GROWING NATURE TOGETHER GREATER DANDENONG'S BIODIVERSITY ACTION PLAN 2023-2025

GREATER DANDENONG
City of Opportunity

> CONTENTS

Front cover:
Christmas Beetle
Anoplognathus
porosus on a
Eucalyptus

IN RECOGNITION OF THE DECLINE IN AUSTRALIA'S BIODIVERSITY, GREATER DANDENONG COUNCIL HAS DECLARED A CLIMATE AND ECOLOGICAL EMERGENCY.

> CONTENTS

The City of Greater Dandenong, acknowledges and pays respects to the Bunurong people of the Kulin Nation, as the Traditional Custodians of the lands and waters in and around Greater Dandenong.

We value and recognise local Aboriginal and Torres Strait Islander cultures, heritage, and connection to land as a proud part of a shared identity for Greater Dandenong.

The City of Greater Dandenong pays respect to Elders past, present and emerging and recognises their importance in maintaining knowledge, traditions, and culture in our community.

The City of Greater Dandenong also respectfully acknowledges the Bunurong Land Council as the Registered Aboriginal Party responsible for managing the Aboriginal cultural heritage of the land and waters where Greater Dandenong is situated.

CONTENTS

Greater Dandenong Icon Animal

LAUGHING KOOKABURRA

Dacelo novaeguineae

BACKGROUND

Ambassador for the protection of Council reserves, habitat corridors and linkages and habitat augmentation.

Laughing Kookaburra are large kingfishers that have adapted to drier climates by shifting prey species from fish to insects and small vertebrates. They are sedentary birds, remaining in the same area once a territory is established.

THREATS

- Loss of habitat for hunting and also loss of large trees with suitable nesting hollows

WHAT IS COUNCIL DOING?

- Improving connectivity habitat for Kookaburras including the installation of nest boxes on council land and by encouraging residents near open areas such as parkland or farmland to install nest boxes on their properties.
- Maintenance of existing habitat.
- Education.

> CONTENTS

EXECUTIVE SUMMARY

The term biodiversity refers to the variety of life on Earth at all its levels, including microorganisms, fungi, animals and plants. Biodiversity has fundamental value to humans as we are dependent on it for our cultural, economic and environmental wellbeing. Biodiversity also provides a range of benefits including ecosystem services such as water and pollination, life resources such as food and medicine, cultural heritage, economic benefits and educational resources.

Australia has experienced the largest loss of biodiversity of any continent over the past 200 years. In Greater Dandenong, heavy land clearing and habitat modification since the 1850s has resulted in very little remnant native vegetation remaining at less than 5% of what existed prior to European settlement, as well as very low canopy cover at 9%. The compounding threat of climate change and urbanisation continue to threaten the areas that remain.

Despite this, Greater Dandenong still has more than 600 hectares of native vegetation, as well as scattered trees, patches of remnant vegetation and successfully revegetated areas. Significant patches of remnant vegetation; such as woodlands at Alex Wilkie Nature Reserve, wetlands at Tirhatuan Park, and billabongs at Fotheringham Reserve, provide habitat for a range of fauna species, such as kookaburras, flying foxes, blue tongue lizards, powerful owls, Krefft's gliders and dwarf galaxias. Street trees, local parks and even residential backyards have an important part to play in providing habitat for local flora and fauna and enhancing Greater Dandenong's biodiversity.

However, threats to biodiversity continue and require active management. Key threats to local biodiversity values include urban development, some agricultural practices, waterway modifications, altered hydrology, environmental weeds, pest animals, pollution and climate change. 42 species of fauna and 91 species of flora found in Greater Dandenong are considered threatened and require our help if they are to persist within the region into the future.

In recognition of Australia's decline in biodiversity, the City of Greater Dandenong has declared a climate and ecological emergency and has recognised the need to better understand local biodiversity values and how best to protect and enhance these values. The Biodiversity Action Plan will guide council's management of biodiversity across the municipality.

The Biodiversity Action Plan is aligned with the two overarching goals of the Department of Environment, Water and Land Use Planning's strategy 'Biodiversity 2037' which are Victorians Value Nature, and Victoria's natural environment is healthy. Additionally, the Biodiversity Action Plan fits under council's Sustainability Strategy in particular under the objective 'a greener city'.

The development of the Biodiversity Action Plan has included a very extensive knowledge review and mapping of fauna corridors, on-ground habitat assessments of 30 sites across the municipality, as well as community consultation and engagement including workshops with external stakeholders, community members, council staff and Traditional Owner groups.

> CONTENTS

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 THAT COUNCIL AIMS TO WORK TOWARDS ARE

1. CARE FOR NATURE

2. SHARE AND BUILD KNOWLEDGE OF NATURE

3. FOSTER CARE FOR NATURE ON PRIVATE LAND

4. MANAGE THREATS TO NATURE

5. CONNECT WITH NATURE.

A series of actions have been described in the Biodiversity Action Plan for the next three years, including further groundwork to fill in gaps in our knowledge about local biodiversity. Once those knowledge gaps are filled it will enable council to set out a longer-term Biodiversity Action Plan in the next iteration in three years' time. An annual update on the implementation of the plan will be provided, and Council's external Sustainability Advisory Group will facilitate community oversight of the plans implementation and community involvement.

The Action Plan includes actions that various departments in council are responsible for completing, as well as actions for local schools, community groups and individuals. This is also a call to action for every resident to play their role locally. Small steps taken by many add up to big impacts. Preservation and enhancement of our shared biodiversity needs to be a collaborative effort to achieve the best outcomes for all of Greater Dandenong's communities, both human and non-human.

> CONTENTS

This is also a call to action for every resident to play their role locally. Small steps taken by many add up to big impacts.

> CONTENTS

Marbled Gecko Christinus marmoratus and Early Nancy Wurmbea dioica

Greater Dandenong Icon Animal

DWARF GALAXIAS

Galaxiella pusilla

BACKGROUND

Ambassador for the protection of floodplains, wetlands and waterways

Dwarf Galaxias are listed as 'vulnerable' under the EPBC Act (1999), threatened under the FFG Act (1988), and endangered under the Advisory List of Threatened Vertebrate Fauna in Victoria (DELWP 2013).

Dwarf Galaxias can be found in the Dandenong Creek and wetlands. Their habitat is seasonal, entailing dry periods and expansion during wet periods.

THREATS

- Loss of habitat through drainage and altered hydrology
- Global warming and increased droughts
- Predation by Eastern Gambusia (introduced mosquito fish)

WHAT IS COUNCIL DOING?

- Monitoring of fish populations and water quality
- Habitat restoration of stream bank
- Education.

WHAT CAN YOU DO?

- Only rain down the drain.
- Do not release aquarium pets into the wild.
- Learn which fish live in your local waterway so you can identify which ones are native and which ones are introduced.

> CONTENTS

INTRODUCTION

Australia has experienced the largest loss of biodiversity of any continent over the past 200 years (ABS 2010). In Victoria, since European settlement approximately half of the native vegetation across the state has been cleared for farming and urban development, with 80 per cent of original cover cleared from private land. In Greater Dandenong, even with extensive green wedge area to the south, very little of the original native vegetation remains.

In recognition of the decline in Australia's biodiversity, The City of Greater Dandenong has declared a climate and ecological emergency and has recognised the need to better understand local biodiversity values and how best to protect and enhance these values. Greater Dandenong Council has developed a Biodiversity Action Plan to guide Council's management of biodiversity throughout the municipality.

Biodiversity has fundamental value to humans as we are dependent on it for our cultural, economic and environmental well-being. This includes both its intrinsic value (i.e. species are worth protecting regardless of their value to humans) along with the range of benefits that it produces, including:

- Supply of ecosystem services – water, nutrients, climate change mitigation, pollination
- Life resources – food, medicine, energy, raw materials and Indigenous cultural practices
- Improved mental and physical health and well-being
- Landscape distinctiveness and cultural heritage
- Direct economic benefits from biodiversity resources and added value through local economic activity and tourism
- Educational, recreational and amenity resources.

Biodiversity underpins the health of the planet and has a direct impact on our lives. According to a 2014 update to a report commissioned by the US Government, the monetary value of goods and services provided by nature was estimated to be about $125 trillion per year ($US) – that's $125 000 000 000 000 provided by plants and wildlife. These services are critical to human wellbeing and to the functioning of the economy. For instance, the value of insect pollinators alone on world agricultural production is estimated to be over $200 billion.

The City of Greater Dandenong has experienced heavy land clearing and habitat modification since the 1850s for agricultural and residential development. This extensive clearing of land has led to high levels of habitat loss, habitat disturbance and habitat fragmentation. These factors reduce the suitability and availability of habitat and the ability of species to maintain viable populations and move/disperse across the municipality. Ongoing stressors including environmental weeds and pest animals, climate change, altered hydrological regimes and lack of awareness of remaining environmental values, and their role in supporting ecosystems services. All continue to pose threats to biodiversity throughout the municipality. Whilst much of the original native vegetation across Greater Dandenong has been cleared, there are still significant areas of scattered trees and patches of remnant plants throughout the municipality, as well as successfully revegetated areas.

> CONTENTS

There are 5 key objectives underpinning the vision:

1. Care for nature – Council will protect and enhance existing biodiversity values in Greater Dandenong through on-ground works, advocacy and monitoring
2. Share and build knowledge of nature – Council will improve our knowledge of biodiversity values, through surveys, mapping and training
3. Foster care for nature on private land – Council will aim to facilitate and encourage biodiversity conservation and enhancement on private land
4. Manage threats to nature – managing threatening processes such as pest animals and plants, pollution and climate change
5. Connect with nature – community engagement and education.

Policy context biodiversity legislation considerations

There are a number of Commonwealth and Victorian Government Acts that regulate actions to protect biodiversity values and mitigate threats. Table 2 presents a summary of these Acts; however, this is not an exhaustive list of legislation, rather an insight into the main Acts that the City of Greater Dandenong and its communities are required to comply with.

Council strategies

This Biodiversity Action Plan aligns with Council's Sustainability Strategy 2016-2030, which contains the guiding framework for this action plan and addresses a number of high-level objectives relating to biodiversity and open space under the goal 'a greener city', including:

- Identify, protect and enhance the ecological value of Council land within the municipality
- Increase the quality, quantity and connectivity of open space owned by Council
- Identify, protect and enhance the ecological value of land throughout the municipality
- Increase the quality and quantity of vegetation cover on Council land that contributes to a net gain throughout the municipality
- Work with key stakeholders to protect and enhance the ecological value of the Green Wedge area
- New development within Greater Dandenong to address open space and biodiversity issues, where appropriate.
- Engage with the community, residents and businesses, to increase their awareness on the value of parks, plants and wildlife.

In addition, Greater Dandenong has developed a number of strategies and plans that have been taken into account in the development of this action plan as they pertain to biodiversity, including:

- Open Space Strategy 2020–2030
- Urban Forest Strategy 2021-2028
- Greening Our City Urban Tree Strategy 2018–2028
- Greening our Neighbourhoods Strategy 2021-2028
- Climate Emergency Strategy 2020–2030
- Green Wedge Management Plan 2017
- Eastern Region Pest Animal Strategy 2020-2030
- Various Bushland Management Plans prepared for specific individual reserves.

> CONTENTS

Figure 1 **Council strategies in relation to the Biodiversity Action Plan**

> CONTENTS

Table 2 Commonwealth and Victorian biodiversity legislation

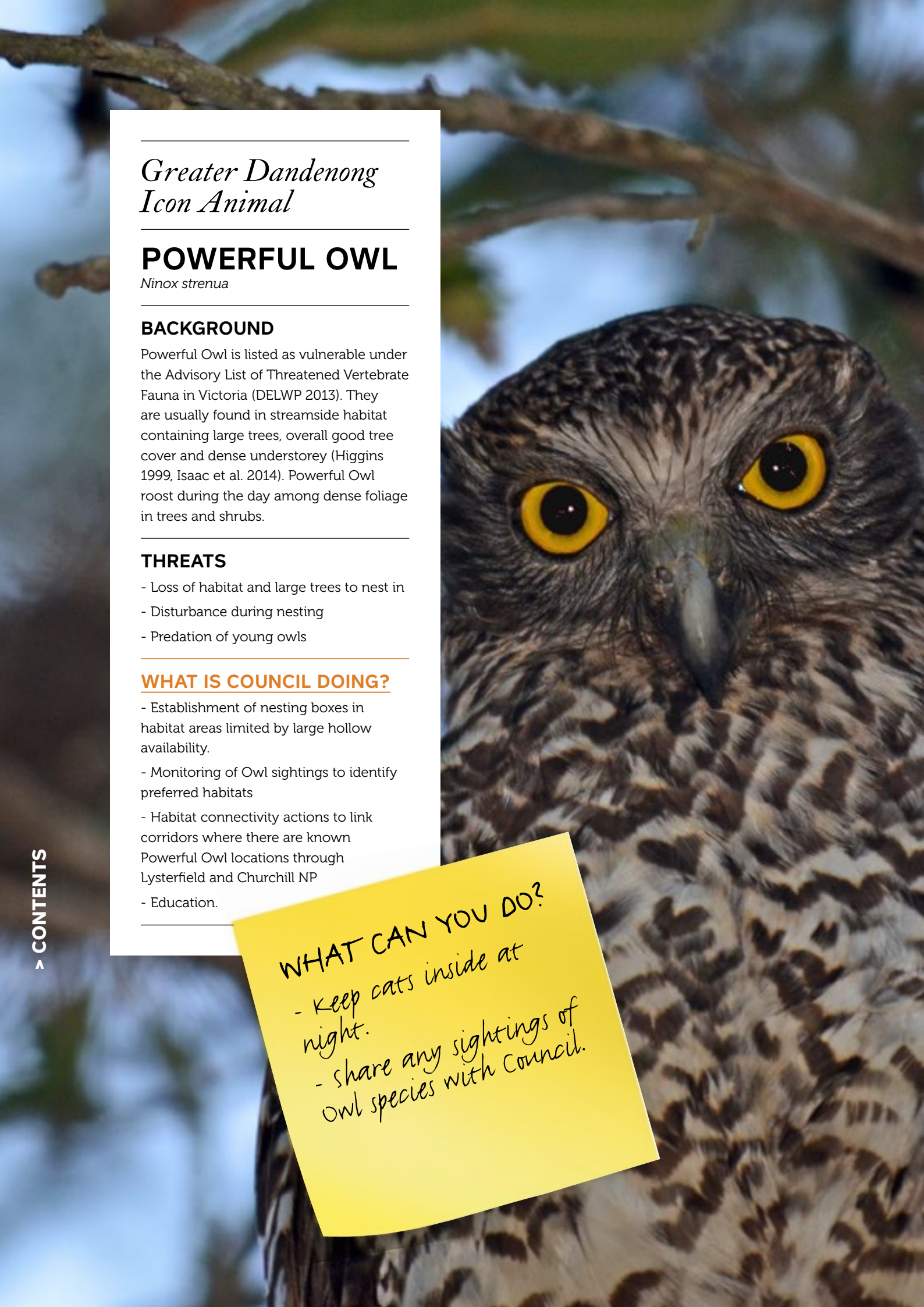
Legislation	Overview	Implications for Greater Dandenong
Environment Protection and Biodiversity Conservation Act 1999 (federal)	To identify and protect Matters of National Environmental Significance (MNES)	Examples of MNES for Greater Dandenong include: Migratory birds Growling grass frogs Swift parrot Herb Rich Plains Grassy Wetland
Flora and Fauna Guarantee Act 1988 (state)	To list and protect threatened and communities and the declaration of critical habitats.	Example threatened species or communities include: Dwarf galaxias Powerful owl Swamp everlasting
Wildlife Act 1975 (state)	To protect native fauna species and regulate the conduct of persons interacting with wildlife.	Wildlife regulations are in place to stop people from damaging, disturbing or destroying wildlife or their habitats.
Catchment and Land Protection Act 1994 (state)	Provides a regulation framework for the listing and management of land, and declared noxious weeds and pest animals.	Example noxious weeds and pest animals include: Alligator weed Blackberry Bridal creeper Fox Rabbits
Planning and Environment Act 1987 (state)	Provides a framework for planning the use, development and protection of land in Victoria.	Greater Dandenong Planning Scheme. The Greater Dandenong Planning Scheme includes the following zones and overlays to assist protection of biodiversity: Green Wedge Zones Public Conservation and Resource Zone Environmental Significance Overlay Vegetation Protection Overlay
Fisheries Act 1995 (state)	To protect aquatic biota.	Example protect aquatic species include: Dwarf galaxias

> CONTENTS

Prior to European settlement, the City of Greater Dandenong area was a contiguous mosaic of various vegetation communities.

> CONTENTS

Blue Banded Bee and Bulbine Lily



Greater Dandenong Icon Animal

POWERFUL OWL

Ninox strenua

BACKGROUND

Powerful Owl is listed as vulnerable under the Advisory List of Threatened Vertebrate Fauna in Victoria (DELWP 2013). They are usually found in streamside habitat containing large trees, overall good tree cover and dense understorey (Higgins 1999, Isaac et al. 2014). Powerful Owl roost during the day among dense foliage in trees and shrubs.

THREATS

- Loss of habitat and large trees to nest in
- Disturbance during nesting
- Predation of young owls

WHAT IS COUNCIL DOING?

- Establishment of nesting boxes in habitat areas limited by large hollow availability.
- Monitoring of Owl sightings to identify preferred habitats
- Habitat connectivity actions to link corridors where there are known Powerful Owl locations through Lysterfield and Churchill NP
- Education.

WHAT CAN YOU DO?

- keep cats inside at night.
- share any sightings of owl species with Council.

> CONTENTS

BACKGROUND INFORMATION

To develop an effective action plan, it is essential to have a thorough understanding of existing biodiversity values within the municipality. Thus, a key component of developing this action plan was to undertake an ecological assessment and knowledge review of biodiversity throughout the municipality.

The purpose of this ecological assessment and knowledge review was to:

- Compile and evaluate previous research to summarise the state and condition of biodiversity within the municipality
- Identify areas of biodiversity significance, summarise their existing habitat quality and potential for these areas to act as habitat corridors for threatened species
- Identify threats to biodiversity throughout the municipality
- Prioritise actions and sites to target for habitat improvement with the aim of increasing connectivity across the municipality
- Inform actions listed in the City of Greater Dandenong Biodiversity Action Plan.

STUDY AREA

The entire City of Greater Dandenong LGA (across all land tenures) was the primary study area for this assessment, however the broader study area included significant areas of remnant vegetation (remnant vegetation or bushland can be defined as those patches of native trees, shrubs and grasses still left), including Churchill National Park (approximately 2 km to the north-east of the LGA) and Lysterfield Park (adjacent to Churchill NP), Braeside Park to the west, and the Dandenong Police Paddocks Reserve to the north-east (Figure 1). Several large waterbodies/ wetlands surrounding the study area that provide habitat for a high diversity of bird species, including Edithvale-Seaford Wetlands and Braeside Park Wetlands to the south-east of the LGA and Tirhatuan Wetlands to the north, were also included.

Prior to European settlement, the City of Greater Dandenong area was a contiguous mosaic of various vegetation communities consisting of woodlands, grasslands, shrublands and freshwater vegetation communities typical of those found throughout the Gippsland Plain bioregion in the south east of Victoria. Historic land clearing has resulted in extensive native vegetation loss in the City of Greater Dandenong, and more broadly throughout the south-eastern suburbs of Melbourne (Appendix 1). Less than 5% of native vegetation remains within the City of Greater Dandenong LGA (626 ha), based on current modelling (DELWP 2020a), and the extent of all vegetation types present prior to 1750 have been drastically reduced. Add to that Greater Dandenong's very low canopy cover of 9%, the municipality is highly vulnerable to the impacts of climate change, both our human residents, and our non-human which this action plan aims to support.

FLORA AND FAUNA

Despite the extensive loss of vegetation experienced throughout the area, several sites within the LGA still contain significant patches of remnant vegetation (e.g. remnant woodlands at Alex Wilkie Nature Reserve, wetlands at Tirhatuan Park, swampy woodlands at Frank Pellicano Reserve). **These remnants provide habitat for several fauna species, including possums, flying foxes, kookaburras, various lorikeets, honeyeaters and insects.**

> CONTENTS

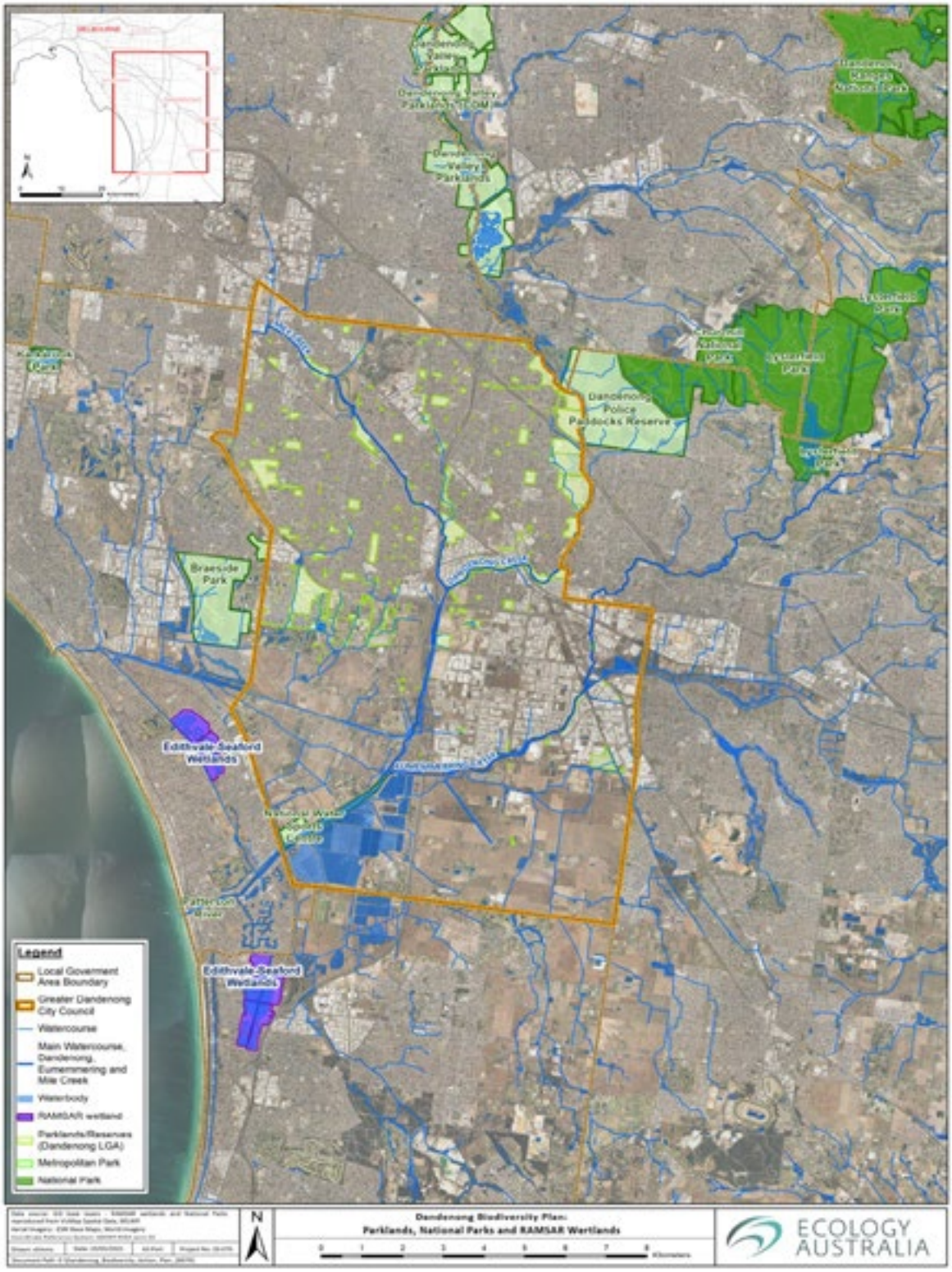


Plate 1 City of Greater Dandenong LGA and municipality study area, including surrounding areas of biodiversity significance.

> CONTENTS

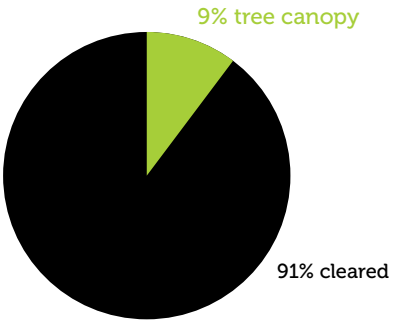
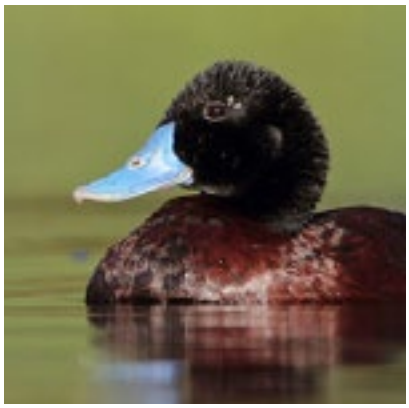


Figure 2 – Tree Canopy across the municipality 2014



Special sighting of a rare duck

In 2020 a resident sent photos in of a Blue-billed Duck - Oxyura australis dabbling in the Keysborough Wetlands. These constructed wetlands provide important habitat for many wetland species including migratory birds. The Blue-billed Duck is rarely sighted in the area so this was celebratory news for the Council.

Non-urban agricultural areas (particularly within the South East Green Wedge) also contain high numbers of remnant River Red Gums that contribute significantly to the biodiversity of the study area. In addition, non-bushland reserves, parks and gardens throughout the LGA contain open grassy areas, fringed by large trees that contribute to the municipality's biodiversity values.

Overall tree canopy cover for the entire municipality is approximately 9%, including all trees across the study area on private and public land, along waterways, and in roadside reserves (Jacobs et al. 2014). In addition to canopy cover present in bushland reserves, recreational reserves and those on private land, a total of 55,276 street trees have been recorded throughout the municipality (City of Greater Dandenong 2017a). Since 2004, 88 different tree species have been planted in the study area, contributing greatly to Greater Dandenong's biodiversity. Street trees provide habitat for a number of native bird species that don't require dense areas of vegetation, including Australian Magpies, Magpie Larks and Rainbow Lorikeets

A total of 42 fauna species (Appendix 2) and 91 flora species (Appendix 3) listed as threatened under the EPBC Act 1999 (DAWE 2020), FFG Act 1988 (DELWP 2019b) or the Victorian Threatened Species Advisory List were recorded or have had habitat modelled (DAWE 2020) within the City of Greater Dandenong municipality.

EXISTING LANDSCAPE HABITAT TYPES

Four broad landscape habitat types have been recorded throughout the LGA that provide habitat for a range of fauna species.

Waterways and wetlands

Permanent instream habitat is provided by Dandenong Creek and connected waterways, the Patterson River, Mordialloc Creek, Eumemmerring Creek, Mile Creek, Yarraman Creek and numerous dams and stormwater wetlands throughout the Greater Dandenong LGA. These habitats provide important refuges for aquatic fauna when connected intermittent tributaries and shallower wetlands dry out. Although these habitats are often unmapped and sometimes dominated by weedy vegetation, when inundated they can provide highly productive and important habitat for frogs and for Dwarf Galaxias to breed in the relative absence of other fish species.

Despite the very high levels of modification, the waterways and waterbodies of the Greater

> CONTENTS

Birds are indicators of the environment. If they are in trouble, we know we'll soon be in trouble. — Roger Tory Peterson.

Dandenong LGA (e.g. Tirhatuan Park, Dandenong Wetlands) still support important aquatic fauna and associated values such as populations of dwarf galaxias and southern pygmy perch, with good opportunities for ongoing improvements to be made, including the re-establishment of Yarra pygmy perch. Some artificial waterbodies such as the tertiary treatment ponds at the Eastern Treatment Plant provide habitat for a large number of waterbird species including migratory waders and shorebirds. Special sighting of a rare duck

Urban and industrial habitats

Native bird species able to persist throughout urban and industrial habitats in the LGA include Ravens *Corvus spp.*, Red Wattlebird *Anthochaera carunculata*, Australian Magpie *Gymnorhina tibicen* and Magpie Lark *Grallina cyanoleuca*. **Where the urban matrix includes gardens containing native species of plants with a good supply of flowers, nectar, invertebrates, and adequate cover for small birds, an additional suite of birds use these food resources and associated habitats.** Such species include New Holland Honeyeater *Phylidonyris novaehollandiae*, Superb Fairy-wren *Malurus cyaneus*, White-plumed Honeyeater *Ptilotula penicillata*, Noisy Miner *Manorina melanocephala*, Eastern Rosella *Platycercus eximius* and Rainbow Lorikeet *Trichoglossus molucannus*. Powerful owl use the urban habitat matrix if there are large trees to roost in or if there are hawking perches available that can be reached from their nest site. Suitable nesting trees tend to be outside the urban matrix of the LGA (e.g. Churchill NP). Powerful Owls often use the urban environment due to the high densities of a major prey source, the eastern ring-tailed possum.

Bats, like most of the species encountered in the LGA, will also have decreased species richness resulting from the removal of native vegetation that forms a significant part of their habitat. Those species that can make use of the urban environment may thrive, while those that require specific, natural conditions are unlikely to occur in the area. There are 16 species of microbat known from the Greater Melbourne area; most of these are likely to be found in the City of Greater Dandenong.

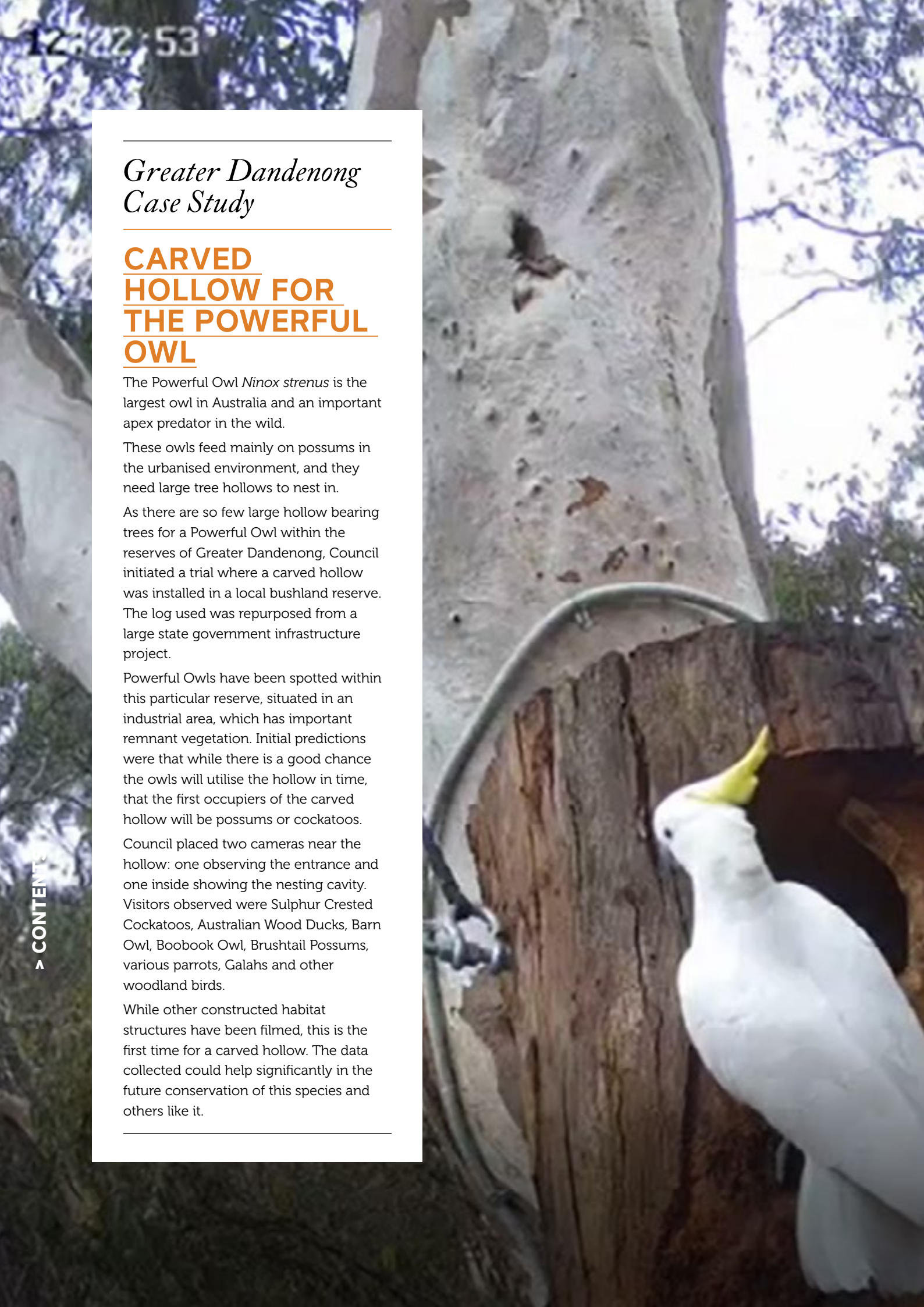
Other fauna species often encountered in the urban environments in the LGA include skinks (e.g. Garden Skink *Lampropholis guichenoti* and Weasel Skink *Saproscincus mustelinus*) and Marbled Gecko *Christinus marmoratus* species that make use of landscaping in gardens, including cracks in building brickwork. Occasionally, larger lizard species such as Common Blue-tongue Lizard *Tiliqua scincoides* may be encountered.

Parks and reserves

The recreational based reserves provide open grassed areas often with large trees on the margins. These reserves provide feeding areas for parrot species such as Sulphur Crested Cockatoos *Cacatua galerita, Corellas Cactua spp.*, lorikeets and rosellas *Platycerus spp.* that are often feeding on seeds or small bulbs of plants often found in these areas. Other smaller seed eating birds will also use the grassed areas. Besides the seed eating birds, the recreational reserves also provide food sources in the form of invertebrates such as spiders and worms for ground foraging insectivores like magpies. The open spaces of the recreation reserves provide open areas for foraging micro-bats that prefer feeding in open areas rather than densely vegetated areas.

Where the reserves have native or indigenous planted vegetation in patches, habitat quality improves with the provision of canopy and shrub cover for predation avoidance, roosting sites and

> CONTENTS



Greater Dandenong Case Study

CARVED HOLLOW FOR THE POWERFUL OWL

The Powerful Owl *Ninox strenus* is the largest owl in Australia and an important apex predator in the wild.

These owls feed mainly on possums in the urbanised environment, and they need large tree hollows to nest in.

As there are so few large hollow bearing trees for a Powerful Owl within the reserves of Greater Dandenong, Council initiated a trial where a carved hollow was installed in a local bushland reserve. The log used was repurposed from a large state government infrastructure project.

Powerful Owls have been spotted within this particular reserve, situated in an industrial area, which has important remnant vegetation. Initial predictions were that while there is a good chance the owls will utilise the hollow in time, that the first occupiers of the carved hollow will be possums or cockatoos.

Council placed two cameras near the hollow: one observing the entrance and one inside showing the nesting cavity. Visitors observed were Sulphur Crested Cockatoos, Australian Wood Ducks, Barn Owl, Boobook Owl, Brushtail Possums, various parrots, Galahs and other woodland birds.

While other constructed habitat structures have been filmed, this is the first time for a carved hollow. The data collected could help significantly in the future conservation of this species and others like it.

> CONTENT

Greater Dandenong Case Study

KREFFT'S (SUGAR) GLIDERS IN DANDENONG

Historically, Sugar Gliders would have inhabited the forest and woodland throughout the Dandenong and surrounds, but with urbanisation and the loss of habitat, particularly trees, the numbers would have decreased, and sightings have been very rare.

Greater Dandenong has a vision to connect vegetation corridors to existing populations in neighbouring Monash to encourage movement back into our LGA.

Of all the arboreal animals, the Sugar Glider has maintained good populations in remnant vegetation patches and linear roadside strips. Where linear roadside strips are wide (about four trees wide) and contain a good mix of nest hollows and food trees, the density of Sugar Gliders can be high.

The ability of these animals to glide up to 50 metres (more often 20–30 metres) means that they can move freely given the right tree spacing. There is the potential that with the correct management of roadside trees and linear strips, connectivity pathways across urban areas can be maintained.

Habitat augmentation is also important. During 2020, a series of nestboxes for the gliders were installed along Dandenong Creek. These are monitored annually.

> CONTENTS

> CONTENTS

Greater Dandenong Case Study

NATIVE FISH IN A WARMING WORLD

Refuge pools during times of drought are important for Dwarf Galaxias along with flooding and drying to encourage zooplankton blooms and recognising the competitive advantage that Dwarf Galaxias can have over Eastern Gambusia in cooler, shady pools have under pinged Council's approach to improving habitat for this species.

Deeper and heavily shaded habitats with lower temperatures are typically avoided by Eastern Gambusia and are thought to offer some degree of protection to Dwarf Galaxias and potentially suppress Eastern Gambusia population size.

In 2020 Council received funding to from the Federal Government to undertake a conservation program for Southern Pygmy Perch – a native fish that shares habitat with Dwarf Galaxias.

We worked with Native Fish Australia to sample areas of Dandenong Creek and surrounding wetlands and undertook habitat restoration with instream and bank plantings to enhance the habitat for both species.

We also developed a school-based program to educate our students on the threats these fish face. The program included field work, water testing and an opportunity for the school to breed Southern Pygmy Perch in a fish tank located at the school.

This work will be ongoing where the waterways will continue to be sampled to gauge fish populations, riverbank restoration works through revegetation and ongoing education through the Native Fish Program and the Discover Dandenong Creek Festival.

> CONTENTS

micro-scale connectivity. These remnant patches form potential habitat for arboreal animals such as Krefft's gliders and possum species.

Many reserves and parks have a drainage/flooding control function and support a range of temporary or permanent open water habitats, often varying in size and shape. This provides a variety of aquatic habitats ranging from shallow swampy grasslands used by birds such as ibis or frogs, to deeper water that may be utilised by waterfowl, egrets, frogs and Rakalis.

Agricultural habitats

Within the study area, and most notably within the Green Wedge, large remnant River Red Gums are found scattered across privately-owned paddocks and roadside reserves. The Green Wedge is a non-urban area located at the southern end of the municipality, outside the Urban Growth Boundary. The most notable areas of scattered trees in the Green Wedge are between Springvale Road and Perry Road, north of the Mordialloc Main Drain and between EastLink and Dandenong–Hastings Road south of Glasscocks Road (Biosis 2013, Planisphere 2016). These trees provide invaluable habitat in such areas. However, the isolation of these trees can sometimes detract from their value if they are not connected to other habitat patches. For more mobile species such as birds, these trees can provide excellent roosting and nesting habitats where they can find some level of safety from predators. However, for mammals living in trees, spacing between trees is critical and needs to be near enough to allow movement between trees rather than via the ground where predation risks are higher, primarily due to the presence of foxes and cats.

KEY THREATS TO LOCAL BIODIVERSITY VALUES

Residential and commercial development

Residential zones make up 26% of the municipality, while commercial zones make up 5%. Threats from residential and commercial development include direct threats to native fauna from predation by domestic cats and dogs, as well as an increase in injury or death from interacting with human infrastructure such as roads and powerlines. In addition, a significant loss of canopy cover throughout the municipality and an increase in impervious surfaces are associated with these developments. Increases in noise and light pollution can also impact on native fauna species through changed night habits (such as reproduction and migration) of vertebrates and their invertebrate prey species and can also disrupt plants by distorting their natural day–night cycle.

Industrial development

Industrial zones make up approximately 20% of the City of Greater Dandenong. Land developed for industrial use is often maximised to create space for factories, storerooms and transport needs. Therefore, most areas in industrial zones generally retain very little canopy cover or native vegetation and are dominated by impervious surfaces (refer to Section 5.2).

Industrial areas are often associated with an increased risk of surface runoff being polluted due to chemical spillage or accidental discharge, impacting on the nearby habitats (soils, vegetation and streams) that receive that runoff. Additionally, there is an increased risk of air pollution associated with some industries. As with residential and commercial development, industrial development is also associated with increased noise and light pollution.

Agriculture

Agriculture continues to be an important land use throughout the study area, particularly in the Green Wedge, where 28% of land is used for agricultural purposes (mainly horticulture and livestock production) (Biosis 2013). Increased risks of fertilisers, herbicides and pesticides entering waterways are typically associated with agricultural development. In addition, intensive use of floodplain land for commercial agriculture results in draining or filling in of shallow wetland drainage systems and replacing them with drains along the edges of paddocks, substantially altering the area's hydrology. Unfenced waterways and wetlands are at risk of increases in erosion, sedimentation and decreased water quality as a result of stock access and associated impacts (pugging and defecation).

Waterway alterations

Most of the waterways within the LGA have been heavily modified, with riparian zones being cleared, sections of waterways being channelised, concrete-lined and piped underground. A section of Dandenong Creek between the confluence of Mile Creek to just upstream of Kidds Road, Dandenong (~4.5 km) is concrete-lined, drastically reducing its habitat value to aquatic fauna. Upstream of the LGA there are extensive sections of Dandenong Creek in the Bayswater area that are piped underground, although 'daylighting' of a smaller section in Heathmont has been undertaken by Melbourne

> CONTENTS

Fast Fact

TREE PLANTING

PLANTING DAYS

The City of Greater Dandenong has undertaken Community Planting Days for over 20 years. These on-ground activities help to revegetate important bushland areas and bring residents together to help increase our Council's important biodiversity.

INDIGENOUS PLANTS

Indigenous Plants are the local plants that originally grew in an area before clearing and development occurred. They are suited to the soil and climate of the local area.

COUNCIL ACTION

Greater Dandenong plants an average of 20,000 indigenous plants every year.

From 2020-2022 CGD planted 174,645 indigenous plants in reserves, wetlands and waterways across the LGA.

WHAT CAN YOU DO?

Join Council at one of the Community Planting Days from July to September.

See website for details.

> CONTENTS

> CONTENTS

Water in recent years (Melbourne Water 2018).

Altered hydrology

The natural hydrology of the waterways and waterbodies in the Greater Dandenong LGA have been dramatically altered by the following:

- Wetland drainage
- Waterway deepening and channelisation
- Concrete-lining and piping
- Farm dam construction
- Weirs and water diversions
- Retarding basins
- Connection to the stormwater network
- The proliferation of impervious surfaces associated with urbanisation.

The altered hydrological regimes that result from these changes have a profound effect on habitat suitability for aquatic fauna. The reduced habitat suitability for aquatic macroinvertebrates reduces food resources for fish, waterbirds, Platypus and Rakali (City of Greater Dandenong 2017b). Furthermore, altered hydrology also affects remnant vegetation throughout the area. For example, altered hydrological regimes reduce soil moisture and groundwater levels, influencing the ability of trees to persist long-term.

Environmental weeds

Environmental weeds threaten natural ecosystems by outcompeting native species for nutrients, water, sunlight and space. Weeds also often form dense infestations that shade and smother native species and can alter biological processes such as hydrological or fire regimes. Numerous introduced plant species have colonised large areas throughout the municipality and pose significant threats to native plants through competition for resources. These include key woody weeds Flax-leaf *Broom Genista linifolia*, Blackberry *Rubus fruticosus*, Blue Periwinkle *Vinca major*, Atlantic Ivy *Hedera hibernica* and Gorse *Ulex europaeus*. Key herbaceous weeds include White Arum-lily *Zantedeschia aethiopica*, Kikuyu *Cenchrus clandestinus*, Couch Cynodon *dactylon var. dactylon* and Brown-top Bent *Agrostis capillaris grasses*.

Pest animals

Pest animals pose a significant threat to native animals through a number of processes. Direct threats include predation on native animals resulting in injury or death. In addition, indirect threats include competition for resources such as food and shelter as well as the destruction of native habitat (DAWE n.d.). Throughout the City of Greater Dandenong, 41 introduced animal species have been recorded. Of these, three species (domestic cats, European rabbits and red foxes) and their impacts are listed as Key Threatening Processes under the EPBC Act (1999). In addition, the Flora and Fauna Guarantee Act 1988 (FFG Act) lists the impacts of one species as a Potentially Threatening Process (Sambar Deer).

Small ground-dwelling mammals, reptiles, birds and insects are particularly vulnerable to predation from foxes and cats throughout the municipality (Eco Logical 2020). Rabbits have also been recorded often across multiple Council reserves while dogs also pose a threat to wildlife. In addition, mynas aggressively exclude native birds from their habitat.

Transport and utility corridors

Roadsides throughout the City of Greater Dandenong support a substantial amount of remnant native vegetation and are expected to make a significant contribution to ecological connectivity throughout the region. For example, many remnant patches of native vegetation (containing river red gums, manna gums, swamp gums or swamp paperbarks) throughout the Green Wedge are associated with roadsides (Biosis 2018). These areas of remnant vegetation provide nesting and foraging habitat for mobile fauna species such as bats, birds and possums. Roadside vegetation clearance for road-widening or management purposes therefore has the potential to impact biodiversity values. Road crossings are also a major cause of mortality for many fauna species, particularly those living in roadside vegetation or with a high rate of dispersal.

Pollution

There are several sources of pollution that pose threats to biodiversity throughout the City of Greater Dandenong, including littering, urban and agricultural run-off, stormwater pollution and air pollution. Stormwater pollution in particular, presents a significant threat to biodiversity values throughout the municipality, as a range of pollutants such as chemicals, oils and litter that enter the stormwater system can greatly reduce water quality and the quality of aquatic and fringing terrestrial habitats in receiving waterways or waterbodies (City of Greater Dandenong 2017b).

Climate change

Climate change will alter crucial ecosystem services within urban areas such as temperature regulating

> CONTENTS

> CONTENTS

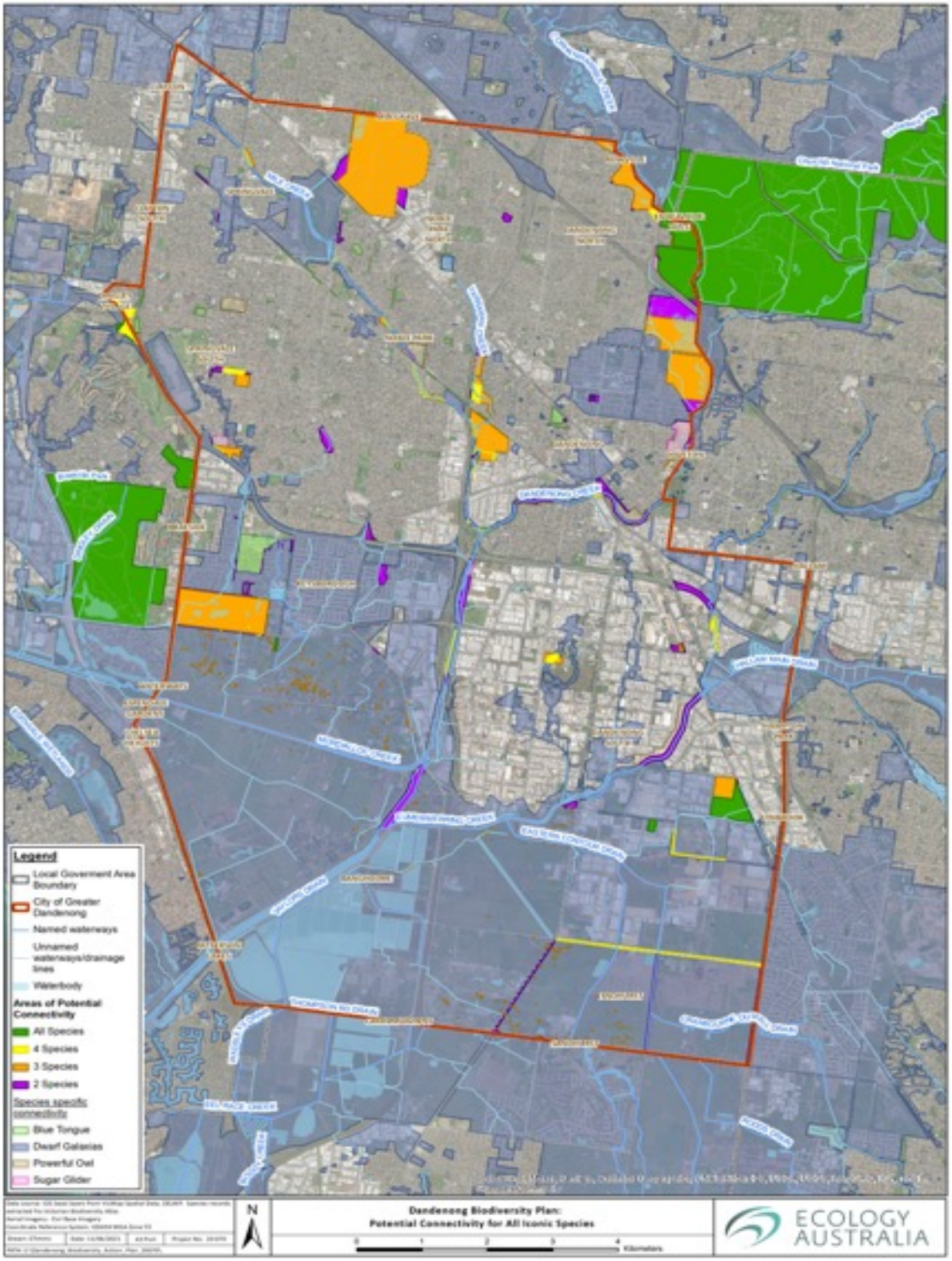


Plate 2 Potential connectivity sites within Greater Dandenong for all five icon species

services, evaporation, humidity, and air quality. This in turn can exacerbate the urban heat island effect, increasing already higher temperatures in urban areas. Tree cover in urban areas, already low in the City of Greater Dandenong, is also likely to be adversely affected as increases in temperature, reduced surface water availability and drier conditions can all reduce the health of urban trees.

Freshwater wetlands are particularly vulnerable to climate change. Wetlands typically rely on seasonal flows, therefore any shift to drier conditions can have significant impacts on the hydrology of freshwater ecosystems (Fay et al. 2016). Many urban wetlands, such as those found in the City of Greater Dandenong, are likely to be at greater risk of dying out as temperatures increase. This can significantly reduce the amount of habitat available for breeding and feeding many waterbird species. Further, sea-level rise will potentially lead to substantial shifts in flooding regimes of urban wetlands, adversely effecting habitat quality for species reliant on wetlands.

HABITAT ASSESSMENTS

In addition, to compiling and assessing existing knowledge to assess the state of biodiversity, on-ground habitat assessments were conducted throughout the study area. On-ground habitat assessments can provide an accurate, current indication of condition of existing vegetation and its potential to act as habitat for fauna. A key component of improving biodiversity is improving habitat quality of existing areas of remnant vegetation that may provide ecological benefits at a landscape scale. Improvements of habitat quality may not only allow for remnant vegetation to persist but may increase the potential of fauna species to use these areas as habitat to allow movement across the landscape.

To prioritise actions that may improve habitat quality and connectivity across the municipality, 30 sites were selected and assessed for habitat quality (Appendix 4). Sites were selected if they were located within the City of Greater Dandenong municipality, contained existing remnants of modelled Ecological Vegetation Classes (EVC)EVCs (DELWP 2020a), were identified as containing significant biodiversity values (i.e. remnant river red gums), or if the presence of flora and fauna species listed under the EPBC Act 1999 (DAWE 2020), FFG Act 1988 (DELWP 2019b) or the Victorian Threatened Species Advisory List had been recorded since 2010.

To assess condition of each site, Vegetation Quality Assessments were conducted using the Habitat Hectares method (DSE 2004) at 18 sites that had been modelled as extant EVCs. Rapid assessments were conducted at a further 12 sites where sites access was not possible or no extant EVCs have been modelled. These assessments provided measures of habitat characteristics likely to influence the ability of species to persist in patches of habitat, including:

- Number of large trees present
- Canopy cover
- Weed cover
- Vegetation structure
- Floristic species diversity
- Recruitment levels
- Organic litter cover
- Patch size.

Habitat assessments conducted across all 30 sites indicated habitat quality ranges from moderate to poor across the study area (Appendix 5). Based on these assessments, site-specific actions to prioritise with the aim of improving vegetation quality have been developed (Appendix 6), ranging from plantings of particular species to focusing on introduced plant species management.

HABITAT CONNECTIVITY FOR ICON SPECIES

'Icon' species are often used as both indicators of environmental change and to promote awareness and knowledge of biodiversity. 'Icon' species, listed below, have been chosen to broadly represent other fauna, flora and their supporting ecosystems found in the City of Greater Dandenong. Identifying and using surrogate species in order to focus landscape scale biodiversity planning actions has been used in various ways over the decades, with various terms used to describe variations of the approach such as icon, focal, umbrella, flagship and indicator species (Wiens et al. 2020).

Using 'icon' helps simplify a complex mix of ecological requirements and aids with awareness raising, monitoring and communication. The result being a wider range of species with similar ecological requirements are better conserved throughout Greater Dandenong.

There are many other species that could be considered for selection (e.g. rakali, southern pygmy

> CONTENTS

Students from Dandenong West Primary School learning about leaf litter and log habitat at Fotheringham Reserve.

> CONTENTS

Fast Fact

PRIVATE LAND

SEVENTY PERCENT

Did you know that privately owned land takes up over 70 per cent of the City of Greater Dandenong?

That means that residential gardens have enormous potential to provide much-needed habitat for wildlife.

Canopy cover in Greater Dandenong has continued to drop in recent years, and as urbanisation continues to increase, wildlife habitat has become severely fragmented, sending many plant and animal populations into decline.

By adding a habitat rock or two, or planting a couple more indigenous plants in your own garden, you are providing vital habitat for local threatened and endangered species to move through our neighbourhoods and live safely alongside people.

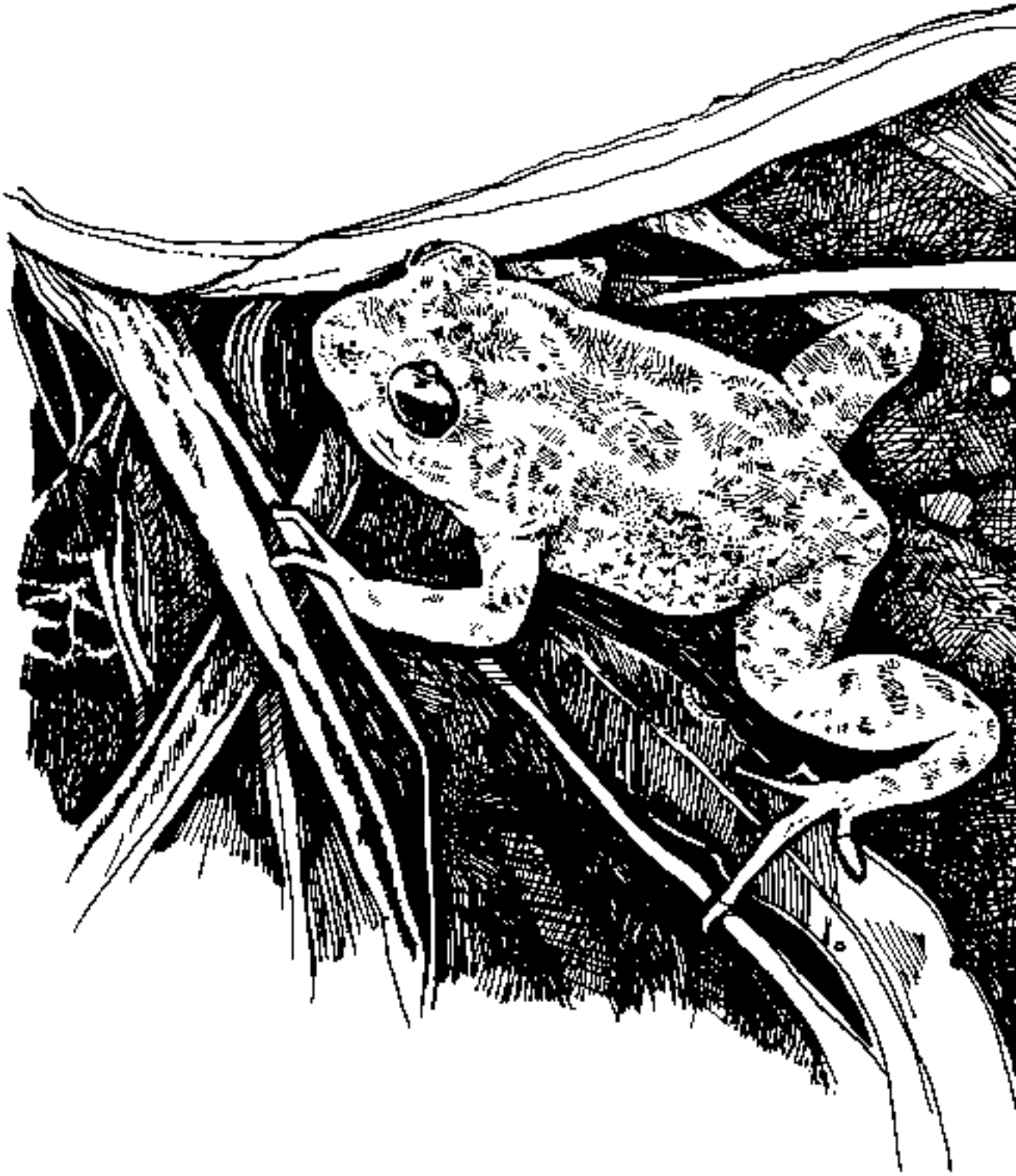
WHAT CAN YOU DO?

Attract local species to your garden by joining Gardens for Wildlife – https://www.greaterdandenong.vic.gov.au/gardens-for-wildlife

gardens for wildlife
Greater Dandenong

> CONTENTS

> CONTENTS



Eastern Common Froglet
Crinia signifera

perch, river red gum) however due to the scope of this project the selection of the following five species was chosen:

- Blotched/common blue-tongue lizard
- Dwarf galaxia
- Laughing kookaburra
- Powerful owl
- Krefft's glider.

Potential sites of connectivity for each species have been identified using data from on-ground site assessments and the Victorian Government's urban forest vegetation cover mapping (DELWP 2020b), as well as summarised information on each species' habitat requirements (Ecology Australia 2021).

Habitat connectivity maps and proposed actions to improve habitat for each species have been summarised and presented in the Appendix (Appendix 7 and 8).

COMMUNITY CONSULTATION AND ENGAGEMENT

Consultation and engagement with the community is essential to developing an effective plan by allowing the community to provide meaningful input. Thus, a community consultation and engagement process was a key component in the development of this action plan. This process consisted of:

- An online survey published on Council's website
- A workshop with stakeholders external to Council (those from state government agencies, non-government organisations and professionals involved in the protection, management, and enhancement of the City of Greater Dandenong's biodiversity)
- A community workshop with members of the Greater Dandenong Environment Group, as well as other community members with an active interest in protecting the City of Greater Dandenong's biodiversity
- Internal council workshop to formulate actions resulting from assessment of biodiversity and previous consultations.
- Consultation sessions also included relevant Traditional Owner groups from the Bunurong Land Council Aboriginal Corporation and the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation.

Among the more common views and ideas expressed was the recognition that to manage and protect biodiversity effectively there was a need for Council to develop **landscape-scale strategies.** Participants wanted to see a more **coordinated approach** to conservation across municipalities and management areas. For example, actions that can lead to increases in **ecosystem connectivity,** not just throughout the City of Greater Dandenong municipality but across jurisdictions, was considered important. In addition, participants wanted Council to take a proactive role in developing a more **regional approach** to management of particular areas of biodiversity value (e.g. Dandenong Creek corridor).

Participants not only wanted to see actions that maintain the condition of biodiversity values that already exist throughout the municipality but placed a high priority on **expanding and enhancing existing values.** This included **on-ground actions** and strategies focused on improving the conservation statuses of state and federally listed threatened species, as well as actions that can improve the information of existing values (i.e. greater mapping of biodiversity values). Many also wanted to see improvements made to existing remnants through actions such as **tree plantings** and establishment of **nest-boxes.** The expansion where possible of existing values was also considered important, with participants wanting to see **mapping of areas that could potentially be revegetated.**

Another common theme was greater Council **support for community environment groups** in the form of increased resourcing for **community-based initiatives** (i.e. Gardens for Wildlife). Increases in communication around **biodiversity awareness** were also considered of high importance. In particular more targeted **communication and education programs** aimed at people with varying levels of biodiversity knowledge be developed. Participants also wanted to see more Council-led engagement activities to **encourage greater community participation,** including activities like tree planting days and wildlife walks.

The feedback summarised above and in Table 1 (see also page 37 graphs) has been used to inform the objectives and actions outlined in this action plan, as well as the action categories.

> CONTENTS

Consultation and engagement with the community is essential to developing an effective plan by allowing the community to provide meaningful input.

Students from Rosewood Down Primary School participating in the Native Fish Program at Tirhatuan Park

> CONTENTS

Table 1 Summary of most common reasons why biodiversity is considered important from online survey and examples of comments provided

Common themes	Examples of comments provided
For future generations	• For my children's future. • It is important to maintain biodiversity for future generations. • To ensure my children and their children get to experience the wonders of this area like I have. • We have a responsibility to leave the next generation with something better, not worse than what we have made.
For the wellbeing of flora and fauna	• Native plants and animals need to be protected. • If we didn't have it, there would be nowhere for animals to live. • To keep places for the animals to live. • For the diversity of all plants.
Health and wellbeing	• It is a crucial part of our neighbourhood and wellbeing. • It is one of the factors that leads to healthier communities and also stronger and more friendly neighbourhoods. • My wife gets intense enjoyment from bird watching. I rate my quality of life based on how many frogs I can hear when walking..
Provision of ecosystem services	• Nice place to live, breathe fresh air and drink clean water. • Will help to filter waterways of pollution. • Biodiversity plays an important part in the functioning ecosystem that supply oxygen, clean air, clean water, pollination of plants and many more.

> CONTENTS

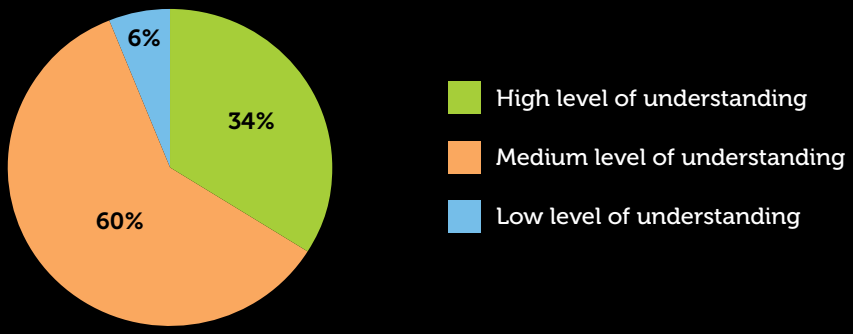
Greater Dandenong Environment Group (GDEG)

Freshwater macro invertebrate testing with Greater Dandenong Environment Group

Greater Dandenong Environment Group is a 'friends' group that comes together to monitor water quality at the Dandenong Wetlands through freshwater macroinvertebrate (FWMI) testing. FWMIs are aquatic larvae, insects, crustaceans, and molluscs that live in our waterways. Some are very sensitive to pollution and can be used to monitor the water quality by their presence.

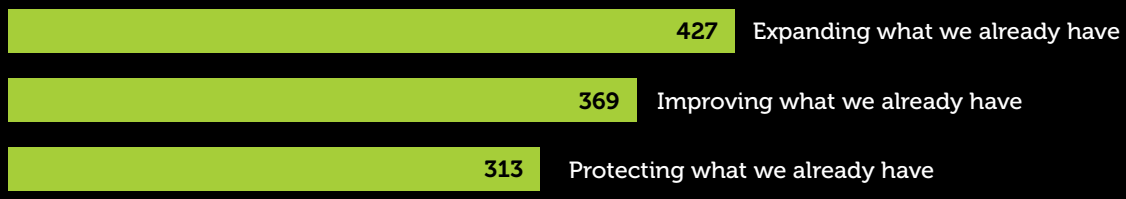
LEVELS OF BIODIVERSITY UNDERSTANDING THROUGHOUT GREATER DANDENONG

Understanding of biodiversity

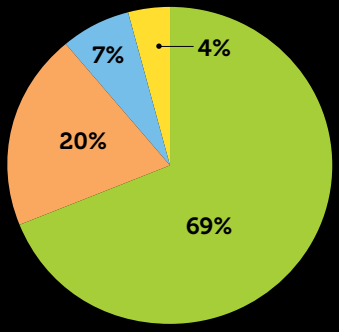


PRIORITIES FOR PROTECTING BIODIVERSITY

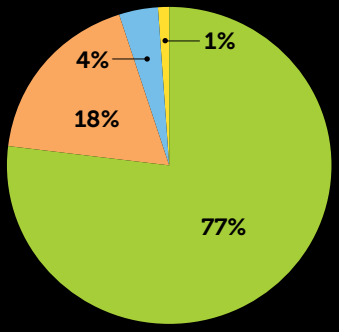
What should Council prioritise to protect biodivesity?



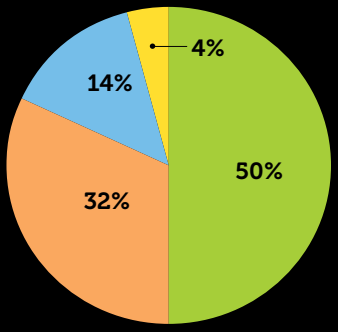
Climate Change



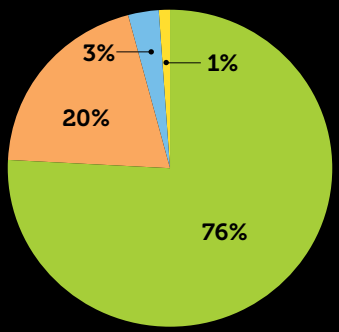
Land Clearing



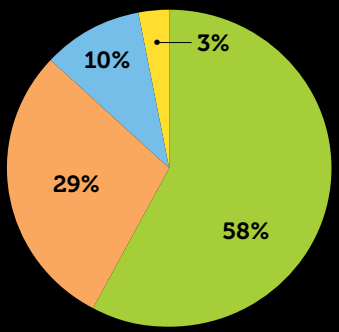
Introduced Species



Polluted Waterways



Dumping rubbish / littering



^ CONTENTS

Greater Dandenong Icon Animal

LATHAM'S SNIPE

Gallinago hardwickii

BACKGROUND

Ambassador for the protection and restoration of wetlands.

Latham's Snipe is the largest snipe in Australia. Its plumage is mainly brown and very camouflaged in the reeds and grasses where it feeds and nests.

It is a migratory bird, travelling to Australia to overwinter from Japan and East Asia. It has been sighted across Dandenong, particularly at Tirhatuan Park, Dandenong Wetlands and Falkiner Reserve during our summer months.

THREATS

- Loss of habitat and drainage of wetlands
- Predation by foxes, cats and dogs

WHAT IS COUNCIL DOING?

- Habitat restoration of waterway corridors and wetlands
- Education

^ CONTENTS

ACTION PLAN

Based on the information collected in the Ecological Assessment and knowledge review for the City of Greater Dandenong (Ecology Australia 2021), the actions outlined in this plan address Council's biodiversity goals, and have been categorised into the following five key objectives:

1. Care for nature - protection and enhancement of existing biodiversity values
2. Share and build knowledge of nature - improving knowledge of biodiversity values
3. Foster care for nature on private land - facilitating and encouraging biodiversity conservation and enhancement on private land
4. Manage threats to nature - managing threatening processes such as pest animals and plants, pollution and climate change
5. Connect with nature - community engagement and education.

The timings of each action are as follows:

Immediate actions	Already commenced, or to commence within the next 6 months
Short term actions	To commence within the next 6 – 18 months
Medium term actions	To commence within the next 18 months to 3 years
Ongoing	Occurring on an ongoing basis each year, or as opportunities arise

While the actions detailed in the action plan are currently considered within Council's sphere of influence, the Action Plan does not indicate that resources are currently or will be available in the future for any specific action. Council's resources are determined annually by council and other stakeholders.

When resources are available, actions will generally be resourced according to their stated timeline as recommended by this plan.

> CONTENTS

#1

Care for nature—protection and enhancement of existing biodiversity values.

> CONTENTS

#	Action	Deliverables	Responsibility	Timeframe
1.1	Develop a monitoring and evaluation framework to measure biodiversity within Greater Dandenong	**1.11** Monitoring and evaluation framework developed that uses standard and repeatable monitoring methods	Parks Asset Management	Short term
		1.12 Activity data to be recorded annually. Align with DELWP Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework (MERF) (2019a)		
		1.13 Ensure actions from other relevant strategies, such as the Green Wedge Management Plan and Reconciliation Action Plan are incorporated into the framework		
1.2	Seek to increase cooperation and collaboration between neighboring councils and regional-based land management organisations (e.g. PV, MW, PPWCMA) to focus on regional biodiversity outcomes	**1.21** Continue council's membership of Living Links, a regional approach to increasing biodiversity and connection of green spaces across the Dandenong Creek catchment	Parks	Ongoing
		1.22 Actively engage with State and Federal Agencies to build relationships and explore grant funding opportunities		
		1.23 Ongoing participation in the Eastern Regional Pest Animal Network		
1.3	Implementation of Greater Dandenong Planning Scheme	**1.31** Continue to support vegetation overlays in the Green Wedge	Planning & Design	Ongoing
		1.32 Continue to implement native vegetation precinct plans during development approvals processes	Parks	
		1.33 Continue to assess planning permit applications against the requirements of the Greater Dandenong Planning Scheme.		
		1.34 Ensure recognition of Biodiversity Action Plan in relevant council strategic and policy documents		
		1.35 Advocate councils and our community's local priorities to state and federal government and key stakeholders through participation in regional forums		

> CONTENTS

1.4	Implement biodiversity focused land management practices and consider biodiversity outcomes when designing and improving public open space	**1.41** Operational works programs are reviewed and updated annually to ensure best practice land management	Parks	Ongoing
		1.42 A minimum of 20 000 indigenous seedlings are planted each year	Parks	Ongoing
		1.43 Bushland Reserve Management Plans are reviewed and updated on a regular basis to better inform management practices	Parks	Ongoing
		1.44 Implement actions to improve habitat connectivity for 'Icon species' (see Appendix 8) a) Further refine habitat connectivity maps (Appendix 7) for icon species including works areas b) Cross reference and update operational works plan c) Report progress annually	Parks Planning & Design City Improvement	Short term
		1.45 Implement site-specific recommendations for assessment sites (see Appendix 6), via works programs and continue implementing through appropriate overlays under the Greater Dandenong Planning Scheme. For on ground works: 1. Year 1 – prepare sites to be planted (weed control) and source species to be contract grown. Apply for grants for relevant sites. 2. Year 2 – control weeds and planting, source species. Source/ build nest boxes and identify locations. 3. Year 3 – continue maintenance and planting. Install nest boxes in identified locations.	Parks Planning & Design City Improvement	Short term
		1.46 Develop an operational rewilding plan, following the refinement of the habitat connectivity and corridor mapping. Plan to include: • identification of parks to be planted and type of species • corridor mapping to be considered during open space strategic land purchases determinations • support of nature strip guidelines	Parks Planning & Design City Improvement	Medium term

> CONTENTS

1.4		**1.47** Ensure actions developed in the Open Space Strategy are being implemented	Parks Planning & Design City Improvement	Ongoing
		1.48 Implement the Open Space Quality Assessment Tool as identified in the Open Space Strategy, including the use of ecosystem services as an indicator of open space quality	Parks Planning & Design City Improvement	Short term

> CONTENTS

Powerful Owl
Ninox strenua

#2

Share and build knowledge of nature—improving data of biodiversity values

> CONTENTS

#	Action	Deliverables	Timeframe	Responsibility
2.1	Review and update GIS map data for existing biodiversity values across all land tenures*	**2.11** Biodiversity values are mapped across the LGA, including ephemeral wetland sites and fauna values	Short term	Parks Asset Management
		2.12 Information is readily accessible via mapping in council's GIS system	Medium term	
		2.13 Develop a GIS layer for the distribution of known biodiversity threats		
2.2	Identify and map habitat corridors to further inform enhancement of biodiversity values across the municipality and surrounding areas	**2.21** Biodiversity connectivity mapping developed and incorporated into GIS layer	Short term	Parks Asset Management
		2.22 Biodiversity mapping used to develop a habitat corridors brochure		
		2.23 Management strategies and habitat enhancement opportunities developed for 'Icon' species		
2.3	Increase biodiversity knowledge and awareness within Council directorates, teams, and Contractors	**2.31** Establish an internal Biodiversity Working Group to focus on biodiversity awareness across Council departments	Immediate	Parks
		2.32 Provide biodiversity awareness training to Council staff and contractors	Short term	Biodiversity Working Group
		2.33 Bushland staff to utilize temporary signs describing works undertaken on site to educate locals and other teams (e.g. weed management signs)	Immediate	Parks
		2.34 Consider establishing a biodiversity community of practice, and hold annual or biannual meetings to increase knowledge, capacity and resilience of local environmental groups	Short term	Parks

> CONTENTS

#3

Foster care for nature on private land - facilitating and encouraging biodiversity conservation and enhancement on private land

> CONTENTS

#	Action	Deliverables	Timeframe	Responsibility
3.1	Continue to implement and support actions in the Green Wedge management plan	**3.11** Ensure relevant actions developed in the Green Wedge Management Plan are being implemented including: • Improve water quality within and downstream of the Greater Dandenong Green Wedge including advocating to Melbourne Water for regular pollution monitoring: • Investigate options to reinstate and reconnect natural waterways in partnership with Melbourne Water and local landowners • Protect existing ecological values, including facilitation of a weed management program and ways to encourage private landowners to protect existing remnant flora and fauna • Enhance ecological values and improve connectivity, including applying planning controls to encourage appropriate revegetation along areas identified to provide habitat links	Ongoing	Parks Planning & Design Regulatory Services
3.2	Investigate mechanisms to support private landholders to protect and enhance biodiversity values	**3.21** Explore options including the development of a Landcare group/ officer, funding opportunities and biodiversity values promotion	Medium term	Parks Planning & Design
		3.22 Deliver "Growing Biodiversity" potting up and plant giveaway activities at Council events (Sustainability Fest, Reconciliation Week, etc.)	Immediate	Parks
		3.23 Investigate further options for tree give aways and incentives for landowners such as: • Tree giveaways at environmental education programs • Tree giveaways as part of the Gardens For Wildlife program	Short term	Parks
		3.24 Advertise and distribute the EVC planting map for the municipality which highlights what species to plant where you live	Short term	Parks
		3.25 Consider a nest box purchase program for residents	Medium term	Parks
		3.26 Investigate options to deliver a biodiversity incentive strategy for private land	Medium term	Parks
3.3	Adopt and implement an affiliate Gardens For Wildlife program with residents	**3.31** Gardens for Wildlife program is supported by Council, including free plants for participants	Immediate	Parks Gardens 4 Wildlife community group

> CONTENTS

#4

Manage threats to nature – key threatening processes that cause biodiversity loss are investigated and mitigated

> CONTENTS

#	Action	Deliverables	Timeframe	Responsibility
4.1	Continue to implement Council's Water Sensitive Urban Design Guidelines (adopted from City of Greater Dandenong 2017b)	**4.11** Develop improved technical standards and guidelines for the design, construction and management of drainage assets	Immediate	Asset Management Parks City Improvement Melbourne Water
		4.12 Investigate and identify opportunities to recycle stormwater runoff for the irrigation of parks and reserves across the City of Greater Dandenong	Medium term	Asset Management Parks
		4.13 Investigate and identify (collaboratively with Melbourne Water) opportunities to rehabilitate channelised section of waterways within the City of Greater Dandenong including Mile Creek at Sandown	Medium term	Parks Melbourne Water
		4.14 Engage and work with local businesses to reduce the risk of future pollution incidents	Immediate	Regulatory Services Asset Management
4.2	Develop a more strategic approach to pest animal management in line with the Eastern Region Pest Animal Strategy	**4.21** Local Action Plans developed in conjunction with the Eastern Regional Pest Animal Network including myna, rabbit, cat and fox	Short term	Parks Regulatory Services Eastern Region Pest Animal Network
		4.22 Encourage community reporting of pest animal sightings to continue to build a database of information	Short term	Regulatory Services
		4.23 Investigate targeted education opportunities for residents within proximity to high biodiversity value areas	Short term	Parks
		4.24 Develop a cat curfew for community consultation and explore other operational methods, practices and education for managing the impacts to biodiversity caused by cats in the municipality	Immediate	Regulatory Services
4.3	Undertake Climate Change Vulnerability Assessments (CCVAs) to increase our understanding of the impacts of climate change on local biodiversity values	**4.31** Commencement of CCVAs for local biodiversity values	Medium term	Planning & Design Parks
		4.32 CCVAs results to be incorporated into initial steps in climate change adaptation planning processes	Medium term	Planning & Design
		4.33 Conduct quantitative assessments based on traits of wildlife and habitats that might make them more vulnerable to climate change	Medium term	Planning & Design Parks

> CONTENTS

4.4	Develop a more strategic approach to weed management	**4.41** Where possible develop new bushland management plans at a broader scale and in collaboration with surrounding landholders, such as the Lower Dandenong Creek Management Plan	Immediate	Parks Planning & Design
		4.42 Collaboratively undertake weed control such as through Living Links or the Peri Urban Weed Partnership	Immediate	Parks
		4.43 Develop action plans for high threat weeds including site identification	Short term	Parks
4.5	Mitigate climate change impacts on biodiversity	**4.51** Review, update and prepare new reserve management plans to include consideration of opportunities to increase and enhance resilience of council's bushland reserves against loss of biodiversity from climate change. This includes maintenance, experimentation and modification where necessary to maintain or enhance ecological functioning areas of biodiversity	Immediate	Parks
		4.52 Investigate opportunities to improve existing wildlife corridor links and establish new ones where appropriate, including through the implementation of the Open Space Strategy	Short term	Parks Planning & Design Asset Management Governance
		4.53 Continue to seek external funding grants to increase local biodiversity and the urban forest	Ongoing	Parks
		4.54 Investigate and report on available opportunities to utilise council's trees and reserves to offset its carbon emissions and draw down carbon	Medium term	Planning & Design Parks

> CONTENTS

Boobook Owl in tree hollow

> CONTENTS

#5

Connect with nature - community engagement and education

> CONTENTS

#	Action	Deliverables	Timeframe	Responsibility
5.1	Review, update and expand the Environmental Education & Engagement Program with an education and community capacity building focus that caters to all levels of biodiversity awareness for residents, schools, early learning centres, staff and councillors.	**5.11** Environmental Education & Engagement Program is updated and better aligns with the desired outcomes of the Biodiversity Action Plan. Other inclusions: nature play, bush kinder and consideration of culturally and linguistically diverse (CALD) communities.	Short term	Parks
		5.12 Promotion of the Environmental Education and Engagement Program is increased	Short term	Parks
		5.13 Run a minimum of six annual community planting days within reserves, and a minimum of 2 with corporate groups	Ongoing	Parks
		5.14 Run a minimum of five annual indigenous planting days in schools		
		5.15 Run a minimum of six "Adopt a Park" programs with local schools annually		
		5.16 Run an annual staff and councillor biodiversity awareness program	Short term	Parks
		5.17 Gauge local levels of interest for bush kinder, and allocate a potential space	Short term	Parks Planning & Design
5.2	Collaborate with key stakeholders and partners to deliver best educational outcomes, and to ensure educational material and resources are more accessible to culturally and linguistically diverse communities to increase awareness of biodiversity	**5.21** Translate existing educational material into other commonly spoken languages	Medium term	Parks Media & Communications Community Services
		5.22 Continue to work with other environmental education providers for best educational outcomes, including Field Naturalists, Birdlife Australia, Dolphin Research Institute and Greater Dandenong Environment Group	Ongoing	Parks Community Services
5.3	Promote biodiversity values within Council reserves	**5.31** Continue incorporating the use of citizen science projects like iNaturalist "Biodiversity Blitz", Frog ID and WaterWatch to support data collection and engage residents	Ongoing	Parks
		5.32 Seek funding opportunities to continue to deliver the Bushland & Wetland Interpretive signage program	Short term	
		5.33 Facilitate nature play, open days, and guided ranger walks at Alex Wilkie Nature Reserve & Visitors Centre	Ongoing	

> CONTENTS

5.4	Develop a biodiversity focused media plan	**5.41** Review and update of website content and messaging	Short term	Parks Media & Communications
		5.42 Bi-monthly "Growing Biodiversity" E-newsletter distributed to registered community groups, schools and residents	Ongoing	Parks Media & Communications
		5.43 Social media posts utilised to promote biodiversity events and awareness of key environmental days (World Wetlands Day, National Tree Day, etc.)		Parks Media & Communications
		5.44 Increase promotion of reserve success stories such as the Flying Fox colony, Latham's Snipe, Swift Parrot and Blue billed duck sightings	Immediate	Parks Media & Communications
5.5	Engage with and develop partnerships with Traditional Owners to include Aboriginal values and traditional ecological knowledge in biodiversity planning and management	**5.51** Partnerships that inform the protection, management and access to biodiversity values across the LGA	Ongoing	Parks Community Development
5.6	Continue to actively encourage participation in educational/ volunteer programs to build awareness and undertake bush regeneration activities.	**5.61** Continue to provide support for Friends of Fotheringham Reserve and the Greater Dandenong Environment Group, as well as any new groups	Ongoing	Parks
		5.62 Update guidance on the council website about how to volunteer in bushland reserves, and how to create a new group	Short term	Parks
5.7	Continue to provide support through Council's community grants program for community events, capacity building activities or programs focused on biodiversity improvements that : • Contribute to Council's vision and strategic priorities • Enhance community capacity in responding to local needs • Increase community collaboration, partnerships and intercultural connections • Contribute to improvement of community safety, health and wellbeing • Have the best sustainable outcomes for the local community	**5.71** Grants provided through the community grant program that include a focus on biodiversity	Ongoing	Community Services

> CONTENTS

Vanessa kershawi &
pelargonium australe

> CONTENTS

Greater Dandenong Icon Animal

EASTERN SPINEBILL

Acanthorhynchus tenuirostris

BACKGROUND

The Eastern Spinebill is a Honeyeater. It feeds on nectar plants while hovering like a hummingbird, which enables it to feed on plants without clinging to the branches. Their long-curved bills are designed to probe flowers but they will also feed on the occasional insect or spider, particularly during nesting season. They are well adapted to urban life, feeding on native and introduced plants and nesting on verandas but like all small native birds, they have seen a decline in their populations.

THREATS

- Loss of habitat, particularly dense, prickly shrubs that provide protection and nesting sites, along with vegetated corridors which are essential for movement
- Predation by cats and birds such as Noisy Miner, Indian Myna, Ravens and Butcher Birds

WHAT IS COUNCIL DOING?

- Habitat restoration of corridors with a focus on the middle-bushy plant layers
- Gardens for Wildlife Program
- Education.

WHAT CAN YOU DO?

- Observe the seasons and record sightings of migratory birds for Council's records.
- Keep cats inside at night.
- Join Gardens for Wildlife to increase habitat in your backyard.

PERFORMANCE MONITORING AND REVIEW

An annual update on the progress made towards achieving Council's vision for protecting and enhancing biodiversity will be completed using a variety of qualitative and quantitative measures, using Council's corporate reporting system. These updates will be made available on Council's website and customer service locations. A full review of the Biodiversity Action Plan will be completed in 2026.

Council's external Sustainability Advisory Group will facilitate community oversight of the Biodiversity Action Plans implementation and community involvement.

> CONTENTS

> CONTENTS

Greater Dandenong Icon Animal

KREFFT'S GLIDER

Petaurus notatus

BACKGROUND

Ambassador for the protection of roadside corridors and habitat linkages.

The Krefft's Glider is an arboreal animal that spends most of its life in trees using trees for both resting, feeding and using the tree canopy to move across the landscape. Krefft's Gliders use hollows in the boles and branches of trees and in coppicing stumps for nesting, and are known to readily use nest-boxes

They feed on nectar, sap and insects including the sap of Black Wattle, Silver Wattle and Golden Wattle.

THREATS

- Loss of habitat connectivity and nesting hollows
- Disturbance during nesting
- Predation.

WHAT IS COUNCIL DOING?

- Establishment of nesting boxes in habitat areas limited by large hollow availability.
- Monitoring any sightings to identify preferred habitats
- Habitat connectivity actions to link corridors where there are known Krefft's Glider locations through Lysterfield and Churchill National Park
- Education.

GLOSSARY

Biodiversity – The variety of all life-forms, plants, animals, fungi, protists (including algae) and bacteria, their encoded genes, and the ecosystems of which they form part.

Bioregion – Defined graphical regions of Australia with similar climatic and geophysical characteristics, and which generally contain a suite of distinct ecosystems and species.

Canopy cover – The measure of the area of tree canopy when viewed from above and is recorded as a percentage of total land area.

Climate Change – the long-term change in the Earth's weather patterns as a result of global warming, resulting in fluctuating temperatures and more frequent extreme weather events.

Ecology – How organisms interact with their environment and other organisms.

Ecological Vegetation Class (EVC) – A vegetation classification described through a combination of its floristic composition, life form and ecological characteristics, and its association with particular environmental attributes. EVCs may include one or more floristic communities that occur across a biological range and have similar habitat and ecological processes operating.

Habitat Hectares – A measure of quality and extent of native vegetation, incorporating attributes.

Resilience – To be able to withstand or recover quickly from difficult conditions.

Sustainability – Actions and decisions that are capable of being maintained at a steady level without exhausting natural resources or causing significant ecological damage.

> CONTENTS

Abbreviations

CaLP Act – Victorian Catchment and Land Protection Act 1994

EPBC Act – Commonwealth Environment Protection and Biodiversity Conservation Act 1999

ESP – Ecological Service Provider

DELWP – Department of Environment, Land, Water, and Planning

FFG Act – Victorian Flora and Fauna Guarantee Act 1988

CGD – City of Greater Dandenong

MW – Melbourne Water

OSP – Other service providers

PPWCMA– Port Phillip and Westernport Catchment Management Authority

PV – Parks Victoria

Greater Dandenong Icon Animal

BLUE TONGUE LIZARDS

BACKGROUND

Blue tongue lizards hide in burrows, particularly those dug out by burrowing spiders. The deeper the burrow the better as this keeps them safer from predators and cooler in summer or warmer in winter.

THREATS

- Habitat loss, road mortality, predation by cats, dogs, foxes and birds of prey.

WHAT IS COUNCIL DOING?

- Identify bushland areas that currently support known populations of Blue-tongued Lizard and create corridors to safely connect populations.
- Exploring options and consulting with the community for the implementation of a cat curfew and increasing community education on the importance of responsible cat ownership.
- Gardens 4 Wildlife.

WHAT CAN YOU DO?

- Build a lizard lounge and provide shelter in your garden such as vegetation, rocks, logs, ground debris, in addition to digging some narrow burrows under logs.
- Avoid using snail bait as the lizards frequently eat snails and can be poisoned.
- Be responsible with your pets.

> CONTENTS

REFERENCES

Australian Bureau of Statistics (2010). Australia's Biodiversity. Available at: https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1301.0Feature+Article12009%E2%80%9310 (Australian Bureau of Statistics, Canberra)

Biosis (2013). City of Greater Dandenong Green Wedge Management Plan.

Biosis (2018). City of Greater Dandenong Green Wedge Biodiversity Management Planning Controls:

Advice for ongoing protection.

City of Greater Dandenong (2016). Greater Dandenong Sustainability Strategy: Towards an Environmentally Sustainable City 2016 – 2030. (City of Greater Dandenong)

City of Greater Dandenong (2017a). Greening our City Urban Tree Strategy 2018-2028. Available at: https://www.greaterdandenong.vic.gov.au/greening-our-city-urban-tree-strategy

City of Greater Dandenong (2017b). Sustainable Stormwater Strategy 2017-2037. Available at: https://www.greaterdandenong.vic.gov.au/sustainable-stormwater-strategy-2017-37

City of Greater Dandenong (2020a). Climate Emergency Strategy 2020 – 2030. Available at: https://www.greaterdandenong.vic.gov.au/climate-change-emergency-strategy

City of Greater Dandenong (2020b). Urban Forest Strategy 2021-28. Available at: https://www.greaterdandenong.vic.gov.au/urban-forest-strategy-2021-2028

City of Greater Dandenong, SJB Urban, Social Fabric Planning & Urban Enterprise (2020c). Greater Dandenong Open Space Strategy 2020 – 2030. Available at: https://www.greaterdandenong.vic.gov.au/open-space-strategy

DAWE (2020). EPBC Act List of Threatened Flora. Available at: https://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora

DELWP (2017a). Protecting Victoria's Environment – Biodiversity 2037. Available at: https://www.environment.vic.gov.au/biodiversity/biodiversity-plan (Department of Environment, Land, Water and Planning: East Melbourne)

DELWP (2017b). Victorian Biodiversity Atlas Version 3.2.5. Available at: https://vba.dse.vic.gov.au/vba/index.jsp (Department of Environment, Land, Water and Planning: East Melbourne)

DELWP (2019a). Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework (MERF) Version 2.0. Available at: https://www.environment.vic.gov.au/__data/assets/pdf_file/0020/462341/Biodiverstiy-2037-MERI-v2.pdf (Department of Environment, Land, Water and Planning: East Melbourne)

DELWP (2019b). Flora and Fauna Guarantee Act Threatened List. Available at: https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list (Department of Environment, Land, Water and Planning: East Melbourne)

DELWP (2020a). Bioregions and EVC Benchmarks. Available at: https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks (Department of Environment, Land, Water and Planning: East Melbourne)

DELWP (2020b) Mapping and analysis of vegetation, heat and land use. https://www.planning.vic.gov.au/policy-and-strategy/planning-for-melbourne/plan-melbourne/cooling-greening-melbourne/mapping-and-analysis-of-vegetation,-heat-and-land-use

> CONTENTS

DELWP (2020c) Naturekit. Available at: https://www.environment.vic.gov.au/biodiversity/naturekit

DSE (2004). Vegetation Quality Assessment Manual – Guidelines for Applying the Habitat Hectares Scoring Method. Available at: https://www.environment.vic.gov.au/__data/assets/pdf_file/0016/91150/Vegetation-Quality-Assessment-Manual-Version-1.3.pdf (Victorian Government Department of Sustainability and Environment, Melbourne)

Ecology Australia (2021). Ecological Assessment and Knowledge review for the City of Greater Dandenong. (Ecology Australia, Melbourne)

Eco Logical. (2020). Eastern Region Pest Animal Strategy (Eco Logical Pty Ltd, Abbotsford).

Fay P. A., Guntenspergen G. R., Olker J. H. & Johnson, W. C. (2016). Climate Change Impacts on Freshwater Wetland Hydrology and Vegetation Cover Cycling Along a Regional Aridity Gradient. Ecosphere, 7(10). https://doi.org/10.1002/ecs2.1504

Jacobs, B., Mikhailovich, N., and Delaney, C. (2014) Benchmarking Australiach, N., and Delaney, C. (i-Tree Assessment, prepared for Horticulture Australia Limited by the Institute for Sustainable Futures, University of Technology Sydney.

Melbourne water (2018). Co-Designed Catchment Program for the Dandenong Catchment Region. Available at: https://www.melbournewater.com.au/search?search=co-designed+catchment+program

Planishpere (2016). Green Wedge Management Plan. Available at: https://www.greaterdandenong.vic.gov.au/green-wedge-management-plan

Practical Ecology (2017). Dandenong Creek and Churchill National Park Biodiversity Mapping.

> CONTENTS

Galah near tree hollow

Greater Dandenong Case Study

HABITAT, HOLLOWS AND NESTING BOX PROGRAM

The importance of bushland vegetation in reserves, along with large, old trees is taught to Dandenong West Primary students as part of their two-year curriculum.

Year 3 and 4 students spend one day per week, over 5 weeks visiting Fotheringham Reserve to learn about habitat, local animals, the importance of hollows and then assist in our nestbox program.

This school program utilises the reserve as an outdoor classroom and has been very successful in teaching conservation-based science to the students. Students have also built nestboxes, which have been installed in the larger trees and these are monitored annually.

> CONTENTS

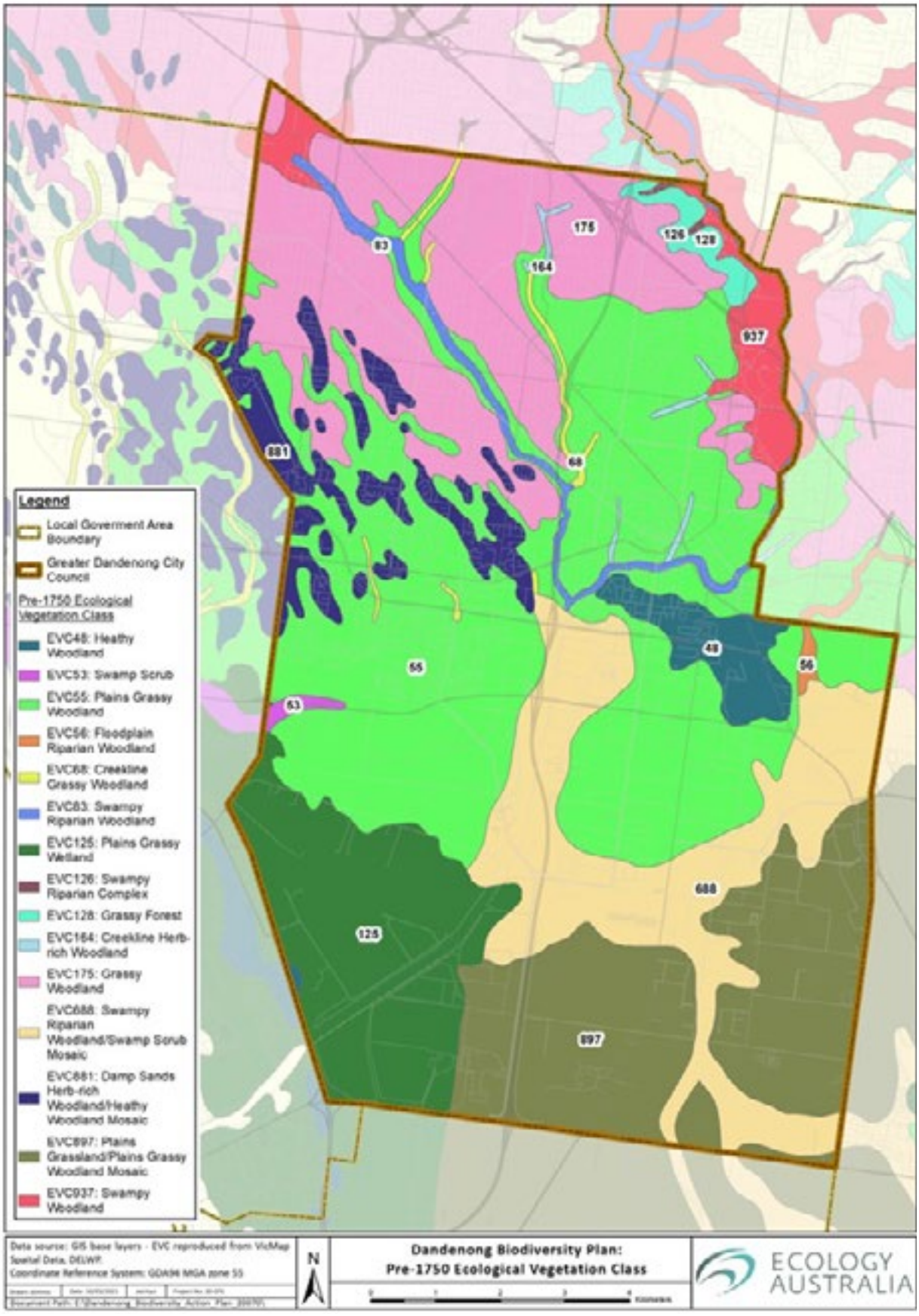
APPENDICES

> CONTENTS

Eastern Long-necked Turtles
Chelodina longicollis

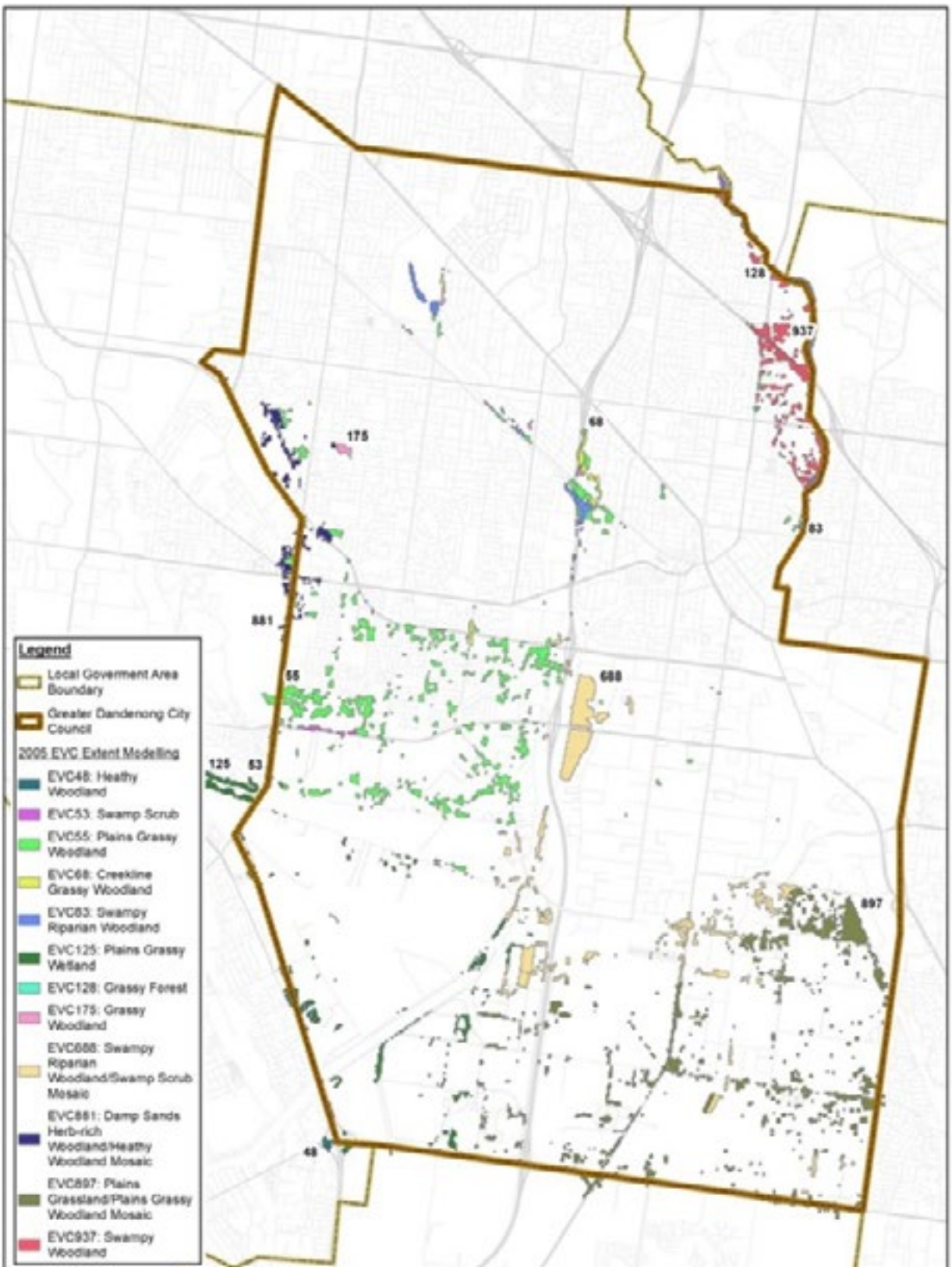
Appendix 1

Vegetation coverage across the City of Greater Dandenong pre 1750 (left) and today (right).



> CONTENTS

> CONTENTS


Legend
Local Goverment Area Boundary
Greater Dandenong City Council
2005 EVC Extent Modelling
EVC48: Heathy Woodland
EVC53: Swamp Scrub
EVC55: Plains Grassy Woodland
EVC68: Creekline Grassy Woodland
EVC83: Swampy Riparian Woodland
EVC125: Plains Grassy Wetland
EVC128: Grassy Forest
EVC175: Grassy Woodland
EVC686: Swampy Riparian Woodland/Swamp Scrub Mosaic
EVC881: Damp Sands Herb-rich Woodland/Heathy Woodland Mosaic
EVC897: Plains Grassland/Plains Grassy Woodland Mosaic
EVC937: Swampy Woodland
128
937
175
68
83
881
55
686
125
53
897
48

Appendix 2

Fauna species listed as threatened under the EPBC Act 1999 (DAWE 2020), FFG Act 1988 (DELWP 2019b) or the Victorian Threatened Species Advisory List recorded within the City of Greater Dandenong municipality

Scientific Name	Common Name	EPBC	FFG	VIC	Source	Last Recorded	LOP	Lifeform
Rostratula australis	Australian painted-snipe	EN	L	cr	PMST, VBA	25/11/2000	Moderate	Other Non-passerine birds
Botaurus poiciloptilus	Australasian bittern	EN	L	en	PMST, VBA	23/06/2019	High	Other Non-passerine birds
Polytelis swainsonii	Superb parrot	VU	L	en	VBA	28/01/2010	Moderate	Other Non-passerine birds
Polytelis anthopeplus	Regent parrot	VU	L	vu	VBA	2/06/1914	Low	Other Non-passerine birds
Lathamus discolor	Swift parrot	CR	L	en	PMST, VBA	18/05/2019	Moderate	Other Non-passerine birds
Hirundapus caudacutus	White-throated needletail	VU	L	vu	PMST, VBA	31/05/2018	High	Other Non-passerine birds
Diomedea exulans	Wandering albatross	VU	L	en	PMST		Low	Marine birds
Thalassarche melanophris	Black-browed albatross	VU		vu	PMST, VBA	13/09/1952	Low	Marine birds
Thalassarche chrysostoma	Grey-headed albatross	EN	L	vu	PMST		Not Likely	Marine birds
Thalassarche cauta	Shy albatross	VU	L	vu	PMST		Not Likely	Marine birds
Macronectes giganteus	Southern giant-petrel	EN	L	vu	PMST		Moderate	Marine birds
Thalassarche bulleri	Buller's albatross	VU	L		PMST		Not Likely	Marine birds
Macronectes halli	Northern giant-petrel	VU	L	nt	PMST, VBA	1/05/1976	Moderate	Marine birds
Diomedea epomophora	Southern royal albatross	VU	L	vu	PMST		Not Likely	Marine birds
Diomedea sanfordi	Northern royal albatross	EN			PMST		Not Likely	Marine birds
Thalassarche salvini	Salvin's albatross	VU			PMST		Not Likely	Marine birds
Thalassarche impavida	Campbell albatross	VU			PMST		Not Likely	Marine birds
Sternula nereis	Fairy tern	VU	L	en	PMST, VBA	31/05/2018	Moderate	Waders
Thinornis cucullatus	Hooded plover	VU	L	vu	PMST		Low	Waders
Numenius madagascariensis	Eastern curlew	CR	L	vu	PMST, VBA	1/05/2019	Moderate	Waders
Limosa lapponica	Bar-tailed godwit	VU			PMST, VBA	19/11/2017	Moderate	Waders
Calidris ferruginea	Curlew sandpiper	CR	L	en	PMST, VBA	7/04/2019	High	Waders
Calidris canutus	Red knot	EN		en	PMST, VBA	16/09/2018	Moderate	Waders

> CONTENTS

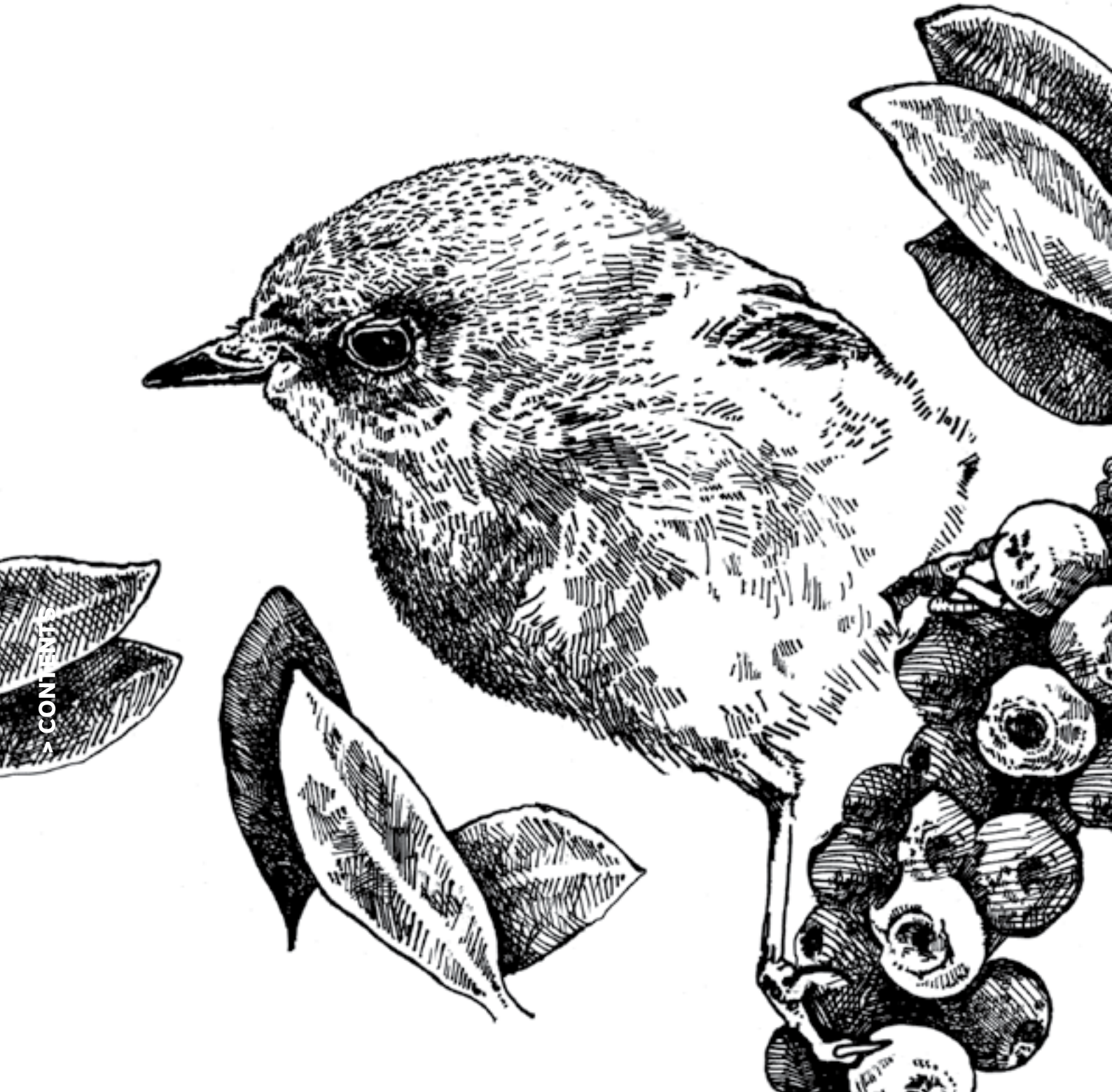
Scientific Name	Common Name	EPBC	FFG	VIC	Source	Last Recorded	LOP	Lifeform
Stipiturus mallee	Mallee emu-wren	EN	L	en	VBA	31/05/2018	Not Likely	Passerine birds
Grantiella picta	Painted honeyeater	VU	L	vu	PMST, VBA	12/03/2019	Moderate	Passerine birds
Anthochaera phrygia	Regent honeyeater	CR	L	cr	PMST, VBA	12/04/2019	Moderate	Passerine birds
Dasyurus maculatus maculatus	Spot-tailed quoll	EN	L	en	PMST		Low	Mammals
Antechinus minimus maritimus	Swamp antechinus	VU	L	nt	PMST		Low	Mammals
Petauroides volans	Southern greater glider	VU	L	vu	PMST		Low	Mammals
Potorous tridactylus trisulcatus	Long-nosed potoroo	VU	L	nt	PMST		Not Likely	Mammals
Isoodon obesulus obesulus	Southern brown bandicoot	EN	L	nt	PMST, VBA	16/11/1990	Moderate	Mammals
Pteropus poliocephalus	Grey-headed flying-fox	VU	L	vu	PMST, VBA	13/04/2019	Moderate	Bats
Chelonia mydas	Green turtle	VU			PMST		Not Likely	Reptiles
Dermochelys coriacea	Leathery turtle	EN	L	cr	PMST		Not Likely	Reptiles
Litoria raniformis	Growling grass frog	VU	L	en	PMST, VBA	25/10/1975	Moderate	Amphibians
Prototroctes maraena	Australian grayling	VU	L	vu	PMST		Low	Fish
Galaxiella pusilla	Dwarf galaxias	VU	L	en	PMST, VBA	3/10/2005	Moderate	Fish
Nannoperca obscura	Yarra pygmy perch	VU	L	vu	PMST, VBA	26/02/1983	Moderate	Fish
Synemon plana	Golden sun moth	CR	L	cr	PMST		Low	Invertebrates
Geopelia cuneata	Diamond dove		L	nt	VBA	3/10/2009	Moderate	Other Non-passerine birds
Lewinia pectoralis	Lewin's rail		L	vu	VBA	28/01/2007	Moderate	Other Non-passerine birds
Porzana pusilla	Baillon's crake		L	vu	VBA	27/01/2019	Moderate	Other Non-passerine birds
Phalacrocorax fuscescens	Black-faced cormorant			nt	VBA	1/07/1975	Moderate	Other Non-passerine birds
Phalacrocorax varius	Pied cormorant			nt	VBA	7/05/2019	High	Other Non-passerine birds
Gallinago hardwickii	Latham's snipe			nt	PMST, VBA	10/03/2019	High	Other Non-passerine birds
Plegadis falcinellus	Glossy ibis			nt	VBA	10/02/2019	High	Other Non-passerine birds
Platalea regia	Royal spoonbill			nt	VBA	23/06/2019	High	Other Non-passerine birds
Egretta garzetta	Little egret		L	en	VBA	27/01/2019	Moderate	Other Non-passerine birds
Ardea intermedia plumifera	Plumed egret		L	en	VBA	30/12/2018	Moderate	Other Non-passerine birds
Ardea alba modesta	Eastern great egret		L	vu	PMST, VBA	31/07/2019	High	Other Non-passerine birds
Nycticorax caledonicus	Nankeen night-heron			nt	VBA	13/05/2019	High	Other Non-passerine birds
Anseranas semipalmata	Magpie goose		L	nt	VBA	31/05/2018	High	Other Non-passerine birds
Spatula rhynchotis	Australasian shoveler			vu	VBA	25/06/2019	High	Other Non-passerine birds
Stictonetta naevosa	Freckled duck		L	en	VBA	23/06/2019	High	Other Non-passerine birds

> CONTENTS

Scientific Name	Common Name	EPBC	FFG	VIC	Source	Last Recorded	LOP	Lifeform
Aythya australis	Hardhead			vu	VBA	30/07/2019	High	Other Non-passerine birds
Oxyura australis	Blue-billed duck		L	en	VBA	23/07/2019	Moderate	Other Non-passerine birds
Biziura lobata	Musk duck			vu	VBA	23/06/2019	High	Other Non-passerine birds
Circus assimilis	Spotted harrier			nt	VBA	31/12/2006	Moderate	Other Non-passerine birds
Haliaeetus leucogaster	White-bellied sea-eagle		L	vu	PMST, VBA	28/04/2019	Moderate	Other Non-passerine birds
Falco hypoleucos	Grey falcon		L	en	PMST		Low	Other Non-passerine birds
Falco subniger	Black falcon		L	vu	VBA	31/03/2019	Moderate	Other Non-passerine birds
Ninox strenua	Powerful owl		L	vu	VBA	25/12/2016	Moderate	Other Non-passerine birds
Lophochroa leadbeateri	Major Mitchell's cockatoo		L	vu	VBA	31/05/2018	Moderate	Other Non-passerine birds
Chrysococcyx osculans	Black-eared cuckoo			nt	PMST		Moderate	Other Non-passerine birds
Pachyptila turtur	Fairy prion			vu	PMST		Low	Marine birds
Chlidonias leucopterus	White-winged black tern			nt	VBA	27/01/2019	Moderate	Waders
Chlidonias hybrida	Whiskered tern			nt	VBA	28/04/2019	High	Waders
Hydroprogne caspia	Caspian tern		L	nt	VBA	27/01/2019	High	Waders
Sternula albifrons	Little tern		L	vu	VBA	1/07/1975	Low	Waders
Arenaria interpres	Ruddy turnstone			vu	VBA	25/11/2018	Moderate	Waders
Pluvialis fulva	Pacific golden plover			vu	VBA	16/09/2018	Moderate	Waders
Numenius phaeopus	Whimbrel			vu	VBA	1/01/1973	Moderate	Waders
Tringa glareola	Wood sandpiper			vu	PMST, VBA	20/01/2019	Moderate	Waders
Tringa brevipes	Grey-tailed tattler		L	cr	VBA	18/10/1987	Low	Waders
Actitis hypoleucos	Common sandpiper			vu	PMST, VBA	9/03/2019	High	Waders
Tringa nebularia	Common greenshank			vu	PMST, VBA	30/04/2019	High	Waders
Tringa stagnatilis	Marsh sandpiper			vu	PMST, VBA	16/09/2018	Moderate	Waders
Calidris alba	Sanderling			nt	VBA	31/05/2018	Moderate	Waders
Calidris subminuta	Long-toed stint			nt	PMST, VBA	1/01/1973	Moderate	Waders
Calidris melanotos	Pectoral sandpiper			nt	PMST, VBA	27/01/2019	Moderate	Waders
Limosa limosa	Black-tailed godwit			vu	PMST, VBA	16/09/2018	Moderate	Waders
Larus pacificus	Pacific gull			nt	VBA	9/03/2019	High	Waders
Melanodryas cucullata	Hooded robin		L	nt	VBA	31/05/2018	High	Passerine birds
Oreoica gutturalis	Crested bellbird		L	nt	VBA	31/05/2018	Moderate	Passerine birds
Pomatostomus temporalis	Grey-crowned babbler		L	en	VBA	30/07/1984	Low	Passerine birds
Pyrrholaemus sagittatus	Speckled warbler		L	vu	VBA	21/09/1883	Moderate	Passerine birds
Stagonopleura guttata	Diamond firetail		L	nt	VBA	01/01/1893	Moderate	Passerine birds
Climacteris picumnus	Brown treecreeper			nt	VBA	31/05/2018	Moderate	Passerine birds
Chelodina longicollis	Eastern snake-necked turtle			dd	VBA	21/11/2016	Moderate	Reptiles
Pseudophryne semimarmorata	Southern toadlet			vu	VBA	15/06/1989	Low	Amphibians

> CONTENTS

Brown Thornbill
Acanthiza pusilla



Appendix 3

Flora species listed as threatened under the EPBC Act 1999 (DAWE 2020), FFG Act 1988 (DELWP 2019b) or the Victorian Threatened Species Advisory List recorded within the City of Greater Dandenong municipality

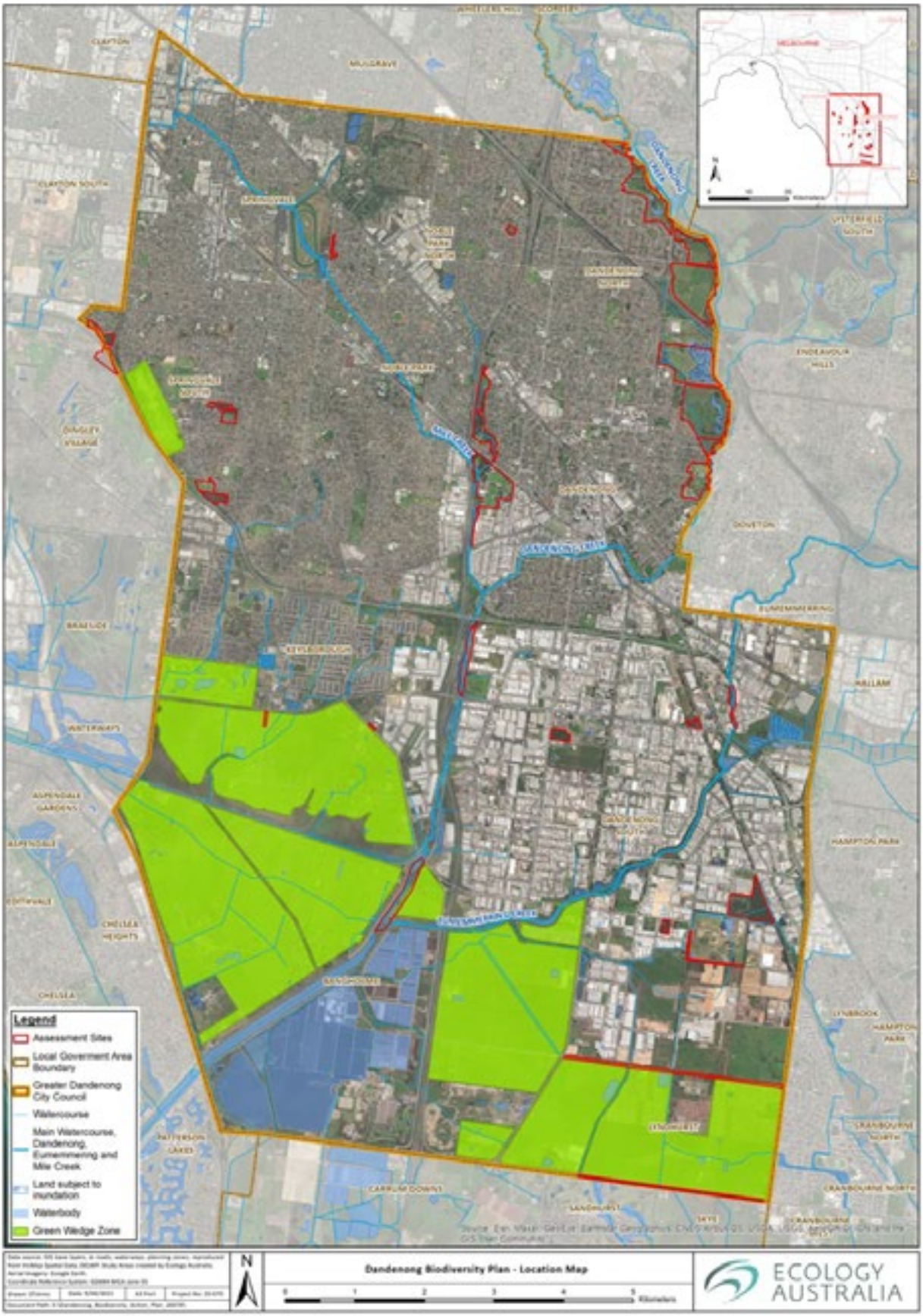
Scientific Name	Common Name	EPBC	FFG	VIC	Source	Last Recorded	Count of Sightings	LOP
Amphibromus fluitans	River swamp wallaby-grass	VU	R		PMST, VBA	1/07/2018	5	Moderate
Caesia parviflora var. minor	Pale grass-lily			k	VBA	1/07/2018	3	Moderate
Caladenia oenochila	Wine-lipped spider-orchid			vu	VBA	13/10/1916	1	Low
Caladenia orientalis	Eastern spider-orchid	EN	L	en	PMST			Low
Caladenia robinsonii	Frankston spider-orchid	EN	L	en		1/07/2018	2	Moderate
Caladenia venusta	Large white spider-orchid		R	r	VBA	1/07/2018	4	Moderate
Callitriche umbonata	Winged water-starwort		R	r	VBA	1/07/2018	3	Moderate
Cardamine moirensis	Riverina bitter-cress			r	VBA	1/01/1997	1	Low
Cladium procerum	Leafy twig-sedge			r	VBA	2/12/2016	2	Moderate
Corunastylis ciliata	Fringed midge-orchid			k	VBA	1/03/1928	1	Low
Corymbia maculata	Spotted gum			vu	VBA	20/08/2019	13	Planted
Craspedia canens	Grey billy-buttons		L	en	VBA	1/07/2018	6	Moderate
Dianella amoena	Matted flax-lily	EN	L	en	PMST	1/07/2018	2	Moderate
Diuris behrii	Golden cowslips			vu	VBA	1/07/2018	1	Moderate
Diuris daltonii	Western purple diuris		L	vu	VBA	1/07/2018	1	Not Likely
Eucalyptus crenulata	Buxton gum	EN	L	en	VBA	1/07/2018	3	Planted
Eucalyptus fulgens	Green scentbark			r		1/07/2018	2	Moderate
Eucalyptus leucoxylon subsp. megalocarpa	Large-fruit yellow-gum		L	en	VBA	1/09/2016	1	Planted
Eucalyptus X studleyensis	Studley park gum			en	VBA	1/07/2018	11	Moderate
Eucalyptus yarraensis	Yarra gum		R	r	VBA	1/07/2018	4	Moderate
Euphrasia collina subsp. muelleri	Purple eyebright	EN	L	en		1/07/2018	2	Moderate
Geranium solanderi var. solanderi s.s.	Austral crane's-bill			vu	VBA	20/10/1899	1	Low
Glycine latrobeana	Clover glycine	VU	L	vu	PMST	1/07/2018	2	Moderate
Goodia pubescens	Silky golden-tip			r	VBA	1/07/2018	3	Low

> CONTENTS

Scientific Name	Common Name	EPBC	FFG	VIC	Source	Last Recorded	Count of Sightings	LOP
Lastreopsis hispida	Bristly shield-fern			r	VBA	1/07/2018	3	Moderate
Melaleuca armillaris subsp. armillaris	Giant honey-myrtle			r	VBA	1/07/2018	14	Moderate
Melaleuca halmaturorum	Salt paperbark		L	vu	VBA	2/08/2017	1	Not Likely
Olearia asterotricha	Rough daisy-bush			r	VBA	1/07/2018	3	Moderate
Potamogeton australiensis	Thin pondweed			k	VBA	11/11/1904	1	Moderate
Prasophyllum colemaniae	Lilac leek-orchid	VU		ex		1/07/2018	2	Not likely
Prasophyllum frenchii	Maroon leek-orchid	EN	L	en	PMST			Low
Pteris comans	Netted brake			r	VBA	1/07/2018	3	Moderate
Pterostylis chlorogramma	Green-striped greenhood	VU	L	vu	PMST			Not Likely
Pterostylis cucullata	Leafy greenhood	VU	L	Inf	PMST	1/07/2018	2	Moderate
Pterostylis pedoglossa	Prawn greenhood			vu	VBA	1/07/2018	4	Low
Ranunculus papulentus	Large river buttercup			k	VBA	1/07/2018	3	Moderate
Rhagodia parabolica	Fragrant saltbush			r	VBA	19/12/2018	1	Low
Senecio glomeratus subsp. longifructus	Annual fireweed			r	VBA	5/12/2003	1	Moderate
Senecio psilocarpus	Swamp fireweed	VU		vu	PMST			Low
Thelymitra epipactoides	Metallic sun-orchid	EN	L	en	PMST	1/07/2018	2	Moderate
Thesium australe	Austral toad-flax	VU	L	vu		1/07/2018	2	Low
Xerochrysum palustre	Swamp everlasting	VU	L	vu	PMST	1/07/2018	2	Moderate

> CONTENTS

Appendix 4
Assessment site locations within study area



> CONTENTS

Common Ringtail Possum
Psuedocheirus peregrinus

> CONTENTS

Appendix 5

Vegetation Quality Assessments (VQA) habitat assessment scores from study sites within the Greater Dandenong LGA

	Site Name		Alex Wilkie Nature Reserve	Coomoora Reserve	Coomoora Reserve	Dandenong Police Paddocks	Dingley Road Bypass	Fotheringham Reserve	Fotheringham Reserve
	Bioregion		GippPl	GippPl	GippPl	GippPl	GippPl	GippPl	GippPl
	EVC Name (Initials)		DSHRW	DSHRW	PGW	SRW	DSHRW	CGW	PGW
	EVC No.		3	3	55	83	3	68	55
	Bioregional Conservation Status		Vu	Vu	En	En	Vu	En	En
		Max Score	Score	Score	Score	Score	Score	Score	Score
Site Condition	Large Old Trees	10	8	5	8	3	3	8	6
	Canopy Cover	5	5	4	5	5	2	5	3
	Lack of Weeds	15	15	15	15	15	10	15	5
	Understorey	25	13	11	15	0	7	4	13
	Recruitment	10	0	1	6	0	0	1	0
	Organic Matter	5	3	5	3	0	4	3	5
	Logs	5	5	5	5	2	5	0	0
	Total Site Score	**75**	**49**	**46**	**57**	**25**	**31**	**36**	**32**
	EVC standardiser	-	NA	NA	NA	NA	NA	NA	NA
	Adj. Site Score	-	-	-	-	-	-	-	-
Landscape	Patch Size	10	2	4	4	4	4	6	6
	Neighbourhood	10	0	0	0	0	0	0	0
	Distance to Core Area	5	0	0	0	3	0	1	1
	Total Landscape Score	**25**	**2**	**4**	**4**	**7**	**4**	**7**	**7**
	Habitat Score	**100**	**51**	**50**	**61**	**32**	**35**	**43**	**39**
	Habitat Score / 100	**1**	**0.51**	**0.50**	**0.61**	**0.32**	**0.35**	**0.43**	**0.39**
	Patch Area (ha)		**2.5**	**2.4**	**1.3**	**7.5**	**5.5**	**2.3**	**1.4**
	Habitat Hectares (Hha)		**1.28**	**1.20**	**0.79**	**2.40**	**1.90**	**0.99**	**0.55**

> CONTENTS

Frank Pellicano	**Frank Pellicano**	**Greaves Reserve**	**Greaves Reserve**	**Leon Trembath Reserve**	**Melbourne Water Wetlands**	**Robert Booth Reserve**	**Robert Booth Reserve**	**Tirhatuan Park**	**Tirhatuan Park**	**Tirhatuan Park**
GippPl	GippPl	GippPl	GippPl	GippPl	GippPl	GippPl	GippPl	GippPl	GippPl	GippPl
PGW	PSW	PGW	SRW	GW	SRW	CGW	SRW	FRW	PGW	SRW
55	651	55	83	175	83	68	83	56	55	83
En	En	En	En	En	En	En	En	En	En	En
Score	Score	Score	Score	Score	Score	Score	Score	Score	Score	Score
2	0	5	2	8	0	0	0	0	3	3
2	3	2	2	3	3	2	4	3	3	3
15	10	5	15	15	5	15	15	15	15	15
0	0	2	6	15	0	7	0	13	13	4
0	1	1	0	6	0	10	10	10	10	10
3	3	3	3	5	0	5	5	5	3	5
5	4	3	2	0	0	2	0	0	2	0
27	**21**	**21**	**30**	**52**	**8**	**41**	**34**	**46**	**49**	**40**
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
-	-	-	-	-	-	-	-	-	-	-
6	1	2	1	1	2	1	1	1	1	4
0	0	0	0	0	0	0	0	0	0	0
0	0	1	1	0	3	1	1	1	1	1
6	**1**	**3**	**2**	**1**	**5**	**2**	**2**	**2**	**2**	**5**
33	**22**	**24**	**32**	**53**	**13**	**43**	**36**	**48**	**51**	**45**
0.33	**0.22**	**0.24**	**0.32**	**0.53**	**0.13**	**0.43**	**0.36**	**0.48**	**0.51**	**0.45**
11.6	**1.0**	**1.5**	**1.0**	**0.5**	**4.8**	**0.5**	**1.0**	**0.3**	**0.5**	**2.2**
3.83	**0.22**	**0.36**	**0.32**	**0.27**	**0.62**	**0.22**	**0.36**	**0.14**	**0.26**	**0.99**

Appendix 6
Site-specific actions recommended for assessment sites

Site name	EVC	Recommendations
Alex Wilkie Nature Reserve	Damp Sands Herb-Rich Woodland	Planting of native understorey species e.g. smooth parrot-pea Dillwynia glaberrima and Stinking Pennywort Hydrocotyle laxiflora.
Coomoora Reserve	Damp Sands Herb-Rich Woodland	Planting of understorey species e.g. common raspwort Gonocarpus tetragynus, cranberry heath, forest wire-grass Tetrarrhena juncea and weeping grass.
Coomoora Reserve	Plains Grassy Woodland	Planting of understorey species e.g. creeping bossiaea Bossiaea prostrata, small St John's wort Hypericum gramineum, thatch saw-sedge Gahnia radula and weeping grass.
Dandenong Police Paddocks Reserve	Swampy Riparian Woodland	Installation of nest boxes to replace large old trees, introduced species management works and planting of understorey/aquatic species e.g. common raspwort, kangaroo grass Themeda triandra, kidney-weed Dichondra repens, nardoo Marsilea spp., shrubby fireweed Senecio minimus and tall sword-sedge.
Dingley Road Bypass	Damp Sands Herb-Rich Woodland	Introduced species management in neighbouring patches and expansion of current patch with planting of canopy and understorey species e.g. austral cranesbill Geranium solanderi, cranberry heath, forest wire-grass, kidney-weed, prickly tea-tree, rough-barked manna gum Eucalyptus viminalis subsp. pryoriana and supple spear-grass Austrostipa mollis.
	Creekline Grassy Woodland	Introduced species management works, planting of native understorey species e.g. common blown-grass Lachnagrostis filiformis, common raspwort, common wheat-grass Anthosachne scabra, sheep's burr Acaena echinata, stinking pennywort, tall sedge Carex appressa and weeping grass.
	Plains Grassy Woodland	Planting of native understorey species e.g. common rice-flower Pimelea humilis, creeping bossiaea, kidney-weed, small St John's wort, veined spear-grass Austrostipa rudis, wattle mat-rush Lomandra filiformis and Leptospermoides sp.
Frank Pellicano Reserve	Plains Grassy Woodland	Introduced species management and planting of native understorey species e.g. common rice-flower, creeping bossiaea, kangaroo grass, small poranthera, small St John's wort, thatch saw-sedge and wattle-mat Rush
Frank Pellicano Reserve	Plains Swampy Woodland	Installation of nest boxes to replace large old trees, introduced species management and planting of native understorey species e.g. angled lobelia Lobelia anceps, centella Centella cordifolia, common tussock-grass Poa labillardierei var. labillardierei, Noah's ark Poa clelandii, prickfoot Eryngium vesiculosum, scrub sheoak Allocasuarina paludosa and slender fireweed Senecio tenuiflorus.

> CONTENTS

Site name	EVC	Recommendations
Greaves Reserve	Plains Grassy Woodland	Introduced species management, installation of nest boxes and planting of native understorey species e.g. common bog-sedge Schoenus apogon, common rice-flower, creeping bossiaea, kidney-weed, small St John's wort and thatch saw-sedge.
Greaves Reserve	Swampy Riparian Woodland	Introduced species management works, installation of nest boxes, planting of native understorey species e.g. Austral bracken Pteridium esculentum, bidgee-widgee Acaena novae-zelandiae, common reed Phragmites australis, kidney-weed, shrubby fireweed and weeping grass.
Leon Trembath Reserve	Grassy Woodland	Expanding planted area to increase patch size.
Melbourne Water Wetlands	Swampy Riparian Woodland	Introduced species management works, installation of nest boxes and planting of native canopy and understorey species e.g. Austral bracken, common raspwort, common reed, kangaroo grass, kidney-weed, shrubby fireweed, swamp gum Eucalyptus ovata, tall rush Juncus procerus and weeping grass.
Robert Booth Reserve	Creekline Grassy Woodland	Installation of nest boxes to replace large old trees.
Robert Booth Reserve	Swampy Riparian Woodland	Installation of nest boxes to replace large old trees and introduced species management.
Tirhatuan Park	Floodplain Riparian Woodland	Installation of nest boxes to replace large old trees and planting of native understorey species e.g. bidgee-widgee, hairy Knotweed Persicaria subsessilis and large bindweed Calystegia sepium.
Tirhatuan Park	Plains Grassy Woodland	Installation of nest boxes to replace large old trees and planting of native understorey species e.g. common bog-sedge, creeping bossiaea, kidney-weed, small St John's wort, thatch saw-sedge and weeping grass.
Tirhatuan Park	Swampy Riparian Woodland	Installation of nest boxes to replace large old trees, introduced species management works and planting of understorey species e.g. Austral bracken, hairy pennywort Hydrocotyle hirta, kidney-weed and shrubby fireweed.

> CONTENTS

Appendix 6
Site-specific actions recommended for assessment sites

Site name	Brief habitat description	Recommendations	Pre-1750 EVC for potential revegetation
Bowman's Redgum Reserve	Scattered river red gums. Groundcover including of Juncus sp., Rytidosperma sp., Themeda triandra and Lomandra longifolia.	Potential for revegetation to build greater connectivity from Dandenong South to areas like Tatterson Park for species such as kookaburras and other semi-urban birds (see Section 7).	Plains Grassy Woodland (EVC 55)
Corner Greens Rd/Ordish Rd	Quite degraded, extensive introduced species establishment (Paspalidium sp., Nasturtium sp., blackberry, Conzya sp.)	Potential for revegetation to build greater connectivity along Dandenong Creek corridor. Management of introduced grass species.	Swampy Riparian Woodland/Swamp Scrub Mosaic (EVC 688)
Currajong Reserve	Scattered Eucalyptus sp. (mostly E. viminalis), Allocasuarina sp., immature Acacia sp.	Maintain existing species composition.	Grassy Woodland (EVC 175)
Eastern Treatment Plant (along Patterson River)	Riparian zone (up to ~5m) dominated by Phragmites, Phalaris. Mowed from ~5 further up bank. Various Eucalyptus sp. Further up bank.	Potential for revegetation to build greater connectivity along Dandenong Creek corridor.	Plains Grassy Wetland (EVC 125)
Eumemmering Creek (Nth of South Gippsland Hwy)	Riparian vegetation dominated by mature RRG. Groundcover dominated by various introduced species, particularly blackberry, kikuyu grass and small-leaf spiderwort	Potential for revegetation. Management of extensive introduced plant species (blackberry, kikuyu grass, small-leaf spiderwort).	Swampy Riparian Woodland/Swamp Scrub Mosaic (EVC 688)
Glasscocks Road	Extensive areas of remnant RRG along roadside and on private land.	Roadside and private land. Protection of individual trees provided through the Native Vegetation Precinct Plan (Jan 2009).	

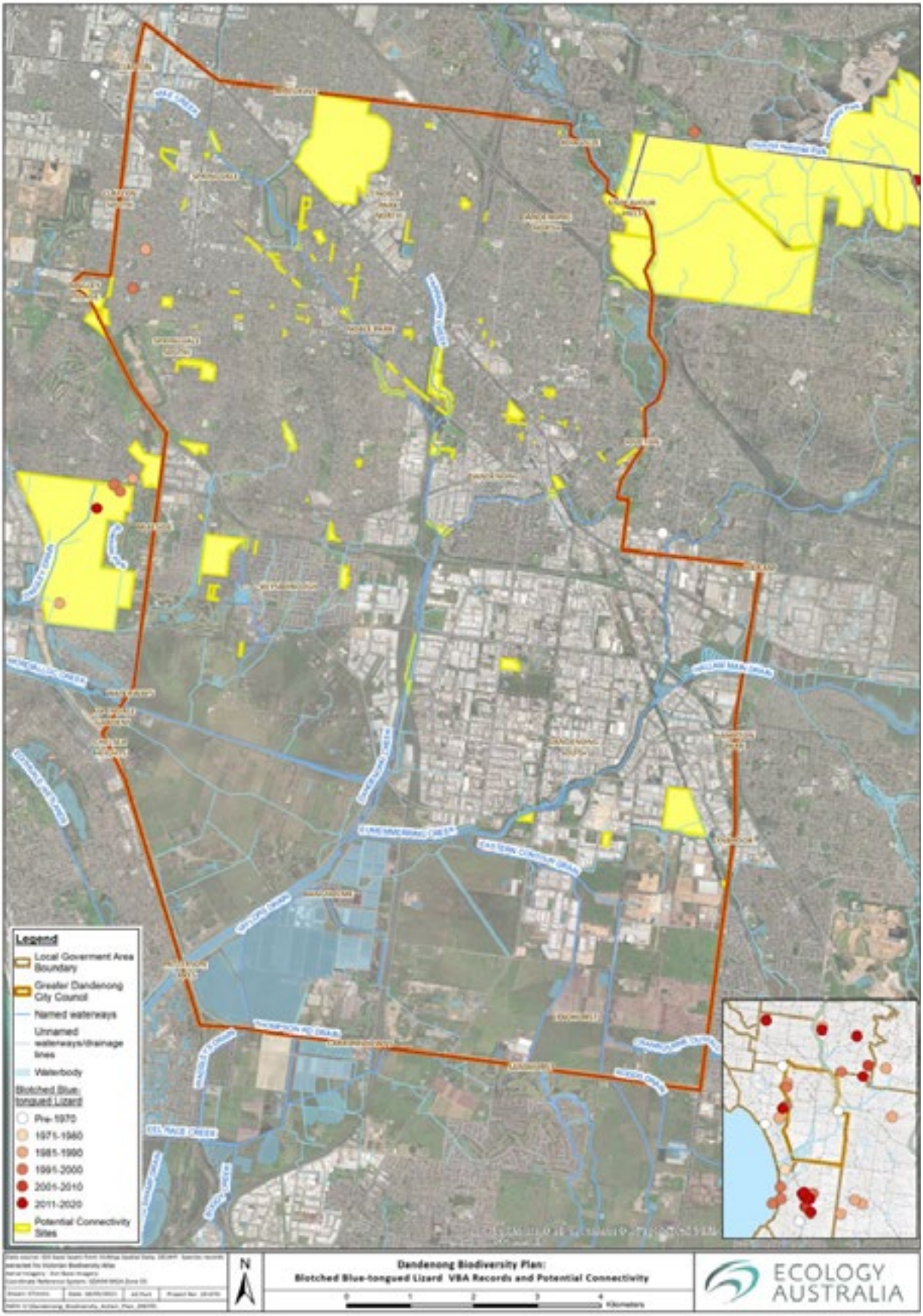
> CONTENTS

Site name	Brief habitat description	Recommendations	Pre-1750 EVC for potential revegetation
Greens Road	Remnant RRG, high levels of RRG recruitment, groundcover dominated by introduced grass species including kikuyu grass, cocksfoot and Bromus sp.	Private land. Potential revegetation. Management of introduced grass species (kikuyu grass, cocksfoot and Bromus sp.).	Heathy Woodland (EVC 48) and Plains Grassy Woodland (EVC 55)
Hammond Road	Dense patch of RRG. Understorey consisting of Acacia sp., Allocasuarina sp., Bursaria spinosa. Groundcover dominated by introduced cocksfoot (Dactylis sp.).	Private land. Potential revegetation. Management of introduced Dactylis sp. needed.	Plains Grassy Woodland (EVC 55)
Mt. Hira College	Last known remnants in the municipality containing Austrostipa rudis, Eragrostis brownii and Lepidosperma elatius var. elatius. Contains other rare species including Xanthorrhea minor, Allocasuarina paludosa and Dianella longifolia.	Maintain and protect remnant. (Clause 52.17)	
Taylors Road	Extensive areas of remnant RRG along roadside and on private land.	Roadside and private land. Continue implementing Vegetation Protection Overlay Schedule 1. .	
Thompsons Road	Extensive patch of roadside remnant RRG.	Roadside and private land. Continue implementing Vegetation Protection Overlay Schedule 1.	

> CONTENTS

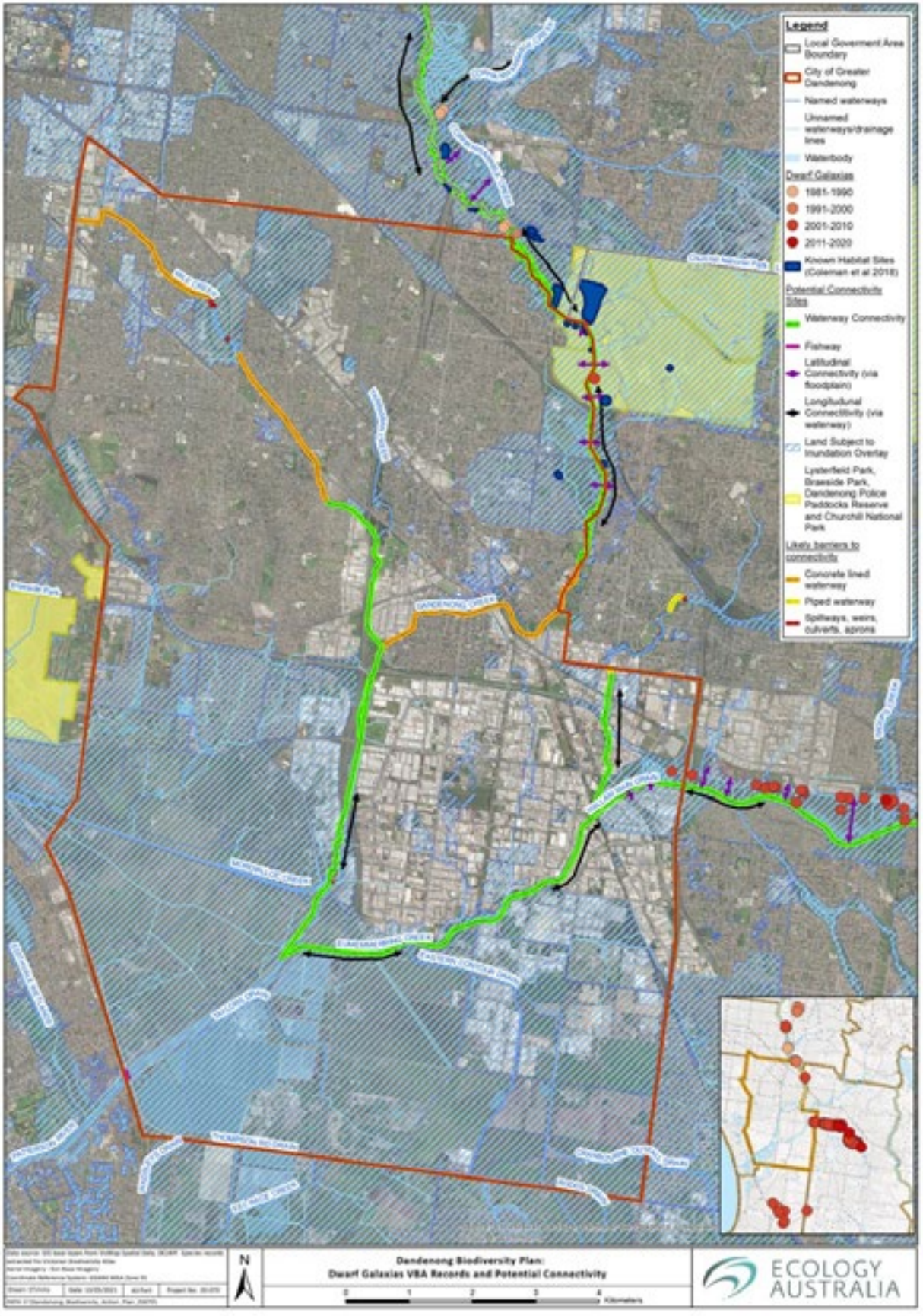
Appendix 7

Habitat connectivity maps and associated actions to enhance connectivity for five icon species

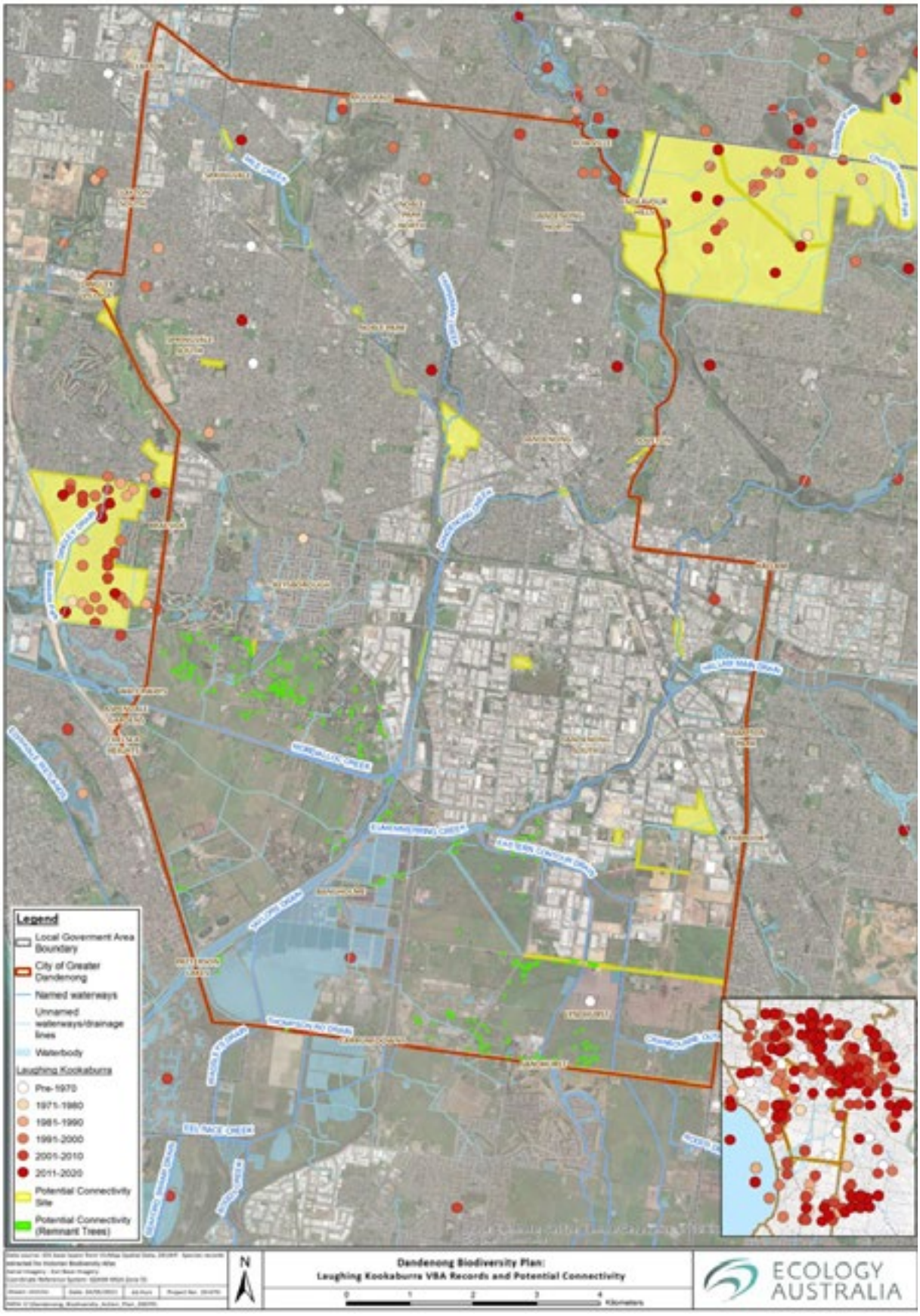


> CONTENTS

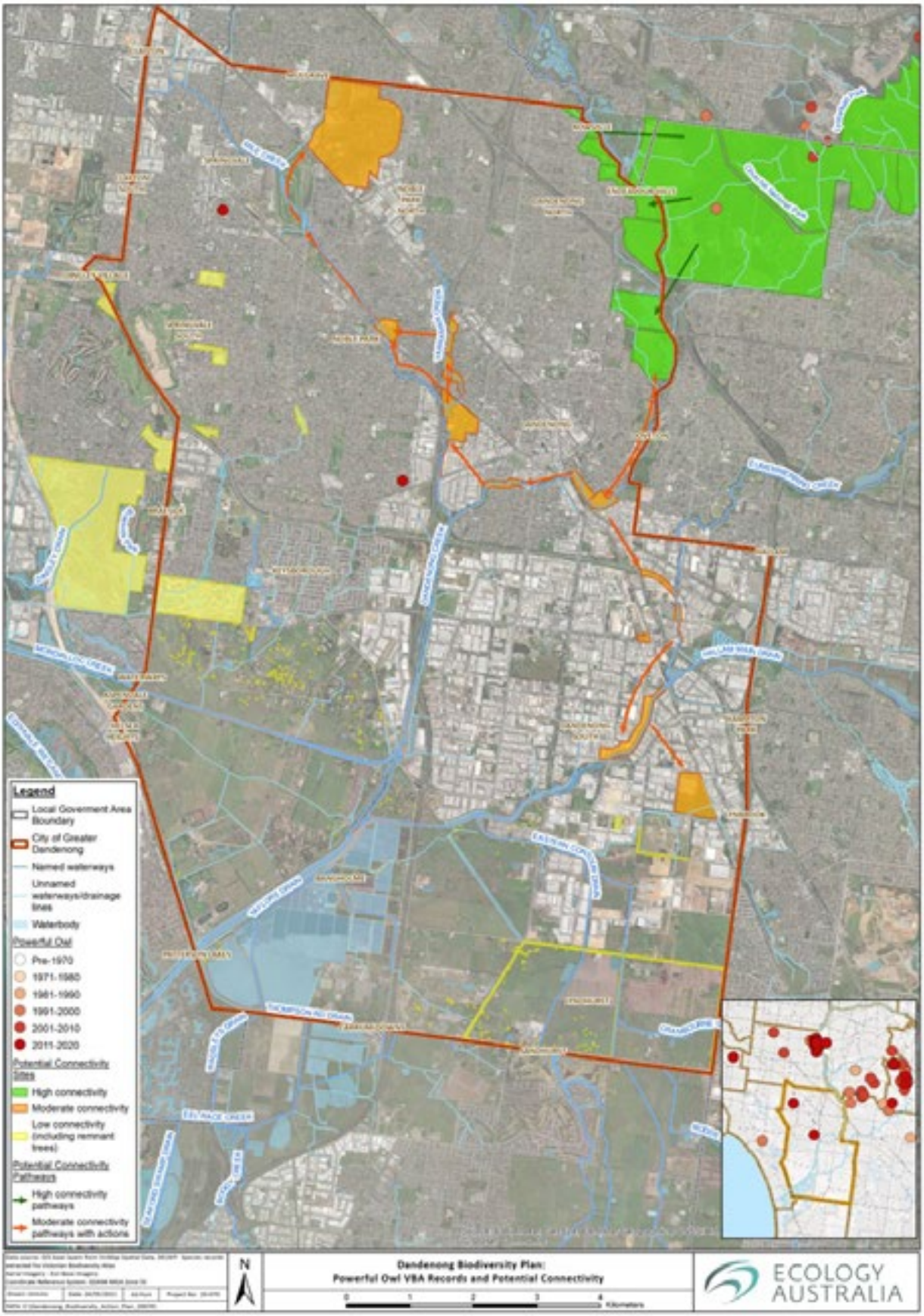
> CONTENTS

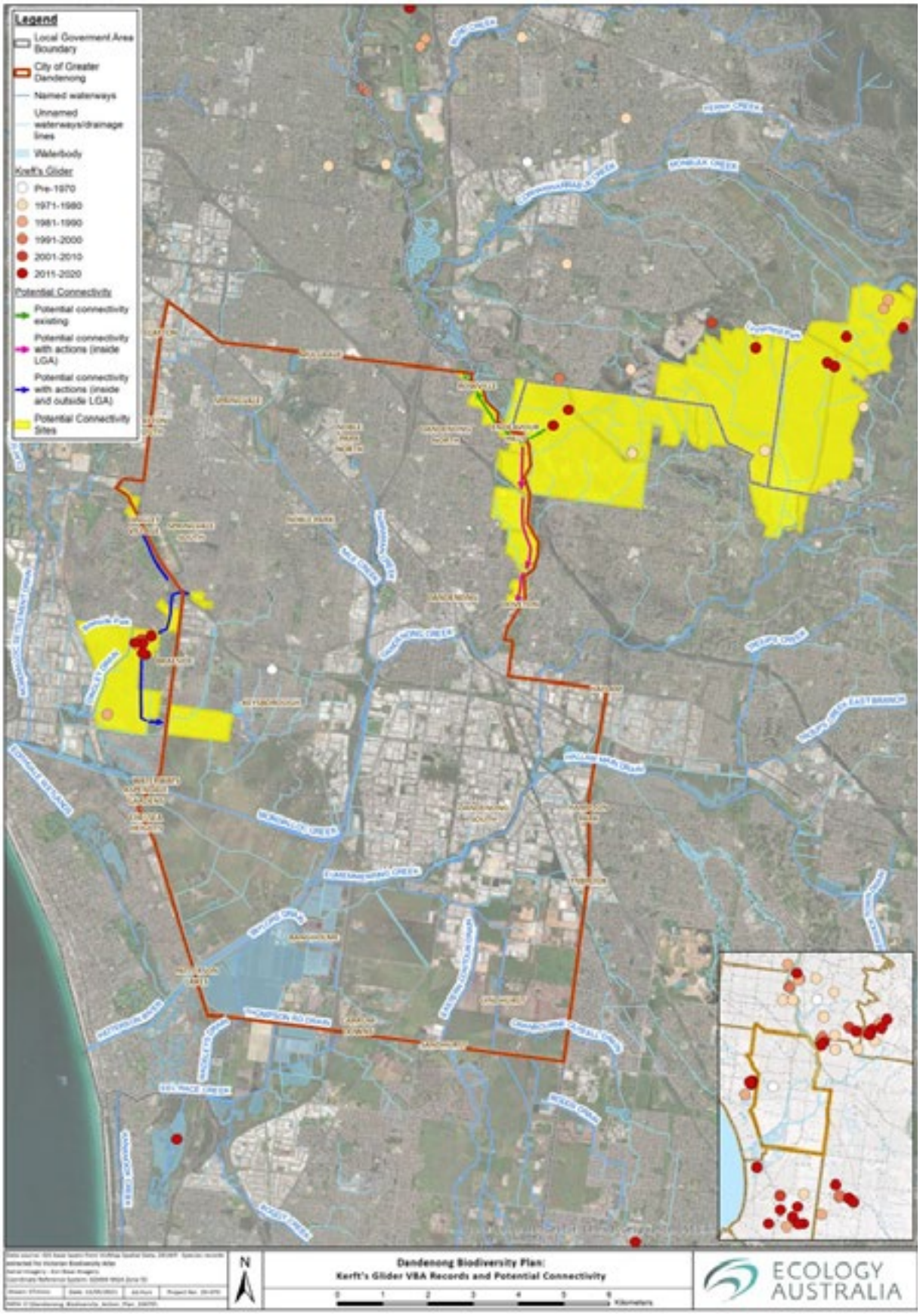

Legend
Local Government Area Boundary
City of Greater Dandenong
Named waterways
Unnamed waterways/drainage lines
Waterbody
Dwarf Galaxias
1981-1990
1991-2000
2001-2010
2011-2020
Known Habitat Sites (Coleman et al 2018)
Potential Connectivity Sites
Waterway Connectivity
Fishway
Latitudinal Connectivity (via floodplain)
Longitudinal Connectivity (via waterway)
Land Subject to Inundation Overlay
Lysterfield Park, Braeside Park, Dandenong Police Paddocks Reserve and Churchill National Park
Likely barriers to connectivity
Concrete lined waterway
Piped waterway
Spillways, weirs, culverts, aprons
N
Dandenong Biodiversity Plan:
Dwarf Galaxias VBA Records and Potential Connectivity
0 1 2 3 4
Kilometers
ECOLOGY AUSTRALIA

> CONTENTS


Legend
Local Government Area Boundary
City of Greater Dandenong
Named waterways
Unnamed waterways/drainage lines
Waterbody
Laughing Kookaburra
Pre-1970
1971-1980
1981-1990
1991-2000
2001-2010
2011-2020
Potential Connectivity Site
Potential Connectivity (Remnant Trees)
N
Dandenong Biodiversity Plan:
Laughing Kookaburra VBA Records and Potential Connectivity
0 1 2 3 4
Kilometers
ECOLOGY AUSTRALIA

> CONTENTS


Legend
Local Government Area Boundary
City of Greater Dandenong
Named waterways
Unnamed waterways/drainage lines
Waterbody
Powerful Owl
Pre-1970
1971-1980
1981-1990
1991-2000
2001-2010
2011-2020
Potential Connectivity Sites
High connectivity
Moderate connectivity
Low connectivity (including remnant trees)
Potential Connectivity Pathways
High connectivity pathways
Moderate connectivity pathways with actions
N
Dandenong Biodiversity Plan:
Powerful Owl VBA Records and Potential Connectivity
0 1 2 3 4 Kilometers
ECOLOGY AUSTRALIA


Legend
Local Government Area Boundary
City of Greater Dandenong
Named waterways
Unnamed waterways/drainage lines
Waterbody
Kreft's Glider
Pre-1970
1971-1980
1981-1990
1991-2000
2001-2010
2011-2020
Potential Connectivity
Potential connectivity existing
Potential connectivity with actions (inside LGA)
Potential connectivity with actions (inside and outside LGA)
Potential Connectivity Sites
N
Dandenong Biodiversity Plan:
Kerft's Glider VBA Records and Potential Connectivity
Kilometers
ECOLOGY AUSTRALIA

> CONTENTS

> CONTENTS

Freshwater Macroinvertebrate sampling

Appendix 8
Actions recommended for improving icon species habitat connectivity

Icon Species	Recommendations
Blotched /Common Blue-Tongue Lizard	Focus on areas capable of supporting dense vegetation Increase promotion of urban gardens (public/private) as Blue-Tongue Lizard habitat through programs such as Gardens For Wildlife Implement management of feral cats and foxes, as described in the Eastern Region Pest Animal Strategy (Eco Logical 2020), across bushland reserves and nature conservation reserves throughout the City of Greater Dandenong Enhance community education and awareness of Blue-Tongue Lizards and what backyard features promote survival Investigate the effectiveness of outdoor cat exercise enclosures for domestic cat owners within the City of Greater Dandenong. Council to consider options to restrict cat movements outside of the home and prohibit ownership in high conservation value areas. Council to review off-leash rules for dogs to protect bushland reserves.
Dwarf Galaxias	Increase awareness of the values of Dandenong Creek and associated floodplain habitat Increase awareness of floodplain specialist fish species in the catchment (Dwarf Galaxias, Yarra Pygmy Perch and Southern Pygmy Perch). If the Melbourne Water reintroduction of Yarra Pygmy Perch is successful, this is the only watercourse anywhere that will support all three species Improve protection of low lying more intermittently inundated (often unmapped) areas that are likely to be used by Dwarf Galaxias for breeding and dispersal Improve awareness of Eastern Gambusia threats and involve community groups in Eastern Gambusia monitoring and removal, particularly for areas outside the new and enhanced habitats being monitored by Melbourne Water Maintain floodplain connectivity and minimise further hydrological alterations unless they are remedial and assessed by aquatic ecologists.

> CONTENTS

Icon Species	Recommendations
Kookaburra	Install nest boxes suitable for Laughing Kookaburra habitation. This can be done on Council land (parks and reserves with suitable habitat and food sources) and by encouraging residents near open areas such as parkland or farmland to install nest boxes on their properties. Maintain the existing habitat occupied and visited by Laughing Kookaburra Providing or maintaining occasional trees or other perching structures in open landscapes to encourage Laughing Kookaburra to land, hunt, and roost.
Powerful owl	Provide Powerful Owl nesting boxes in habitat areas limited by large hollow availability. Ensure nesting boxes are installed in less disturbed areas away from footpaths and other sites with frequent human activity Continue to provide structural habitat for mammals living in trees such as possums, gliders and flying foxes Focus should be linked to the Dandenong Creek corridor as there are known Powerful Owl locations through Lysterfield and Churchill National Park and about 5km upstream of the Dandenong Creek from the study area.
Krefft's Glider	Maintain large old trees, particularly hollow bearing trees as nesting habitat and provide additional nest boxes with an opening less than 50mm to improve nest hollow density Improve and maintain woodland and forest corridors through planting of mixed tree species including: Suitable wattles such as Black Wattle, Silver Wattle and Golden Wattle for a supply of sap as an important high energy winter food source. Wattles also provide a source of flowers, pollen and nectar in spring. Suitable Eucalypts to provide high canopy cover to assist in longer distance glides, future natural tree hollows as well as sap as a food source Improve shrub layer in corridors to increase food supply and safety of movement through vegetation corridors.

> CONTENTS

> CONTENTS

Free indigenous plant giveaways to residents

BIODIVERSITY IS ALL COMPONENTS OF THE LIVING WORLD:

THE NUMBER AND VARIETY OF NATIVE PLANTS, ANIMALS AND OTHER LIVING THINGS ACROSS OUR LAND, RIVERS, COAST AND OCEAN.

IT INCLUDES THE VARIETY OF THEIR GENETIC INFORMATION, THEIR HABITATS AND THEIR RELATIONSHIP TO THE ECOSYSTEMS WITHIN WHICH THEY LIVE.

PUT SIMPLY, BIODIVERSITY IS A TERM THAT REPRESENTS THE TOTAL VARIETY OF ALL LIVING THINGS ON EARTH.

As defined by the Victorian State Government's publication Protecting Victoria's Environment – Biodiversity 2037 (DELWP 2017a):

> CONTENTS

Preservation and enhancement of our shared biodiversity needs to be a collaborative effort to achieve the best outcomes for all of Greater Dandenong's communities, both human and non-human.

> CONTENTS