



West Gippsland
Catchment Management Authority

WEST GIPPSLAND Regional Catchment Strategy

2013-2019



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TABLE OF CONTENTS

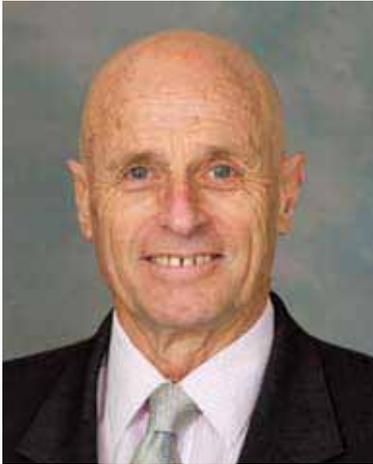
Table of Contents

■ Chair's Foreword	3
■ Regional Catchment Strategy Introduction	4
Our Vision	4
Summary	4
■ What is a Regional Catchment Strategy?	5
Purpose	5
Strategic Framework	5
■ Review and Development Process	7
RCS Review	7
RCS Development Process	7
Development Principles	10
■ Regional Overview	11
West Gippsland Region	11
Natural Environment	11
Traditional Owners	12
Demographics	13
Economy	13
Climate	14
Floodplain Management	15
Cross Regional Collaboration	15
■ Landscape Priority Areas	16
■ Bunurong Coastal Landscape Priority Area	19
■ Corner Inlet Nooramunga Landscape Priority Area	25
■ Gippsland Lakes and Hinterland Landscape Priority Area	32
■ Mullungdung Landscape Priority Area	40
■ Strzelecki Ranges Landscape Priority Area	46
■ Victorian Alps Landscape Priority Area	51
■ Wilsons Promontory Landscape Priority Area	57

■ Objectives and Management Measures	62
■ Implementing the Strategy	71
Implementation Principles	71
■ Monitoring, Evaluation and Reporting	72
■ Appendices	73
Appendix 1: Key legislation, policies, frameworks and strategies	73
Appendix 2: Regional Catchment Strategy multi-agency Steering Committee	80
Appendix 3: Thematic asset classes and significance criteria	81
Appendix 4: Communication and engagement mechanisms	82
Appendix 5: Aboriginal Areas of Cultural Sensitivity and RCS Landscape Priority Areas	84
Appendix 6: Roles and responsibilities of WGCMA and partners	85
Appendix 7: Glossary	89
Appendix 8: References	90

CHAIR'S FOREWORD

Chair's Foreword



The West Gippsland Catchment Management Authority (WGCMA) has one of the most diverse natural resource management regions in Australia. It extends from San Remo on the coast in the west to Lakes Entrance in the east and to Mount Howitt high in the Victorian Alps. It supports intensive agriculture and forestry industries, as well as the tourism industry, which is equally reliant on our natural resources. The region has extensive brown coal resources associated with power generation, along with other extractive industries. Major water resources are relied upon for urban and rural communities (including part of Melbourne's water supply), the environment and industry. With population growth occurring across much of the region we must be mindful of the explicit value of these natural resources, not the least that of iconic features such as Wilson's Promontory, the Gippsland Lakes and associated wetlands.

In framing our third Regional Catchment Strategy (RCS) we are mindful of our obligations under the *Catchment and Land Protection Act 1994*. The RCS is this region's overarching strategic set of priorities, against which our sub-strategies and action plans form the framework for investment in on ground activity in natural resource and catchment management. The RCS also provides a vehicle for the further coordination of our partner organisations, landholders and the variety of communities across the West Gippsland region.

The landscape priority areas within this RCS represent groupings of significant natural assets at most immediate risk that are a priority for attention during the life of the Strategy. However, action will also need to be taken in areas outside of and in-between the landscape priority area boundaries, in order to achieve an improvement in condition of those assets located within them.

This most comprehensive RCS has been prepared in cooperation with landholders, our partner organisations and the variety of communities across the West Gippsland region.

We look forward to continuing to work with our regional stakeholders throughout the implementation of this RCS for the enhancement, resilience and management of our region's natural resource environment.

A handwritten signature in black ink, appearing to read 'Angus Hume', written in a cursive style.

Angus Hume
Chair

West Gippsland Catchment Management Authority



REGIONAL CATCHMENT STRATEGY INTRODUCTION

Regional Catchment Strategy Introduction

OUR VISION

The vision statement for the West Gippsland region is:

Catchment Health - Gippsland's Wealth

The people of Gippsland recognise the importance of our ecosystems, natural resource base, unique natural features and landscapes found within the region. Our inspired, knowledgeable, capable and resilient communities will ensure these continue to underpin the environmental, social, cultural and economic wealth of the region.

SUMMARY

In developing the West Gippsland Regional Catchment Strategy (RCS), the West Gippsland Catchment Management Authority (WGCMA) has adhered to the Victorian Catchment Management Council RCS development guidelines and the associated Department of Environment and Primary Industries (DEPI) Standard/Advisory Note entitled 'Applying the Asset-Based Approach for the Development of Regional Catchment Strategies'.

This process involved firstly defining significant natural assets within their thematic asset class (Aquifers, Biodiversity, Coast, Estuaries, Marine, Rivers, Soil/Land, and Wetlands) according to a set of significance criteria, undertaking a risk assessment process and then grouping the significant assets according to their interaction as a system in the landscape. The groups of significant natural assets have been named 'landscape priority areas'. This approach recognises the interaction between the various assets in the landscape, their interdependence as a system, and allows for an integrated management approach to be developed.

Seven landscape priority areas are presented in this Strategy. Locality maps and a broad description of each landscape priority area are provided. Maps depicting the significant natural assets within each of the priority areas are also provided, along with discussion of the asset values, condition and key threats.

The landscape priority areas represent groupings of significant natural assets at most immediate risk, which are a priority for attention during the life of the Strategy. However, it is important to note that action will also need to be taken in areas outside of and in-between the landscape priority area boundaries, in order to achieve an improvement in condition of those assets located within the landscape priority areas.

For example, to gain an improvement in the Gippsland Lakes and Hinterland landscape priority area, on ground action will need to be taken within the Macalister Irrigation District (which is adjacent to the landscape priority area) to ensure sediments and nutrients remain on site to benefit both agricultural production within the district and improve river health and the quality of water entering the Gippsland Lakes system.

With the vision statement in mind, 20 year objectives for each of the landscape priority areas have been developed. These describe what the implementation of the RCS aims to achieve in the long term. The six year management measures (high level actions) that are required to be undertaken in order to move towards the 20 year objectives are described in the Objectives and Management Measures chapter. Proposed partners who could work together to implement the management measures have also been identified in this chapter. An aim of the RCS is to encourage an integrated collaborative approach to managing natural resources, strengthen partnerships and to reduce duplication of effort. WGCMA will coordinate the development and execution of an associated implementation plan in consultation with regional partners.

Progress towards implementation will be monitored throughout the life of the RCS by the WGCMA, with a mid-term review to be conducted in 2016.

WHAT IS A REGIONAL CATCHMENT STRATEGY?

What is a Regional Catchment Strategy?

PURPOSE

Regional Catchment Strategies are statutory documents under the *Catchment and Land Protection Act 1994* (CaLP Act) that provide the overarching framework for land, water and biodiversity management and conservation in each of the ten catchment management regions of Victoria. Under the CaLP Act, the West Gippsland Catchment Management Authority (WGCMA) has the responsibility to prepare a Strategy for the region and to coordinate and monitor its implementation.

The West Gippsland Regional Catchment Strategy (RCS) is the primary planning document that identifies priorities for natural resource management across the region for the next six years. It sets the direction for how the region's land, water and biodiversity resources should be managed in order to maintain or improve the condition of those natural resources over time.

The aim of the RCS is to provide a framework for the integrated management of catchments, which will maintain long term sustainable land productivity, while also conserving the environment.



Briagolong Forest Red Gum Reserve.

STRATEGIC FRAMEWORK

The development of the RCS takes into account international agreements and key pieces of Australian and Victorian Government legislation including the *Catchment and Land Protection Act 1994*, *Water Act 1989*, *Planning and Environment Act 1987*, *Climate Change Act 2010* and *Traditional Owner Settlement Act 2010*.

In a statewide context, Regional Catchment Strategies sit beneath a range of Victorian Government policies, frameworks and strategies. Priorities within relevant Victorian Government policies, frameworks and strategies have helped inform development of the RCS. Priorities in relevant Australian Government programs have also been taken into consideration.

The RCS is the overarching regional strategic planning framework, under which are found a range of sub-strategies and action plans for the region. The priorities established through the RCS development process will inform the development of future regional sub-strategies and action plans. However, it is important to note that priorities in existing regional strategies and plans have also helped inform regional landscape priorities in the RCS.

Figure 1 illustrates these relationships. Appendix 1 describes legislation, policies, frameworks and sub-strategies relevant to the RCS in further detail.





Figure 1: Strategic Framework

REVIEW AND DEVELOPMENT PROCESS

Review and Development Process

RCS REVIEW

This is the third iteration of the West Gippsland RCS, with the first published in 1997. A review of the 2004-09 RCS was undertaken and submitted to the Victorian Catchment Management Council (VCMC) in 2009. The review found that the RCS had been instrumental in guiding the development of a number of supporting regional strategies, action plans and programs. It was the only document to house regional overview information so comprehensively, with stakeholders referring to the content of the RCS for a variety of reasons. These included planning at a variety of scales, funding proposal development and communication purposes. The RCS had provided clear direction for natural resource management action, with a wide array of regional partners involved in delivering the RCS actions.

Key recommendations for improvement included:

- A concise strategy which articulates the relationship between the RCS and the supporting regional strategies and plans is desired.
- An integrated landscape planning approach is preferred.
- Identification of geographic areas that are a priority for multiple key natural assets/threats is required, in conjunction with a set of high level objectives and measures.
- Spatial representation of key assets using maps would be of great assistance to stakeholders, including local government planners.
- Articulation of how natural resource management agencies, organisations and community can all work together.

RCS DEVELOPMENT PROCESS

The RCS was developed by the WGCMA in partnership with regional agencies, organisations and community representatives. The development process was overseen by a multi-agency Steering Committee (Appendix 2) and the WGCMA Board. It has been developed in accordance with guidelines issued by the Victorian Catchment Management Council (VCMC 2011) and associated standards provided by the Department of Environment and Primary Industries (formerly DSE) (DSE 2011a, b). Key recommendations for improvement taken from the review of the 2004-09 strategy have been included in the development process. Long term (20 year) objectives and six-year management measures have been identified through extensive stakeholder consultation.

The best available data and information sources were considered in defining and describing significant natural assets, and in establishing regional management priorities. A separate background document contains a brief description of each thematic asset class (condition, threats and objectives at the regional scale) and the application of significance criteria in more detail.



REVIEW AND DEVELOPMENT PROCESS

Review and Development Process

The following figure illustrates the RCS development process:

1. Review of 2004-2009 West Gippsland RCS

- Key recommendations for improvement taken from the review of the 2004-09 strategy were included in the RCS development process
- Vision statement was tested with WGCMA Advisory Groups and Board members and the regional community through workshops and an online survey
- Regional vision statement was revised in response to feedback from 95 individuals

2. Identification of Significant Natural Assets

- Significant natural assets were identified at a regional scale by drawing upon existing natural resource management strategies and plans, GIS datasets, community consultation and specialist knowledge according to a set of significance criteria (Appendix 3)
- Maps demonstrating natural assets of high, medium and low significance were developed for eight thematic asset classes (Aquifers, Biodiversity, Coast, Estuaries, Marine, Rivers, Soil / Land, Wetlands)
- Regional stakeholder thematic asset class workshops were held to refine the maps and identify stakeholder values, aspirations and broad objectives for significant natural assets
- Significant natural assets and associated values were further validated by cross referencing the results with those obtained through community surveys distributed at public events and consultation exercises held with the WGCMA Advisory Groups and Board members
- Significant thematic asset class maps were finalised in response to feedback received from 178 individuals

3. Asset Risk Assessment and Categorisation

- Regional stakeholder risk assessment workshops series were held for each thematic asset class and attended by 44 individuals
- Risk analysis process was undertaken on natural assets of high and medium significance, including testing the feasibility of management intervention
- Significant natural assets were placed into categories following risk analysis:
 - Immediate risk: action is required within the life of the RCS
 - More information required: there is a threat but there is an information gap that prevents immediate action
 - Monitor and maintain: the asset is not under immediate severe threat but should be monitored
 - No immediate action required: assets that are not at threat within the RCS timeframe or the threat(s) cannot be managed
- Draft objectives were developed for significant natural assets in each category
- Significant natural assets that fell within all categories, except for 'no immediate action required' (these deemed outside of the scope of the strategy's six year timeframe) went through to next stage in the development process

4. Asset Integration and Prioritisation

- Regional stakeholder workshop with 14 specialists to group and filter significant thematic assets to develop a smaller number of spatially explicit areas for priority attention (as per DEPI Standards for applying the Asset-Based Approach)
- Grouping considered the physical and functional connectivity of natural assets and communities of common interest
- Prioritisation considered asset significance ranking, risk category and the technical and socio-economic feasibility of management intervention (in line with the DEPI Asset-Based Approach)
- Seven Landscape Priority Areas were agreed upon and mapped
- Objectives and management measures were developed by building on those identified during the earlier series of RCS workshops
- Proposed implementation partners were defined

5. Development of Draft West Gippsland RCS

- Draft RCS was developed and reviewed by an inter-agency RCS Steering Committee and WGCMA Board
- Communication tools and consultation strategy were developed

6. Draft RCS available for public exhibition

- Formal engagement of over 300 stakeholders was conducted during a four week period using a variety of mechanisms (Appendix 4)

7. Development of final Draft West Gippsland RCS

- All comments and feedback received were considered in developing the final Draft West Gippsland RCS

8. Endorsement from West Gippsland CMA Board

- Board endorsement of final Draft for submission to Victorian Government Ministers

9. 2012-18 West Gippsland RCS presented to Ministers

- Ministerial endorsement of West Gippsland RCS

10. Implementation

- WGCMA will coordinate the development and execution of an associated RCS implementation plan in consultation with regional stakeholders

Figure 2: West Gippsland RCS development process



REVIEW AND DEVELOPMENT PROCESS

Review and Development Process

DEVELOPMENT PRINCIPLES

The following suite of principles was used to guide development of the RCS (Table 1).

Table 1: Principles to guide development of the RCS

PRINCIPLE	
Collaboration, Partnerships and Strategic Alignment	The RCS will support and align with other regional-scale natural resource management strategies, such as the Gippsland Sustainable Water Strategy and Regional Waterway Management Strategy.
Integration, Connectivity and Interdependence	This RCS recognises that natural systems are connected and interdependent and that these systems cannot be managed in isolation. It is based on the concept that integrated efforts to manage natural resources are the most effective means to achieve successful outcomes.
Carbon Sequestration	As carbon policy frameworks become available, the WGCMA and other natural resource managers will identify priority areas for carbon sequestration planting and soil management. The establishment of diverse carbon plantings and soil management regimes may also lead to an improvement in catchment health by enhancing and connecting habitats and stabilising soils, buffering water flow and reducing nutrient loss. Planning for carbon sequestration plantings and soil management regimes will consider potential adverse impacts on water availability, agricultural productivity and fire risks to the community.
Sustainable Land Management	This RCS will support sustainable land management. Through the integration of land, water, biodiversity, and environmental management we will work in partnership to meet rising food and fibre demands and other productive land uses and the requirements of a growing population while sustaining ecosystem services and livelihoods.
Best Practice Underpinned by Science	This RCS will provide a basis on which to exceed the commonly recognised standard of natural resource management and to provide a framework for natural resource managers to achieve the objectives set out within the Strategy. All management intervention decisions are to be based on best available science, adaptive management principles and with research targeted towards priority knowledge gaps.
Ecological Resilience	Through the RCS, natural resource managers will build ecological resilience, contribute to the ongoing provision of ecosystem services and preserve and maintain biodiversity within the region.
Indigenous Knowledge	The skills, knowledge and perspectives of Indigenous people will be incorporated into natural resource management through the objectives of the RCS.

REGIONAL OVERVIEW

Regional Overview

WEST GIPPSLAND REGION

The West Gippsland region is determined by the West Gippsland Catchment Management Authority's (WGCMA) boundary (Figure 3). It extends across west, south and central Gippsland, from Warragul and San Remo in the west to the Gippsland Lakes in the east, and from the Great Dividing Range in the north to Wilsons Promontory in the south. The region extends into marine waters out to three nautical miles, which marks the State of Victoria's jurisdictional limit. It covers an area of 19,639 square kilometres (including the marine environment) and accounts for almost eight percent of Victoria's total land area. Fifty-nine percent of the region is under public ownership, with the remaining forty-one percent under private ownership.

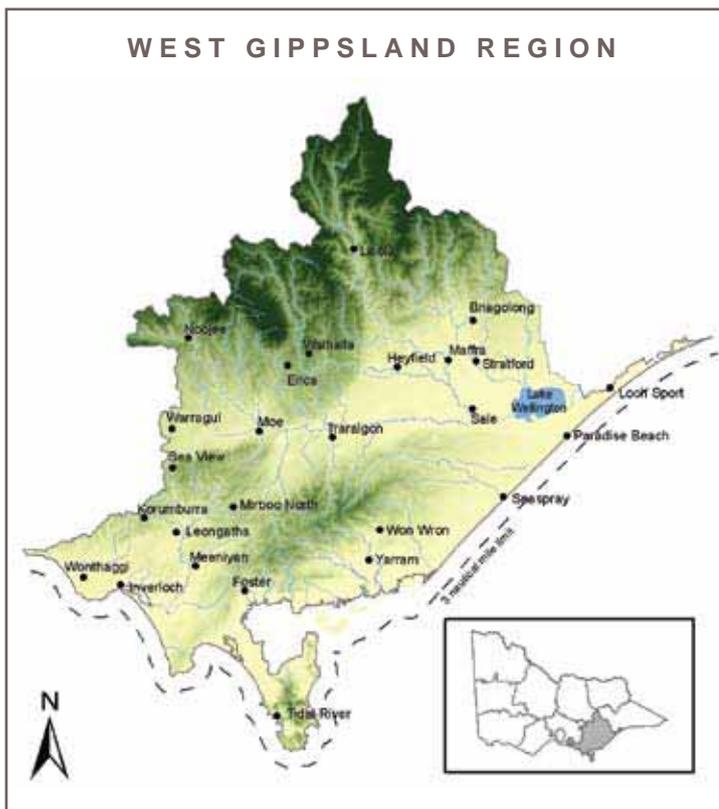


Figure 3: West Gippsland Region Location

NATURAL ENVIRONMENT

The West Gippsland region is underpinned by a variety of soil types that reflect different parent material, topography, climate, organic activity and age (e.g. degree of weathering). The soils are moderately well structured across the region and support a range of agricultural enterprises and natural ecosystems. The eastern highlands, Strzelecki Ranges and the western half of the region receive high rainfall, have deep soils and support native forest vegetation. The plains in the east are in the rain shadow of the highlands, where the native vegetation supported consists of woodland, grassy woodland, heathland and riparian complexes in low-lying areas (WGCMA 2003).

The region is floristically diverse, with six of Victoria's 22 terrestrial bioregions represented in the region. All of the Wilsons Promontory bioregion and the majority of the Strzelecki Ranges bioregion occur in the region. The Gippsland Plain bioregion is the most extensive bioregion and has been heavily impacted by agriculture, industry and settlement. The Highlands Southern Fall bioregion is the next most extensive and is mostly within public land in State Forests and Parks. The northern WGCMA boundary cuts through the Alps bioregion and a small part of the East Gippsland Lowlands bioregion is encompassed on the eastern boundary of the region. Four of the five Victorian marine bioregions are represented in the West Gippsland region: Central Victoria (San Remo to Cape Liptrap); Flinders (Wilson's Promontory to the western extent of the Ninety Mile Beach); Twofold (from the western extent of Ninety Mile Beach eastwards); and Victorian Embayments (bays, inlets and estuaries).

While the region is home to a diversity of terrestrial, marine and aquatic flora and fauna species, many of these are threatened. For example, 69 fauna and flora species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and 141 of Victoria's 601 threatened species formally listed under the *Flora and Fauna Guarantee Act 1988* (FFG Act) are located within the region. There is a high representation of endangered, rare and vulnerable ecological vegetation classes across the region.



REGIONAL OVERVIEW

Regional Overview

Historic wide-scale clearing that opened up the region for settlement, agriculture and industry has resulted in a considerable loss of native vegetation throughout the landscape. Across the West Gippsland region, only approximately 48% of pre-1750 native vegetation cover remains, much of which is in a degraded state (WGCMA 2003). Most remaining native vegetation is located within six National Parks, three State Parks and surrounding areas of public land. Four Marine National Parks are located off the West Gippsland region's coast.

Corner Inlet and the Gippsland Lakes are wetlands of international importance under the Ramsar convention and are critical habitats for many vulnerable and threatened species, including migratory birds species listed under the Japan-Australia Migratory Bird Agreement (JAMBA), China-Australia Migratory Bird Agreement (CAMBA) and Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

The West Gippsland region has valuable water resources for environmental, agricultural, industrial, urban and potable water supply purposes. The region has 24 of Victoria's 134 declared water supply catchments, which supply water for both stock and domestic purposes and are protected under the CaLP Act. The region incorporates three major river basins: the Thomson, Latrobe and South Gippsland Basin. The Thomson Basin (incorporating the Avon, Thomson and Macalister Rivers) and the Latrobe Basin both drain the Great Dividing Range and the northern slopes of the Strzelecki Ranges into Lake Wellington. The South Gippsland Basin's ten rivers and streams drain the southern slopes of the Strzelecki Ranges to the coast between San Remo in the west and Loch Sport in the east.

The Thomson Basin contains the Thomson Reservoir (a major water storage for Melbourne), with the other river basins containing water storages for much of the wider Gippsland region. The Thomson Reservoir is the largest of all of Melbourne's reservoirs, with a capacity of 1,068,000 ML (Melbourne Water 2012). The upper reaches of the Thomson River (downstream of Thomson Reservoir to Cowwarr Weir) and the Aberfeldy River (within the Baw Baw National Park) are classified as Heritage River Areas under the *Heritage Rivers Act 1992*.

Much of the West Gippsland region contains a rich source of groundwater, suitable for livestock, domestic, garden and industrial use. In some areas, particularly along the Ninety Mile Beach coast and Gippsland Plains the high yielding aquifers are important sources of water for irrigation and town water supply, including major city centres like Sale in the east. (WGCMA 2012)

TRADITIONAL OWNERS

Indigenous Australians have a strong cultural connection to country and the preservation of cultural heritage is extremely important. There are many areas of Aboriginal cultural sensitivity within the West Gippsland region (Appendix 5). The Gunaikurnai peoples and Kulin peoples are the traditional custodians of the country covered by this region.

Gunaikurnai country extends from the coast near Wilsons Promontory in the west; north to Mt Baw Baw and east into East Gippsland into the southern slopes of the Great Dividing Range. Tribes of the Gunaikurnai peoples in the West Gippsland region include:

- **Brataualung**¹ people in South Gippsland west from Cape Liptrap and Tarwin Meadows, east to the Merriman Creek mouth, north to Mirboo and along the coast to the vicinity of Port Albert and Wilsons Promontory
- **Brayakaulung**² people in central Gippsland near Sale, the Avon and Latrobe rivers to the west of Lake Wellington and west/north to Mt Baw Baw and Mt Howitt
- **Tatungalung** people near Lakes Entrance on the coast, along the Ninety Mile Beach and around Lake Victoria and Lake Wellington, and southwest to the Merriman Creek.

Kulin country extends west from the Gunaikurnai country. Kulin people tribes include:

- **Bunurong** people and **Boon Wurrung** people around Westernport Bay south to Wilsons Promontory
- **Wurundjeri** people through Melbourne and east to Mt Baw Baw.

In 2010, the Federal Court determined under the *Native Title Act 1993* that the Gunaikurnai people hold native title over much of Gippsland. In addition to this, the Gunaikurnai people have entered into an agreement with the Victorian Government under the *Traditional Owner Settlement Act 2010*, which formally recognises them as the traditional owners over land within that area. The determination and agreement area extends from West Gippsland near Warragul, east to the Snowy River and north to the Great Dividing Range and includes 200m of sea country offshore. The determination and agreement is only applicable to Crown land within that area and does not affect existing rights and interests on Crown land (such as leases and licences).

The native title agreement includes rights for Gunaikurnai people to access and use Crown land for traditional purposes, including hunting, fishing, camping and gathering in accordance with existing laws.

It also includes the transfer of ownership of some National Parks and Reserves to the Gunaikurnai people to be jointly managed with the Victorian Government (Parks Victoria). Under the *Aboriginal Heritage Act 2006*, the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) is recognised as the Registered Aboriginal Party for the Gunaikurnai native title area. The parks and reserves within the West Gippsland region to be transferred to Aboriginal Title and jointly managed by GLaWAC and Parks Victoria are:

- The Knob Reserve, Stratford
- Tarra Bulga National Park
- Lakes National Park
- Gippsland Lakes Coastal Park.

¹ *Spelling endorsed by the Gunaikurnai Elders Council 2012.*

² *Spelling endorsed by the Gunaikurnai Elders Council 2012.*

DEMOGRAPHICS

Seven municipalities fall within the West Gippsland region: all of Latrobe City; large portions of Baw Baw, South Gippsland, Wellington and Bass Coast Shires (excluding Phillip Island and the western portion of the Bass River plain); and very small, sparsely populated sections of the East Gippsland and Mansfield Shires³.

The character and diversity of townships and settlements in the West Gippsland region largely reflects their heritage. The major settlements in the Latrobe Valley and their growth are largely a product of the coal and power industries which attracted bursts of large scale immigration; whereas settlements in South Gippsland, such as Leongatha and Korumburra, were established, and continue to grow, largely to support the dairy and agricultural industries. Coastal settlements, such as Port Albert and Inverloch were initially established to support a fishing industry. They, along with other coastal settlements, are now popular destinations for holiday makers, sea-changers and tourism.

The estimated population for the West Gippsland region for 2010 was 183,852 people.

By 2026 the region's population is expected to grow by 21% to nearly 240,000 people, with a significant increase in the aged population. Household sizes are expected to decrease and the number of couple-families with non-dependent children is expected to increase. Population growth means a growing demand for housing, land availability and for goods and services.

Numerous community groups with an interest in the natural environment operate within the region (e.g. Landcare groups and networks, Coastcare, Conservation Societies, Conservation Management Networks and Committees of Management). Community groups, along with businesses, philanthropic organisations and individuals, make an important contribution to the region's environment through financial investment, business practices and volunteering. Whilst the aging population may threaten the viability of many volunteer groups, opportunities exist to engage our young people in volunteering activities. (WGCMA 2012)

³ *The small portions of Mansfield and East Gippsland Shires are not included when describing many of the region's demographic, social and economic characteristics.*

ECONOMY

Natural resources are the focus of the West Gippsland region's economy. The region's agriculture, brown coal reserves in the Latrobe Valley and off-shore oil and gas reserves all represent a major contribution to Victoria's economy.

The vast majority of Victoria's electricity is generated from brown coal in the Latrobe Valley and produced via Loy Yang, Hazelwood, and Yallourn power stations. Thirty percent of Australia's gas and two thirds of Australia's oil production occurs off the Gippsland coast.

The main industries in the region are energy production (electricity, oil and gas); supply of potable and irrigation water; manufacturing and processing; property, business services and ownership of dwellings; agriculture and forestry; construction and residential building.

REGIONAL OVERVIEW

Regional Overview

The main manufacturing industries, in terms of their contribution to the region's outputs, are petrochemicals and other chemicals (including oil and gas processing); pulp, paper and paperboard; sawmill products and iron and steel product manufacturing. The main agricultural enterprises in the region are dairy, grazing and meat production, forestry and vegetables. The dairy industry is the highest value agribusiness industry in the region, which produces one third of Victoria's and 23 percent of Australia's dairy production (DSE 2011c). Commercial fishing off the West Gippsland coast and aquaculture also contribute to the region's economy.

The region's economy is limited and controlled by market forces. A pending diminishing oil supply will have further impacts on the economy. To accommodate changing regulatory and market demands on industries, the transition to a low carbon economy will require some proactive measures (including development of new technologies) to enable more sustainable use of the region's natural resources, especially coal and water. Industry diversification is also important to reduce the region's reliance on natural resources to sustain its economy. For example, sustainable tourism development provides an opportunity to grow the region's economy without relying on population growth.

The region's economy is also threatened by loss and degradation of its agricultural land; water supply and quality issues; and extreme weather event impacts. (WGCMA 2012)

CLIMATE

The West Gippsland region has maximum temperatures and minimum rainfall in summer. Seasonal temperature and rainfall variability is less in coastal areas and in the east of the region, with milder temperatures and a more evenly distributed annual rainfall. The southerly areas tend to be warmer and drier, while the highlands are cooler and wetter.

West Gippsland is Victoria's wettest region. It receives an average 926 mm of rain per annum and has an average of 141 days a year where at least 1 mm of rain falls. Winter is the wettest season, with an average of 254 mm, accounting for 27% of a typical year's rainfall. The average rainfall in summer is just 177 mm. Long term average daily temperature across the West Gippsland region is 13°C, with an average maximum of 18.1°C and an average daily minimum of 7.8°C. Temperatures range from a winter average daily minimum of 4.0°C to a summer average daily maximum of 23.7°C (DSE 2008).

On average the future climate in West Gippsland is projected to be hotter and drier than it is today (mid range warming of + 0.8°C by 2030) (DSE 2008). An increase in severe weather events (e.g. intense rainfall, strong winds, storm surge, bushfires, floods and drought) can be expected. Water and air quality may be reduced as a result of an increase in bushfires and floods. Crop damage and soil erosion can occur as a result of the increase in severe weather events. Increased heat stress on dairy cattle reduces milk production and indirect impacts to agriculture (e.g. an increase in invasive plants, pests and disease) may occur as the result of a changing climate.

Biodiversity can expect to be affected at varying scales (from individual species to ecosystems) and species may alter their distribution patterns, abundance, behaviour and the timing of migration or breeding. There may be an increased risk of decline or extinction of more vulnerable species of flora and fauna (e.g. those with restricted or specialised habitat requirements, poor dispersal abilities or small populations). Increased pressure from competitors, predators, disease, parasites and extreme weather events can have an impact on biodiversity in the region. The composition of ecosystems and their distribution will be influenced by forces such as altered flow rates in rivers and wetlands and events such as fire and flood.

Marine ecosystems may be affected by an increase in water temperature and acidity, changing currents and changing ranges of native and introduced species. The impacts of threats such as habitat loss and invasive species will be amplified as a result of a changing climate.

The Gippsland coastline can expect greater inundation and erosion from sea level rise and an increase in frequency and intensity of storm events. Storm surges are likely to occur more frequently due to changed wind patterns, rainfall and sea surface temperatures.

Shorter drier winters and reductions in snow cover will have impacts on the alpine region's flora and fauna and on the tourism industry.

The potential impacts of climate variability have been considered during the natural asset threat/risk assessment and objective setting phases of the RCS development process.

FLOODPLAIN MANAGEMENT

The WGCMA recognises that floodplains provide significant social, economic, cultural and environmental benefits to our region. The inherent functions of our floodplains to convey and store floodwater should be recognised and preserved to minimise the deterioration of environmental values and the long-term flood-risk to floodplain production, assets and communities.

When responding to development applications the WGCMA will be guided by the following overriding principles:

- To minimise risk to people and property;
- To identify and prevent adverse impacts on the watercourse and floodplain;
- To ensure that development is designed appropriately for a flood-prone area;
- To reduce the need to rely on emergency services, and
- To ensure that development maintains or improves river health.

These principles will be delivered through the application of best practice floodplain management which aims to reduce flood damage, improve the wellbeing of landowners and reduce adverse impacts on the natural environment. WGCMA will implement best practice floodplain management over the life of this RCS.

CROSS REGIONAL COLLABORATION

The WGCMA region is located adjacent to four other Catchment Management Authority (CMA) regions. CMAs and their regional partners work collaboratively on programs to address cross boundary natural resource management issues. An example of this collaborative approach is the multiregional Highlands Down project which focuses on addressing threats caused by invasive plants to high value ecosystems in the eastern highlands of Victoria.



Venus Bay Coastal Vegetation.



LANDSCAPE PRIORITY AREAS

Landscape Priority Areas

Seven landscape priority areas (Figure 4) have been identified by drawing on priorities within existing regional sub-strategies and plans and through a series of regional stakeholder workshops, community surveys and consultation exercises.

This process involved firstly defining significant natural assets within their thematic asset class (Aquifers, Biodiversity, Coast, Estuaries, Marine, Rivers, Soil/Land, and Wetlands) according to a set of significance criteria (Appendix 3), undertaking a risk assessment process and then grouping the significant assets according to their interaction as a system in the landscape.

The groups of significant natural assets have been named 'landscape priority areas'. This approach recognises the interaction between the various assets in the landscape, their interdependence as a system, and allows for an integrated management approach to be developed.

The landscape priority areas represent groupings of significant natural assets at most immediate risk, which are a priority for attention during the life of the Strategy.

As many threatening processes occurring in one area can negatively impact upon another, action will also need to be taken in areas outside of and in-between the landscape priority area boundaries, in order to achieve an improvement in condition within the landscape priority areas.

For example, to gain an improvement in the Gippsland Lakes and Hinterland landscape priority area, on ground action will need to be taken within the Macalister Irrigation District (which is adjacent to the landscape priority area) to ensure sediments and nutrients remain on site to benefit both agricultural production within the district and improve river health and water quality within the Gippsland Lakes system.

Another example is where soil loss as the result of erosion in the Strzelecki Ranges can impact on the condition of water quality in the Gippsland Lakes and Corner Inlet. By mitigating soil loss in the Strzelecki Ranges an improvement in condition of the Gippsland Lakes and Corner Inlet landscape priority areas can also be achieved.

Strzelecki Ranges
Mullungdung Bunurong Coastal
Victorian Alps Gippsland Lakes and Hinterland
Wilson's Promontory
Corner Inlet Nooramunga

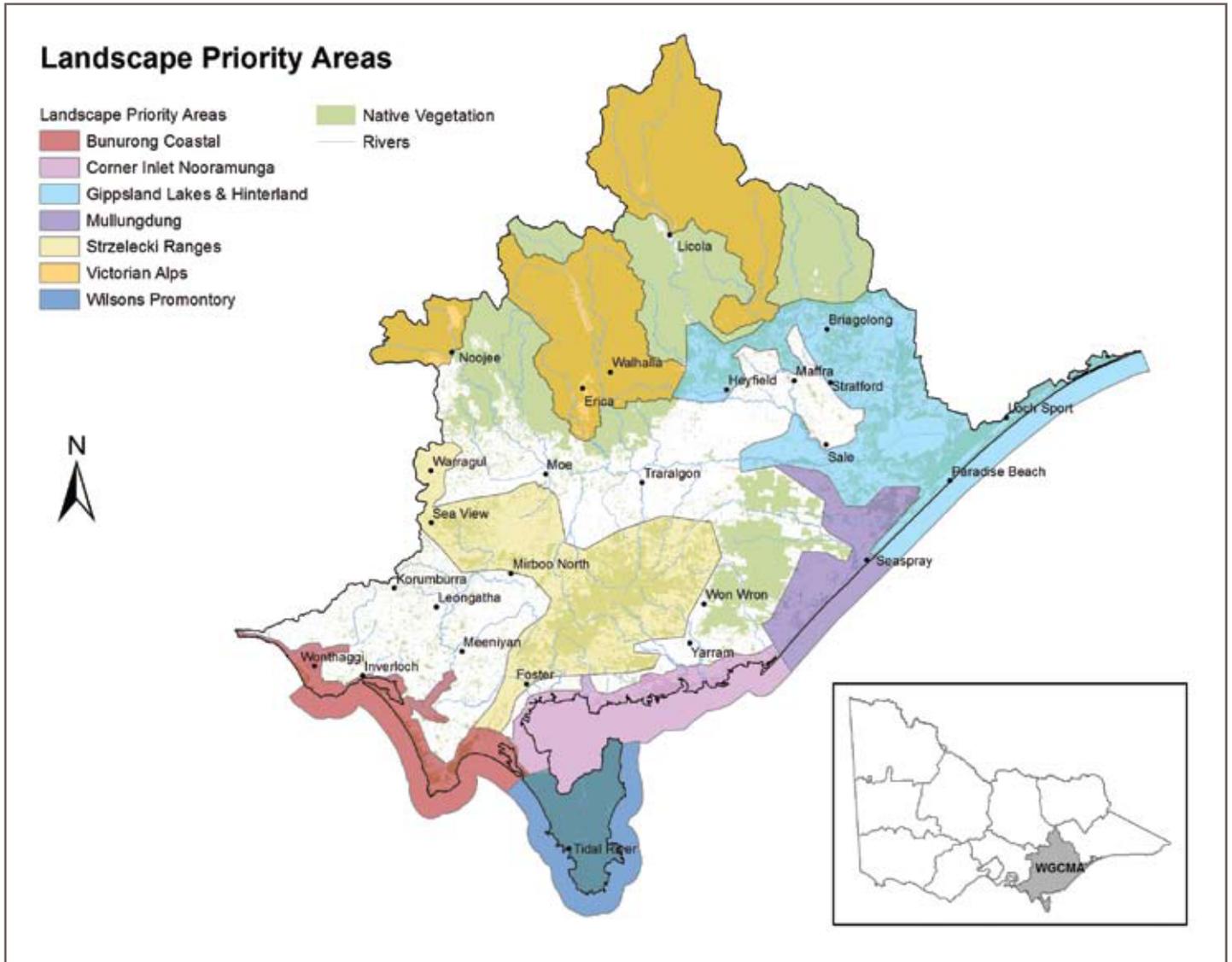
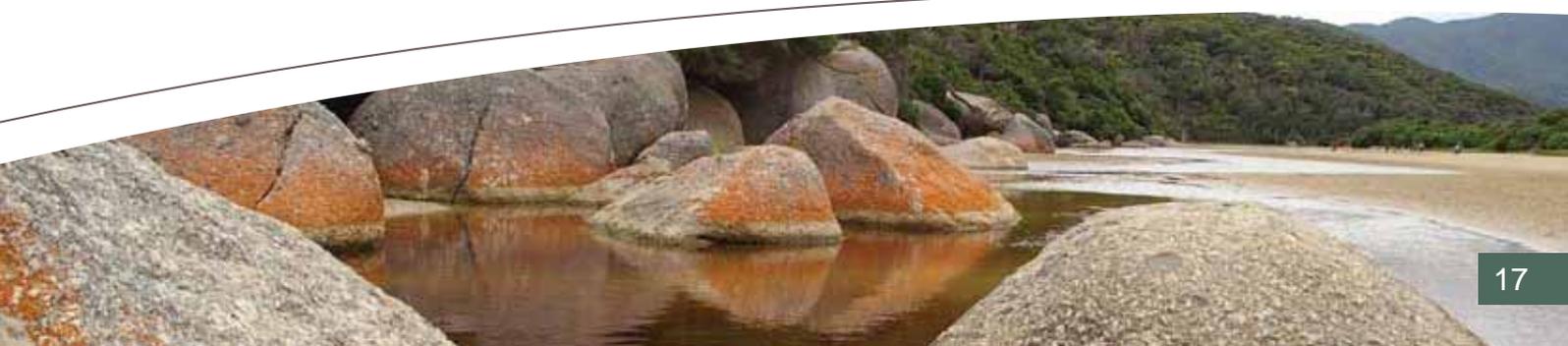


Figure 4: Landscape Priority Areas within the West Gippsland Region

Locality maps and a broad description of each landscape priority area are provided in this chapter. Maps depicting the significant natural assets within each of the priority areas are also provided, along with discussion of the asset values, condition and key threats and risks.





BUNURONG Coastal

L A N D S C A P E P R I O R I T Y A R E A

Photo: The entrance to Anderson Inlet

BUNURONG COASTAL

Bunurong Coastal

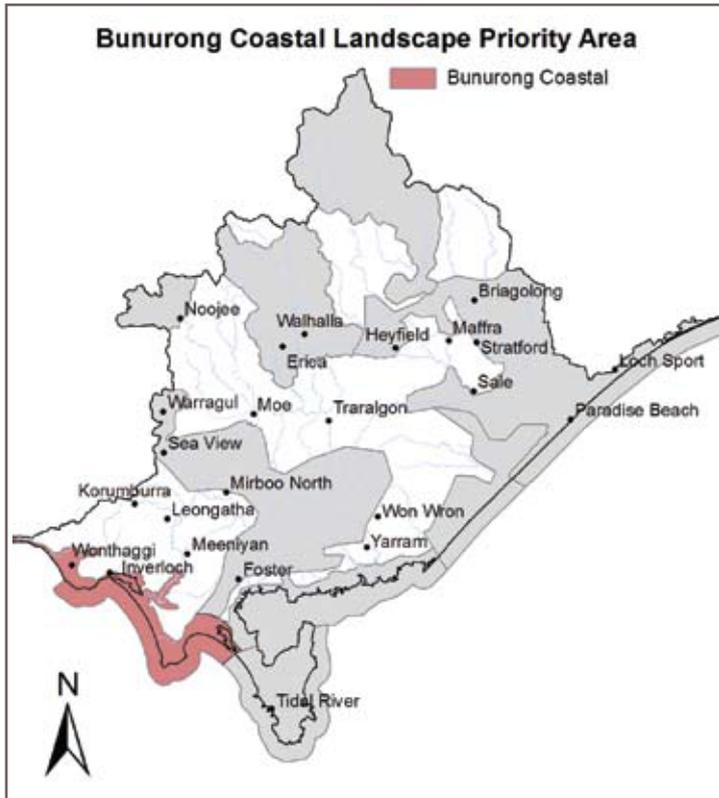


Figure 5: Bunurong Coastal Landscape Priority Area Location

The Bunurong Coastal landscape priority area is characterised by estuarine and coastal environments containing extensive intertidal rock platforms and sub-tidal rocky reefs, which are home to diverse ecological communities. It contains fossil sites of international and national significance and areas of cultural heritage sensitivity. The seagrass and saltmarsh communities found within the landscape priority area provide habitat for migratory waders, resident birds and native fish. The coastal and marine parks and reserves are valued for the recreational opportunities they provide and the threatened species they support. The landscape priority area is surrounded by a largely cleared environment, with fertile and productive soils underpinning a vigorous and varied agricultural sector (WGCM 2011).

Maps of the significant natural assets within the Bunurong Coastal landscape priority area are presented in this chapter along with a description of their values, condition and key threats. A summary of the key threats to the significant natural assets within the Bunurong Coastal landscape priority area is provided in Table 2 at the end of this chapter.

BIODIVERSITY

ASSET VALUES, CONDITION AND KEY THREATS

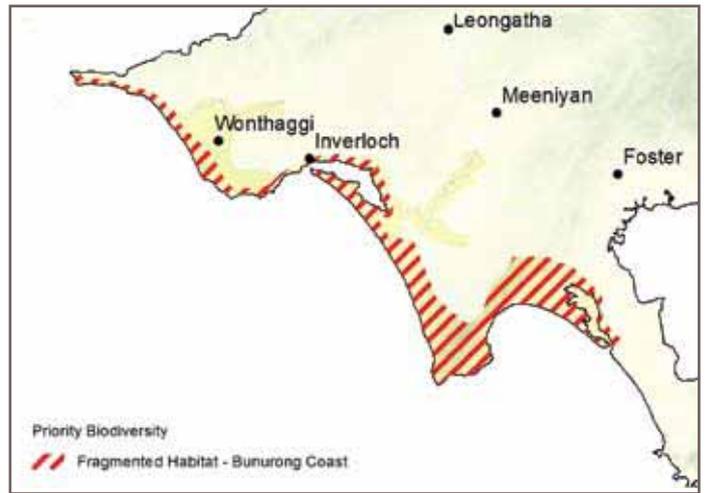


Figure 6: Bunurong Coastal Landscape Priority Area Biodiversity Asset

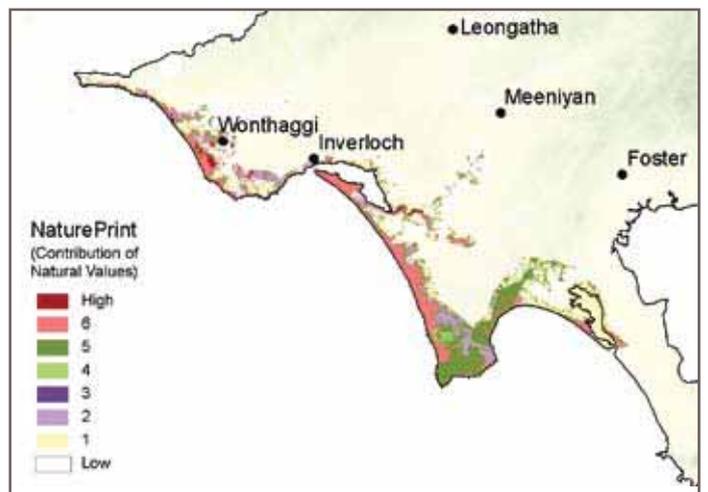


Figure 7: Bunurong Coastal Landscape Priority Area Biodiversity Asset Values

BUNURONG COASTAL

Bunurong Coastal

Fragmented Habitat - Bunurong Coast

The Fragmented Habitat - Bunurong Coast biodiversity asset contains the Cape Liptrap Coastal Park and other coastal reserves and sites of cultural heritage sensitivity. It supports endangered, rare and vulnerable Ecological Vegetation Classes (EVCs). NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least 15 threatened fauna species. It also supports multiple threatened flora species. This asset covers a fragmented natural landscape with large patches of remnant native vegetation. Remnant vegetation patches are moderately connected and the modelled vegetation quality is moderate to high. Key threats to the asset are vegetation clearing; invasive plants and animals and extreme events (fire and flood).

It supports a diverse range of vegetation including foredunes of Spinifex, heathy woodlands and saltmarsh communities. It contains sites of geological significance and areas of cultural heritage sensitivity. The key threats to the asset are recreational activity and vehicles on the beach; invasive plants and animals; and climate variability impacts (storm surge, sea level rise, fire and flood).

Bunurong Coast

The Bunurong Coast asset contains the Cape Liptrap Coastal Park, Bunurong Coastal Reserve, Cape Paterson Coastal Reserve and a portion of the Kilcunda-Harmers Haven Coastal Reserve. It has very complex geology exposed as cliffs and shore platforms and is the best dated sequence of uplifted marine terraces in eastern Australia. Megafauna trackways can be found within dune limestone.

The Bunurong Coast supports a number of EVCs including Wet Heathland, Coast Banksia Woodland, Coastal Saltmarsh and Mangrove Shrubland. It contains important shorebird roosting sites and areas of cultural heritage sensitivity. The key threats to the asset are recreational activities; urban expansion and development; invasive plants and animals; and climate variability impacts (storm surge, sea level rise, fire and flood).

COASTAL ASSET VALUES, CONDITION AND KEY THREATS

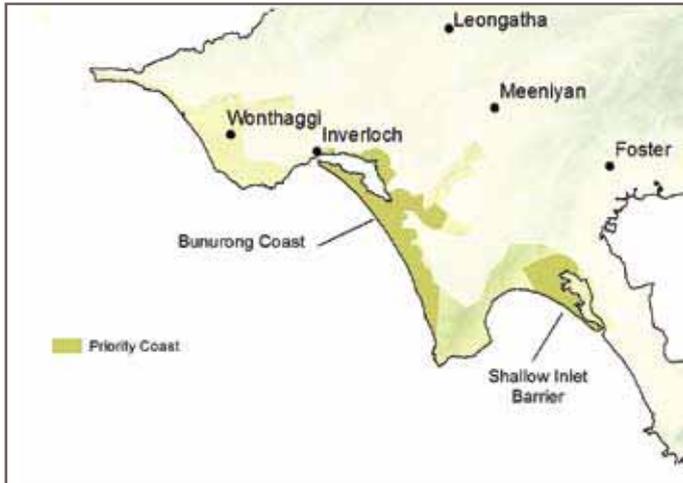


Figure 8: Bunurong Coastal Landscape Priority Area Coastal Assets

Shallow Inlet Barrier

The Shallow Inlet Barrier asset is a sand barrier complex of spits, bars and mobile dunes, which encloses Shallow Inlet from the sea. It is located within the Shallow Inlet Marine and Coastal Park and is an East Asian-Australasian Shorebird Site. It provides habitat and drought refuge for migratory and resident shorebirds of international, national, state and regional significance, including species listed under JAMBA and CAMBA.

ESTUARY ASSET VALUES, CONDITION AND KEY THREATS

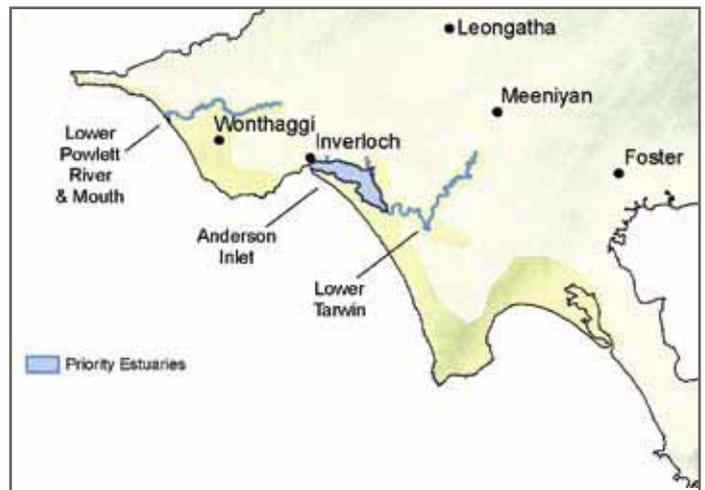


Figure 9: Bunurong Coastal Landscape Priority Area Estuary Assets

Lower Powlett River (Reach 5) and Powlett River Mouth

The mouth of the Powlett River is a Wetland of National Importance and site of cultural and historical significance. The estuary supports important saltmarsh and coastal woodland vegetation and provides habitat for a range of fish and bird species including Estuary Perch and Silver Trevally, Hooded Plover, Eastern Great Egret and Orange-bellied Parrot. The estuary is valued for its visual amenity and is a popular recreational fishing location. Key threats to the asset are poor water quality from upstream sources (including urban and agricultural runoff); recreational use impacts and artificial opening of the Powlett River mouth (potentially leading to fish kills).

Lower Tarwin River (Reach 10)

The lower Tarwin River provides habitat for a range of fish and bird species including Estuary Perch, Australian Grayling and Gull-billed Tern. Large tracts of remnant vegetation exist along the lowest section of this reach including Swamp Scrub and Woodland communities. The lower Tarwin River is valued for its recreational uses; fishing, boating, swimming, walking, bird watching and kayaking. It also has Indigenous cultural heritage significance. Key threats to the asset are urban development and land use pressure; invasive plants; altered flow regimes; sedimentation and poor water quality.

Anderson Inlet

Anderson Inlet is a Wetland of National Importance and East Asian-Australasian Shorebird Site, and functions primarily as a result of marine influences and wave energy. Freshwater flows are provided via Screw Creek, Pound Creek and the Tarwin River. The Inlet and its estuaries support a diversity of habitats and vegetation communities and significant fauna including Australian Grayling, Hooded Plover, Eastern Great Egret, Orange-bellied Parrot and Terek Sandpiper. The Inlet and estuaries are associated with the tourism destinations of Inverloch and Tarwin Lower and are valued for their recreational uses; fishing, boating, swimming, walking and kayaking as well as bird watching. Key threats to the asset are urban development and land use pressure; invasive plants; poor water quality and sedimentation; and altered flow regime.

MARINE ASSET VALUES, CONDITION AND KEY THREATS



Figure 10: Bunurong Coastal Landscape Priority Area Marine Assets

Bunurong

The Bunurong marine asset falls within the Central Victoria marine bioregion and contains the Bunurong Marine Park and Bunurong Marine National Park, which provides habitat for the *Amphibolis antarctica* seagrass and a number of threatened marine species. The area is a known migratory path for Blue and Southern Right Whales and is an area of cultural sensitivity and heritage significance. Sites of geological significance include cliffs, shore platforms, stranded beaches and fossil sites, with the Cape Liptrap reefs, Venus Bay beach and Arch Rock being of particular note. It is a popular location for diving and surfing. Key threats to the asset are excess nutrients and sediments entering the system (via urban and agricultural run off, stormwater, sewage and desalination outlets/outfalls); oil/shipping traffic spills and ballast discharge (commercial and recreational); invasive plants and animals (e.g. Northern Pacific Sea Star) and climate variability impacts (rising sea level, temperature, acidity).

BUNURONG COASTAL

Bunurong Coastal

Shallow Inlet

Shallow Inlet is a tidal embayment with a varied shoreline and dynamic entrance. It is located within the Shallow Inlet Marine and Coastal Park and provides habitat for migratory and resident shorebirds of international, national, state and regional significance. The extensive mudflats provide feeding opportunities for a range of migratory wading birds, including species listed under JAMBA and CAMBA. Seagrass meadows within the Inlet are in good condition. Key threats to the asset are invasive plants (particularly *Spartina*) and climate variability impacts (rising sea level, temperature, acidity).

RIVER

ASSET VALUES, CONDITION AND KEY THREATS

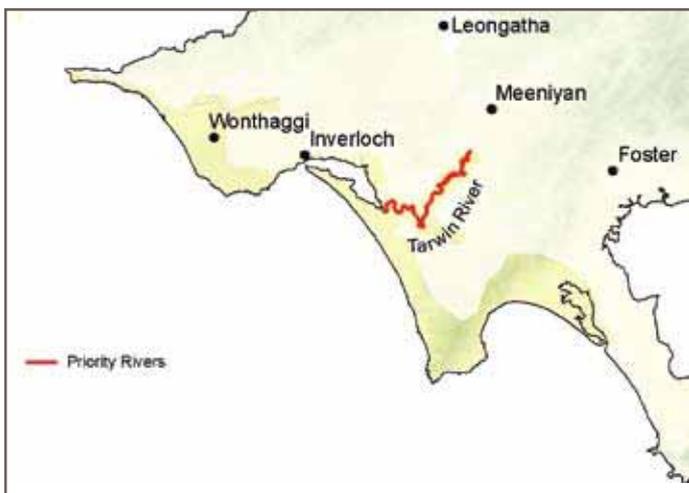


Figure 11: Bunurong Coastal Landscape Priority Area River Asset

Lower Tarwin River (Reach 10)

The Tarwin River provides freshwater flows to Anderson Inlet. It provides water for the township of Meeniyan and for irrigated agriculture, as well as livestock and domestic use. The Tarwin provides habitat for a range of fish species including River Blackfish and the endangered Australian Grayling. Large tracts of remnant vegetation exist along the lowest section of this reach including Swamp Scrub and Woodland communities. The lower Tarwin River is in poor condition according to the 2004 Index of Stream Condition rating.

An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are livestock access; vegetation clearing; bank erosion and sedimentation; altered flow regimes; poor water quality and invasive plants.

SOIL AND LAND

ASSET VALUES, CONDITION AND KEY THREATS

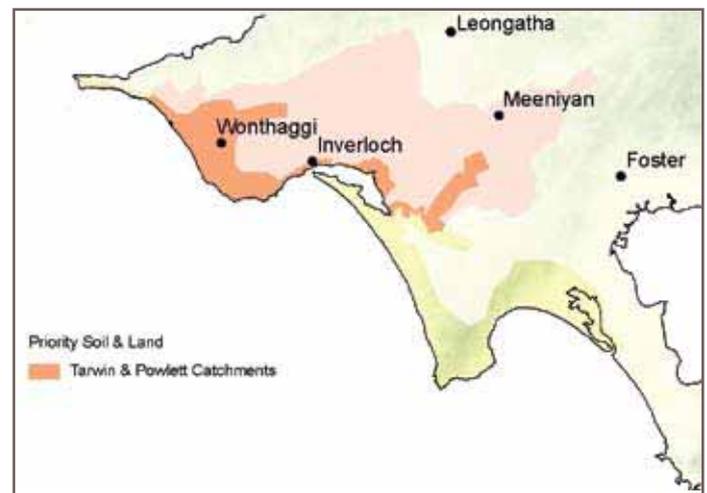


Figure 12: Bunurong Coastal Landscape Priority Area Soil and Land Asset

Tarwin and Powlett Catchments

The entire Tarwin and Powlett Catchments soil and land asset is highly valued for supporting agricultural production. The soil and land asset supports a number of threatened ecological vegetation classes. Whilst the soil is susceptible to acidity, it is largely intact and meets desired land use requirements under appropriate management. Upper reaches of the catchment can be erosive. Key threats to the asset are overgrazing; erosion (water and wind) in the upper catchment and extreme events (fire and flood).

WETLAND

ASSET VALUES, CONDITION AND KEY THREATS

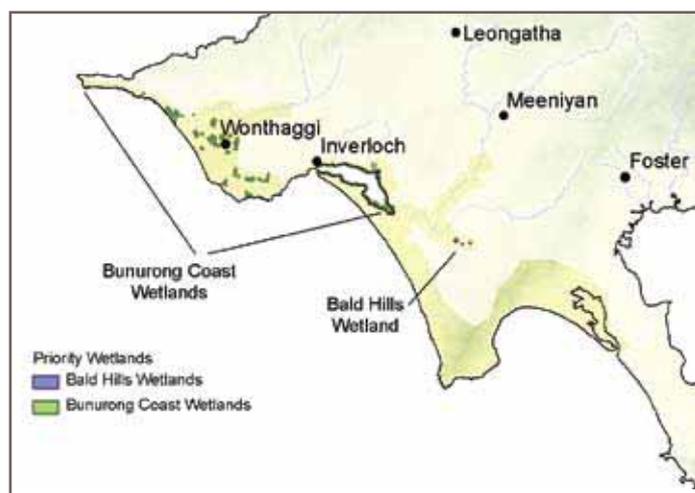


Figure 13: Bunurong Coastal Landscape Priority Area Wetland Assets

Bald Hills Wetland

Bald Hills Wetland is a rehabilitated wetland complex that supports rare and intact vegetation communities in a largely agricultural environment. This asset is located within a State Wildlife Reserve and is listed as a Wetland of National Importance. The wetlands support large numbers of birds and provide drought refuge for migratory and resident bird species. It is a popular destination for walking and bird watching. Key threats to the asset are poor water quality and invasive animals.

Bunurong Coast Wetlands

This asset incorporates rare wetland types that provide habitat connectivity with the marine and estuarine systems of South Gippsland. These wetlands support a range of bird species and indigenous vegetation and are remnants of a once extensive wetland complex. Key threats to the assets are livestock access; changed water regime (due to draining); industrial and urban development; and invasive plants and animals.

Table 2: Summary of key threats to significant natural assets within the Bunurong Coastal landscape priority area

BUNURONG COASTAL LANDSCAPE PRIORITY AREA	Biodiversity	Coast	Estuaries	Marine	Rivers	Soil & Land	Wetlands
Key threats to natural asset values and condition							
Altered flow or hydrological regimes			✓		✓		✓
Climate variability related extreme events (e.g. wildfire, flood, storm surge, sea level rise)	✓	✓		✓		✓	
Disturbance of potential acid sulfate soils						✓	
Erosion					✓	✓	
Invasive plants and animals	✓	✓	✓	✓	✓		✓
Land use pressure (includes timber harvesting, land and livestock management practices)			✓		✓		✓
Poor water quality (as the result of excess nutrients, sedimentation, oil spills and other pollutants)			✓	✓	✓		✓
Recreational use and visitation impacts (includes activities and access)		✓	✓				
Urban or industrial development		✓	✓				✓
Vegetation clearing	✓				✓		



CORNER INLET

Nooramunga

L A N D S C A P E P R I O R I T Y A R E A

Photo: Duck Point



CORNER INLET NOORAMUNGA

Corner Inlet Nooramunga

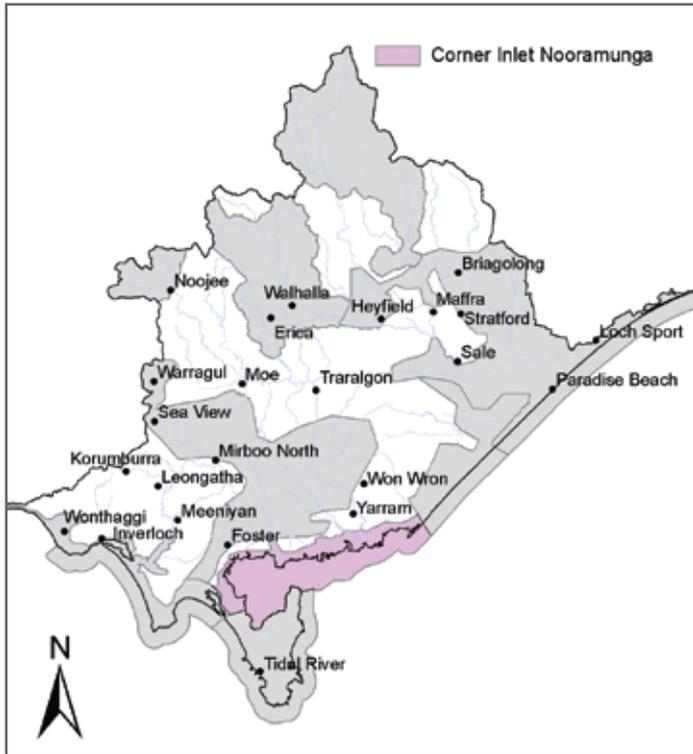


Figure 14: Corner Inlet Nooramunga Landscape Priority Area Location

The Corner Inlet Nooramunga landscape priority area is characterised by short, dynamic and independent river systems, which drain from the Strzelecki Ranges to the internationally recognised Corner Inlet Ramsar site and Nooramunga Marine and Coastal Park. Corner Inlet is also listed in the Directory of Important Wetlands of Australia (DIWA) and is an East Asian-Australasian Shorebird Site, which provides a drought refuge for migratory and resident birds. The marine and coastal parks are highly valued for the recreational opportunities they provide and for the natural scenic values of the park areas. Numerous threatened species are found within the range of complex habitats and vegetation communities in the landscape priority area. Corner Inlet supports a commercial fishing industry, as well as recreational fishing and water based activities. The landscape priority area is largely surrounded by land used for agricultural production (WGCMA 2011).

Maps of the significant natural assets within the Corner Inlet Nooramunga landscape priority area are presented in this chapter along with a description of their values, condition and key threats. A summary of the key threats to the significant natural assets within the Bunurong Coastal landscape priority area is provided in Table 3 at the end of this chapter.

AQUIFER

ASSET VALUES, CONDITION AND KEY THREATS

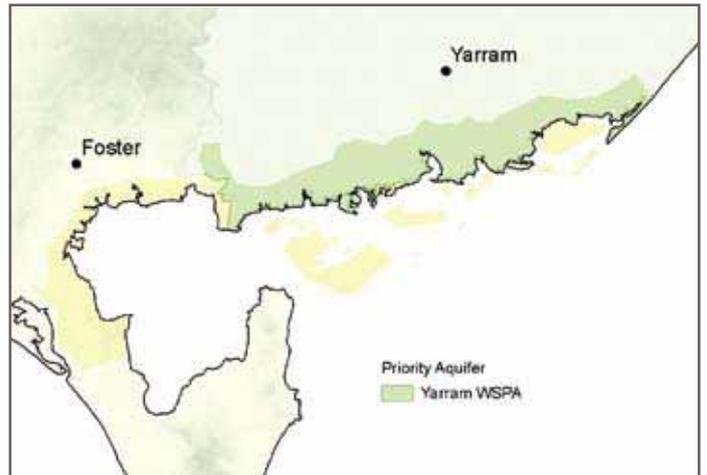


Figure 15: Corner Inlet Nooramunga Landscape Priority Area Aquifer Asset

Latrobe Group Aquifer - Yarram Water Supply Protection Area (WSPA)

The Yarram WSPA extends across a large part of the onshore extent of the Latrobe Group Aquifer. It is a major water resource for both irrigation, industry and town water supplies (Yarram) and has been confirmed to interact with rivers (e.g. Tarra River) where it is unconfined (on the southern edges of the Strzelecki Ranges north of Yarram). This aquifer also contains the oil and gas reserves mined off-shore in Bass Strait. The Latrobe Group Aquifer contains extremely large volumes of high quality (fresh) groundwater. Water levels have been declining consistently at a rate of approximately 1m/year over the last few decades, which has resulted in the water becoming less accessible to groundwater users (SRW 2010). The degree to which the declining water levels are impacting on connected surface water systems or groundwater dependent ecosystems is currently unclear. The major threat to the Latrobe Group Aquifer is unsustainable extraction, particularly via the offshore oil and gas industry. Unsustainable extraction poses a threat to onshore groundwater users and may lead to land subsidence (SRW 2010). The potential impacts of emerging technologies (e.g. coal seam methane gas extraction) on groundwater resources will need to be considered (DSE 2011c).

CORNER INLET NOORAMUNGA

Corner Inlet Nooramunga

BIODIVERSITY ASSET VALUES, CONDITION AND KEY THREATS

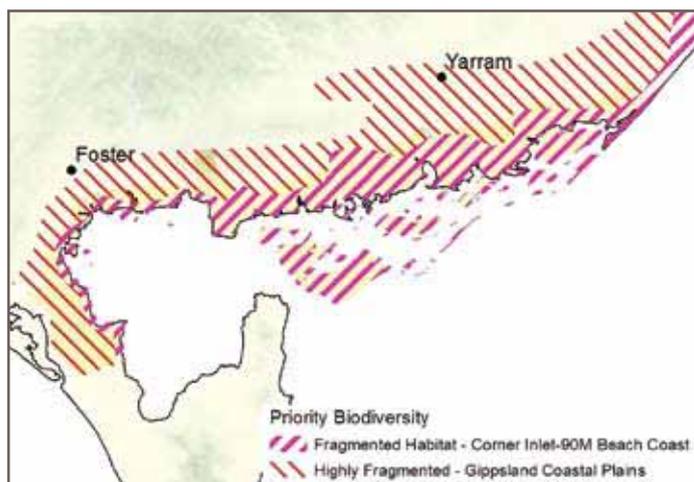


Figure 16: Corner Inlet Nooramunga Landscape Priority Area Biodiversity Assets

BIODIVERSITY ASSET VALUES, CONDITION AND KEY THREATS

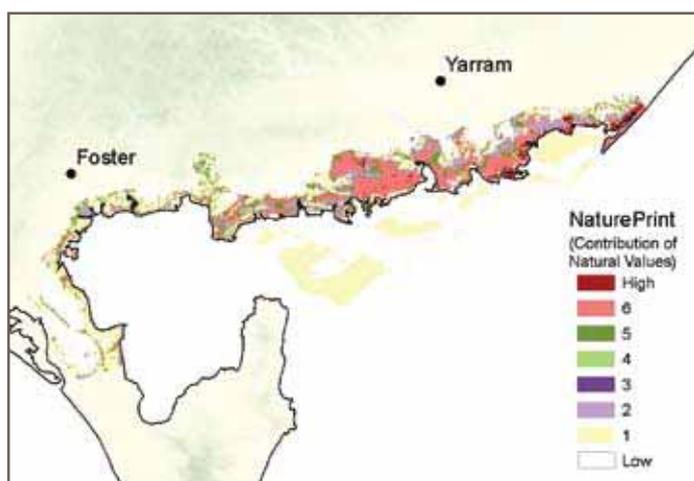


Figure 17: Corner Inlet Nooramunga Landscape Priority Area Biodiversity Asset Values

The Corner Inlet Nooramunga landscape priority area encompasses portions of two biodiversity assets: the Fragmented Habitat - Corner Inlet 90-Mile Beach Coast asset and the Highly Fragmented Habitat - Gippsland Coastal Plains asset (Figure 16). The combined contribution of natural values of these two biodiversity assets is depicted in Figure 17.

Fragmented Habitat - Corner Inlet 90-Mile Beach Coast

The Fragmented Habitat - Corner Inlet 90-Mile Beach Coast biodiversity asset contains the Corner Inlet and Nooramunga Marine and Coastal Parks. It supports endangered, rare and vulnerable EVCs. NaturePrint v2.0 indicates this landscape area as containing habitat of significant Statewide importance for at least 23 threatened fauna species. It also supports multiple threatened flora species. This asset covers a fragmented natural landscape with large patches of remnant native vegetation. Remnant vegetation patches are moderately connected and the modelled vegetation quality is moderate to high. Key threats to the asset are invasive plants and animals; soil acidification (including coastal acid sulfate soils); altered fire regimes; overgrazing and extreme events (fire and flood).

Highly Fragmented Habitat - Gippsland Coastal Plains

The Highly Fragmented Habitat - Gippsland Coastal Plains biodiversity asset also contains the Corner Inlet and Nooramunga Marine and Coastal Parks. It supports endangered, rare and vulnerable EVCs. NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least six threatened fauna species. It also supports multiple threatened flora species. This asset covers a highly fragmented natural landscape with small patches of remnant native vegetation. Remnant vegetation patches are poorly connected and the modelled vegetation quality is low to moderate. Key threats to the asset are invasive plants and animals; altered fire regimes; overgrazing; altered hydrological regimes (including groundwater extraction) and extreme events (fire and flood).

COASTAL ASSET VALUES, CONDITION AND KEY THREATS

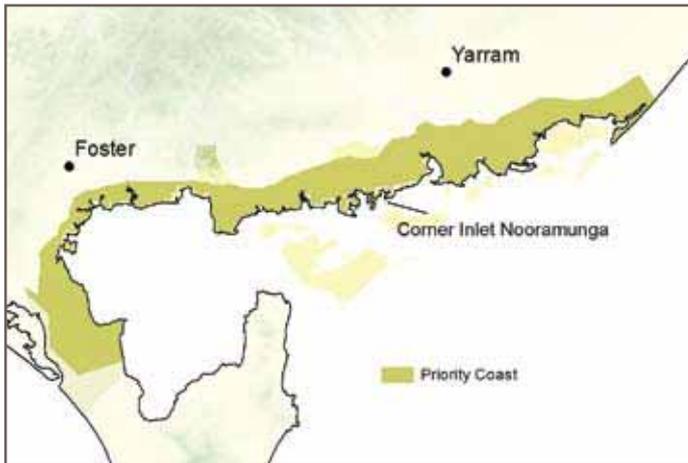


Figure 18: Corner Inlet Nooramunga Landscape Priority Area Coast Asset

Corner Inlet and Nooramunga

The Corner Inlet and Nooramunga coast asset is a complex of coastal and dune ridges and is associated with the Ramsar wetland environment. The coast asset contains both the Corner Inlet Marine and Coastal Park and the Nooramunga Marine and Coastal Park, and is one of the largest barrier islands and active tidal systems in Australia.

It supports an extremely complex tidal wetland community with mangrove and saltmarsh and areas of freshwater swamp and represents the southern-most global extent of mangroves. The coast asset contains shorebird habitat and roosting sites, sites of geological significance and areas of cultural heritage sensitivity. Key threats to the asset are urban expansion and development; recreational infrastructure construction; dredging for port expansion; disturbance of potential acid sulfate soils; invasive plants and animals; inappropriate fire regimes; seawalls; and climate variability impacts (storm surge, sea level rise, fire and flood).

ESTUARY ASSET VALUES, CONDITION AND KEY THREATS

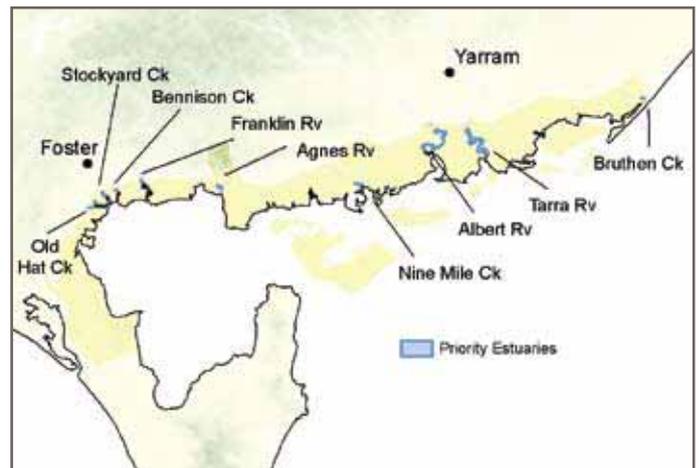


Figure 19: Corner Inlet Nooramunga Landscape Priority Area Estuary Assets

Old Hat, Stockyard and Bennisson Creeks

Old Hat, Stockyard and Bennisson Creek along with numerous other small waterways drain from the Hoddle Range, forming small creek mouth estuaries along the western coast line of the Corner Inlet Ramsar site. These estuaries support a diversity of vegetation including coastal saltmarsh, mangrove shrubland and woodland communities and provide important habitat for fish and bird species.

Franklin River (Reach 21)

The Franklin River is a river mouth estuary located in the Corner Inlet Marine and Coastal Park and part of the Corner Inlet Ramsar site. The Franklin River estuary and the township of Port Franklin provide safe harbour and berthing for commercial fishing operators and pleasure cruisers. The estuary supports a diversity of vegetation communities including coastal saltmarsh and mangrove shrubland and provides important habitat for fish including the endangered Australian Grayling and bird species.

CORNER INLET NOORAMUNGA

Corner Inlet Nooramunga

Agnes River (Reach 25)

Agnes River is a river mouth estuary located in the Corner Inlet Marine and Coastal Park and part of the Corner Inlet Ramsar site. The Agnes River is valued for its recreational opportunities including boating and fishing. The estuary supports a diversity of vegetation communities including coastal saltmarsh and mangrove shrubland and provides important habitat for fish (including the endangered Australian Grayling) and bird species.

Nine Mile Creek

Nine Mile Creek is a small creek mouth estuary located in the Nooramunga Marine and Coastal Park and part of the Corner Inlet Ramsar site. The estuary supports a diversity of vegetation communities including coastal saltmarsh and mangrove shrubland, and woodland communities and provides important habitat for fish and bird species.

Albert River (Reach 28)

The Albert River is a river mouth estuary located in the Nooramunga Marine and Coastal Park and part of the Corner Inlet Ramsar site. The Albert River is valued for its recreational opportunities including boating, fishing and camping. The estuary supports a diversity of vegetation communities including coastal saltmarsh and mangrove communities and provides important habitat for fish and bird species.

Tarra River (Reach 33)

The Tarra River is a river mouth estuary located in the Nooramunga Marine and Coastal Park and part of the Corner Inlet Ramsar site. The Tarra River is valued for its recreational opportunities including boating, fishing, camping and bird watching. The estuary supports a diversity of vegetation including coastal saltmarsh and mangrove shrubland, and woodland communities and provides important habitat for fish and bird species.

Bruthen Creek

Bruthen Creek is a river mouth estuary located in the Nooramunga Marine and Coastal Park and is the most easterly of the waterways flowing into the Corner Inlet Ramsar site. Bruthen Creek estuary is valued for its recreational opportunities including boating, fishing and camping. The estuary supports a diversity of vegetation including coastal saltmarsh and mangrove communities and provides important habitat for fish and bird species.

The key threats to all of these estuary assets are poor water quality and sedimentation; altered flow regimes; invasive plants and animals; urban development and adjacent land use pressure.

MARINE

ASSET VALUES, CONDITION AND KEY THREATS

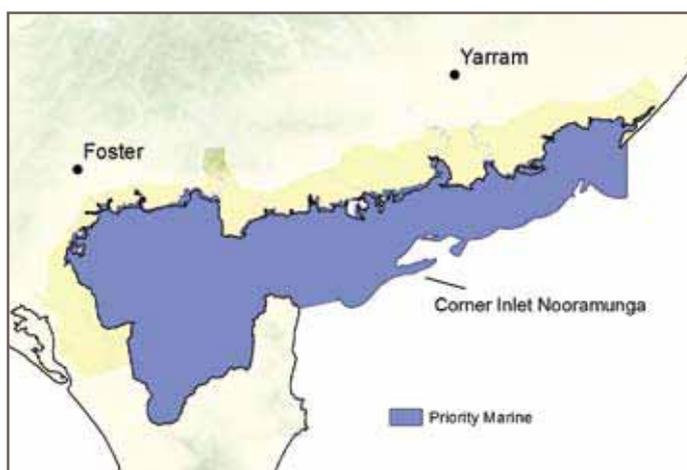


Figure 20: Corner Inlet Nooramunga Landscape Priority Area Marine Asset

Corner Inlet and Nooramunga

The Corner Inlet Nooramunga marine asset falls within the Victorian Embayments marine bioregion and contains the Corner Inlet Marine and Coastal Park and Nooramunga Marine and Coastal Park. Corner Inlet is a Ramsar listed site, a Wetland of National Significance and an East Asian-Australasian Shorebird Site, which provides a drought refuge for migratory and resident birds. Mudflats provide feeding and roosting opportunities for shorebirds, including those species listed under JAMBA and CAMBA. The asset contains the southern-most global extent of mangroves at Millers Landing (within the Corner Inlet Ramsar site) and areas of cultural heritage sensitivity. The marine waters are a known migratory path for Blue, Humpback and Southern Right Whales. Significant seagrass meadows of both *Posidonia* and *Zostera* species are found here. It is the third largest bay and inlet fishery in Victoria and a popular location for recreational fishing, diving and surfing. Key threats to the asset are excess nutrients and sediments entering the system (via urban and agricultural run off, stormwater and sewage outlets/outfalls); oil/shipping traffic spills and ballast discharge (commercial and recreational); invasive plants and animals (e.g. *Spartina*) and climate variability impacts (rising sea level, temperature, acidity).

RIVER

ASSET VALUES, CONDITION AND KEY THREATS

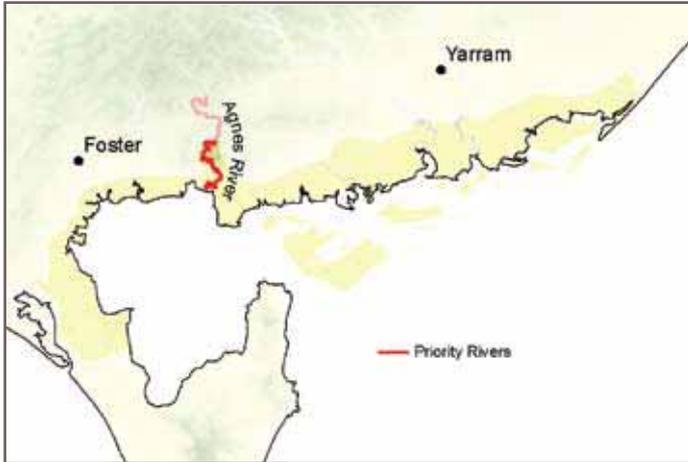


Figure 21: Corner Inlet Nooramunga Landscape Priority Area River Asset

Agnes River (Reach 25)

The Agnes River provides freshwater flows to Corner Inlet. The Agnes River falls and gorge at the top of this reach are valued for their visual amenity and are a site of State significance. The river provides valuable habitat for fauna, including Australian Grayling, Cox's Gudgeon and Striped Gudgeon. The Agnes River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are poor water quality and invasive plants.

SOIL AND LAND

ASSET VALUES, CONDITION AND KEY THREATS

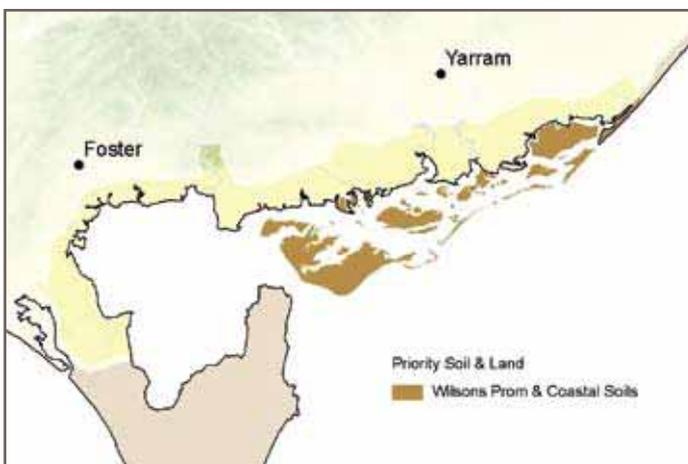


Figure 22: Corner Inlet Nooramunga Landscape Priority Area Soil and Land Asset

Wilson's Promontory and Coastal Soils

The Wilson's Promontory and Coastal Soils asset is highly valued for supporting ecosystem resilience and the provision of clear air and water. These soils also support economic values associated with tourism. The asset is largely intact when supported by native vegetation cover. Key threats to the asset are erosion (water) and extreme events (fire and flood).

WETLAND

ASSET VALUES, CONDITION AND KEY THREATS

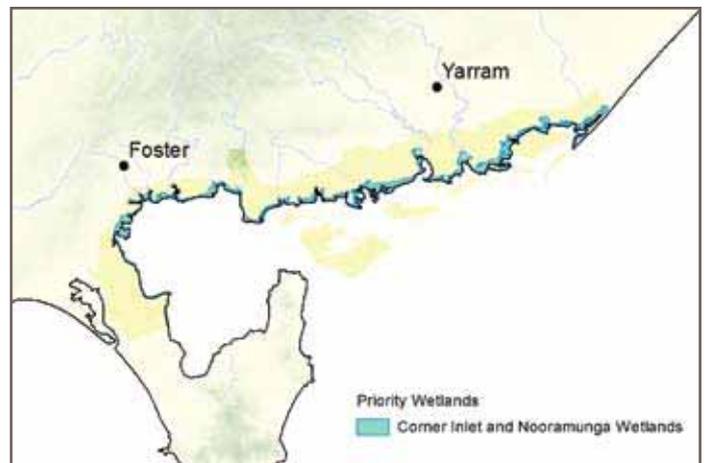


Figure 23: Corner Inlet Nooramunga Landscape Priority Area Wetland Asset

Corner Inlet Nooramunga Fringing Wetlands

This asset incorporates the wetlands that fringe the Corner Inlet Nooramunga marine and coastal assets and is associated with the Corner Inlet Ramsar listed site. These wetlands include both saline and freshwater wetland types and provide habitat for a range of rare or threatened fauna and migratory bird species. Key threats to the asset are livestock access, invasive plants and sea level rise.

CORNER INLET NOORAMUNGA

Corner Inlet Nooramunga

Table 3: Summary of key threats to significant natural assets within the Corner Inlet Nooramunga landscape priority area

CORNER INLET NOORAMUNGA LANDSCAPE PRIORITY AREA Key threats to natural asset values and condition	Aquifers	Biodiversity	Coast	Estuaries	Marine	Rivers	Soil & Land	Wetlands
Altered flow or hydrological regimes		✓		✓				
Climate variability related extreme events (e.g. wildfire, flood, storm surge, sea level rise)		✓	✓		✓		✓	✓
Disturbance of potential acid sulfate soils		✓	✓					
Dredging for port expansion			✓					
Erosion							✓	
Inappropriate fire regimes		✓	✓					
Invasive plants and animals		✓	✓	✓	✓	✓		✓
Land use pressure (includes timber harvesting, land and livestock management practices)		✓		✓				✓
Poor water quality (as the result of excess nutrients, sedimentation, oil spills and other pollutants)				✓	✓	✓		
Potential impacts of emerging technologies (e.g. coal seam gas extraction)	✓							
Recreational infrastructure construction			✓					
Seawalls			✓					
Unsustainable extraction of groundwater	✓							
Urban or industrial development			✓	✓				



GIPPSLAND LAKES and Hinterland

L A N D S C A P E P R I O R I T Y A R E A

Photo: The Perry River



GIPPSLAND LAKES AND HINTERLAND

Gippsland Lakes and Hinterland

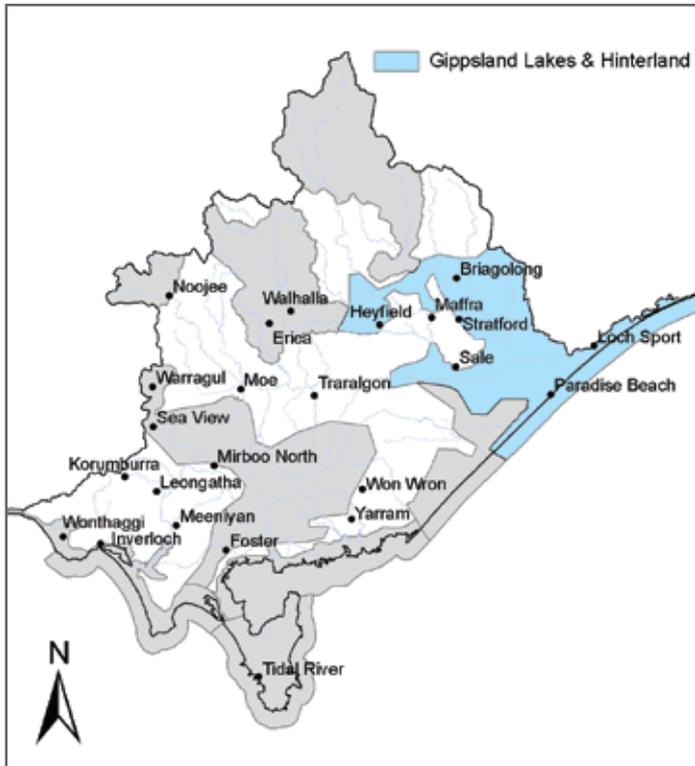


Figure 24: Gippsland Lakes and Hinterland Landscape Priority Area location

The Gippsland Lakes and Hinterland landscape priority area is characterised by the iconic Gippsland Lakes and wetlands Ramsar site. The Gippsland Lakes is of high social, economic, environmental and cultural value and is a major drawcard for tourists. A number of major Gippsland rivers (Latrobe, Thomson, Macalister, Avon and Perry) all drain through floodplains to Lake Wellington and ultimately the Southern Ocean, with the Perry River being one of the few waterways in Victoria to have an intact chain of ponds geomorphology. The EPBC Act listed Gippsland Red Gum Grassy Woodland and associated Native Grassland ecological community is represented in the landscape priority area. The priority area is within a largely fragmented, agricultural landscape and is located adjacent to the Macalister Irrigation District, which is the largest irrigation area south of the Great Dividing Range (WGCM 2011).

Maps of the significant natural assets within the Gippsland Lakes and Hinterland landscape priority area are presented in this chapter along with a description of their values, condition and key threats. A summary of the key threats to the significant natural assets within the Gippsland Lakes and Hinterland landscape priority area is provided in Table 4 at the end of this chapter.

AQUIFER

ASSET VALUES, CONDITION AND KEY THREATS

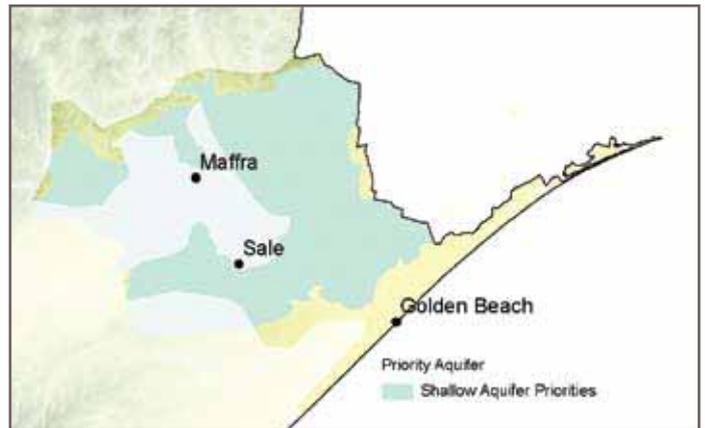


Figure 25: Gippsland Lakes and Hinterland Landscape Priority Area Aquifer Asset

Shallow Aquifer

The Shallow Alluvial aquifer includes the Denison and Wa De Lock Groundwater Management Areas. It has high connectivity to surface water systems including the provision of base flow to rivers, such as the Avon, Thomson and Macalister. The aquifer contributes to the condition of other Groundwater Dependent Ecosystems including wetlands, estuarine environments and terrestrial flora. The aquifer is also a very important resource for domestic, livestock, irrigation and urban (Briargolong) water supply. The shallow aquifer of the Avon, Thomson, Macalister and lower Latrobe catchments is naturally variable in quality and yield. In many areas the aquifer contains large volumes of high quality (fresh) groundwater, whereas elsewhere the aquifer can be naturally high in salinity levels. Watertable levels in some areas have been elevated due to land clearing and irrigation recharge. In recent times this has been off-set by prolonged drought, improved efficiency of irrigation water supply and use, and increased groundwater usage. Contamination of the aquifer via fertilisers, dairy effluent, sewerage systems and other industrial or commercial sources presents a key threat to the aquifers and the receiving systems that the aquifers interact with (e.g. rivers, wetlands and the Gippsland Lakes). Unsustainable extraction, particularly during dry periods, can impact on groundwater users, reduce base flow to rivers and place groundwater dependent ecosystems under stress. Altered recharge/discharge patterns due to land use change can also impact the resource and have secondary implications in particular via land salinisation.

BIODIVERSITY
ASSET VALUES, CONDITION AND KEY THREATS

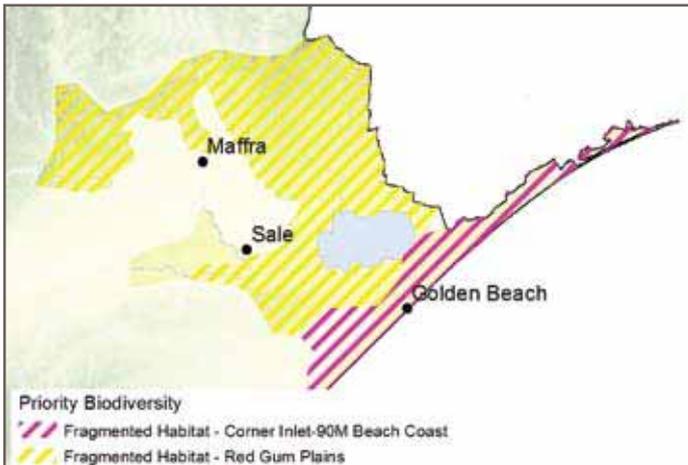


Figure 26: Gippsland Lakes and Hinterland Landscape Priority Area Biodiversity Assets

BIODIVERSITY
ASSET VALUES, CONDITION AND KEY THREATS

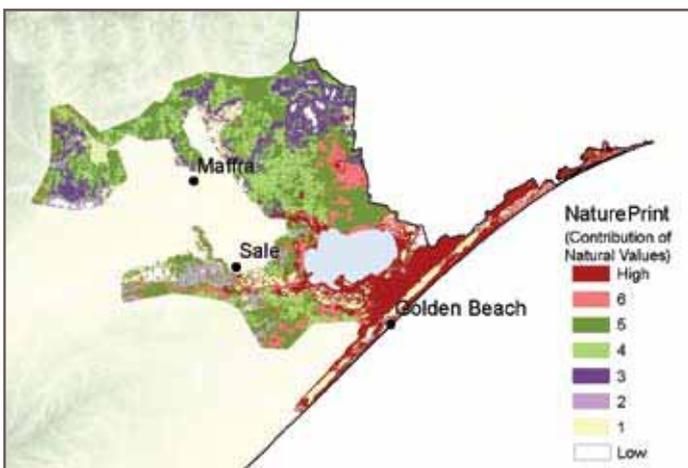


Figure 27: Gippsland Lakes and Hinterland Landscape Priority Area Biodiversity Asset Values

The Gippsland Lakes and Hinterland landscape priority area encompasses portions of two biodiversity assets: the Fragmented Habitat - Corner Inlet 90-Mile Beach Coast asset and the Fragmented Habitat - Red Gum Plains asset (Figure 26). The combined contribution of natural values of these two biodiversity assets is depicted in Figure 27.

Fragmented Habitat - Red Gum Plains

The Fragmented Habitat - Red Gum Plains biodiversity asset contains the Gippsland Lakes Coastal Park, The Lakes National Park, Providence Ponds Flora and Fauna Reserve, and other smaller reserves and sites of cultural heritage sensitivity. It supports endangered, rare and vulnerable EVCs including the EPBC Act listed Gippsland Red Gum Grassy Woodland and associated Native Grassland ecological community. NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least 16 threatened fauna species. It also supports multiple threatened flora species. This asset covers a fragmented natural landscape with medium to large patches of remnant native vegetation. Remnant vegetation patches are moderately connected and the modelled vegetation quality is moderate. Key threats to the asset are vegetation clearing; overgrazing; invasive plants and animals, altered hydrological regimes and extreme events (fire and flood).

Fragmented Habitat - Corner Inlet 90-Mile Beach Coast

The Fragmented Habitat - Corner Inlet 90-Mile Beach Coast biodiversity asset contains the Gippsland Lakes Coastal Park and The Lakes National Park. It supports endangered, rare and vulnerable EVCs. NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least 23 threatened fauna species. It also supports multiple threatened flora species. This asset covers a fragmented natural landscape with large patches of remnant native vegetation. Remnant vegetation patches are moderately connected and the modelled vegetation quality is moderate to high. Key threats to the asset are invasive plants and animals; soil acidification (including coastal acid sulfate soils); altered fire regimes; overgrazing and extreme events (fire and flood).

GIPPSLAND LAKES AND HINTERLAND

Gippsland Lakes and Hinterland

COASTAL

ASSET VALUES, CONDITION AND KEY THREATS

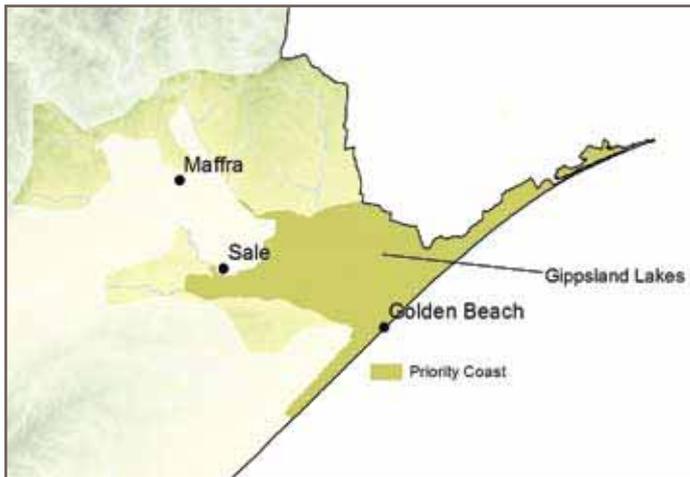


Figure 28: Gippsland Lakes and Hinterland Landscape Priority Area Coast Asset

ESTUARY

ASSET VALUES, CONDITION AND KEY THREATS



Figure 29: Gippsland Lakes and Hinterland Landscape Priority Area Estuary Assets

Gippsland Lakes

The Gippsland Lakes coast asset contains the Gippsland Lakes Coastal Park and the Lakes National Park and is associated with the Ramsar listed wetland environment. It supports a range of ecological vegetation classes including Coast Banksia Woodland, Estuarine Wetland and Coastal Saltmarsh. It contains shorebird habitat and roosting sites, areas of cultural heritage sensitivity and sites of geological significance. This coast asset is also valued for the range of recreational opportunities it provides. Key threats to the asset are disturbance of potential acid sulfate soils; invasive plants and animals; breached dunes/barrier (impacting salinity of the Lakes system) and climate variability impacts (storm surge, sea level rise, fire and flood).

Lake Wellington and McLennan Strait

Lake Wellington and McLennan Strait are part of the Gippsland Lakes Ramsar site. They provide very important habitat for a wide variety of common and threatened waterbirds, including resident and migratory species, particularly during drought. Extensive stands of endangered Swamp Scrub fringe these waterways which are valued for commercial and recreational fishing. They connect a number of major Gippsland Rivers (Latrobe, Thomson, Macalister and Avon) with the eastern Gippsland Lakes and Southern Ocean, and facilitate the migration of fish between fresh and salt water. McLennan Strait and its surrounds are of State geomorphologic significance. Lake Wellington underwent a major change in state in the late 1960s; transforming from a clear lake covered in aquatic vegetation with extensive fringing reeds, to a turbid lake with no aquatic vegetation and much reduced fringing reed beds.

Lower Perry River (Reach 23)

The lower Perry River and its chain of ponds morphology is a site of significance in Victoria. The lower Perry River supports relatively natural vegetation communities of bioregional significance, including Swamp Scrub, Plains Grassy Woodland, and Sandy Floor Scrub.

The river also provides important habitat for migratory and non-migratory fish including the EPBC listed Dwarf Galaxias, Southern Pygmy Perch and Australian Bass. The lower Perry connects with the internationally significant Gippsland Lakes via the lower Avon River, and is valued for recreational fishing.

Lower Avon River (Reach 19)

The lower Avon River is valued for its fish populations which include highly sought after recreational species such as Estuary Perch, Australian Bass and Black Bream. It also provides connectivity of habitat for species that migrate between fresh and salt water such as the nationally vulnerable Australian Grayling. It is an important water source for the Gippsland Lakes Ramsar site.

Lower Thomson River (Reach 1)

The lower Thomson River provides important freshwater flows to the Gippsland Lakes and its fringing wetlands. The river has a diversity of habitats including extensive floodplains and wetland systems. It is flanked by endangered Riparian Floodplain Woodland and provides habitat for numerous species of native fish including Australian Bass, Tupong, Estuary Perch, Black Bream, Yellow-eye Mullet and the vulnerable Australian Grayling. It is a popular waterway for boating and includes the Port of Sale, which provides access to the lower Latrobe River and the Gippsland Lakes. It is also a popular area for walking, fishing and bird watching and has Indigenous cultural heritage values. The river supplies water for irrigated agriculture and is integral to the productivity of the Macalister Irrigation District.

Lower Latrobe River (Reach 1)

The lower Latrobe River is fringed by extensive reed beds. Relatively intact endangered Swamp Scrub and Floodplain Riparian Woodland communities vegetate the river levees, interspersed with small perched freshwater wetlands in some areas. The lower Latrobe is a very popular recreational fishing and boating destination, and is commercially fished for eels and European carp. It is also a critical conduit for the migration of fish between the Latrobe, Thomson and Macalister Rivers and the Gippsland Lakes, including the vulnerable Australian Grayling. The river provides an important source of freshwater to the Gippsland Lakes, and has significant fringing wetlands which are also part of the Ramsar site.

Many threatened birds are associated with the estuarine reach of the river including Great Egret, White-bellied Sea-Eagle, Royal Spoonbill and Nankeen Night Heron. The Latrobe River delta is of State geomorphologic significance.

The key threats to all of these estuary assets are livestock access; invasive plants and animals; degraded water quality (salinity, sediments and nutrients); altered freshwater and marine inflows; recreational pressure and associated navigational improvements.

MARINE ASSET VALUES, CONDITION AND KEY THREATS



Figure 30: Gippsland Lakes and Hinterland Landscape Priority Area Marine Asset

Gippsland Lakes

This marine asset is adjacent to the Gippsland Lakes Ramsar listed site and falls within the Twofold marine bioregion. It contains part of the Port Albert to Lakes Entrance sandy plain, which has a diverse animal community living within the sediment beds (including burrowing worms and small crustaceans). It is a known Blue Whale and Humpback Whale migratory path. It is a popular surfing location and an area of cultural heritage sensitivity. Key threats to the asset are excess nutrients and sediments entering the system (via urban and agricultural run off, stormwater and sewage outlets/outfalls); oil/shipping traffic spills and ballast discharge (commercial and recreational); and climate variability impacts (rising sea level, temperature, acidity).

GIPPSLAND LAKES AND HINTERLAND

Gippsland Lakes and Hinterland

RIVER

ASSET VALUES, CONDITION AND KEY THREATS



Figure 31: Gippsland Lakes and Hinterland Landscape Priority Area River Assets

Perry River (Reach 23)

The Lower Perry River and its chain of ponds morphology is a site of significance in Victoria. The lower Perry River includes deep pools that support a number of fish species including the endangered Dwarf Galaxias and Pygmy Perch. The lower reach has been impacted on by adjacent land use and the remaining indigenous vegetation provides an important link with downstream environments and the range of rain fed wetlands in the catchment. The Perry River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are livestock access; invasive plants and animals and altered flow regime.

Perry River (Reach 24)

The Perry River is one of the few streams in Victoria to have an intact chain of ponds geomorphology, where the waterway consists of a series of deep pools connected by a shallow channel. The Perry River supports a diversity of fauna and vegetation communities including Sandy Floor Scrub and Plains Grassy Forest. This reach of the Perry River supports large areas of intact indigenous vegetation that provides connectivity between the Gippsland Lakes and Victoria Alpine Region. The Perry River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are bank erosion and channel modification; invasive plants and animals; livestock access and altered flow regime.

Thomson River (Reach 4)

The Upper Thomson River is designated as a Heritage River due to its high visual amenity, fishing opportunities and habitat for the endangered Australian Grayling. It is a source of irrigation and potable water supply. The Upper Thomson River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants; altered flow regime and livestock access to the riparian zone.

Latrobe River (Reach 2)

The lower Latrobe provides important freshwater flows to the fringing wetlands and main lakes of the Gippsland Lakes. The lower reach of the Latrobe provides a source of water for irrigated agriculture and has extensive floodplain and wetland complexes many of which still support remnant vegetation communities including Floodplain Riparian Woodland and Swamp Scrub. A range of fish and bird species are supported by the lower Latrobe including the White-bellied Sea-Eagle and endangered Australian Grayling. The lower Latrobe River is in poor condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are bank erosion and channel modification; poor water quality; invasive plants and altered flow regime.

SOIL AND LAND

ASSET VALUES, CONDITION AND KEY THREATS

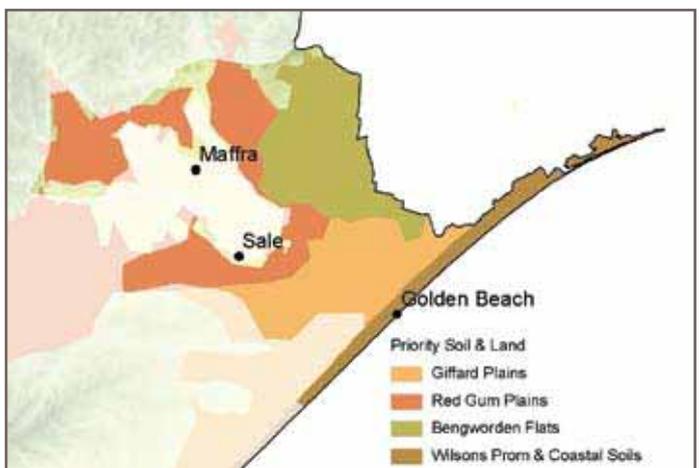


Figure 32: Gippsland Lakes and Hinterland Landscape Priority Area Soil and Land Assets

Giffard Plains

The Giffard Plains soil and land asset is highly valued for the extensive agricultural production it supports. The asset also supports some forestry production in a mostly cleared landscape. The asset is largely intact when supported by groundcover (either introduced or native) but erosive (mainly wind) when cleared of vegetation. These soils are susceptible to primary and secondary salinity on the eastern flats, which is contributing to vegetation loss.

Red Gum Plains

The Red Gum Plains soil and land asset is highly valued for the remnant Red Gum Plains Grassy Woodland that this soil supports, along with agriculture and forestry production. The asset is largely intact when supported by groundcover (either introduced or native) but erosive (water) when cleared of vegetation. These soils are susceptible to primary and secondary salinity in the eastern section of the asset area.

Bengworden Flats

The Bengworden Flats soil and land asset is highly valued for the remnant Red Gum Plains Grassy Woodland that this soil supports, along with agriculture and forestry production. The asset is largely intact when supported by groundcover (either introduced or native) but erosive (wind and water) when cleared of vegetation. These soils are susceptible to primary and secondary salinity in the eastern section of the asset area.

Wilson's Promontory and Coastal Soils

The Wilson's Promontory and Coastal Soils asset is highly valued for supporting resilient ecosystems and the provision of clear air and water. These soils also support economic values associated with tourism. The asset is largely intact when supported by native vegetation cover. Key threats to the asset are erosion (water) and extreme events (fire and flood).

WETLAND

ASSET VALUES, CONDITION AND KEY THREATS

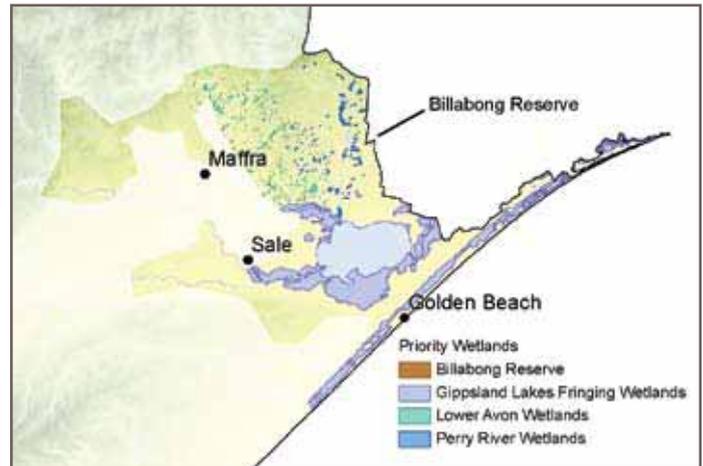


Figure 33: Gippsland Lakes and Hinterland Landscape Priority Area Wetland Assets

Billabong Reserve

The Billabong Reserve is large wetland that supports unique vegetation communities and a population of the nationally endangered prostrate shrub Dwarf Kerrawang. A number of important bird species have been recorded at the site including the Sharp-tailed Sandpiper which is protected under the JAMBA and CAMBA agreements. The Billabong Reserve is in excellent condition assessed by the Index of Wetland Condition. Key threats to the asset are inappropriate fire regimes; invasive plants and animals and altered flow regime.

Gippsland Lakes Fringing Wetlands

The wetlands associated with the western Gippsland Lakes comprise a wide range of wetland types: from rare freshwater wetlands along the lower Latrobe River, through estuarine (variably saline and the most common type), to hypersaline such as Lake Reeve. Each wetland type supports rare and threatened vegetation communities and numerous fauna species (including resident and migratory birds, fish and frogs). These wetlands are included in the Gippsland Lakes Ramsar site, with Dowd Morass also listed on the Register of the National Estate. Many sites of cultural importance are found within or nearby the wetlands. The wetlands have variable Index of Wetland Condition ratings (ranging from good to moderate).

GIPPSLAND LAKES AND HINTERLAND

Gippsland Lakes and Hinterland

Key threats to the assets are grazing; changed water and salinity regimes (including river regulation, permanent entrance at Lakes Entrance, sea level rise and catchment salinisation); invasive plants and animals; and acid sulfate soils.

Lower Avon Wetlands

This asset contains wetlands of the lower Avon River including rare freshwater wetland types (both riverine and catchment/groundwater fed). The wetlands of the Avon River provide habitat connectivity with the Gippsland Lakes, have intact vegetation communities and provide a drought refuge for fauna. Wetlands in this asset group have been impacted by clearing for agriculture and changes to catchment hydrology. Key threats to the assets are invasive plants; altered hydrology and adjacent land use pressures.

Perry River Wetlands

This asset contains wetlands of the Perry River including rare freshwater wetland types (both riverine and catchment fed). The wetlands of the Perry River provide habitat connectivity with the Gippsland Lakes, have intact vegetation communities and provide a drought refuge for fauna. Wetlands in this asset group have been impacted by clearing for agriculture and changes to catchment hydrology. Key threats to the assets are altered hydrology; inappropriate fire regimes and invasive plants and animals.

Table 4: Summary of key threats to significant natural assets within the Gippsland Lakes and Hinterland landscape priority area

GIPPSLAND LAKES AND HINTERLAND LANDSCAPE PRIORITY AREA	Aquifers	Biodiversity	Coast	Estuaries	Marine	Rivers	Soil & Land	Wetlands
Key threats to natural asset values and condition								
Altered flow or hydrological regimes		✓		✓		✓		✓
Breached dunes/barrier			✓					
Channel modification						✓		
Climate variability related extreme events (e.g. wildfire, flood, storm surge, sea level rise)		✓	✓		✓		✓	✓
Disturbance of potential acid sulfate soils		✓	✓					✓
Erosion						✓	✓	
Inappropriate fire regimes		✓						✓
Invasive plants and animals		✓	✓	✓		✓		✓
Land use pressure (includes timber harvesting, land and livestock management practices)	✓	✓				✓		✓
Poor water quality (as the result of excess nutrients, sedimentation, oil spills and other pollutants)	✓			✓	✓			
Recreational use and visitation impacts (includes activities and access)				✓				
Salinity				✓			✓	✓
Unsustainable extraction of groundwater	✓							
Vegetation clearing		✓						



MULLUNG DUNG

L A N D S C A P E P R I O R I T Y A R E A

Photo: Ninety Mile Beach



MULLUNGDUNG

Mullungdung

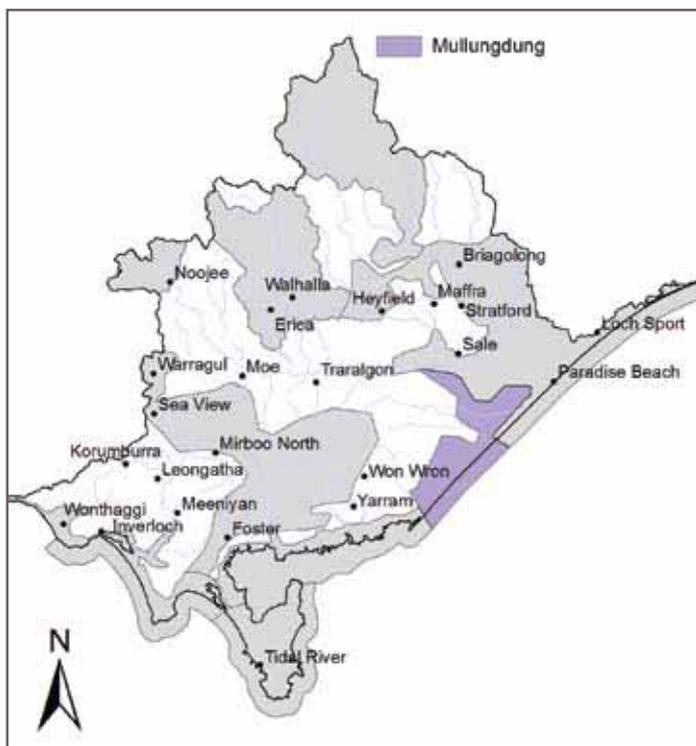


Figure 34: Mullungdung Landscape Priority Area Location

The Mullungdung landscape priority area is characterised by its largely fragmented remnant native vegetation of high biodiversity and natural value, which is poorly connected to larger remnants located within State Parks and conservation reserves outside of the priority area (such as the Mullungdung State Forest). The area supports endangered, rare and vulnerable ecological vegetation classes, including the EPBC Act listed Gippsland Red Gum Grassy Woodland and associated Native Grassland ecological community. The extensive sandy beaches and marine waters of Ninety Mile Beach are a popular destination for local fishermen, holidaymakers and tourists and have indigenous cultural heritage significance. Jack Smith Lake and its associated wetlands are listed in the Directory of Important Wetlands of Australia (DIWA) and are valued for the diversity of bird species they support. The landscape priority area supports broad acre agricultural enterprises (including dairy, sheep and beef grazing) and some forestry production (WGCMA 2011).

Maps of the significant natural assets within the Mullungdung landscape priority area are presented in this chapter along with a description of their values, condition and key threats. A summary of the key threats to the significant natural assets within the Mullungdung landscape priority area is provided in Table 5 at the end of this chapter.

AQUIFER

ASSET VALUES, CONDITION AND KEY THREATS



Figure 35: Mullungdung Landscape Priority Area Aquifer Asset

Latrobe Group Aquifer - Yarram Water Supply Protection Area (WSPA)

The Yarram WSPA extends across a large part of the onshore extent of the Latrobe Group Aquifer. It is a major water resource for both irrigation, industry and town water supplies (Yarram) and has been confirmed to interact with rivers (e.g. Tarra River) where it is unconfined (on the southern edges of the Strzelecki Ranges north of Yarram). This aquifer also contains the oil and gas reserves mined off-shore in Bass Strait. The Latrobe Group Aquifer contains extremely large volumes of high quality (fresh) groundwater. Water levels have been declining consistently at a rate of approximately 1m/year over the last few decades, which has resulted in the water becoming less accessible to groundwater users (SRW 2010). The degree to which the declining water levels are impacting on connected surface water systems or groundwater dependent ecosystems is currently unclear. The major threat to the Latrobe Group Aquifer is unsustainable extraction, particularly via the offshore oil and gas industry. Unsustainable extraction poses a threat to onshore groundwater users and may lead to land subsidence (SRW 2010). The potential impacts of emerging technologies (e.g. coal seam methane gas extraction) on groundwater resources will need to be considered (DSE 2011c).

BIODIVERSITY
ASSET VALUES, CONDITION AND KEY THREATS

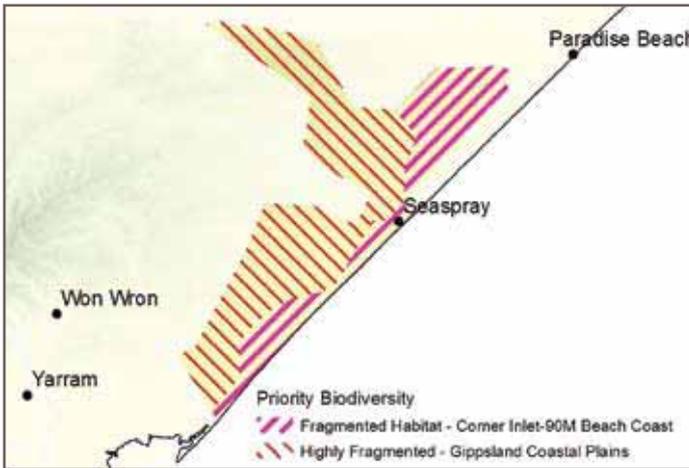


Figure 36: Mullungdung Landscape Priority Area Biodiversity Assets

BIODIVERSITY
ASSET VALUES, CONDITION AND KEY THREATS

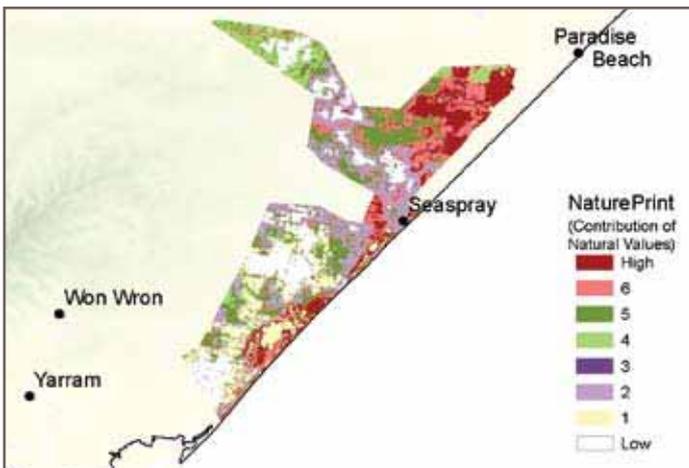


Figure 37: Mullungdung Landscape Priority Area Biodiversity Asset Values

The Mullungdung landscape priority area encompasses portions of two biodiversity assets: the Highly Fragmented Habitat - Gippsland Coastal Plains asset and the Fragmented habitat - Corner Inlet 90-Mile Beach Coast asset (Figure 36). The combined contribution of natural values of these two biodiversity assets is depicted in Figure 37.

Highly Fragmented Habitat - Gippsland Coastal Plains

The Highly Fragmented Habitat - Gippsland Coastal Plains biodiversity asset contains the Darriman Bushland Reserve, other small reserves, and sites of cultural heritage sensitivity. It supports endangered, rare and vulnerable EVCs; including the EPBC Act listed Gippsland Red Gum Grassy Woodland and associated Native Grassland ecological community. NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least six threatened fauna species. It also supports multiple threatened flora species. This asset covers a highly fragmented natural landscape with small patches of remnant native vegetation. Remnant vegetation patches are poorly connected and the modelled vegetation quality is low to moderate. Key threats to the asset are invasive plants and animals; altered fire regimes; overgrazing and extreme events (fire and flood).

Highly Fragmented Habitat - Corner Inlet 90-Mile Beach Coast

The Highly Fragmented Habitat - Corner Inlet 90-Mile Beach Coast biodiversity asset contains the Jack Smith Lake Wetland Reserve. It supports endangered, rare and vulnerable EVCs. NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least 23 threatened fauna species. It also supports multiple threatened flora species. This asset covers a fragmented natural landscape with large patches of remnant native vegetation. Remnant vegetation patches are moderately connected and the modelled vegetation quality is moderate to high. Key threats to the asset are invasive plants and animals; soil acidification (including coastal acid sulfate soils); altered fire regimes; overgrazing and extreme events (fire and flood).

MULLUNGDUNG

Mullungdung

COASTAL ASSET VALUES, CONDITION AND KEY THREATS



Figure 38: Mullungdung Landscape Priority Area Coast Asset

ESTUARY ASSET VALUES, CONDITION AND KEY THREATS

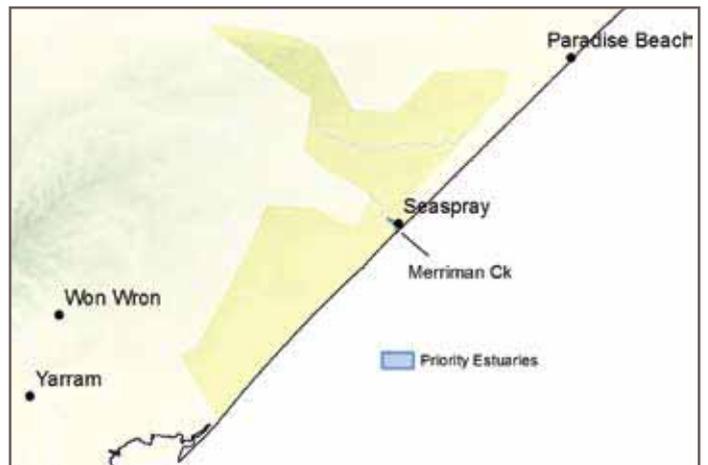


Figure 39: Mullungdung Landscape Priority Area Estuary Asset

Ninety Mile Beach

This coastal asset contains the McLoughlins Beach - Seaspray Coastal Reserve and provides important habitat for shorebirds. The main ecological vegetation classes supported include Estuarine Wetland and Coast Banksia Woodland. It contains areas of cultural heritage sensitivity and sites of geological significance, with former lagoon deposits exposed on the beach. The coast asset is also a popular destination for holidaymakers and tourists. Key threats to the asset are urban expansion and development; disturbance of potential acid sulfate soils; invasive plants and animals; breached dunes / barrier - impacting salinity of the Lakes system; and climate variability impacts (storm surge, sea level rise, fire, and flood).

Merriman Creek (Reach 39)

Merriman Creek is a small creek estuary, flowing from the Strzelecki Ranges through intensive grazing and plantation forestry areas, before flowing to Bass Strait adjacent to the township of Seaspray. Merriman Creek is a source of potable water supply. The estuary is a popular location for recreational activities and fishing and provides a diversity of habitat for birdlife. The area has important Indigenous cultural heritage values for traditional owners. The estuary asset was classified as in near pristine condition according to the Ozestuaries classification (GHD 2005). Key threats to this asset are altered flow regimes; poor water quality; bank and dune erosion.

MARINE ASSET VALUES, CONDITION AND KEY THREATS

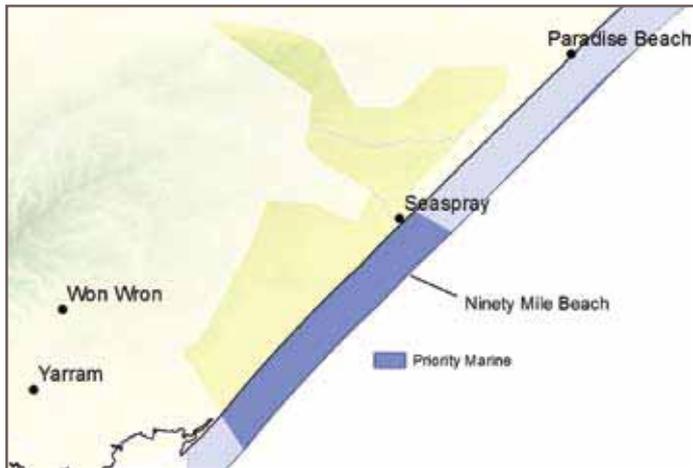


Figure 40: Mullungdung Landscape Priority Area Marine Asset

Ninety Mile Beach

This marine asset falls within the Twofold marine bioregion and contains the Ninety Mile Beach Marine National Park. It is one of narrowest sectors of the outer barrier of the Gippsland Lakes and is an area of cultural heritage sensitivity. It contains part of the Port Albert to Lakes Entrance sandy plain, which has a diverse animal community living within the sediment beds (including burrowing worms and small crustaceans). The marine asset is a known Blue Whale and Humpback Whale migratory path and popular surfing location. Key threats to the asset are excess nutrients entering the system via agricultural run off; oil/shipping traffic spills and ballast discharge (commercial and recreational); invasive plants and animals (e.g. Spartina); and climate variability impacts (rising sea level, temperature, acidity).

SOIL AND LAND ASSET VALUES, CONDITION AND KEY THREATS

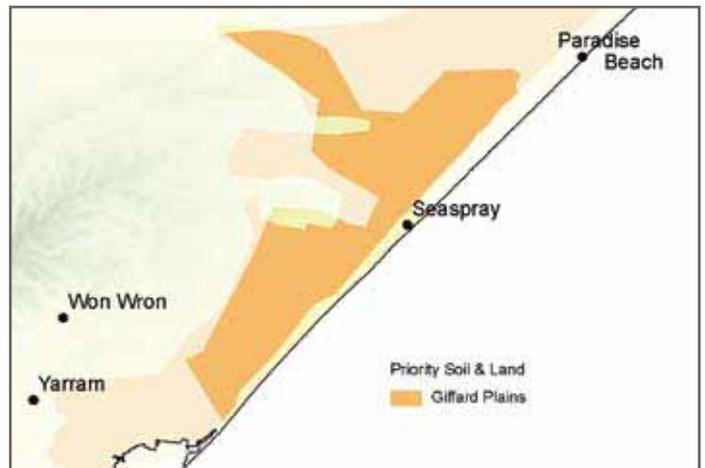


Figure 41: Mullungdung Landscape Priority Area Soil and Land Asset

Giffard Plains

The Giffard Plains soil and land asset is highly valued for the extensive agricultural production it supports. The asset also supports some forestry production in a mostly cleared landscape. The asset is largely intact when supported by groundcover (either introduced or native) but erosive (mainly wind) when cleared of vegetation. These soils are susceptible to primary and secondary salinity on the eastern flats, which is contributing to vegetation loss.



Open Dune Grassland at Jack Smith Lake.

MULLUNGUNG

Mullungdung

WETLAND

ASSET VALUES, CONDITION AND KEY THREATS

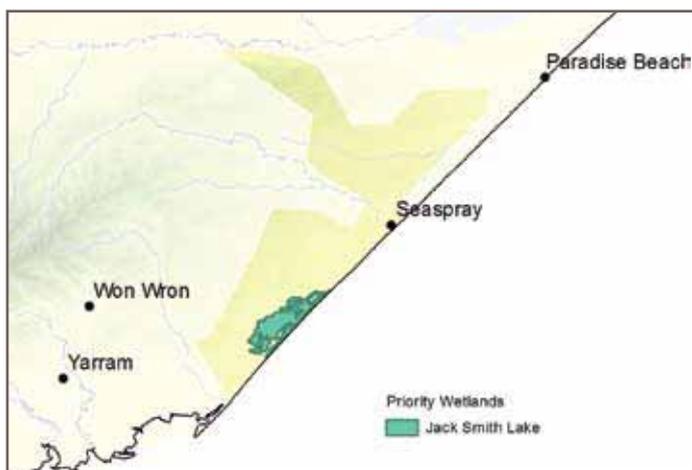


Figure 42: Mullungdung Landscape Priority Area Wetland Asset

Jack Smith Lake

Jack Smith Lake is wetland of national significance. Jack Smith Lake supports a diversity of vegetation communities including Coastal Banksia Woodland, Saltmarsh areas, Swamp scrub, Wet grasslands and Banksia woodland. The wetland complex is dry in most years, filling only after sustained rainfall in the catchment and only rarely opening to the ocean. The wetlands are valued for the diversity of bird species it supports (including water birds and migratory waders) and it is a popular destination for hunting, camping and bird watching. The area has important Indigenous cultural heritage values for traditional owners. Key threats to this asset are altered flow regimes; invasive plants and animals and visitor impacts.

Table 5: Summary of key threats to significant natural assets within the Mullungdung landscape priority area

MULLUNGUNG LANDSCAPE PRIORITY AREA	Aquifers	Biodiversity	Coast	Estuaries	Marine	Rivers	Soil & Land	Wetlands
Key threats to natural asset values and condition								
Altered flow or hydrological regimes				✓				✓
Breached dunes/barrier			✓					
Climate variability related extreme events (e.g. wildfire, flood, storm surge, sea level rise)		✓	✓		✓			
Disturbance of potential acid sulfate soils		✓	✓					
Erosion				✓			✓	
Inappropriate fire regimes		✓						
Invasive plants and animals		✓	✓		✓			✓
Land use pressure (includes timber harvesting, land and livestock management practices)		✓						
Poor water quality (as the result of excess nutrients, sedimentation, oil spills and other pollutants)				✓	✓			
Potential impacts of emerging technologies (e.g. coal seam gas extraction)	✓							
Recreational use and visitation impacts (includes activities and access)								✓
Salinity							✓	
Unsustainable extraction of groundwater	✓							
Urban or industrial development			✓					



STRZELECKI Ranges

LANDSCAPE PRIORITY AREA

Photo: Strzelecki Ranges



STRZELECKI RANGES

Strzelecki Ranges

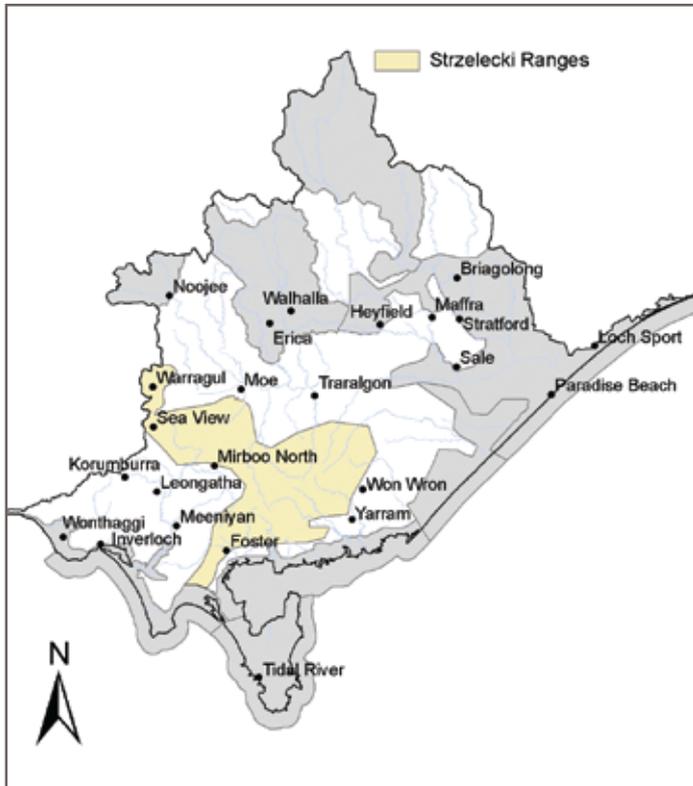


Figure 43: Strzelecki Ranges Landscape Priority Area Location

The Strzelecki Ranges landscape priority area is characterised by its topography, high rainfall and fertile soils. It is a fragmented landscape, containing remnant native vegetation patches of varying sizes. The landscape priority area is valued for its National Parks and reserves and contains native vegetation of high ecological value (including Cool Temperate Rainforest, Wet and Damp Forest). Within the Strzelecki Ranges, the majestic Tarra Bulga National Park and upper Tarra River attract residents and visitors alike, while also providing habitat for threatened species. This landscape supports intensive agricultural and forestry production, as well as groundwater dependent ecosystems (WGCMA 2011).

Maps of the significant natural assets within the Strzelecki Ranges landscape priority area are presented in this chapter along with a description of their values, condition and key threats. A summary of the key threats to the significant natural assets within the Strzelecki Ranges landscape priority area is provided in Table 6 at the end of this chapter.

AQUIFER

ASSET VALUES, CONDITION AND KEY THREATS



Figure 44: Strzelecki Ranges Landscape Priority Area Aquifer Assets

Latrobe Group Aquifer - Yarram Water Supply Protection Area (WSPA)

The Yarram WSPA extends across a large part of the onshore extent of the Latrobe Group Aquifer. It is a major water resource for both irrigation, industry and town water supplies (Yarram) and has been confirmed to interact with rivers (e.g. Tarra River) where it is unconfined (on the southern edges of the Strzelecki Ranges north of Yarram). This aquifer also contains the oil and gas reserves mined off-shore in Bass Strait. The Latrobe Group Aquifer contains extremely large volumes of high quality (fresh) groundwater. Water levels have been declining consistently at a rate of approximately 1m/year over the last few decades, which has resulted in the water becoming less accessible to groundwater users (SRW 2010). The degree to which the declining water levels are impacting on connected surface water systems or groundwater dependent ecosystems is currently unclear. The major threat to the Latrobe Group Aquifer is unsustainable extraction, particularly via the offshore oil and gas industry. Unsustainable extraction poses a threat to onshore groundwater users and may lead to land subsidence (SRW 2010). The potential impacts of emerging technologies (e.g. coal seam methane gas extraction) on groundwater resources will need to be considered (DSE 2011c).

Latrobe Group Aquifer - Outcropping Areas

The outcropping areas of the Latrobe Group Aquifer are predominantly found in the foothills of the Strzelecki Ranges where they interact directly with streams (provision of base flow) and support groundwater dependent ecosystems. They are also an important source of recharge for the Latrobe Group Aquifer. The Latrobe Group Aquifer contains extremely large volumes of high quality (fresh) groundwater. Water levels have been declining consistently at a rate of approximately 1m/year over the last few decades, which has resulted in the water becoming less accessible to groundwater users (SRW 2010). The degree to which the declining water levels are impacting on connected surface water systems or groundwater dependent ecosystems is currently unclear. The major threat to the Latrobe Group Aquifer is unsustainable extraction, particularly via the offshore oil and gas industry. Unsustainable extraction poses a threat to onshore groundwater users and may impact of stream flows and groundwater dependent ecosystems (SRW 2010). The potential impacts of emerging technologies (e.g. coal seam methane gas extraction) on groundwater resources will need to be considered (DSE 2011c).

BIODIVERSITY ASSET VALUES, CONDITION AND KEY THREATS

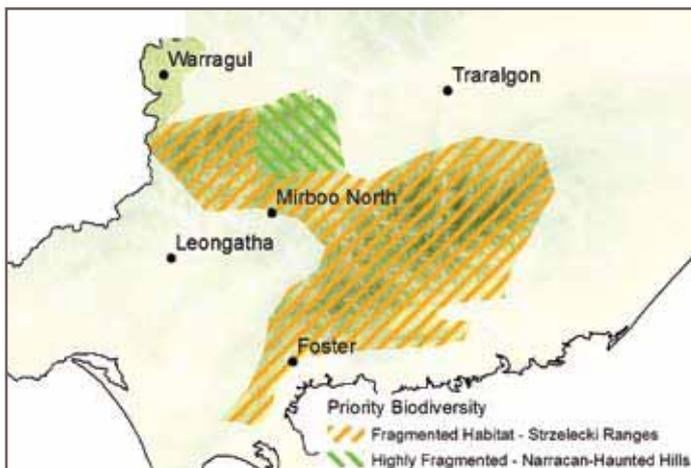


Figure 45: Strzelecki Ranges Landscape Priority Area Biodiversity Assets

BIODIVERSITY ASSET VALUES, CONDITION AND KEY THREATS

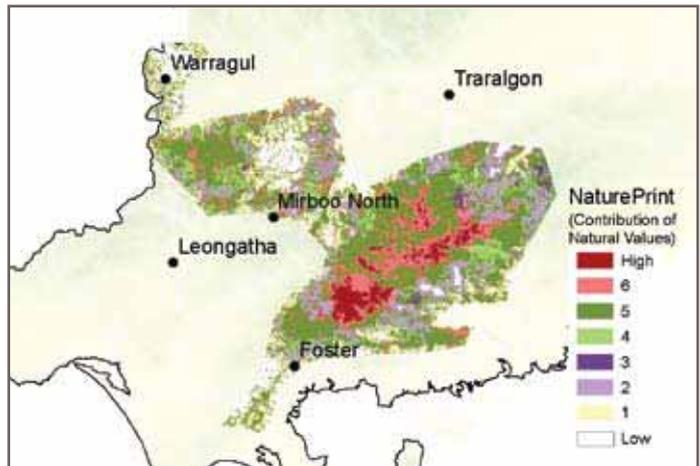


Figure 46: Strzelecki Ranges Landscape Priority Area Biodiversity Asset Values

The Strzelecki Ranges landscape priority area encompasses portions of two biodiversity assets: the Highly Fragmented Habitat - Narracan-Haunted Hills asset and the Highly Fragmented Habitat - Strzelecki Ranges asset (Figure 45). The combined contribution of natural values of these two biodiversity assets is depicted in Figure 46.

Highly Fragmented Habitat - Narracan - Haunted Hills

The Highly Fragmented Habitat - Narracan-Haunted Hills biodiversity asset supports endangered, rare and vulnerable EVCs. NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least five threatened fauna species. It also supports multiple threatened flora species. This asset covers a highly fragmented natural landscape with small to medium patches of remnant native vegetation. Remnant vegetation patches are poorly to moderately connected and the modelled vegetation quality is low to moderate. Key threats to the asset are invasive plants and animals; vegetation clearing, land contamination (excess nutrients); sedimentation and extreme events (fire and flood).

STRZELECKI RANGES

Strzelecki Ranges

Fragmented Habitat - Strzelecki Ranges

The Fragmented Habitat - Strzelecki Ranges biodiversity asset contains Tarra-Bulga National Park, Morwell National Park, Mt Worth State Park, Mirboo North Regional Park, Gunyah Rainforest Reserve and various smaller reserves. It supports endangered, rare and vulnerable EVCs and contains areas of cultural sensitivity. NaturePrint v2.0 indicates this landscape area as containing habitat of t Statewide importance for at least four threatened fauna species. It also supports multiple threatened flora species. This asset covers a fragmented natural landscape with large patches of remnant native vegetation. Remnant vegetation patches are moderately to highly connected and the modelled vegetation quality is high. Key threats to the asset are invasive plants and animals; vegetation clearing, land contamination (excess nutrients); and extreme events (fire and flood).

RIVER ASSET VALUES, CONDITION AND KEY THREATS

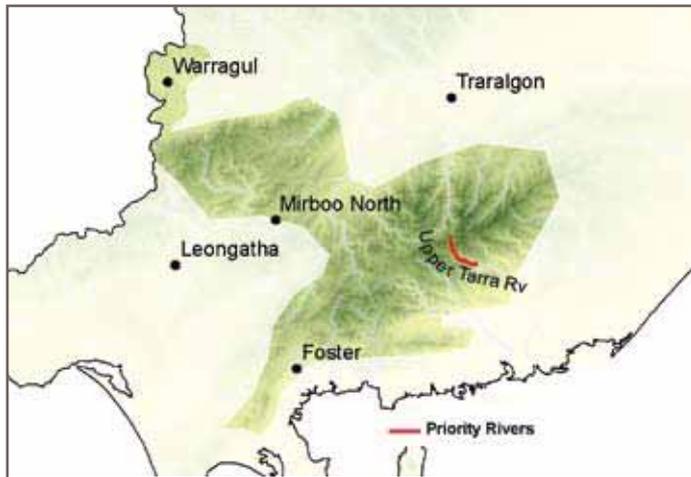
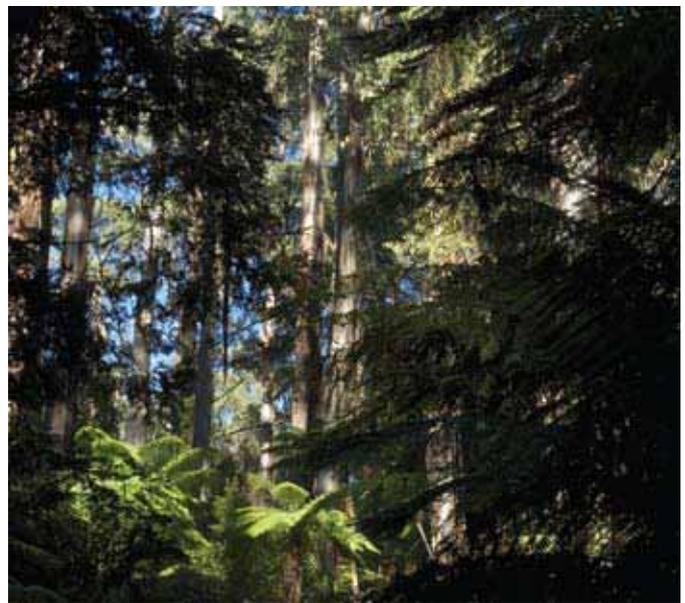


Figure 47: Strzelecki Ranges Landscape Priority Area River Asset

Upper Tarra River (Reach 35)

The Tarra River flows from the Strzelecki Ranges, supplies water for the township of Yarram and irrigators on the productive floodplains. The upper reach of the Tarra is identified as being a representative river due to its high environmental values and good condition. The Tarra River supports a number of fish species and threatened fauna including; Tupong, River Blackfish, Climbing Galaxias, Common Jollytail, South Gippsland Spiny Crayfish, Powerful Owl and Baillons Crake.

The Tarra River flows through the Tarra Bulga National Park and is a popular destination for walkers and sight-seeing. The Upper Tarra River is in good condition according to the 2004 Index of Stream Condition rating, with excellent riparian vegetation, physical form and connectivity. An updated Index of Stream Condition Rating is due later in 2012. Key threats to the asset are invasive plants; bank erosion and sedimentation; and fire.



Tarra Bulga National Park (Photo Parks Victoria)

SOIL AND LAND ASSET VALUES, CONDITION AND KEY THREATS

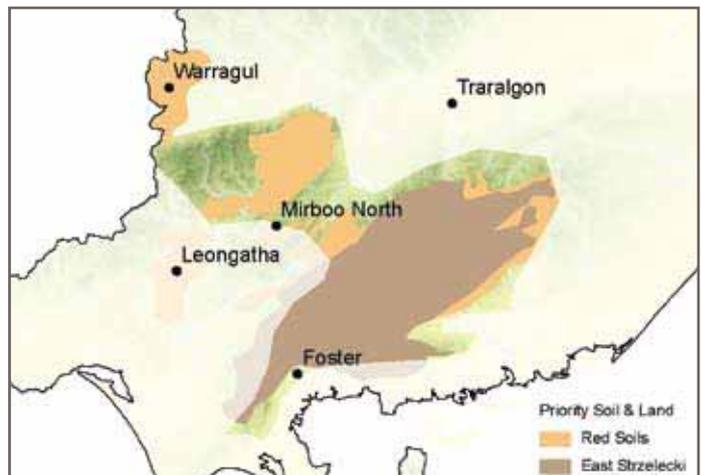


Figure 48: Strzelecki Ranges Landscape Priority Area Soil and Land Assets

East Strzelecki

The East Strzelecki soil and land asset is highly valued for the native vegetation communities of high ecological value it supports (e.g. Cool Temperate Rainforest). The asset also has high economic value for supporting forestry production. The asset is largely intact when supported by native vegetation cover. Cleared areas can be highly susceptible to land slips and erosion.

Red Soils

The Red Soils asset is highly valued for supporting agricultural production. These soils therefore have high economic value, with the ability to persist under intensive agricultural practice. The soil and land asset also has high ecological values, as it provides habitat for species, including the Giant Gippsland Earthworm and a suite of rare and threatened Burrowing Crayfish. The asset is a highly resilient soil type, mostly in satisfactory condition to support the desired land use. Whilst highly permeable, areas are susceptible to compaction (livestock and machinery) and areas devoid of vegetation (natural or cleared) are easily eroded.

Table 6: Summary of key threats to significant natural assets within the Strzelecki Ranges landscape priority area

STRZELECKI RANGES LANDSCAPE PRIORITY AREA	Biodiversity	Rivers	Soil & Land
Key threats to natural asset values and condition			
Climate variability related extreme events (e.g. wildfire, flood, storm surge, sea level rise)	✓		
Erosion		✓	✓
Inappropriate fire regimes		✓	
Invasive plants and animals	✓	✓	
Land contamination (as the result of excess nutrients)	✓		
Poor water quality (as the result of excess nutrients, sedimentation, oil spills and other pollutants)		✓	
Sedimentation	✓	✓	
Soil compaction (as the result of machinery or livestock)			✓
Vegetation clearing	✓		



VICTORIAN Alps

L A N D S C A P E P R I O R I T Y A R E A

Photo: Mt Howitt



VICTORIAN ALPS

Victorian Alps

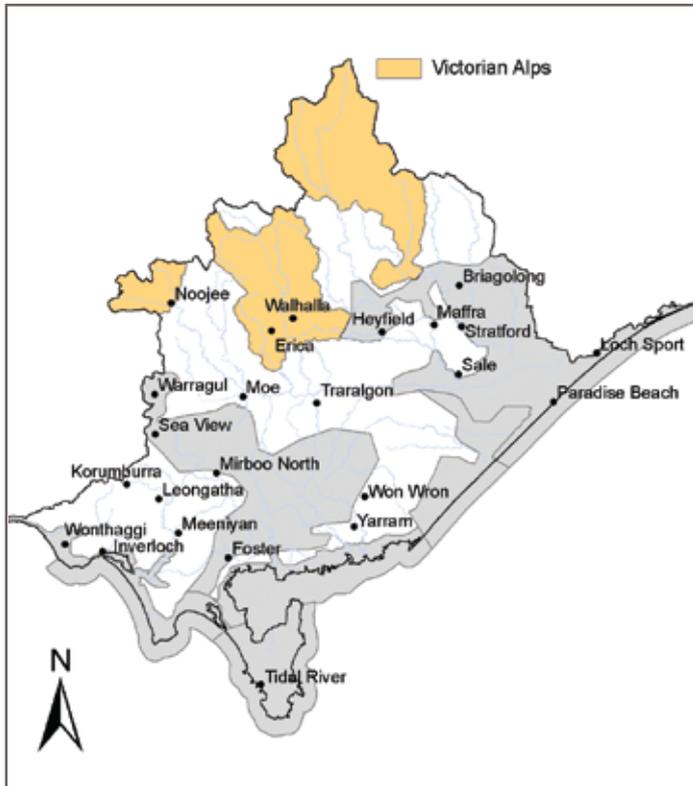


Figure 49: Victorian Alps Landscape Priority Area Location

The Victorian Alps landscape priority area is characterised by its largely contiguous vegetation and topography. It is valued for its National and State Parks and Wilderness Areas, which provide for a wide array of recreational opportunities. The landscape is underpinned by relatively stable soils and contains largely intact ecological vegetation communities and numerous rare and threatened species. Wetlands listed in the Directory of Important Wetlands of Australia (DIWA), which are valued for their intact hydrology, geomorphologic significance and habitat provision are also found within this landscape. The upper reaches of the rivers that flow through the landscape are in excellent to good condition (WGCM 2011).

Maps of the significant natural assets within the Victorian Alps landscape priority area are presented in this chapter along with a description of their values, condition and key threats.

A summary of the key threats to the significant natural assets within the Victorian Alps landscape priority area is provided in Table 7 at the end of this chapter.

BIODIVERSITY

ASSET VALUES, CONDITION AND KEY THREATS

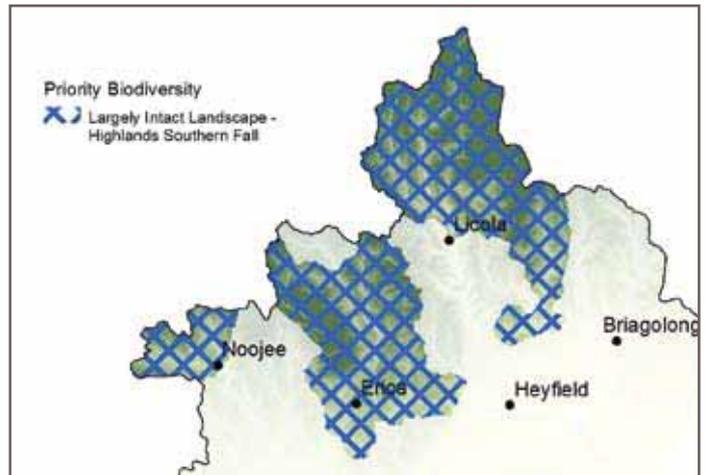


Figure 50: Victorian Alps Landscape Priority Area Biodiversity Asset

BIODIVERSITY

ASSET VALUES, CONDITION AND KEY THREATS

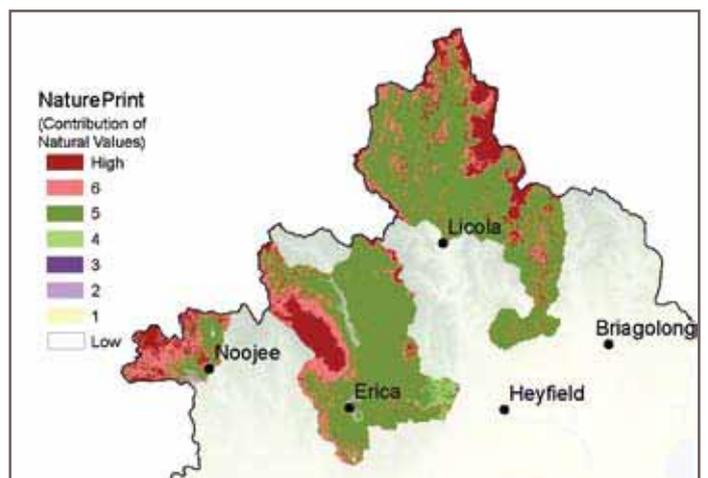


Figure 51: Victorian Alps Landscape Priority Area Biodiversity Asset Values

VICTORIAN ALPS

Victorian Alps

Largely Intact Landscape - Highlands Southern Fall

The Largely Intact Landscape - Highlands Southern Fall biodiversity asset is an area of highly contiguous native vegetation on public land including the Alpine National Park, Baw Baw National Park, Avon Wilderness Park, and other smaller parks and reserves. This asset supports endangered, rare and vulnerable EVCs; including the EPBC Act listed Alpine Sphagnum Bogs and associated Fens ecological community. It contains areas of cultural heritage sensitivity. NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least 6 threatened fauna species. It also supports multiple threatened flora species. This asset covers a largely intact natural landscape with large contiguous patches of remnant native vegetation. Remnant vegetation patches are highly connected and the modelled vegetation quality is high. Key threats to the asset are invasive plants and animals; poor management of livestock grazing; altered fire regimes; land use pressure; and extreme events (fire and flood).

RIVER ASSET VALUES, CONDITION AND KEY THREATS

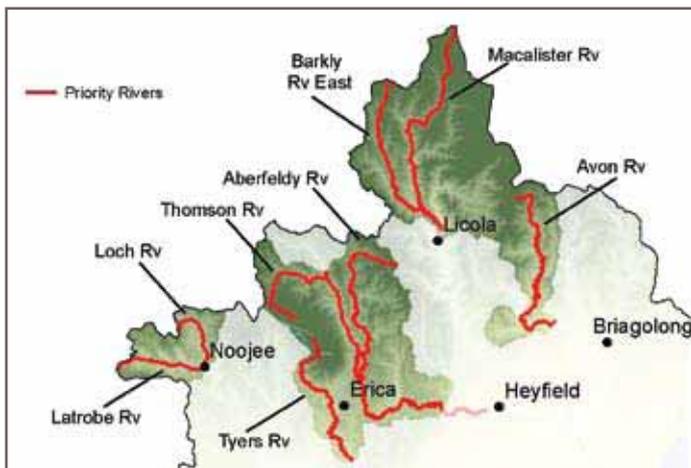


Figure 52: Victorian Alps Landscape Priority Area River Assets

Upper Latrobe River (Reach 7)

The upper Latrobe River provides unregulated freshwater flows to lower parts of the system. The river flows through state forest which has multiple uses including the production of timber. This section of the Latrobe supports a range of species including Barred Galaxias, River Blackfish and Gippsland Spiny Crayfish and Nankeen Night Heron. The reach contains largely intact riparian vegetation including Damp Forest, Wet Forest and Riparian Forest and is one of the few catchment areas to be unaffected by fire in the last five years. It is valued for its visual amenity and is a popular spot for recreational fishing. The upper Latrobe River is in good condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition Rating is due later in 2012. Key threats to the asset are invasive plants and animals; livestock access; adjacent land use pressure and bank erosion.

Loch (Reach 30)

The Loch River flows downstream from the Noojee State Forest through native forest and softwood plantations before meeting the Latrobe River above Noojee. The Loch River is located within a declared water supply catchment and supports intact vegetation communities. It is valued for its visual amenity and is a popular destination for recreational fishing. The Loch River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants; adjacent land use pressure; and inappropriate fire regimes.

Upper Thomson River (Reach 99)

This reach of the Thomson River provides freshwater inflows to the Thomson Reservoir, which is a major storage of potable water. Key threats to asset are invasive plants and animals; and extreme events (fire).

Upper Thomson River (Reach 5)

The upper Thomson River extends downstream from the Thomson Reservoir. This section of the Thomson River is recognised for its heritage values and has high social value for visual amenity, sightseeing, walking, kayaking and recreational fishing. It provides water for downstream use by irrigators and for town water supply. The upper Thomson River is in moderate condition to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are barriers to fish passage; channel modification; and altered flow regimes.

Upper Thomson River (Reach 4)

The upper Thomson River is designated as a Heritage River due to its high visual amenity, fishing opportunities and habitat for the endangered Australian Grayling. It is also a source of potable water supply. The upper Thomson River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants; altered flow regimes; and livestock access to the riparian zone.

Tyers River (Reach 17)

The Tyers River provides flows to the Moondarra Reservoir, which supplies water for Gippsland Water. The river supports native fish populations including River Blackfish, Gippsland Spiny Crayfish and eels and is a popular recreational fishing spot. The Tyers River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition Rating is due later in 2012. Key threats to the asset are invasive plants; fire regimes; and livestock access.

Aberfeldy River (Reach 18)

The Aberfeldy River provides unregulated inflows to the Thomson River and is a source of potable water supply. The Aberfeldy together with the upper Thomson River is listed as a Heritage River. The Aberfeldy River has excellent water quality and supports a diverse fish population. It has high social value and is used for fishing, kayaking, four-wheel driving and camping. The Aberfeldy River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants and inappropriate fire regimes.

Barkly River (Reach 13)

The Barkly River extends downstream from the Alpine National Park before meeting the Macalister River above Licola. The Barkly River supports a range of native fish including River Blackfish, Gippsland Spiny Crayfish, galaxias and eels. The Barkly River is valued for its visual amenity and recreational opportunities including camping. The Barkly River is in good condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants and animals; and inappropriate fire regimes.

Upper Macalister River (Reach 12)

The upper Macalister River extends downstream from the Alpine National Park to the township of Licola. The upper Macalister River is fast flowing with a confined rocky bed and supports important vegetation communities including Riparian Shrubland and Rocky Outcrop Shrubland that are largely intact. It is valued for its recreational opportunities including camping, walking, four-wheel driving and kayaking. This section of the Macalister River also provides inflows to Lake Glenmaggie for irrigation and potable water supply. The upper Macalister River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants and animals; inappropriate fire regimes and visitor impacts.

Upper Avon River (Reach 22)

The upper Avon River extends downstream from the Avon Wilderness Area, providing freshwater flows to the fringing wetlands and main lakes of the Gippsland Lakes. The Avon River also supplies water for irrigated agriculture and horticulture. In its upper reaches the Avon is physically stable and its vegetation is largely intact providing an important link between the Gippsland Lakes and Victorian Alps. The Upper Avon River is in moderate condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants and animals; and inappropriate fire regimes.



Victorian High Plains north of Licola.

VICTORIAN ALPS Victorian Alps

SOIL AND LAND

ASSET VALUES, CONDITION AND KEY THREATS

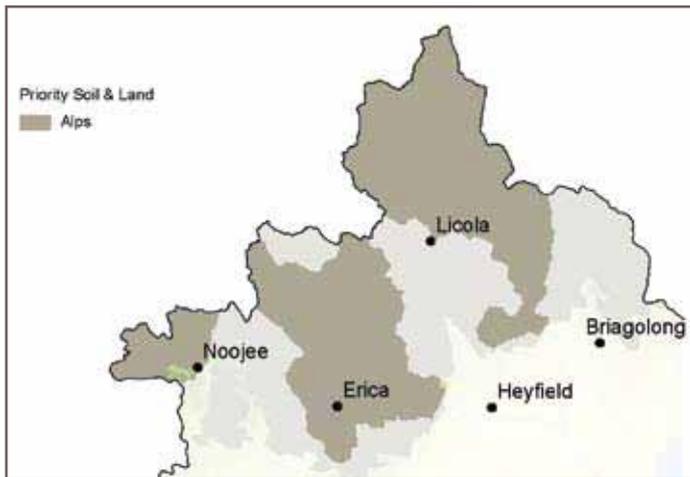


Figure 53: Victorian Alps Landscape Priority Area Soil and Land Assets

Alps

The Alps soil and land asset are valued for the native vegetation communities of high ecological value that they support and the associated high economic value attributed to tourism. This asset is largely intact when supported by native vegetation cover and therefore do not impact upon clear air and water quality within the area. Key threats to the asset are erosion (water erosion and from roads and tracks) and extreme events (fire).

WETLAND

ASSET VALUES, CONDITION AND KEY THREATS

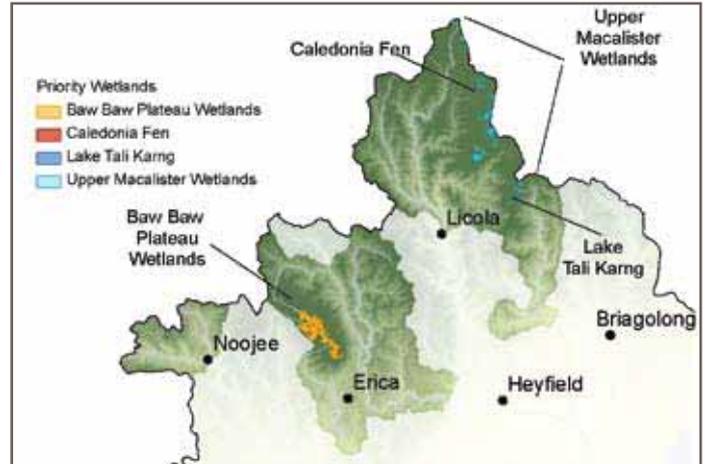


Figure 54: Victorian Alps Landscape Priority Area Wetland Assets

Baw Baw Plateau Wetlands

The Baw Baw Plateau wetlands are a large alpine peatland complex located within the Baw Baw National Park. The wetlands support significant intact alpine and subalpine vegetation communities and have high visual amenity and social value. Key threats to the asset are invasive plants and animals; inappropriate fire regimes; and visitor impacts.

Caledonia Fen

Caledonia Fen is part of a large alpine peatland complex within the Alpine National Park. It is a Wetland of National Importance and is valued for its intact Sphagnum Bog vegetation communities. The site is of geomorphologic significance and the pollen record at the site is extremely important for understanding the history of plant evolution and geological change in Australia. Caledonia Fen is in excellent condition assessed by the Index of Wetland Condition. Key threats to the asset are invasive plants and animals; and inappropriate fire regimes.

Lake Tali Karng

Lake Tali Karng is the only permanent natural lake in the Victorian highlands. The lake has important Indigenous cultural values for traditional owners. Lake Tali Karng has high visual amenity and is popular for walking, fishing and camping. Key threats to the asset are visitor impacts and inappropriate fire regimes.

Upper Macalister Wetlands

The Upper Macalister wetlands are a large peatland complex within the Alpine National Park. The wetlands support significant largely intact alpine and subalpine vegetation communities and have high visual amenity and social value. Key threats to the asset are invasive plants and animals; and inappropriate fire regimes.

Table 7: Summary of key threats to significant natural assets within the Victorian Alps landscape priority area

VICTORIAN ALPS LANDSCAPE PRIORITY AREA	Biodiversity	Rivers	Soil & Land	Wetlands
Key threats to natural asset values and condition				
Altered flow or hydrological regimes		✓		
Barriers to fish passage		✓		
Channel modification		✓		
Climate variability related extreme events (e.g. wildfire, flood, storm surge, sea level rise)	✓		✓	✓
Erosion		✓	✓	
Inappropriate fire regimes	✓	✓		✓
Invasive plants and animals	✓	✓		✓
Land use pressure (includes timber harvesting, land and livestock management practices)	✓	✓		
Recreational use and visitation impacts (includes activities and access)		✓		✓



Upper Macalister River fish survey.



WILSONS Promontory

L A N D S C A P E P R I O R I T Y A R E A

Photo: Tidal River



WILSONS PROMONTORY

Wilson's Promontory

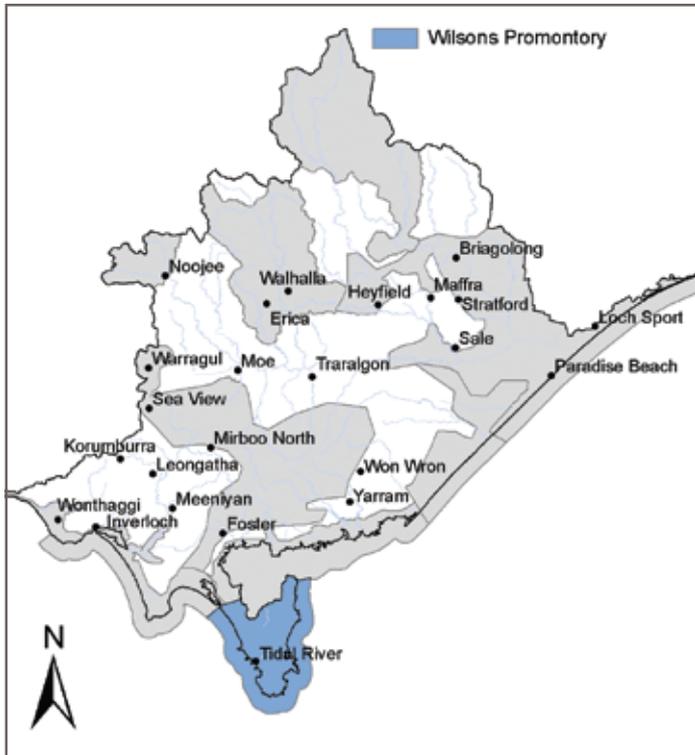


Figure 55: Wilsons Promontory Landscape Priority Area Location

The Wilsons Promontory landscape priority area is characterised by the largely contiguous native vegetation that is located within the iconic Wilsons Promontory National Park. The priority area is further defined by its marine environment, which contains the Wilsons Promontory Marine National Park. The National Parks are highly valued by both residents and tourists for their natural scenic values, educational and recreational opportunities and Indigenous cultural heritage significance. The landscape is underpinned by relatively stable soils and contains largely intact ecological vegetation communities and numerous rare and threatened species. Tidal River's close proximity to the main day visitor, camping and overnight accommodation is a popular site for activities including walking, sightseeing, swimming, kayaking, boating and recreational fishing.

Maps of the significant natural assets within the Wilsons Promontory landscape priority area are presented in this chapter along with a description described below in terms of their values, condition and key threats. A summary of the key threats to the significant natural assets within the Wilsons Promontory landscape priority area is provided in Table 8 at the end of this chapter.

BIODIVERSITY

ASSET VALUES, CONDITION AND KEY THREATS

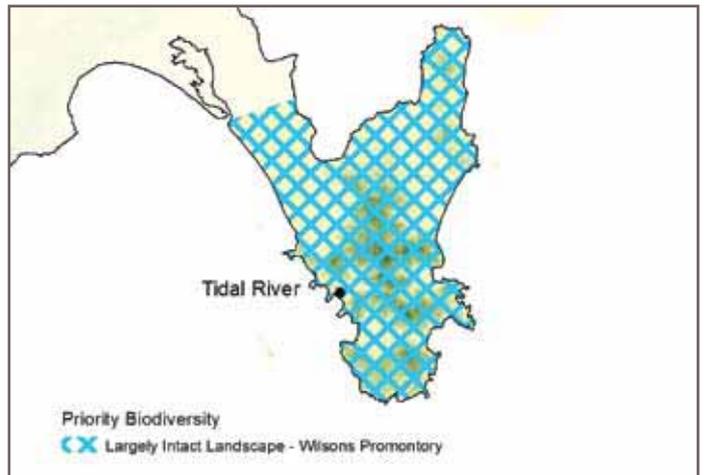


Figure 56: Wilsons Promontory Landscape Priority Area Biodiversity Asset

BIODIVERSITY

ASSET VALUES, CONDITION AND KEY THREATS

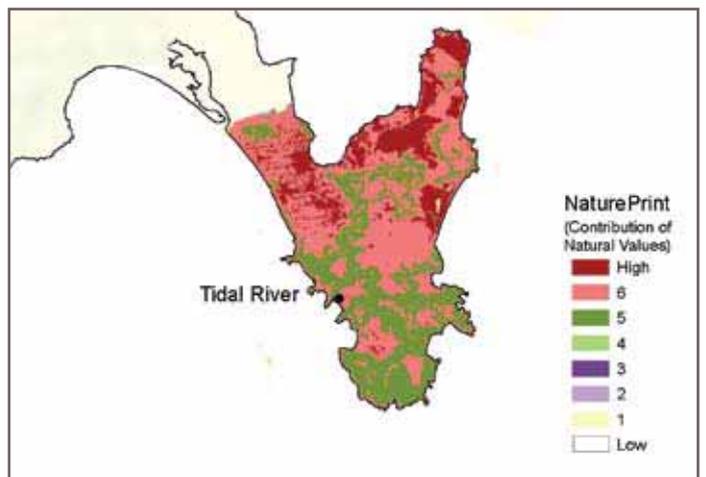


Figure 57: Wilsons Promontory Landscape Priority Area Biodiversity Asset Values

WILSONS PROMONTORY

Wilson's Promontory

Largely Intact Landscape - Wilson's Promontory

The Largely Intact Landscape - Wilson's Promontory biodiversity asset is an area of highly contiguous native vegetation on public land defined by Wilson's Promontory National Park in its entirety. It supports endangered, rare and vulnerable EVCs and contains areas of cultural heritage sensitivity. NaturePrint v2.0 indicates this landscape area as containing habitat of Statewide importance for at least 12 threatened fauna species. It also supports multiple threatened flora species. This asset covers a largely intact natural landscape with large contiguous patches of remnant native vegetation. Remnant vegetation patches are highly connected and the modelled vegetation quality is high. Key threats to the asset are invasive plants and animals; altered fire regimes; visitation pressure and extreme events (fire and flood).

COASTAL ASSET VALUES, CONDITION AND KEY THREATS



Figure 58: Wilson's Promontory Landscape Priority Area Coast Asset

Wilson's Promontory

This coastal asset incorporates the entire Wilson's Promontory National Park. It contains sites of geological significance and areas of cultural heritage sensitivity. The Yanakie dunes are an extensive active dune system crossing the isthmus. The Wilson's Promontory coastal asset provides habitat and roosting sites for migratory and resident shorebirds and habitat for penguins.

Due to the range of recreational opportunities it supports, the coast asset is a popular destination for both residents and visitors. Key threats to the asset are invasive plants and animals; inappropriate infrastructure and recreational overuse; and climate variability impacts (storm surge, sea level rise, fire, and flood).

ESTUARY ASSET VALUES, CONDITION AND KEY THREATS

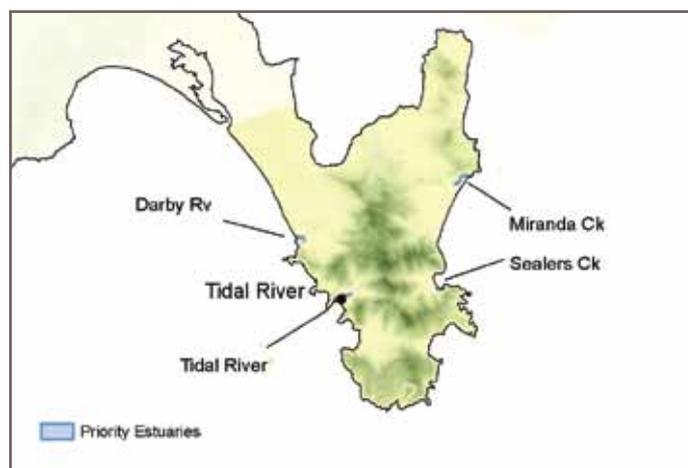


Figure 59: Wilson's Promontory Landscape Priority Area Estuary Assets

Darby River (Reach 11), Sealers Creek (Reach 13) and Miranda Creek (Reach 14)

The small estuaries of Wilson's Promontory, Darby River, Sealers Creek and Miranda Creek drain from the mountain range that extend through the National Park and drain either to the ocean or to the Corner Inlet Ramsar Site. The estuaries of Wilson's Promontory support a diversity of important vegetation communities as well as fish and bird species. The estuaries are a popular destination for visitors to the park and are used for walking and sightseeing. Key threats to the assets are invasive plants and animals; fire regime and visitor impacts.

Tidal River (Reach 23)

Tidal River is a small river estuary located in the Wilsons Promontory National Park. The estuary is adjacent to the Park's main visitor, camping and accommodation area. Tidal River is highly valued for its visual amenity and is a popular spot for recreational fishing, walking, swimming, sightseeing and boating. The estuary supports a range of threatened species including the Eastern Great Egret, Swamp Skink, Southern Brown Bandicoot and White-bellied Sea-Eagle. The area has important Indigenous cultural heritage values for traditional owners. This estuary was classified as a wave dominated strandplain estuary in largely unmodified condition according to the Ozestuaries classification (GHD 2005). Key threats to the asset are visitor impacts; invasive plants and poor water quality.

Features of note include the Wilsons Promontory south islands, deepwater habitat and high sea-level cave. White shark residency is located within the open sea pelagic environment. Key threats to the asset are oil/shipping traffic spills and ballast discharge (commercial and recreational); invasive plants and animals (e.g. Spartina and Northern Pacific Sea Star); and climate variability impacts (rising sea level, temperature, acidity).

MARINE

ASSET VALUES, CONDITION AND KEY THREATS

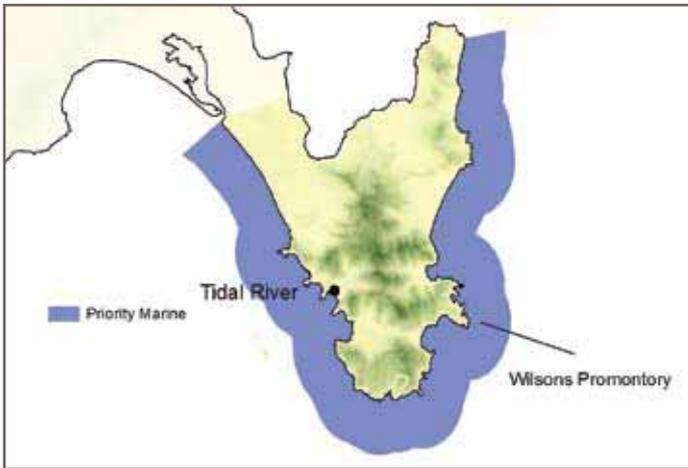


Figure 60: Wilsons Promontory Landscape Priority Area Marine Asset

Wilsons Promontory

This marine asset falls within the Flinders marine bioregion and contains the Wilsons Promontory Marine National Park. It is a popular surfing and diving location and contains areas of cultural heritage sensitivity and significance. The marine asset is home to Australian Fur Seal and New Zealand Fur Seal colonies and is a known migratory pathway for Blue, Humpback and Southern Right Whales.

RIVER

ASSET VALUES, CONDITION AND KEY THREATS

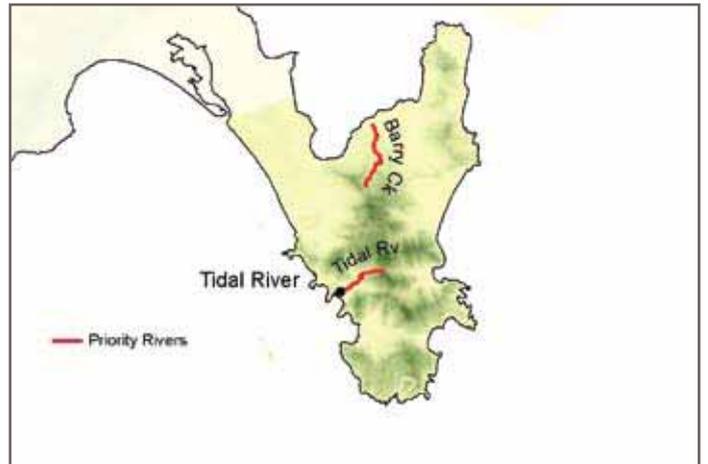


Figure 61: Wilsons Promontory Landscape Priority Area River Assets

Barry Creek (Reach 24)

Barry Creek is a small waterway located on the northern coastline of Wilsons Promontory National Park and drains into the Corner Inlet Ramsar site. Barry Creek supports important vegetation communities including Swamp Scrub, Saltmarsh and Warm Temperate Rainforest. Barry Creek is in good condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants; inappropriate fire regimes and visitation pressure.

WILSONS PROMONTORY

Wilson's Promontory

Tidal River (Reach 23)

Tidal River is located on the west coast of Wilsons Promontory. It is adjacent to the main day visitor, camping and overnight accommodation hub and is a popular for walking, sightseeing, kayaking and fishing. Tidal River supports a range of fauna and vegetation communities and provides all the freshwater for the Tidal River community. Tidal River is in good condition according to the 2004 Index of Stream Condition rating. An updated Index of Stream Condition rating is due later in 2012. Key threats to the asset are invasive plants; inappropriate fire regimes and visitor impacts.

SOIL AND LAND

ASSET VALUES, CONDITION AND KEY THREATS



Figure 62: Wilsons Promontory Landscape Priority Area Soil and Land Asset

Wilson's Promontory and Coastal Soils

The Wilsons Promontory and Coastal Soils asset are valued for the native vegetation communities of high ecological value that they support and the associated high economic value attributed to tourism. This asset is largely intact when supported by native vegetation cover and therefore do not impact upon clear air and water quality within the area. Key threats to the asset are erosion from roads and tracks construction and use; and extreme events (fire).

WETLAND

ASSET VALUES, CONDITION AND KEY THREATS

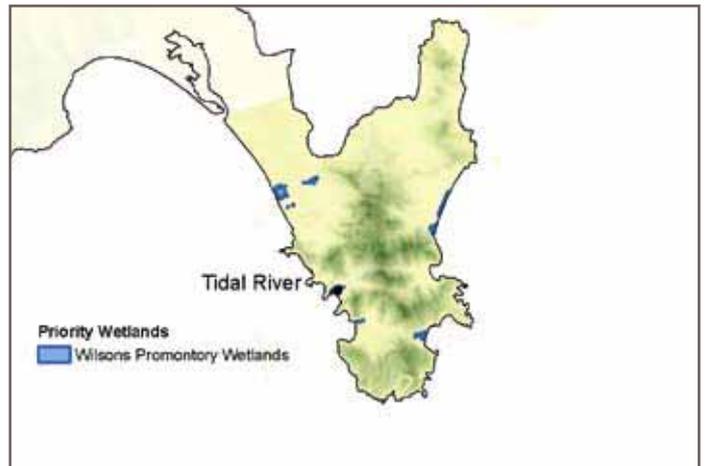


Figure 63: Wilsons Promontory Landscape Priority Area Wetland Asset

Wilson's Promontory Wetlands

This wetland asset incorporates the wetlands of Wilsons Promontory. The wetlands support largely intact vegetation communities and have near natural water regimes. A number of rare or threatened fauna and flora are associated with the wetlands and the wetlands are valued for their visual amenity and recreational opportunities. Key threats to the asset are inappropriate fire regimes; invasive plants and animals; and visitor impacts.

Table 8: Summary of key threats to significant natural assets within the Wilsons Promontory landscape priority area

WILSONS PROMONTORY LANDSCAPE PRIORITY AREA	Biodiversity	Coast	Estuaries	Marine	Rivers	Soil & Land	Wetlands
Key threats to natural asset values and condition							
Climate variability related extreme events (e.g. wildfire, flood, storm surge, sea level rise)	✓	✓		✓		✓	
Erosion						✓	
Inappropriate fire regimes	✓		✓		✓		✓
Invasive plants and animals	✓	✓	✓	✓	✓		✓
Poor water quality (as the result of excess nutrients, sedimentation, oil spills and other pollutants)			✓	✓			
Recreational infrastructure development and construction		✓					
Recreational use and visitation impacts (includes activities and access)	✓		✓		✓		✓



Wilsons Promontory.

OBJECTIVES AND MANAGEMENT MEASURES

Objectives and Management Measures

Objectives and management measures have been developed for each landscape priority area in order to mitigate the identified key threats to significant asset values and condition as presented in the previous chapters. These have been underpinned by the following program logic (Table 9).

Table 9: RCS Program Logic

REGIONAL CATCHMENT STRATEGY	
Vision	50 year statement that is balanced between aspirational and achievable
Objectives	20 year objectives describing the desired condition in the long term in order to work toward the 50 year vision
Management Measures	A program of six year management measures, stating the action needed during the life of the strategy to work toward the 20 year objectives
REGIONAL SUB-STRATEGIES & ACTION PLANS	
Targets and Activities	Specific on ground targets and activities linking to the RCS management measures and objectives
INVESTMENT PROPOSALS	
Outputs	Annual management targets

The objectives are long term and set broad direction for future action. The program of management measures, which states the action necessary to achieve these objectives are planned for implementation during the life of this RCS.

The RCS objectives and management measures have been developed in response to the key threats to significant assets values and condition where feasible. The technical, social and economic feasibility and likelihood of success was considered in their development.

Objectives and associated management measures that relate to all or more than one landscape priority area are outlined in Table 10.

The proposed partners, who would ideally work together to implement the actions are also shown in Table 10. While the listed proposed implementation partners does not constitute a formal agreement to deliver each item, each of these partners has the opportunity to lead, contribute or influence the achievement of the objectives and management measures. The roles and actions to be taken by regional partners will be negotiated and confirmed during the development of an associated RCS implementation plan.

Table 10: RCS Landscape Priority Areas Objectives, Management Measures and Proposed Implementation Partners

	Objectives (20 year timeframe)	Management Measures (6 year timeframe)	Proposed Implementation Partners	Bunurong Coastal Landscape	Corner Inlet Nootamunga Landscape	Gippsland Lakes and Hinterland Landscape	Mullungdung Landscape	Strzelecki Landscape	Victorian Alps Landscape	Wilson's Promontory Landscape
1	Improved coastal dune system integrity	Develop and implement a program to incrementally replace European Marram Grass (<i>Ammophila arenaria</i>) with native vegetation.	Coastcare, DEPI, GLMAC, Landcare, Traditional Owners, Parks Victoria.			✓	✓			
2	Improved coastal dune system integrity	Develop and implement a program to define access routes and rehabilitate areas of the fragile Ninety Mile Beach dune systems.	Coastcare, GCB, Local Government, Parks Victoria, Traditional Owners.				✓			
3	Improved conservation status of threatened species and communities in the landscape.	Implement an integrated approach to undertake high priority actions at high priority locations for threatened species as per the DEPI Actions for Biodiversity Conservation (ABC) database.	Birdlife Australia, DEPI, GLMAC, Landcare, Local Government, Parks Victoria, TfN, Traditional Owners, WGCMA.	✓	✓	✓	✓	✓	✓	✓
4	Improved or maintained environmental condition of waterways, estuaries, wetlands and aquifers.	Implement policies and actions outlined in the Gippsland Sustainable Water Strategy (SWS) and priority actions in the Regional Waterway Management Strategy (in development).	DEPI, Gippsland Water, South Gippsland Water, SRW, TfN, WGCMA.	✓	✓	✓	✓	✓	✓	✓
5	Improved or maintained soil health.	Implement policies and actions outlined in the State Soil Health Strategy and priority actions in a Regional Soil Health Strategy (yet to be developed).	DEPI, WGCMA.	✓	✓	✓	✓	✓	✓	✓

	Objectives (20 year timeframe)	Management Measures (6 year timeframe)	Proposed Implementation Partners	Bunurong Coastal Landscape	Corner Inlet Nooramunga Landscape	Gippsland Lakes and Hinterland Landscape	Mullungdung Landscape	Strzelecki Landscape	Victorian Alps Landscape	Wilson's Promontory Landscape
6	Improved quality of native vegetation in the landscape.	Undertake and support collaborative programs between private and public land managers to improve the understanding and outcomes of ecological burning and ecosystem responses in coastal vegetation.	CFA, DEPI, Local Government, Parks Victoria, Traditional Owners, WGCMA.	✓	✓	✓				
7	Improved quality of native vegetation in the landscape.	Develop and implement a program to control invasive plants and animals in accordance with the West Gippsland Invasive Plants and Animals Strategy and Parks Victoria conservation objectives.	DEPI, GLMAC, Landcare, Local Government, Parks Victoria, Traditional Owners, WGCMA.	✓	✓	✓	✓	✓	✓	✓
8	Improved quality of native vegetation in the landscape.	Undertake and support collaborative programs between private and public land managers to improve the understanding and outcomes of ecological burning and ecosystem responses in the Mullungdung Holey Plains vegetation communities.	DEPI, Parks Victoria, Traditional Owners.				✓			
9	Improved soil health and sustainable agriculture in the Macalister Irrigation District.	Develop and implement a program to work with landholders to improve soil health and address local salinity threats, as per priority actions in the Macalister Land and Water Management Plan and West Gippsland Salinity Management Plan.	DEPI, GLMAC, GippsDairy, Landcare, Local Government, SRW, WGCMA.			✓				

	Objectives (20 year timeframe)	Management Measures (6 year timeframe)	Proposed Implementation Partners	Bunurong Coastal Landscape	Corner Inlet Nooramunga Landscape	Gippsland Lakes and Hinterland Landscape	Mullungdung Landscape	Strzelecki Landscape	Victorian Alps Landscape	Wilson's Promontory Landscape
10	Improved soil health and sustainable agriculture in the Macalister Irrigation District.	Develop and implement a program to work with landholders to improve irrigation water use efficiency, as per priority actions in the Macalister Land and Water Management Plan and West Gippsland Salinity Management Plan.	DEPI, GLMAC, GippsDairy, Landcare, SRW, WGCMA.			✓				
11	Improved soil health and sustainable agriculture in the Strzelecki Ranges Red Soils.	Develop and implement a program to detect early signs of soil erosion in accordance with the West Gippsland Soil Erosion Management Plan.	DEPI, Landcare, Local Government, WGCMA.					✓		
12	Improved water quality in the landscape system.	Develop and implement a program to reduce soil erosion and increase ground cover in targeted areas of the Tarwin and Powlett Rivers catchments in accordance with the West Gippsland Soil Erosion Management Plan.	DEPI, Landcare, Traditional Owners, WGCMA.	✓						
13	Improved water quality in the landscape system.	Undertake an investigation into the sources and movement of nutrients from the Tarwin catchment to the Bunurong Coastal estuarine and marine system.	Coastcare, DEPI, Landcare, Research Institutions, WGCMA.	✓						
14	Improved water quality in the landscape system.	Develop and implement a program to reduce livestock access to riparian zones, waterways, wetlands, saltmarsh and mangroves in accordance with the Regional Waterway Management Strategy (in development).	GLMAC, Landcare, GippsDairy, SRW, Traditional Owners, WGCMA.	✓	✓	✓				

	Objectives (20 year timeframe)	Management Measures (6 year timeframe)	Proposed Implementation Partners	Bunurong Coastal Landscape	Corner Inlet Nooramunga Landscape	Gippsland Lakes and Hinterland Landscape	Mullungdung Landscape	Strzelecki Landscape	Victorian Alps Landscape	Wilson's Promontory Landscape
15	Improved water quality in the landscape system.	Develop and implement a program to reduce nutrients and sediment loads from agricultural, forestry and urban land use into the Corner Inlet Nooramunga system in accordance with the West Gippsland Soil Erosion Management Plan and Corner Inlet Water Quality Improvement Plan (in development).	Coastcare, DEPI, EPA, GippsDairy, Landcare, Local Government, TfN, Traditional Owners, WGCMA.		✓					
16	Improved water quality in the landscape system.	Undertake an investigation of the role and management of nitrogen (and to a lesser extent phosphorus) in water quality in the Gippsland Lakes system.	EGCMA, GLMAC, Research Institutions, SRW, WGCMA.			✓				
17	Improved water quality in the landscape system.	Develop and implement a communication and education strategy to promote the findings from research into the sources and movement of catchment based nutrients to the Gippsland Lakes system.	Coastcare, DEPI, GLMAC, Industry Groups, Landcare, SRW, WGCMA.			✓				
18	Improved water quality in the landscape system.	Implement a dryland nutrient and sediment reduction program in targeted zones within the Gippsland Lakes catchment in accordance with the West Gippsland Soil Erosion Management Plan.	DEPI, EPA, GLMAC, GippsDairy, Landcare, WGCMA.			✓				

	Objectives (20 year timeframe)	Management Measures (6 year timeframe)	Proposed Implementation Partners	Bunurong Coastal Landscape	Corner Inlet Nooramunga Landscape	Gippsland Lakes and Hinterland Landscape	Mullungdung Landscape	Strzelecki Landscape	Victorian Alps Landscape	Wilson's Promontory Landscape
19	Improved water quality in the landscape system.	Implement priority actions from the Macalister Land and Water Management Plan.	DEPI, GLMAC, GippsDairy, Landcare, SRW, TfN, WGCMA.			✓				
20	Increased native vegetation extent and connectivity across the landscape.	Develop a plan and implement a program to protect, increase the extent and build ecological resilience of native vegetation, and create ecologically functional biolinks between patches of high conservation significance native vegetation.	DTPLI, DEPI, EGCMA, GLMAC, Landcare, Local Government, Parks Victoria, TfN, Traditional Owners, WGCMA.	✓	✓	✓	✓	✓		
21	Maintained extent and quality of significant native vegetation within the landscape.	Develop and implement a monitoring program to identify risks posed by hard hoofed animals on high conservation significance native vegetation in accordance with Parks Victoria conservation objectives and DEPI conservation strategies.	DEPI, Parks Victoria, Traditional Owners.						✓	✓
22	Maintained extent and quality of significant native vegetation within the landscape.	Identify fire sensitive Alpine Peatlands and Cool Temperate Rainforests as ecological assets to be protected from planned and unplanned fire and engage in fire planning processes to develop measures to reduce the risk to these assets.	Mt Baw Baw ARMB, DEPI, Parks Victoria, Traditional Owners.					✓	✓	

	Objectives (20 year timeframe)	Management Measures (6 year timeframe)	Proposed Implementation Partners	Bunurong Coastal Landscape	Corner Inlet Nooramunga Landscape	Gippsland Lakes and Hinterland Landscape	Mullungdung Landscape	Strzelecki Landscape	Victorian Alps Landscape	Wilson's Promontory Landscape
23	Maintained extent and quality of significant native vegetation within the landscape.	Develop and implement a monitoring program to identify risks posed by inappropriate recreational use, invasive plants and animals, and changes in hydrology to the Alpine Peatlands.	DEPI, Parks Victoria, Traditional Owners.						✓	
24	Maintained integrity of biota and habitat within the marine ecosystem.	Implement actions according to Parks Victoria's Conservation Outcomes for Marine National Parks and Marine and Coastal Parks (in development).	Coastcare, DEPI, Landcare, Local Government, Parks Victoria, Traditional Owners.	✓	✓		✓			✓
25	Maintained integrity of biota and habitat within the marine ecosystem.	Undertake an investigation on the impacts of nutrients and sediments on seagrass.	DEPI, Parks Victoria, Research Institutions, WGCMA.		✓					
26	Maintained water quality condition in the landscape system.	Develop and implement a monitoring program for waterways and estuaries located in high use recreation sites, to identify increased risks posed by invasive plants and animals, inappropriate recreational use, sediment impacts after fire, and soil erosion in accordance with Parks Victoria conservation objectives and the Regional Waterway Management Strategy (in development).	DEPI, Parks Victoria, SRW, WGCMA.						✓	✓
27	Minimised disturbance of acid sulfate soils in the landscape.	Develop and implement a public education program to raise awareness of the implications of disturbing potential acid sulfate soils.	DEPI, GLMAC, Local Government, WGCMA.	✓	✓	✓	✓			

	Objectives (20 year timeframe)	Management Measures (6 year timeframe)	Proposed Implementation Partners	Bunurong Coastal Landscape	Corner Inlet Nooramunga Landscape	Gippsland Lakes and Hinterland Landscape	Mullungdung Landscape	Strzelecki Landscape	Victorian Alps Landscape	Wilson's Promontory Landscape
28	Minimised flood damage to the floodplain and its occupants.	Develop and implement guidelines for development in flood prone areas.	Local Government, WGCMA.	✓	✓	✓	✓	✓	✓	✓
29	Preservation of Aboriginal cultural heritage sites.	Engage with nominated Indigenous representatives when planning natural resource management works to ensure that they are carried out in accordance with the <i>Aboriginal Heritage Act 2006</i> and the <i>Aboriginal Heritage Regulations 2007</i> .	All NRM agencies, Coastcare, Landcare, Local Government, Traditional Owners .	✓	✓	✓	✓	✓	✓	✓
30	Reduced shoreline erosion of the Gippsland Lakes fringing wetlands (Lake Wellington wetlands and Lake Reeve).	Develop and implement a program to stabilise the Gippsland Lakes shoreline.	DEPI, GLMAC, Traditional Owners, WGCMA.			✓				
31	Sustainable management of the Gippsland Lakes system during the long term transition to a saline system.	Undertake an investigation into the implications of a long term transition of the Gippsland Lakes system to a saline system and develop an associated management and communication strategy.	EGCMA, GLMAC, Research Institutions, Traditional Owners, WGCMA.			✓				
32	Traditional Owners' knowledge and aspirations are incorporated into the management of the landscape.	Continue to grow relationships between natural resource management agencies and Traditional Owners on country identifying their priorities for land management.	All NRM agencies, Coastcare, Landcare, Local Government, Traditional Owners.	✓	✓	✓	✓	✓	✓	✓

	Objectives (20 year timeframe)	Management Measures (6 year timeframe)	Proposed Implementation Partners	Bunurong Coastal Landscape	Corner Inlet Nooramunga Landscape	Gippsland Lakes and Hinterland Landscape	Mullungdung Landscape	Strzelecki Landscape	Victorian Alps Landscape	Wilson's Promontory Landscape
33	Understand the implications of the transition of Jack Smith Lake from a freshwater system to an estuarine system.	Develop and implement a monitoring program and predictive model of impacts for the Jack Smith Lake system to determine whether action is warranted.	DEPI, Parks Victoria, Traditional Owners, WGCMA.				✓			
34	Understand the threats that seawalls pose to the coast and marine system in the long term.	Investigate the ownership and management of seawalls, including maintenance requirements.	DEPI, GCB, Local Government, Parks Victoria, WGCMA.		✓					
35	Understand the threats that seawalls pose to the coast and marine system in the long term.	Undertake an investigation into the threats that seawalls may pose to the long term adaptation of the Corner Inlet coast and marine system.	DEPI, GCB, Local Government, Research Institutions, WGCMA.		✓					
36	Yarram WSPA is managed in accordance with the Yarram Water Supply Protection Area Groundwater Management Plan.	Implement recommendations in the Yarram Water Supply Protection Area Groundwater Management Plan.	DEPI, SRW, WGCMA.		✓		✓	✓		

IMPLEMENTING THE STRATEGY

Implementing the Strategy

WGCMA will coordinate the development of an associated implementation plan based upon the suite of RCS objectives and management measures. An overview of the roles and responsibilities of regional natural resource management groups, networks, agencies and organisations is provided in Appendix 6. While the listed proposed implementation partners does not constitute a formal agreement to deliver each item, each of these partners has the opportunity to lead, contribute or influence the achievement of the objectives and management measures. The specific roles, responsibilities and actions to be taken by implementation partners will be negotiated and confirmed during the development of the associated RCS implementation plan. Supporting information including maps and GIS files will be made available to share with partners to assist with future natural resource management planning.

IMPLEMENTATION PRINCIPLES

The following suite of principles will guide implementation of the RCS (Table 11).

Table 11: Principles to guide implementation of the RCS

PRINCIPLE	
Collaboration, Partnerships and Strategic Alignment	Through the RCS, natural resource managers will continue to nurture partnerships across the region and aim to collaborate to achieve the objectives of the strategy. Collaboration will extend to working with natural resource managers in adjacent regions to address cross boundary issues.
Adaptive Management	Catchments are constantly in a state of change. Through the RCS natural resource managers will apply adaptive management principles to respond to and manage complex issues such as climate variability, fire, invasive plants and pathogens (e.g. Myrtle Rust).
Best Management Practice Underpinned by Science	This RCS will provide a basis on which to exceed the commonly recognised standard of natural resource management and to provide a framework for natural resource managers to achieve the objectives set out within the Strategy. All management intervention decisions are to be based on best available science, adaptive management principles and with research targeted towards priority knowledge gaps.
Floodplain Management	The application of best practice floodplain management aims to reduce flood damage, improve the wellbeing of landowners and reduce adverse impacts on the natural environment.
Targeted Investment	Through this RCS, resources will be targeted to address priorities identified within it and associated strategies, such as the Regional Waterway Management Strategy, to deliver maximum on-ground benefits.
Accountability	Natural resource management decision-makers are required to be clearly accountable to government and the community for financial probity and for the success of biophysical outcomes.

MONITORING, EVALUATION AND REPORTING

Monitoring, Evaluation and Reporting

Adaptive management encourages ongoing learning by continually assessing the success of implementing actions in meeting objectives and accommodates future adjustment to actions. Monitoring, evaluation and reporting (MER) are key components of the adaptive management cycle. It provides a framework that systematically tests assumptions, promotes learning, allows for the incorporation of new information and for improved future management decisions. Monitoring, evaluation and reporting is used to both understand the efficacy of management interventions and to be accountable for public and private investment in natural resources.

In November 2011, DEPI (formerly DSE) released a document entitled 'Department of Sustainability and Environment Monitoring, Evaluation and Reporting Framework for Land, Water and Biodiversity'. The purpose of this framework is to provide guidance for MER within the Victorian natural resource management sector. A suite of standards are to be developed by DEPI to assist in applying the framework. Figure 64 presents the points within the adaptive management cycle where and how MER applies.

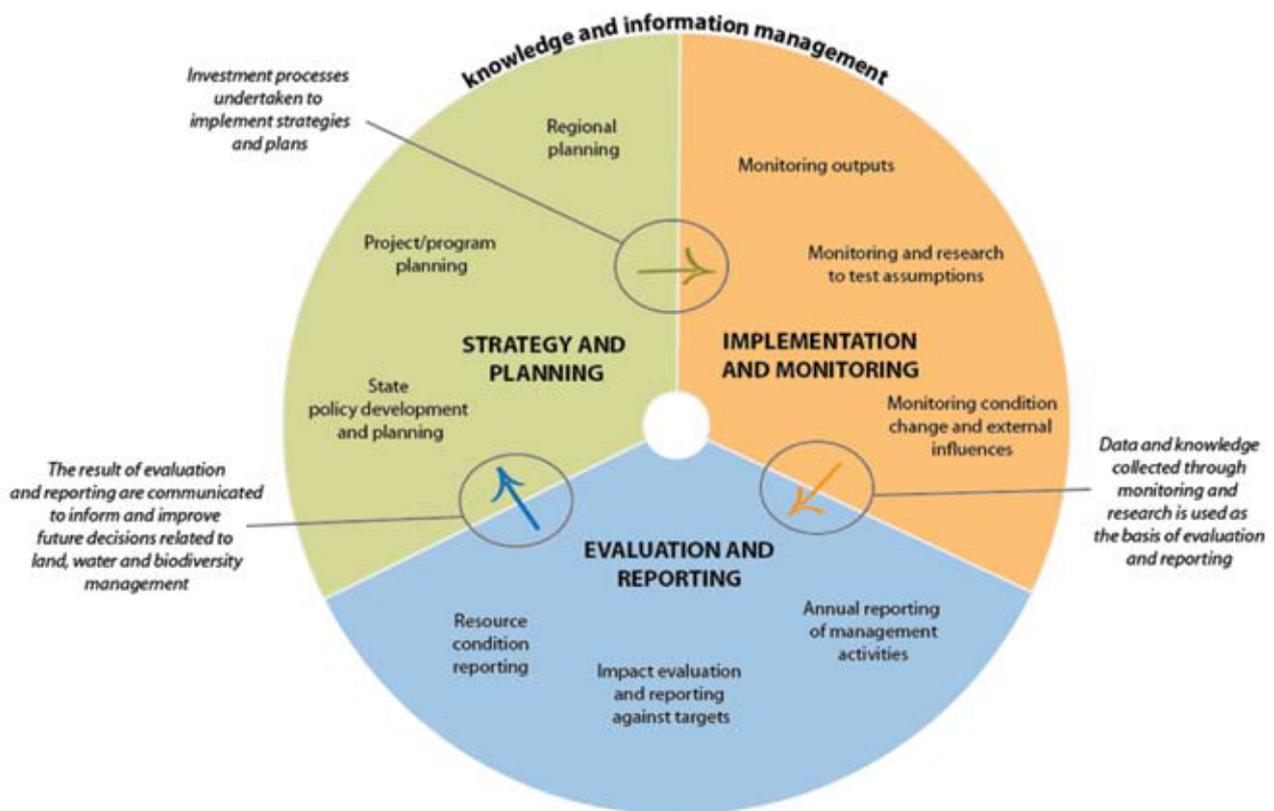


Figure 64: DEPI MER Management Cycle (DSE, 2011b)

Once the RCS has been ministerially endorsed a monitoring, evaluation and reporting plan for the RCS is to be developed by WGCMA in accordance with the DEPI framework and its associated standards. It is to be based on a set of key evaluation questions that will test the assumptions that underpin the program logic which has been used in developing the RCS 20 year objectives and six-year management measures.

Under the CaLP Act, WGCMA is required to report on the condition and management of natural resources as part of their annual report in accordance with guidelines issued by DEPI.

The WGCMA is required to undertake a mid-term review of this RCS in 2016 and final review in 2019.

APPENDIX ONE: Key Legislation, Policies, Frameworks and Strategies

TITLE	DESCRIPTION
INTERNATIONAL	
Convention on Migratory Species ("Bonn" Convention)	The Convention on the Conservation of Migratory Species of Wild Animals (also known as CMS or Bonn Convention) aims to conserve terrestrial, aquatic and avian migratory species throughout their range. It is an intergovernmental treaty, concluded under the aegis of the United Nations Environment Program, concerned with the conservation of wildlife and habitats on a global scale.
East Asian - Australasian Flyway Partnership	An international framework for conserving migratory waterbirds and their habitat by considering their flight paths and conserving their habitats along their flyways.
Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA)	Agreement between the government of Australia and the republic of Korea on the protection of migratory birds.
The Ramsar Convention	The Ramsar Convention is an intergovernmental treaty that embodies the commitments of its member countries to maintain the ecological character of their Wetlands of International Importance and to plan for the "wise use", or sustainable use, of all of the wetlands in their territories.
The Japan-Australia Migratory Birds Agreement (JAMBA) and the China-Australia Migratory Birds Agreement (CAMBA)	The JAMBA and CAMBA agreements list terrestrial, water and shorebird species which migrate between Australia and the respective countries. In both cases the majority of listed species are shorebirds. Both agreements require the parties to protect migratory birds by limiting the circumstances under which migratory birds are taken or traded; protecting and conserving important habitats; exchanging information; and building cooperative relationships.
AUSTRALIAN GOVERNMENT	
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>	Enables the Australian Government to respond to requests to protect traditionally important areas and objects that are under threat, if it appears that state or territory laws have not provided effective protection.
Australia's Biodiversity Conservation Strategy 2010-2030	Provides a guiding framework for conserving our nation's biodiversity over the coming decades. Functions as a policy 'umbrella' over other more specific national frameworks including: Strategy for Australia's National Reserve System 2009-2030, The Australian Weeds Strategy (revised 2007), Australian Pest Animal Strategy 2007, National Framework for the Management and Monitoring of Australia's Native Vegetation (2001). This strategy is important in providing National priorities for action and National targets.
Australian Pest Animal Strategy 2007	The focus of the Strategy is to address the undesirable impacts caused by exotic vertebrate animals (mammals, birds, reptiles, amphibians, and fish) that have become pests in Australia, and to prevent the establishment of new exotic vertebrate pests. This strategy determines principles and the framework for threat abatement plans for species such as feral cats, foxes, rabbits, goats and pigs.

TITLE	DESCRIPTION
AUSTRALIAN GOVERNMENT	
Directory of Important Wetlands in Australia	The Directory not only identifies nationally important wetlands, it provides a substantial knowledge base of what defines wetlands, their variety, and the many flora and fauna species that depend on them. In addition, it contains information about their social and cultural values and some of the ecosystem services and benefits they provide. It is a valuable tool for managers and others interested in Australia's important wetlands.
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	The EPBC Act is the Australian Governments central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined in the Act as matters of national environmental significance. It is the principal Commonwealth legislation for providing comprehensive protection for Indigenous heritage places.
National Cooperative Approach to Integrated Coastal Zone Management: Framework and Implementation Plan 2006	Aims to ensure national cooperation in managing coastal issues and ensuring ecologically sustainable development in coastal zones.
<i>Native Title Act 1993</i>	The Act establishes a framework for the protection and recognition of native title. The Act gives Indigenous Australians who hold native title rights and interests (or who have made a native title claim) the right to be consulted and, in some cases, to participate in decisions about activities proposed to be undertaken on the land.
Strategy for Australia's National Reserve System 2009-2030	Outlines the strategy to achieve an effective reserve system by 2030 that secures biodiversity assets in their landscape setting and ensures they are effectively managed. This strategy provides guidance to improve cross-jurisdictional co-ordination and collaboration as well as setting national targets and guiding principles.
The Australian Weeds Strategy (revised 2007)	The strategy is a vital part of Australia's integrated approach to national biosecurity and complements other existing and new national strategies for invasive species, such as those for terrestrial vertebrate pests and marine pests. Its aim is to minimise the impact of weeds on Australia's environmental, economic and social assets. This strategy determines principles, roles and responsibilities, Priority Weeds, Weeds of National Significance and the framework for a National Weed Awareness Action Plan.
VICTORIAN GOVERNMENT	
<i>Aboriginal Heritage Act 2006</i>	The Victorian Government introduced the <i>Aboriginal Heritage Act 2006</i> . This Act replaces Part IIA of the <i>Commonwealth Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> and the <i>State Archaeological and Aboriginal Relics Preservation Act 1972</i> . The Act links the protection of Aboriginal cultural heritage more directly with planning and land development processes.
<i>Catchment and Land Protection Act 1994</i>	Sets up a framework for the integrated management and protection of catchments, establishes processes to encourage and support community participation in the management of land and water resources, provides for a system of controls on noxious weeds and pest animals, and establishes the Victorian Catchment Management Council and Catchment Management Authorities.

TITLE	DESCRIPTION
VICTORIAN GOVERNMENT	
<i>Climate Change Act 2010</i>	Provides a framework for Victoria's action on climate change. The Act requires the Government to develop a Climate Change Adaptation Plan every four years, outlining the climate change impacts and risks to Victoria and the Government's priority areas for response.
<i>Coastal Management Act 1995</i>	Sets up the framework to: establish the Victorian Coastal Council; provide for the establishment of Regional Coastal Boards; the preparation and implementation of the Victorian Coastal Strategy and Coastal Action Plans; coordinated strategic planning and management for the Victorian coast; the preparation and implementation of management plans for coastal Crown land; a coordinated approach to approvals for the use and development of coastal Crown land.
<i>Crown Land (Reserves) Act 1978</i>	Provides for reservation of Crown land for a variety of public purposes, the appointment of committees of management to manage those reserves, and for leasing and licensing of reserves.
<i>Environment Effects Act 1978</i>	This Act applies to works that are declared to be public works for the purposes of this Act by Order of the Minister published in the Government Gazette. The Minister must not make an Order in respect of works under subsection unless the Minister is satisfied that the works could reasonably be considered to have or to be capable of having a significant effect on the environment. The Minister must specify in an Order under subsection (1) the procedures and requirements under the guidelines that are to apply to a statement for the works.
<i>Environment Protection Act 1970</i>	Establishes the Environment Protection Authority and makes provision for the Authority's powers, duties and functions relating to improving the air, land and water environments by managing waters, controlling noise and controlling pollution.
<i>Flora and Fauna Guarantee Act 1988</i>	Provides the basic legal powers and the management systems needed for the protection of the State's native species.
<i>Forests Act 1958</i>	Provides for the management of State forests, including the protection of public land from fire, the development of working plans, licensed occupations including grazing, beekeeping and the sale of forest produce.
<i>Heritage Rivers Act 1992</i>	Provides for the protection of parts of rivers and river catchments in Victoria that have environmental, amenity, cultural or historical significance.
<i>Invasive Plants and Animal Policy Framework 2010</i>	The framework presents the overarching Victorian Government approach to the management of existing and potential invasive species within the context of the Whole of Government Biosecurity Strategy for Victoria. The IPAPF incorporates a biosecurity approach and ensures that Victoria maintains a comprehensive planning framework to guide future policy, planning and community activity specific to invasive species.
<i>Land Act 1958</i>	Provision for the leasing, occupation and sale of unreserved Crown Land (including seabed).

TITLE	DESCRIPTION
VICTORIAN GOVERNMENT	
<i>National Parks Act 1975</i>	Makes provision for National and other parks, for park management, the government administration of parks, appointment of a National Parks Advisory Council and park advisory committees. It also provides for specialised uses and activities, including those of a non-conforming nature.
Nutrient Management Strategy for Victorian Inland Waters 1995	In March 1995 the State Government of Victoria released the Nutrient Management Strategy for Victorian Inland Waters (DCNR, 1995). This Strategy recognised the link between high nutrient levels in water bodies and the increasing occurrence of algal blooms. Blue-green algal (BGA) blooms are potentially toxic and threaten both human use of water and the ecological biodiversity of aquatic life. The strategy suggested a planning process to assess regional problems and encourage local communities to develop and implement nutrient management plans specific to local nutrient problems.
<i>Planning and Environment Act 1987</i>	Establishes a framework for planning the use development and protection of land in Victoria in the present and long-term interests of all Victorians.
State Environment Protection Policy (Waters of Victoria) 2003	The State Environment Protection Policy (Waters of Victoria) sets the framework for government agencies, businesses and the community to work together, to protect and rehabilitate Victoria's surface water environments. The Waters of Victoria policy was updated in June 2003 and reflects current scientific approaches and Victoria's catchment management arrangements.
State Soil Health Strategy 2012	The strategy sets out the goals, outcomes and actions to guide planning and government investment in soil health across public and private land for environmental benefits in Victoria.
Strategic Direction Statement for Victorian Ramsar Sites	In 2002 a Strategic Directions Statement was published. It established a set of objectives and state wide strategies for the management of Ramsar sites in Victoria.
<i>Sustainable Forests (Timber) Act 2004</i>	Provides a framework for sustainable forest management and sustainable timber harvesting in State forests.
<i>Traditional Owner Settlement Act 2010</i>	Provides for an out-of-court settlement of native title and delivery of land justice. It allows the Victorian Government to make agreements to recognise Traditional Owners and their rights in Crown land, in return for withdrawing native title claims and an agreement not to lodge future claims.
Victoria's Biodiversity Strategy 1997	This strategy complements the National Strategy and the Flora and Fauna Guarantee Act 1988. This strategy demonstrates how conserving biodiversity is a part of everyday life and how many of our actions can affect biodiversity. It provides the overarching direction for biodiversity conservation and management in Victoria. The Biodiversity Strategy is coordinated with other natural resources management mechanisms such as Regional Catchment Strategies, Regional Forest Agreements, and National Parks and Reserve planning.
Victoria's Salinity Management Framework 2000	The framework provides a statewide plan for protecting Victoria's environment from salinity. It focuses on the need for land use change in the future, the role of the various levels of Government, the need to build the skills and capacities of landholders to deal with salinity and the need for efficient water use.

TITLE	DESCRIPTION
VICTORIAN GOVERNMENT	
Victorian Coastal Acid Sulfate Soils Strategy 2009	Aims to protect the environment, humans and infrastructure from potentially harmful effects of acid sulfate soils. Supported by the Victorian Best Practice Guidelines for assessing and Managing Coastal Acid Sulfate Soils 2010.
Victorian Coastal Strategy 2008	The Victorian Coastal Strategy is the State Government's policy commitment for coastal, estuarine and marine environments in Victoria. It provides a long-term vision for the planning, management and sustainable use of our coast, and the policies and actions Victorians will need to implement over the next five years to help achieve that vision.
<i>Victorian Conservation Trust Act 1972</i>	The <i>Victorian Conservation Trust Act 1972</i> sets the framework for the establishment of Trust for Nature. Trust for Nature assists in the administration of conservation programs on private land in Victoria. It has the power to hold, buy and sell real property and the power to enter a binding covenant on private land through Conservation Agreements which are entered into on a voluntary basis with a landholder. The covenants are registered on the title of the land for perpetuity.
<i>Victorian Environment Assessment Council Act 2001</i>	The purpose of this Act is to establish the Victorian Environmental Assessment Council to conduct investigations and make recommendations relating to the protection and ecologically sustainable management of the environment and natural resources of public land.
Victorian Flood Management Strategy 1998	The strategy was prepared to enable an effective statewide approach to flood and flood plain management by the responsible authorities, agencies and groups. It provides a statewide policy framework for best principles and guidelines, establishes priorities for statewide action, and identifies roles and responsibilities of key stakeholders. Each CMA is required to have a floodplain management plan detailing roles, responsibilities, cost sharing arrangements and key programs for floodplain management stakeholders within its region.
Victorian Native Vegetation Management - A framework for Action (revised 2005)	This framework sets out the broad approach to achieving a Net Gain in extent and quality of native vegetation. The framework builds on the state goal in Victoria's Biodiversity Strategy.
Victorian Pest Management Framework 2000	This plan aims to minimise the impact of pests on biodiversity, forestry and recreation and community use on public land. It also seeks to minimise the impacts of pests that have originated on public land and spread onto adjacent private land.
Victorian Waterway Management Strategy (in development)	The next generation of the Victorian River Health Strategy 2002 seeks to integrate the management of rivers, estuaries and wetlands. It will focus on protecting sites of high value, outline an adaptive management approach in response to climate change and incorporate directions of recent Government policy and legislation.
<i>Water Act 1989</i>	Establishes rights and obligations in relation to water resources, provides mechanisms for the allocation of water resources, governs the statutory powers and functions of all water authorities outside the metropolitan area, and provides for integrated management of the water resource and for environmental and consumer protection.
<i>Wildlife Act 1975</i>	Provides for the establishment and management of State wildlife and nature reserves, licences, research and management, wildlife management co-operative areas, prohibited areas and sanctuaries, noxious wildlife, offences, enforcement and legal proceedings, plus the protection of whales as a complement to Commonwealth legislation.

TITLE	DESCRIPTION
REGIONAL SUB-STRATEGIES AND PLANS	
Gippsland Estuaries Coastal Action Plan 2006	Provides a strategic framework for planning and management of estuaries across Gippsland to ensure their sustainable management and use into the future.
Gippsland Regional Growth Plan (in development)	<p>The Gippsland Regional Growth Plan (also referred to as the Gippsland Integrated Land Use Plan) will identify preferred locations for particular land uses and development in both rural and urban areas. The Regional Growth Plan will:</p> <ul style="list-style-type: none"> ■ Establish at a regional scale where future development will be supported and where risks or other constraints discourage development ■ Provide direction for accommodating change and additional land requirements for residential, employment, industrial, commercial and primary industry uses ■ Identify important regional environmental, economic, community and cultural resources to be preserved, maintained or developed ■ Identify key regional priorities for future infrastructure planning and investment to support growth
Gippsland Regional Plan 2010	The Gippsland Regional Plan (GRP) is a long-term strategic plan that aims to manage the emerging challenges in the region to shape a successful future. It analyses the region's economic, social and environmental challenges and trends and sets a strategic vision for Gippsland with priority areas for action.
Gippsland Sustainable Water Strategy 2011	The Strategy outlines the water resources available in Gippsland, and responds to the challenges and opportunities facing all water users into the future. It sets out a range of measures to make the best use of water resources in different parts of Gippsland, protect the environment and be ready to manage a variable climate and future droughts. It includes implementation details such as timing and responsibility for key actions.
Macalister Land & Water Management Plan 2007	This plan provides strategic direction for the management of land and water within the Macalister Irrigation District and surrounding dryland areas for the next 10 years. The plan has a particular focus on reducing off site impacts on the Gippsland Lakes.
West Gippsland Wetlands Plan 2007	Provides a framework for the protection, restoration and enhancement of wetlands across the West Gippsland CMA region. To be superseded by a Regional Waterway Management Strategy.
West Gippsland Invasive Plants and Animals Strategy 2010-2015	Spatially represents priority asset areas for protection from IPAs. Identifies assets as priority for immediate on-ground action, for investigation or research, and those assets not at high immediate risk from IPAs.
West Gippsland Native Vegetation Plan 2003	Provides policy direction, principles and rationale behind native vegetation planning, including descriptions of prioritisation processes based on functionality and service values of native vegetation.
West Gippsland Regional Floodplain Strategy 1999	This Strategy focuses on Floodplain Management within the West Gippsland region. As well as providing a planning framework for each of the Strategy's programs, it incorporates the vision, objectives and targets necessary for their successful implementation.
West Gippsland Regional Waterway Management Strategy (to be developed)	The Regional Waterway Management Strategy will provide a framework for targeted action and will be based upon the framework set out in the Victorian Waterway Management Strategy.

TITLE	DESCRIPTION
REGIONAL SUB-STRATEGIES AND PLANS	
West Gippsland River Health Strategy 2005	Identifies priority river reaches, determined via a value and threat risk assessment process. To be superseded by a Regional Waterway Management Strategy.
West Gippsland Salinity Management Plan 2005	Identifies areas at risk of salinity and priority management areas.
West Gippsland Soil Erosion Management Plan	Identifies areas of private land at risk of erosion processes.

APPENDIX TWO: Regional Catchment Strategy Multi-Agency Steering Committee

NAME	AGENCY	TITLE
Ian Gibson (Chair)	West Gippsland Catchment Management Authority	Board Member
Adam Dunn	West Gippsland Catchment Management Authority	Land Planning Unit Manager
Greg Turner	Department of Environment and Primary Industries	Program Manager, Productivity & Sustainability Services
Julianne Sargent	Department of Environment and Primary Industries	Senior Project Officer, Statewide Services
Kylie Debono	West Gippsland Catchment Management Authority	Water and Operations Unit Manager
Martin Fuller	West Gippsland Catchment Management Authority	Chief Executive Officer
Mikaela Power	West Gippsland Catchment Management Authority	Partnership Development Unit Manager
Paula Camenzuli	West Gippsland Catchment Management Authority	Regional Catchment Strategy Coordinator
Roger Fenwick	Parks Victoria	Chief Ranger, West Gippsland

APPENDIX THREE:

Thematic Asset Classes and Significance Criteria

Eight thematic asset classes are represented in the West Gippsland Regional Catchment Strategy. Department of Environment and Primary Industries definitions of each thematic asset class are provided below:

THEMATIC ASSET CLASSES	DEFINITION
Biodiversity	Incorporates consideration of populations of threatened or significant species (these may be mapped based on the area of occupancy or areas of habitat as appropriate) and occurrences of threatened communities. Incorporates consideration of terrestrial habitat, individual ecological classes or spatial occurrences of Ecological Vegetation Classes (EVCs) based on their intrinsic value or their contribution to landscape processes (e.g. connectivity, refugia, buffering etc.).
Coasts	Stretches of coastline. Coastal assets can extend inland as far as appropriate.
Estuaries	Individual estuaries and their associated riparian ecosystems.
Marine	Marine ecosystems or sub-systems, up to the high water mark, including mangroves.
Rivers	Individual river reaches and their associated riparian ecosystems.
Soil/land	Selected geographic areas of land and/or specific soil types.
Wetlands	Individual wetlands, wetland complexes, and their associated floodplain ecosystems.
Aquifers*	*Not mandatory. In recognition of the importance of aquifers and groundwater to the WGCMA region, an additional thematic asset class entitled 'Aquifers' has been included in the West Gippsland RCS.

A suite of significant asset maps (demonstrating assets of high, medium and low significance) were developed for each of the above thematic asset classes using the best known available data and specialist knowledge and applying the following significance criteria:

1. Formally recognised significance
2. Presence of rare or threatened species/communities
3. Naturalness (condition)
4. Other significant environmental values (e.g. drought refuge)
5. Other significant social/economic/cultural values

Whilst the criteria does emphasise the environmental values (over social, economic or cultural values), the premise is that by protecting, maintaining or enhancing the environmental values of an asset, you will also be supporting the associated social, economic and cultural values.

APPENDIX FOUR: Communication and Engagement Mechanisms

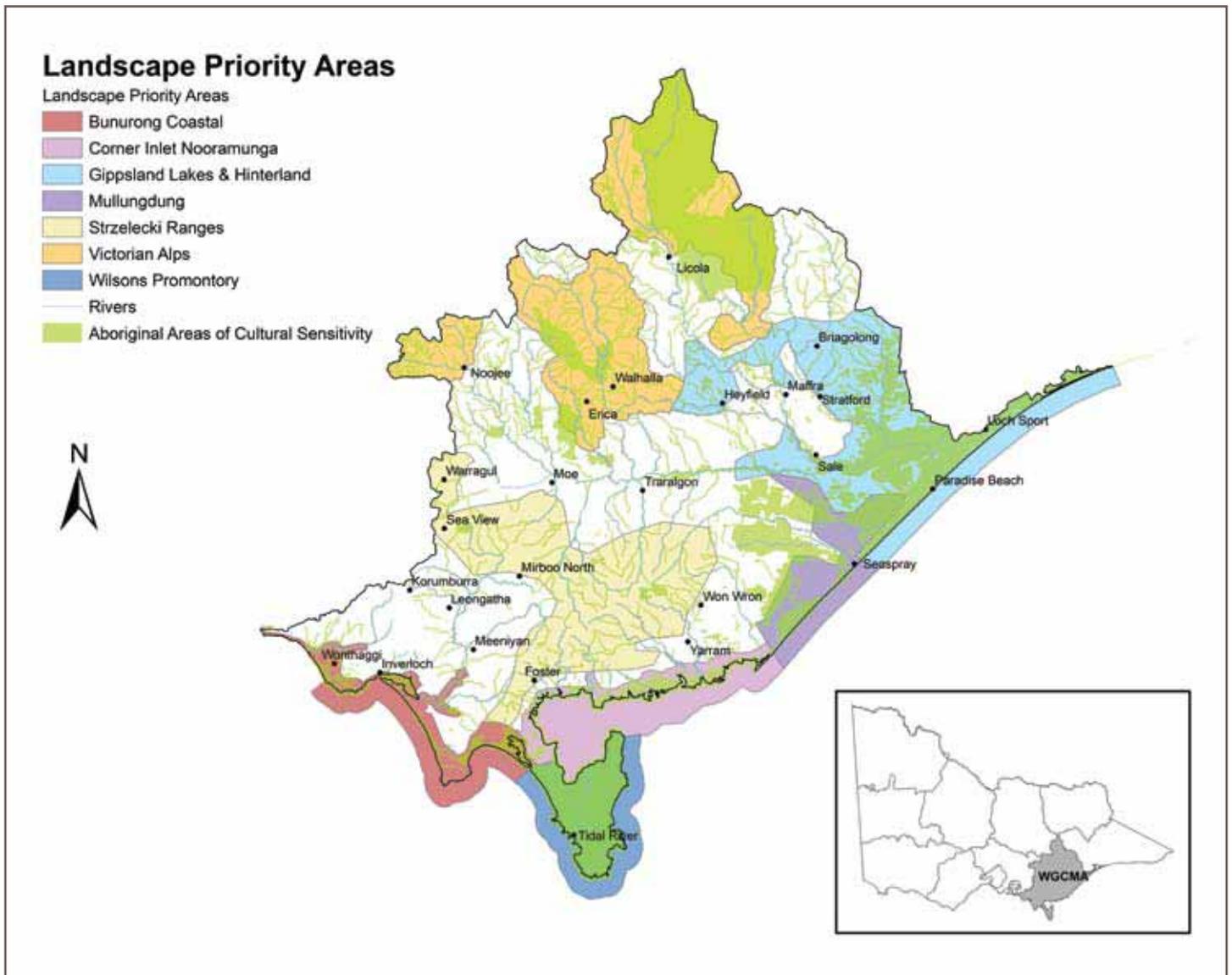
Throughout the RCS development process key stakeholders and the regional community were engaged using the following mechanisms.

MECHANISM	PURPOSE	AUDIENCE
Website	To provide a central repository of information relating to the RCS development process. Provide a portal to RCS online survey. Make RCS e-newsletters and draft RCS document available for download. Provide links to VCMC guidelines, DEPI webpage, and an explanation of Landscape Priority Area development approach. Provide access to the Ministerially endorsed RCS document and supporting information.	General public Targeted stakeholders
Online survey using survey monkey	To gather feedback on and vote for a preferred regional vision statement. To gather semi-structured feedback on the draft RCS document	General public Targeted stakeholders
Hard copy surveys distributed at public events	To gather information on natural assets valued by the regional community.	General public
Workshops	To test and refine the regional vision statement. To develop RCS Landscape Priority Areas, objectives and management measures and identify proposed implementation partners.	Targeted stakeholders
Media releases	Raise awareness of the release of the draft RCS, notify of how to access a copy, how to provide feedback and public briefing session details.	General public
Newspaper advertisements	Raise awareness of the release of the draft RCS, notify of how to access a copy, how to provide feedback and public briefing session details.	General public
ABC Radio	Raise awareness of the release of the draft RCS, notify of how to access a copy, how to provide feedback and public briefing session details.	General public
Hard copy draft RCS mail outs	Raise awareness of the release of the draft RCS, notify of how to access a copy, how to provide feedback and public briefing session details.	Targeted stakeholders
RCS e-newsletter	To provide ongoing updates throughout the development process.	Targeted stakeholders
Email distribution list	To provide ongoing updates throughout the development process.	Targeted stakeholders

MECHANISM	PURPOSE	AUDIENCE
Public briefing sessions x 4	To inform of the RCS development process, provide access to a copy of the RCS, provide a forum to ask questions, collate feedback during the meeting, inform of how to provide formal feedback and next steps.	General public
Targeted briefing sessions	To inform of the RCS development process, provide access to a copy of the RCS, provide a forum to ask questions, collate feedback during the meeting, inform of how to provide formal feedback and next steps. To discuss how to use the RCS and supporting GIS layers and discuss RCS implementation and partnerships once finalised.	<p>DEPI Regional Director and Regional Managers</p> <p>Local Government Strategic, Environmental and Statutory planning staff within five municipalities</p> <p>Nominated Indigenous community representatives</p> <p>Water authorities</p> <p>WGCMA Advisory Group members</p>

APPENDIX FIVE: Aboriginal Areas of Cultural Sensitivity and RCS Priority Areas

The map below demonstrates the Aboriginal Areas of Cultural Sensitivity (used with the permission of Aboriginal Affairs Victoria) within the West Gippsland region in relation to the location of Regional Catchment Strategy Landscape Priority Areas.



APPENDIX SIX: Roles and Responsibilities of WGCMA and partners

RCS PARTNER	ROLES & RESPONSIBILITIES RELATIVE TO THE RCS
Community Groups and Networks (e.g. Landcare, Coastcare, Waterwatch, Conservation Management Networks, Conservation Societies)	Community groups and networks encourage community involvement in on ground work, environmental surveys and monitoring and attract corporate, philanthropic and government funding to undertake natural resource management activities. They provide information and support to extensive networks of land managers and community members throughout the region on best management practice techniques through research, development and extension activities. Community groups and networks assist in implementing the RCS by contributing their time, labour, land and financial investment in projects that assist in working towards the RCS objectives.
Country Fire Authority (CFA) www.cfa.vic.gov.au	CFA is a volunteer and community based fire and emergency services organisation that help protect 3.3 million Victorians, and more than one million homes and properties across the state. They respond to bushfires, house fires, industrial fires, road accidents, rescues and a range of other emergencies. Working with local communities to raise awareness about fire safety and help plan for bushfires. CFA may support implementation of the RCS by working in partnership with other agencies that have a role in fire management such as Parks Victoria and DEPI towards relevant RCS objectives.
Department of Agriculture, Fisheries and Forestry (DAFF) www.daff.gov.au	Responsible for developing and implementing policies and programs that ensure Australia's agricultural, fisheries, food and forestry industries remain competitive, profitable and sustainable. DAFF supports implementation of the RCS by investing in projects to achieve national natural resource management priorities and RCS objectives through programs such as Caring for Our Country and the Carbon Farming Initiative.
Department of Environment and Primary Industries (DEPI) www.depi.vic.gov.au	The new Department of Environment and Primary Industries (DEPI) has been formed from the Department of Sustainability and Environment and the Department of Primary Industries. It will focus on boosting productivity in Victoria's world-class food and fibre sector, managing our natural resources, protecting our environment and responding to fire, flood and biosecurity emergencies. DEPI is Victoria's lead government agency for sustainable management of water resources, climate change, bushfires, public land, forests and ecosystems. DEPI support implementation of the RCS through financial investment and provision of technical, extension and research services. DEPI design and deliver government policies and programs that enable Victoria's primary industries to sustainably maximise the wealth and wellbeing they generate, by providing essential goods and services, employment, investment and recreational opportunities.
Department of Premier and Cabinet Incorporates Aboriginal Affairs Victoria (AAV)	AAV provides advice to the Victorian Government on Aboriginal policy and planning, and delivers key programs. AAV works in partnership with Indigenous communities, and government departments and agencies to promote knowledge, leadership and understanding about Victoria's Indigenous people.
Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) www.environment.gov.au	Responsible for implementing Australian Government policies to protect the nation's environment and heritage including natural, built and cultural heritage; water policy and resources; environmental research and administering the <i>Environment Protection and Conservation of Biodiversity Act 1999</i> (EPBC Act). SEWPaC supports implementation of the RCS by investing in projects to achieve national natural resource management priorities and RCS objectives through programs such as Caring for Our Country and the Biodiversity Fund.

RCS PARTNER	ROLES & RESPONSIBILITIES RELATIVE TO THE RCS
<p>Department of Transport, Planning and Local Infrastructure (DTPLI)</p>	<p>Provides a central role in managing Victoria's growth and development. DTPLI works collaboratively with local government and other key public and private stakeholders to lead state and metropolitan development, strategic and statutory planning, development regulation, and environmental assessment. DTPLI are responsible for coordinating development of the Gippsland Regional Growth Plan (also known as the Gippsland Integrated Land Use Plan), which will provide a broad direction for regional land use and development as well as detailed planning frameworks for key regional centres. The Regional Growth Plan will identify important economic, environmental, social and cultural resources to be preserved, maintained or developed.</p>
<p>Environment Protection Authority (EPA) www.epa.vic.gov.au</p>	<p>Responsible for regulating pollution in Victoria. EPA has independent authority to make regulatory decisions under the <i>Environment Protection Act 1970</i>. The EPA aims to provide clean air, healthy waterways, safe land and minimal disturbances from industrial noise and odours.</p>
<p>Gippsland Coastal Board (GCB) www.gcb.vic.gov.au</p>	<p>Responsible for implementing the Victorian Coastal Strategy and the preparation and implementation of coastal action plans. Assist in facilitating improved coastal management through commissioning research, awareness raising activities and liaison with industry, government and the community.</p>
<p>Gippsland Lakes Ministerial Advisory Committee (GLMAC)</p>	<p>Provide advice to Victorian Ministers on how to secure the environmental health of the Lakes. Initiatives include the development of a Gippsland Lakes Environmental Strategy.</p>
<p>Gippsland Water www.gippswater.com.au</p>	<p>Responsible for the supply of safe drinking water and wastewater treatment for the Central Gippsland region. Gippsland Water also provides waste recovery services at its Soil and Organic Recycling Facility at Dutson Downs.</p>
<p>Individuals / Land Managers</p>	<p>According to the CaLP Act, a land manager must take all reasonable steps to (a) avoid causing or contributing to land degradation which causes or may cause damage to land of another land owner; and (b) conserve soil; and (c) protect water resources; and (d) eradicate regionally prohibited weeds; and (e) prevent the growth and spread of regionally controlled weeds; and (f) prevent the spread of, and as far as possible eradicate, established pest animals. Individuals and land managers throughout the region assist in implementing the RCS by contributing their time, labour, land and financial investment in projects that assist in working towards the RCS objectives.</p>
<p>Industry Groups (e.g. GippsDairy, Victorian Farmers Federation)</p>	<p>Provide information and support to extensive networks of land managers throughout the region on best management practice techniques through research, development and extension activities.</p>
<p>Local Government</p>	<p>Services provided local government are diverse and include property, economic, human, recreational and cultural services. Local government enforce State and local laws relating to land use planning, environment protection, public health, traffic and parking and animal management. Responsible for maintaining infrastructure including roads, bridges, drains, town halls, libraries, recreation facilities, parks and gardens. Land use planning is a key role of local government. Each municipality has a local planning scheme that describes what types of activities or developments may occur in areas of the municipality. An important part of a council's planning scheme is the Municipal Strategic Statement (MSS). The MSS provides the broad outline and vision for existing and future land use within a municipality.</p>

RCS PARTNER	ROLES & RESPONSIBILITIES RELATIVE TO THE RCS
<p>Mount Baw Baw Alpine Resort Management Board (ARMB)</p> <p>www.mountbawbaw.com.au</p>	<p>Mt Baw Baw Alpine Resort is owned by the Crown and since 1998 has been managed by an Alpine Resort Management Board (ARMB). The Strategic Management Plan 2011-2016 identifies challenges faced at the Resort, and establishes the Board's priorities in protecting, enhancing and sustainably developing this unique asset for the benefit and enjoyment of all Victorians and visitors to Gippsland.</p>
<p>Other Catchment Management Authorities (CMA)</p>	<p>Work collaboratively on programs to address cross CMA boundary natural resource management issues.</p>
<p>Other non-government organisations and interest groups (e.g. Birdlife Australia, Greening Australia, Climate Change Networks)</p>	<p>Provide specialised advice on areas of interest. Encourage community involvement in on ground work, environmental surveys and monitoring and attract corporate, philanthropic and government funding to undertake natural resource management activities.</p>
<p>Parks Victoria</p> <p>http://parkweb.vic.gov.au</p>	<p>Under the <i>Parks Victoria Act 1998</i>, Parks Victoria's responsibilities are to provide services to the State and its agencies for the management of parks, reserves and other public land. Responsible for managing an expanding and diverse estate covering more than 4 million hectares, or about 17 per cent, of Victoria. Responsible for managing a representative system of marine national parks and marine sanctuaries. Parks are managed in the context of their surrounding landscape and in partnership with Traditional Owners. As part of managing Victoria's parks and reserves, Parks Victoria supports the Department of Environment and Primary Industries (DEPI) to prepare for, fight and recover from bushfires on public land. Parks Victoria work in partnership with other government and non-government organisations and community groups such as catchment management authorities, private land owners, friends groups, volunteers, licensed tour operators, lessees, research institutes and the broader community.</p>
<p>Research Institutions (e.g. CSIRO, Universities, DEPI)</p>	<p>Provide assistance in filling information gaps and guidance on the most appropriate natural resource management tools, methods or approaches to use. Provide scientific evidence on the condition of natural assets.</p>
<p>South Gippsland Water</p> <p>www.sgwater.com.au</p>	<p>Responsible for the supply of safe drinking water and wastewater treatment for the South Gippsland region.</p>
<p>Southern Rural Water (SRW)</p> <p>www.srw.com.au</p>	<p>Responsible for managing rural water in southern Victoria including delivering water to irrigators, harvesting bulk water for rural and urban use, licencing and monitoring water extractions from most surface and groundwater systems south of the Great Divide and licencing the construction of farm dams and groundwater bores.</p>
<p>Traditional Owners</p>	<p>Provide advice and expertise on areas of interest to local Indigenous communities. Traditional Owners manage land in partnership with Parks Victoria. Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) is a Registered Aboriginal Party (RAP) for the Gunaikurnai native title area. RAPs have responsibilities relating to the management of Aboriginal cultural heritage under the <i>Victorian Aboriginal Heritage Act 2006</i>. These include evaluating Cultural Heritage Management Plans, providing advice on applications for Cultural Heritage Permits, decisions about Cultural Heritage Agreements and advice or application for interim or ongoing Protection Declarations.</p>

RCS PARTNER	ROLES & RESPONSIBILITIES RELATIVE TO THE RCS
Trust for Nature (TfN) www.trustfornature.org.au	Responsible for working with landholders to protect biodiversity on private land through five key mechanisms: conservation covenants; facilitating native vegetation offset agreements; a stewardship program; revolving fund and land acquisition.
Victorian Catchment Management Council (VCMC) www.vcmc.vic.gov.au	Responsible for releasing guidelines for the preparation of Regional Catchment Strategies; provide advice to Victorian Government Ministers on land and water management issues and produce a Victorian Catchment Condition Report every five years.
West Gippsland Catchment Management Authority (WGCMA) www.wgcma.vic.gov.au	Responsible for preparing a Regional Catchment Strategy and to coordinate and monitor its implementation. Responsible for coordinating regional investment into catchment management. Provides a conduit between the regional community and Victorian and Australian Governments. Provides statutory functions including floodplain management and administering works on waterway approvals.

APPENDIX SEVEN: Glossary

TERM/ACRONYM	DESCRIPTION
ABA	Asset Based Approach
ABC database	Actions for Biodiversity Conservation
ARMB	Alpine Resort Management Board
BCS	Bioregional Conservation Status
CaLP Act	<i>Catchment and Land Protection Act 1994</i>
CFA	Country Fire Authority
DEPI	Department of Environment and Primary Industries
DIWA	Directory of Important Wetlands of Australia
DTPLI	Department of Transport, Planning and Local Infrastructure
EGCMA	East Gippsland Catchment Management Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVC	Ecological Vegetation Class
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i>
GCB	Gippsland Coastal Board
GLaWAC	Gunaikurnai Land and Waters Aboriginal Corporation
GLMAC	Gippsland Lakes Ministerial Advisory Committee
IEC	Index of Estuarine Condition
ISC	Index of Stream Condition
IWC	Index of Wetland Condition
NaturePrint v2.0	Department of Environment and Primary Industries mapping product that attempts to efficiently rank places within Victoria in terms of their capacity to support multiple conservation assets while considering complementarities, landscape context and ecosystem integrity.
NRM	Natural Resource Management
RCS	Regional Catchment Strategy
SRW	Southern Rural Water
TfN	Trust for Nature
VCMC	Victorian Catchment Management Council
WGCMA	West Gippsland Catchment Management Authority

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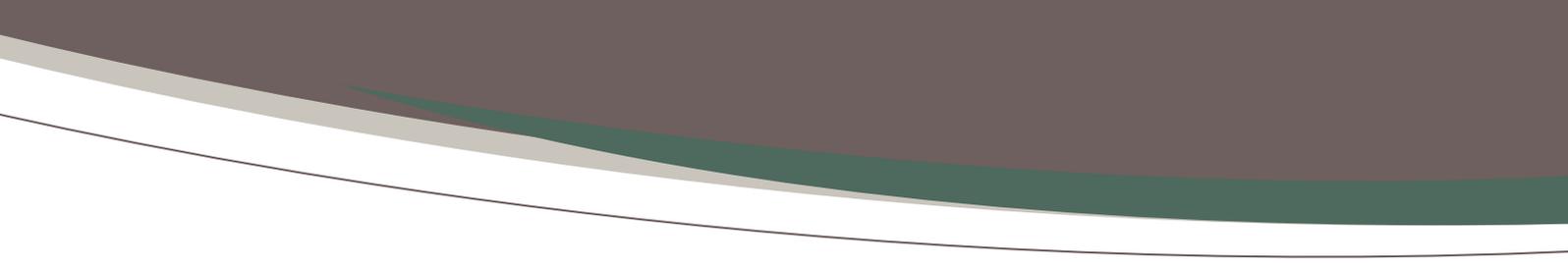
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NOTES
Notes



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