



Regional Catchment Strategy

2022



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CATCHMENT
MANAGEMENT
AUTHORITY





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Acknowledgement of Country

We acknowledge the Traditional Owners of Country throughout East Gippsland and pay our respects to them, their Culture and their Elders past, present and future.

Disclaimer

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Foreword

Vision

Working together to conserve and enhance East Gippsland's naturally wealthy landscapes, and the biodiversity and cultural heritage they hold, for now and into the future.



I am pleased to present the 2022–2028 East Gippsland Regional Catchment Strategy (RCS). The RCS has been prepared by the East Gippsland Catchment Management Authority in collaboration with Traditional Owners, our regional partners, and the communities of East Gippsland.

The past six years have been some of the most challenging times experienced by our environment and communities across the region. We experienced one of the worst droughts recorded, followed by landscape scale bushfires that burnt more than half the region. The impact of this was compounded by the effects of the coronavirus pandemic, and more recently we have seen large rain events and continuous flooding across the region.

Despite these challenges our region remains the 'jewel in the crown' in Victoria. It contains a wealth of significant natural assets including our rivers, wetlands and many national parks and reserves. It is the only place on mainland Australia where the continuity of natural ecosystems – from the alps to the sea – still exists.

The natural resources of the region are used to generate wealth in many ways. The floodplain of our major rivers are used for high value horticulture, the alpine and coastal areas for recreational activities, and the foothills for grazing and timber production.

The 2022 RCS provided for a continued focus on Traditional Owner engagement and integrated catchment management across the region. The key areas of focus in the RCS include:

Alpine Peaks – maintain the unique environmental assets of the high country, including alpine peatlands through controlling pest plants and animals, and improving the connection and hydrology of our alpine wetlands.

Forested foothills – improving the condition and connectivity of our river corridors and working with landholders to increase ground cover across agricultural areas to improve productive values and improving the sustainability of agriculture in the region.

Gippsland Lakes – protecting and improving this wetland system of international importance by enhancing saltmarsh communities, reducing nutrient and sediment entering the lakes, and enhancing the fringing wetlands around the lakes and the species they support.

Protecting the Best (Far East Gippsland) – improving the condition and connectivity of our river and estuaries, a focus on recovering from bushfires, and protecting our high values places by controlling pest plants and animals.

Red Gum Plains – maintaining and improving creek corridors, protecting threatened vegetation communities, and working with landholders to increase ground cover across agricultural areas.

The management of our region is a responsibility that we all share. This can be done most effectively when individuals, community groups, Traditional Owners and land and water management organisations work in partnership to achieve agreed outcomes.

I would like to thank the individuals, community groups, Traditional Owners and management agencies who contributed to the development of the RCS. Our challenge now is to implement the actions outlined in the strategy over the next six years.

I invite you all, as individuals, as community groups, Traditional Owners and as agencies to contribute to the maintenance and improvement of the environmental and productive assets on which our prosperity and way of life depends.

Ewan Waller
Chairperson
East Gippsland Catchment Management Authority



The Region

Regional Overview

The East Gippsland Catchment Management Authority region covers 2.2 million hectares of land, lakes and coastal waters in eastern Victoria.

About 83% of the region is in public ownership, mainly as state forests, national and coastal parks, and marine national parks, and virtually all of this retains extensive native vegetation cover.

East Gippsland is the only place on mainland Australia where such continuity of natural ecosystems – from the alps to the sea – still exists.

Located entirely south of the Great Dividing Range the East Gippsland region includes the catchments of streams from the Mitchell River eastwards to the Victoria–New South Wales border.

The northern boundary is formed by the Great Dividing Range where mountains rise to elevations of 1500 metres.

The southern boundary is located three nautical miles (5.5 km) off the coast.

Rivers generally run from north to south, rising in the alpine reaches and progressing through lowland forests to coastal estuaries in the south.





The region contains significant natural assets like the declared 'heritage rivers' of the Mitchell, Snowy, Bemm and Genoa River catchments, the Ramsar listed wetlands of the Gippsland Lakes, and many national parks and reserves, stretching from sub-alpine environments to the coast.

Private land covers 17% of the region. Grazing occupies the largest area, and there are significant productive areas of irrigated horticulture and dairying on the floodplains of the Snowy and Mitchell rivers.

Variability in rainfall across the region gives rise to droughts and floods that have an effect on waterway health, fire frequency and intensity, and land management. This variability is likely to further increase under the influence of climate change.

The influence of climate change on the natural environments and resources of East Gippsland likely poses the greatest threat to key values into the future. The impacts of a changing climate will impact our water resources, our coastal environments, important species and vegetation communities, the way we can use our land, and the resilience of our communities. Other threats including pest plant and animals in our landscape, and extreme events like drought, flood, and bushfire will potentially compound these impacts.

Our Partnership Approach

Our region includes most of the East Gippsland Shire, the northern part of the Wellington Shire, and part of the Alpine Shire south of the Great Dividing Range. It abuts the Wangaratta Shire in the north-east and the New South Wales shires of Snowy Valleys, Snowy Monero and Bega Valley. The East Gippsland CMA boundary also adjoins that of the West Gippsland, north-east and Goulburn Broken CMAs.

Working in partnership is a key approach within East Gippsland and 'cross border' relationships form an important part of the management of natural resources within our region. This approach recognises the ability

of values and threats to move across administrative boundaries, and that the most effective way to manage this is through shared outcomes and a shared vision delivered in partnership.

Examples of these partnerships include working with the West Gippsland CMA in the management of the Gippsland Lakes Ramsar Site; collaborating with the NSW government on water and environmental management along the Snowy and Genoa River corridors; and working together with land managers and adjoining CMAs to protect key values across the Victorian alps.



Social and Economic Drivers

In 2016, the East Gippsland local government area had a population of 48,376 people (East Gippsland Shire Council).

Aboriginal people have a strong connection to Country in East Gippsland and are represented by the Gunaikurnai, Bidwell, and Ngarigo Monero people.

Aboriginal people have an aspiration to participate in the management of the region's natural resources, and this aspiration is acknowledged by natural resource management agencies across the region.

The major population centres across East Gippsland include Bairnsdale, Lakes Entrance, Paynesville, Orbost and Mallacoota. There are many smaller towns such as Bruthen, Cann River, Dargo, Ensay and Swifts Creek, with some situated in remote locations.

Increases in population over recent years has not been evenly distributed across the region. Large centres such as Bairnsdale and the coastal communities in the west of the region continue to support more residents than the far east.

Current economic profiling for the East Gippsland Shire shows that the major industries by output are manufacturing, construction, agriculture, forestry and fishery, renting, hiring and real estate services, health care and social assistance, accommodation and food services, and retail trade.

In 2016, the value of agricultural commodities for East Gippsland was \$240 million annually, consisting of crops, livestock and livestock products (Australian Bureau of Statistics, 2020).

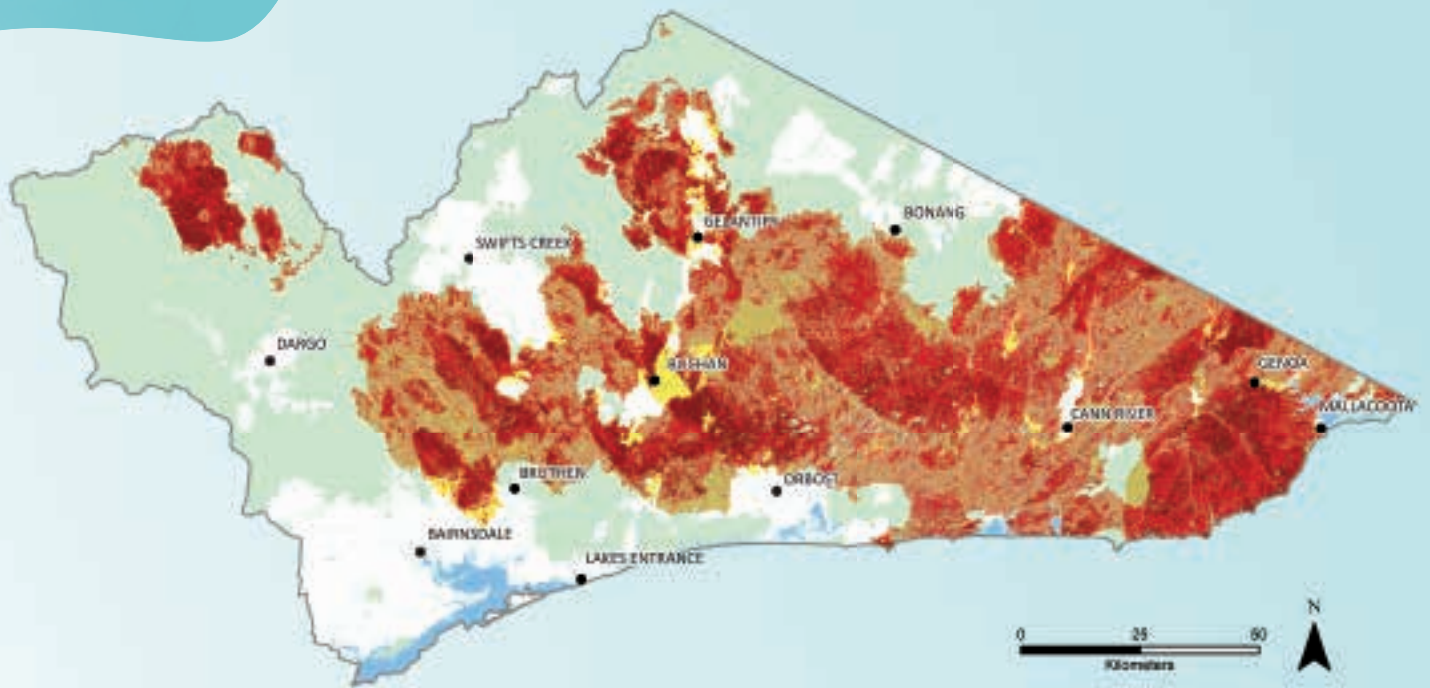


Victoria's largest offshore commercial fishing fleet is based at Lakes Entrance. The port handles about 10,000 tonnes of seafood annually with a landed value of \$30 million.

The tourism industry attracted 1.2 million visitors in 2018, contributing \$340 million to the regional economy. Major tourist destinations are Lakes Entrance, Metung and Paynesville on the Gippsland Lakes, and Mallacoota in the east. Nature based tourism is an important component of the total tourism industry.

More information on the economic and industry profile of the East Gippsland Shire can be found on the Shire website.

The communities of East Gippsland are resilient. The past years have been some of the most challenging our community have faced. An extended period of drought followed by widespread bushfires and the impacts of the coronavirus pandemic have impacted on the health and well-being of many people and communities across the region. Impacts of the experiences of recent years have been significant, and communities are concerned about the challenges we may face into the future.



2019/20 Black Summer Bushfires

On 21 November 2019 lightning strikes ignited numerous fires in East Gippsland, with the region experiencing significant drought and severe, widespread dryness in the region.

Unfavourable conditions and remote locations meant the fires were difficult to contain and several fires joined, creating fires of a magnitude previously unseen in Gippsland, the Victoria's north-east and adjacent NSW.

In late December, dry lightning started new fires west of Mallacoota and these merged on New Year's Eve during extreme fire and weather conditions.

Over 56% of the East Gippsland region was within the fire impact footprint.

With three fatalities, over 450 residences and commercial properties destroyed or damaged, the immediate loss from the event was significant for the East Gippsland community.

46,000 residents and 118 communities were directly or indirectly impacted, and an estimated loss of visitor expenditure for Gippsland of \$170-180 million placed further pressure on impacted communities. A range of bushfire recovery programs have been implemented collaboratively across the region following the fires. More information can be found on bushfire recovery planning and reporting coordinated by the East Gippsland Shire Council and the Department of Environment, Land, Water, and Planning

Impacts of bushfires on biodiversity

The fires across Victoria burnt mostly in areas that have high biodiversity value. There were 244 species with more than 50 per cent of their modelled habitat within the burnt area, including 215 Victorian rare or threatened species. This includes four species listed under the Commonwealth EPBC Act 1999.

The fire extent impacted at least 60 per cent of over 75 National parks and nature conservation reserves in Victoria.

78 per cent of the Warm Temperate Rainforest is within the fire extent, and the majority of the distribution of seven vegetation communities listed under the Flora and Fauna Guarantee Act 1988 (FFG Act) are also within the burnt area.

A significant area of habitat across Victoria has now burnt multiple times since 2000. This can result in regeneration failure for Alpine Ash.

Across East Gippsland areas impacted included:

- 56% of national parks and conservation reserves;
- 53% of water supply catchments; and
- 32,046 ha of waterways and riparian areas.

Large areas of Rainforest (32% of Cool Temperate Rainforest; and 77% of Warm and Dry Temperate Rainforest) were affected by the fires.

Species and vegetation communities of most immediate concern include the Long-footed Potoroo, Ground Parrot, Glossy Black-cockatoo, Large Brown Tree Frog, Diamond Python, Freshwater Galaxiids, Colquhoun Grevillea, Betka Bottlebrush and Warm Temperate Rainforest.

Some species, such as the Brush-tailed Rock-wallaby and the Guthega Skink, were not as impacted as first predicted, as the fire did not reach key populations. Other species appear to be showing some resilience to the fires, such as Yellow-bellied Water Skink.



Figure 2 | Fire impacts along Benedore River estuary within the Croajingolong National Park.

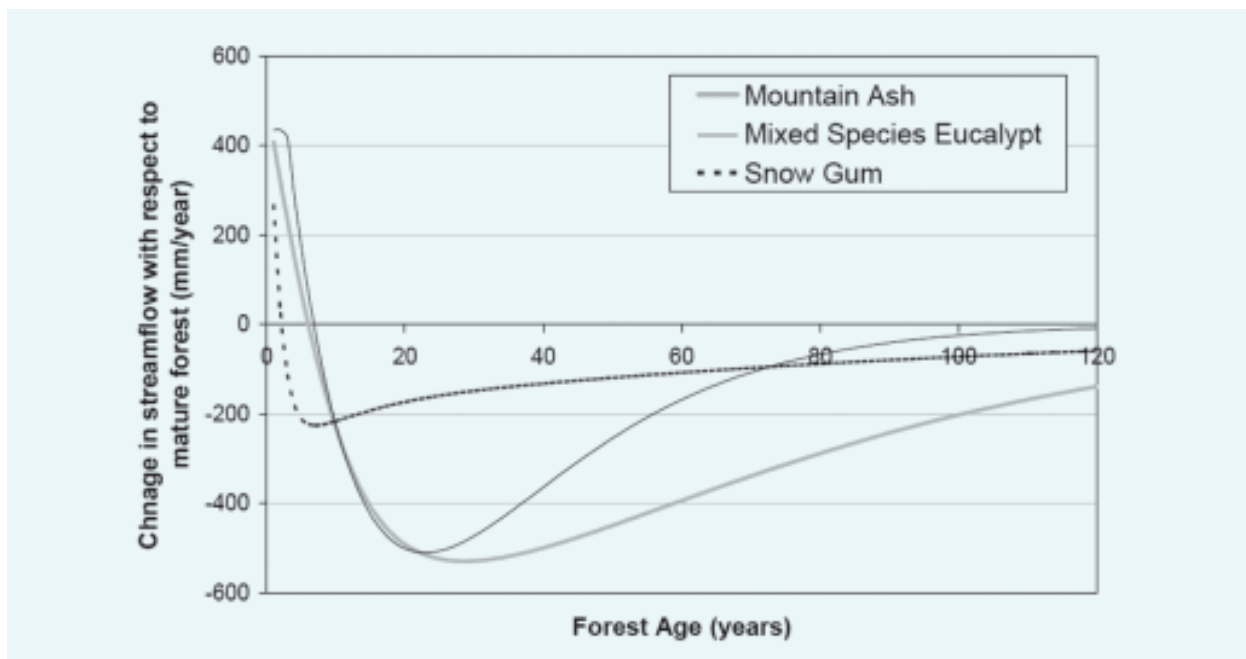


Figure 3 | Changes in streamflow for various Eucalypt species scaled to a rainfall of 2000mm/yr.

Impacts of bushfires on water quality

Immediately following a bushfire, streamflows typically increase due to increased runoff from bare surfaces. The loss of forest canopy and ground cover means less interception of rainfall as well as less water-use by the forest as a whole (less “evapotranspiration”), meaning more runoff to streams. This increase in streamflows lasts until the forest vegetation recovers or regrows (5–10 years, or less for partial burns).

As the forest regenerates, vigorous growth and re-growth increases evapotranspiration above pre-fire conditions, so streamflows decrease below what would be expected without fire. This reduction reaches a maximum at 20–30 years post-fire then slowly recovers as the forest ages (in the absence of any other further disturbances).

Figure 3 shows this graphically as a worst case for “complete burn”. It plots years since fire versus runoff relative to pre-fire conditions. It illustrates that different types of forests behave differently in the magnitude and timing of the initial streamflow increase; the subsequent reduction due to vigorous growth; and then recovery as the forest matures.

The exact shape of these curves for a real catchment depend on forest type, pre-fire age of forests, severity of burn, and the general soil and climatic conditions in the catchment. In practice, each burnt area will be a complex

mosaic of forest types, ages, burn severity and catchment characteristics.

Actual impacts on streamflow of the 2019/20 fires across EGCMA catchments will depend on areas of different fire severity; but it is clear that there will be significant impacts, particularly for the far eastern rivers where a very high percentage of catchments was burnt.

The impacts on water quality are more obvious following fire due to the immediate visual changes within waterways. Sediment, nutrients and contaminants are mobilised because of loss of cover exposing soil, mobilisation of nutrients in soil, decaying vegetation and ash, and increased likelihood of landslips and debris flows.

The increased runoff immediately following fires exacerbates these problems.

Consequences for our waterways include:

- smothering of in-stream plants and animals,
- reduction of in-stream dissolved oxygen levels,
- eutrophication (over-load of nutrients), and
- coarse sediment slugs and pulses.

Impacts experienced immediately after the fires are generally the most significant, and declining as forest cover is re-established, but some impacts continue for many years and will be exacerbated by multiple burns. The effects of multiple burns can be readily seen after each rain event.



Figure 4 | Crooked River confluence with the Wonnangatta, illustrating the dirty water flowing from the Crooked catchment which has been burnt four times in the past 20 years, in comparison to the Wonnangatta which has only burnt once.


Management implications

Work has been undertaken over the last 15 years to understand options for mitigating the effects of bushfires on water quality. The following summarises the current options available, and whilst they were developed with a focus on the Gippsland Lakes, they are generally applicable to catchments across East Gippsland:

- Undertake prescribed burning using procedures that will protect water quality – Water quality impacts are related to fire intensity, so well managed prescribed burns have the potential to reduce water quality impacts of subsequent wild-fires, especially if riparian areas can be protected. Note there is also a risk that prescribed burns can themselves cause water quality problems if not managed well.
- Undertake rehabilitation activities as part of fire suppression – Often fire breaks and tracks are constructed in haste as part of the fire fighting effort. Rehabilitation of these works should take place as soon as the immediate fire danger is over (i.e. within a one to a few days of their construction), rather than waiting until the fire is extinguished, or until the end of the fire season.

- Identify those areas that contribute high nutrient loads to the lakes and that are cost effective to mitigate. These might include eroding areas that are hydrologically well connected to waterways.

Ideally, consideration of water quality impacts would be incorporated into all fire suppression practices. Additionally, the impacts of major fires cannot be fully mitigated through the delivery of existing waterway health improvement programs alone, and preventative solutions must be found to reduce or mitigate longer term declines in waterway health.



Work has been undertaken over the last 15 years to understand options for mitigating the effects of bushfires on water quality.

A large, textured tree trunk is the central focus, set against a background of green foliage and a clear blue sky. A large, semi-transparent teal shape is overlaid on the image, starting from the top left and curving around the tree. The title 'Traditional Owners' is written in white, bold, sans-serif font across the middle of the image.

Traditional Owners

Aboriginal Community

The Aboriginal community across the East Gippsland region is represented by:

Gunaikurnai Land and Waters Aboriginal Corporation

The Registered Aboriginal Party and Native Title holder

Bidwell people

Ngarigo Monero people

East Gippsland is part of the tapestry of interwoven cultural landscapes that are the product of the skills, knowledge and activities of Aboriginal land managers over thousands of generations. Cultural landscapes are reflections of how Aboriginal people engage with the world. Aboriginal people have an enduring connection to Country in East Gippsland.

Aboriginal groups across East Gippsland have strong objectives to care for, be involved in, and collaborate in managing Country. The EGCMA are deeply appreciative of their time, knowledge, and input to the strategy and are committed to continuing to work together through the implementation of the RCS over the next 6 years.

Registered Aboriginal Parties across Victoria, worked hard to develop the Victorian Traditional Owner Cultural Landscapes Strategy. The key principles of the Cultural Landscape Strategy enable Traditional Owners to self determine their respective objectives for Country, using the Traditional Owner Cultural Landscape Strategy Framework for Managing Country as a toolkit.

The Victorian Traditional Owner Cultural Landscapes Strategy is a foundational document that has informed the development of the East Gippsland RCS and will help guide its implementation.

“The Cultural Landscapes Strategy is a collective view, describing what Traditional Owners want, and how they want it to happen as part of cultural land and water management.”

Victorian Traditional Owner Cultural Landscapes Strategy

Victorian Traditional Owner Cultural Landscapes Strategy



Traditional Owners - Gunaikurnai

“As Gunaikurnai, we see our land (Wurruk), waters (Yarnda), air (Watpootjan) and every living thing as one. All things come from Wurruk, Yarnda and Watpootjan and they are the spiritual life-giving resources, providing us with resources and forming the basis of our cultural practices. We have a cultural responsibility to ensure that all of it is looked after.”

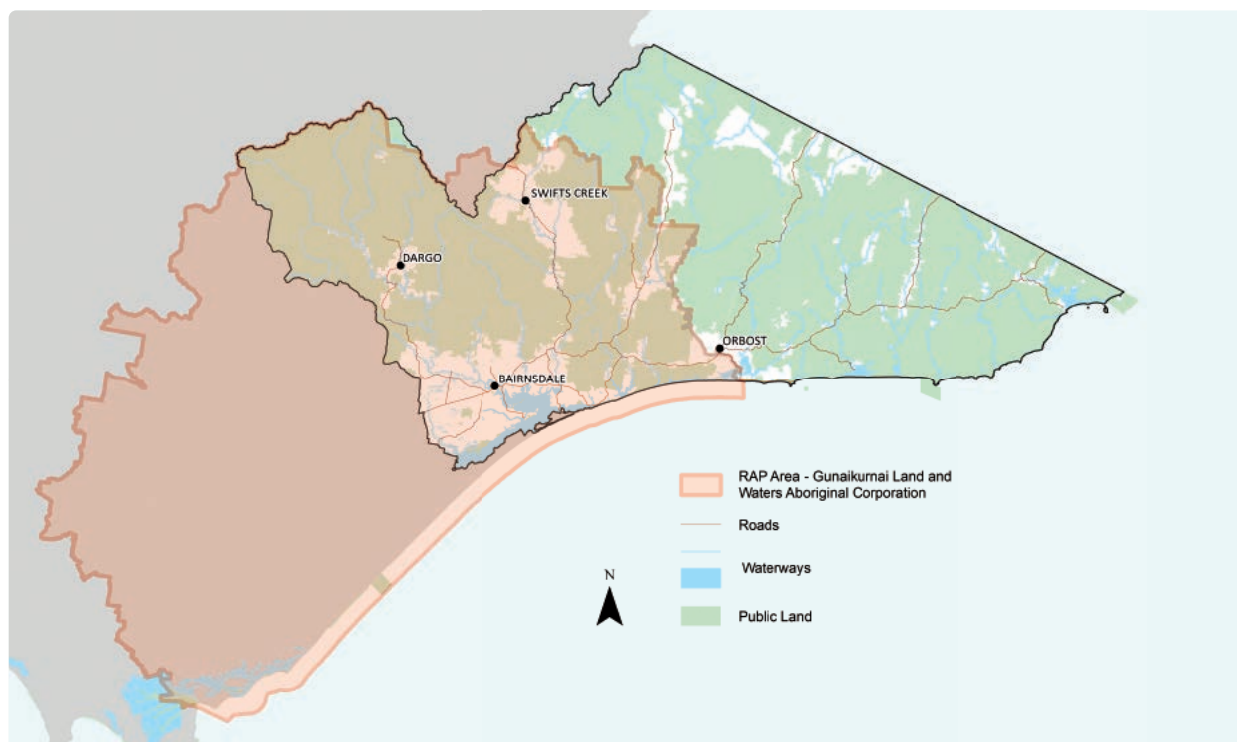
“Our vision is Gunaikurnai stand proud and strong, where our people have strong connections to their culture and Country, where our businesses and relationships are based on solid foundations and where we are self-sufficient and highly respected. In our future, our mob is united – the five clans of Gunaikurnai working together to support each other.”

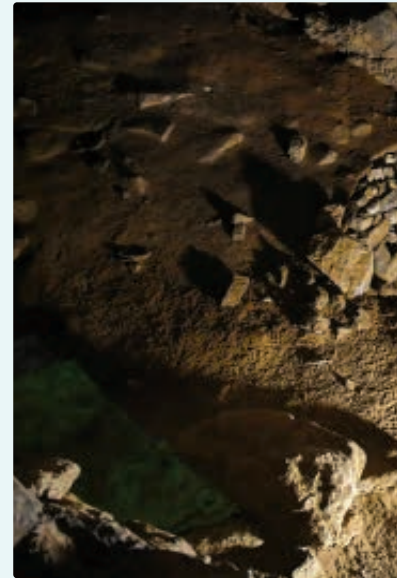
Gunaikurnai Whole of Country Plan

Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC), is recognised as:

- A Traditional Owner Body Corporate under Federal Native Title Act
- The Registered Aboriginal Party (RAP) within their area of determination
- Holder of a Recognition and Settlement Agreement, executed under the Traditional Owner Settlement.

The map below shows the area of determination for GLaWAC as the Registered Aboriginal Party in East Gippsland. This area covers just over 50% of the EGCMCA region.





The role of GLaWAC is to further the aspirations of the Gunaikurnai Traditional Owners through the implementation of the Gunaikurnai Native Title settlement agreements and furthering the objectives of the Gunaikurnai Whole of Country Plan, including caring for Country.

Caring for Country includes being able to practice the cultural obligations to heal and look after Country in a way that acknowledges all of Gunaikurnai Country is linked with no separation between landscapes, waterways, coasts and marine environments, and natural and cultural resources.

Managing a connected landscape means everything matters and that values exist even when they cannot be seen, for instance they are under water, covered by vegetation or within landscapes changed by colonisation. Managing Country in a sustainable way like the Gunaikurnai have done for tens of thousands of years means ensuring everything taken can be replenished, resources are taken for the benefit of the mob rather than individual gain and leaving enough for others.

To implement this, GLaWAC is looking to the East Gippsland Regional Catchment Strategy as a shared pathway to implement Gunaikurnai traditional knowledge and together ensure Gunaikurnai objectives are acknowledged, supported and resourced.

GLaWAC together with other Registered Aboriginal Parties across Victoria, worked hard to develop the Victorian Traditional Owner Cultural Landscapes Strategy. The

key principles of the Cultural Landscape Strategy enable Traditional Owners to self determine their respective objectives for Country, using the Traditional Owner Cultural Landscape Strategy Framework for Managing Country as a toolkit.

The Framework is a “toolkit” that GLaWAC will adapt their own self-determined pathway for healing and caring for Country, with five key program components:

- Restore the Traditional Owner knowledge system
- Strengthen Traditional Owner resilience
- Enable Traditional Owner cultural landscape planning
- Embed Traditional Owner knowledge and practice into policy, planning and management of Country
- Enable Traditional Owners to apply cultural objectives, knowledge and practice in the management of public land

The Gippsland Environment Agencies and GLaWAC work closely together using a collaborative Partnerships Agreement to align priorities, objectives and actions to achieve common goals. The priorities in the RCS are reflected in the Partnerships Agreement and the CMA looks to where the objectives of the Gunaikurnai can be furthered, including implementation of the Country Plan, and the Cultural Landscapes Strategy, where prioritised by GLaWAC.

For more information, visit the Gunaikurnai Land and Waters Aboriginal Corporation website.



THE CULTURAL LANDSCAPES STRATEGY STRATEGIC FRAMEWORK

1. RESTORING THE KNOWLEDGE SYSTEM

COMPONENT OBJECTIVES

To restore and protect the Traditional Owner knowledge system

COMPONENT AREAS

Reading Country Programs
Traditional Owner led research partnerships
Traditional Owner knowledge and practice networks

COMPONENT OUTCOMES

Traditional Owner led practices are rejuvenated and knowledge protected and applied to meet cultural objectives that include social, ecological and economic co-benefits

2. STRENGTHENING TRADITIONAL OWNER NATION RESILIENCE

COMPONENT OBJECTIVES

To strengthen Traditional Owner Nation resilience to enable delivery of our contemporary role as custodians of Country

COMPONENT AREAS

Strengthening the government funding model for Traditional Owner Corporations and Nations
NRM based Economic Development
Diverse Self Determination Pathways for Diverse Nations

COMPONENT OUTCOMES

Traditional Owner Nations are enabled to lead the process to heal and strengthen Country through their governance systems and with active, adaptive management

3. TRADITIONAL OWNER CULTURAL LANDSCAPES PLANNING

COMPONENT OBJECTIVES

To enable Traditional Owner cultural landscapes planning

COMPONENT AREAS

Cultural governance guides decision making
Development of planning frameworks that are tailored and appropriate to each group's pathway
System development for assessing health of Country

COMPONENT OUTCOMES

Cultural landscapes are the basis for Land management planning

4. EMBEDDING TRADITIONAL OWNER KNOWLEDGE AND PRACTICE

COMPONENT OBJECTIVES

To embed Traditional Owner knowledge and practice into policy, planning and the management of Country

COMPONENT AREAS

Institutional arrangements of the Government are enhanced to reflect Traditional Owner rights regarding management of Country
Two-way capacity is developed
Co-Governance arrangements are in place

COMPONENT OUTCOMES

Victorian Government policy, legislation and procedures enable and embed Traditional Owner knowledge and practice across all cultural landscapes

5. TRADITIONAL OWNER CULTURAL LANDSCAPES MANAGEMENT

COMPONENT OBJECTIVES

To enable the application of Traditional Owner cultural objectives, knowledge and practice in the management of public land

COMPONENT AREAS

Country Management programs are established
Cultural landscapes are managed by Traditional Owners through shared governance arrangements and Sole Management is established
Collaborative management pilots in priority cultural landscapes

COMPONENT OUTCOMES

Traditional Owners have decision making authority over the management of Traditional territories



Traditional Owners - Bidwell

Bidwell's aspirations are to preserve, protect, and showcase cultural heritage, lore, traditions, and customs through self-determination.

We assert our rights to a healthy country and an environmentally friendly landscape, riverscape and seascape. All living things in biodiversity have an absolute right to live in peace and harmony on this great country we all share and live on.

Bidwell is committed to creating positive relationships with non-government and government organisations; and is interested in developing strategies for coastal waters, rivers and lakes.

Bidwell First Nations Clans

Bidwell is a First Nation with 27 Ancestors still subject to ongoing research and development with clans, maps and language.

Bidwell Country covers south-east of Australia including coastal rivers and the Victorian-NSW border.



Traditional Owners - Ngarigo Monero

“We are the Ngarigo Monero people, ‘our people have always been connected to the coastline as well as the mountains’. Our continual connection to places, sites and stories is caring for ancestral lands, our cultural practices are held in our collective knowledge and has been shared down the generations. Ngarigo Monero continue to maintain our cultural obligations and responsibilities to our Elders and Ancestors and Country.”

“Our special places are connected to our knowledge and stories and in caring for country. Our rivers were our pathways for our Old People to connect to special places. Our oral stories shared down the generations are rich in their knowledge.”

The five main rivers in Far East Gippsland are very important waterways for Ngarigo Monero people. These include the Snowy River, Thurra River, McKenzie River, Bemm River, Cann River and the Genoa River. As well, the lakes in Far East Gippsland are just as important.

NNNMAC (Nindi-Ngujarn Ngarigo Monero Aboriginal Corporation) sees the following priorities as being critical for the management of our natural resources:

- Being part of decision-making processes; addressing environmental and cultural values.

- Addressing self-determination around water with reference to economic water; licencing water; tourism opportunities; partnerships and opportunities for community members; NRM activity; surveying; tangible and intangible cultural heritage; employment of key staff to represent interests in managing water resources.

The NNNMAC are committed to sharing knowledge and continuing to work closely with partner agencies to improve the management of our cultural landscapes in East Gippsland.



This Strategy





Introduction

An integrated planning framework

The Regional Catchment Strategy (RCS) is the primary integrated planning framework in each of the ten CMA regions of Victoria. This Regional Catchment Strategy (2021–2027), the fourth since 1997, will help to guide natural resource management across East Gippsland for the next 6 years.

What is included in the Regional Catchment Strategy?

The RCS works exclusively at a strategic level. It:

- sets strategic direction and identifies strategic actions
- provides direction for the future development of plans
- sets broad priorities with principles and directions for implementation
- sets priorities for 'landscape scale' programs of management
- establishes the principles for monitoring and evaluating its effectiveness.

What is not included in the Regional Catchment Strategy?

The RCS does not aim to provide detailed information at the level that could be expected in action plans. The document raises issues that require discussion within the region to further inform our strategic thinking and develops landscape level priorities that will guide management action in coming years.








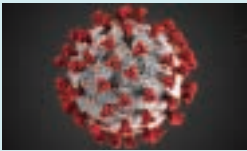
Policy Context

The RCS provides an integrated planning framework for managing land, water and biodiversity in the East Gippsland region for the next six years. In line with the requirements of the *Catchment and Land Protection Act 1994* (CaLP Act), the principal objectives of the strategy are to:

- establish a framework for the integrated and coordinated management of catchments
- establish processes that can be used to assess the condition of the region’s land and water resources, and the effectiveness of land protection measures.

Since the development of the last RCS, a number of major events have occurred, legislative reform, and new plans and strategies introduced. These impact the management of the region into the future and influence the new RCS. The timeline below shows the key planning, policy and environmental influences on our region since the development of the last RCS.

A Region in Transition (2013–2021)

2013		Launch of the East Gippsland RCS (2013–19)	Partnership agreement signed between Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) and Gippsland Environment Agencies (GEA).	<ul style="list-style-type: none"> • Australian Government Caring for our Country (CfoC) • Trust for Nature State-wide Conservation Plan • Victorian Waterway Management Strategy
2014		East Gippsland Water Strategy (2014–22)		<ul style="list-style-type: none"> • Victorian Coastal Strategy • Australian Government National Landcare Program (NLP)
2015		Gunaikurnai Whole-of Country Plan		<ul style="list-style-type: none"> • Australian Government Threatened Species Strategy • Gippsland Lakes Ramsar Site Management Plan
2016		Significant Flooding in the Tambo, Nicholson, Mitchell, Wentworth, Brodribb and Buchan Rivers		<ul style="list-style-type: none"> • Water for Victoria • Our Catchments Our Communities • Environmental Contribution Tranche 4 • Victorian Auditor General's Report (VAGO) - Ramsar Wetlands • Victorian Floodplain Management Strategy
2017		East Gippsland Floodplain Management Strategy		<ul style="list-style-type: none"> • Victoria's Climate Change Adaption Plan • Agriculture Victoria Strategy • Protecting Victoria's Environment Biodiversity 2037
2018		National Landcare Program - Regional Landcare Partnership (over 5 years)		<ul style="list-style-type: none"> • Rural Drainage Strategy • <i>Climate Change Act</i> • <i>Marine and Coastal Act</i> • Gunaikurnai Victorian Government Joint Management Plan
2019		Black Summer bushfires		<ul style="list-style-type: none"> • Phase out of native forest harvesting by 2030 • <i>Water and Catchment Legislation Amendment Act</i> • Australia's Strategy for Nature 2019–2030 • Gippsland Integrated Water Management Strategic Directions Statement • East Gippsland Drought Employment Program
2020		COVID-19 Pandemic		<ul style="list-style-type: none"> • Environmental Contribution Tranche 5 (four years) • Long-term Water Resource Assessment for Southern Victoria (LTWRA) • Marine and Coastal Policy • Central and Gippsland Sustainable Water Strategy (under development)

The current RCS presents a planning framework which focuses on maintaining the condition and productivity (sustainability) of the natural assets of the region. This RCS uses a collaborative and risk-based prioritisation process, based on an assessment of 'the land and water resources of the catchments of the region and how they are used' (CaLP Act).

The sections below outline the relevant policy context for the current RCS at a regional, state, national and international level.



Regional Plans and Strategies

Theme	Policy / Legislation
Land	<ul style="list-style-type: none"> • East Gippsland Soil Erosion Management Plan (EGCMA / AgVic) • Draft East Gippsland Rural Land Use Strategy (EGSC)
Water	<ul style="list-style-type: none"> • East Gippsland Waterway Strategy (EGCMA) • East Gippsland Urban Waterway Strategy (EGW) • East Gippsland Regional Floodplain Management Strategy (EGCMA) • Integrated Water Management – East Gippsland Strategic Directions Statement (EGW / DELWP) • East Gippsland Shire Urban Waterway Management Strategy (EGSC) • East Gippsland Shire Urban Waterway Guidelines (EGSC)
Biodiversity	<ul style="list-style-type: none"> • Biodiversity Response Planning process (DELWP) • Gippsland Plains and Strzelecki Ranges Conservation Action Plan (Parks Victoria) • East Gippsland Conservation Action Plan (Parks Victoria) • Greater Alpine National Parks Management Plan (Parks Victoria) • Protection of the Alpine National Park – Feral Horse Strategic Action Plan 2018-2021 (Parks Victoria) • Protection of the Alpine National Park: Feral Horse Action Plan 2021 (Parks Victoria)
Coasts and Marine	<ul style="list-style-type: none"> • Gippsland Lakes Ramsar Site Management Plan (EGCMA) • Gippsland Lakes Priorities Plan (EGCMA) • Beware Reef Marine Sanctuary Management Plan (Parks Victoria) • Cape Howe Marine Park Management Plan (Parks Victoria) • Point Hicks Marine Park Management Plan (Parks Victoria) • Gippsland Lakes Recreational Fishery Plan (VFA)
Community	<ul style="list-style-type: none"> • East Gippsland Landcare Support Plan
Traditional Owners/First Nations Peoples	<ul style="list-style-type: none"> • Gunaikurnai Whole of Country Plan 2015 • Gunaikurnai and Victorian Government Joint Management Plan
Cross-theme (other)	<ul style="list-style-type: none"> • East Gippsland Climate Change Adaption and Mitigation Plan (EGCMA) • East Gippsland Environmental Sustainability Strategy (EGSC) • East Gippsland Bushfire Recovery Plan (EGSC led) • Gippsland Regional Climate Change Adaptation Strategy (DELWP)

State Policies, Plans and Legislation

Theme	Policy / Legislation
Land	<ul style="list-style-type: none"> • <i>Catchment and Land Protection Act 1994</i> • Strong, Innovative, Sustainable: A new strategy for agriculture in Victoria 2020 • Digital Agriculture Strategy 2018 (Agriculture Victoria) • Victorian Forestry Plan • Land Management Strategy (Parks Victoria)
Water	<ul style="list-style-type: none"> • <i>Water Act 1989</i> • <i>Water and Catchment Legislation Amendment Act 2019</i> • Water for Victoria – Water Plan 2016 • Victorian Waterway Management Strategy 2013 • State Environment Protection Policy (Waters) • Integrated Water Management Framework for Victoria 2017 • Draft Gippsland and Central Region Sustainable Water Strategy 2022 • Victorian Seasonal Watering Plan (VEWH) • Victorian Floodplain Management Strategy 2016 • Victorian Rural Drainage Strategy 2018
Biodiversity	<ul style="list-style-type: none"> • <i>Flora and Fauna Guarantee Amendment Act 2019</i> • Flora and Fauna Guarantee Threatened List • Protecting Victoria's Environment - Biodiversity 2037 (Bio 2037) • Framework for the Victorian State of the Environment Report 2023 • Trust for Nature State-wide Conservation Plan 2013 • Victorian Deer Control Strategy
Coasts and Marine	<ul style="list-style-type: none"> • <i>Marine and Coastal Act 2018</i> • <i>Marine and Coastal Policy 2020</i> • Draft Marine and Coastal Strategy
Community	<ul style="list-style-type: none"> • Victorians Volunteering for Nature - Environmental Volunteering Plan
Traditional Owners/First Nations Peoples	<ul style="list-style-type: none"> • <i>Aboriginal Heritage Act 2006</i> • <i>Traditional Owner Settlement Act 2010</i> • The Victorian Traditional Owner Cultural Landscapes Strategy • Victorian Aboriginal Affairs Framework 2018–2023 • Self-Determination Reform Framework • Framework for Government Engagement with Traditional Owners • Pupangarli Mammarnepu 'Owning Our Future' Aboriginal Self-Determination Reform Strategy • 2020–2025 • DELWP Aboriginal Inclusion Plan 2016–2020 • The Victorian Traditional Owner Cultural Fire Strategy • The Victorian Traditional Owner Native Foods and Botanicals Strategy • Managing Country Together Framework
Cross-theme (other)	<ul style="list-style-type: none"> • Our Catchments Our Communities Strategic Directions Statement • Our Catchments Our Communities – Integrated Catchment Management in Victoria 2016 • <i>Climate Change Act 2017</i> • Victorian Climate Change Strategy 2021 • <i>Environment Protection Act 2017</i> (and associated <i>Amendment Act 2018</i>) • Victorian Planning Provisions • Alpine Resorts Strategic Plan 2020–2025 • <i>Planning and Environment Act 1987</i>

National Policies, Plans and Legislation

Theme	Policy / Legislation
Land	<ul style="list-style-type: none"> • Australian Government's National Landcare Program (and Regional Land Partnerships (RLP) Program) • Australian Government's National Soil Strategy
Biodiversity	<ul style="list-style-type: none"> • <i>Environment Protection and Biodiversity Conservation Act 1999 Act</i> • Australia's Strategy for Nature 2019–2030 (2019) • Threatened Species Strategy 2021–2026
Coasts and Marine	<ul style="list-style-type: none"> • <i>Environment Protection and Biodiversity Conservation Act 1999 Act</i> (Ramsar wetlands) • National Coastal Risk Assessment (DAWE)
Traditional Owners/First Nations Peoples	<ul style="list-style-type: none"> • <i>Native Title Act 1993</i> • <i>Native Title Legislation Amendment Act 2021</i> • The National Agreement on Closing the Gap • Indigenous Advancement Strategy
Cross-theme (other)	<ul style="list-style-type: none"> • Intergovernmental Agreement on the Environment

International Conventions and Frameworks

Theme	Policy / Legislation
Biodiversity	<ul style="list-style-type: none"> • UN Convention on Biological Diversity – Strategic Plan for Biodiversity 2011–2020 and the Aichi Targets • Ramsar Convention on Wetlands of International Importance
Cross-theme (other)	<ul style="list-style-type: none"> • UN Framework Convention on Climate Change • United Nations Declaration on the Rights of Indigenous People



Regional Catchment Strategy Development

The East Gippsland RCS was developed in collaboration with regional partners, including Traditional Owners, community and natural resource management organisations and agencies.

The development of this East Gippsland RCS has built on previous strategies and existing regional priorities, and plans will continue to guide natural resource management across our region.

Review of the 2013 RCS

As part of the development of the new East Gippsland RCS, a review of the previous (2013–2019) RCS was undertaken.

The Victorian Catchment Management Council guidelines specify that a review of the existing RCS should be undertaken as part of the development of the new RCS. Specifically, ‘the mid-term and final reviews will look back to the overall effectiveness of the RCS, and forwards, with recommendations for the future’.

The East Gippsland CMA commissioned a review of the existing RCS with the aims of meeting the intent of the guidelines and helping inform the development of the new RCS for East Gippsland.

The purpose of this end of term review was to:

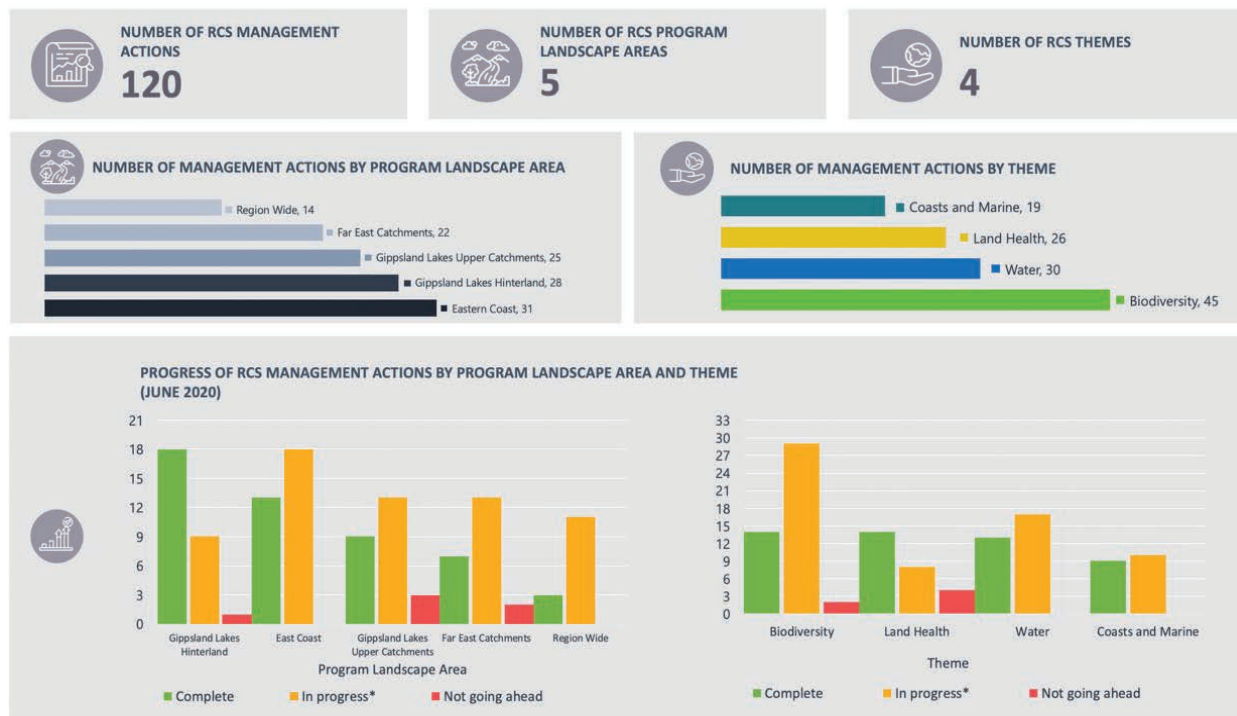
- Provide an update on achievements, learnings and changes since the mid-term review completed in 2016
- Identify key drivers of change key emerging trends
- Provide information to assist in the renewal of the RCS for the period 2021–2027.

The review included a summary of the findings of the mid-term review undertaken in 2016, and a semi-quantitative review of the achievement of priority management actions in the RCS.

Key findings of the review include:

- Since the development of the last RCS, a number of major events have occurred, legislative reform, and new plans and strategies introduced. These impact the management of the region into the future and influence the new RCS. The timeline below shows the key planning, policy and environmental influences on our region since the development of the last RCS.

RCS Review Summary



Legislative context

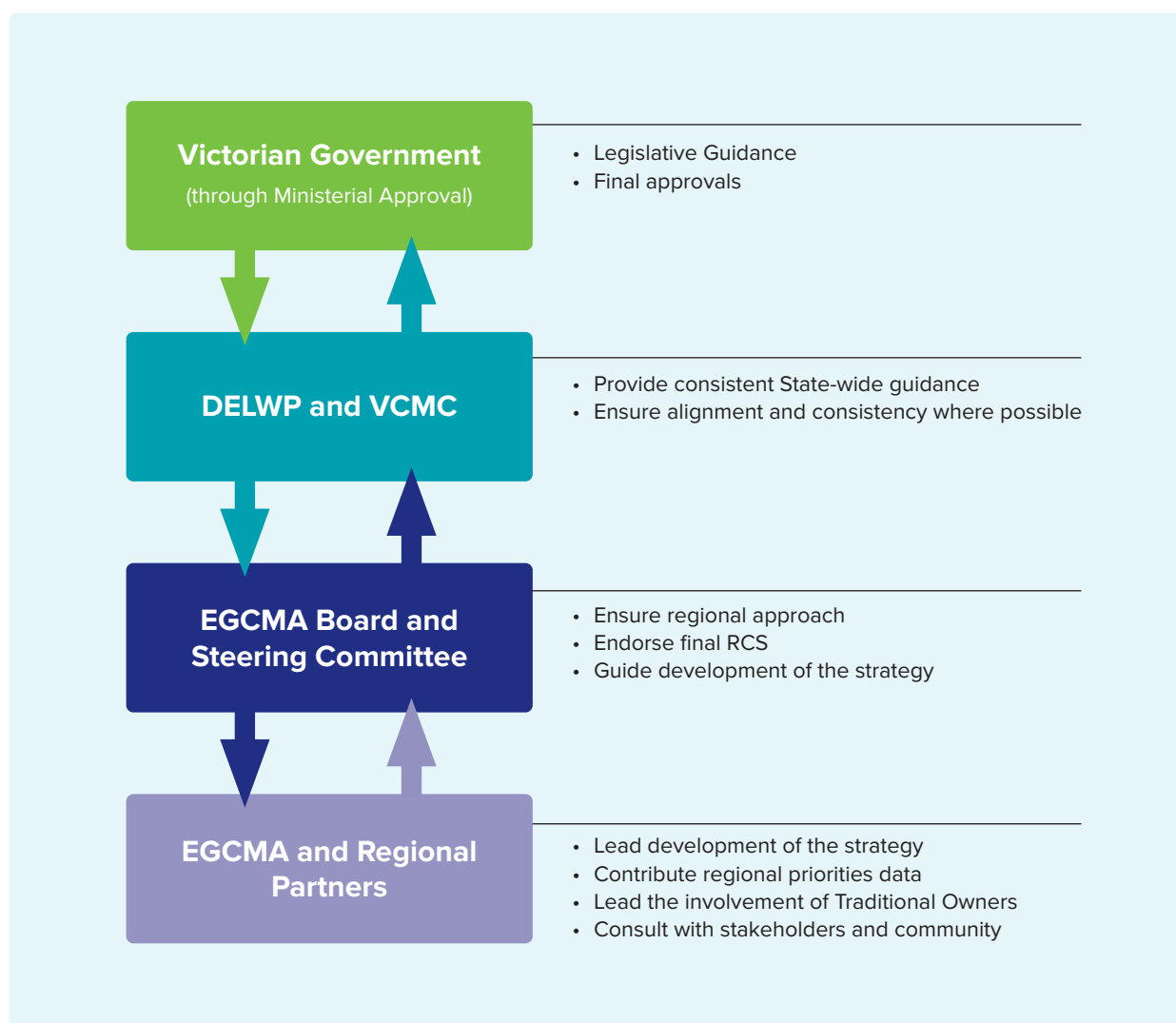
The *CaLP Act 1994* stipulates that each CMA must prepare a Regional Catchment Strategy (RCS) for the region, and coordinate and monitor its implementation. Each CMA prepares an RCS in partnership with local communities and partners involved in integrated catchment management.

In December 2019 the Victorian Catchment Management Council released guidelines approved by the Minister for the preparation of RCS's across Victoria. The guidelines provide a minimum set of requirements, so that each RCS is succinct and a high-level strategy.

Governance

The development of the East Gippsland RCS was overseen by a Steering Group. This group included senior representation from the East Gippsland CMA Board and key partners including the Gunaikurnai Land and Waters Aboriginal Corporation, Agriculture Victoria, DELWP, and Parks Victoria. The group provided an opportunity for East Gippsland CMA Board members to contribute to the project, and a mechanism for broader engagement with the Board around the strategy.

The broader governance structure related to the development of the RCS is outlined in the figure below.

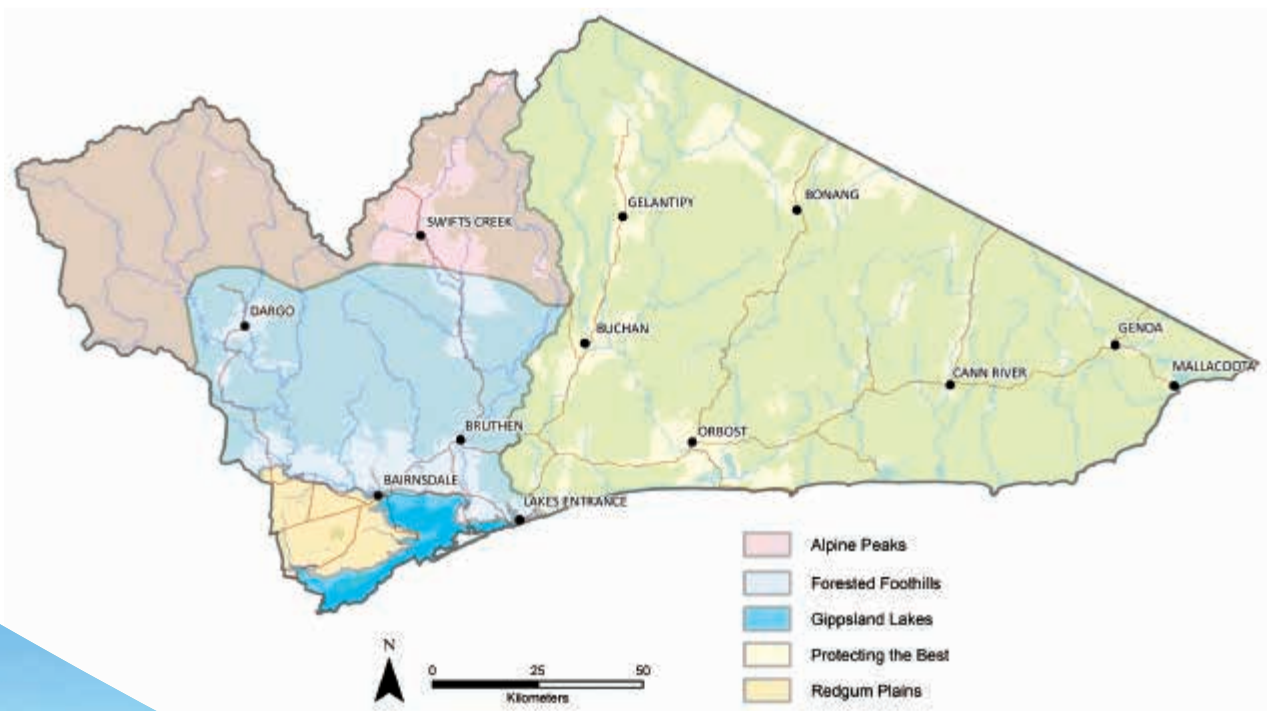


Structure of the RCS

The themes of the RCS are based around Water; Land; Biodiversity; Coasts and Marine; and Community. It is recognised that these broad themes are inter-connected, but they align with the way governments and other investors often plan and roll out their investment programs.

The RCS also includes a 'Local Areas' section to focus on the integration of the themes and related topics in a way that is relevant to local communities.

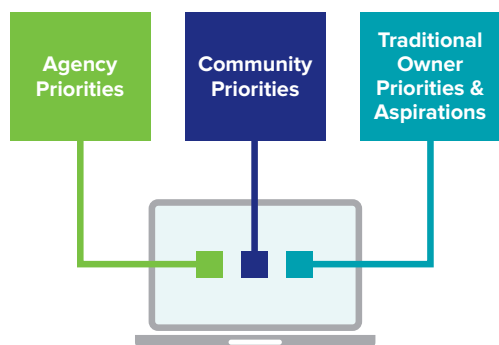
The East Gippsland CMA has been working with Gippsland environment agencies since 2018 to develop regional landscape priority areas, some of which are cross regional. These areas have formed the basis of this RCS. The areas were identified by considering strategic and collaborative opportunities informed by existing priorities and management plans. The regional landscape priority areas ('Local Areas') are Gippsland Lakes; Forested Foothills; Alpine Peaks; Protecting the Best – Far East Gippsland; and Red Gum Plains.



Regional landscape priority areas have formed the basis of this RCS.

Data and information

The priorities and outcomes outlined in the RCS are supported by data and information collected from national, state, and regional data sets, as well as existing strategies and plans relevant to the RCS.



Themes

The new East Gippsland RCS considers and presents information on five themes: Water; Land; Biodiversity; Coasts and Marine; and Community.

The thematic information in the RCS uses regional and statewide data to provide alignment with the agreed 'Outcomes Framework' for the RCS's developed by DELWP.

It is recognised that many of the specific themes are in fact interconnected. The integration of this information is addressed through the priorities and outcomes described for each of the Local Areas defined in the strategy.

Data used to develop this section of the RCS has been drawn from a variety of sources including national and state databases collating information on things like water resources, flora and fauna records, land use, ground cover, environmental condition assessments and population data.

Local Areas

The structure of the new East Gippsland RCS is based on five Local Areas: Gippsland Lakes; Redgum Plains; Alpine Peaks; Forested Foothills; and Protecting the Best – Far East Gippsland.

The Local Areas are the foundation for a place-based approach to priority and target setting and provide a more meaningful platform for discussion with communities and regional partners about management actions and strategic direction.

The aim of this approach is to capture the interconnected nature of the themes covered by the RCS. Priorities from key regional strategic and action plans have been collated in this part of the RCS. This includes the:

- East Gippsland Regional Waterway Strategy
- Gippsland Lakes Ramsar Site Management Plan
- East Gippsland and Gippsland Plains and Strzelecki Ranges Conservation Action Plans
- Gippsland Biodiversity Response Planning process
- East Gippsland Rural Land Use Strategy
- East Gippsland Floodplain Management Strategy
- Gippsland Regional Climate Change Adaptation Strategy
- East Gippsland Integrated Water Management Strategic Directions Statement
- Gunaikurnai Whole of Country Plan
- Gunaikurnai and Victorian Government Joint Management Plan
- Statewide Conservation Plan for Private Land in Victoria
- Greater Alpine National Parks Management Plan
- Strong, Innovative, Sustainable: A New Strategy for Agriculture in Victoria
- Cape Howe Marine Park Management Plan
- Point Hicks Marine Park Management Plan
- Beware Reef Marine Sanctuary Management Plan

It should be noted that three areas (Gippsland Lakes, Alpine Peaks and Redgum Plains) all represent 'shared' landscapes with adjoining CMAs. East Gippsland CMA is working with the West Gippsland CMA and the North East CMA to ensure the alignment of landscape scale priorities where possible.

It is recognised that many of the specific themes are in fact interconnected.

Engagement and consultation

The involvement of regional partners including Traditional Owners, community and natural resource management organisations and agencies in the development and implementation of the RCS is critical.

Initial broad engagement with the **community** based on the five themes covered by the RCS was completed using the RCS website. After providing information on the five themes of the RCS including descriptions of the values, threats and current condition across the region, the opportunity for community and stakeholders to give feedback on their priorities and vision for the region over the life of the RCS was provided through the RCS website. A range of feedback was received from the community in this initial stage.

Initial information outlining the key values, condition, and priorities for significant landscapes across the region ('Local Areas' – Gippsland Lakes, Redgum Plain, Forested Foothills, Protecting the Best (Far East Gippsland) and Alpine Peaks) were drafted and provided to **regional partner organisations** for their review and feedback.

This information was the basis for discussion through a series of seven individual and group workshops held with partner organisations between August and September 2021.

Organisations and groups participating in these workshops included:

- Department of Environmental, Land, Water and Planning
- Parks Victoria
- East Gippsland Shire Council
- Agriculture Victoria
- Trust for Nature
- Greening Australia
- East Gippsland Conservation Management Network
- Birdlife Australia
- Landcare networks (East Gippsland, Far East Victoria, Snowy River Interstate, High Country)
- Gippsland Agricultural Group
- Agriculture industry representatives through the 'Sowing the Gap' Project Steering Group.

The discussions and feedback from these workshops were used to inform the vision, priority outcomes, and targets for each of the landscape areas, informed by all regional partners. Additional direct invitations for input from Southern Rural Water, East Gippsland Water and Wellington Shire Council were also sought.

Feedback from these workshops and initial community consultation through the RCS website was incorporated into the draft RCS.

The East Gippsland RCS website (www.eastgippsland.rcs.vic.gov.au) provided the primary platform for **community** consultation, running from early December 2021 through to the end of February 2022. Consultation on the website was supported by traditional and social media campaigns to raise awareness and encourage participation in the RCS development process.

Online consultation via the website was supplemented by face to face 'open house' events in Bairnsdale, Orbost, Cann River and Mallacoota held during February 2022. An additional online session was also held to accommodate community members who were unable to attend one of the open house events.

It is recognised that the involvement and recognition of Traditional Owners across the RCS should be significant. To help achieve this, a stand-alone engagement process with Traditional Owners was developed to help document the relevant aspirations, and priorities in the RCS.

The East Gippsland CMA held positive meetings with representatives from Gunaikurnai Land and Waters Aboriginal Corporation (Gunaikurnai), Nindi Ngujarn Ngarigo Monero Aboriginal Corporation (Ngarigo Monero), and Bidwell First Nations Clans (Bidwell) to support development of content for the RCS.

Strategy Implementation

The management of our region is a responsibility that we all share. The challenge now is to work together with individuals, community groups, Traditional Owners and delivery agencies to implement the actions outlined in the RCS.

The RCS was developed in collaboration with all partners, including the commitment to actions and outcomes. Implementation of the strategy will use an accountability model, that is, the East Gippsland Catchment Management Authority will lead the monitoring, evaluation and reporting of the strategy, with partners providing input into the progress of delivery.

Arrangements of accountability and reporting on progress will include meetings, one on one discussions, providing data annually, and ensuring we are working together across the region in an integrated way to report on progress.

This RCS has been developed with close alignment to existing regional strategies. This approach will increase the ownership of the outcomes described in the RCS and maximise the efficiency and alignment of the delivery of outcomes by regional partners.

This approach aims to improve the robustness of reporting against the targets and outcomes in the RCS by ensuring that regional partners can utilise data already collected through other mechanisms to inform reporting against the RCS.

Phases of Implementation

With respect to the delivery of actions outlined in each of the Local Areas covered by this RCS, there are four phases in the implementation framework. These phases describe the current status and trajectory of the local area. Different places across a single Local Area may be in different phases of the implementation framework.

1 Target setting

A vision is set for each local area, including outcomes, aiming for the healthiest environment tailored to community and Traditional Owner aspirations and regional characteristics. Actions are developed in collaboration with partner agencies, targeting threats to the Local Area.

2 Taking action

Land managers and community work intensively to maintain and improve our natural environments. Examples of work undertaken during this phase include pest plant and animal control, revegetation, and hosting engagement events. This phase is working together to achieve results on the ground.

3 Recovery and growth

Once the delivery of on ground works is complete, the local area (and the life within it) will take some time to recover and establish. In some cases, environmental works will cause a minor decline before the environment can find its balance and improve in condition. This phase provides for onground works to be delivered at a level for the environment to establish into a stronger, more resilient, and healthier Local Area.

4 Target achieved

The Local Area is resilient, providing community values and is largely naturally sustained. Threats to the local area are now reduced (along with the costs to fix them). The environment is stronger, more resistant, and resilient to threats. The local area will need minimal maintenance, although ongoing monitoring may be required, once the outcomes have been achieved.



Implementation Partners

Many individuals, community groups, Traditional Owners, and delivery agencies have interests and responsibilities in the management of natural resources for East Gippsland and we will work together to deliver the actions and achieve the outcomes in the RCS.

Many of these partners have existing interests or responsibilities for areas of land and water, or activities, values or threats across these areas.

Collaboration and the delivery of target outcomes through partnerships are key to the implementation of this RCS over the next 6 years. Regional delivery partners will contribute to the implementation of the RCS through:

- Undertaking the statutory or legislative roles and responsibilities of their organisations

- Working in partnership with other organisations, individuals, or groups to deliver projects or contribute to strategic or action planning projects
- Continuing to build meaningful partnerships with Traditional Owners across the region to help generate positive outcome for Country
- Securing investment for the region to allow delivery of key projects either through their own or partner organisations
- Engaging with the community to understand current and future priorities across the region
- Providing support, advice, or permissions for activities to take place across the region

The key partners involved in the delivery of the RCS include:



Agriculture Victoria

Agriculture Victoria works in partnership with farmers, industries, communities and other government agencies to support and grow agriculture in Victoria. The organisation focusses on profitable and sustainable farming in thriving regional and rural communities across Victoria. Key responsibilities include biosecurity, animal welfare, farm safety and welfare, and research.



Birdlife Australia

Birdlife Australia is a not-for-profit organisation and the nation's largest bird conservation organisation. It has been a voice for Australia's birdlife for well over a century, protecting birds and their habitats through a range of programs and informed advocacy. Its mission is to make a real and positive difference for Australia's birds and to help people learn about and appreciate birds.



Department of Environment, Land Water and Planning (DELWP)

The Department of Environment Land Water and Planning (DELWP) is focused on creating a liveable, inclusive and sustainable Victoria with thriving natural environments – where the community is at the centre. It has programs focussed on climate change, wildlife, land and property, environment, water and catchments, forests and reserves and planning. It is also responsible for Forest Fire Management Victoria.



East Gippsland Catchment Management Authority

The East Gippsland Catchment Management Authority (EGCMA) provides for the integrated management of land, biodiversity and water resources in the region. The Authority disseminates Government policy and information to the community of East Gippsland and provides strategic leadership on current and emerging government initiatives in natural resource management. It acts as a conduit between government and community to build cooperative connections between the two.

The EGCMA is directly accountable under the *Water Act 1989* for licensing works on waterways and planning referrals on floodplains and also provides advice and information on other river health related issues. A focus of the EGCMA is to foster project delivery through partnerships with stakeholders, including the delivery or on ground river health improvement works programs across East Gippsland.



East Gippsland Conservation Management Network

The Conservation Management Network is a community run charity who work with a range of community members and stakeholders to look after East Gippsland's unique environment.



East Gippsland Shire

The East Gippsland Shire Council (EGSC) covers the greatest area of the two local governments that occur across the East Gippsland CMA region. There are four key areas that EGSC plays a role in delivering on the RCS these include, public land management; flood and stormwater management; strategic planning and regulation; partnering; and advocacy.



Greening Australia

Greening Australia is a not-for-profit organisation committed to tackling Australia's environmental challenges, to return life to landscapes and balance to the natural environment in ways that work for communities, economies and nature. To help threatened plants and wildlife, and combat global climate change, Greening Australia works across southern Australia's landscapes, integrating large-scale re-forestation and carbon sinks into farming systems to create healthy, productive landscapes for people and nature.



Gunaikurnai Land and Water Aboriginal Corporation (GLaWAC)

GLaWAC is the Registered Aboriginal Party that represents the Gunaikurnai people, the Traditional Owners of our Country, as determined by the Victorian Heritage Council under the *Aboriginal Heritage Act, 2006*. As part of their role, GLaWAC have an On Country team. The team plays an active role in ensuring the protection, preservation, rehabilitation and sustainable use of our Country as guided by the Gunaikurnai Whole of Country Plan. GLaWAC are a key partner in the delivery of the RCS.



Landcare

Across East Gippsland there are more than 30 Landcare groups. These groups are organised into three networks: East Gippsland Landcare Network, Far East Victoria Landcare and Snowy River Interstate Landcare Committee, and they cover approximately 742,000 hectares across the region. The groups and networks are active in a huge range of land management issues ranging from soil health and farm productivity, management of invasive species, conservation of native flora and fauna, and protection of the region's waterways.



Parks Victoria

Parks Victoria manages a diverse network of parks that are home to over 4,300 native plant species and 948 native animal species. These parks include some of Victoria's largest and most undisturbed ecosystems – landscapes like the Alps, the mallee, grasslands and inland waters and wetlands. It covers Victoria's marine national parks and sanctuaries that protect a wide array of marine life.



Trust for Nature

Trust for Nature play a unique role in Victoria's biodiversity conservation by protecting the diverse range of native plants, animals and habitats found on private land. Trust For Nature uses a variety of methods to achieve conservation goals across region. On title agreements, or Conservation Covenants are used to protect private land in perpetuity. These are a legally-binding agreement placed on a property's title to ensure native vegetation is protected forever. The Trust also purchases properties with unique conservation value using their Revolving Fund.

Other natural resource management agencies, state and federal government authorities and delivery partners

In addition to the partners listed above other partners and groups play a role in the management of natural resources in the region and in delivering the RCS: Organisations including the Commonwealth Department of Agriculture, Water and the Environment, the Gunaikurnai Traditional Owner Land Management Board, the Environment Protection Authority, East Gippsland Water, Southern Rural Water, Gippsland Ports, Wellington Shire Council, the State Emergency Service, the Bureau of Meteorology, and Regional Roads Victoria are all important partners for our region. These organisations contribute to strategic and action planning projects across the region, engage with our community on issues and priorities, and deliver projects that contribute to achieving outcomes described in the RCS.

Traditional Owners/First Nations

The Aboriginal community in East Gippsland is represented by the Gunaikurnai, Bidwell and Ngarigo Monero people. Key organisations representing and supporting Traditional Owners and First Nations peoples in East Gippsland include:

- Gunaikurnai Land and Water Aboriginal Corporation
- Bidwell First Nations Corporation
- Nindi Ngujarn Ngarigo Monero Aboriginal Corporation
- Gippsland & East Gippsland Aboriginal Corporation
- Moogji Aboriginal Council

A map of the Registered Aboriginal Parties in Victoria can be found at: www.aboriginalheritagecouncil.vic.gov.au



Monitoring and Reporting

The East Gippsland Catchment Management Authority is responsible for monitoring and reporting on the implementation of the RCS.

Under section 19B of the Catchment and Land Protection Act 1994, the East Gippsland CMA is also required to annually report on the condition and management of land and water resources in the region. The East Gippsland CMA commits to reporting on the RCS annually in the East Gippsland CMA Annual Report.

Monitoring and reporting helps us to track progress against the outcomes and priority directions for land, water, coasts and marine, biodiversity and community. This promotes continuous improvement through the collection, analysis and evaluation of data and information on natural resources in the East Gippsland region.

In 2021, all CMAs developed and adopted an outcomes framework. This framework provides guidance on overarching outcomes that all CMAs seek to achieve in integrated catchment management. Measuring these outcomes also provides a picture of catchment condition.

Through engagement during the review and renewal phases of the East Gippsland RCS our community and regional partners have identified more specific regional outcomes they seek to achieve.

When combined, this set of measurable State and Regional Outcomes forms the East Gippsland RCS outcomes and monitoring framework.

Statewide Outcomes Framework

The Department of Premier and Cabinet (DPC) developed the Victorian Government Outcomes Framework which provides a consistent way to design and measure outcomes. This approach helps to drive collaboration across government and identify shared aspirations and areas of work.

Applying the Victorian Government Outcomes Framework to develop an RCS Outcomes Framework enables all CMAs to demonstrate how regional outcomes align with state-wide policies and outcomes. The Statewide RCS Outcome Framework has been developed in conjunction with CMAs, the Victorian Catchment Management Council and DELWP.

Each of these outcomes will be monitored and reported against annually.

The East Gippsland CMA will collaborate with partners to collect and collate data required to monitor the Regional Outcomes outlined in the framework.



Monitoring and reporting helps us to track progress against the outcomes and priority directions for land, water, coasts and marine, biodiversity and community.

WATER	LAND	BIODIVERSITY	COASTS & MARINE	COMMUNITIES	INTEGRATED CATCHMENT MANAGEMENT
<p>The Victorian and State Governments have defined the following high level outcomes relevant to Regional Catchment Strategies</p>					
<p>Safe, sustainable and productive water resources.</p> <p>The environmental condition of waterways supports environmental, social, cultural and economic values.</p>	<p>Land use and management is sustainable with the condition of soil, biodiversity and vegetation improved.</p> <p>Victoria's agriculture systems have adapted to significant changes in climate and markets.</p>	<p>Victoria's biodiversity is healthy, valued and actively cared for.</p>	<p>A healthy, dynamic and biodiverse marine and coastal environment that is valued in its own right benefits the Victorian community now and in the future</p>	<p>Effective community engagement and citizen participation in catchment management.</p>	<p>Healthy, sustainable and productive land, water and biodiversity maintained by ICM that is strongly community based, regionally focused and collaborative</p>
<p>Government's commitment to self-determination: We're committed to self-determination and working closely with the Aboriginal community to drive action and improve outcomes. Healthy, sustainable and productive land, water and biodiversity maintained by ICM that is strongly community based, regionally focused and collaborative.</p>					
<ul style="list-style-type: none"> Increase in Victoria's water security Protect the condition of Victoria's groundwater resources Increase in the number of river reaches/wetlands with maintained or improved environmental condition 	<ul style="list-style-type: none"> An increased number of farmers have adopted practices needed to reduce the risk of soil and nutrient loss and acidification, improve carbon retention and biodiversity protection on-farm Increase in area of agricultural land mapped that has improved biodiversity protection in place A demonstrable increase in the number of farmers using new technologies to support their climate related farm decisions 	<ul style="list-style-type: none"> Net gain of the overall extent and condition of habitats across terrestrial, waterway and marine environments (On average) % Change in Suitable Habitat expected over 50 years from sustained improved management for threatened species (On average) % Change in Suitable Habitat expected over 50 years from sustained improved management for culturally significant species Percentage of all species with positive % Change in Suitable Habitat expected over 50 years from sustained improved management 	<ul style="list-style-type: none"> Net gain in extent and condition of coastal habitats Improved catchment impact on marine environments through water quality of coastal rivers and estuaries Improved catchment impact on marine environments through improved water quality of coastal rivers and estuaries 	<ul style="list-style-type: none"> Victorians are contributing to the health of Victoria's environment (biodiversity/catchments/waterways) RCS include Traditional Owner cultural values in specific sectors, or weaved throughout Traditional Owners endorse how their values and priorities are incorporated in the RCS, or letters of support. Partnership and participation of Traditional Owners 	<ul style="list-style-type: none"> Area under active stewardship to improve catchment health and resilience ICM Stewardship Partnerships
<p>Through the development of the Regional Catchment Strategy, each Catchment community will identify and agree outcomes they seek to achieve. We will monitor and report annually the following set of state-wide outcome and condition indicators as well as regionally specific outcome and condition measures that reflect regionally specific outcomes and Traditional Owner consultation.</p>					

REGIONAL OUTCOMES

- Extent of protected or improved riparian land (ha)
- River flows
- Extent of wetlands (ha)
- Groundwater levels
- Percentage of exposed soils
- Agriculture (type, number of enterprises, area, value)
- Amount of change over time of land use
- Extent of native vegetation (ha)
- Area (ha) of pest herbivore control
- Area (ha) of pest predator control
- Area (ha) of weed control
- Area (ha) of permanent protection
- Extent of coastal vegetation (mangrove, saltmarsh and other regionally relevant species)
- Water quality
- Community volunteering (Landcare / community NRM Groups – Group Health Score)
- Number of formal partnership agreements for planning and management between Traditional Owners and key NRM agencies
- Number of partnerships



Themes

Elements of our landscape

The information contained in the RCS is built from five major elements of our landscape: **Water**, **Biodiversity**, **Land**, **Coasts and Marine**, and **Communities**.

These themes largely align with how programs, that improve or manage the natural resources of our region, are delivered. It is recognised that in practice these themes are often interrelated.

Each of the five themes has been described individually by outlining their scope, current conditions and values, and major threats and drivers of change.



Water



Biodiversity



Land



**Coasts and
Marine**



Community



Water

The **'water theme'** of this Regional Catchment Strategy includes the rivers, wetlands, water resources, and groundwater of East Gippsland, including the aquatic biodiversity supported by these freshwater systems. Our region is one of the few places on mainland Australia where continuity of natural ecosystems from the alps to the sea still exists.

Our water dependant values... a snapshot

The waterways of East Gippsland support significant ecological, social and cultural values. Fresh water is critical to the productivity of the region and our aquatic habitats support a large number of threatened species that depend on these ecosystems.

The rivers of East Gippsland rise in the Great Dividing Range, and flow generally south to discharge into Bass Strait. Rivers in the east flow through smaller estuaries and inlets to discharge directly to the sea, whilst the Mitchell and Tambo Rivers discharge to the Gippsland Lakes, before water flows to the sea through Lakes Entrance.

Wetlands within the region occur in alpine areas, along the coast (see coastal theme), and there are a small number of floodplain wetlands, including Macleod Morass, which is part of the Gippsland Lakes Ramsar Site.

Fertile lower floodplains, including the Mitchell River in particular, are utilised for agriculture including irrigated horticulture operations.

The waterways of East Gippsland are valued by the local community, visitors to the region and the broader Australian community.

Dependent plant species

350

Dependent bird species

44

Dependent frog species

11

Dependent fish species

9

Dependent mammal species

1



Genoa River.

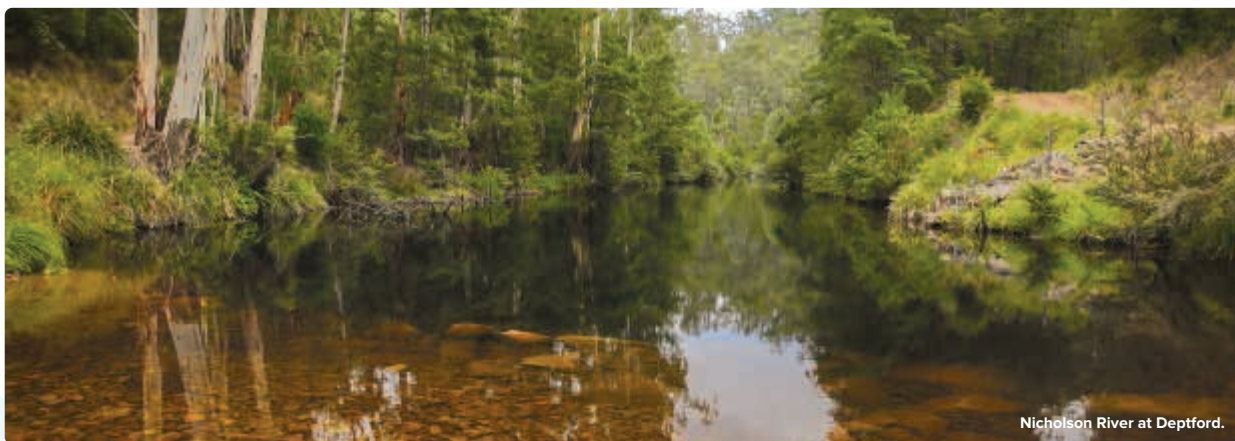
Specific Values

The waterways of East Gippsland support significant ecological values including a large number of threatened species with 350 species of plant, 44 species of bird, 11 species of frog, 9 species of fish and 1 mammal species that are dependent on these aquatic ecosystems.

The major rivers of the region are largely unregulated with the only major storage in the region located on the Nicholson River, although there is a major storage on the Snowy River upstream of East Gippsland in NSW. As a result, most of the river systems have low modifications to the flow regime and support significant natural values. East Gippsland contains several rivers which have no barriers to fish passage, including the Benedore, Thurra, Suggan Buggan and Berrima Rivers, all of which are listed on the Directory of Important Wetlands in Australia. These

river systems also have few or no introduced fish species, which when coupled with connectivity from headwaters to the sea, results in a high diversity and abundance of native fish. Many of the rivers of East Gippsland support the nationally endangered Australian grayling as well as a diversity of riparian and aquatic plants. The pristine nature of many of the rivers in East Gippsland enhances their ecological values and provides unique habitat for a variety of species. For example, the Wongungarra River contains the only unmodified habitat for the endangered spotted tree frog.

The peatlands of the alpine region of East Gippsland are rare in Australia. These are permanently wet sites that contain at least one species of Sphagnum in areas above 1000 metres in elevation. They perform important functions, filtering nutrients and sediments, and maintaining good water quality in streams and groundwater. They support a



Nicholson River at Deptford.

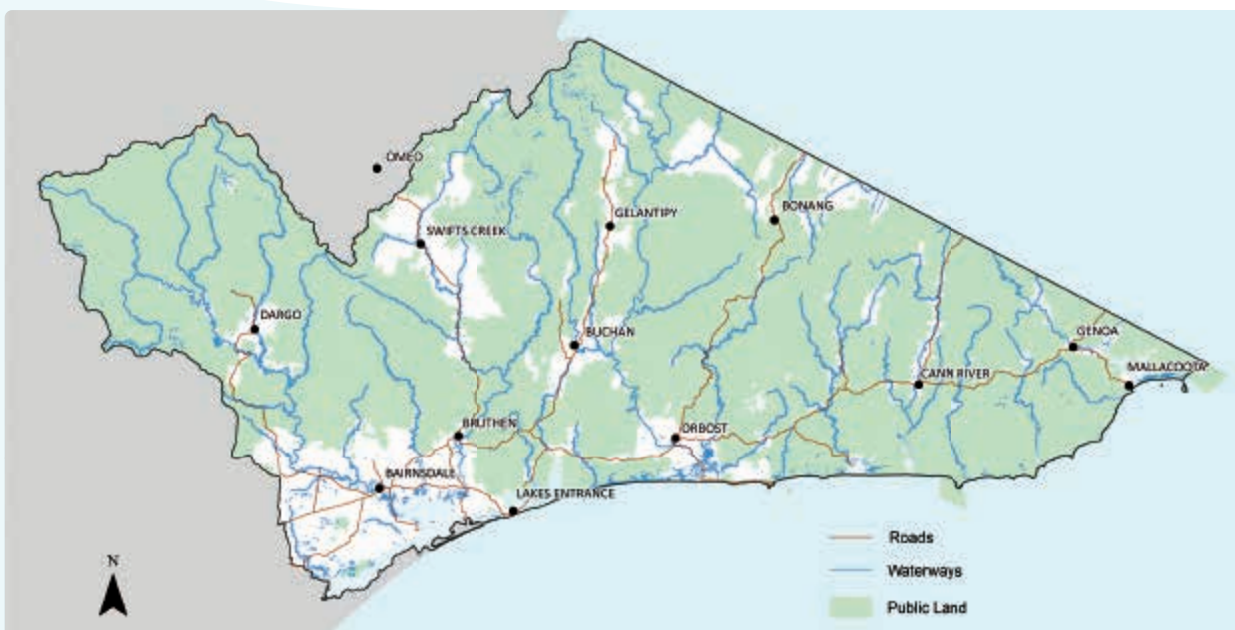


Figure 1 | Waterways of East Gippsland.

diversity of aquatic flora and fauna including threatened species like alpine pennywort, alpine bog skink, alpine water skink, and alpine spiny crayfish, as well as the nationally vulnerable alpine tree frog. Significant alpine wetlands in East Gippsland include the nationally important Nuniong Plateau Peatlands and the threatened ecological community 'Montane Swamp Complex', which comprises seven small sites (total of 44 hectares) on the tributaries of the western headwaters of the Tambo River.

The waterways of East Gippsland support 27 different ecological vegetation communities (EVCs) that are considered river or wetland dependent. Combined these cover an area of almost half a million hectares and include areas of alpine bog, extensive riparian forests and woodlands and large areas of wet or damp forest (Table 1).

Table 1 | Waterway dependent ecological vegetation classes in East Gippsland.

Ecological Vegetation Class	Hectares
Alpine Fen	20
Aquatic Herbland/Plains Sedgy Wetland Mosaic	44
Billabong Wetland Aggregate	130
Cool Temperate Rainforest	2,690
Cool Temperate Rainforest/Warm Temperate Rainforest Overlap	256
Damp Forest	292,968
Deep Freshwater Marsh	1,026
Dry Rainforest/Warm Temperate Rainforest/Gallery Rainforest/Riparian Shrubland/Riverine Escarpment Scrub/Blackthorn Scrub Complex	183
Floodplain Reedbed	461
Montane Riparian Thicket	1,082
Montane Riparian Woodland	3,340
Plains Grassy Wetland	30
Riparian Forest	24,104

Ecological Vegetation Class	Hectares
Riparian Scrub	190
Riparian Scrub/Swampy Riparian Woodland Complex	18,988
Riparian Shrubland	1,941
Riverine Escarpment Scrub	4,692
Sedge Wetland	175
Snowpatch Grassland	13
Sub-alpine Wet Heathland	562
Swamp Scrub	2,653
Swamp Scrub/Plains Sedgy Wetland Mosaic	3
Swampy Riparian Woodland	253
Warm Temperate Rainforest	8,533
Wet Forest	107,502
Wet Heathland	8,593
Wet Swale Herbland	790



Rafting down the Snowy River.

Although water extraction for consumptive use is low in East Gippsland, compared to many other regions in Victoria, there are licensed extractions from the river systems. This includes for industrial and agricultural use (e.g. irrigation from the Lower Mitchell) as well as for stock and domestic purposes.

Groundwater extraction in East Gippsland is generally low and the only groundwater management area is Orbost. There is also extraction of groundwater outside of the management units, with Lindenow and Mallacoota urban water supply and the agricultural areas along the Mitchell floodplain extracting water for consumptive use. Groundwater is also extracted in areas across the Redgum Plains to the east of Bairnsdale to support irrigated agriculture.

Threats and drivers of change

Despite the pristine nature of much of East Gippsland, waterways of the region are still subject to threatening processes. This includes the impacts of pest plants and animals, climate change and associated hotter and drier conditions directly impacting water regimes, as well as increasing risks from bushfires.

Increased temperatures and decreased rainfall will result in a decrease in surface water and river flows. Rivers in East Gippsland have already experienced a decline in surface water availability of between 10 and 14 % (1997 to 2018 compared to the long-term historical average¹) and will continue to decline under future climatic conditions.

This has implications for plants and animals that rely on freshwater aquatic habitats, with a decrease in wetland area and an increase in the area and extent of dry periods in rivers and wetlands. A loss of connectivity between rivers, wetlands and the sea will impact on native fish, many of which rely on migration to complete their lifecycles. Decreased durations of inundation in wetlands will impact on waterbirds, frogs and invertebrates and may result in reduced populations if wet periods are too short for breeding cycles to be complete. Water quality in riverine pools and drying wetlands will decline as salts and nutrients concentrate in smaller pools of water. This can lead to conditions that are beyond the tolerance of fish and other aquatic biota and increase the severity of algal blooms. There will also be effects on consumptive use, with decreases in water availability occurring at the same time that there is increased demand for domestic and agricultural water supplies during hotter and drier periods.

In the **forested uplands** of the region, one of the major threats to waterway values are invasive plants and animals. Alpine peatlands and upland pristine streams are at extreme risk from deer and feral horses, with hard hooves causing significant and often irreversible damage to fragile peat communities. Willows and non-woody weeds also pose a threat to these communities, with invasion of willows following bushfire of particular concern. Climate change (hotter and drier conditions) can have major impacts to alpine peatlands and the associated increase risks from bushfires are significant. Alpine peatlands are highly vulnerable to fire and need to be protected from fuel reduction burning and associated traffic and machinery.



Damage to sensitive alpine country.

¹ Department of Environment, Land, Water and Planning 2020, Long-Term Water Resource Assessment for Southern Victoria, State of Victoria, Melbourne.

In the **Snowy River**, altered flow regimes have significant effects on waterway health. Almost 90% of the flow from the Snowy River is extracted upstream of East Gippsland and the reduction in flows has resulted in changes to the river channel and alterations to the ecology of the river system.

On the **lower reaches** of rivers, where there are more settlements and agricultural activity, clearing of riparian land and loss of native habitat is considered a significant threat. Stock access to waterways increases erosion and decreases water quality and impacts on riparian vegetation in lowland river reaches. Disturbance of vegetation and waterways allows the establishment of invasive plant species in these environments. Feral pigs, goats, and deer all pose a threat to waterway values and increased introduced predators such as foxes and cats impact the animals that are dependent on the aquatic environment for habitat.

Current condition

Wetlands

There is limited information on the condition of wetlands in the East Gippsland region. Index of Wetland Assessments completed in 2009 and 2010, cover a small number of floodplain and alpine wetlands and indicate that while the alpine wetlands are largely in good or excellent condition, the floodplain wetlands are generally in moderate condition overall (Table 2). The pristine catchment conditions and largely unmodified hydrology in alpine wetlands maintain good ecological condition, while higher catchment pressures and altered hydrology are affecting the small number of wetlands assessed in lowlands.

Wetland extent has been mapped from the herbaceous cover of native plant species (Figure 2). This indicates a decline in seasonal freshwater wetland vegetation extent in the region over the past 35 years. The area of open water, however, has largely remained stable over the same time period (Victorian Land Cover Time Series: DELWP).

Table 2 | Index of Wetland Condition assessments for wetlands in East Gippsland (2009 and 2010).

Wetland	Catchment	Physical Form	Hydrology	Water Properties	Soils	Biota	Overall
McLeod Morass	9	20	20	15	19.5	11.8	7
Deep Water Morass	4.5	6	10	17	6	13.58	6
Lindenow Wildlife Sanctuary	4.5	16	10	17	11.5	11.27	6
Alpine 1	18	20	20	17	14.5	12	8
Alpine 2	20	18	20	17	17	18.6	9
Alpine 3	14.5	20	20	20	19	18.6	9
Alpine 4	20	20	20	17	19	16.8	9
Alpine 5	20	20	10	17	9	13.1	7
Alpine 6	20	18	20	15	11.5	18.15	9
Freshwater meadow	6.5	11.75	5	17	11	6.33	5

Key: Excellent Good Moderate Poor Very Poor

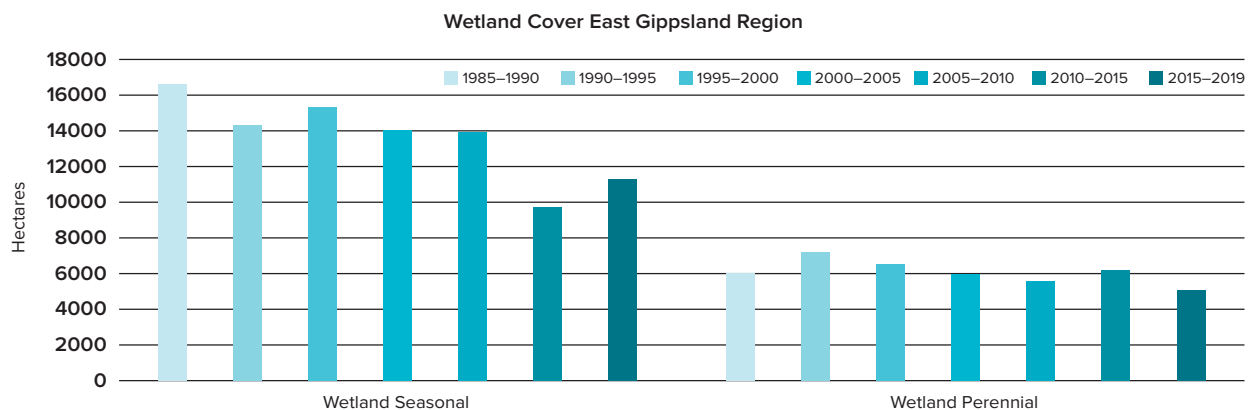


Figure 2 | Change in extent of wetland vegetation cover (hectares) in the East Gippsland Region. Source: Victorian Land Cover Time Series (DELWP).

Rivers

Condition of rivers in East Gippsland was assessed as part of the state-wide 2010 Index of Stream Condition. The majority of rivers in the region were in excellent or good condition, ranging from over 95% of river length in far east Gippsland to just under 70% of rivers in the Snowy and Tambo Basins (Figure 3). The rivers of far East Gippsland

scored highly across most of the sub-indices, while in the remaining river basins, not all sub-components fared the same. In the Snowy Basin, altered hydrology, largely due to upstream extractions has reduced the condition of the river, although water quality remains in largely good condition. In the Tambo, average water quality was lower, and in the Mitchell, there were lower average scores for physical form (Figure 4).

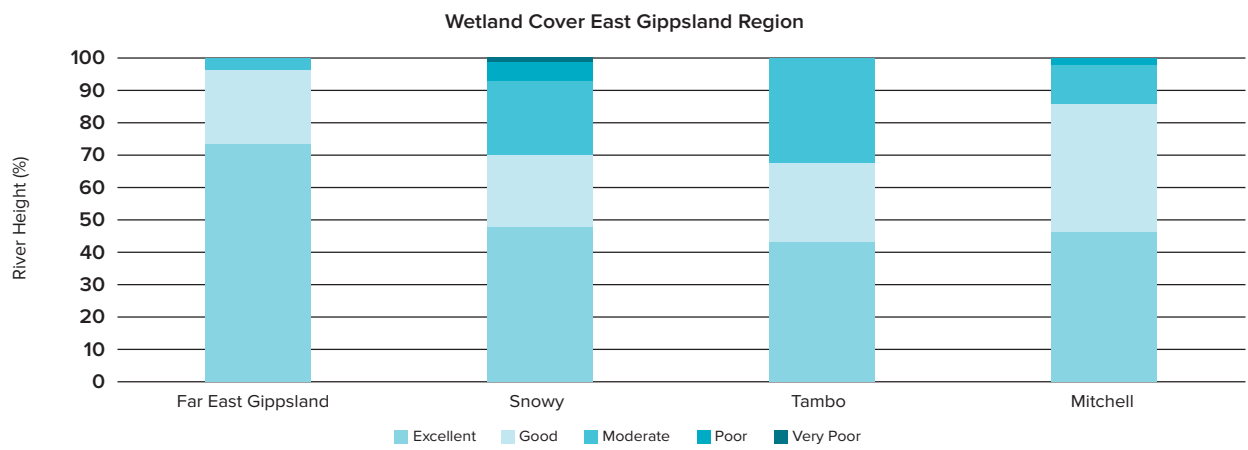


Figure 3 | River length (%) in condition categories for the river basins in East Gippsland. Source: the Third Index of Stream Condition (DEPI 2013).

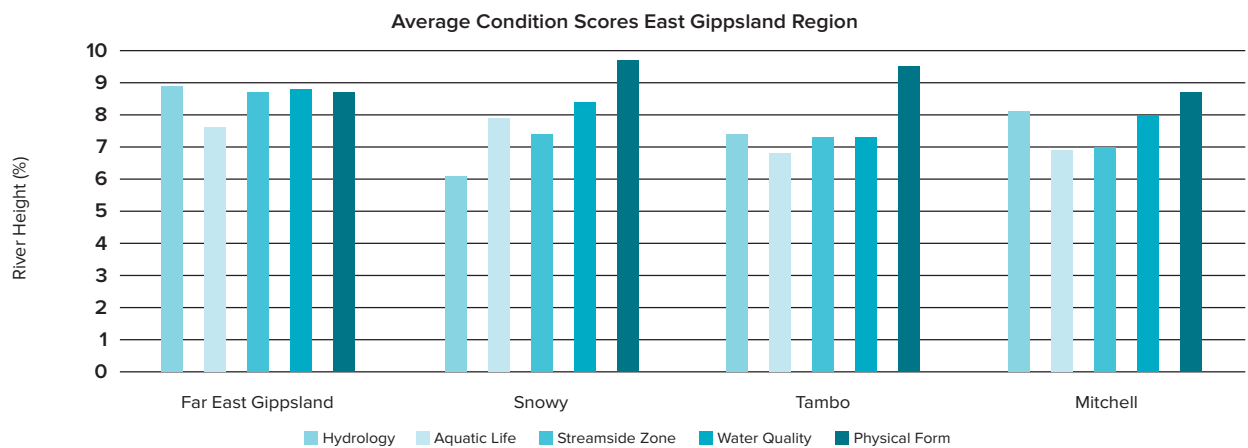


Figure 4 | Average condition scores (out of 10) for each of the sub-components of the Index of Stream Condition for the river basins in East Gippsland. Source: the Third Index of Stream Condition (DEPI 2013).

Average river inflows in East Gippsland vary considerably from year to year. In the last two decades, this has ranged from a high of over 350 millimetres in 2012 to just 71 millimetres in 2019 (Figure 5). This is, however, tightly coupled to patterns in rainfall across the region.

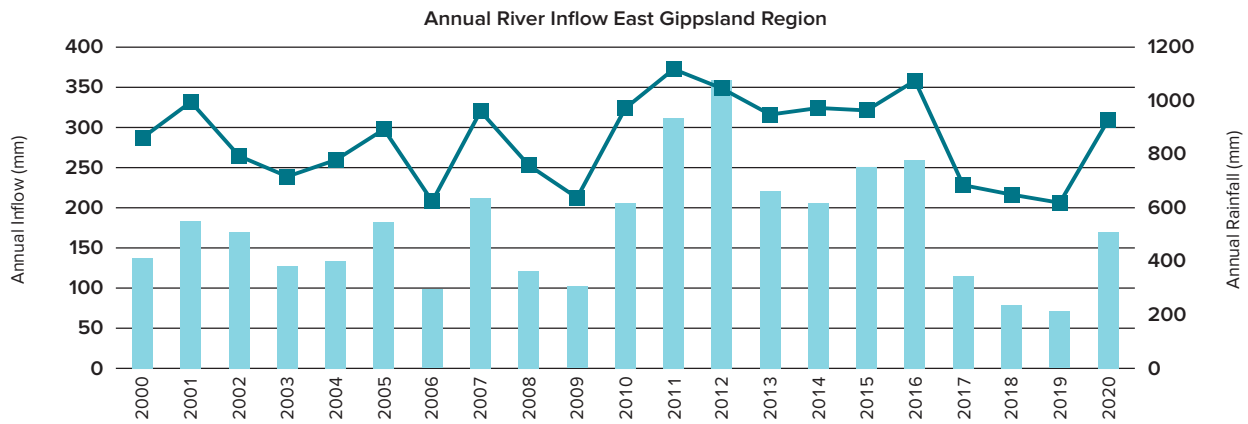


Figure 5 | Annual river inflow (mm) and rainfall (mm) in the East Gippsland Region over time. Source: Australia’s Environment Explorer (ANU-WALD).



Trends in riparian condition from 2011 to present illustrate the effects of riparian restoration works in East Gippsland (Figure 6). In the Far East of the catchment, in particular there have been consistent improvements in riparian condition over the past decade. While the pattern is less clear in the other three river basins, there is evidence that fencing, stock management and removal of willows and other weeds is having a positive effect on river health.

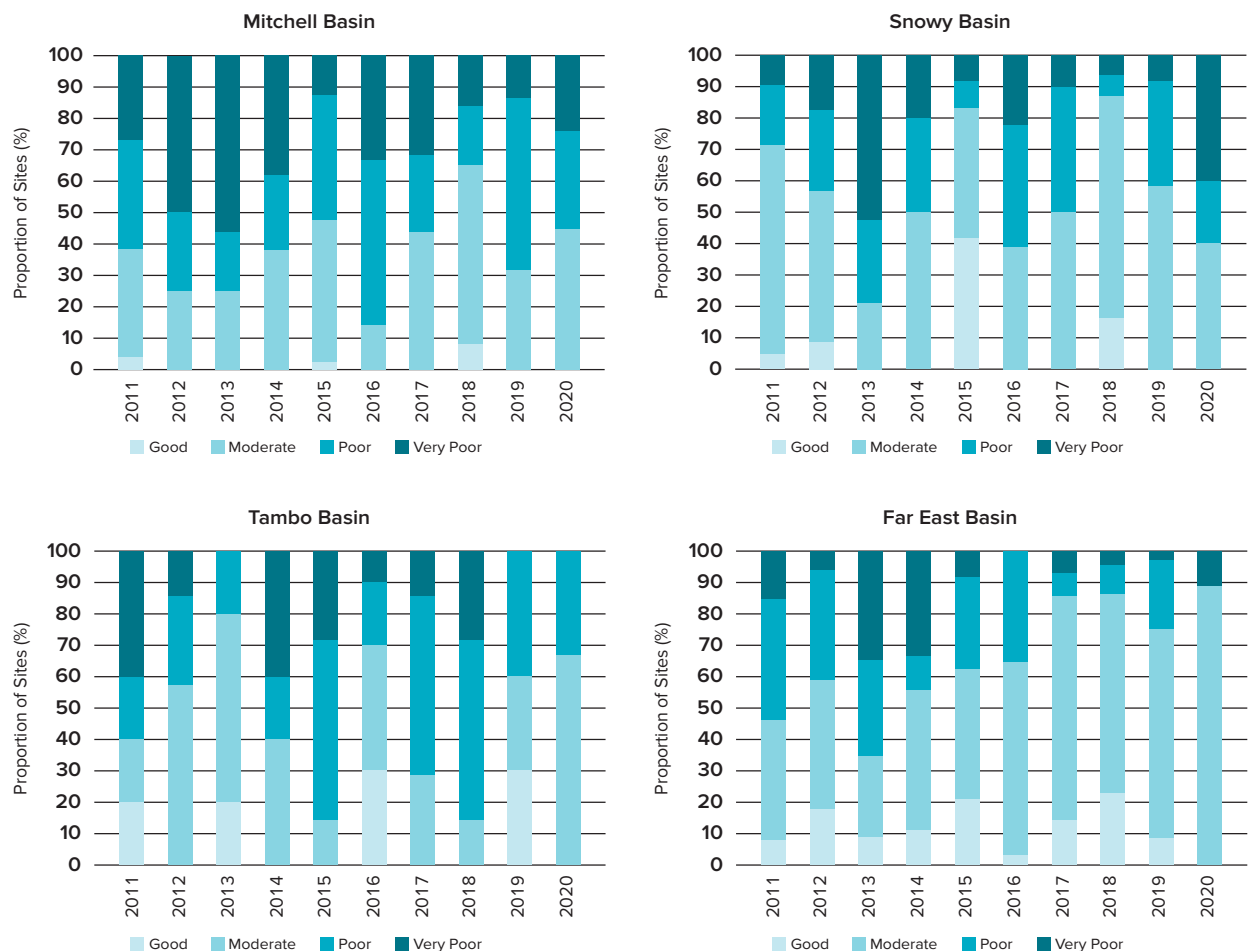


Figure 6 | Proportion of riparian sites assessed in condition classes across East Gippsland from 2011 to 2020.

In the Far East of the catchment, in particular there have been consistent improvements in riparian condition over the past decade.

Groundwater

Changes in groundwater level can be tracked through the State Bore Monitoring Network. While the majority of the bores in East Gippsland indicate stable water levels, there are areas on the Red Gum Plains, to the west of Bairnsdale where water level trends are declining (e.g. Bore number 77947; Table 4). This reflects the relatively higher levels of groundwater extraction for consumptive use in this region.

Table 4 | Groundwater level (m) monthly averages and trends in active SOBN bores in the East Gippsland Region.

Bore	Year	March	June	September	December
144467 (Bete Bolong)	2014		6.2	6.3	6.1
	2015	6.3	6	5.5	5.6
	2016	5.8	5.5		5.4
	2017	6.9	5.7	5.5	5.4
	2018	6.2		5.6	
	2019	6.1	5.6	5.1	5.6
	2020	6.2	5.7	5	5.4
	Groundwater trend level	Stable	Stable	Declining	Stable

Bore	Year	March	June	September	December
65762 (north of Blonde Bay)	2014	20.63	20.24	20.18	20.33
	2015	20.35	20.19	20.1	20.14
	2016	20.25	20.18	20.07	20.18
	2017	20.32	20.26	20.24	20.34
	2018	20.55	20.53	20.43	62.29
	2019	21	20.69		20.83
	2020				20.49
	Groundwater trend level	Stable	Stable	Stable	Stable

Bore	Year	March	June	September	December
56545 (Lindenow)	2014	38.14	38.17	38.19	38.17
	2015	38.21	38.15	38.08	38.14
	2016	38.25	38.07	38.16	38.16
	2017	38.3	38.3	38.2	38.32
	2018	38.25	38.28	38.21	
	2019				38.5
	2020				38.47
	Groundwater trend level	Stable	Stable	Stable	Stable

Bore	Year	March	June	September	December
77947 (Perry Bridge)	2014	30.25	29.31	28.13	28.92
	2015	30.36	29.38	28.07	28.42
	2016	30.36	29.65	28.16	28.29
	2017	31.09	30.36	29.34	29.49
	2018	30.33	30.97	29.69	30.855
	2019				30.85
	2020	31.4	30.88	29.83	31
	Groundwater trend level	Increasing	Increasing	Increasing	Increasing

Regional outcome targets

Water – Regional Outcome Targets

These regional outcomes relate to the water theme within the RCS. They set out the long term (to 2040) and medium term (to 2027) outcomes as they relate to the region's water assets. The outcomes include those aligned with the statewide outcomes framework (*in italics*) as well regionally specific outcomes developed in collaboration with RCS partners.

The RCS outcomes framework can be found on page 37, and more detailed outcomes addressing each theme of the RCS and linked closely to each of the local areas can be found starting on page 82.

Medium-term Outcomes (2027)

Extent of permanent wetlands will be maintained at or above the average recorded for 2005–2019 (5600 ha).

An additional 1600 ha of riparian land will be protected or improved along priority waterways.

Alpine peatlands currently in good condition will remain in good condition, through protection from the impacts of pest plants and animals and physical impacts to hydrology at these sites.

Extent, structure, and diversity of riparian vegetation is improved along priority waterways, through:

- maintaining waterways free of willows
- excluding livestock grazing on 75% of waterway frontages in cleared sections
- completing surveillance for new and emerging weeds in remote tributaries

Water regimes in MacLeod Morass are managed to maintain freshwater conditions in the upper Morass as indicated by annual average EC of < 500 uS/cm.

Long-term Outcomes (2040)

85% of alpine peatlands within East Gippsland are in good condition.

MacLeod Morass is maintained as a freshwater wetland.

The condition of riparian vegetation and connectivity in priority wetlands and waterways is improved, providing habitat for native animals, and improving resistance and resilience of waterways, and reducing risk of instability.

Links between groundwater levels and priority Groundwater Dependant Ecosystems across East Gippsland are understood.

Management directions

Management Direction	Current	Future Opportunity	Partners Involved
Continue to implement the East Gippsland Waterway Strategy (including a review during 2022 and renewal of the strategy by 2024).	✓		EGCMA, DELWP, Parks Victoria, GLaWAC
Continue to implement the strategies of the Gippsland Lakes Ramsar Site Management Plan (including an update to the plan in 2023).	✓		EGCMA, GLaWAC, DELWP, Parks Victoria, WGCMA, DAWE, EGSC, WSC, Greening Australia, TfN, Birdlife Australia, Agriculture Victoria
Implement a strategic and integrated program to control willows and other invasive tree weeds along waterways, focussing on high value stream and areas recovering from fire impact.	✓		EGCMA, DELWP, Parks Victoria, GLaWAC
Develop and implement the recommendations of the Snowy River Flows Study.	✓		EGCMA, DELWP
Seek to progress and implement on ground works for the partial removal of the Nicholson Dam wall.		✓	EGCMA, EGW, DELWP
Support activities for improving integrated water management as specified in the East Gippsland Integrated Water Management Strategic Directions Statement.		✓	EGCMA, EGSC, EGW, DELWP
Support the development of the Central and Gippsland Sustainable Water Strategy, including supporting GLaWAC in the use and delivery of cultural flows on the Mitchell River, and permits and approvals for the partial removal of the Nicholson Dam wall.	✓		EGCMA, DELWP, GLaWAC
Support the implementation of the Victorian Alpine Peatlands Spatial Action Plan	✓		EGCMA, Parks Victoria, GLaWAC, DELWP
Target investment to specific peatlands where recovery is slower or threats have not been reduced enough to allow recovery.	✓		EGCMA, Parks Victoria, GLaWAC, DELWP
Work with landholders to construct fencing along waterways and keep stock out	✓		EGCMA, DELWP, Private landholders



Biodiversity

The '**biodiversity theme**' of this Regional Catchment Strategy includes the terrestrial plant and animal species, and the habitats that support them. The biodiversity of East Gippsland is unique to our region and important for us all.

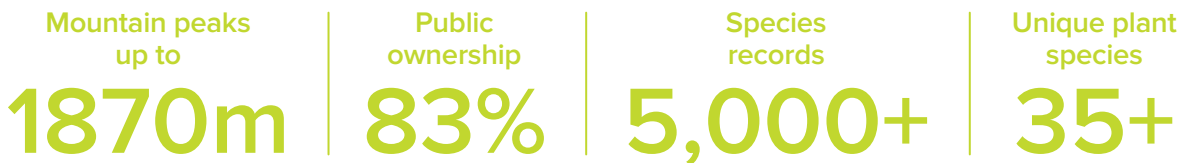
Our biodiversity values... a snapshot

East Gippsland is a biodiverse region bounded by the peaks of the Great Dividing Range to the north, where mountain peaks rise to 1870 metres and extending to the coastal and marine environments in the south.

Our region supports significant biodiversity values. It is one of the few places in Victoria to retain the majority (around 80 %) of pre-European extent of

native vegetation cover. Around 83 % of the region is in public ownership, mainly as state forests, national and coastal parks.

These intact habitats support many different plants and animals, with records of over 5000 species. This includes at least 35 species of plant that are unique to the region.



Deadcock Den, Mitchell River National Park.

Specific Values

East Gippsland is one of the few places in Victoria to retain a high degree of native vegetation, with over 80% of pre-European extent of native vegetation cover. While there has been clearing of Plains Grassy Woodland and Forest in the lower floodplains, particularly in the west of the region, a high proportion of rainforest (97%) and dry forests (96%) have been retained.

There are at least 13 Commonwealth or State listed threatened ecological communities supported in East Gippsland, these include:

- Alpine sphagnum bogs and associated fens – endangered (EPBC); FFG listed
- Gippsland Red Gum Grassy Woodland and associated native grassland – critically endangered (EPBC)
- Seasonal Herbaceous Wetlands of the Temperate Lowland – critically endangered (EPBC)
- Littoral Rainforest and Coastal Vine Thicket – critically endangered (EPBC)
- Subtropical and Temperate Coastal Saltmarsh – vulnerable (EPBC)
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and derived Native Grassland – critically endangered (EPBC)
- Forest Red Gum Grassy Woodland Community – FFG listed
- Warm Temperate Rainforest (Coastal East Gippsland) Community – FFG listed



Forest around Lake Tyers.

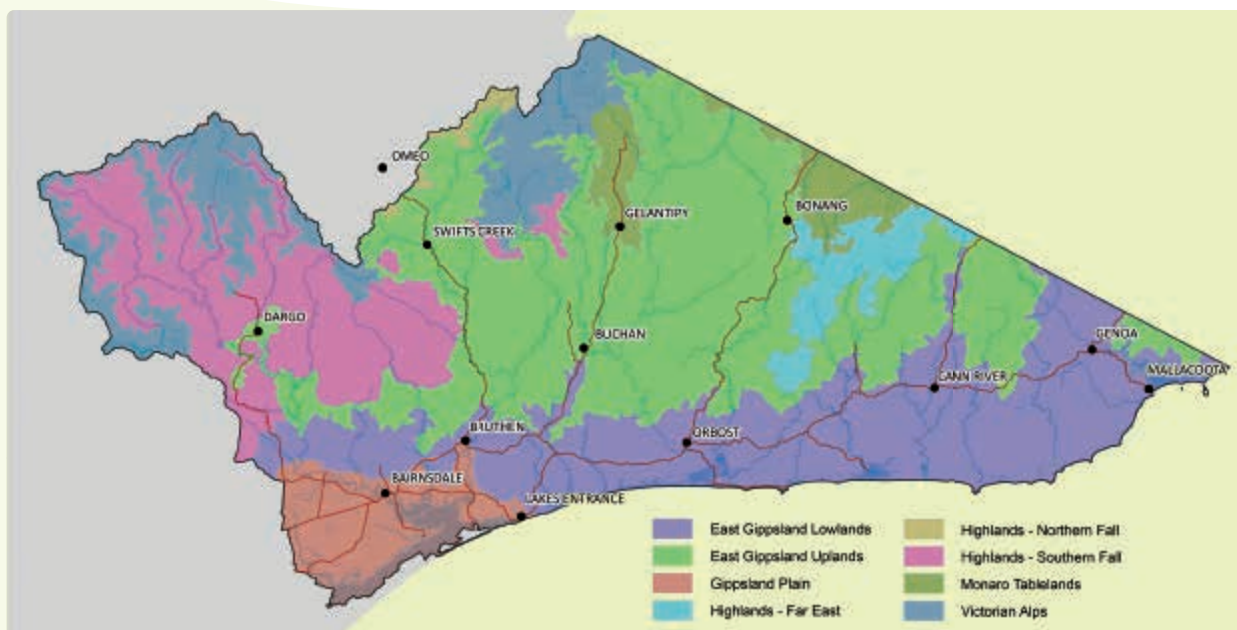


Figure 1 | East Gippsland vegetation communities.

- Warm Temperate Rainforest (Cool Temperate Overlap, Howe Range) Community – FFG listed
- Warm Temperate Rainforest (East Gippsland Alluvial Terraces) Community – FFG listed
- Warm Temperate Rainforest (Far East Gippsland) Community – FFG listed
- Cool Temperate Rainforest – FFG listed
- Cool Temperate Mixed Forest – FFG listed

The Atlas of Living Australia has records of 140 EPBC listed threatened species from the East Gippsland region. This includes 60 species of plant, 30 species of bird, 18 species

of mammal, 11 species of fish, eight species of reptile, seven species of frog and a number of invertebrates.

In addition, 1100 species that are considered rare or threatened in Victoria have also been recorded within the region. This list includes 11 species that are known to only occur in East Gippsland including several plants and three species of galaxiid native fish.

East Gippsland supports greater than 50% of the Victorian range of 17 species listed as endangered or vulnerable nationally and a further 40 species listed as threatened in Victoria (Table 1).

Table 1 | Threatened species for which East Gippsland represents > 50% of the Victorian range.

EPBC Environment Protection and Biodiversity Conservation Act, 1999 FFG Flora and Fauna Guarantee Act, 1988 E Endangered, V - Vulnerable, CE - critically endangered (https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list)			
Plants	Scientific Name	FFG	EPBC
Bantam bush-pea	<i>Pultenaea parrisiae</i>		V
Betka bottlebrush	<i>Callistemon kenmorrisonii</i>	Critically endangered	V
Black stem	<i>Adiantum formosum</i>	Critically endangered	
Buff hazelwood	<i>Symplocos thwaitesii</i>	Critically endangered	
Cabbage fan-palm	<i>Livistona australis</i>	Critically endangered	
Colquhoun grevillea	<i>Grevillea celata</i>	Critically endangered	V
Cotoneaster pomaderris	<i>Pomaderris cotoneaster</i>	Critically endangered	E
Dainty bitter-cress	<i>Cardamine tryssa</i>	Critically endangered	
Deddict blue-box	<i>Eucalyptus baueriana</i> subsp. <i>deddickensis</i>	Critically endangered	
Forrester's bottlebrush	<i>Callistemon forresterae</i>	Endangered	V
Genoa River correa	<i>Correa lawrenceana</i> var. <i>genoensis</i>	Critically endangered	E
Genoa spider-orchid	<i>Caladenia ancylosa</i>	Critically endangered	V
Gippsland banksia	<i>Banksia croajingolensis</i>	Critically endangered	
Green wattle	<i>Acacia irrorata</i> subsp. <i>irrorata</i>	Critically endangered	
Heath spider-orchid	<i>Caladenia peisleyi</i>	Endangered	
Kosciuszko grevillea	<i>Grevillea victoriae</i> subsp. <i>nivalis</i>	Endangered	
Kydra dampiera	<i>Dampiera fusca</i>	Critically endangered	
Lemon-scented zieria	<i>Zieria citriodora</i>		V
Long-leaf bitter-pea	<i>Daviesia wyattiana</i>	Critically endangered	
Maiden's wattle	<i>Acacia maidenii</i>	Critically endangered	
Marsh leek-orchid	<i>Prasophyllum niphopedium</i>	Endangered	
Mountain cryptandra	<i>Cryptandra speciosa</i> subsp. <i>speciosa</i>	Critically endangered	
Mt Stewart wax-flower	<i>Philothea myoporoides</i> subsp. <i>petraea</i>	Critically endangered	
Narrow-leaf bent-grass	<i>Deyeuxia pungens</i>	Critically endangered	V
Olive mallee	<i>Eucalyptus elaeophloia</i>	Vulnerable	
Orange-blossom orchid	<i>Sarcochilus falcatus</i>	Critically endangered	
Purple eyebright	<i>Euphrasia collina</i>	Critically endangered	
Rock mallee	<i>Eucalyptus saxatilis</i>	Vulnerable	
Snowy river westringia	<i>Westringia cremnophila</i>	Endangered	V
Stringybark tea-tree	<i>Leptospermum jingera</i>	Endangered	
Suggan Buggan wax-flower	<i>Philothea myoporoides</i> subsp. <i>brevipedunculata</i>	Critically endangered	
Tasmanian wax-flower	<i>Philothea virgata</i>	Endangered	
Thyme pink-bells	<i>Tetradlea thymifolia</i>	Vulnerable	
Upright pomaderris	<i>Pomaderris virgata</i>	Critically endangered	
Viscid daisy-bush	<i>Olearia viscosa</i>	Critically endangered	
Willow needlewood	<i>Hakea macraeana</i>	Critically endangered	
Woolly-bear wattle	<i>Acacia lucasii</i>	Critically endangered	V

Continued...

Table 1 | Threatened species for which East Gippsland represents > 50% of the Victorian range. *Continued...*

Animals	Scientific Name	FFG	EPBC
Giant burrowing frog	<i>Heleioporus australiacus</i>	Critically endangered	V
Green and golden bell frog	<i>Litoria aurea</i>		V
Keferstein's tree frog	<i>Litoria dentata</i>	Critically endangered	
Large brown tree frog	<i>Litoria littlejohni</i>	Critically endangered	V
Martin's toadlet	<i>Uperoleia martini</i>	Critically endangered	
Black bittern	<i>Ixobrychus flavicollis</i>	Endangered	
Eastern bristlebird	<i>Dasyornis brachypterus</i>	Critically endangered	E
Glossy black-cockatoo	<i>Calyptorhynchus lathami</i>	Critically endangered	
Masked owl	<i>Tyto novaehollandiae</i>	Critically endangered	
Dargo galaxias	<i>Galaxias mungadhan</i>	Critically endangered	
East Gippsland galaxias	<i>Galaxias aequipinnis</i>	Critically endangered	
Mcdowells galaxias	<i>Galaxias mcdowalli</i>	Critically endangered	
Clayton's spiny crayfish	<i>Euastacus claytoni</i>	Endangered	
East Gippsland spiny crayfish	<i>Euastacus bidawalus</i>	Vulnerable	
Mallacoota burrowing crayfish	<i>Engaeus mallacoota</i>	Critically endangered	
Orbost spiny crayfish	<i>Euastacus diversus</i>	Endangered	
Brush-tailed rock-wallaby	<i>Petrogale penicillata</i>	Critically endangered	V
Long-footed potoroo	<i>Potorous longipes</i>	Endangered	E
Long-nosed potoroo	<i>Potorous tridactylus trisulcatus</i>	Vulnerable	E
Diamond python	<i>Morelia spilota spilota</i>	Critically endangered	



Green and golden bell frog.

Threats and drivers of change

The high proportion of public land and retention of much of the native vegetation and habitats of the region, means that much of the biodiversity of East Gippsland is exposed to lower levels of threat from changed land use than elsewhere in Victoria.

In the lowlands and regions cleared for agricultural production, habitats can become fragmented, whilst pressures from recreational impacts from tourism and recreational pursuits can affect species and habitats, particularly in popular seaside destinations.

Over much of the rest of the East Gippsland region threats to biodiversity arise from:

Climate change

Increased hot and dry conditions will mean an increase in the frequency and severity of bushfires. If fires occur more frequently than habitats and animal populations can recover, then long term impacts to population viability can be expected. In 2019–20, bushfires affected over 56% of the East Gippsland region, burning a large proportion of the native vegetation and killing or displacing large numbers of animals. The full extent of the impact and recovery from this event is not yet understood. A range of bushfire recovery programs have been implemented following the fires.

Alpine areas are highly vulnerable to climate change impacts with reduced snowfall and an increase in the altitude of snow fall. Plants that require periods of chilling to complete lifecycles may not survive.

Many of the impacts to flora and fauna are difficult to predict exactly, although it is expected that gradual changes in temperature and rainfall may see changes in the composition of vegetation communities as more resilient species cope in a warmer and drier climate. There may

be an increase in pest plants and animals that are more adaptable to changing conditions. Fauna species may experience changes in behaviour, abundance and distribution as well as potential shifts in regular cycles such as migration or breeding



Stringybark forest after the bushfires.

Pest plants and animal

Despite much of East Gippsland retaining native vegetation cover, there are still areas of priority weeds and a number of significant pest animal threats to biodiversity.

- **Weeds** have the potential to transform important vegetation communities and natural systems, drastically altering their form and function. Riparian weeds like willows have the potential to invade waterways, outcompeting native species, altering water temperature and chemistry, and changing the physical form of streams. Climbing and or shade tolerant weeds can impact rainforest communities, impacting canopy trees and out competing native groundcover species. In coastal ecosystems salt tolerant invasive plants can spread across wide areas of the wild coastlines in East Gippsland altering sand movement and dune formation, and outcompeting native species that stabilise our coastline.
- **Horses** remain a significant threat in alpine areas. Damage to vegetation communities (including threatened communities and species) is a common impact through overgrazing and trampling, which leads to erosion and water quality impacts to fragile ecosystems such as wetlands and peatlands in alpine areas, particularly where horse numbers are high.
- **Deer** are a significant threat across all landscapes in the region causing damage to vegetation communities, threatened plant species and resulting in loss and degradation of habitat for native animals. Deer have the potential to severely impact alpine wetlands and streams, stands of rainforest, and fragile coastal systems through their browsing, rubbing and wallowing behaviours.
- **Pigs** also represent a significant threat, particularly in the Upper Snowy, Cobberas and Monero Tablelands. In these areas impacts are greatest in alpine peatlands due to upturning of soils and subsequent weed invasion, and the risk of incursions from cross border areas is ongoing particularly along the Snowy River corridor.
- **Introduced predators** such as foxes and cats remain a threat to wildlife including birds, frogs, reptiles and native mammals and the ecosystems that these native species influence (for example the role of potoroos as ecosystem and soil engineers, and quolls as native predators). Predators can significantly impact on population of resident and migratory shore and water birds along our coast and estuaries, and continue to impact critical weight range mammals the forested areas across East Gippsland.

Current condition

Area of permanent protection

The East Gippsland region contains over 1.8 million hectares under permanent protection (Table 2). This represents over 60% of the total area within the region. National

Park comprises approximately 90% of the protected area, covering more than 1.6 million hectares.

There had been a steady increase in native grassland between 1985 and 2010, but a subsequent decline to 1985 benchmark levels. There has also been a slight decline in native shrub and natural low cover vegetation in the past two decades (Figure 3).

Table 2 | Area of permanent protection in East Gippsland. Source: Collaborative Australian Protected Area Database (CAPAD)

Protection type	Number of protected areas	Proportion of total protected area (%)	Total area (ha)	Additional area (ha) since 2017
National Park	10	89.5%	1,638,677	0
State Park	1	< 1%	8,695	0
Conservation covenant and other private lands	118	< 1%	5,306	367
Other (including other public land reserves e.g. natural feature reserves, nature conservation reserves, heritage rivers)	213	9.70%	177,362	0

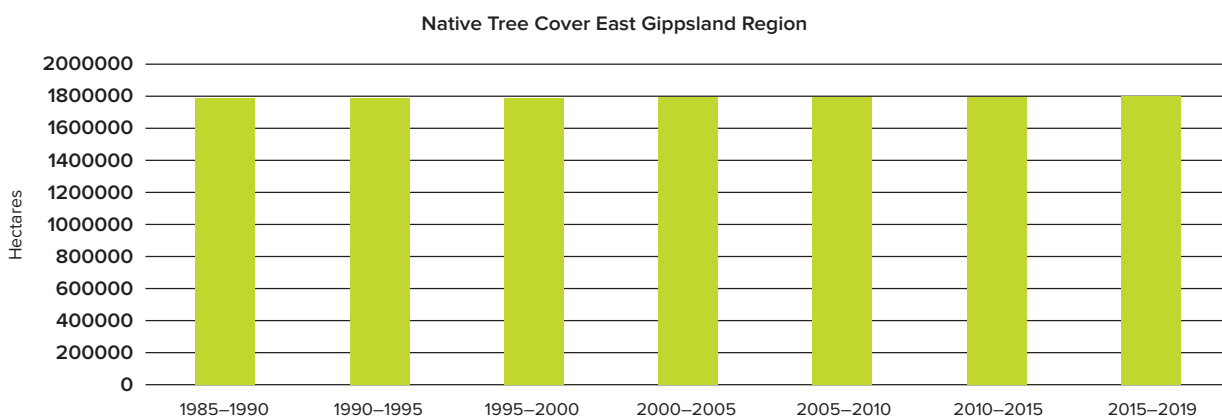


Figure 2 | Change in extent of native tree cover (hectares) in the East Gippsland Region. Source: Victorian Land Cover Time Series (DELWP)

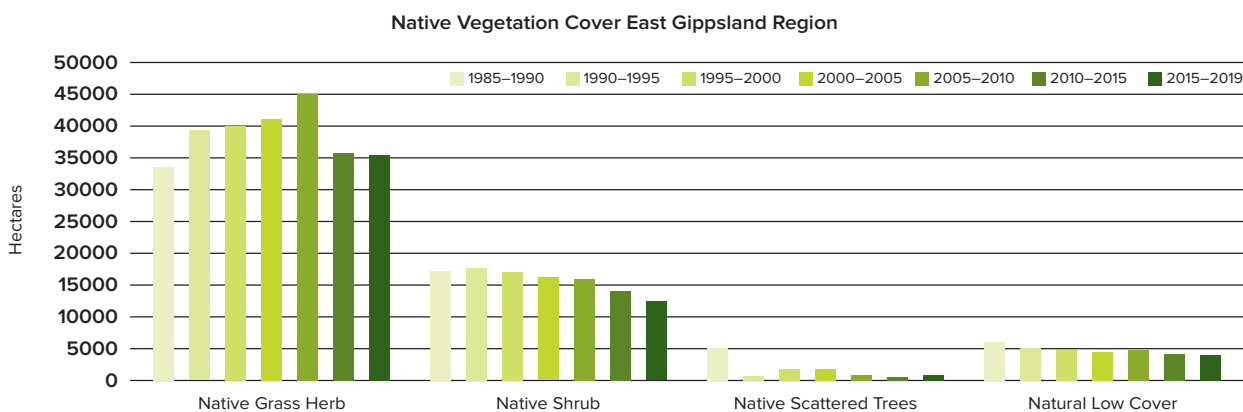


Figure 3 | Change in extent of native vegetation cover (hectares) in the East Gippsland Region. Source: Victorian Land Cover Time Series (DELWP)

Biodiversity 2037 and Biodiversity Response Planning

Protecting Victoria's Environment – Biodiversity 2037 and the regional Biodiversity Response Planning process

Victoria's biodiversity, including native flora and fauna and their habitats, has been declining since European settlement. Victoria has lost around 80 species, and between one quarter and a third of all of Victoria's terrestrial plants, birds, reptiles, amphibians and mammals, along with numerous invertebrates and ecological communities, are considered to be at threat of extinction. Climate change and population growth are expected to exacerbate existing threats and bring new challenges for Victoria's biodiversity (Protecting Victoria's Environment – Biodiversity 2037, DELWP 2017).

Biodiversity 2037 Protecting Victoria's Environment is Victoria's 20-year plan to stop the decline of native plants and animals and improve the natural environment. Biodiversity 2037 sets targets for management outputs (including weed control in priority locations) that contribute to biodiversity outcomes and the goal 'Victoria's natural environment is healthy'.

Under Biodiversity 2037, the **Biodiversity Response Planning (BRP) process** is a long-term area-based planning approach to biodiversity conservation. It is designed to strengthen alignment between agencies, Traditional Owners and the community by working together to identify, promote and tackle local biodiversity needs as part of an ongoing collective process. The **regional BRP process** identifies Focus Landscapes and the priority actions for these landscapes drawing on stakeholder input, local knowledge and modelling. There are eight focus landscapes in East Gippsland region.

More information on the region's biodiversity values and actions to protect biodiversity is available via a set of fact sheets for Biodiversity Response Planning focus landscapes. The fact sheets can be used to provide direction on what on-ground activities would be highest priority to do to get the best biodiversity result.

Regional outcome targets

Biodiversity – Regional Outcome Targets

These regional outcomes relate to the biodiversity theme within the RCS. They set out the long term (to 2040) and medium term (to 2027) outcomes as they relate to the region's biodiversity assets. The outcomes include those aligned with the statewide outcomes framework (*in italics*) as well regionally specific outcomes developed in collaboration with RCS partners.

The RCS outcomes framework can be found on page 37, and more detailed outcomes addressing each theme of the RCS and linked closely to each of the local areas can be found starting on page 82. Details on specific management actions to be implemented within individual landscapes, and the local stakeholders that will contribute to their delivery is provided in the Local Areas section.

Medium-term Outcomes (2027)

Increase the area of native vegetation under permanent protection by an additional 1500 ha[#] focussing on improving the condition of and connectivity to existing remnants.

Integrated large herbivore control (deer, horses, pigs) is implemented in priority locations over 640,000 ha[#] to protect and maintain important biodiversity values.

Threatened Ecological Communities and priority vegetation types are maintained through implementation of 308,000 ha[#] of sustained weed control in priority locations.

Threatened animals are protected through sustained integrated predator control in 480,000 ha[#] of priority locations.

Sustained predator control has been implemented 35,000 ha[#] of known priority waterbird foraging and breeding sites.

Increase the area and diversity of native vegetation through revegetation of an additional 5000 ha[#] focussing on improving the condition of and connectivity to existing remnants in priority locations.

[#] These outcomes contribute to the regional targets and priority locations established through Biodiversity 2037 and TfN's provisional targets for permanent protection on private land. They represent a realistic level of ambition for key partners. Progress reporting against the outcomes will also consider activities related to the implementation of the RCS in other priority locations informed by other regional planning and prioritisation processes.

Regional targets established through Biodiversity 2037 are as follows:

By 2037

- *Total area permanently protected since 2017 – 35,000 ha*
- *Total area in priority locations under sustained weed control* – 385,000 ha*
- *Total area of revegetation in priority locations for habitat connectivity since 2017 – 10,000 ha*
- *Total area in priority locations under sustained herbivore control* – 800,000 ha*
- *Total area in priority locations under sustained pest predator control* – 640,000 ha.*

* Hectares (ha) annually

"Priority locations" in relation to the medium-term outcomes and Biodiversity 2037 targets, are determined by the latest version of SMP (currently v3).


Long-term Outcomes (2040)

Populations of threatened species and ecological communities are maintained.

Recovery trajectory of East Gippsland forests is well understood and being observed across areas impacted by fire.

Management directions

Management Direction	Current	Future Opportunity	Partners Involved
Continue to implement the strategies of the Gippsland Lakes Ramsar Site Management Plan (including an update to the plan in 2023).	✓		EGCMA, GLaWAC, DELWP, Parks Victoria, WGCMA, DAWE, EGSC, WSC, Greening Australia, TfN, Birdlife Australia, Agriculture Victoria
Identify and action the establishment of conservation covenants on private land as detailed in the Trust for Nature Statewide Conservation Plan for Private Land in Victoria (including following its renewal)	✓		TfN, DELWP, EGCMA, Private landholders
Implement targeted pest plant and animal control measures in priority areas consistent with the Biodiversity Response Planning process for focus landscapes and drawing on spatial decision-support tools such as Strategic Management Prospects.	✓		EGCMA, DELWP, Parks Victoria, GLaWAC
Implement priority actions in the Conservation Action Plan for the Gippsland Plains and Strzelecki Ranges Parks Landscape through management of pest plants and animals and recreational impacts on environmental and cultural values	✓		Parks Victoria
Work together to support integrated future fire management planning to provide environmental, social, economic and cultural outcomes.		✓	DELWP, GLaWAC, Parks Victoria, EGCMA
Support activities for improved biodiversity outcomes from Victoria's Bushfire Biodiversity Response and Recovery program	✓		EGCMA, DELWP, Parks Victoria, TfN
Support East Gippsland Shire to implement the Environmental Sustainability Strategy (including an update to the Roadside Vegetation Management Plan).		✓	EGSC, DELWP, EGCMA
Support Parks Victoria to complete and implement the East Gippsland Conservation Action Plan, including integration of outcomes from the Far East Eden project.		✓	Parks Victoria, DELWP, EGCMA, EGSC



Climate change and population growth are expected to exacerbate existing threats and bring new challenges for Victoria's biodiversity.



Land

The **'land theme'** of this Regional Catchment Strategy includes all the terrestrial (land based) environments of East Gippsland. Our land provides for a vast array of natural values and supports important productive enterprises and industry that rely on these values, including agricultural, recreation and tourism.

Our landscape values... a snapshot

The terrestrial environments of East Gippsland support our biodiversity, provide a productive landscape, and offer places to explore and enjoy.

The East Gippsland region covers around 2.2 million hectares and represents around 10% of Victoria. The region is bounded by the Great Dividing Range to the north, where mountain peaks rise to 1870 metres and extends south to the coast.

Large areas of public land cover East Gippsland, including state forests, national and coastal parks. Private land covers less than 20% of the region.

Grazing occupies the largest area of this private land, with significant productive areas of irrigated horticulture and dairying on the floodplains of the Snowy and Mitchell Rivers.

Soil types across the region vary from east to west and across freehold land, supporting broad scale grazing of sheep and cattle. Intensive horticulture and cropping are limited to the more fertile soils found in the river valleys and on the Redgum Plains.

The climate of East Gippsland is cool temperate and influenced by altitude and distance to the coast.



Tambo Upper farming landscape.

Specific Values

The landforms of East Gippsland vary considerably from the mountain peaks to the coastal flats with large areas of land in public ownership, mainly as state forests, national and coastal parks.

Areas of broad ridges and plateaus of the alpine area above 1200m in elevation support typically rich loamy or stony shallow soils. At lower elevation flatter areas in the landscape have been cleared by agriculture. Steeper landscapes occur at a range of elevations but are characterised by steep slopes and incised gorges. These areas retain much of their native vegetation.

At the lowest elevations across East Gippsland most of the landforms are terraces and fans, which are characterised by older soils, dunes and terraces. The riverine plains

comprise floodplains and morasses and occur in the southwest of the region. Much of this area is freehold land and has been cleared for agriculture.

In the eastern parts of East Gippsland region soils are well structured and fertile with high organic matter content. In the west of the region, soils are generally low in organic matter content, are lightly textured and prone to erosion. The lowlands are characterised by soils of uniform texture contrast.

The climate of East Gippsland is cool temperate and influenced by altitude and distance to the coast. Close to the coast, weather is mild year-round, with rainfall evenly distributed throughout the year. Average rainfall at Cann River is approximately 1,000 mm per year. By contrast, the ranges cause significant rain shadow effects in the Mitchell basin, with average rainfall in the mid valley at Tabberabbera of 660 mm.



Snowy River at Mackillops Bridge.



Grazing on the Redgum Plains.

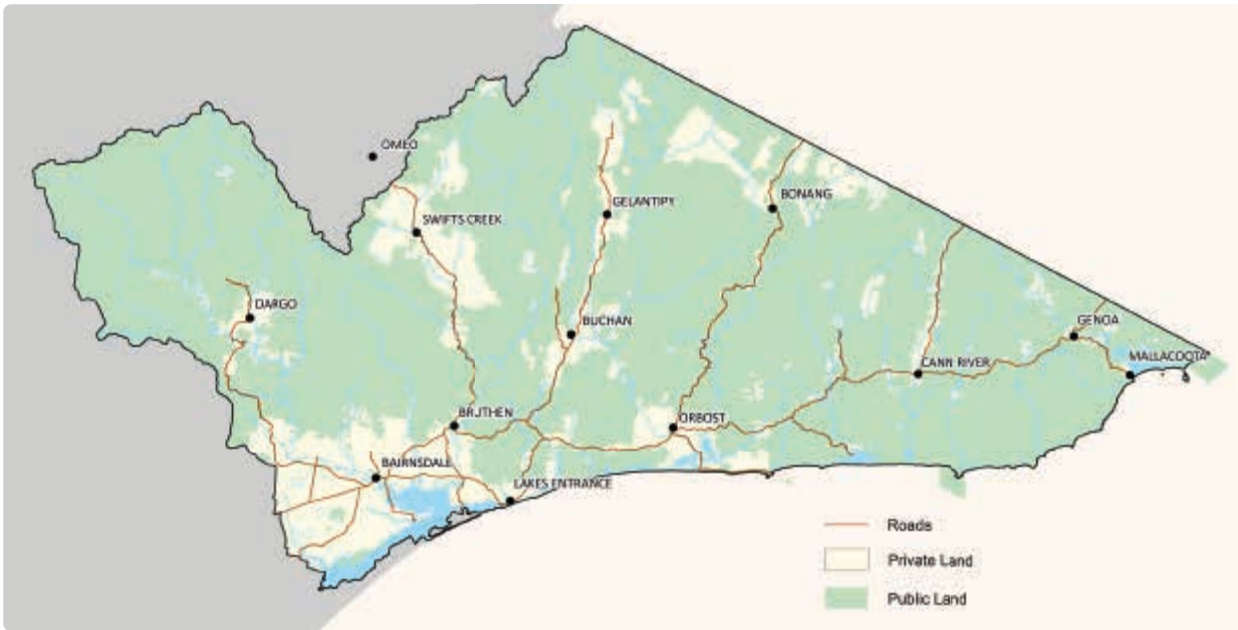


Figure 1 | Private and publically owned land in East Gippsland.

While the vast majority of the land in East Gippsland retains native vegetation, over half of the region is State Forest that can be used for timber harvesting. Grazing and mixed cropping is the next largest land use by

area comprising around 14% of the region. By contrast, residential areas represent just 1% of the region and all other land uses individually account for < 1% of East Gippsland (Figure 2).

Table 1 | Land use in East Gippsland. Source: Australia’s Environment (ANU-WALD)

Land Use	Square Kilometres	Land Use	Square Kilometres	Land Use	Square Kilometres
Production native forests	10,934.0	Infrastructure	64.3	Artificial water bodies	2.8
Natural environments	6,670.3	Dryland horticulture	27.0	Land in transition	2.4
Grazing on modified pasture	3,076.9	Dryland cropping	20.0	Intensive animal husbandry	1.9
Residential	195.1	Transport and communication	9.2	Mining	0.9
Natural water and wetlands	79.1	Grazing on native pasture	9.1		
Plantation forestry	71.2	Industrial	3.0		

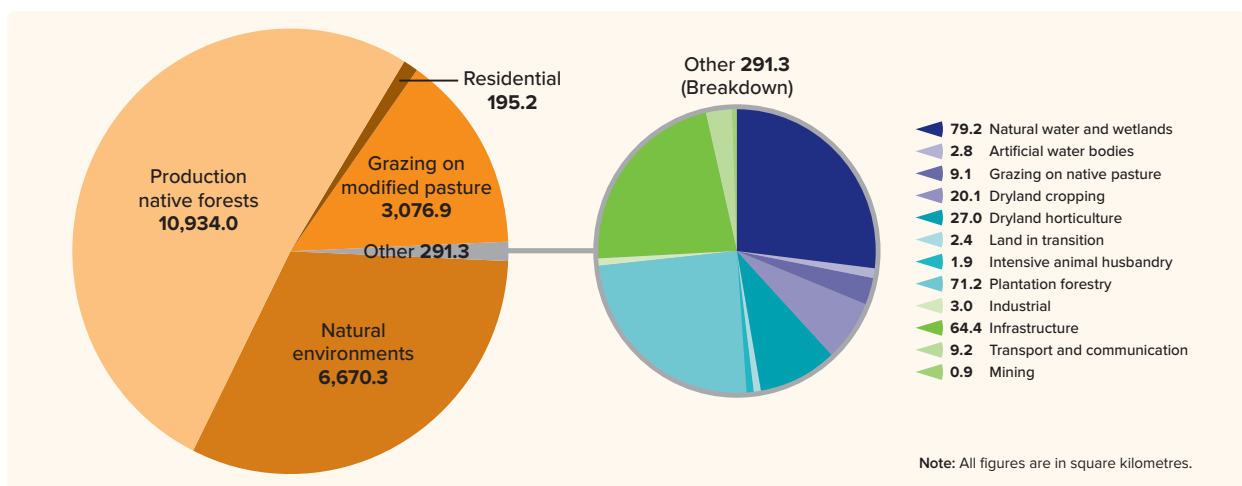


Figure 2 | Land use in East Gippsland.

Threats and drivers of change

A hotter and drier climate with reduced water availability will put significant pressure on the agricultural sector. As conditions change, historical farming practices and products may no longer be viable in some areas. Livestock are vulnerable to changes in temperature and water availability and an increase in the number of hot days. Dairy cattle are particularly affected by heatwaves with a reduction in milk productions and an increase in illness and even death. Increased drought and bushfire risk will also affect forestry in East Gippsland with reduced growing rates and prolonged recovery periods.

Over the 2019/20 Black Summer bushfires over 1 million hectares (53%) of the East Gippsland region was burnt. Over 900 buildings including homes and sheds were

destroyed and over 6,000km of fencing required replacement. Across East Gippsland the economic impact on farms through loss of assets and production has been significant.

For some businesses, the impact of coronavirus (COVID-19) comes in addition to the impact of bushfires and drought, particularly in East and Central Gippsland.

The coronavirus pandemic has had a significant impact on Victorian agriculture. Our export markets have been challenged by contracting demand and disrupted supply chains. Reduced domestic demand from the hospitality sector has also affected our farmers. Production restrictions – necessary to contain and manage the spread of the virus in Victoria – have also had an impact.



After the bushfires in the Snowy River catchment.

Current condition

Percent exposed soil

The percentage of exposed soils in East Gippsland is relatively low and generally less than 4% of the total land area (Figure 3). There was an increase in 2020 following the bushfires, but the total exposed soil was still less than 5%. In general, intensive land uses such as cropping, horticulture and residential land have a higher proportion of exposed soil (Figure 4). These land uses, however, cover only a small part of the East Gippsland region.

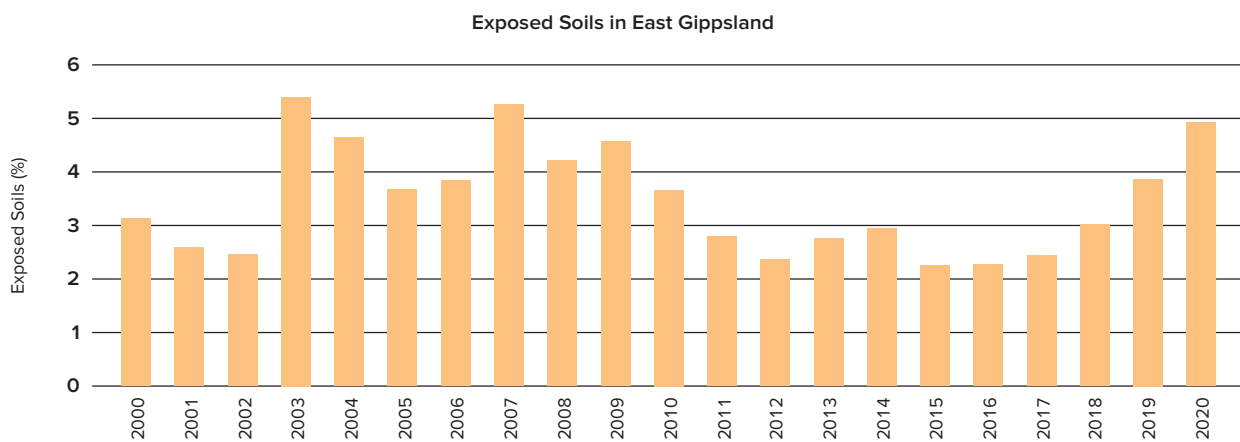


Figure 3 | Percentage exposed soil in the East Gippsland region. Source: Australia’s Environment (ANU-WALD).

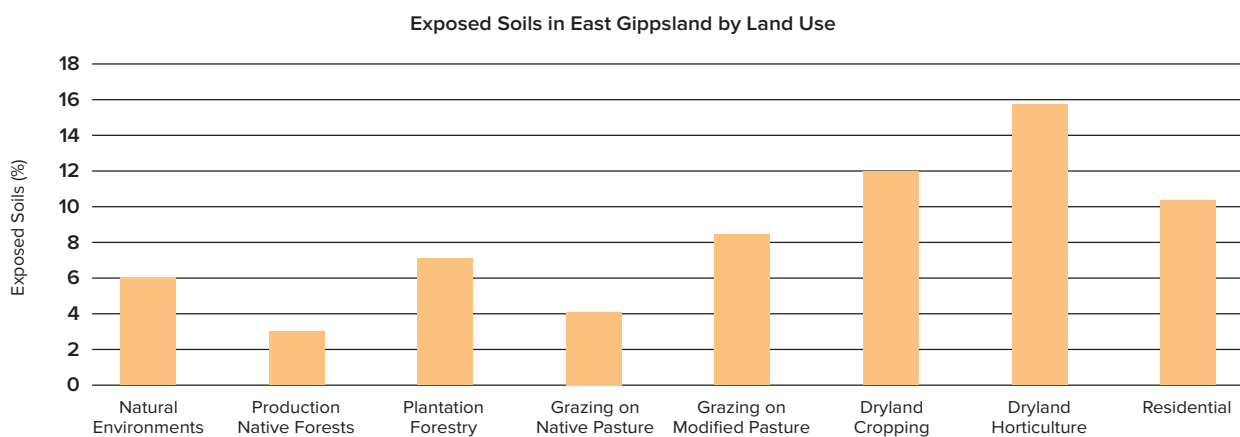


Figure 3 | Percentage exposed soil (2020) in the East Gippsland region by land use category. Source: Australia’s Environment (ANU-WALD).

Extent of land uses

There has been little change in the land uses in East Gippsland as represented by the Victorian Land cover data (Figure 5). There have been very small increases in intensive land uses such as urban areas and irrigated agriculture, but these represent a small fraction of the East Gippsland region.

Agricultural productivity

Total agricultural production in East Gippsland increased from around \$150 million in 2010–11 to \$240 million in 2015–16 (Figure 6). The greatest value was from the vegetable and livestock sectors. This analysis does not account for the value of the timber industry that was estimated at \$310 million in 2018–19.

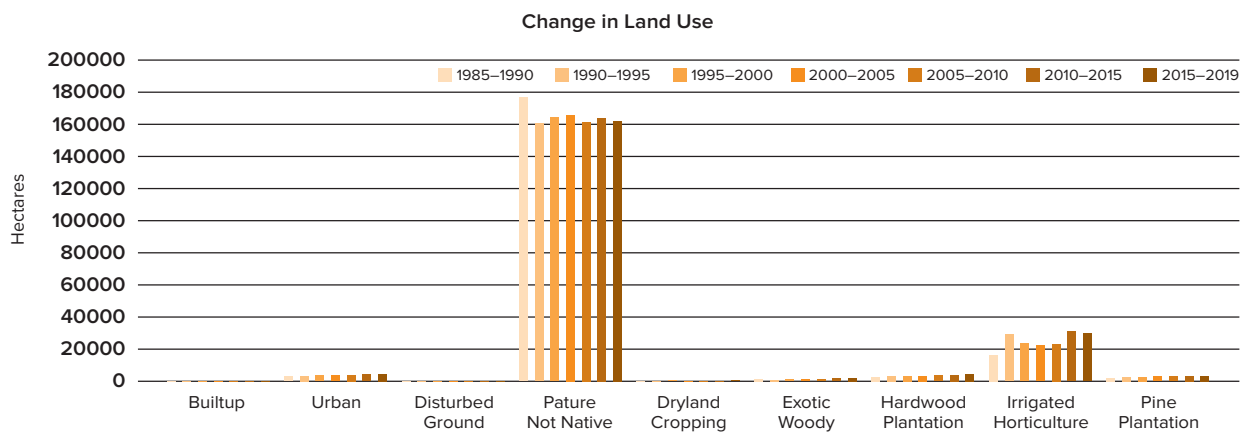


Figure 5 | Change in extent of land uses (hectares) in the East Gippsland Region (please note that the largest land use identified across east Gippsland is 'Production Native Forest', however the data set used for this analysis does not include this land use category). Source: Victorian Land Cover Time Series (DELWP).

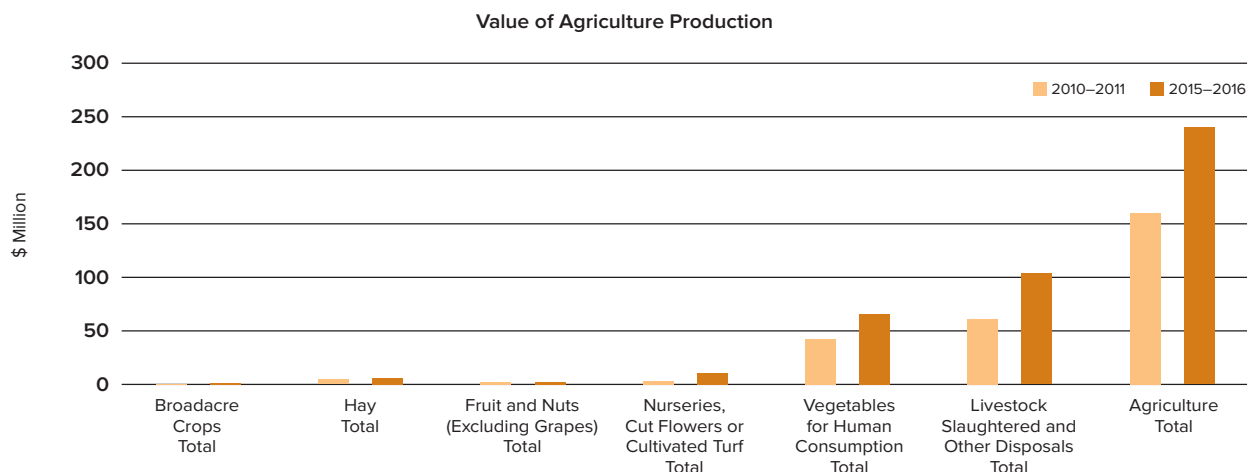


Figure 6 | Value of agriculture production (excluding the timber industry) in the East Gippsland region. Source: Australian Bureau of Statistics.

Regional outcome targets

Land – Regional Outcome Targets

These regional outcomes relate to the land theme within the RCS. They set out the long term (to 2040) and medium term (to 2027) outcomes as they relate to the region's land based assets. The outcomes include those aligned with the statewide outcomes framework (in italics) as well regionally specific outcomes developed in collaboration with RCS partners.

The RCS outcomes framework can be found on page 37, and more detailed outcomes addressing each theme of the RCS and linked closely to each of the local areas can be found starting on page 82.

Medium-term Outcomes (2027)


Best practice soil management, including maintaining appropriate ground cover is implemented at 60 % of priority sites across the agricultural landscapes.

Landholders will use systems and techniques to deliver long term outcomes for both farming and the environment to improve resilience.

Long-term Outcomes (2040)

The productive values and stability of agricultural land and soils within the Dargo Mountain Basin, Tambo Valley, Snowy Mountain Basin and Buchan Valley will be maintained.

Over 750 properties across East Gippsland will have active sustainable land management practices in place relating to soil and groundcover management.



Landholders will use systems and techniques to deliver long term outcomes for both farming and the environment to improve resilience.

Management directions

Management Direction	Current	Future Opportunity	Partners Involved
Continue to develop best practice guides and approaches to support farmers, including through demonstration trials, knowledge sharing days and initiatives.	✓		Agriculture Victoria, Landcare, DAWE, EGCMA, Industry partners and community farmer networks, Private landholders
Continue to work with landholders to improve soil health and ground cover through education, trials and initiatives, including management of erosion in post bushfire landscapes.	✓		Agriculture Victoria, Landcare, DAWE, EGCMA, Industry partners and community farmer networks, Private landholders
Ensure appropriate land use through the implementation of the East Gippsland Rural Land Use Strategy (currently draft).	✓		EGSC
Improve landholder participation in programs to implement best practice, or permanently protect environmental assets, through incentives or stewardship payments.	✓		EGCMA, TfN, DELWP, Landcare, Industry partners and community farmer networks
Work together to support integrated future fire management planning to provide environmental, social, economic and cultural outcomes.	✓		DELWP, GLaWAC, Parks Victoria, EGCMA
Support the activities under the Future Drought Fund by working with beef and sheep farmers to build understanding of options to manage drought risks.	✓		Agriculture Victoria, Landcare, DAWE, EGCMA, Industry partners and community farmer networks, Private landholders



Coast and Marine

The ‘**coast and marine theme**’ of this Regional Catchment Strategy includes the estuaries and coastal environments of East Gippsland, including the offshore ocean environments. Our coasts are highly valued by our community and provide some of the last remaining truly wild places in Victoria.

Our coastal and marine values... a snapshot

The coastal and marine environments of East Gippsland support significant ecological, social and economic values.

Our coast supports plants and animals including nationally listed threatened ecological communities, visiting international migratory shorebirds, and diverse and unique populations of marine mammals, fish and invertebrates and part of the Gippsland Lakes Ramsar Site.

East Gippsland’s coastal economy is based largely on natural resources. Coastal dependent economic sectors include oil and gas in Bass Strait, fisheries, commercial ports, shipping, commercial boating and services supported by coastal settlements and tourism. The scenic beauty and recreational amenity of our coasts are valued by residents and tourists, with boating and recreational fishing popular activities that make significant contributions to the local economy.

Waterbird species

80+

Northern hemisphere shorebirds fly to feed here and can travel up to

10,000km

Most coastal residents live in small settlements

<500



Bar-tailed Godwits at Tamboon Inlet.

Specific Values

The coast and marine environment of East Gippsland support significant ecological values including nationally listed threatened ecological communities such as temperate coastal saltmarsh and littoral rainforest (listed under the *Environment Protection and Biodiversity Conservation Act*); international migratory shorebirds which feed in the soft sediments of the lakes, estuaries and intertidal zones, marine mammals including one of only two resident populations of the Burruran dolphin and a diversity of fish and invertebrate species.

East Gippsland includes Lakes Victoria, King and Tyers which are all part of the Gippsland Lakes Ramsar Site. The Ramsar site supports extensive seagrass beds, important areas of coastal saltmarsh, over 80 species of waterbird

and an abundance of fish. Some species migrate from fresh to marine waters to complete their lifecycles. Estuarine resident species and marine opportunists use the productive feeding grounds of the Gippsland Lakes coastal lagoons.

The marine habitats of East Gippsland, including marine national parks and sanctuaries, support a wide range of aquatic habitats. Intertidal soft sediments that are feeding grounds for shorebirds, many of which migrate over 10,000 kilometres from the northern hemisphere to feed here in our spring and summer, before making the return journey. Rocky reefs dotted along the coast support diverse fish and invertebrate communities, including commercially important species. Subtidal habitats support seagrass and macroalgae beds, including stands of bull kelp.



Burruran dolphins on the Gippsland Lakes.

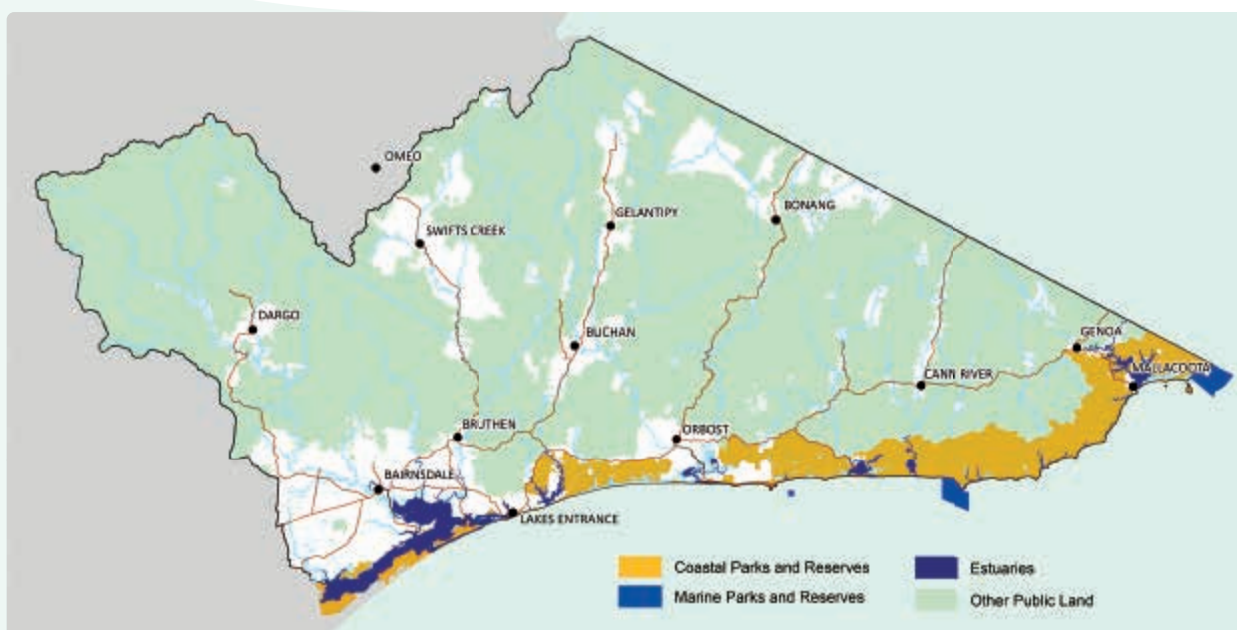


Figure 1 | Marine and coastal parks of East Gippsland.

Deeper waters are important feeding grounds for pelagic bird species including the nationally vulnerable shy albatross and wandering albatross. Threatened southern right whales, humpback whales, southern elephant seals and New Zealand fur seals are all found in the marine waters of East Gippsland. There are also several important haul-out sites for Australian fur seals in the region.

The sandy beaches of our region support beach nesting birds such as plovers, terns and oystercatchers. In particular, the nationally threatened little tern, fairy tern, and hooded plover have significant breeding areas in the coasts of East Gippsland. Our estuaries are important habitat for many species of native fish including the recreationally important estuary perch and black bream.

East Gippsland's coastal economy is based largely on natural resources. Coastal dependent economic sectors include oil and gas in Bass Strait, fisheries, commercial

ports, shipping, commercial boating and services supported by coastal settlements and tourism. The Gippsland coastal region is an important centre for commercial and recreational fisheries with large commercial fishing fleets operating out of Lakes Entrance. Together with the eastern zone abalone fishery based at Mallacoota, Gippsland's estimated annual commercial catch contributes significantly to the Victorian economy.

The scenic beauty and recreational amenity of the coasts of East Gippsland are valued by residents and tourists. Coastal settlements in East Gippsland range from towns such as Lakes Entrance and Mallacoota to villages such as Bemm River and Gipsy Point. The majority of residents in coastal East Gippsland live in settlements of less than 500 people. Boating and recreational fishing are important and popular activities in East Gippsland and make significant contributions to the local economy.



Hooded plover at Mallacoota.



Tamboon Inlet.

Threats and drivers of change

Threats to coastal and marine ecosystems of East Gippsland come from local and broad scale sources. Climate change, including increased carbon dioxide, increased temperature, ocean acidification, sea level rise, increased frequency and intensity of storms, increased frequency and intensity of droughts all have the potential to impact the coastal and marine ecosystems of East Gippsland. The coastline of East Gippsland is susceptible to erosion, with only a small fraction of the coastline consisting of rocky shorelines that are resistant to this impact. The combined actions of storm surges, high tides and sea level rise not only result in coastal flooding but accelerate coastal erosion.

Climate change

Decreased freshwater inflows and rising sea levels will impact the Gippsland Lakes, with increasing salinity across the system becoming more common. Hotter conditions will also result in increased frequency and duration of algal blooms in the Lakes. Rising sea levels also impact saltmarsh and fringing vegetation subjecting these communities to deeper water. This will be a particular problem in areas where there are barriers such as roads preventing landward migration of saltmarsh and paperbark communities.

Reduced freshwater inflows will also affect estuary openings, with more prolonged periods of closed conditions. This impact on the quality of habitat in the estuary and prevents migratory fish from moving between rivers and the sea to complete breeding cycles. Rising sea levels and increased storm surges will increase erosion pressures on shorelines impacting natural environments and built infrastructure such as boat moorings and jetties. While ocean acidification will have impacts to marine biota and reefs, particularly to animals with calcium shells such as molluscs.

Nutrient and sediment inflows from the catchments

This can be extreme following bushfires, and can lead to serious impacts to coastal lagoon and estuarine condition. Algal blooms can occur in Lakes Victoria and King in the Gippsland Lakes affecting not only the ecology of the system, but amenity values.

Invasive species and marine pests

Weeds, grazing animals, pigs, deer and marine pests all pose a threat to marine and coastal habitats. Introductions from commercial and recreational vessels can impact on marine and coastal ecosystems. For example, the invasive screw shell has been recorded within the Point Hicks Marine National Park. This New Zealand species can quickly colonise large areas of soft sediment, changing food web structure and leading to a decline in the diversity of native invertebrate species. In 2015, the invasive Northern Pacific Seastar (*Asterias amurensis*) was reported in the Gippsland Lakes by the community group Friends of Beware Reef. A swift management response resulted in the eradication of the species, which was not recorded for a further five years. In 2019, the species was again spotted, again prompting a swift response and monitoring program.

Damage to seagrass, reefs and marine habitats

Anchors and recreational vessels have been identified as a threat in the region, although the extent of damage is not known. Commercial and recreational fishing can result in changes in the populations of target species and poaching of abalone has been identified as a threat to marine national parks.

Disturbance of shorebirds

Impacts to feeding and beach nesting birds by vessels, people and domestic dogs is a risk. Although much of the region is sparsely populated and disturbance is comparatively low, there are a number of popular places, such as in the Gippsland Lakes and Mallacoota Inlet where this threat is more likely to occur.



Seahorse in the Gippsland Lakes.

Table 1 | Index of Estuary Condition assessments for estuaries in East Gippsland (2019–20).

Wetland	Physical Form	Hydrology	Water Quality	Flora	Fish	Overall
Benedore River	10	10	NA	9	NA	48
Betka River	10	9	10	7	6	39
Bunga Inlet	9	5	4	8	6	28
Cann River (Tamboon Inlet)	9	8	10	9	9	43
Davis Creek	10	7	3	9	6	30
Lake Tyers	10	6	9	8	8	38
Mallacoota Inlet	9	5	10	10	8	37
Maringa Creek	10	4	7	10	9	36
Mississippi Creek	10	3	9	7	8	32
Mitchell River	9	5	9	5	9	32
Mueller River	10	10	10	9	6	41
Newlands Arm	7	5	10	8	10	36
Nicholson River	8	3	6	8	9	30
Red River	10	10	NA	10	NA	50
Seal Creek	10	10	NA	10	NA	50
Shipwreck Creek	10	10	6	NA	7	37
Slaughterhouse Creek	10	3	2	8	8	24
Snowy River	9	1	10	8	9	31
Sydenham Inlet	9	6	10	5	8	34
Tambo River	8	5	10	9	7	34
Thurra River	10	7	10	10	6	39
Tom Creek	9	3	8	5	7	27
Tom Roberts Creek	9	5	6	7	7	31
Wau Wauka Creek	10	10	NA	10	NA	50
Wingan Inlet	10	9	7	9	9	41
Yeerung River	10	9	10	6	7	39

Key: Excellent Good Moderate Poor Very Poor

Mangroves are not a feature of the coastal habitats of East Gippsland and so the assessment of coastal vegetation is limited to saltmarsh. Saltmarsh cover in East Gippsland has declined slightly over the past five years (Figure 3). A finer scale assessment of saltmarsh in the Gippsland Lakes Ramsar site indicated that there had also been a small decline in saltmarsh from 2011 to 2020, but that ecological character of the site remained within its defined limits of acceptable change.

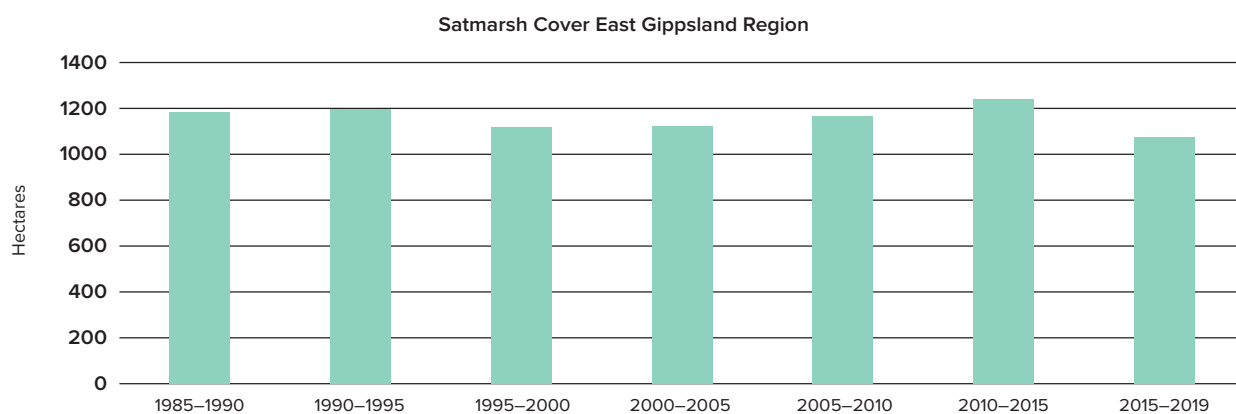


Figure 3 | Change in extent of saltmarsh vegetation cover (hectares) in the East Gippsland Region. Source: Victorian Land Cover Time Series (DELWP).



Water quality

Water quality in the catchment of the Gippsland Lakes in East Gippsland has remained very good for most years in the past two decades. In 2019–20 water quality declined slightly for the first time since 2006 (Figure 4). Declines in the East Gippsland catchment were associated with poorer nutrient levels, pH and water clarity than usual. While East Gippsland experienced severe bushfires over spring/summer 2019-20, these were largely further east and impacts on water quality in the Gippsland Lakes catchments appear to have been short lived (Figure 5), although further analysis of these impacts is currently underway.

Water Quality Condition Scores for the Eastern Gippsland Lakes Catchment

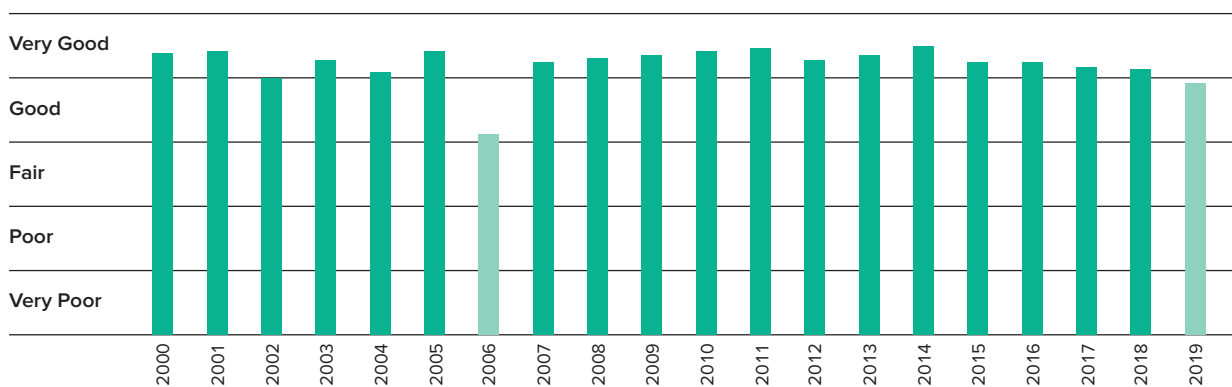


Figure 4 | Water quality condition scores for the eastern Gippsland Lakes catchment. Source EPA (2020) Publication number 1923.

Water quality in the catchment of the Gippsland Lakes in East Gippsland has remained very good for most years in the past two decades.

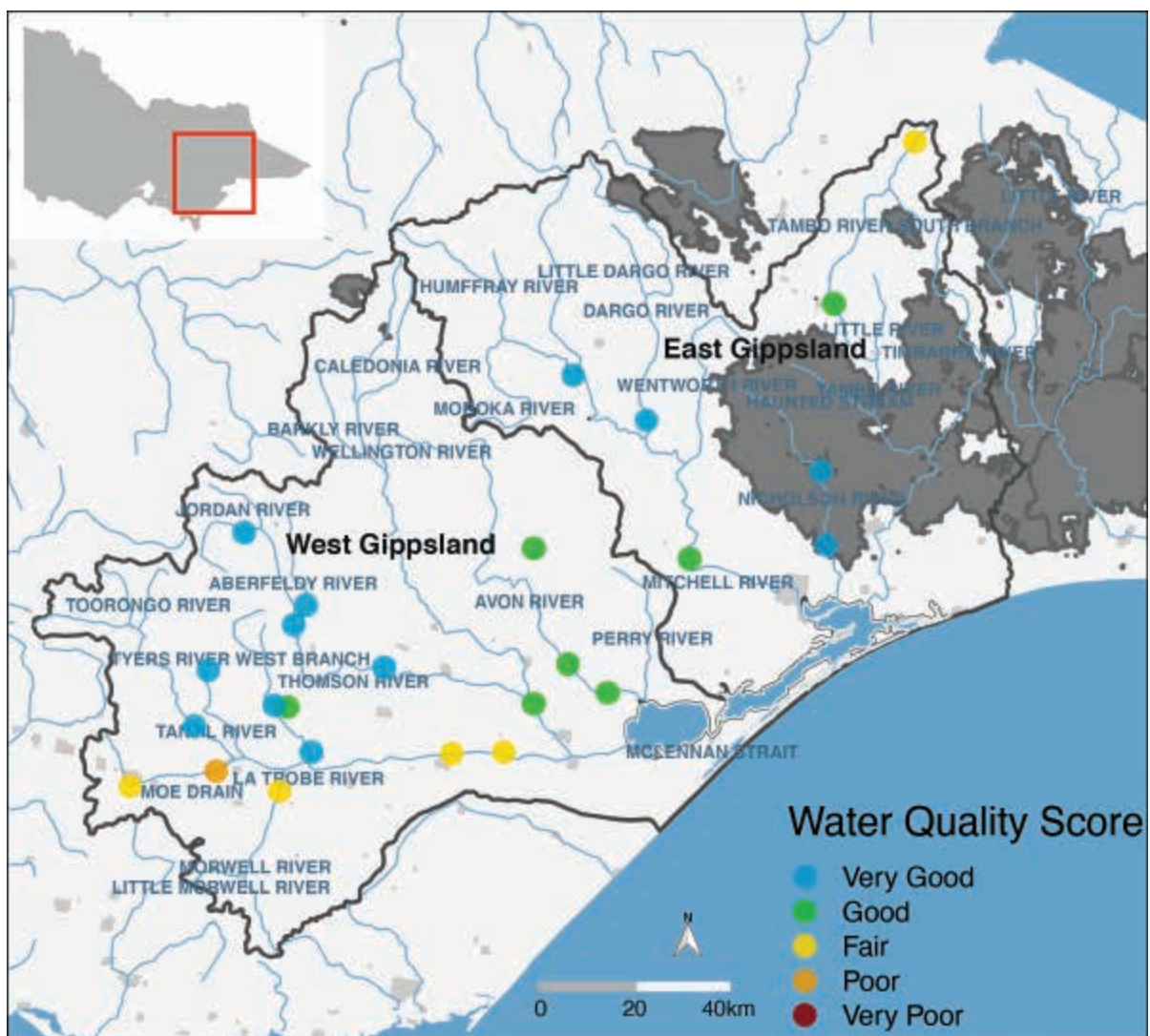


Figure 5 | Location and WQI scores of DELWP’s monitoring sites in the Gippsland Lakes catchment. Dark grey shaded areas show the extent of the 2019–2020 bushfires in Gippsland. Source EPA (2020) Publication number 1923..

Water quality in Lakes Victoria and King has improved since the late 2000s, when condition scores were very poor to fair (Figure 6). The eastern lakes are characterised by good dissolved oxygen conditions, higher water clarity and lower nutrients and algal blooms than Lake Wellington to the west.

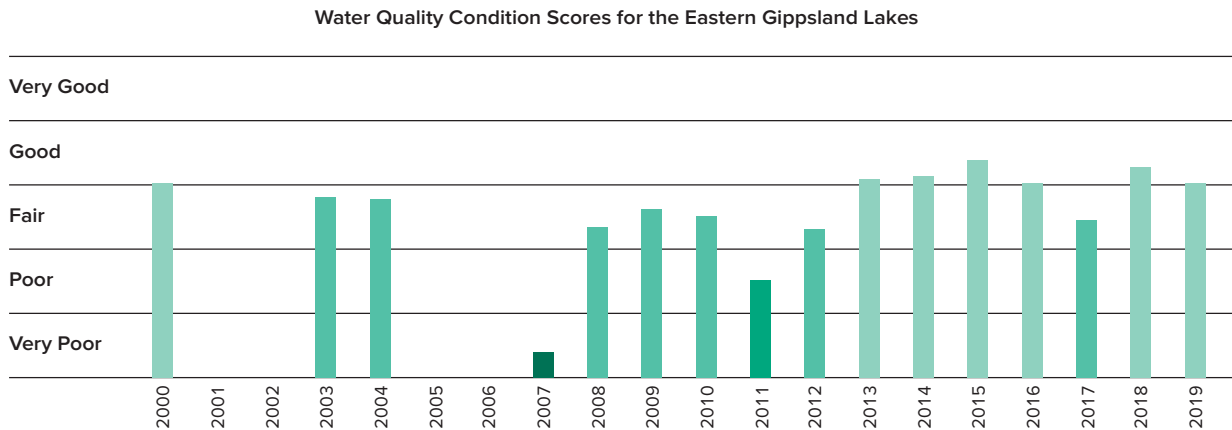


Figure 6 | Water quality condition scores for the eastern Gippsland Lakes. Source EPA (2020) Publication number 1923.

Regional outcome targets

Coast and Marine – Regional Outcome Targets

These regional outcomes relate to the coasts and marine theme within the RCS. They set out the long term (to 2040) and medium term (to 2027) outcomes as they relate to the region’s coastal and marine assets. The outcomes include those aligned with the statewide outcomes framework (*in italics*) as well regionally specific outcomes developed in collaboration with RCS partners.

The RCS outcomes framework can be found on page 37, and more detailed outcomes addressing each theme of the RCS and linked closely to each of the local areas can be found starting on page 82.

Medium-term Outcomes (2027)

Extent of coastal saltmarsh in the Gippsland Lakes will be maintained at the average area recorded for 2005–2019 (1150 ha), enhanced by increased areas of permanent protection and improved land management.

Artificial entrance openings have been completed in line with a regionally agreed approach that appropriately considers environmental, cultural, economic and social outcomes.

A reduction in the number of years in which blue-green algal blooms occur in the Gippsland Lakes to less than five over the 20 years (2007–2027).

Sustainable sea urchin populations are maintained in all three marine protected areas in East Gippsland.

Long-term Outcomes (2040)

Extent and condition (density) of seagrass is maintained in estuaries, including the Gippsland Lakes.

Understory species (kelp and other marine macroalgae) have been restored and sea urchin barrens are no longer visible features of the marine protected areas.

Management directions

Management Direction	Current	Future Opportunity	Partners Involved
Working together with Traditional Owners, other regional partners and the community, set strategic directions for the identification, recovery and enhancement of marine and coastal habitats across public and private land in its catchment.		✓	DELWP, EGCMA, GLaWAC, Parks Victoria
Continue to implement the strategies of the Gippsland Lakes Ramsar Site Management Plan (including an update to the RSMP in 2023).	✓		EGCMA, GLaWAC, DELWP, Parks Victoria, WGCM, DAWE, EGSC, WSC, Greening Australia, TfN, Birdlife Australia, Agriculture Victoria
Work with Agriculture Victoria, DELWP, Parks Victoria and other partners to prioritise and manage invasive marine pests in the Gippsland Lakes.	✓		EGCMA, GLaWAC, DELWP, Parks Victoria, Agriculture Victoria
Work with Parks Victoria and other partners to manage marine National Parks, including management of urchin barrens.	✓		DELWP, Parks Victoria
Control domestic stock and recreational vehicle access in saltmarsh communities around the Gippsland Lakes Ramsar site.	✓		DELWP, Parks Victoria, EGCMA
Working with community and regional partners, review and continue to implement the East Gippsland Estuary Opening Protocols.	✓		EGCMA, DELWP, Parks Victoria, EGSC, Local landholders
Support and lead the implementation of relevant activities, including facilitation of local participation, in the Marine and Coastal Strategy across East Gippsland.		✓	DELWP, Parks Victoria, EGCMA, GLaWAC
Participate in the development and implementation of a process for the provision of coastal erosion advice for long term planning, management and adaptation for the East Gippsland coast.		✓	DELWP, EGCMA

Extent and condition (density) of seagrass is maintained in estuaries, including the Gippsland Lakes.



Community

The **'community theme'** of this Regional Catchment Strategy aims to capture the profile of our community and their involvement in the management of our natural values. The partnerships we form across our region are the key to delivering successful environmental outcomes for us all.

Our community... a snapshot

East Gippsland is relatively sparsely populated compared to other regions in Victoria, however the population has continued to grow to almost 48,000 people in 2020. The increase in population has not been evenly distributed across the region. Large centres such as Bairnsdale and the coastal communities in the west of the region continue to support more residents than the far east.

The Aboriginal community in East Gippsland is represented by Gunaikurnai, Bidwell, and Ngarigo Monero.

Aboriginal people have a strong connection to Country in East Gippsland. Aboriginal people have an aspiration to participate in the management of the region's natural resources, and this aspiration is acknowledged by natural resource management agencies.

The communities of East Gippsland are resilient. The past years have been some of the most challenging our community have faced. An extended period of drought followed by widespread bushfires and the impacts of the coronavirus pandemic have impacted on the health and well-being of many people and communities across the region.

Impacts of the experiences of recent years have been significant, and communities are concerned about the challenges we may face into the future.

Some of these challenges include the future management of our environment and fire, the impacts of climate change, caring for the Gippsland Lakes, and water security and water availability.



Caption?



Traditional Owners

Agencies and community in East Gippsland are committed to working with Aboriginal people to learn from each other, care for Country, and deliver on priorities through the Gunaikurnai Whole of Country Plan and the Gunaikurnai and Victorian Government Joint Management Plan.

In October 2010, the Federal Court made a determination (FCA1144) that native title exists over much of Gippsland and is held by the Gunaikurnai people. The court recognised the Gunaikurnai Land and Waters Aboriginal Corporation as the sole holder and representative body of these native title rights and interests on behalf of all Gunaikurnai people.

At the same time, the State of Victoria entered into a recognition and settlement agreement with the corporation under the *Traditional Owner Settlement Act 2010*. The agreement includes:

- a number of cultural recognition and strengthening initiatives
- the transfer of 10 parks and reserves to the Gunaikurnai as 'Aboriginal title' and establishment of a Traditional Owner land management board for joint management with the state
- rights to use crown land for traditional purposes, including hunting, fishing, camping and gathering
- funding for economic development to meet their obligations under the agreement.

The Gunaikurnai Land and Waters Aboriginal Corporation is also the appointed Registered Aboriginal Party under the *Aboriginal Heritage Act 2006* for the Gunaikurnai native title area.

Regional partnerships

Within the East Gippsland region, natural resource management is undertaken as a partnership between government agencies and the community. The size of the region, its large areas of remote and inaccessible public land, and its relatively small population have highlighted partnerships as being the most effective approach. Many issues requiring management act at a scale which is beyond the ability of individuals, or individual agencies, to address.

In East Gippsland we pride ourselves on our ability to work together. Effective management of threats to natural values can involve working across and beyond organisational and regional boundaries. As a result, the East Gippsland community and relevant agencies maintain strong relationships with neighbouring regions.

Considerable experience in integrating works among multiple partners on a landscape scale has been gained through initiatives such as the Gippsland Environment Agencies (GEA). These groups include representatives from natural resource management agencies from across East Gippsland. The groups work collaboratively on strategic priorities, leadership in the region and support each other.

Number of partnerships

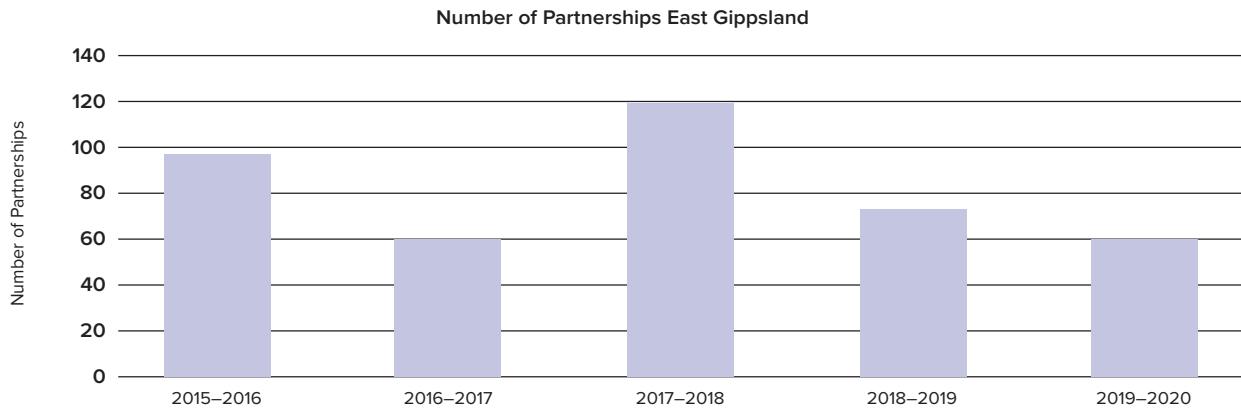


Figure 1 | Number of partnerships established, modified, or maintained in the East Gippsland region. Source: internal EGCMA community engagement database (ACE2)



Community partnerships

There are many community groups across East Gippsland that undertake volunteer work to improve the health of the environment. Some examples of the groups that are supported in East Gippsland include Landcare, Coastcare, specific interest groups focussing of species or guilds, and angling clubs.

Landcare in East Gippsland is organised into three networks: East Gippsland Landcare Network, Far East Victoria Landcare and Snowy River Interstate Landcare

Committee. The area covered by these networks is approximately 742,000 hectares. The enthusiasm and activity for groups ebbs and flows, and likewise volunteering efforts vary with the ability and motivation of the community to participate in on ground projects or planning related to the natural resource management.

Table 1 | Percentage of Landcare Group Health Scores in each category for each year, East Gippsland region.

Health Score	2012–13	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20
Just hanging on	0%	0%	0%	0%	0%	0%	3%	0%
Struggling along	22%	20%	7%	11%	3%	22%	21%	18%
Moving forward	63%	50%	73%	41%	38%	31%	34%	50%
Rolling along	15%	30%	17%	41%	41%	31%	34%	26%
Trail blazer	0%	0%	0%	7%	17%	16%	8%	6%

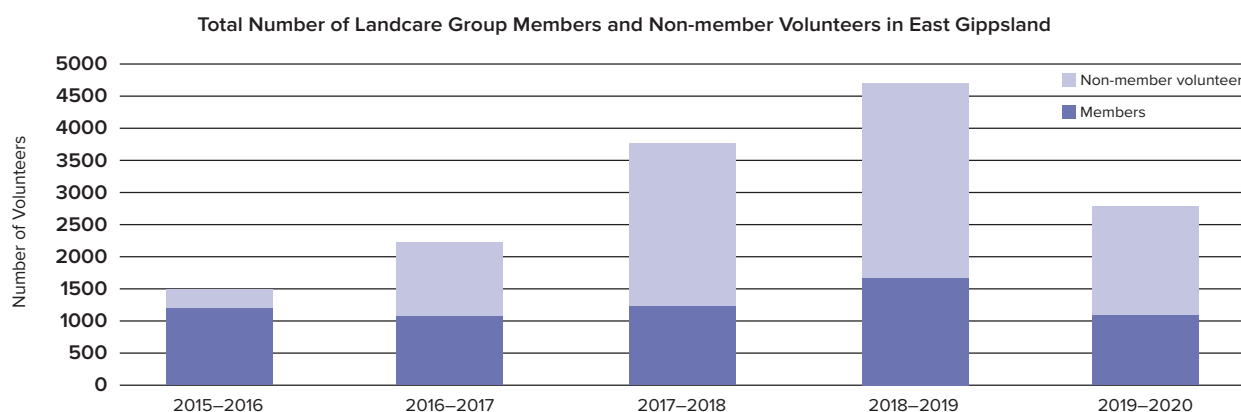


Figure 2 | Total number of Landcare Group members and non-member volunteers in East Gippsland.

Regional outcome targets

Community – Regional Outcome Targets

These regional outcomes relate to the community theme within the RCS. They set out the long term (to 2040) and medium term (to 2027) outcomes as they relate to the region’s community values. The outcomes include those aligned with the statewide outcomes framework (in italics) as well regionally specific outcomes developed in collaboration with RCS partners.

The RCS outcomes framework can be found on page 37, and more detailed outcomes addressing each theme of the RCS and linked closely to each of the local areas can be found starting on page 82.

Medium-term Outcomes (2027)

Mechanisms are in place providing for the involvement of Traditional Owners in natural resource management across East Gippsland, including the incorporation of traditional ecological knowledge into management practice.

Communities are actively involved in agricultural and Landcare groups, reflected in the maintenance of Group Health Scores at 2020 levels.

Community volunteering groups are collaboratively working with land managers and other partner agencies to improve public spaces, visitor facilities and recreational opportunities

Communities around the Gippsland Lakes will continue to have a single point of reference of the most up to date condition and on ground program delivery information for the Gippsland Lakes.

Communities are invited to participate in citizen science programs, such as bird, frog, turtle and water quality monitoring.

Long-term Outcomes (2040)

There are many sites across East Gippsland where Traditional Owners work in close partnership with government agencies, jointly planning and managing shared priorities at these locations that protects both the cultural and natural values of the region.

Public spaces, visitor facilities and recreational opportunities are discoverable, in good condition and suitable for the needs of users.

Communities are well informed about the condition and threats to the biodiversity and habitats of the Gippsland Lakes.

Active citizen science programs will help inform the long-term monitoring of ecological condition ecological assets.



Community tree planting activity.

Management directions

Management Direction	Current	Future Opportunity	Partners Involved
Continue to work with Traditional Owners to understand and share knowledge to protect and enhance Country and cultural sites of significance.	✓		All partners
Provide support to Traditional Owners to realise the goals of the Joint Management Plans, including enabling a self-determination to priority setting, project involvement and project delivery more broadly across the Gippsland Lakes (and other areas identified by Traditional Owners).	✓		GLaWAC, Traditional Owners, EGCMA, DELWP, Parks Victoria
Work collaboratively with regional partners to develop education and awareness campaigns on key issues, values and opportunities related to natural resource management in East Gippsland.		✓	All partners
Participate in adaptation planning and emergency management activities related to bushfire and floods in regional communities.	✓		EGSC, DELWP, Parks Victoria, EGCMA, SES, BoM, WSC
Identify new recreational opportunities appropriate landscapes and improve the condition of environmental recreational assets and infrastructure.		✓	DELWP, GLaWAC, Parks Victoria, EGSC, EGCMA



An aerial photograph of a rural landscape. In the foreground, there is a dense forest of green trees. To the right, a river flows through the landscape. The middle ground shows a large green field, possibly a pasture or agricultural field, with some trees scattered throughout. In the background, there are rolling hills and a small cluster of buildings, likely a farm or small settlement. The sky is clear and blue. The image is framed by large, abstract teal and blue shapes in the corners and bottom.

Local Areas

A 'place based' approach

The structure of the new East Gippsland RCS will be based on five Priority Landscape Areas. The aim of this approach is to capture the interconnected nature of the themes covered by the RCS, and present integrated priorities for natural resource management across a meaningful spatial scale.

The Priority Landscape Areas are the foundation for a place-based approach to priority and target setting and will provide a more meaningful platform for discussion with communities and regional partners about management action and strategic direction from natural resource management in our region.

Information about, and priorities for, the areas will form a key part of the structure of the new East Gippsland RCS.

It should be noted that three areas (Gippsland Lakes, Alpine Peaks and Red Gum Plains) all represent 'shared' landscapes with adjoining CMA's. The EGCMA has worked with the West Gippsland CMA and the North East CMA to ensure the alignment of landscape scale priorities where possible.



Alpine Peaks

Overview

The Alpine Peaks local area within the East Gippsland Catchment Management Region comprises the upper catchments of the Mitchell, Nicholson and Tambo rivers. It is bounded to the north by the Great Dividing Range and to the south by the forested foothills. It contains a portion of the Alpine National Park, which covers over a third of this local area.

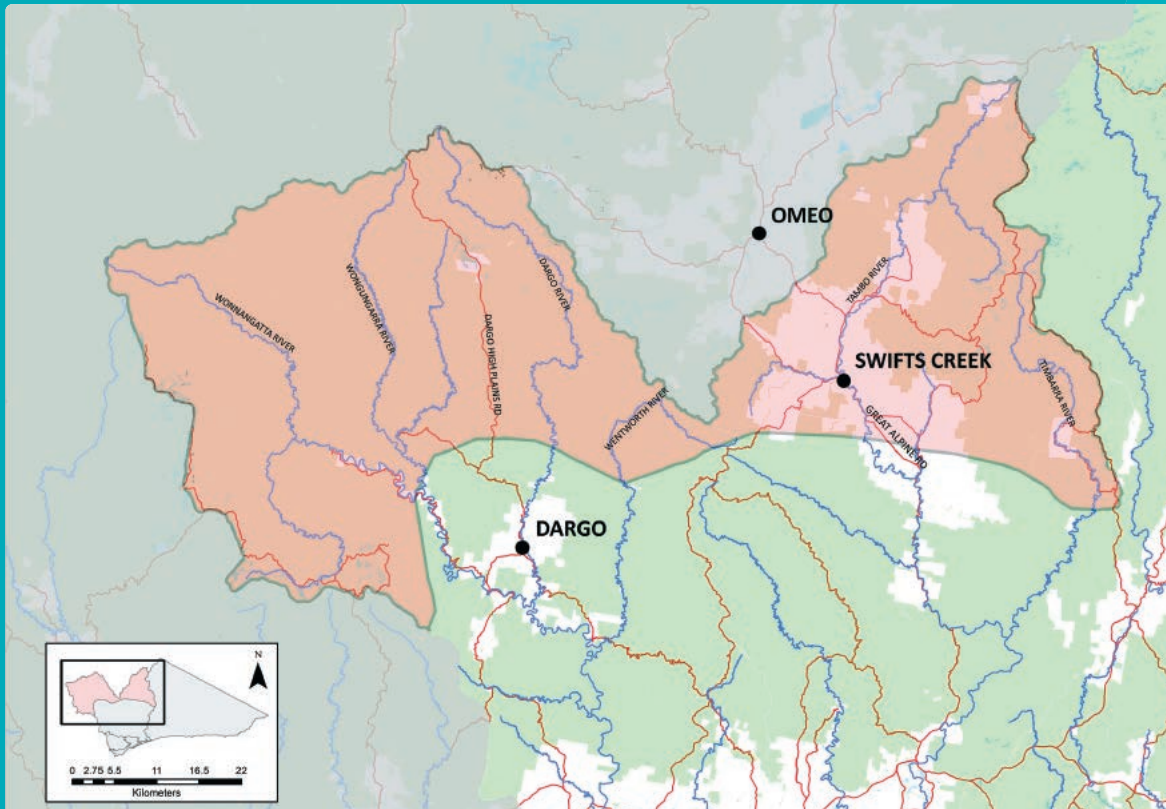
The area features two important and rare ecological communities, White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (or Box-Gum Grassy Woodlands), and Alpine Sphagnum Bogs and Associated Fens (or Alpine Peatlands).

There are only 4,480 hectares of Alpine Peatland, all found in high elevations of the Victorian Alps. The peatlands are permanently wet sites in high rainfall alpine, sub-alpine and montane areas of the state. The community is listed as endangered under the *Commonwealth Environment Protection Biodiversity Conservation Act* due to:

- its small geographic distribution coupled with demonstrable threats
- the continued decline of functionally important species
- the severe reduction in community integrity across its range.

Box-Gum Grassy Woodlands provide important habitat for a large number of plants and animals, including threatened species. These woodland were formerly widespread however now less than 5% remains in good condition across its range and much of this occurs in small isolated patches.





Areas of land used for agriculture, largely devoid of trees, sit within the large areas of native forest and woodland. They are located primarily in river valleys and are mostly used for agricultural production. They include the Wonnangatta Valley in the Mitchell catchment, and Ensay and Swifts Creek in the Tambo Valley.



Current condition

Available data indicates that the Alpine Peaks Local Area is in very good condition (Table 1). However, in 2019–20, bushfires affected over a third of this local area, burning a large proportion of the native vegetation and killing or displacing large numbers of animals. The full extent of the impact and recovery from this event is not yet well understood.

Table 1 | Condition and trend of Alpine Peaks Local Area.

Theme	Indicator	Data Source	Condition	Trend
 Water	Wetland condition	Index of Wetland Condition (DELWP 2010)	The 2009–2010 assessments of Wetland condition indicated that the alpine peatlands assessed were in good to excellent condition.	Declining
	Waterway condition	Index of Stream Condition (DELWP 2011)	The 2011 Index of Stream condition considered that the river reaches in the Alpine Peaks area were in good to excellent condition, except for several reaches on the Tambo which were rated as moderate. The rivers of this local area are largely unmodified and have few barriers to connectivity, providing for the movement of biota from headwater streams to estuaries and the sea.	Unknown
 Biodiversity	Land cover	Victorian Land Cover Time Series (DELWP 2020)	Around 96% of the extent of native vegetation in this local area has been maintained with over one 350,000 hectares of native forest and woodland.	Stable
	Strategic Biodiversity Value	NatureKit (DELWP 2021)	The local area has a median strategic biodiversity value above 70. The strategic biodiversity value is a combined score from 0 (low value) to 100 (high value) that takes into account habitat and condition. Many of the regions of East Gippsland have high strategic biodiversity value reflecting the high cover of native vegetation and the habitat values this provides.	Unknown
	Threatened species	Atlas of Living Australia (2021), Victorian Biodiversity Atlas (2021)	The local area supports at least 87 threatened species.	
 Land	Land use	Australian National University's Centre for Water and Landscape Dynamics (2021)	Less than 5% of the Alpine Peaks Local Area has been cleared, largely for grazing, with a very small (around 1000 hectares) used for irrigated agriculture.	Stable
	Land cover	Australian National University's Centre for Water and Landscape Dynamics (2021)	Exposed soils in the Alpine Peaks cover less than 2% of the local area and are largely in areas cleared of native vegetation.	Stable
 Community	Landcare group health score	Landcare Group Health Survey (2015–2020)	Landcare group membership has varied over the past five years, but overall numbers and group health has been maintained.	Stable
	Collaborative Australian Protected Areas Database (2021), Trust for Nature (2022)	Collaborative Australian Protected Areas Database (2021), Trust for Nature (2022)	The area of private land under permanent protection has increased by 20ha since 2017.	Stable
	Population	Australian Bureau of Statistics (2020)	The population in this local area is small, estimated at less than 2,000 people in 2020 and is declining.	Declining

Major threats and drivers of change

The high proportion of public land and retention of much of the native vegetation and habitats of the region, coupled with a relatively sparse population, means that the Alpine Peaks is subject to lower levels of threat from changed land use than elsewhere in Victoria and the East Gippsland Region. Over much of the local area threats to biodiversity arise from climate change, pest plants and animals.

Climate change

Increase in temperatures coupled with decreased rainfall have led to an increase in the risk of severe bushfire events. This occurred in 2019–20, where over 1 million hectares, (56%) of the East Gippsland region was burnt.

Pest plants and animals

Despite much of East Gippsland retaining native vegetation cover, there are still areas of priority weeds and a number of significant pest animal threats to biodiversity. Alpine peatlands and upland pristine streams are at extreme risk from deer and feral horses, with hard hooves causing significant and often irrevocable damage to fragile peat communities. Willows and non-woody weeds also pose a threat to these communities, with invasion of willows following bushfire of particular concern. Also, wild dogs and agricultural weeds continue to impact of farming enterprises.

Vision and outcomes

Vision

The ecological character, extent and condition of the Alps Natural Ecosystem and associated environments is maintained including alpine grassland and heathland mosaic, White Box Woodlands and wetlands. Communities are resilient, connected and value the unique alpine landscapes and farming districts.


Outcomes

By 2040, the long-term objectives for the Alpine Peaks are:

- Ensure the total extent of the Alpine Peatlands is maintained, and that those peatlands that are currently in good condition are protected, and any peatlands that are in medium or poor condition are restored to good condition by 2040.
- Populations of threatened species and ecological communities are maintained.
- Improvement of the productive values and stability of the Dargo Mountain Basin and Tambo Valley agricultural land and soils in priority areas.
- Public spaces, visitor facilities and recreational opportunities are discoverable, in good condition and suitable for the needs of users.
- Landcare are integral to the collaborative approach with land managers and partner agencies.


This will be achieved by focussing on the following themes:

- 1 Water – improving the condition of the Alpine Peatlands in the Wonnangatta-Moroka and Dargo High Plains areas.
- 2 Biodiversity – working with land managers across the region to address established and emerging pest plants and animals.
- 3 Land – reducing erosion following bushfires and continue to control pest plants and animals.
- 4 Community – Landcare encouraging recreational activities and opportunities through working with land managers to maintain and improve visitor facilities.




Communities are resilient, connected and value the unique alpine landscapes and farming districts.


Water - Improving the condition of the Alpine Peatlands in the Wonnangatta-Moroka and Dargo High Plains areas.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Most of the peatlands in the Wonnangatta-Moroka area are in good condition but some have been affected by weeds, particularly willows, vehicle and walking tracks (that have affected water flows into and out of peatlands) and damage by pest animals such as deer.</p>	<p>Alpine peatlands currently in good condition will remain in good condition, through protection from the impacts of pest plants and animals and physical impacts to hydrology at these sites.</p>	<p>75% (615 hectares) of peatlands in the Wonnangatta-Moroka areas will be maintained in their current good condition.</p> <p>The remaining 25% (205 hectares) of peatlands are improved from medium or poor condition to good condition.</p>


Biodiversity - Working with land managers across the region to address established and emerging pest plants and animals.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Pest plant and animals threaten Alpine Peatlands and terrestrial habitats in the region, including white box woodlands. Pest animals such as horses, deer, and pigs, together with transforming weeds have been identified as a significant threat to alpine ecosystems. Following landscape scale bushfires, this is a key priority moving forward.</p>	<p>Impacts are reduced on threatened vegetation communities and individual animals through ongoing integrated large herbivore control (deer, horses, pigs).</p>	<p>Populations of threatened species and ecological communities are maintained.</p> <p>Maintenance and targeted improvement of the condition, security, diversity and integrity of natural ecosystems and the status of threatened species and communities.</p>

Land - Reducing erosion following bushfires.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>The 2019/20 bushfires impacted a large proportion of the Alpine Peaks local area. While much of the land affected was public and supported natural values, there were impacts to productive agricultural lands as well.</p>	<p>Best practice soil management, including maintaining appropriate ground cover is implemented at 60 % of priority sites across the agricultural landscape.</p>	<p>Targeted improvement of the productive values and stability of the Dargo Mountain Basin and Tambo Valley agricultural land and soils.</p>

Community - Working together to improve public spaces and recreational and visitor facilities.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Landcare community is working on several projects to improve visitor facilities and achieve beneficial environmental outcomes.</p>	<p>Landcare groups are collaboratively working with land managers and other partner agencies to improve public spaces, visitor facilities and recreational opportunities.</p>	<p>Public spaces, visitor facilities and recreational opportunities are discoverable, in good condition and suitable for the needs of users.</p> <p>Landcare are integral to the collaborative approach with land managers and partner agencies.</p>

A target to develop a staged and coordinated program for works and activities in line with the East Gippsland Waterway Strategy.

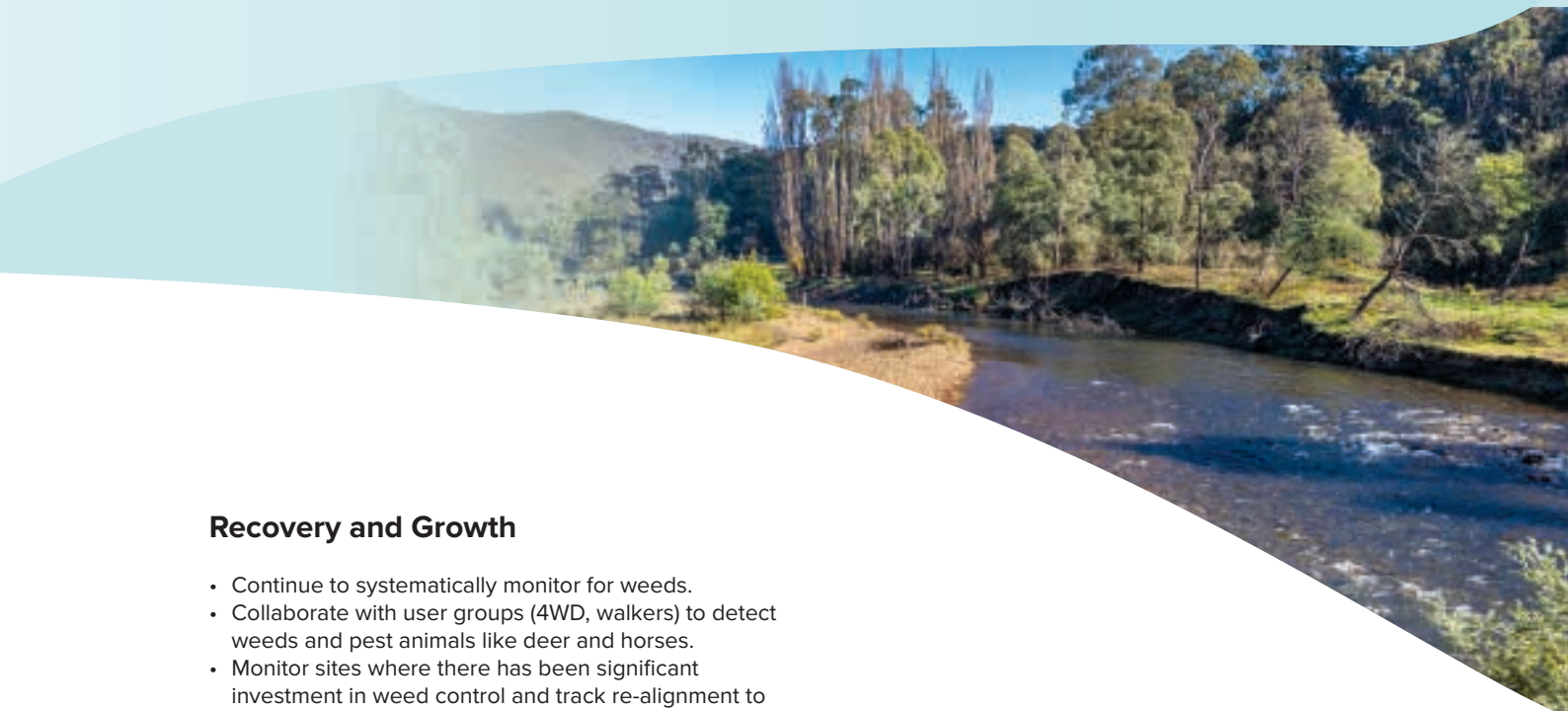
Phases of implementation

Target Setting

- Develop a staged and coordinated program for works and activities in line with the East Gippsland Waterway Strategy, Victorian Alpine Peatlands Spatial Action Plan, the National Recovery Plan for the Alpine Sphagnum bogs, the Greater Alpine National Parks Management Plan, the Trust for Nature Statewide Conservation Plan, Biodiversity Response Planning process (Cobberas Nunniong Focus Landscape), East Gippsland Rural Land Use Strategy, and the Gunaikurnai Whole of Country Plan.

Taking Action

- Target investment to specific peatlands where recovery is slower or threats have not been reduced enough to allow recovery.
- Develop an education and awareness campaign with key project partners.
- Support the implementation of the Victorian Alpine Peatlands Spatial Action Plan (e.g. protecting peatlands from fire management and impacts of recreational activities).
- Drawing on spatial decision-support tools such as Strategic Management Prospects, and other regional prioritisation and planning processes, implement in priority areas consistent with the Biodiversity Response Planning process (for relevant Landscapes):
- Sustained weed control, large herbivore control, and integrated predator control (Cobberas Nunniong Focus Landscape).
- Support activities for improved biodiversity outcomes from Victoria's Bushfire Biodiversity Response and Recovery program.
- Identify and action conservation covenants as detailed in the Trust for Nature (2013) Statewide Conservation Plan for Private Land in Victoria.
- Continue to work with Traditional Owners to understand and share knowledge to protect and enhance Country and cultural sites of significance.
- Work with Landcare and community groups to manage recreational activities around peatlands.
- Support landholders to control erosion post bushfire.
- Support East Gippsland Shire to implement the Environmental Sustainability Strategy (including an update to the Roadside Vegetation Management Strategy).
- Ensure appropriate land use through the implementation of the East Gippsland Rural Land Use Strategy (when finalised).



Recovery and Growth

- Continue to systematically monitor for weeds.
- Collaborate with user groups (4WD, walkers) to detect weeds and pest animals like deer and horses.
- Monitor sites where there has been significant investment in weed control and track re-alignment to ensure recovery is occurring as expected.
- Continue to work with fire management agencies to minimise the risk of fire to peatlands and to ensure fire management actions do not impact peatlands.

Target Achieved

- Continue to systematic monitoring for weeds and pest herbivores where populations have been removed or previously not recorded.
- Maintain support for user groups to continue their monitoring and reporting.
- Continue systematic monitoring of the degraded peatlands to assess progress on improving quality.
- Continue to work with fire management agencies to minimise the risk of fire to peatlands and to ensure fire management actions do not impact peatlands.

Forested Foothills

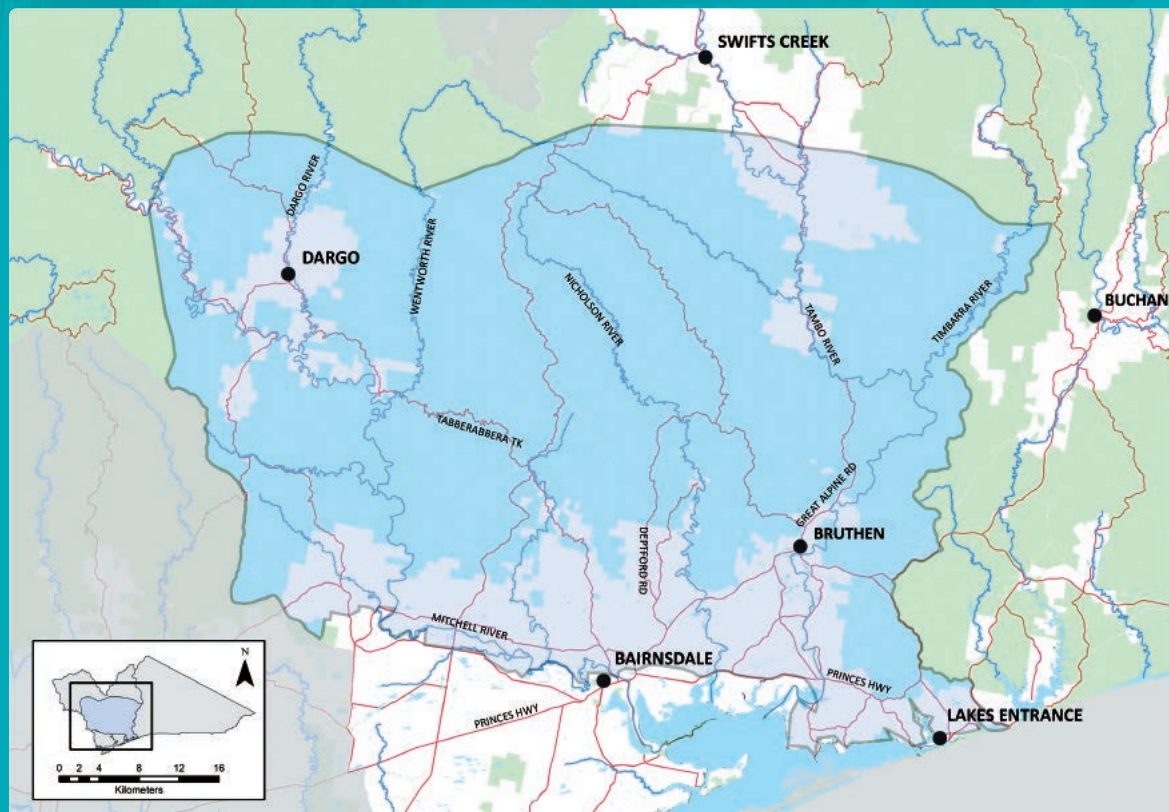
Overview

The Forested Foothills Local Area extends from Dargo to Bairnsdale and across to Bruthen (refer to map). The northern boundary of the plains is characterised by the peaks of the Victorian Alps, through to the top of the Red Gum Plains in the south.

The Forested Foothills are strongly associated with the Gippsland Lakes priority landscape area comprising much of the eastern river catchments that flow into the lakes, including the Mitchell, Tambo and Nicholson rivers.

The area primarily comprises a patched mosaic of cleared and vegetated land. The native vegetation is dominated by lowland eucalypt forests of stringybark and silver top ash. The grazing land is made up of small to medium holdings that support sheep and cattle, and some forestry.





The foothills support a diverse range of flora and fauna species, including threatened species such as the Southern Greater Glider, Lace Monitor and Sooty Owl.



Current condition

Available data indicate that the Forested Foothills is in moderate condition (Table 1).

Table 1 | Condition and trend of Alpine Peaks Local Area.

Theme	Indicator	Data Source	Condition	Trend
 Water	Wetland extent	Victorian Land Cover Time Series (DELWP 2020)	There has been a 28 % decline in wetland extent in this local area since 1985.	Declining
	Waterway condition	Index of Stream Condition (DELWP 2011)	The 2011 Index of Stream condition considered that the river reaches in the Forested Foothills area were in good to excellent condition, except for several reaches on the Lower Tambo and Mitchell Rivers which were rated as moderate.	Unknown
 Biodiversity	Area of permanent protection	Collaborative Australian Protected Areas Database (2021), Trust for Nature (2022)	Area of permanent protection in this local area is low. The area of private land permanently protected in this Local Area since 2017 has increased by 176ha.	Increasing
	Native vegetation cover	Victorian Land Cover Time Series (DELWP 2020)	Area of native vegetation remains high with over 85% of the local area retaining native vegetation cover (native forests cover 83% of the area).	Stable
 Land	Land cover	Australian National University's Centre for Water and Landscape Dynamics (2021)	Less than 1 % of the land in this local area has exposed soil.	Increasing
	Land use	Australian National University's Centre for Water and Landscape Dynamics (2021)	Production forestry is the dominant land use, with around 12% of the land cleared for agricultural production, dominated by grazing.	Stable
 Community	Landcare group health score	Landcare Group Health Survey (2015–2020)	Landcare membership and participation has increased in the past five years peaking in 2018/19, with group health rating score remaining stable	Stable
	Population	Australian Bureau of Statistics (2020)	The area includes Bairnsdale, with a population of 15,500 people. The area also includes smaller surrounding communities including Wy Yung, Lindenow, Glenaladale, Bruthen, Dargo, and Ensay.	

Major threats and drivers of change

The following high or very high threats to this local area have been identified through regional Biodiversity Response Planning (Tambo Foothills, Mitchell Foothills) and stakeholder workshops.

Natural resource extraction

Legal and illegal natural resource extraction can destroy habitat (e.g. grazing, timber harvesting, track creation, illegal firewood collection) or directly affect species populations (e.g. hunting, fishing).

Weed invasion

Weeds displace native species, alter vegetation structure and impact fire regimes. Over abundant native species displace existing flora.

Predation

Declines in populations and abundance of native species due to fox and cat predation. Introduced predators can act as disease and weed vectors.

Grazing

Threats to vegetation communities including threatened species from introduced grazers in particular rabbits and deer.

Fire

Increased fire frequency and intensity impacting terrestrial and aquatic habitats.

Vision and outcomes

Vision

The resilience of natural assets, agriculture and communities in Forested Foothills Local Area are increased and ecosystem services are maintained in the face of climate change and other stressors.

Outcomes


By 2040, the long-term objectives for the Forested Foothills are to:

- protect and enhance the condition of unique vegetation communities that support native animals and cultural values, in areas including the Mitchell River National Park, Colquhoun and Mount Elizabeth State Forests, and rainforest gullies
- reduce threats and improve habitat to maintain population of key animal species, including owls, gliders and glossy black-cockatoos
- integrated fire management across the Forested Foothills, communities and partners agencies working together to manage the landscape to protect communities, built assets and the environment
- promote sustainable land management practices, particularly relating to soil and groundcover management, that support higher productivity and protection of the environment
- maintain and improve the condition of significant waterways and tributaries of the Mitchell, Nicholson and Tambo rivers
- promote awareness of, and participation by, communities and land managers in the management of fire, land health, vegetation protection and improving waterway health; also recognise, develop and utilise Traditional Owner knowledge of the cultural landscape.


This will be achieved by focussing on the following themes:

- 1 Biodiversity – protecting unique vegetation communities
- 2 Water – protecting waterway health in the Mitchell, Nicholson and Tambo catchments
- 3 Land – increased resilience and production in agricultural land
- 4 Community – supporting community and landholder participation, and embracing Traditional Owner knowledge.


Water - Improving the condition of the Mitchell, Nicholson and Tambo Rivers.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Mitchell, Nicholson and Tambo rivers are free of willows.</p> <p>Some sections of waterway have continuous native vegetation riparian corridors with stock excluded.</p>	<p>95% of priority waterways are maintained as free of willows, and ongoing surveillance is undertaken for new and emerging riparian weeds in remote tributaries.</p> <p>75% of priority reaches in the Nicholson, Tambo and Mitchell Rivers have continuous native vegetation riparian corridors with stock excluded.</p>	<p>Rivers and tributaries are maintained as free of willows and no new and emerging weeds are established.</p> <p>All reaches of the Nicholson, Tambo and Mitchell Rivers have continuous native vegetation riparian corridors with stock excluded.</p>


Biodiversity - Working with land managers across the region to address pest plants and animals.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Pest plant and animals threaten unique vegetation communities.</p> <p>Pest animals such as deer, together with transforming weeds impact on native vegetation.</p> <p>Following landscape scale bushfires, these are key priorities moving forward.</p>	<p>Impacts are reduced on unique vegetation communities and native animals are protected through ongoing integrated through weed control, large herbivore control, and habitat improvement.</p>	<p>Unique vegetation communities are maintained.</p> <p>Maintenance and targeted improvement of the condition, security, diversity and integrity of natural ecosystems and the status of threatened species.</p> <p>Fire regimes are suitably managed.</p>

Land - Protecting agricultural land, productivity and soil health.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Emerging focus on sustainable practices, particularly relating to soil and groundcover management. The focus is shifting from recovery following drought to increasing resilience to climate change and other stressors.</p>	<p>Continue to work with landholders to improve farm management practices.</p> <p>Effective management of groundcover to conserve soils for the benefit of both agriculture and the natural environment.</p> <p>Landholders will use systems and techniques to deliver long term outcomes for both farming and the environment, making the whole system more resilient to on-going threats (e.g. invasive weeds, pest animals) and to climate change.</p>	<p>Targeted improvement of the productive values and stability of the Dargo Mountain Basin and Tambo Valley agricultural land and soils.</p>

Community - Working together on land and waterway management.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Community is involved in discussions and decisions with land managers and partner agencies in the management of fire, land health, vegetation protection and improving waterway health.</p>	<p>Community and Landcare Groups are collaboratively working with land managers and other partner agencies to be involved in fire and environmental management.</p>	<p>Community, partner agencies and land managers working seamlessly together to achieve environmental outcomes.</p> <p>Landcare are integral to the collaborative approach with land managers and partner agencies.</p>


Phases of implementation

Target Setting

- Develop a staged and coordinated program for works and activities in line with the East Gippsland Waterway Strategy, East Gippsland Rural Land Use Strategy, the Trust for Nature Statewide Conservation Plan, the Gunaikurnai and Victorian Government Joint Management Plan, and the Biodiversity Response Planning process (Tambo Foothills and Mitchell Foothills Landscapes).
- Support the development of the Central and Gippsland Sustainable Water Strategy, including supporting GLaWAC in the use and delivery of cultural flows on the Mitchell River, and permits and approvals for the partial removal of the Nicholson Dam wall.
- Management plans developed to maintain the condition of the unique environments and cultural values.
- Identify recreational opportunities in the forested foothills (4WD, Hiking, Canoeing, etc.).
- Continue to develop best practice guides and initiatives to support farmers.
- Integrated future fire management planning.

Taking Action

- Drawing on spatial decision-support tools such as Strategic Management Prospects, implement in priority areas consistent with the Biodiversity Response Planning process (for relevant Landscapes):
 - sustained weed control, integrated predator control, large herbivore control (Tambo Foothills and Mitchell Foothills Landscapes).
 - permanent protection on private land (Tambo Foothills Landscape – particularly for White Box Woodland).
- Continue to work with Traditional Owners to understand and share knowledge to protect and enhance Country and cultural sites of significance.
- Provide support to Traditional Owners to realise the goals of the Joint Management Plans, including enabling self-determination in priority setting, project involvement and project delivery.
- Continue to work with landholders to improve soil health and ground cover through education, trials and initiatives.
- Implement actions of the East Gippsland Waterway Strategy to protect waterways via stock exclusion fencing and riparian area works in partnership with landholders, and a focus on control of woody weeds along waterways.
- Identify and action conservation covenants as detailed in the Trust for Nature (2013) Statewide Conservation Plan for Private Land in Victoria.
- Partial removal of the Nicholson Dam wall.
- Improve the condition of environmental recreational assets and infrastructure.
- Support farmers with demonstration trials, knowledge sharing days and initiatives.



Management plans developed to maintain the condition of the unique environments and cultural values.

Recovery and Growth

- Continue to maintain waterways and control woody weeds.
- Maintain the condition of assets and infrastructure to support environmental recreation.
- Continue to undertake surveillance and control (as required) on pest plants and animals.
- Continue to support farmers with best practice works and programs.

Target Achieved

- Soil health improved and erosion reduced.
- Variety of environmental recreation opportunities with well-maintained assets.
- Woody weeds along waterways are controlled.
- Flows into the Gippsland Lakes are unimpeded.



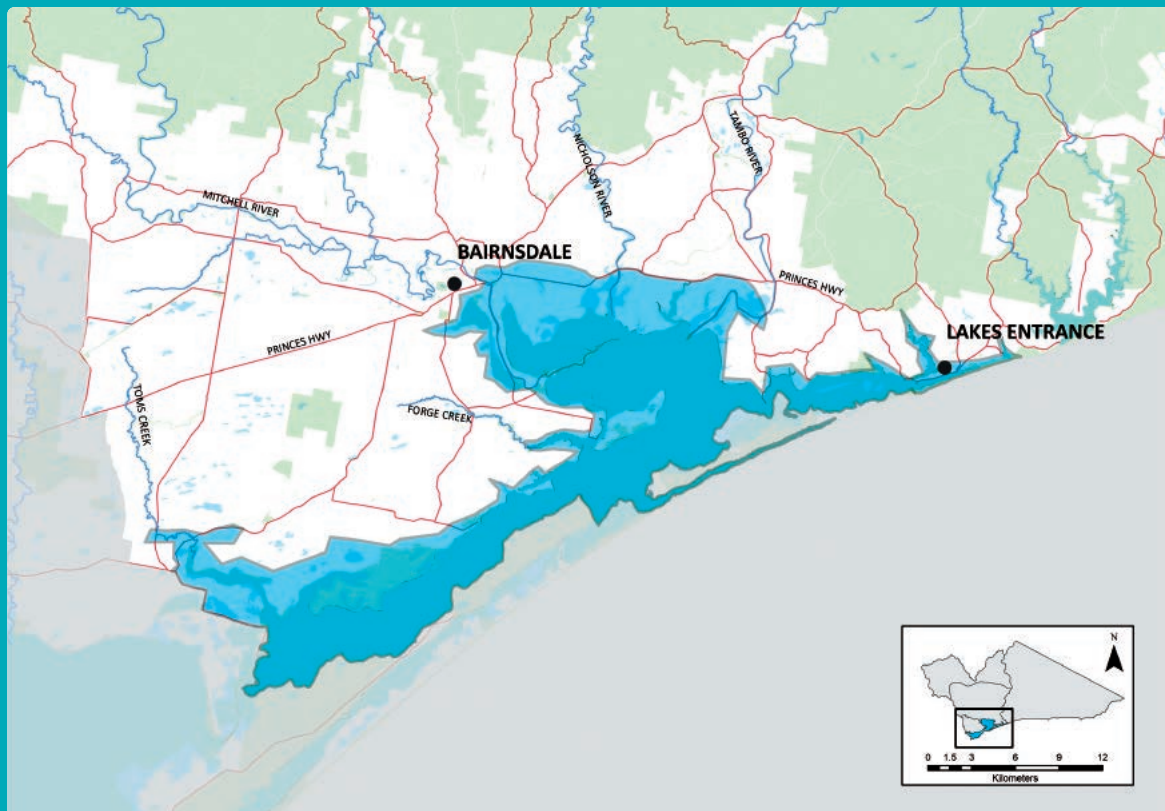
Maintain the condition of assets and infrastructure to support environmental recreation.

Gippsland Lakes

Overview

The Gippsland Lakes form a large estuarine system, which extends between Sale in the west and Lakes Entrance in the east. The lake system is listed under the Ramsar Convention as a wetland of international importance. The lakes support substantial numbers of waterbirds, often during critical life stages and through drought. They also support a range of threatened flora and fauna and are an important site for fish populations. The lakes neighbour the urban centres of Bairnsdale, Lakes Entrance and Paynesville and are highly valued for recreational pursuits such as boating and fishing that help support the economy of the Gippsland region.

Only a portion of the Gippsland Lakes lies within the East Gippsland CMA region. This equates largely to Lakes Victoria, and King (including Jones Bay) and associated fringing wetland areas, including the freshwater wetland of MacLeod Morass. While East Gippsland CMA will continue to work collaboratively with West Gippsland CMA to manage the Gippsland Lakes, this local area paper is focussed on the portion of the Gippsland Lakes that is within the East Gippsland CMA region.







Current condition

Recent assessments have indicated that the Gippsland Lakes and adjoining areas are generally in fair to good condition (Table 1). The site remains recognised as a Wetland of International Importance under the Ramsar Convention, and the values leading to that listing (coastal saltmarsh, waterbirds, native fish) all continue to be maintained by the site.

The main lakes and the fringing wetlands are a system in transition that has been occurring for over 100 years. The arrival of Europeans has seen changes in land use in the catchment and the establishment of towns and urban development around the Lakes. Into the future change is likely to increase with an increasing population and climate change predicted to alter the system further. The Gippsland Lakes will continue to adapt to the changing conditions, and, with efforts, key values can be maintained, and new values are likely to emerge.

Table 1 | Condition and trend of the Gippsland Lakes.

Theme	Indicator	Data Source	Condition	Trend
 Water	Water resource use	Australian Bureau of Meteorology (2021)	Surface and groundwater extraction is relatively low and connectivity between the rivers, lakes and the sea remain relatively unimpeded.	Stable
	Freshwater wetland habitat	Gippsland Lakes Environment Report (EGCMA, 2021)	A habitat mosaic of open water, emergent reed beds and paperbark is being maintained at Macleod Morass, one of the few freshwater wetlands in the region.	Unknown
 Coast and Marine	Water quality	Gippsland Lakes Environment Report (EGCMA, 2021)	Water quality is highly variable over short time scales, but largely stable in Lakes Victoria and King over longer time periods. In years of high rainfall, large loads of nutrients can enter the Lakes resulting in algal blooms, which may temporarily impact on values. While there is some evidence of increasing in salinity in the west of the Gippsland Lakes, water quality in Lakes King and Victoria is fair to good.	Stable
	Estuary condition	Index of Estuary Condition (DELWP 2021)	The estuaries of the Mitchell, Tambo and Nicholson Rivers are in good to moderate condition.	Unknown
	Vegetation extent and condition	Gippsland Lakes Environment Report (EGCMA, 2021)	Seagrass and saltmarsh extent and condition is being maintained.	Stable
 Biodiversity	Fish diversity and abundance	Victorian Fisheries Authority 2019 assessment; Gippsland Lakes Environment Report (EGCMA, 2021)	The lakes support over 100 species of native fish including freshwater, estuarine and marine opportunist species. While there have been declines in some commercial fish species such as black bream, other species such as silver trevally are considered stable.	Potentially declining
	Key species	Gippsland Lakes Environment Report (EGCMA, 2021)	Waterbird abundance and diversity is considered indicative of good condition, with > 20,000 waterbirds supported annually and over 90 species detected in the past five years.	Stable
			There have been impacts to populations of Burrunan dolphins in 2021, which now can be considered in fair condition.	Unknown
			The Gippsland Lakes support at least 96 threatened species, three of which have > 50% of their Victorian range in this local area.	Unknown
 Community	Landcare group health score	Landcare Group Health Survey (2015–2020)	Participation in Landcare activities has continued around the Gippsland Lakes with the group health score remaining moderately high.	Stable
	Population	Australian Bureau of Statistics (2020)	Around 70% of the population of the East Gippsland region lives around the Gippsland Lakes and these areas contain the fastest growing populations in East Gippsland. In In Paynesville, for example, there has been a 50% increase in population since 2001.	Increasing



Major threats and drivers of change

The following major threats to the Gippsland Lakes are identified in the Gippsland Lakes Ramsar Site Management Plan and stakeholder workshops.

Nutrient and sediment inflows

Increased nutrient and sediment loads from the catchment have been identified as significant drivers of water quality decline in the Lakes, leading to algal blooms and impacts to ecological, economic and social values. Riverine nutrient loads are generally the greatest source of nutrients to the system. Events such as bushfires in the catchment, result in the mobilisation of large amounts of sediment and nutrients into the system. Increased algal blooms and sediments can directly impact seagrass extent, which in turn results in reduced habitat for native fish and birds. Algal blooms also have a direct impact on recreation and tourism in the system.

Pest plants and animals


There are broad range of pest plants and animals that are impacting the habitats and communities of the Gippsland Lakes. Introduced predators such as foxes and cats have a direct impact on waterbirds, including shorebirds and beach nesting species such as the threatened little tern and fairy tern. Large herbivores, particularly deer and grazing stock are common in the fringing wetlands and can cause significant damage to wetland vegetation communities. Other herbivores such as rabbits and goats have caused localised damage to wetland habitats and introduced marine pests represent a risk to sensitive aquatic ecosystems, particularly in Lake King.

Climate change

The climate has already changed and is continuing to change at an accelerated rate. Increased temperatures, decreased rainfall and rising sea levels are having a profound effect on the Gippsland Lakes. Increasing salinity, increased inundation of intertidal communities and potential salinisation of freshwater wetlands are all serious risks to the values of the Gippsland Lakes. There are also predictions of increased fire and flood events, which could lead to more frequent inflows of nutrients and sediments to the system, further impacting aquatic communities.

Recreation

The Gippsland Lakes support significant recreational activities including boating, fishing and camping. Recreational pressure is growing as populations in Victoria and beyond grow and increased tourists visit the Gippsland Lakes. Vehicle damage to saltmarsh from four-wheel drives and trail bikes has been reported for areas around Jones Bay. Saltmarsh is slow to recover from damage, which not only impacts this EPBC listed threatened ecological community, but also the biota such as shorebirds which rely on this important foraging habitat. Disturbance by humans, domestic dogs and recreation activities represent a significant risk to shorebirds, which need to spend a large portion of their time building up reserves to make the long journey back to the northern hemisphere. Studies have shown that disturbance when roosting or feeding may result in a significant loss of energy and compromise their survival. In addition, many beach nesting birds are susceptible to inadvertent destruction of eggs, or nest abandonment by recreational activities. The popularity of the lakes for boating can impact on habitats such as seagrass communities which can be damaged from moorings, and Burrunan dolphins, which alter their behaviour to avoid busy boating areas.



A vision to maintain, and where necessary improve, the ecological character of the Gippsland Lakes Ramsar Site and promote wise use.

Decreased freshwater inflows

Approximately 20% of the total average freshwater inflow to the Gippsland Lakes is extracted for a number of consumptive purposes. While, the majority of extraction occurs from the Western Rivers, there are extractions from the Mitchell and Tambo Rivers that decrease end of system flows into the eastern portion of the Gippsland Lakes. It is likely that increased extraction from the western rivers could influence future salinity regimes in Lakes King and Victoria. Many of the values of the eastern Lakes such as estuarine fish (e.g. black bream), Burrunan dolphin and seagrass are dependent on maintained salinity regimes.

Vision and outcomes

Vision

To maintain, and where necessary improve, the ecological character of the Gippsland Lakes Ramsar Site and promote wise use.

Outcomes

By 2040, the long term objectives for the Gippsland Lakes are to:

- implement integrated programs of work to maintain or improve the ecological health of the Gippsland Lakes focussing on fostering cooperation and coordination between agencies and organisations, and maximising outcomes through leveraging investments


- further develop and enhance the capacity of Traditional Owners to manage country, including increased opportunities to coordinate and lead natural resource management programs
- protect and enhance freshwater habitat, focussing on critical habitat types for freshwater dependant species
- assist in the adaptation of vulnerable landscapes to the impacts of climate change
- maintain condition, and improve the extent, of fringing habitats including variably saline wetlands and saltmarsh
- maintain and better understand aquatic vegetation communities and species critical to the ecological character of the Gippsland Lakes.

This will be achieved by focussing on the following themes:


- 1 Coasts and Marine – improving vegetation in fringing wetlands and shorelines of Lakes King and Victoria
- 2 Water – managing salinity, nutrients and sediments
- 3 Biodiversity – improving aquatic habitats and ecosystems, including freshwater wetlands
- 4 Community – promoting awareness of, and participation by, communities in the management of the lakes.

Progress under each of these themes will be achieved by working with local communities and Traditional Owners to build awareness and understanding of the overall system, and by working together to manage the lakes. There is also a focus on coordination and cooperation between the many agencies and organisations with an interest in the lakes. This coordination and cooperation aims to maximise outcomes through leveraging investments.


Water - Managing salinity, nutrients and sediments.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Loads of nutrients entering the system are largely a result of western river inflows, although the Mitchell River (and to a lesser extent, the Nicholson/Tambo, contribute loads of nitrogen, phosphorus, and sediment to Lake King. Algal blooms are a current feature of the system.</p> <p>MacLeod Morass is the only significant, public freshwater wetland in the system. The salinity and nutrient regimes of this system remain a knowledge gap.</p>	<p>Works have been completed in 30% of priority reaches and sub-catchments to reduce sediment input to waterways flowing to the Gippsland Lakes.</p> <p>A reduction in the number of years in which blue-green algal blooms occur in the lakes to less than five over the 20 years (2007–2027).</p> <p>Water regimes in MacLeod Morass are managed to maintain freshwater conditions in the upper Morass as indicated by annual average EC of < 500 uS/cm.</p>	<p>Extent and condition (density) of seagrass is maintained.</p> <p>Macleod Morass is maintained as a freshwater wetland.</p>


Coast and Marine - Improving the fringing wetlands and shorelines of Jones Bay and Lake King.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>The shorelines of Lakes Victoria and King (including Jones Bay) support a mosaic of saltmarsh, emergent reeds (e.g. common reed) and swamp scrub (paperbark). Condition assessments of saltmarsh in 2019 indicated 24% of sites in poor condition, 40% in fair condition and 36% in good condition. Recreational vehicles, domestic stock and large herbivores have been identified as significant threats.</p>	<p>Control of domestic stock and recreational vehicle access is in place across 25% of priority saltmarsh areas.</p> <p>Increased areas of permanent protection in saltmarsh communities.</p>	<p>The extent of saltmarsh and swamp scrub communities is maintained, and condition of poor and fair saltmarsh communities is improved.</p>

Biodiversity - Improving aquatic habitats and ecosystems.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>The freshwater, estuarine and coastal lagoon habitats of the Gippsland Lakes support a diversity of flora and fauna. This includes several threatened species such as EPBC listed waterbirds and, EPBC listed green and golden bell frog and the Victorian listed Burrunan dolphin. While the status of threatened waterbird and frog populations remain a knowledge gap, there is some evidence that there have been recent impacts to Burrunan dolphin populations.</p> <p>Pest plants and animals together with increased recreation have been identified as key threats to the fauna of the Gippsland Lakes.</p>	<p>Sustained predator control has been implemented in 60% of known priority waterbird foraging and breeding sites.</p> <p>Control of large herbivores in 30% priority wetlands where impacts have been observed and measured.</p> <p>No new sustained marine pest infestations in the Gippsland Lakes have occurred.</p> <p>The drivers of Burrunan dolphin population dynamics will be well understood.</p>	<p>Diversity and abundance of waterbirds are maintained at priority locations around the Lakes.</p> <p>Diversity of fish is maintained in Lakes Victoria and King.</p> <p>Populations of Burrunan dolphins are stable.</p>

Community - Promoting awareness of, and participation in, management of the lakes.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>The broader community are currently informed and engaged through the Love Our Lakes platform including a dedicated website, social media profiles and targeted traditional media and events.</p> <p>Community groups are able to participate in the management and improvement of the lakes environment through volunteer and community grants programs.</p>	<p>Gippsland Lakes communities will continue to have a single point of reference of the most up to date condition and on ground program delivery information for the Gippsland Lakes.</p> <p>Local community driven groups will be focused on achieving the long-term objectives for the lakes and maximising opportunities to align and collaborate with Traditional Owners, and land and waterway managers.</p> <p>Regular opportunities to implement community priority project will be provided.</p>	<p>Gippsland Lakes communities are well informed about the condition and threats to the biodiversity and habitats of the lakes.</p> <p>Community priorities are well integrated into the broader implementation of programs of works to improve the health of the Gippsland Lakes.</p> <p>Active citizen science programs will help inform the long-term monitoring of ecological condition of the Gippsland Lakes.</p> <p>On-ground projects continue to be delivered in priority areas across the lakes.</p>

Phases of implementation

Target Setting

- Develop a staged program for works and activities in line with Gippsland Lakes Priorities Plan, Gippsland Lakes Ramsar Site Management Plan, East Gippsland Waterway Strategy, Biodiversity Response Planning process (Gippsland Lakes Focus Landscape), the Gunaikurnai and Victorian Government Joint Management Plan, the Trust for Nature Statewide Conservation Plan, and the Gippsland Plains and Strzelecki Ranges Conservation Action Plan.
- Build understanding of Traditional Owner knowledge and how to incorporate this into management and maintenance of the lakes.
- Further develop and broaden the education and awareness campaign around the lakes.
- Carry out priority investigations, for example:
 - climate change impacts
 - ecological impacts of algal bloom
 - effects of altered salinity on the Burrnunan dolphin.

Taking Action

- Continue to implement the strategies of the Gippsland Lakes Ramsar Site Management Plan (including an update to the RSMP in 2023).
- Drawing on spatial decision-support tools such as Strategic Management Prospects, implement in priority areas consistent with the Biodiversity Response Planning process (for relevant Landscapes):
 - sustained weed control, integrated predator control, large herbivore control, and revegetation (Gippsland Lakes Focus Landscape).
 - permanent protection on private land (Gippsland Lakes Focus Landscape – particularly for Coastal Saltmarsh, riparian and wetland areas).
- Control domestic stock and recreational vehicle access in saltmarsh communities around the lakes.
- Work with Agriculture Victoria, DELWP, Parks Victoria and other partners to prioritise and manage invasive marine pests in Lake King.
- Identify and action conservation covenants as detailed in the Trust for Nature (2013) Statewide Conservation Plan for Private Land in Victoria.

- Continue to work with Traditional Owners to understand and share knowledge to protect and enhance Country and cultural sites of significance.
- Support activities for improving integrated water management as specified in the East Gippsland Integrated Water Management Strategic Directions Statement.
- Providing support to Traditional Owners to realise the goals of the Joint Management Plans, including enabling self-determination in priority setting, project involvement and project delivery more broadly across the Gippsland Lakes.
- Participate in adaptation planning and emergency management activities related to bushfire and flood impacts on the Gippsland Lakes environment.

Recovery and Growth

- Monitor and manage threats from invasive plants and predators.
- Continue to work with public and private land managers to maintain past work sites.
- Monitor flora and fauna populations, including threatened species.
- Monitor and maintain works following flood or fire.

Target Achieved

- Maintain support for public and private land managers (e.g. expert advice, access to grants for enhancement works).
- Maintain the ecological condition from recent investment, such as weed control to support natural processes.
- Conduct systematic monitoring of key factors for maintaining site health e.g. water quality (nutrients and sediments), waterbird numbers, fish and marine mammal numbers and invasive species.
- Evaluate project achievements against aims and objectives.

Protecting the best - Far East Gippsland

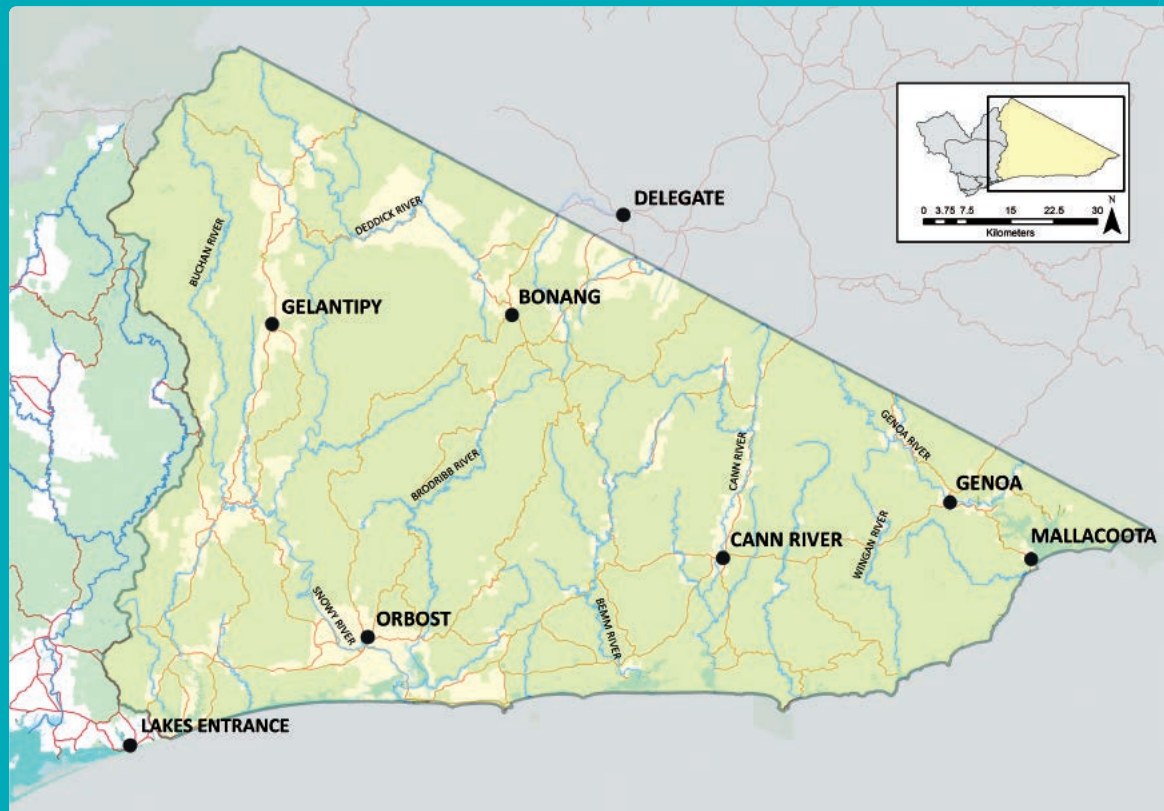
Overview

The Protecting the Best – Far East Gippsland Local Area is focused on maintaining the condition of the relatively undisturbed landscape in East Gippsland. It features large tracts of continuous native vegetation communities and ecosystems of high quality, particularly rivers and streams. The majority of the area is public land, including the internationally listed UNESCO Croajingolong Biosphere Reserve, and other significant areas such as the Croajingolong, Coopracambra, Errinundra, Snowy River and Alpine National Parks.

Several areas of cleared land punctuate the landscape. These areas are used mostly for agricultural production. Most are located in river valleys such as Orbost, Cann and Genoa rivers. Isolated cleared areas in the uplands including Gelantipy and Amboyne are mostly used for grazing.

Five waterways are recognised as Victorian ‘heritage rivers’, with the Snowy and Bemm rivers being recognised in their entirety. High value streams are a feature of the area, with many waterways having largely unmodified catchments. A number of streams cross the Victoria–New South Wales border, with the Snowy and Genoa rivers having the majority of their catchments in New South Wales.





This local area includes a long stretch of coastline with numerous estuaries and unique marine values. There are three significant marine protected areas: Point Hicks Marine National Park, Cape Howe Marine National Park and Beware Reef Marine Sanctuary, which support significant marine biodiversity.



Current condition

Available data indicate that the Protecting the Best- Far East Gippsland Local Area is in very good condition (Table 1). In 2019–20, however, bushfires affected over 80% of this local area, burning a large proportion of the native vegetation and killing or displacing large numbers of animals. The full extent of the impact and recovery from this event is not yet fully understood. A range of bushfire recovery programs have been implemented following the fires experienced in this Local Area.

Table 1 | Condition and trend of Protecting the Best – Far East Gippsland Local Area.

Theme	Indicator	Data Source	Condition	Trend
 Water	Waterway condition	Index of Stream Condition (DELWP 2011)	<p>The 2011 Index of Stream condition considered that 96% of the rivers Far East Gippsland and 70% of rivers in the Snowy catchment were in good to excellent condition.</p> <p>The rivers of this local area are largely unmodified and have few barriers to connectivity, providing for the movement of biota from headwater streams to estuaries and the sea.</p>	Stable
 Coast and Marine	Estuary condition	Index of Estuary Condition (DELWP 2021)	The majority of the estuaries in the local area including Tamboon Mallacoota, Sydenham and Wingan Inlets are in good to excellent condition.	Unknown
	Land cover	Victorian Land Cover Time Series (DELWP 2020)	Saltmarsh extent is being maintained.	Stable
 Biodiversity	Land cover	Victorian Land Cover Time Series (DELWP 2020)	Around 94% of the extent of native vegetation in this local area has been maintained with over one million hectares of native forest and woodland.	Potentially declining
	Strategic Biodiversity Value	NatureKit (DELWP 2021)	The local area has a median strategic biodiversity value of 74. The strategic biodiversity value is a combined score from 0 (low value) to 100 (high value) that takes into account habitat and condition. Many of the regions of East Gippsland have high strategic biodiversity value reflecting the high cover of native vegetation and the habitat values this provides.	Potentially declining
	Threatened Species	Biodiversity Response Planning process (DELWP 2021), Atlas of Living Australia (2021), Victorian Biodiversity Atlas (2021)	The Biodiversity Response Planning process has identified six focus priority landscape in this local area, which support over 150 threatened species, with at least 78 species having more than 50% of their Victorian range in the area.	
	Area of permanent protection	Trust for Nature (2022)	The area of permanent protect in the Local Area has increased by 191 ha since 2017.	Increasing
 Community	Landcare group health score	Landcare Group Health Survey (2015–2020)	Participation in Landcare activities has increased dramatically over the past five years, with group health scores moderately good.	Stable
	Population	Australian Bureau of Statistics (2020)	The population in this local area is small, estimated at less than 6500 people in 2020 and is declining.	Declining

Major threats and drivers of change

The high proportion of public land and retention of much of the native vegetation and habitats of the region, coupled with a relatively sparse population, means that the Protecting the Best- Far East Gippsland Local Area is subject to lower levels of threat from changed land use than elsewhere in Victoria and the East Gippsland Region. Over much of the local area threats to biodiversity arise from climate change, pest plants and animals.

Climate change

Increase in temperatures coupled with decreased rainfall have led to an increase in the risk of severe bushfire events. This occurred in 2019–20, where extensive areas of native vegetation was destroyed by extensive bushfires, resulting in direct death of flora and fauna and loss and alteration of habitat. Over one million hectares, (56% of the East Gippsland region) was burnt.

Pest plants and animals

Despite retaining a high cover of native vegetation, East Gippsland is a high priority area for pest & weed control due to its significant biodiversity value. Horses remain a significant threat in alpine areas. Damage to vegetation communities (including threatened communities and species) is a common impact through overgrazing and bark chewing in medium to high-density horse areas and trampling leads to erosion and water quality impacts to fragile ecosystems such as wetlands and peatlands. Pigs are a significant threat being managed in the Upper Snowy and Snowy River corridor to prevent further incursions from NSW populations into more vulnerable areas to the south. Deer are a significant threat across all landscapes in the region causing damage to vegetation communities, threatened flora species and resulting in loss and degradation of habitat for native fauna. Introduced predators such as foxes and cats remain a threat to wildlife including birds, frogs, reptiles and native mammals. In the marine parks, urchin barrens, caused by an increase in invasive, native species are having an impact on biodiversity values and visitor amenity.

Vision and outcomes

Vision

The unique and connected landscapes of the Protecting the Best – Far East Gippsland Local Area with its extraordinary diversity of plants and animals, rare alpine ecosystems, vast forested environments, and wild coastal places are valued and protected. The outstanding values of the marine environments and the diversity of plants and animals of the area are enjoyed and respected by the supported and resilient communities of the area.

Outcomes


By 2040, the long-term objectives for the Protecting the Best – Far East Gippsland Local Area area are to:

- implement integrated programs of work to maintain or improve the condition of the high value alpine, forest and coastal environments of Far East Gippsland through ongoing cooperation and coordination between agencies and organisations
- maintaining the health of waterways in Far East Gippsland, particularly heritage and other priority rivers
- monitor and manage invasive species, including early detection and response where required.
- promoting awareness of, and participation by, communities in the management of invasive plants; and animals.


This will be achieved by focussing on the following themes:

- 1 Coasts and marine – managing estuary openings and protecting the biodiversity of marine national parks
- 2 Water – protecting and restoring waterways and riparian zones
- 3 Biodiversity – working with land managers across the region to address established and emerging invasive species and a focus on recovery from and resilience to bushfires
- 4 Land – reducing erosion following bushfires and supporting communities to implement best practice soil management, including maintaining appropriate ground cover across agricultural land
- 5 Community – partnering with Traditional Owners to maintain the health of Far East Gippsland’s landscapes and supporting community groups to become involved in natural resource management.


Water - Protecting and restoring waterways and riparian zones.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Domestic stock impacts on riparian corridors may be low compared to other locations in the State, but have been identified as a risk in some locations (e.g. Brodribb-Bemm Foothills, Genoa, Buchan and Lower Snowy). In addition, the Snowy River has over 90% of the natural flows extracted, resulting in impacts to river processes and biota.</p>	<p>Species control on rivers leads to reduced cover of willow, with priority rivers maintained as free of willows.</p> <p>Livestock are excluded from grazing on 75% of waterway frontages in cleared sections of priority reaches.</p> <p>Extent, structure and diversity of vegetation on riparian corridors improved within cleared sections of selected priority reaches leading to improvements in in-stream habitat and bank stability.</p> <p>Improved understanding of the risks to the condition of priority waterways.</p>	<p>The condition of riparian vegetation is improved in priority cleared waterways, providing habitat for native animals, and improving resistance and resilience, reducing risk of instability (Snowy River and rivers of the far east).</p> <p>The condition of forested priority waterways and remote coastal wetlands is maintained.</p>


Water - Protecting and maintaining native fish populations.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Although the waterways of the local area are largely in good condition and barriers to connectivity are low, brown trout have been identified as a potential threat in some headwater streams and the effects of recent bushfires on water quality and habitat is of concern. The risk is highest in streams that support threatened galaxias species including McDowall's galaxias, East Gippsland galaxias and Cann galaxias.</p>	<p>Suitable habitat is maintained in priority locations for small threatened native fish species by 2027.</p>	<p>Populations of the following small native threatened fish species are stable: McDowall's galaxias, East Gippsland galaxias and Cann galaxias.</p> <p>Fish populations can move freely within the river systems of far East Gippsland critical times of year.</p>


Coast and Marine - Managing estuary openings.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Ideally estuaries are allowed to open and close naturally. There are times, however, when flooding impacts would cause long term impacts to adjoining land and infrastructure and active estuary management is required.</p>	<p>The artificial entrance openings in the local area have been completed in line with a regionally agreed approach that appropriately considers environmental, cultural, economic and social outcomes.</p> <p>The condition of Lake Tyers, Sydenham Inlet and Mallacoota Inlet is maintained as good or better, and improvement is observed in the influence of river flows on the Snowy River Estuary entrance.</p>	<p>The overall condition of estuaries is good or better for 90% of estuaries in the local area.</p>


Coast and Marine - Protecting biodiversity in marine national parks.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>There are three marine parks within this local area (Point Hicks Marine National Park, Cape Howe Marine National Park and Beware Reef Marine Sanctuary). The biodiversity values at each of these parks is high and they attract many tourists to the region. Sea urchins are native marine animals, but under certain circumstances, they can experience a population growth resulting in urchin barrens that are devoid of macroalgae. Control programs at Beware Reef Marine Sanctuary have managed the invasive species, but similar works are required at Cape Howe and Point Hicks.</p>	<p>Sustainable sea urchin populations are maintained in all three marine parks.</p>	<p>Understory species (kelp and other marine macroalgae) have been restored and sea urchin barrens are no longer visible features of the marine parks.</p>


Biodiversity - Work with land managers across the region to address established and emerging invasive species.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Invasive plant and animal management in the Protecting the Best – Far East Gippsland area is currently focused on the profile of high value areas (e.g. the Southern Ark project area and heritage and other priority rivers). It is effective in those areas where there is consistent effort, but the approaches could be better coordinated across the region.</p>	<p>Integrated large herbivore control (deer, horses, pigs) is implemented in priority locations to protect and maintain important biodiversity values.</p> <p>Predator (fox and cat) control is completed in priority refuge habitats.</p> <p>Control of transforming weeds in priority vegetation types and high value waterways, supported by the Far East Eden Strategy and priorities identified in the Biodiversity Response Planning process.</p>	<p>Populations of threatened species and ecological communities are maintained.</p>


Biodiversity - Recovery from and resilience to bushfires.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>The 2019/20 bushfires impacted a large proportion of the Protecting the Best – Far East Gippsland Local Area. The full extent of the impact of past fires is not yet understood and recovery trajectories remain unknown. Climate change projections are for increased severity and frequency of fires and resilient landscapes are crucial to the survival of the unique biodiversity of this local area.</p>	<p>Actions to address threats acting on priority unburnt habitat are implemented to maintain key values are protected and maintained.</p> <p>Regeneration in littoral rainforest and coastal vine thicket communities has progressed, including the management of deer to assist in recovery.</p> <p>Monitoring and reconnaissance of priority species and habitats in fire affected areas is complete.</p>	<p>The recovery trajectory of East Gippsland forests is well understood and being observed across the local area.</p> <p>There will be no loss of threatened species from the local area.</p>

Land - Reducing erosion following bushfires.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>The 2019/20 bushfires impacted a large proportion of the Protecting the Best – Far East Gippsland Local Area. While much of the land affected was public and supported natural values, there were impacts to productive agricultural lands as well particularly in the Snowy and Buchan Valleys.</p>	<p>Best practice soil management, including maintaining appropriate ground cover is implemented at 60 % of priority sites across the agricultural landscape.</p>	<p>Targeted improvement of the productive values and stability of the Snowy Mountain Basin and Buchan Valley agricultural land and soils.</p>

Community - Partnering with Traditional Owners to maintain the health of East Gippsland's landscapes.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>The relationships with Aboriginal groups are developing and there have been examples where government agencies have worked with Moogji Aboriginal Council to deliver on-ground works.</p>	<p>Constructive working relationships are built between all Traditional Owner groups within the local area with land and waterway managers and community groups.</p> <p>Mechanisms are in place supporting the involvement of Traditional owners in natural resource management across the local area, including the incorporation of traditional ecological knowledge into management practice.</p>	<p>There are many sites across East Gippsland where the Traditional Owners work in close partnership with government agencies, jointly planning and managing invasive pests at these locations. This protects both the cultural and natural heritage of the area.</p>

Phases of implementation

Target Setting

- Develop a staged and coordinated program for works and activities in line with East Gippsland Waterway Strategy, the Biodiversity Response Planning process (Cobberas Nunniong, Upper Snowy, Brodribb Bemm foothills, Lake Tyers Corringale, Coopracambra and Far East Coast Focus Landscapes), the Trust for Nature Statewide Conservation Plan, Victoria's Bushfire Biodiversity Response and Recovery Program, East Gippsland Rural Land Use Strategy, the East Gippsland Conservation Action Plan, and Marine National Parks management plans.
- Build partnerships with Traditional Owners incorporating their knowledge and interests into planning for management and maintenance of the area.
- Carry out priority investigations, for example:
 - bushfire recovery trajectories for priority habitats
 - emerging invasive species threats
 - options to contain established pests
 - priority areas for addressing established pests (e.g. Southern Ark model)
 - options for a region-wide monitoring system.

Taking Action

- Continue to implement the East Gippsland Waterway Strategy.
- Drawing on spatial decision-support tools such as Strategic Management Prospects, implement in priority areas consistent with the Biodiversity Response Planning process (for relevant Focus Landscapes):
 - revegetation (Lake Tyers Corringale; and Coopracambra Focus Landscapes)
 - sustained weed control and large herbivore control (Cobberas Nunniong; Upper Snowy; Brodribb Bemm Foothills; Lake Tyers Corringale; Coopracambra; and Far East Coast Focus Landscapes)
 - sustained integrated predator control (Upper Snowy; Brodribb Bemm Foothills; Lake Tyers Corringale; Coopracambra; and Far East Coast Focus Landscapes)
 - permanent protection on private land (Upper Snowy – particularly for White Box Woodland; Lake Tyers Corringale; Coopracambra; and Far East Coast Focus Landscapes – particularly riparian areas)
- Develop and implement the recommendations of the Snowy River Flows Study.
- Work with Parks Victoria and other partners to manage marine National Parks, including management of urchin barrens.
- Support Parks Victoria to complete and implement the East Gippsland Conservation Action Plan, including the Far East Eden project.
- Identify and action conservation covenants as detailed in the Trust for Nature (2013) Statewide Conservation Plan for Private Land in Victoria.

- Support activities for improved biodiversity outcomes from Victoria's Bushfire Biodiversity Response and Recovery program.
- Provide support to Traditional Owners to realise the goals of the Joint Management Plans, including enabling self-determination in priority setting, project involvement and project delivery
- Continue to work with Traditional Owners to understand and share knowledge to protect and enhance Country and cultural sites of significance.
- Establish constructive working relationships between all Traditional Owner groups within the local area, land and waterway managers and community groups.
- Participate in adaptation planning and emergency management activities related to bushfire and floods in regional communities.
- Support landholders to control erosion post bushfire.
- Support East Gippsland Shire to implement the Environmental Sustainability Strategy (including an update to the Roadside Vegetation Management Strategy).
- Ensure appropriate land use through the implementation of the East Gippsland Regional Land Use Planning Strategy.

Recovery and Growth

- Monitor and manage threats from invasive plants and predators.
- Continue to work with all land managers to maintain the outcomes of past work.
- Increase monitoring following flood or fire (e.g. monitor recovery of habitats and threatened species following the 2019–2020 fires).

Target Achieved

- Maintain support for public and private land managers (e.g. expert advice, access to support).
- Conduct systematic monitoring of key factors for maintaining site health (e.g. habitat quality and invasive species).
- Evaluate project achievements against aims and objectives.

Red Gum Plains

Overview

The Gippsland Red Gum Plains extend from near Traralgon and the Latrobe Valley in the west, to Bairnsdale in the east (refer to map). The northern boundary of the plains is characterised by the heavier vegetated foothills of the Victorian Alps. While the plains have been mostly cleared of native vegetation to support agriculture production (mainly dryland sheep and cattle), remnants of EPBC listed Red Gum Grassy Woodland and Associated Grassland and Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains communities do remain, alongside other threatened flora species. As a result, in the recent past, the eastern Red Gum Plains have been an important area for permanent protection on private land..

Only a portion of the Red Gum Plains lies within the East Gippsland CMA region. This equates largely to the areas north of Lake Victoria in the Gippsland Lakes. While East Gippsland CMA will continue to work collaboratively with West Gippsland CMA to manage

the Red Gum Plains, this local area paper is focussed on the portion of the local area that is within the East Gippsland CMA region.





Through having been extensively cleared for agriculture, the remnant native vegetation across the plain is scarce and highly fragmented. This remnant vegetation includes two communities that are considered to be critically endangered under the *Environment Protection and Biodiversity Conservation Act*: Gippsland Red Gum Grassy Woodland and Associated Native Grassland, and Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains. There are also many endangered flora and fauna species found on the plain.



Current condition

Available data indicate that the Red Gum Plains is in moderate condition (Table 1).

Table 1 | Condition and trend of the Gippsland Lakes.

Theme	Indicator	Data Source	Condition	Trend
 Water	Land cover	Victorian Land Cover Time Series (DELWP 2020)	There has been a 40 % decline in wetland extent in this local area since 1985.	Declining
	Waterway condition	Index of Stream Condition (DELWP 2011)	Toms Creek and Forge Creek were in moderate condition when last assessed in 2010 with low scores of riparian vegetation and aquatic biota.	Unknown
 Biodiversity	Are of permanent protection	Collaborative Australian Protected Areas Database (2021), Trust for Nature (2022)	Area of permanent protection in this local area is low.	Stable
	The Conservation Action Plan for the Gippsland Plains and Strzelecki Ranges Parks Landscape	The Conservation Action Plan for the Gippsland Plains and Strzelecki Ranges Parks Landscape (Parks Victoria, 2021)	Vegetation condition of the dry forest woodland on the Red Gum plains is fair.	Stable
			Abundance of orchids is indicative of fair condition.	Declining
			Abundance and diversity of woodland birds is fair	Declining
		The abundance and extent of mammals is a knowledge gap.	Unknown	
 Land	Land cover	Australian National University's Centre for Water and Landscape Dynamics (2021)	Over 10 % of the land in this local area has exposed soil. The state of soils and their water holding capacity, however, remains a knowledge gap.	Increasing
	Land use	Australian National University's Centre for Water and Landscape Dynamics (2021)	Grazing on modified pastures is the dominant land use, with only 20% native vegetation cover remaining	Stable
 Community	Landcare group health score	Landcare Group Health Survey (2015–2020)	There have been increases in participation in Landcare activities over the past year with moderate group health scores	Stable

Major threats and drivers of change

The following high or very high threats to dry forest and woodland of the Red Gum Plains Local Area have been identified through the Conservation Action Plan for the Gippsland Plains and Strzelecki Ranges Parks Landscape, regional Biodiversity Response Planning process (Red Gum Plains Focus Landscape) and stakeholder workshops.

Habitat fragmentation

Infrastructure and development, such as construction of roads, fuel breaks, and other structures, can reduce connectivity between habitat and populations across the local landscape.

Natural resource extraction

Legal and illegal natural resource extraction can destroy habitat (e.g. grazing, timber harvesting, track creation) or directly affect species populations (e.g. hunting, fishing).

Weed invasion

Weeds displace native species, alter vegetation structure and impact fire regimes. Over abundant native species displace existing flora.

Predation

Declines in populations and abundance of native species due to fox and cat predation. Introduced predators can act as disease and weed vectors.

Grazing

Threats to vegetation communities including threatened species from introduced grazers in particular rabbits and deer.

Altered flow regimes

Changes to natural flow regimes impacting upon wetlands and flow connectivity.

Land clearing

Incremental land clearing, edge effects and lack of secure tenure, particularly from grassland and grassy woodland remnants and linear reserves.

Vision and outcomes

Vision

The resilience of natural assets, agriculture and communities in the Red Gum Plains Local Area are increased and ecosystem services are maintained in the face of climate change and other stressors.

Outcomes


By 2040, the long-term objectives for the Red Gum Plains are to:

- protect and enhance the condition of the high and medium quality threatened vegetation communities (Gippsland Red Gum Grassy Woodland and Associated Native Grassland and Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains)
- promote sustainable land management practices, particularly relating to soil and groundcover management, that support higher productivity and protection of the environment
- maintain and improve the condition of significant waterways on the Red Gum Plains
- promote awareness of, and participation by, communities and land managers in the management and protection of the vegetation communities on the Red Gum Plains; and recognise, develop and utilise Traditional Owner knowledge of the cultural landscape.


This will be achieved by focussing on the following themes:

- 1 Biodiversity – protecting remnant native vegetation
- 2 Water – protecting waterway health; including Seasonal Herbaceous Wetlands
- 3 Land – increased resilience and production in agricultural land
- 4 Community – supporting community and landholder participation.


Water - Protecting waterway health.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Waterways such as Forge Creek, Toms Creek and wetlands in this local area are subject to pressures from agricultural activities including stock grazing, nutrient and sediment inflows and past land clearing.</p>	<p>Extent, structure, and diversity of vegetation on riparian corridors is improved along Forge and Toms creeks.</p> <p>Extent, structure, and diversity of vegetation on Gippsland Plains priority wetlands is improved.</p>	<p>The condition of riparian vegetation along Forge Creek, Toms Creek and priority wetlands is improved, providing habitat native animals, and improving resistance and resilience of waterways, reducing risk of instability.</p>


Biodiversity - Protecting remnant native vegetation.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>High quality remnants, particularly of Gippsland Red Gum Grassy Woodlands, are at risk due to threats from invasive weeds, rabbits, livestock grazing, and altered fire and hydrological regimes. There are also many patches of other medium quality remnants with low levels of protection and connectivity.</p>	<p>Maintain, and where possible improve, the condition of Gippsland Plains Grassy woodland, increase extent by 30%.</p> <p>Increase the area of native vegetation under permanent protection.</p> <p>There will be no reduction in known threatened plant species populations.</p> <p>Bird numbers and species diversity will remain stable at 2020 levels.</p>	<p>The Gippsland Red Gum Plains will have improved ecological function. All significant areas of remnant native vegetation will have basic protections in place and will be better connected to each other across the landscape via strategic plantings.</p>

Land - Protecting agricultural land and soil health.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Emerging focus on sustainable practices, particularly relating to soil and groundcover management. The focus is shifting from recovery following drought to increasing resilience to climate change and other stressors.</p>	<p>Continue to work with landholders to improve farm management practices</p> <p>Effective management of groundcover to conserve soils for the benefit of both agriculture and the natural environment.</p> <p>Landholders will use systems and techniques to deliver long term outcomes for both farming and the environment, making the whole system more resilient to on-going threats (e.g. invasive weeds, pest animals) and to climate change.</p>	<p>Over 750 properties with active sustainable land management practices in place relating to soil and groundcover management.</p>

Community - Supporting community and landholder participation.

	Current State (2021)	Medium-term Outcomes (2027)	Long-term Outcomes (2040)
	<p>Emerging awareness of local native vegetation and participation in protection programs. There is also growing interest in alternative farming practices aimed at improved soil and land management (e.g. Landcare, Regeneration Ag Alliance, Soils for Life, Soil Ambassador).</p>	<p>Community actively involved in agricultural and Landcare groups.</p> <p>Community invited to participate in citizen science programs, such as bird, frog, turtle and water quality monitoring.</p>	<p>High awareness of local native vegetation and active participation in protection programs with increased numbers of groups and landholders actively involved and measured levels of awareness improved.</p>

Phases of implementation

Target Setting

- Develop a staged and coordinated program for works and activities in line with the East Gippsland Waterway Strategy, East Gippsland Rural Land Use Strategy, the Gunaikurnai Whole of Country Plan, the Trust for Nature Statewide Conservation Plan, the Gippsland Plains and Strzelecki Ranges Conservation Action Plan, and the Biodiversity Response Planning process (Red Gum Plains Focus Landscapes).
- Establish baseline data levels for the number of properties (area) under active sustainable land management.
- Engage with local community, key landholders, and other community groups.
- Identify priority areas for on-ground works for biodiversity, land, and water management.
- Establish clear management agreements with landholders and agencies.
- Develop a staged program for works and activities; with clear monitoring regimes.

Taking Action

- Drawing on spatial decision-support tools such as Strategic Management Prospects, implement in priority areas consistent with the Biodiversity Response Planning process (for relevant Landscapes):
 - sustained weed control, integrated predator control, and revegetation (Red Gum Plains Focus Landscape).
 - permanent protection on private land (Red Gum Plains Focus Landscape – particularly for Red Gum Grassy Woodland and Seasonal Herbaceous Wetlands).
- Enhance high and medium quality vegetation condition and extent through:
 - exclusion fencing (browsing fauna)
 - revegetation using keystone species
 - control of weeds and rabbits.
- Support the activities under the Future Drought Fund by working with beef and sheep farmers to build understanding of options to manage drought risks.
- Continue to work with Traditional Owners to understand and share knowledge to protect and enhance Country and cultural sites of significance.

- Implement actions of the East Gippsland Waterway Strategy to protect waterways via stock exclusion fencing and riparian area works in partnership with landholders.
- Identify and action conservation covenants as detailed in the Trust for Nature (2013) Statewide Conservation Plan for Private Land in Victoria.
- Implement the actions in the Conservation Action Plan for the Gippsland Plains and Strzelecki Ranges Parks Landscape through management of pest plants and animals and recreation.
- Support the actions of the East Gippsland Shire's Environmental Sustainability Strategy, including the update to the Roadside Vegetation Strategy.
- Improve landholder participation through incentives or stewardship payments.

Recovery and Growth

- Continue to work with landholders and build understanding of the value of remnant vegetation and ground cover.
- Maintain weed control and revegetated areas to support natural processes.
- Monitor and maintain works following natural impacts, such as floods or fires.
- Monitor the condition of the remnants and adapt management accordingly to increase resilience.

Target Achieved

- Monitor the condition of the systems.
- Monitor the effectiveness of works.
- Evaluate project achievements against aims and objectives.
- Maintain weed control and revegetated areas to support natural processes.
- Maintain support for private landholders who are actively protecting remnants.



**East Gippsland
Catchment Management Authority**
T 03 5152 0600
E egcma@egcma.com.au
574 Main Street Bairnsdale VIC 3875
PO Box 1012, Bairnsdale VIC 3875
egcma.com.au  

