Environment and biodiversity

The declared area's natural environment, biodiversity and habitat — its healthy marine and terrestrial environments and native vegetation — provide many social, economic and cultural benefits. They are integral to the Aboriginal cultural heritage of the Bunurong people, who, over countless generations, developed extensive biocultural knowledge and practices to manage habitat and biodiversity values.

The main refuges for biodiversity in the declared area are:

- Yallock-Bulluk Marine and Coastal Park, which combines the Bunurong Marine National Park, Bunurong Coastal Reserve and other coastal and foreshore reserves and adjacent Crown land.
- Western Port Woodlands, which includes the Grantville Nature Conservation Reserve, Grantville Bushland Reserve, The Gurdies Nature Conservation Reserve, Hurdy Gurdy Creek Nature Conservation Reserve, Lang Lang Proving Ground and Lang Lang Education Area, and private land between these areas.
- Churchill Island Marine National Park.
- Land managed by Phillip Island Nature Parks.

Its biodiversity-rich wetlands — the wetlands of the Western Port Ramsar site and the nationally important wetlands of the Powlett River mouth and Anderson Inlet — are sustained by rainfall on the steep slopes of the Strzelecki Ranges and Bass Hills, which flows into the Bass and Powlett rivers, Bourne Creek and other waterways.

Biodiversity

Native animals, including little penguins, whales, koalas and kangaroos, are major tourist attractions to the declared area, particularly at sites managed by Phillip Island Nature Parks.

The Western Port Woodlands includes a string of reserves that contain remnant native vegetation, providing habitat for threatened species, including the Strzelecki gum, tea-tree fingers, thick-lip spider orchid, southern brown bandicoot, giant Gippsland earthworm, swift parrot, lace monitor and powerful owl.

The wetlands of the Western Port Ramsar provide habitat for threatened species, including the bar-tailed godwit, curlew sandpiper, eastern curlew, lesser sand plover, red knot, Australian fairy tern and Australian grayling. Anderson Inlet and its tributaries provide habitat for species listed under the Japan-Australia Migratory Bird Agreement and the China-Australia Migratory Bird Agreement, which protect migratory birds in danger of extinction. The risk of extinction is exacerbated by climate change, which threatens habitat by increasing coastal erosion and inundation, reducing rainfall and polluting waterways.

The Bunurong Marine National Park is characterised by its extensive intertidal rock platforms and subtidal rocky reefs. It provides habitat for diverse marine plants and animals, many of which are of national, state or regional significance. They include:

- Species-rich algae communities (such as rhodoliths).
- Conservation-listed seabirds and shorebirds (such as the southern giant-petrel and white-faced storm-petrel).
- Threatened and critically endangered species (such as the blue whale, southern right whale and intermediate egret).
- The greatest diversity of intertidal and shallow subtidal invertebrate animals in eastern Victoria.

Other endangered or vulnerable species to which Bass Coast is home include the swift parrot, orange-bellied parrot, red-necked stint, grey-headed flying fox, river blackfish and southern brown bandicoot.



Revegetation

Revegetation is essential for ecosystem restoration, biodiversity conservation and mitigating the effects of climate change. As most of the declared area's native vegetation has been cleared since colonisation, there needs to be a focus on revegetation to protect and enhance the environment, as well as prepare for climate change. There are various revegetation approaches, each with its purpose and focus. Three approaches are explained below.

The facilitation of biolinks: A biolink is a connection between two habitat areas that can provide native animals (such as the nationally significant eastern barred bandicoot) with safe transit routes and access to food and water. Biolinks also help improve the genetic diversity of populations and the resilience of native plants and animals to threats including climate change impacts, and they also sequester carbon and help reduce emissions.

Enhancing vegetation on agricultural land: Agricultural and revegetation activities on public and private land can contribute greatly to revegetation, as about 76% of the declared area's land is used for agriculture. Increasing vegetation and retaining significant vegetation on land used for agriculture sequesters carbon and helps achieve net-zero emissions in the declared area.

Increasing vegetation cover in urban areas: Maintaining and increasing vegetation in urban areas can help reverse urban heat island effects and consequent risks to people's health. Vegetation growth in urban areas can be supported by water sensitive urban design and passive irrigation.

What is carbon sequestration?

Carbon sequestration is the process of removing carbon from the atmosphere and storing it in soil, vegetation, other materials or underground. Carbon sequestration and net-zero emissions are the main approaches to reducing the overabundance of carbon dioxide in the atmosphere.

Carbon sequestration occurs naturally through photosynthesis: plants remove carbon from the air and store it as carbon in their trunks, branches, foliage and roots and as dead organic matter in forest debris. Revegetation and reforestation increase the amount of carbon plants can sequester. Minimising land-clearing maintains the ability of plants to do so.

'Blue carbon' is when carbon sequestration occurs within coastal ecosystems and marine environments. Mangroves, seagrasses and tidal salt marshes are particularly good at sequestering carbon because the oxygen-poor soil in which they grow prevents the release of carbon dioxide into the atmosphere. As a result, carbon builds up in the soil, layer by layer, with time. Environments with these vegetation types are called 'blue carbon ecosystems'. Blue carbon ecosystems can remove and store carbon from the atmosphere and provide habitat for many marine and coastal species.

Science informs geoengineering methods of sequestering carbon, including carbon capture and storage. Farmers have also sequestered carbon for centuries by creating biochar — a carbon-rich substance made by partly burning crop waste — to enrich the soil.



Water and soil quality

Since colonisation, clearing native vegetation and increasing the extent of nonpermeable surfaces have reduced environmental health and functioning by increasing run-off and reducing water quality.

Clearing native vegetation makes the land less able to withstand rainfall events and filter water. In sloping areas, vegetation clearing increases the risk of soil erosion and agricultural run-off, which washes nutrients into waterways and wetlands, potentially creating algal blooms and damaging aquatic ecosystems. In urban areas, replacing vegetation with nonpermeable surfaces increases run-off that can wash household chemicals, fertilisers, litter and other pollutants into waterways and waterbodies. The consequences for marine and coastal habitats can be devastating: the runoff can disrupt the delicate balance of marine and coastal ecosystems, cause detrimental algae blooms and harm aquatic life.

Permeable surfaces, ground cover and canopy vegetation build the capacity of soil to hold and distribute nutrients. They filter water and reduce run-off as stormwater and pollutants are absorbed and treated in situ. They also mitigate the urban heat island effect in urban areas, providing shade and evapotranspiration that help make living cooler.

Development and more intensive agricultural production can increase run-off that pollutes water flowing into waterways and wetlands. More intense rainfall events can also make this pollution worse.

Managing stormwater is a priority for settlements around Western Port, as stormwater run-off directly threatens the health of the Ramsar wetlands. Stormwater must be redirected in some places, so it filters naturally before flowing into wetlands.

Acid sulphate soils — soils saturated with water, are almost oxygen-free and contain iron sulfide crystals — are harmless if not disturbed, but floods and increased urbanisation can disturb them. If disturbed, these soils can form sulfuric acid that can trigger the release of other toxic elements harmful to plants, animals, waterways and human-made structures. The acid can also contaminate drinking water. Acid sulphate soils are particularly prevalent in wetlands around Silverleaves, Newhaven, Coronet Bay and Grantville; at the mouths of the Bass and Powlett rivers; and at Anderson Inlet.

Urban expansion

Urban expansion, native vegetation removal and climate change impacts threaten the declared area's environment, ecology and biodiversity. Wetlands, coastal environs and waterways are particularly vulnerable to rising sea levels, stormwater run-off, changes to tidal flows, visitation and trespass and increased nutrient loads and salinity. Hard infrastructure (such as seawalls and settlements) can change wetland and coastal processes by creating barriers and limiting natural adaptation (such as wetland migration and natural beach replenishment).

Expansion of urban areas must be carefully planned to limit stormwater run-off and restore and maintain water quality and salinity levels, particularly near sensitive wetlands and coastal areas. As the climate becomes hotter and drier, bushfire risk also increases in and near settlements.

Agricultural and urban stormwater management, increased vegetation cover and biolinks will improve the area's ecological value.



Responsible management of the Western Port Woodlands

The Western Port Woodlands is an area parallel to Western Port generally extending from Lang Lang in the north to Bass in the south. It includes private freehold land and public conservation and bushland reserves. The woodlands' boundary is undefined and recognised as extending beyond the Bass Coast declared area within the Bass Coast Shire into the Cardinia and South Gippsland shires. While some areas of the Western Port Woodlands are designated as conservation reserves, the overall area does not have formal conservation status. Remnant native vegetation within the Western Port Woodlands provides habitat for threatened species, and there are long-standing community concerns about the potential impacts of expanded extractive industry activity on the biodiversity values of the Western Port Woodlands.

It is important to balance protecting Victoria's unique biodiversity and environment with the safeguarding of extractive resources essential for meeting the housing, infrastructure and employment needs of Victoria's growing population. These goals need not be mutually exclusive.

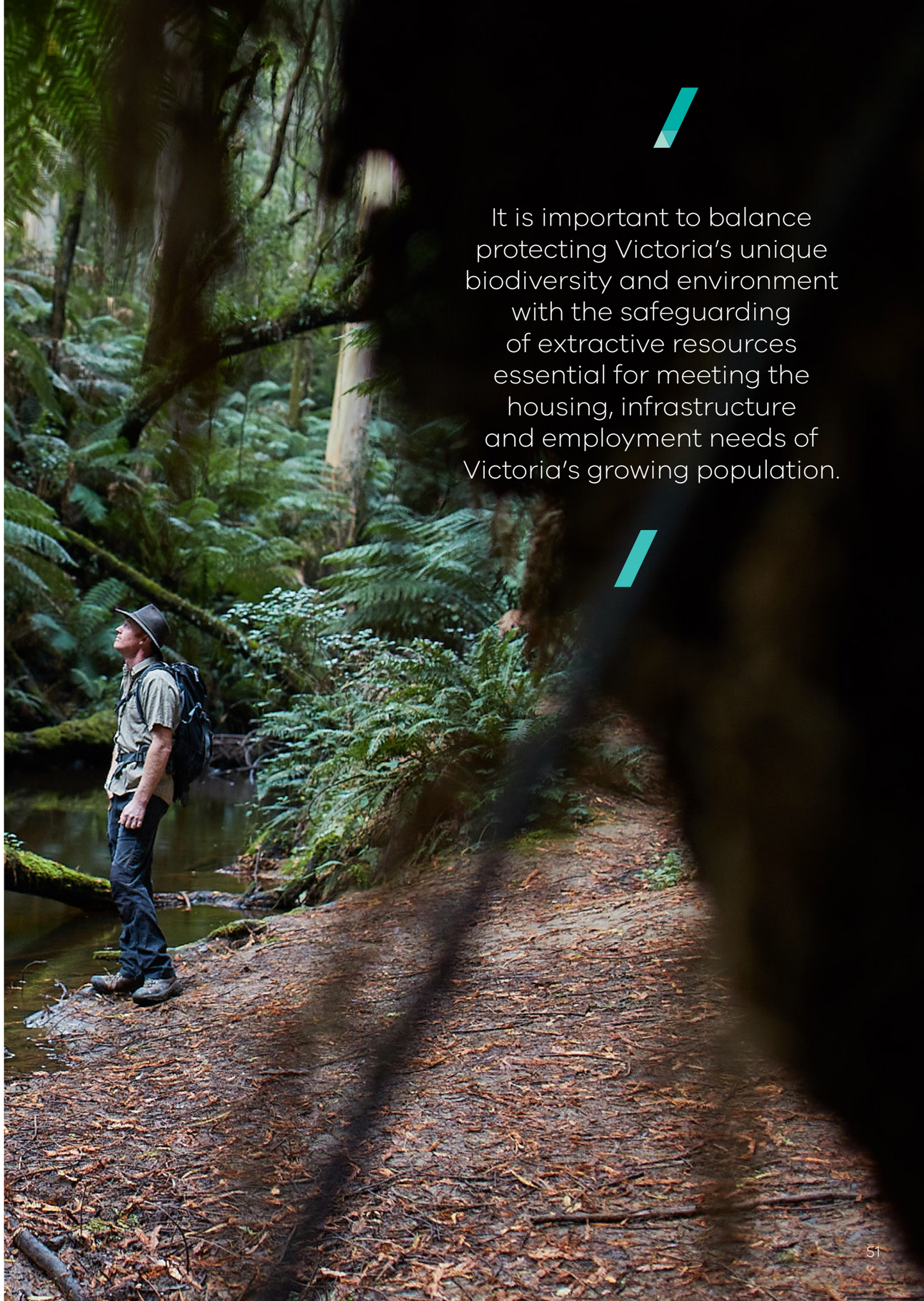
Western Port Woodlands Investigation

There is a need to identify and confirm if there are areas with high biodiversity value within the Western Port Woodlands to help conserve them and inform land use planning, including planning for managing strategic extractive resources.

Further investigative work is needed to understand the intrinsic values of the woodlands and the efficacy of current protections. The investigation may include:

- A strategic environmental assessment to determine the geographical extent and significance of biodiversity within the woodlands.
- An assessment of the effectiveness of the protection of high biodiversity values under the existing planning and extractive industry regulations. It would address the work authority and planning approvals processes. Consideration would be given to best practices regarding biodiversity and extractive industry planning and whether new or revised regulations (such as planning controls or other interventions) are required to better protect areas of high biodiversity values within the woodlands to ensure a balance with the development of extractive resources to support Victoria's growth.

Any investigation would need to be carried out in collaboration with Traditional Owners. It would involve engagement with landowners and occupiers, community groups, industry and other relevant stakeholders.



Objectives and strategies

Objective 5

To protect, conserve and enhance the declared area's significant biodiversity and ecosystem services.



Strategies

5.1	Utilise Bunurong biocultural knowledge and practices in managing habitat and biodiversity values.
5.2	Improve habitat quality and quantity, particularly for endangered animal species, by increasing indigenous vegetation and retaining and enhancing remnant native vegetation to the extent practicable, having regard to bushfire risk (for example, in shelterbelts, along fence lines and on steep agricultural land).
5.3	Establish and maintain strategic biolinks, particularly along waterways and coastlines, to enhance habitat and better connect areas of high environmental, biodiversity and ecological value.
5.4	Prioritise ecological restoration works in areas of high environmental, biodiversity and ecological value.
5.5	Minimise the impacts of weeds and pests on biodiversity values by undertaking best practice land management.
5.6	Utilise revegetation to address erosion in coastal and undulating landscapes.
5.7	Encourage regenerative agriculture and environmental practices that increase soil health, diversity in food production and carbon sequestration.

Objective 6

To protect and enhance the health and function of the declared area's integrated water system, particularly the significant wetlands and marine and coastal environments.

Strategies

6.1	Reduce soil erosion in steep areas through revegetation, undertaking appropriate groundwork and fencing off waterways, particularly in the agricultural areas of the Strzelecki Foothills.
6.2	Reduce the agricultural run-off impacts of fertilisers, pesticides and effluent, especially in river catchment areas (such as by revegetating them).
6.3	Minimise the impacts of high-risk invasive weeds (particularly capeweed, cordgrass and emerging salt-tolerant weeds) by developing and implementing best practice land management and prioritising areas abutting or adjacent to significant habitat and biodiversity.
6.4	Reduce urban stormwater run-off impacts of household chemicals, fertilisers, litter and other pollutants, especially in locations subject to inundation or near wetlands.

Objective 7

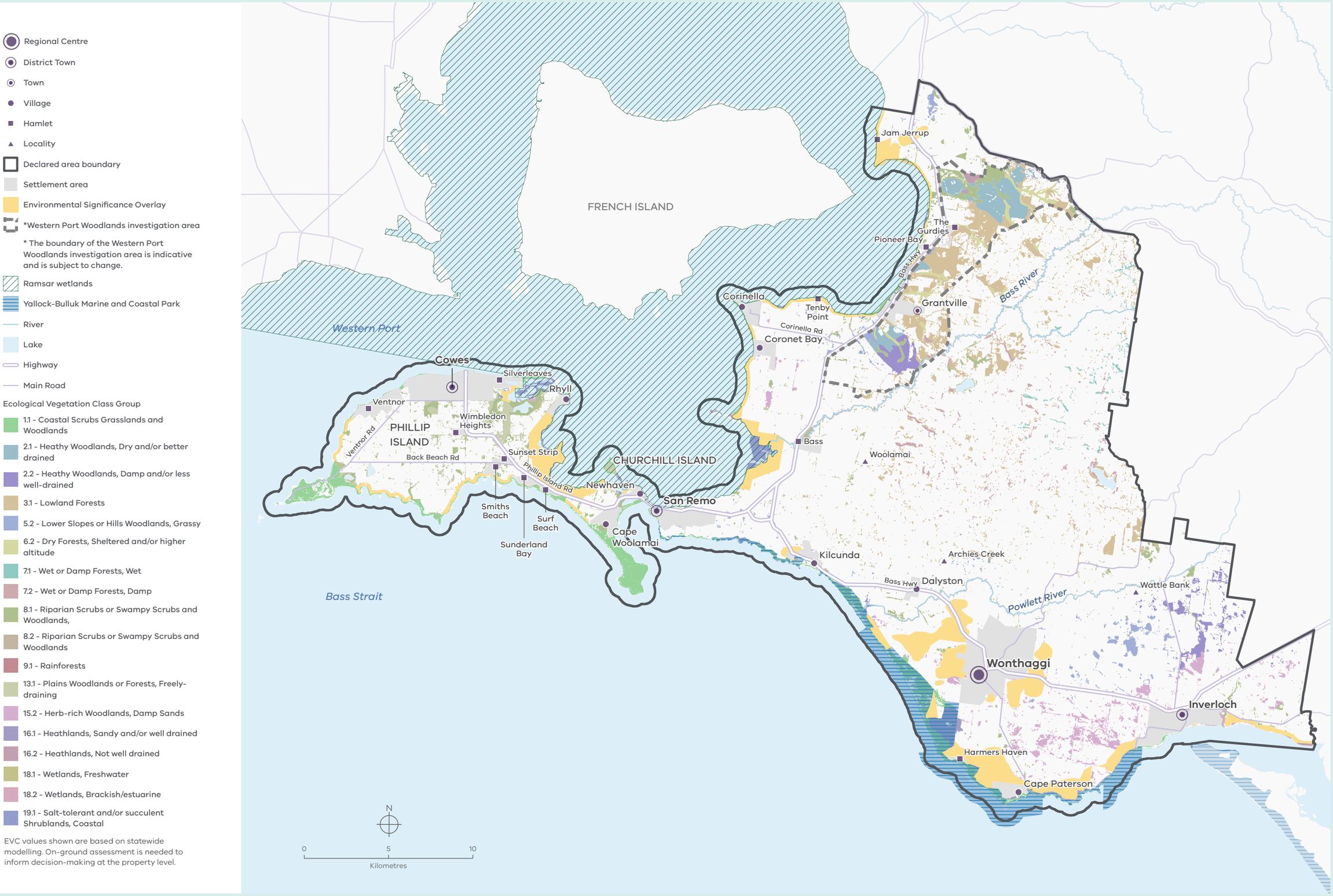
To avoid and minimise human impacts and the effects of urban land uses and development on the declared area's environmental and ecological values.

Strategies

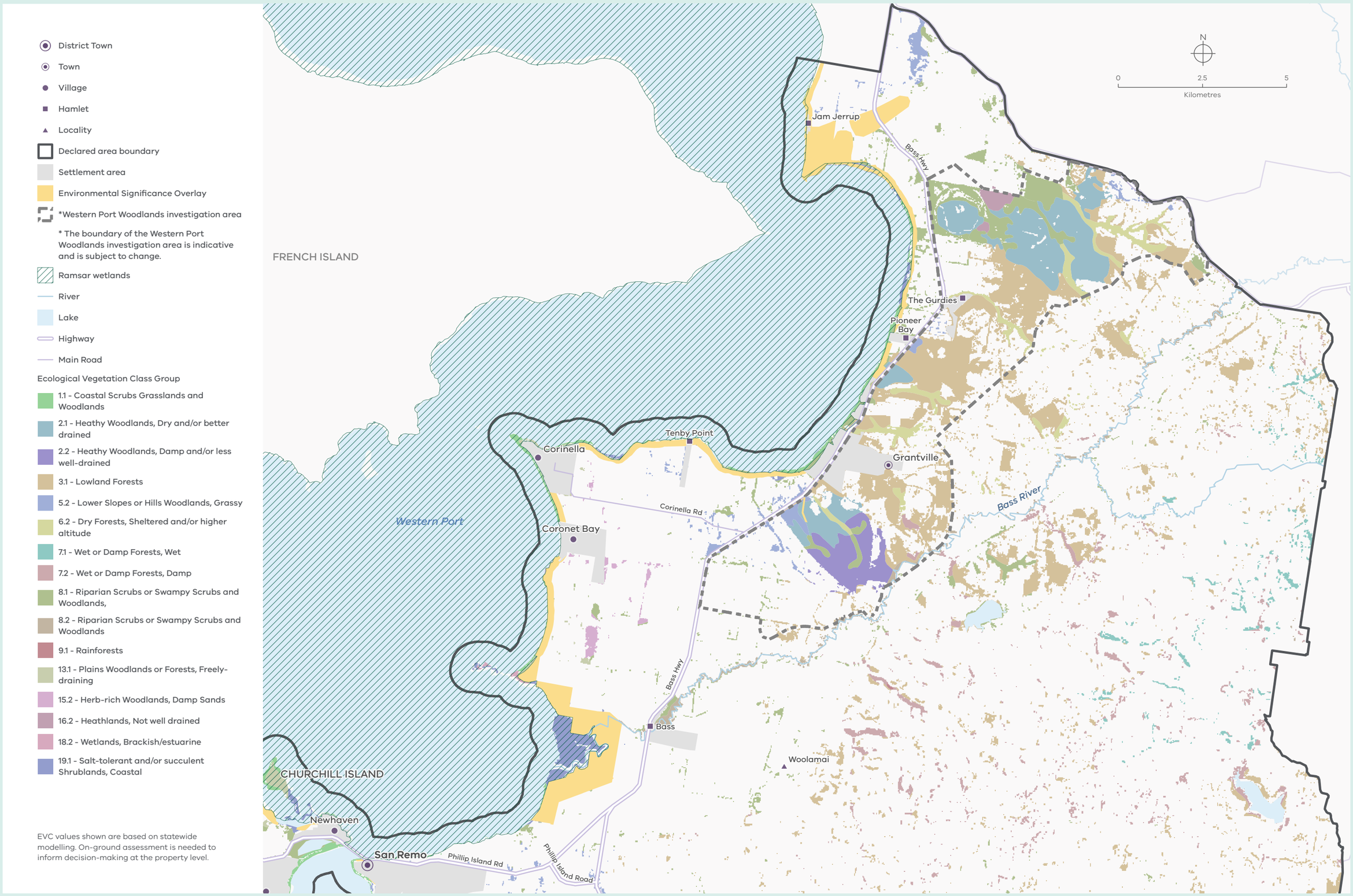
7.1	Reduce the impacts of land use, development, human trespass, noise and light pollution on marine environs and areas of ecological significance, especially those vulnerable to climate change impacts.
7.2	Encourage tourism practices to minimise the impacts of increased visitation on the declared area's distinctive attributes.
7.3	Facilitate sustainable public access to and minimise direct human impacts (such as from trespass and fishing) on sensitive sites and their surrounds.
7.4	Ensure waste collection, storage and disposal activities do not affect sensitive or significant environs.

Map 9: Environment and biodiversity.

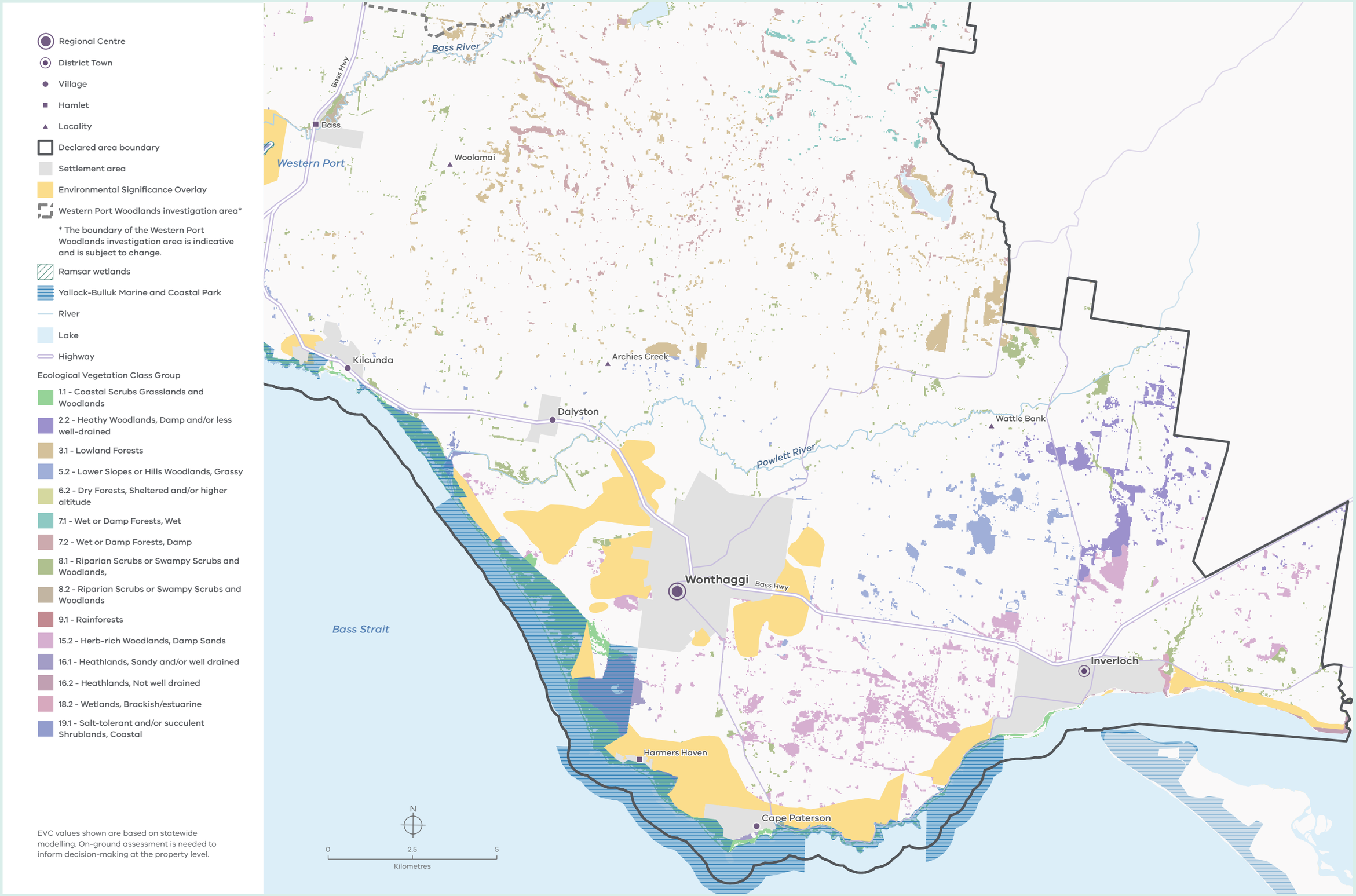
(Source: DTP)



Map 10: Environment and biodiversity, with a focused overview of the declared area's north-east aspect. (Source: DTP)

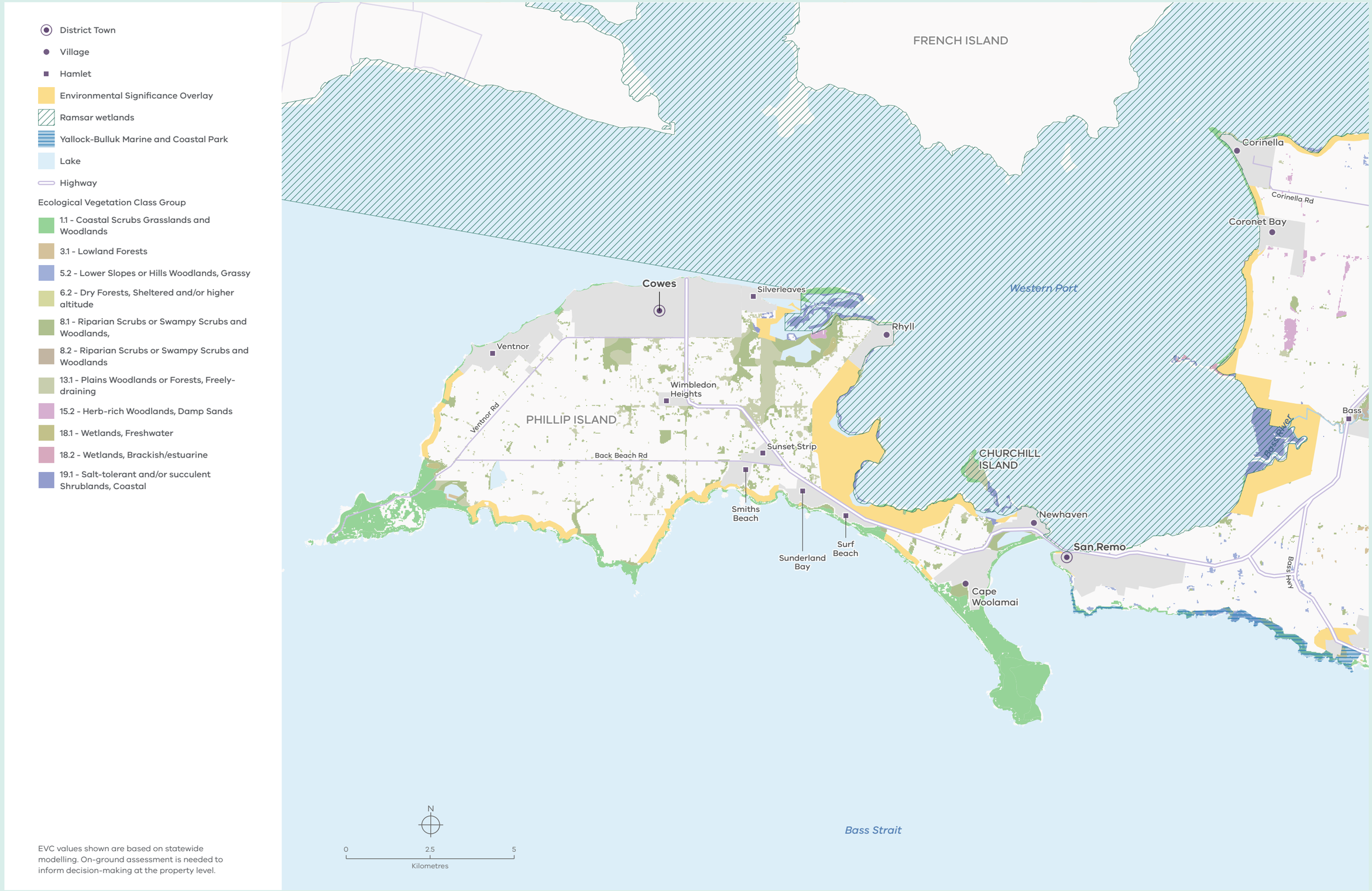


Map 11: Environment and biodiversity, with a focused overview of the declared area's southern and inland aspects. (Source: DTP)



Map 12: Environment and biodiversity, with a focused overview of the declared area's western aspect, including Phillip Island.

(Source: DTP)





Historic heritage

The declared area offers a window into the colonisation of Victoria. Its many palaeontological and archaeological sites reflect a rich fossil, maritime, early settlement, agricultural (including chicory farming), mining, industrial, convict and leisure heritage.

The declared area, particularly along the coastline near Inverloch and Kilcunda, contains dinosaur fossils and continues to be a highly valued palaeontological research area. Eagles Nest is the site of Australia's first-documented dinosaur fossil discovery, and many fossils have been uncovered: the fossils of two dinosaur species are found exclusively in the area.

The declared area's colonial maritime heritage began with the arrival of sealers and explorers (such as George Bass, after whom the area is named) around 1800. This was the start of the conflict with the Bunurong people in the area and their displacement. The many historic shipwrecks along the coastline evidence the declared area's extensive maritime history. Part of the hull of the mid-19th century wreck of the Amazon is buried on the beach at Inverloch and can be seen when the sand level is low. The main wreck site is located in the intertidal zone at Flat Rocks and is sometimes visible at very low tide. It is the only well-preserved, wooden-barque shipwreck in Victoria, which is described in the Victorian Heritage Register as a rare example of an international wooden trading ship.

Churchill Island was the site of Victoria's first colonial agricultural pursuit in 1801. Agriculture is an important part of the area's history and continues to be an important industry.

As early as 1826, rich coal deposits were identified in the area. The State Coal Mine in Wonthaggi was Victoria's most important black coal mine, and it operated from 1909 to 1968, providing fuel for Victoria's industries and railways. Remnant elements include mine shafts and tunnels, tram rails visible on Cape Paterson beach and the Kilcunda Bridge, built in 1911 on the Woolamai–Wonthaggi railway. The mine's operation also shaped the establishment and growth of surrounding settlements: the early miners built coastal shacks, groups of which, over time, evolved into formalised settlements.

For generations, Phillip Island, San Remo and the many smaller coastal settlements have been synonymous with weekend getaways and school holidays for Victorian families. The declared area has several well-known surfing spots, and the southern coast of Phillip Island was named Victoria's first national surfing reserve. This connection with holidaying and leisure is important to the declared area's tangible and intangible heritage values.

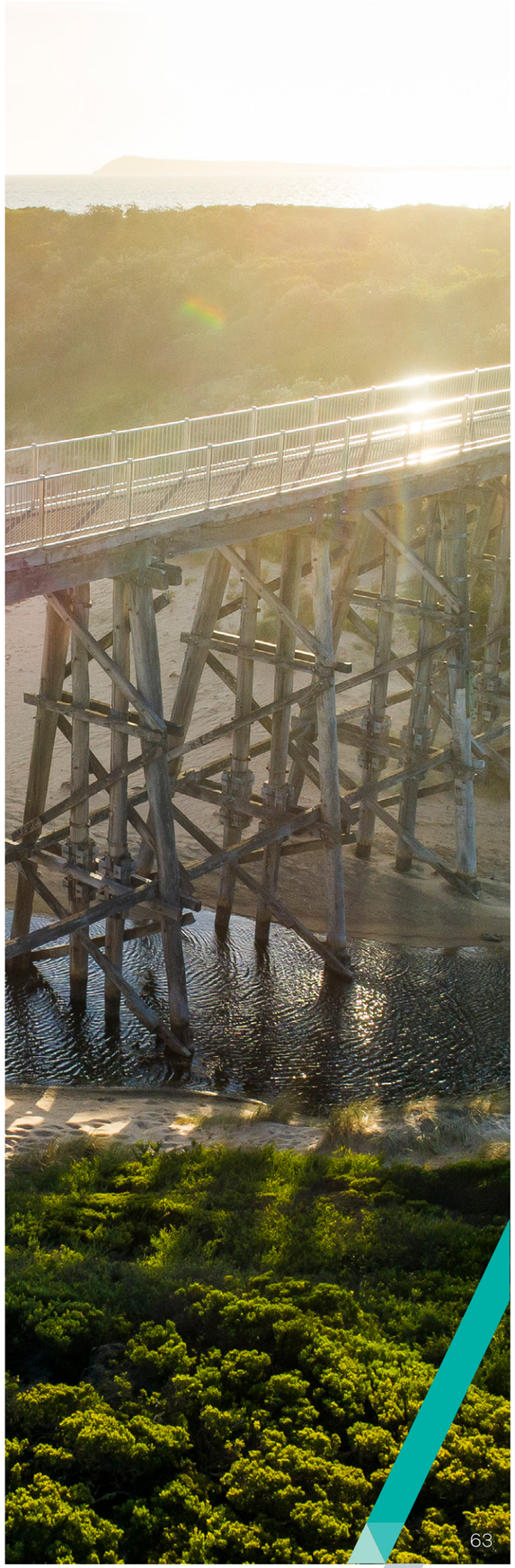
Objective and strategies

Objective 8

To protect, strengthen and promote the declared area's historic heritage values.

Strategies

8.1	Ensure significant historic heritage places are identified, protected, enhanced and sustainably managed.
8.2	With the community, promote the declared area's rich historic heritage values, including its aesthetic, historical, scientific and social values.
8.3	Conserve and enhance historic heritage through responsible tourism development and practices.
8.4	Minimise the impacts of buildings and works on historic heritage places by designing and siting development to respect their distinct cultural characters and values.
8.5	Acknowledge, interpret and promote significant historic heritage values in the planning, design, development and management of land use and development.



Map 13: Historic heritage.

(Source: DTP)



Strategic infrastructure

The social, economic and environmental resilience of communities depends on providing, maintaining and upgrading transport, essential services and other community infrastructure. Growing numbers of residents and visitors add to demand for this infrastructure, which must be managed to protect and enhance the declared area's distinctive attributes. There is a need to respond to existing and emerging community needs by providing infrastructure in sequence with development. New and upgraded infrastructure must seek to reduce greenhouse gas emissions where possible and be resilient to natural hazard impacts as climate change increases their frequency and severity.

Energy

Renewable energy generation is essential for energy security and emissions reduction. Stationary energy — electricity, LPG bottled gas, mains gas and firewood — is the declared area's largest source of emissions. The plan is to transition the area from an energy system reliant on fossil fuels to one powered by renewable energy and for Bass Coast to become a net exporter of renewable energy.

Many renewable energy sources are emerging economic opportunities for the area: wind, solar, small-scale hydroelectricity, bioenergy and marine energy, including wave, tidal and offshore energy.

Transport infrastructure

Good transport networks are essential for economic prosperity and community wellbeing, providing access to jobs, markets, services and recreational opportunities. Land use and transport planning must be integrated for settlements to grow sustainably.

The Bass Highway is a key transport corridor that connects the declared area to Melbourne. Phillip Island Road (including the bridge at San Remo) and the Bunurong Coastal Drive are popular tourist routes affected by peak-visitor-period congestion. They need careful planning to ensure they are resilient to climate change impacts and natural hazards (such as bushfires and flooding). Ferry services between Phillip Island, French Island and the Mornington Peninsula are also essential connections for residents, businesses and visitors.

As motor vehicles are the main mode of transport in the declared area, a more environmentally sustainable future requires a shift to the greater use of active transport, public transport and low- or no-carbon transport alternatives. To make this shift, the declared area needs ongoing investment in sustainable transport infrastructure and services.

Water security infrastructure

With anticipated erratic weather patterns and less rainfall due to climate change, water security is vital. In the immediate future, integrated water management approaches and the protection of water infrastructure are crucial to improving water security.

The Victorian Desalination Plant, located close to Wonthaggi, is essential for the state's water security; it can provide up to one-third of Melbourne's water needs. The plant separates salts from seawater and produces high-quality drinking water. The water is then distributed across Victoria via a transfer pipeline. The plant and associated pipeline infrastructure must be protected for the long term to make the declared area and Victoria more resilient and better prepared for climate change.

Community infrastructure and essential services

The social, economic and environmental resilience of Bass Coast communities depends on the provision, maintenance and upgrading of community infrastructure and essential services. This includes water supply, waste and resource recovery, electricity, renewable energy and telecommunications, schools, sporting facilities, libraries and health services.

As settlements within the declared area grow, there is a need for governments and the private sector to respond to existing and emerging community needs by providing infrastructure that is in sequence with development and resilient to natural hazards and climate change impacts.

The delivery of infrastructure and services across the declared area's dispersed settlements should be managed in line with the Bass Coast settlement hierarchy and networks (shown in **Table 2**). Wonthaggi is the municipality's regional service centre, and it is expected to accommodate much of the declared area's future population and employment growth as well as its health, education, civic and retail services. Cowes, Inverloch and San Remo are categorised as district towns, with Cowes continuing to service Phillip Island's residents, businesses and visitors in conjunction with San Remo.

Objectives and strategies

Objective 11

To ensure the integrated and timely provision of transport, essential services and community infrastructure that meets community needs and increases resilience to natural hazard and climate change impacts.

Strategies

11.1 Protect infrastructure in sequence with development to meet the needs of communities, local businesses and visitors.

11.2 Design infrastructure sensitively to:

- be sympathetic to landscape character and the preferred character of settlements.
- minimise the impact on Aboriginal cultural heritage, historic heritage and environmental attributes.
- maintain view lines from existing and new transport corridors.
- retain remnant native vegetation and increase indigenous vegetation.

11.3 In consultation with the Bunurong people, ensure the provision, maintenance and upgrading of infrastructure that conserves and enhances Aboriginal cultural heritage values.

11.4 Ensure transport projects minimise impacts on landscape, environmental and Aboriginal cultural and historic heritage values.

11.5 Ensure the provision of infrastructure that adjoins or abuts significant environmental areas enables habitat connectivity, providing for the safe passage of wildlife.

11.6 Ensure land use and development within the vicinity of the Victorian Desalination Plant does not impact on its operations including pipeline infrastructure.

Objective 12

To reduce greenhouse gas emissions related to stationary energy and transportation, facilitating an orderly and rapid transition to an energy-efficient renewable energy community.

Strategies

12.1 Ensure transport networks within and between settlements consider safe and accessible active transport modes (including walking, cycling and public transport.

12.2 Encourage the provision of sustainable infrastructure that supports sustainable modes of travel.

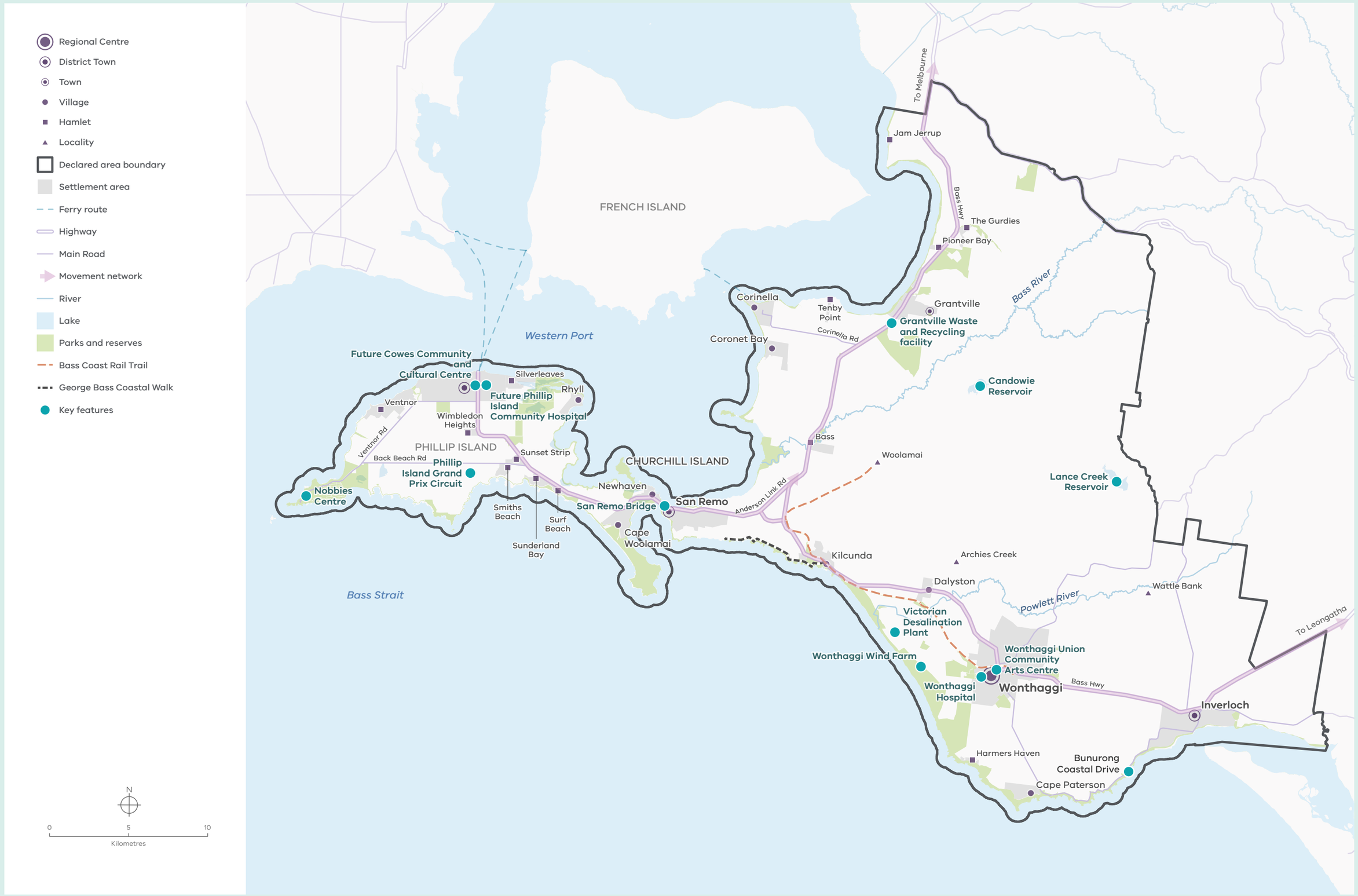
12.3 Encourage mixed-use, walkable neighbourhood and town centres that provide for daily needs and are accessible by active transport to reduce the need to use motor vehicles.

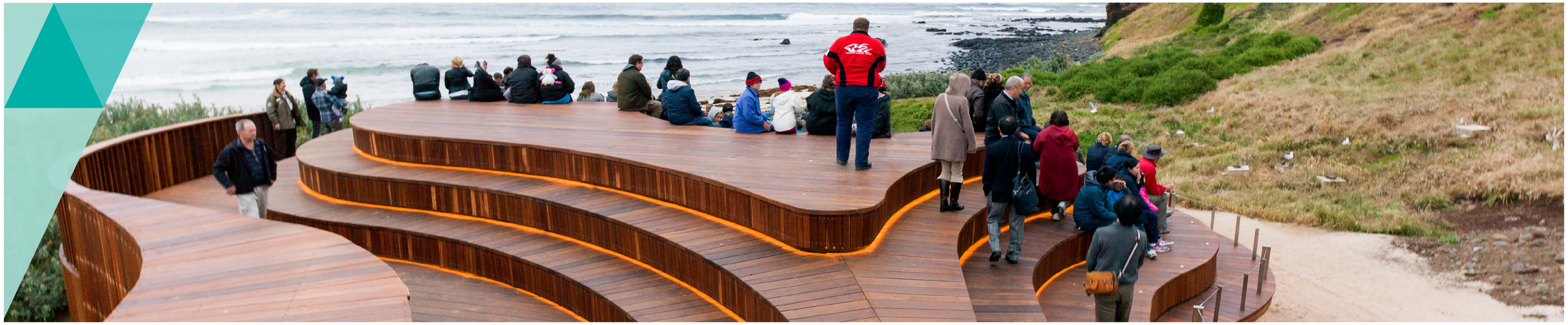
12.4 Plan for more renewable energy generation and distribution in the siting and design of development.

12.5 Encourage the provision of infrastructure that utilises or manages alternative sustainable energy sources.

12.6 Encourage the development of renewable energy facilities in locations where they will not adversely affect the declared area's environmental, Aboriginal cultural and historic heritage and landscape values.

Map 14: Strategic infrastructure. (Source: DTP)





Sustainable economic development

Bass Coast Shire is one of the fastest-growing municipalities in regional Victoria. It has become a popular location to live, work and invest due to its unique natural environment, relaxed coastal lifestyle, natural resources and opportunities for economic growth. The Shire is close to Melbourne's south-east growth corridor, and it has strategic transport and communications networks and a growing regional centre with various commercial and community services.

Tourism

The tourism industry is one of the main drivers of the Bass Coast economy and a major employer. The area boasts world-class, nature-based tourist attractions, pristine surf beaches and major events (such as the Australian Motorcycle Grand Prix at the Phillip Island Grand Prix Circuit) that attract millions of visitors a year.

There is a need to provide for a sustainable, year-round visitor economy. The number of visitors to the region is projected to double from 1.85 million in 2015 to 3.4 million and be worth upwards of $1.1 billion by 2035.

Nature-based tourism is one of the declared area's key drivers of visitations. By capitalising on its diverse natural assets for tourism purposes in an eco-friendly way, the declared area can:

- Increase public awareness of its environmental conservation values.
- Attract investment in infrastructure for nature-based experiences (such as tracks and trails).
- Extend the length of visitors' stays by providing more varied tourism offerings.
- Support local businesses that benefit from increased visitation.

The establishment of the Yallock-Bulluk Marine and Coastal Park with a new walking trail between Inverloch and San Remo will increase tourism opportunities and highlight the Bunurong people's connection to and stewardship of Country. There are opportunities to increase the diversity and quality of visitor experiences within the declared area through agritourism, arts and culture and recreational and educational experiences celebrating the area's Aboriginal cultural and historic heritage.

More visitors, seasonal fluctuations in visitation and climate change impacts will increase the demand for local infrastructure (such as increasing road use) and put pressure on the environment that attracts visitors to the region. Infrastructure must be designed, maintained and improved so tourism growth is sustainable and the area's Aboriginal cultural and historic heritage, environment and landscapes are preserved and protected.

The declared area's coastal assets and attractions (such as the Phillip Island Penguin Parade) are major tourism drawcards threatened by climate change impacts, particularly rising sea levels and extreme storm events. To protect the local economy, managing these assets and attractions must include rehabilitating habitat, revegetating, controlling weeds, monitoring the health of wetlands and managing bushfire risk.

The sustainable growth of the tourism industry within the Bass Coast, requires the preferred locations for tourism development to be identified to ensure the declared area's distinctive attributes are safeguarded. This will be informed by local strategic planning led by the Bass Coast Shire Council in collaboration with Traditional Owners, the Victorian government, other stakeholders and local communities.

Agriculture

Farming is a mainstay of the Bass Coast economy, with about 76% of land in the declared area used for agriculture. The climatic conditions are ideal for food production and winemaking. The areas located to the east of the Bass Highway contribute greatly to Gippsland's dairy industry. The open, rural farming landscape is an important contributor to the area's landscape setting and amenity, and it is important for agricultural businesses and tourism.

Farmers must be supported to adapt to climate change impacts and to innovate and embrace new technologies for sustainability, water reuse, value-adding and agritourism.

The declared area must protect its high-quality agricultural land and agricultural operations from encroachment by incompatible land uses. High-quality agricultural land generally has all or most of the following traits:

- Access to quality water that is reliable and affordable.
- Sized to support large-scale agricultural uses into the future.
- Located on high-quality soil that supports a range of agricultural uses.
- Well-located with access to markets.
- Part of or close to other industries, forming a cluster.

Natural resources

The declared area's natural resources are strategically important to Victoria. Bass Coast is a critical supply area for the raw materials needed for construction and infrastructure development. The area has active quarries (particularly sand quarries) and Extractive Industry Interest Areas, which indicate the land is likely to contain extractive resources (such as sand, hard rock and gravel) that may be considered for extraction in the future.

Extractive industries require appropriate buffers during operation and rehabilitation at the end of their operating life in a way suitable to the surrounding landscape character, thereby providing a net community benefit. As remnant native vegetation is scarce in the declared area, new industries (including extractive industries) should be directed to areas of lesser environmental significance.

Renewable energy technologies — wind, solar and small-scale hydroelectricity — are live, readily scalable technologies that deserve investment and community support. Emerging renewable technologies — bioenergy and marine energy, including wave, tidal and offshore energy — provide potential economic opportunities for the region and are important ways to reduce emissions.

Building a thriving circular economy

Reducing the amount of waste created and recycling waste reduces the environmental impacts of production and consumption, while enabling economic growth through more productive use of natural resources. Transitioning to a circular economy diverts waste from landfills, reduces greenhouse gas emissions, and retains valuable materials in the economy.

Victoria is forecast to create 40% more waste in 2046 than now. Victoria's waste and recycling system must expand to maximise the amount of material recovered for recycling and safely manage the remaining waste. Victoria's planning system can facilitate the expansion of waste and resource recovery infrastructure to ensure facilities are where they are most needed and developed in line with regional priorities.

Objectives and strategies

Objective 9

To build a sustainable, responsible, year-round visitor economy that builds on or complements the declared area's significant landscape, environmental and Aboriginal cultural and historic heritage values.

Strategies

9.1 In partnership with the Bunurong people, facilitate culturally responsive tourism and related economic development that encourages the community to recognise, understand and celebrate Aboriginal cultural heritage, rights and authority.

9.2 Facilitate sustainable tourism and recreation related land uses and development sensitive to the area's landscape, environmental and Aboriginal cultural and historic heritage values.

9.3 Encourage infrastructure design and development that is adaptable to climate change impacts and reduces visitors' impacts on the declared area's landscape, environmental and Aboriginal cultural and historic heritage values.

9.4 Encourage tourism and commercial development to include net-zero carbon infrastructure (such as electric vehicle charging stations).

9.5 Improve gateways to settlements and points of interest by avoiding the introduction of intrusive signage and promoting features that enhance significant views and improve the visitor experience.

9.6 Ensure tourism development is located in preferred areas and is sensitively designed to minimise the impact on Aboriginal cultural heritage, environment, historic heritage, landscape character and significance and natural resource values.

Objective 10

To facilitate a diverse, resilient, circular economy that reduces waste and promotes innovation in the productive use of rural land, natural resources and value-adding activities.

Strategies

10.1 Protect and manage extractive resource areas from encroachment by incompatible land uses and inappropriate development.

10.2 Ensure extractive industries adhere to best practice measures to minimise impacts on the declared area's attributes.

10.3 Protect and manage high-quality agricultural land and agricultural operations from encroachment by incompatible land uses.

10.4 Encourage innovation in agricultural practices (such as regenerative agriculture, sustainable farming, water reuse and efficiency, carbon sequestration and new technologies).

10.5 Encourage innovation in development practices (such as including recycled materials) in the design and construction of buildings and infrastructure.

10.6 Restrict the supply of rural living land in rural locations to conserve and protect agricultural practices, natural resources and related activities, and other rural land uses.

10.7 Encourage practices that reduce waste to landfills including reusing, repurposing and recycling.

10.8 Encourage the development of facilities, services and innovative practices that support a circular economy that does not harm Aboriginal cultural heritage, environmental, historic heritage, landscape and natural resource values.

Map 15: Sustainable economic development. (Source: DTP)



Settlements

There are 29 settlements within the declared area, located along the coast or nestled among the vast rural hinterland. The character of settlements and the lifestyles they offer make them highly desirable places to live, work and visit. As a result, the Bass Coast Shire is one of regional Victoria's fastest-growing municipalities.

In 2023, Bass Coast had an estimated 42,729 residents, forecast to increase to 47,408 residents by 2036. Projections indicate a need for about 9,800 additional dwellings in the Bass Coast Shire between 2021 and 2036. The growing population will also need a greater diversity of housing types and tenures for different household types, including for older people, smaller households and people with a disability.

The growing visitor population will also drive the demand for housing, other accommodation and services. In 2021, about 27% of dwellings in the declared area were used for holiday rental or holiday home purposes, and the proportion in coastal settlements is higher. The demand for coastal homes is expected to increase.

To achieve the long-term vision for the declared area, settlements must be carefully planned and managed so development respects their existing or preferred character and unique features.

Decision-makers must recognise, conserve, strengthen and promote the declared area's Aboriginal cultural heritage and work in partnership with the Bunurong people in caring for Country.

The declared area must have an adequate supply of well-serviced residential, commercial and industrial land, good access to active transport, jobs and community infrastructure. It is also essential to protect and enhance the native, indigenous and riparian vegetation that contribute so much to the declared area's character and the canopy cover within settlements that helps mitigate heat island effects.

Settlement hierarchy and networks

Table 2 identifies and describes the hierarchy of settlements — designated as a regional service centre, district town, town, village, hamlet or locality — within the declared area.

Settlements clustered together function as networks, offering housing diversity and shared services. Networked settlements include:

- Cape Paterson, Dalyston, Hamers Haven
- Inverloch, Kilcunda and Wonthaggi
- Cape Woolamai, Newhaven, San Remo, Smiths Beach, Sunset Strip, Sunderland Bay and Surf Beach
- Cowes, Silverleaves, Ventnor and Wimbledon Heights
- Corinella, Coronet Bay, Grantville and Tenby Point.

The character of settlements and the lifestyles they offer make them highly desirable places to live, work and visit.



Table 2: Bass Coast settlement hierarchy.

SETTLEMENT	DESIGNATION	DESCRIPTION
Wonthaggi	Regional service centre	A settlement with a substantial and diverse population, employment and housing base. A regional service centre provides all essential services, higher-order goods, education at all levels and access to a large hospital and diverse medical facilities. It can accommodate substantial and incremental housing change and has strong relationships with all types of surrounding settlements.
Cowes	District town	A settlement with a substantial and diverse population. It usually has a dominant town centre. Most essential services are available, including a post office, schools, emergency services, medical and hospital facilities, retail services and accommodation options. There is some reliance on the regional service centre for employment and higher-order services. A district town can accommodate substantial and incremental housing change and has strong relationships with smaller, nearby settlements, providing them with some higher-order services. District towns on the coast are popular visitor destinations. All are connected to reticulated water, electricity and sewerage. They provide diverse housing, services and employment to support residents and visitors.
Inverloch		
San Remo		
Grantville	Town	A settlement with a population size varying in line with general service provision and the diversity of housing stock. Services include a post office, supermarket, school, police station and basic medical facilities. There is some reliance on larger, nearby settlements for employment and higher-order services. Towns on the coast are popular visitor, retirement and lifestyle destinations. Towns are connected to reticulated water and electricity, and most to sewerage.
Cape Paterson	Village	A small settlement with moderate population levels that fluctuate seasonally. Basic services are available, including a general store and basic retail facilities. Most have postal services. A village has strong relationships with larger, nearby settlements and relies on them for services and employment. Villages on the coast have moderate-to-high levels of holiday home ownership. Most are connected to reticulated water, and some to sewerage.
Cape Woolamai		
Corinella		
Coronet Bay		
Dalyston		
Kilcunda		
Newhaven		
Rhyll		
Bass	Hamlet	A very small settlement with low population levels that fluctuate seasonally. Reticulated water and sewerage connections are generally not available. Hamlets on the coast have high levels of holiday home ownership and some small-scale visitor accommodation.
Harmers Haven		
Jam Jerrup		
Pioneer Bay and The Gurdies		
Silverleaves		
Smiths Beach		
Sunderland Bay		
Sunset Strip		
Surf Beach		
Tenby Point		
Ventnor		
Wimbledon Heights		
Archies Creek	Locality	A small cluster of houses with various lot sizes within the rural hinterland. A locality relies on larger settlements for services. Reticulated water and sewerage connections are generally not available.
Wattle Bank		
Woolamai		



Future development

Most of the declared area's residential growth will be concentrated within the regional service centre and district towns by developing vacant lots, infill and greenfield areas. It will be planned and designed to respect the unique identities of settlements, including their highly valued landscapes, environmental, Aboriginal cultural heritage and historic heritage values and coastal characters.

Housing change areas

Each settlement will accommodate housing differently, in line with its designation in the settlement hierarchy and its unique features and character.

Planning for housing growth should address the following principles.

- **Environmental hazards, ecology and heritage:** Housing should be located in areas that avoid environmental hazards and sensitive places with high biodiversity and Aboriginal cultural heritage values.
- **Neighbourhood and landscape character:** Housing should be designed to protect the unique characters of settlements, including their landscape settings.
- **Urban infrastructure and connectivity:** Housing should be located close to services and infrastructure and have good connections to surrounding areas. Where feasible, opportunities to consolidate and redevelop existing urban areas should be prioritised over developing greenfield areas.
- **Diversity and affordability:** Housing should be diverse, considering the existing and future demographics of the area.

Protected settlement boundaries

Every settlement within the declared area, excluding localities, will have a protected settlement boundary to contain urban growth and provide long-term protection for the settlement's distinctive attributes and environs. **Map 16** to **Map 35** show the location of each protected settlement boundary. The protected settlement boundaries for Inverloch and Wonthaggi are yet to be defined and are subject to further strategic planning work and public consultation.

Green breaks

Maintaining green breaks between the declared area's settlements is important. As shown on **Map 3**, the green breaks together with the protected settlement boundaries will help conserve landscape, environmental and cultural heritage attributes, strategic infrastructure (such as water utilities), agricultural land and other natural resources from encroachment by urban development.

Green breaks help to establish a sense of arrival and a unique identity for each settlement area by containing their outward growth and avoiding settlement areas coalescing. Development at the periphery of settlements has the potential to impact environmental and cultural heritage attributes and the rural land uses contained within the green breaks. It can greatly change the character of the surrounding landscape and must be carefully designed to achieve a successful urban-rural interface. Subject to addressing bushfire risks, providing for a soft-edge transition between urban and rural areas may be achieved through the siting, scale and appearance of development.

Within the declared area, green breaks are mostly rural land zoned as Farming Zone, Rural Conservation Zone, Public Conservation and Recreation Zone or Rural Living Zone.

Objective and strategies

Objective 13

To plan and manage the sustainable development of the declared area's settlements, to ensure the protection and enhancement of the area's landscape significance, Aboriginal cultural heritage, historic heritage, environmental and biodiversity values, and consistent with the unique character and hierarchy designation of each settlement.

Strategies

13.1	Direct urban development to a hierarchy of settlements identified for growth by designating housing change areas and protected settlement boundaries.
13.2	Support protected settlement boundaries for each settlement identified in the Bass Coast settlement hierarchy, excluding localities.
13.3	Limit the expansion and intensification of settlements in high-risk locations, actively reducing the risks associated with natural hazards.
13.4	Ensure the design of development respects the identities, coastal characters and Aboriginal cultural and historic heritages of settlements and their environs.
13.5	Ensure development at the periphery of settlements is designed to transition to the surrounding landscapes, integrating development with its environs, landscape character and features, subject to addressing bushfire risks.
13.6	Ensure development in settlements maintains and enhances views of the rural hinterland, to and from the coast and foreshore, and other significant landscapes.
13.7	Ensure development in settlements achieves best practice environmentally sustainable design and development for the full life of the development.
13.8	Provide an adequate supply of well-serviced commercial, industrial, community and other employment land in settlements to support local and regional jobs and services.
13.9	Encourage the voluntary and proactive use of Aboriginal cultural heritage management plans.
13.10	Ensure affordable and social housing is located close to town centres and services.



Settlement planning and management

Regional service centre

Wonthaggi

Wonthaggi is the declared area's primary service and employment centre. There are opportunities for the large-scale expansion of residential, commercial, community and industrial land uses.

Growth will be accommodated within designated growth areas (such as the Wonthaggi North East precinct) and through infill development within the settlement area. Housing change will occur within and around the commercial centre.

Wonthaggi needs a protected settlement boundary to protect the distinctive attributes surrounding the settlement and ensure future residential development is not located in areas of environmental risk. The resolution of the location of the future protected settlement boundary will be informed by strategic planning work undertaken in collaboration with the Bunurong people and relevant government agencies and authorities. This work will also involve public consultation.

District towns

Cowes

Cowes is a vibrant, coastal district town. It is Phillip Island's largest settlement and its primary commercial and community service centre for residents and visitors. It supports a large seasonal visitor community and has a significant foreshore precinct.

The district town's area is elevated and undulating, and the main street, with its activity and avenue of cypress trees, provides a sense of arrival and entry. Residential neighbourhoods on either side of the main street and town centre have an established grid of large, regular-shaped blocks.

Growth will be accommodated through infill development and by developing vacant greenfield land within the protected settlement boundary shown on **Map 16**.

Map 16: Cowes protected settlement boundary. (Source: DTP)





Inverloch's character is shaped by its setting on Anderson Inlet and the Tarwin River estuary and the coastline of broad beaches, tidal flats and dunes.

Inverloch

Inverloch is a coastal district town and a popular lifestyle and holiday destination. Its town centre provides commercial, community and recreational services, with residents depending on nearby Wonthaggi for higher-order services.

Inverloch's character is shaped by its setting on Anderson Inlet and the Tarwin River estuary and the coastline of broad beaches, tidal flats and dunes. Areas southwest of the town have dense canopies of trees and coastal shrubs.

Inverloch adjoins the state-significant and regionally significant San Remo to Inverloch Coast and Coastal Hinterland landscape, characterised by its low-energy coastline within Anderson Inlet (a shallow, dynamic river mouth edged by broad, sandy beaches and low, grassy dunes) and a mostly cleared, rolling, pastoral hinterland. The Inverloch Surf Beach is highly dynamic and has experienced significant erosion of the dunes and coastal vegetation. There are extensive areas of non-developed grassland at the edge of the settlement.

Growth will be accommodated through infill development and by developing vacant land within the existing settlement area.

Development should have a distinct coastal character. In areas of minimal housing change, development at Inverloch will occur on larger lots with wide frontages. Buildings should be casually sited on lots with low site coverage, providing space for boats, other recreational pursuits and vegetation. Street spaces should be generous and well-vegetated and have informal pedestrian environments.

A protected settlement boundary is planned for Inverloch to protect the distinctive attributes surrounding the settlement and to ensure future residential development is not located in areas of environmental risk. The location of the future protected settlement boundary will be informed by strategic planning work undertaken in collaboration with the Bunurong people and relevant government agencies and authorities. This work will also involve public consultation.

San Remo

San Remo is a district town. It is a residential and holiday visitor settlement with a small commercial centre.

Located at the edge of the Anderson Peninsula (where the Bass Hills terminate) and the entrance to Phillip Island, San Remo offers panoramic outlooks: the settlement is prominent and exposed in views across Western Port. Views towards the water are framed and captured by the local street network.

Most of San Remo is within the regionally significant Strzelecki Foothills landscape, characterised by the undeveloped, rolling Bass Hills, clusters of remnant native vegetation and expansive views to Western Port. Part of San Remo is within the state-significant San Remo to Inverloch Coast and Coastal Hinterland landscape, a highly valued coastal landscape of stunning contrasts and iconic features, which can be appreciated from the George Bass Coastal Walk: the walk provides commanding views of the dramatic coastline and Bass Strait.

Development should be sensitively designed in relation to the topography, coastal outlook and environs. The foreshore setting of San Remo's town centre is the settlement's main focus. Streetscapes should utilise distinctive native vegetation.

The strategic planning of the growth area and the design of development should address:

- Aboriginal cultural heritage values by engaging with the Bunurong people.
- The state-significant and regionally significant landscapes within which San Remo is located, including the scenic journey along Phillip Island Road by:
- Protecting the ridgeline that forms the westerly extent of the Bass Hills and the Anderson Peninsula.
- Using external materials that reduce the visibility of buildings.
- Transport, drainage and other infrastructure requirements to the satisfaction of the relevant authorities.

Map 17: San Remo protected settlement boundary.

(Source: DTP)

