RMCG

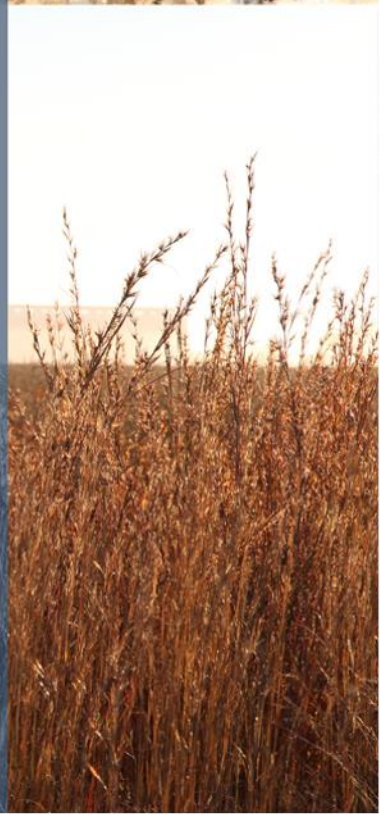
Melbourne Water

OCTOBER 2024

Biodiversity Conservation Action Plan 2024-28

Final Plan

Melbourne Water



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Executive Summary

Globally, biodiversity is in decline. We are losing species at a faster rate than ever recorded in history. We need to work together to bring about transformative change to halt and reverse this decline. We all have a part to play, and this plan sets out the pathway for Melbourne Water and its partners to better protect and improve biodiversity across the Port Phillip and Western Port region.

Melbourne Water has a unique dual role of water resource manager and catchment manager for the Port Phillip and Western Port (PPW) region. Within these roles is the obligation to protect and improve native biodiversity. Managing Melbourne Water's own land to protect and improve biodiversity is a key part of this role, but as catchment manager, the organisation also has an important leadership role in biodiversity enhancement across the whole catchment.

This Biodiversity Conservation Action Plan (BCAP) provides a practical guide for Melbourne Water and its partners to direct management efforts that will maximise the protection and enhancement of native biodiversity across the PPW region over the next five years. The BCAP sets out:

- Regional spatial priorities for biodiversity investment
- Objectives and actions that Melbourne Water will deliver as an organisation to better protect and conserve biodiversity
- A monitoring plan to measure and track the progress of actions and outputs from the plan.

This BCAP was informed by extensive consultation with Melbourne Water staff and key biodiversity management partners in the PPW region. The BCAP is also underpinned by an analysis of the best available and most comprehensive regional biodiversity data and a cost-benefit analysis which was used to assess the effectiveness of interventions at priority locations.

The BCAP identifies themes, objectives, actions and priority focus areas to direct biodiversity conservation and management efforts and enable Melbourne Water to make prudent and efficient investment decisions. Delivering on actions in this BCAP will be the responsibility of everyone at Melbourne Water and the partners Melbourne Water works with across the PPW region.

The overarching vision for biodiversity conservation and protection at Melbourne Water is:

'Our region's native biodiversity is protected and maintained for future generations to appreciate, and Melbourne Water is recognised for its role as a leader among natural resource managers'

The vision, outcomes and objectives will be achieved through the delivery of priority actions as detailed in this plan. There are two main components of the BCAP:

- Regional spatial priorities that will guide biodiversity conservation work Melbourne Water does with its partners as the Catchment Management Authority
- Objectives that will be delivered directly by Melbourne Water as a major landowner / manager

An overview of these two components and their strategic alignment to the Regional Catchment Strategy and 2018 *Healthy Waterways Strategy* is shown in the following diagram which brings the BCAP together as a 'plan on a page'.

RELATED REGIONAL CATCHMENT STRATEGY VISION, OUTCOMES AND TARGETS

Vision (30 year)

In 2050, native plant and animal populations across the region are plentiful, thriving and flourishing and are part of functioning and resilient ecosystems. Conservation reserves across the region are connected by a large network of established and protected biolinks, across public and private land, providing habitat corridors of movement for a diversity of species. Populations of threatened species across the region are valued, protected and on the path to recovery.

Medium-term (5 to 20 years)

- *All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience*
- *20,000 hectares of revegetation is established in priority areas for habitat connectivity in the region (at least 1,000 per year)*
- *Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region*
- *Maintain the diversity of native animal species in the region*
- *Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience.*

RELATED HEALTHY WATERWAYS STRATEGY VISION AND TARGETS

Vision (50 year)

Healthy and valued waterways are integrated with broader landscape, and enhance life and livability. Waterways connect diverse and thriving communities of plants and animals; provide amenity to urban and rural areas, and engage communities with their environment; and are managed sustainably to enhance environmental, economic, social and cultural values

Long-term targets for all catchments - Westernport, Dandenong, Yarra, Maribyrnong, Werribee (10 to 50 years)

- *Increased vegetation extent along waterways*
- *Improved vegetation quality along waterways*
- *Improved wetland vegetation condition*
- *Improved wetland water regimes*
- *The ecological conditions of the Westernport Ramsar Wetland and Port Phillip Bay (Western Shoreline) Ramsar Wetland and Edithvale-Seaford Ramsar wetland are maintained or improved*

END OF BCAP OUTCOMES FOR PRIORITY FOCUS AREAS (5 YEARS)

Improving condition and connectivity

Linking landscapes across the west

- *Improve the condition of the Natural Temperate Grasslands of the Victorian Volcanic Plain (NTGVVP) ecological community adjacent to or expanding out from the Western Grasslands Reserve*
- *Improve the condition of grassland dependent wetlands adjacent to or expanding out from the Western Grasslands Reserve*
- *Improve connectivity between the Western Grasslands Reserve, the Werribee River and the You Yangs Regional Park*
- *Increase the area of critical habitat available for the Victorian Grassland Earless Dragon*

Enhancing the Jackson's Creek corridor

- *Increase the condition and connectivity of riparian and escarpment vegetation along the Jackson's Creek corridor*
- *Conduct extant population survey's for the Victorian Grassland Earless Dragon along the Jackson's Creek corridor*

Strengthening biodiversity hotspots

Protecting biodiversity hotspots in Yarra Valley North

- *Link aquaducts, existing revegetation and properties under permanent protection to create habitat corridors in the areas surrounding Warrandyte State Park, and Sugarloaf Reservoir*
- *Improve the condition of habitat for threatened species in the areas surrounding Warrandyte State Park, and Sugarloaf Reservoir*
- *Identify and improve the condition of priority sites for threatened orchid assemblages (Little pink spider-orchid, Charming spider-orchid, Kilsyth south spider-orchid*

Protecting biodiversity hotspots in Yarra Valley South

- *Improve the condition of habitat for threatened species in and surrounding the Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds*
- *Create additional suitable habitat for Helmeted honeyeater and Leadbeater's possum (lowland population) in the Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds*

Protecting biodiversity hotspots on the Mornington Peninsula

- *Link existing remnant vegetation to create habitat corridors in the area surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach*
- *By 2028, improve the condition of habitat for threatened species in the areas surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach*

Buffering Ramsar Sites

Improve the resilience of wetlands along the Werribee South Coast

- *Increase the condition and connectivity of coastal vegetation between priority wetlands along the coast of Werribee South*

Improve the resilience of wetlands along the Westernport Coast

- *increase the condition and connectivity of coastal vegetation between Hastings and Warneet*

Enhancing island 'safe havens'

Safeguarding Phillip Island

- *The condition of suitable habitat to facilitate persistence of threatened species on Phillip Island is improved*
- *Phillip Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species*

Safeguarding French Island

- *French Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species (above and beyond those prioritised in the NRM Action Plan)*

END OF BCAP OBJECTIVES FOR MELBOURNE WATER (5 YEARS)

Protecting native biodiversity across our catchment

Melbourne Water is the lead agency guiding, facilitating and actioning biodiversity conservation efforts both across the catchment and on Melbourne Water land

Building ecological resilience in the face of a changing climate

Melbourne Water conserves and enhances biodiversity to builds ecological resilience in the face of a changing climate

Building organisational skills and capacity to enable biodiversity protection and recovery

Melbourne Water is equipped with the knowledge, skills and resources to deliver the biodiversity conservation leadership role

Within Melbourne Water, championing biodiversity positive planning and development

Melbourne Water positively influences the outcomes of urban planning and development to benefit biodiversity both across the catchment and on Melbourne Water land.

Healing and walking on country

Melbourne Water strengthens its partnerships and empowers Traditional Owners to deliver culturally important biodiversity conservation outcomes.

SHORT-TERM OUTCOMES EXPECTED THROUGH DELIVERY OF ACTIONS IN PRIORITY FOCUS AREAS (2 - 3 YEARS)

- *The area of land under permanent protection is increased*
- *The extent of native vegetation is increased*

- *Reduced herbivory on threatened and other native vegetation*
- *Recruitment of key native flora species*

- *Reduced predation presssure from foxes and cats on threatened and native fauna*

- *Area of weed infestations reduced*
- *Phytophora is contained to areas it is known to occur (no new incursions are recorded)*
- *The area managed under improved fire regimes is increased*

SHORT-TERM OUTCOMES EXPECTED THROUGH DELIVERY OF ACTIONS ACROSS MELBOURNE WATER (2 - 3 YEARS)

- *Melbourne water has strengthened and expanded its partnerships with biodiversity management agencies and organisations*
- *Melbourne Water has improved awareness, knowledge and skills to protect and conserve biodiversity across the region*
- *Melbourne Water has established partnerships with Traditional Owners across the region*
- *Melbourne Water are engaged in urban planning and development decisions to inform biodiversity protection measures*

ACTIONS THAT WILL DELIVER OUTCOMES IN PRIORITY FOCUS AREAS (ANNUAL)

- *Habitat restoration and enhancement*
- *Revegetation*
- *Permanent protection*

- *Total grazer control*
- *Deer control*
- *Rabbit control*

- *Fox control*
- *Cat control*
- *Predator surveillance*

- *Improved fire regimes*
- *Weed control*
- *Phytophora control*

ACTIONS THAT WILL DELIVER BIODIVERSITY OBJECTIVES ACROSS MELBOURNE WATER (ANNUAL)

- *See table 3.1, actions 1 to 14 described in section 3.2 of the BCAP*
- *See table 3.2, actions 15 to 19 described in section 3.2 of the BCAP*
- *See table 3.3, actions 20 to 26 described in section 3.2 of the BCAP*
- *See table 3.4, actions 27 to 34 described in section 3.2 of the BCAP*
- *See table 3.5, actions 35 and 36 described in section 3.2 of the BCAP*

Responsibility for delivery

- Melbourne Water and Partners
- Melbourne Water

ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Wadawurrang, Wurundjeri Woi-wurrung, Bunurong as the Traditional Owners of the Country on which this project is conducted. We recognise their continuing connection to land, waters and culture and pay our respects to their Elders past, present and emerging. Moreover, we express gratitude for the knowledge and insight that Traditional Owners and other Aboriginal and Torres Strait Islander people contribute to our shared work.

1 Introduction

1.1 BIODIVERSITY CRISIS

The current rate of global biodiversity decline is higher than ever before in Earth's history. Species extinctions are estimated to be occurring at a rate of 100 to 1,000 times greater than natural background levels[1,2]. Species population trends are an indicator of the state of global biodiversity and monitoring of these trends shows there has been an average decline of 69 per cent in species populations since 1970 (Figure 1-1). This has led experts to declare the world is undergoing a sixth mass extinction event[3]. This unprecedented decline is directly driven by[4]:

- Changes in land and sea use
- Direct exploitation and overuse of natural resources
- Climate change
- Pollution, and
- Invasive species.

With the trend in species' extinction rates accelerating and the health of ecosystems declining rapidly, now is the time to bring about transformative change to protect, restore and sustainably manage biodiversity.

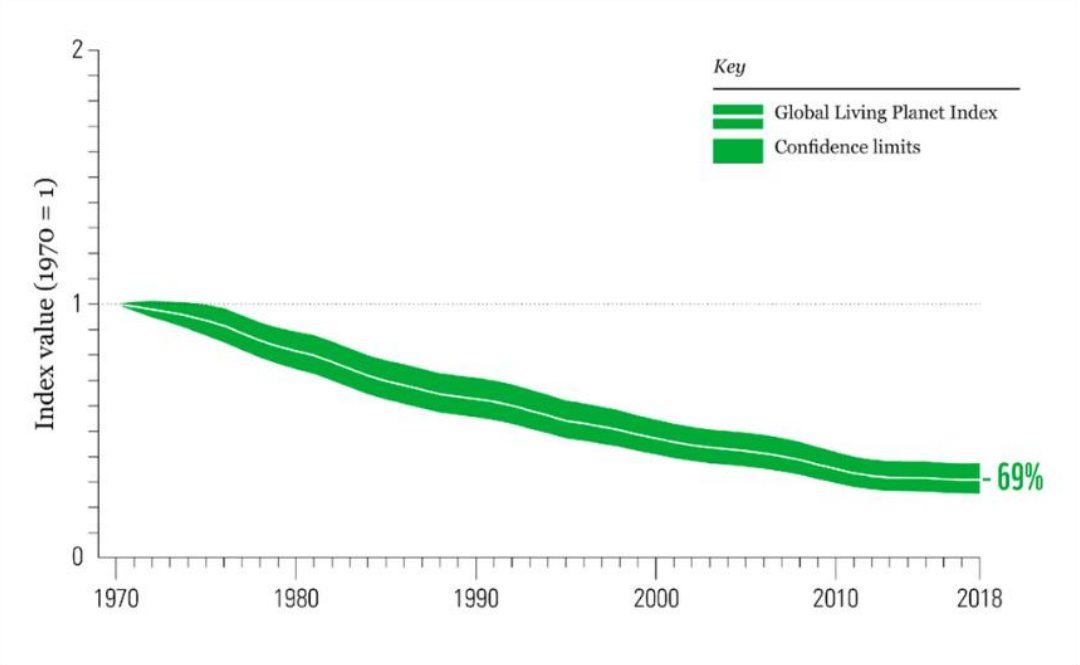


Figure 1-1: The global living planet index showing the average change in relative abundance of populations for 5,230 species. The average change in relative abundance for 2022 shows a decline of 69 per cent (Source: WWF Living Planet Report 2022, pg. 32).

The importance of biodiversity cannot be understated. Biodiversity underpins the ecosystem services that humans rely on for survival. Such services include pollination of crops, productive soils, natural pest control, flood regulation, purification of air and water, decomposition of waste and climate regulation[5]. When the delivery of ecosystem services can no longer occur, or is compromised through biodiversity loss, human survival is threatened[6]. Furthermore, biodiversity is estimated to contribute over $140 trillion per year, globally through the delivery of benefits derived from ecosystem services. Costs associated with inaction to reduce biodiversity decline are significant and predicted to increase[3]. The irreversible loss of biodiversity is listed as one of the top five critical global risks[7].

Looking through a national lens, trends in biodiversity decline across Australia mirror those occurring at the global scale. Australia has the highest rates of biodiversity decline across the developed world, having lost over 100 species since the arrival of Europeans in the late 1700s. The cumulative impacts of land clearing, habitat loss, invasive species and climate change are driving Australia's biodiversity loss[8]. This is significant considering Australia is one of 17 mega-diverse countries which, when combined, cover less than 10 per cent of the world's area while supporting over 70 per cent of its biodiversity[9].

Putting biodiversity decline into a Victorian context, a total of 81 species are reported to be extinct across the state, with a third of all remaining species threatened with extinction. Victoria supports tens of thousands of native species across a range of habitats[6,8]. However, Victoria's biodiversity is under increasing threat from changes in fire frequency and intensity, invasive plants and animals, habitat loss and fragmentation, changes to river flows, wetlands and floodplains. These threats are further exacerbated by population growth and climate change[10].

Within the Port Phillip and Western Port (PPW) region an estimated 58 per cent of native vegetation cover has been lost since European settlement in the early 1800's, mostly cleared for agriculture and urban development[10]. Across the region 627 species have been recorded over the past 200 years, however, several are extinct, and many are in decline. Currently, 159 species are listed as threatened under state and or national legislation[11]. The PPW region is particularly important for the endemic species it provides critical habitat for, as these species are not found anywhere else in the world. Some of these species are critically endangered and include Helmeted Honeyeater, Lowland Leadbeater's Possum, Round-leaf Pomaderris, Victorian Grassland Earless Dragon, White-star bush and the Kilsyth Spider orchid.

1.2 THE OUTLOOK

The decline in biodiversity calls for transformative change through coordinated action from local through to global partnerships. Whilst the rates of biodiversity decline and ecosystem degradation are alarming, it is possible to halt and reverse these trends (Figure 1-2). A multifaceted approach that commands the following is required[11]:

- Increases to the area of habitat protected and restored
- Implementation of sustainable agricultural and forestry practices
- Reduction in pollution and waste
- Increases to invasive species management efforts
- Support for captive breeding and reintroduction programs
- Development of market based incentives to encourage biodiversity protection and conservation
- Improvements in knowledge and understanding to monitor and track changes in biodiversity over time
- Strengthened legal, policy and governance levers to ensure biodiversity is adequately protected and environmental laws are appropriately enforced.

Globally, efforts to address the decline in biodiversity and ecosystem health are being delivered through the 'nature positive' agenda. This approach focuses on promoting the restoration and sustainable management of natural environments to ensure human activities aid in the recovery and enhancement of nature rather than contribute to its degradation. The cornerstone of a nature positive agenda is biodiversity conservation[12].

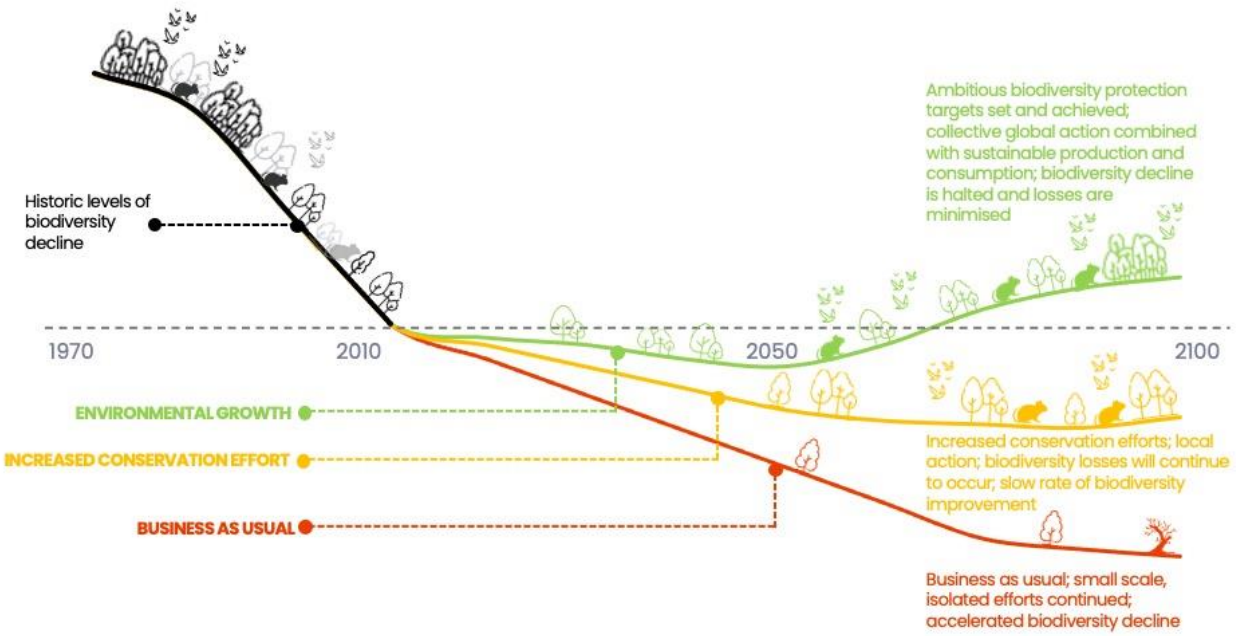


Figure 1-2: Biodiversity trends based on three different scenarios related to future efforts (Source: adapted from the Cornwall & Isles of Scilly Local Nature Partnership and the WWF Living Planet Report 2022 pg. 72)

In Australia this has culminated in the development of a Nature Positive Plan and the establishment of Australia's first environment protection agency, Environment Protection Australia. This new agency will administer Australia's environmental protection laws to better protect nature and make faster, better decisions[13].

More recently the Nature Repair Bill, introduced in 2023, aims to incentivise private investment in biodiversity conservation. The market operating rules for the Bill are still being developed and are expected to be finalised in 2024. The Bill is a key part of Australia's nature positive strategy which aims to protect a 30 per cent of the county's land and seas by 2030.

Agencies, landholders and the community across the PPW region are working towards better protecting and conserving biodiversity through management of the 300,000 hectares of public land which includes a network of national, state, regional and local parks, conservation reserves and waterways[11]. This network of public land supports habitat for biodiversity across the region and is complemented by the protection and enhancement of biodiversity on private land through covenants, grant incentives and the provision of information through groups such as Landcare. Additionally, key efforts to protect, enhance and restore biodiversity are evident through a range of existing initiatives.

The Melbourne Strategic Assessment (MSA) program supports a comprehensive plan to manage urban growth in a way that protects biodiversity through the conservation of habitats and threatened species whilst allowing for sustainable development. Focal threatened species include the Growling Grass Frog, Southern Brown Bandicoot and Spiny Rice-flower[14]. The MSA is complemented by the 2013 Biodiversity Conservation Strategy for Melbourne's Growth Corridors (BCS) which sets out the framework for how biodiversity will be protected within Melbourne's growth corridors. The BCS aims to balance the protection of key species and habitats with urban growth[15].

Large landscape scale restoration projects including *Living Links[16], Greening the West[17], Waterways of the West[18], Burndap Birrarung Burndap Umarkoo Yarra Strategic Plan and the Port Phillip Bay Western Shoreline*

Regional and Strategic Partnership[20] and aim to enhance habitat connectivity, create suitable habitat and improve urban green spaces for biodiversity and people. These programs are delivered in partnership with state government, local council, community groups and conservation organisations.

Whilst these initiatives are a positive step forward more needs to be done to better protect biodiversity, halt and reverse the decline in species loss and restore habitats. This plan sets out what Melbourne Water will do to contribute to improving biodiversity outcomes for the PPW region.

1.3 ORGANISATIONAL CONTEXT FOR BIODIVERSITY CONSERVATION

Melbourne Water manages and protects water resources across the region including the provision of clean drinking water, treating sewage, flood management planning and keeping waterways, wetlands and floodplain habitats healthy. Coupled with this Melbourne Water has a role as catchment manager across the PPW region and is responsible for integrated management of land, water and biodiversity across the catchment.

1.3.1 CATCHMENT MANAGER

As a catchment manager, Melbourne Water is responsible for the integrated planning of land, water and biodiversity management across the PPW region. This includes meeting the objectives of the *Catchment and Land Protection Act 1994* which focuses on management of pest plants and animals and promoting sustainable land use.

As a catchment manager, Melbourne Water now plays a key role in the development, delivery and administration of the Regional Catchment Strategy (RCS). The RCS is a key guiding document for conserving and enhancing the PPW region's land, water and biodiversity over a six-year timeframe. It provides an overview of key land and water ecosystems, identifies key values and threats within these systems, sets a vision and targets for the region's land, water and biodiversity and identifies potential opportunities to deliver projects that will contribute to the achievement of these targets.

With respect to biodiversity, Melbourne Water has a significant role in leading and coordinating the planning and delivery of biodiversity conservation and protection efforts across the PPW region in collaboration with partner agencies and the community. Melbourne Water is charged with communicating the importance of biodiversity in the region and promoting sustainable land practices to further protect and conserve biodiversity. This BCAP will directly contribute to achieving the biodiversity targets under the RCS.

1.3.2 WATER MANAGER

Melbourne Water manages 33,000 hectares of land across the PPW region, including land around aqueducts, pipeline routes, service reservoirs, flood retarding basins, sewerage treatment plants and other assets. In addition, over 290,000 hectares occur within water supply catchments, made up of state forests, national parks, land owned by Melbourne Water and private land[19].

Melbourne Water contributes to the management of water supply catchments for the purpose of maintaining high-quality drinking water. This includes working in collaboration with the Department of Environment, Energy and Climate Action (DEECA), Parks Victoria, Traditional Owners and private land managers to ensure these areas are ecologically healthy and can continue to deliver the ecosystem services required to provide drinking water, such as filtration services[18].

Melbourne Water is involved in a range of activities to protect water supply catchments. This includes fuel and fire management, water quality monitoring, land use regulation to minimise the impact of agriculture, input to

urban development planning, supporting recreational use, water use efficiency incentives and water source diversification to adapt to a changing climate[18].

Beyond water supply catchments Melbourne Water has a key role in protecting and conserving biodiversity on all Melbourne Water owned land under legislative obligations such as the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999) and *Flora and Fauna Guarantee Act 1988* (FFG Act 1988) (refer to Appendix 1 for a full list of relevant legislation). Melbourne Water also acts as custodian of the 25,000 kilometres of rivers and creeks across the region and facilitates and delivers environmental watering, provides advice and influences planning decisions to protect and enhance biodiversity as well as promote sustainable development.

As a waterway manager, Melbourne Water is responsible for the development and implementation of the regional Healthy Waterways Strategy (HWS). The HWS sets out the long-term vision for managing and improving the health of rivers, wetlands and estuaries across the PPW region. It has a focus on sustaining the regions native biodiversity through multiple lenses including, consideration and prioritisation of species listed under the EPBC Act 1999 and FFG Act 1988 at locations where works are delivered, managing Sites of Biodiversity Significance, improving connectivity and climate change resilience through biodiversity corridors, adopting biodiversity sensitive design to minimise the impact of water management operations and urban development on biodiversity across the region[20].

This plan will help to further embed biodiversity conservation and management into Melbourne Water's role as water manager.

1.3.3 HOW THESE ROLES FIT TOGETHER

As Melbourne Water transitions into its role as a catchment manager, it is opportune to determine how the organisation's role as a water manager can operate in synergy with its dual role as catchment manager. This includes identifying where efficiencies can be gained to maximise the benefits of investment in biodiversity across the PPW region. This plan seeks to articulate Melbourne Water's regional approach to biodiversity protection and conservation and will provide a blueprint to assist in the planning and development of the next RCS and HWS which are due for renewal in 2027 and 2028 respectively.

2 This plan

This plan has been developed to align and focus the efforts of Melbourne Water in biodiversity protection and enhancement across the PPW region. In section 2.2 below a vision for biodiversity in the region and a set of guiding principles have been set out. The next two chapters of the plan (sections 3 and 4), describe how this vision will be delivered by focusing on:

- Detailed spatial priorities for biodiversity investment by Melbourne Water and its partners (section 3), and
- Organisational objectives and actions that will help to embed biodiversity protection and conservation into business as usual across Melbourne Water (section 4).

The plan aims to guide biodiversity protection, management and enhancement actions and projects over the next five years. The final chapter of the plan (section 5) sets out a monitoring, evaluation and reporting approach that will ensure progress towards the plan's vision and objectives is closely tracked, and approaches improved regularly over the five years.

This biodiversity plan is considered a sub-plan of both the RCS and HWS. It informs and aligns with these broader strategies in place to protect land, waters and biodiversity across the PPW region.

2.1 BIODIVERSITY PLANNING OVER TIME

The first biodiversity plan for the Melbourne Water region was developed in 2004, coinciding with the pivotal moment when Melbourne Water committed to becoming 'custodian of river health'. Since 2004 the plan for biodiversity conservation and protection at Melbourne Water has evolved, and the document was updated in response to changes in the operating environment (Figure 2-1).

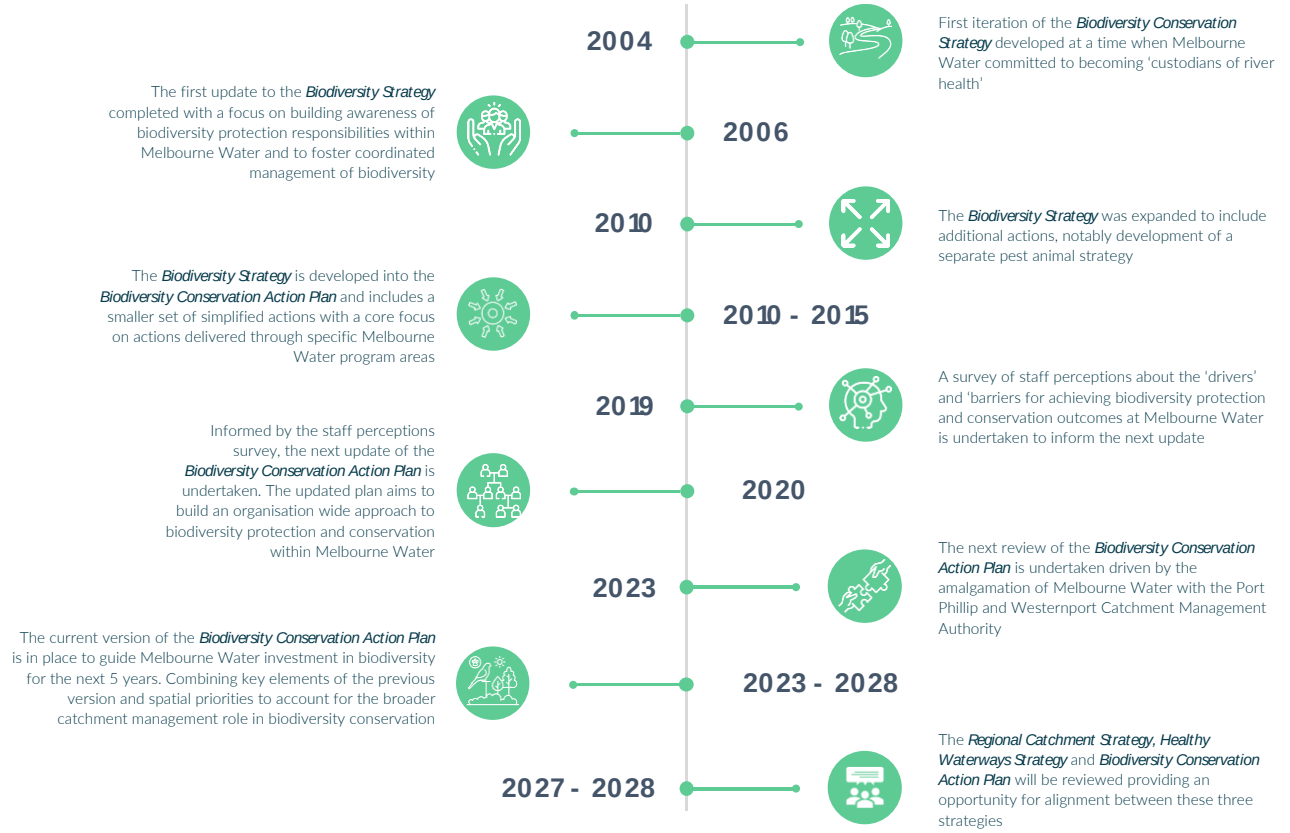


Figure 2-1: Evolution of the BCAP overtime

As Melbourne Water faces another pivotal moment with the integration of the Port Phillip and Western Port Catchment Management Authority, the organisation's role in biodiversity conservation and protection is expanded to include the broader catchment. This plan has been developed to respond to new opportunities for biodiversity management across the PPW region. Notably, this plan sets out spatial priorities to guide investment in biodiversity and brings together the role of Melbourne Water as a leader in the coordination and delivery of biodiversity actions across the PPW region and on land it owns.

2.2 VISION AND GUIDING PRINCIPLES

The overarching vision for biodiversity conservation and protection at Melbourne Water is as follows.

"Our region's native biodiversity is protected and maintained for future generations to appreciate, and Melbourne Water is recognised for its role as a leader among natural resource managers"

Given the expanded role of Melbourne Water as a catchment manager combined with its role as the substantive water resource manager across the PPW region, the set of principles guiding biodiversity protection and conservation has been updated from the previous iteration of the BCAP.

Delivering on these principles and associated actions in this BCAP will be the responsibility of everyone at Melbourne Water. This plan aims to embed biodiversity protection and enhancement throughout Melbourne Water operations and within its regional partnerships to ensure biodiversity outcomes are maximised across the region. The eight core principles are outlined in Figure 2-2.

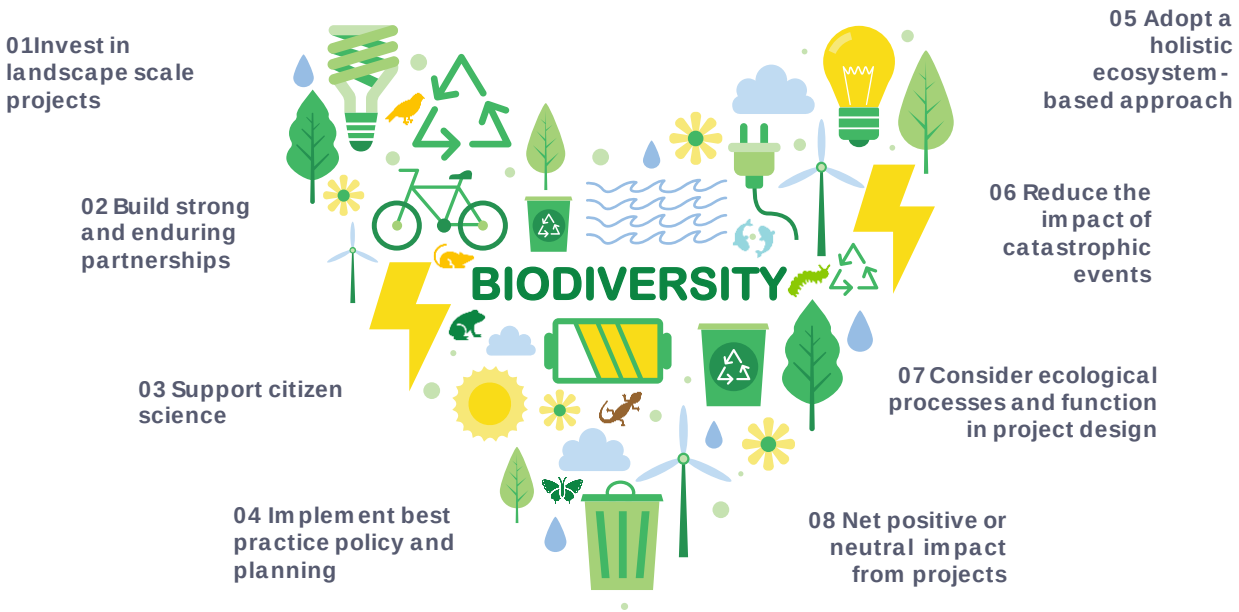


Figure 2-2: Eight core principles that will guide biodiversity protection and enhancement at Melbourne Water over the next five years

The intention of the eight principles is described as follows:

1. **Invest in landscape scale projects** – build on the strength of Melbourne Water as a catchment manager through the implementation of the RCS and in leading long-term flagship projects across the PPW region

2. **Build strong and enduring partnerships** – focus on maintaining existing partnerships and further develop strong and enduring partnerships with Traditional Owners, agencies, landholders, community groups and experts

3. **Support citizen science** – continue to support community involvement in data and information collection

4. **Implement best practice policy and planning** – consider and build in new frameworks and best practice approaches to biodiversity conservation and restoration including the Nature Repair Market Bill (2023), natural capital mapping and nature-based solutions

5. **Adopt a holistic ecosystem-based approach** – draw on the ecosystem-based approach to priority setting and management action planning (contained in this plan) to protect and prevent loss of biodiversity and habitat and make prudent and efficient investment decisions

6. **Reduce the impact of catastrophic events** – implement the Emergency Preparedness and Response Plan (EPRP) (2024) to reduce the impact of catastrophic events on priority biodiversity and natural capital assets and further build ecosystem resilience across the PPW region

7. **Consider ecological processes and function in project design** – ensure critical ecological processes and functions are considered during the project design phase

8. **Net positive or neutral impact from projects** – seek to have a neutral or net positive impact on biodiversity for all projects on Melbourne Water land.

3 Regional biodiversity priorities

The regional spatial priorities form a sub-plan of the RCS. The RCS sets out higher-level targets for biodiversity across the PPW region. Delivery of projects aligned to the spatial priorities in this plan will contribute to the higher level RCS targets. An overview of the prioritisation process for identifying spatial priorities is provided next followed by a detailed description of priority focus areas.

3.1 OVERVIEW OF THE PRIORITISATION PROCESS

An ecosystem-based approach was used to develop the biodiversity priorities for the BCAP. The aim of this approach was to identify where Melbourne Water could deliver biodiversity conservation and protection interventions within the landscape to maximise the benefits to biodiversity. The approach was tenure blind and not tied to any particular funding program. The prioritisation process was characterised by the following steps:

a. Spatial analysis of biodiversity data against a set of thresholds and criteria
b. Consultation
c. Cost-benefit analysis.

Further detail of each step is provided in the following sections.

3.1.1 SPATIAL ANALYSIS

Ecosystem units

A regional scale assessment of biodiversity data was undertaken using the DEECA Strategic Management Prospects (SMP) modelling data. The SMP-modelled data provides a spatially explicit landscape scale approach to identify the most effective and efficient management actions to maximise benefits for the greatest number of species.

The first step in the analysis involved identification of broader ecosystem units across the PPW region. This was completed using the SMP data and involved:

- Clipping the relevant benefit layers to the region
- Combining the benefit layers to show where the combined actions deliver the most benefit for the greatest number of species
- Determining which individual actions deliver the highest level of benefits to biodiversity, and
- Identification of clusters where the concentration of high biodiversity values coincided with the highest level of benefit from management intervention[21].

As a result of this analysis, 11 ecosystem units were identified across the region (Figure 3-1).

Species specific data

Following the identification of ecosystem units further analysis of the SMP data was undertaken to identify biodiversity priority areas within ecosystem units. This included the generation of species-specific data for each unit. The analysis was guided by the following key principles:

- Manageable and feasible number of species to focus biodiversity efforts on over a five-year timeframe
- Manageable and feasible spatial area to focus biodiversity efforts on over a five-year timeframe
- Interventions that will provide greatest benefit to the greatest number of species at a regional level.

The criteria and thresholds applied to identify biodiversity priority areas within ecosystem units are shown in Table 3-1 below.

Table 3-1: Criteria and thresholds to identify biodiversity priority areas in the PPW region

Criteria	Thresholds	Justification
Species conservation status	Species listed as critically endangered, endangered or vulnerable under the *FFG Act 1988*	Conservation status is an indicator of the level of threat a species is facing and the urgency that intervention is required to support species persistence. Thus, critically endangered, endangered and vulnerable species are considered the highest priorities for intervention.
Proportional distribution	Proportional modelled habitat distribution of 5% or more within the ecosystem unit	The higher the proportional distribution of a species within the ecosystem unit the more important that location is for the species (e.g. a proportional distribution of 99% means the ecosystem unit contains 99% of a species modelled Victorian habitat). Focusing interventions into locations where the species is most likely to occur will deliver the greatest benefit for that species.
Benefit of action value	Actions that deliver a proportional benefit of 5% or more	To generate the best chance of maximising benefits to the most species within an ecosystem unit all actions with a proportional benefit of 5% or more of the combined benefit score for all actions were included in the analysis.
Habitat score standardisation	Standardised habitat score of 50% or above Intersect between the benefit of action layers with the most suitable habitat	A standardised habitat score of 50% or more provides a strong indication that the location contains highly suitable habitat for the species. The higher the habitat score the more suitable the habitat in that location is for the species. Higher habitat scores represent locations that are more important for the species within it's distributional range. Whilst areas that score lower can support the species, the habitat is likely to be less suitable than those areas that score higher. Therefore, delivering the highest benefit value actions (proportional benefit of 5% or more) where the species standardised habitat score is 50% or more will maximise the benefits for that species (measured as a change in suitable habitat). Standardising the habitat scores is important to ensure geographically restricted species are considered equally with more widely distributed species.
Secondary data layers	▪ MSA Biodiversity Conservation Areas (Melbourne Water) ▪ Sites of Biodiversity Significance (Melbourne Water) ▪ Regional Priority Landscapes (Parks Victoria) ▪ Focal Landscapes (Trust for Nature) ▪ Trust for Nature properties ▪ Registered Covenants (Trust for Nature) ▪ Regional Priority Wetlands ▪ Potential for Biodiversity Improvement – Priority Urban	Secondary data layers were overlayed on final priority biodiversity areas to provide additional context about areas of high biodiversity value across the region and show alignment to partner priorities. This data is displayed as key features on the priority focus area maps.

Criteria	Thresholds	Justification
	Greening Analysis (Melbourne Water) ▪ Platypus present and likely to breed (Melbourne Water) ▪ Waterbird data overtime (Melbourne Water) ▪ Threatened fish surveys (Melbourne Water) ▪ Western Grasslands Reserve (DEECA) ▪ PPW Region Ramsar sites	

The output of this analysis was a series of maps showing biodiversity priority areas for each ecosystem unit (refer to section 2.2 for final mapping outputs). Further detailed description of the species-specific data analysis method is provided in a separate technical document[22]. The full list of key species identified for each ecosystem unit is provided in (Appendix 2).

3.1.2 CONSULTATION

The biodiversity priority area maps were presented to potential partners involved in conservation and protection of biodiversity across the PPW region (Appendix 3). Consultation was delivered through a series of workshops and targeted follow-up. The focus of the consultation was to test and refine the mapping outputs and to collate collective expert knowledge on biodiversity in the region to inform the cost-benefit analysis described in the next section.

3.1.3 COST-BENEFIT ANALYSIS

Following the consultation a cost-benefit analysis was undertaken on the identified biodiversity priorities. The cost-benefit analysis confirmed that the proposed interventions will deliver significant benefits at a reasonable cost for biodiversity priority areas in 9 of the 11 ecosystem units. There was insufficient information from the spatial analysis and consultation to progress the cost-benefit analysis for the Wombat State Forest and Edithvale-Seaford ecosystem units.

In the case of Wombat State Forest there were only three species that met the criteria for identifying priority biodiversity areas compared to an average of 15 species across all ecosystem units. Furthermore, the proposed interventions were considered unlikely to deliver landscape scale change. Proposed interventions include weed and grazing control, predator control, phytophora management and ecological burning. Whilst this combination of actions is likely to deliver benefits within the ecosystem unit the spatial analysis and follow up consultation confirmed these benefits would occur over a limited area. This is partly driven by the small proportion of Wombat State Forest that occurs within the PPW region.

For Edithvale-Seaford there were a high number of key species identified (25 in total), however given the urban context and operational requirements to manage flood waters at the site the proposed interventions and their potential to drive meaningful and measurable changes for biodiversity were limited. The proposed interventions include weed and grazing control, predator control, phytophora management, revegetation and permanent protection. These interventions would need to be delivered in the land surrounding the wetlands to provide a buffer. Given the wetlands are surrounded by existing urban residential development it is not possible to deliver the interventions that are proposed to bring about meaningful and measurable changes for biodiversity in this location. There are other measures in place to protect these wetlands through existing Ramsar site management.

Overall, for the 9 identified locations, the analysis shows that the chosen interventions are a sound investment in biodiversity across the PPW region and will support achievement of the proposed outcomes at these locations. The cost-benefit analysis considered the following:

- Benefits
  - Biodiversity values in priority areas (key species, critical vegetation assemblages, additional values from secondary spatial data)
  - Significant threats to biodiversity values at the identified priority locations
  - Proposed medium-term outcomes for the priority area
  - Interventions to address significant threats to biodiversity values and the effectiveness of those interventions
  - Timing in the delivery of benefits
  - Potential to scale up interventions across other localities in the region
  - Likely change in condition of biodiversity values due to delivery of interventions.
- Costs
  - Technical feasibility of delivering interventions
  - Likelihood of adoption of interventions
  - Cash costs relative to historical spending on biodiversity protection and conservation in the region.

A summary of the results from the cost-benefit analysis is provided in Appendix 4.

It is important to note that the focus areas relate to priority areas for biodiversity investment at a regional scale. There are other locations within the PPW region that support biodiversity values (e.g. Wombat State Forest, Edithvale-Seaford Wetlands) and management of these areas should consider such values as part of an integrated management approach.

Several themes related to the biodiversity conservation and protection interventions emerged through the prioritisation process. These themes and how they relate to biodiversity priority focus areas are described in detail in the next section.

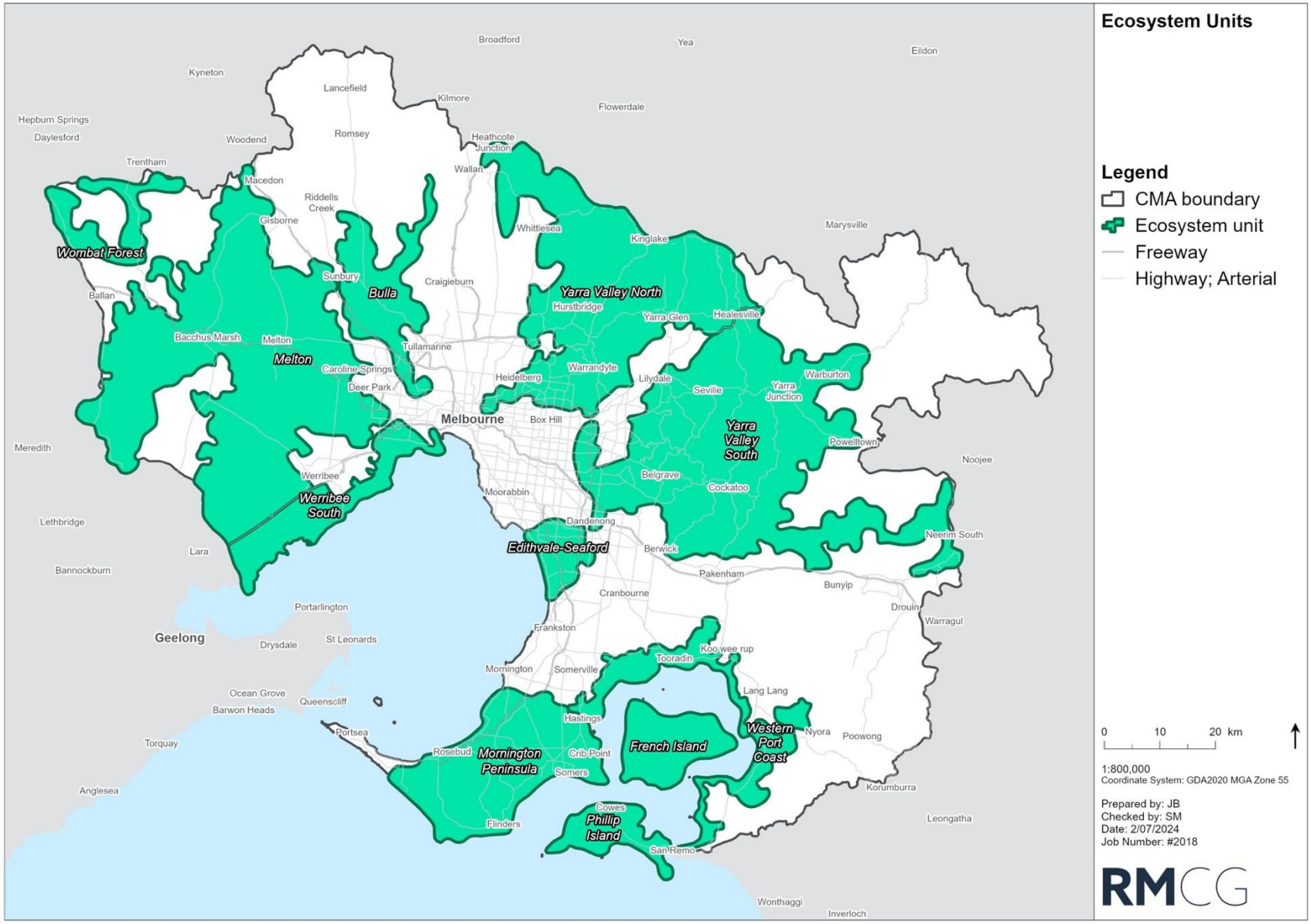


Figure 3-1: The 11 priority ecosystem units identified across the PPW region based on analysis of the SMP data

3.2 KEY THEMES AND PRIORITY FOCUS AREAS

Four themes and 9 priority focus areas emerged from the prioritisation process including:

- Theme: Improving condition and connectivity
  - Linking landscapes across the west
  - Enhancing the Jacksons Creek corridor
- Theme: Strengthening biodiversity hotspots
  - Protecting biodiversity hotspots in Yarra Valley North
  - Protecting biodiversity hotspots on the Mornington Peninsula
  - Protecting biodiversity hotspots in Yarra Valley South
- Theme: Buffering Ramsar sites
  - Improving the resilience of wetlands along the Werribee South Coast
  - Improving the resilience of wetlands along the Western Port coast
- Theme: Enhancing island 'safe havens'
  - Safeguarding Phillip Island
  - Safeguarding French Island.

Each priority focus area sits under a theme. Whilst a priority focus area may fit under several themes the intent of biodiversity conservation and protection efforts within the focus area is the key driver underpinning which theme that focus area is assigned to. Detail of the themes and priority focus areas is provided next including an outline of the biodiversity benefits intended to flow from delivering interventions under the theme, location and description of the priority focus area (spatial map, key values, significant threats, intended five-year outcomes, proposed actions to deliver the intended outcomes and partnership opportunities).

The spatial map for each priority area is intended to guide the development of projects without being prescriptive and should be considered in combination with the information outlined in the priority focus area tables. The following principles should be considered when using the mapping outputs for project planning:

- The biodiversity benefit rating provides an indication of where interventions are likely to deliver the highest biodiversity benefit, these areas should provide the initial focus during project planning discussions (this is represented as the darker blue areas on the maps)
- To further refine the project location, areas where key features overlap with areas of high biodiversity benefit should be prioritised
- Further consultation with key project partners and collaborators (consider the partnership opportunities identified in the priority focus area table as a first step) is critical to gather local expert knowledge and inform the design and delivery of projects within the priority focus area.

3.2.1 IMPROVING CONDITION AND CONNECTIVITY

The PPW region is characterised by varied landscapes and ecosystems from mountain foothills and forests, grasslands and coastal hinterlands to low lying wetlands and swamps, marine environments and a network of river and creek corridors. These landscapes provide important habitat for the significant number of threatened species and ecological communities that occur within the region including 159 fauna species, 333 flora species and 24 ecological communities[11,10]. Furthermore, there are 6 threatened species that are known to be endemic to the region and rely on these habitats for survival[23].

Through focusing efforts on improving the condition and connectivity of habitats across the PPW region biodiversity will be better protected and become more resilient to the impacts of a changing climate. Developing a network of biodiversity corridors across the landscape supports improvements in habitat condition and

connectivity. Biodiversity corridors connect patches of isolated ecosystems such as forests, grasslands and wetlands and can range from narrower strips such as riparian zones along waterways or roadsides to larger more connected patches of protected land.

Increasing connectivity through biodiversity corridors facilitates species dispersal and migration leading to enhanced genetic diversity. Improved genetic diversity reduces inbreeding and increases the adaptability of species by allowing natural movement between critical habitats in response to seasonal or environmental changes. Connected, high-quality habitats also provide safe zones or natural shelters buffering species from the impacts of climate change.

Increasing habitat quality along biodiversity corridors supports species survival and reproduction by ensuring access to adequate food resources and breeding sites. In turn, this increases the stability of populations, maintains healthy reproductive rates and reduces the chance of local extinctions. High-quality connected habitats enhance ecosystem function and stability through maintaining food web interactions such as predator-prey relationships, provision of ecosystem services (e.g. pollination, water filtration, pest control, carbon sequestration) and sustaining ecological processes like nutrient cycling, seed dispersal and hydrological flows.

Larger more connected patches of habitat can buffer species from the impacts of edge effects including increased predation, competition with invasive species and changes in microclimate. Through improving habitat connectivity and quality, the impacts of habitat fragmentation can be minimised reducing the vulnerability of species to extinction.

There are two priority focus areas identified through the prioritisation process that are included under this theme. The long-term outcome for biodiversity protection and enhancement efforts in these priority focus areas is to:

Improve connectivity and condition by extending out from existing conservation and other protected areas to increase their resilience and better connect larger patches of habitat through the development of biodiversity corridors.

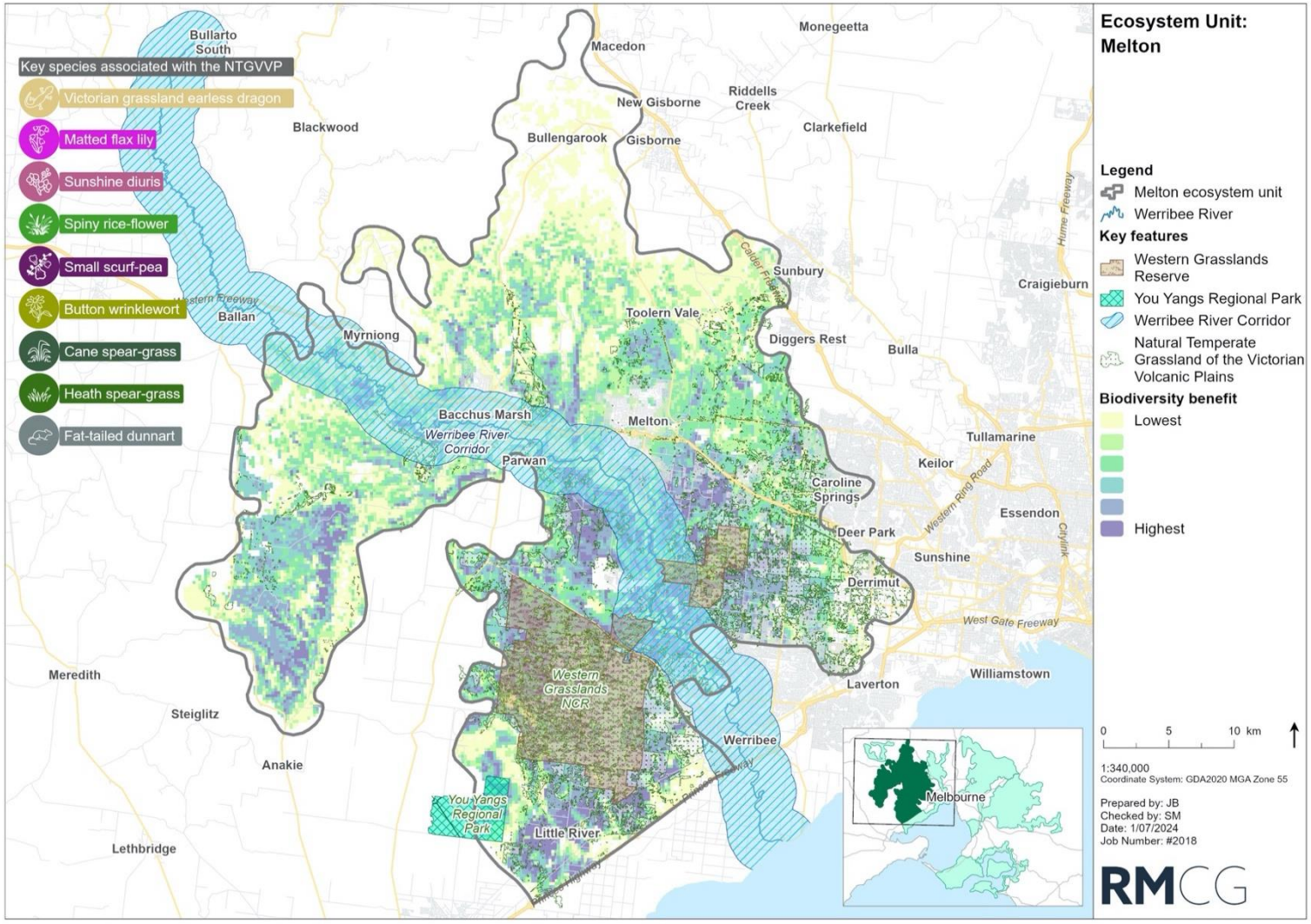
This will aid species movement and dispersal and increase availability of and access to resources for species that occur across these areas.

Further detail of the two priority focus areas within this theme is provided in Table 3-2 next.

Table 3-2: Overview of the two priority focus areas under the improving condition and connectivity theme

Improving condition and connectivity

Linking landscapes across the west



<table>
<tr><td>Ecosystem unit</td><td colspan="3">Melton</td></tr>
<tr><td>Key features</td><td colspan="3">Western Grasslands Reserve, Werribee River corridor, You Yangs Regional Park, Natural Temperate Grassland of the Victorian Volcanic Plains</td></tr>
<tr><td>Description</td><td colspan="3">There are four key features that make up this priority focus area across the west of Melbourne:
Natural Temperate Grassland of the Victorian Volcanic Plains (NTGVVP)
The Western Grasslands Reserve
Werribee River Corridor
You Yangs Regional Park.
The Western Grassland Reserve is an area of crown land set aside under the EPBC Act 1999 to protect and restore critically endangered grassland vegetation and associated flora and fauna. Grassland dependent wetlands are also found throughout and adjoining the reserve. The reserve occurs over 15,000 hectares on the lands of the Wurundjeri Woi-wurrung, Bunurong and Wadawurrung peoples. It is located to the west of Melbourne between Little River and Deer Park.

The Werribee River headwaters begin north of Bacchus Marsh and flow south through Werribee entering Port Phillip Bay at the Werribee estuary. The riparian corridor contains significant stands of native vegetation which support populations of macroinvertebrates, frogs, fish and platypus.

The You Yangs Regional Park is located close to Lara, between Melbourne and Geelong. The park provides habitat for a variety of flora and fauna including tall eucalypts such as manna gum, yellow gum and river red gum through to an undergrowth of native shrubs and groundcovers. Patches of wattle and drooping sheoaks also occur. The endangered brittle greenhood orchid is one of 30 species of orchids found in the park. More than 200 species of birds have been recorded and koalas, kangaroos, wallabies, brush-tail possums, echidnas and lizards are commonly seen.

The NTGVVP provide critical habitat for the Victorian grassland earless dragon. Survey efforts are currently underway to determine key locations for the species across the NTGVVP.

Extending habitat out from the identified key features increases their resilience and aids the movement and dispersal of species along corridors which connect larger patches of habitat. Having larger more connected habitat across the NTGVVP will reduce the impact of edge effects, prevent further habitat fragmentation, improve ecosystem function and enhance the delivery of ecosystem services.</td></tr>
<tr><td rowspan="2">Significant values</td><td>Vegetation assemblages:</td><td>Key species associated with the priority focus area:</td><td>Additional values</td></tr>
<tr><td>Natural Temperate Grassland of the Victorian Volcanic Plains (CE, CE)^!</td><td>Victorian grassland earless dragon (CE, CE) *#!
Sunshine diuris (En, Th) *
Matted flax lily (En, CE) *
Spiny rice-flower (En, CE) *
Small scurf-pea (NL, En) *
Button wrinklewort (En, En) *
Cane spear-grass (NL, En) *
Heath spear-grass (NL, Vul) *
Fat-tailed dunnart (NL, Vul) ^</td><td>Wetlands of regional significance
Platypus present and likely to breed – Werribee River
Parks Victoria Regional Priority Landscape
Trust for Nature Focal Landscape
Growling Grass Frog (Threatened with Extinction, Vul) – Western Grasslands Reserve
Striped Legless Lizard – Western Grasslands Reserve (En, Vul)
Golden Sun Moth – Western Grasslands Reserve (Vul, Vul)
Grassland dependent wetlands (notably Richmond’s Swamp, Rabbiters Swamp)</td></tr>
</table>

			▪ Native fish in the Little River (e.g. eels, galaxis)
Key threats	▪ Total grazing pressure ▪ Weed invasion ▪ Land clearing ▪ Inappropriate fire regimes		
Five-year outcome/s	1. By 2028, improve the condition of the NTGVVP ecological community adjacent to or expanding out from the Western Grasslands Reserve 2. By 2028, improve the condition of grassland dependent wetlands adjacent to or expanding out from the Western Grasslands Reserve 3. By 2028, improve connectivity between the Western Grasslands reserve, the Werribee River and the You Yangs Regional Park 4. By 2028, increase the area of critical habitat available for the Victorian Grassland Earless Dragon *Note: the long-term outcome (10 to 20 years) for this priority focus area is to develop a network of biodiversity corridors across the landscape connecting and improving the condition of key features. The above outcomes represent what is achievable over the next five years.*		
Proposed actions	▪ Weed control ▪ Habitat restoration and enhancement ▪ Improved fire regimes	▪ Total grazer control ▪ Permanent protection ▪ Revegetation	
Partnership opportunities	There are extensive opportunities to work with partners to augment, compliment and build on existing programs and initiatives across this priority focus area to achieve the intended outcomes. These include: ▪ Melbourne Strategic Assessment (DEECA) ▪ More Trees for a Cooler, Greener West Program (DEECA) ▪ Remote species detection project (Agriculture Victoria) ▪ Peaks to Plains Program (led by Melbourne Water and co-delivered with various partners) ▪ Grow West (led by Melbourne Water and co-delivered with various partners) ▪ 30 by 30 commitment (The Nature Conservancy)	▪ Wyndham City Council Land Protection Scheme ▪ Melton City Council Rate Rebate Scheme ▪ Geelong City Council Grants ▪ Grassy Plains Network Campaign (community environment group) ▪ Little River Nature West (community environment group) ▪ Little River Community Landcare (community environment group) ▪ Koala Clancy - connecting corridors (not for profit group)	
Research questions/s	1. What are the hydrological requirements of grassland dependent wetlands within the Western Grassland Reserve? 2. What additional species could be added to drone survey of grasslands (both species in the ecological community and pest plants)? 3. To what extent do Fat-tail Dunnart populations occur within the priority focus area?		

* Key species identified through SMP analysis

^ Additional species identified through partner workshops

¯ Australian Government 100 Priority Species

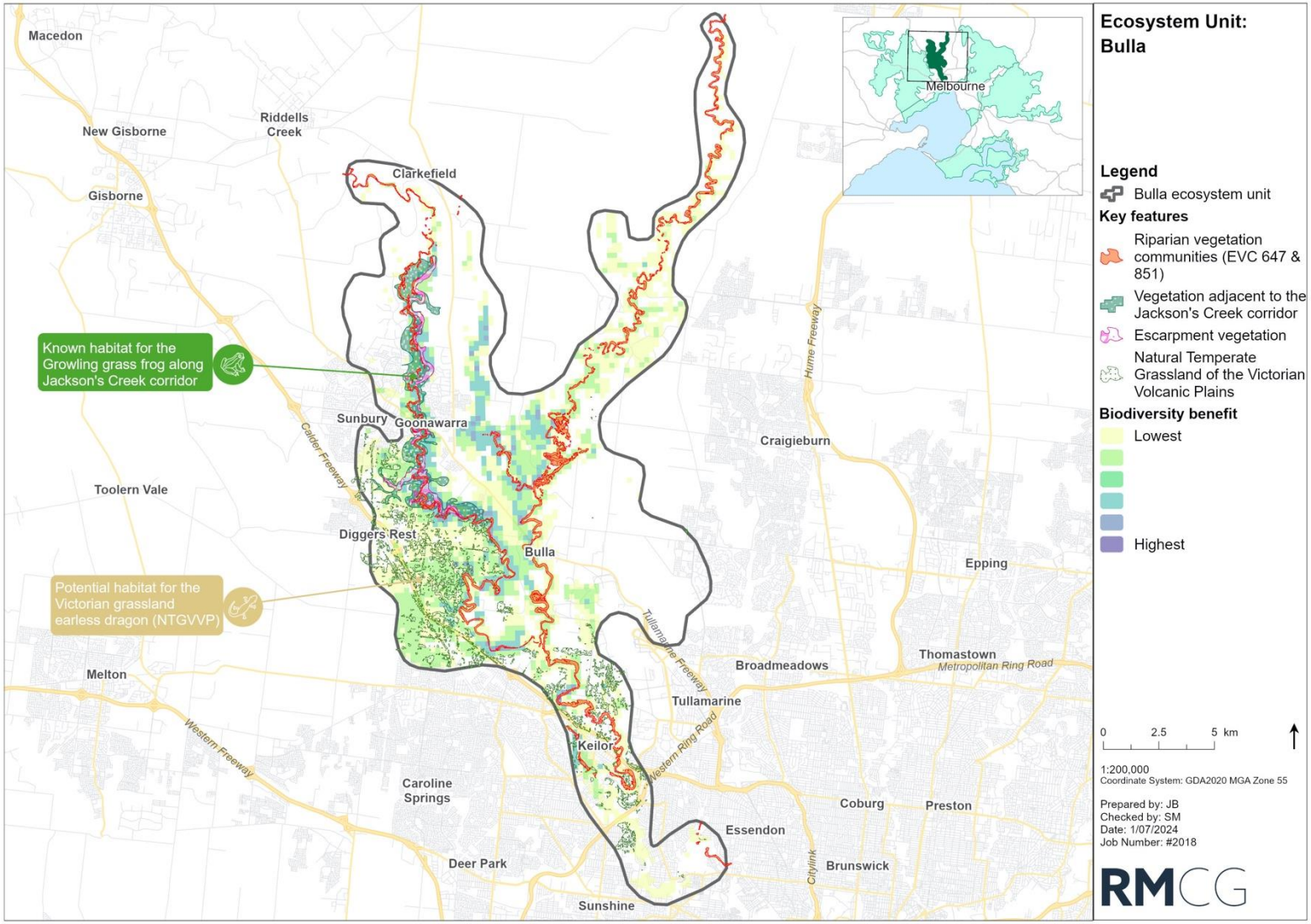
Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

Improving condition and connectivity

Enhancing the Jacksons Creek Corridor



<table>
<tr><td>Ecosystem unit</td><td colspan="3">Bulla</td></tr>
<tr><td>Key features</td><td colspan="3">Riparian and escarpment vegetation communities and Natural Temperate Grassland of the Victorian Volcanic Plains along and adjacent to the Jackson’s Creek corridor</td></tr>
<tr><td>Description</td><td colspan="3">There are three key features that make up this priority focus area across the north-west of Melbourne:
Riparian vegetation communities
Escarpment vegetation
Natural Temperate Grasslands of the Victorian Volcanic Plain (NTGVVP).
The Jackson’s Creek biik wurrdha corridor takes in approximately 26km of the valley and escarpments flanking Jackson’s Creek, which runs generally north to south and is situated to the east of Sunbury on the urban outskirts of Melbourne. Jackson’s Creek, known as biik wurrdha (‘land of many’), flows across Wurundjeri Woi-wurrung Country. The corridor connects multiple important parklands that contain remnant native vegetation and is a highly valuable refuge for wildlife to thrive and move throughout the linked landscapes of Jackson’s Creek. In a largely modified urban landscape, the corridor has the potential to preserve threatened species habitat, enhance biodiversity, protect cultural heritage, and contribute positively to community wellbeing.

Whist Jackson’s Creek corridor has been modified through agriculture and urban development it retains significant patches of high quality remnant native vegetation, especially the steeper escarpment areas and within Holden Flora Reserve. Riparian vegetation is largely continuous and provides important habitat for local biodiversity including fish, frogs, platypus and kangaroos.

The Growling grass frog, is one important resident of the Jackson’s Creek corridor. Once widely distributed throughout the wetlands of south-eastern Australia, populations are now fragmented due to widespread habitat loss and degradation. The Growling grass frog persists in isolated populations throughout greater Melbourne, and focused effort is required to preserve and strengthen these populations as urban areas expand. The Growling grass frog requires wetland habitats with abundant aquatic vegetation, minimal tree canopy cover, and low salinity. Threats to the species include increased salinity from run-off and altered hydrological systems; reduced water quality from pollution, fertiliser and chemical run-off; and loss of habitat due to stock grazing, land clearing and removal of features such as logs and rocks.

The Victorian grassland earless dragon was previously known to occur at Jackson’s Creek. The species is highly susceptible to habitat disturbance. It requires rocky native grasslands with sparse tree and shrub cover. The species is restricted to the critically endangered NTGVVP, which has been widely modified and degraded due to land clearing and inappropriate land management practices such as overgrazing and altered fire regimes.

Preservation and enhancement of the Jackson’s Creek corridor for its biodiversity and cultural values will become increasingly important as urban growth in surrounding area continues. Species that once had healthy and thriving populations in the greater Melbourne area, such as the Growling grass frog and Victorian grassland earless dragon, now rely on remnant patches and corridors of native vegetation to avoid localised extinction. Preserving habitat for these two species also serves to improve the habitat for the rich diversity of plants and animals that occur across the creek corridor. The Jackson’s Creek corridor provides continuous riparian, grassland and escarpment vegetation. Protecting, enhancing and further improving the condition of Jackson’s Creek corridor can ensure this priority focus area serves as a stronghold for threatened species near Melbourne, through providing connected, high quality habitat.</td></tr>
<tr><td>Significant values</td><td>Vegetation assemblages:</td><td>Key species associated with the priority focus area:</td><td>Additional values</td></tr>
<tr><td></td><td>Valley Grassy Forest (EVC 47)
Riparian Woodland (EVC 641)
Grassy Woodland (EVC 175)
Stream Bank Shrubland (EVC 851)</td><td>Growling grass frog (Th, Vul) ^~
Victorian grassland earless dragon (CE, CE) *#</td><td>Melbourne Water Biodiversity Conservation Areas
Trust for Nature Focal Landscape
Potential for biodiversity improvement – Priority Urban Greening Analysis (Melbourne Water)
Wurundjeri significant place – Sunbury Rings Property</td></tr>
</table>

	▪ Natural Temperate Grassland of the Victorian Volcanic Plains (CE, CE)^!		▪ The biik wurrda Cultural Landscape (Wurundjeri Woi-wurrung)
Key threats	▪ Total grazing pressure ▪ Weed invasion ▪ Fox predation ▪ Land clearing ▪ Inappropriate fire regimes		
Five-year outcome/s	1. By 2028, increase the condition and connectivity of riparian and escarpment vegetation along the Jackson's Creek corridor 2. By 2028, conduct extant population surveys for the Victorian Grassland Earless Dragon along the Jackson's Creek corridor *Note: the long-term outcome (10 to 20 years) for this priority focus area is to develop a continuous biodiversity corridor along the Jackson's creek riparian zone, including the adjacent escarpment. Further connecting and improving the condition of key features. The above outcomes represent what is achievable over the next five years.*		
Proposed actions	▪ Total grazer control ▪ Weed control ▪ Fox control ▪ Permanent protection	▪ Improved fire regimes ▪ Revegetation ▪ Habitat restoration and enhancement	
Partnership opportunities	There are several opportunities to work with partners to augment, compliment and build on existing programs and initiatives across this priority focus area to achieve the intended outcomes. These include: ▪ Realisation of the Jacksons Creek biik wurrdha Regional Parklands Plan ▪ Support self-determination of Wurundjeri Woi-wurrung Traditional Owners in management of the priority focus area ▪ Partner with Trust for Nature to encourage sustainable land management practices that support and enhance biodiversity ▪ Linking riparian corridors connected to Jackson's Creek (Blind Creek, Kismet Creek, Harpers Creek, Emu Creek)		
Research questions/s	1. What cultural values are present along the Jackson's Creek biik wurrdha corridor? 2. Are Victorian Grassland Earless Dragons present in the area and if so, what is their population size and distribution? 3. Can private land adjacent to the corridor be protected and enhanced to improve Victorian Grassland Earless Dragon habitat?		

* Key species identified through SMP analysis

^ Additional species identified through partner workshops

˜ Australian Government 100 Priority Species

Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

3.2.2 STRENGTHENING BIODIVERSITY HOTSPOTS

Biodiversity hotspots are defined as areas with exceptionally high levels of species richness and endemism which are under significant threat. These hotspots occur throughout the network of parks and reserves protected for conservation within the PPW region and across private land (including properties protected under conservation covenant).

Protecting biodiversity hotspots in the PPW region will support endemic species to persist and thrive and make localities known for their concentration of threatened and other species more resilient to significant threats and systemic environmental stressors. Often biodiversity hotspots are also known for their rich cultural and spiritual significance to traditional owners. Focusing protection and conservation efforts in biodiversity hotspots helps ensure cultural heritage values and traditional ecological knowledge is preserved.

Biodiversity hotspots support a diversity of habitats and species. Preserving these areas makes them more adaptable and resilient to environmental changes and disturbances, enhancing the capacity of these ecosystems to self-repair following an event (e.g. flood, storm) and withstand changes in ecosystem state.

Using hotspots to raise awareness about the importance of biodiversity can further encourage and mobilise community involvement in biodiversity conservation efforts. In addition, these areas provide opportunities for research related to ecological processes, evolutionary biology, species response to climatic shifts and the impact of human activities on ecosystems.

There are three priority focus areas identified through the prioritisation process that are included under this theme. The long-term outcome for biodiversity protection and enhancement efforts in these priority focus areas is to:

Improve the condition of habitat for threatened and endemic species in and surrounding these areas, create additional suitable habitat and safe zones or natural shelters from environmental events (e.g. fire, food) for threatened species and link existing habitat.

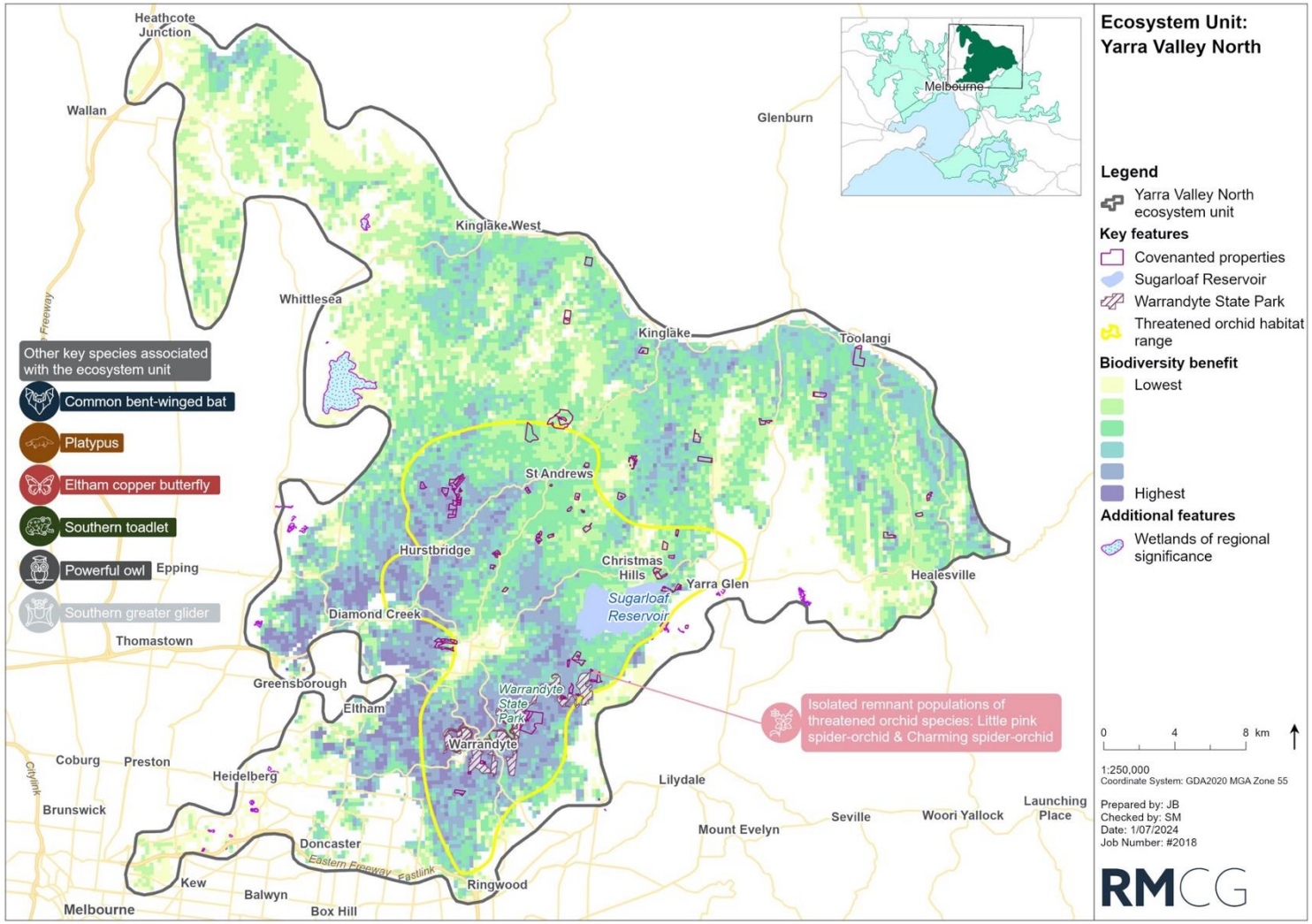
This will improve the resilience of endemic and threatened species and allow them to more readily adapt to environmental changes across their habitat range.

Further detail of the three priority focus areas within this theme is provided in Table 3-3 next.

Table 3-3: Overview of the three priority focus areas under the biodiversity hotspots theme

Biodiversity hotspots

Protecting biodiversity hotspots in Yarra Valley North



Ecosystem unit	Yarra Valley North
Key features	Warrandyte State Park, Sugarloaf Reservoir, Covenanted properties, Threatened orchid assemblages
Description	There are four key features that make up this priority focus area which is located between Warrandyte and Sugarloaf Reserve east of Melbourne: ▪ Warrandyte State Park ▪ Sugarloaf Reservoir ▪ Covenanted properties ▪ Threatened orchid populations. The priority focus area is located north-east of Melbourne on Wurundjeri Country, towards the foothills of the Great Dividing Range. The landscape contains high quality remnant native vegetation along the meandering Yarra River and on its alluvial flats. The area of native vegetation under protection with conservation covenants on private land is significant. Many landholders are engaged in conserving and enhancing natural values on their properties. Multiple threatened orchid species have been recorded in dry forests within the ecosystem unit, and are the focus of dedicated conservation, research and translocation efforts. Additionally, large continuous habitat patches occur in parks and conservation reserves and are biodiversity hotspots supporting significant numbers of native and threatened flora and fauna. Warrandyte State Park is known for its significant biodiversity values. Supporting an array of vegetation communities from open forests to riparian corridors. Many vegetation communities are rare or threatened and provide a diversity of habitats for species such as kangaroos, wallabies and echidna, threatened species including swift parrots listed as critically endangered[1] and powerful owl listed as threatened[2]. The park plays a critical role in conserving regional biodiversity through protecting a significant area of habitat for many species, providing refuge from the surrounding agricultural and urban landscape. Sugarloaf Reservoir and the surrounding catchment includes forested areas dominated by eucalypts interspersed with patches of grassland and shrubby understorey. These vegetation communities provide habitat for a diversity of flora and fauna including wombats, kangaroos, wedge-tailed eagles and echidnas. It is a closed catchment and surrounding native vegetation functions to purify water entering the reservoir which is used to supply Melbourne's drinking water. The Sugarloaf reservoir is surrounded by several reserves of public land that support biodiversity values. Of note is the Yering Backswamp located southeast of the Sugarloaf Reservoir. The swamp is a 4.8 hectares site of biological significance that contains threatened vegetation including Slender bittercress, Swamp water-starwort and Australian basket-grass. This site also provides habitats for threatened fauna, Peron's tree frog and River blackfish as well as a range of other native plants and animals. Victoria has over 400 species of native orchids, many of which are endemic. Orchids have sensitive habitat or lifecycle requirements, for example, some orchids rely on only one type of insect for pollination. Orchids are overrepresented on Australia's list of threatened plants, many have severely contracted ranges and are threatened with extinction. Causes of decline include historic and current land clearing, competition for resources from introduced weeds, inappropriate fire regimes and grazing by introduced animals. The Little pink spider-orchid is known to occur across four remaining populations restricted to a small area of Victoria, including within the priority focus area. Only two known populations of the Charming spider-orchid and one population of the Kilsyth south spider-orchid remain and these are located within the priority focus area. Current conservation efforts for threatened orchid species include fencing and caging known populations, intensive weed control, hand pollination and collection of seed capsules. The Little pink spider-orchid and Charming spider-orchid are targeted for conservation and research programs at the Victorian Royal Botanic Gardens (RBG). The RBG aims to prevent extinction of the species by storing genetically diverse orchid seeds and their symbiotic fungi, propagating orchids and reintroducing them to protected public and private land. Private land under conservation covenants within the priority focus area add to the available sites for orchid

[1] EPBC Act 1999 conservation status.

[2] FFG Act 1988 conservation status.

<table>
<tr><td></td><td colspan="3">reintroduction and protection. Such efforts have potential to extend the reach of orchid protection measures, which could benefit the genetic diversity of these species and greatly improve their conservation outlook.

A range of conservation interventions are needed to ensure efforts to safeguard areas of concentrated biodiversity within the priority focus area are successful. Removing weeds and controlling grazing pressure from deer, rabbits and other introduced herbivores are critical for ensuring suitable habitat remains and where possible is expanded out from existing areas managed for conservation purposes. This will support the persistence of threatened species and maintain the richness of biodiversity within and surrounding ‘hotspot’ areas.</td></tr>
<tr><td rowspan="2">Significant values</td><td>Vegetation assemblages:</td><td>Key species associated with the priority focus area:</td><td>Additional values</td></tr>
<tr><td>▪ Box Ironbark Forest (EVC 61)
▪ Creekline Herb-rich Forest (EVC 164)
▪ Grassy Dry Forest (EVC 22)
▪ Riparian Forest (EVC 18)
▪ Swampy Riparian Complex (EVC 126)
▪ Valley Grassy Forest (EVC 47)
▪ Floodplain Riparian Woodland (EVC 56)
▪ Herb-rich Foothill Forest (EVC 23)
▪ Grassy Woodland (EVC 75)</td><td>▪ Little pink spider-orchid (En, CE) *
▪ Charming spider-orchid (En, CE)
▪ Common bent-winged bat (eastern subspecies) (NL, CE) *
▪ Charming spider-orchid (EN, CE) *
▪ Platypus (NL, V) ^
▪ Eltham copper butterfly (En, En) ^
▪ Southern toadlet (NL, En) ^
▪ Powerful owl (NL, V) ^
▪ Southern greater glider (V, En) ^</td><td>▪ FFG and EPBC listed fish (based on Melbourne Water surveys) – Yarra River
▪ Waterbirds
▪ Platypus present – Yarra River (based on Melbourne Water surveys)
▪ Wetlands of regional significance
▪ Potential for biodiversity improvement – Priority Urban Greening Analysis (Melbourne Water)
▪ Melbourne Water Sites of environmental significance (Sugarloaf Reservoir)
▪ Parks Victoria Regional priority landscapes
▪ Trust for Nature Focal Landscape
▪ Trust for Nature registered covenants
▪ Bend of Islands locality (north of Warrandyte to Christmas Hills)</td></tr>
<tr><td>Key threats</td><td colspan="3">▪ Weed invasion
▪ Grazing pressure (deer)
▪ Grazing pressure (rabbits)
▪ Fox predation
▪ Cat predation
▪ Inappropriate fire regimes
▪ Phytophthora</td></tr>
<tr><td>Five-year outcome/s</td><td colspan="3">1. By 2028, link aqueducts, existing revegetation and properties under permanent protection to create habitat corridors in the areas surrounding Warrandyte State Park and Sugarloaf Reservoir Reserve
2. By 2028, improve the condition of habitat for threatened species in the areas surrounding Warrandyte State Park and Sugarloaf Reservoir Reserve
3. By 2028, identify and improve the condition of priority sites for threatened orchid assemblages (Little pink spider-orchid, Charming spider-orchid, Kilsyth south spider-orchid)
Note: the long-term outcome (10 to 20 years) for this priority focus area is to strengthen biodiversity hotspots in Yarra Valley North, through enhancing habitat for threatened species and building the resilience of hotspot areas to climate change. The above outcomes represent what is achievable over the next five years.</td></tr>
<tr><td>Proposed actions</td><td colspan="3">▪ Weed control
▪ Rabbit control
▪ Deer control
▪ Revegetation
▪ Habitat restoration and enhancement
▪ Improved fire regimes</td></tr>
</table>

	▪ Fox control ▪ Cat control ▪ Permanent protection
Partnership opportunities	There are extensive opportunities to work with partners to augment, compliment and build on existing programs and initiatives across this priority area to achieve the intended outcomes. These include: ▪ Existing works are being completed by the RBG and Nillumbik Shire to protect orchids (further funding and sites with suitable habitat are needed to increase the genetic pool) ▪ Melbourne Water owns a series of properties in Christmas Hills which retain biodiversity values and may be candidates for future reserves ▪ There is a cluster of Trust for Nature properties protected under conservation covenant in this priority area. Landholders are engaged and want to conserve the environmental values along the existing aqueducts (e.g. Spider-orchids, Lyrebirds, Bandicoots)
Research questions/s	1. What orchid species are present/absent from land managed by Melbourne Water, and is there potential to translocate orchids to Melbourne Water managed land to increase populations? 2. How do human impacts arising from public access to the aqueduct areas constrain conservation efforts? For example, through increasing erosion or spreading phytophthora. How can impacts be identified and monitored?

* Key species identified through SMP analysis

^ Additional species identified through partner workshops

˜ Australian Government 100 Priority Species

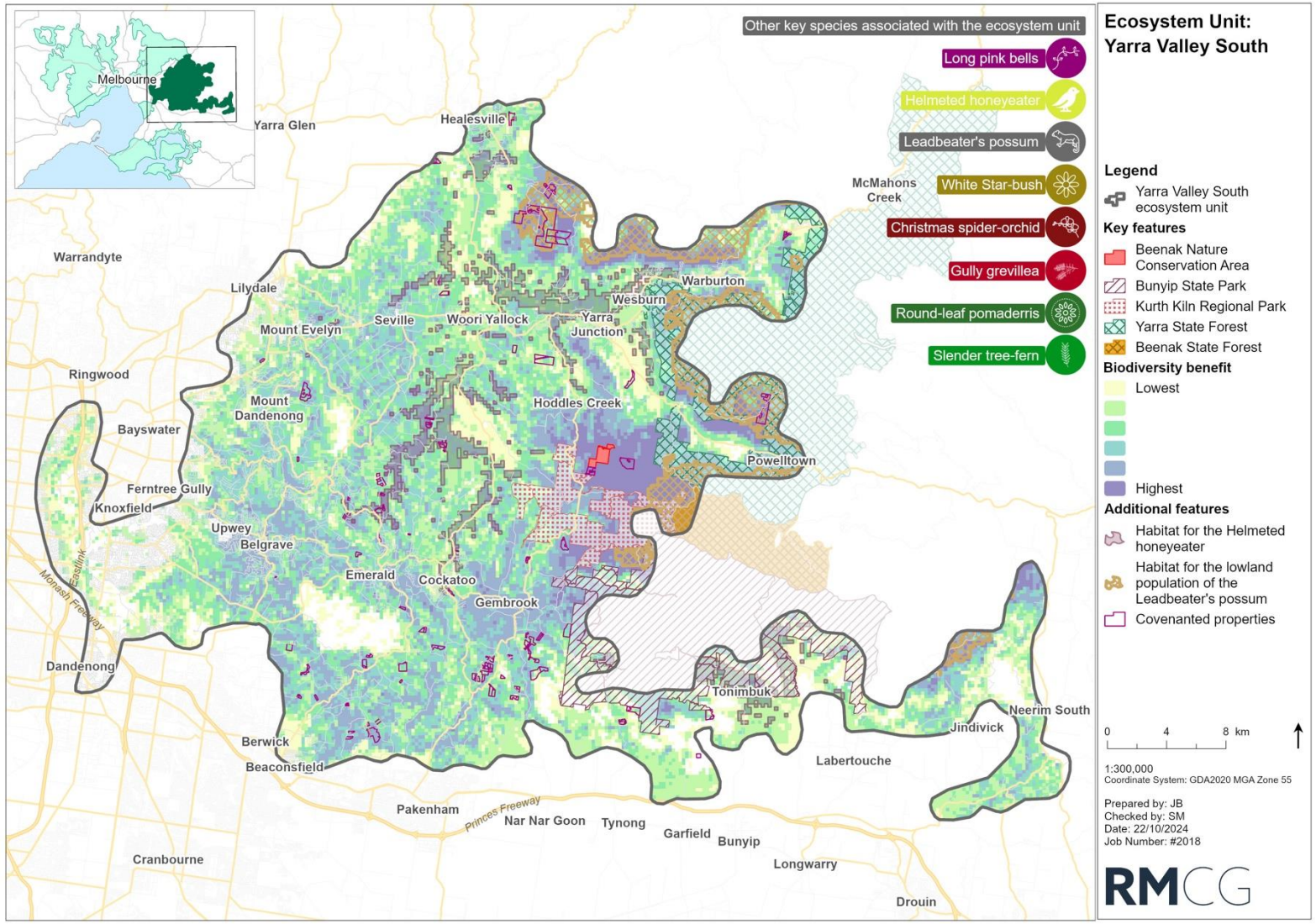
Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

Biodiversity hotspots

Protecting biodiversity hotspots in Yarra Valley South



Ecosystem unit	Yarra Valley South
Key features	Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park
Description	There are five key features that make up this priority focus area which is located between Hoddles Creek and Powelltown east of Melbourne: ▪ Beenak State Forest ▪ Yarra State Forest ▪ Beenak Nature Conservation Area ▪ Kurth Kiln Regional Park ▪ Bunyip State Park. This priority focus area occurs on Wurundjeri and Bunurong Country, located ~ 50 km east of Melbourne's centre. It takes in mountainous terrain covered in Wet and Damp eucalypt-dominated Forests, with cool temperate rainforest in sheltered gullies. The foothills and riparian areas contain high quality stands of Riparian Forest, Damp Heathy Woodland and Shrubby Foothill Forest. The conservation reserves and parks that make up the key features are recognised for their rich biodiversity values. These host a diverse range of forest vegetation composed of tall eucalypts, ferns and an abundance of understorey species. They are a haven for birds (lyrebirds, owls, parrots, honeyeaters) and support a variety of wildlife including swamp wallabies, echidna, possums, gliders, skinks and frogs. The waterways that run through these areas are home to fish and invertebrates. These protected areas provide critical habitat for a significant range of species and play a vital role in conserving regional biodiversity through provision of large patches of connected native vegetation. Victoria's state animal and bird emblems, the Helmeted Honeyeater and Leadbeater's Possum, both reside in pockets of habitat within this focus area. Despite their emblematic status, these species are both critically endangered and at high risk of extinction in the wild. Protecting and enhancing biodiversity in this priority focus area is fundamental to the survival of these species, along with the many others that rely on remnant native habitat within the region. The Helmeted honeyeater requires dense riparian vegetation, its small population is distributed in linear patches along a small number of creeks. Loss of habitat through land use change is the primary reason for their decline. The species also face threats from habitat degradation caused by eucalypt dieback, competition with other bird species such as Bell Miners, predation by introduced pest animals, and extreme events (bushfires, droughts). Helmeted Honeyeaters are bred in captivity at Healesville Sanctuary and have been reintroduced into the wild within the ecosystem unit. The Zoos Victoria conservation program aims to establish a stable wild population of ten connected colonies. Leadbeater's possums only inhabit montane ash forests of Victoria's Central Highlands and some areas of sub-alpine Snow Gum woodland. Hollow-bearing mature trees are critical habitat for the species, and the loss of this habitat reduces habitat suitability significantly. Key factors driving decline of this small possum are the loss of hollow-bearing trees and reduction in the extent of mature Mountain Ash forest, principally through extensive historical logging of their habitat as well as large-scale bushfires. Critical habitat for the lowland population of Leadbeater's possum occurs in the priority focus area. Zoos Victoria is working continuously on emergency recovery measures for the species, including exploring how the possums can be bred in captivity and translocated to boost declining wild populations. The highly restricted ranges of these two iconic animal species mean they are especially vulnerable to catastrophic events such as bushfires, which are becoming more intense and more frequent with climate change. The 2009 Black Saturday bushfires burnt an estimated 45% of Leadbeater possum habitat. Examples such as this highlight the need for extensive resources and concerted efforts from many stakeholders to be put toward the conservation of threatened species habitat in this priority focus area, as well as emergency measures to prevent extinction such as captive breeding and translocation programs. Further management measures which aim to protect lowland Leadbeater's possum and Helmeted Honeyeater from emergency events are documented in the PPW Emergency Preparedness and Management Plan[24] and should be considered in conjunction with the biodiversity conservation actions outlined in this plan

Significant values	*Vegetation assemblages:* ▪ Lowland Forest (EVC 16) ▪ Riparian Forest (EVC 18) ▪ Damp Forest (EVC 29) ▪ Wet Forest (EVC 30) ▪ Cool Temperate Rainforest (EVC 31) ▪ Shrubby Foothill Forest (EVC 45) ▪ Damp Heathy Woodland (EVC 793)	*Key species associated with the priority focus area:* ▪ Long pink bells (NL, En) * ▪ Helmeted honeyeater (in adjacent areas) (CE, CE) *# ▪ Leadbeater' possum (CE, CE) ^~#! ▪ White star-bush (NL, CE) * ▪ Christmas spider-orchid (NL, CE) * ▪ Gully grevillea (NL, CE) *^ ▪ Round-leaf pomaderris (CE, CE) * ▪ Slender tree-fern (NL, CE) ^	*Additional values* ▪ Platypus present and likely to breed – Yarra River (based on Melbourne Water surveys) ▪ Parks Victoria Regional Priority Landscapes ▪ Waterbirds ▪ Trust for Nature registered covenants
Key threats	▪ Weed invasion ▪ Grazing pressure (deer) ▪ Fox predation ▪ Cat predation	▪ Inappropriate fire regimes ▪ Phytophthora ▪ Land clearing	
Five-year outcome/s	1. By 2028, improve the condition of habitat for threatened species in and surrounding the Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds 2. By 2028, create additional suitable habitat and refuge areas (safe zones, natural shelters) for Helmeted honeyeater and Leadbeater's possum (lowland population) in the Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds *Note: the long-term outcome (10 to 20 years) for this priority focus area is to strengthen biodiversity hotspots in Yarra Valley South, through enhancing habitat for threatened species and building the resilience of hotspot areas to climate change. The above outcomes represent what is achievable over the next five years.*		
Proposed actions	▪ Weed control ▪ Deer control ▪ Fox control	▪ Cat control ▪ Habitat restoration and enhancement ▪ Improved fire regimes	
Partnership opportunities	There are extensive opportunities to work with partners to augment, compliment and build on existing programs and initiatives across this priority area to achieve the intended outcomes. These include: ▪ Australian Government Regional Land Partnerships Program/ National Landcare Program ▪ Potential to engage with state forests	▪ Parks Victoria (potential Helmeted Honey release sites) ▪ Zoos Victoria (Helmeted Honeyeater, Leadbeater's Possum) – captive breeding and release programs, identification and enhancement of suitable habitat outside the existing know range	
Research questions/s	1. What is the size and distribution of the Leadbeater's Possum population in this area? 2. What is the extent of Leadbeater's Possum habitat on private land? 3. What is the extent of threatened plant species distributions along Tomahawk Creek e.g., Long Pink-bells and Tall Astelia?		

* Key species identified through SMP analysis
^ Additional species identified through partner workshops
~ Australian Government 100 Priority Species

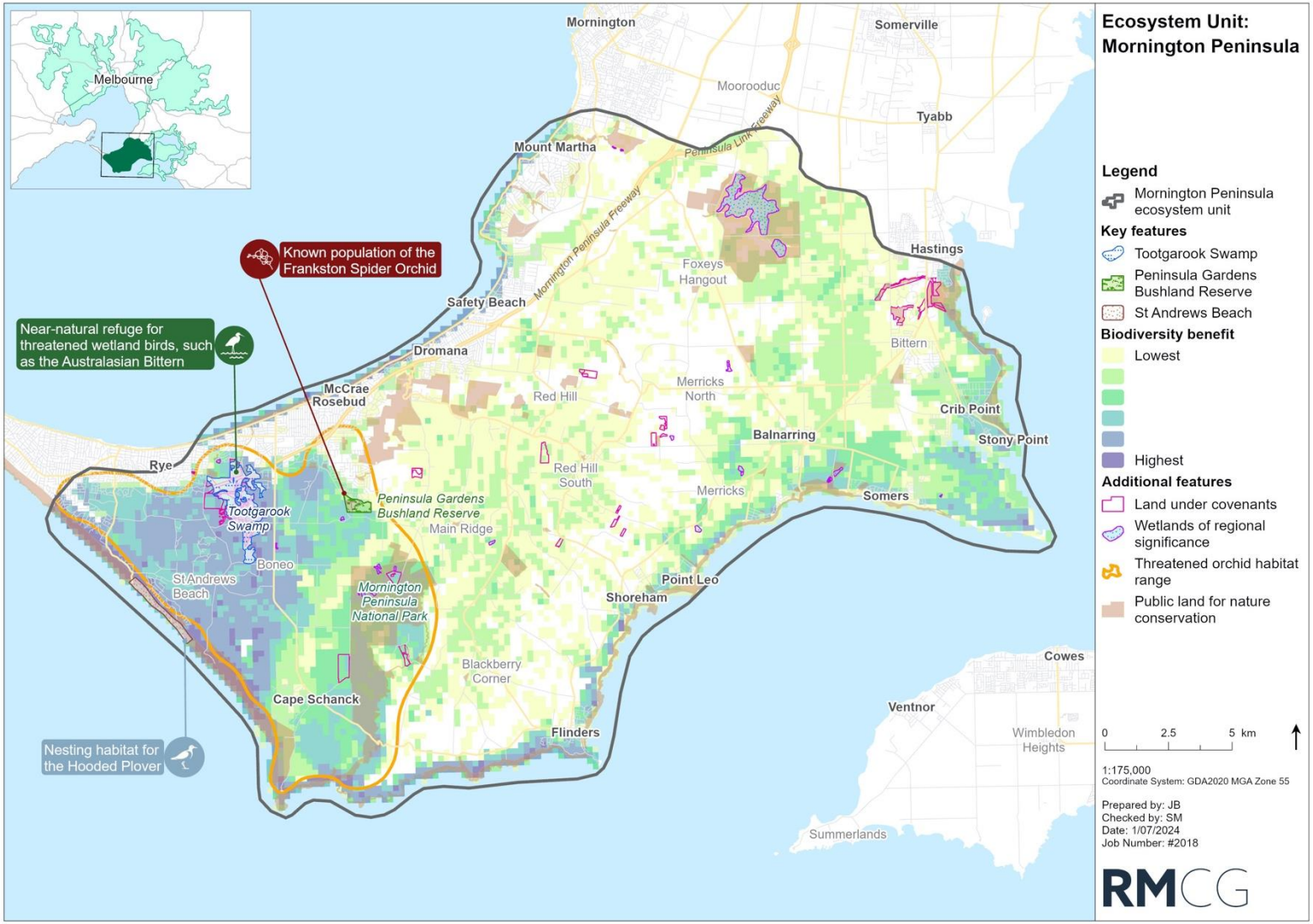
[#] Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

Biodiversity hotspots

Protecting biodiversity hotspots on the Mornington Peninsula



<table>
<tr><td>Ecosystem unit</td><td colspan="3">Mornington Peninsula</td></tr>
<tr><td>Key features</td><td colspan="3">Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach</td></tr>
<tr><td>Description</td><td colspan="3">There are three key features that make up this priority focus area which is located on the Mornington Peninsula:
Tootgarook Swamp
Peninsula Gardens Bushland Reserve
St Andrews Beach.
The Mornington priority focus area is comprised of three important biodiversity hotspots occurring in proximity. The 590-hectare Tootgarook Swamp is the largest Groundwater Dependent Ecosystem (GDE) and freshwater marsh ecosystem in the Port Phillip Bay region. To its east lies the Peninsula Gardens Bushland Reserve, which contains high-value remnant bushland vegetation. St Andrews Beach is an ocean-facing beach on the Mornington Peninsula which provides crucial nesting habitat for shorebirds such as the Hooded Plover. These three sites are diverse and important biodiversity nodes which are linked by minor waterways, bushland corridors and private land under conservation covenants. Through these corridors, the three sites are connected to other important natural areas such as the Mornington Peninsula National Park.

Despite extensive modification of the wider Mornington Peninsula region for agriculture and urban development, these three sites retain aspects of their original natural states and provide habitat for multiple threatened species. The Tootgarook Swamp is an example of a near-natural freshwater marsh wetland. It preserves four distinct types of wetland habitat that are otherwise absent from the local region: shallow freshwater marsh, deep freshwater marsh, freshwater meadow and permanent open freshwater. Several Ecological Vegetation Classes found in the swamp are threatened, including Swamp Scrub, Coastal Alkaline Scrub and Damp Sands Herb-rich Woodland. These habitats form important near-natural refuges for multiple threatened wetland birds, such as the Australasian Bittern.

The Peninsula Gardens Bushland Reserve contains relatively intact remnants of several threatened Ecological Vegetation Classes, including Swampy Riparian Woodland, Riparian Scrub and Damp Sands Herb-rich Woodland. The Frankston spider-orchid has been recorded at the reserve.

Hooded plovers are known to frequent St Andrews Beach. These small resident shorebirds are ocean beach specialists and are highly selective of their habitat. Coastal development and human disturbance are significant threats to this species, which nests on the open sand above the high-tide mark from August to March. Disturbance from human activity, dogs off leash on beaches and introduced predators such as cats and foxes pose a significant threat to this small and vulnerable bird. Weed infestations, also exacerbated by urban encroachment, can further degrade their habitat and make nesting sites unsuitable.

Protecting biodiversity hotspots within proximity to urban development and with such high human use is critical for ensuring the survival of the threatened species that also call these locations home. Without concerted and dedicated efforts to preserve and enhance habitat in these small, yet valuable and connected hotspots, they may further succumb to the impacts of human disturbance and habitat degradation. Thoughtful management, effective threat control and voluntary conservation of adjoining private land are needed to ensure these sites can remain suitable for multiple species that have experienced radical contractions in their original habitat.</td></tr>
<tr><td rowspan="2">Significant values</td><td>Vegetation assemblages:</td><td>Key species associated with the priority focus area:</td><td>Additional values</td></tr>
<tr><td>Coastal Headland Scrub (EVC 161)
Coastal Alkaline Scrub (EVC 858)
Wetland Formation (EVC 74)
Swamp Scrub (EVC 53)
Damp Sands Herb-rich Woodland (EVC 3)</td><td>Hooded plover (Vul, Vul) ^~
Frankston spider-orchid (En, CE) *
Dense leek-orchid (Vul, CE) *</td><td>Parks Victoria Regional Priority Landscape
Regional Priority Wetlands
Trust for Nature registered covenants
Migratory and waterbird monitoring
Significant mainland population of Southern toadlet at Devilbend Reservoir</td></tr>
</table>

Key threats	▪ Weed invasion ▪ Grazing pressure (deer) ▪ Land clearing ▪ Phytophthora ▪ Cat predation ▪ Fox predation
Five-year outcome/s	1. By 2028, improve functional connectivity between existing remnant vegetation to increase habitat quality in the areas surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach. 2. By 2028, improve the condition of habitat for threatened species in the areas surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach. *Note: the long-term outcome (10 to 20 years) for this priority focus area is to strengthen biodiversity hotspots within and surrounding the three key feature areas, through connecting and further protecting habitat for threatened species and building resilience to climate change within the hotspot areas. The above outcomes represent what is achievable over the next five years.*
Proposed actions	▪ Weed control ▪ Fox control ▪ Cat control ▪ Permanent protection ▪ Deer control ▪ Phytophthora control
Partnership opportunities	There are extensive opportunities to work with partners to augment, compliment and build on existing programs and initiatives across this priority area to achieve the intended outcomes. These include existing works being completed by: ▪ Trust for Nature ▪ Parks Victoria ▪ Melbourne Water ▪ Mornington Peninsula Shire Council.
Research questions/s	1. What biodiversity and conservation efforts are required to enhance degraded sections of Lightwood Creek? 2. Conduct hydrological investigations at Tootgarook Wetlands to determine the impact of artificial drainage on wetland flows, and the benefits of restoring a more natural hydrological regime?

* Key species identified through SMP analysis

^ Additional species identified through partner workshops

˜ Australian Government 100 Priority Species

Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

3.2.3 BUFFERING RAMSAR SITES

There are three Ramsar sites within the PPW region, the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula site, Western Port Bay site and Edithvale Seaford Wetlands. The first two are included as biodiversity focus areas in this plan. Ramsar wetlands within the region provide critical foraging, roosting and breeding habitat for migratory shorebirds, other waterbirds and threatened species.

Creating buffers around Ramsar sites protects core wetlands through filtering water before it enters the site, slowing the flow of run-off from extreme rainfall events and floods, encouraging sustainable land use practices on adjacent private land and increasing connectivity to adjacent suitable habitat allowing species to readily move between habitats.

Ramsar wetlands play a role in carbon sequestration. Creating buffer zones around these wetlands enhances this function by protecting vegetation that absorbs and stores carbon contributing to climate change mitigation. Coastal vegetation within Ramsar sites also helps to mitigate coastal erosion. Further enhancing and connecting coastal vegetation around Ramsar wetlands improves the capacity of vegetation to deliver this function.

Buffering Ramsar sites builds the resilience of core wetland areas by keeping habitat intact, maintaining habitat for a diversity of threatened and migratory species and minimising human impacts by protecting sensitive areas from public access. Buffer areas also provide opportunities to build public awareness and appreciation of Ramsar wetlands in adjacent areas whilst the core wetlands remain undisturbed (e.g. foraging birds are not disturbed by birdwatchers or dog walkers).

There are two priority focus areas identified through the prioritisation process that are included under this theme. Due to the landscape context of the Edithvale Seaford Wetlands it is not feasible to consider further interventions to buffer this site, therefore the priority focus areas are based around the other two Ramsar sites in the region.

The long-term outcome for biodiversity protection and enhancement efforts in these priority focus areas is to:

Further protect and build the resilience of the Ramsar sites by improving habitat quality and connectivity to adjacent areas, providing a buffer around the Ramsar sites.

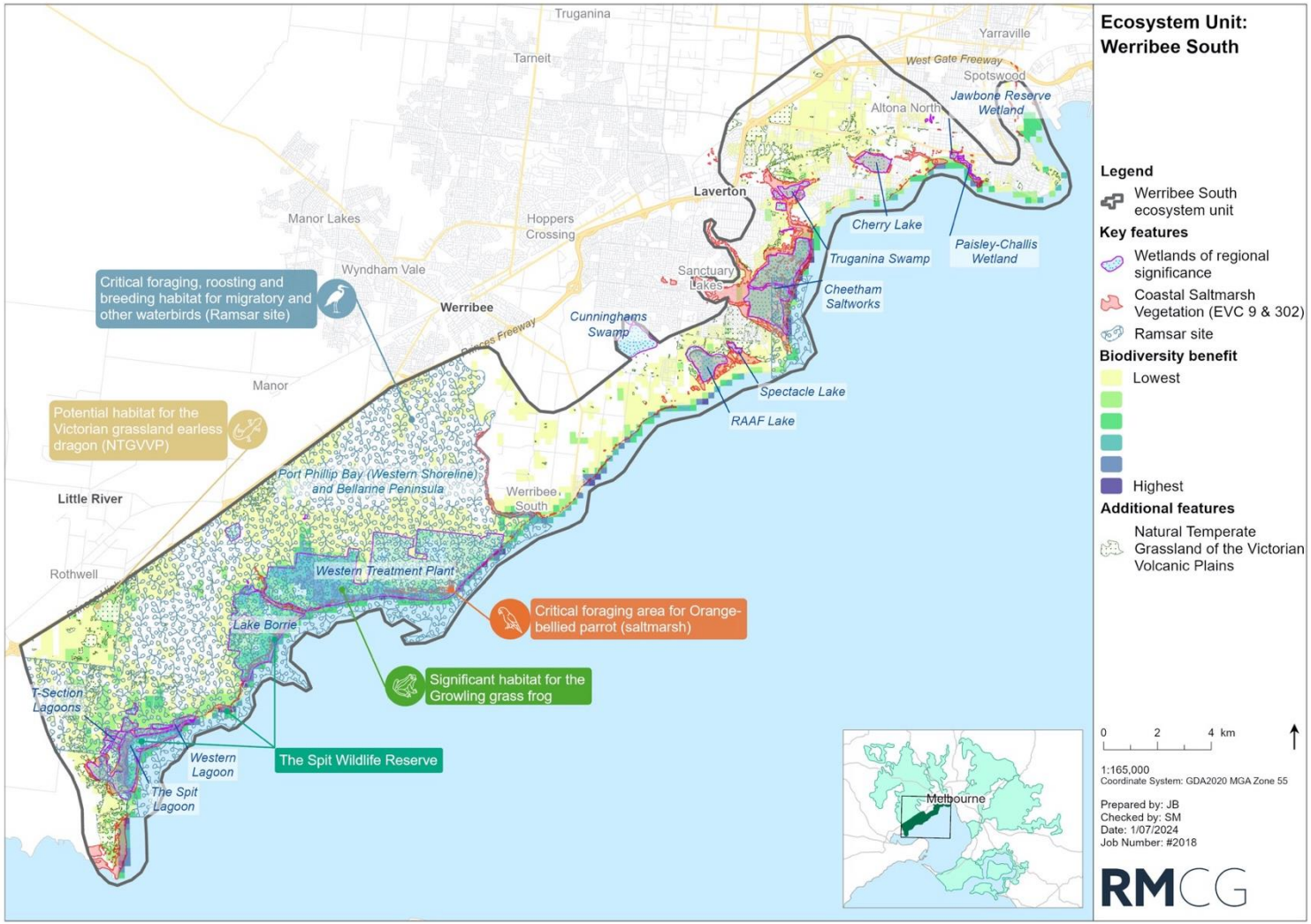
This will contribute to the persistence of migratory and water birds and other threatened species within and adjacent to the Ramsar sites.

Further detail of the two priority focus areas within this theme is provided in Table 3-4 next.

Table 3-4: Overview of the two priority focus areas under the buffering Ramsar sites theme

Buffering Ramsar sites

Improving the resilience of wetlands along the Werribee South coast



<table>
<tr><td>Ecosystem unit</td><td colspan="3">Werribee South</td></tr>
<tr><td>Key features</td><td colspan="3">Coastal Saltmarsh, Mangrove Shrubland/Coastal Saltmarsh Mosaic, Ramsar site, wetlands of regional significance</td></tr>
<tr><td>Description</td><td colspan="3">There are three key features that make up this priority focus area which is located south west of Melbourne along the coast of Port Phillip Bay:
Coastal saltmarsh and saltmarsh mosaic vegetation communities
Ramsar wetlands of international importance
Wetlands of regional significance.
Situated in close proximity to both Melbourne and Geelong, the Port Phillip Bay (Western Shoreline) Ramsar site is internationally recognised for its diversity of birdlife and its critical role supporting threatened species and ecological communities. Tens of thousands of shorebirds and waterfowl flock to the site to breed and forage seasonally, some of which travel from Alaska or Siberia to Werribee in yearly roundtrips of over 20,000km. The site supports 20 bird species listed under international migratory agreements, and for these birds as well as others, the condition and biodiversity of the Ramsar site is essential as they feed and avoid disturbance to build energy for the next leg of their migrations. The Ramsar site is also used by the critically-endangered Orange-bellied Parrot, one of only two migratory parrot species in the world, which feeds at the site in winter before heading to Tasmania in summer to breed. There are less than 50 individuals remaining in the wild.

Many of these unique and vulnerable species rely on the coastal saltmarsh and saltmarsh mosaic vegetation communities for habitat. These vegetation communities occupy the high tide zone, and are comprised of a mosaic of sedges, rushes, grasses, reeds, shrubs and succulent herbs that are highly tolerant of dynamic conditions where inundation and salinity are frequently changing. As well as habitat for birds, fish and invertebrates, Coastal Saltmarsh functions as a nutrient and sediment filter, reducing coastal erosion and improving water quality. It buffers other coastal ecosystems from storms and storm surges, and functions as an important carbon sink.

Despite the resilience of this ecosystem, climate change is set to alter key cycles that support wetland health, function and biodiversity. Variations in rainfall patterns and increasing temperatures may change freshwater inflow and alter the hydrological regime of these wetlands. Sea levels are predicted to rise, storm surges may become more intense, and rising ocean temperatures are likely to impact the abundance and distribution of key vegetation species.

These impacts, along with those from population increase and urbanisation between Melbourne and Geelong, mean that managing and conserving the network of wetlands across Werribee South will be critical for the survival of the many species that live there. In particular, wetlands need to be able to ‘retreat’ inland as sea levels rise, meaning that buffer zones are needed to accommodate and protect vegetation communities as their distribution changes. Enhancing, extending and restoring habitat across the Werribee South focus area will provide a network of high quality, functioning wetlands that provide the necessary resources for the diversity of species that are dependent on these wetlands systems to thrive. This includes access to sufficient sized habitat patches, connectivity between habitat patches, refuge from emergency events (floods, drought, storms), food resources, roosting and breeding sites. Pursuing research into the best ways to accommodate and manage wetland retreat across this area will be key to the future survival and functioning of the wetlands network which are globally important refuges for threatened and migratory species.</td></tr>
<tr><td rowspan="2">Significant values</td><td>Vegetation assemblages:</td><td>Key species associated with the priority focus area:</td><td>Additional values</td></tr>
<tr><td>Coastal vegetation
Coastal Saltmarsh (EVC 9)
Mangrove Shrubland/Coastal Saltmarsh Mosaic (EVC 692)</td><td>Orange-bellied parrot (CE, CE) *~#!
Growling grass frog (Th, Vu) ^~
Victorian grassland earless dragon (CE, CE) ^#</td><td>Wetlands of regional significance
Migratory shorebirds
Waterfowl – diversity and abundance
Melbourne Water Sites of Biodiversity Significance
Parks Victoria Regional Priority Landscape</td></tr>
</table>

Key threats	▪ Total grazing pressure ▪ Weed invasion ▪ Fox predation ▪ Cat predation ▪ Altered hydrological regimes
Five-year outcome/s	1. By 2028, increase the condition and connectivity of coastal vegetation within and adjacent to the Ramsar site and other priority wetlands along the coast of Werribee South creating a buffer around these important wetlands.
Proposed actions	▪ Weed control ▪ Fox control ▪ Cat control ▪ Revegetation ▪ Habitat restoration and enhancement
Partnership opportunities	There are extensive opportunities to work with partners to augment, compliment and build on existing programs and initiatives across this priority area to achieve the intended outcomes. These include: ▪ Australian Government Regional Land Partnerships Program/ National Landcare Program ▪ Port Phillip Bay Western Shoreline Regional and Strategic Partnership (a 2-year project that will develop a Resilience Plan to adapt to sea-level rise and the broader impacts of climate change) (DEECA) ▪ Peri-urban weeds project (DEECA) ▪ Previous EC6 funding (DEECA)
Research questions/s	1. What locations should be prioritised for managed retreat, based on existing vegetation data? 2. What are the most appropriate methods to manage retreat at prioritised locations, to maintain and improve critical habitat for flora and fauna whilst enhancing the natural resilience of saltmarsh vegetation? 3. What land is available for ecological restoration?

* Key species identified through SMP analysis

^ Additional species identified through partner workshops

˜ Australian Government 100 Priority Species

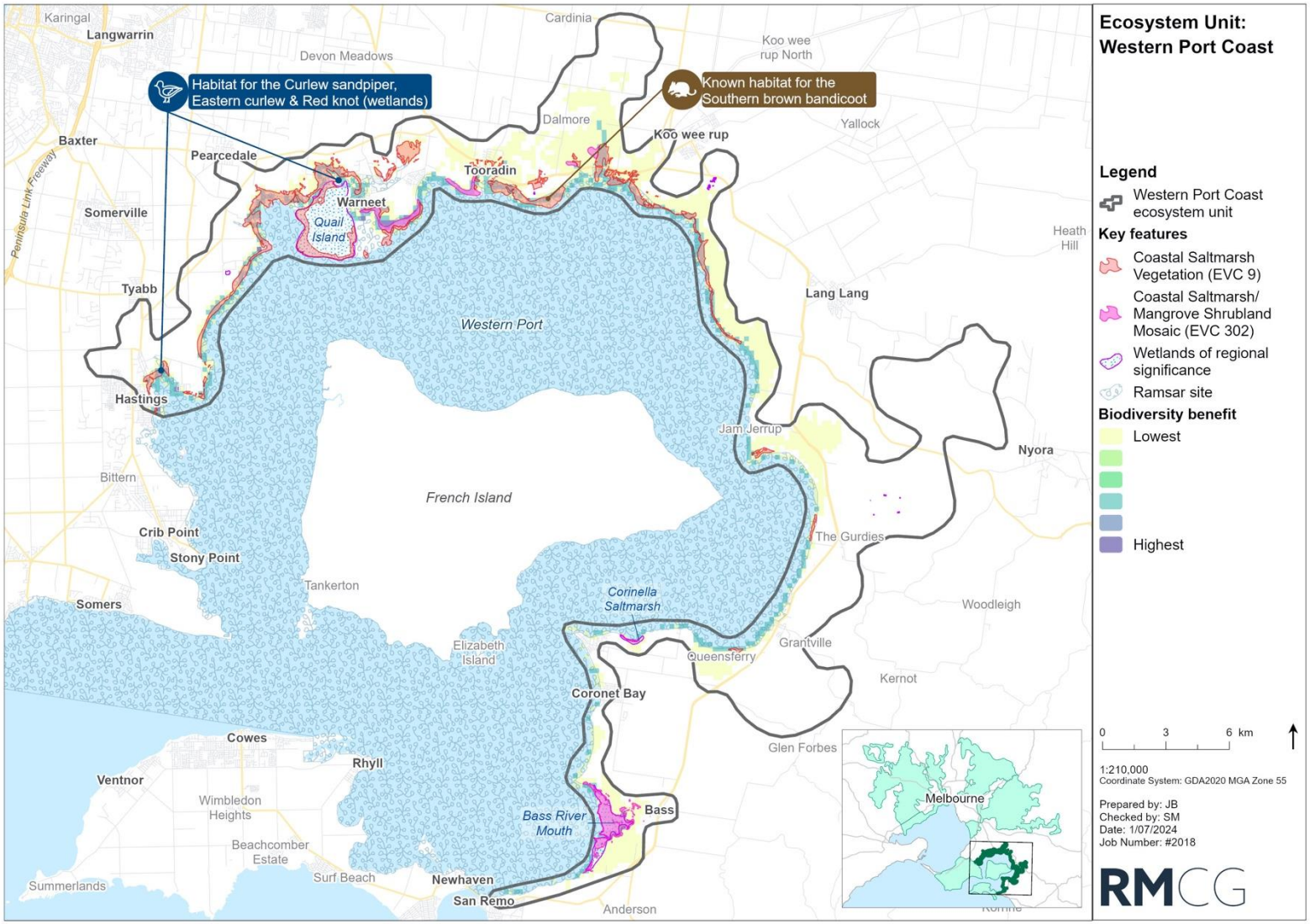
Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

Buffering Ramsar sites

Improving the resilience of wetlands along the Western Port Coast



<table>
<tr><td>Ecosystem unit</td><td colspan="3">Western Port coast</td></tr>
<tr><td>Key features</td><td colspan="3">Coastal Saltmarsh, Mangrove Shrubland/Coastal Saltmarsh Mosaic, Ramsar sites, wetlands of regional significance</td></tr>
<tr><td>Description</td><td colspan="3">There are three key features that make up this priority focus area which is located between Hastings and Warneet on the Western Port Bay coast:
Coastal saltmarsh and saltmarsh mosaic vegetation communities
Ramsar wetlands of international importance
Wetlands of regional significance.
The Western Port Coast priority focus area encompasses the ecologically important coastline environment stretching from Hastings to Warneet south-east of Melbourne, on Bunurong Country. This coastline forms part of the Western Port Ramsar site and is an important example of a natural wetland marine embayment, made up of extensive intertidal flats, mangroves and saltmarsh. The site is recognised under the Ramsar convention for its international importance to migratory and wetland bird species. Over 30 species of international migratory birds use the Western Port Ramsar site annually, migrating from as far as Alaska to the Ramsar site to forage and roost within the diverse wetland environment. Victoria's Ramsar wetlands are critical for the health and persistence of these species, as they rely on rich and abundant food sources and a lack of disturbance to build their energy stores for their northbound journeys to breed.

The priority focus area supports multiple threatened fauna species and a threatened vegetation class, Coastal Saltmarsh. The Curlew sandpiper, Eastern curlew and Red knot have been recorded feeding and foraging in the Western Port Ramsar site. Offshore, the site harbours sea grass beds and other habitats that are important breeding and nursery grounds for a variety of fish species.

While the Western Port ecosystem unit is a thriving and internationally important example of biodiversity, it faces threats from a number of different sources. Weeds such as cord-grass (Spartina spp.) and other salt-tolerant weeds have the potential to invade wetlands and saltmarshes and degrade habitat and food sources. Introduced foxes and cats predate on shorebirds and beach-nesting birds, and rabbits can cause widespread degradation of coastal habitats by digging extensive burrows and exacerbating erosion.

Coastal wetlands are among the most vulnerable ecosystems to climate change. At the same time, these areas provide important protection from climate change impacts, for example they buffer other coastal ecosystems against storms and tidal surges, reduce coastal erosion by stabilising shorelines and are important carbon sinks. A critical factor for managing wetlands through climate change is allowing them to adapt and retreat. That is, under natural conditions, coastal wetlands would gradually move inland as sea levels rise. However, with urban areas bordering many coastal wetlands, these ecosystems are under increasing pressure as they are confined to the narrow fringe between developed land and the sea.

Enhancing habitat quality and condition through weed and pest control works, revegetation and permanent protection can help to ensure the threatened species and vegetation communities that rely on the Western Port Ramsar site can continue to thrive. Identifying suitable land for retreat and adaptation of Coastal saltmarsh and saltmarsh mosaic vegetation communities will be important for preserving these habitats. Maintaining the diversity of ecosystems within and surrounding the Ramsar site, which encompasses most of Western Port Bay, and supporting wetland corridors, can also help wetland-dependent plants and animals to move between areas in response to climate change and altered conditions.</td></tr>
<tr><td rowspan="2">Significant values</td><td>Vegetation assemblages:</td><td>Key species associated with the priority focus area:</td><td>Additional values</td></tr>
<tr><td>Damp Sands Herb-rich Woodland (EVC 3)
Heathy Woodland (EVC 48)
Mangrove Shrubland (EVC 140)
Coastal Saltmarsh (EVC 9)
Damp Heathland (EVC 710)</td><td>Southern brown bandicoot (En, En) ^
Curlew sandpiper (CE, CE)^
Easter curlew (CE, CE) ~
Red knot (Vul, En) ^</td><td>Wetlands of regional significance
Migratory and waterbird monitoring
Parks Victoria Regional Priority Landscape</td></tr>
</table>

Key threats	▪ Weed invasion ▪ Total grazing pressure ▪ Land clearing ▪ Fox predation ▪ Cat predation.
Five-year outcome/s	1. By 2028, increase the condition and connectivity of coastal vegetation within and adjacent to the Ramsar site along the coast between Hastings and Warneet creating a buffer around these important wetlands.
Proposed actions	▪ Weed control ▪ Fox control ▪ Cat control ▪ Total grazer control ▪ Revegetation ▪ Habitat restoration and enhancement ▪ Permanent protection
Partnership opportunities	There are extensive opportunities to work with partners to augment, compliment and build on existing programs and initiatives across this priority area to achieve the intended outcomes. These include: ▪ Australian Government Regional Land Partnerships Program/ National Landcare Program ▪ DEECA EC5 funding delivered through Parks Victoria (Quail Island and Chinaman's Island) ▪ City of Casey peri-urban weeds program (a small proportion of the area around Warneet – foxes, weeds, deer) ▪ EC6 Ramsar funding bid (Yaringa to Warneet, French Island coast, Reef Island)
Research questions/s	1. What locations should be prioritised for managed retreat, based on existing vegetation data? 2. What are the most appropriate methods to manage retreat at prioritised locations, to maintain and improve critical habitat for flora and fauna whilst enhancing the natural resilience of saltmarsh vegetation? 3. What land is available for ecological restoration?

* Key species identified through SMP analysis

^ Additional species identified through partner workshops

˜ Australian Government 100 Priority Species

Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

3.2.4 ENHANCING ISLAND 'SAFE HAVENS'

Both French Island and Phillip Island are located within the PPW region. These islands provide significant habitat for a diversity of species including threatened, endemic and migratory species. Both islands have a diversity of natural habitats including woodlands, grasslands, marine areas, swamps and wetlands.

Island habitats have the potential to safeguard species from extinction by providing safe zones and natural shelter from invasive species. Both French Island and Phillip Island are fox free and French Island is nearing completion of its cat eradication program. Their pest-free status makes Phillip Island and French Island significant locations for holding insurance populations to allow rewilding of species following catastrophic events such as bushfires or for the maintenance of genetic diversity.

There are two priority focus areas identified through the prioritisation process that are included under this theme. The long-term outcome for biodiversity protection and enhancement efforts in these priority focus areas is to:

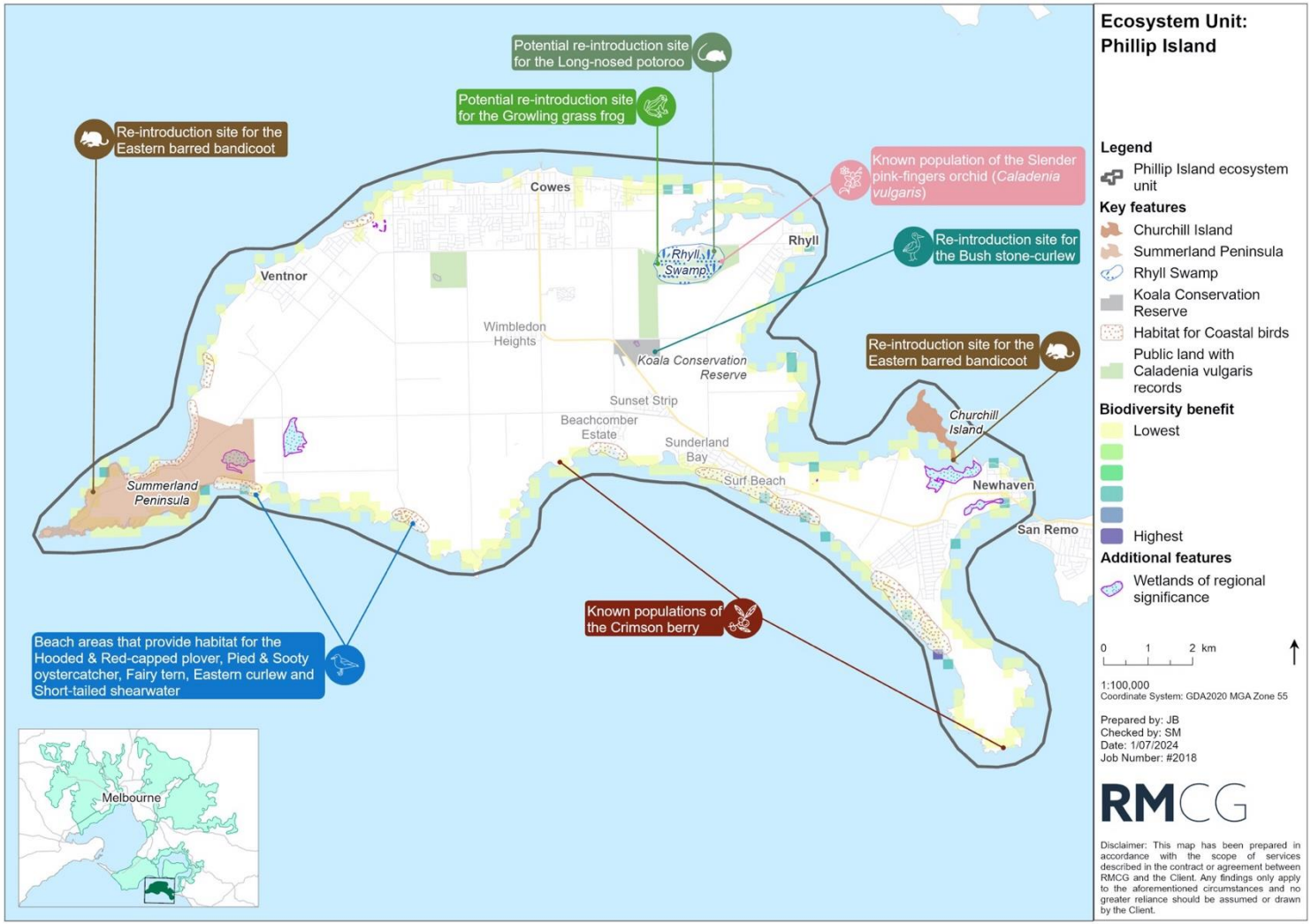
Improve habitat quality to ensure suitable habitat is available for species reintroductions and introductions and to maintain biodiversity values on the islands. This will contribute to 'safeguarding' species from extinction.

Further detail of the two priority focus areas within this theme is provided in Table 3-5 next.

Table 3-5: Overview of the two priority focus areas under the enhancing island 'safe havens' theme

Enhancing island 'safe havens'

Safeguarding Phillip Island



Ecosystem unit	Phillip Island
Key features	Churchill Island (Eastern barred bandicoot reintroduction site), Summerland Peninsula (Eastern barred bandicoot reintroduction site), Koala Conservation Reserve (Bush stone-curlew reintroduction site), Rhyll Swamp (Long-nosed potoroo reintroduction site), habitat for coastal birds (Hooded plover, Pied oystercatcher, Sooty oystercatcher, Red-capped plover, Fairy tern, Eastern vurlew, Short-tailed shearwater), public land with Slender pink fingers orchid records
Description	This Phillip Island priority focus area includes six key features: ▪ Churchill Island (Eastern barred bandicoot reintroduction site), ▪ Summerland Peninsula (Eastern barred bandicoot reintroduction site), ▪ Koala Conservation Reserve (Bush stone-curlew reintroduction site) ▪ Rhyll Swamp (Long-nosed potoroo reintroduction site) ▪ Habitat for coastal birds (Hooded plover, Pied oystercatcher, Sooty oystercatcher, Red-capped plover, Fairy tern, Eastern curlew, Short-tailed shearwater) ▪ Public land with Slender pink fingers orchid (*Caladenia vulgaris)* records. Phillip Island forms part of the lands of the Bunurong People, who know the island as Millowl. It is 101 km^2 in size and is situated south-east of Melbourne at the mouth of Western Port Bay. Much of Phillip Island's original vegetation and land cover has been modified for agriculture and urban development, yet the island supports a wide range of important and diverse vegetation communities and provides habitat for multiple threatened species. The island is disconnected from the mainland aside from a single road bridge, making it a prime location for the conservation and possible reintroduction or restoration of threatened species and vegetation communities. Islands can function as refuges for threatened species, their isolation can facilitate more effective and enduring eradication of weeds and pest animals such as foxes, rabbits and feral cats. Foxes are a key driver of population decline for many key species on the island, such as the critically endangered Bush Stone-curlew and iconic Little Penguin. Phillip Island was declared fox-free in 2017, continuous monitoring takes place to ensure foxes do not enter and establish on the island again. There is a rigorous feral cat control program and strong containment regulations for domestic cats on the island. Cats devastate native animal populations through direct predation and the transmission of diseases such as toxoplasmosis, which is lethal to native animals such as the endangered Eastern barred bandicoot. Phillip Islands core areas of biodiversity have the capacity to provide functioning habitat due to concerted conservation efforts from organisations such as Phillip Island Nature Park who deliver works to improve habitat quality and reduce predation pressures. Eastern barred bandicoots were introduced to Churchill Island in 2015 and on Summerland Peninsula two years later, and the Churchill Island population has since become a source for other reintroductions across the state, helping to ensure the persistence of the species in Victoria. Following this success, work is underway to reintroduce further threatened species that were lost to the island, such as the Bush stone-curlew, Long-nosed potoroo and Growling grass frog. The island also supports significant remnants of threatened ecological vegetation classes, such as Wetland Formation (endangered), Swamp Scrub (endangered) and Bird Colony Succulent Herbland (rare). These vegetation communities face a multitude of threats, including weed invasion, grazing pressure from rabbits, changes to environmental conditions, and sea level rise. Changes to species distributions and diversity are likely to occur as saline seawater inundates previously freshwater environments, soil moisture declines, extremes like droughts and bushfires increase, or as other changes occur with climate change. Continuing the impressive legacy of work that has made Phillip Island an icon of conservation will be needed to face these ongoing and emerging challenges and maintain the island as a refuge for species under threat.

Significant values	*Vegetation assemblages:*		*Key species associated with the priority focus area:*	*Additional values*
	▪ Coastal Dune Scrub/Coastal Dune Grassland Mosaic (EVC 1) ▪ Swamp Scrub (EVC 53) ▪ Coastal Saltmarsh (EVC 9) ▪ Mangrove Shrubland (EVC 140) ▪ Wetland Formation (EVC 74)	▪ Damp Sands Herb-rich Woodland (EVC 3) ▪ Plains Grassy Woodland (EVC 55) ▪ Coastal Tussock Grassland (EVC 63) ▪ Bird Colony Succulent Herbland (EVC 155)	▪ Crimson berry (NL, Vul) * ▪ Eastern barred bandicoot (En, En) (reintroduced population) ^# ▪ Growling grass frog (Vul, Threatened with extinction) ^~ ▪ Long-nosed potoroo (Vul, Vul) ^	▪ Wetlands of regional significance ▪ Migratory and shorebird monitoring
Key threats	▪ Weed invasion ▪ Grazing pressure (rabbits) ▪ Fox predation ▪ Cat predation			
Five-year outcome/s	1. By 2028, Phillip Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species. 2. By 2028, the condition of suitable habitat to facilitate the persistence of threatened species on Phillip Island is improved.			
Proposed actions	▪ Weed control ▪ Rabbit control ▪ Habitat restoration and enhancement ▪ Predator surveillance			
Partnership opportunities	On Phillip Island, there are existing strong and long-term partnerships established between land managers and conservation agencies, for example: ▪ Melbourne Water ▪ Zoos Victoria ▪ Department of Environment, Energy and Climate Action (DEECA) ▪ Parks Victoria ▪ Phillip Island Nature Parks			
Research questions/s	1. What is the status of Growling Grass Frogs on Phillip Island? 2. Where is the most suitable habitat for Growling Grass Frog populations on Phillip Island?			

* Key species identified through SMP analysis

^ Additional species identified through partner workshops

˜ Australian Government 100 Priority Species

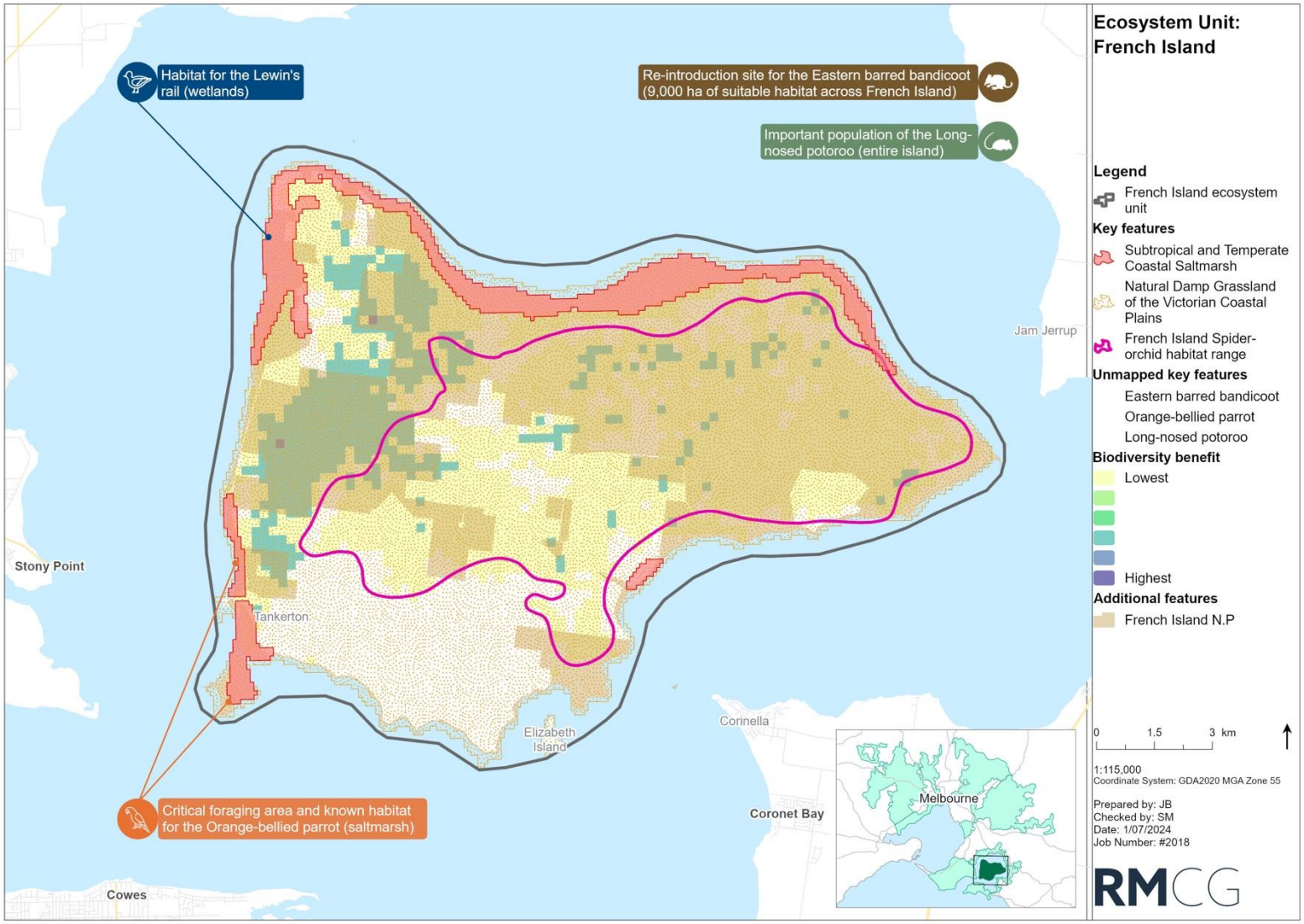
Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

Enhancing island ‘safe havens’

Safeguarding French Island



Ecosystem unit	French Island
Key features	Natural Damp Grassland of the Coastal Plain, Subtropical and temperate saltmarsh, Orange-bellied parrot, Eastern barred bandicoot, French Island spider orchid, Long-nosed potoroo
Description	The priority focus area on French Island includes six key features: ▪ Natural Damp Grassland of the Coastal Plain ▪ Subtropical and temperate saltmarsh ▪ Orange-bellied parrot ▪ Eastern-barred bandicoot ▪ French Island spider orchid ▪ Long-nosed potoroo. French Island is in Western Port Bay on Bunurong Country. The island is surrounded by the internationally recognised Western Port Ramsar wetland. This unique island offers refuge to many threatened species and vegetation communities from the multitude of threats they face elsewhere in Victoria. This is largely due to the small population, the extent of French Island National Park (covering two thirds of the island), and the exclusion of cars (except for a small number of permanent residents). While the island offers security from certain threats, its limited size also leaves it vulnerable to habitat loss and degradation from remaining threats, including climate change, notably sea level rise. The island's varied vegetation communities, coastal saltmarsh, mangroves, heathlands, woodlands and the critically endangered Natural Damp Grassland of the Coastal Plain, provide habitat for many significant species. Critically, the island is free from cinnamon fungus (*Phytophthora cinnamomi*), a root-rotting fungus that devastates populations of native plants across vast areas of mainland Australia. The fauna of the island also experience benefits from isolation. French Island is fox free and a prime refuge for small marsupials that have become threatened or even extinct across other parts of the state. The White-footed dunnart, a mouse-like carnivore, and the Long-nosed potoroo, a larger marsupial that feeds primarily on fungi, are two native mammals found on French Island. These marsupials have suffered extensive population decline on the mainland through predation by foxes and cats. The Eastern barred bandicoot was declared extinct in the wild on mainland Australia in 2013. However, successful captive breeding programs have helped bolster populations, and this small nocturnal marsupial was reintroduced to French Island, which now supports a healthy population. French Island also supports Victoria's most significant koala population. Despite its ecological richness and relative protection from some significant threats, French Island and its distinct species still face impacts from land clearing, development, human disturbance and climate change. Feral cats are a significant introduced predator of the island's birds and small mammal species. A current collaborative project between Melbourne Water, Parks Victoria, French Island Landcare Group and local residents, aims to completely eradiate feral cats from the island and encourage responsible pet ownership to reduce or eliminate the risk of cat predation on native fauna across the island. While important to the island, tourism and recreation have the potential to expose the island's habitats to introduced weeds as well as risks from pollution and erosion. Climate change threatens French Island and its precious populations of native species. Rising sea levels and warming sea temperatures have the potential to alter the distribution and composition of coastal vegetation communities. Increasing frequency of extreme weather events such as storms and bushfires pose a significant risk because French Island's ecosystems are limited in size, and animal species may not be able to seek refuge if an incident were to impact vast areas of the island. Dedicated work to reduce threats from weed invasion, habitat degradation, sea-level rise and feral cats, in addition to habitat enhancement and restoration, is needed to preserve the unique ecosystems of French Island and safeguard its rare and threatened species.

Significant values	*Vegetation assemblages:* ▪ Sand Heathland (EVC 6) ▪ Estuarine Wetland/Estuarine Swamp Scrub Mosaic (EVC 935) ▪ Swamp Scrub (EVC 53) ▪ Heathy Woodland (EVC 48) ▪ Damp Sands Herb-rich Woodland (EVC 3) ▪ Aquatic Herbland/Swamp Scrub Mosaic (EVC 915) ▪ Lowland Forest (EVC 16) ▪ Natural Damp Grassland of the Coastal Plain (TEC) ▪ Subtropical and Temperate Saltmarsh	*Key species associated with the priority focus area:* ▪ Orange-bellied parrot (CE, CE) *~# ▪ Eastern barred bandicoot (introduced population) (En, En) ^# ▪ French Island spider-orchid (Vul, En) * ▪ Long-nosed potoroo (Vul, Vul) ^ ▪ Lewin's rail (NL, Th) ^	*Island values* ▪ Fox free ▪ Potential habitat for Victorian species on the brink of extinction
Key threats	▪ Total grazing pressure ▪ Cat predation ▪ Weed invasion		
Five-year outcome/s	1. By 2028, French Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species (above and beyond those prioritised in the PPW NRM Action Plan)		
Proposed actions	▪ Weed control ▪ Cat control	▪ Habitat restoration and enhancement ▪ Total grazer control	
Partnership opportunities	On French Island, there are existing strong and long-term partnerships established between land managers, for example: ▪ Strong and long-term partnerships established between land managers (e.g. Parks Victoria, Zoos Victoria, Melbourne Water, DEECA, French Island Landcare Group) ▪ Australian Government Regional Land Partnerships Program/ National Landcare Program	▪ Parks Victoria's existing work to protect the environmental values of French Island National Park (pest plant and animal control, Koala overpopulation) and on the Ramsar estate through various sources (EC5/6 funding, liveable communities, liveable waterways program and the peri-urban weed program)	
Research questions/s	1. What species should be targeted for reintroduction or rerelease on French Island? 2. Where are the priority areas for habitat enhancement to facilitate reintroduction or rerelease of targeted threatened species? 3. What locations should be prioritised for managed retreat, based on existing data?		

* Key species identified through SMP analysis

^ Additional species identified through partner workshops

˜ Australian Government 100 Priority Species

Zoos Victoria 27 threatened native species

! Regionally significant species (this is based on how important the region is for the threatened species or threatened ecological community (e.g. endemic to the region, core population is found within the region)

Conservation status (EPBC Act 1999, FFG Act 1988)

4 Biodiversity Conservation at Melbourne Water

This section provides an overview of the role Melbourne Water play in protecting and conserving biodiversity across its operational areas and provides a summary of the biodiversity programs that are currently implemented. It also highlights the significant achievements that have been made to improve biodiversity overtime.

4.1 MELBOURNE WATER ROLE IN BIODIVERSITY PROTECTION AND CONSERVATION

Melbourne Water plays an important role in biodiversity protection and conservation including:

- Habitat restoration and management (revegetation, pest plant and animal management, creating habitat corridors)
- Wetland conservation (maintain habitat values for aquatic and other wetland-dependent flora and fauna, maintain or improve water quality)
- Improving waterway health (monitoring and maintaining the health of waterways through improving riparian vegetation, water quality monitoring, pollution management, erosion control)
- Community education and awareness (citizen science programs, community planting days, educational presentations to local school groups)
- Research and monitoring (active in partnerships with research organisations, maintain biodiversity databases to measure the effectiveness of actions and plan for future conservation actions)
- Developing partnerships with other environmental conservation agencies to contribute to broader biodiversity conservation and protection outcomes.
- Development of habitat suitability models for aquatic species
- Grants to landowners (including local councils and Parks Victoria) to undertake conservation works
- Development of Growling Grass Frog ponds and reserves in Melbourne Strategic Assessment Areas.

Melbourne Water has achieved significant gains in biodiversity conservation over time. A summary of key achievements to date is shown in Figure 4-1 below.

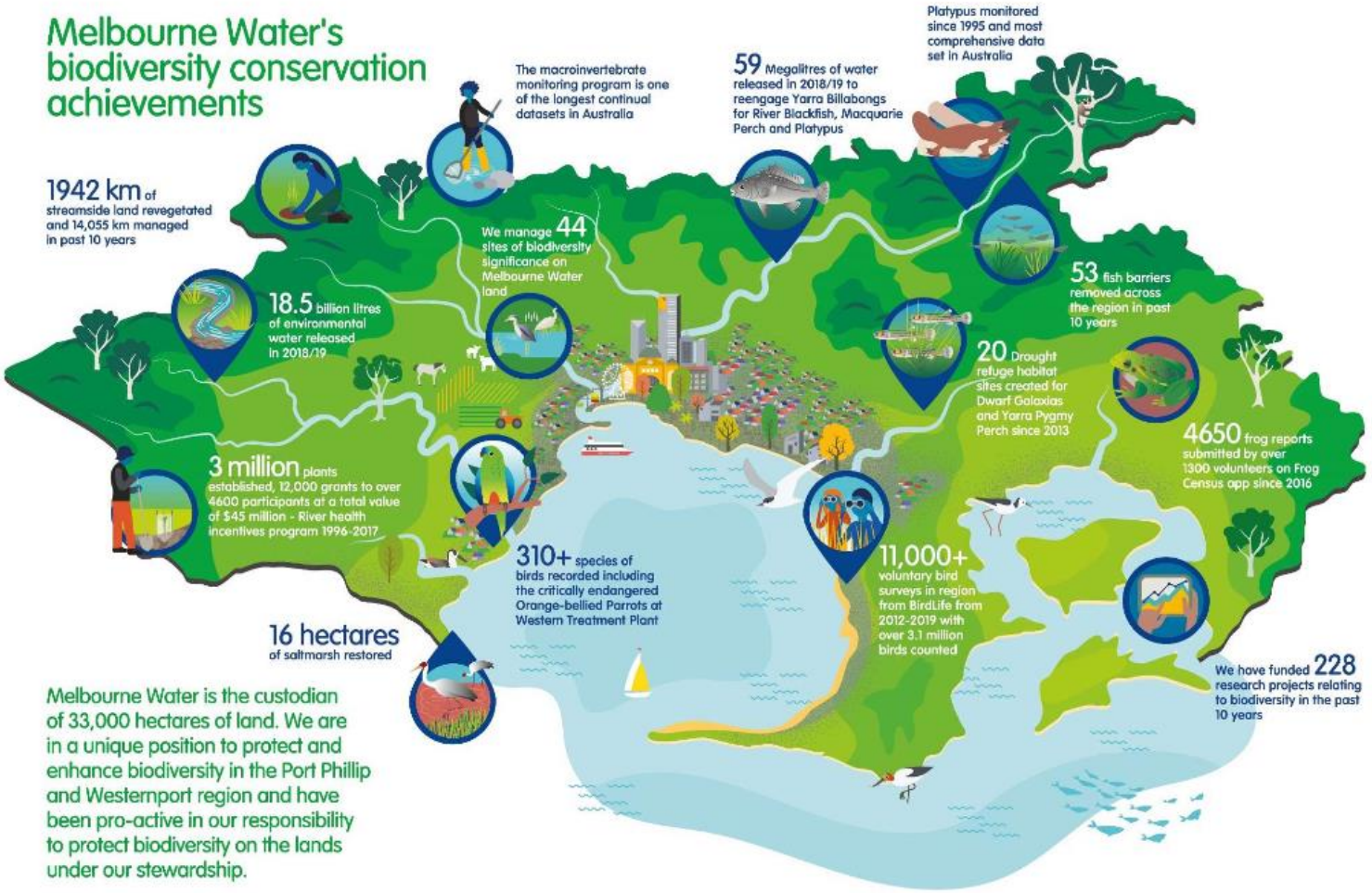


Figure 4-1: Summary of key Melbourne Water biodiversity conservation achievements to date

[Drafting note: Image to be updated with recent facts and figures. MW to provide existing image and updated figures to the designer.]

4.2 OBJECTIVES AND ACTIONS

Whilst Melbourne Water's achievements to date in biodiversity conservation are significant, there is recognition that much more needs to be done, particularly given the organisation's role as the catchment manager. Through intensive staff engagement, a meaningful set of objectives and actions have been developed to more effectively embed biodiversity management and protection into business as usual. These have been grouped into five themes to better equip Melbourne Water over the next five years to conserve and enhance biodiversity.

Some of the actions in this section align with the regional priorities outlined in Section 2 which includes the need to identify spatial priorities across the PPW region. The themes, objectives and actions are detailed in Table 4-1, Table 4-2,

Table 4-3, Table 4-4 and Table 4-5.

Table 4-1: Melbourne Water objectives, actions and responsible program area for theme 1

	THEME 1: Protecting native biodiversity across our catchments			
	Objective: *Melbourne Water is the lead agency guiding, facilitating and actioning biodiversity conservation efforts across the catchment and on Melbourne Water land*			
Actions		**Responsibility**	**Priority**	**Timeframe**
1	Continue the programs Melbourne Water have in place to protect, maintain and enhance biodiversity assets on **land that is owned and/or managed by Melbourne Water** where there is a clear legislative driver and obligation to protect biodiversity. These programs include: ▪ Sites of Biodiversity Significance (SoBS) ▪ Ramsar site management ▪ Healthy Waterways Strategy ▪ Internal Biodiversity Fund ▪ Community Grants	Service Strategy, Service Programs, Waterways & Catchment Services North West, Waterways & Catchment Services South East	High	Ongoing
2	Adopt the policy position of 'no further natural wetland extent loss' within Melbourne Water based on recommendations in the Policy Briefing Note: Protection of Natural Wetlands in the Melbourne Region (Boon and Jacobs, 2024).	Service Strategy	High	Year 1
3	Develop and adopt Board approved organisational messaging and a position statement on the importance of biodiversity and Melbourne Water's role and obligations in biodiversity conservation.	Service Strategy	Med	Year 1
4	Utilise spatial prioritisation mapping from the Biodiversity Conservation Action Plan (BCAP 2024-2028) to guide co-design processes over the next five years, ensuring maps and spatial data are accessible to Melbourne Water staff and external stakeholders.	Service Strategy	Med	Ongoing
5	Update the Regional Catchment Strategy (RCS) prospectus to incorporate biodiversity priorities listed in the BCAP 2024-2028 and the Emergency Preparedness and Response Plan (EPRP) 2024, ensuring it supports long-term, investment pathways through partnerships.	Service Strategy	High	Year 1

	THEME 1: Protecting native biodiversity across our catchments			
6	Evaluate how existing partnerships and collaborations are contributing to Integrated Catchment Management (ICM) and biodiversity outcomes, and where appropriate, further build and strengthen these.	Service Programs	Med	Year 1
7	Develop new strategic partnerships with targeted stakeholders to increase Integrated Catchment Management (ICM) and biodiversity outcomes.	Service Programs	Med	Year 1 & 2
8	Support an ICM approach to land stewardship through the Climate Smart Ag Project and incorporate protection of natural capital in project outcomes.	Aboriginal Engagement and Community Connections	Med	Year 2 & 3
9	Develop a clear and simple report card on the trajectory of biodiversity in the region. In developing the report card consider the following: ▪ Use of quantitative data ▪ State of the Environment (SOE) reporting for large sites e.g. the Western Treatment Plant (WTP) ▪ Alignment with the Annual Catchment Condition Report ▪ Sharing updates and data with partners and stakeholders.	Service Strategy	Low	Year 2 & 3
10	Identify biodiversity actions (for implementation) from the BCAP 2024-2028 that align with existing Melbourne Water Plans including the HWS 2018-2028, NRM Action Plan 2023, SoBS Program, and Emergency Response and Preparedness Plan 2024.	Service Strategy	High	Ongoing
11	Explore opportunities and barriers for identifying and establishing new biodiversity offsets on Melbourne Water land through administration of the Melbourne Water Internal Biodiversity Fund (IBF).	Service Strategy	High	Ongoing
12	Review and update the framework for allocating funds and prioritising projects through the Melbourne Water Internal Biodiversity Fund (IBF).	Service Strategy	High	Year 1
13	Continue to explore secure sources of funding to implement the Regional Catchment Strategy (RCS).	Service Strategy	High	Ongoing
14	Ensure biodiversity priorities and actions contained in the BCAP 2024-2028 are considered in Melbourne Water Sustainability Frameworks, Action Plans and Materiality Assessments.	Sustainable Futures	Med	Ongoing

Table 4-2: Melbourne Water objectives, actions and responsible program area for theme 2

	THEME 2: Building ecological resilience in the face of a changing climate			
	Objective: *Melbourne Water conserves and enhances biodiversity and builds ecological resilience in the face of a changing climate.*			
Actions		**Responsibility**		
15	Explore opportunities for funding to Implement the Port Phillip and Western Port region Emergency Preparedness and Response Plan 2024 and where appropriate consider expanding the current plan to incorporate emergency response actions for additional species and values.	Service Strategy	Med	Ongoing
16	Increase awareness and understanding of the BCAP 2024-2028 within the Melbourne Water value chain as defined by Building a Better Melbourne Water.	Service Strategy	Med	Ongoing
17	Increase awareness and understanding of current climate change modelling and research across Melbourne Water to inform biodiversity conservation and management including: ▪ Impacts of climate change on key environmental values in the Healthy Waterways Strategy (HWS) and mid-term review[3] ▪ Climate resilience vegetation frameworks[4] ▪ Modelling the risk of key revegetation species to a changing climate[5] ▪ Climate future plots[6] ▪ Approaches to increasing the resilience of vegetation in a changing climate[7].	Sustainable Futures, Service Strategy, Research and Modelling	Med	Ongoing
18	Identify opportunities to implement nature positive solutions in response to climate change to improve biodiversity on Melbourne Water land including the use of new frameworks and approaches to biodiversity conservation and restoration such as: ▪ Emerging nature markets ▪ Natural capital including: building organisational capacity and alignment with emerging best practice natural capital frameworks such as Natural Capital Accounting; TNFD approaches; and use of natural capital mapping ▪ Exploring partnerships for nature based solutions ▪ Exploring integrated biodiversity and carbon initiatives including insetting on Melbourne Water land (where there are no detrimental effects to holistic conservation planning and outcomes).	Sustainable Futures	High	Ongoing

[3] Habitat suitability models, scenarios and quantitative action prioritisation (using zonation) for the Healthy Waterways Strategy 2018, (University of Melbourne and Melbourne Water, 2020), re-running habitat suitability models with updated climate-impacted projections and other scenarios of interest (University of Melbourne and Melbourne Water, 2023).

[4] Understanding management options for restoration under a changing climate (Melbourne Water and Alluvium, 2022).

[5] Using mechanistic and correlative species distribution models to assess climate impacts on 30 revegetation species to 2090 (University of Melbourne and Melbourne Water, 2023).

[6] Using climate adjusted seed for research and monitoring changes over time of survival, growth, reproduction and genetics between provenances and species in three council areas (Maroondah City Council, Dandenong City Council, Knox City Council and Melbourne Water, 2024).

[7] Understanding limitations and opportunities for implementing climate resilient restoration practices (Melbourne University and Melbourne Water, 2024).

Table 4-3: Melbourne Water objectives, actions and responsible program area for theme 3

	THEME 3: Building organisational skills and capacity to enable biodiversity protection and recovery			
	Objective: *Melbourne Water conserves and enhances biodiversity and builds ecological resilience in the face of a changing climate.*			
Actions		**Responsibility**		
19	Develop a targeted approach to raise staff and board awareness of Melbourne Water's role as a CMA and our roles and obligations for biodiversity across the Port Phillip and Western Port region.	Service Strategy	Med	Ongoing
20	Develop a process map to define Melbourne Water's current roles and responsibilities for biodiversity by building on the Service Strategy Review completed in 2024 for Building a Better Melbourne Water.	Service Strategy	Low	Ongoing
21	Appoint a EGM level champion at Melbourne Water to lead biodiversity governance across the organisation.	Service Strategy	High	Ongoing
22	Explore opportunities for funding, develop and implement management plans informed by BCAP 2024-2028 priorities (ensure works crews clearly understand BCAP 2024-2028 objectives and outcomes).	Service Programs, Service Strategy	Med	Ongoing
23	Identify and implement opportunities that improve and align systems to capture biodiversity data to enable more effective collation, improved planning, decision making and reporting.	Waterways & Catchment Services North West, Waterways & Catchment Services South East	High	Year 1
24	Review processes to upload biodiversity data to the Victorian Biodiversity Atlas (VBA) and Stakeholder, Environment & Public Health Assessment (SEPHA). Review to include: ▪ Identification of data that is currently collected (monitoring, research and risk assessments) ▪ Identification of which data sets should be uploaded to VBA and SEPHA ▪ Consideration of responsibilities, timing and intervals at which data should be uploaded ▪ Consideration of data sets that should also be made available on the Melbourne Water community portal	Service Enablement Catchment and Waterways, Research and Modelling, Service Strategy, Service Programs	High	Ongoing
25	Continue to provide Melbourne Water support for operational staff and works crews to reduce risks to biodiversity including: ▪ Standard Operating Procedures (SOPs) ▪ Site works environmental management plans and guidelines to support Stakeholder, Environment & Public Health Assessment (SEPHA) ▪ Melbourne Water Biodiversity Conservation Training Module into induction and training for new employees.	Chief Safety Officer, People Services, Capability and People Experience	Med	Ongoing

Table 4-4: Melbourne Water objectives, actions and responsible program area for theme 4

	**THEME 4: Within Melbourne Water, championing biodiversity positive planning and development**			
Objective: *Melbourne Water positively influences the outcomes of urban planning and development to benefit biodiversity both across the catchment and on Melbourne Water land.*				
Actions		**Responsibility**		
26	Develop a policy position on biodiversity conservation assets in the urban growth development area (including assets that link to waterways and adjacent land[8]).	Service Strategy	High	Year 1
27	Improve leadership level understanding of the legal framework for protecting and promoting recovery of threatened species and ecological communities and preserving significant places from decline, including the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* and *Catchment and Land Protection Act 1994 (CaLP Act)*.	Service Strategy	Med	Ongoing
28	Investigate options for embedding biodiversity priorities and protection measures into local planning policy and schemes based on priorities contained in the BCAP 2024-2028 and Emergency Preparedness and Response Plan 2024 e.g. Environmental Significant Overlays (ESO) and/or incorporated documents.	Service Strategy	Med	Ongoing
29	Implement findings from the Healthy Waterways Strategy (HWS) mid-term review to improve knowledge and understanding of opportunities to protect headwater streams and wetlands as part of urban planning approvals, including development of guidelines and supporting policies/legislation.	Service Strategy	Med	Year 1 & 2
30	As a referral authority, apply Stakeholder, Environment & Public Health Assessment (SEPHA) to applications for planning for development including referrals relating to Precinct Structure Plans (PSPs) and Masterplans.	Urban Planning and Development	Med	Ongoing
31	Identify opportunities to reduce the impact of urban development on land and biodiversity through pollutant reduction (e.g. Bifenthrin for termite control), flow management and buffer zones.	Service Strategy	Med	Ongoing
32	Investigate opportunities to direct funding from Capital Works towards biodiversity outcomes to meet Water Corporations requirements under The *Water Act 1988* (Water Act) – conservation of biological and ecological integrity, implementing measures to minimise threats of serious or irreversible environmental damage, notwithstanding lack of full scientific certainty.	Service Strategy	Med	Year 1

Table 4-5: Melbourne Water objectives, actions and responsible program area for theme 5

[8] For example, Southern Brown Bandicoot underpasses, Growling Grass Frog reserves in non-Melbourne Strategic assessment areas.

	THEME 5: Healing and walking on country			
Objective: *Melbourne Water strengthens its partnerships and empowers Traditional Owners to deliver culturally important biodiversity conservation outcomes.*				
Actions		**Responsibility**		
33	Work with Traditional Owners to ensure that Traditional Owner aspirations and values are incorporated in spatial prioritisation and overlays of biodiversity assets and values for the Port Phillip and Western Port Region.	Service Strategy	Med	Year 1
34	Work with Traditional Owners to increase their involvement in on-ground management, including improved procurement processes to allow their self-determined outcomes to be met.	Waterways and Catchment Services North West, Waterways and Catchment Services South East, Works Delivery, Aboriginal Engagement and Community Connections	Med	Ongoing

5 Monitoring, Evaluation and Reporting

This section outlines the monitoring, evaluation and reporting (MER) approach for the BCAP which will ensure Melbourne Water can effectively track and demonstrate achievement of the outcomes, objectives and actions set out in this plan. It will also ensure that organisational priorities and direction in biodiversity conservation are adapted in response to changes in the operating environment over time, supporting continuous improvement.

There are three levels of MER in this plan:

1. Capturing progress against targets in the RCS (RCS targets)
2. Capturing the contribution of internal Melbourne Water actions to organisational biodiversity objectives (organisational objectives)
3. Review of spatial priorities at the end of the plan (review of spatial priorities).

Table 5-1: Three levels of MER for the BCAP, who and when they will be captured by.

MER level	How	Who	When
RCS targets	Tracking and collecting data against: ▪ Actions delivered under the priority focus area projects ▪ Contribution of actions to priority focus area five year outcomes	▪ Operational staff ▪ Program managers ▪ External partners	▪ Annually ▪ Mid-term (2026)
Organisational objectives	Tracking and collecting data against: ▪ Actions delivered through existing internal program areas ▪ Contribution of actions to internal organisational objectives	▪ Operational staff ▪ Program managers	▪ Annually ▪ Mid-term (2026)
Review of spatial priorities	Revisit prioritisation process and update as needed: ▪ DECCA SMP Analysis ▪ Cost-benefit analysis	▪ Program managers ▪ External partners	▪ End of plan (2028)

The data collected through MER as part of this plan will be used to inform the development of the next RCS and HWS which are due for renewal in 2027 and 2028 respectively.

A plan overview diagram has been developed to demonstrate the linkages and alignment between outcomes, objectives and actions set out in this plan, Figure 5-1. The plan overview shows the objectives and actions which data should be collected against. A proposed data collection plan is shown in Appendix 5.

RELATED REGIONAL CATCHMENT STRATEGY VISION, OUTCOMES AND TARGETS

Vision (30 year)

In 2050, native plant and animal populations across the region are plentiful, thriving and flourishing and are part of functioning and resilient ecosystems. Conservation reserves across the region are connected by a large network of established and protected biolinks, across public and private land, providing habitat corridors of movement for a diversity of species. Populations of threatened species across the region are valued, protected and on the path to recovery.

Medium-term (5 to 20 years)

- *All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience*
- *20,000 hectares of revegetation is established in priority areas for habitat connectivity in the region (at least 1,000 per year)*
- *Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region*
- *Maintain the diversity of native animal species in the region*
- *Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience.*

RELATED HEALTHY WATERWAYS STRATEGY VISION AND TARGETS

Vision (50 year)

Healthy and valued waterways are integrated with broader landscape, and enhance life and livability. Waterways connect diverse and thriving communities of plants and animals; provide amenity to urban and rural areas, and engage communities with their environment; and are managed sustainably to enhance environmental, economic, social and cultural values

Long-term targets for all catchments - Westernport, Dandenong, Yarra, Maribyrnong, Werribee (10 to 50 years)

- *Increased vegetation extent along waterways*
- *Improved vegetation quality along waterways*
- *Improved wetland vegetation condition*
- *Improved wetland water regimes*
- *The ecological conditions of the Westernport Ramsar Wetland and Port Phillip Bay (Western Shoreline) Ramsar Wetland and Edithvale-Seaford Ramsar wetland are maintained or improved*

END OF BCAP OUTCOMES FOR PRIORITY FOCUS AREAS (5 YEARS)

Improving condition and connectivity

Linking landscapes across the west

- *Improve the condition of the Natural Temperate Grasslands of the Victorian Volcanic Plain (NTGVVP) ecological community adjacent to or expanding out from the Western Grasslands Reserve*
- *Improve the condition of grassland dependent wetlands adjacent to or expanding out from the Western Grasslands Reserve*
- *Improve connectivity between the Western Grasslands Reserve, the Werribee River and the You Yangs Regional Park*
- *Increase the area of critical habitat available for the Victorian Grassland Earless Dragon*

Enhancing the Jackson's Creek corridor

- *Increase the condition and connectivity of riparian and escarpment vegetation along the Jackson's Creek corridor*
- *Conduct extant population survey's for the Victorian Grassland Earless Dragon along the Jackson's Creek corridor*

Strengthening biodiversity hotspots

Protecting biodiversity hotspots in Yarra Valley North

- *Link aquaducts, existing revegetation and properties under permanent protection to create habitat corridors in the areas surrounding Warrandyte State Park, and Sugarloaf Reservoir*
- *Improve the condition of habitat for threatened species in the areas surrounding Warrandyte State Park, and Sugarloaf Reservoir*
- *Identify and improve the condition of priority sites for threatened orchid assemblages (Little pink spider-orchid, Charming spider-orchid, Kilsyth south spider-orchid*

Protecting biodiversity hotspots in Yarra Valley South

- *Improve the condition of habitat for threatened species in and surrounding the Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds*
- *Create additional suitable habitat for Helmeted honeyeater and Leadbeater's possum (lowland poplulation) in the Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds*

Protecting biodiversity hotspots on the Mornington Peninsula

- *Link existing remnant vegetation to create habitat corridors in the area surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach*
- *By 2028, improve the condition of habitat for threatened species in the areas surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach*

Buffering Ramsar Sites

Improve the resilience of wetlands along the Werribee South Coast

- *Increase the condition and connectivity of coastal vegetation between priority wetlands along the coast of Werribee South*

Improve the resilience of wetlands along the Westernport Coast

- *increase the condition and connectivity of coastal vegetation between Hastings and Warneet*

Enhancing island 'safe havens'

Safeguarding Phillip Island

- *The condition of suitable habitat to facilitate persistence of threatened species on Phillip Island is improved*
- *Phillip Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species*

Safeguarding French Island

- *French Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species (above and beyond those prioritised in the NRM Action Plan)*

END OF BCAP OBJECTIVES FOR MELBOURNE WATER (5 YEARS)

Protecting native biodiversity across our catchment

Melbourne Water is the lead agency guiding, facilitating and actioning biodiversity conservation efforts both across the catchment and on Melbourne Water land

Building ecological resilience in the face of a changing climate

Melbourne Water conserves and enhances biodiversity to builds ecological resilience in the face of a changing climate

Building organisational skills and capacity to enable biodiversity protection and recovery

Melbourne Water is equipped with the knowledge, skills and resources to deliver the biodiversity conservation leadership role

Within Melbourne Water, championing biodiversity positive planning and development

Melbourne Water positively influences the outcomes of urban planning and development to benefit biodiversity both across the catchment and on Melbourne Water land.

Healing and walking on country

Melbourne Water strengthens its partnerships and empowers Traditional Owners to deliver culturally important biodiversity conservation outcomes.

SHORT-TERM OUTCOMES EXPECTED THROUGH DELIVERY OF ACTIONS IN PRIORITY FOCUS AREAS (2 - 3 YEARS)

- *The area of land under permanent protection is increased*
- *The extent of native vegetation is increased*

- *Reduced herbivory on threatened and other native vegetation*
- *Recruitment of key native flora species*

- *Reduced predation presssure from foxes and cats on threatened and native fauna*

- *Area of weed infestations reduced*
- *Phytophora is contained to areas it is known to occur (no new incursions are recorded)*
- *The area managed under improved fire regimes is increased*

SHORT-TERM OUTCOMES EXPECTED THROUGH DELIVERY OF ACTIONS ACROSS MELBOURNE WATER (2 - 3 YEARS)

- *Melbourne water has strengthened and expanded its partnerships with biodiversity management agencies and organisations*
- *Melbourne Water has improved awareness, knowledge and skills to protect and conserve biodiversity across the region*
- *Melbourne Water has established partnerships with Traditional Owners across the region*
- *Melbourne Water are engaged in urban planning and development decisions to inform biodiversity protection measures*

ACTIONS THAT WILL DELIVER OUTCOMES IN PRIORITY FOCUS AREAS (ANNUAL)

- *Habitat restoration and enhancement*
- *Revegetation*
- *Permanent protection*

- *Total grazer control*
- *Deer control*
- *Rabbit control*

- *Fox control*
- *Cat control*
- *Predator surveillance*

- *Improved fire regimes*
- *Weed control*
- *Phytophora control*

ACTIONS THAT WILL DELIVER BIODIVERSITY OBJECTIVES ACROSS MELBOURNE WATER (ANNUAL)

- *See table 3.1, actions 1 to 14 described in section 3.2 of the BCAP*
- *See table 3.2, actions 15 to 19 described in section 3.2 of the BCAP*
- *See table 3.3, actions 20 to 26 described in section 3.2 of the BCAP*
- *See table 3.4, actions 27 to 34 described in section 3.2 of the BCAP*
- *See table 3.5, actions 35 and 36 described in section 3.2 of the BCAP*

Responsibility for delivery

- Melbourne Water and Partners
- Melbourne Water

Figure 5-1: BCAP overview diagram

Appendix 1: PPW region biodiversity policies and legislation

A list of key policies and legislation that help guide biodiversity protection and management across the PPW region is provided in Table A-1-1.

Table A1-1: Biodiversity policies and legislation across the PPW region

Title	Brief description
Global	
The Convention on Biological Diversity	The international treaty adopted at the Earth Summit in Rio de Janeiro in 1992. It has three primary objectives; conservation of biological diversity, sustainable use of biological resources, fair and equitable benefits derived from biodiversity.
Global Biodiversity Framework	An ambitious plan adopted by the Convention on Biological Diversity to guide global actions to protect and restore biodiversity by 2030.
Signatory to the United Nations Sustainable Development Goals[9]	A set of 17 global goals set by the United Nations General Assembly in 2015 and intended to be achieved by 2030.
The Ramsar Convention on Wetlands	The international convention is a treaty that aims to halt the worldwide loss of wetlands and to conserve through wise use and management of those wetlands that remain.
Federal	
Environment Protection & Biodiversity Conservation Act 1999	Provides a legal framework for the protection and management of the environment and biodiversity at a national level. The act considers matters such as impact assessments, protection of World Heritage Properties and national heritage places. It aims to promote sustainable development whilst considering economic and social factors.
Threatened Species Strategy 2021-2031: is the practical contribution to the national commitments set out in Australia's Strategy for Nature	A comprehensive plan developed to address the conservation and recovery of threatened species over a ten year timeframe. It includes a set of goals and objectives, identifies priority species for protection, list beneficial conservation actions, includes a monitoring and evaluation framework to track the effectiveness of actions, includes a list of adaptive management principle to guide the delivery of key strategies.
Strategy for Nature 2019-2030	An overarching framework for all national, state and territory and local strategies, legislation, policies, and actions aimed at conserving and enhancing biodiversity and natural ecosystems.
Nature Positive Plan – Better for Nature, Better for Business 2022	Lays out the agenda for environmental law reform at a national level to address weaknesses and gaps in the Environment Protection and *Biodiversity Conservation Act 1999.*
National Roadmap for protecting and conserving 30% of Australia's land by 2030	The *National Roadmap for Protecting and Conserving 30% of Australia's Land by 2030* outlines a strategic approach to enhance biodiversity and promote conservation across the country. The primary goal is to protect 30% of Australia's land and inland waters by 2030 to safeguard biodiversity, mitigate climate change impacts, and support sustainable development.

[9] Melbourne Water commitment to deliver on the Sustainable Development Goals, accessed 12 June 2024, https://www.melbournewater.com.au/about/what-we-do/publications/delivering-sustainable-development-goals

Title	Brief description
	There is clear alignment between the strategy and conservation efforts focused on climate adaptation, enhancing ecosystem resilience and supporting species recovery in the face of climate change. The roadmap emphasises to need for collaboration among governments, Indigenous communities, landholders, and conservation organisations to achieve conservation targets. The strategy recognises the critical role of Indigenous peoples in conservation efforts and promotes co-management of lands to incorporate traditional ecological knowledge. It encourages public awareness and community involvement in conservation efforts to foster a culture of stewardship and support for biodiversity initiatives. Various strategies for biodiversity conservation and protection are proposed, including establishing protected areas, enhancing existing reserves, and improving land management practices to maintain and restore habitats The strategy clearly identifies the need for adequate funding and resources to support conservation initiatives, including leveraging private and philanthropic investment to achieve the outcomes and targets set. The strategy establishes frameworks for monitoring biodiversity outcomes and assessing the effectiveness of conservation actions to ensure accountability and adapt strategies as needed.
State	
Fauna and Flora Guarantee Act 1988	The Act's objectives aim to conserve all of Victoria's native plants and animals. The Act establishes a range of mechanisms to achieve this objective, including: listing threatened species, communities and threats to native species. requiring an overarching strategy for Victoria's biodiversity.
Catchment and Land Protection Act 1994	The Act sets up the framework for the integrated management and protection of catchments in Victoria, it encourages community participation in the management of land and water resources, and creates a system of controls on noxious weeds and pest animals.
Yarra River Protection Act 2017	The Act gives effect to the development of a long-term Community Vision and a Yarra Strategic Plan. The Act also established a new statutory body, the Birrarung Council. The Birrarung Council is the first independent voice of the Yarra River, Birrarung, as a single, living entity.
Water Act 1989	The Water Act 1989 (Vic) plays a central part in providing a legal framework that protects rights to water and entitlements for all Victorians. Many groups and individuals have interests in water, so dividing up these rights and allocating them properly helps everyone have fair and equitable access to water.
Planning and Environment Act 1987	The purpose of the Act is to establish a framework for planning the use, development and protection of land in Victoria.
Environment Protection Act 1997	The main purposes of the Act include: providing for the EPA and its governance structure. specifying that EPA's objective is to protect human health and the environment by reducing the harmful effects of pollution and waste. setting out 11 principles of environment protection.
Prevention of Cruelty to Animals Act 1986	Prevention of Cruelty to Animals Act 1986. The Prevention of Cruelty to Animals Act 1986 (POCTA Act) aims to prevent cruelty to animals, encourage considerate treatment of animals and improve community awareness about preventing cruelty to animals.
Protecting Victoria's Environment – Biodiversity 2037	This policy framework has been developed to ensure the conservation and enhancement of the state's natural environment and biodiversity. It is designed to secure a healthy, resilient and sustainable environment for current and future generations, supporting both ecological and human wellbeing.
Victorian Planning Authority's Biodiversity Conservation Strategy: Protecting biodiversity in	The Biodiversity Conservation Strategy (BCS) is the overarching strategy for protecting biodiversity in Victoria's growth corridors. It outlines all relevant matters of national and state environmental significance, including matters covered in the Environment Protection and Biodiversity Conservation Act 1999.

Title	Brief description
Victoria's growth corridors.	
Local	
Melbourne Water Corporate Plan 2023 – 24 to 2027 – 28	The Corporate Plan outlines Melbourne Waters strategic direction, priorities and initiatives. The plan serves as a roadmap for achieving Melbourne Water's mission of enhancing life and liveability.
Melbourne Water Environment Policy	This Policy supports Melbourne Water's vision to enhance life and liveability across greater Melbourne and the surrounding region by creating a Healthy Environment, Healthy People and Healthy Places. It applies to all Melbourne Water activities, staff and contractors that can impact on the environment. The environment policy seeks to outline the approach Melbourne Water will take to protect the environment and minimise risks to the environment when operating to supply affordable, high-quality water, provide reliable sewerage treatment and resource recovery, manage healthy waterways, provide integrated drainage management and flood resiliency, and maintain outstanding natural community spaces. Environmental management at Melbourne Water is based on the Plan – Do - Check - Act methodology and is aligned to the principles of ISO 14001:2015 environmental management system standard. The policy is approved by the Board, with oversight from the Finance, Audit and Compliance Committee (FACC). It is reviewed every two years to ensure relevance to the operating environment of the organisation.
Regional Catchment Strategy	The Port Phillip and Western Port Regional Catchment Strategy broadly describes how land, water and biodiversity is managed across the region, highlights the connections between them, and identifies targets for the future health and resilience of the region's environment.
Healthy Waterways Strategy	The Healthy Waterways Strategy 2018-28 sets a long-term vision for managing the health of rivers, wetlands and estuaries in the Port Phillip and Western Port region, in order to protect and improve their value to the community.
Port Phillip and Western Port NRM Plan	This plan aims to: ▪ Identify how the delivery of existing and potential future projects will contribute to the Australian Government Regional Land Partnership Program outcomes and investment priorities for the region ▪ Reflect stakeholder aspirations, including Indigenous peoples' land and sea management aspirations ▪ Identify how actions will be implemented with comprehensive community participation ▪ Identify the key collaborations and partnerships for delivery ▪ Identify the monitoring and reporting processes that will be used to measure the achievements and effectiveness of the plan.
Burndap Birrarung burndap umarkoo - Yarra Strategic Plan 2022–2032 (Yarra Strategic Plan)	This is a 10-year plan that establishes a collaborative management model to protect and enhance the Yarra River and its parklands for a place of refuge and recreation, as one living and integrated natural entity.
Waterways and Drainage Investment Plan	The Waterways and Drainage Investment Plan outlines strategic investment to manage and enhance the region's waterways and drainage systems. The plan aims to improve the health of waterways, manage stormwater effectively and enhance the resilience of urban environments to flooding and climate change impacts. The plan is built around three key investment priorities: ▪ Upgrading drainage infrastructure ▪ Restoring and rehabilitating waterways and natural habitats ▪ Implementing sustainable water management practices.

Title	Brief description
	The plan supports the long-term vision for the regions waterways, aligning with broader environmental policies and strategies to foster sustainable development and climate resilience.
Nature in the City, Thriving Biodiversity and Healthy Ecosystems to 2027 (Melbourne City Council)	Sets out goals and targets to strengthen the protection of ecosystems and enhance liveability in the city. The plan seeks to contribute to the achievement of regional, stage, national and international biodiversity strategies.
Bayside Biodiversity Action Plan 2018-2027 (Bayside City Council)	This biodiversity Action Plan outlines the specific actions that will be implemented to meet the strategic objectives of the council's *Environmental Sustainability Framework 2016-2025*, community aspirations and addresses recommendations presented in Ecology Australia's (2017a) Ecological data review for the Bayside City Council Municipality.
City of Glen Eira Biodiversity Plan	Draft under development. Final plan due September 2024
City of Kingston Biodiversity Strategy 2018 - 2023	The City of Kingston Biodiversity Strategy sets out goals and strategic objectives for protecting, preserving and improving biodiversity within Council's Natural Resource Areas (NRA). It also includes an action plan to be implemented over time to ensure goals and objectives are met.
Frankston City Council Biodiversity Action Plan 2021 - 2036	The purpose of this plan is to collate and analyse existing data relevant to biodiversity in Frankston, identify knowledge gaps, and consider potential future threats to biodiversity. Following the analysis an Action Plan is provided which contains outline targeted, achievable actions to enhance biodiversity across all land in Frankston City.
Mornington Peninsula Biodiversity Conservation Action Plan	The Biodiversity Conservation Plan identifies the long-term goals for conserving the natural capital of the Mornington Peninsula. The Plan seeks to protect and improve the resilience of the Mornington Peninsula's natural landscapes, ecosystems and biodiversity.
City of Casey Biodiversity Strategy	The Biodiversity Strategy guides the planning, protection, engagement and restoration of biodiversity for the benefit of current and future generations.
Growing Nature Together - Greater Dandenong's Biodiversity Action Plan 2023-2025	The Biodiversity Action Plan seeks to achieve the vision 'The City of Greater Dandenong's ecosystems are resilient, healthy, connected and contributing to the wellbeing of current and future generations'. The key objectives of the plan are to: ▪ Care for nature ▪ Share and build knowledge of nature ▪ Foster care for nature on private land ▪ Manage threats to nature ▪ Connect with nature.

Appendix 2: Full list of key species for each ecosystem unit

The list of key species identified for each ecosystem unit in the PPW region is shown in Table A2-1. The key species are listed as critically endangered, endangered or vulnerable under the FFG Act 1988 and have 5 per cent or more of their proportional distribution within the ecosystem unit based on habitat distribution models from DEECA's Strategic Management Prospects.

Table A2-1: List of key species within each ecosystem unit in the PPW region.

Key species		FFG Act 1988 – conservation status	Proportional distribution[10]
Common Name	**Scientific Name**		
Bulla Ecosystem Unit			
Grassland Earless Dragon	*Tympanocryptis pinguicolla*	Critically endangered	9.87%
Brittle Greenhood	*Pterostylis truncata*	Critically endangered	6.96%
Werribee Blue-box	*Eucalyptus baueriana subsp. Thalassina*	Endangered	13.26%
Austral Tobacco	*Nicotiana suaveolens*	Endangered	6.74%
Fragrant Saltbush	*Rhagodia parabolica*	Vulnerable	12%
Heath Spear-grass	*Austrostipa exilis*	Vulnerable	6.54%
Bacchus Marsh Wattle	*Acacia rostriformis*	Vulnerable	11.47%
Edithvale-Seaford Ecosystem Unit			
No species with 5 per cent or more of their proportional distribution within the ecosystem unit			
French Island Ecosystem Unit			
French Island Spider-orchid	*Caladenia insularis*	Endangered	100%
Swamp Pelican-orchid	*Corybas fordhamii*	Endangered	22.25%
Slender Leek-orchid	*Prasophyllum parviflorum*	Endangered	9.68%
King Quail	*Coturnix chinensis victoriae*	Endangered	6.87%
Melton Ecosystem Unit			
Brittle Greenhood	*Pterostylis truncata*	Critically endangered	60.73%
Grassland Earless Dragon	*Tympanocryptis pinguicolla*	Critically endangered	48.22%
Drooping Mistletoe	*Amyema pendula subsp. longifolia*	Critically endangered	35.42%
Sunshine Diuris	*Diuris fragrantissima*	Critically endangered	33.64%

[10] Predicted proportional habitat distribution within the ecosystem unit based on DEECA Strategic Management Prospects Habitat Distribution Modelling.

Key species		FFG Act 1988 – conservation status	Proportional distribution[10]
Common Name	Scientific Name		
Hairy-leaf Triggerplant	*Stylidium armeria subsp. pilosifolium*	Critically endangered	17.77%
Large-headed Fireweed	*Senecio macrocarpus*	Critically endangered	8.31%
Matted Flax-lily	*Dianella amoena*	Critically endangered	5.64%
Plump Swamp Wallaby-grass	*Amphibromus pithogastrus*	Critically endangered	5.45%
Spiny Rice-flower	*Pimelea spinescens subsp. spinescens*	Critically endangered	75.98%
Werribee Blue-box	*Eucalyptus baueriana subsp. thalassina*	Endangered	55.75%
Brisbane Range Grevillea	*Grevillea steiglitziana*	Endangered	47.55%
Gum-barked Bundy	*Eucalyptus goniocalyx subsp. laxa*	Endangered	33.76%
Rough Wattle	*Acacia aspera subsp. parviceps*	Endangered	23.98%
Melbourne Yellow-gum	*Eucalyptus leucoxylon subsp. connata*	Endangered	22.79%
Austral Tobacco	*Nicotiana suaveolens*	Endangered	16.37%
Basalt Podolepis	*Podolepis linearifolia*	Endangered	10.92%
Velvet Daisy-bush	*Olearia pannosa subsp. cardiophylla*	Endangered	9.60%
Red-chested Button-quail	*Turnix pyrrhothorax*	Endangered	9.37%
Small Scurf-pea	*Cullen parvum*	Endangered	8.19%
Coast Saltwort	*Salsola tragus subsp. pontica*	Endangered	8.02%
Pale-flower Crane's-bill	*Geranium sp. 3*	Endangered	6.67%
Button Wrinklewort	*Rutidosis leptorhynchoides*	Endangered	5.8%
Cane Spear-grass	*Austrostipa breviglumis*	Endangered	5.74%
Dense Mint-bush	*Prostanthera decussata*	Endangered	5.46%
Brackish Plains Buttercup	*Ranunculus diminutus*	Endangered	75.98%
Golden Bush-pea	*Pultenaea gunnii subsp. tuberculata*	Vulnerable	66.68%
Fragrant Saltbush	*Rhagodia parabolica*	Vulnerable	66.05%
Heath Spear-grass	*Austrostipa exilis*	Vulnerable	53.6%
Bacchus Marsh Wattle	*Acacia rostriformis*	Vulnerable	44%
Shiny Leionema	*Leionema lamprophyllum subsp. obovatum*	Vulnerable	24.06%
Tangled Pseudanthus	*Pseudanthus orbicularis*	Vulnerable	12.23%
Snowy Mint-bush	*Prostanthera nivea var. nivea*	Vulnerable	11.99%

Key species		FFG Act 1988 – conservation status	Proportional distribution[10]
Common Name	**Scientific Name**		
Variable Goodenia	*Goodenia heterophylla subsp. heterophylla*	Vulnerable	7.65%
Yellow Burr-daisy	*Calotis lappulacea*	Vulnerable	6.42%
Mornington Peninsula Ecosystem Unit			
Frankston Spider-orchid	*Caladenia robinsonii*	Critically endangered	79.07%
Mount Martha Bundy	*Eucalyptus carolaniae*	Critically endangered	77.95%
Late Helmet-orchid	*Corybas sp. aff. diemenicus (Coastal)*	Critically endangered	14.03%
Marsh Sun-orchid	*Thelymitra longiloba*	Critically endangered	9.71%
Dense Leek-orchid	*Prasophyllum spicatum*	Critically endangered	5.52%
Australian Mudfish	*Neochanna cleaveri*	Endangered	40.36%
Coast Helmet-orchid	*Corybas despectans*	Endangered	32.94%
Peninsula Daisy-bush	*Olearia sp. 2*	Endangered	20.61%
Coast Wirilda	*Acacia uncifolia*	Endangered	17.12%
Coast Bush-pea	*Pultenaea canaliculata*	Endangered	16.95%
Purple Eyebright	*Euphrasia collina subsp. muelleri*	Endangered	15.32%
Coast Saltwort	*Salsola tragus subsp. pontica*	Endangered	13.96%
Coast Colobanth	*Colobanthus apetalus var. apetalus*	Endangered	11.65%
Dune Wood-sorrel	*Oxalis rubens*	Endangered	8.28%
Netted brake	*Pteris comans*	Endangered	7.77%
Green Leek-orchid	*Prasophyllum lindleyanum*	Endangered	6.94%
Dune Poa	*Poa poiformis var. ramifer*	Endangered	6.88%
Leafy Greenhood	*Pterostylis cucullata subsp. cucullata*	Endangered	6.52%
Alpine Marianth	*Rhytidosporum inconspicuum*	Endangered	6.04%
Coast Fescue	*Poa billardierei*	Endangered	5.77%
Mauve-tuft Sun-orchid	*Thelymitra malvina*	Endangered	5.10%
Promontory Peppermint	*Eucalyptus willisii s.s.*	Vulnerable	10.33%
Phillip Island Ecosystem Unit			
Crimson Berry	*Leptecophylla juniperina subsp. oxycedrus*	Critically endangered	7.29%
Australian Grass-wrack	*Heterozostera nigricaulis*	Endangered	6.90%
Coast Saltwort	*Salsola tragus subsp. pontica*	Endangered	6.44%

Key species		FFG Act 1988 – conservation status	Proportional distribution[10]
Common Name	**Scientific Name**		
Werribee South Ecosystem Unit			
Drooping Mistletoe	*Amyema pendula subsp. longifolia*	Critically endangered	30.59%
Sea Water-mat	*Althenia marina*	Critically endangered	26.81%
Orange-bellied Parrot	*Neophema chrysogaster*	Critically endangered	22.17%
Sunshine Diuris	*Diuris fragrantissima*	Critically endangered	12.82%
Hairy Shepherd's Purse	*Microlepidium pilosulum*	Critically endangered	8.58%
Tasman Grass-wrack	*Heterozostera tasmanica*	Endangered	43.83%
Coast Saltwort	*Salsola tragus subsp. pontica*	Endangered	31.64%
Australian Grass-wrack	*Heterozostera nigricaulis*	Endangered	9.48%
Shore Spleenwort	*Asplenium obtusatum subsp. northlandicum*	Endangered	6.83%
Western Port Coast Ecosystem Unit			
Marsh Saltbush	*Atriplex paludosa subsp. paludosa*	Endangered	8.32%
Australian Mudfish	*Neochanna cleaveri*	Endangered	7.23%
Coast Saltwort	*Salsola tragus subsp. pontica*	Endangered	6.30%
Australian Grass-wrack	*Heterozostera nigricaulis*	Endangered	5.21%
Lesser Sand Plover	*Charadrius mongolus*	Endangered	5.08%
Wombat State Forest Ecosystem Unit			
Hairy-leaf Triggerplant	*Stylidium armeria subsp. pilosifolium*	Critically endangered	11.64%
Creeping Grevillea	*Grevillea repens*	Endangered	8.45%
Swamp Bush-pea	*Pultenaea weindorferi*	Endangered	5.45%
Yarra Valley North			
Little Pink Spider-orchid	*Caladenia rosella*	Critically endangered	98.85%
Charming Spider-orchid	*Caladenia amoena*	Critically endangered	92.10%
Kilsyth South Spider-orchid	*Caladenia sp. aff. venusta (Kilsyth South)*	Critically endangered	17.42%
Round-leaf Pomaderris	*Pomaderris vacciniifolia*	Critically endangered	15.41%
Common Bent-wing Bat (eastern ssp.)	*Miniopterus schreibersii oceanensis*	Critically endangered	6.79%
Pale Hickory-wattle	*Acacia sporadica*	Critically endangered	6.36%
Helmeted Honeyeater	*Lichenostomus melanops cassidix*	Critically endangered	5.13%
Red-tip Greenhood	*Pterostylis sp. aff. parviflora (Southern Victoria)*	Endangered	30.61%

Key species		FFG Act 1988 – conservation status	Proportional distribution[10]
Common Name	**Scientific Name**		
Dandenong Wattle	*Acacia stictophylla*	Endangered	24.91%
Creeping Grevillea	*Grevillea repens*	Endangered	18.11%
Skirted Bent-grass	*Deyeuxia talariata*	Endangered	14.83%
Slender Stylewort	*Levenhookia sonderi*	Endangered	11.30%
Swamp Bush-pea	*Pultenaea weindorferi*	Endangered	9.30%
Early Forest-gentian	*Gentianella polysperes*	Endangered	6.85%
Forest Bitter-cress	*Cardamine papillata*	Endangered	6.55%
Pale-flower Crane's-bill	*Geranium sp. 3*	Endangered	6.45%
Short Water-starwort	*Callitriche brachycarpa*	Endangered	6.21%
Green Scentbark	*Eucalyptus fulgens*	Endangered	5.96%
Australian Mudfish	*Neochanna cleaveri*	Endangered	5.89%
Slender Mint-bush	*Prostanthera saxicola var. bracteolata*	Endangered	5.84%
Large-leaf Cinnamon-wattle	*Acacia leprosa var. uninervia*	Endangered	5.73%
Velvet Apple-berry	*Billardiera scandens s.s.*	Endangered	5.65%
Melbourne Yellow-gum	*Eucalyptus leucoxylon subsp. connata*	Endangered	5.60%
Long Pink-bells	*Tetratheca stenocarpa*	Endangered	5.39%
Green Leek-orchid	*Prasophyllum lindleyanum*	Endangered	5.08%
Bacchus Marsh Wattle	*Acacia rostriformis*	Vulnerable	35.93%
Purple Eyebright	*Euphrasia collina subsp. trichocalycina*	Vulnerable	35.69%
Clustered Lily	*Thelionema umbellatum*	Vulnerable	9.67%
Tangled Pseudanthus	*Pseudanthus orbicularis*	Vulnerable	8.89%
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	7.08%
Brush-tailed Phascogale	*Phascogale tapoatafa*	Vulnerable	5.26%
Yarra Valley South			
Helmeted Honeyeater	*Lichenostomus melanops cassidix*	Critically endangered	85.40%
White Star-bush	*Asterolasia asteriscophora subsp. albiflora*	Critically endangered	84.58%
Kilsyth South Spider-orchid	*Caladenia sp. aff. venusta (Kilsyth South)*	Critically endangered	48.37%
Round-leaf Pomaderris	*Pomaderris vacciniifolia*	Critically endangered	21.87%
Gully Grevillea	*Grevillea barklyana*	Critically endangered	20.67%
Christmas Spider-orchid	*Caladenia flavovirens*	Critically endangered	19.22%

Key species		FFG Act 1988 – conservation status	Proportional distribution[10]
Common Name	Scientific Name		
Shiny Nematolepis	*Nematolepis wilsonii*	Endangered	10.81%
Dandenong Wattle	*Acacia stictophylla*	Endangered	59.62%
Powelltown Correa	*Correa reflexa var. lobata*	Endangered	39.78%
Brickmaker's Sedge	*Gahnia grandis*	Endangered	36.3%
Long Pink-bells	*Tetratheca stenocarpa*	Endangered	36.25%
Swamp Bush-pea	*Pultenaea weindorferi*	Endangered	31.93%
Green Scentbark	*Eucalyptus fulgens*	Endangered	28.64%
Red-tip Greenhood	*Pterostylis sp. aff. parviflora (Southern Victoria)*	Endangered	26.50%
Large-leaf Cinnamon-wattle	*Acacia leprosa var. uninervia*	Endangered	17.93%
Spurred Helmet-orchid	*Corybas aconitiflorus*	Endangered	14.66%
Fairy Lanterns	*Thismia rodwayi*	Endangered	12.81%
Jungle Bristle-fern	*Cephalomanes caudatum*	Endangered	10.90%
Silky Golden-tip	*Goodia pubescens*	Endangered	10.82%
Green Leek-orchid	*Prasophyllum lindleyanum*	Endangered	8.86%
Tall Astelia	*Astelia australiana*	Endangered	8.01%
Nunniong Everlasting	*Ozothamnus rogersianus*	Endangered	7.55%
Forest Sedge	*Carex alsophila*	Endangered	7.55%
Forest Phebalium	*Phebalium squamulosum subsp. squamulosum*	Endangered	6.81%
Varied Mitrewort	*Mitrasacme polymorpha*	Endangered	6.53%
Wiry Bossiaea	*Bossiaea cordigera*	Endangered	6.19%
Clustered Lily	*Thelionema umbellatum*	Vulnerable	10.36%
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	6.38%

Appendix 3: List of stakeholders consulted

Consultation methods included scoping interviews at project initiation to shape development of the BCAP; two internal workshops with Melbourne Water to develop the themes, objectives and actions; one on one interviews with Melbourne Water to refine the themes, objectives and actions that will further embed biodiversity conservation and management within the organisation; four external stakeholder workshops to test, refine and finalise the spatial priorities and inform the cost-benefit analysis; targeted follow up with external stakeholders to finalise the spatial priorities and cost-benefit analysis. A list of stakeholders consulted to inform the development of biodiversity priorities across the PPW region is provided in Table A3-1 below.

Table A3-1: List of key stakeholders consulted and the method of engagement

Stakeholder	Organisation	Consultation method
Darren Quin	Birdlife Australia	▪ Scoping interview
Chris Purnell	Birdlife Australia	▪ Scoping interview
Andrea White	Department of Energy, Environment and Climate Action (DEECA)	▪ Scoping interview
Billy Geary	Department of Energy, Environment and Climate Action (DEECA)	▪ Scoping interview ▪ Targeted follow up
Adam Muir	Department of Energy, Environment and Climate Action (DEECA)	▪ Scoping interview
Nathan McDonald	Department of Energy, Environment and Climate Action (DEECA)	▪ External stakeholder workshop
Steve Sinclair	Department of Energy, Environment and Climate Action (DEECA)	▪ External stakeholder workshop ▪ Targeted follow up
James Johnson	Department of Energy, Environment and Climate Action (DEECA)	▪ Targeted follow up
Jeremy Hindell	Department of Energy, Environment and Climate Action (DEECA)	▪ Targeted follow up
Jonathan Wilson	Department of Energy, Environment and Climate Action (DEECA)	▪ Targeted follow up
David Fairbridge	Frankston City Council	▪ Stakeholder interview ▪ External stakeholder workshops
Vanessa Hutchins	Wyndham City Council	▪ Stakeholder interview ▪ External stakeholder workshops
Kate Lumb	Melbourne Water	▪ Internal workshops ▪ External stakeholder workshops
Belinda Lovell	Melbourne Water	▪ Scoping interview
Rhys Coleman	Melbourne Water	▪ Scoping interview ▪ Internal workshops
Will Steele	Melbourne Water	▪ Scoping interview ▪ Internal workshops ▪ External stakeholder workshops
Trent Griffiths	Melbourne Water	▪ Scoping interview ▪ Internal workshops
Tim Sanders	Melbourne Water	▪ Scoping interview

Stakeholder	Organisation	Consultation method
		▪ Internal workshop
Olivia Wright	Melbourne Water	▪ Scoping interview
Kristen Shelly	Melbourne Water	▪ Scoping interview
Kristen Coster	Melbourne Water	▪ Scoping interview
Sridevi Patnaikuni	Melbourne Water	▪ Scoping interview ▪ Internal workshops
Gail Hall	Melbourne Water	▪ Scoping interview
Lauren Mittiga	Melbourne Water	▪ Scoping interview ▪ Internal workshop
Ellen Mitchell	Melbourne Water	▪ Scoping interview ▪ Internal workshops
Nathan Ackland	Melbourne Water	▪ Scoping interview
Yvonne Cabuang	Melbourne Water	▪ Internal workshops
Geraldine Plas	Melbourne Water	▪ Internal workshops
Trish Grant	Melbourne Water	▪ Internal workshops
Grace Tjandraaamadja	Melbourne Water	▪ Internal workshops
Bronwen Hutchinson	Melbourne Water	▪ Internal workshops
Vivienne Fraser	Melbourne Water	▪ Internal workshops
Anna Lucas	Melbourne Water	▪ Internal workshops
Lauren Mittiga	Melbourne Water	▪ Internal workshops
Corinne Mays	Melbourne Water	▪ Internal workshops
Digby Richardson	Melbourne Water	▪ One on one interviews
Katy Marriott	Melbourne Water	▪ One on one interviews
Michelle Ezzy	Melbourne Water	▪ One on one interviews
Sacha Jellinek	Melbourne Water	▪ One on one interviews
Suelin Haynes	Melbourne Water	▪ One on one interviews
Sharyn Rossrakesh	Melbourne Water	▪ One on one interviews
Peter Kemp	Parks Vic	▪ Scoping interview ▪ External stakeholder workshops ▪ Targeted follow up
Louise Bracy	Parks Vic	▪ External stakeholder workshops
Sarah Canham	Parks Vic	▪ External stakeholder workshops
Duncan Sutherland	Phillip Island Nature Park	▪ Scoping interview ▪ External stakeholder workshops ▪ Targeted follow up
Ben Thomas	Phillip Island Nature Park	▪ Targeted follow up
Maria Schreider	Phillip Island Nature Park	▪ Targeted follow up

Stakeholder	Organisation	Consultation method
Tim Allen	Department of Climate Change, Energy and Water (DCCEW)	▪ Scoping interview
Ben Cullen	Trust for Nature	▪ Scoping interview ▪ External stakeholder workshops ▪ Targeted follow up
Amy Coetsee	Zoos Victoria	▪ Scoping interview
Dan Harley	Zoos Victoria	▪ Scoping interview ▪ Targeted follow up
Garry Peterson	Zoos Victoria	▪ Scoping interview ▪ External stakeholder workshops
Mike Magrath	Zoos Victoria	▪ Scoping interview
Sarah Eccles	Wadawurrung	▪ Scoping interview
Richard Lyon	Independent consultant	▪ External stakeholder workshops

Appendix 4: Summary of cost-benefit analysis results

A summary of the cost-benefit analysis results for the 9 identified biodiversity priorities is provided in Table A4-1.

Table A4-1: Summary of cost-benefit analysis for biodiversity priorities in the PPW region

Priority	Five year outcome	List of significant threats to the priority	Potential management actions	Cost-benefit-score	Justification (cost-benefit score)
Buffering Ramsar Sites					
Werribee South coastal strip (Ecosystem unit: Werribee South)	By 2028, increase the condition and connectivity of coastal vegetation between priority wetlands along the coast of Werribee South	▪ Total grazing pressure ▪ Weed invasion ▪ Fox predation ▪ Cat predation ▪ Altered hydrological regime	▪ Weed control ▪ Fox control ▪ Cat control ▪ Revegetation ▪ Habitat restoration and enhancement	1	▪ **Effectiveness of management actions:** medium, the coastal strip is largely public land, close to urban development, some potential barriers (e.g. industry operations and port infrastructure) ▪ **Time lags until benefits are realised:** 5-10 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: stable, there are existing large patches of high quality coastal vegetation along the Werribee South Coastal Strip ▪ **Technical feasibility:** medium – mix of public and private land, methods for proposed works are well developed and tested ▪ **Likelihood of adoption:** medium – mix of public and private land, some challenges with making progress on private land ▪ **Cash costs (relative to historical spending within the priority area):** medium, most sites are on public land and there is recent or current investment in works to protect areas adjacent to the priority area (e.g. within the Parks Victoria estate, within the PPW (Western Shoreline) and Bellarine Peninsula Ramsar site)
Coastal strip between Hastings and Warneet (Ecosystem unit: Western Port Coast)	By 2028, improve the condition and connectivity of coastal vegetation between Hastings and Warneet	▪ Weed invasion ▪ Total grazing pressure ▪ Land clearing ▪ Fox predation ▪ Cat predation	▪ Weed control ▪ Fox control ▪ Cat control ▪ Total grazer control ▪ Revegetation ▪ Habitat restoration and enhancement ▪ Permanent protection	2	▪ **Effectiveness of management actions:** medium, medium, the coastal strip is largely public land, close to urban development, some potential barriers (e.g. existing carparks, seawalls) ▪ **Time lags until benefits are realised:** 5-10 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: stable, there are existing large patches of high quality coastal vegetation along the Western Port Coast Strip ▪ **Technical feasibility:** medium – mix of public and private land, methods for proposed works are well developed and tested ▪ **Likelihood of adoption:** medium – mix of public and private land, some challenges with making progress on private land ▪ **Cash costs (relative to historical spending within the priority area):** medium, most sites are on public land and there is recent or current investment in works to protect areas adjacent to the priority

Priority	Five year outcome	List of significant threats to the priority	Potential management actions	Cost-benefit-score	Justification (cost-benefit score)
					area (e.g. Peri-urban weeds program delivered through Casey City Council and Parks Victoria, Ramsar EC6 funding bid)
Building landscape scale condition and connectivity					
Surrounding the Western Grasslands Reserve (Ecosystem unit: Melton)	By 2028, improve the condition of the NTGVVP ecological community adjacent to or expanding out from the Western Grasslands Reserve By 2028, improve the condition of grassland dependent wetlands adjacent to or expanding out from the Western Grasslands Reserve By 2028, improve connectivity between the Western Grasslands reserve, the Werribee River and the You Yangs Regional Park By 2028, increase the area of critical habitat available for the Grassland Earless Dragon	▪ Total grazing pressure ▪ Weed invasion ▪ Land clearing ▪ Inappropriate fire regimes	▪ Weed control ▪ Habitat restoration and enhancement ▪ Improved fire regimes ▪ Total grazer control ▪ Permanent protection ▪ Revegetation	1	▪ **Effectiveness of management actions:** medium, extending habitat out from protected areas and reserves (Western Grasslands Reserve, Werribee River, You Yangs) increases the resilience of these conservation areas and aids the movement and dispersal of species along corridors which connect up larger patches of habitat ▪ **Time lags until benefits are realised:** 5-10 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: long term decline ▪ **Technical feasibility:** medium, mix of public and private land, close to urban development, existing high quality patches identified across priority area, methods for proposed works are well developed and tested ▪ **Likelihood of adoption:** medium, some parts of the priority area are already under permanent protection, some challenges with making progress on private land ▪ **Cash costs (relative to historical spending within the priority area):** high, intensive and sustained management effort overtime will be required, there are significant opportunities for co-investment and to support the leveraging of funds
Jacksons Creek (Ecosystem unit; Bulla)	By 2028, increase the condition and connectivity of riparian and escarpment vegetation along the Jackson's Creek corridor By 2028, conduct extant population surveys' for the Grassland Earless Dragon along the	▪ Total grazing pressure ▪ Weed invasion ▪ Fox predation ▪ Land clearing ▪ Inappropriate fire regimes	▪ Total grazer control ▪ Weed control ▪ Fox control ▪ Permanent protection ▪ Improved fire regimes ▪ Revegetation ▪ Habitat restoration and enhancement	1	▪ **Effectiveness of management actions:** high, opportunities to build on and contribute to the newly developed Jackson's Creek Regional Parklands ▪ **Time lags until benefits are realised:** 5-10 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: stable ▪ **Technical feasibility:** high, potential to build on strong existing partnerships, existing high quality patches of native vegetation along the creek corridor, methods for proposed works are well developed and tested ▪ **Likelihood of adoption:** high, existing high quality patches of native vegetation along the creek corridor, sites are mostly on

Priority	Five year outcome	List of significant threats to the priority	Potential management actions	Cost-benefit-score	Justification (cost-benefit score)
	Jackson's Creek corridor				public land, some parts of the priority area are protected in conservation areas ▪ **Cash costs (relative to historical spending within the priority area):** medium, based on the implementation of similar previous programs
Strengthening biodiversity hotspots					
Warrandyte to Sugarloaf Reserve (Yarra Valley North)	By 2028, link aqueducts, existing revegetation and properties under permanent protection to create habitat corridors in the areas surrounding Warrandyte State Park and Sugarloaf Reservoir Reserve By 2028, improve the condition of habitat for threatened species in the areas surrounding Warrandyte State Park and Sugarloaf Reservoir Reserve By 2028, identify and improve the condition of priority sites for threatened orchid assemblages (Little Pink Spider-orchid, Charming Spider-orchid, Kilsyth South Spider-orchid)	▪ Weed invasion ▪ Grazing pressure (deer) ▪ Grazing pressure (rabbits) ▪ Fox predation ▪ Cat predation ▪ Inappropriate fire regimes ▪ Phytophthora	▪ Weed control ▪ Rabbit control ▪ Deer control ▪ Fox control ▪ Cat control ▪ Revegetation ▪ Habitat restoration and enhancement ▪ Improved fire regimes ▪ Permanent protection	1	▪ **Effectiveness of management actions:** high, extending habitat out from established protected areas and reserves increases the resilience of these areas and aids the movement and dispersal of species along corridors which connect up larger patches of habitat ▪ **Time lags until benefits are realised:** 5-10 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: declining, highly fragmented due to urban development, subject to edge effects ▪ **Technical feasibility:** medium, methods for proposed works are well developed and tested ▪ **Likelihood of adoption:** high, focus on public land and areas of private land under permanent conservation protection ▪ **Cash costs (relative to historical spending within the priority area):** medium, based on the implementation of similar previous programs
Coastal plain from Cape Schanck northwest to St Andrews Beach and south of Rosebud	By 2028, link existing remnant vegetation to create habitat corridors in the areas surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach	▪ Weed invasion ▪ Grazing pressure (deer) ▪ Land clearing ▪ Phytophora ▪ Cat predation ▪ Fox predation	▪ Weed control ▪ Fox control ▪ Cat control ▪ Permanent protection ▪ Deer control ▪ Phytophthora control	1	▪ **Effectiveness of management actions:** high, extending habitat out from established protected areas and reserves increases the resilience of these areas and aids the movement and dispersal of species along corridors which connect up larger patches of habitat ▪ **Time lags until benefits are realised:** 5-10 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: Stable

Priority	Five year outcome	List of significant threats to the priority	Potential management actions	Cost-benefit-score	Justification (cost-benefit score)
	By 2028, improve the condition of habitat for threatened species in the areas surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach				▪ **Technical feasibility:** medium, methods for proposed works are well developed and tested, fragmented landscape due to urban development ▪ **Likelihood of adoption:** medium, this area includes a mix of public and private land managers ▪ **Cash costs (relative to historical spending within the priority area):** medium, based on the implementation of similar previous programs
Hoddles Creek to Powelltown	By 2028, improve the condition of habitat for threatened species in and surrounding the Beenak State Forest, Yarra State Forest, Beenak Nature Conseration Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds By 2028, create additional suitable habitat/refuge for Helmeted Honeyeater and Leadbeater's Possum in the Beenak State Forest, Yarra State Forest, Beenak Nature Conseration Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds	▪ Weed invasion ▪ Grazing pressure (deer) ▪ Fox predation ▪ Cat predation ▪ Inappropriate fire regimes ▪ Phytophthora ▪ Land clearing	▪ Weed control ▪ Deer control ▪ Fox control ▪ Cat control ▪ Habitat restoration and enhancement ▪ Improved fire regimes	1	▪ **Effectiveness of management actions:** high, managing the combination of threats will improve habitat for a wide range of flora and fauna species in this priority area ▪ **Time lags until benefits are realised:** within 5 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: stable, strong focus on areas protected in public reserves for conservation purposes ▪ **Technical feasibility:** medium, methods for proposed works are well developed and tested ▪ **Likelihood of adoption:** medium, this area includes a mix of public and private land managers ▪ **Cash costs (relative to historical spending within the priority area):** medium, based on the implementation of similar previous programs
Island safe havens					
French Island	By 2028, French Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species (above and beyond those prioritised in the PPW NRM Action Plan)	▪ Total grazing pressure ▪ Cat predation ▪ Weed invasion	▪ Weed control ▪ Cat control ▪ Habitat restoration and enhancement ▪ Total grazer control	1	▪ **Effectiveness of management actions:** high, habitat requirements for targeted species are know and the intervention actions are tested, success of the current feral cat eradication program ▪ **Time lags until benefits are realised:** within 5 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: improving, based on continued maintenance of benefits from previous investments, continued long-term investment

Priority	Five year outcome	List of significant threats to the priority	Potential management actions	Cost-benefit-score	Justification (cost-benefit score)
	(Create suitable habitat to support the reintroduction of targeted species by establishing insurance populations to build the resilience of those species to persist and contribute to recovery efforts through repopulation following catastrophic events)				▪ **Technical feasibility:** medium, methods for proposed works are well developed and tested ▪ **Likelihood of adoption:** high, previous works, works focused on public land, strong community interest in conserving the environmental values of the island ▪ **Cash costs (relative to historical within the priority area):** medium, based on the implementation of similar previous programs
Phillip Island	By 2028, Phillip Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species *(Create suitable habitat to support the reintroduction of targeted species by establishing insurance populations to build the resilience of those species to persist and contribute to recovery efforts through repopulation following catastrophic events)* By 2028, improve the condition of suitable habitat to facilitate the persistence of threatened species on Phillip Island	▪ Weed invasion ▪ Grazing pressure (rabbits) ▪ Fox predation ▪ Cat predation	▪ Weed control ▪ Rabbit control ▪ Habitat restoration and enhancement ▪ Predator surveillance	1	▪ **Effectiveness of management actions:** high, habitat requirements for targeted species are know and the intervention actions are tested, success of the 'fox free' island approach ▪ **Time lags until benefits are realised:** within 5 years ▪ **Can works be 'scaled up':** yes ▪ **Condition trajectory**: improving, continued and long-term investment in conservation protection works ▪ **Technical feasibility:** medium, methods for proposed works are well developed and tested ▪ **Likelihood of adoption:** medium, this area includes a mix of public and private land managers ▪ **Cash costs (relative to historical spending the priority area):** medium, based on the implementation of similar previous programs

The cost benefit-score is derived from the analysis and based on the rating of costs and benefits associated with implementing the proposed works in the priority focus area. A score of 1 or 2 indicates a program of works is likely to deliver high biodiversity benefit at a reasonable cost, a score of 3 or 4 indicates the program of works is unlikely to deliver sufficient benefits to justify investment. The cost benefit matrix used to score priority focus areas is shown in Table A-4-1 next.

Table A4-2: Cost benefit matrix used to score priority focus areas

Cost-benefit matrix				
	Benefits			
		LOW	MEDIUM	HIGH
Costs	LOW	2	1	1
	MEDIUM	3	2	1
	HIGH	4	3	2

Appendix 5: Proposed data collection plan

Table A5-1 and A5-2 provide a proposed data collection plan to track and monitor the delivery of actions, objectives and outcomes in the BCAP and demonstrate how they contribute to the delivery of the longer- and medium-term objectives/outcomes/targets set out in the Port Phillip and Western Port Regional Catchment Strategy (RCS) and the Melbourne Water Healthy Waterways Strategy (HWS).

Table A5-1 shows the annual and end of five-year measures that should be used when funding has been sourced to deliver a project within a priority focus area. The measures provide evidence that the actions have been delivered and show the impact of those actions in delivering the outcome. The plan will allow Melbourne Water and its partners to demonstrate the delivery of outcomes through the BCAP and feed into reporting against outcomes in the RCS.

Table A5-1: Proposed data collection plan for the BCAP (priority focus areas)

5-year outcome/ objective	Contributing actions	Action measures (annual)	Outcomes measures (5 year, end of BCAP)	Alignment to RCS
PRIORITY FOCUS AREA OUTCOMES				
 **Improving condition and connectivity**				
By 2028, improve the condition of the Natural Temperate Grasslands of the Victorian Volcanic Plain ecological community adjacent to or expanding out from the Western Grasslands Reserve	▪ Weed control ▪ Habitat restoration and enhancement ▪ Improved fire regimes ▪ Total grazer control ▪ Permanent protection	▪ Area of weed control (ha) ▪ Area of habitat restored or enhanced (ha) ▪ Area where fire regimes have been improved (ha) ▪ Area of grazer control (ha) and species controlled ▪ Area under permanent protection achieved through the project (ha) ▪ Area of revegetation (ha)	▪ **Baseline:** Condition of VVP grasslands vegetation within project area (floristic composition, species diversity, habitat hectares assessment) ▪ **End of BCAP:** Change in condition of VVP grasslands vegetation within project area (floristic composition, species diversity, habitat hectares assessment)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
By 2028, improve connectivity between the Western Grasslands Reserve, the Werribee River and the You Yangs Regional Park			▪ **Baseline**: Length of connected and functioning habitat within project area (km) ▪ **End of BCAP:** Change in length of connected and functioning habitat within project area (km)	▪ 20,000 hectares of revegetation is established in priority areas for habitat connectivity in the region
By 2028, improve the condition of Grassland dependent wetlands adjacent to			▪ **Baseline:** Index of Wetland condition score for wetlands in the project area	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive

5-year outcome/ objective	Contributing actions	Action measures (annual)	Outcomes measures (5 year, end of BCAP)	Alignment to RCS
or expanding out from the Western Grasslands Reserve			▪ **End of BCAP:** Change in Index of Wetland condition score for wetlands in the project area	trajectories for their extent, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
By 2028, increase the area of critical habitat available for the Victorian Grassland Earless Dragon			▪ **Baseline:** Area of critical habitat available within project area (ha) ▪ **End of BCAP:** Change in area of critical habitat available within the project (ha)	▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience
By 2028, increase the condition and connectivity of riparian and escarpment vegetation along the Jackson's Creek corridor	▪ Total grazer control ▪ Weed control ▪ Fox control ▪ Improved fire regimes ▪ Revegetation ▪ Habitat restoration and enhancement ▪ Permanent protection	▪ Area of grazer control (ha) and species controlled ▪ Area of weed control (ha) ▪ Area of fox control (ha) ▪ Area where fire regimes have been improved (ha) ▪ Area of revegetation (ha) ▪ Area of habitat restored or enhanced (ha) ▪ Area under permanent protection achieved through the project (ha)	▪ **Baseline:** Condition of escarpment vegetation within project area (floristic composition, species diversity, habitat hectares assessment) ▪ **End of BCAP:** Change in condition of escarpment vegetation within project area (floristic composition, species diversity, habitat hectares assessment) ▪ **Baseline:** Length of connected and functioning habitat within project area (km) ▪ **End of BCAP:** Change in length of connected and functioning habitat within project area (km)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
By 2028, conduct extant population surveys for the Victorian Grassland Earless Dragon along the Jackson's Creek corridor			▪ **Baseline:** Area of critical habitat available for VGED within project area (ha) ▪ **End of BCAP:** Change in area of critical habitat available for VGED within the project (ha) ▪ **Baseline:** VGED population size ▪ **End of BCAP:** Change in VGED population size	▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience

5-year outcome/ objective	Contributing actions	Action measures (annual)	Outcomes measures (5 year, end of BCAP)	Alignment to RCS
Strengthening biodiversity hotspots				
By 2028, identify and improve the condition of priority sites for threatened orchid assemblages (Little pink spider-orchid, Charming spider-orchid, Kilsyth south spider-orchid	▪ Weed control ▪ Grazer control (deer) ▪ Grazing control (rabbits) ▪ Fox control ▪ Cat control ▪ Improved fire regimes ▪ Phytophthora control	▪ Area of weed control (ha) ▪ Area of grazer control (deer) (ha) ▪ Area of grazer control (rabbits) (ha) ▪ Area of fox control (ha) ▪ Area of cat control (ha) ▪ Area where fire regimes have been improved (ha) ▪ Area of surveillance for phytophthora and record of incursions	▪ **Baseline:** Population size of threatened orchid assemblages; area of suitable habitat available for threatened orchid assemblages (based on known habitat requirements) (ha) ▪ **End of BCAP:** Change in Population size of threatened orchid assemblages; change in area of suitable habitat available for threatened orchid assemblages (based on known habitat requirements) (ha)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
By 2028, improve the condition of habitat for threatened species in the areas surrounding Warrandyte State Park, and Sugarloaf Reservoir			▪ **Baseline:** Area of suitable habitat available for key species (ha) ▪ **End of BCAP:** Change in area of suitable habitat available for key species (ha)	▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
By 2028, link aqueducts, existing revegetation and properties under permanent protection to create habitat corridors in the areas surrounding Warrandyte State Park, and Sugarloaf Reservoir			▪ **Baseline:** Length of connected and functioning habitat within project area (km) ▪ **End of BCAP:** Change in length of connected and functioning habitat within project area (km)	▪ 20,000 hectares of revegetation is established in priority areas for habitat connectivity in the region
By 2028, improve the condition of habitat for threatened species in and surrounding the Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds	▪ Weed control ▪ Deer control ▪ Fox control ▪ Cat control	▪ Area of weed control (ha) ▪ Area of grazer control (deer) (ha) ▪ Area of fox control (ha) ▪ Area of cat control (ha)	▪ **Baseline:** Area of suitable habitat available for key species (ha) ▪ **End of BCAP:** Change in area of suitable habitat available for key species (ha)	▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for

5-year outcome/ objective	Contributing actions	Action measures (annual)	Outcomes measures (5 year, end of BCAP)	Alignment to RCS
	▪ Habitat restoration and enhancement ▪ Improved fire regimes	▪ Area of habitat restored or enhanced (ha) ▪ Area where fire regimes have been improved (ha)		their population size, health and resilience ▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
By 2028, create additional suitable habitat for Helmeted honeyeater and Leadbeater's possum (lowland population) in the Beenak State Forest, Yarra State Forest, Beenak Nature Conservation Area, Kurth Kiln Regional Park, Bunyip State Park and surrounds			▪ **Baseline:** Area of critical habitat available for Helmeted honeyeater and Lowland Leadbeater's Possum within the project area (ha) ▪ End of BCAP: Change in area of critical habitat available for Helmeted Honeyeater and Lowland Leadbeater's Possum within the project area (ha)	▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience
By 2028, improve the condition of habitat for threatened species in the areas surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach	▪ Weed control ▪ Fox control ▪ Cat control ▪ Deer control ▪ Phytophthora control ▪ Permanent protection	▪ Area of weed control (ha) ▪ Area of fox control (ha) ▪ Area of cat control (ha) ▪ Area of grazer control (deer) (ha) ▪ Area of surveillance for phytophthora and record of incursions ▪ Area under permanent protection achieved through the project (ha)	▪ **Baseline:** Area of suitable habitat available for key species (ha) ▪ **End of BCAP:** Change in area of suitable habitat available for key species (ha)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region

5-year outcome/ objective	Contributing actions	Action measures (annual)	Outcomes measures (5 year, end of BCAP)	Alignment to RCS
By 2028, link existing remnant vegetation to create habitat corridors in the area surrounding Tootgarook Swamp, Peninsula Gardens Bushland Reserve and St Andrews Beach			▪ **Baseline:** Length of connected and functioning habitat within project area (km) ▪ **End of BCAP:** Change in length of connected and functioning habitat within project area (km)	▪ 20,000 hectares of revegetation is established in priority areas for habitat connectivity in the region
Buffering Ramsar sites				
By 2028, increase the condition and connectivity of coastal vegetation between priority wetlands along the coast of Werribee South	▪ Weed control ▪ Fox control ▪ Cat control ▪ Revegetation ▪ Habitat restoration and enhancement	▪ Area of weed control (ha) ▪ Area of fox control (ha) ▪ Area of cat control (ha) ▪ Area of revegetation (ha) ▪ Area of habitat restored or enhanced (ha)	▪ **Baseline:** Condition of coastal vegetation within project area (floristic composition, species diversity, habitat hectares assessment) ▪ **End of BCAP:** Change in condition of coastal vegetation within project area (floristic composition, species diversity, habitat hectares assessment) ▪ **Baseline:** Length of connected and functioning habitat within project area (km) ▪ **End of BCAP:** Change in length of connected and functioning habitat within project area (km)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
By 2028, increase the condition and connectivity of coastal vegetation between Hastings and Warneet	▪ Weed control ▪ Fox control ▪ Cat control ▪ Total grazer control ▪ Revegetation ▪ Habitat restoration and enhancement ▪ Permanent protection	▪ Area of weed control (ha) ▪ Area of fox control (ha) ▪ Area of cat control (ha) ▪ Area of grazer control (ha) and species ▪ Area of revegetation (ha) ▪ Area of habitat restored or enhanced (ha) ▪ Area under permanent protection achieved through the project (ha)Area of habitat restored or enhanced (ha)	▪ **Baseline:** Condition of coastal vegetation within project area (floristic composition, species diversity, habitat hectares assessment) ▪ **End of BCAP:** Change in condition of coastal vegetation within project area (floristic composition, species diversity, habitat hectares assessment) ▪ **Baseline:** Length of connected and functioning habitat within project area (km) ▪ **End of BCAP:** Change in length of connected and functioning habitat within project area (km)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region

5-year outcome/ objective	Contributing actions	Action measures (annual)	Outcomes measures (5 year, end of BCAP)	Alignment to RCS
Enhancing island 'safe havens'				
By 2028, the condition of suitable habitat to facilitate persistence of threatened species on Phillip Island is improved	▪ Weed control ▪ Rabbit control ▪ Habitat restoration and enhancement ▪ Predator surveillance	▪ Area of weed control (ha) ▪ Area of grazer control (rabbits) (ha) ▪ Area of habitat restored or enhanced (ha) ▪ Area of predator surveillance and record of incursions	▪ **Baseline:** Area of suitable habitat available for targeted threatened species within the project area (ha) ▪ **End of BCAP:** Change in area of suitable habitat available for targeted threatened species within the project area (ha)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
By 2028, Phillip Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species			▪ **Baseline:** Area of suitable habitat available for species targeted for reintroduction (ha) ▪ **End of BCAP:** Change in area of suitable habitat available for species targeted for reintroduction (ha)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region

5-year outcome/ objective	Contributing actions	Action measures (annual)	Outcomes measures (5 year, end of BCAP)	Alignment to RCS
By 2028, French Island is a 'safe haven' providing suitable habitat to support the reintroduction of targeted captive bred species (above and beyond those prioritised in the NRM Action Plan)	▪ Weed control ▪ Cat control ▪ Habitat restoration and enhancement ▪ Total grazer control	▪ Area of weed control (ha) ▪ Area of cat control (ha) ▪ Area of habitat restored or enhanced (ha) ▪ Area of grazer control (ha) and species	▪ **Baseline:** Area of suitable habitat available for species targeted for reintroduction (ha) ▪ **End of BCAP:** Change in area of suitable habitat available for species targeted for reintroduction (ha)	▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Maintain the diversity of native animal species in the region ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region

Table A5-2: Proposed data collection plan for the BCAP (internal to Melbourne Water)

5-year objective	Contributing actions	Measures	Alignment to HWS and RCS
THEME 1: Protecting native biodiversity across our catchment			
Melbourne Water is the lead agency guiding, facilitating and actioning biodiversity conservation efforts both across the catchment and on Melbourne Water land	Continue the programs Melbourne Water have in place to protect, maintain and enhance biodiversity assets on **land that is owned and/or managed by Melbourne Water** where there is a clear legislative driver and obligation to protect biodiversity. These programs include: ▪ Sites of Biodiversity Significance (SoBS) ▪ Ramsar site management ▪ Healthy Waterways Strategy ▪ Internal Biodiversity Fund ▪ Community Grants.	▪ Change in area of critical habitat for species listed under the EPBC Act 1999 and FFG Act 1988 protected (ha) ▪ Change in area of critical habitat for species listed under the EPBC Act 1999 and FFG Act 1988 enhanced (ha) ▪ Increased occurrence of species listed under the EPBC Act 1999 and FFG Act 1988 at SoBS sites ▪ Change in area of habitat for threatened species listed under the EPBC Act 1999 and FFG Act 1988 protected through the community grants scheme (ha) ▪ Change in area of habitat for threatened species listed under the EPBC Act 1999 and FFG Act 1988 enhanced through the community grants scheme (ha) ▪ Length (km) and area (ha) of biolinks connecting patches of existing remnant habitat for threatened species ▪ Reporting on population trends (particularly key species identified in the BCAP) ▪ Documented compliance with biodiversity-related regulations	▪ Increased vegetation extent along waterways ▪ Improved vegetation quality along waterways ▪ Improved wetland vegetation condition ▪ Improved wetland water regimes ▪ The ecological conditions of the Western Port Ramsar Wetland and Port Phillip Bay (Western Shoreline) Ramsar Wetland and Edithvale-Seaford Ramsar wetland are maintained or improved ▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region
	Adopt the policy position of ‘no further natural wetland extent loss’ within Melbourne Water based on recommendations in the Policy Briefing Note: Protection of Natural Wetlands in the Melbourne Region (Boon and Jacobs, 2024).	▪ The ‘no further natural wetland extent loss’ policy position is adopted	▪ Improved wetland vegetation condition ▪ Improved wetland water regimes ▪ The ecological conditions of the Western Port Ramsar Wetland and Port Phillip Bay (Western Shoreline) Ramsar Wetland and Edithvale-Seaford Ramsar wetland are maintained or improved
	Develop and adopt Board approved organisational messaging and a position statement on the importance of biodiversity and Melbourne Water’s role and obligations in biodiversity conservation.	▪ Board endorsed and approved biodiversity messaging and position statement developed	▪ N/A

5-year objective	Contributing actions	Measures	Alignment to HWS and RCS
	Utilise spatial prioritisation mapping from the Biodiversity Conservation Action Plan (BCAP 2024-2028) to guide co-design processes over the next five years, ensuring maps and spatial data are accessible to Melbourne Water staff and external stakeholders.	▪ Level of use of the BCAP maps and data by Melbourne Water staff and by external stakeholders ▪ Examples where prioritised maps are driving investment - e.g. how well does investment align with the mapped priorities ▪ Number of co-designed partner projects that have used the mapping in the BCAP 2024 – 2028 ▪ Survey of spatial data users (internal and external) to understand how spatial products are being used, their accessibility and adequacy in planning processes	▪ Increased vegetation extent along waterways ▪ Improved vegetation quality along waterways ▪ Improved wetland vegetation condition ▪ Improved wetland water regimes ▪ The ecological conditions of the Western Port Ramsar Wetland and Port Phillip Bay (Western Shoreline) Ramsar Wetland and Edithvale-Seaford Ramsar wetland are maintained or improved ▪ Wild populations of all threatened native animal species in the region are retained and have positive trajectories for their population size, health and resilience ▪ All threatened native vegetation species and ecological communities in the region are retained and have positive trajectories for their extent, health and resilience ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region ▪ 20,000 hectares of revegetation is established in priority areas for habitat connectivity in the region
	Update the Regional Catchment Strategy (RCS) prospectus to incorporate biodiversity priorities listed in the BCAP 2024-2028 and the Emergency Preparedness and Response Plan (EPRP) 2024, ensuring it supports long-term, investment pathways through partnerships.	▪ RCS prospectus updated to incorporates BCAP 2024 - 2028 priorities and EPRP 2024 priorities	▪ N/A
	Evaluate how existing partnerships and collaborations are contributing to Integrated Catchment Management (ICM) and biodiversity outcomes, and where appropriate, further build and strengthen these.	▪ Number of new partnerships established ▪ Number and type of partners engaged ▪ Amount of funding contribution from partners to biodiversity projects within priority focus areas of the BCAP 2024 – 2028 ($) ▪ Number and type of partnerships or collaborations that are contributing to Integrated Catchment Management (ICM) and biodiversity outcomes	▪ N/A

5-year objective	Contributing actions	Measures	Alignment to HWS and RCS
	Develop new strategic partnerships with targeted stakeholders to increase Integrated Catchment Management (ICM) and biodiversity outcomes.	▪ Number of new strategic partnerships developed ▪ Number and type of partners engaged ▪ Stakeholders targeted ▪ Amount of funding contribution from partners to integrated catchment management and biodiversity projects ($)	▪ N/A
	Support an ICM approach to land stewardship through the Climate Smart Ag Project and incorporate protection of natural capital in project outcomes.	▪ No of landholders that are improving natural capital on their property through biodiversity action plans, re-vegetation for co-benefits and fauna monitoring for healthy ecosystem indicator species (frogs, birds, macroinvertebrates)	▪ Increased vegetation extent along waterways ▪ Improved vegetation quality along waterways ▪ Improved wetland vegetation condition ▪ Pest herbivore control is maintained for at least 120,000 hectares of priority areas, and weed control is maintained for at least 40,000 hectares in priority areas of the region ▪ 20,000 hectares of revegetation is established in priority areas for habitat connectivity in the region
	Develop a clear and simple report card on the trajectory of biodiversity in the region. In developing the report card consider the following: ▪ Use of quantitative data ▪ State of the Environment (SOE) reporting for large sites e.g. the Western Treatment Plant (WTP) ▪ Alignment with the Annual Catchment Condition Report ▪ Sharing updates and data with partners and stakeholders.	▪ Three yearly biodiversity trajectory report card delivered ▪ Number and type of communication materials relating to the report card that have been developed	▪ N/A
	Identify biodiversity actions (for implementation) from the BCAP 2024-2028 that align with existing Melbourne Water plans and strategies including the HWS 2018-2028, NRM Action Plan 2023, SoBS Program and Emergency Response and Preparedness Plan 2024.	▪ BCAP supports planning and delivery of existing Melbourne Water plans and strategies	▪ N/A
	Explore opportunities and barriers for identifying and establishing new biodiversity offsets on Melbourne Water land through administration of the Melbourne Water Internal Biodiversity Fund (IBF).	▪ Number of additional offset sites secured ▪ Area of high quality of habitat for threatened species secured at offset sites (ha)	▪ N/A

5-year objective	Contributing actions	Measures	Alignment to HWS and RCS
	Review and update the framework for allocating funds and prioritising projects through the Melbourne Water Internal Biodiversity Fund (IBF).	▪ Internal Biodiversity Framework reviewed and updated	▪ N/A
	Continue to explore secure sources of funding to implement the Regional Catchment Strategy (RCS).	▪ Expansion of services funded by the Waterways and Drainage charge to include implementation of actions delivered under the RCS	▪ N/A
	Ensure biodiversity priorities and actions contained in the BCAP 2024-2028 are considered in Melbourne Water Sustainability Frameworks, Action Plans and Materiality Assessments.	▪ BCAP Biodiversity priorities (number, type) embedded in sustainability frameworks	▪ N/A
THEME 2: Building ecological resilience in the face of a changing climate			
Melbourne Water conserves and enhances biodiversity and builds ecological resilience in the face of a changing climate	Explore opportunities for funding to implement the Port Phillip and Western Port region Emergency Preparedness and Response Plan 2024 and where appropriate consider expanding the current plan to incorporate emergency response actions for additional species and values.	▪ Number of actions in Emergency Preparedness and Response Plan that have been delivered ▪ Additional species and values added to the Emergency Preparedness and Response Plan	▪ N/A
	Increase awareness and understanding of the BCAP 2024-2028 within the Melbourne Water value chain as defined by Building a Better Melbourne Water.	▪ Change in the awareness of the BCAP among key Melbourne Water (via survey) ▪ Implementation of projects and priorities contained within the BCAP 2024-2028	▪ N/A
	Increase awareness and understanding of current climate change modelling and research across Melbourne Water to inform biodiversity conservation and management including: ▪ Impacts of climate change on key environmental values in the Healthy Waterways Strategy (HWS) and mid-term review[11] ▪ Climate resilience vegetation frameworks[12] ▪ Modelling the risk of key revegetation species to a changing climate[13] ▪ Climate future plots[14]	▪ Change in awareness, knowledge and understanding of climate change modelling and research available to inform biodiversity management and delivery ▪ Evidence of use of climate change modelling and research in project design ▪ Adaptive management of biodiversity interventions incorporating new knowledge and data ▪ Evidence of the implementation of climate resilient practices in the implementation of biodiversity actions delivered through the BCAP 2024-2028	▪ N/A

[11] Habitat suitability models, scenarios and quantitative action prioritisation (using zonation) for the Healthy Waterways Strategy 2018, (University of Melbourne and Melbourne Water, 2020), re-running habitat suitability models with updated climate-impacted projections and other scenarios of interest (University of Melbourne and Melbourne Water, 2023).

[12] Understanding management options for restoration under a changing climate (Melbourne Water and Alluvium, 2022).

[13] Using mechanistic and correlative species distribution models to assess climate impacts on 30 revegetation species to 2090 (University of Melbourne and Melbourne Water, 2023).

[14] Using climate adjusted seed for research and monitoring changes over time of survival, growth, reproduction and genetics between provenances and species in three council areas (Maroondah City Council, Dandenong City Council, Knox City Council and Melbourne Water, 2024).

5-year objective	Contributing actions	Measures	Alignment to HWS and RCS
	▪ Approaches to increasing the resilience of vegetation in a changing climate[15].		
	Identify opportunities to implement nature positive solutions in response to climate change to improve biodiversity on Melbourne Water land including the use of new frameworks and approaches to biodiversity conservation and restoration such as: ▪ Emerging nature markets ▪ Natural capital including: building organisational capacity and alignment with emerging best practice natural capital frameworks such as Natural capital Accounting; TFND approaches; and use of natural capital mapping ▪ Exploring partnerships for nature base solutions. ▪ Exploring integrated biodiversity and carbon initiatives including insetting on Melbourne Water land (where there are no detrimental effects to holistic conservation planning and outcomes).	▪ Evidence of projects implementing a 'nature positive' approach to design and delivery	▪ N/A
THEME 3: Building organisational skills and capacity to enable biodiversity			
Melbourne Water is equipped with the knowledge, skills and resources to deliver the biodiversity conservation leadership role	Develop a targeted approach to raise staff and board awareness of Melbourne Water's role as a CMA and our roles and obligations for biodiversity across the Port Phillip and Western Port region.	▪ Number and type of activities relating to the CMA role that Board members and staff have participated in ▪ Increase in awareness and knowledge of biodiversity protection and management requirements (via survey)	▪ N/A
	Develop a process map to define Melbourne Water's current roles and responsibilities for biodiversity by building on the Service Strategy Review completed in 2024 for Building a Better Melbourne Water.	▪ Process map developed ▪ Clearly documented roles and responsibilities in biodiversity management	▪ N/A
	Appoint a Executive General Manager (EGM) level champion at Melbourne Water to lead biodiversity governance across the organisation.	▪ Biodiversity governance structure in place ▪ Biodiversity champion at EGM level appointed ▪ Evidence of biodiversity champion's influence on decision making to improve biodiversity conservation and protection ▪ Changes in policies (e.g. updates, new policies) that support biodiversity conservation	▪ N/A
	Explore opportunities for funding, develop and implement management plans informed by BCAP 2024-2028 priorities (ensure works crews clearly	▪ Management plans informed by BCAP 2024-2028 priorities	▪ N/A

[15] Understanding limitations and opportunities for implementing climate resilient restoration practices (Melbourne University and Melbourne Water, 2024).

5-year objective	Contributing actions	Measures	Alignment to HWS and RCS
	understand BCAP 2024-2028 objectives and outcomes.)	▪ Changes in biodiversity conservation knowledge and skills of works crews	
	Identify and implement opportunities that improve and align systems to capture biodiversity data to enable more effective collation, improved planning, decision making and reporting.	▪ Examples of improvements and alignment in systems to capture biodiversity data	▪ N/A
	Review processes to upload biodiversity data to the Victorian Biodiversity Atlas (VBA) and Stakeholder, Environment & Public Health Assessment (SEPHA). Review to include: ▪ Identification of data that is currently collected (monitoring, research and risk assessments) ▪ Identification of which data sets should be uploaded to VBA and SEPHA ▪ Consideration of responsibilities, timing and intervals at which data should be uploaded ▪ Consideration of data sets that should also be made available on the Melbourne Water community portal	▪ Proportion of biodiversity projects that have uploaded data to VBA ▪ Examples of data from biodiversity being included in SEPHA updates ▪ Examples of biodiversity data being added to the Melbourne Water community portal	▪ N/A
	Continue to provide Melbourne Water training for new staff, operational staff and works crews to reduce risks to biodiversity including: ▪ Standard Operating Procedures (SOPs) ▪ Site works environmental management plans and guidelines to support Stakeholder, Environment & Public Health Assessment (SEPHA) ▪ Melbourne Water Biodiversity Conservation Training Module into induction and training for new employees.	▪ Survey to assess change in awareness and knowledge of biodiversity for operational staff ▪ Biodiversity conservation module built into existing Melbourne Water induction for new staff	▪ N/A
THEME 4: Within Melbourne Water, championing biodiversity positive planning and development			
Melbourne Water positively influences the outcomes of urban planning and development to benefit	Develop a policy position on biodiversity conservation assets in the urban growth development area (including assets that link to waterways and adjacent land[16]).	▪ Policy position on biodiversity assets in urban areas developed	▪ N/A

[16] For example, Southern Brown Bandicoot underpasses, Growling Grass Frog reserves in non-Melbourne Strategic assessment areas.

5-year objective	Contributing actions	Measures	Alignment to HWS and RCS
biodiversity both across the catchment and on Melbourne Water land.	Improve leadership level understanding of the legal framework for protecting and promoting recovery of threatened species and ecological communities and preserving significant places from decline, including the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Catchment and Land Protection Act 1994 (CaLP Act)*.	▪ Changes in knowledge and understanding among the EGMs and broader Melbourne Water staff of the EPBC Act including how it is administered by the Australian Government (via survey)	▪ N/A
	Investigate options for embedding biodiversity priorities and protection measures into local planning policy and schemes based on priorities contained in the BCAP 2024-2028 and Emergency Preparedness and Response Plan 2024 e.g. Environmental Significant Overlays (ESO) and/or incorporated documents.	▪ Examples of values and protection measures being incorporated into local planning policy and schemes ▪ Number of ESOs developed and adopted ▪ Number of partnerships established with relevant local councils focussed on improving incorporation of biodiversity conservation into the planning scheme	▪ N/A
	Implement findings from the Healthy Waterways Strategy (HWS) mid-term review to improve knowledge and understanding of opportunities to protect headwater streams and wetlands as part of urban planning approvals, including development of guidelines and supporting policies/legislation.	▪ Change in areas of headwater streams and wetlands protected ▪ Guidelines, policies, legislation to protect headwater streams and wetlands in urban areas developed ▪ Evidence of use and adoption of guidelines, policies, legislation to protect headwater streams and wetlands in urban areas within local councils in the PPW region ▪ Implementation of HWS mid-term review recommendations	▪ Increased vegetation extent along waterways ▪ Improved vegetation quality along waterways ▪ Improved wetland vegetation condition ▪ Improved wetland water regimes
	As a referral authority, apply Stakeholder, Environment & Public Health Assessment (SEPHA) to applications for planning for development including referrals relating to Precinct Structure Plans (PSPs) and Masterplans.	▪ Number of referrals where SEPHA has been applied	▪ N/A
	Identify opportunities to reduce the impact of urban development on land and biodiversity through pollutant reduction (e.g. Bifenthrin for termite control), flow management and buffer zones.	▪ Number of opportunities to protect biodiversity via pollutant reduction that have been identified. ▪ Undertake waterflow studies in priority areas under urban development to track pollutant types and loads ▪ Mapping of impacted areas and areas recommended for treatment ▪ Adoption of recommendations to reduce pollutant loads in urban areas	▪ N/A
	Investigate opportunities to direct funding from Capital Works towards biodiversity outcomes to meet Water Corporations requirements under The *Water Act 1988* (Water Act) – conservation of biological and ecological integrity, implementing measures to minimise threats of serious or irreversible environmental damage, notwithstanding lack of full scientific certainty.	▪ Summary report from investigation ▪	▪ N/A

5-year objective	Contributing actions	Measures	Alignment to HWS and RCS
THEME 5: Healing and walking on country			
Melbourne Water strengthens its partnerships and empowers Traditional Owners to deliver culturally important biodiversity conservation outcomes	Work with Traditional Owners to ensure that Traditional Owner aspirations and values are incorporated in spatial prioritisation and overlays of biodiversity assets and values for the Port Phillip and Western Port Region.	▪ Examples where Traditional Owner aspirations and values have been incorporated into spatial prioritisation and overlays	▪
	Work with Traditional Owners to increase their involvement in on-ground management, including improved procurement processes to allow their self-determined outcomes to be met.	▪ Improved procurement processes allowing self-determined outcomes to be met	▪ N/A

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