Waters of Victoria (Environment Protection Authority, 1988).

The first step in applying the planning methodology involves establishing a protective zoning of the wetland which can control new land and waterway uses, which may conflict with or damage the wetland community either indirectly or directly.

The second step involves establishing a set of development control guidelines or performance standards, which can control the effects of new development on the wetland and its adjoining areas including any buffer areas.

The third step involves the development of a management plan for the wetland area and its surrounds (including any buffer areas) which can specify objectives, strategies and actions that can address existing land and waterway uses and development that may be effecting the wetland.

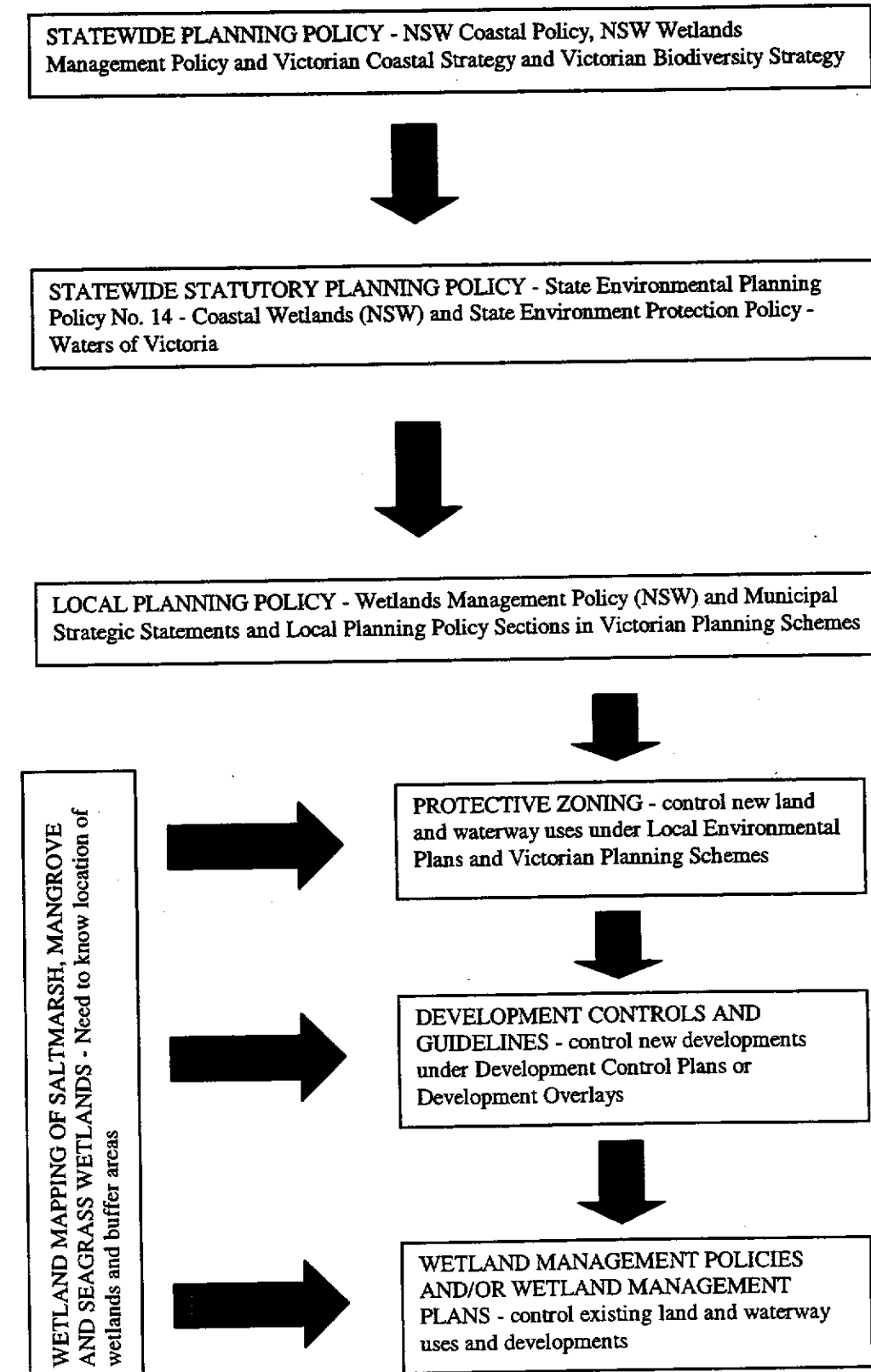
DISCUSSION

State Planning Policy

The State Governments of both New South Wales and Victoria recognise the value and importance of coastal wetlands such as saltmarshes, mangroves and seagrasses to the coastal and estuarine ecosystems through their respective state policies.

The NSW Coastal Policy states that seagrass, mangrove, saltmarsh and other wetland associated species will be conserved and managed as valuable components of the coastal ecosystem by effectively implementing existing controls (eg SEPP 14, Fish Habitat Protection Plans, Ramsar listing of important wetlands) through controlling runoff, sedimentation and other water quality impacts (NSW

Table 1: Planning Methodology for Protecting Saltmarsh, Mangrove and Seagrass Wetlands.



Government, 1997). This policy, however, does not cover the area between Newcastle and Wollongong, although the Sydney Coastal Councils Group have a Regional Coastal Management Strategy for Sydney which recognises the importance of protecting coastal wetlands (Sydney Coastal Councils Group, 1998). The NSW Wetlands Management Policy, which covers the whole state, also ensures that the Government gives explicit consideration to the biophysical requirements of wetlands with the goal of ensuring their sustainable management as part of its decision making process (NSW Government, 1996).

In Victoria, the Victorian Coastal Strategy, which is statewide, states that coastal wetlands, including mangrove, seagrass and saltmarsh areas, will be protected from detrimental impacts of coastal development through planning schemes and guidelines to enhance wetland management (Victorian Coastal Council, 1997). The Victorian Biodiversity Strategy also includes a priority management response for land and water use managers and planners for; Increase understanding, protection and monitoring of vulnerable habitats, particularly seagrass, mangroves and saltmarsh (Department of Natural Resources and Environment, 1997).

State Statutory Planning Policy

New South Wales has established a statewide statutory planning policy for coastal wetlands with SEPP 14, which provides a foundation from which more site specific and detailed planning can be applied. SEPP 14 explicitly relates to coastal wetlands in NSW with the exception of the Sydney region. It controls developments such as clearing, levee construction, drainage works and landfill activities in mapped wetlands. The policy

requires both the consent of the local council and the concurrence of the Director of Environment and Planning for consent. In Victoria, an attempt to develop similar planning protection for all wetland communities was made in 1992 with a statewide amendment to the State Section of all Planning Schemes. However, this failed after a change in Government. Alternatively, the Victorian Environment Protection Authority has SEPP Waters of Victoria which is a statewide policy under the Environment Protection Act 1970 which protects saltmarshes and mangroves from the discharge of wastes and relates to ensuring environmental water quality for coastal wetlands and estuaries.

Mapping

To integrate planning for saltmarsh, mangrove and seagrass wetlands, an approach that involves mapping and identifying the location of these wetlands is needed. This approach could be the 1:25,000 scale maps produced by the Department of Urban Affairs and Planning for State Environmental Planning Policy No.14 - Coastal Wetlands (SEPP 14) or the production of 1:25,000 scale maps of coastal and marine vegetation communities developed for the Department of Natural Resources and Environment by the Marine and Freshwater Research Institute in Victoria. It could also be detailed 1:5,000 scale maps prepared using Geographical Positioning Systems (GPS), Geographical Information Systems (GIS) and extensive ground truthing for wetlands undertaken by local government such as Gosford City Council (Payne & Harty, 1998). The delineation of a line on a map is important for planners to identify the location of zone boundaries. It has been argued that planners should adopt an approach which includes the total

wetland (Winning *et al*, 2000) and this should be encouraged. It can be achieved through the application of the planning methodology outlined in this paper because using this approach will seek to protect not only the easily identifiable wetland areas but also the adjoining ecotone of a wetland including any adjoining vegetation that supports the wetland as a buffer zone.

Local Planning Policy

Local planning policies are important to provide a context between state policy directions and their application at a local level. In NSW the development of a Wetland Management Policy can be undertaken either as local council policy such as that developed by Gosford City Council (Gosford City Council, 2000) or through estuary management plans prepared by local council estuary management committees.

The planning system in Victoria has been reformed with a move away from prescriptive zoning based planning to a strategic planning focused system. Victorian Planning Schemes contain a structured policy component, which comprises a State Planning Policy section detailing statewide policy directions for local government. This section includes reference to the Victorian Coastal Strategy. The planning scheme is followed with a Municipal Strategic Statement (MSS) which outlines the major strategic planning policy and directions for use and development of land in the municipality. The MSS usually contains policies, which deal with the coastal and estuarine environment. The MSS is then followed by a Local Planning Policy section, which deals with specific types of uses, developments or issues. Policy statements cover the coast, wetlands

and waterways of the municipality. The local planning policy section of the Casey Planning Scheme, which covers the northern end of Western Port Bay, contains the Western Port Coastal Policy (Casey City Council, 1999). This policy specifies where the policy applies, a policy basis, policy objective, policy performance standards and policy references in association with a plan, which identifies the location of the policy. The Planning Scheme contains an Environmental Significance Overlay with a schedule relating specifically to the coastal environs and a Significant Landscape Overlay with a schedule relating specifically to the Western Port coast. Both schedules to these Overlays contain a statement of environmental significance, objectives to be achieved, permit requirements (which related to new developments) and decision guidelines, which are linked directly to a map identifying the area to which the Overlays apply. The Planning Scheme then identifies zoning, which regulates land uses in terms of determining whether or not planning permits are required which are selected from a standard suite of zones that implements the intent of the MSS and local planning policies. These policies also direct the selection of Overlay controls, which address development issues within environmentally significant areas including wetlands.

Protective Zoning

Upon establishing the location of key wetlands a variety of zones can be used under either Local Environmental Plans in New South Wales or Planning Schemes in Victoria. Zones can be applied to land areas such as the 7(a) Environmental Protection Zone or 7(g) Wetland Management Zone available in New South Wales or Public Conservation and Resource Zone or

Environmental Rural Zone available under the Victoria Planning Provisions. Waterway based zones such as the 7(a1) Environment Protection - Waterways Zone as used by Pittwater Council (Pittwater Council, 1994) can be applied to regulate waterway uses within estuaries. These zones can provide protection for saltmarsh, mangrove and seagrass wetlands by prohibiting new land and waterway uses, which are damaging to these ecosystems.

Development Controls and Guidelines

Following the establishment of zones, mechanisms such as Development Control Plans can be developed in NSW while in Victoria policy schedules associated with the Overlays can be included into planning schemes containing Statements of Environmental Significance, Objectives and Decision Guidelines for new developments.

In New South Wales, Development Control Plans have been prepared to protect wetlands such as Wyong Shire Council Development Control Plan No. 30 - Wetlands (Wyong Shire Council, 1999). These have been reinforced by the development of Estuary Management Plans and Wetland Management Policies like those prepared by Gosford City Council. The emphasis on these plans is the control of the impacts associated with new development.

Management Plans

Planning authorities need to address both new and existing activities that may be impacting upon saltmarsh, mangrove and seagrass wetlands. Planning instruments such as planning schemes, Local Environmental Plans and Development Control Plans will not be capable of addressing existing

uses and developments from affecting the ecology of coastal wetlands. Management plans for coastal wetlands are an appropriate mechanism to use to influence the negative effects of existing activities on coastal wetland areas and can specify a range of non-statutory actions, which can address these issues. Examples of such actions arising from management plans for coastal wetlands are education programs for wetland catchments.

Management of existing development can be achieved through the implementation of Wetland Management Plans such as that prepared by Pittwater Council for Careel Bay Wetlands (Pittwater Council, 1998) and Wetland Management Policies prepared by Gosford City council. In Victoria, examples of Wetland Management Plans include the preparation of the South Warrnambool Wetlands Management Plan by Warrnambool City Council, (1996), the Bittern Coastal Wetlands Conservation Plan by Hastings Shire Council, (1992) and the Limeburners Bay Management Plan by the City of Greater Geelong, (1999).

All of these plans are examples of how management plans prepared for coastal wetlands including saltmarsh, mangrove and seagrass wetlands can successfully address existing uses and developments that are affecting these vegetation communities in a cumulative manner.

CONCLUSION

This paper outlines a planning methodology that can be successfully used to better integrate the planning protection of saltmarsh, mangrove and seagrass wetlands at any level of

government. The implementation of such a methodology does require a commitment from relevant stakeholders of the importance to establish an integrated planning structure which provides a number of levels of planning protection. The levels of protection from planning ranges from a statewide policy such as SEPP 14 through to local planning policies, zones, development controls (applied through Development Control Plans and Development Overlays), through to management policies and plans which can establish programs for addressing existing uses and developments affecting wetlands.

The planning methodology may also benefit coastal wetlands by covering areas adjoining wetland areas such as buffer areas which can improve the long term sustainability of coastal wetlands.

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