



*South Gippsland
Shire Council*

South Gippsland Coastal Strategy BACKGROUND PAPER

December 2019

*Coastal Strategy Background Report***Contents**

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Note on Mapping:

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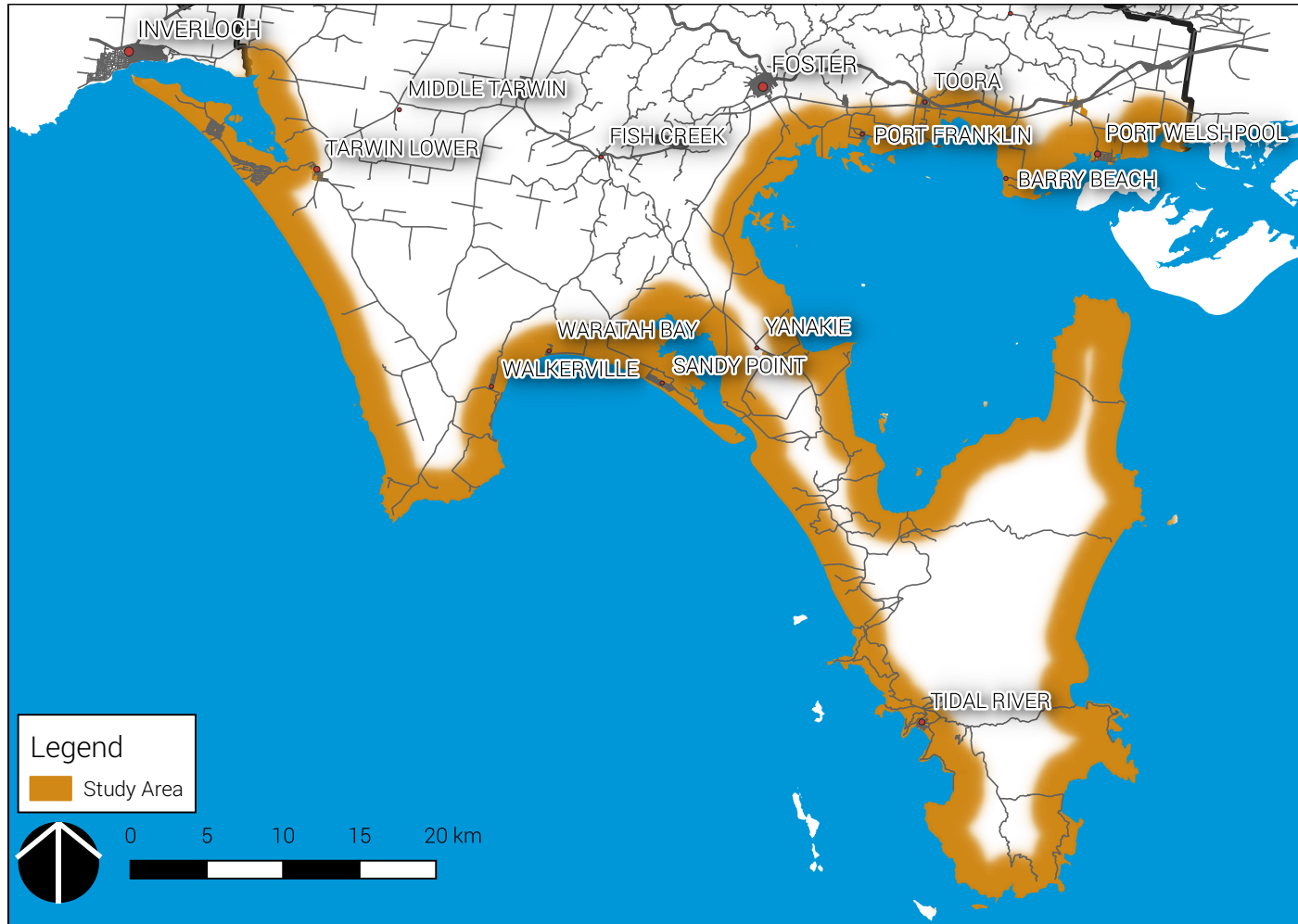
Cover Photo - Wilsons Promontory by Ken Fraser

Introduction



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Map 1 - Study Area



Project Aim

This South Gippsland Coastal Strategy project aims to provide strategic direction for the planning of South Gippsland's coastal areas. It considers the impacts and opportunities for growth and development on the natural and built environment. The project will help inform Council's existing operations and future planning for growth.

This project identifies current land use and development issues to aid community understanding and provide a platform for advocacy on identified issues. The final strategy will set out Council's advocacy platform and implementation plan.

This Report

This Background Paper sets out the existing **context** and legislative framework and key **issues** and opportunities that relate to the use, development and protection of these areas. The report presents **options** that seek to address these issues.

An **Overview** (separate to this report) has been prepared separate to this report that summarises the key issues and options for community consultation.

The Strategy will be formed from the Overview, this Background Paper, community feedback and any additional work undertaken during and following feedback. **Figure 1** sets out the structure of the final Strategy which will include Context, Issues and Implications, Advocacy and Action sections.

Study Area

South Gippsland's coast stretches for approximately 300 kilometres from Venus Bay in the west to Port Welshpool in the east. The focus of this strategy is within two kilometres of South Gippsland Shire Council's coast. The area includes the 'coastal land' as defined by the [Victorian Coastal Strategy](#) (2014). Towns within the study area include Port Franklin, Port Welshpool, Sandy Point, Tarwin Lower, Toora, Venus Bay, Walkerville, Waratah Bay, Welshpool and Yanakie. Key features in the area include Wilsons Promontory, Corner Inlet, Andersons Inlet and Shallow Inlet Marine and Coastal Park.

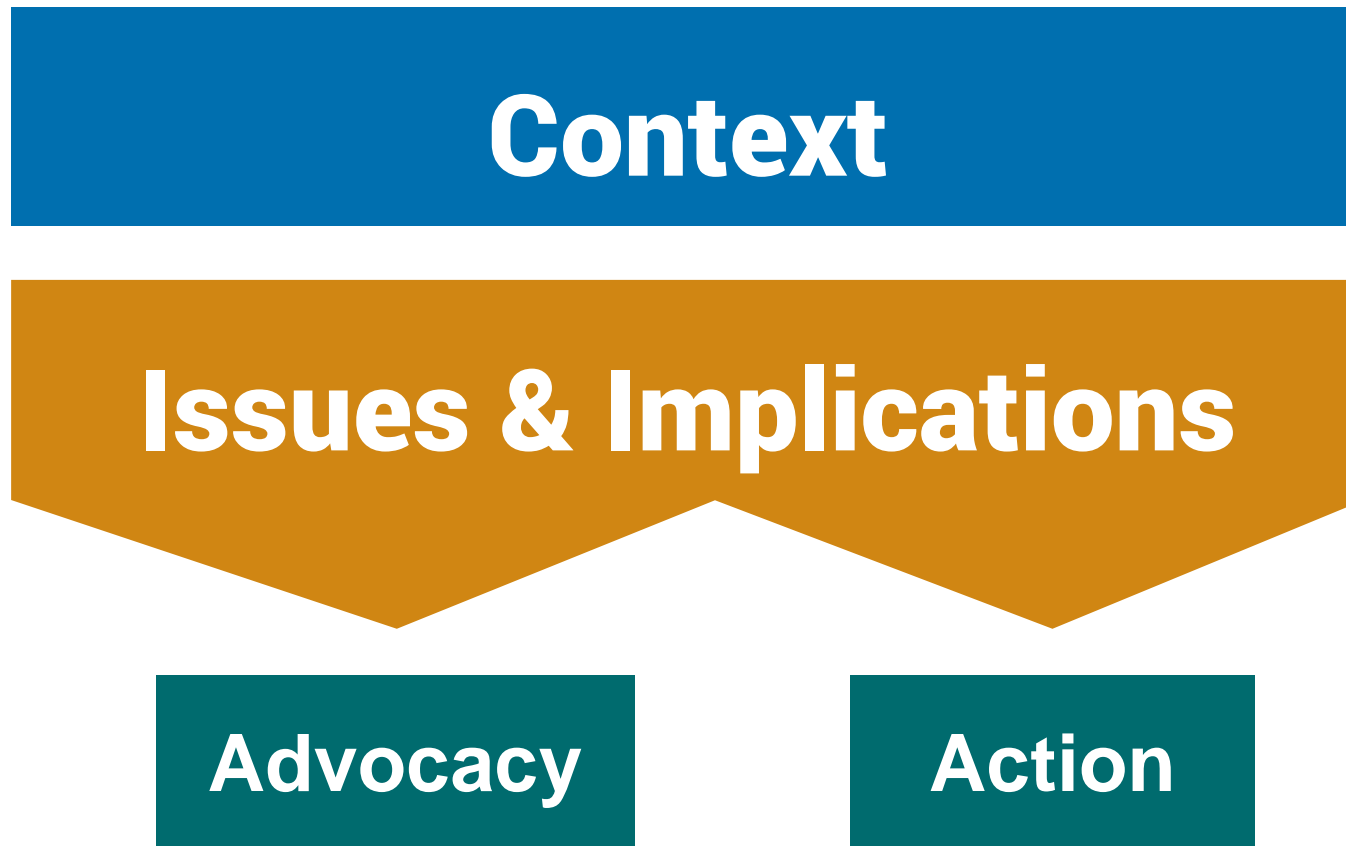
The Victorian Coastal Strategy (2014) identifies that the term 'coast' means:

- *The marine environment – nearshore marine environment, the seabed and waters out to the State limit of three nautical miles*
- *Foreshores – or coastal Crown land up to 200 metres from the high water mark*
- *Coastal hinterland – land directly influenced by the sea or directly influencing the coastline and with critical impacts on the foreshore and nearshore environment*
- *Catchments – rivers and drainage systems that affect the coastal zone, including estuaries and coastal wetlands*
- *Atmosphere – near, around and over the coast as defined above.*

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Figure 1. The Coastal Strategy at a Glance

This Background Paper will help form the basis of the South Gippsland Coastal Strategy. As a number of issues that the Coastal Strategy is expected to address are likely to fall outside of Council's powers and responsibility, Council's role will be to advocate. The implementation of the Coastal Strategy will therefore involve **Advocacy** by Council as well as **Action**.

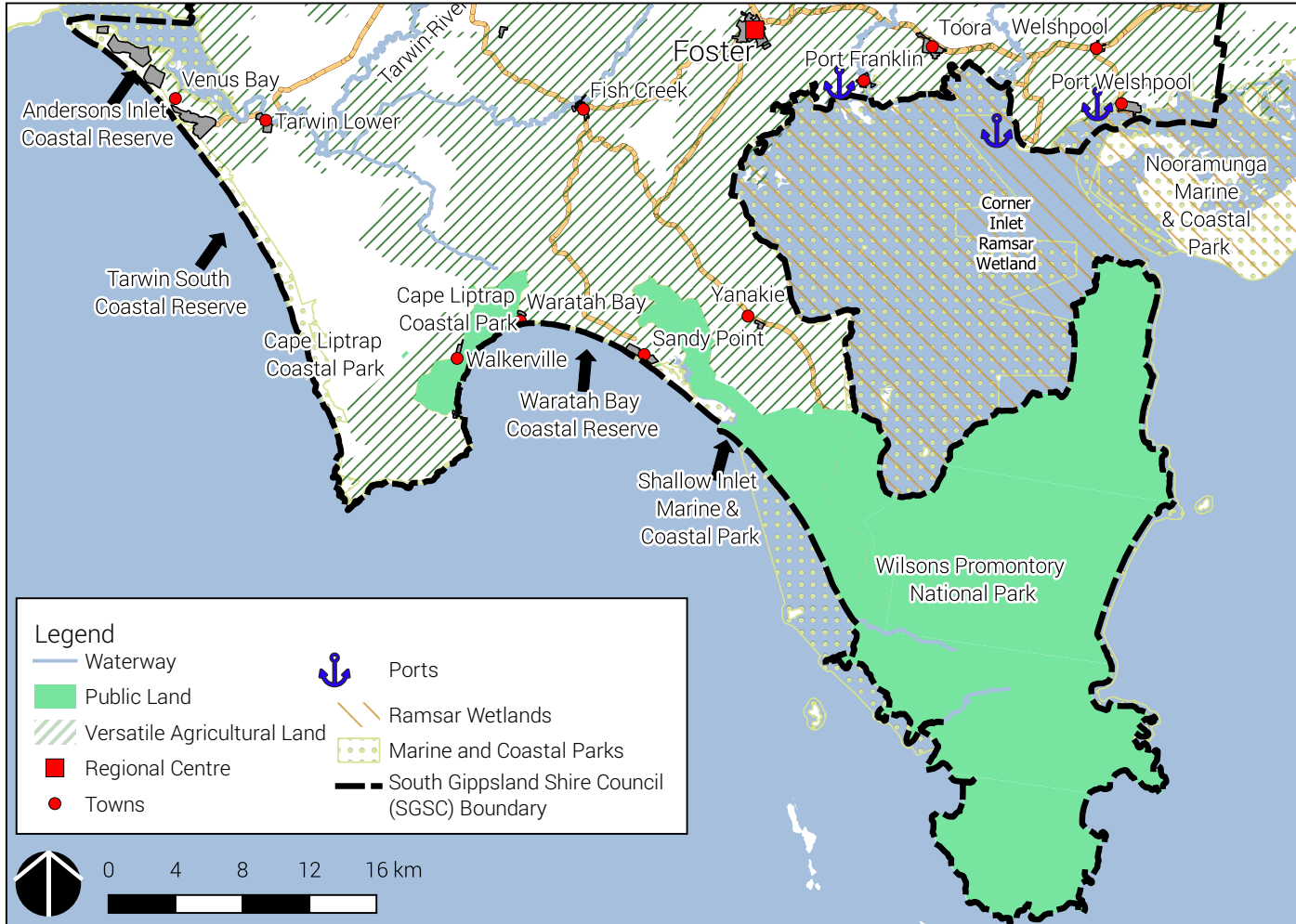


Context



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Map 2 - Key Coastal Features



Key Features

Settlements

Key settlements in South Gippsland's coastal areas are (with their population figures in brackets):

- Tarwin Lower ([132](#))
- Venus Bay ([944](#))
- Walkerville ([84](#)) and Walkerville North ([5](#))
- Waratah Bay ([56](#))
- Sandy Point ([209](#))
- Yanakie ([251](#))
- Toora ([436](#))
- Port Franklin ([134](#))
- Welshpool ([331](#))
- Port Welshpool ([209](#))
- Wilsons Promontory ([13](#))

Please refer to **Map 3** for further details of settlement population and dwelling figures. The main population in South Gippsland's coastal areas is based in the Venus Bay - Tarwin Lower area.

*Note: The population and dwelling figures (shown above in brackets and in **Map 3**) were based off ABS 2016 Census UCL (Urban Centres and Localities) and SS (State Suburbs) data. In the 2016 Census, there were no people in the area for Walkerville South ([ABS, 2016](#)).*

Natural Environment and Cultural Heritage

Marine and coastal land in South Gippsland comprises significant landscape and environmental areas including Wilsons Promontory, Corner Inlet, Andersons Inlet and Shallow Inlet Marine and Coastal Park. Significant heritage places include Aboriginal cultural heritage sites in Venus Bay, lime kilns in Walkerville and the Cape Liptrap lighthouse.

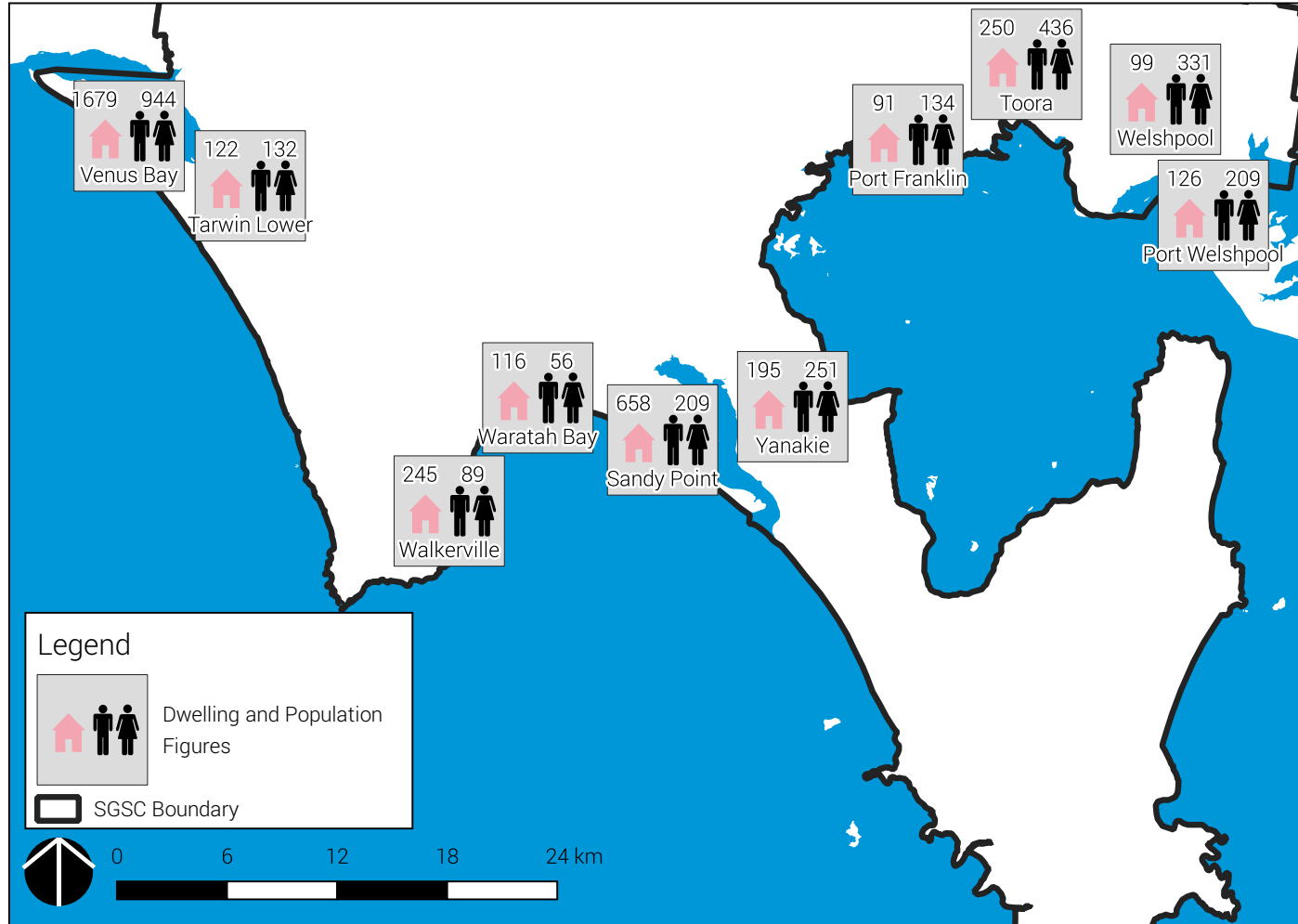
Economy and Tourism

South Gippsland's coastal environment is a key attraction in the municipality, attracting residents and visitors as well as forming a basis for tourism activities. South Gippsland's coastal areas also underpin a number of other economic activities in the region including fishing, agriculture, freight and resource extraction activities (e.g. oil rigs). Tourism and fishing in South Gippsland are linked to the coast. There are three ports in South Gippsland: Port Franklin, Barry Beach and Port Welshpool. Barry beach encompasses the Port Anthony Marine Terminal and the Exxon Mobil Barry Beach Marine Terminal for the support of oil and gas fields in Bass Strait. The Corner Inlet and Port Albert waters are managed by Gippsland Ports.

A major proposal of note in the South Gippsland area is the Star of the South wind farm. It is the first proposed offshore wind farm under development in Australia, to be located off the south coast of Gippsland outside of council's administration area.

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Map 3 - Dwellings and Population





Port Franklin. Photo Ken Fraser

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Governance

Public Ownership and Management

Public ownership and management of coastal land is complex. Much of South Gippsland's coast comprises public land, specifically Crown Land managed under a number of Acts. South Gippsland coastal Crown land is managed by numerous government agencies other than Council including Parks Victoria, Department of Environment, Land, Water and Planning (DELWP), Gippsland Ports and the following Committees of Management (refer to *Map 4*):

- Port Franklin Public Purpose and Recreation Reserve Committee of Management
- Sandy Point Foreshore Committee of Management
- Shallow Inlet Camping and Recreation Reserve Committee of Management
- Walkerville Foreshore Committee of Management
- South Gippsland Shire Council (Waratah Bay, Yanakie and Fisher Reserve (Foster Beach))

Other regulatory agencies also play an important role in the area including the West Gippsland Catchment Management Authority (CMA), Victorian Marine and Coastal Council, South Gippsland Water Corporation and the Country Fire Authority (CFA).

South Gippsland Shire Council is the Committee of Management for three sections of coastal Crown Land. Council has been responsible for Yanakie foreshore (18 kilometres) since 1976, Fisher Reserve,

Foster (1 kilometre - Foster Beach) since 1914 and Waratah Bay (4.5 kilometres) since 2000.

Council has limited influence seaward of the high tide mark however its official boundary extends out beyond high tide in Andersons and Corner Inlets (refer to *Map 2*).

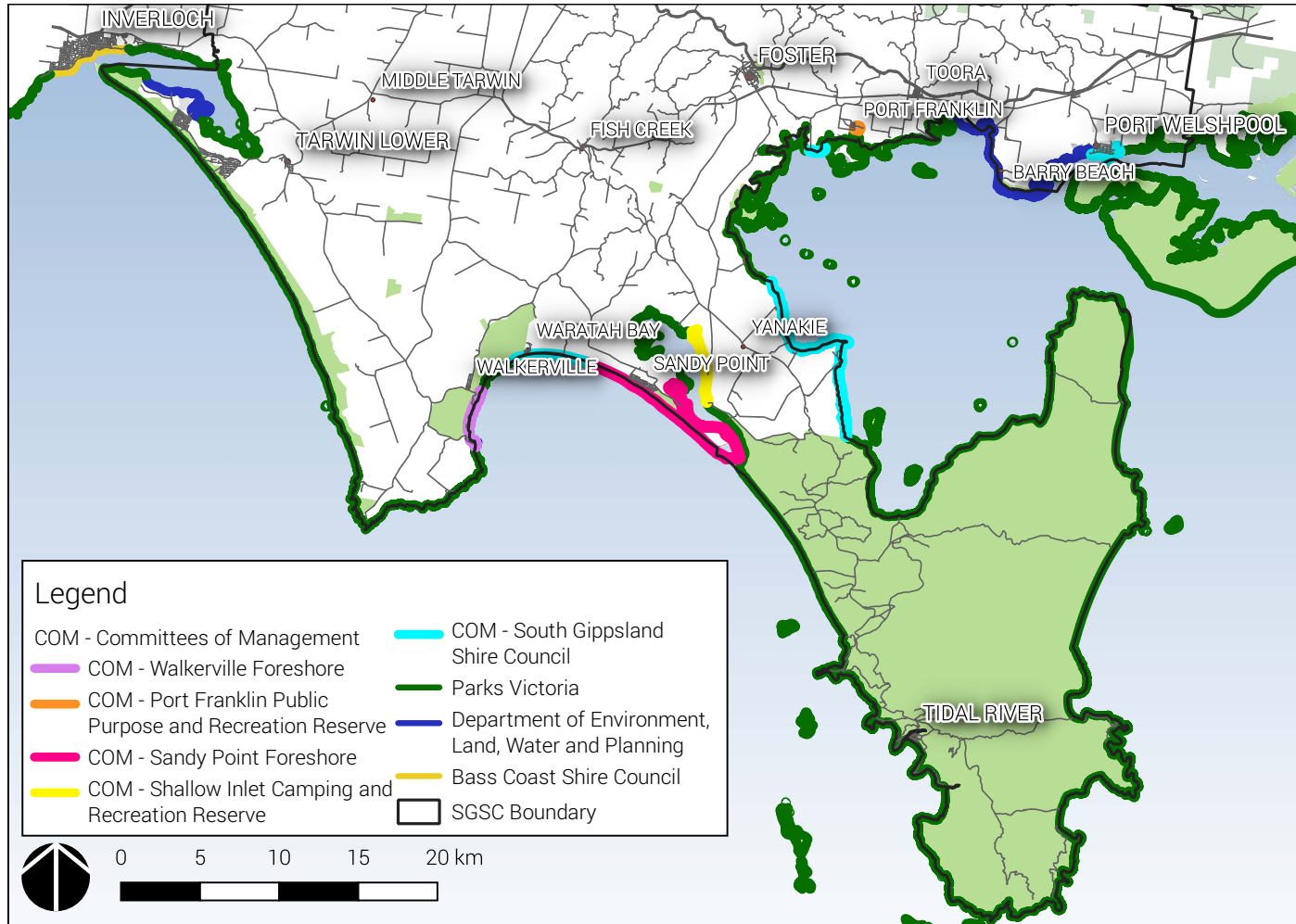
Other Ownership and Management

Inland of the coastline land is predominantly privately owned and managed. Private companies at Barry Beach maintain wharves for access across Crown Land while Surf Lifesaving clubs, and other similar organisations, have infrastructure on coastal Crown Land.

Corner Inlet Marine National Park - Ramsar site

Ramsar is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources for the protection of migration birds. Corner Inlet site (refer to *Map 2*) was listed with Ramsar in 1982 and is significant due to its unique barrier island formation coastal process and international importance for migratory waterbirds.

Map 4 - Coastal Crown Land Management



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Legislative Framework

The regulatory framework governing land use and development along the coast is similarly complex. Decision making on coastal Crown Land is largely managed by the [Marine and Coastal Act 2018](#), the [Victorian Coastal Strategy \(2014\)](#) and the [South Gippsland Planning Scheme](#). The use and development of land in the coastal fringe is predominantly regulated by the South Gippsland Planning Scheme which includes policy and provisions that guide the decision making process including:

- [Gippsland Regional Growth Plan \(2014\)](#)
- Framework Plans for coastal towns ([Clause 21.15](#))
- Significant Landscape Overlay ([SLO1](#), [SLO2](#) and [SLO3](#))
- Environmental Significance Overlay ([ES03](#) and [ES07](#))
- Bushfire Management Overlay ([BMO1](#) and [BMO2](#))
- Land Subject to Inundation Overlay ([LSIO](#))
- Design and Development Overlay ([DDO3](#), [DDO4](#), [DDO5](#) and [DDO6](#))
- [South Gippsland Rural Land Use Strategy \(2011\)](#)
- [South Gippsland Housing and Settlement Strategy \(2013\)](#)

Map 5 and *Map 6* are examples of the key planning controls that apply to coastal settlements. These planning controls are similar for all coastal settlements and have similar implications.

Key Documents

The following documents which are summarised below are also discussed in further detail at "Growth and Settlements" on page 42.

[Victorian Coastal Strategy \(2014\)](#)

The Victorian Coastal Strategy (VCS) provides for the long-term planning of the Victorian coast. The VCS sets a long term vision and framework for planning and management of the coast, guided by the Hierarchy of Principles, policies and actions (see *Figure 2*). The VCS states that coastal population growth and township expansion is to be managed by maintaining defined settlement boundaries.

[Gippsland Regional Growth Plan \(2014\)](#)

The Gippsland Regional Growth Plan provides a framework for settlements in the Gippsland region and focuses growth in towns with services outside South Gippsland's coastal areas. It seeks to protect rural landscapes and sensitive environments like the coast and manage development to minimise impacts on coastal hazards.

[Housing and Settlement Strategy \(2013\)](#)

The Housing and Settlement Strategy provides a framework for South Gippsland settlements, providing tailored growth objectives for each coastal town. It establishes settlement boundaries for coastal towns which are being implemented via Planning Scheme Amendment C90.

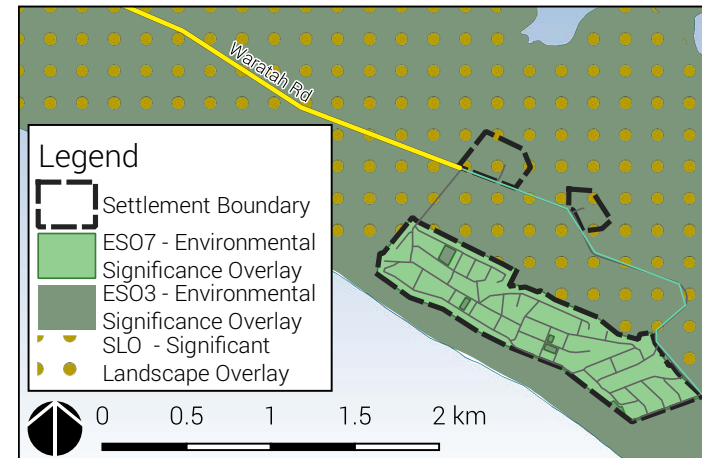
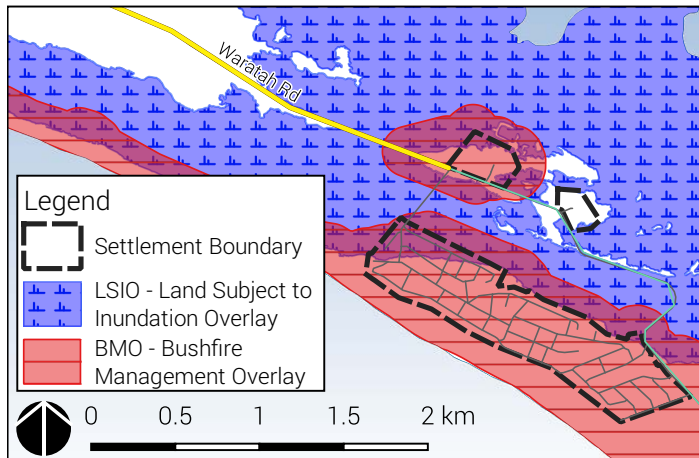
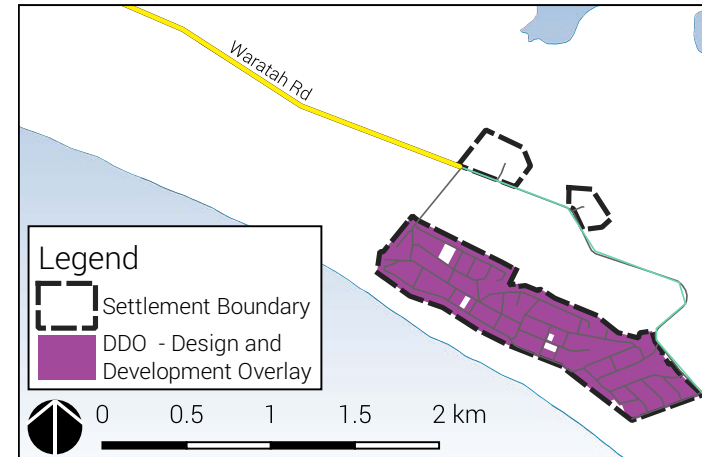
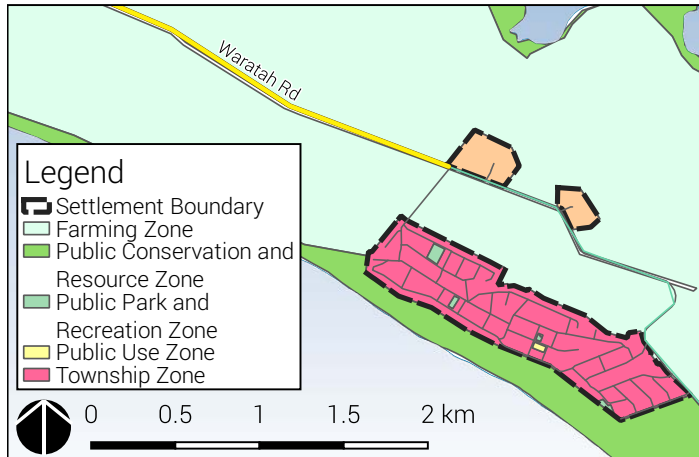
Figure 2. Hierarchy of Principles
 (Victorian Coastal Strategy 2014 p.29)

VALUE & PROTECT	<p>1 ENSURE THE PROTECTION OF SIGNIFICANT ENVIRONMENTAL AND CULTURAL VALUES</p> <p>The starting point is recognising and protecting what we value on the coast, based on identification and sound understanding of coastal and marine features and processes, vulnerabilities and risks</p>
PLAN & ACT	<p>2 UNDERTAKE INTEGRATED PLANNING AND PROVIDE CLEAR DIRECTION FOR THE FUTURE</p> <p>This highlights the importance of having integrated policies, plans and strategies that respond to the major issues affecting coastal and marine environments, provide clear direction for protection, management and sustainable development, and involve coastal stakeholders and the broader community</p>
USE & ENJOY	<p>3 ENSURE THE SUSTAINABLE USE OF NATURAL COASTAL RESOURCES</p> <p>This emphasises that natural coastal resources are a limited and valuable public resource, and if developed, or used, this should be done wisely and deliver proven net community and public benefit for current and future generations</p>
	<p>4 ENSURE DEVELOPMENT ON THE COAST IS LOCATED WITHIN EXISTING, MODIFIED, AND RESILIENT ENVIRONMENTS WHERE THE DEMAND FOR DEVELOPMENT IS EVIDENT AND ANY IMPACTS CAN BE MANAGED SUSTAINABILITY.</p> <p>This aims to ensure that development on and adjacent to the coast is of high quality design, sensitively sited, suitable and sustainable over the longer term. Development on coastal Crown land must have a demonstrated need to be located on the coast and a demonstrated public benefit.</p>

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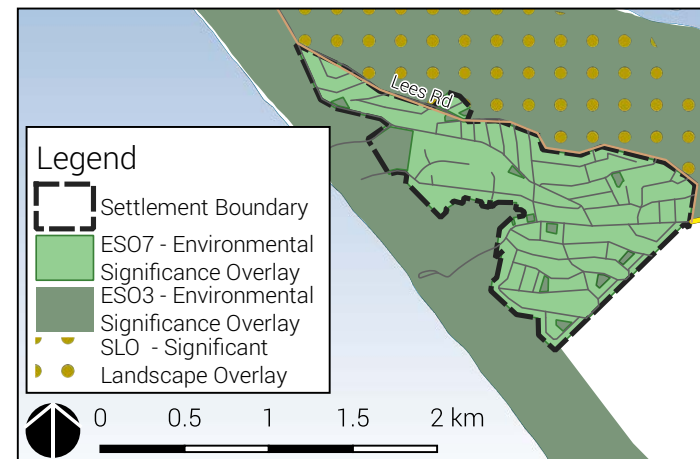
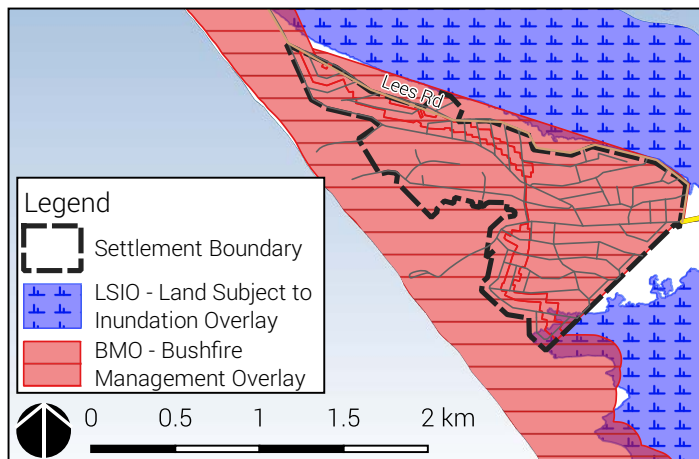
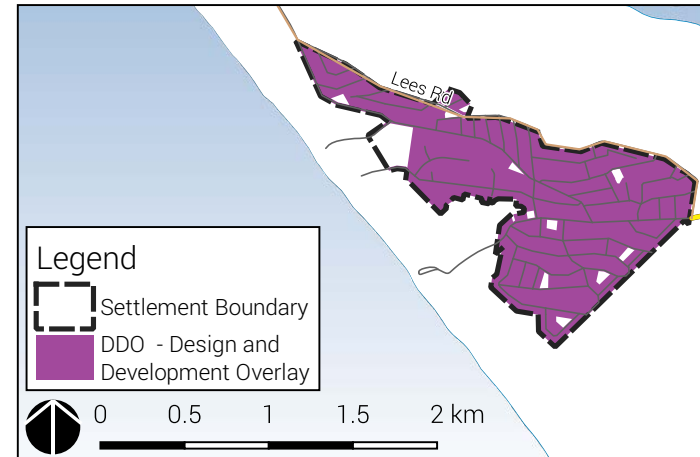
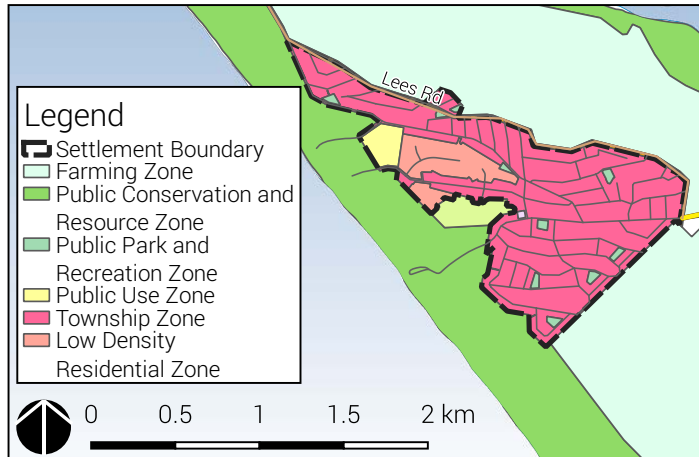
Map 5 - Sandy Point Key Planning Controls Township Example

Sandy Point is predominantly zoned Township and affected by design, bushfire, inundation, environmental and significant landscape controls.



Map 6 - Venus Bay Key Planning Controls Township Example

Venus Bay is predominantly zoned Township and affected by design, bushfire, inundation, environmental and significant landscape controls.



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List of Relevant Documents

Commonwealth Legislation & Report

- [Australian Government - Australia State of the Environment Marine Environment \(2016\)](#)
- *Environment Protection & Biodiversity Conservation Act 1999*

Victorian Legislation

- [Marine & Coastal Act 2018](#)
- [Climate Change Act 2017](#)
- [Aboriginal Heritage Act 2006](#)
- [Planning & Environment Act 1987](#)

Victorian Strategy, Policy, Plans & Reports

- [VAGO Protecting Victoria's Coastal Assets \(2018\)](#)
- [Victorian Coastal Hazard Assessment \(2017\)](#)
- [Planning Practice Note No.36: Implementing a Coastal Settlement Boundary \(2016\)](#)
- [Planning Practice Note No.53: Managing Coastal Hazards & the Coastal Impacts of Climate Change \(2015\)](#)
- [Planning Practice Note No.64: Local Planning for Bushfire Protection \(2015\)](#)
- [Planning Practice Note No.12: Applying the Flood Provisions in Planning Scheme \(2015\)](#)
- [Asset Management Accountability Framework \(2016\)](#)

Regional Strategy & Reports

- [West Gippsland Floodplain Management Strategy 2018-2027 \(2018\)](#)
- [West Gippsland Regional NRM Climate Change Strategy \(2016\)](#)
- [Gippsland Regional Coastal Plan 2015-2020 \(2015\)](#)
- [Gippsland Boating Coastal Action Plan \(2013\)](#)
- [West Gippsland Regional Catchment Strategy 2013-2018 \(2013\)](#)
- [Coastal Spaces Landscape Assessment Study \(2006\)](#)
- [Assessment of Existing Seawalls and Coastal Levees \(2018\)](#)

Council Strategy, Policy, Plans & Reports

- [Port Welshpool Marine Precinct Plan \(2019\)](#)
- [South Gippsland Economic Development and Tourism Strategy 2018-2020 \(2018\)](#)
- [South Gippsland Paths and Trails Strategy \(2017\)](#)
- [South Gippsland Domestic Wastewater Management Plan 2016-2020 \(2016\)](#)
- [South Gippsland Seasonal Population Impacts in Coastal Towns Plan \(2015\)](#)
- [South Gippsland Open Space Strategy \(2007\)](#)
- [South Gippsland Coastal Development Plan \(2004\)](#)

Council is also undertaking the following projects: Sandy Point Caravan Park Investigation and Venus Bay Tourism Precinct Plan.



Wilsons Promontory. Photo Roberto Seba [Visit Victoria](https://www.visitvictoria.com.au/)

*Coastal Strategy Background Report***VCAT & Planning Panel Decisions**

The [Victorian Civil and Administrative Tribunal \(VCAT\)](#) and [Planning Panels](#) have made decisions and provided recommendations relevant to planning and decision-making for coastal areas set out on the following pages. Their decisions emphasise the need to support the ongoing protection of life and property above all else. These cases reinforce the importance of making appropriate coastal risk considerations when making decisions.

[Myers v South Gippsland SC \(no 2\) \(includes Summary\) \(Red Dot\) \[2009\] VCAT 2414 \(19 November 2009\)](#)

This case involved the refusal of two lot subdivision in Waratah Bay in the Township Zone because of inundation risk.

'...State policy requires that we consider climate change impacts and we have evidence before us stating that without any mitigation works, it is quite foreseeable that there will be no dune, no road and therefore no access to the site and the site will be inundated by storm surges.'

'Policy directs us to consider the need for long term planning for the future consequences of climate change, rising sea levels and storm surges.'

'We accept that a problem already exists for the community of Waratah Bay that depends on the access road.'

'...at some point a line in the sand needs to be drawn as there is a cumulative effect of single subdivisions (or development proposals) on our environment.'

'To grant a permit in these circumstances would consent to a

poor planning outcome that would unnecessarily burden future generations.'

...'we adopt the precautionary approach of the General Practice Note (December 2008).'

[Gippsland Coastal Board v South Gippsland SC \[2008\] VCAT 187 \(11 February 2008\)](#)

This case involved the refusal of six permit applications for dwellings on small lots in the Farming Zone near Toora due to inundation risk.

'We accept that there is growing evidence of sea level rises and risks of coastal inundation. While we acknowledge that there is uncertainty as to the magnitude of the sea level rise, it is evident that the consequences of such rises in level will be complex due to the dynamic nature of the coastal environment. Put plainly, rising sea levels are to be expected.'

'The range of impacts may well be beyond the predictive capability of current assessment techniques. In the face of such evidence, a course of action is warranted to prevent irreversible or severe harm.'

'We have applied the precautionary principle. We consider that increases in the severity of storm events coupled with rising sea levels create a reasonably foreseeable risk of inundation of the subject land and the proposed dwellings, which is unacceptable. This risk strengthens our conclusion that this land and land in the Grip Road area generally is unsuitable for residential development.'

Lindsay Holland Pty Ltd v South Gippsland SC [2018] VCAT 1408 (24 September 2018)

This case involved the refusal of an application for two double storey dwellings on each of two lots in Venus Bay in the Township Zone because of risks due to loss of access to Venus Bay from inundation.

'While it is said that Venus Bay can sustain itself in times of flooding, that does not mean that emergency services and others would not be exposed to risks to evacuate people needing assistance (eg. acute medical conditions) or to provide supplies. Nor are services such as electricity guaranteed.'

...'I consider the proposal would provide an undesirable precedent with respect to the orderly development of Venus Bay.'

'I find the increased density in this proposal is not acceptable given flooding and coastal risk considerations...'

West Gippsland Catchment Management Authority v South Gippsland SC [2017] VCAT 63 (10 January 2017)

This case involved the refusal of an application for the use and development of a dwelling on a small lot in Lamont Drive, Toora in the Farming Zone due to inundation risk and Farming Zone policy. Although outside of the study area, the consideration of risk is still relevant.

'There is considerable emphasis in State and local planning policy on protecting life and property from flood hazard and siting development to minimise risk to life from natural hazards such as

flood.'

'It is my view that exposing additional persons to flood risk by allowing an additional dwelling where the only means of access to the property is subject to significant flood hazard is unacceptable and contrary to the Planning Scheme policies and provisions that seek to protect life and property from flood hazard.'

Coastal Climate Change (AC) [2010] PPV 140 (24 December 2010)

The Coastal Climate Change Advisory Committee was appointed by the Minister for Planning in 2009 to assess the operation of planning controls in considering coastal climate change impacts.

'The Committee concludes that whilst the current planning figure of 0.8m of sea level rise by 2100 is sound, interim sea level rise targets should be used in planning to provide a clearer framework for strategic planning and adaptation responses within that time horizon.'

'...The Committee considers that responses to coastal climate change hazards should focus on reducing exposure to risk...'

...'It is important to include planning for climate change as one of the objectives of the Act to ensure that all planning (not just coastal planning) is cognisant of the risks and the need for appropriate decision making.'

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Population and Housing

South Gippsland's coastal areas attract a large number of visitors, particularly over the summer period. The coastal areas generally have a high percentage of holiday home ownership and small permanent populations. Because of this, there are a high proportion of houses which are vacant for extended periods during the year (see *Map 9*). During the summer period, the population of some coastal towns can increase up to 4,000-5,000 including holiday makers and day visitors ([Seasonal Population Impacts in Coastal Towns, 2015](#)). These fluctuations in population are particularly apparent in Venus Bay and Sandy Point.



Photo Ken Fraser

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Number of Residents

There is an estimated 3,575 people living (permanent population) in South Gippsland's coastal areas (estimate is based on [ABS Mesh Block 2016](#) boundaries for areas within 2 kilometres of the coast). *Map 7* is a heat map showing population densities in South Gippsland's coastal areas.

The permanent coastal population represents 12.5 percent of the municipality's total population. All coastal towns have small permanent populations however growth in the permanent population of South Gippsland coastal towns has been significantly greater compared to coastal Victoria as a whole ([Seasonal Population Impacts in Coastal Towns, 2015](#)).

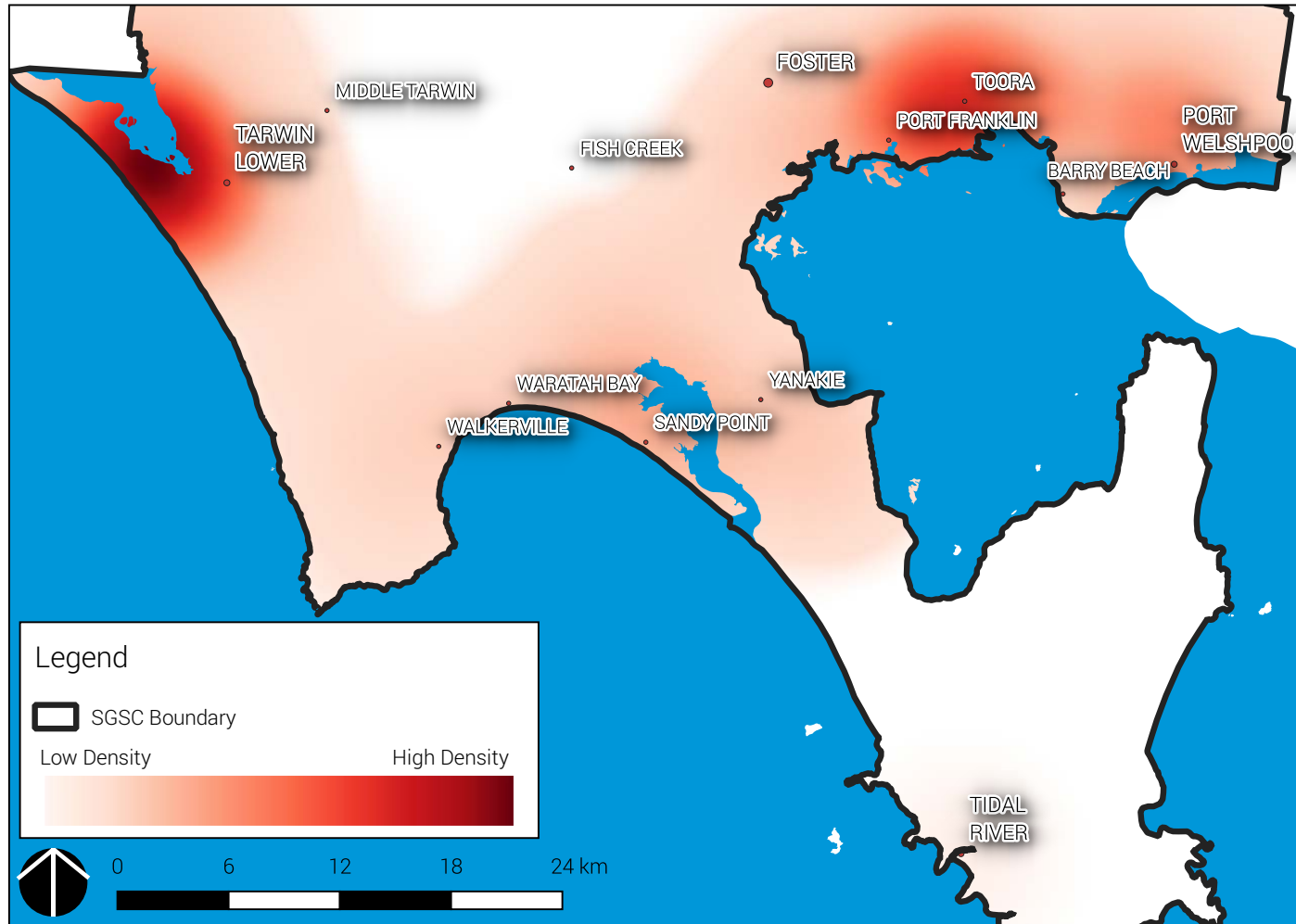
Despite the growth experienced in coastal areas, the permanent populations of South Gippsland coastal towns are still low in comparison to those in other towns in South Gippsland and considerably lower than those in Bass Coast Shire, Mornington Peninsula Shire and the City of Greater Geelong.



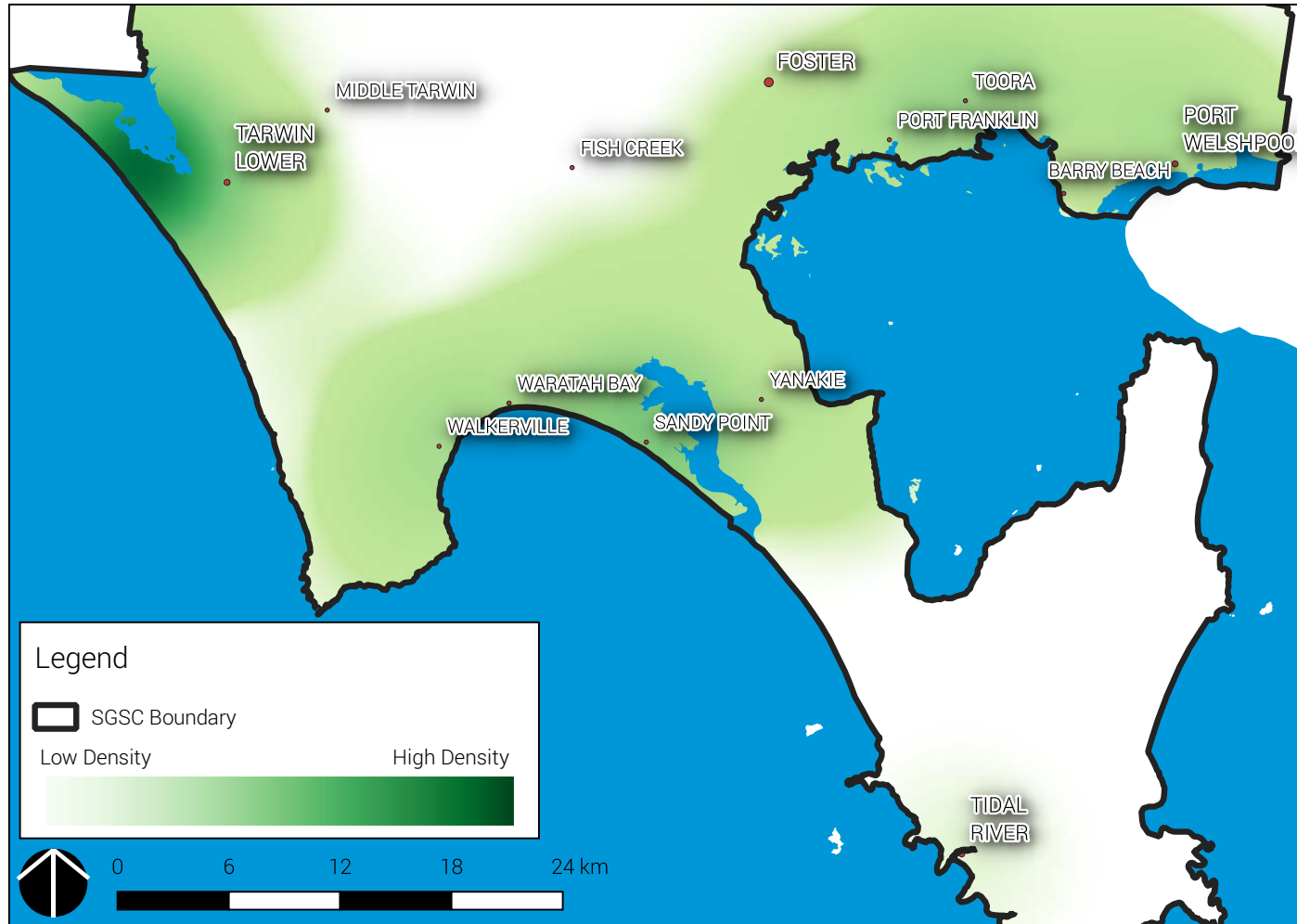
Sparkes Lookout - Wilsons Promontory National Park. Photo Mark Watson [Visit Victoria](https://www.visitvictoria.com.au)

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Map 7 - Population Density

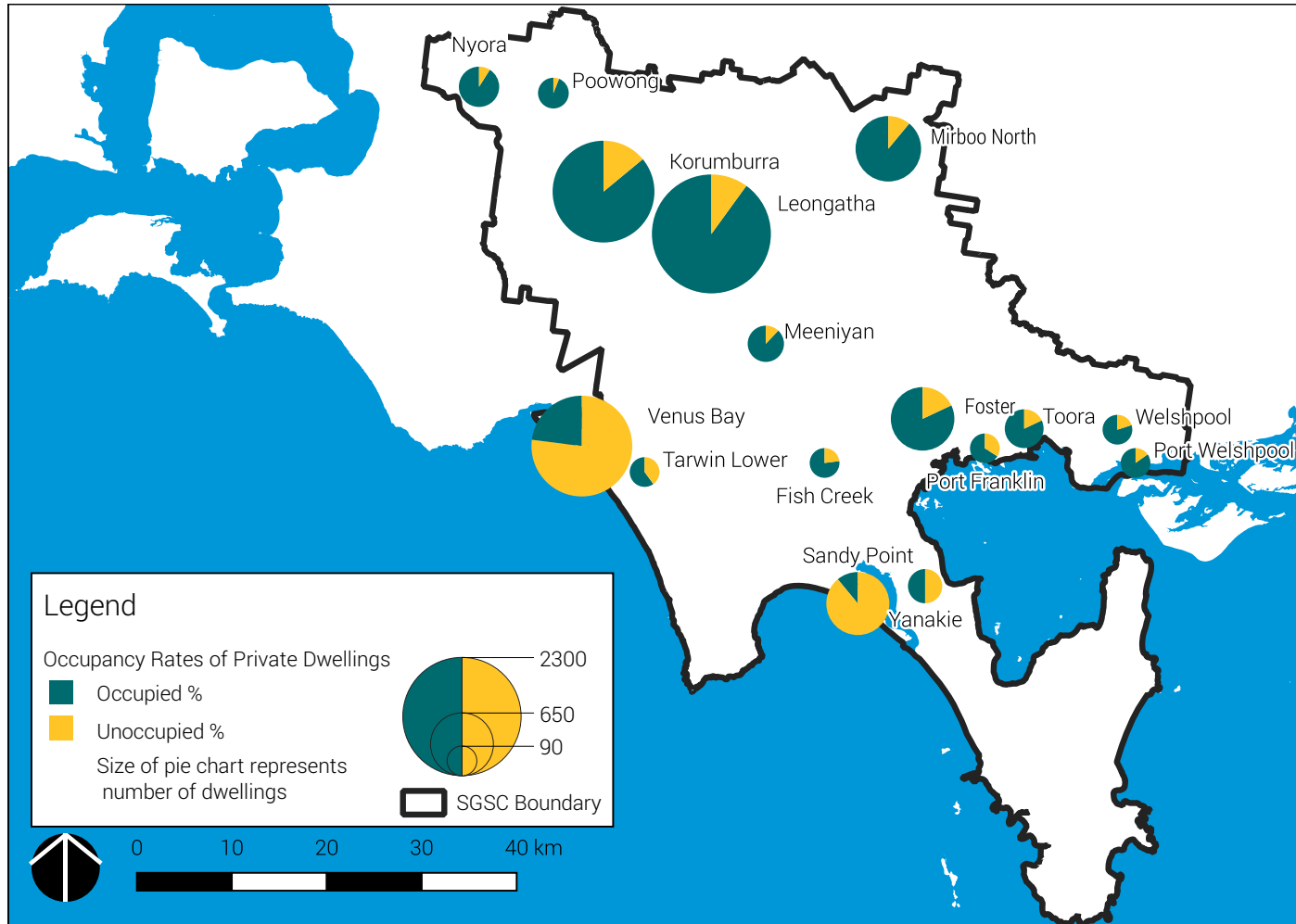


Map 8 - Dwelling Density

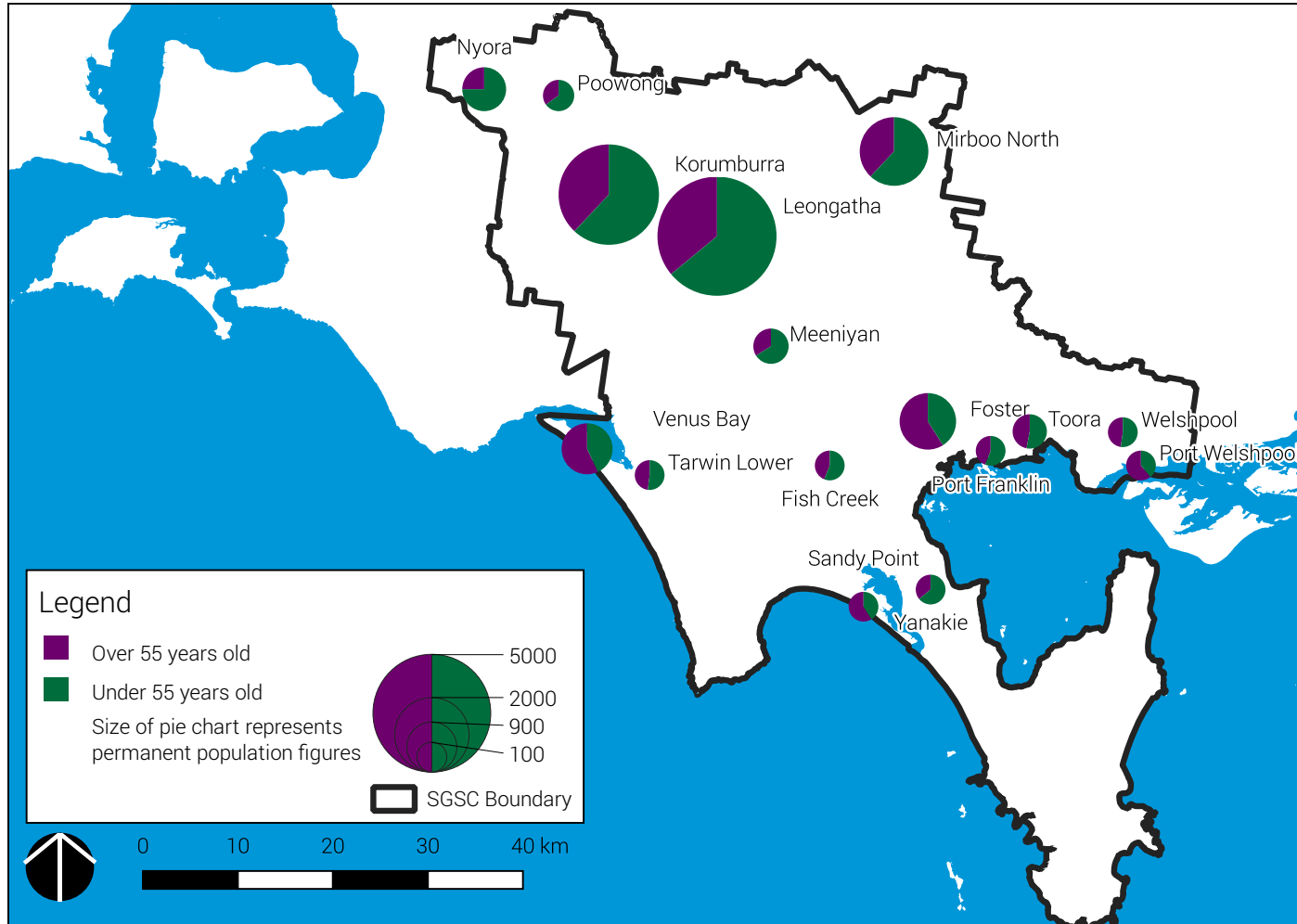


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Map 9 - Occupancy Rates of Private Dwellings



Map 10 - Permanent Population and Age Demographics



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Number of Dwellings

There is an estimated 4,307 dwellings in the study area for the South Gippsland Coastal Strategy ([Mesh Block Data, ABS Census 2016](#)).

Map 8 shows that there is a higher density of dwellings in Venus Bay and Sandy Point compared to other coastal areas.

Map 9 displays dwelling numbers and the corresponding occupancy rate of the town. Venus Bay and Sandy Point have a large number of dwellings with very low occupancy rates. For example, there is a similar number of dwellings in Venus Bay compared to Korumburra however there is a significant difference in the occupancy rate between these two towns. A similar relationship can be found between Foster and Sandy Point.

South Gippsland's coastal towns have an average occupancy rate of 35.2 percent compared to an average across the municipality of 72.2 percent (ABS Census 2016). A characteristic of most South Gippsland coastal towns is the high proportion of houses which are vacant for extended periods of time during the year. The majority of dwellings in coastal towns are vacant or holiday homes with non-residents visiting for varied lengths of time over the year ([Seasonal Population Impacts in Coastal Towns, 2015](#)).

Who They Are

Coastal areas in South Gippsland attract retirees and people seeking a 'sea change' due to the affordable housing and tranquil lifestyle. A higher proportion of older people live in coastal areas compared to larger towns within the municipality. Over 50 percent of the population in Venus Bay, Sandy Point and Port Welshpool are over 55 in comparison 40 percent of the municipality's total (see **Map 10**). In 2011, 11.2 percent of the population were born overseas, and 4.7 percent were from a non-English speaking background ([Housing and Settlement Strategy, 2013](#)).



Photo Ken Fraser

What They Do

Compared to the rest of the municipality, the employment rates in coastal areas are much lower. For example, [ABS \(2016\)](#) reported 43 percent of Venus Bay's population was employed full time compared to 51.9 percent municipality wide. People in coastal areas are mostly employed as *technicians and trades* and *workers and professionals* ([ABS, 2016](#)).

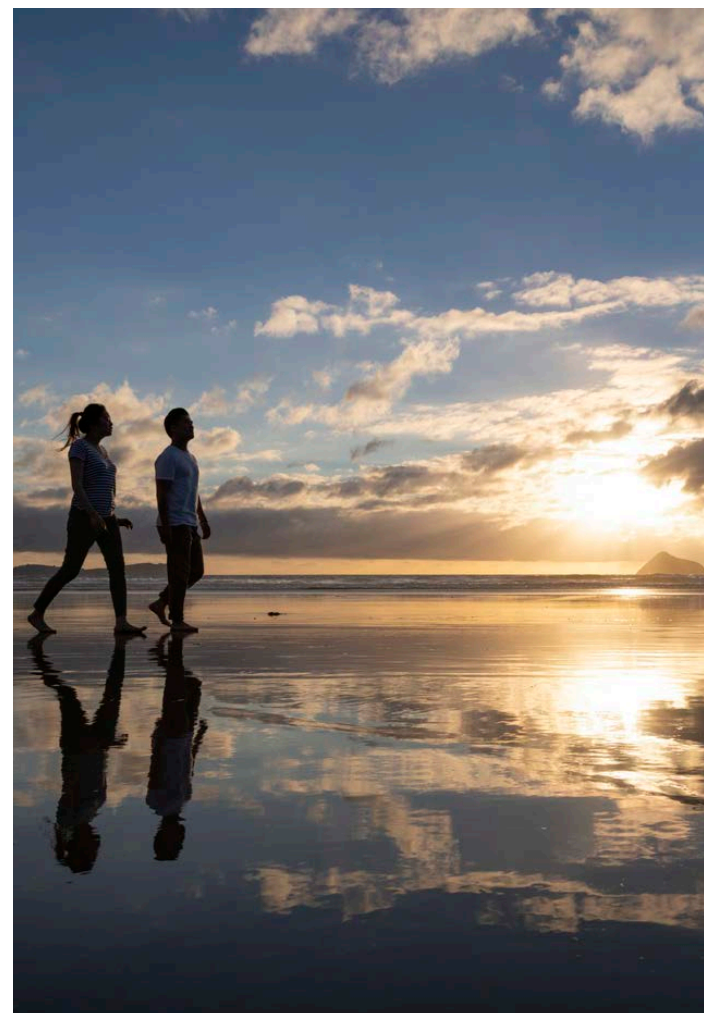
How They Live

The coastal towns support part-time and seasonal populations. These towns cater to the significant lifestyle and tourism housing market within the municipality.

The second home and holiday home property market plays a significant role in the municipality, with Venus Bay a particularly popular holiday home location ([Housing and Settlement Strategy, 2013](#)).

Future Population and Housing

It is anticipated that South Gippsland's coastal population will grow from 8,353 (as at 2019) to 8,916 by 2036 ([forecast.id](#)). There are an estimated 1,200 vacant urban zoned lots within South Gippsland's existing coastal townships ([South Gippsland Population Growth and Land Supply Study](#)).



Whisky Bay - Wilsons Promontory National Park. Photo Mark Watson
[Visit Victoria](#)

Coastal Strategy Background Report



Existing Issues



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Overview

The coastal environment is under pressure from a changing climate, population growth and visitation, competing interests, ageing infrastructure and at times, fragmented governance systems and financing arrangements ([Victorian Coastal Strategy, 2014](#)).

The key issues have been categorised into:

- Natural Environment and Cultural Heritage
 - Biodiversity Protection
 - Natural Processes and Climate Change
 - Possible impacts on Coastal Assets
- Growth and Settlements
- Services
 - Wastewater and Drinking Water
- Public Land Management
- Economy and Tourism

Natural Environment and Cultural Heritage Issues

Biodiversity Protection

In its [Assessment of the Values of Victoria's Marine Environment Report \(2019\)](#), the Victorian Environmental Assessment Council (VEAC) provided a useful overview of not only the values of the marine environment but also many of the issues faced in South Gippsland's coastal areas in its [Atlas](#).

Key issues relating to Biodiversity Protection include:

- Adverse impacts on the environment likely to have flow-on impacts to settlements, economy and existing activities.
- Pollution from stormwater run-off from commercial and residential activities.
- Pressure on marine species including:
 - Collecting pipis in Venus Bay.
 - Sea grass loss.
 - Erosion to sand dunes from campers at Waratah Bay.
 - Increased pressure from commercial fishing in Corner Inlet
- Loss of coastal vegetation (e.g. due to bushfire controls).
- Recognition and protection of indigenous values while also respecting beliefs (which require privacy).
- Loss and decline in habitat values and fauna species due to lack of resources to control noxious and environmental weeds and pest animals (for example deer at Wilsons Prom, Cape Ivy, Sea Spurge or Bridal Creeper).



Vegetation removal for access to the beach at Shellcot Road, Yanakie



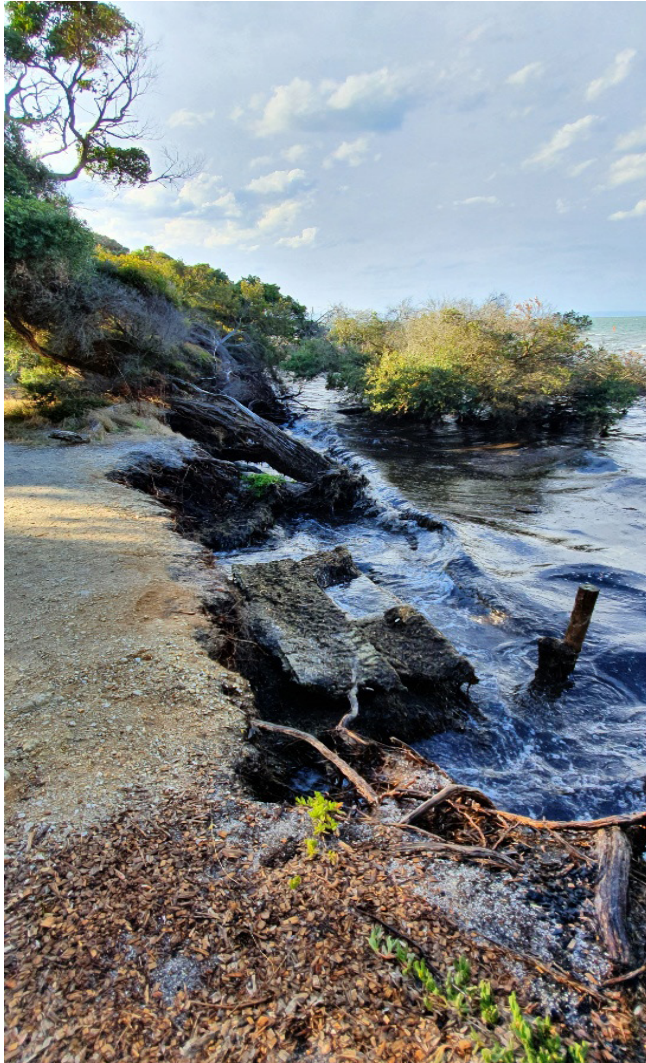
Pipis from Venus Bay. Photo [Victorian Fisheries Authority](#)



Deer at Wilsons Promontory. Photo Matt Hoskins Parks Victoria



Mangrove removal for boating activities at Yanakie

Coastal Strategy Background Report

Erosion and inundation at Yanakie Caravan Park

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Natural Processes and Climate Change

Over the past 100 years, global surface air temperatures have risen by almost 1°C. Both the atmosphere and the oceans have warmed. Climate change occurs through the release of greenhouse gases from the burning of fossil fuels, land use change and agriculture. Atmospheric concentrations of carbon dioxide are more than 40 percent higher than they were before industrialisation. ([Gippsland Climate-Ready Victoria, 2015](#))

In the Gippsland region, the rate of warming has increased since 1960. On average, rainfall has declined since the 1950s, especially in autumn. Sea level today is approximately 225 millimetres higher than in 1880. Sea surface temperatures have risen faster here than anywhere else on the Australian coastline. Ecosystems are under threat as their environments change. Increased wave energy is expected to erode existing mangroves that are currently acting as a natural coastal protection barrier. ([Gippsland Climate-Ready Victoria, 2015](#))

South Gippsland's coastal environment is expected to experience widespread impacts from climate change and sea-level rise in excess of natural coastal processes including:

- Coastal erosion
- Coastal inundation
- Increased storm surges
- Increased water temperatures
- Loss of habitat and changing animal species
- Damage to and loss of coastal assets
(beach areas, infrastructure, access etc.)

Many impacts are likely to have wide ranging effects which are difficult to quantify and anticipate. This may include properties being unable to obtain insurance as environmental risks become more evident. This in turn could have implications on mortgages and property prices. A major concern is possible access being lost to some of South Gippsland's towns (including Venus Bay and Sandy Point) and the majority of properties in Port Welshpool as well as access being lost to inundation.



Tarwin Lower Fishing Platform Flooded. Photo Ken Fraser



Coastal erosion



Erosion at Walkerville North

*Coastal Strategy Background Report***Possible Impacts on Coastal Assets**

The Victorian Planning System currently recommends planning for possible sea level rise of 0.8 metres by 2100¹, and allow for the combined effects of tides, storm surges, coastal processes and local conditions ([refer to Clause 13.01S of the South Gippsland Planning Scheme](#)). At this point, many coastal assets are expected to be underwater as shown by mapping undertaken for South Gippsland (refer to page 40).

Between now and 2100, the impact of climate change experienced by inundation and storm surge is likely to lead to the loss and or damage of the following assets:

- Road access impacting the following (refer to **Figure 3**):
 - Inverloch - Venus Bay Road: cutting access to Venus Bay and Tarwin Lower.
 - Bayside Drive, Walkerville North: cutting access to private properties and the caravan park.
 - Waratah Road, Sandy Point: cutting access to Sandy Point.
 - Fish Creek-Waratah Road and Gale Street, Waratah Bay: cutting access to Waratah Bay.
 - Foster Beach Road, Foster: cutting access to Foster Beach.
 - Port Welshpool Road cutting access to Port Welshpool.

¹ This figure may under-represent future risk given the Intergovernmental Panel on Climate Change's latest report (Special report on the [Ocean and Cryosphere](#), September 2019) suggests a higher figure.

- Lower Toora Road, Bannison: cutting access at the Franklin River between Port Franklin and Toora.
- Private properties at the following locations (refer to **Figure 4**):
 - Port Welshpool significantly impacted leaving the remaining high ground an island.
 - Venus Bay, especially those located in the Rural Living Zone towards Point Smythe.
 - Tarwin Lower north western corner.
 - Cooinda Court and Gale Street, Waratah Bay.
 - North, north-west and north-east edges of the Sandy Point township.
 - Grip Road, Toora and surrounds heavily impacted.
- 10,000ha of farming land and production along the South Gippsland coast.
- Vegetation and habitat for indigenous fauna.
- Venus Bay fishing platforms, jetty and boat ramp.
- Walkerville rock revetment seawalls.
- Yanakie Caravan Park campsites.
- Port Franklin jetties and walking track.
- Cultural heritage assets such as Aboriginal shell middens and Walkerville lime kilns.
- Sea walls and coastal levees protecting existing assets.
- Boating assets (refer to **Map 11**).

Possible impacts on coastal assets was derived from mapping from the [Victorian Coastal Inundation Dataset](#) (VCID) and the [Corner Inlet Dynamic Storm Tide Modeling](#) Study as well as the Assessment of Existing Seawalls and Coastal Levees (2018).

Figure 3 represents all major roads protected by levees or seawalls, which might given a levee failure, be expected to be inundated during more frequent storm tide events (10% AEP storm tide levels) and also rare events (1% AEP storm tide levels). The figures have been completed for current sea level, and future 2100 (+0.8m SLR) conditions.

Figure 3. Length of road in metres that might be inundated in current conditions and at 2100 Sea Level Rise Conditions - Assessment of Existing Seawalls and Coastal Levees (2018)

Levee ID	Road Name	Inundation Length (m): Current Conditions		Inundation Length (m): 2100 SLR Conditions	
		10% AEP	1% AEP	10% AEP	1% AEP
1	Black Swamp Road	-	2,900	3,519	3,821
12	Yarram-Port Albert Road	-	910	1,270	1,411
13	Port Welshpool Road	-	-	1,140	1,183
17	Inverloch-Venus Bay Road	460	1,332	1,572	1,686
17	Lees Road	-	141	863	922
24	Waratah Road	11	109	534	678
24	Sandy Point Road	-	289	809	993
24	Gale Street	-	-	632	1,398
24	Fish Creek Waratah Road	-	-	270	292

A count of residential properties within the extent of the storm tide inundation which would be subject to increased risk by 2100 is shown in **Figure 4**. The mapping undertaken for the Assessment of Existing Seawalls and Coastal Levees (2018) has been specifically conducted for areas where there are levees and there could be other properties subject to risk.

Figure 4. Total number of residential properties affected by 2100 - Assessment of Existing Seawalls and Coastal Levees (2018)

Town	Total Number of Residential Properties Affected
Venus Bay - West	150
Venus Bay - East	46
Tarwin Lower	73
Waratah	3
Sandy Point	151
Port Franklin	4
Port Welshpool	270

Coastal Strategy Background Report

Map 11 - Boating Assets in South Gippsland

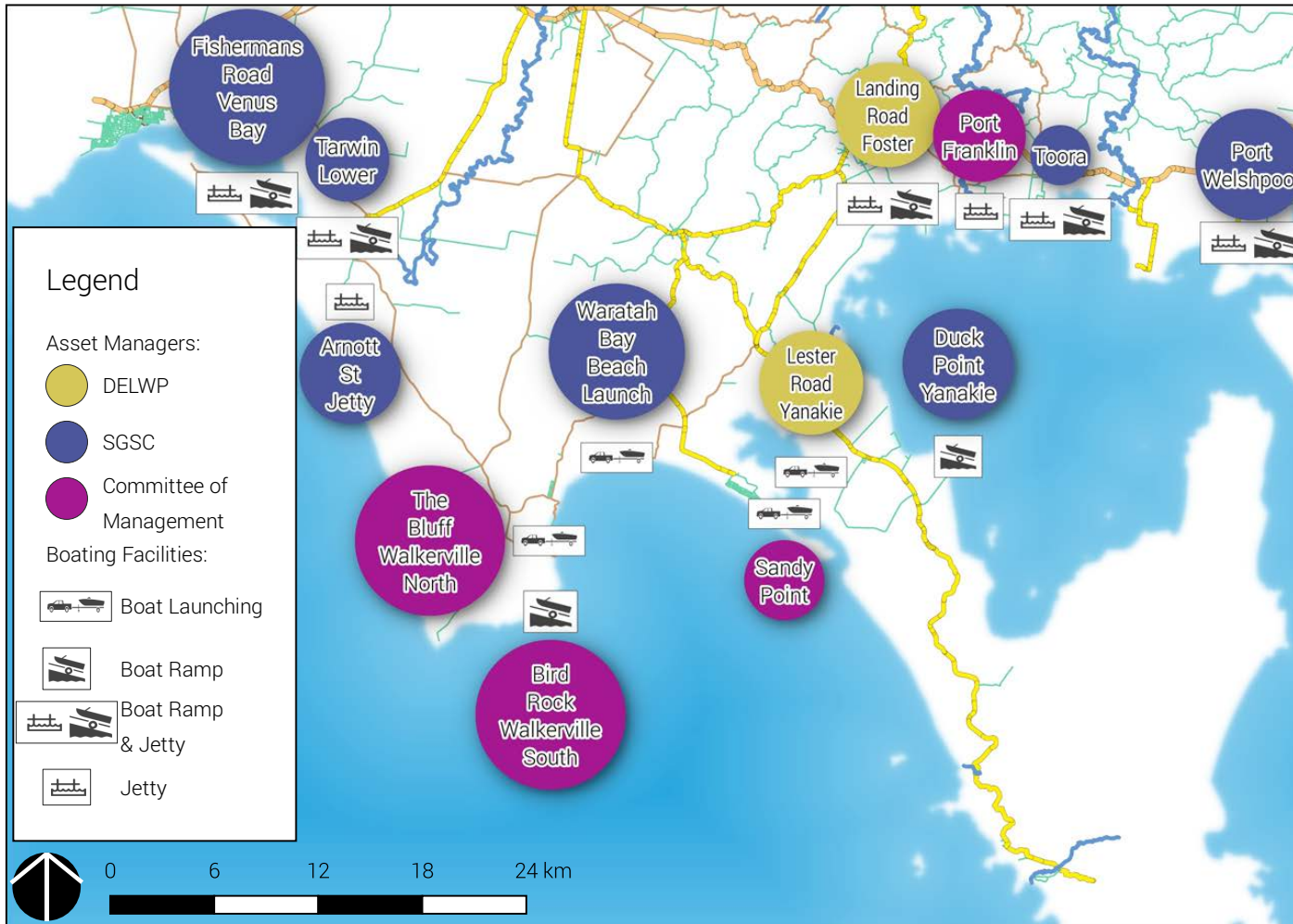




Photo Ken Fraser

Coastal Strategy Background Report

Mapping

This report uses mapping from the [Victorian Coastal Inundation Dataset](#) (VCID) and the [Corner Inlet Dynamic Storm Tide Modeling](#) Study to identify coastal areas subject to inundation risk. The VCID data set includes coastal modelling for sea level rise at 0.2 metres by the year 2040, 0.4 metres by 2070 and 0.8 metres by 2100 and includes storm surge. The Land Subject to Inundation Overlay (LSIO) control which applies to South Gippsland coastal areas is based on the 0.8 metres sea level rise mapping.

Clause [13.01](#) of the South Gippsland Planning Scheme states “Plan for sea level rise of not less than 0.8 metres by 2100, and allow for the combined effects of tides, storm surges, coastal processes and local conditions such as topography and geology when assessing risks and coastal impacts associated with climate change.”

The 0.8 metres figure may under-represent future risk given the Intergovernmental Panel on Climate Change's latest report (Special report on the [Ocean and Cryosphere](#), September 2019) suggests a higher figure.

Figure 5, Figure 6, Figure 7, Figure 8 and *Figure 9* show possible inundation and storm tide levels at various coastal areas throughout the Shire.

Figure 10 represents impacts to Snake and Little Snake Island however it is possible that due to the likes of wave energy or loss of vegetation these islands could be eroded away. These islands currently protect Port Welshpool and surrounding areas from wave action and if there were to be eroded away, further impacts could be experienced on the mainland.

Figure 5. Venus Bay Access Under Threat by 2040

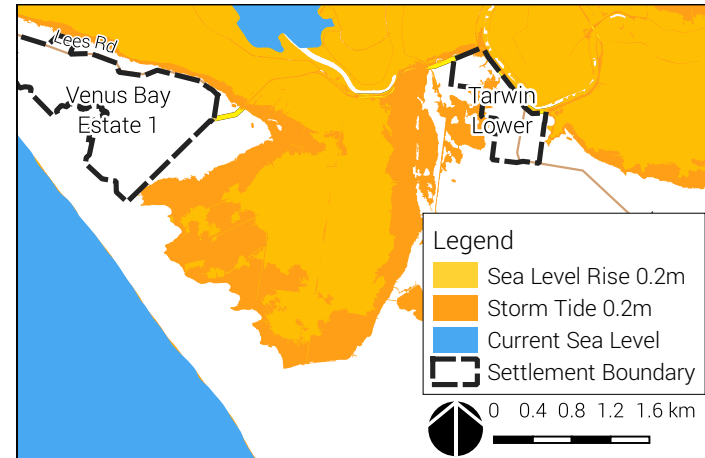


Figure 6. Sandy Point Access and Properties Under Threat by 2070

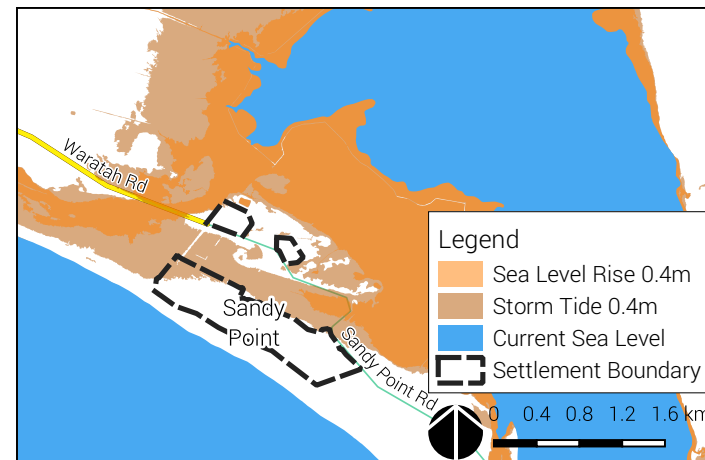


Figure 7. Grip Road, Toora Properties Under Threat by 2100

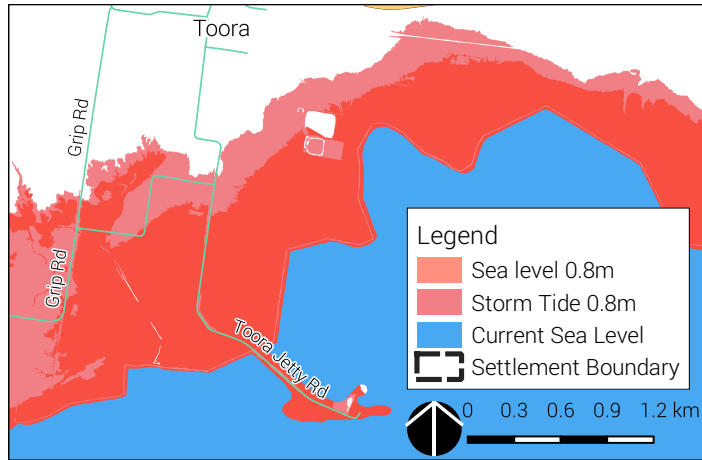


Figure 9. Waratah Bay Properties Under Threat by 2100

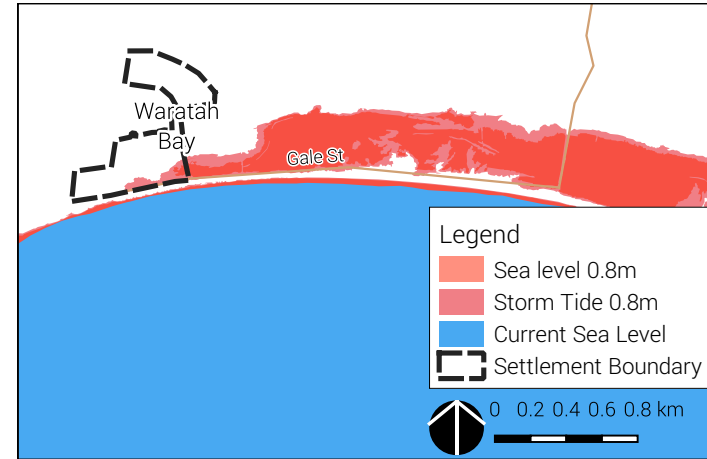


Figure 8. Port Welshpool Properties Under Threat by 2100

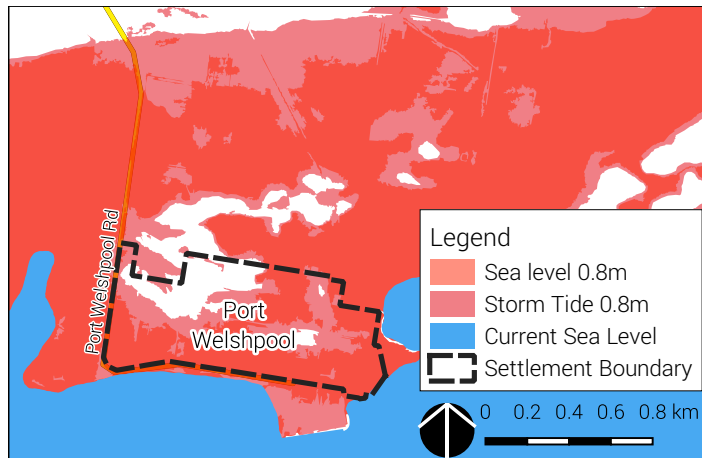
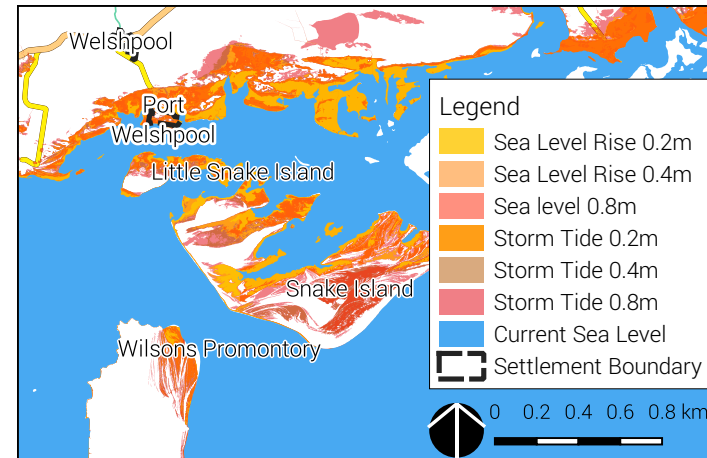


Figure 10. Potential Inundation of Snake Island by 2100



Coastal Strategy Background Report

Growth and Settlements

Coastal areas are very popular in Australia with 85 percent of the nation's population living 50 kilometres from the coast ([Australia State of the Environment, 2016](#)). A key part of South Gippsland's attraction is its coastline. South Gippsland is located close to Melbourne and is an affordable and less developed alternative to other coastal areas such as Inverloch and the Mornington Peninsula. Increasingly people are wanting to move to South Gippsland to be located closer to the coast. Coastal land for development is finite and is affected by a range of environmental risks including flooding, bushfire, erosion and coastal acid sulfate soil. Services are also limited. Issues relating to servicing include the lack of health care, core retail services, public transport, footpaths, community infrastructure and telecommunications coverage and issues with waste removal and rubbish management.



Photo Ken Fraser

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Existing policy at a state and local level seeks to manage population growth along the coast. The [Gippsland Regional Growth Plan \(2014\)](#), which provides the settlement framework for the region, does not 'promote' or 'support' growth along South Gippsland's coast. Instead it promotes and supports growth in larger centres in the region such as Leongatha, Korumburra and Inverloch which already have a significant amount of infrastructure that support employment and provide services. [The Gippsland Regional Growth Plan \(Page 60\) \(2014\)](#) identified that it is important to strengthen existing services rather than invest in new infrastructure that increases service areas of responsible authorities.

Any additional growth along the coast is to be accommodated within town settlement boundaries as set out in the [Victorian Coastal Strategy \(2014\)](#) in order to protect coastal values. Some coastal towns already have settlement boundaries established in the [South Gippsland Planning Scheme](#) at Clause 21.15. Other settlement boundaries are proposed to be introduced into the South Gippsland Planning Scheme via [Amendment C90](#) to implement the [Housing and Settlement Strategy \(2013\)](#). Coastal policy and provisions, including a range of planning overlay controls aim to ensure development along the coast is appropriate, for example avoiding areas subject to coastal hazards.

In some cases, planning controls could be improved to provide better and more accurate guidance for decision-making. For example, the Significant Landscape Overlays and Design and Development Overlays could provide clearer guidance as to the type of development that should or should not be provided in coastal areas. Planning controls could better reflect West Gippsland Catchment Management Authority's views, which often must be considered as part of planning decisions. This would help land owners better understand the development potential of their land. The planning system has no mechanism for indicating to owners the issues potentially preventing development, for example neighbouring bores which impact on wastewater disposal.

Wastewater disposal is a significant issue in coastal areas. It is expected that some housing in coastal areas will need to be evacuated in the future temporarily or permanently in the case of inundation. Wastewater systems, reticulated sewer as well as stormwater in low lying areas cannot operate effectively (or at all) when inundated.

To date, wastewater disposal requirements have restricted the level of development possible in unsewered coastal towns. Wastewater requirements have effectively limited one dwelling per lot and the building size. As wastewater treatment technology improves, less land is being needed for disposal meaning that coastal towns could expect pressure for bigger and denser development.

Venus Bay could become one of the municipality's largest towns if all the dwellings were occupied permanently. At the [2016 ABS Census](#), the town had almost 1,700 dwellings of which only about 300 were occupied. The town currently has almost 800 vacant lots ([Population Growth and Land Supply Study, 2016](#)). It is expected that most of these could be developed. On average 28 new dwellings are completed each year ([Population Growth and Land Supply Study, 2016](#)).

Road access to the town is expected to be affected by coastal inundation, sea level rise and storm surge in the future cutting off access to the town. While this already poses significant risks to existing residents and visitors, further development in the town poses additional risks. The introduction of sewer to the town could accelerate the already strong growth that the town is experiencing. This is likely to result in pressure for additional subdivision and more intense development with implications on biodiversity, asset management and service provision.

Coastal areas are likely to experience pressure for growth and additional services, many of which are provided in other nearby centres. If growth occurs, increasing expectations of residents is likely for similar services provided in Leongatha, Foster and Inverloch. Increasing service areas and associated infrastructure such as sewer, water, supermarkets and health facilities are expensive to construct and maintain.

Coastal Strategy Background Report

New dwellings continue to be approved in coastal townships affected by the Bushfire Management Overlay. New planning scheme controls introduced after the 2009 Black Saturday Bushfires require buildings to be constructed to a higher level of bushfire safety (increasing development costs) and the subdivision of land to create new residential lots has become increasingly challenging. If the landscape continues to dry and the bushfire risk continues to increase, the possibility exists for more restrictive controls to be placed on new developments in high risk areas in coming years.

VCAT has identified issues with development intensification in Venus Bay due to flooding and coastal risk ([Lindsay Holland Pty Ltd v South Gippsland SC \[2018\] VCAT](#)).



Photo Ken Fraser

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Further issues relating to coastal settlements include:

- High proportion of dwellings are vacant for extended periods which could significantly increase population if residents increase in permanency. For example Venus Bay could become one of Council's largest towns if all dwellings were occupied.
- Increasing pressure for growth of coastal towns, particularly in Venus Bay.
- Increasing expectations of residents in coastal areas in relation to services.
- Potential for coastal hazards to impact on growth (e.g. flooding of access road to Venus Bay).
- Potential issues with property insurance due to climate change effects.
- Difficulties facing emergency response (e.g. in response to flood and fire).
- Future pressures on coastal areas due to housing affordability issues in metropolitan Melbourne.
- Ageing population needing access to healthcare.
- Neighbourhood character being eroded.
- Planning controls provide limited guidance for decision making in some instances.

Case Study 1 Bushfire Risk in Coastal Areas

Bushfire is a critical consideration for the growth and development of settlements. Bushfire risk is increasing in Australia. Fire seasons are becoming longer and commencing earlier in the year ([Gippsland Climate Projections, 2019](#)).

Wilsons Promontory has been severely impacted by bushfires in 2005, 2009 and 2019. The 2009 bushfire resulted in the closure of park for several weeks due to damaged infrastructure and the risk posed to the public from falling trees. Bushfire risk at Wilsons Promontory is compounded by its single road entry point which, when cut by fire (as occurred in 2009), presents significant risk to human life. The park presents challenges to emergency services authorities in regard to public evacuation as well as environmental protection.

Wilsons Promontory is South Gippsland's most visited tourism attraction and its closure in 2005 and 2009 had significant economic, social and environmental implications for the region. It was reported that businesses were impacted as far away as Korumburra following the aftermath of the 2005 and 2009 fires.

In 2015, the Great Ocean Road was closed when bushfires destroyed 116 homes in Wye River. The Great Ocean Road and Wilsons Promontory are two of the State's key tourist attractions and their closure had significant impacts not only on the local residents but more broadly on the local and regional economy.



Wilsons Promontory Fire.



Wilsons Promontory Fire.

Coastal Strategy Background Report

Services

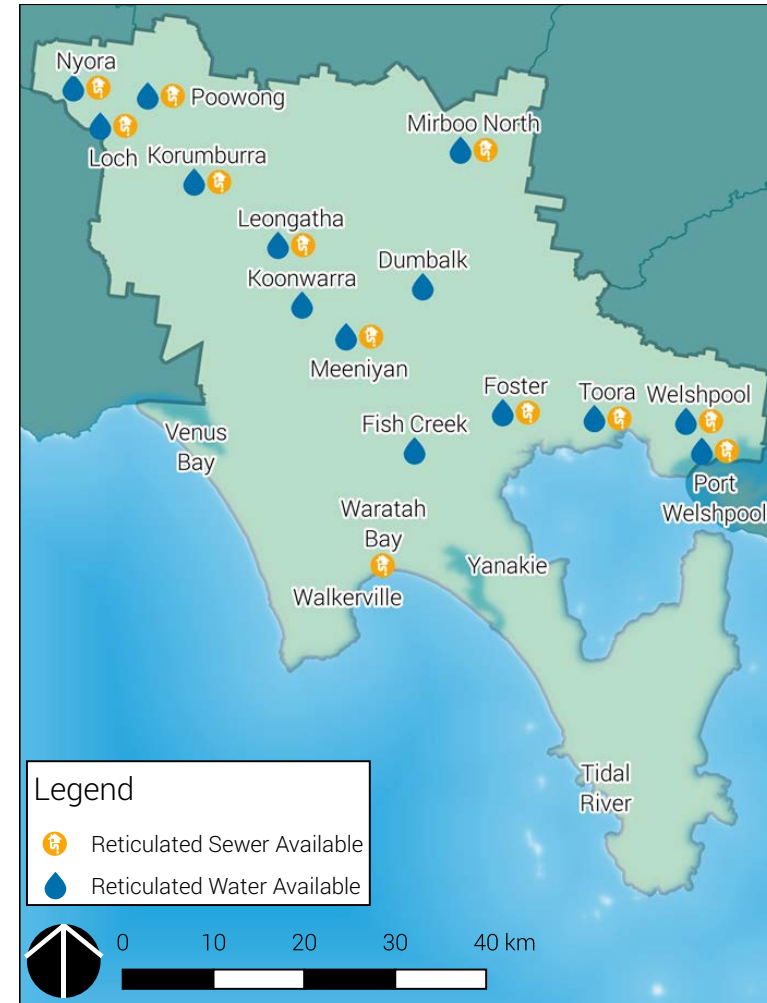
Wastewater and Drinking Water

Water quality and safe disposal of wastewater is an issue in South Gippsland's coastal towns, many of which are not connected to reticulated sewer or water. Even if all South Gippsland's coastal towns were connected to reticulated services, many areas may still experience issues with disposing of wastewater in the event of sea level rise and storm surges. Areas of Venus Bay, Tarwin Lower, Sandy Point and Port Welshpool are expected to experience these issues in the future.

Clause 21.15 of the [South Gippsland Planning Scheme](#) states that expansion cannot occur unless reticulated water and sewer is available in Venus Bay, Tarwin Lower, Waratah Bay (water only) and Sandy Point.

Currently in South Gippsland in areas without reticulated water (refer to **Map 12**), there are a large number of properties that depend on bores for their water supply. The aquifers that the bores pump from in these coastal areas are classed as unconfined, meaning that they can receive water from the surface such as rain runoff. Due to the predominantly sandy soils and a large number of older septic systems, there is some evidence that wastewater which does not meet current standards, is entering the groundwater supply.

Map 12 - Water and Sewer Services



As a result, Council advocates that no groundwater should be used for drinking water due to potential contamination issues. Population increases and drier climate conditions are expected to further increase contamination levels.

The [EPA Code of practice 891.4 July 16](#) states to minimise wastewater impacts to ground water, only secondary treated effluent that has been disinfected is allowed in Sandy Point and Venus Bay. The application of wastewater in sandy soils for all new development require that effluent can only be discharged at greater than 20 metres of any groundwater bores.

Adding to the complexities of the setback distance for the effluent areas, is the location of bores. There are no legislative constraints being applied to the location of the bores. They can be located where convenient for the land owner and drillers. Development of lots could be restricted if bores are placed along lot boundaries where neighbours are potentially unable to meet wastewater setback distances. Council would prefer bores to be located at the front middle of any lot or adjacent to any existing neighbouring bores. While there is mapping available for the existing ground water bores, the information is often inaccurate and hard to verify, making decision-making hard and time consuming.



A wastewater system being installed

There are issues in areas where reticulated water has been connected prior to reticulated sewerage. For example, Fish Creek is connected to reticulated water however not sewer. People who are connected to mains water have the ability to generate wastewater and overload the septic systems capabilities that lead to off-site environmental impacts. It is important to consider installing reticulated water and sewer together.

Figure 11. Approximate Bore Locations

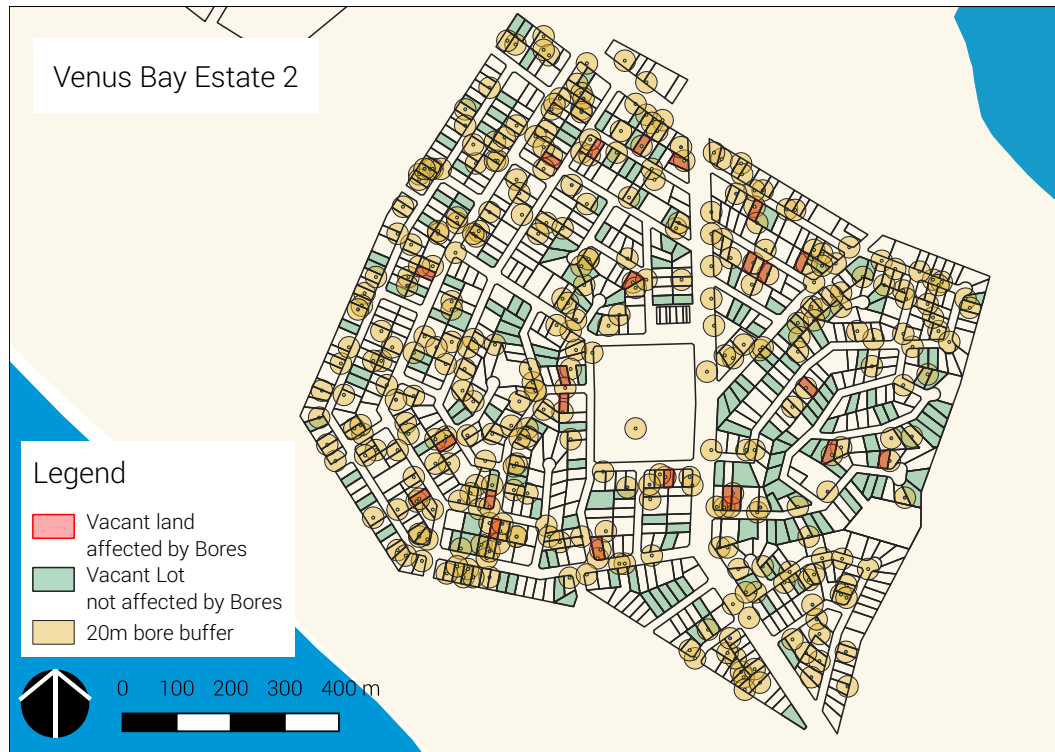


Figure 12. Illustration of Potential Issue with Bores and Development

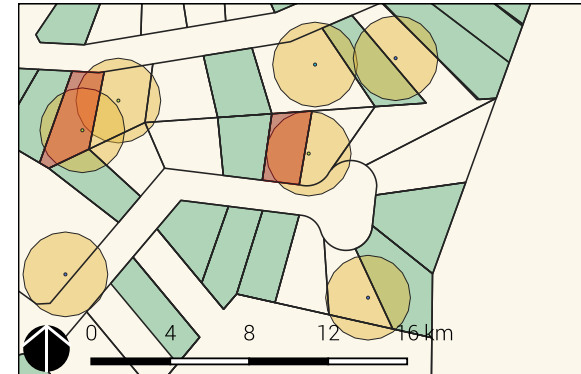


Figure 11 represents the large number of bores (estimated around 350) located throughout Venus Bay Estate 2 which is a similar scenario for other non-sewered coastal settlements.

Figure 12 displays vacant lots potentially affected by a neighbour's bore due to set back requirements and the lot's size and configuration. It is difficult for Council to provide accurate information as the true location of the bore can only be confirmed by a physical inspection of the lot. For the vacant land affected by a bore (highlighted red), neighbours have to negotiate the decommissioning and relocation of bores in order to develop their lots.

Identifying appropriate locations where the sewerage would be pumped and treated has proved challenging, adding to the complexities of being able to provide reticulated services to coastal towns. For example, a location to the South of Tarwin Lower and Venus Bay was investigated however the proposal site was found to be subject to inundation. There is a longstanding history, specific to each coastal area as to why the area is not connected to reticulated sewer and water.

South Gippsland (SG) Water has limited resources to maintain existing infrastructure as it is spread over such a large geographic area. It is expensive for SG Water to provide waste and water systems for small communities. At this point in time, SG Water has indicated that they will not be prioritising the development of small systems, but rather continuing to invest and grow their existing networks.

Healthcare and Public Transport

There are minimal aged healthcare services available in the coastal areas. This means that current residents have to commute to Foster, Leongatha and Korumburra for such services. Having larger older than average communities in these coastal areas continues to put pressure on in home aged care services and prevents the older people remaining independent longer in their own homes.

There is no public transport services into some coastal areas. This further compounds issues for the ageing population as well as posing issues for others that may rely on public transport (e.g. younger people who cannot drive or tourists).

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Public Land Management

Public Ownership and Management

Issues that relate to general public land management are:

- Lack of resources for monitoring and enforcement in holiday periods.
- Inconsistency between levels of public land management in coastal areas.
- Limited resources for asset maintenance.
- Inconsistency with government assessment of proposals in Wilsons Promontory and in the Public Conservation and Resource Zone.

Council currently assesses planning permits at Wilsons Promontory on Parks Victoria managed land because of planning permit triggers in the Bushfire Management Overlay where previously exemptions applied. The Department of Environment, Land, Water and Planning (DELWP) is the relevant fire referral authority under the Bushfire Management Overlay, not the Country Fire Authority (this is only the case for some Crown land in the municipality). Council refers Parks Victoria's planning application to DELWP and then DELWP provides Council with the conditions to then apply on Parks Victoria. It is not considered that assessment by Council adds any value to decision-making when direct liaison could take place between Parks Victoria and DELWP who are both State agencies.

The Public Conservation and Resource Zone requires a planning

permit for a use, building or works not undertaken on or behalf of the public land manager. Council often receive applications for use, building or works on coastal Crown land from parties like Committees of Management because they have not been given the authority to act on behalf of the public land manager for their proposal (though general or conditional consent is an application requirement). Council's involvement is often considered unnecessary, particularly as the decision guidelines mostly limit Council's assessment scope to the views of the public land manager or other relevant land manager having responsibility at the time of application.

Without this requirement, Council would potentially not be notified of development and potentially not able to provide input into the assessment. It is useful for Council to be involved in the decisions about permissions because Council is often expected by the community to take on management and renewal of assets when groups like Committees of Managements decide they can no longer look after and renew them or need assistance for this. There may, however, be a better way for Council to be notified and involved in these approvals.

Council Managed Land

Along the South Gippsland coastline, Council as a Committee of Management is responsible for Yanakie foreshore, Fisher Reserve (Foster Beach) and Waratah Bay foreshore. The State Government has stated that they will take over responsibility for the Yanakie foreshore area subject to the removal of the boat sheds at Red Bluff with Parks Victoria to become the land manager. The State Government has previously indicated that they would take over Waratah Bay as well.

The State Government may be better placed to manage these areas given their experience, expertise, current land responsibilities and resources.



Aerial imagery of damage to vegetation from vehicle movements along the foreshore adjacent to Shellcot Road, Yanakie.

Issues for Council managed land include:

- Lack of expertise and resources for monitoring and enforcement, particularly in holiday periods.
- Limited resources for asset maintenance.
- Possible public liability claims.

Yanakie Foreshore

The key issues that relate to Yanakie foreshore are:

- Private boat sheds occupying public land along the foreshore.
- The State Government will not release South Gippsland Shire Council as the Committee of Management while boat sheds are on the land.
- Management of Yanakie foreshore is important because it neighbours the Corner Inlet Marine and Coastal Park (Ramsar site) - a sensitive site.
- Destruction of sensitive habitat through possible illegal vehicle beach access and non-approved waste systems.
- Unofficial beach boat launching.
- Loss of mangroves due to beach launching and jetty that was built in around 2003.
- Fire response now required from CFA due to boat sheds.
- Erosion at Yanakie caravan park.

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Economy and Tourism

Economic and tourism issues relating to South Gippsland's coastal areas include:

- Tourism is seasonal, particularly from AFL Grand Final Day to Easter and there is not consistent income provided to the area and people using the area.
- Coastal activities at risk of inundation with 10,000ha of Zoned land estimated to be inundated by 2100.
- Parking, traffic and beach access pressure in holiday periods
- Conflict between water and beach users (e.g. commercial vs recreation users, dogs vs non-dog walkers on beaches).
- Coastal infrastructure under pressure in holiday periods (e.g. toilets failing).
- Difficulties attracting investment in the area for larger tourism facilities like a conference centre.
- Potential for adverse impact of additional development and tourism on the environment.
- Dangerous corner along the freight route to Barrys Beach.



Options



Coastal Strategy Background Report

Adaptation Options

In response to many of the issues identified earlier in this report (see the chapter on page 31), this chapter sets out a variety of options for South Gippsland's coastal areas and the implications of these options. These options include ways to maintain, to avoid deterioration and to improve coastal areas.

One of the biggest challenges that the South Gippsland Coastal Strategy has to face is looking ahead to address increasing environmental risks affecting coastal settlements and assets.

Planning for increasing environmental hazards is difficult because government, land owners and managers, business and other parties risk incrementally undertaking significant investment in protection measures only to incur great losses and costs over time.

Ultimately there may be some coastal areas where property and assets may be damaged and or lost. This will have significant implications for residents and Council. It is prudent to consider early on whether relocation and removal may need to be considered and whether investment in these areas should be restricted in the meantime. The State Government has set out possible options for adaptation at page 38 of the [Draft Marine and Coastal Policy](#) (refer to *Figure 13*).

The potential loss of road access to the towns of Venus Bay, Tarwin Lower, Sandy Point and Waratah Bay is a key concern because it is likely to impact so many properties (over 1,000 residential properties by 2100 refer to *Figure 4*).

Figure 13. Options for Adaptation from the Victorian Government's [Draft Marine and Coastal Policy](#) p.38

Adaptation actions:

Non-intervention: allow marine and coastal processes, and the hazards they may pose, to occur.

Avoid: locate new uses, development, and redevelopment away from areas that are or will be negatively impacted by coastal hazards.

Nature-based methods: enhance or restore natural features to mitigate or provide protection from coastal hazards caused by marine and coastal process. For example, restoring mangrove systems to lessen the impact of sea level rise and storm surge.

Retreat: remove / relocate uses, structures, or assets away from areas that are or will be negatively impacted. Retreat of natural systems may also be required, for example saltmarsh habitat that would naturally migrate landward in response to sea level rise may be obstructed by the built environment, and corridors of undeveloped land may be required to allow landward movement of species and habitats.

Accommodate: change the design of structures to lessen the impact of changed condition. For example, raising minimum floor heights of dwellings to reduce the impact of current and future coastal flooding.

Protect: construct, maintain or enhance existing physical barriers to mitigate the impact of coastal hazards caused by marine and coastal processes. For example, soft protective measures such as beach renourishment to restore foreshore following erosion events, or hard-protection such as sea wall to protect from sea-level rise and storm surge.

Options to manage coastal hazard risk in South Gippsland's coastal areas are canvassed on the following pages. These options have been prepared for community consultation. **This is not an exhaustive list.** It is expected that further options will be explored with the community in the development of the South Gippsland Coastal Strategy.

The Victorian [Draft Marine and Coastal Policy](#) provides guidance to manage coastal hazard risks by considering the full suite of adaptation actions including: non-intervention, avoid, nature-based methods, retreat, accommodate, and protect. Options in this report have been grouped according to these categories (refer to Figure 15). Options that consider other coastal priorities and demands have also been proposed as part of this Background Paper.

Non-intervention

Do Nothing

This involves stopping maintenance of coastal areas which may be appropriate for some areas, particularly areas with limited assets and accessibility.

Implications & Risks:

- Would not provide protection for significant assets located in South Gippsland's coastal areas.
- Would have unreasonable safety risks to people and property which would also pose legal and financial risks to decision-makers, land owners and land managers.
- Would not recognise the significant effort and resources have already been committed to existing investment including Council projects in South Gippsland's coastal areas e.g. Venus Bay tourism precinct, Sandy Point caravan park, Port Welshpool marine precinct, coastal levees assessment, etc

*Coastal Strategy Background Report***Avoid****Improve Planning Controls for Development**

Council could consider amending the South Gippsland Planning Scheme to better address risks and existing development potential in coastal areas, particularly settlements. This would help locate new uses, development and redevelopment away from coastal hazards and minimise issues in areas of hazard. This may be achieved by:

- Restricting further subdivision.
- Limiting density by restricting one dwelling per lot.
- Further restricting percentage of impermeable surfaces, building bulk (e.g. through site coverage, plot ratio, etc.).
- Requiring development to be built to withstand climate modeling forecasts (e.g. raising houses and building to new standards as discussed in [Bay Blueprint 2070](#)).

Implications & Risks:

- May not be supported as there are few examples of such restrictive planning controls in Victoria's coastal areas.
- Is likely to be opposed by affected land owners as it would potentially further restrict the development of sites.
- Would provide the community through the Planning Scheme Amendment process, the opportunity to make comments and be heard by an Independent Planning Panel.
- Could take a long time to take effect as Planning Scheme Amendments can take over a year to process.

Declare South Gippsland's Coastal Areas a Distinctive Area & Landscape

Council could advocate to the State Government to declare South Gippsland a distinctive area and landscape (refer to ***Case Study 2***). This may result in more permanent township boundaries and additional development controls (e.g. setback and height restrictions).

Implications & Risks:

- Could receive opposition by affected land owners whose development potential is restricted.
- Would provide greater long-term certainty to the community regarding development.

Case Study 2 Distinctive Areas & Landscapes Victoria

In 2018, the Victorian Government passed landmark legislation to recognise and safeguard the State's distinctive areas and landscapes and to achieve better coordinated decision-making by government agencies, local councils and other key parties.

The Planning and Environment Amendment (Distinctive Areas and Landscapes) Act 2018, enables the government to declare a distinctive area and landscape subject to meeting strict criteria.

Once declared, a Statement of Planning Policy must be prepared for the area in partnership with Traditional Owners, local councils and the community. A Statement of Planning Policy will include a long-term vision of at least 50 years, policy objectives and strategies to achieve the vision, and a strategic framework plan for guiding the future use and development of land in the declared areas.

This plan may identify long-term settlement boundaries to ensure that development does not inappropriately encroach into valued natural and rural landscapes.

Once implemented, Parliament must ratify any future changes to the settlement boundaries. This is the same process in place for Melbourne's Urban Growth Boundary ([DELWP, 2019](#)).

The Macedon Ranges, Bass Coast, Bellarine Peninsula and Surf Coast are the first four areas where Distinctive Area and Landscape controls will be applied.



Walkerville South. Photo Ken Fraser



Port Welshpool. Photo Ken Fraser

Nature-based Methods**Investigate Nature-based Methods**

Options to enhance or restore natural features include:

- Regenerative activities such as beach nourishment, dune construction and re-vegetation programs.
- Reviewing penalties for illegal activities in coastal areas such as increasing fines for illegal dumping of rubbish, fires, alcohol and disturbing wildlife.
- Continue to work with West Gippsland Catchment Management Authority (WGCMA) to minimise pollution from waterways that affect the marine and coastal environment.
- Improve monitoring and reporting on marine ecosystems.

Implications & Risks:

- Can be challenging to coordinate beneficial outcomes across sectors and jurisdictions given the number of land owners and managers and their differing interests and responsibilities.
- Would be constrained by available funding and interest of affected land owners and managers.

Case Study 3 Sea Urchin Removal in Corner Inlet

Corner Inlet has been significantly impacted by a spike in the number of purple spined sea urchin. In a unique partnership, commercial fishermen have been permitted to harvest and sell sea urchins from Corner Inlet in a bid to improve seagrass habitat at a crucial wetlands biodiversity site.

The Yarram Yarram Landcare network, in partnership with the commercial fishing industry, will also work to restore the seagrass habitats by replanting 200 hectares of broad leaf seagrass in Corner Inlet. This project has been jointly funded (\$250,000) by the Victorian Government and the National Landcare Program to regrow seagrass in the inlet.



Photo Parks Victoria

Case Study 4 Long Spined Sea Urching Strategy, Tasmania

Another example where scientists and industry are working together to solve environmental issues is the Long Spined Sea Urching Strategy Tasmania. The long spined urchin is expanding southwards from its traditional native habitat. The urchins graze on kelp and other marine plants, forming extensive barren. These barrens significantly impact on the biodiversity of rocky reef habitat with devastating impact on recreational and commercial fisheries.

One of the key components in the battle against the invader is the recent allocation of \$5.1 million over five years by the Tasmanian State Government to support a number of strategies to help improve the abalone industry. One of which is the control of the long spined sea urchin incursion using approaches such as by providing a harvest subsidy to help increase interest.



Processing of Sea Urchins. Photo Tasmanian Government

Nature-based Methods continued

Improve Carbon Stocks

Coastal ecosystems are critical to maintain human well-being and global biodiversity. In particular, mangroves, tidal salt marshes, and seagrasses provide numerous benefits and services. Coastal ecosystems contribute to mitigating and adapting to the impacts of climate change. This option would involve sequestering and storing carbon (known as coastal blue carbon) from the atmosphere and oceans.

Implications & Risks

- Would require the development of a plan that would enable sequestering and storing carbon to occur.
- Would require appropriate resources (including expertise and funding) and interest of affected land owners and managers.

Coastal Strategy Background Report

Nature-based Methods continued

Improve Planning Controls for Vegetation Removal

This involves changes being made to the State Government planning controls that currently provide for vegetation removal in coastal areas. Council main option in this instance is to advocate for changes.

Implications & Risks

- Without action, vegetation will continue to be removed, increasing risk of erosion and changing the landscape and character of coastal areas.

Case Study 5 Tomago Wetland Restoration, Newcastle NSW

Many estuarine floodplains in eastern Australia were isolated from tidal waters in the 1950's and 1960's as a consequence of flood mitigation measures. Over recent years, efforts have been made to re-introduce tidal waters to improve wetlands that facilitate fish passage and the restoration of habitat for shorebirds. The Tomago Wetland restoration is one such program.

The project is a collaboration between NSW Fisheries, the National Parks and Wildlife Service, the Hunter Regional Local Land Services, and the Water Research Laboratory at the University of New South Wales. The implications of tidal reinstatement for carbon sequestration is being investigated by scientists from Macquarie University, Sydney, and the University of Wollongong ([UNSW Sydney, 2019](#)).



Photo UNSW Sydney

Case Study 6 Fox Control Venus Bay

Since introduction into Australia in the 1850's, the Red Fox (*Vulpes vulpes*) has spread across the continent. It is a predator of many small to medium sized native animals and ground nesting birds. Foxes carry many diseases that infect both wildlife and domestic animals. These include hydatids, distemper, parvovirus, canine hepatitis, heartworm and sarcoptic mange.

To address these impacts, the Friends of Venus Bay Peninsula, in partnership with a number of other organisations, initiated a Fox Control Program on the peninsula. The program began in 2007 with a registered contractor laying soft jaw traps, the most humane method currently available.

In 2008 the program was expanded to include adjoining farmlands and Cape Liptrap Coastal Park, where shooting and baiting are the most effective control methods. The ongoing fox control program now includes a combination of soft jaw trapping, shooting, baiting, cage trapping and a community fox watch to report fox sightings ([Friends of Venus Bay Peninsula Inc, 2019](#)).

Retreat

Relocate Settlement Areas

Council could consider advocating to the State Government to investigate the potential long-term need for settlement relocation where inundation is expected to occur and wastewater systems and other infrastructure will no longer be effective e.g. Port Welshpool (refer to **Figure 12**) or Venus Bay due to being inaccessible by road.

Implications & Risks:

- Would be very costly (potentially hundreds of millions of dollars).
- Would be a difficult process involving land acquisition, multiple parties and organisations as well as strong political commitment.
- Could address risk for the long-term better than engineering solutions that will have ongoing costs and risk.
- Would require finding an appropriate relocation area which may be difficult and is likely to lead to the loss of valuable agricultural land.

*Coastal Strategy Background Report***Retreat continued****Rezone Significantly Constrained Land**

Council could request that the State Government rezone residential land subject to significant environmental hazards and constraints to a more appropriate zone. For example it may be appropriate to rezone privately owned Rural Living Zoned land at the end of Lees Road, Venus Bay to Rural Conservation Zone. This could better respond to the impacts of this area from flooding. Rezoning would assist accommodating the ecological function as well as associated flora and fauna in the area.

Implications & Risks:

- Would mean that planning controls better reflect the existing constraints of land.
- Would be difficult to apply in many instances given its impacts on land owners.
- Would involve a Planning Scheme Amendment (as for "Improve Planning Controls for Development" on page 56).

Remove Assets

This involves the removal of assets from areas affected by coastal hazard risk. This could be undertaken incrementally as assets reach their end of life, become damaged and / or unsafe in accordance with an asset management policy. Aligning the removal of assets with coastal hazard risk increases (e.g. reaching a particular point of sea level rise) could be a way to provide more certainty as to when assets could be removed.

Implications & Risks:

- Could result in community opposition where there are expectations that assets will be renewed.
- Without action, coastal assets could become damaged or unsafe in a storm event. Such an event could destroy a number of assets at once, having a dramatic effect on the coast.

Case Study 7 Summerland Estate Buy Back

In 1985 on Victoria's Phillip Island, a State Government decision was made to buy back the entire Summerland estate and return it to a wildlife reserve for penguins through the Penguin Protection



Photo Phillip Island Nature Parks

Plan ([Phillip Island Nature Parks, 2019](#)). This buy back ensured a secure future of the penguin population as well as improving the environment for other species such as mutton bird ([ABC News, 2018](#)). This is a rare example where buy backs have occurred for conservation purposes.

Implications:

- The announcement from the government came as a shock to current landowners.
- Relocation for landowners was very stressful.
- The buy back period took an additional 10 years to what was originally stated creating additional stress and unknown for land owners.
- Landowners were prohibited from any forms of development such as sheds.
- Perception that it was just the landowners in the Summerland estate putting the penguin population at risk.



Photo Phillip Island Nature Parks

Case Study 8 Isle de Jean Charles Resettlement, USA

The residents of Isle de Jean Charles live on an island that is rapidly disappearing into the Gulf of Mexico.

Once encompassing more than 22,000 acres, only 320 acres of Isle de Jean Charles remains. Due to a broad range of environmental factors, the island has experienced 98 percent land loss since 1955. The sole connecting road to the mainland built in 1953 is often impassable due to high tides, storm surge or wind. This effectively blocks residents from school, work and essential goods and services.

In January 2016, the U.S. Department of Housing and Urban Development awarded the state of Louisiana US\$48.3 million for the Resettlement of Isle de Jean Charles, as part the National Disaster Resilience Competition. The relocation is part of a first-of-its-kind Federal grant to relocate communities affected by sea level change ([State of Louisiana, 2016](#)).

Retreat continued

Undertake Assisted Transition

Assisted transition is an option proposed by the research paper [How to Retreat: The Necessary Transition from Buyouts to Leasing \(2018\)](#) written by Allan Young (2018). It offers an alternative to the traditional relocation of settlements which is likely an unaffordable solution.

Assisted transition involves:

- The offer of lease by government for a set period for vacant land, on the condition of the removal of all private structures in coastal areas.
- When land is abandoned, the cost to remove associated structures be recovered through adjustment of rent.
- Providing an income stream to owners during a period of loss and adjustment however ensures it is not an arrangement in perpetuity.
- Lease agreements to be tailored to policy intent, available funding and the local context.
- Early disincentive to intensify development.
- Rezoning to occur as land is restored to natural environment.

Implications & Risks

- Has not been tested in practice and as such may be difficult to undertake and may not be successful. It has only been proposed as part of a research paper.

Increase Role of State Government to Address Future Loss of Private Properties

Council could consider advocating to the State Government to take a greater role in planning for and addressing the issue of private property being 'lost' to coastal hazards in the future (including when and how retreat should occur).

Implications & Risks:

- May not align with the State Government's proposed approach in the [Draft Marine and Coastal Policy](#) (page 39) which states the State Government and marine and coastal Crown land managers will not manage coastal processes for the primary purpose of protecting private properties.
- Would provide for a consistent approach to at risk coastal areas across the State.

*Coastal Strategy Background Report***Accommodate****Advocate to Build Up Roads (with Possible Bridges)**

Where VicRoads is the responsible road authority, Council could advocate to the State Government to raise coastal roads that may be impacted by sea levels (may include bridge building). This could be considered for roads providing access to coastal settlements such as Inverloch-Venus Bay Road or Waratah Road (refer to *Figure 5* and *Figure 6*).

Implications & Risks:

- Would be challenging to determine how high the roads should be and how they should be engineered to sustain natural processes, sea level rise and future weather events.
- May require rebuilding if they cannot sustain these events.
- In the case of Port Welshpool, building the road up for access may be redundant given that much of the town is forecast to be impacted by inundation (refer to *Figure 8 on page 41*).
- Would be very costly (potentially millions of dollars).

Build Up Roads

Council could consider raising coastal roads that may be impacted by sea levels such as Gale Street.

Implications & Risks:

- Would be challenging to determine how high the roads should be and how they should be engineered to sustain natural processes, sea level rise and future weather events.
- May require rebuilding if they cannot sustain these events.
- Would be very costly (potentially millions of dollars).
- Could have significant implications for South Gippsland rate payers and the services able to be provided by Council for Council to fund this option.

Accommodate continued

Alternative Road Locations

Council could consider investigating alternative road locations (if any) and the possibility of building them at higher levels.

Implications & Risks:

- May be few alternative locations for roads to access settlements that are not subject to coastal hazards or contain sensitive environmental areas (e.g. Venus Bay and Port Welshpool).

Support Future Sea Access

This involves primary access via sea (e.g. via barge or ferry at Venus Bay) rather than land where existing road access is lost.

Implications & Risks:

- Could result in pressure on Council to fund a ferry service which would have significant implications for South Gippsland rate payers and the services able to be provided by Council for Council to fund this option.

*Coastal Strategy Background Report***Accommodate continued****Establish an Asset Management Policy**

Council could prepare a policy that guides asset investment, renewal and removal in areas affected by coastal hazard risks. It could:

- Include criteria to consider before undertaking investment in a new asset such as asset lifespan.
- Limit renewal upgrades or improvements to existing infrastructure in coastal areas affected by coastal hazard risks.
- Include thresholds to determine when existing infrastructure will be removed and / or stop being repaired / provided as a result of coastal hazards.

Implications & Risks

- Would provide clarity to the public as to Council's views on new assets and plans for existing assets at risk of being affected by coastal hazards.
- May risk being ignored where there is strong community pressure to retain an asset in an at-risk location.
- Could prevent significant resources, including millions of dollars or more, being spent on asset protection and construction only to be damaged or destroyed soon after.

Prepare an Access & Parking Strategy

Council could prepare an access and parking strategy for coastal areas that considers emergency management particularly in peak holiday season. This may consider visitor information, parking waivers and the provision of car parking areas.

Implications & Risks

- Likely to require significant resources to implement.
- Would be difficult to establish a strategy that addresses existing and future car parking issues particularly in emergency situations during holiday periods while also supporting tourism
- Could result in providing more car parking in coastal areas which may encourage more visitors and put more people at risk.
- Without action, could result in risk to life and damage to the environment.

Accommodate continued

Introduce More Prescriptive Building Requirements

Council could advocate to the State Government to introduce more prescriptive building requirements on land affected by coastal hazards. This could include:

- Introducing building setbacks.
- Requiring building construction on stilts (see [Bay Blueprint 2070](#)).

Implications & Risks:

- Could be difficult to determine appropriate setback requirements.
- Could be introduced as part of the State's new Marine and Coastal Strategy (still to be prepared).

Protect

Engineering Solutions

There are a range of human made engineering options that could be used to address coastal hazards. These options seek to minimise risks, particularly associated with hazard events. They often cost less in the short-term but may not be feasible as a long-term solution. Examples include but are not limited to:

- Artificial reefs
- Detached breakwaters
- Groynes and artificial headlands
- Seadykes or levees
- Seawalls
- Storm surge barriers

Implications & Risks:

- Could involve significant time and finances, only to be damaged and or destroyed by coastal processes, sea level rise and extreme weather events.
- Would be very costly (potentially tens of millions of dollars).

Case Study 9 Walkerville Seawalls

The Walkerville North Foreshore Development Project involved the construction of seawalls and a streetscape upgrade. The Walkerville Foreshore Reserve Committee of Management (WFRCoM) was directly responsible for the reconstruction of approximately 400 metres of the existing seawall north of the boat ramp. The streetscape works were a collaboration between WFRCoM and South Gippsland Shire Council and included the rehabilitation of the existing road, construction of new car and boat trailer parking, retaining walls, and footpaths.

The photos show the upgraded seawall protecting vital assets such as the road and the Walkerville North Hall. The cost for the seawall construction was approximately \$2,000-2,500 per lineal metre. The estimated cost of works would vary in other locations due to height, location and design of seawalls.



Walkerville North Hall

70



Seawall. Photo Walkerville Foreshore Reserve Committee of Management



Streetscape works. Photo Walkerville Foreshore Reserve Committee of Management

Case Study 10 Flying Fish Point, QLD Seawall Replacement Project

The Flying Fish Point Seawall Upgrade project for Cassowary Coast Regional Council, located south of Cairns, included 650 metres of rock revetment upgrade.

The rock revetment design includes green engineering 'fish-friendly' features, adding structural complexity, which encourages ecological development. The project team collaborated with James Cook University to consider the long-term effects of all design options on the local fish population. The 'fish-friendly' design features included shaping rock armour to particular pattern placement and incorporating concrete precast Reef Balls within the revetment toe ([Cassowary Coast Regional Council, 2015](#)).

To date the seawall upgrade has an estimated cost of around \$8,700 per metre (or a total of \$6.5 million for around 740 metres of seawall).



Photo Cassowary Coast Regional Council

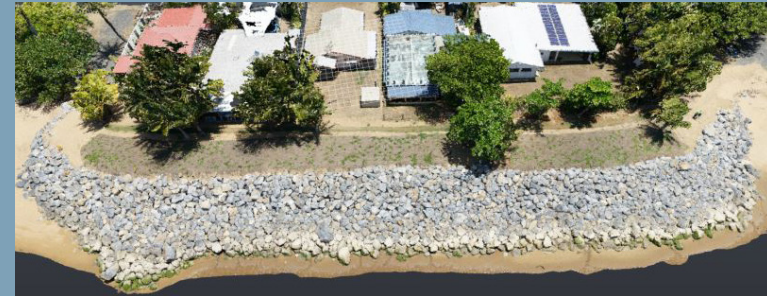


Photo Cassowary Coast Regional Council

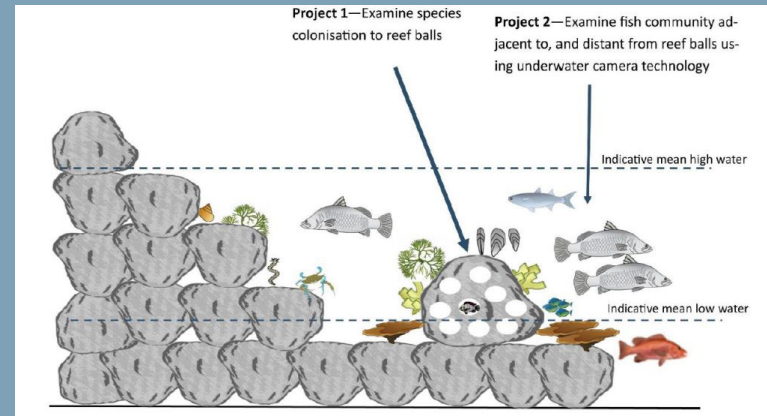


Photo Cassowary Coast Regional Council

Case Study 11 Artificial Reef Portarlinton, Victoria

The City of Greater Geelong and the University of Melbourne have been working towards developing sustainable methods to protect coastal communities from erosion. They have been creating artificial habitats to reduce wave height and accumulate sand.

An example is the newly installed reef at Portarlinton, which has been seeded with native mussels to create a living breakwater. The reef is 130 metres long, 8 metres wide and on average 0.65 metres high. It has been designed and constructed to stabilise a beach and prevent further erosion adjacent to a shallow marine environment. ([Geelong City Council, 2019](#)).

It is estimated that the construction cost around \$420,000 plus design fees of around \$30,000. It must also be noted that the material that filled the cages (rock and shells) was provided free of charge, reducing the cost to Council.



Photos Geelong City Council

Other Options

Funding

It is anticipated that addressing coastal hazards will cost millions of dollars (more likely hundreds of millions of dollars) over time. Existing funding sources are limited and cannot necessarily be relied upon into the future. For example securing State Government funding can be strongly contested with more funding generally being directed to centres of population (rather than undeveloped coastal areas and small coastal settlements). Funding to address risk to coastal assets is likely to be difficult for government, other land owners and managers and the community. A few different options have been discussed.

Establish a Coastal Adaptation Levy

Council could advocate to the State Government to introduce a coastal adaptation levy (similar to the existing fire levy) to fund various issues arising from increasing coastal hazard risks.

Implications & Risks:

- Would result in extra cost burden on rate payers if introduced like the fire levy.

Establish Special Charge Scheme/s

Council may be able to establish a [special charge scheme](#) to facilitate maintenance, improvements and relocation of coastal assets (e.g. sea levee to protect Port Welshpool).

Implications & Risks:

- Would require land owners that benefit from the coastal asset to contribute to the asset cost.
- Would result in extra cost burden on rate payers because Council funds part of the asset cost.
- Would potentially involve spending a large amount money on an asset that could get damaged or fail before its predicted life cycle.

Use Crowd Sourced Funding

Assets that are highly valued by the community could potentially benefit from crowd sourced funding where it is considered they need to be replaced, fixed or renewed.

Implications & Risks:

- May be more difficult to fund expensive assets.

Coastal Strategy Background Report

Information, Education & Warnings

Provide Information to New/Existing Residents

Council has existing information packs available for new/existing residents on its website and available for distribution in hard copy. Some of the issues experienced across the municipality are already discussed, although there is limited or no information specific to residents of coastal towns/areas. Information could be updated to include specific detail regarding coastal areas.

Implications & Risks:

- Could provide information that better prepares residents for living in the coastal environment and avoiding coastal issues.

Continue to Use Section 173 Agreements

Council could continue to require Section 173 agreements to be placed on titles as part of planning permits issued in Venus Bay, Sandy Point, Waratah Bay and Port Welshpool. These agreements recognise the potential impacts of climate change on the area.

Implications & Risks:

- Provides a warning for current and future landowners that these properties may be affected by flooding/climate change.
- Does not address coastal issues.

Public Land Management

Transfer of Land Management Responsibilities

Council should advocate to return land management responsibility of coastal foreshore land that Council manages as a Committee of Management to DELWP. For Yanakie Foreshore, the State Government has committed to taking over responsibility of this area 'as resources permit'.

Implications & Risks:

- Would be appropriate as the State Government are better placed to manage this land consistently with other land they manage along South Gippsland's coast.
- Requires removal of the boat sheds at Red Bluff to return the Yanakie foreshore to DELWP as discussed in [VEAC's Marine Investigation \(2014\)](#) and the [Government Response](#).

Update Planning Controls on Public Land

Council could advocate to the State Government to review planning controls for coastal Crown land and Wilsons Promontory to place decision-making responsibility with the State Government with input from Council where relevant (refer to discussion at page 50).

Implications & Risks:

- Would reduce red tape for approvals on coastal Crown land and at Wilsons Promontory.
- Could lead to revised controls that do not involve notification to Council.

*Coastal Strategy Background Report***Maintain Service Provision & Assets****Prepare an Integrated Water Management Strategy**

Council could develop an integrated water management strategy for South Gippsland in consultation with water authorities that would lead to the improvement of existing storm water management infrastructure assets to minimise nutrients, sediments, litter and pathogens entering waterways and the marine environment.

Implications & Risks:

- Likely to require significant resources to prepare as well as to implement.
- Likely to take significant time to implement.

Improve Service Provision & Assets**Provide Reticulated Sewer & Water Where Absent**

Council could advocate for reticulated sewer and water services in coastal towns where these services are currently absent. This could be considered for town areas not likely to be affected by future inundation.

Implications & Risks:

- Could lead to major population growth and development in towns which in turn is expected to:
 - add pressure on the coastal environment;
 - affect the character of coastal towns; and
 - increase the number of people and the amount of property at risk due to coastal hazards.
- Would address public health issues that septic systems can pose when not operating correctly.
- Would be most effective and have less adverse impacts where reticulated water and sewer are provided together (rather than one provided separately from the other).
- May not take place since it requires significant investment.
- Would require partnership between the community, Council and South Gippsland Water as well as third party funding.
- Would require South Gippsland Water (and its small rate base) to bear the cost for ongoing maintenance.
- Likely to become ineffective if they are inundated.
- Would provide for some additional businesses, particularly in Venus Bay's town centre which is currently constrained.

Improve Service Provision & Assets continued

Improve Wastewater & Drinking Water

There are numerous issues (refer to "Wastewater and Drinking Water" on page 46) arising from the co-current use of wastewater and drinking (ground) water. Suggested improvements include:

- Advocate to the relevant Ministers (Minister for Water, Minister for Health and the Minister for the Environment who controls the *Water Act 1989* and *EPA Act 2018*) for improvements to the existing legislative framework in regards to septic systems, potable water and bores in township areas and their impact on water quality and development.
- Advocate to the Minister for Water to classify bore water as non-potable and make it a requirement that this is stated on the water extraction licence.
- Advocate to the Minister for Water for a yearly fee to be charged for domestic bores (requiring all others to be decommissioned) so that mapping can be updated and accurate and water quality testing can be regularly undertaken in accordance with the Municipal Domestic Wastewater Management Plan.
- Introduce development controls that prevent additional lots being created through subdivision in unsewered coastal towns so that the issues with bores, wastewater and its impacts on development are not further compounded.

While undertaking advocacy, the following options could also be considered:

- Continue to remind landowners and tenants where possible that bore water in coastal townships is not fit for human consumption unless further treated.
- Investigate introducing a yearly requirement of mandatory water quality sampling for domestic bores where the cost of testing is the landowners responsibility unless landowners demonstrate bores are not being used for drinking purposes.
- Investigate the possibility of establishing sunset clauses on landownership to upgrade systems, where landownership changes, people are required to update their system to current regulations.
- Consult with land owners in coastal township areas to determine and confirm if they have bores and whether they use them for drinking water.
- Where possible, notify landowners and tenants with septic systems that their systems may be ineffective in the future and pose health issues in the case of sea level rise, particularly those with trench-based primary



Coastal Strategy Background Report

Improve Service Provision & Assets continued

systems as it is likely they are to be affected first.

Implications & Risks:

- Without action, could be ongoing environmental health issues and risks associated with the consumption of ground water in close proximity to wastewater systems.
- Would require changes to legislation in some instances and an amendment to the Planning Scheme for development controls.

Undertake Research on the Impact of Bores

In partnership with Southern Rural Water, Council could consider funding for an appropriate research body (e.g. university) to further investigate the issues relating to bores in coastal townships. This could include:

- Updating the locations of bores.
- Establishing a numbering system for the identification of bores.
- Evaluating the effect of septic tanks on bore water quality on sandy soils.

Implications & Risks:

- Without action, could be ongoing environmental health issues and risks associated with the consumption of ground water in close proximity to wastewater systems.

Promote Growth

Actions that promote growth in population and visitation to the coastal areas may be beneficial to the economy but may also exacerbate existing issues in the area. Additional residents and visitors to an area could place additional pressure on the coast's sensitive environment. It could also place more people and property at risk. These are implications and risks for all of these options.

Advocate for Public Transport Improvements

Council could advocate to the State government for public transport improvements for example from Foster to Wilsons Promontory and Venus Bay and other public transport options that generally promote tourism.

Implications & Risks

- Would be difficult to attract further investment in public transport without increased population and visitation.
- Would provide an alternative transport method that would particularly help residents and visitors who are not able to drive.

Improve Other Assets & Services

Other assets and services in the area could continue to be provided and improved such as public parks, tourism attractions, viewing platforms and road improvements.

Implications & Risks

- Could involve investment in assets that may be damaged or destroyed by coastal hazards before their expected life span.
- Could be directed to areas that are subject to less coastal hazard risks.

Prepare a Signage Strategy to Promote Tourism

Council could prepare a signage strategy to improve wayfinding and promote tourism in coastal areas (with potential for this strategy to be undertaken for the whole municipality as this is also an issue in non-coastal areas).

Implications & Risks:

- Could help mitigate risk by directing people away from higher risk areas and providing better information about risks.

Coastal Strategy Background Report

Mitigate Climate Change

Declare a Climate Emergency

Council could consider adopting a Climate Emergency Declaration. Bass Coast Shire Council recently resolved that climate change poses a serious threat and should be treated as an emergency. Implementing a declaration is likely to involve embedding the response across the organisation and re-prioritising budgets and resources.

Implications & Risks:

- Would not mean much if it is followed by action or adequate action.
- Would be difficult to implement because of the time, education and resources involved.
- Could be difficult to move 'beyond business as usual' when this is not yet reflected across society or at State or Federal levels.

Improve Sustainability Strategy

Council could include recommendations regarding climate change mitigation in its Sustainability Strategy that seek to reduce greenhouse gas emissions.

Implications & Risks:

- Could reduce Council's corporate emissions.
- Could seek to include targets for community emissions though this would be difficult to achieve.

Next Steps



Coastal Strategy Background Report

Timeline

The next steps of the South Gippsland Coastal Strategy project are:

1. Community consultation regarding key issues and options
(December 2019-February 2020)
2. Preparation of the Draft Coastal Strategy (early 2020)
3. Community consultation on the Draft Coastal Strategy (mid 2020)
4. Preparation of the Final Coastal Strategy (end 2020)

Final Strategy

The Final Coastal Strategy will be structured as set out in the following figure (also shown and described at *Figure 1*):

