



REPORT TYPE: Final

Technical Report

Kingston Biodiversity Strategy 2024

City of Kingston

August 2024





Artwork by Melissa Barton. This piece was commissioned by Alluvium and tells our story of caring for Country, through different forms of waterbodies, from creeklines to coastlines. The artwork depicts people linked by journey lines, sharing stories, understanding and learning to care for country and the waterways within.

EcoFutures and Alluvium recognise and acknowledge the unique relationship and deep connection to Country shared by Aboriginal and Torres Strait Islander people, as First Peoples and Traditional Owners of Australia. We pay our respects to their Cultures, Country and Elders past and present.

This report has been prepared by EcoFutures Consulting Australia Pty Ltd for City of Kingston under the contract titled 'Kingston Biodiversity Strategy'.

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Cover images: Top image – Leaden flycatcher (*Myiagra rubecula*) recorded in Kingston for the first time in January 2024 at the Grange Heathland Reserve.

Photo Credit: Tania Splawa-Neyman.

Bottom image – Coast manna-gum (*Eucalyptus viminalis subsp. pryoriana*) overstorey with an understory of the notoriously difficult to propagate thatch saw sedge (*Ghania radula*) at Rowan Road Reserve.

Photo credit: Karl Just.

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GLOSSARY OF TERMS

Terms	Definition
Abundance (species)	Species abundance is the number of individual per species
Artificial habitat	Artificial habitat are structures that are purposely designed to provide areas for wildlife to breed, sleep and take refuge from predators. These structures may sometimes be in degraded and modified landscape (Ecological Society of Australia, 2023).
Biodiversity	Biodiversity includes all the components of the living world including the number and variety of all living forms across the globe.
Buffer (ecological)	Ecological buffer are zones around sensitive or critical areas such as wetlands, forest, streams to reduce the impacts of disturbance (e.g. human activity). Depending on how sensitive the ecological area is, the buffer can be small or large.
Bushland	Vegetation which is either remnant of the natural vegetation of the land or, if altered, is representative of the structure and the floristics of the natural vegetation and includes trees of any size, shrubs and all herbaceous species.
Canopy	The uppermost branches of the trees in a forest, forming a more or less continuous layer of foliage.
Climate change	Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas (The Science: What is Climate Change, 2023).
Connectivity	Connectivity (ecological) is the unimpeded movement of species and the flow of natural processes that sustain life on Earth (Convention on the Conservation of Migratory Species of Wild Animals, 2019)
Distribution (species)	Species distribution describes the geographical occurrence of species that can be spatially represented to understand the limits of where species can occur.
Diversity (species)	Species diversity is the number and relative abundance of species found in a given biological organisation (e.g. ecosystem).
Ecosystem services	The benefits people derive from ecosystems (such as clean air, clean water, shade, cooling, stormwater filtration, pollination etc) – the support of sustainable human well-being that ecosystems provide (Costanza, 2014) (Assessment, 2005).
Ecological processes	The physical, chemical and biological processes on which life depends. Ecological processes include decomposition, plant matter production, nutrient cycling, and fluxes of nutrients and energy.
Ecosystem	An ecosystem includes all the living things (plants, animals and organisms) in a given area, interacting with each other, and with their non-living environments (weather, earth, sun, soil, climate, atmosphere). In an ecosystem, each organism has its own niche or role to play.
Fauna	Fauna is a collection of animals found in a specific time and place.
Flora	Fauna is a collection of plants found in a specific time and place.
Fragmentation (habitat)	Fragmentation in ecology terms normally refers to habitat fragmentation. Habitat fragmentation is the process where large and contiguous habitats get divided into smaller and isolated patches of habitat. This process is normally driven by disturbances such as land clearing or degradation of land.
Habitat patches	Patches are areas of habitat suitable for a species of interest, which is secluded from other habitats via boundaries
Indigenous species	Plant and animal species that are locally unique to the area.
Introduced	Introduced species are species that have arrived from different countries or regions and established wild populations. Alternative terms are alien species, exotic species and non-native.
Invasive	Invasive species are introduced species to the that establish outside their natural range and become pests. Native species can also become invasive if transferred outside of their natural range
Native species	Plant and animal species that have evolved in a specific geography (including nearby species that may be appropriate in the near future, given anticipated range shifts as the climate changes).

Terms	Definition
Pest	A pest is species that occur beyond their natural range and have the potential to cause significant economic, environmental and social impacts. Pest plants are normally referred to as ‘weed’ and pest animals as ‘feral’ animals.
Refugia	Refugia are locations that supports an isolated or remaining populations of species that were once widespread, and are potentially resistant to disturbances
Remnant	Remnant habitat of vegetation refers to vegetation or habitat that has not been cleared.
Residential biodiversity	Residential biodiversity refers to the biodiversity within private properties and land (e.g. gardens, backyards)
Resilient (ecological)	An ecosystem’s ability and stability of tolerating disturbances and restoring itself. There are two components: time required for ecosystem to return to an equilibrium following disturbances, and the capacity of the system to absorb disturbance and reorganise while undergoing change (and still retain the same function, structure, identity and feedback)
Stepping stones	Stepping stones are series of small habitat areas that act as a conduit or corridor to facilitate movement of species in the landscape and is separated by small gaps
Threatened species	Threatened species are species that are vulnerable to extinction in the near future. They are often identified under the legislation under national, state and local level.
Vascular (plants)	Vascular plants are flowering plants, conifers and ferns that are seed bearing.
Water regime	The presence of water and patterns of wetland / river that can be characterised by its timing, predictability, frequency, duration, extent and depth, variability and rate of change
Water sensitive urban design (WSUD)	The approach to planning and designing urban areas and buildings to make use of the valuable resource of stormwater, make places cooler and reduce the harm it causes to waterways rivers and creeks.
Urban	An area of high human population and significant built infrastructure. In this report, “urban areas” and “cities” are used interchangeably.

ACRONYMS

Terms	Definition
CaLP 1994	Catchment and Land Protections Act 1994
CAMBA	China-Australia Migratory Bird Agreement
CMMP	Coastal and Marine Management Plan
DEECA	Department of Energy, Environment and Climate Action
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EVC	Ecological Vegetation Classes
FFG Act	Flora and Fauna Guarantee Act 1988
JAMBA	Japan-Australia Migratory Bird Agreement
LiDAR	Light Detection and Ranging
LGA	Local Government Area
MNES	Matters of National Environmental Significance
NRA	Natural Resource Areas
Ramsar	Ramsar Convention on Wetlands of International Importance
RAP	Registered Aboriginal Party
SDG	Sustainable Development Goals
WoNS	Weeds of National Significance

Terms	Definition
Victorian Biodiversity Atlas (VBA)	The VBA is a foundational dataset that contributes to biodiversity tools used in decision making in Victoria, showing the present distribution of wildlife (https://www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas , viewed January 2024).
UHI	Urban Heat Island
UN	United Nations

1 About this report

1.1 Purpose and review

The City of Kingston is preparing a Biodiversity Strategy that seeks to support Council to take a wholistic approach to protecting and enhancing biodiversity across the municipality incorporating private land or land owned by other agencies as well as Council managed land. With a current population of 160,000 people, the City of Kingston continues to grow. Urban growth, along with other pressures such as climate change, land fragmentation and introduced pest species threaten the future of biodiversity. By reviewing and understanding biodiversity values and identifying opportunities and challenges to these values, Council is better placed to implement realistic and effective management. Conserving and managing biodiversity requires a collaborative approach, including investment by the community. By working together biodiversity can be protected and enhanced.

This report provides the previous and current context for biodiversity management. It is intended as an internal report to:

1. identify current challenges, future opportunities, and gaps in capacity and information and
2. guide decision making for the Biodiversity Strategy.

This report provides an overview of Biodiversity management in Kingston, sources of information for this report are outlined in Table 1: Report sections.

Table 1: Report sections

Section	Information source
Section 2 - Governance context for biodiversity management	<ul style="list-style-type: none"> • A review of relevant reports, policies, legislation from international to local obligations
Section 3 - The current state of Biodiversity in Kingston	<p>Spatial mapping and analysis and a review of technical reports to provide an assessment of:</p> <ul style="list-style-type: none"> • biodiversity values including indigenous flora and fauna/insects, waterways, dispersal/habitat corridors and connectivity of reserves with surrounding urban areas and high-quality natural areas, endangered ecological communities and listed species. • Status of EVC's/Vegetation communities in Kingston (Biosis Report) this has been a very important reference for the field team. • Literature on biodiversity and a review of Council documents and reports • Consider current extent of biodiversity in Kingston and recommend how best to strategically protect and enhance it, including through planning controls (zoning & overlays), on-ground management & compliance, community engagement and education, advocacy and strategic partnerships etc. • Habitat Hectares Summary
Section 4 – Land managers and key stakeholders	<ul style="list-style-type: none"> • Local staff knowledge • Spatial mapping
Section 5 – Current State of biodiversity in Kingston	<ul style="list-style-type: none"> • DEECA NatureKit • Victorian Biodiversity Atlas • Kingston Reports • Local Flora reports • Habitat Hectares Summary • City of Kingston biodiversity staff
Section 6 – Threats, challenges and opportunities	<ul style="list-style-type: none"> • Community and council consultation • City of Kingston Biodiversity Strategy working group • Field reports • Field Survey data

Section	Information source
	<ul style="list-style-type: none"> • Technical reports – local, state and federal governments
Section 7 - Best practice biodiversity management	<ul style="list-style-type: none"> • Literature on best practice biodiversity management • Benchmarking Kingston’s biodiversity data in comparison with other councils in the region and with similar demographics • Reviews of best practice from consultant knowledge and published records of best practice
Section 8 - Action Plan	<ul style="list-style-type: none"> • Community and council consultation • City of Kingston Biodiversity Strategy working group • Field reports

2 Governance context for biodiversity in Kingston

This section outlines the governance direction and context for biodiversity in Kingston on a global, federal, state and Council level. These strategies and legislation are important to the development of Kingston’s biodiversity strategy, and also other relevant Council’s strategies that may directly influence the Biodiversity Strategy Figure 1. Key takeaways are summarised in each section below.

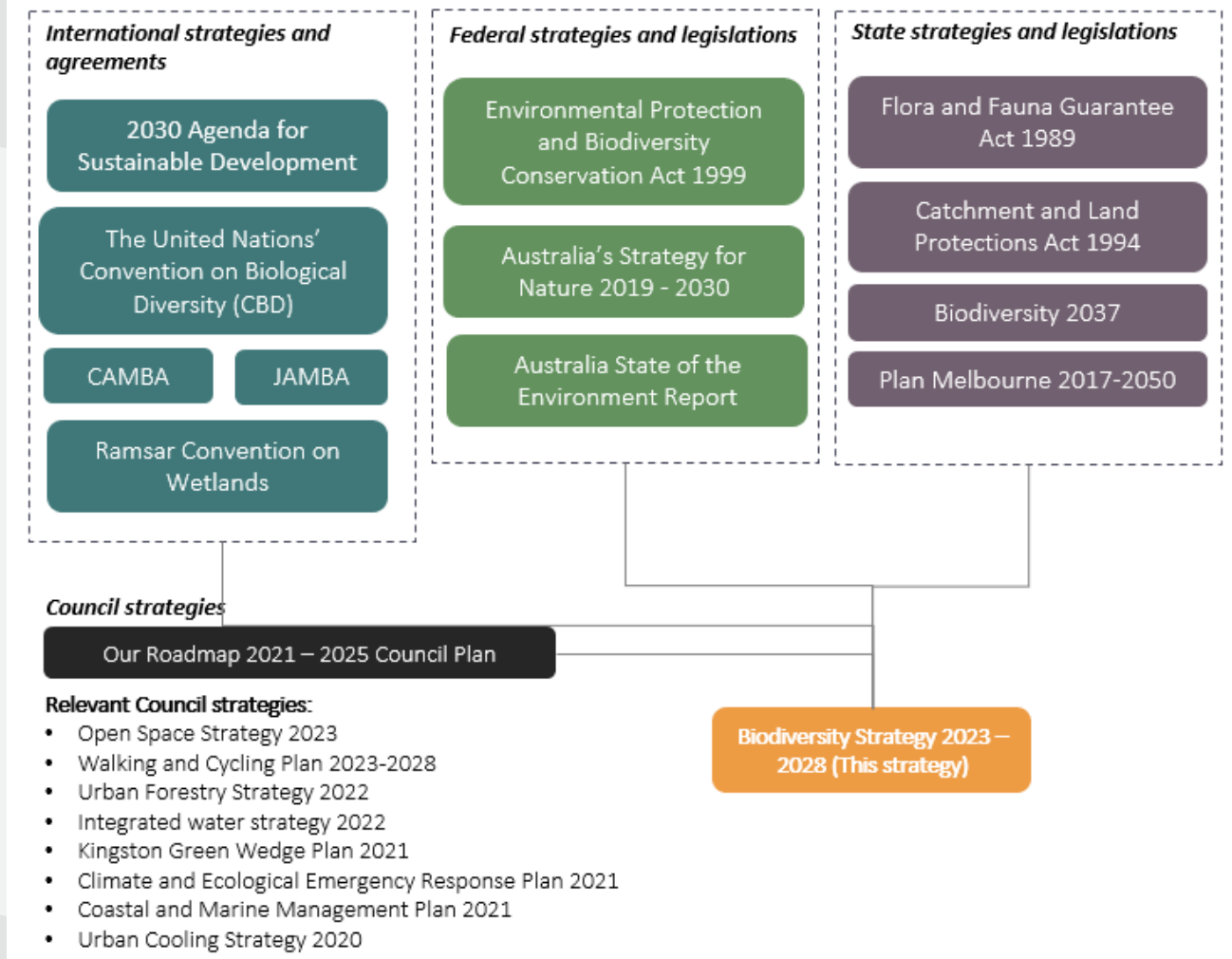


Figure 1: Strategies and legislation that govern the direction for this Biodiversity Strategy

2.1 Global direction for protecting biodiversity/ International Agreements

2.1.1 2030 Agenda for Sustainable Development

Adopted by all United Nations Member States in 2015, the 2030 Agenda for Sustainable Development provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. Three of these goals are relevant to the Kingston Biodiversity strategy:



2.1.2 The United Nations Convention on Biological Diversity (CBD), entered 29 December 1993

The key international legal instrument for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources". 196 nations have signed. The overall objective is for a sustainable future. The convention covers ecosystems, species, and genetics. Australia has been a signatory of the CBD since 1993.

Kunming-Montreal Global Biodiversity Framework – adopted by parties in the CBD on 19 December 2022

Replaces the Aichi Targets in the CBD's Strategic Plan from 2011- 2020. The framework has 4 global goals dated to 2050 and 23 global targets dated to 2030. The framework sets the global biodiversity agenda until 2050. A summary of the most relevant targets for the Kingston Biodiversity strategy include:

30 per cent conservation of land, sea, and inland waters, 30 per cent restoration of degraded ecosystems, ensure all areas are under biodiversity inclusive spatial planning and/ or effective management, urgent recovery and conservation of threatened species, mitigation of current invasive species and prevention of future invasive species; integrate biodiversity into all policy, regulatory, development and planning levels.

2.1.3 China-Australia Migratory Bird Agreement (CAMBA) and Japan- Australia Migratory Bird Agreement (JAMBA)

The habitat of birds that migrate annually between Australia and both China and Japan are protected under the China-Australia Migratory Bird Agreement (1986) and the Japan- Australia Migratory Bird Agreement (1974) (CAMBA-JAMBA).

2.1.4 Ramsar Convention on Wetlands

The intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources. The Convention was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. Since then, almost 90% of UN member states, from all the world's geographic regions, have acceded to become Contracting Parties.

There is one RAMSAR site within Kingston, Edithvale-Seafood Wetlands. Edithvale Wetlands is managed by Melbourne Water.

Key takeaways

- The conservation and restoration of biodiversity across Kingston can directly contribute to 3 of the 17 SDGs and can play a role in helping Australia meet conservation obligations through the UN convention on Biological Diversity and the newly adopted global biodiversity targets as part of the Kuming-Montreal framework.
- Edithvale Wetlands Ramsar site sits within the City of Kingston and provides critical habitat for CAMBA/ JAMBA listed migratory bird species.

2.2 Federal, state and regional direction for biodiversity

The management of biodiversity within Kingston municipality sit under a number of important strategic documents that are the link between the longer-term strategic desires and the operational delivery of biodiversity actions.

Biodiversity is protected and managed through a framework of federal, state and local laws, policies and programs.

2.2.1 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act (EPBC) Act and regulations are Australia's main national environmental legislation. They provide a way for us to protect and manage nationally and internationally important plants, animals, habitats and places. The EPBC Act helps to:

- protect the environment with a focus on Matters of National Environmental Significance (MNES)
 - conserve our biodiversity - the variety of all life forms in Australia.
- protect and manage our important natural and cultural places.
- assess the environmental impact of projects and decide whether to approve them.
 - control how plants and animals, including specimens and products, move in and out of Australia.
 - promote ecologically sustainable development through careful use of our natural resources.
 - appreciate the role of Indigenous peoples in protecting and sustainably using the environment.
- promote using Indigenous peoples' knowledge, with their permission and cooperation.

The EPBC Act 1999 is currently in a stage of reform with a staged process of environmental law reform likely to be implemented by the end of 2024.

There is potential for the changes to EPBC Act to increase legislative requirements of the City of Kingston within the lifespan of the Biodiversity Strategy. This may provide Kingston with a unique opportunity to play a leading role in exemplifying Nature Positive goals on a council scale.

2.2.2 Australia's Strategy for Nature 2019 - 2030

This National strategy is the overarching framework for strategies, legislation, policies and actions at national, state and territory and local levels that target nature. The strategy aims to protect nature through three priority goals which are linked, cyclic and reflect international commitments and goals such as the Convention of Biological Diversity Aichi Targets and the United Nations Sustainable Development Goals. The three goals are:



GOAL 1

Connect all Australians with nature



GOAL 2

Care for nature in all its diversity



GOAL 3

Share and build knowledge

The goals work together to reinforce one another and are tracked through progress measures outlined in the strategy.

2.2.3 Australia State of the Environment Report, 2021

The state and trend of the environment in Australia is poor and deteriorating. Threats and pressures causing the decline include climate change, habitat loss, invasive species, pollution, and resource extraction. Multiple pressures amplify threats and create cumulative impacts. Since the 2016 state of the environment report, the number of listed threatened species has grown by 8%. Actions at a local level are the only way that Australia will change the declining trajectory of environmental decline.

Through a combination of conservation and ecological restoration, the City of Kingston have the opportunity to play an important role in halting biodiversity decline.

2.2.4 Victorian Government Biodiversity Strategy Protecting Victoria’s Environment – Biodiversity 2037

This strategy sets out a plan to stop biodiversity loss within Victoria and achieve overall biodiversity improvement over the next 20 years.

VISION: VICTORIA’S BIODIVERSITY IS HEALTHY, VALUED AND ACTIVELY CARED FOR

GOAL: Victorians value nature

Victorians understand that their personal wellbeing and the economic wellbeing of the state are dependent on the health of the natural environment.

GOAL: Victoria’s natural environment is healthy

Victoria has functioning plant and animal populations, improved habitats and resilient ecosystems, even under climate change.

The strategy outlines the positive health benefits to humans when they connect and care for nature and outlines ways for Victorians to be involved in nature conservation. The strategy also recognised the critical role that private landholders play in biodiversity conservation and the need to create more opportunities to sustain and increase this participation. Another goal of this strategy is to improve environmental accounting and to ensure that all Victorian Government organisations that manage environmental assets contribute to environmental-economic accounting to protect against natural capital decline.

The Kingston Biodiversity Strategy can help achieve these goals with targeted programs designed to connect the community with nature and to assist with valuing nature. This report provides information on vegetation communities, species that are threatened and identify areas for habitat quality improvement and connection.

2.2.5 Flora and Fauna Guarantee Act 1989

The FFG Act 1989 is the State of Victoria's key environmental legislation regarding the conservation of native flora and fauna species. The Act includes listing of threatened species, communities and critical habitat and management of potentially threatening processes. The 2019 amendment to the Act included an increased consideration of Traditional Owners rights and interest, the impacts of climate change, a greater consideration across government departments of potential impacts on biodiversity, clarification of existing powers, introduces the Common Assessment Method (CAM) for listing threatened species (to reduce duplication between other state and federal reporting), increased penalties for breaching the Act.

The Kingston Biodiversity Strategy will abide by all legislative requirements within the FFG Act.

2.2.6 Catchment and Land Protections Act 1994

The Catchment and Land Protection Act is designed to promote sustainable land management and protect water resources within catchment areas across Victoria. The act establishes measures for the conservation of soil, water, and vegetation by regulating land use, controlling erosion, preventing degradation, and managing pests and invasive species. It outlines provisions for the establishment of catchment management authorities, delineates responsibilities for landholders, and empowers authorities to enforce regulations aimed at preserving and enhancing the ecological health of catchment areas throughout Victoria.

The Kingston Biodiversity Strategy will abide by all legislative requirements within the CLP Act.

2.2.7 Plan Melbourne 2017-2050

Plan Melbourne is Melbourne's planning strategy designed to guide policies and actions within Melbourne's Urban Growth Boundary. The plan is a formal document to guide planners, councils, developers and VCAT in their design making processes over the coming decades.

Through a consideration of both people and the environment, the City of Kingston's Biodiversity Strategy aims to improve the liveability of Kingston for all aspects of biodiversity.

Key takeaways

- There is a clear urgency to conserve and restore biodiversity nationwide which is reflected in both federal and state legislation and environmental strategies.
- A science-based approach that considers both the current values, threats and opportunities to biodiversity and people's relationship with biodiversity is needed at all scales to halt biodiversity decline.

2.3 Council strategies and direction for biodiversity

Kingston has numerous strategies and plans that influence the management of biodiversity across the municipality.

2.3.1 Our Roadmap 2021 – 2025 Council Plan

Kingston’s Council Plan “Our Roadmap” 2021-2025 includes both council and community visions which have caring for the environment at their centre. Strategic Objective 2.1 of the plan: *We prioritise our environment and reduce our impact on the earth, recognises the need to address climate change, protect and enhance the environmental assets of the municipality and involve the community in environmental action.*

The Council Plan was developed through deliberated engagement with the community and a Community Panel and so reflects community desires for the management of Kingston by Council. It provides a list of supporting Plans and Strategies along with measurable indicators for each strategic objective to allow for monitoring of the achievement of objectives.

2.3.2 Biodiversity policies and strategies

Biodiversity Strategy 2018 – 2023

The *Biodiversity Strategy 2018-2023* sets out the goals and objectives for conservation, management and restoration of biodiversity within the Councils Natural Resource Areas (NRA). The strategy outlines the council’s responsibility to manage biodiversity throughout open spaces within the municipality through direct management of NRA’s, partnerships with other land managers (Melbourne Water and Parks Victoria), community education programs, stormwater management and revegetation programs maintained by the parks department. Although all biodiversity values across the City of Kingston are highlighted, the primary focus of the document was to outline the 5-year plan for biodiversity values within the 16 Bushland and 2 Coastal managed reserves covering a total of 72 ha across the council area. Of the 18 total NRA areas, 5 are highlighted as of ‘high conservation significance’ due to the quantity and quality of biodiversity and habitat features. These 5 include: The Grange Heathland, Rowan Woodland, Epsom Conservation Reserve, Mordialloc Creek Reserve and Kingston Foreshore Reserve.

Kingston Biodiversity Strategy 2007

The 2007 Kingston Biodiversity strategy outlined goals and strategic objectives for the preservation of Kingston’s biodiversity. The overall goal of the plan was to protect and enhance local biodiversity across the City of Kingston and to appropriately support all wider biodiversity initiatives. The plan included a priority action plan with accepted timelines, responsibilities and estimated budgets.

Coastal and Marine Management Plan 2021

The Coastal and Marine Management Plan (CMMP) sets the strategic direction for Kingston’s marine and coastal management for the next 5-10 years. It is to be reviewed after five years. The framework for the plan, including the vision and objectives, has been informed by community and stakeholder perspectives, reflecting their expectations and aspirations for the Kingston coastline. It also draws on the experience of past management plans and state policy and guidance.

Climate and Ecological Emergency Response Plan 2021

The climate change and ecological emergency plan is a document that identifies where and how Kingston City Council needs to accelerate and support existing work to respond to Climate Emergency. It is a plan to show leadership in reducing emissions and support community and influence industries to lead effective and sustained climate programs, promoting advocacy and removing barriers to change.

Council’s Vision

We are an inclusive, resilient community with a thriving economy, where we all share a safe and sustainable environment.

Community vision

Kingston is a resilient, inclusive, and diverse community. We are building the most live able and sustainable city in Victoria. We champion and nurture our green and open spaces creating a safe, healthy environment. Our share legacy connects our community, embracing innovation, making Kingston the place to live.

2.3.3 Other Council policies/ strategies

The following Council strategies include actions or commitments that relate to the management of open space, biodiversity, and climate.

Open Space Strategy 2023

City of Kingston's Open Space Strategy 2023-2033 provides strategic framework to achieve Council's Vision outlined in the Council Plan 2021-25 (Our Roadmap). It will inform the design of open spaces and guide decision making relating to open space management and planning across the municipality.

Kingston Green Wedge Plan 2023

'Green Wedges' are the non-urban areas of metropolitan Melbourne outside the Urban Growth Boundary. They were first identified in the 1960 to safeguard areas for agriculture, biodiversity, recreation, open space, natural resources, heritage and landscape conservation, and to preserve locations for service industries and infrastructure away from urban uses such as the airport, freeway reservations, quarries and waste management operations. The 2023 plan outlines the vision for the Kingston Green Wedge to be "an exemplar environmental and recreational resource for the local and regional community. It will showcase the best in environmental management, former land fill reuse, sustainable energy generation, community interaction and focus, sustainable agriculture, open space linkages, local and regional recreation and community facilities".

Urban Forest Strategy 2022

Kingston's Urban Forest Strategy (2022) aims to increase canopy cover across Kingston from 12.3 to 20% by 2050. The strategy used LiDAR analysis to determine tree cover across the council area. This determined both the 2022 status of canopy (12.3% of woody plants over 3m high), the average height of trees (at 8.8m tall) and the percent canopy cover of trees >10m tall (5.6%). The data highlighted a 0.8% decline in canopy cover from 2014 to 2022, the majority of which was due to tree removals on residential land. 60% of Kingston's canopy was found to reside on private land with 32% of this on residential land- increasing enforcement to prevent tree removals within residential properties is key. To achieve a 20% canopy cover target by 2050 canopy cover must be increased by 30% across all public parks and reserves.

Urban Cooling Strategy

The Urban Cooling Strategy is the City of Kingston's vision for creating a cooler city. The strategy recognises existing programs already being undertaken in the municipality and highlights areas where a 'cooling lens' can be applied. Urban Greening is highlighted as the number one strategic direction for urban cooling.

Kingston's Integrated Water Strategy

Kingston's Integrated Water Strategy includes the overall vision to become a "water sensitive city". Broad objectives of the strategy include use water wisely; protect waterways and bay from pollution; improve flood management; enhance education and engagement partnerships. 49% of Council's water use goes to irrigating sports fields and open spaces. The key aim of the plan is to increase the delivery of recycled water from Melbourne Water's treatment plants. Included in the strategy is a model of the potential impacts of climate change within the City of Kingston with two forecasted outcomes: A warmer wetter future, a hotter drier future. The impacts of both forecasted outcomes for meeting the overall vision are explored.

Walking and Cycling Plan 2023-2028

Kingston's Walking and Cycling plan aims to develop walking and cycling as key means of travel within the council area. The plan included a gap analysis of key areas to improve walking and cycling facilities, highlighting challenges faces in developing better networks, and understand the current and future transport trends within the council area.

2.3.4 Council programs and services

Significant tree register

Kingston's Significant Tree Register (2015) helps to identify and conserve significant trees across the council area. Significant is defined as trees that contain:

- Historical or cultural value.
- Contribute to landscape character due to their size, growth form or age.
- Provide shade and shelter for people and animals.
- Assist in biodiversity conservation.

There are currently 84 trees registered as significant across Kingston. The list was developed by both council and a consultant firm (Tri Dimensional Consultants) with the input of community.

Gardens for Wildlife program

Council's Gardens for Wildlife program helps residents to develop wildlife friendly habitat in their gardens. It was established in the early 2020's to address loss of quality habitat through development and maximise the ecological function of what remains.

The program offers:

- free garden consultations
- educational workshops and events
- volunteer opportunities to get involved in biodiversity activities

The program has currently reached over 500 participants.

3 Planning and Regulations

The Kingston Planning Scheme and Kingston Community Local Law are the key mechanisms for supporting biodiversity and protecting trees and vegetation in Kingston.

3.1 Kingston Planning Scheme

Planning Schemes contain policies, provisions and permit requirements that control land use and development.

Council is required to follow the Planning Policy Framework when considering planning applications. A policy statement on its own does not trigger a permit requirement, rather it is considered as part of the assessment of the planning permit application.

Clause 12.01 of the Planning Policy Framework contains a combination of State and local policy statements for the protection of biodiversity. This requires Council to:

- Avoid impacts of land use and development on important areas of biodiversity.
- Assist in the identification, protection and management of important areas of biodiversity.
- Assist in the establishment, protection and re-establishment of links between important areas of biodiversity, including through a network of green spaces and large-scale native vegetation corridor projects.

Strategies to support this include:

- Retain and replant native trees and vegetation cover where possible.
- Promote opportunities for reinstating and enhancing local biodiversity.
- Avoid the removal, destruction or lopping of native vegetation.
- Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
- Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.
- Encourage the use of indigenous plant species in all landscaping through the green wedge area.
- Retain existing native vegetation wherever possible.

The state local policy framework also highlights the need to protect and enhance the marine and coastal environment, waterway systems, environmentally sensitive areas, and significant landscapes and open spaces that contribute to character, identity and sustainable environments.

The planning scheme policy statements strategically support detailed planning requirements and planning decisions more broadly.

The planning scheme also contains zones and overlays that apply to land in the municipality. Each zone/overlay has a purpose and the planning scheme indicate in what scenarios a planning permit is required, and the matters Council must consider before deciding to grant a permit. The following Kingston planning scheme zones support biodiversity:

- Green Wedge Zone
- Public Park and Recreation Zone
- Public Conservation and Resource Zone

The following planning scheme overlays support biodiversity:

- Environmental Significance Overlay (including protection of Edithvale Seaford Wetlands and buffer zone, significant trees)
- Vegetation Protection Overlay (for protection of indigenous vegetation)
- Heritage Overlay (including tree protection controls)
- Design and Development Overlay
- Incorporated Plan Overlay
- Development Plan Overlay

There are also particular provisions in the planning scheme that relate to native vegetation. This includes particular provision 52.16 and 52.17 which aim to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.

Council can include conditions on a development approval for vegetation protection and replacement planting for any removal of vegetation. Council could explore further requirement for a landscape plan to be approved with development proposals, particularly for residential zones. This provides Council with an opportunity to address replacement planting and biodiversity sensitive design. Further protection of trees and vegetation through overlays could also be explored.

3.2 Kingston Community Local Law 2021

Under the Local Government Act 2020 (Vic), Kingston City Council has the authority to create and enforce local laws. Local laws are made in consultation with the community, to protect public health, safety, and amenity in Kingston. There can be a penalty or fine for breach of a local law. These laws can be used in conjunction with planning decisions. They are also applicable in situations where a planning permit is not required.

The Community Local Law includes elements that are pertinent to biodiversity protection such as controls for noxious weeds, tree protection, pet ownership, and council foreshores.

Trees

Trees are recognised as important for the Kingston community and the environment as they provide shade, reduce daytime temperatures, improve air and water quality, mitigate stormwater runoff, absorb pollutants, help conserve energy and provide habitat for wildlife. Kingston is aiming for no further net loss in tree canopy cover. Public trees (street trees, open space and other Council managed land) are Council assets, protected by Kingston's Community Local Law. This means:

- you can't remove, damage, kill or destroy a public tree (or direct anyone else to do so on your behalf) without a permit; and
- any cutting, trimming, lopping or pruning of public trees has to be carried out in accordance with specific guidelines.

Private trees are also protected under the local law for unauthorised damage and/or removal of trees or vegetation.








Nature Strips

Another key aspect of the local law is the **Nature Strip Guidelines**. Nature strips play an important role in the appearance of a city and can provide habitat and connectivity avenues for wildlife. Residents are responsible for mowing, watering, and general maintenance of nature strips. Council will assist with nature strip hazards and prune natural strip trees every two years. Kingston's Nature Strip Guidelines include design options for residents including drought tolerant, shade tolerant, bee and butterfly attracting, coastal, native edible, and permeable surface treatment.

Separate to the local law, **Council's Significant Tree Register** also helps identify and conserve significant trees in Kingston.

4 Land managers and other key stakeholders.

Table 2: Relevant land managers and key stakeholders that may influence the process of the Biodiversity Strategy

Agency	Role
 <p>VICTORIA State Government</p> <p>Energy, Environment and Climate Action</p>	<p>The Department of Energy, Environment and Climate Action is responsible for overseeing management of Crown land and marine areas for its energy, environment, water, agriculture, forestry, resources, climate action, and emergency management functions. The Flora and Fauna Guarantee Act 1988 is the key piece of Victorian legislation that DEECA is governed under for the conservation of threatened biodiversity.</p>
 <p>City of KINGSTON</p>	<p>Kingston City Council has multiple roles in managing biodiversity. Council administers the Kingston Planning Scheme and manages Council-owned infrastructure (e.g. parks and reserves).</p>
 <p>Parks VICTORIA</p>	<p>Parks Victoria is the State government agency responsible for the management of protected areas of land and marine parks and reserves. Parks Victoria manages some of the reserves within the City of Kingston.</p>
 <p>Melbourne Water</p>	<p>Melbourne Water is a statutory authority owned by the Victorian Government that manages and protects Melbourne’s major water resources. Melbourne Water has responsibilities with respect to managing water quality, drainage and flooding. Melbourne Water owns and maintains major water, sewer and drainage infrastructure within the City of Kingston, including drainage reserves and outlets.</p>
 <p>BUNURONG LAND COUNCIL</p>	<p>Bunurong Land Council Aboriginal Corporation (BLCAC) is a Traditional Owner organisation that represents the Bunurong people of the South-Eastern Kulin Nation.</p> <p>Previously a contested area, the entire City of Kingston LGA has recently been formally designated as being within the Registered Aboriginal Party (RAP) boundaries of the Bunurong Land Council Aboriginal Corporation.</p>
 <p>EPA VICTORIA</p> <p>Environment Protection Authority Victoria</p>	<p>Environment Protection Authority Victoria (EPA) is Victoria’s environmental regulator. They are an independent statutory authority, established in 1971 under the <i>Environment Protection Act 1970</i>. A new Environmental Protection Act comes into effect on 1 July 2021. The EPA’s role is to protect human health and the environment by reducing harmful effects of pollution and waste.</p>
 <p>LEVEL CROSSING REMOVAL PROJECT</p>	<p>Level Crossing Removal Project (LXRP) was established by the Victorian Government to oversee one of the largest rail infrastructure projects in the state's history. There are recent and upcoming upgrades happening to the rail network within Kingston’s LGA.</p>
<p>Private Land Holders</p>	<p>There are numerous private land holders within City of Kingston. Most relevant to this strategy are private land holders with large green spaces and reserves e.g. golf courses</p>

5 Current state of biodiversity in Kingston

5.1 Background

The City of Kingston sits on the land of the Bunurong People of the Kulin Nation within the Gippsland Plain Bioregion of Victoria. The bioregion is predominately <200m above sea level with a temperate climate averaging between 500-1100mm a year of rain. The low lying coastal and dune area where Kingston resides are predominantly defined by sandy soils underlying coastal heathlands, damp sand woodlands, swampy flats, wetlands and floodplains (DEECA, 2023). Extending from Mordialloc to Frankston and east towards Dandenong, a significant portion of the City of Kingston is a part of the ancient Carrum Carrum wetlands system (Dobbie 2022). Although the draining of the previously extensive wetland complex began in 1878, remnants of the wetland in Kingston can be found in Edithvale Ramsar wetland.

Each Victorian Bioregion is subdivided into Ecological Vegetation Classes (EVC's). EVC's are the standard unit for classifying and mapping vegetation types across Victoria. EVC's are defined by a combination of rainfall patterns, geology, flora, ecological characteristics and functions, and soil types.

The EVCs for City of Kingston are available via the website: <https://www.kingston.vic.gov.au/environment/sustainability/managing-our-natural-resources>.

5.2 Kingston Overview

Despite significant landscape scale changes since British colonisation, the LGA is home to a variety of natural features: 13km of coastline within Melbourne's Port Phillip Bay, the Ramsar listed Edithvale Wetland and high biodiversity value parks and reserves. A Strategic Biodiversity Values overview map of the City of Kingston (Figure 205) compiles threatened flora and fauna, levels of depletion, connectivity, vegetation types and condition spatial data to determine a relative overview of biodiversity importance within the City (DELWP, 2018).

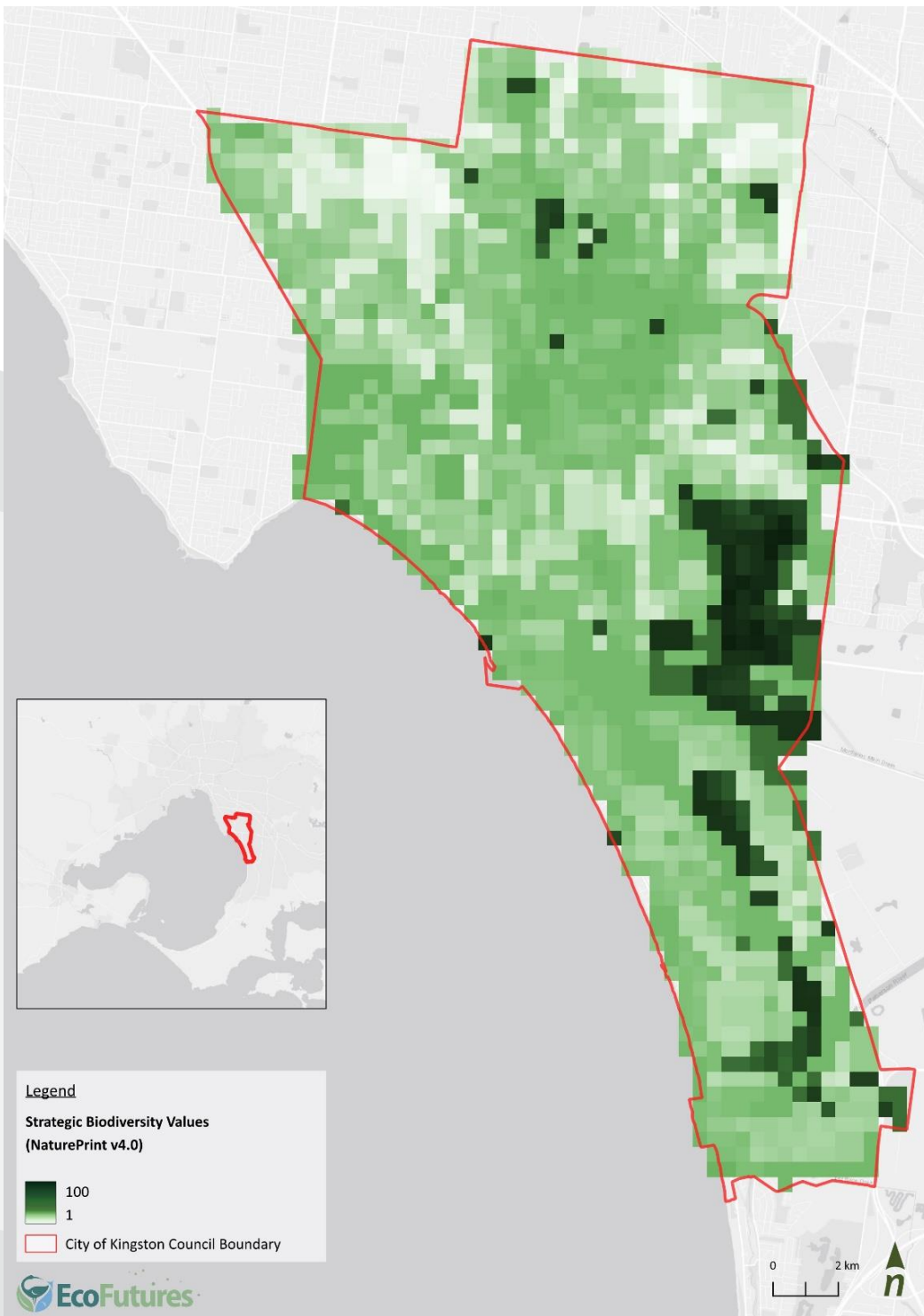


Figure 2: Strategic Biodiversity Values (NaturePrint) in Kingston

Approximately 24% of the City of Kingston’s land cover is parks, reserves, and open green space under a variety of public and private land tenure (*note* this does not include private residential property or green space in schools, hospitals or the airport).



Figure 3: Parks and reserves within Kingston.

5.3 Federal and State listed threatened species overview

The protection of listed threatened species under both the EPBC Act (1999) and the Flora and Fauna Guarantee Act (1988) is often undertaken at a local government level. Local governments are privy to local activities in their regions and play a vital role in identifying threatened species and/or the habitat they require along with any proposed actions that may influence the state of these species/habitats.

A search on Victoria's Biodiversity Database (VBA) within the City of Kingston identified that 68 nationally listed (EPBC Act 1999) and/or state listed (FFG Act 1988) listed threatened species have been recorded within Kingston since 1950 (VBA, 2023). A further seven flora species and twenty fauna species were identified in a Protected Matters (PM) search with either known or likely occurrence status within the City of Kingston. Eleven of the twenty additional threatened fauna species within the protected matters search are migratory seabirds or shorebirds. Figure 4 and Figure 5 show the spatial locations of these threatened species using the Victorian Biodiversity Atlas (VBA).

Table 3: Threatened Species list (VBA and Protected Matters Search)

Source	Scientific Name	Common Name	FFG Act	EPBC Act Status	Last Year Observed	Record Type	Presence Likelihood (PM Search only)
VBA 2023	<i>Acacia howittii</i>	Sticky Wattle		Vulnerable	2015	Flora	
VBA 2023	<i>Accipiter novaehollandiae</i>	Grey Goshawk		Endangered	2019	Fauna	
VBA 2023	<i>Actitis hypoleucos</i>	Common Sandpiper		Vulnerable	2007	Fauna	
PM Search	<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass, Floating Swamp Wallaby-grass		Vulnerable	NA	Flora	Known
VBA 2023	<i>Angophora floribunda</i>	Rough-barked Apple		Endangered	2009	Flora	
VBA 2023	<i>Anseranas semipalmata</i>	Magpie Goose		Vulnerable	2019	Fauna	
PM Search	<i>Anthochaera phrygia</i>	Regent Honeyeater		Critically Endangered	NA	Fauna	Known
VBA 2023	<i>Arctophoca forsteri</i>	Long-nosed Fur Seal		Vulnerable	2019	Fauna	
VBA 2023	<i>Ardea alba modesta</i>	Eastern Great Egret		Vulnerable	2019	Fauna	
VBA 2023	<i>Ardea intermedia plumifera</i>	Plumed Egret		Critically Endangered	2008	Fauna	
VBA 2023	<i>Arenaria interpres</i>	Ruddy Turnstone		Endangered	1977	Fauna	
VBA 2023	<i>Austrostipa rudis subsp. australis</i>	Veined Spear-grass		Endangered	1985	Flora	
VBA 2023	<i>Aythya australis</i>	Hardhead		Vulnerable	2020	Fauna	
VBA 2023	<i>Biziura lobata</i>	Musk Duck		Vulnerable	2020	Fauna	
VBA 2023	<i>Botaurus poiciloptilus</i>	Australasian Bittern		Critically Endangered	Endangered	2019	Fauna
PM Search	<i>Calidris canutus</i>	Red Knot, Knot		Endangered	NA	Fauna	Known

Source	Scientific Name	Common Name	FFG Act	EPBC Act Status	Last Year Observed	Record Type	Presence Likelihood (PM Search only)
VBA 2023	<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered	Critically Endangered	2019	Fauna	
VBA 2023	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Endangered	Endangered	2019	Fauna	
PM Search	<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large Sand Plover		Vulnerable		Fauna	Likely
2023 Dylan Osler	<i>Cladium procerum</i>	Leafy Twig-sedge	Endangered		2023	Flora	
VBA 2023	<i>Coronidium gunnianum</i>	Pale Swamp Everlasting	Critically Endangered		1999	Flora	
VBA 2023	<i>Corymbia maculata</i>	Spotted Gum	Vulnerable		2018	Flora	
2023 Dylan Osler	<i>Craspedia canens</i>	Grey Billy-buttons	Critically Endangered		2023	Flora	
PM Search	<i>Dianella amoena</i>	Matted Flax-lily		Endangered	NA	Flora	Likely
PM Search	<i>Diomedea antipodensis</i>	Antipodean Albatross		Vulnerable	NA	Fauna	Likely
PM Search	<i>Diomedea antipodensis gibsoni</i>	Gibson's Albatross		Vulnerable	NA	Fauna	Likely
PM Search	<i>Diomedea epomophora</i>	Southern Royal Albatross		Vulnerable	NA	Fauna	Likely
PM Search	<i>Diomedea exulans</i>	Wandering Albatross		Vulnerable	NA	Fauna	Likely
PM Search	<i>Diomedea sanfordi</i>	Northern Royal Albatross		Endangered	NA	Fauna	Likely
VBA 2023	<i>Diuris punctata</i> var. <i>punctata</i>	Purple Diuris	Endangered		1998	Flora	
VBA 2023	<i>Egretta garzetta</i>	Little Egret	Endangered		2019	Fauna	
VBA 2023	<i>Emydura macquarii</i>	Murray River Turtle	Critically Endangered		2012	Fauna	
PM Search	<i>Falco hypoleucos</i>	Grey Falcon		Vulnerable	NA	Fauna	Likely
VBA 2023	<i>Falco subniger</i>	Black Falcon	Critically Endangered		2018	Fauna	
PM Search	<i>Galaxiella pusilla</i>	Eastern Dwarf Galaxias, Dwarf Galaxias		Vulnerable	NA	Fauna	Likely
PM Search	<i>Glycine latrobeana</i>	Clover Glycine, Purple Clover		Vulnerable	NA	Flora	Likely
PM Search	<i>Grantiella picta</i>	Painted Honeyeater		Vulnerable	NA	Fauna	Likely
VBA 2023	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Endangered		2019	Fauna	

Source	Scientific Name	Common Name	FFG Act	EPBC Act Status	Last Year Observed	Record Type	Presence Likelihood (PM Search only)
VBA 2023	<i>Hieraaetus morphnoides</i>	Little Eagle	Vulnerable		2008	Fauna	
VBA 2023	<i>Hirundapus caudacutus</i>	White-throated Needletail	Vulnerable	Vulnerable	1999	Fauna	
VBA 2023	<i>Hydroprogne caspia</i>	Caspian Tern	Vulnerable		2018	Fauna	
VBA 2023	<i>Isolepis gaudichaudiana</i>	Benambra Club-sedge	Vulnerable		1991	Flora	
VBA 2023	<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot	Endangered	Endangered	1989	Fauna	
VBA 2023	<i>Ixobrychus dubius</i>	Australian Little Bittern	Endangered		2017	Fauna	
VBA 2023	<i>Lachnagrostis semibarbata var. filifolia</i>	Purple Blown-grass	Endangered		1999	Flora	
VBA 2023	<i>Lathamus discolor</i>	Swift Parrot	Critically Endangered	Critically Endangered	1978	Fauna	
VBA 2023	<i>Lewinia pectoralis</i>	Lewin's Rail	Vulnerable		2017	Fauna	
VBA 2023	<i>Limosa lapponica</i>	Bar-tailed Godwit	Vulnerable	Vulnerable	1987	Fauna	
VBA 2023	<i>Lissolepis coventryi</i>	Swamp Skink	Endangered	Endangered	2011	Restricted fauna	
VBA 2023	<i>Litoria raniformis</i>	Growling Grass Frog	Vulnerable	Vulnerable	2006	Fauna	
VBA 2023	<i>Lophochroa leadbeateri</i>	Major Mitchell's Cockatoo	Critically Endangered	Endangered	1979	Fauna	
VBA 2023	<i>Macronectes giganteus</i>	Southern Giant-Petrel	Endangered	Endangered	1980	Fauna	
PM Search	<i>Macronectes halli</i>	Northern Giant Petrel		Vulnerable	NA	Fauna	Likely
VBA 2023	<i>Melaleuca armillaris subsp. armillaris</i>	Giant Honey-myrtle	Endangered		2018	Flora	
VBA 2023	<i>Neophema chrysogaster</i>	Orange-bellied Parrot	Critically Endangered	Critically Endangered	1977	Fauna	
PM Search	<i>Neophema chrysostoma</i>	Blue-winged Parrot		Vulnerable	NA	Fauna	Known
VBA 2023	<i>Ninox strenua</i>	Powerful Owl	Vulnerable		1995	Fauna	
VBA 2023	<i>Numenius madagascariensis</i>	Eastern Curlew	Critically Endangered	Critically Endangered	1990	Fauna	
VBA 2023	<i>Numenius phaeopus</i>	Whimbrel	Endangered		1977	Fauna	
VBA 2023	<i>Oxyura australis</i>	Blue-billed Duck	Vulnerable		2019	Fauna	
PM Search	<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)		Vulnerable		Fauna	Known

Source	Scientific Name	Common Name	FFG Act	EPBC Act Status	Last Year Observed	Record Type	Presence Likelihood (PM Search only)
VBA 2023	<i>Pelagodroma marina</i>	White-faced Storm-Petrel	Endangered		2020	Fauna	
PM Search	<i>Petaurus australis australis</i>	Yellow-bellied Glider (south-eastern)		Vulnerable	NA	Fauna	Likely
VBA 2023	<i>Philydrum lanuginosum</i>	Woolly Waterlily	Endangered		2007	Flora	
PM Search	<i>Phoebastria fusca</i>	Sooty Albatross		Vulnerable	NA	Fauna	Likely
VBA 2023	<i>Pluvialis fulva</i>	Pacific Golden Plover	Vulnerable		1987	Fauna	
VBA 2023	<i>Pluvialis squatarola</i>	Grey Plover	Vulnerable		1977	Fauna	
VBA 2023	<i>Polytelis anthopeplus monarchoides</i>	Regent Parrot	Vulnerable	Vulnerable	2008	Fauna	
VBA 2023	<i>Pomatostomus temporalis</i>	Grey-crowned Babbler	Vulnerable		2002	Fauna	
PM Search	<i>Prasophyllum spicatum</i>	Dense Leek-orchid		Vulnerable	NA	Flora	Likely
PM Search	<i>Prototroctes maraena</i>	Australian Grayling Fish		Vulnerable	NA	Fauna	Likely
VBA 2023	<i>Pseudophryne semimarmorata</i>	Southern Toadlet	Endangered		1990	Fauna	
VBA 2023	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Vulnerable	2017	Fauna	
PM Search	<i>Pterostylis chlorogramma</i>	Green-striped Greenhood		Vulnerable	NA	Flora	Likely
PM Search	<i>Pterostylis cucullata</i>	Leafy Greenhood		Vulnerable	NA	Flora	Likely
VBA 2023	<i>Pterostylis pedoglossa</i>	Prawn Greenhood	Endangered		1901	Flora	
VBA 2023	<i>Ranunculus amplus</i>	Lacey River Buttercup	Critically Endangered		2005	Flora	
VBA 2023	<i>Rostratula australis</i>	Australian Painted-snipe	Critically Endangered	Endangered	2008	Fauna	
VBA 2023	<i>Senecio glomeratus subsp. longifructus</i>	Annual Fireweed	Vulnerable		2007	Flora	
PM Search	<i>Senecio psilocarpus</i>	Swamp Fireweed, Smooth-fruited Groundsel		Vulnerable	NA	Flora	Likely
PM Search	<i>Seriola brama</i>	Blue Warehou Fish		Conservation Dependent	NA	Fauna	Known
VBA 2023	<i>Spatula rhynchotis</i>	Australasian Shoveler	Vulnerable		2019	Fauna	
VBA 2023	<i>Stagonopleura guttata</i>	Diamond Firetail	Vulnerable	Vulnerable	1990	Fauna	
PM Search	<i>Sternula nereis nereis</i>	Australian Fairy Tern		Vulnerable		Fauna	Known

Source	Scientific Name	Common Name	FFG Act	EPBC Act Status	Last Year Observed	Record Type	Presence Likelihood (PM Search only)
VBA 2023	<i>Stictonetta naevosa</i>	Freckled Duck	Endangered		2019	Fauna	
PM Search	<i>Thalassarche carteri</i>	Indian, Yellow-nosed Albatross		Vulnerable	NA	Fauna	Likely
VBA 2023	<i>Thalassarche cauta</i>	Shy Albatross	Endangered	Endangered	1980	Fauna	
VBA 2023	<i>Tringa glareola</i>	Wood Sandpiper	Endangered		2019	Fauna	
VBA 2023	<i>Tringa nebularia</i>	Common Greenshank	Endangered		2002	Fauna	
VBA 2023	<i>Tringa stagnatilis</i>	Marsh Sandpiper	Endangered		2018	Fauna	
VBA 2023	<i>Turnix pyrrhothorax</i>	Red-chested Button-quail	Endangered		2000	Fauna	
VBA 2023	<i>Tursiops australis</i>	Burrnunan Dolphin	Critically Endangered		2013	Fauna	
VBA 2023	<i>Varanus varius</i>	Lace Monitor	Endangered		1977	Fauna	
VBA 2023	<i>Xenus cinereus</i>	Terek Sandpiper	Endangered		1977	Fauna	
PM Search	<i>Xerochrysum palustre</i>	Swamp Everlasting, Swamp Paper Daisy		Vulnerable	NA	Flora	Known
VBA 2023	<i>Xerochrysum palustre</i>	Swamp Everlasting	Critically Endangered	Vulnerable	2016	Flora	

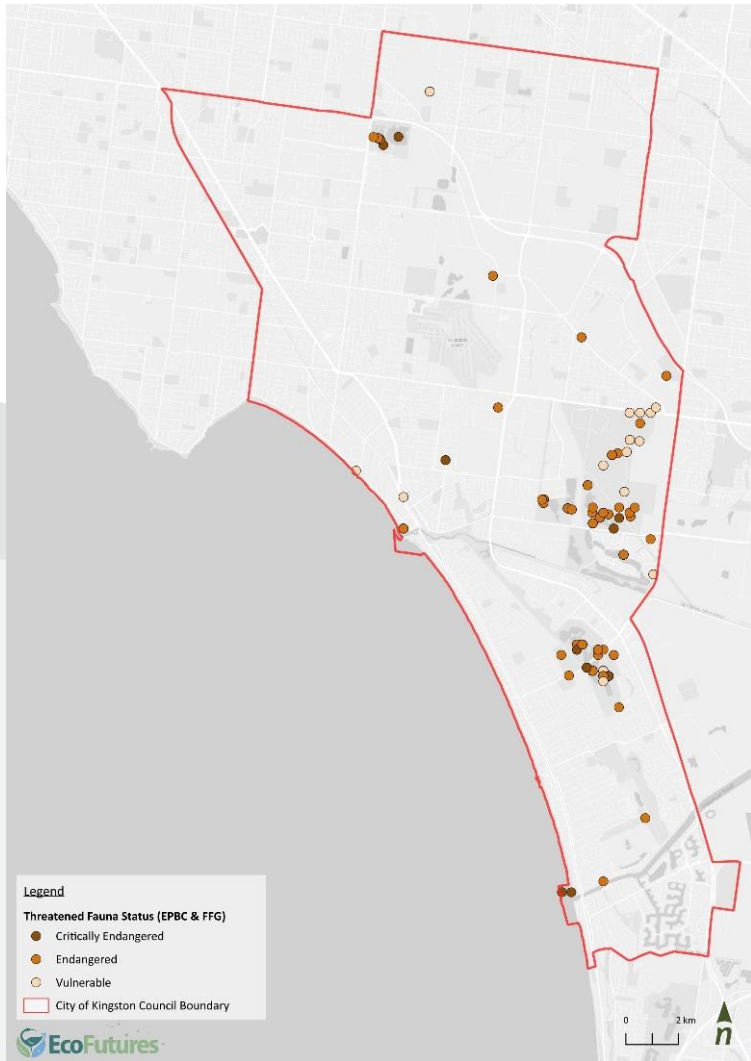


Figure 4: Threatened fauna species record on Victoria Biodiversity Atlas (VBA)

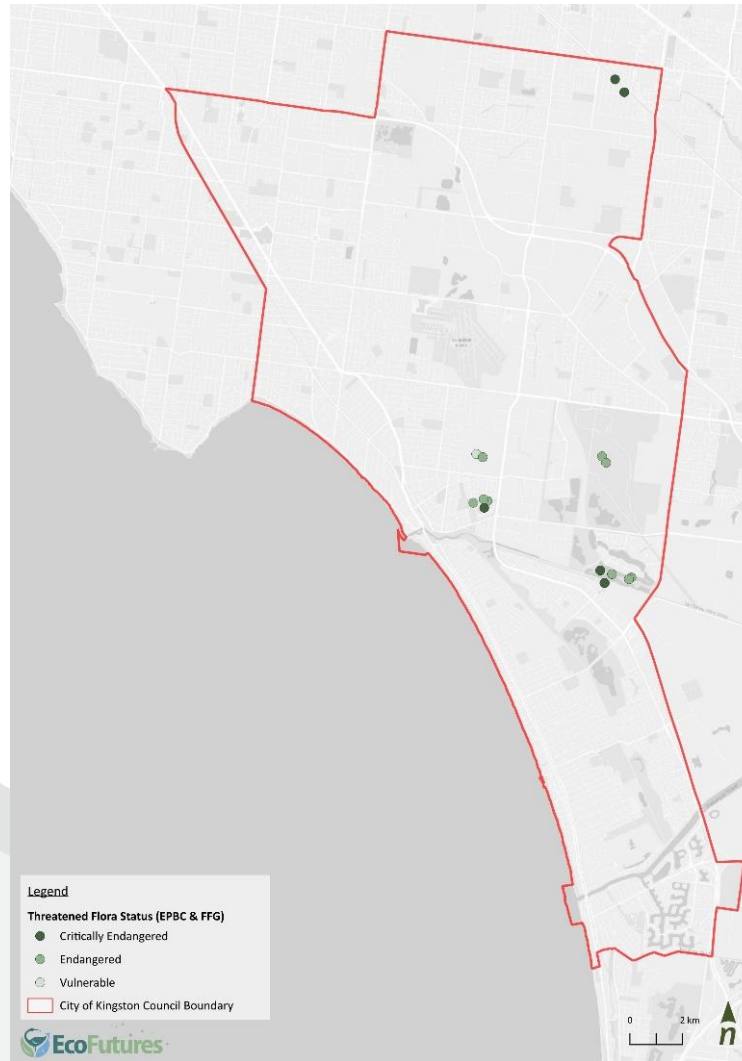


Figure 5: Threatened flora species record on Victoria Biodiversity Atlas (VBA)

5.4 Kingston's local conservation status

Conservation of species at a federal and state level are determined by two key pieces of legislation: The Federal Environment Protection and Biodiversity Conservation Act (EPBC Act 1999) and Victoria's Flora and Fauna Guarantee Act (FFG 1988). Both acts provide criteria for the listing of threatened species and communities under categories. All species undergo rigorous scientific assessment to determine the listing status of a species or community. Listed species are subject to protections and management actions including an assessment and approval process for actions that may impact a listed species or community.

The City of Kingston has developed their own threatened species status based on local records and determined by an expert committee in 2007. The local Kingston conservation status does not hold legislative protection powers such as an EPBC or FFG Act listing, but it does greatly improve the understanding of the local current state of biodiversity within Kingston and enables the setting of priorities for planning and management at a local scale.

An important note on the 2024 update

The local flora and fauna status has not been systematically updated with field surveys since 2015. The 2024 updated local status of flora (as recorded below) is based on a combination of VBA data, a qualitative assessment (done by Bushland Coordinator - Lee James), a 2020 flora survey at The Grange Heathland Reserve and updated VBA records (from 2015-2024). The 2024 updated local status of fauna is based on an updated VBA search only. To provide a true updated representation of the local status of flora, fauna and vegetation communities, Kingston-wide updated field surveys are required.

5.4.1 Determining local status

The conservation status of each flora and fauna species has been determined as follows:

Flora

- Kingston Flora Database (2018)
 - The status of each species was initially determined by an expert committee in 2007 and has been updated using the Victorian Biodiversity Atlas (VBA) data and expert advice from David Bainbridge, the Kingston Natural Resource Area Team, Jeff Yugovic for technical and editorial advice, Mick Connolly (Friends of The Grange Heathland Reserve) and Thelma Spice (Friends of The Grange Heathland Reserve). Since its compilation the database has been sporadically updated and reviewed by the Kingston staff within the Bushland and Biodiversity team with input from Jeff Yugovic.
- Victorian Biodiversity Atlas (VBA) search via NatureKit (2015-2024).
 - Presence of species based on search between 2015 to 2024 with state and federal-listed conservation status.
- Flora field assessments completed by Dylan Osler and Karl Just in October- November 2023.

Table 4: Flora local conservation status definitions

Status	Description
Secure	Not considered to be rare or threatened in the City of Kingston, planted individuals contribute to population where site-indigenous.
Rare	Rare but not considered otherwise threatened - there are relatively few known populations, or the taxon is restricted to a relatively small area.
Vulnerable	Not presently endangered but likely to become so soon due to continued depletion; occurring mainly on sites likely to experience changes in land-use which would threaten the survival of the plant in the wild; or taxa whose total population is so small that the likelihood of recovery from disturbance, including localised natural events such as drought, fire or landslide, is doubtful.
Endangered	At risk of disappearing from the wild state if present land use and other causal factors continue to operate.
Poorly Known	Poorly Known and suspected, but not definitely known, to belong to one of the above categories (x, e, v, r). At present, accurate distribution information is inadequate.
Extinct (recorded)	Not recorded during the past 50 years despite field searches specifically for the plant, or, alternatively, intensive field searches (since 1950) at all previously known sites have failed to record the plant. There is a Victorian Biodiversity Atlas (VBA) record (DELWP 2018).
Extinct (presumed)	Not recorded during the past 50 years despite field searches specifically for the plant, or, alternatively, intensive field searches (since 1950) at all previously known sites have failed to record the plant. No VBA record - presumed lost before recording based on Flora of Melbourne 4th edition.

Fauna

- Victorian Biodiversity Atlas (NatureKit 2024) with expert input from Kingston Bushland Coordinator - Lee James and ecologists Karl Just and Dylan Osler.

Table 5: Fauna local conservation status definitions

Status	Description
Secure	Not considered to be rare or threatened in the City of Kingston.
Near Threatened	A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
Vulnerable	A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Species Survival Commission 2001), and it is therefore considered to be facing a high risk of extinction in the wild.
Endangered	A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Species Survival Commission 2001), and it is therefore considered to be facing a very high risk of extinction in the wild.
Critically Endangered	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Species Survival Commission 2001), and it is therefore considered to be facing an extremely high risk of extinction in the wild.
Data Deficient	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate.
Extinct (recorded)	A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its (Kingston) historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form. There is an old VBA record (DELWP 2018), all fauna locally extinct in Kingston are also Regionally Extinct, but they occur elsewhere in Australia.
Extinct (presumed)	A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its (Kingston) historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form. No VBA record - presumed lost before recording based on Mammals of Victoria, Peter Robertson (reptiles and frogs), John McGuckin (fish), all fauna locally extinct in Kingston are also Regionally Extinct, but they occur elsewhere in Australia.

5.5 Local indigenous vascular flora status

The Indigenous vascular flora of the City of Kingston comprises approximately 746 (species, subspecies and varieties) of vascular plants of which 431 (58%) of which are extant and 315 (42%) of which are presumed or recorded extinct (see appendix B for species list with local status) (Table 6).

Table 6: Local status of Kingston flora 2005 to 2024

Status	2005 species	2015 species	2024 species
Endangered	122	110	143
Vulnerable	42	47	54
Rare	62	41	52
Poorly Known	55	117	117
Secure	74	91	65
Total	355	406	431

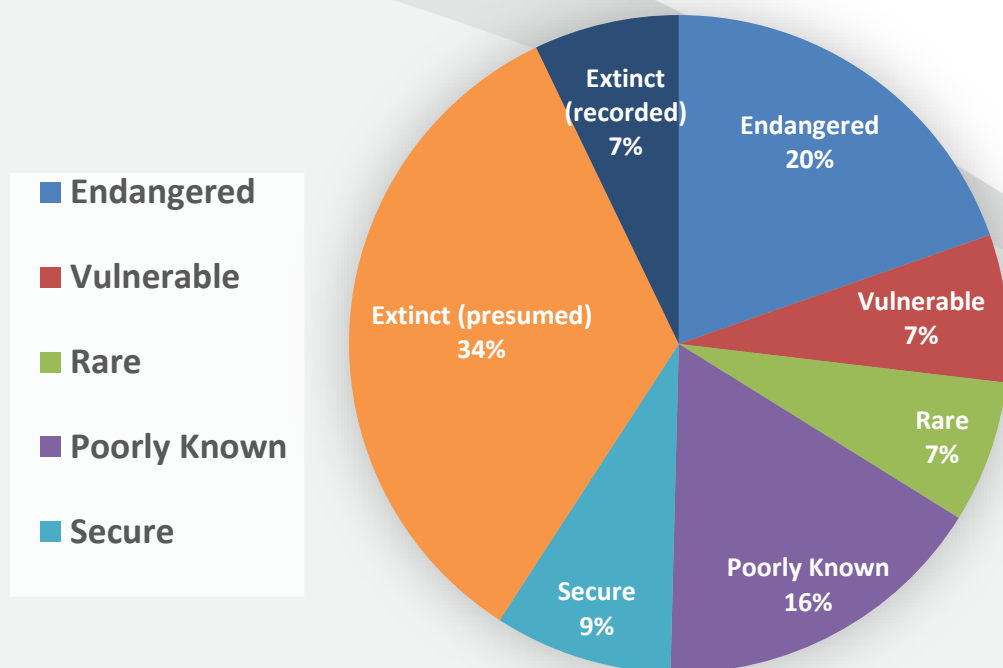


Figure 6: Kingston's updated local Indigenous flora status. *Indicates that although the species list has been updated since the previous technical report, the local status is primarily based on the previous systematic update in 2015 (see report section 5.4)

Locally Threatened Flora Species

Indigenous Flora species are concentrated in known and managed patches of native vegetation with exceptions in generalist's/ highly adaptable species and some threatened species in private properties (See VBA threatened species map in section 5.3).

18 indigenous species previously recorded as locally extinct or unrecorded were recorded within Kingston since 2015 (Table 7). The details of the exact locations have been redacted for the public version of this report to assist in the ongoing protection of these species.

Table 7: Species previously recorded or presumed as locally extinct previously unrecorded within Kingston. Species in bold were recorded during the 2023 field surveys by D. Osler and K. Just.

Scientific name	Common name	Record location	Source	State/ Federal Threatened Status
<i>Acacia acinacea</i>	Gold Dust Wattle	Two records within [REDACTED] during a targeted search.	VBA 2017	NA
<i>Billardiera scandens</i>	Common Apple-berry	2 records within both [REDACTED] during a targeted survey. Previously unrecorded within Kingston but locally indigenous.	VBA 2017	FFG Act Endangered
<i>Blechnum minus</i>	Soft Water-fern	Recorded at [REDACTED]. Previously thought to be locally extinct	D. Osler & K. Just 2023	NA
<i>Calystegia sepium subsp. roseata</i>	Large Bindweed	Previously thought to be locally extinct. 7 individuals were recorded within Kingston in 2018 at [REDACTED]	VBA 2018	NA
<i>Cladium procerum</i>	Leafy twig rush	Recorded at [REDACTED]. Not previously recorded	D. Osler & K. Just 2023	FFG Act Endangered
<i>Cyathea australis</i>	Rough Tree Fern	Recorded at [REDACTED]. Previously thought to be locally extinct	D. Osler & K. Just 2023	NA
<i>Eleocharis macbarronii</i>	Grey Spike-sedge	Recorded at [REDACTED]. Previously thought to be locally extinct	D. Osler & K. Just 2023	NA
<i>Hydrocotyle verticillata</i>	Shield Pennywort	Recorded at [REDACTED]. Previously thought to be locally extinct.	D. Osler & K. Just 2023	NA
<i>Isoetes drummondii</i>	Plains Quillwort	Recorded at [REDACTED]. Previously thought to be locally extinct	D. Osler & K. Just 2023	NA
<i>Linum marginale</i>	Native Flax	Previously recorded as locally extinct 3 VBA records from 2017 at [REDACTED]	VBA 2017	NA
<i>Lycopus australis</i>	Australian Gipsywort	11 records in the [REDACTED]. Recorded in 2016 under a targeted search	VBA 2016	NA
<i>Parietaria debilis</i>	Shade Pellitory	Recorded in 2019 at [REDACTED] and in 2023, location unknown	Unknown/ Lee James	NA
<i>Poa ensiformis</i>	Sword Tussock Grass	One individual recorded by Jeff Y in 2019 [REDACTED]	Jeff. Y	NA
<i>Ranunculus glabrifolius</i>	Shining Buttercup	Recorded at [REDACTED]. Previously thought to be locally extinct	D. Osler & K. Just 2023	NA
<i>Ranunculus sessiliflorus var. sessiliflorus</i>	Annual buttercup	Recorded in Mordialloc	Unknown/ Lee James	NA
<i>Senecio pinnatifolius var. lanceolatus</i>	Lance-leaf Groundsel	Recorded in 2021 at [REDACTED] during a targeted flora survey.	VBA 2021	NA
<i>Solanum aviculare</i>	Kangaroo Apple	Multiple records in 2017 in both [REDACTED] [REDACTED] are recorded as incidental.	VBA 2017	NA
<i>Suaeda australis</i>	Austral Seablite	Recorded at [REDACTED]. Previously thought to be locally extinct	D. Osler & K. Just 2023	NA

Note: All species listed in Table 7 above have the local status of Endangered within Kingston. Species names in bold are threatened at a state or federal level.

5.5.1 Indigenous Vertebrate Fauna

Although the local Fauna status has NOT had a systematic update (see explanation under heading in 5.4) since the previous technical report (2018), additional species which have been recorded on the VBA have been added to the local species list with a local status assumed based on previous records (represented in Figure 7).

Indigenous Fauna of Kingston summary

The indigenous fauna of the City of Kingston comprises approximately 408 species of vertebrate fauna, 367 (90%) of which are extinct and 41 (10%) of which are presumed or recorded extinct (see appendix B for species list with local status). Of the extant species, 279 records are birds, 22 are mammals (including marine mammals), 11 are frogs, 68 are fish and 17 are reptiles. 31 fauna species were recorded on the VBA that had not previously been recorded within the City of Kingston (Table 8).

Approximately 49% (144) locally record extinct fauna species are considered resident species with the remaining 61% (223) considered transient species.

Resident Fauna refers to animals that establish a relatively permanent presence within an area and are often adapted to local environmental conditions. They typically live, breed and carry out most of their life activities within the defined area. Kingston specific examples of fauna labelled as residents include the Red Wattle Bird and the Common Froglet.

Transient Fauna refers to fauna that move through a particular area temporally or intermittently. They may not establish permanent residence, but they utilise the region for a particular life stage or activity (e.g. breeding or feeding). Kingston specific examples of fauna labelled as include the Wedge Tailed Eagle and the Zebra finch.

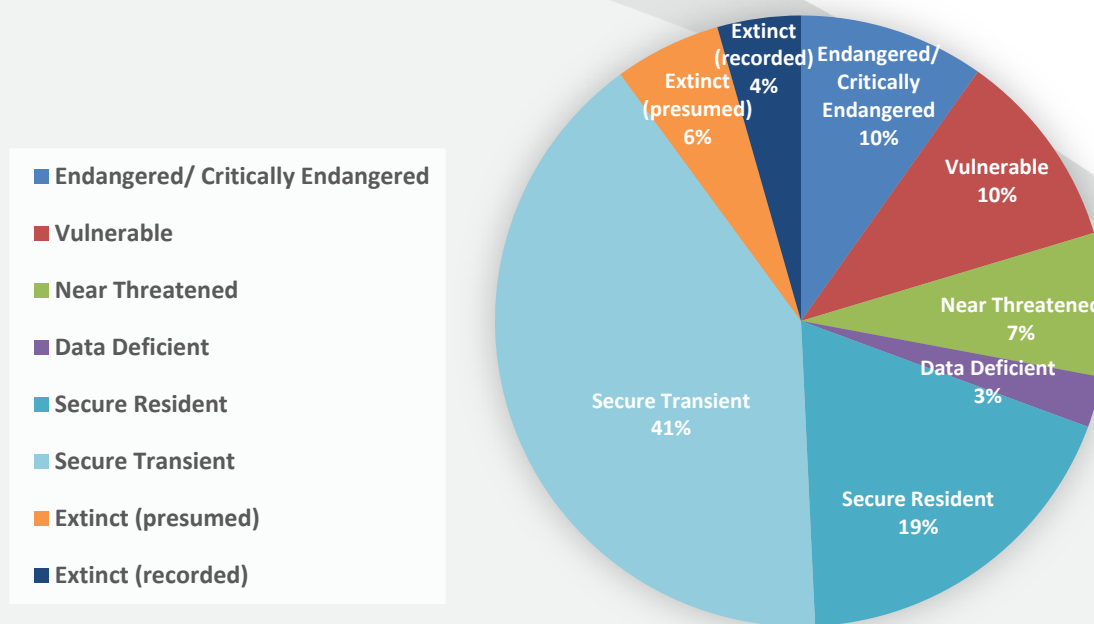


Figure 7: Kingston's *updated local indigenous vertebrate fauna status. *Indicates that although the species list has been updated since the previous technical report, the local status is primarily based on the previous systematic update in 2015 (see report 5.4.1).

Table 8: Species not previously recorded within Kingston (source: VBA data)

Life Form	Scientific name	Common name	Resident/transient status	State/ Federal Threatened Status
Bird	<i>Acrocephalus australis</i>	Reed-Warbler	Resident	
Bird	<i>Alisterus scapularis</i>	Australian King-Parrot	Transient	
Bird	<i>Anthus australis</i>	Australian Pipit	Transient	
Bird	<i>Aphrodroma brevirostris</i>	Kerguelen Petrel	Transient	

Life Form	Scientific name	Common name	Resident/transient status	State/ Federal Threatened Status
Bird	<i>Ardea alba</i>	Great Egret	Resident	
Bird	<i>Ardea alba modesta</i>	Eastern Great Egret	Transient	FFG Act Vulnerable
Bird	<i>Bubulcus coromandus</i>	Eastern Cattle Egret	Transient	
Bird	<i>Caligavis chrysops</i>	Yellow Faces Honey Eater	Resident	
Bird	<i>Calonectris leucomelas</i>	Streaked Shearwater	Transient	
Bird	<i>Ceyx azureus</i>	Azure Kingfisher	Transient	
Reptile	<i>Chelodina longicollis</i>	Eastern Snake-necked Turtle	Resident	
Reptile	<i>Christinus marmoratus</i>	Southern Marbled Gecko	Resident	
Bird	<i>Circus assimilis</i>	Red-chested Button-quail	Transient	
Bird	<i>Egretta sacra</i>	Pacific reef Heron	Transient	
Bird	<i>Gavicalis virescens</i>	Singing Honeyeater	Resident	
Bird	<i>Gerygone fusca</i>	Western Gerygone	Resident	
Bird	<i>Gerygone olivacea</i>	White-Throated Gerygone	Resident	
Bird	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	Transient	
Bird	<i>Himantopus leucocephalus</i>	Pied Stilt	Transient	
Bird	<i>Hypotaenidia philippensis</i>	Buff-banded Rail (Cocos (Keeling) Islands)	Resident	
Bird	<i>Ixobrychus dubius</i>	Australian Little Bittern	Transient	
Frog	<i>Litoria fallax</i>	Eastern Dwarf Tree Frog	Resident	
Frog	<i>Litoria peronii</i>	Peron's Tree Frog	Resident	
Bird	<i>Myiagra rubecula</i>	Leaden flycatcher	Transient	
Bird	<i>Myzomela sanguinolenta</i>	Scarlet Honeyeater	Resident	
Bird	<i>Nesoptilotis leucotis</i>	White-eared Honeyeater	Resident	
Bird	<i>Parvipsitta pusilla</i>	Little lorikeet	Transient	
Bird	<i>Poodytes gramineus</i>	Little Grassbird	Resident	
Bird	<i>Porphyrio melanotus</i>	Australasian Swamphen	Resident	
Bird	<i>Ptilotula penicillata</i>	White plummed honeyeater	Resident	
Bird	<i>Spatula rhynchotis</i>	Australian Shoveler	Transient	

5.6 Local introduced species

Since the 2018 Kingston technical report was published, 32 new introduced flora species, 32 introduced fauna have been recorded within Kingston. Common fauna species such as foxes, feral cats, and rabbits are normally found in urban area.

5.6.1 Introduced Flora

Approximately 444 introduced flora species have also been recorded within the City of Kingston. Eight of which are listed Weeds of National Significance (WoNS) (Table 9). For ease of legibility the map below shows records of these species within their functional groups (Figure 9).

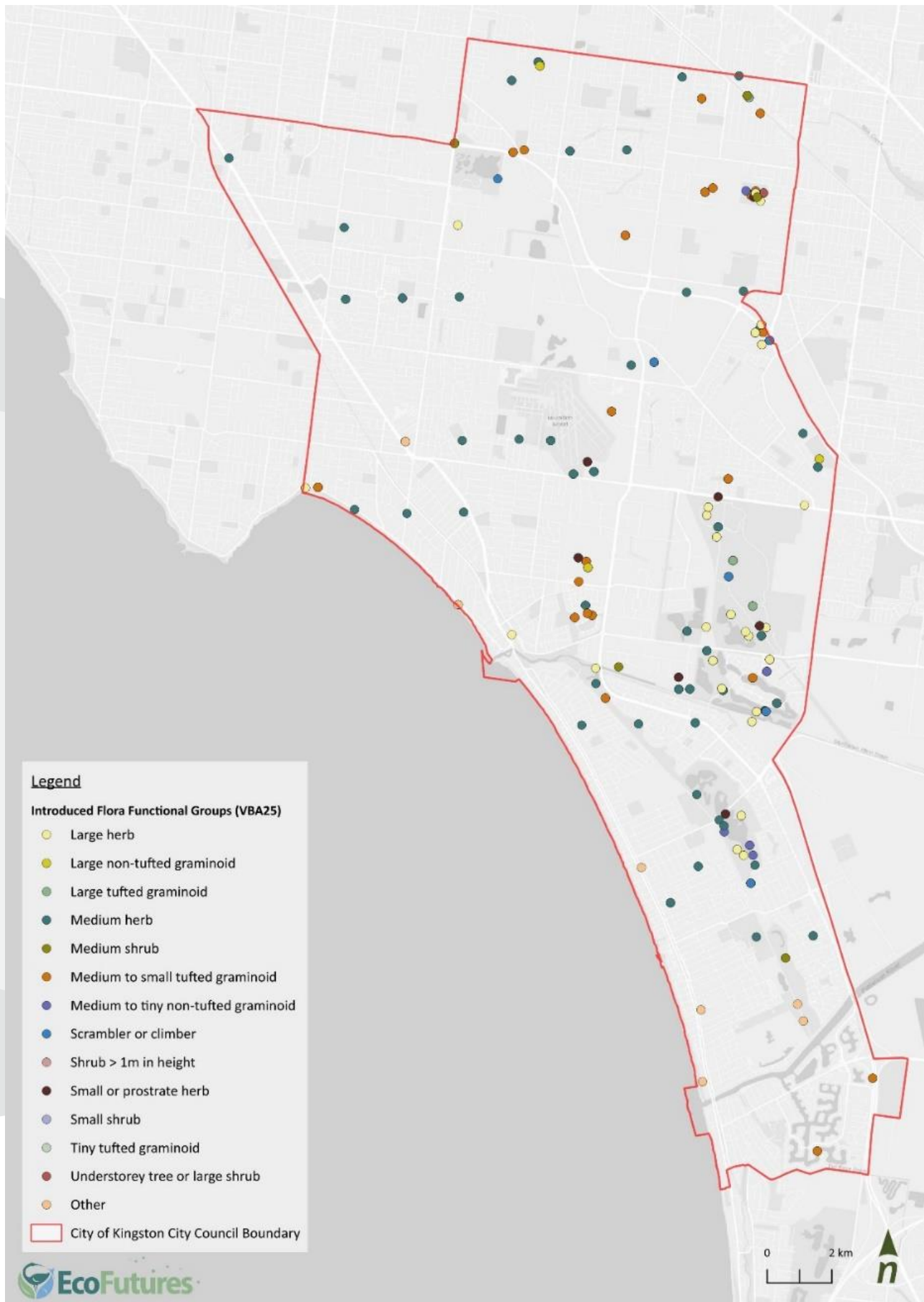


Figure 8: Introduced flora coloured by functional group in Kingston.

Table 9: WoNS weeds recorded in the City of Kingston

Scientific name	Common name
<i>Anredera cordifolia</i>	Madeira Vine
<i>Asparagus asparagoides</i>	Bridal Creeper
<i>Asparagus scandens</i>	Asparagus Fern
<i>Genista linifolia</i>	Flax-leaf Broom
<i>Genista monspessulana</i>	Montpellier Broom
<i>Lycium ferocissimum</i>	African Box-thorn
<i>Nassella trichotoma</i>	Serrated Tussock
<i>Ulex europaeus</i>	Gorse

5.6.2 Introduced Fauna

32 Introduced Fauna species have been recorded within the City of Kingston within the last 100 years (Table 10, Figure 10).

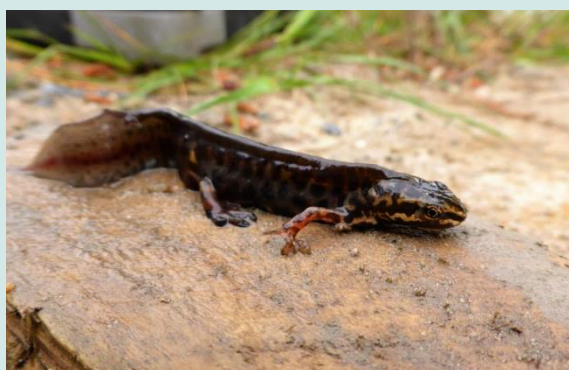


Figure 9: Smooth Newt

The Smooth Newt (Table 10) was **recorded for the first time** in the City of Kingston during the November Surveys at the Waterways Reserve. Smooth newts are not native to Australia and may pose a risk to native species if they were to establish and breed. They have the potential to carry disease and predate or compete with small native species. Smooth Newts are classified as a prohibited pest animal under the Victorian Catchment and Land Protection Act 1994 (CaLP Act). Pest animals that are classified as pest animals under the CaLP Act are required to be managed by the relevant landowner.

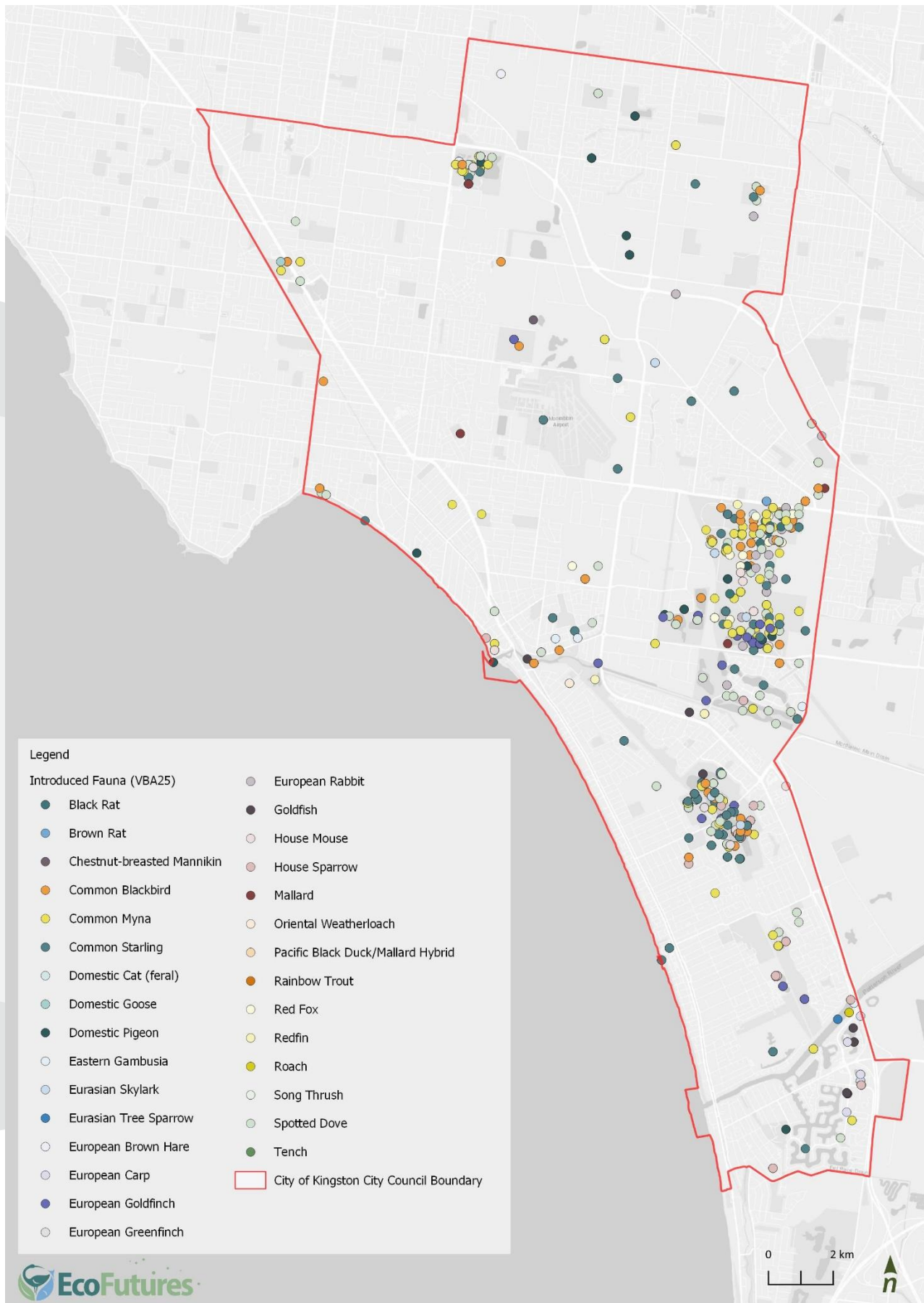


Figure 10: Introduced fauna (downloaded from Victorian Biodiversity Atlas VBA)

Table 10: Introduced Fauna recorded within the City of Kingston

Scientific Name	Common Name	Last year of VBA Record
<i>Acridotheres tristis</i>	Common Myna	2021
<i>Alauda arvensis</i>	Eurasian Skylark	2021
<i>Anas platyrhynchos</i>	Mallard	2020
<i>Anas superciliosa X Anas platyrhynchos</i>	Pacific Black Duck/Mallard Hybrid	2003
<i>Anser anser</i>	Domestic Goose	1999
<i>Carassius auratus</i>	Goldfish	2017
<i>Carduelis carduelis</i>	European Goldfinch	2021
<i>Chloris chloris</i>	European Greenfinch	2021
<i>Columba livia</i>	Domestic Pigeon	2021
<i>Cyprinus carpio</i>	European Carp	2013
<i>Felis catus</i>	Domestic Cat (feral)	1990
<i>Gambusia holbrooki</i>	Eastern Gambusia	2021
<i>Lepus europaeus</i>	European Brown Hare	2013
<i>*Lissotriton vulgaris</i>	Smooth Newt	2023
<i>Lonchura castaneothorax</i>	Chestnut-breasted Mannikin	1988
<i>Misgurnus anguillicaudatus</i>	Oriental Weatherloach	2017
<i>Mus musculus</i>	House Mouse	2016
<i>Oncorhynchus mykiss</i>	Rainbow Trout	2003
<i>Oryctolagus cuniculus</i>	European Rabbit	2018
<i>Passer domesticus</i>	House Sparrow	2021
<i>Passer montanus</i>	Eurasian Tree Sparrow	2020
<i>Perca fluviatilis</i>	Redfin	2006
<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	1982
<i>Rattus norvegicus</i>	Brown Rat	2001
<i>Rattus rattus</i>	Black Rat	2017
<i>Rutilus rutilus</i>	Roach	2006
<i>Spilopelia chinensis</i>	Spotted Dove	2021
<i>Sturnus vulgaris</i>	Common Starling	2021
<i>Tinca tinca</i>	Tench	2006
<i>Turdus merula</i>	Common Blackbird	2021
<i>Turdus philomelos</i>	Song Thrush	2008
<i>Vulpes vulpes</i>	Red Fox	2013

5.7 Canopy Cover

Kingston's canopy cover (trees > 3m) currently sits at 12.3%. This represents a 0.8% decline from 2014 with the largest cause of decline coming from tree removal. The Urban Forest strategy identified that 59% of trees over 3 metres sat within private land, 40% sat within public land and the remaining 1% was mixed (City of Kingston, 2022). 32% of Kingston's overall canopy cover sits on residential land highlighting the critical protection of trees on private land. Compared with other councils in Melbourne, Kingston sits on the lower end of local government tree cover.

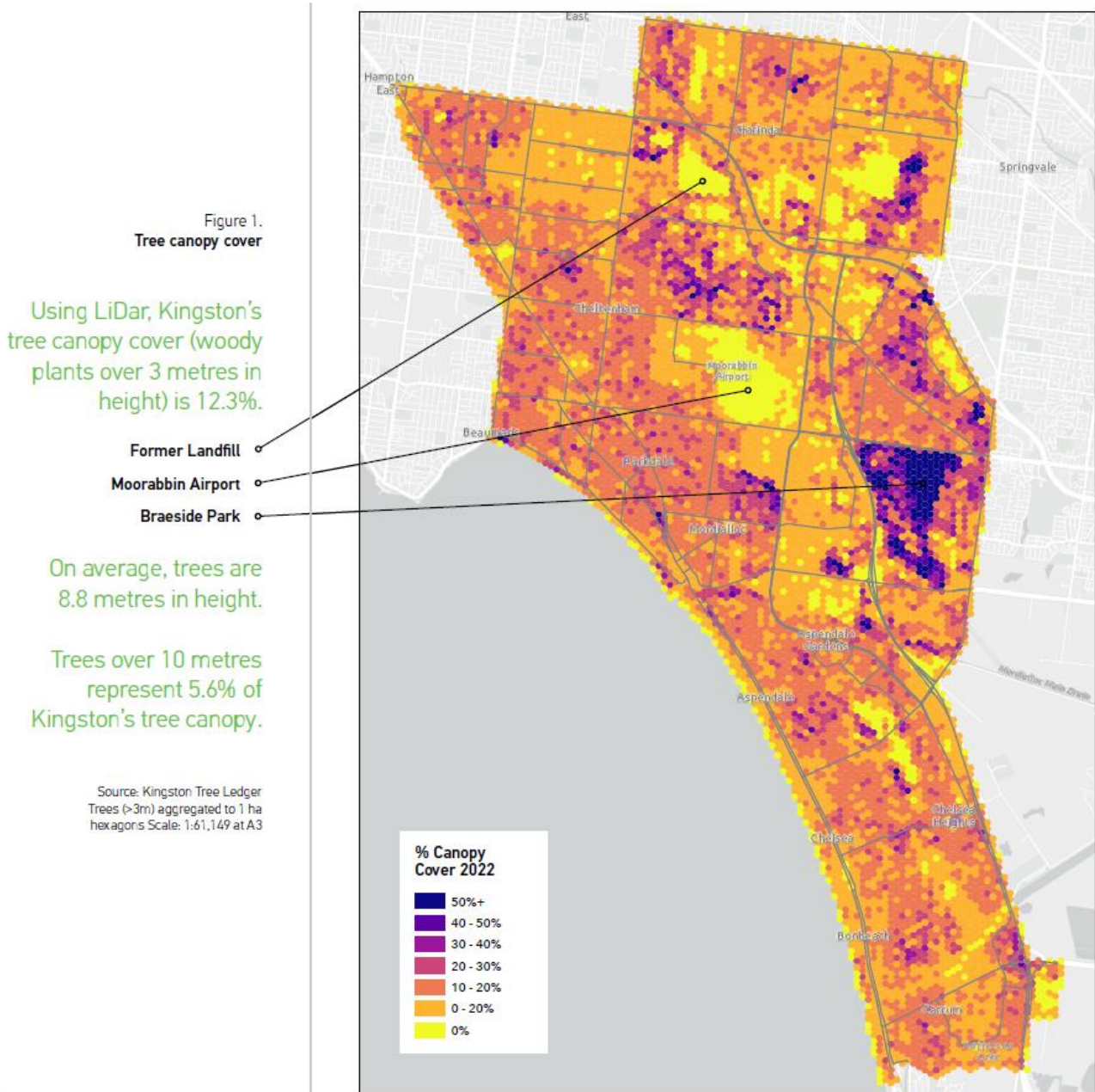


Figure 11: Tree Canopy Cover within the City of Kingston (Extracted from Source: Kingston Urban Forest Strategy)

5.8 City of Kingston Managed Reserves

The City of Kingston manages approximately 89 ha of habitat across 23 reserves (Table 11) totalling approximately 1% of Kingston's total land area.

Quantitative flora and fauna surveys using the habitat hectare methodology have been completed in some of these reserves over the years (Table 11). Table 12 summarises the assessment outcomes for these reserves from the most recent reference documents:

- Practical Ecology (2023). Bushland and Foreshore Reserves – Habitat Hectare Assessments and EVC Mapping (September 2023).
- Eco Logical Australia (2021). Ecological assessment of Eel Race Road Creek, Carrum

Method for determining Ecological Vegetation Classes within the City of Kingston

All EVC area extents were determined using the complete Habitat Hectares assessment methodology as outlined in the Vegetation Quality Assessment Manual - Guidelines for Applying the Habitat Hectares Scoring Method (DSE 2004). For determining EVC patches extent within City of Kingston managed reserves. This process began with the identification of the benchmark EVC against which to assess quality. In most cases this EVC benchmark reflected the present and pre-1750 vegetation that would have occurred on the site as mapped by DECCA. However, in some situations (e.g., a site contained vegetation that has established as a result of changes beyond the land managers control or has been established through historical revegetation works) the vegetation on site is reflective of a different EVC to that shown by DECCA modelled mapping.

Table 11: Reserves managed by the Conservation Team at the City of Kingston*.

Reserve name	Area (ha) managed by Kingston City Council for biodiversity values*	Habitat hectare assessment (most recent)
Bald Hill Park	0.27	Practical Ecology (2023)
Bowen Parkway	0.80	
Bradshaw Bushland Reserve	1.86	Practical Ecology (2023)
Caruana Reserve	0.51	Practical Ecology (2023)
Edithvale Common	0.64	
Eel Race Creek/drain	0.88	Eco Logical Australia (2021)
Epsom Grasslands	4.46	Practical Ecology (2023)
Epsom Wetlands	2.05	
Foreshore North	11.94	Practical Ecology (2023)
Foreshore South	25.81	Practical Ecology (2023)
Grange Heathland Reserve	13.40	Practical Ecology (2023)
Groves Reserve	1.87	Practical Ecology (2023)
Heights Park	2.08	Practical Ecology (2023)
Long Beach Trail	2.70	
Kingston Heath	1.49	Practical Ecology (2023)
Mordialloc Creek Reserve	5.82	Practical Ecology (2023)
Namatjira Reserve	2.57	
Powernet Easement Reserve	0.06	Practical Ecology (2023)
Purtell Reserve	0.08	

Reserve name	Area (ha) managed by Kingston City Council for biodiversity values*	Habitat hectare assessment (most recent)
Rowan Woodland	3.77	Practical Ecology (2023)
Wells Road Reserve	1.18	
Woolepe Bushland Reserve	0.39	
Yammerbook Nature reserve	4.45	
Zephyr/Brixton Reserve	0.37	
Total area (ha)	80	

* Reserve area was calculated from the Bushland and Foreshore Reserves polygon data provided by Kingston. The polygon data represents patches of native vegetation managed by council and does not include open lawn areas within each reserve.

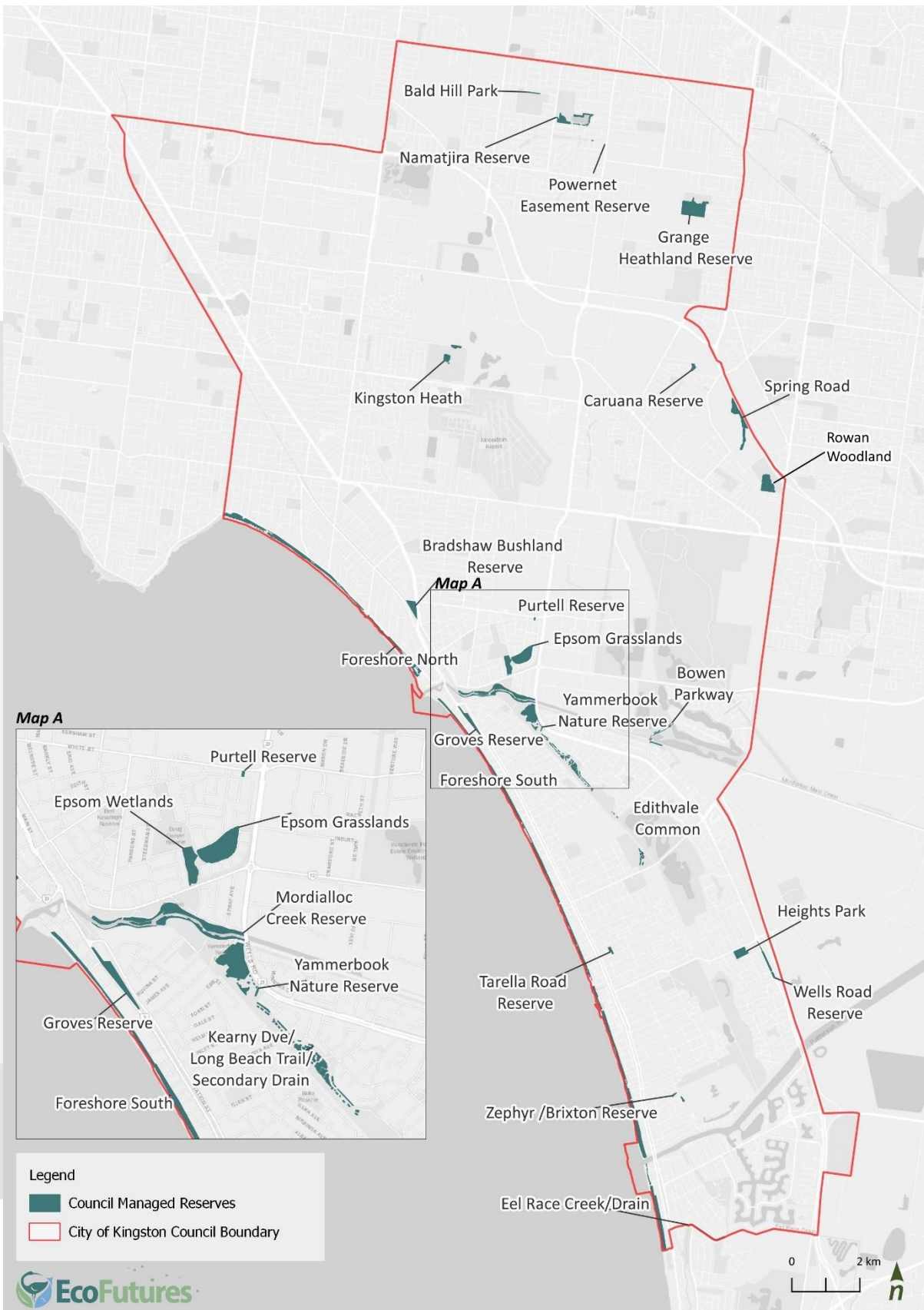


Figure 12: City of Kingston Managed Reserves

Table 12: Habitat Hectare assessment outcome (Practical Ecology, 2023; Eco Logical Australia, 2021)

Reserve name	Area (ha) managed by Council for biodiversity values	Area of native vegetation (ha)	% of assessment area occupied by habitat zones	Total Habitat Hectare	Observed EVC	Source
Bald Hill Park	0.27	0.18	67%	0.06	Damp sands Herb-rich Woodland (EVC 3)	Practical Ecology (2023)
Bradshaw Bushland Reserve	1.86	1.79	96%	0.66	Damp sands Herb-rich Woodland (EVC 3)	Practical Ecology (2023)
Caruana Reserve	0.51	0.52	100%	0.18	Plains Grassy Woodland (EVC 55), Plains Swampy Woodland (651)	Practical Ecology (2023)
Eel Race Road	0.88	0.55	63%	0.204	Coast Banksia Woodland (EVC 2), Swamp Scrub (EVC 53, Tall Marsh (EVC 821)	Eco Logical Australia (2021)
Epsom Grasslands	4.46	3.7	94%	1.78	Plains Grassy Wetland (EVC 125), Plains Grassland (EVC 132_62)	Practical Ecology (2023)
Foreshore North	11.94	11.24	65%	4.23	Coast Banksia Woodland (EVC 2), Sand Heathland (EVC 6), Coastal Dune Scrub (EVC 160), Coastal Headland Scrub (EVC 161), Coastal Tussock Grassland (EVC 163), Berm Grassy Shrubland (EVC 311), Coastal Dune Grassland (EVC 879)	Practical Ecology (2023)
Foreshore South	25.81	12.88*	40%	4.05	Coast Banksia Woodland (EVC 2), Coastal Dune Scrub (EVC 160), Berm Grassy Shrubland (EVC 311), Coastal Dune Grassland (EVC 879)	Practical Ecology (2023)
Grange Heathland Reserve	13.4	6.43	81%	3.82	Damp sands Herb-rich Woodland (EVC 3), Sand Heathland (EVC 6), Heathy Woodland (EVC 48), Swamp Scrub (EVC 53), Swampy Woodland (EVC 937)	Practical Ecology (2023)
Groves Reserve	1.87	0.59	35%	0.09	Coast Banksia Woodland (EVC 2)	Practical Ecology (2023)
Heights Park	2.08	0.69	34%	0.32	Heathy Woodland (EVC 48)	Practical Ecology (2023)
Kingston Heath	1.49	1.07	55%	0.36	Heathy Woodland (EVC 48), Swamp Scrub (EVC 53), Aquatic Herbland (EVC 653), Tall Marsh (EVC 821)	Practical Ecology (2023)
Mordialloc Creek Reserve	5.82	1.55	45%	0.83	Swamp Scrub (EVC 53), Brackish Wetland (EVC 656), Tall Marsh (EVC 821), Estuarine Reed Bed (EVC 952), Estuarine Scrub (EVC 953)	Practical Ecology (2023)
Powernet Easement Reserve	0.06	0.05	83%	0.01	Heathy Woodland (EVC 48)	Practical Ecology (2023)
Rowan Woodland	3.77	3.67	98%	1.88	Damp sands Herb-rich Woodland (EVC 3), Heathy Woodland (EVC 48), Swampy Woodland (EVC 937)	Practical Ecology (2023)

5.9 2023 Surveys of Kingston Parks and Reserves

The 2023 field surveys surveyed 28 sites across the City of Kingston in November 2023. The surveys took a qualitative approach to understanding the key values and threats across the sites. 17 of the 28 sites are not managed by the City of Kingston, most of which had very little publicly available data. Survey data collected at each site included the following categories:

- **Landscape context:** a brief description paragraph of each site.
- **Vegetation description:** a paragraph describing the main vegetation types and dominant species.
- **Threatened flora:** A list of any locally threatened flora species found during the survey (local threatened status refers to the Kingston Flora database).
- **Fauna habitat and values:** Areas of potential habitat for fauna species (both resident and/or transient fauna).
- **Hollow bearing trees:** a presence or absence score
- **Habitat connectivity:** A brief analysis of the site's connectivity potential within the Kingston wide landscape (e.g. does it connect to any other parks/ reserves?).
- **Habitat suitability for threatened species:** Whether the site has potential to support threatened fauna.



The surveys represent a starting point for a Kingston wide biodiversity assessment that considers habitat connectivity beyond Kingston managed reserves. Habitat connectivity plays a pivotal role in maintaining and promoting biodiversity through increasing movement of plant and animal species, facilitating gene flow, and increasing population viability. A consideration of the movement of flora and fauna within and beyond the City of Kingston is critical to protecting biodiversity.

Details for each site surveyed are included in Appendix C.

Figure 13: A locally significant patch of FFG Endangered (EN) *Diuris punctata var. punctata* (Purple Diuris) at [REDACTED]

Data from habitat surveys conducted in 2023 across different land parcels and previous reports were used to identify habitat elements at each surveyed site and council reserve (see 2023 Survey Data in Appendix C, Table 16, 13 and Figure 20). Each site was then allocated a habitat value of *'very high'*, *'high'* or *'medium'*. As some habitat values are found even in modified land parcels, a value of *low* was not used. The mapping of these values is found on Figure 20, however it should be noted that spatial layers are only available for the 2023 survey layers.

Habitat values and their application to reserves are described further in Section 6.3.2.

Table 13: Indicative habitat values based on 2023 surveys, Council’s conversations and habitat hectare assessment.

Reserves	Council-managed/Non council	Habitat values (High, medium, low)
Aspendale to Carrum Foreshore	Council	Medium
Bald Hill Park	Council	Medium
Bowen Parkway	Council	Insufficient data
Bradshaw Bushland Reserve	Council	Medium
Braeside Park	Non-council	Very high
Browns Reserve	Non-council	Medium
Caruana Reserve	Council	High
Edithvale Commons	Council	Medium
Edithvale Trail South	Non-council	High
Edithvale RAMSAR Wetlands	Non-council	Very high
Eel Race Road/ Kananook Creek	Council	Medium
Epsom Grasslands	Council	High
Epsom Wetlands	Council	Insufficient data
Grange Heathland Reserve	Council	High
Groves Reserve	Council	High
Heights Park	Council	Medium
Henry Street Trail	Non-council	Medium
John Lindsay Reserve	Non-council	Medium
Karkarook Wetlands	Non-council	Very high
Long Beach Trail	Council	Insufficient data
Kingston Heath Reserve	Council	Insufficient data
Kingston Heath Golf Club	Non-council	Medium
Mentone to Mordialloc Foreshore	Council	Very high
Mentone Pony Club	Non-council	Medium
Mordialloc Creek Reserve	Council	High
Namatjira Reserve	Council	Insufficient data
Patterson River	Non-council	Very high
Powernet Easement Reserve	Council	Medium
Purtell Reserve	Council	Insufficient data
Rossdale Golf Club	Non-council	High
Rowan Road Reserve	Council	High
Rowan Woodland	Non-council	High
Spring Road Reserve	Council	High
Spring Valley Golf Club	Non-council	Very high
Woolpe Bushland Reserve	Council	Insufficient data
Thompson Road Off Ramp	Non-council	Medium
Wannarkladdin	Non-council	High
Waterways	Non-council	Very high
Wells Road Reserve	Council	Insufficient data
Woodlands Estate Wetlands	Non-council	Very high
Yammerbrook Nature Reserve	Council	Medium
Zephyr /Brixton Reserve	Council	Insufficient data

6 Threats, challenges and opportunities

6.1 Global and state-wide threats

6.1.1 Climate change

Our climate is changing and over the last several years Victoria has experienced weather events with unprecedented severity and frequency such as bushfires, flooding and drought. Under a high emission scenario, Victoria may experience increased average annual temperature, frequency and duration of extreme weather events (e.g. fire season, hot days, rain) (Figure 14). The two modelled futures for climate within Kingston are predicted to be a warmer wetter future and a hotter drier future (City of Kingston, 2022b).

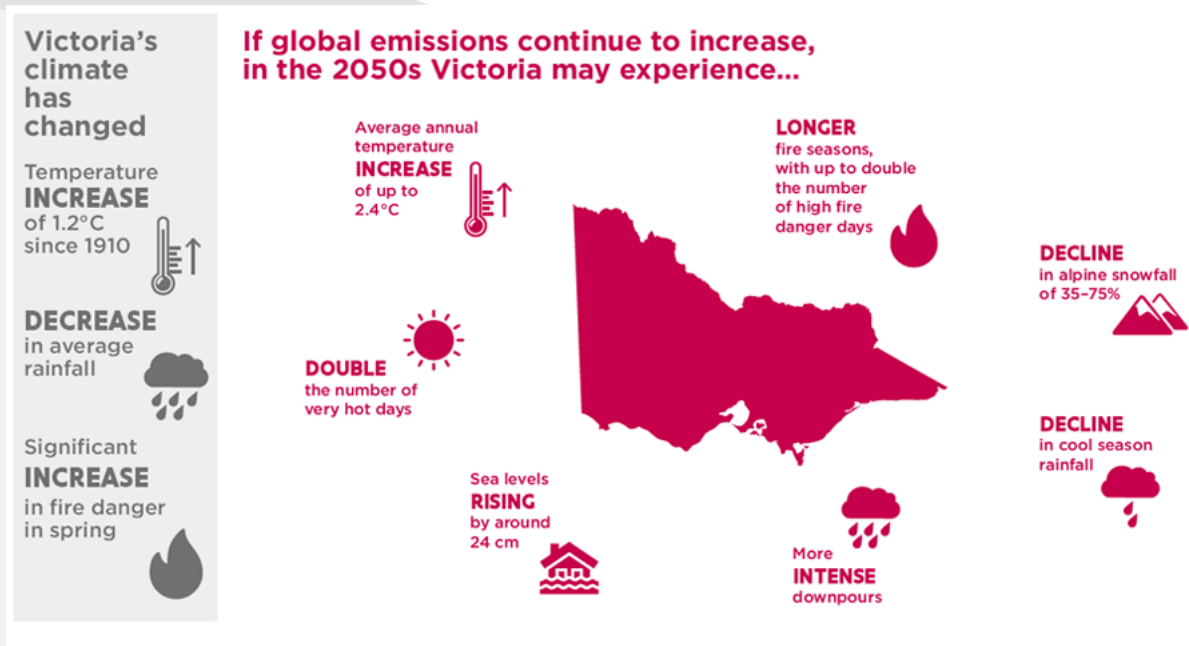
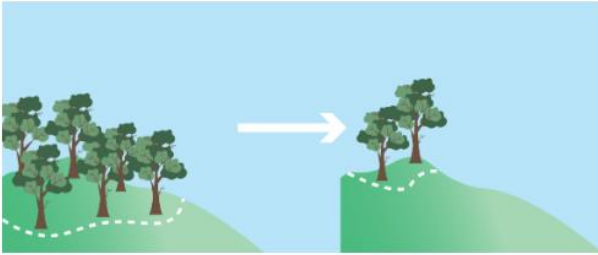


Figure 14: Under high emission scenario compared to 1986 – 2005 (DELWP, 2021)

Climate change has significant impacts on the natural environment and biodiversity (Dunlop et al. 2012; Figure 15; Figure 16). The impacts include:

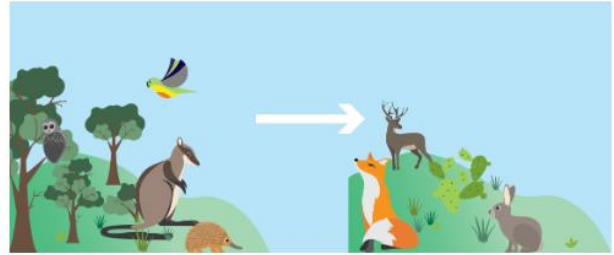
- changes in structure and function of ecosystems
- shifts in phenology (earlier spring and later autumn life history events),
- changes in local distribution or abundance of species
- the arrival and expansion of new species from other regions as they find new areas with suitable environmental conditions and macro-scale distribution shifts
- tree canopy loss
- reduced resilience of fauna species
- loss or reduced condition of refugia
- habitat loss and degradation
- changes in fire regimes
- greater opportunities for invasive species to colonise new regions.

Distribution



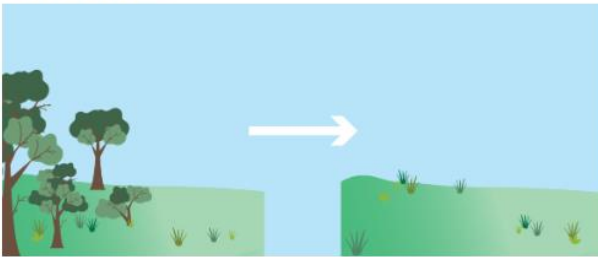
Sensitive ecosystems will shrink or disappear while more tolerant ecosystems might expand.

Composition



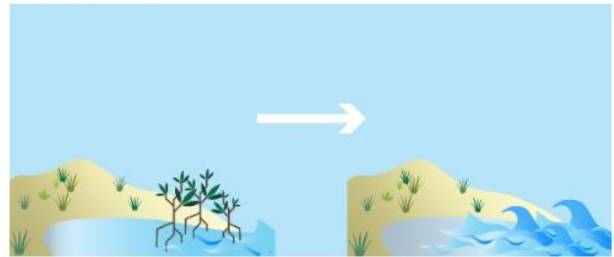
Many ecosystems are likely to lose native species, and might have more pest plants and animals.

Structure



Some ecosystems might lose dominant species such as eucalypts, and no longer resemble what they once were.

Function



Some ecosystems will no longer provide suitable habitat for species or might not provide the same ecosystem services.

Figure 15: Changes in ecosystem health and function due to climate change (DEECA, 2023)

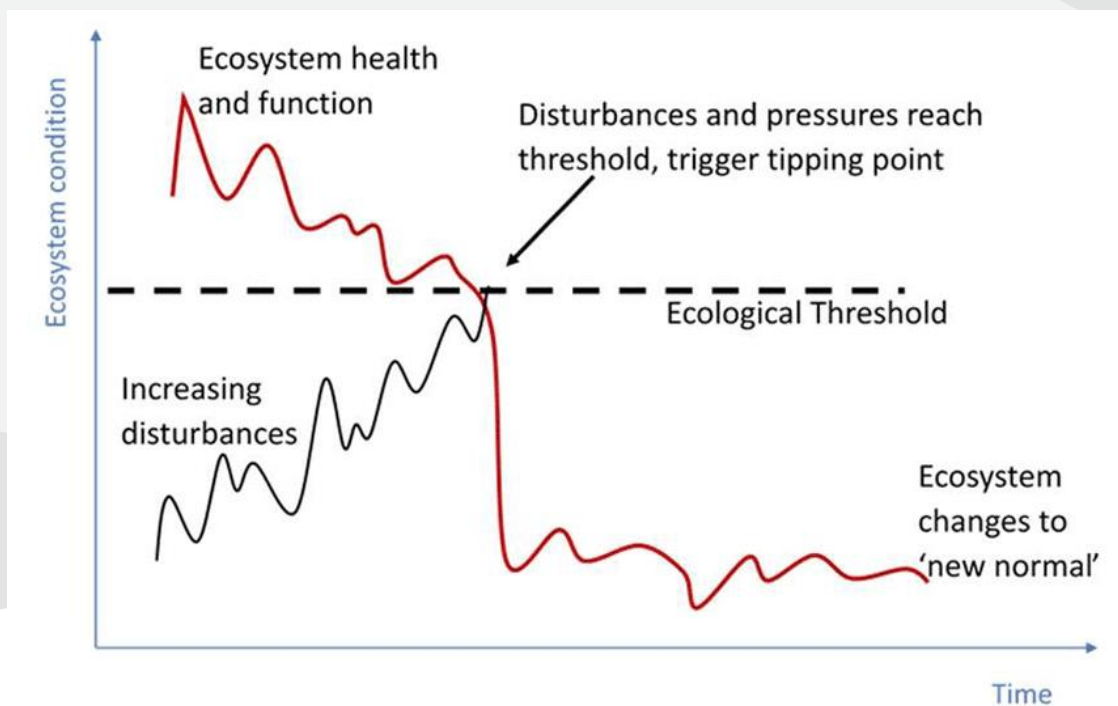


Figure 16: Change in ecosystem condition over time. Adapted from Dana M et al (2011) Global Change Biology 27(9): 1692-1703 (DEECA, 2023).

6.1.2 Heat Vulnerability

Heatwave occurs when both the maximum and minimum temperature are abnormally high consistently over a 3-day period. A combination of hot days and nights lowers the chances of species to recover, and consistent elevated temperatures over a period of time put terrestrial, aquatic and marine ecosystems at risk of heat stress (DCCEEW, 2021).

Heat stress can cause species mortality, degradation and loss of habitat, and reduce plant productivity. It also alters animal behaviour and physiology to avoid overheating, e.g. moving into shaded / cooler areas, reducing activities, allowing body temperature to increase with air temperature (Ecological Society of Australia, 2020). These behavioural alterations can place animals at risk of predation and unnatural contact with humans and associate infrastructure. The impacts of climate change will increase the risk of species succumbing to heat vulnerability, as discussed in 6.1.1.

Heat stress has been responsible for large numbers of deaths in flying foxes across several species and several states in recent years (Ecological Society of Australia, 2020). In freshwater ecosystems, heatwaves can alter water quality by increasing water temperature, dissolved oxygen and promoting bacterial and algal growth (DCCEEW, 2021). In marine ecosystems, periods of extreme temperatures affect species distribution, habitat condition, increase likelihood of ocean acidification and changes to marine food webs.

In cities, heatwaves are exacerbated by the high amount of concrete and hard surfaces as these materials retain heat for longer and raising temperatures even higher. This effect poses even higher risk to biodiversity in cities, where the impacts of heatwaves are compounded by urban heat island effect (Figure 17).

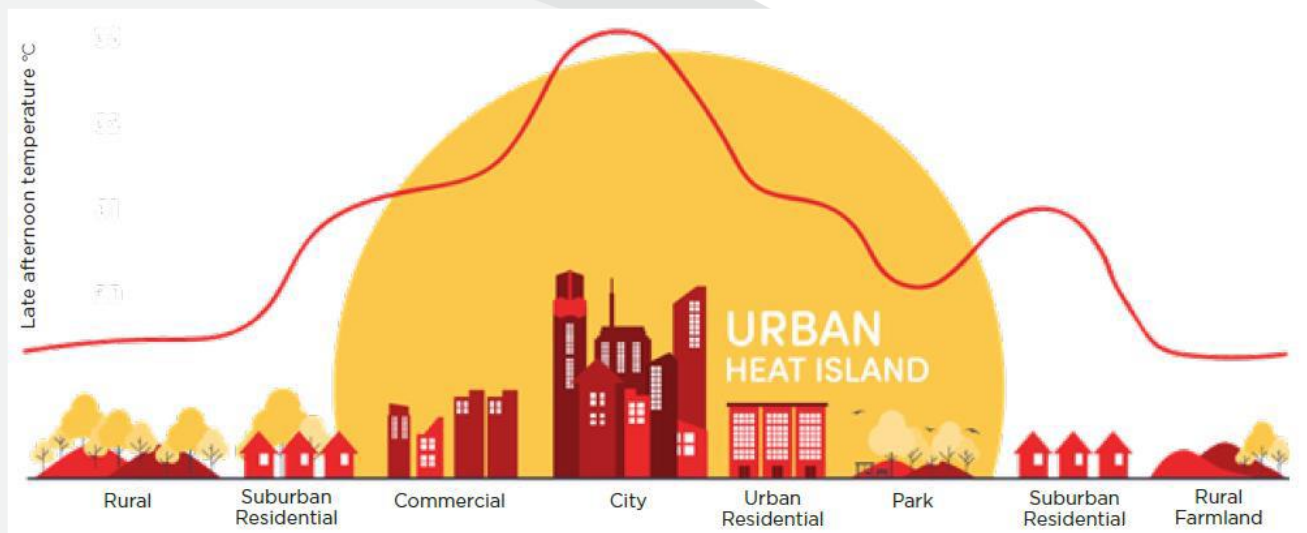


Figure 17: Urban heat island location across the landscape (City of Kingston, 2020).

Figure 18 illustrates the range of urban heat island effects across Kingston Municipality, where the urban heat island (UHI) value is the average difference in Land Surface Temperature (LST) in Melbourne's metropolitan areas to a non-urban baseline LST.

The urban heat island map shows that the urban heat island effect is most pronounced in areas where there is lack of green spaces e.g. residential, industrial and manufacturing areas, and is less pronounced in coastal areas, parklands and golf courses. The Urban Cooling Strategy (2020) identified several hotspots and heat islands within Kingston:

- Moorabbin Airport
- Patterson Lakes – residential areas to the immediate west of Old Wells Road and in the Patterson Lakes Recreation Reserve
- Various locations across Chelsea Heights
- Heatherton Sands

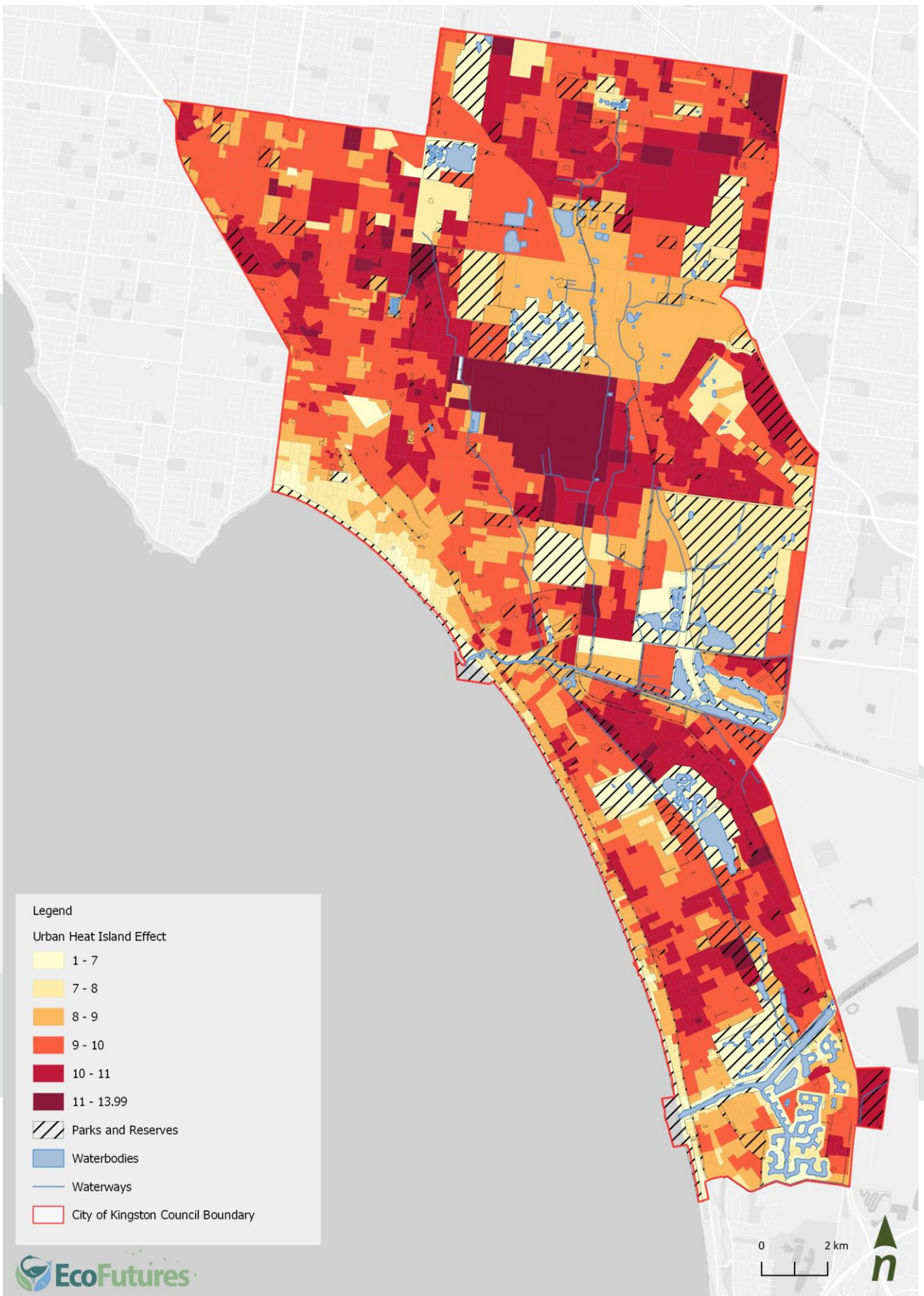


Figure 18: Urban Heat Island effect (UHI) across Kingston.

6.1.3 Coastal inundation and sea level rise

Changing climate conditions are anticipated to result in rising sea levels, more intensive riverine flooding, changes in wave climate, increases in swell energy and storm tide events, and ocean acidification. Global sea levels are projected to increase between 0.61m and 1.10m by 2100 above 1986-2005 levels under a high-emissions scenario, with a global average 0.84 m³ based on Intergovernmental Panel on Climate Change (IPCC) projections (City of Kingston, 2023a).

Some low-lying areas around Port Phillip Bay are vulnerable to coastal inundation (coastal flooding). With sea level rise and coastal inundation will likely increase, for temporary flooding during storm events (storm tide inundation) and more permanent inundation as the extent of tidal areas increase (where the tides reach every day).

Rising sea level rise may also see changes in shoreline position and response, with increasing magnitude of storm events and resulting sand loss off beaches, as well as changes in shoreline recovery (rebuilding during calmer conditions). Long term shoreline recession further landward (more permanent loss of land) may also occur as sea levels rise.

Urbanised coastal areas may experience the effects of “coastal squeeze”, as the buffers between the sea and built up areas diminish with rising water levels. Armoured and built up shorelines, built up areas behind dune systems, lock up of sediment supply and limit shoreline dynamics and their ability to move and respond to changing conditions.

The existing stormwater network and its outfalls within coastal zone, will likely be impacted by rising sea levels, reducing drainage efficacy and high intensity rainfalls will put pressure on the capacity of the broader network, including at the foreshore.

Rising sea levels are anticipated to have an impact on groundwater at and around the Bay. This may include changing water table depths/levels, shallow groundwater becoming surface water (rising to above the ground surface) and changing groundwater quality (such as increasing salinity). As the region was historically wetlands, changes to groundwater are projected across the entire Kingston region in the future.

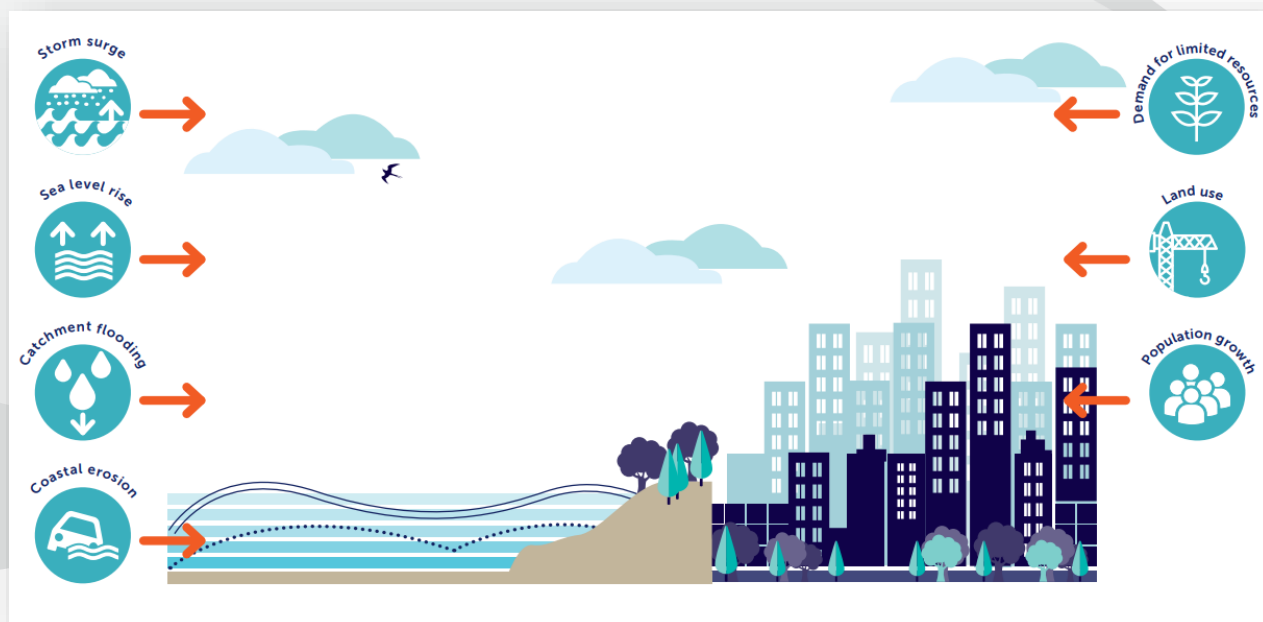


Figure 19: Coastal Squeeze (Association of Bayside Municipalities 2017)

6.1.4 Urban development

Kingston is one of the main employment centres in Victoria and population is driving the local economy in areas where the green wedge zone is designated. The LGA now has an estimated population of around 167,300 people and is forecast to grow to around 187,000 by 2036. Such population growth can increase urban density and urban sprawl, and promote / accelerate urban renewal, expansion and development in cities.

There are a range of issues with protecting and conserving biodiversity in the urban context. Population growth and urban development put pressure on the natural environment. Many of these issues can compete with the objectives of biodiversity conservation and the impacts can pose a risk to biodiversity.

Discussed below are:

- Land clearing
- Stormwater drainage
- Inappropriate planting

Land clearing

One of the biggest threats of urban development is land clearing. While Kingston is predominately an urban Council, pressures for more intensive urban development within urban areas and at the edge of urban growth areas could lead to more land clearing for housing and infrastructure (e.g. level crossing removal). Land clearing can result in loss of habitat and fragments habitat on the broader landscape (DCCEE, 2021). It also reduces the patch sizes and reduce the quality of adjoining habitat. Land clearing reduces the resilience of threatened species population to impacts of climate change and also exacerbates other threatening processes.

Other components within ecosystems within the modified landscape that could be compromised include:

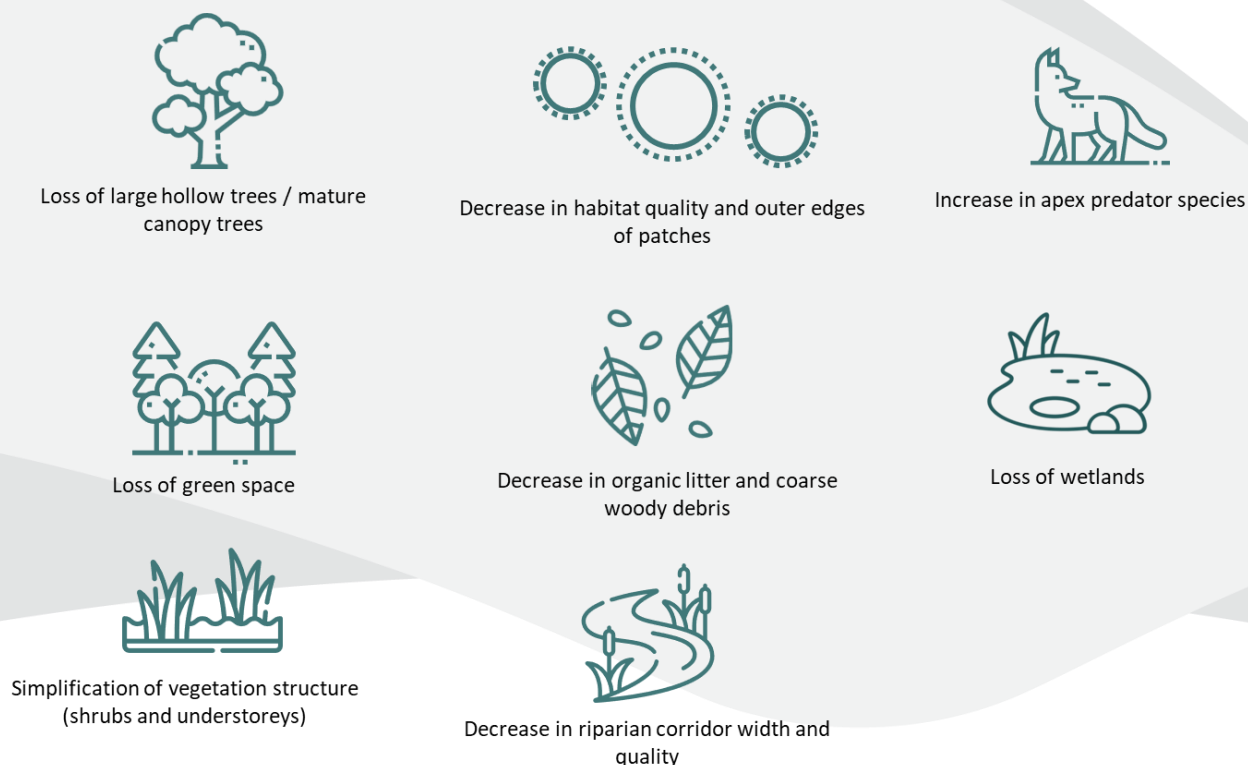


Figure 20: Other threatened processes from land clearing.

Stormwater drainage

Urban development can transform the condition of waterways and wetland ecosystems. Stormwater runoff from impervious surfaces is captured by drainage systems that quickly discharge to creeks, rivers and eventually Port Phillip Bay. Stormwater runoff alters the hydrologic regime in waterways by increasing the frequency of high flows and reducing the baseflows. It limits opportunities for infiltration of water into the ground and reduces evaporation and transpiration via plants in the landscape (Figure 21). Stormwater runoff also reduces or cuts off inflows into natural wetlands that are depending on natural flows, which alters the wetland hydrology and biodiversity.

Aquatic ecosystems are threatened by stormwater runoff as it changes the structure and condition of the bed and banks of waterways along with habitat for aquatic life such as platypus, fish and macroinvertebrates. It limits the opportunity for successful breeding and movements across the catchment between estuaries and rivers.

Stormwater drainage system often carries nutrients and toxicants that affect water quality and ecosystem health. It increases turbidity and decrease dissolved oxygen which pose a threat to sensitive macroinvertebrates, platypus and fish. Toxicants can also accumulate in sediment and bind to organic matter which may enter the food chain when eaten by aquatic species.

As described above, performance, functionality and capacity of stormwater networks and their outfalls within coastal zone, may reduce as sea level rise and the frequency and intensity of storms (both coastal and rainfall events) increase.

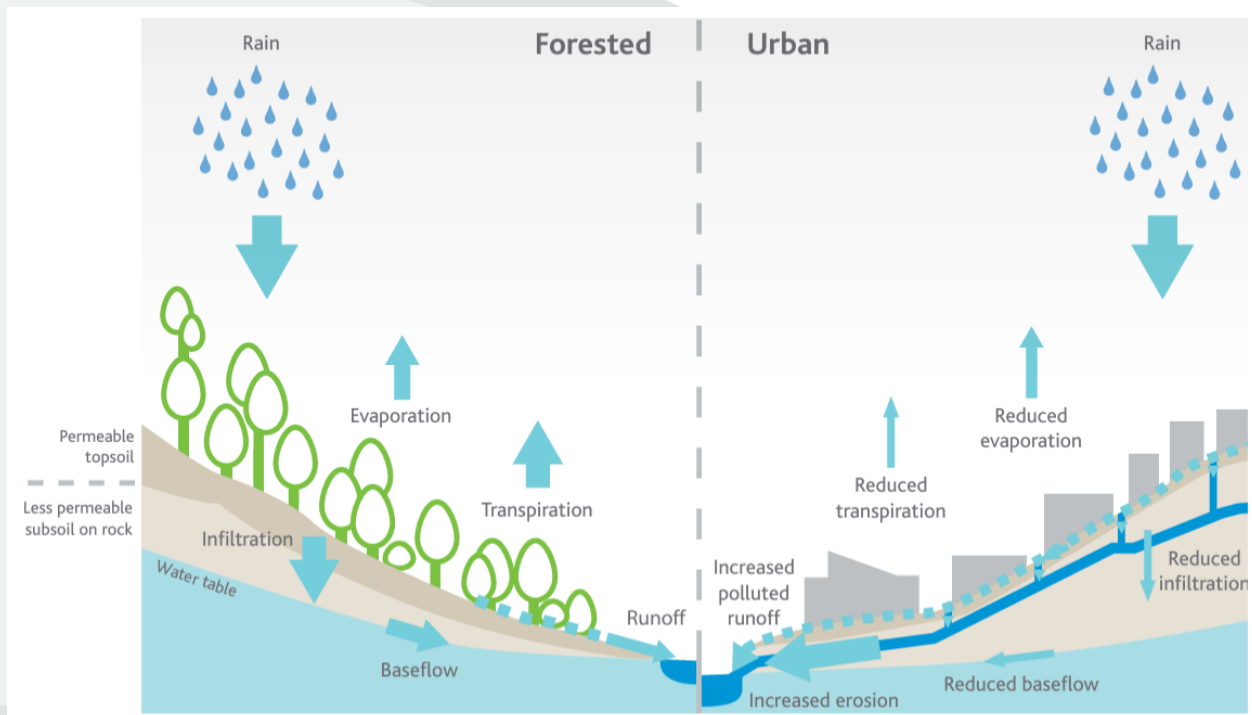


Figure 21: Typical water balance in natural and urbanised catchment (Melbourne Water, 2013).

Inappropriate planting

Planting of inappropriate vegetation species in private land or reserves are potential threats to indigenous biodiversity in urban areas. The introduction of invasive species or environmental weeds into landscapes through inappropriate planting may result in endemic species being outcompeted and displaced. This decreases the biodiversity of flora within an area and has flow on impacts on indigenous flora including birds, mammals and pollinator insect species. See 6.1.6 on the specific impacts of invasive species.

6.1.5 Loss of Wetlands

Wetlands include billabongs, lakes, bogs, swamps and mudflats and can occur naturally or be constructed/artificial. Although wetlands can be different sizes and types, they share three main characteristics; the presence of permanent or seasonal water, soils that have formed under wet conditions and plants that are adapted to growing in water or

inundated soils. Many wetlands in Australia are ephemeral. Ephemeral wetlands are those that undergo drying and wetting cycles depending on climatic conditions and so the wetland can look very different throughout varying seasons.

Wetlands are often undervalued; however, they play a critical role in our environment by treating wastewater naturally before it enters waterways, storing large quantities of carbon (often greater than forests (Pearse et al. 2015)), protecting shorelines from erosion from waves and providing habitat for many plants and animals including some that are not found in any other environments. Wetlands often serve as nurseries for fish and play a vital role in linking the land to permanently wet areas such as rivers and the sea. Wetlands can be places of great beauty or be reasonably inconspicuous places of low-lying drainage, but they all play important roles in supporting biodiversity.

Wetlands are being lost on a global scale despite their importance and so managing those that remain is a vital step in biodiversity conservation. In Kingston, wetlands are managed to allow the drying and wetting seasons to occur as naturally as possible. This variation provides habitat for migratory birds, frogs, rakali and many other native species. Wetland vegetation is also seasonal, with rushes, reeds and aquatic vegetation growing in response to the changes in water levels. These plants remove nutrients and toxins from the water, stabilise the soil and provide habitat for many wetland species. Most wetlands are self-regulating and function best when left undisturbed. Constructed wetlands may sometimes require the removal of siltation and plants, to allow them to function at optimum levels.

Wetlands are susceptible to changes in climate and associated extreme climate events and so protecting and consolidating them is key to their survival. Insects, birds and other fauna require refugia areas especially from extreme heat, and wetlands can provide a suitable place for these species to reside in. Understanding the cryptic nature of wetlands, along with the diverse and critical roles they play in ecosystem function allows us to see their conservation as a priority.

6.1.6 Invasive species

Invasive species can pose threats to indigenous biodiversity by modifying habitat, degrading ecosystems and are the primary cause of native animal extinctions in Australia (Australian Academy of Science, 2017).

Invasive flora species can significantly impact on ecosystem function and composition, the population and distribution of indigenous plants, and affect animal populations by decreasing habitat and food resources that depend on this flora and changing the physical elements of ecosystems. Invasive fauna species can impact biodiversity by disturbing and damaging vegetation, spreading weeds, competing with other species for habitat niches and direct predation. The impact of invasive species is expected to increase with changes in ecosystem function (i.e. simplification and stress) under climate change. As indigenous species concentrate in refugia areas, the potential for increased predation on vulnerable mammals and insects may increase. Ensuring that refugia is well distributed and protected from predators and invasive weeds will be critical to ongoing conservation of biodiversity.

Invasive species can be effectively managed through the invasive species framework by considering where each stage each species is at and the level of impact it has on the landscape. Figure shows the various management approaches to different stages of the invasion curves, which includes prevention, eradication, containment and asset-based protection.

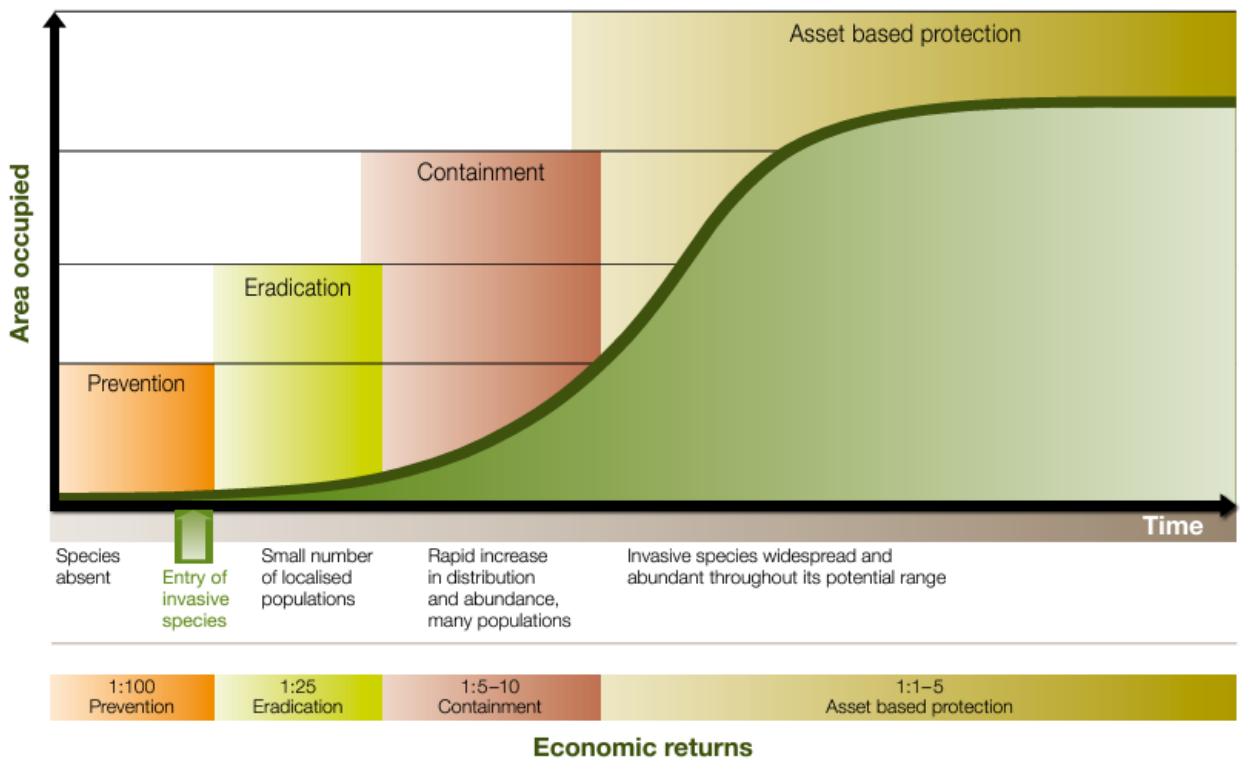


Figure 22: Generalised invasion curve showing actions appropriate to each stage (DEPI, 2010).

6.2 Local challenges

There are several local challenges, some of which are specific to Kingston.

Local challenges

- Loss of golf courses to urban development
- Land tenure management differences
- Fragmentation of reserves/green spaces
- Changes to the foreshore
- Presence of pest animals
- Domestic dogs
- Changes in fire regime and burning
- Community attitude towards biodiversity conservation
- Changes in species interactions

6.2.1 Loss of golf courses to urban development

There are 10 golf courses in Kingston. They have been highlighted as one of the few last remaining green spaces to retain biodiversity (Figure 23). Urban golf courses often provide critical habitat and food resources for urban wildlife. They can be areas with remnant mature native trees and threatened flora and fauna. As golf courses are not owned by Council, they are vulnerable to urban development or significant landscape changes. Any improper development or lack of planning controls could result in:

- Loss of mature large trees which provide crucial habitat for urban ecosystems.
- Loss of vegetation.
- Simplification of vegetation structure and composition.
- Fragmentation of habitat and connectivity.

6.2.2 Land tenure management differences

Government managers of high conservation reserves within Kingston include the Kingston City Council, Parks Victoria, and Melbourne Water. Other areas are also managed under different land tenures including private property (Figure 23). However, managing biodiversity requires a landscape scale approach if biodiversity is to be resilient and protected within urban areas. Managing biodiversity must allow for sufficient core habitat areas, habitat patches and connectivity between these areas to allow species to move safely across the landscape and to utilise elements of the ecosystem critical to survival. At present, a coordinated effort to manage land across tenures is lacking which limits a wholistic approach to biodiversity management.

These differences in land tenure management could lead to unintended consequences for existing habitat, remnant and vulnerable ecosystems and individual species. These include direct habitat and/or biodiversity loss, disruption of ecological function, loss of species associations and decreased resilience of ecosystems in the face of other global threats (e.g. climate change, heat vulnerability).

6.2.3 Fragmentation of reserves/green spaces

Kingston municipality, like most urban councils is under constant pressure from urban development. Urban development such as urban renewal, high density development and urban expansion can fragment existing reserves, green spaces and connectivity between them. This results in a loss of biodiversity values and essential movement corridors for fauna and flora, leading to decreases in population size and a reduction in gene flow between populations which impact population health. Other impacts of fragmentation include increases in species susceptibility to, and spread of, disease, changes in population composition, increased vulnerability to edge effects and a reduction in the adaptability of species to environmental changes. Habitat fragmentation and climate change impacts are likely to interact with one another increasing negative impacts on biodiversity.

6.2.4 Changes to the foreshore

Kingston's coastal and marine areas include sandy beaches, dune systems and coastal reserves, major waterways and important wetlands such as the Ramsar-listed Edithvale Wetlands. The dune systems and coastal reserves contain high value flora and fauna and play an important role in the coastline's resilience. Native vegetation along the Kingston foreshore is limited to a thin (and diminishing) strip with some sporadic pockets. However, this vegetation still provides essential ecosystem services, habitat, and connectivity for biodiversity, especially shore dependent species.

Kingston faces risks from climate change impacts through flooding from sea level rise and storm tide inundation. The region is already experiencing the effects of erosion, with loss of sand from beaches resulting from storm events and sediment transport dynamics (City of Kingston, 2023a). Climate change is likely to exacerbate foreshore erosion rates and magnitude, leading to coastal vegetation loss and protection of the dune systems.

Storm tide inundation, temporary and permanent coastal inundation could also impact waterways and low-lying areas further inland. Impacts may include an extension of salinity further inland, changes in the groundwater table and hydrologic conditions for both estuarine and freshwater wetlands, and vegetation communities. Permanent coastal inundation and storm tide inundation may cause irreversible damage to low-lying wetlands altering the hydrologic and salinity regime.

We understand that City of Kingston is currently developing its own coastal climate change hazard and risk assessment, which will provide detail on the impacts that coastal climate change hazards will have on Kingston. DEECA has also recently undertaken extensive modelling and analysis to understand current and future coastal hazards around the Port Phillip Bay (including Kingston). For more information and specific area maps for Kingston please visit: <https://www.marineandcoasts.vic.gov.au/coastal-programs/port-phillip-bay-coastal-hazard-assessment>.

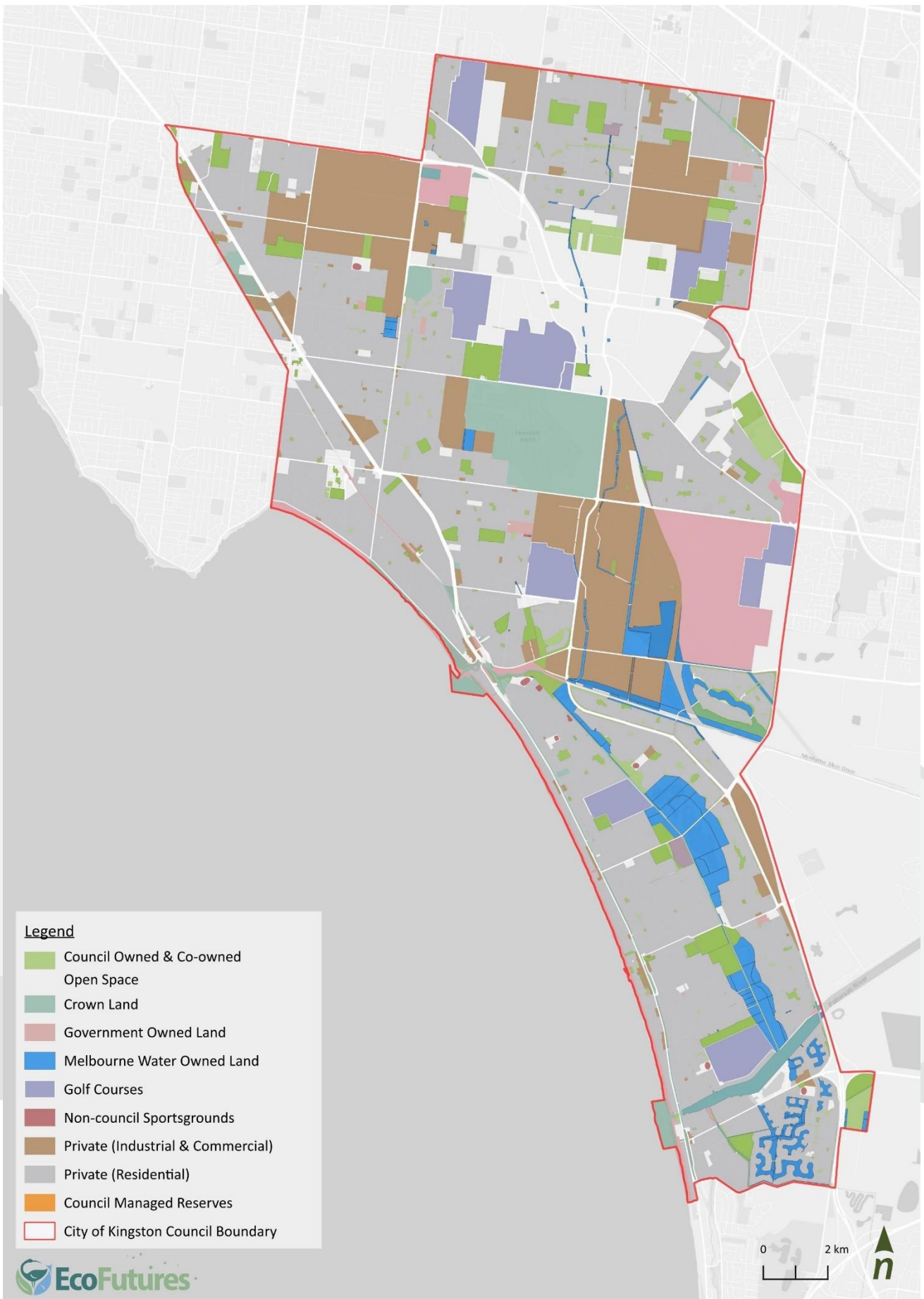


Figure 193: Map of land tenure across the City of Kingston with parks and reserves managed for conservation and biodiversity values and incidental biodiversity refugia (including golf courses).

6.2.5 Presence of pest animals

Pest animal species can have disproportionate impacts on native flora and fauna. Table 14 highlights the direct and indirect pressures that pest animal species pose to indigenous flora and fauna.

Red Foxes and feral cats are major predators in urban councils including Kingston. Recent research shows that feral cats and foxes kill and eat 697 million birds, 510 million reptiles, 1.4 billion mammals and well over 1.1 billion invertebrates every year (Centre for Invasive Species Solutions, 2023). Red Fox (*Vulpes vulpes*) are declared as established pest animals under the CaLP Act (Agricultural Victoria, 2023). Like cats, they prey on native wildlife and livestock, as well as spread diseases to native biodiversity.

Cats are most active between dusk and dawn which coincides with the activity periods of many species of native wildlife. Cats pose a direct risk to native wildlife through hunting however they also have the potential to pass on diseases to sensitive fauna species. Kingston requires cats to be securely confined indoors between sunset and sunrise; however, the challenge of imposing this cat bylaw is difficult and community's compliance in keeping cats indoors can be variable. A concerted effort is required to limit the impact of cats on native species.

Table 14: Pest animal species with the largest potential threat to indigenous flora and fauna.

Pest or domestic animal Species	Direct Pressure	Indirect Pressure
Red Fox (<i>Vulpes vulpes</i>)	Directly impact wildlife through predation and competitive pressures. Red Foxes are opportunistic predators which prey on small mammals, birds, reptiles and insects. They compete directly with native predators including Wedge-Tailed Eagles and Powerful Owls.	Indirectly impact fauna and flora through an impact on herbivore population, disease transmission and through the damage created through dens.
Domestic and feral cats (<i>Felis catus</i>)	Free roaming domestic and feral cats are highly evolved hunters and pose a direct threat to many small ground dwelling and arboreal fauna species including birds, reptiles, small mammals, and amphibians.	The presence of free roaming domestic cats or feral cats can alter animal behaviour (which can in turn affect breeding and feeding), can fragment habitat (through the disruption of ecosystem dynamics) and can lead to decreased reproductive success for native species (due to prey of juveniles and disruption of nesting sites).
European Rabbit (<i>Oryctolagus cuniculus</i>)	European Rabbits pose a direct threat to native flora through herbivory, soil disturbance and habitat alteration (through the creation of burrows).	Rabbits can create significant changes to vegetation structure and function. They can act as a prey source for other pest animal species thereby increasing the abundance of pest animals within a given area.
Common Myna (<i>Acridoethes tristis</i>)	Common Myna birds pose a direct threat to native bird species ability to compete for nesting sites. Common Myna are known to evict native species from hollows and nesting boxes and are known to even kill eggs and chicks. Common Myna birds carry diseases such as avian influenza and parasites such as mites.	Common Myna birds can outcompete native species for resources and nesting sites, thereby altering the composition of local bird communities, leading to a reduction in biodiversity.

6.2.6 Domestic dogs

There are thirty-one parks with off-leash areas for dogs in Kingston (Kingston, 2024), some of which are close to remnant habitat for native biodiversity (e.g. Kingston Heath and Browns Reserve). Off-leash dogs have the potential to impact on native fauna through predation, habitat disturbance and harassment. There are concerns about potential conflicts between domestic pets and biodiversity values especially near waterways and wetlands where native birds and other animals may be disturbed by the physical presence and/or odour of dogs. The presence of off-leash dogs can alter native animal behaviour resulting in a reduction in species fitness and population size.

Domestic dogs can negatively impact wildlife through predation and harassment, disease transmission, habitat damage, and fear-mediated behavioural changes. Local studies on domestic dogs found that dog walkers generally have low awareness of biodiversity in the parklands (City of Boroondara) and lack awareness of the impact's dogs may have on the surrounding environment (Farrar et al., 2015).

6.2.7 Changes in fire regime and burning

Fire is a natural ecological process in Australia and has a strong influence on Australia's biodiversity. Some species, including threatened species require fire to germinate long-dormant seed banks, trigger life cycle responses, regenerate areas and maintain healthy conditions. Fire may, in some circumstances, also help to manage and control the level of weeds in the landscape. Prior to European contact, First Nation's peoples have been practicing cultural burns, not only for protecting assets and providing clear access for cultural uses but also to regenerate landscapes and maintain ecosystem health.

Kingston undertakes ecological burns in heathlands and grasslands such as The Grange Heathland, Rowan Woodland, Bradshaw Bushland Reserve and Epsom Grassland. These ecological burns promote regeneration of indigenous flora species and removal of weeds. There is a need to strengthen the cultural burning capacity and knowledge base of Kingston staff through partnership with the Aboriginal Corporation. As an urban municipality, undertaking frequent ecological burns is also challenging due to the impacts on residents. Secondary effects of ecological burning such as risk to property, smoke and odour can be problematic for surrounding residents and difficult to manage.

6.2.8 Community attitude towards biodiversity conservation

Kingston community care about their local environment. In the recent Open Space Strategy (2023), 41% of the survey respondents identified the need to improve urban forest and natural habitat to support wildlife, and 26% identified that open spaces should support, offer and encourage conservation for plants and wildlife.

Community attitudes towards biodiversity and the protection of the environment are also reflected in the community vision for Kingston *"We champion and nurture our green and open spaces creating a safe, healthy environment"*.

The current challenge for Council is translating community attitudes and desires for biodiversity and conservation into actions. This entails not only raising awareness about protecting biodiversity and understanding the impacts of urban development and climate change on biodiversity but also providing conduits for residents to practice caring for nature. In addition, as Kingston becomes more urbanised over time, the population landscape will also change. This means that new residents may not understand or be aware of the biodiversity in Kingston's land and the environmental challenges that Kingston is experiencing.

Programs such as Gardens for Wildlife and National Tree Day are important in reaching the community changing community attitudes. These attitudes are also influenced by councils' approach to the control of domestic pets, illegal clearing of vegetation and inappropriate development. An increased effort in changing community attitudes and actions is critical to the success of the Biodiversity Strategy.

6.2.9 Changes in species interactions

Climate change will have impacts on a variety of elements of ecosystem function which will result in changes in species interactions. These interactions are important, as they may result in changes in the dominance of species and/or the ability of a species to persist. Changes likely to occur included interruptions to pollination and seed dispersal, especially in instances where very specific pollination relationships exist, loss of cover and habitat values critical to a species persistence in an area, and changes in habitat niches through exclusion of some species through competition and predation (Dunlop et al. 2012). Competition over hollows used for nesting and brooding are already evident in many ecosystems in Australia (Gibbons and Lindenmayer 2002) and this competition may increase as climate impacts vegetation condition. Invertebrate and fungi species play critical roles in ecosystem function (Selbmann et al 2013) and knowledge gaps around their relationship to ecosystem health still exist. Nutrient cycling, food and water availability and species associations are just some of the elements that are expected to be impacted by climate change.

An example of a change in species interaction is that of the Noisy Minor (*Manorina melanocephala*). The Noisy Minor is a native species to Victoria that has become a threat to other native species within shared ecosystems. This is due to changes in habitat structure and availability influenced by the modification of open spaces in urban areas. The Noisy Minor often excludes small birds due to its aggressive tendencies when defending its habitat (DCCEEW 2021). Appropriate habitat planting can reduce the detrimental impacts of this species in the future.

6.3 Opportunities

There are opportunities for protecting, restoring and connecting biodiversity values across all tenure types within the City of Kingston. These opportunities were identified, further developed and have been broken into 7 themes which are described Table 15 and the specific opportunities for each land parcel are highlighted in Table 16. These opportunities were then mapped (Figure 24) to provide spatial representation of them across Kingston.

Further targeted investigations and council staff knowledge of each site may reveal further opportunities in addition to those identified in this report.

Table 15: Opportunities to improve biodiversity outcomes in Kingston.

Themes	Opportunities	Description
Connectivity	Connectivity opportunity	Areas identified as having a clear opportunity to connect habitat patches, reserves and shared pathways to increase the availability of habitat for species and a reduction in fragmentation across Kingston.
	Protect existing connectivity	Biodiversity connectivity that currently exists and requires protection into the future.
Threatened species protection	Consolidate	Existing areas of habitat that require strengthening (e.g. fauna through the provision of climate change refugia, artificial habitat within the wetland) to ensure protection of threatened species.
	Protect threatened species and communities	Areas that require protection and management due to the presence of listed species and/or communities.
	Potential for threatened species	Areas that have potential to provide habitat for threatened species if managed to protect associated habitat values.
Habitat values	Protect habitat	Areas with existing remnant or well-established revegetated habitat of medium to very high quality that requires protection.
	Habitat and refugia creation	Areas with potential to create habitat or refugia through management actions such as revegetation, critical wetland habitat rehabilitation and construction of artificial habitat to be installed on applicable sites.
	Improving habitat values	Areas with habitat that can be improved by various management actions such as changing water regimes, infill planting, habitat planting and ecological restoration work.
Community education, biodiversity awareness and action	Elevate significance of threatened sp	Areas where the presence of threatened species can be communicated to the community to improve awareness and protection of the species.
	Community education/citizen science	Areas identified for community education/interpretation/citizen science activities.
	Target residential biodiversity	Areas of residential/private property which can be targeted with programs such as nature strip habitat planting, G4W, to improve biodiversity values and connectivity.
Planning	Planning controls	Areas where increased planning controls are required to protect biodiversity.
Monitoring	Further investigation / assessment	Areas where further field surveys are required to provide robust data on a species or biodiversity value.
	Monitoring artificial habitat	Areas where existing artificial habitat requires regular monitoring for effectiveness and condition.
*Advocacy and partnerships	Advocacy and partnership	Areas identified where partnering with, or utilising existing programs/activities of, external agencies can increase the availability of habitat for species and a reduction in fragmentation across Kingston. E.g. Melbourne Water's projects and grants, Chains of Parks, Sand belts and other land tenure programs.

Table 16: Specific opportunities that could be considered to improve biodiversity outcomes across Kingston.

		OPPORTUNITY KEY THEMES													
Reserves	Council managed	1. Connectivity		2. Threatened species protection			3. Habitat values			4. Community, education, biodiversity awareness and action			5. Planning controls	6. Monitoring	
		Connectivity opportunity	Protect existing connectivity	Consolidate	Protect threatened species and communities	Potential for threatened species	Protect remnant habitat	Habitat and refugia creation	Improving habitat values	Elevate significance of threatened sp	Community education	Target residential biodiversity	Planning controls	Further investigation / assessment	Monitoring artificial habitat
Aspendale to Carrum Foreshore	Council	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Bald Hill Park	Council	Yes	Yes			Yes	Yes	Yes	Yes		Yes	Yes			
Bowen Parkway	Council	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes				
Bradshaw Bushland Reserve	Council	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes	
Braeside Park	Non-council	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Browns Reserve	Non-council	Yes	Yes	Yes				Yes	Yes		Yes				
Caruana Reserve	Council	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Dingley Road Reserve (back of Caruana Reserve.)	Non-council	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Edithvale Commons	Council	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Edithvale Trail South	Non-council	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Edithvale Wetlands	Non-council	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes				
Eel Race Road / Kananook Creek	Council	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	
Epsom Grasslands	Council	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes			
Epsom Wetlands	Council	Yes	Yes		Yes		Yes			Yes	Yes				
Grange Heathland Reserve	Council	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes			
Groves Reserve	Council	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes				
Heights Park	Council			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Henry Street Trail	Non-council	Yes	Yes								Yes				
John Lindsay Reserve	Non-council	Yes			Yes				Yes		Yes	Yes			
Karkarook Wetlands	Non-council	Yes	Yes			Yes	Yes	Yes		Yes	Yes			Yes	
Long Beach Trail	Council	Yes	Yes			Yes	Yes	Yes			Yes				
Kingston Heath Reserve	Council	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes			
Kingston Heath Golf Club	Non-council	Yes	Yes		Yes	Yes	Yes	Yes			Yes		Yes		
Mentone to Mordialloc Foreshore	Council	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	
Mentone Pony Club	Non-council	Yes	Yes		Yes	Yes	Yes	Yes	Yes					Yes	
Mordialloc Creek Reserve	Council	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Namatjira Reserve	Council	Yes	Yes			Yes	Yes	Yes	Yes		Yes	Yes			
Patterson River	Non-council	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		

		OPPORTUNITY KEY THEMES												
Powernet Easement Reserve	Council	Yes					Yes	Yes	Yes		Yes	Yes		
Purtell Reserve	Council						Yes							
Rosedale Golf Club	Non-council	Yes	Yes		Yes	Yes	Yes		Yes		Yes		Yes	Yes
Rowan Road Reserve	Council	Yes	Yes		Yes	Yes	Yes	Yes				Yes		Yes
Rowan Woodland	Council	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes
Spring Road Reserve	Council	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes	
Spring Valley Golf Club	Non-council	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Woolepe Bushland Reserve	Council				Yes		Yes			Yes	Yes	Yes		
Thompson Road Off Ramp Drain	Non-council	Yes		Yes		Yes								
Wannarkladdin	Non-council	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Waterways Conservation Reserve	Non-council	Yes	Yes		Yes	Yes	Yes		Yes			Yes		Yes Yes
Wells Road Reserve	Council	Yes					Yes							
Woodlands Estate Wetlands	Non-council	Yes	Yes			Yes		Yes	Yes		Yes		Yes	Yes Yes
Yammerbook Nature Reserve	Council	Yes				Yes	Yes	Yes	Yes		Yes			Yes
Zephyr /Brixton Reserve	Council	Yes	Yes		Yes		Yes					Yes		

*Note: the opportunities theme 'Advocacy and Partnership' was not included in the opportunity table and subsequent map as we felt that we were not in the position to determine where or why Kingston might seek to advocate or partner with a given agency on a particular site. We thought that this could be highly influenced by the community, grant possibilities, council budget and on ground conditions.

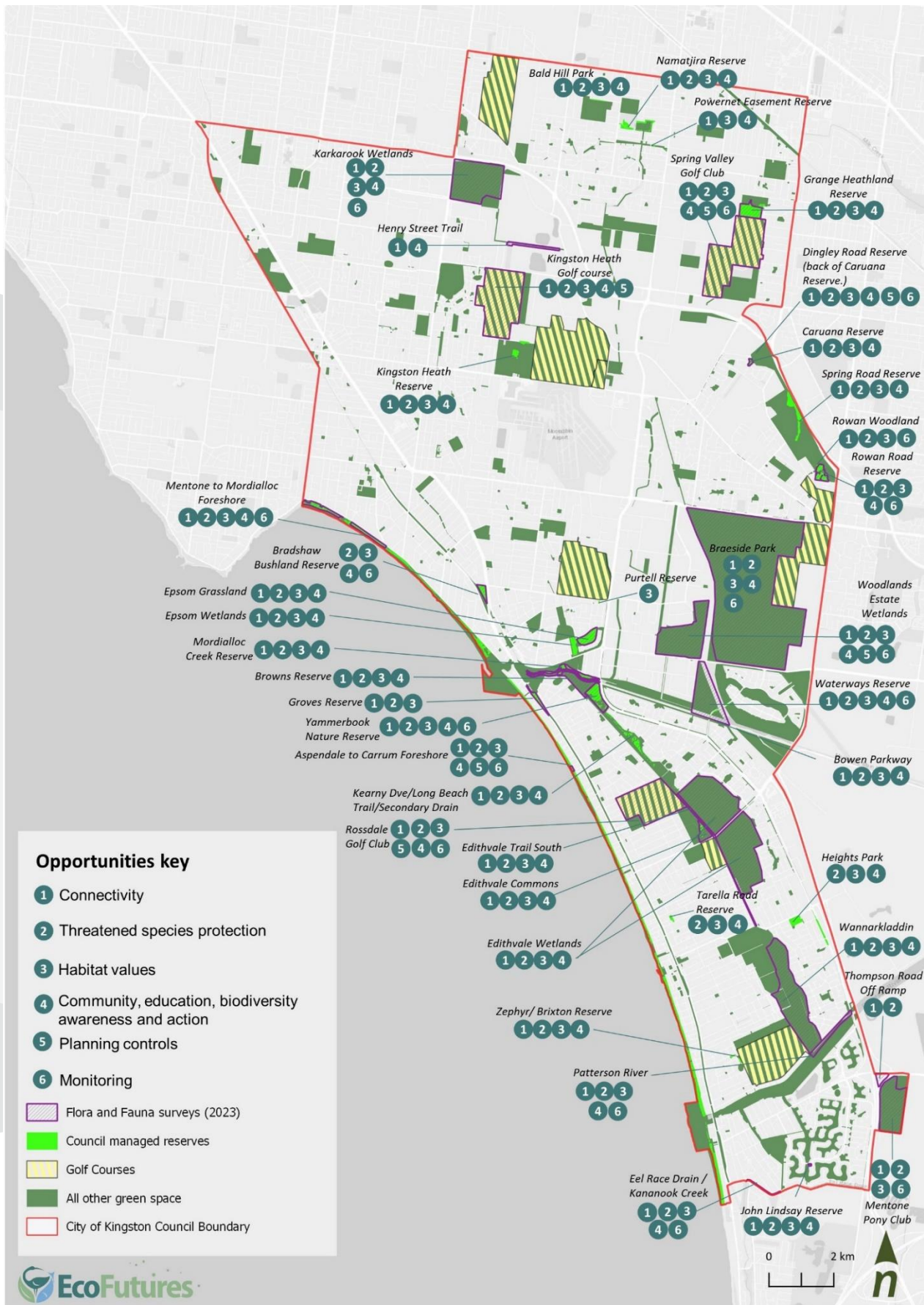


Figure 24: Opportunities to improve biodiversity across Kingston, numbered by the key opportunities' themes.

6.3.1 Other opportunities

There are several existing programs within Kingston that assist with biodiversity management across non council land parcels that provide the Council with the opportunity to engage the community and to work with other agencies. The Gardens for Wildlife program partners with land holders to develop on-ground actions for conserving biodiversity on private land, and targeted programs such as Chain of Parks and Sandbelt Parklands program provide financial support and necessary resources to enable land within Kingston to be converted for open spaces and conservation purposes.

Gardens for Wildlife program



Gardens for Wildlife is a program that seeks to ground nature conservation in residents through wildlife gardening and extend conservation efforts to private sectors across the landscape. The goals are:

- to combat biodiversity loss and to nurture and enhance our flora, fauna and environment
- to build a network of environmental stewards and champions
- to build knowledge, skills, confidence and ownership in caring for the land and its wildlife
- to strengthen connections between residents, nature, community and place
- to improve wellbeing through experiencing and caring for nature
- to collect and share stories and data about the impact of our work

Chains of Parks

The Chain of Parks is a long-term joint project between City of Kingston and Victorian State Government to transform at least 300 hectares of land into a series of parks for amenity, recreation and biodiversity. The Chain of Parks sits within Kingston's Green wedge and spans from Karkarook Park in Heatherton through to Braeside Park. It transforms old and former landfill sites into parks for people to enjoy.

Sandbelt Parklands

The Sandbelt Parklands is a program under DEECA's Suburban Parks Program which aims to create more than 6,500 hectares of new and upgraded parks and trails across Melbourne's growing outer suburbs. The Sandbelt Parklands is a chain of parks to connect existing and new parklands for Melbourne's south-east. It aims to work with multiple stakeholders, including City of Kingston to identify and plan for new parklands from Moorabbin to Dingley Village.

Golf course partnerships



Kingston is home to ten golf courses, many of which host important refugia. Council continues to explore opportunities to work with golf courses to improve biodiversity outcomes. One good example is grassland restoration trial at Woodlands golf club. This was conducted by Greening Australia and University of Melbourne to identify practical and cost-effective ways to manage biodiversity in golf courses, and it was also part of the larger Grassy Groundcover Restoration program (Threlfall et al. 2014). The research project re-established complex grassland and grasses by direct seeding and active vegetation management, to improve topsoil and revegetate targeted native species. Ecological burns were also

undertaken to encourage natural regeneration and ensure that native vegetation remained healthy. This example

highlights opportunities for Council to work with golf courses to educate and change management practices for better biodiversity outcomes.

Habitat planting in recreational areas

Recreational areas have a role to play in biodiversity conservation as they provide areas of open space that can meet the needs of both humans and nature. Recreational areas can be planted with species that are native to Kingston and in a way that improves the connectivity of these areas to other conservation reserves and reduces fragmentation. Habitat plantings (using species that are local to the area and known to provide specific values for local fauna) can be prioritised within and surrounding recreational areas. This can strengthen the capacity of all green spaces to support native insects, birds and fauna. Habitat plantings can provide refugia from extreme weather events for many species.

Amenity has been shown to be enhanced where humans feel that they are in a space that allows them to feel disconnected from urban stress and more immersed in nature. More natural spaces provide both human amenity outcomes as well as biodiversity refugia. By incorporating these elements into the design of recreational areas multiple benefits to both humans and biodiversity can be achieved.

6.3.2 Connectivity mapping

Data from habitat surveys conducted in 2023 across different land parcels and previous reports were used to identify habitat elements at each surveyed site and council reserve (see 2023 Survey Data in Appendix C and Figure 26). Each site was then allocated a habitat value of '**very high**', '**high**' or '**medium**'. As some habitat values are found even in modified land parcels, a value of **low** was not used. The sites were then mapped along with other landscape elements, such as waterways, drains and bike tracks, to highlight where connections between land parcels exist. These connections provide biodiversity connectivity opportunities which are reflected in the Action Plan (Section 8).

The approach to connectivity creation or enhancement can be varied and dependent on resources. For example, one approach would be to develop biodiversity corridors between sites with **very high** values score. This would consolidate those areas with a high likelihood of providing habitat for numerous species and increase biodiversity resilience across Kingston. Alternatively, connecting areas with **medium** scores to those with a **very high** score would improve access to habitat values for species found within medium score areas.

Bike tracks and waterways that exist between land parcels are obvious targets for biodiversity connectivity, although areas with high levels of pedestrian/bike traffic require extra planning to ensure that the safety of humans and fauna is protected. Waterways and drains provide an excellent basis for improving connectivity, especially under climate change conditions. Existing riparian vegetation can often be enhanced, and the buffer width increased with minimal effort and cost. Riparian areas also provide refuge from high heat events and access to water for fauna which allows them to mitigate stress in these extremes.

Potential connectivity improvements are mapped in Figure 206, and should be used in conjunction with the Action Plan (Section 8) with Actions in Priority 1 and Priority 3 as the most pertinent to connectivity improvements across Kingston.

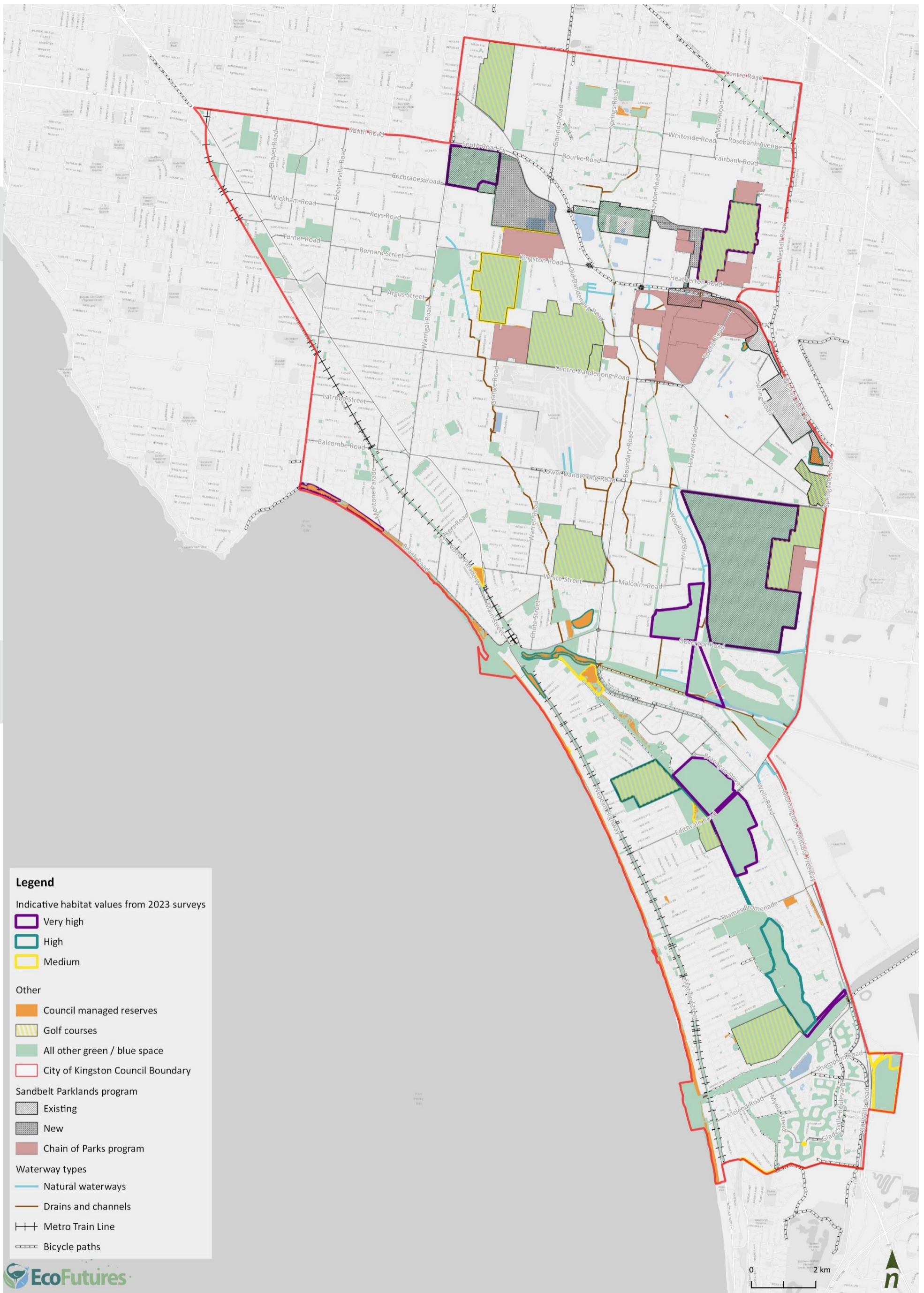


Figure 205: Indicative habitat values with potential opportunities to improve connectivity across Kingston

7 Best practice biodiversity management

7.1 Biodiversity data

Kingston Biodiversity data includes, but is not limited to, past biodiversity strategies, technical reports, habitat hectares reports and local species lists. For this report, 2015 flora and fauna lists were provided and updated using data base searches (See Section 5.4.1). However, targeted surveys conducted every 10 years are required to ensure that these lists are updated with ground truthed information.

Most local councils struggle with biodiversity data collection and utilisation due to a lack of resources and data storage systems. Kingston lacks a consistent data collection program which incorporates regular repeatable field surveys (e.g. every 5 years with consistent methodology). Opportunities for improved data collection could include grant funded projects that allow partnerships with agencies such as Bird Life Australia or the Victoria Museum to assist with data collection.

Data collection also requires systems for storage and analysis. Kingston, like many councils, has staff with intimate knowledge of reserves and biodiversity values within the municipality. This information needs to be collated and shared to improve a wholistic approach to, and to maximise benefits of, biodiversity management. Data systems should ensure that mapping and analysis remains current and is well placed to manage new information as it arrives.

Data collection should always begin with an understanding of what question is to be answered and which data will best serve to provide answers. Biodiversity data collections should now include specific climate change surveys to allow for tracking changes to ecosystem diversity and composition under new climatic conditions. This will allow City of Kingston to update management strategies in line with on ground changes. Conservation will not be adequate to protect biodiversity into the future, short term (e.g. artificial habitat installation) and long-term strategies (riparian buffers and refugia creation) must be adopted if biodiversity is to be protected and enhanced.

8 Action Plan

8.1 Kingston Biodiversity Strategy 2024-2029 framework and action plan

This Biodiversity Strategy set the strategic direction for biodiversity management across Kingston Municipality for the next 5 years and is to be reviewed in 2029. The framework for the plan has been informed by the expectations and aspirations of council staff and community members. The intent of each level of the framework can be found in the Biodiversity Strategy 2024 -2029. The framework provides the foundation for the Action Plan and associated multi-criteria analysis used for prioritising the actions.



Figure 216: Biodiversity Strategy 2024-2029 framework

8.2 Actions

Section 8 presents the final actions for the Biodiversity Strategy 2024 – 2029. Draft management actions were developed under each of the 5 key priorities for the biodiversity strategy in consultation with council staff and community members. The actions were informed by past documents, current knowledge of Kingston reserves and programs and the 2023 field surveys. The actions were produced in consultation with Council biodiversity, planning staff and established through a community consultation process.

The Cost column provides a general indication only of the financial input required to achieve each action as per the table below:

**	No significant additional cost
\$	Relatively low cost to implement (<\$50,000)
\$\$	Moderate cost to implement (\$50,000 to \$200,000)
\$\$\$	High cost to implement (\$200,000 to \$500,000)

8.2.1 Priority 1 Actions

Priorities	What does success look like?	Action	Lead Dept	Council Partners	Agency Partners	Cost
Priority 1. Connected biodiversity across all land types.	Public and private land are managed wholistically to protect and connect the multiple elements of biodiversity across Kingston and the wider landscape.	1a. Embed biodiversity conservation elements when undertaking planning and design for the Chain of Parks and other projects in Council's Open Space areas by 2029.	Open Space, Active Kingston	City Strategy, City Development		\$
		1b. Establish at least 2 ha of new riparian or wetland refugia (30 m buffer extent) across Kingston (regardless of land tenure) by 2029.	Open Space - City Strategy - City Development		Melbourne Water, Parks Victoria	\$\$
		1c. Establish at least 10 km of linear biodiversity corridors and/or stepping stones throughout Kingston with a variety of vegetation types, to increase resilience for small bird and other native fauna populations by 2029.	Open Space	City Strategy, City Development	Melbourne Water, Parks Victoria	\$\$
		1d. Recruit at least 40 private properties (e.g. residential, industrial, schools, golf courses) adjacent to areas identified for connectivity enhancement to G4W program and implement habitat improvements by 2029.	City Strategy	Open Space, City Development		\$
		1e. Prioritise retention of or improve at least 10km of vegetation and plant buffers with habitat planting when planning for and constructing new public access corridors for biodiversity connectivity by 2029.	Open Space	Infrastructure		\$\$
		1f. Identify at least 5 priority areas for habitat enhancement (lighting, pollution control, vegetation) along the existing concrete drain network and execute works between 2024 and 2029.	Open Space - City Strategy - City Development			\$\$
		1g. Establish a collaborative interagency biodiversity management group across land management agencies within Kingston by 2025.	Open Space			**
		1h. Identify, improve and develop the ongoing management of at least 4 key wetlands, both permanent and ephemeral, within the city of Kingston by 2025 with the goal of enhancing the biodiversity value of these integral sites.	Open Space			\$
		1i. Improve the ecological data collection throughout Kingston by undertaking field surveys across all Council managed natural resource areas every 5 years.	Open Space		Melbourne Water	

8.2.2 Priority 2 Actions

Priorities	What does success look like?	Action	Lead Dept	Council Partners	Agency Partners	Cost
Priority 2. Engaging Kingston	Established partnerships, programs and community choices and actions show growing support for pursuing this strategy's vision.	2a. Engage at least 3 golf courses to implement biodiversity habitat/refugia enhancement by 2029.	City Strategy	Open Space, City Development		**
		2b. Continue to engage and partner with the Bunurong Land Council Aboriginal Corporation to identify opportunities for new biodiversity projects and programs within Kingston by 2029.	Open Space	City Strategy, Inclusive Communities		**
		2c. Increase participation and engagement in biodiversity volunteering annually, encouraging biodiversity champions throughout the life of the strategy.	Open Space, City Strategy			**
		2d. Establish an Environment Education Centre within Kingston by 2029.	Open Space	Infrastructure		\$\$\$
		2e. Conduct at least 12 biodiversity activities @ 3 per annum to engage the community in caring for nature by 2029.	City Strategy, Open Space			\$
		2f. Establish at least 4 partnerships within the community (schools, kindergarten, play groups, art groups, gardening clubs, aged care facilities) to improve biodiversity engagement outcomes in the public realm by 2029.	City Strategy	Open Space		**
		2g. Develop and disseminate at least 5 new biodiversity information resources (e.g. indigenous flora and fauna guides, fact sheets) by 2029.	City Strategy, Open Space			\$
		2h. Update the City of Kingston's website to improve community access to biodiversity resources and to increase transparency of council policies and practices on biodiversity by 2026.	Open Space	Advocacy, Engagement and Communications, City Strategy, City Development		\$
		2i. Continue Free Plant Giveaway with increased biodiversity information and engagement and increased plant numbers annually	City Strategy	Open Space		**
		2j. Facilitate 4 Council-run events and provide biodiversity information and free plants	City Strategy, Open Space			\$
		2k. Implement biodiversity information hubs at all Kingston libraries by 2029	City Strategy	Open Space		\$
		2l. Establish 10 demonstration interactive biodiversity gardens across Council by 2029	City Strategy	Open Space		\$\$
		2m. Support the action in the Urban Forest Strategy to facilitate bush kinder programs for Kingston early years learning services	City Strategy	Open Space		**

8.2.3 Priority 3 Actions

Priorities	What does success look like?	Action	Lead Dept	Council Partners	Agency Partners	Cost
Priority 3. Building resilience and adapting to change	Biodiversity is well consolidated and withstanding threats (e.g., climate change, fire, pest species).	3a. Develop a fire management program with the Traditional Owners and other agencies to reintroduce cool burn fire patterns across Kingston reserves by 2029.	Open Space			\$
		3b. Undertake targeted works to enhance at least 25 existing connection/refugia sites (corridors, wetlands, waterways) by 2029.	Open Space	City Strategy, City Development		\$\$
		3c. Develop and implement a pest animal and plant management program across all council owned land by 2029.	Open Space	City Economy & Innovation		\$\$
		3d. Conduct a needs assessment for an artificial habitat/fauna movement program throughout Kingston by 2025 and install at least 10 habitat components if/where appropriate by 2029.	Open Space			\$
		3e. Develop and implement a targeted program to increase indigenous vegetation cover in areas of Kingston vulnerable to urban heat effects to protect biodiversity values by 2029.	Open Space, Active Kingston, PMO			\$\$
		3f. Build knowledge and capacity of council planning, and open space staff through attendance of at least 1 workshops/training on biodiversity threats and adaptation per annum throughout the five years to 2029.	Open Space			\$
		3g. Develop a rare plant plan documenting Kingston's indigenous flora species, identifies species at risk and includes a plan to propagate, reintroduce and monitor these species within Kingston by 2029.	Open Space			\$
		3h. Adopt wildlife sensitive lighting principles for all Council projects.	City Strategy	Open Space, City Development		\$
		3i. Investigate the impacts of noise on native fauna and consider these impacts when applying planning decisions.	City Strategy	Open Space, City Development		\$\$
		3j. Incorporate wildlife crossing structures when undertaking road and/or major construction projects (or advocate when not Council assets).	Infrastructure, PMO	City Strategy, Open Space, City Development		\$\$
		3k. Establish a seed bank to ensure adequate supply of seed, prioritising species with a shortage of supply and/or at risk of decline through climate change.	Open Space	City Strategy		\$
		3l. Recommend adjustments throughout the creation of the Domestic Animal Management Plan 2026 - 2030 to highlight the impact of domestic and feral cats to biodiversity and implement actions to mitigate their impacts.	Open Space	City Strategy		\$

8.2.4 Priority 4 Actions

Priorities	What does success look like?	Action	Lead Dept	Council Partners	Agency Partners	Cost
Priority 4. Strong biodiversity planning	An increasing number of land-use planning decisions taken and influenced by City of Kingston are providing explicit support for protecting biodiversity and pursuing this strategy's vision.	4a. Develop management plans/briefs for all reserves in Kingston to inform management and allow for 5 yearly review by 2029.	Open Space			\$
		4b. Develop internal guidelines/tool and training to support planning officers with planning decisions regarding biodiversity and vegetation retention and replacement on private land by 2026.	City Development			\$
		4c. Identify areas of biodiversity by value by 2027 and seek to implement appropriate planning controls.	City Development, City Strategy	Open Space	City Strategy and City Development	\$
		4d. Update the Significant Tree Register and implement it into the Kingston Planning Scheme	City Development, Open Space			\$
		4e. Recognise the importance of biodiversity on golf courses in the Planning Policy Framework and investigate planning controls that may be required to protect those values by 2027.	City Development, City Strategy	Open Space	DTP	\$

8.2.5 Priority 5 Actions

Priorities	What does success look like?	Action	Lead Dept	Council Partners	Agency Partners	Cost
Priority 5. Tracking our impact	Plant and animal diversity, abundance and distribution across Kingston is improved or maintained compared to 2023 assessments.	5a. Establish a 5 yearly review process of reserve prioritisation by 2029.	Open Space			\$
		5b. Establish longitudinal flora and fauna survey program (field survey every 5 years) to evaluate status of diversity, abundance, and distribution by 2029.	Open Space			\$
		5c. Report annually on planning and enforcement decisions that maintain or enhance biodiversity values over the 5 years to 2029.	City Development			**
		5d. Establish longitudinal climate change plot program to track and manage floristic changes over time by 2026.	Open Space			\$
		5e. Engage citizen scientists to undertake flora and fauna monitoring through new and existing programs (bioblitz, nature watch, iNaturalist)	Open Space	City Strategy		\$

9 Implementation

This Biodiversity Strategy reflects the Federal, State and Kingston’s overall aspirations for a sustainable and healthy environment with human stewardship for and connection to biodiversity at its centre as outlined in *Australia’s Strategy for Nature 2019*, the *Victorian Protecting Victoria’s Environment – Biodiversity 2037* and Kingston’s Council’s *Plan Our Roadmap 2021 – 2025*. The successful implementation of the Kingston Biodiversity Strategy is dependent on commitment from council, the Kingston community and external land management agencies. The actions involve building new and existing relationships with the community and stakeholders, changes to planning approaches and on-ground management to improve biodiversity protection and connectivity across the municipality. Integration with existing strategies and plans such as the *Climate and Ecological Emergency Response Plan 2021* and *Green Wedge Plan 2021* is also important for maximising the outcomes of the strategy.

The SMART (Specific, Measurable, Achievable, Realistic, Timebound) actions proposed in this strategy aim to deliver on the priorities identified in the development of the strategy. The SMART methodology used allows for targeted monitoring and evaluation of the outcomes of each action over the strategy’s five-year timeframe. The SMART actions provide an avenue for accountability and allow council to strive for improvement and adaptation based on measures of success and performance challenges. Such accountability and willingness to evaluate performance is essential to building a community of trust and cooperation with the wider community.

Monitoring and evaluating the performance of action outcomes will allow council to understand the suitability, scale and efficacy of each action in achieving the stated goals and vision for biodiversity management within Kingston. This opens the door to adaptive management which in the challenging environment of urbanisation and climate change is critical to successful biodiversity conservation both now and into the future. The Kingston Biodiversity Strategy 2024 is a five-year plan and will be reviewed in 2029.

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11 Appendices



Appendix A - Kingston Vascular Flora species list 2024 update

An important note on the 2024 update

The local flora and fauna status has not been systematically updated with field surveys since 2015. The 2024 updated local status of flora (as recorded below) is based on a combination of VBA data, a qualitative assessment (done by Kingston Staff) a 2020 flora survey at The Grange Heathland Reserve and updated VBA records (from 2015-2024). The 2024 updated local status of fauna is based on an updated VBA search only. **The flora, fauna and EVC databases require Kingston wide updated field surveys to provide a true updated representation of the local status of flora, fauna, and vegetation communities.**

Scientific name	Common name	Kingston Status 2024
<i>Acacia acinacea</i>	Gold Dust Wattle	E
<i>Acacia brownii</i>	Heath Wattle	Recorded extinct
<i>Acacia dealbata</i>	Silver Wattle	E
<i>Acacia genistifolia</i>	Spreading Wattle	Presumed extinct
<i>Acacia implexa</i>	Lightwood	E
<i>Acacia longifolia ssp.sophorae</i>	Coast Wattle	S
<i>Acacia mearnsii</i>	Black Wattle	S
<i>Acacia melanoxylon</i>	Blackwood	S
<i>Acacia oxycedrus</i>	Spike Wattle	R
<i>Acacia paradoxa</i>	Hedge Wattle	S
<i>Acacia pycnantha</i>	Golden Wattle	V
<i>Acacia stricta</i>	Hop Wattle	E
<i>Acacia suaveolens ssp. suaveolens</i>	Sweet Wattle	E
<i>Acacia ulicifolia</i>	Juniper Wattle	E
<i>Acacia verticillata ssp. verticillata</i>	Prickly Moses	E
<i>Acaena echinata</i>	Sheep's Burr	E
<i>Acaena novae-zelandiae</i>	Bidgee-widgee	V
<i>Acaena ovina</i>	Australian Sheep's Burr	E
<i>Acianthus caudatus</i>	Mayfly Orchid	Recorded extinct
<i>Acianthus pusillus</i>	Gnat Orchid	E
<i>Acrotriche prostrata</i>	Trailing Ground-berry	Presumed extinct
<i>Acrotriche serrulata</i>	Honey-pots	K
<i>Actites megalocarpus</i>	Dune Thistle	V
<i>Adiantum aethiopicum</i>	Common Maidenhair	Presumed extinct
<i>Ajuga australis</i>	Austral Bugle	Presumed extinct
<i>Alisma plantago-aquatica</i>	Water Plantain	E
<i>Allittia cardiocarpa</i>	Swamp Daisy	E
<i>Allocasuarina littoralis</i>	Black Sheoak	V
<i>Allocasuarina paludosa</i>	Scrub Sheoak	E
<i>Allocasuarina paradoxa</i>	Green Sheoak	E

Scientific name	Common name	Kingston Status 2024
<i>Allocauarina verticillata</i>	Drooping Sheoak	S
<i>Almaleea subumbellata</i>	Wiry Bush-pea	Presumed extinct
<i>Alternanthera denticulata</i> s.s.	Lesser Joyweed	V
<i>Alyxia buxifolia</i>	Sea Box	V
<i>Amperea xiphioclada</i> var. <i>xiphioclada</i>	Broom Spurge	S
<i>Amphibromus archeri</i>	Pointed Swamp Wallaby-grass	E
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	Recorded extinct
<i>Amphibromus macrorhinus</i>	Long-nosed Swamp Wallaby-grass	Presumed extinct
<i>Amphibromus neesii</i>	Southern Swamp Wallaby-grass	K
<i>Amphibromus nervosus</i>	Common Swamp Wallaby-grass	R
<i>Amphibromus recurvatus</i>	Dark Swamp Wallaby-grass	Presumed extinct
<i>Amyema pendula</i> ssp. <i>pendula</i>	Drooping Mistletoe	K
<i>Amyema preissii</i>	Wire-leaf Mistletoe	Presumed extinct
<i>Amyema quandang</i> var. <i>quandang</i>	Grey Mistletoe	Presumed extinct
<i>Anthosachne scabra</i> s.l.	Common Wheat-grass	R
<i>Aotus ericoides</i>	Common Aotus	V
<i>Aphanes australiana</i>	Australian Piert	Recorded extinct
<i>Aphelia gracilis</i>	Slender Aphelia	Presumed extinct
<i>Aphelia pumilio</i>	Dwarf Aphelia	Presumed extinct
<i>Apium prostratum</i> ssp. <i>prostratum</i> var. <i>filiforme</i>	Sea Celery	Presumed extinct
<i>Apium prostratum</i> ssp. <i>prostratum</i> var. <i>prostratum</i>	Sea Celery	E
<i>Apodasmia brownii</i>	Coarse Twine-rush	E
<i>Argentipallium obtusifolium</i>	Blunt Everlasting	Recorded extinct
<i>Arthropodium milleflorum</i>	Vanilla Lily	K
<i>Arthropodium</i> sp. 3 (aff. <i>strictum</i>)	Small Chocolate-lily	K
<i>Arthropodium strictum</i>	Chocolate Lily	R
<i>Asperula conferta</i>	Common Woodruff	Presumed extinct
<i>Asperula polymera</i>	Asparagus Fern	K
<i>Asperula scoparia</i> subsp. <i>scoparia</i>	Prickly Woodruff	K
<i>Asperula subsimplex</i>	Water Woodruff	K
<i>Asplenium flabellifolium</i>	Necklace Fern	Presumed extinct
<i>Astroloma humifusum</i>	Cranberry Heath	V
<i>Atriplex billardiarei</i>	Glistening Saltbush	Presumed extinct
<i>Atriplex cinerea</i>	Coast Saltbush	S
<i>Atriplex semibaccata</i>	Berry Saltbush	V
<i>Austrostipa flavescens</i>	Coast Spear-grass	R
<i>Austrostipa mollis</i>	Supple Spear-grass	S
<i>Austrostipa nodosa</i>	Knotty Spear-grass	Presumed extinct
<i>Austrostipa pubinodis</i>	Tall Spear-grass	E

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<i>Austrostipa rudis</i> ssp. <i>australis</i>	Veined Spear-grass	K
<i>Austrostipa rudis</i> ssp. <i>rudis</i>	Veined Spear-grass	K
<i>Austrostipa scabra</i> ssp. <i>scabra</i>	Rough Spear-grass	K
<i>Austrostipa semibarbata</i>	Fibrous Spear-grass	E
<i>Austrostipa stipoides</i>	Prickly Spear-grass	R
<i>Austrostipa stuposa</i>	Tasmanian Spear-grass	Presumed extinct
<i>Azolla pinnata</i>	Ferny Azolla	K
<i>Azolla rubra</i>	Pacific Azolla	S
<i>Banksia integrifolia</i> ssp. <i>integrifolia</i>	Coast Banksia	S
<i>Banksia marginata</i>	Silver Banksia	R
<i>Batrachium trichophyllum</i>	Water Fennel	V
<i>Bauera rubioides</i>	Wiry Bauera	Recorded extinct
<i>Baumea articulata</i>	Jointed Twig-rush	K
<i>Billardiera mutabilis</i>	Common Apple-berry	S
<i>Billardiera scandens</i>	Common Apple-berry	E
<i>Blechnum minus</i>	Soft Water-fern	E
<i>Bolboschoenus caldwellii</i>	Salt Club-sedge	S
<i>Bolboschoenus medianus</i>	Marsh Club-sedge	K
<i>Boronia parviflora</i>	Swamp Boronia	Presumed extinct
<i>Bossiaea cinerea</i>	Showy Bossiaea	S
<i>Bossiaea prostrata</i>	Creeping Bossiaea	E
<i>Brachyloma ciliatum</i>	Fringed Brachyloma	Presumed extinct
<i>Brachyscome aculeata</i>	Branching Daisy	Presumed extinct
<i>Brachyscome diversifolia</i>	Tall Daisy	Presumed extinct
<i>Brachyscome graminea</i>	Grass Daisy	Presumed extinct
<i>Brachyscome parvula</i>	Coast Daisy	Recorded extinct
<i>Brachyscome parvula</i>	Coast Daisy	K
<i>Brunonia australis</i>	Blue Pincushion	Presumed extinct
<i>Bulbine bulbosa</i>	Bulbine Lily	K
<i>Burchardia umbellata</i>	Milkmaids	R
<i>Burnettia cuneata</i>	Lizard Orchid	Presumed extinct
<i>Bursaria spinosa</i>	Sweet Bursaria	S
<i>Caesia parviflora</i> var. <i>minor</i>	Pale Grass-lily	Presumed extinct
<i>Caesia calliantha</i>	Blue Grass-lily	V
<i>Caesia parviflora</i> var. <i>parviflora</i>	Pale Grass-lily	V
<i>Caladenia aurantiaca</i>	Orange-tip Caladenia	Presumed extinct
<i>Caladenia australis</i>	Southern Spider-orchid	Recorded extinct
<i>Caladenia cardiochila</i>	Heart-lip Caladenia	Presumed extinct
<i>Caladenia carnea</i>	Pink Fingers	E
<i>Caladenia catenata</i> s.l.	Pink Fingers/White Fingers	Recorded extinct

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<i>Caladenia clavigera</i>	Clubbed Spider-orchid	Presumed extinct
<i>Caladenia congesta</i>	Black-tongue Hood-orchid	Recorded extinct
<i>Caladenia dilatata</i> s.l.	Green-comb Spider-orchid	Recorded extinct
<i>Caladenia fuscata</i>	Dusky Fingers	Presumed extinct
<i>Caladenia gracilis</i>	Musky Caladenia	Presumed extinct
<i>Caladenia latifolia</i>	Pink Fairies	Presumed extinct
<i>Caladenia mentiens</i>	Cryptic Fingers	Presumed extinct
<i>Caladenia oenchila</i>	Wine-lipped Spider-orchid	Presumed extinct
<i>Caladenia parva</i>	Small Spider-orchid	Presumed extinct
<i>Caladenia phaeoclavia</i>	Brown-clubbed Spider-orchid	Presumed extinct
<i>Caladenia tentaculata</i>	Mantis Orchid	Presumed extinct
<i>Caladenia transitoria</i>	Eastern Bronze Caladenia	Presumed extinct
<i>Caladenia venusta</i>	Large White Spider-orchid	Recorded extinct
<i>Caladenia vulgaris</i>	Slender Fingers	Presumed extinct
<i>Calandrinia calyptrata</i>	Pink Purslane	Presumed extinct
<i>Caleana major</i>	Large Duck-orchid	Presumed extinct
<i>Callistemon sieberi</i>	River Bottlebrush	Presumed extinct
<i>Callitriche umbonata</i>	Winged Water-starwort	Presumed extinct
<i>Calocephalus lacteus</i>	Milky Beauty-heads	Presumed extinct
<i>Calochilus campestris</i>	Copper Beard-orchid	Presumed extinct
<i>Calochilus paludosus</i>	Red Beard-orchid	Presumed extinct
<i>Calochilus robertsonii</i>	Common Beard-orchid	Presumed extinct
<i>Calochilus therophilus</i>	Slender Beard-orchid	Presumed extinct
<i>Calochlaena dubia</i>	False Bracken	Presumed extinct
<i>Calystegia sepium subsp. roseata</i>	Large Bindweed	E
<i>Cardamine moirensis</i>	Riverina Bitter-cress	Presumed extinct
<i>Cardamine paucijuga</i>	Annual Bitter-cress	Presumed extinct
<i>Carex appressa</i>	Tall Sedge	S
<i>Carex breviculmis</i>	Common Grass-sedge	R
<i>Carex fascicularis</i>		E
<i>Carex gaudichaudiana</i>	Fen Sedge	K
<i>Carex inversa</i>	Knob Sedge	R
<i>Carex pumila</i>	Strand Sedge	K
<i>Carex tereticaulis</i>	Poong'ort	E
<i>Carpobrotus rossii</i>	Karkalla	E
<i>Cassinia aculeata</i>	Common Cassinia	E
<i>Cassinia longifolia</i>	Shiny Cassinia	R
<i>Cassytha glabella</i> f. <i>glabella</i>	Slender Dodder-laurel	E
<i>Cassytha glabella</i> forma <i>dispar</i>	Slender Dodder-laurel	E
<i>Cassytha melantha</i>	Coarse Dodder-laurel	E

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<i>Cassytha pubescens</i>	Downy Dodder-laurel	R
<i>Centella cordifolia</i>	Centella	V
<i>Centipeda cunninghamii</i>	Common Sneezeweed	Recorded extinct
<i>Centipeda elatinoides</i>	Elatine Sneezeweed	Presumed extinct
<i>Centipeda minima</i>	Spreading Sneezeweed	Presumed extinct
<i>Centrolepis aristata</i>	Pointed Centrolepis	E
<i>Centrolepis fascicularis</i>	Tufted Centrolepis	K
<i>Centrolepis strigosa</i> ssp. <i>strigosa</i>	Hairy Centrolepis	V
<i>Chamaescilla corymbosa</i>	Blue Stars	E
<i>Chenopodium glaucum</i>	Glaucous Goosefoot	K
<i>Chiloglottis reflexa</i>	Autumn Bird-orchid	Presumed extinct
<i>Chiloglottis</i> sp.	Bird-orchid	K
<i>Chiloglottis trapeziformis</i>	Dainty Bird-orchid	Presumed extinct
<i>Chiloglottis trilabra</i>	Tall Wasp-orchid	Presumed extinct
<i>Chiloglottis valida</i>	Common Bird-orchid	Presumed extinct
<i>Chiloglottis x pescottiana</i>	Bronze Bird-orchid	Presumed extinct
<i>Chorizandra australis</i>	Southern Bristle-sedge	Presumed extinct
<i>Chorizandra cymbaria</i> s.l.	Heron Bristle-sedge	Recorded extinct
<i>Chrysocephalum apiculatum</i>	Common everlasting	E
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	Presumed extinct
<i>Cladium procerum</i>	Leafy twigrush	E
<i>Clematis aristata</i>	Mountain Clematis	K
<i>Clematis microphylla</i> s.l.	Small-leaved Clematis	R
<i>Comesperma calymega</i>	Blue-spike Milkwort	Recorded extinct
<i>Comesperma defoliatum</i>	Leafless Milkwort	Recorded extinct
<i>Comesperma ericinum</i>	Heath Milkwort	Recorded extinct
<i>Comesperma volubile</i>	Love Creeper	E
<i>Convolvulus angustissimus</i> ssp. <i>angustissimus</i>	Australian Bindweed	K
<i>Convolvulus angustissimus</i> ssp. <i>omnigracilis</i>	Slender Bindweed	Presumed extinct
<i>Coprosma quadrifida</i>	Prickly Currant-bush	Presumed extinct
<i>Coronidium gunnianum</i>	Pale Swamp Everlasting	E
<i>Coronidium scorpioides</i>	Button Everlasting	K
<i>Correa alba</i> var. <i>alba</i>	White Correa	R
<i>Correa alba</i> var. <i>pannosa</i>	Velvet White Correa	Recorded extinct
<i>Correa reflexa</i>	Common Correa	V
<i>Corunastylis archeri</i>	Variable Midge-orchid	Presumed extinct
<i>Corunastylis ciliata</i>	Fringed Midge-orchid	Presumed extinct
<i>Corunastylis despectans</i>	Sharp Midge-orchid	K
<i>Corunastylis morrisii</i>	Beared Midge-orchid	Presumed extinct

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<i>Corunastylis pumila</i>	Green Midge-orchid	Presumed extinct
<i>Corybas aconitiflorus</i>	Spurred Helmet-orchid	Recorded extinct
<i>Corybas diemenicus</i> s.l.	Veined Helmet-orchid	K
<i>Corybas fimbriatus</i>	Fringed Helmet-orchid	Recorded extinct
<i>Corybas incurvus</i>	Slaty Helmet-orchid	Presumed extinct
<i>Cotula australis</i>	Common Cotula	S
<i>Cotula vulgaris</i> var. <i>australasica</i>	Slender Cotula	Recorded extinct
<i>Craspedia canens</i>	Grey Billy-buttons	E
<i>Craspedia paludicola</i>	Swamp Billy-buttons	Presumed extinct
<i>Craspedia variabilis</i>	Common Billy-buttons	Presumed extinct
<i>Crassula closiana</i>	Stalked Stonecrop	Presumed extinct
<i>Crassula colligata</i> ssp. <i>colligata</i>	Slender Stonecrop	V
<i>Crassula colorata</i> var. <i>acuminata</i>	Dense Crassula	Presumed extinct
<i>Crassula decumbens</i> var. <i>decumbens</i>	Spreading Crassula	S
<i>Crassula helmsii</i>	Swamp Crassula	R
<i>Crassula peduncularis</i>	Purple Crassula	Recorded extinct
<i>Crassula sieberiana</i>	Sieber Crassula	R
<i>Cryptostylis leptochila</i>	Small Tongue-orchid	Presumed extinct
<i>Cryptostylis subulata</i>	Large Tongue-orchid	Presumed extinct
<i>Cyanicula caerulea</i>	Blue Fingers	Presumed extinct
<i>Cyathea australis</i>	Rough Tree Fern	E
<i>Cycnogeton procerum</i> s.s.	Common Water-ribbons	R
<i>Cymbonotus preissianus</i>	Sweet Hound's -tongue	Presumed extinct
<i>Cynoglossum suaveolens</i>	Sweet Hound's -tongue	Presumed extinct
<i>Cyperus gunnii</i> ssp. <i>gunnii</i>	Flecked Flat-sedge	Presumed extinct
<i>Cyperus lucidus</i>	Leafy Flat-sedge	Presumed extinct
<i>Cyrtostylis reniformis</i>	Small Gnat-orchid	E
<i>Cyrtostylis robusta</i>	Large Gnat-orchid	Presumed extinct
<i>Daucus glochidiatus</i>	Australian Carrot	Presumed extinct
<i>Daviesia latifolia</i>	Hop Bitter-pea	Presumed extinct
<i>Daviesia leptophylla</i>	Narrow-leaf Bitter-pea	Presumed extinct
<i>Daviesia ulicifolia</i> ssp. <i>ulicifolia</i>	Gorse Bitter-pea	Recorded extinct
<i>Deyeuxia densa</i>	Heath Bent-grass	Presumed extinct
<i>Deyeuxia minor</i>	Small Bent-grass	Presumed extinct
<i>Deyeuxia quadriseta</i>	Reed Bent-grass	V
<i>Dianella brevicaulis</i>	Small-flower Flax-lily	R
<i>Dianella longifolia</i> s.l.	Flax-lily	E
<i>Dianella longifolia</i> var. <i>longifolia</i>	Pale Flax-lily	K
<i>Dianella revoluta</i> var. <i>revoluta</i> (NOTE: <i>D. admixta</i> and <i>Dianella</i> sp. aff. <i>revoluta</i> (Coastal) are now both recognised under	Coastal Flax Lily	R

Scientific name	Common name	Kingston Status 2024
<i>D. revoluta</i> var. <i>revoluta</i> so previous status's have been combined)		
<i>Dianella tasmanica</i>	Tasman Flax-lily	R
<i>Dichelachne crinita</i>	Long-hair Plume-grass	R
<i>Dichelachne rara</i>	Common Plume-grass	Presumed extinct
<i>Dichelachne sieberiana</i>	Rough Plume-grass	Presumed extinct
<i>Dichondra repens</i>	Kidney-weed	S
<i>Dillwynia cinerascens</i>	Grey Parrot-pea	E
<i>Dillwynia glaberrima</i>	Smooth Parrot-pea	R
<i>Dillwynia sericea</i>	Showy Parrot-pea	K
<i>Dipodium roseum</i>	Hyacinth Orchid	E
<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Rounded Noon-flower	R
<i>Distichlis distichophylla</i>	Australian Salt-grass	V
<i>Diuris behrii</i>	Golden Cowslip	Presumed extinct
<i>Diuris chryseopsis</i>	Golden Moths	Presumed extinct
<i>Diuris orientis</i>	Wallflower Orchid	E
<i>Diuris palustris</i>	Swamp Doubletail	Presumed extinct
<i>Diuris pardina</i>	Leopard Orchid	K
<i>Diuris punctata</i>	Purple Diuris	E
<i>Diuris sulphurea</i>	Tiger Orchid	E
<i>Dodonaea viscosa</i> ssp. <i>spatulata</i>	Wedge-leaf Hop-bush	E
<i>Doodia australis</i>	Common Rasp-fern	Presumed extinct
<i>Drosera aberrans</i>	Scented Sundew	E
<i>Drosera auriculata</i>	Tall Sundew	R
<i>Drosera binata</i>	Forked Sundew	Presumed extinct
<i>Drosera glanduligera</i>	Scarlet Sundew	Presumed extinct
<i>Drosera macrantha</i> ssp. <i>macrantha</i>	Climbing Sundew	E
<i>Drosera peltata</i>	Pale Sundew	E
<i>Drosera pygmaea</i>	Pigmy Sundew	Presumed extinct
<i>Drosera spatulata</i>	Spoon-leaf Sundew	Recorded extinct
<i>Dysphania pumilio</i>	Clammy Goosefoot	E
<i>Echinopogon ovatus</i> ssp. <i>ovatus</i>	Hedgehog-grass	Presumed extinct
<i>Einadia hastata</i>	Saloop	Presumed extinct
<i>Einadia nutans</i> ssp. <i>nutans</i>	Nodding Saltbush	S
<i>Einadia trigonos</i>	Lax Goosefoot	Presumed extinct
<i>Elatine gratioloides</i>	Waterwort	V
<i>Eleocharis acuta</i>	Common Spike-sedge	S
<i>Eleocharis atricha</i>	Tuber Spike-sedge	Presumed extinct
<i>Eleocharis gracilis</i>	Slender Spike-sedge	K
<i>Eleocharis macbarronii</i>	Grey Spike-sedge	E
<i>Eleocharis pusilla</i>	Small Spike-sedge	K

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<i>Eleocharis sphacelata</i>	Tall Spike-sedge	R
<i>Empodisma minus</i>	Spreading Rope-rush	E
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Narrow-leaf Bitter-pea	Presumed extinct
<i>Entolasia marginata</i>	Bordered Panic	Presumed extinct
<i>Entolasia stricta</i>	Upright Panic	Presumed extinct
<i>Epacris impressa</i>	Common Heath	V
<i>Epacris obtusifolia</i>	Blunt-leaf Heath	Recorded extinct
<i>Epilobium billardierianum</i> ssp. <i>billardierianum</i>	Smooth Willow-herb	S
<i>Epilobium billardierianum</i> ssp. <i>cinereum</i>	Grey Willow-herb	V
<i>Epilobium billardierianum</i> ssp. <i>intermedium</i>	Variable Willow-herb (white-flowered)	R
<i>Epilobium hirtigerum</i>	Hairy Willow-herb	S
<i>Epilobium pallidiflorum</i>	Showy Willowherb	Presumed extinct
<i>Eragrostis brownii</i>	Common Love-grass	V
<i>Eriochilus cucullatus</i>	Parson's Bands	Recorded extinct
<i>Erodium crinitum</i>	Blue Crowsfoot	E
<i>Eryngium ovinum</i>	Blue Devil	Presumed extinct
<i>Eryngium vesiculosum</i>	Prickfoot	V
<i>Eucalyptus camaldulensis</i> var. <i>camaldulensis</i>	River Red-gum	S
<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	E
<i>Eucalyptus macrohyncha</i>	Red Stringybark	Recorded extinct
<i>Eucalyptus melliodora</i>	Yellow Box	E
<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum	R
<i>Eucalyptus pauciflora</i> var. <i>pauciflora</i>	Snow Gum	E
<i>Eucalyptus radiata</i> ssp. <i>radiata</i>	Narrow-leaf Peppermint	E
<i>Eucalyptus viminalis</i> ssp. <i>pryoriana</i>	Coast Manna-gum	S
<i>Eucalyptus viminalis</i> ssp. <i>viminalis</i>	Manna Gum	K
<i>Euchiton involucratus</i>	Star Cudweed	E
<i>Euchiton japonicus</i>	Creeping Cudweed	E
<i>Euchiton sphaericus</i>	Annual Cudweed	K
<i>Euphrasia collina</i> ssp. <i>collina</i>	Purple Eyebright	Presumed extinct
<i>Euphrasia collina</i> ssp. <i>muelleri</i>	Purple Eyebright	Presumed extinct
<i>Eutaxia microphylla</i> var. <i>diffusa</i>	Spreading Eutaxia	Presumed extinct
<i>Exocarpos cupressiformis</i>	Cherry Ballart	R
<i>Exocarpos strictus</i>	Pale Fruit Ballart	Presumed extinct
<i>Ficinia marginata</i>	Little Club-sedge	K
<i>Ficinia nodosa</i>	Knobby Club-sedge	S
<i>Frankenia pauciflora</i> var. <i>gunnii</i>	Southern Sea-heath	Presumed extinct
<i>Gahnia filum</i>	Chaffy Saw-sedge	Presumed extinct
<i>Gahnia radula</i>	Thatch Saw-sedge	S

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<i>Gahnia sieberiana</i>	Red-fruit Saw-sedge	E
<i>Galium australe</i>	Tangled Bedstraw	Presumed extinct
<i>Galium gaudichaudii</i> ssp. <i>gaudichaudii</i>	Rough Bedstraw	Presumed extinct
<i>Galium leiocarpum</i>	Mauri Bedstraw	Presumed extinct
<i>Geranium aff. retrorsum</i>	Grassland Crane's-bill	K
<i>Geranium ciliocarpum</i>	Variable Crane's-bill	Presumed extinct
<i>Geranium homeanum</i>	Rainforest Crane's-bill	Recorded extinct
<i>Geranium potentilloides</i>	Soft Crane's-bill	S
<i>Geranium potentilloides</i> var. <i>potentilloides</i>	Soft Crane's-bill	Presumed extinct
<i>Geranium</i> spp.	Crane's-bill	K
<i>Gleichenia microphylla</i>	Scrambling Coral-fern	Presumed extinct
<i>Glossodia major</i>	Wax-lip Orchid	E
<i>Glossostigma elatinoides</i>	Small Mudmat	Presumed extinct
<i>Glyceria australis</i>	Australian Sweet-grass	K
<i>Glycine clandestina</i>	Twining Glycine	K
<i>Glycine latrobeana</i>	Clover Glycine	Presumed extinct
<i>Glycine tabacina</i> s.l.	Variable Glycine	Recorded extinct
<i>Gnaphalium indutum</i>	Tiny Cudweed	Presumed extinct
<i>Gompholobium huegelii</i>	Common Wedge-pea	E
<i>Gonocarpus humilis</i>	Shade Raspwort	Presumed extinct
<i>Gonocarpus micranthus</i> ssp. <i>micranthus</i>	Creeping Raspwort	E
<i>Gonocarpus tetragynus</i>	Common Raspwort	V
<i>Goodenia elongata</i>	Lanky Goodenia	E
<i>Goodenia geniculata</i>	Bent Goodenia	E
<i>Goodenia humilis</i>	Swamp Goodenia	K
<i>Goodenia lanata</i>	Trailing Goodenia	Presumed extinct
<i>Goodenia ovata</i>	Hop Goodenia	S
<i>Goodenia pinnatifida</i>	Cut-leaf Goodenia	Presumed extinct
<i>Goodenia radicans</i>	Shiny Swamp-mat	E
<i>Goodia latifolia</i>	Golden-tip	K
<i>Goodia lotifolia</i>	Golden Tip	K
<i>Gratiola peruviana</i>	Austral Brooklime	K
<i>Gratiola pubescens</i>	Glandular Brooklime	Presumed extinct
<i>Grevillea ilicifolia</i> ssp. <i>ilicifolia</i>	Holly Grevillea	Presumed extinct
<i>Gynatrix pulchella</i> s.l.	Hemp Bush	Recorded extinct
<i>Hakea decurrens</i> ssp. <i>physocarpa</i>	Bushy Needlewood	Presumed extinct
<i>Hakea nodosa</i>	Yellow Hakea	E
<i>Hakea teretifolia</i> ssp. <i>hirsuta</i>	Dagger Hakea	Presumed extinct
<i>Hakea ulicina</i>	Furze Hakea	E
<i>Haloragis aspera</i>	Rough Raspwort	K

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<i>Haloragis brownii</i>	Swamp Raspwort	Presumed extinct
<i>Haloragis heterophylla</i>	Varied Raspwort	E
<i>Hardenbergia violacea</i>	Purple Coral-pea	Recorded extinct
<i>Hemarthria uncinata</i> var. <i>uncinata</i>	Mat Grass	R
<i>Hibbertia acicularis</i>	Prickly Guinea-flower	E
<i>Hibbertia fasciculata</i> var. <i>prostrata</i>	Bundled Guinea-flower	R
<i>Hibbertia procumbens</i>	Spreading Guinea-flower	K
<i>Hibbertia riparia</i>	Erect Guinea-flower	E
<i>Hibbertia sericea</i> var. <i>sericea</i>	Silky Guinea-flower	V
<i>Hibbertia virgata</i> var. <i>virgata</i>	Twiggy Guinea-flower	Presumed extinct
<i>Histiopteris incisa</i>	Bat's Wing Fern	Presumed extinct
<i>Hookerchloa hookeriana</i>	Hooker's Fescue	Presumed extinct
<i>Hovea heterophylla</i>	Common Hovea	E
<i>Hydrocotyle foveolata</i>	Yellow Pennywort	Recorded extinct
<i>Hydrocotyle hirta</i>	Hairy Pennywort	K
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	K
<i>Hydrocotyle pterocarpa</i>	Wing Pennywort	Presumed extinct
<i>Hydrocotyle sibthorpioides</i>	Dwarf Pennywort	K
<i>Hydrocotyle tripartita</i>	Slender Pennywort	Presumed extinct
<i>Hydrocotyle verticillata</i>	Common Pennywort	E
<i>Hypericum gramineum</i>	Small St John's Wort	E
<i>Hypericum japonicum</i>	Matted St John's Wort	K
<i>Hypolaena fastigiata</i>	Tassel Rope-rush	V
<i>Hypolepis rugosula</i>	Ruddy Ground-fern	Presumed extinct
<i>Imperata cylindrica</i>	Blady Grass	E
<i>Indigofera australis</i>	Austral Indigo	K
<i>Isoetes drummondii</i>	Plains Quillwort	E
<i>Isolepis cernua</i> var. <i>cernua</i>	Nodding Club-sedge	E
<i>Isolepis cernua</i> var. <i>platycarpa</i>	Broad-fruit Club-sedge	V
<i>Isolepis fluitans</i>	Floating Club-sedge	K
<i>Isolepis hookeriana</i>	Grassy Club-sedge	K
<i>Isolepis inundata</i>	Swamp Club-sedge	R
<i>Isolepis marginata</i>	Little Club-sedge	S
<i>Isolepis producta</i>	Nutty Club-sedge	Presumed extinct
<i>Isolepis stellata</i>	Star Club-sedge	K
<i>Isolepis victoriensis</i>	Victorian Club-sedge	Presumed extinct
<i>Isopogon ceratophyllus</i>	Horny Cone-bush	Presumed extinct
<i>Isotoma fluviatilis</i> ssp. <i>australis</i>	Swamp Isotome	K
<i>Juncus amabilis</i>	Hollow Rush	S
<i>Juncus australis</i>	Austral Rush	K

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<i>Juncus bufonius</i>	Toad Rush	S
<i>Juncus caespiticus</i>	Grassy Rush	Presumed extinct
<i>Juncus filicaulis</i>	Thread Rush	K
<i>Juncus flavidus</i>	Gold Rush	K
<i>Juncus gregiflorus</i>	Green Rush	K
<i>Juncus holoschoenus</i>	Joint-leaf Rush	R
<i>Juncus kraussii</i> ssp. <i>australiensis</i>	Sea Rush	V
<i>Juncus pallidus</i>	Pale Rush	S
<i>Juncus pauciflorus</i>	Loose-flower Rush	Recorded extinct
<i>Juncus planifolius</i>	Broad-leaf Rush	K
<i>Juncus radula</i>	Hoary Rush	K
<i>Juncus sarophorus</i>	Broom Rush	E
<i>Juncus subsecundus</i>	Finger Rush	R
<i>Juncus vaginatus</i>	Clustered Rush	K
<i>Kennedia prostrata</i>	Running Postman	E
<i>Kunzea leptospermoides</i>	Yarra Burgan	R
<i>Lachnagrostis aemula</i>	Leafy Blown-grass	V
<i>Lachnagrostis billardierei</i> ssp. <i>billardierei</i>	Coast Blown-grass	V
<i>Lachnagrostis filiformis</i>	Common Blown-grass	S
<i>Lachnagrostis semibarbata</i> var. <i>filifolia</i>	Purple Blown-grass	E
<i>Lagenophora gracilis</i>	Slender Bottle-daisy	K
<i>Lagenophora stipitata</i>	Common Bottle-daisy	V
<i>Laphangium luteoalbum</i>	Jersey Cudweed	S
<i>Laxmannia orientalis</i>	Dwarf Wire-lily	E
<i>Lemna disperma</i>	Common Duckweed	S
<i>Lepidium pseudohyssopifolium</i>	Native Peppergrass	Presumed extinct
<i>Lepidosperma congestum</i>	Clustered Sword-sedge	E
<i>Lepidosperma curtisiae</i>	Little Sword-sedge	Presumed extinct
<i>Lepidosperma filiforme</i>	Common Rapier-sedge	Presumed extinct
<i>Lepidosperma gladiatum</i>	Coast Sword-sedge	Presumed extinct
<i>Lepidosperma gunnii</i>	Slender Sword-sedge	Presumed extinct
<i>Lepidosperma laterale</i>	Variable Sword-sedge	E
<i>Lepidosperma longitudinale</i>	Pithy Sword-sedge	R
<i>Lepidosperma semiteres</i>	Wire Rapier-sedge	Presumed extinct
<i>Lepidosperma sieberi</i>	Sandhill Sword-sedge	S
<i>Lepilaena bilocularis</i>	Small-fruit Water-mat	K
<i>Leporella fimbriata</i>	Fringed Hare Orchid	Presumed extinct
<i>Leptinella reptans</i>	Creeping Cotula	Presumed extinct
<i>Leptoceras menziesii</i>	Hare Orchid	Presumed extinct
<i>Leptorhynchus squamatus</i>	Scaly Buttons	K

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<i>Leptorhynchus tenuifolius</i>	Wiry Buttons	E
<i>Leptospermum continentale</i>	Prickly Tea-tree	R
<i>Leptospermum laevigatum</i>	Coast Tea-tree	S
<i>Leptospermum lanigerum</i>	Woolly Tea-tree	K
<i>Leptospermum myrsinoides</i>	Heath Tea-tree	S
<i>Leptospermum scoparium</i>	Manuka	Presumed extinct
<i>Lepyrodia muelleri</i>	Common Scale-rush	K
<i>Leucophyta brownii</i>	Cushion Bush	R
<i>Leucopogon australis</i>	Spike Beard-heath	Presumed extinct
<i>Leucopogon ericoides</i>	Pink Beard-heath	Presumed extinct
<i>Leucopogon parviflorus</i>	Coast Beard-heath	E
<i>Leucopogon virgatus</i> var. <i>virgatus</i>	Common Beard-heath	V
<i>Levenhookia dubia</i>	Hairy Stylewort	Presumed extinct
<i>Levenhookia sonderi</i>	Slender Stylewort	Presumed extinct
<i>Lilaeopsis polyantha</i>	Australian Lilaeopsis	V
<i>Limosella australis</i>	Austral Mudwort	K
<i>Lindsaea linearis</i>	Screw Fern	K
<i>Linum marginale</i>	Native Flax	E
<i>Liparophyllum exaltatum</i>	Erect Marsh-flower	Presumed extinct
<i>Lobelia anceps</i>	Angled Lobelia	V
<i>Lobelia gibbosa</i>	Tall Lobelia	Presumed extinct
<i>Lobelia irrigua</i>	Salt Pratia	K
<i>Lobelia pedunculata</i>	Matted Pratia	K
<i>Lobelia pratioides</i>	Poison Lobelia	E
<i>Lomandra filiformis</i> ssp. <i>coriacea</i>	Wattle Mat-rush	K
<i>Lomandra filiformis</i> ssp. <i>filiformis</i>	Wattle Mat-rush	R
<i>Lomandra longifolia</i> ssp. <i>longifolia</i>	Spiny-headed Mat-rush	S
<i>Lomandra micrantha</i>	Small flowered Mat-rush	K
<i>Lomandra micrantha</i> ssp. <i>micrantha</i>	Small-flowered Mat-rush	Presumed extinct
<i>Lomandra multiflora</i> ssp. <i>multiflora</i>	Many-flowered Mat-rush	E
<i>Lomandra nana</i>	Dwarf Mat-rush	E
<i>Ludwigia peploides</i> var. <i>montevidensis</i>	Water Primrose	Presumed extinct
<i>Luzula meridionalis</i>	Common Woodrush	E
<i>Lycopodiella lateralis</i>	Slender Clubmoss	Presumed extinct
<i>Lycopodium deuterodensum</i>	Bushy Clubmoss	Presumed extinct
<i>Lycopus australis</i>	Australian Gipsywort	E
<i>Lyperanthus suaveolens</i>	Brown Beaks	Presumed extinct
<i>Lythrum hyssopifolia</i>	Small Loosestrife	S
<i>Machaerina acuta</i>	Pale Twig-sedge	Recorded extinct
<i>Machaerina arthropylla</i>	Fine Twig-sedge	E

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<i>Machaerina articulata</i>	Jointed Twig-sedge	E
<i>Machaerina juncea</i>	Bare Twig-sedge	R
<i>Machaerina rubiginosa</i>	Soft Twig-rush	K
<i>Machaerina tetragona</i>	Square Twig-sedge	E
<i>Malva preissiana</i>	Australian Hollyhock	Recorded extinct
<i>Marsilea drummondii</i>	Common Nardoo	K
<i>Melaleuca ericifolia</i>	Swamp Paperbark	S
<i>Melaleuca squarrosa</i>	Scented Paperbark	E
<i>Melicytus dentatus</i>	Tree Violet	Recorded extinct
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass	S
<i>Microseris lanceolata</i>	Murniong	Presumed extinct
<i>Microtidium atratum</i>	Yellow Onion-orchid	Presumed extinct
<i>Microtis arenaria</i>	Notched Onion-orchid	E
<i>Microtis oblonga</i>	Sweet Onion-orchid	K
<i>Microtis parviflora</i>	Slender Onion-orchid	K
<i>Microtis unifolia</i>	Common Onion-orchid	R
<i>Monotoca scoparia</i>	Prickly Broom-heath	E
<i>Montia australasica</i>	White Purslane	E
<i>Montia fontana</i> ssp. <i>chondrosperma</i>	Water Blinks	Presumed extinct
<i>Muehlenbeckia australis</i>	Climbing Lignum	V
<i>Muellerina eucalyptoides</i>	Creeping Mistletoe	S
<i>Myoporum insulare</i>	Common Boobiolla	S
<i>Myoporum parvifolium</i>	Creeping Boobiolla	Presumed extinct
<i>Myoporum petiolatum</i>	Sticky Boobiolla	Presumed extinct
<i>Myosotis australis</i>	Austral Forget-me-not	Presumed extinct
<i>Myriophyllum amphibium</i>	Broad Water-Milfoil	Presumed extinct
<i>Myriophyllum crispatum</i>	Upright Water-milfoil	V
<i>Myriophyllum integrifolium</i>	Tiny Water-Milfoil	Presumed extinct
<i>Myriophyllum pedunculatum</i> ssp. <i>longibracteatum</i>	Mat Water-milfoil	Presumed extinct
<i>Myriophyllum salsugineum</i>	Lake Water-milfoil	K
<i>Myriophyllum simulans</i>	Amphibious Water-milfoil	E
<i>Myriophyllum variifolium</i>	Variable Water-milfoil	E
<i>Myriophyllum verrucosum</i>	Red Water-milfoil	S
<i>Olearia axillaris</i>	Coast Daisy-bush	V
<i>Olearia glandulosa</i>	Swamp Daisy-bush	Recorded extinct
<i>Olearia glutinosa</i>	Sticky Daisy-bush	K
<i>Olearia lirata</i>	Snowy Daisy-bush	K
<i>Olearia ramulosa</i> var. <i>ramulosa</i>	Twiggy Daisy-bush	S
<i>Opercularia varia</i>	Variable Stinkweed	V
<i>Ophioglossum lusitanicum</i>	Adder's Tongue	Presumed extinct

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<i>Ornduffia reniformis</i>	Running Marsh-flower	E
<i>Orthoceras strictum</i>	Horned Orchid	Recorded extinct
<i>Oxalis exilis</i>	Shady Wood-sorrel	E
<i>Oxalis perennans</i>	Grassland Wood-sorrel	R
<i>Oxalis radicata</i>	Stout-rooted Wood-sorrel	K
<i>Oxalis thompsoniae</i>	Fluffy-fruit Wood Sorrel	E
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	R
<i>Ozothamnus obcordatus</i>	Grey Everlasting	Presumed extinct
<i>Ozothamnus turbinatus</i>	Coast Everlasting	V
<i>Parietaria debilis s.l.</i>	Shade Pellitory	K
<i>Patersonia fragilis</i>	Short Purple-flag	Presumed extinct
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	Long Purple-flag	V
<i>Pauridia glabella</i>	Tiny Star	E
<i>Pauridia hygrometrica</i> var. <i>villosisepala</i>	Golden Weather-glass	K
<i>Pauridia vaginata</i>	Yellow Star	E
<i>Pelargonium australe</i>	Austral Stork's-bill	V
<i>Pelargonium inodorum</i>	Kopata	E
<i>Pentapogon quadrifidus</i> var. <i>quadrifidus</i>	Five-awned Spear-grass	E
<i>Persicaria decipiens</i>	Slender Knotweed	S
<i>Persicaria hydropiper</i>	Water Pepper	K
<i>Persicaria lapathifolia</i>	Pale Knotweed	E
<i>Persoonia juniperina</i>	Prickly Geebung	E
<i>Pheladenia deformis</i>	Blue Fairies	Presumed extinct
<i>Philydrum lanuginosum</i>	Woolly Waterlily	E
<i>Phragmites australis</i>	Common Reed	S
<i>Phyllangium divergens</i>	Wiry Mitrewort	Presumed extinct
<i>Phylloglossum drumondii</i>	Pigmy Cubmoss	Presumed extinct
<i>Picris angustifolia</i> ssp. <i>angustifolia</i>	Coast Picris	Recorded extinct
<i>Pilularia novae-hollandiae</i>	Austral Pillwort	Presumed extinct
<i>Pimelea curviflora</i>	Curved Rice-flower	Presumed extinct
<i>Pimelea glauca</i>	Smooth Rice-flower	E
<i>Pimelea humilis</i>	Common Rice-flower	V
<i>Pimelea octophylla</i>	Woolly Rice-flower	Recorded extinct
<i>Pimelea phyllicoides</i>	Heath Rice-flower	Recorded extinct
<i>Pittosporum crassifolium</i>	Kohutu	
<i>Plantago gaudichaudii</i>	Narrow Plantain	E
<i>Plantago varia</i>	Variable Plantain	K
<i>Platylobium obtusangulum</i>	Common Flat-pea	V
<i>Platysace heterophylla</i> var. <i>heterophylla</i>	Slender Platysace	R
<i>Poa ensiformis</i>	Sword Tussock Grass	K

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<i>Poa clelandii</i>	Noah's Ark	K
<i>Poa labillardierei</i> var. <i>labillardierei</i>	Common Tussock-grass	S
<i>Poa morrisii</i>	Soft Tussock-grass	V
<i>Poa poiformis</i> var. <i>poiformis</i>	Coast Tussock-grass	S
<i>Poa sieberiana</i> var. <i>sieberiana</i>	Grey Tussock-grass	R
<i>Poa tenera</i>	Slender Tussock-grass	Presumed extinct
<i>Podolepis jaceoides</i>	Showy/Basalt Podolepis	Recorded extinct
<i>Podotheca angustifolia</i>	Sticky Long-heads	Presumed extinct
<i>Poranthera microphylla</i> s.l.	Small Poranthera	R
<i>Portulaca oleracea</i>	Common Purslane	S
<i>Potamogeton cheesemanii</i>	Floating Pondweed	K
<i>Potamogeton crispus</i>	Curly Pondweed	K
<i>Potamogeton ochreatus</i>	Blunt Pondweed	K
<i>Prasophyllum australe</i>	Austral Leek-orchid	Presumed extinct
<i>Prasophyllum colemaniae</i>	Lilac Leek-orchid	Presumed extinct
<i>Prasophyllum elatum</i>	Tall Leek-orchid	Presumed extinct
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	Presumed extinct
<i>Prasophyllum lindleyanum</i>	Green Leek-orchid	Presumed extinct
<i>Prasophyllum pyriforme</i>	Graceful Leek-orchid	Presumed extinct
<i>Prasophyllum</i> sp aff. <i>odoratum</i>	Ranges Leek-orchid	Presumed extinct
<i>Prasophyllum spicatum</i>	Dense Leek-orchid	Presumed extinct
<i>Pteridium esculentum</i>	Austral Bracken	S
<i>Pteris tremula</i>	Tender Brake	Recorded extinct
<i>Pterostylis concinna</i>	Trim Greenhood	V
<i>Pterostylis cucullata</i> ssp. <i>cucullata</i>	Leafy Greenhood	Presumed extinct
<i>Pterostylis curta</i>	Blunt Greenhood	E
<i>Pterostylis falcata</i>	Sickle Greenhood	Presumed extinct
<i>Pterostylis grandiflora</i>	Cobra Greenhood	Presumed extinct
<i>Pterostylis melagramma</i>	Tall Greenhood	E
<i>Pterostylis mellagramma</i>	Tall Greenhood	E
<i>Pterostylis mutica</i>	Midget Greenhood	Presumed extinct
<i>Pterostylis nana</i>	Dwarf Greenhood	V
<i>Pterostylis nutans</i>	Nodding Greenhood	V
<i>Pterostylis parviflora</i>	Tiny Greenhood	Recorded extinct
<i>Pterostylis pedoglossa</i>	Prawn Greenhood	E
<i>Pterostylis pedunculata</i>	Maroonhood	E
<i>Pterostylis sanguinea</i>	Banded Greenhood	Presumed extinct
<i>Pterostylis</i> sp. aff. <i>parviflora</i> 1	Red-lip Greenhood	Presumed extinct
<i>Pterostylis</i> sp. aff. <i>plumosa</i> 1	Woodland Bearded Greenhood	Presumed extinct
<i>Pterostylis</i> sp. aff. <i>revoluta</i> (inland)	Autumn Greenhood	Presumed extinct

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<i>Pterostylis striata</i>	Striped Greenhood	Presumed extinct
<i>Pterostylis tasmanica</i>	Southern Bearded Greenhood	Presumed extinct
<i>Pterostylis truncata</i>	Brittle Greenhood	Presumed extinct
<i>Pterostylis x toveyana</i>	Mentone Greenhood	Presumed extinct
<i>Pultenaea dentata</i>	Clustered Bush-pea	K
<i>Pultenaea gunnii</i> ssp. <i>gunnii</i>	Golden Bush-pea	Presumed extinct
<i>Pultenaea scabra</i>	Rough Bush-pea	K
<i>Pultenaea tenuifolia</i>	Slender Bush-pea	K
<i>Pyrorchis nigricans</i>	Red-beaks	E
<i>Ranunculus amphitrichus</i>	Small River Buttercup	K
<i>Ranunculus amplus</i>	Lacey River Buttercup	K
<i>Ranunculus glabrifolius</i>	Shining Buttercup	E
<i>Ranunculus inundatus</i>	River Buttercup	K
<i>Ranunculus lappaceus</i>	Common Buttercup	Presumed extinct
<i>Ranunculus papulentus</i>	Large River Buttercup	K
<i>Ranunculus pumilio</i> var. <i>pumilio</i>	Large River Buttercup	Presumed extinct
<i>Ranunculus sessiliflorus</i> ssp. <i>Sessiliflorus</i>	Annual buttercup	E
<i>Rhagodia candolleana</i> ssp. <i>candolleana</i>	Seaberry Saltbush	S
<i>Ricinocarpos pinifolius</i>	Wedding Bush	R
<i>Rubus parvifolius</i>	Small-leaf Bramble	E
<i>Rumex bidens</i>	Mud Dock	K
<i>Rumex brownii</i>	Slender Dock	K
<i>Ruppia polycarpa</i>	Many-fruit Tassel	K
<i>Rytidosperma bipartitum</i>	Leafy Wallaby-grass	E
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	V
<i>Rytidosperma duttonianum</i>	Brown-back Wallaby-grass	E
<i>Rytidosperma erianthum</i>	Hill Wallaby-grass	Recorded extinct
<i>Rytidosperma fulvum</i>	Copper-awned Wallaby-grass	S
<i>Rytidosperma geniculatum</i>	Kneed Wallaby-grass	S
<i>Rytidosperma laeve</i>	Smooth Wallaby-grass	E
<i>Rytidosperma pallidum</i>	Red-anther Wallaby-grass	K
<i>Rytidosperma penicillatum</i>	Weeping Wallaby-grass	Presumed extinct
<i>Rytidosperma pilosum</i>	Velvet Wallaby-grass	V
<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	Slender Wallaby-grass	S
<i>Rytidosperma semiannulare</i>	Wetland Wallaby-grass	S
<i>Rytidosperma setaceum</i> var. <i>setaceum</i>	Bristly Wallaby-grass	S
<i>Rytidosperma tenuius</i>	Purplish Wallaby-grass	Recorded extinct
<i>Salicornia quinqueflora</i>	Beaded Glasswort	R
<i>Salsola tragus</i> ssp. <i>pontica</i>	Prickly Saltwort	K
<i>Samolus repens</i>	Creeping Brookweed	E

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<i>Sarcocornia blackiana</i>	Thick-head Glasswort	Presumed extinct
<i>Schenkia australis</i>	Spiked Centaury	Presumed extinct
<i>Schizaea bifida</i>	Forked Comb-fern	Presumed extinct
<i>Schizaea fistulosa</i>	Narrow Comb-fern	Presumed extinct
<i>Schoenoplectus tabernaemontani</i>	River Club-sedge	S
<i>Schoenus apogon</i>	Common Bog-sedge	R
<i>Schoenus brevifolius</i>	Zig-zag Bog-sedge	K
<i>Schoenus latelaminatus</i>	Medusa Bog-sedge	K
<i>Schoenus lepidosperma</i>	Slender Bog-sedge	K
<i>Schoenus maschalinus</i>	Leafy Bog-sedge	Presumed extinct
<i>Schoenus nitens</i>	Shiny Bog-sedge	E
<i>Schoenus tesquorum</i>	Soft Bog-sedge	E
<i>Scutellaria humilis</i>	Dwarf Skullcap	Recorded extinct
<i>Sebaea albidiflora</i>	White Sebaea	Presumed extinct
<i>Sebaea ovata</i>	Yellow Sebaea	Presumed extinct
<i>Selaginella gracillima</i>	Tiny Selaginella	Presumed extinct
<i>Selaginella uliginosa</i>	Swamp Selaginella	Presumed extinct
<i>Senecio biserratus</i>	Jagged Fireweed	E
<i>Senecio glomeratus</i> ssp. <i>glomeratus</i>	Annual Fireweed	R
<i>Senecio glomeratus</i> ssp. <i>longifructus</i>	Fireweed Groundsel	Presumed extinct
<i>Senecio hispidulus</i>	Rough Fireweed	S
<i>Senecio longicollaris</i>	Riverina Fireweed	Presumed extinct
<i>Senecio minimus</i>	Shrubby Fireweed	E
<i>Senecio odoratus</i> var. <i>odoratus</i>	Scented Groundsel	Presumed extinct
<i>Senecio phelleus</i>	Stony Fireweed	K
<i>Senecio pinnatifolius</i> var. <i>lanceolatus</i>	Lance-leaf Groundsel	E
<i>Senecio prenanthoides</i>	Common Fireweed	E
<i>Senecio psilocarpus</i>	Swamp Fireweed	Presumed extinct
<i>Senecio quadridentatus</i>	Cotton Fireweed	R
<i>Senecio squarrosus</i>	Leafy Fireweed	Presumed extinct
<i>Siloxerus multiflorus</i>	Small Wrinklewort	Presumed extinct
<i>Solanum aviculare</i>	Kangaroo Apple	K
<i>Solanum laciniatum</i>	Large Kangaroo Apple	K
<i>Solenogyne dominii</i>	Smooth Solenogyne	Presumed extinct
<i>Solenogyne gunnii</i>	Hairy Solenogyne	Presumed extinct
<i>Sonchus hydrophilus</i>	Native Sow-thistle	K
<i>Spergularia brevifolia</i>	Salt Sea-spurrey	Presumed extinct
<i>Sphaerolobium minus</i>	Eastern Globe-pea	Presumed extinct
<i>Sphaerolobium vimineum</i>	Leafless Globe-pea	K
<i>Spinifex sericeus</i>	Hairy Spinifex	V

Scientific name	Common name	Kingston Status 2024
<i>Spiranthes australis</i>	Austral Ladies Tresses	Presumed extinct
<i>Sporobolus virginicus</i>	Salt Couch	E
<i>Sprengelia incarnata</i>	Pink Swamp-heath	Presumed extinct
<i>Stackhousia monogyna</i>	Candles	K
<i>Stackhousia spathulata</i>	Coast Stackhousia	Presumed extinct
<i>Stackhousia viminea</i>	Slender Stackhousia	K
<i>Stellaria angustifolia</i> ssp. <i>angustifolius</i>	Swamp Starwort	Presumed extinct
<i>Stellaria multiflora</i>	Rayless Starwort	Presumed extinct
<i>Stellaria pungens</i>	Prickly Starwort	K
<i>Stenopetalum lineare</i>	Narrow Thread-petal	Presumed extinct
<i>Stuckenia pectinata</i>	Fennel Pondweed	K
<i>Stylidium armeria</i>	Thrift-leaved Triggerplant	K
<i>Stylidium beaugleholei</i>	Small Triggerplant	Presumed extinct
<i>Stylidium despectum</i>	Small Triggerplant	Presumed extinct
<i>Stylidium graminifolium</i>	Grass-leaved Triggerplant	K
<i>Stylidium inundatum</i>	Hundreds and Thousands	Presumed extinct
<i>Suaeda australis</i>	Austral Seablite	E
<i>Tetragonia implexicoma</i>	Bower Spinach	S
<i>Tetragonia tetragonioides</i>	New Zealand Spinach	E
<i>Tetralia capillaris</i>	Hair-sedge	Presumed extinct
<i>Tetrarrhena distichophylla</i>	Hairy Rice-grass	Presumed extinct
<i>Tetradlea ciliata</i>	Pink Bells	Presumed extinct
<i>Thelionema caespitosum</i>	Tufted Lily	E
<i>Thelymitra antennifera</i>	Rabbit Ears	Recorded extinct
<i>Thelymitra arenaria</i>	Forest Sun-orchid	Presumed extinct
<i>Thelymitra aristata</i>	Great Sun-orchid	Presumed extinct
<i>Thelymitra brevifolia</i>	Peppertop Sun-orchid	Presumed extinct
<i>Thelymitra carnea</i>	Pink Sun-orchid	Recorded extinct
<i>Thelymitra circumsepta</i>	Naked Sun-orchid	Presumed extinct
<i>Thelymitra epipactoides</i>	Metallic Sun-orchid	Presumed extinct
<i>Thelymitra flexuosa</i>	Twisted Sun-orchid	Recorded extinct
<i>Thelymitra holmesii</i>	Blue Star Sun-orchid	E
<i>Thelymitra ixioides</i>	Spotted Sun-orchid	K
<i>Thelymitra juncifolia</i>	Rushleaf Sun-orchid	Presumed extinct
<i>Thelymitra nuda</i>	Scented Sun-orchid	Presumed extinct
<i>Thelymitra pauciflora</i>	Slender Sun-orchid	V
<i>Thelymitra peniculata</i>	Trim Sun-orchid	K
<i>Thelymitra rubra</i>	Salmon Sun-orchid	Recorded extinct
<i>Thelymitra x irregularis</i>	Crested Sun-orchid	Presumed extinct
<i>Thelymitra x macmillanii</i>	Crimson Sun-orchid	Presumed extinct

Scientific name	Common name	Kingston Status 2024
<i>Themeda triandra</i>	Kangaroo Grass	V
<i>Thesium australe</i>	Austral Toad-flax	Recorded extinct
<i>Threlkeldia diffusa</i>	Coast Bonefruit	Presumed extinct
<i>Thrydia repens</i>	Creeping Monkey-flower	E
<i>Thysanotus patersonii</i>	Twining Fringe-lily	E
<i>Thysanotus tuberosus</i>	Common Fringe-lily	K
<i>Trachymene compositavar. composita</i>	Parsnip Trachymene	S
<i>Tricoryne elatior</i>	Yellow Rush-lily	V
<i>Tricostularia pauciflora</i>	Needle Bog-sedge	Presumed extinct
<i>Triglochin alcockiae</i>	Southern Water-ribbons	K
<i>Triglochin striata</i>	Streaked Arrowgrass	R
<i>Triptilodiscus pygmaeus</i>	Common Sunray	Presumed extinct
<i>Typha domingensis</i>	Narrow-leaf Cumbungi	S
<i>Typha orientalis</i>	Broad-leaf Cumbungi	S
<i>Urtica incisa</i>	Scrub Nettle	Recorded extinct
<i>Utricularia beaugleholei</i>	Purple Bladderwort	Presumed extinct
<i>Utricularia dichotoma</i>	Fairies' Aprons	K
<i>Utricularia lateriflora</i>	Tiny Bladderwort	Presumed extinct
<i>Utricularia tenella</i>	Pink Bladderwort	Presumed extinct
<i>Velleia paradoxa</i>	Spurr Velleia	Presumed extinct
<i>Veronica calycina</i>	Cup Speedwell	K
<i>Veronica gracilis</i>	Slender Speedwell	E
<i>Veronica plebeia</i>	Creeping Speedwell	K
<i>Viminaria juncea</i>	Golden Spray	V
<i>Viola betonicifolia ssp. betonicifolia</i>	Showy Violet	Presumed extinct
<i>Viola cleistogamoides</i>	Hidden Violet	K
<i>Viola hederacea</i>	Ivy-leaf Violet	E
<i>Vittadinia gracilis</i>	Woolly New Holland Daisy	Presumed extinct
<i>Wahlenbergia gracilentata s.l.</i>	Annual Bluebell	E
<i>Wahlenbergia gracilis</i>	Sprawling Bluebell	E
<i>Wahlenbergia gymnoclada</i>	Naked Bluebell	Presumed extinct
<i>Wahlenbergia luteola</i>	Bronze Bluebell	Presumed extinct
<i>Wahlenbergia multicaulis</i>	Branching Bluebell	E
<i>Wahlenbergia stricta ssp. stricta</i>	Tall Bluebell	Presumed extinct
<i>Wilsonia backhousei</i>	Narrow-leaf Wilsonia	Presumed extinct
<i>Wilsonia rotundifolia</i>	Round-leaf Wilsonia	E
<i>Wolffia australiana</i>	Tiny Duckweed	S
<i>Wurmbea dioica</i>	Common Early Nancy	E
<i>Xanthorrhoea minor ssp. lutea</i>	Small Grass-tree	R
<i>Xanthosia dissecta s.l.</i>	Cut-leaf Xanthosia	K

Scientific name	Common name	Kingston Status 2024
<i>Xanthosia heugelii</i>	Common Xanthosia	Presumed extinct
<i>Xanthosia pilosa</i>	Woolly Xanthosia	Presumed extinct
<i>Xerochrysum palustre</i>	Swamp Everlasting	E
<i>Xyris gracilis</i>	Slender Yellow-eye	Recorded extinct

B. Appendix B - Kingston Vertebrate Fauna species list

An important note on the 2024 update

The local flora and fauna status has not been systematically updated with field surveys since 2015. The 2024 updated local status of flora (as recorded below) is based on a combination of VBA data, a qualitative assessment (done by Kingston Staff), a 2020 flora survey at The Grange Heathland Reserve and updated VBA records (from 2015-2024). The 2024 updated local status of fauna is based on an updated VBA search only. **The flora, fauna and EVC databases require Kingston wide updated field surveys to provide a true updated representation of the local status of flora, fauna, and vegetation communities.**

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater	Resident	Vulnerable
Bird	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	Resident	Near threatened
Bird	<i>Acanthiza lineata</i>	Striated Thornbill	Resident	Near threatened
Bird	<i>Acanthiza nana</i>	Yellow Thornbill	Resident	Vulnerable
Bird	<i>Acanthiza pusilla</i>	Brown Thornbill	Resident	Secure
Fish	<i>Acanthopagrus australis</i>	Yellow-fin Bream	Transient	Secure
Fish	<i>Acanthopagrus butcheri</i>	Black Bream	Transient	Secure
Bird	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	Resident	Near threatened
Bird	<i>Accipiter cirrhocephalus</i>	Collared Sparrowhawk	Resident	Critically Endangered
Bird	<i>Accipiter fasciatus</i>	Brown Goshawk	Resident	Near Threatened
Bird	<i>Accipiter novaehollandiae</i>	Grey Goshawk	Resident	Critically Endangered
Reptile	<i>Acritoscincus duperreyi</i>	Eastern Three-lined Skink	Resident	Near threatened
Bird	<i>Acrocephalus australis</i>	Reed-Warbler	Resident	Secure
Bird	<i>Acrocephalus stentoreus</i>	Clamorous Reed Warbler	Transient	Secure
Bird	<i>Actitis hypoleucos</i>	Common Sandpiper	Transient	Vulnerable
Bird	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	Resident	Extinct (recorded)
Fish	<i>Afurcagobius tamarensis</i>	Tamar River Goby	Transient	Secure
Fish	<i>Aldrichetta forsteri</i>	Yellow-eye Mullet	Transient	Secure
Bird	<i>Alisterus scapularis</i>	Australian King-Parrot	Transient	Secure
Reptile	<i>Amphibolurus muricatus</i>	Tree Dragon	Resident	Endangered
Bird	<i>Anas castanea</i>	Chestnut Teal	Transient	Secure
Bird	<i>Anas clypeata</i>	Northern Shoveler	Transient	Secure
Bird	<i>Anas gracilis</i>	Grey Teal	Transient	Secure
Bird	<i>Anas rhynchotis</i>	Australasian Shoveler	Transient	Vulnerable
Bird	<i>Anas superciliosa</i>	Pacific Black Duck	Resident	Secure
Fish	<i>Anguilla australis</i>	Southern Sand Flathead	Transient	Secure
Fish	<i>Anguilla reinhardtii</i>	Longfin Eel	Transient	Secure
Bird	<i>Anhinga novaehollandiae</i>	Darter	Transient	Secure

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Anseranas semipalmata</i>	Magpie Goose	Resident	Critically Endangered
Bird	<i>Anthochaera carunculata</i>	Red Wattlebird	Resident	Secure
Bird	<i>Anthochaera chrysoptera</i>	Little Wattlebird	Resident	Secure
Bird	<i>Anthochaera phrygia</i>	Regent Honeyeater	Transient	Critically Endangered
Bird	<i>Anthus australis</i>	Australian Pipit	Transient	Secure
Bird	<i>Anthus novaeseelandiae</i>	New Zealand Pipit	Resident	Secure
Bird	<i>Aphrodroma brevirostris</i>	Kerguelen Petrel	Transient	Secure
Bird	<i>Apus pacificus</i>	Fork-tailed Swift	Transient	Secure
Bird	<i>Aquila audax</i>	Wedge-tailed Eagle	Transient	Secure
Fish	<i>Aracana aurita</i>	Shaw's Cowfish	Transient	Secure
Mammal	<i>Arctocephalus pusillus</i>	Australian Fur Seal	Transient	Secure
Bird	<i>Ardea alba</i>	Great Egret	Resident	Secure
Bird	<i>Ardea alba modesta</i>	Eastern Great Egret	Transient	Endangered
Bird	<i>Ardea ibis</i>	Cattle Egret	Transient	Secure
Bird	<i>Ardea intermedia</i>	Intermediate Egret	Transient	Endangered
Bird	<i>Ardea modesta</i>	Eastern Great Egret	Transient	Data Deficient
Bird	<i>Ardea pacifica</i>	White-necked Heron	Transient	Secure
Bird	<i>Ardeotis australis</i>	Australian Bustard	Transient	Extinct (presumed)
Bird	<i>Arenaria interpres</i>	Ruddy Turnstone	Transient	Vulnerable
Fish	<i>Arenigobius bifrenatus</i>	Bridled Goby	Transient	Secure
Fish	<i>Arothron firmamentum</i>	Starry Toadfish	Transient	Secure
Fish	<i>Arripis truttaceus</i>	Western Australian Salmon	Transient	Secure
Bird	<i>Artamus cyanopterus</i>	Dusky Woodswallow	Transient	Secure
Bird	<i>Artamus personatus</i>	Masked Woodswallow	Transient	Secure
Bird	<i>Artamus superciliosus</i>	White-browed Woodswallow	Resident	Extinct (recorded)
Fish	<i>Atherinason hepsetoides</i>	Smallmouthed Hardyhead	Transient	Secure
Fish	<i>Atherinosoma elongatum</i>	Elongate Hardyhead	Transient	Secure
Fish	<i>Atherinosoma microstoma</i>	Six-spine Leatherjacket	Transient	Secure
Reptile	<i>Austrelaps superbus</i>	Lowland Copperhead	Resident	Vulnerable
Bird	<i>Aythya australis</i>	Hardhead	Transient	Vulnerable
Fish	<i>Barbatia pistachia</i>	Banded Ark	Transient	Secure
Bird	<i>Biziura lobata</i>	Musk Duck	Resident	Near threatened
Bird	<i>Botaurus poiciloptilus</i>	Australasian Bittern	Resident	Critically Endangered
Bird	<i>Bubulcus coromandus</i>	Eastern Cattle Egret	Transient	Secure
Bird	<i>Burhinus grallarius</i>	Bush Stone-curlew	Resident	Extinct (presumed)
Bird	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	Resident	Secure
Bird	<i>Cacatua sanguinea</i>	Little Corella	Resident	Vulnerable
Bird	<i>Cacatua tenuirostris</i>	Long-billed Corella	Resident	Vulnerable
Bird	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	Transient	Secure

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Cacomantis pallidus</i>	Pallid Cuckoo	Transient	Secure
Bird	<i>Cacomantis variolosus</i>	Brush Cuckoo	Transient	Secure
Fish	<i>Caesioperca lepidopterus</i>	Butterfly Perch	Transient	Secure
Fish	<i>Caesioperca rasor</i>	Barber Perch	Transient	Secure
Bird	<i>Calamanthus fuliginosus</i>	Striated Fieldwren	Resident	Critically Endangered
Bird	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Transient	Secure
Bird	<i>Calidris alba</i>	Sanderling	Transient	Near threatened
Bird	<i>Calidris ferruginea</i>	Curlew Sandpiper	Transient	Endangered
Bird	<i>Calidris melanotos</i>	Pectoral Sandpiper	Transient	Near threatened
Bird	<i>Calidris ruficollis</i>	Red-necked Stint	Transient	Secure
Bird	<i>Calidris subminuta</i>	Long-toed Stint	Transient	Near threatened
Bird	<i>Caligavis chrysops</i>	Yellow Faces Honey Eater	Resident	Secure
Bird	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Transient	Secure
Bird	<i>Calonectris leucomelas</i>	Streaked Shearwater	Transient	Near threatened
Bird	<i>Calyptorhynchus funereus</i>	Yellow-tailed Black-Cockatoo	Transient	Secure
Bird	<i>Calyptorhynchus lathami</i>	Glossy Black Cockatoo	Resident	Extinct (presumed)
Mammal	<i>Canis lupus dingo</i>	Dingo	Resident	Extinct (presumed)
Mammal	<i>Cercartetus nanus</i>	Eastern Pygmy-possum	Resident	Extinct (recorded)
Bird	<i>Cereopsis novaehollandiae</i>	Cape Barren Goose	Transient	Secure
Bird	<i>Ceyx azureus</i>	Azure Kingfisher	Transient	Secure
Mammal	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	Resident	Secure
Mammal	<i>Chalinolobus morio</i>	Chocolate Wattled Bat	Resident	Secure
Bird	<i>Charadrius bicinctus</i>	Double-banded Plover	Transient	Secure
Bird	<i>Charadrius ruficapillus</i>	Red-capped Plover	Resident	Secure
Fish	<i>Chelidonichthys kumu</i>	Red Gurnard	Transient	Secure
Reptile	<i>Chelodina longicollis</i>	Eastern Long-necked Turtle	Resident	Vulnerable
Bird	<i>Chenonetta jubata</i>	Australian Wood Duck	Resident	Secure
Bird	<i>Chlidonias hybrida</i>	Whiskered Tern	Transient	Endangered
Bird	<i>Chlidonias leucopterus</i>	White-winged Black Tern	Transient	Near threatened
Reptile	<i>Christinus marmoratus</i>	Southern Marbled Gecko	Resident	Secure
Bird	<i>Chroicocephalus novaehollandiae</i>	Silver Gull	Resident	Secure
Bird	<i>Chrysococcyx basalis</i>	Horsfield's Bronze-Cuckoo	Transient	Secure
Bird	<i>Chrysococcyx lucidus</i>	Shining Bronze-Cuckoo	Transient	Secure
Bird	<i>Chrysococcyx osculans</i>	Black-eared Cuckoo	Transient	Secure
Fish	<i>Chrysophrys auratus</i>	Smooth Toadfish	Transient	Secure
Bird	<i>Cincloramphus cruralis</i>	Brown Songlark	Transient	Secure
Bird	<i>Cincloramphus mathewsi</i>	Rufous Songlark	Transient	Secure
Bird	<i>Circus approximans</i>	Swamp Harrier	Resident	Secure

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Circus assimilis</i>	Red-chested Button-quail	Transient	Vulnerable
Bird	<i>Cisticola exilis</i>	Golden-headed Cisticola	Resident	Secure
Bird	<i>Cladorhynchus leucocephalus</i>	Banded Stilt	Transient	Secure
Bird	<i>Colluricincla harmonica</i>	Grey Shrike-thrush	Resident	Near threatened
Fish	<i>Contusus brevicaudus</i>	Prickly Toadfish	Transient	Secure
Bird	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	Resident	Secure
Bird	<i>Corcorax melanorhamphos</i>	White-winged Cough	Resident	Extinct (presumed)
Bird	<i>Corvus coronoides</i>	Australian Raven	Resident	Secure
Bird	<i>Corvus mellori</i>	Little Raven	Resident	Secure
Bird	<i>Coturnix chinensis</i>	King Quail	Resident	Extinct (presumed)
Bird	<i>Coturnix pectoralis</i>	Stubble Quail	Transient	Secure
Bird	<i>Coturnix ypsilophora</i>	Brown Quail	Resident	Endangered
Bird	<i>Cracticus torquatus</i>	Grey Butcherbird	Resident	Secure
Frog	<i>Crinia signifera</i>	Common Froglet	Resident	Secure
Fish	<i>Cristiceps australis</i>	Southern Cardinalfish	Transient	Secure
Bird	<i>Cygnus atratus</i>	Black Swan	Resident	Secure
Fish	<i>Cyttus australis</i>	Shorthead Lamprey	Transient	Secure
Bird	<i>Dacelo novaeguineae</i>	Laughing Kookaburra	Resident	Vulnerable
Bird	<i>Daphoenositta chrysoptera</i>	Varied Sittella	Resident	Endangered
Bird	<i>Daption capense</i>	Cape Petrel	Transient	Secure
Mammal	<i>Dasyurus maculatus</i>	Spot-tailed Quoll	Resident	Extinct (recorded)
Mammal	<i>Dasyurus viverrinus</i>	Eastern Quoll	Resident	Extinct (recorded)
Mammal	<i>Delphinus delphis</i>	Common Dolphin	Transient	Secure
Bird	<i>Dendrocygna eytoni</i>	Plumed Whistling-Duck	Transient	Secure
Bird	<i>Dicaeum hirundinaceum</i>	Mistletoebird	Resident	Near threatened
Bird	<i>Dromaius novaehollandiae</i>	Emu	Resident	Extinct (presumed)
Reptile	<i>Drysdalia coronoides</i>	White-lipped Snake	Resident	Endangered
Bird	<i>Egretta garzetta</i>	Little Egret	Transient	Endangered
Bird	<i>Egretta novaehollandiae</i>	White-faced Heron	Transient	Secure
Bird	<i>Egretta sacra</i>	Pacific reef Heron	Transient	Secure
Bird	<i>Elanus axillaris</i>	Black-shouldered Kite	Transient	Secure
Bird	<i>Elsyornis melanops</i>	Black-fronted Dotterel	Resident	Secure
Fish	<i>Engraulis australis</i>	Australian Anchovy	Transient	Secure
Fish	<i>Enoplosus armatus</i>	Old Wife	Transient	Secure
Fish	<i>Eocallionymus papilio</i>	Painted Stinkfish	Transient	Secure
Bird	<i>Eolophus roseicapilla</i>	Galah	Resident	Secure
Bird	<i>Eopsaltria australis</i>	Eastern Yellow Robin	Resident	Near threatened
Bird	<i>Epthianura albifrons</i>	White-fronted Chat	Resident	Near threatened
Bird	<i>Erythronyctis cinctus</i>	Red-kneed Dotterel	Transient	Secure

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Eudyptula minor</i>	Little Penguin	Transient	Secure
Bird	<i>Falco berigora</i>	Brown Falcon	Resident	Secure
Bird	<i>Falco cenchroides</i>	Nankeen Kestrel	Resident	Secure
Bird	<i>Falco longipennis</i>	Australian Hobby	Resident	Secure
Bird	<i>Falco peregrinus</i>	Peregrine Falcon	Resident	Vulnerable
Bird	<i>Falco subniger</i>	Black Falcon	Transient	Vulnerable
Bird	<i>Falcunculus frontatus</i>	Crested Shrike-tit	Resident	Endangered
Fish	<i>Foetorepus calaupomus</i>	Common Stinkfish	Transient	Secure
Bird	<i>Fregata minor</i>	Great Frigatebird	Transient	Secure
Bird	<i>Fulica atra</i>	Eurasian Coot	Resident	Secure
Bird	<i>Fulmarus glacialoides</i>	Southern Fulmar	Transient	Secure
Fish	<i>Galaxias brevipinnis</i>	Climbing Galaxias	Transient	Secure
Fish	<i>Galaxias maculatus</i>	Common Galaxias	Transient	Secure
Fish	<i>Galaxias truttaceus</i>	Spotted Galaxias	Transient	Secure
Fish	<i>Galaxiella pusilla</i>	Dwarf Galaxias	Transient	Extinct (presumed)
Fish	<i>Galeorhinus galeus</i>	School Shark	Transient	Secure
Bird	<i>Gallinago hardwickii</i>	Latham's Snipe	Transient	Near threatened
Bird	<i>Gallinula tenebrosa</i>	Dusky Moorhen	Resident	Secure
Bird	<i>Gallirallus philippensis</i>	Buff-banded Rail	Resident	Vulnerable
Bird	<i>Gavicalis virescens</i>	Singing Honeyeater	Resident	Secure
Fish	<i>Geotria australis</i>	Pouched Lamprey	Transient	Secure
Bird	<i>Gerygone fusca</i>	Western Gerygone	Resident	Secure
Bird	<i>Gerygone olivacea</i>	White-Throated Gerygone	Resident	Secure
Bird	<i>Glossopsitta concinna</i>	Musk Lorikeet	Transient	Secure
Bird	<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet	Transient	Secure
Bird	<i>Glossopsitta pusilla</i>	Little Lorikeet	Transient	Data Deficient
Fish	<i>Gobiopterus semivestitus</i>	Glass Goby	Transient	Secure
Bird	<i>Grallina cyanoleuca</i>	Magpie-lark	Resident	Secure
Bird	<i>Grus rubicunda</i>	Brolga	Resident	Extinct (presumed)
Fish	<i>Gymnapistes marmoratus</i>	Snapper	Transient	Secure
Bird	<i>Gymnorhina tibicen</i>	Australian Magpie	Resident	Secure
Bird	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	Transient	Near threatened
Bird	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Transient	Vulnerable
Bird	<i>Haliastur sphenurus</i>	Whistling Kite	Resident	Secure
Bird	<i>Halobaena caerulea</i>	Blue Petrel	Transient	Secure
Fish	<i>Heteroclinus perspicillatus</i>	Common Weedfish	Transient	Secure
Fish	<i>Heteroclinus tristis</i>	Longnose Weedfish	Transient	Secure
Bird	<i>Hieraaetus morphnoides</i>	Little Eagle	Transient	Secure
Bird	<i>Himantopus himantopus</i>	Black-winged Stilt	Transient	Secure

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Himantopus leucocephalus</i>	Pied Stilt	Transient	Secure
Bird	<i>Hirundapus caudacutus</i>	White-throated Needletail	Transient	Vulnerable
Bird	<i>Hirundo neoxena</i>	Welcome Swallow	Resident	Secure
Mammal	<i>Hydromys chrysogaster</i>	Water Rat	Resident	Extinct (presumed)
Bird	<i>Hydroprogne caspia</i>	Caspian Tern	Transient	Near Threatened
Mammal	<i>Hydrurga leptonyx</i>	Leopard Seal	Transient	Secure
Mammal	<i>Hyperoodon planifrons</i>	Southern Bottlenose Whale	Transient	Secure
Bird	<i>Hypotaenidia philippensis</i>	Buff-banded Rail (Cocos (Keeling) Islands)	Resident	Vulnerable
Mammal	<i>Isoodon obesulus</i>	Southern Brown Bandicoot	Resident	Extinct (recorded)
Bird	<i>Ixobrychus dubius</i>	Australian Little Bittern	Transient	Endangered
Bird	<i>Ixobrychus minutus</i>	Common Little Bittern	Transient	Endangered
Bird	<i>Lalage tricolor</i>	White-winged Triller	Resident	Critically Endangered
Reptile	<i>Lampropholis guichenoti</i>	Garden Skink	Resident	Secure
Bird	<i>Larus dominicanus</i>	Kelp Gull	Transient	Secure
Bird	<i>Larus pacificus</i>	Pacific Gull	Transient	Near threatened
Bird	<i>Lathamus discolor</i>	Swift Parrot	Transient	Endangered
Fish	<i>Lepidotrigla papilio</i>	Spiny Gurnard	Transient	Secure
Reptile	<i>Lerista bougainvillii</i>	Bougainville's Skink	Resident	Endangered
Fish	<i>Lesueurina platycephala</i>	Flat-headed Gudgeon	Transient	Secure
Bird	<i>Lewinia pectoralis</i>	Lewin's Rail	Transient	Vulnerable
Bird	<i>Lichenostomus chrysops</i>	Yellow-faced Honeyeater	Transient	Secure
Bird	<i>Lichenostomus leucotis</i>	White-eared Honeyeater	Resident	Data Deficient
Bird	<i>Lichenostomus melanops</i>	Yellow-tufted Honeyeater	Transient	Secure
Bird	<i>Lichenostomus ornatus</i>	Yellow-plumed Honeyeater	Transient	Secure
Bird	<i>Lichenostomus penicillatus</i>	White-plumed Honeyeater	Resident	Secure
Frog	<i>Limnodynastes dumerilii</i>	Southern Bullfrog	Resident	Secure
Frog	<i>Limnodynastes peronii</i>	Striped Marsh Frog	Resident	Data Deficient
Frog	<i>Limnodynastes tasmaniensis</i>	Spotted Marsh Frog	Resident	Secure
Bird	<i>Limosa lapponica</i>	Bar-tailed Godwit	Transient	vulnerable
Reptile	<i>Liopholis whitii</i>	White's Skink	Resident	Extinct (recorded)
Frog	<i>Litoria ewingii</i>	Southern Brown Tree Frog	Resident	Secure
Frog	<i>Litoria fallax</i>	Eastern Dwarf Tree Frog	Resident	Secure
Frog	<i>Litoria peronii</i>	Peron's Tree Frog	Resident	Data Deficient
Frog	<i>Litoria raniformis</i>	Growling Grass Frog	Resident	Extinct (presumed)
Frog	<i>Litoria verreauxii verreauxii</i>	Verreaux's Tree Frog	Resident	Secure
Bird	<i>Lophocroca leadbeateri</i>	Major Mitchell's Cockatoo	Transient	Vulnerable
Fish	<i>Macquaria colonorum</i>	Estuary Perch	Transient	Secure
Bird	<i>Macronectes giganteus</i>	Southern Giant-Petrel	Transient	Vulnerable

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Mammal	<i>Macropus giganteus</i>	Eastern Grey Kangaroo	Resident	Vulnerable
Bird	<i>Malacorhynchus membranaceus</i>	Pink-eared Duck	Transient	Secure
Bird	<i>Malurus cyaneus</i>	Superb Fairy-wren	Resident	Secure
Bird	<i>Manorina melanocephala</i>	Noisy Miner	Resident	Secure
Bird	<i>Manorina melanophrys</i>	Bell Miner	Resident	Extinct (recorded)
Bird	<i>Megalurus gramineus</i>	Little Grassbird	Resident	Data Deficient
Bird	<i>Melanodryas cucullata cucullata</i>	Hooded Robin	Resident	Extinct (recorded)
Bird	<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	Resident	Extinct (recorded)
Bird	<i>Melithreptus lunatus</i>	White-naped Honeyeater	Resident	Vulnerable
Bird	<i>Melopsittacus undulatus</i>	Budgerigar	Transient	Secure
Fish	<i>Meuschenia freycineti</i>	Silver Dory	Transient	Secure
Bird	<i>Microcarbo melanoleucos</i>	Little Pied Cormorant	Resident	Secure
Bird	<i>Microeca fascinans</i>	Jacky Winter	Resident	Critically Endangered
Bird	<i>Milvus migrans</i>	Black Kite	Transient	Secure
Bird	<i>Mirafra javanica</i>	Horsfield's Bushlark	Transient	Secure
Mammal	<i>Mirounga leonina</i>	Southern Elephant Seal	Transient	Secure
Bird	<i>Monarcha melanopsis</i>	Black-faced Monarch	Transient	Secure
Fish	<i>Mordacia mordax</i>	Southern Shortfin Eel	Transient	Secure
Bird	<i>Morus serrator</i>	Australasian Gannet	Transient	Secure
Bird	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Transient	Secure
Bird	<i>Myiagra rubecula</i>	Leaden flycatcher	Transient	Secure
Bird	<i>Myzomela sanguinolenta</i>	Scarlet Honeyeater	Resident	Secure
Fish	<i>Nannoperca australis</i>	Southern Hulafish	Transient	Secure
Fish	<i>Nannoperca obscura</i>	Yarra Pygmy Perch	Transient	Extinct (presumed)
Frog	<i>Neobatrachus sudellae</i>	Common Spadefoot Toad	Resident	Data Deficient
Bird	<i>Neochmia temporalis</i>	Red-browed Finch	Resident	Near threatened
Fish	<i>Neoodax balteatus</i>	Little Weed Whiting	Transient	Secure
Bird	<i>Neophema chrysogaster</i>	Orange-bellied Parrot	Transient	Critically Endangered
Bird	<i>Neophema chrysostoma</i>	Blue-winged Parrot	Transient	Secure
Bird	<i>Neophema pulchella</i>	Turquoise Parrot	Transient	Extinct (presumed)
Bird	<i>Nesoptilotis leucotis</i>	White-eared Honeyeater	Resident	Endangered
Bird	<i>Ninox novaeseelandiae</i>	Southern Boobook	Resident	Vulnerable
Bird	<i>Ninox strenua</i>	Powerful Owl	Resident	Critically Endangered
Reptile	<i>Notechis scutatus</i>	Tiger Snake	Resident	Endangered
Fish	<i>Notorynchus cepedianus</i>	Broadnose Sevengill Shark	Transient	Secure
Bird	<i>Numenius madagascariensis</i>	Eastern Curlew	Transient	Vulnerable
Bird	<i>Numenius phaeopus</i>	Whimbrel	Transient	Vulnerable
Bird	<i>Nycticorax caledonicus</i>	Nankeen Night Heron	Transient	Near threatened

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Mammal	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	Resident	Secure
Bird	<i>Nymphicus hollandicus</i>	Cockatiel	Transient	Secure
Bird	<i>Ocyphaps lophotes</i>	Crested Pigeon	Resident	Secure
Bird	<i>Onychoprion anaethetus</i>	Bridled Tern	Transient	Secure
Fish	<i>Ophisurus serpens</i>	Serpent Eel	Transient	Secure
Bird	<i>Oriolus sagittatus</i>	Olive-backed Oriole	Transient	Secure
Bird	<i>Oxyura australis</i>	Blue-billed Duck	Resident	Near Threatened
Bird	<i>Pachycephala pectoralis</i>	Golden Whistler	Transient	Secure
Bird	<i>Pachycephala rufiventris</i>	Rufous Whistler	Transient	Secure
Bird	<i>Pachyptila belcheri</i>	Slender-billed Prion	Transient	Secure
Bird	<i>Pachyptila desolata</i>	Antarctic Prion	Transient	Secure
Bird	<i>Pachyptila turtur</i>	Fairy Prion	Transient	Vulnerable
Fish	<i>Parablennius tasmanianus</i>	Tasmanian Blenny	Transient	Secure
Reptile	<i>Parasuta flagellum</i>	Little Whip Snake	Resident	Extinct (recorded)
Bird	<i>Pardalotus punctatus punctatus</i>	Spotted Pardalote	Resident	Secure
Bird	<i>Pardalotus striatus</i>	Striated Pardalote	Resident	Secure
Bird	<i>Parvipsitta pusilla</i>	Little lorikeet	Transient	Secure
Fish	<i>Pegasus lancifer</i>	Sculptured Sea Moth	Transient	Secure
Bird	<i>Pelagodroma marina</i>	White-faced Storm-Petrel	Transient	Vulnerable
Bird	<i>Pelecanoides urinatrix</i>	Common Diving-Petrel	Transient	Near threatened
Bird	<i>Pelecanus conspicillatus</i>	Australian Pelican	Transient	Secure
Mammal	<i>Petaurus breviceps</i>	Sugar Glider	Resident	Critically Endangered
Bird	<i>Petrochelidon ariel</i>	Fairy Martin	Transient	Secure
Bird	<i>Petrochelidon nigricans</i>	Tree Martin	Transient	Secure
Bird	<i>Petroica boodang</i>	Scarlet Robin	Resident	Vulnerable
Bird	<i>Petroica phoenicea</i>	Flame Robin	Transient	Secure
Bird	<i>Petroica rosea</i>	Rose Robin	Transient	Secure
Bird	<i>Pezoporus wallicus</i>	Ground Parrot	Resident	Extinct (recorded)
Bird	<i>Phalacrocorax carbo</i>	Great Cormorant	Resident	Secure
Bird	<i>Phalacrocorax fuscescens</i>	Black-faced Cormorant	Transient	Vulnerable
Bird	<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant	Resident	Secure
Bird	<i>Phalacrocorax varius</i>	Pied Cormorant	Resident	Near threatened
Bird	<i>Phaps chalcoptera</i>	Common Bronzewing	Resident	Vulnerable
Bird	<i>Phaps elegans</i>	Brush Bronzewing	Resident	Critically Endangered
Mammal	<i>Phascolarctos cinereus</i>	Koala	Resident	Extinct (recorded)
Bird	<i>Philemon corniculatus</i>	Noisy Friarbird	Transient	Secure
Bird	<i>Philomachus pugnax</i>	Ruff	Transient	Secure
Fish	<i>Philypnodon grandiceps</i>	Flathead Sandfish	Transient	Secure

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Phylidonyris melanops</i>	Tawny-crowned Honeyeater	Transient	Secure
Bird	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	Resident	Near threatened
Bird	<i>Phylidonyris pyrrhoptera</i>	Crescent Honeyeater	Transient	Secure
Bird	<i>Platalea flavipes</i>	Yellow-billed Spoonbill	Transient	Secure
Bird	<i>Platalea regia</i>	Royal Spoonbill	Resident	Near threatened
Fish	<i>Platycephalus bassensis</i>	Southern Pygmy Perch	Transient	Extinct (presumed)
Fish	<i>Platycephalus speculator</i>	Soldierfish	Transient	Secure
Bird	<i>Platycercus elegans</i>	Crimson Rosella	Resident	Vulnerable
Bird	<i>Platycercus eximius</i>	Eastern Rosella	Resident	Near threatened
Bird	<i>Plegadis falcinellus</i>	Glossy Ibis	Transient	Near threatened
Bird	<i>Pluvialis fulva</i>	Pacific Golden Plover	Transient	Vulnerable
Bird	<i>Pluvialis squatarola</i>	Grey Plover	Transient	Endangered
Bird	<i>Podargus strigoides</i>	Tawny Frogmouth	Resident	Vulnerable
Bird	<i>Podiceps cristatus</i>	Great Crested Grebe	Transient	Secure
Bird	<i>Poliocephalus poliocephalus</i>	Hoary-headed Grebe	Transient	Secure
Bird	<i>Pomatostomus temporalis</i>	Grey-crowned Babbler	Resident	Extinct (recorded)
Bird	<i>Poodytes gramineus</i>	Little Grassbird	Resident	Secure
Bird	<i>Porphyrio melanotus</i>	Australasian Swamphen	Resident	Secure
Bird	<i>Porphyrio porphyrio</i>	Purple Swamphen	Resident	Secure
Bird	<i>Porzana fluminea</i>	Australian Spotted Crake	Resident	Near Threatened
Bird	<i>Porzana pusilla palustris</i>	Baillon's Crake	Transient	Vulnerable
Bird	<i>Porzana tabuensis</i>	Spotless Crake	Transient	Secure
Mammal	<i>Potorous tridactylus</i>	Long-nosed Potoroo	Resident	Extinct (presumed)
Fish	<i>Prototroctes maraena</i>	Australian Grayling	Transient	Extinct (presumed)
Bird	<i>Psephotus haematonotus</i>	Red-rumped Parrot	Resident	Secure
Fish	<i>Pseudaphritis urvillii</i>	Congolli	Transient	Secure
Reptile	<i>Pseudemoia entrecasteauxii</i>	Southern Grass Skink	Resident	Data Deficient
Mammal	<i>Pseudocheirus peregrinus</i>	Eastern Ringtail Possum	Resident	Secure
Fish	<i>Pseudogobius olorum</i>	Bluespot Goby	Transient	Secure
Reptile	<i>Pseudonaja textilis</i>	Eastern Brown Snake	Resident	Critically Endangered
Frog	<i>Pseudophryne semimarmorata</i>	Southern Toadlet	Resident	Critically Endangered
Bird	<i>Psophodes olivaceus</i>	Eastern Whipbird	Resident	Extinct (recorded)
Mammal	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Transient	Vulnerable
Bird	<i>Ptilonorhynchus violaceus</i>	Satin Bowerbird	Resident	Extinct (presumed)
Bird	<i>Ptilotula penicillata</i>	White plummed honeyeater	Resident	Secure
Bird	<i>Puffinus gavia</i>	Fluttering Shearwater	Transient	Secure
Bird	<i>Puffinus tenuirostris</i>	Short-tailed Shearwater	Transient	Secure
Mammal	<i>Rattus lutreolus</i>	Swamp Rat	Resident	Data Deficient

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Recurvirostra novaehollandiae</i>	Red-necked Avocet	Transient	Secure
Fish	<i>Redigobius macrostoma</i>	Largemouth Goby	Transient	Secure
Bird	<i>Rhipidura albiscapa</i>	Grey Fantail	Resident	Secure
Bird	<i>Rhipidura leucophrys</i>	Willie Wagtail	Resident	Secure
Bird	<i>Rhipidura rufifrons</i>	Rufous Fantail	Transient	Secure
Fish	<i>Rhombosolea tapirina</i>	Greenback Flounder	Transient	Secure
Bird	<i>Rostratula australis</i>	Australian Painted Snipe	Transient	Critically Endangered
Reptile	<i>Saproscincus mustelinus</i>	Weasel Skink	Resident	Secure
Mammal	<i>Scotorepens orion</i>	Eastern Broad-nosed Bat	Resident	Data Deficient
Bird	<i>Sericornis frontalis</i>	White-browed Scrubwren	Resident	Secure
Fish	<i>Sillaginodes punctatus</i>	King George Whiting	Transient	Secure
Fish	<i>Siphamia cephalotes</i>	Wood's Siphonfish	Transient	Secure
Bird	<i>Spatula rhynchotis</i>	Australian Shoveler	Transient	Secure
Fish	<i>Spratelloides robustus</i>	Blue Sprat	Transient	Secure
Fish	<i>Squatina australis</i>	Australian Angleshark	Transient	Secure
Bird	<i>Stagonopleura bella</i>	Beautiful Firetail	Resident	Extinct (presumed)
Bird	<i>Stagonopleura guttata</i>	Diamond Firetail	Resident	Extinct (recorded)
Bird	<i>Stercorarius skua</i>	Great Skua	Transient	Secure
Bird	<i>Sterna hirundo</i>	Common Tern	Transient	Secure
Bird	<i>Sterna paradisaea</i>	Arctic Tern	Transient	Secure
Bird	<i>Sterna striata</i>	White-fronted Tern	Transient	Near threatened
Bird	<i>Stictonetta naevosa</i>	Freckled Duck	Transient	Endangered
Fish	<i>Stigmatopora nigra</i>	Widebody Pipefish	Transient	Secure
Bird	<i>Strepera graculina</i>	Pied Currawong	Transient	Secure
Bird	<i>Strepera versicolor</i>	Grey Currawong	Resident	Endangered
Bird	<i>Sugamel niger</i>	Black Honeyeater	Transient	Secure
Bird	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	Resident	Secure
Mammal	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	Resident	Critically Endangered
Mammal	<i>Tadarida australis</i>	White-striped Freetail Bat	Resident	Secure
Bird	<i>Tadorna tadornoides</i>	Australian Shelduck	Resident	Secure
Bird	<i>Taeniopygia guttata</i>	Zebra Finch	Transient	Secure
Fish	<i>Taratretis derwentensis</i>	Derwent Flounder	Transient	Secure
Fish	<i>Tetractenos glaber</i>	Smallscale Hardyhead	Transient	Secure
Fish	<i>Tetractenos hamiltoni</i>	Common Toadfish	Transient	Secure
Bird	<i>Thalassarche cauta</i>	Shy Albatross	Transient	Vulnerable
Bird	<i>Thalassarche melanophris</i>	Black-browed Albatross	Transient	Vulnerable
Bird	<i>Thalasseus bergii</i>	Crested Tern	Transient	Secure
Bird	<i>Threskiornis molucca</i>	Australian White Ibis	Resident	Secure

Life Form	Scientific name	Common name	Resident/ transient status	Kingston status 2024
Bird	<i>Threskiornis spinicollis</i>	Straw-necked Ibis	Resident	Secure
Mammal	<i>Thylogale billardierii</i>	Rufous-bellied Pademelon	Resident	Extinct (presumed)
Reptile	<i>Tiliqua nigrolutea</i>	Blotched Blue-tongued Lizard	Resident	Vulnerable
Reptile	<i>Tiliqua scincoides</i>	Common Blue-tongued Lizard	Resident	Endangered
Fish	<i>Tilodon sexfasciatus</i>	Mountain Galaxias	Transient	Extinct (presumed)
Bird	<i>Todiramphus pyrropygia</i>	Red-backed Kingfisher	Transient	Near threatened
Bird	<i>Todiramphus sanctus</i>	Sacred Kingfisher	Transient	Secure
Fish	<i>Trachinops caudimaculatus</i>	Southern Crested Weedfish	Transient	Secure
Bird	<i>Tribonyx ventralis</i>	Black-tailed Native-hen	Transient	Secure
Bird	<i>Trichoglossus molucannus</i>	Rainbow Lorikeet	Resident	Secure
Mammal	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	Resident	Secure
Bird	<i>Tringa glareola</i>	Wood Sandpiper	Transient	Vulnerable
Bird	<i>Tringa nebularia</i>	Common Greenshank	Transient	Vulnerable
Bird	<i>Tringa stagnatilis</i>	Marsh Sandpiper	Transient	Vulnerable
Bird	<i>Turnix pyrrhotorax</i>	Red-chested Button-quail	Transient	Data Deficient
Bird	<i>Turnix varius</i>	Painted Button-quail	Resident	Critically Endangered
Bird	<i>Turnix velox</i>	Little Button-quail	Transient	Extinct (recorded)
Mammal	<i>Tursiops australis</i>	Burrnan Dolphin	Transient	Endangered
Mammal	<i>Tursiops truncatus</i>	Bottlenose Dolphin	Transient	Secure
Bird	<i>Tyto javanica</i>	Barn Owl	Transient	Secure
Bird	<i>Tyto javanica</i>	Pacific Barn Owl	Transient	Secure
Fish	<i>Urolophus piperatus</i>	Coral Sea Stingaree	Transient	Secure
Bird	<i>Vanellus miles</i>	Masked Lapwing	Resident	Secure
Bird	<i>Vanellus tricolor</i>	Banded Lapwing	Resident	Critically Endangered
Reptile	<i>Varanus varius</i>	Lace Monitor	Resident	Extinct (presumed)
Fish	<i>Venerupis galactites</i>	Moonlighter	Transient	Secure
Mammal	<i>Vespadelus darlingtoni</i>	Large Forest Bat	Resident	Secure
Mammal	<i>Vespadelus regulus</i>	Southern Forest Bat	Resident	Secure
Mammal	<i>Vespadelus vulturnus</i>	Little Forest Bat	Resident	Secure
Fish	<i>Vincentia conspersa</i>	Southern Blue-spotted Goby	Transient	Secure
Mammal	<i>Vombatus ursinus</i>	Common Wombat	Resident	Extinct (presumed)
Mammal	<i>Wallabia bicolor</i>	Black Wallaby	Resident	Extinct (presumed)
Bird	<i>Xenus cinereus</i>	Terek Sandpiper	Transient	Endangered
Bird	<i>Zoothera lunulata</i>	Bassian Thrush	Resident	Extinct (recorded)
Bird	<i>Zosterops laterali</i>	Silvereye	Resident	Secure

C. Appendix C - Kingston Planning Scheme – biodiversity and ecology summary

PURPOSE AND VISION

02.02 Land Use Vision

Environment and landscape values:

- Areas of ecological significance and the biodiversity they support are protected and restored.
- The competing demands on Kingston’s foreshore are effectively addressed.
- Areas of landscape value are protected and enhanced.

02.03-1 Strategic Directions

Urban areas:

- Manage urban development to minimise the impact on rivers, wetlands, reserves and foreshore.

Green wedge:

It is important that land use outcomes in the green wedge are not driven by short term economic expediency but seek to achieve sustainable use and development outcomes. The ‘hard’ edge between the urban and non-urban areas is important for the management of development pressures at the urban/green wedge interface.

- Improve the region’s environmental values (including flood storage, water quality and flora/fauna habitats).
- Manage the edge of urban areas to protect the green wedge and ensure that the green wedge area is both stable and enduring.
- Protect and improve the rural landscape character of the green wedge particularly along main roads.

02.03-2 Environmental and Landscape Values

Biodiversity:

- Enhance the quality and ecological value of Kingston’s natural environments.
- Maintain and enhance the tree canopy within existing urban areas.
- Identify and protect trees and vegetation corridors of significance.
- Encourage native planting to protect and improve rural landscape character, particularly along main roads in the green wedge areas.

Coastal areas:

Managing the ... foreshore requires a balance to be struck between managing sensitive coastal ecosystems, while providing for broader community access.

Significant environments and landscapes:

- Protect the physical and habitat diversity of the Edithvale-Seafood wetlands.

02.03-4 Natural resource management

Water:

- Integrate the water quality treatment functions, habitat and recreation importance of waterways and floodplains.

10 PLANNING POLICY FRAMEWORK

11 Settlement

Planning is to anticipate and respond to the needs of existing and future communities through provision of zoned and serviced land for housing, employment, recreation and open space, commercial and community facilities and infrastructure.

- Protecting, conserving and improving biodiversity, waterways and other natural resources.

11.01 Victoria

11.01-1R Green Wedge – Metropolitan Melbourne

- Promote and encourage the key features and related values of each green wedge area.
- Support development in the green wedge that provides for environmental, economic and social benefits.
- Consolidate new residential development in existing settlements and in locations where planned services are available and green wedge values are protected.
- Protect areas of environmental, landscape and scenic value such as biodiversity assets, national and state parks, Ramsar wetlands and coastal areas.

11.02 Managing Growth

11.02-1S Supply of Urban Land:

- The limits of land capability and natural hazards and environmental quality.

11.02-2S Structure planning:

- Address the strategic and physical context of the location, including increased physical risks associated with climate change.
- Protect and enhance areas of natural and cultural significance.
- Incorporate integrated water management and urban greening.

11.03-2S Growth Areas

Protect and manage natural resources and areas of heritage, cultural and environmental significance.

- Identify the boundaries of individual communities, landscape values and, as appropriate, the need for discrete urban breaks and how land uses in these breaks will be managed.
- Respond to climate change and increase environmental sustainability.

11.03-3S Peri-urban areas

Identify and protect areas that are strategically important for the environment, biodiversity, landscape.

Provide for development in established settlements that have capacity for growth having regard to complex ecosystems, landscapes.

11.03-4S Coastal Settlement

Identify a clear settlement boundary around coastal settlements to ensure that growth in coastal areas is planned and coastal values are protected.

Limit development in identified coastal hazard areas, on ridgelines, primary coastal dune systems, shorelines of estuaries, wetlands and low-lying coastal areas, or where coastal processes may be detrimentally impacted.

11.03-5S Distinctive Areas and Landscapes

Recognise the importance of distinctive areas and landscapes to the people of Victoria and protect and enhance the valued attributes of identified or declared distinctive areas and landscapes.

Enhance conservation of the environment, including the unique habitats, ecosystems and biodiversity of these areas.

Support use and development where it enhances the valued characteristics of these areas.

Avoid use and development that could undermine the long-term natural or non-urban use of land in these areas.

12 Environmental and Landscape values:

Planning should help to protect the health of ecological systems and the biodiversity they support (including ecosystems, habitats, species and genetic diversity) and conserve areas with identified environmental and landscape values.

Planning must implement environmental principles for ecologically sustainable development that have been established by international and national agreements. Foremost amongst the national agreements is the Intergovernmental Agreement on the Environment, which sets out key principles for environmental policy in Australia. Other agreements include the National Strategy for Ecologically Sustainable Development, National Greenhouse Strategy, the National Water Quality Management Strategy, Australia's Strategy for Nature 2019-2030, the National Forest Policy Statement and National Environment Protection Measures.

Planning should protect, restore and enhance sites and features of nature conservation, biodiversity, geological or landscape value.

12.01 Biodiversity

12.01-1S Biodiversity

Objective:

To protect and enhance Victoria's biodiversity.

Strategies:

Use biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites.

Strategically plan for the protection and conservation of Victoria's important areas of biodiversity.

Ensure that decision making takes into account the impacts of land use and development on Victoria's biodiversity, including consideration of:

- Cumulative impacts.
- Fragmentation of habitat.
- The spread of pest plants, animals and pathogens into natural ecosystems.

Avoid impacts of land use and development on important areas of biodiversity.

Consider impacts of any change in land use or development that may affect the biodiversity value of national parks and conservation reserves or nationally and internationally significant sites; including wetlands and wetland wildlife habitat designated under the Convention on Wetlands of International Importance (the Ramsar Convention) and sites utilised by species listed under the Japan-Australia Migratory Birds Agreement (JAMBA), the China-Australia Migratory Birds Agreement (CAMBA), or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Assist in the identification, protection and management of important areas of biodiversity.

Assist in the establishment, protection and re-establishment of links between important areas of biodiversity, including through a network of green spaces and large-scale native vegetation corridor projects.

Support land use and development that contributes to protecting and enhancing habitat for indigenous plants and animals in urban areas.

Policy guidelines:

Consider as relevant:

- State biodiversity information maintained by the Department of Energy, Environment and Climate Action.

Policy documents:

- Any applicable biodiversity strategies, including the relevant Regional Catchment Strategy (prepared under Part 4 of the Catchment and Land Protection Act 1994)
- Biodiversity Conservation Strategy for Melbourne's Growth Corridors (Department of Environment and Primary Industries, 2013)
- Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017)
- Protecting Victoria's Environment – Biodiversity 2037 (Department of Environment, Land, Water and Planning, 2017)
- Victorian Waterway Management Strategy (Department of Environment and Primary Industries, 2013)

12.01-1L Protection of Biodiversity – Kingston

Strategies:

- Retain and replant native trees and vegetation cover where possible.
- Promote opportunities for reinstating and enhancing local biodiversity

Policy guidelines:

- Protecting the extent or integrity of significant indigenous vegetation.
- Providing for the reinstatement of native vegetation and/or the creation of habitat corridors where appropriate.

12.01-2S Native vegetation management

Objective:

To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.

Strategies:

Ensure decisions that involve, or will lead to, the removal, destruction or lopping of native vegetation, apply the three-step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017):

- Avoid the removal, destruction or lopping of native vegetation.
- Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
- Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.

Policy guidelines:

Consider as relevant:

- State biodiversity information maintained by the Department of Energy, Environment and Climate Action.

Policy documents:

Consider as relevant:

- Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017)
- Assessor’s handbook – applications to remove, destroy or lop native vegetation (Department of Environment, Land, Water and Planning, 2017)

12.01-2L Native Vegetation Management – Kingston

- Encourage the use of indigenous plant species in all landscaping through the green wedge area.
- Retain existing native vegetation wherever possible.

12.02 Marine and Coastal Environment

12.02-1S Protection of the Marine and Coastal Environment

Objective:

To protect and enhance the marine and coastal environment.

Strategies:

- Enhance the ecological values of the ecosystems in the marine and coastal environment.
- Encourage revegetation of cleared land abutting coastal reserves.
- Minimise direct, cumulative and synergistic effects on ecosystems and habitats.
- Maintain the natural drainage patterns, water quality and biodiversity in and adjacent to coastal estuaries, wetlands and waterways.
- Maintain and enhance water and soil quality by minimising disturbance of sediments.
- Protect and enhance natural features, landscapes, seascapes and public visual corridors.

12.02-1L Protection of Coastal Areas – Kingston Foreshore

- To retain the high value of Kingston’s coastal environment and optimise community enjoyment of the foreshore.
- To protect and restore the integrity of natural ecosystems, coastal processes and the scenic landscape of the coastal environment where possible.
- Protection of remnant indigenous vegetation.
- Facilitation of natural regeneration of indigenous vegetation.
- Revegetation using indigenous species.
- Discourage land use and development (including paths) within or enabling access to the foreshore with the aim of protecting, maintaining and enhancing the natural features of the area.
- Promote innovation in landscape and urban design for development within the foreshore environs.

12.03 Water Bodies and Wetlands

- Conserve waterway systems and the landscapes and environmental values surrounding them by protecting ecological values, indigenous vegetation, terrestrial and aquatic habitats and encouraging biodiversity.
- Sensitively design and site development to maintain and enhance the waterway system and the surrounding landscape setting, environmental assets, and ecological and hydrological systems.
- Address the impacts of use and development on drought and flooding events at a catchment and site scale to protect the health and natural function of waterway systems and their surrounding landscape and environment.
- Retaining and re-establishing vegetation, including grasslands and canopy trees, surrounding waterway systems to enhance and connect to the landscape setting, ensuring it responds to the bushfire risk of a location.

- Minimising the visual intrusion of development on the natural landscape views from major roads, bridge crossings, public open space, recreation trails and within waterway systems themselves.
- Avoiding impeding the natural flow of waterways and future flood events.

12.05 Significant Environments and Landscapes

12.05-2S Landscapes

- Improve the landscape qualities, open space linkages and environmental performance in significant landscapes and open spaces, including green wedges, conservation areas and non-urban areas.
- Recognise the natural landscape for its aesthetic value and as a fully functioning system.
- Ensure important natural features are protected and enhanced.

13.04-3S Salinity

- Promote vegetation retention and replanting in aquifer recharge areas contributing to groundwater salinity problems.
- Prevent inappropriate development in areas affected by groundwater salinity.

15 built environment and heritage

- Is adapted and resilient to climate related hazards.
- Supports the transition to net zero greenhouse gas emissions.
- Protects and enhances natural values.
- Minimises off-site detrimental impacts on people and the environment.

15.01-1L-01 Urban Design – Kingston

- Retain trees that have been identified as significant in the development of new industrial estates and the redevelopment of older industrial areas.

15.01-2L Environmentally sustainable development

This policy applies to residential and non-residential development, excluding subdivision, in accordance with the thresholds detailed in this policy.

Urban Ecology

Protect and enhance biodiversity by incorporating natural habitats and planting indigenous vegetation.

Reduce urban heat island effects through building design, landscape design, water sensitive urban design and the retention and provision of canopy and significant trees.

Encourage the provision of space for productive gardens, particularly in larger residential developments.

15.01-3S – Subdivision design

- Protecting and enhancing habitat for native flora and fauna, and providing opportunities for people to experience nature in urban areas.

15.01-5L - 01 Neighbourhood Character – Kingston

- Maintain landscaping and trees as a major character element of residential areas.
- Encourage the retention of existing semi-mature and mature canopy trees.
- Encouraging the planting of at least one semi-mature canopy trees with spreading crowns in front setbacks and open space areas.

15.01-5L - 02 Landscape Character – Kingston

- Protect trees that have been identified as significant in the City of Kingston Register of Significant Trees (City of Kingston, June 2015).
- Ensure that buildings and works do not adversely affect the health, appearance, stability and values of significant trees.

30 ZONES

35 Rural Zones

35.04 Green Wedge Zone

Purpose

- To recognise, protect and conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources.
- To protect and enhance the biodiversity of the area.

35.04-5 Buildings and works

A permit is required to construct or carry out any of the following:

- Permanent or fixed feeding infrastructure for season or supplementary feeding for grazing animal production constructed within 100 metres of:
 - A waterway, wetland or designated flood plain.

35.04-6 Decisions guidelines

Before deciding on an application to use or subdivide land, lease or license a portion of a lot for a period of more than 10 years if the portion is to be leased or licensed for the purpose of Accommodation, construct a building or construct or carry out works, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

Environmental Issues

- The impact of the use or development on the flora and fauna on the site and its surrounds.
- The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.
- The location of on site effluent disposal areas to minimise impact of nutrient loads on waterways and native vegetation.

35.05 Green Wedge A Zone

Purpose

- To protect, conserve and enhance the biodiversity, natural resources, scenic landscapes and heritage values of the area.

Environmental Issues

- The impact of the use or development on the flora and fauna on the site and its surrounds.
- An assessment of the likely environmental impact on the natural physical features and resources of the area and in particular any impact caused by the proposal on soil and water quality and by the emission of effluent, noise, dust and odours.

- The need to protect and enhance the biodiversity of the area, including the retention of vegetation and fauna habitat and the revegetation of land including riparian buffers along waterways, gullies, ridge lines, property boundaries and saline recharge and discharge areas.
- The location of onsite effluent disposal areas to minimise impact of nutrient loads on waterways and native vegetation.

36 Public Use Zone

36.02 Public Park and Recreation Zone

Purpose

- To recognise areas for public recreation and open space.
- To protect and conserve areas of significance where appropriate.

36.03 Public Conservation and Resource Zone

Purpose

- To protect and conserve the natural environment and natural processes for their historic, scientific, landscape, habitat or cultural values.
- To provide facilities which assist in public education and interpretation of the natural environment with minimal degradation of the natural environment or natural processes.

40 OVERLAYS

42 Environmental and Landscape Overlays

42.01 Environmental Significance Overlay

Purpose

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To identify areas where the development of land may be affected by environmental constraints.
- To ensure that development is compatible with identified environmental values.

42.01-1 Environmental significance and objectives

A schedule to this overlay must contain:

- A statement of environmental significance.
- The environmental objectives to be achieved.

42.01-2 Permit requirement

A permit is required to:

- Remove, destroy or lop any vegetation, including dead vegetation. This does not apply:
 - To the removal, destruction or lopping of native vegetation in accordance with a native vegetation precinct plan specified in the schedule to Clause 52.16.

42.01-5 Decision guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

- The statement of environmental significance and the environmental objective contained in a schedule to this overlay.

- The need to remove, destroy or lop vegetation to create a defensible space to reduce the risk of bushfire to life and property.
- Any other matters specified in a schedule to this overlay.

Schedule 1 to Clause 42.01 Environmental Significance Overlay: Edithvale Seaford Wetlands

1.0 Statement of environmental significance

The Edithvale-Seaford wetlands are a remnant of the once extensive Carrum Carrum Wetlands, which historically stretched from Mordialloc in the north to Frankston in the south. These freshwater and brackish wetlands are of environmental significance:

- As a remnant of a formerly extensive wetland type.
- For the total number of bird species they support.
- For the types of bird species they support.
- As an area of cultural significance.

The wetlands have also come under consideration for inclusion on the 'RAMSAR' list of internationally significant wetlands. The site has been identified as home to more than 150 bird species including 24 international migratory species. The site is particularly significant for the high numbers of wader birds which migrate annually from their Siberian breeding grounds to Australian wetlands.

The Edithvale site is also part of a large and complex drainage scheme system and operates as both critical flood storage and a retarding basin.

2.0 Environmental objective to be achieved

- To protect the integrity and diversity of the wetland ecosystems.
- To preserve the existing wetlands as a significant habitat for birdlife.
- To protect the important regional function of the wetlands as a complex.
- Drainage scheme system.
- To encourage the restoration of valuable ecological systems.
- To promote conservation awareness and education of the significance of the wetlands for maintenance of water quality, flood control, wildlife conservation and passive recreation.

Schedule 2 to Clause 42.01 Environmental Significance Overlay: Edithvale Seaford Wetlands Buffer Zone

1.0 Statement of environmental significance

The Edithvale-Seaford Wetlands Buffer Zone (comprising Edithvale Common and Chelsea Public Golf Course) has inherent conservation value in supporting locally indigenous vegetation and plays an important role in providing a buffer between the adjacent Edithvale-Seaford Wetlands and existing urban development.

Edithvale Common and Chelsea Golf Course support examples of reed swamp, brackish wetland and saltmarsh. These are locally significant in the context of the City of Kingston, an urban area largely cleared of natural vegetation and habitat.

The buffer zone is immediately adjacent to the Edithvale-Seaford Wetlands. The Edithvale-Seaford Wetlands are remnants of the once extensive Carrum Carrum Swamp. These freshwater and brackish wetlands are of environmental significance:

- As a remnant of a formerly extensive wetland type.
- For the total number of bird species they support.
- For the types of bird species they support.
- As an area of cultural significance.

2.0 Environmental objective to be achieved

- To protect the integrity and diversity of the adjacent wetlands ecosystems.
- To protect the adjacent wetlands as a significant habitat for birdlife.
- To protect the important regional function of the adjacent wetlands as a complex drainage scheme system.
- To enhance the viability of the adjacent wetlands by providing additional habitat where possible.

3.0 Permit Requirement

Schedule 3 to Clause 42.01 Environmental Significance Overlay: Significant Trees

1.0 Statement of environmental significance

The City of Kingston Register of Significant Trees (May 2007) identifies exotic, native and indigenous trees on private and public land that have special significance. The trees have been identified because of their horticultural value, location or context, are rare or have a localised distribution, particularly old, of an outstanding size, provide aesthetic value or are of curious growth form, are outstanding examples of their species or are of cultural or historical significance. Some of these trees are also included on the National Trust of Australia (Victoria) Register of Significant Trees.

2.0 Environmental objective to be achieved

- To protect and enhance trees that have been identified as being significant.
- To minimise the adverse effects of development and works on the condition and health of trees that have been identified as being significant.
- To preserve the values of trees as identified in the City of Kingston Register of Significant Trees (May 2007).

5.0 Decision guidelines

The following decision guidelines apply to an application for a permit under Clause 42.01, in addition to those specified in Clause 42.01 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- The impact of the proposal on the significance of the tree as identified in the City of Kingston Register of Significant Trees (May 2007).
- The impact of the proposal on the health, appearance and stability of the tree.
- Any relevant report from a qualified arborist.
- Any report that identifies, describes, or deals with the tree including the City of Kingston Register of Significant Trees (May 2007) and the National Trust of Australia (Victoria) Significant Tree Register.
- The reason for removing the tree and whether alternatives to the removal of the tree including the redesign or relocation of buildings and works is possible.
- The benefits of requiring a long-term maintenance program for the tree and especially if it is subject to continuing works over a period within its vicinity.
- The desirability of requiring fencing or any other protective barrier and the management of the Tree Protection Radius/Zone.

Schedule 5 to Clause 42.01 Environmental Significance Overlay: 19 Tarella Road, Chelsea

1.0 Statement of environmental significance

19 Tarella Road, Chelsea contains rare native coastal vegetation on the inland part of the Kingston coastal sand belt. A significant amount of vegetation is found within the site including individual trees and communities of native trees, shrubs and plants. Removal of vegetation may affect the ecological and biodiversity value of the land. The rare vegetation species that are threatened within the site and the City of Kingston are:

- Coastal Dune Scrub (vulnerable)

- Coast Banksia Woodland (endangered)
- Common Correa *Correa reflexa* (vulnerable)
- Sieber Crassula *Crassula sieberiana* (rare)
- Bundled Guinea-flower *Hibbertia fasciculata* (rare)
- New Zealand Spinach *Tetragonia tetragonioides* (endangered).

Showy Bossiaea *Bossiaea cinerea* is prevalent on the site and is rare in the Chelsea area.

The understorey is a mixture of coastal and inland species, with coastal elements including Seaberry Saltbush *Rhagodia candolleana* and New Zealand Spinach *Tetragonia tetragonioides* and inland elements including Showy Bossiaea *Bossiaea cinerea* and Bundled Guinea-flower *Hibbertia fasciculata*.

2.0 Environmental objective to be achieved

To protect indigenous and native vegetation that contributes to the ecological and biodiversity value of the land.

5.0 Decision guidelines

The following decision guidelines apply to an application for a permit under Clause 42.01, in addition to those specified in Clause 42.01 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- The conservation significance of any vegetation to be removed.
- The results of any arborist report, flora and fauna survey and assessment of the ecological values of the land.
- Whether any replacement planting is proposed to address the loss of vegetation having regard to the conservation significance of the vegetation, including local and regionally significant vegetation.
- The benefits of requiring an ongoing vegetation management plan for the site.
- The effect of the proposed removal of vegetation on the habitat value and long-term viability of remnant and revegetated areas.
- The environmental significance of the site, including significance of plant communities or significance of plant and animal species supported.
- The reasons for removing the vegetation and the practicality of alternative options which do not require or minimise the removal of the indigenous and native vegetation.

42.02 Vegetation Protection Overlay

Purpose:

- To protect areas of significant vegetation.
- To ensure that development minimises loss of vegetation.
- To preserve existing trees and other vegetation.
- To recognise vegetation protection areas as locations of special significance, natural beauty, interest and importance.
- To maintain and enhance habitat and habitat corridors for indigenous fauna.
- To encourage the regeneration of native vegetation.

42.02-1 Vegetation significance and objectives

A schedule to this overlay must contain:

- A statement of the nature and significance of the vegetation to be protected.
- The vegetation protection objectives to be achieved.

42.02-5 Decision guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

- The statement of the nature and significance of the vegetation to be protected and the vegetation protection objective contained in a schedule to this overlay.
- The effect of the proposed use, building, works or subdivision on the nature and type of vegetation to be protected.
- The role of native vegetation in conserving flora and fauna.
- The need to retain native or other vegetation if it is rare, supports rare species of flora or fauna or forms part of a wildlife corridor.
- The need to retain vegetation which prevents or limits adverse effects on ground water recharge.
- The need to retain vegetation:
 - Where ground slopes exceed 20 percent.
 - Within 30 metres of a waterway or wetland.
 - On land where the soil or subsoil may become unstable if cleared.
 - On land subject to or which may contribute to soil erosion, slippage or salinisation.
 - In areas where the removal, destruction or lopping of vegetation could adversely affect the integrity or long term preservation of an identified site of scientific, nature conservation or cultural significance.
 - Which is of heritage or cultural significance.
- The need to remove, destroy or lop vegetation to create a defensible space to reduce the risk of bushfire to life and property.
- Any relevant permit to remove, destroy or lop vegetation in accordance with a land management plan or works program.
- Whether the application includes a land management plan or works program.
- Whether provision is made or is to be made to establish and maintain vegetation elsewhere on the land.
- Any other matters specified in a schedule to this overlay.

Schedule 1 to Clause 42.02 Vegetation Protection Overlay: Indigenous Vegetation Protection Area

1.0 Statement of nature and significance of vegetation to be protected

These areas contain significant local examples of scarce indigenous vegetation which make a positive contribution to the locality's former ecology and landscape.

2.0 Vegetation protection objectives to be achieved

- To protect and enhance the remnant vegetation community.
- To promote the regeneration of indigenous vegetation.

Schedule 2 to Clause 42.02 Vegetation Protection Overlay: Aspendale Gardens / Braeside Indigenous Vegetation Protection Area

1.0 Statement of nature and significance of vegetation to be protected

These areas contain significant local examples of river redgum species and other scarce indigenous vegetation which contribute to the strong landscape theme to be protected and enhanced throughout the industrial estates.

2.0 Vegetation protection objectives to be achieved

- To protect and enhance the remnant vegetation community.

- To promote the regeneration of indigenous vegetation.
- The condition and quality of the vegetation.

43 Heritage and Built Form Overlays

43.01 Heritage Overlay

Purpose:

To conserve and enhance heritage places of natural or cultural significance.

To conserve and enhance those elements which contribute to the significance of heritage places.

To ensure that development does not adversely affect the significance of heritage places.

To conserve specified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.

Schedule 1 to Clause 43.02 Design and Development Overlay: Urban Coastal Height Control Area

1.0 Design objectives

- To protect and enhance the foreshore environment of Mentone, Parkdale, Mordialloc, Aspendale and Chelsea and adjacent areas including Port Phillip Bay.
- To ensure that new buildings, works, renovations and extensions are compatible with surrounding buildings and natural features, and sympathetic to the surrounding natural landscape and environment.
- To relate building heights, building bulk and setbacks to adjoining sites so that they are compatible with and enhance the appearance and character of the immediate locality.

Schedule 6 to Clause 43.02 Design and Development Overlay: Kingston Lodge Site

1.0 Design objectives

- To ensure that the development of land is based on ecologically sustainable design principles.
- To employ best practice design techniques for environmental residential living, with particular emphasis on:
 - resource conservation
 - waste management
 - enhancement of landscape values
 - fauna habitat protection and creation generally consistent with maintenance of a high standard of community amenity and having special regard for the proximity of areas set aside for floodplain management, wetland based water treatment and passive recreation.
- To conserve and enhance landscape character supportive of the development and maintenance of indigenous flora and fauna habitats, and consistent with the purposes of each reserve and the amenity of nearby urban residential precincts.

Schedule 6 to Clause 43.02 Design and Development Overlay: Urban Coastal Foreshore Setback Control Area

1.0 Design objectives

- To protect and enhance the visual and aesthetic appearance of the foreshore area.
- To encourage new buildings and works which are sympathetic to the surrounding foreshore environment.

Schedule 2 to Clause 43.03 Incorporated Plan Overlay: Kingston Lodge Concept Plan 2006 and Kingston Lodge Precinct Development Plan 1997

1.0 Purpose

To preserve, and where practicable, enhance the performance of highly valued local and regional assets in the Keysborough Non-Urban Area including:

- Waterbodies, wetlands, watercourses and other areas that contribute to flood-management, water-treatment, wildlife habitat and the health of indigenous plant communities.

Schedule 3 to Clause 43.04 Development Plan Overlay: 20 Levanto Street, Mentone

The development of the land generally in accordance with the Building Envelope Diagram & Tree Retention Plan forming part of this Schedule provides an opportunity for development to occur while identifying the vegetation considered appropriate to retain and providing a positive contribution to the community through the provision of a substantial area of public open space. The development plan will facilitate the development of the land by balancing competing planning objectives so as to ensure an appropriate and environmentally responsive form of development for the land. The development plan will contain requirements which make appropriate arrangements for the retention of native vegetation on the land. The provision of the open space area to be transferred to Council will provide an opportunity for planting in this area to offset the loss of vegetation elsewhere on the land.

50 PARTICULAR PROVISIONS

52.03 Level Crossing Removal Project

52.03-7 Native Vegetation Requirements

- The biodiversity impacts from the removal, destruction or lopping of that native vegetation must be offset in accordance with the Guidelines. The biodiversity impacts from the removal, destruction or lopping of native vegetation to enable a preparatory use or development must be included in the total biodiversity impacts when determining the offset.

52.16 Native Vegetation Precinct Plan

Purpose:

To provide for the protection, management and removal of native vegetation through the use of a native vegetation precinct plan incorporated into this scheme.

To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017) (the Guidelines):

1. Avoid the removal, destruction or lopping of native vegetation.
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.

To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation.

52.16-6 Offset Requirements

If a permit is required to remove, destroy or lop native vegetation, the biodiversity impacts from the removal, destruction or lopping of native vegetation must be offset in accordance with the Guidelines. The conditions on the permit for the removal, destruction or lopping of native vegetation must specify the offset requirement and timing to secure the offset.

52.17 Native Vegetation

Purpose:

To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017) (the Guidelines):

1. Avoid the removal, destruction or lopping of native vegetation.
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.

To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation.

52.30 State Projects

52.30-7 Native Vegetation Requirements

Before the removal, destruction or lopping of native vegetation outside the levy area:

- Information about the native vegetation in accordance with application requirements in Tables 4 and 5 of the Guidelines must be prepared to the satisfaction of the Secretary.
- The biodiversity impacts from the removal, destruction or lopping of that native vegetation must be offset in accordance with the Guidelines.

52.35 Major Road Projects

52.35-8 Native Vegetation Requirements

Before the removal, destruction or lopping of native vegetation outside the levy area (other than to enable a preparatory use or development):

- Information about the native vegetation in accordance with the application requirements 1, 5, 9, 10, and 11 in Tables 4 and 5 of the Guidelines must be prepared to the satisfaction of the Secretary.
- The biodiversity impacts from the removal, destruction or lopping of that native vegetation must be offset in accordance with the Guidelines to the satisfaction of the Secretary. The biodiversity impacts from the removal, destruction or lopping of native vegetation outside the levy area to enable a preparatory use or development must be included in the total biodiversity impacts when determining the offset to the satisfaction of the Secretary.
- Evidence that the required offset has been secured must be provided to the satisfaction of the Secretary.

52.36 Rail Projects

52.36-8 Native Vegetation Requirements

Before the removal, destruction or lopping of native vegetation outside the levy area (other than to enable a preparatory use or development):

- Information about the native vegetation in accordance with application requirements 1, 5, 9, 10, and 11 in Tables 4 and 5 of the Guidelines must be prepared to the satisfaction of the Secretary.
- The biodiversity impacts from the removal, destruction or lopping of that native vegetation must be offset in accordance with the Guidelines to the satisfaction of the Secretary. The biodiversity impacts from the removal, destruction or lopping of native vegetation outside the levy area to enable a preparatory use or development must be included in the total biodiversity impacts when determining the offset to the satisfaction of the Secretary.

- Evidence that the required offset has been secured must be provided to the satisfaction of the Secretary.

58 Apartment Developments

58.03 Site Layout

58.03-5 Landscape Objectives

To preserve existing canopy cover and support the provision of new canopy cover.

To ensure landscaping is climate responsive, supports biodiversity, wellbeing and amenity and reduces urban heat.

59 VicSmart Applications and Requirements

59.06 Remove, Destroy or Lop One Tree

59.06-2 Decision guidelines

In assessing an application the responsible authority must consider as appropriate:


- If the tree is a native tree, its role in conserving flora and fauna and whether the proposal will adversely affect the conservation of flora and fauna of the area.
- Whether provision is made to plant a new tree elsewhere on the land

D. Appendix D – 2023 Surveys of Kingston Parks and Reserves (Includes sensitive species records which have been redacted)

The following field surveys took place across the City of Kingston in November 2023 and were conducted by Karl Just and Dylan Osler (Ecological Perspective). The surveys took a qualitative approach to understanding the key ecological values and threats across the sites. Across these sites, most of which have very little publicly available ecological data.


The surveys represent a starting point for a Kingston wide biodiversity assessment that considers habitat connectivity beyond Kingston managed reserves. Habitat connectivity plays a pivotal role in maintaining and promoting biodiversity through increasing movement of plant and animal species, facilitating gene flow, and increasing population viability. A consideration of the movement of flora and fauna within and beyond the City of Kingston is critical to protecting biodiversity.

D.1.1. Aspendale to Carrum Foreshore

SITE CONTEXT	
SITE NAME	CARRUM TO ASPENDALE TO FORESHORE
Landscape context	<p>Narrow strip of remnant vegetation between houses and shoreline.</p> 
VEGETATION CATEGORIES	
Berm Grassy Shrubland EVC 311	<p>Description Relatively degraded, with a high cover of <i>Gazania</i> spp. There are scattered <i>Atriplex cinerea</i> (Coast Saltbush) and <i>Spinifex sericeus</i> (Hairy Spinifex).</p> <p>*Locally Threatened Flora Kingston-Vulnerable: [REDACTED]</p>
HABITAT VALUES	
Fauna habitat and values	Aspendale Beach provides habitat for some shorebirds, however this is compromised by high visitor activity. The shoreline provides habitat for a small diversity of marine species.
Hollow bearing trees – absent/present	Absent
Habitat connectivity	There is connectivity along the shoreline, however the narrow width of remnants and lack of trees and shrubs limits its suitability for many birds.
Habitat suitability for threatened species	Shy Albatross have been recorded near the Mordialloc Creek outlet. The foreshore supports suitable habitat for other threatened shorebirds; however, this suitability is compromised by high visitor activity (e.g. walkers, swimmers, dogs)


**Note:* Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.

D.1.2. Bradshaw Bushland Reserve

SITE CONTEXT		
Site Name	Bradshaw Bushland Reserve	
Location	White Street, Mordialloc	
Landscape context	<p>Small council reserve that incorporates remnant and planted vegetation. Surrounded by urban development and railway line.</p> 	
VEGETATION CATEGORIES		
Grassy Woodland EVC 175 (and revegetation)	Description	Scattered overstorey of <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> (Coast Manna-gum) with <i>Allocasuarina verticillata</i> (Drooping Sheoak). Areas with intact ground layer that included <i>Austrostipa mollis</i> (Supple Spear-grass), <i>Lepidosperma sieberi</i> (Sandhill Sword-grass) and <i>Dianella brevicaulis</i> (Small-flowered Flax-lily).
	*Locally Threatened Flora	Kingston-Endangered 17 species, Kingston-Rare 9 species, Kingston-Vulnerable 10 species, Kingston-Poorly Known 4 species.
HABITAT VALUES		
Fauna habitat and values	This small area of grassy woodland provides habitat for a variety of woodland birds, reptiles, and insects.	
Hollow bearing trees – absent/present	Several artificial hollows have been installed.	
Habitat connectivity	The reserve is surrounded by residential development and relatively isolated. There is minor connectivity along the adjacent Frankston train line, which supports scattered and linear areas of native vegetation.	
Habitat suitability for threatened species	None recorded.	


*Note: Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.

D.1.3. Braeside Park


SITE CONTEXT		
Site Name	BRAESIDE PARK	
Location	Braeside	
Landscape context	<p>Large core area of open space which incorporates various vegetations types which are both remnant and planted. The descriptions below have split what is a significantly more complex site in both EVC distributions, potential of threatened flora species and general conditions. For the current project, we have combined the vegetation into three broad categories.</p> 	
VEGETATION CATEGORIES		
Aquatic Herbland EVC 653	Description	Large open wetland areas which is largely dominated by <i>Cynogeton procerum</i> (Water Ribbon), although its likely to occur in conjunction with other wetlands EVC
	Locally Threatened Flora	<p>Area not thoroughly assessed and likely to contain several other threatened flora.</p>
Plains Grassy Woodland EVC 55 / Plains Swampy Woodland EVC 651	Description	Majority of the area is highly modified understorey but both mature <i>Eucalyptus camaldulensis</i> (River Red Gum) (including dead stags) present. Small intact remnant still present in the internal area of old racetrack. Some low-lying areas prone to periodic inundation -largely dominated by exotic species but with some cover of <i>Juncus</i> spp.
	Locally Threatened Flora	<p>Highly significant population of Kingston-Endangered and Kingston-Vulnerable. A rapid assessment, a thorough review of both the woodlands and wetlands and the Kingston list is likely to reveal additional listed species.</p>
Damp Sands Herb-rich Woodland EVC 3 / Heathy Woodland EVC 48	Description	Large core areas of intact remnant areas dominated by mature <i>Eucalyptus viminalis</i> ssp. <i>pryoriana</i> with a complex mid storey and relatively intact ground layer. Area not properly assessed during field visit.
	Locally Threatened Flora	Due to the large area and diversity of species present the threatened species haven't been reviewed but is likely to include a range of threatened species within the City of Kingston.
HABITAT VALUES		

Fauna habitat and values	Due to its relatively large size and wide diversity of vegetation types, Braeside Park is one of the most important faunal habitats in The City of Kingston. Key habitats include extensive heathy woodlands in the eastern portion, partly constructed wetlands in the south and large areas of River Red Gum grassy woodland in the central and southern areas. There are also a variety of creeks, drains and seasonally inundated depressions and ponds throughout the site.
Hollow bearing trees – absent/present	Present. Include large River Red Gum stags with extensive hollows in the southern section.
Habitat connectivity	Limited. The north, west and south boundaries are largely surrounded by industrial and residential estates. There is some connectivity via the Southern and Keysborough Golf Courses to the east, Woodlands Industrial Estate to the south-west and wetlands within the Waterways Estate to the south.
Habitat suitability for threatened species	<p>Twenty-three threatened fauna species have been recorded at Braeside Park, including 20 bird, two frog and one mammal species. These are mostly comprised of wetland birds, which have been recorded throughout the Braeside Park Wetlands in the south, as well as around the ponds and seasonally inundated depressions along Dingley Creek (also referred to as the Dingley Drain). Threatened wetland birds that have been recorded include species that prefer dense reedbeds (Australasian Bittern and Australian Little Bittern), fringing mudflats and herbfields (Wood Sandpiper and Eastern Great Egret) and deeper open water (Blue-billed Duck, Freckled Duck and Hardhead). The threatened Grey-headed Flying-fox is likely to occasionally feed on Coast Banksia trees when in flower.</p> <p>Several of the threatened species have not been recorded for over 30 years and are likely to be locally extinct, including Diamond Firetail, Grey-crowned Babbler and Growling Grass-frog. Targeted survey for Southern Toadlet would be of great value, as this species is relatively cryptic and could possibly survive within the site.</p>

D.1.4. Browns Reserve


SITE CONTEXT		
Site Name	BROWNS RESERVE	
Location	Aspendale	
Landscape context	<p>Low lying area between Browns Reserve, Mordialloc Creek and Browns Lane. Some areas with salt scolding/water logging with some native vegetation. Area slashed but otherwise appears to be unmanaged. Very large population of <i>Lampranthus tegens</i> (Little Noon-flower). Scope to improve habitat values while maintaining drainage assets.</p> 	
VEGETATION CATEGORIES		
Brackish Wetland Aggregate EVC 656	Description	Area largely dominated by exotic species but also includes some small patches of [REDACTED]
	Locally Threatened Flora	[REDACTED]
HABITAT VALUES		
Fauna habitat and values	The open brackish flats provide foraging habitat for some birds, however the lack of trees, shrubs and cover excludes many species. There is potential for the site to be improved through creation of wetland complexes, which would provide important habitat for many wetland birds.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	The site abuts Mordialloc Creek, an important habitat corridor. There is therefore relatively intact connectivity, allowing fauna to disperse into the site from larger patches of habitat nearby.	
Habitat suitability for threatened species	The site currently has low suitability for threatened species, however the open herb fields may occasionally be visited by threatened wetland birds such as Eastern Great Egret, and potentially threatened wader species. Creation of shallow wetlands through the site would more greatly improve suitability for threatened wetland birds.	

D.1.5. Dingley Road Reserve (back of Caruana Reserve)

SITE CONTEXT		
Site Name	DINGLEY ROAD RESERVE (BACK OF CARUANA RESERVE)	
Location	Dingley	
Landscape context	<p>Isolated small remnant - locally threatened EVC and species present across the site.</p> 	
VEGETATION CATEGORIES		
Plains Swampy Woodland EVC 55_61	Description	Remnant area of <i>Eucalyptus camaldulensis</i> (River Red Gum) with areas prone to seasonal inundation with intact ground layer.
	Locally Threatened Flora	<p>Range of significant species including –</p> <p>Kingston-Presumed Extinct: [REDACTED]</p> <p>Kingston-Endangered: [REDACTED]</p> <p>Kingston-Rare: [REDACTED]</p> <p>Kingston-Poorly Known: [REDACTED]</p> <p>Kingston-Vulnerable: [REDACTED]</p>
Swamp Scrub EVC 53	Description	Swampy area with a stand of <i>Melaleuca ericifolia</i> (Swamp Paper-bark) between Plains Swampy Woodland and Damp-sands Woodland. High cover of weeds throughout the area, specifically <i>Zantedeschia aethiopica</i> (White Arum-lily)
	Locally Threatened Flora	Kingston-Presumed Extinct: [REDACTED]
Damp-sands Herb-rich Woodland EVC 3	Description	<i>Eucalyptus viminalis</i> ssp. <i>pryoriana</i> (Coast Manna-gum), high cover of shrubby weeds throughout the area.
	Locally Threatened Flora	Rapid assessment didn't allow time for adequate assessment in this area however a range of locally rare species were found:

	<p>Kingston-Endangered: [REDACTED]</p> <p>Kingston-Vulnerable: [REDACTED]</p>
HABITAT VALUES	
Fauna habitat and values	Caruana Reserve supports relatively extensive and diverse faunal habitats. The south-western portion contains remnants of River Red Gum woodland and open herbfields that become seasonally inundated, a habitat type that is now rare within the City of Kingston. These are fringed by relatively dense Swamp Paperbark shrublands, grading into woodland on higher ground.
Hollow bearing trees – absent/present	Present in very low numbers, and only supporting smaller hollows. Most River Red Gum trees are young regrowth.
Habitat connectivity	Limited. There are areas of bushland to the north and east but connectivity is compromised by the Dingley Bypass and Westall Road. There is partial connectivity to small areas of native vegetation to the west.
Habitat suitability for threatened species	Surveys in 2023 recorded Latham’s Snipe and the locally uncommon Buff-banded Rail in seasonally inundated herbfields and locally uncommon Satin Flycatcher in Swamp Paperbark shrubland.

D.1.6. Edithvale Common – Brackish Wetland

SITE CONTEXT		
Site Name	EDITHVALE COMMON - BRACKISH WETLAND	
Location	Edithvale	
Landscape context	<p>Small brackish wetland that sits outside of the larger, adjoining Edithvale Wetland (north).</p> 	
VEGETATION CATEGORIES		
Brackish Wetland EVC 656	Description	Ringed by [REDACTED] and central areas either open water or mudflats. Surrounds are slashed rank grass, with woodland revegetation in the broader surrounding environment.
	*Locally Threatened Flora	Kingston-Vulnerable: [REDACTED]
HABITAT VALUES		
Fauna habitat and values	The wetland provides habitat for wetland birds, insects and frogs. Reducing mowing around a ten-metre buffer surrounding the wetlands would improve habitat values by providing more cover.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	The Edithvale Common Brackish Wetland sits immediately adjacent to Edithvale Wetland North, one of the most significant areas for wetland birds in the Greater Melbourne area. This greatly increases the potential for a high diversity of wetland birds to visit the site.	
Habitat suitability for threatened species	The threatened Common Greenshank and Australasian Shoveler have both been recorded within the wetlands, which also support potential habitat for other threatened wetland birds including Latham's Snipe, Eastern Great Egret.	


**Note:* Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.

D.1.7. Edithvale Trail South

SITE CONTEXT		
Site Name	EDITHVALE TRAIL SOUTH	
Location	Edithvale Wetlands (South)	
Landscape context	<p>Slashed open drain between the Edithvale Wetlands Trail and Edithvale Wetlands (south). Area is prone to regular inundation or saturated soils and largely functions as a wetland. More direct management that reflects this while achieving the necessary drainage could be achieved improving faunal habitat values.</p> 	
VEGETATION CATEGORIES		
Spike-sedge Wetland (modified) EVC 819	Description	Area dominated by <i>Eleocharis acuta</i> (Common Spike-sedge), with [REDACTED], <i>Persicaria decipiens</i> (Slender Knotweed), <i>Phragmites australis</i> (Common Reed).
	Locally Threatened Flora	Kingston-Rare: [REDACTED]
HABITAT VALUES		
Fauna habitat and values	The Edithvale Trail South includes a complex of drains, shallow wetlands and rank pasture, surrounded by patches of planted trees and shrubs. These features provide habitat for wetland and terrestrial bird species. There is potential for constructing shallow wetlands adjacent to the trail, which would greatly increase habitat values.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	The site is contiguous with Edithvale Wetlands, which are in turn is part of a north-south corridor that runs through most of the municipality. The site therefore has intact connectivity to other areas of high faunal significance.	
Habitat suitability for threatened species	During the 2023 assessment, the threatened Latham's Snipe was flushed from shallowly inundated depressions. The site is likely to be visited on occasion by other threatened wetland bird species.	


D.1.8. Edithvale RAMSAR Wetlands

(See Edithvale-Seaford Site Management Plan on Melbourne Waters website for a full review of Edithvale Wetlands and accompanying images).

SITE CONTEXT		
Site Name	EDITHVALE WETLANDS	
Location	Edithvale	
Landscape context	<p>Large core area of wetland which incorporates sections of open water, tall marsh, brackish wetland agg and rank grass. Public access to the wetlands is largely restricted to small areas.</p> 	
VEGETATION CATEGORIES		
Tall Marsh EVC 821	Description	Large sections of the wetlands are dominated by <i>Phragmites australis</i> (Common Reed) which is currently being managed by Melbourne Water in some areas.
	Locally Threatened Flora	<p>Kingston-presumed extinct: [REDACTED]</p> <p>Kingston Endangered: [REDACTED]</p> <p>Kingston-Rare: [REDACTED]</p> <p>Kingston-Poorly Known: [REDACTED]</p>
Aquatic Herbland EVC 653/Open Water	Description	Areas dominated largely by [REDACTED] and [REDACTED].
	Locally Threatened Flora	<p>Kingston-Poorly Known: [REDACTED]</p> <p>Kingston-Rare: [REDACTED]</p>
Brackish Wetland Aggregate EVC 656	Description	Relatively restricted in distribution to the margins of the wetlands in the northern section and Edithvale south during a dry phase. Can vary between stands of [REDACTED] with a range of small herbs through to the wetland floor being dominated by <i>Bolboschoenus caldwellii</i> .

<p>Locally Threatened Flora</p>	<p>Kingston- Endangered: [REDACTED] Kingston- Vulnerable: [REDACTED] Kingston- Rare: [REDACTED] Kingston-Poorly Known: [REDACTED]</p>
<p>HABITAT VALUES</p>	
<p>Fauna habitat and values</p>	<p>Edithvale Wetlands is one of the most significant wetland bird habitats remaining in the Greater Melbourne Area. The site supports a diverse range of habitat types, including extensive reedbeds, open water and mudflats. There is significant temporal variation in the extent and quality of habitats, with large areas of open water following inundation events, transitioning to mudflats as water draws down. The expansion of reedbeds in recent years has required management via slashing of parts of the site, to prevent loss of open mudflats and herbfields.</p>
<p>Hollow bearing trees – absent/present</p>	<p>Absent</p>
<p>Habitat connectivity</p>	<p>Edithvale Wetlands is the epicentre of a north-south corridor that runs through most of the municipality. This extends from the Patterson River in the south, through Wannarkladdin Wetlands and Edithvale Wetlands, and continuing to the north along the Edithvale Wetland Trail to the Mordialloc Creek.</p>
<p>Habitat suitability for threatened species</p>	<p>Twenty-three species of threatened wetland bird have been recorded at the site, many which are resident or regular visitors. These include Australasian Bittern, Australasian Shoveler, Australian Little Bittern, Australian Painted-snipe, Bar-tailed Godwit, Blue-billed Duck, Common Greenshank, Common Sandpiper, Curlew Sandpiper, Eastern Curlew, Eastern Great Egret, Grey Plover, Hardhead, Lewin's Rail, Little Eagle, Little Egret, Magpie Goose, Marsh Sandpiper, Musk Duck, Orange-bellied Parrot, Plumed Egret, Ruddy Turnstone and Wood Sandpiper. The threatened Growling Grass-frog has also been recorded, however the most recent VBA record is from 1988 and the species is now possibly extinct at the site.</p>

D.1.9. Eel Race Drain/ Kananook Creek


SITE CONTEXT	
Site Name	EEL RACE ROAD/ KANANOOK CREEK
Location	Patterson Lakes-Palm Beach Drive
Landscape context	<p>Mid reaches of Kananook Creek/Eel Race Road (above mariner), some degree of riparian vegetation (combination of remnant and revegetation) within 20m of the waterway. significant linear linage between Port Phillip Bay, Waterways Housing Estate and Braeside Park.</p> 
VEGETATION CATEGORIES	
Swampy Riparian Woodland EVC 83 (modified)	<p>Description Linear band of vegetation along the waterway with a planted semi-mature canopy of <i>Eucalyptus camaldulensis</i> (River Red Gum), <i>Melaleuca ericifolia</i> (Swamp Paper-bark) coppices and stands of <i>Phragmites australis</i> (Common Reed) with [REDACTED]. A range of other species have been planted throughout the area.</p> <p>*Locally Threatened Flora Kingston-Vulnerable: [REDACTED]</p>
HABITAT VALUES	
Fauna habitat and values	Kananook Creek/Eel Race Road is estuarine, having direct connectivity with Port Phillip Bay. The creek therefore provides habitat for many estuarine species of fish including Black Bream, Estuary Perch, Bridled Goby, Spotted Galaxias, Common Galaxias and Short-finned Eel. The creek banks and open water are frequented by waterbirds such as cormorants, pelicans, black swan, herons, and waterfowl, which feed on fish and other estuarine species.
Hollow bearing trees – absent/present	Absent
Habitat connectivity	Kananook Creek/Eel Race Road is an important habitat corridor, linking to Port Phillip Bay to the west and areas of un-developed paddocks, constructed wetlands and remnant vegetation to the south and east. However the integrity of this corridor is compromised by high density residential estates along some sections.

Habitat suitability for threatened species

No threatened species have been recorded along the section of Kananook Creek/Eel Race Road that borders the municipality. However, the site could potentially support or be occasionally visited by threatened wetland birds and estuarine fish.

**Note:* Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.

D.1.10. Epsom Grassland

SITE CONTEXT	
Site Name	EPSOM GRASSLANDS
Location	Mordialloc
Landscape context	<p>Area of high floristic value-remnant area grassland/seasonal wetlands. In 2022 the extent of the wetland variation was expressed, often majority of the area is dry or with saturated soils. Quality of grassland highly variable with degraded sections throughout the site.</p> 
VEGETATION CATEGORIES	
Plains Sedgy Wetland EVC 647 /Plains Grassy Wetland EVC 125	Description (2022) Areas of lower lying areas were dominated by a rich assemblage of graminoids including <i>Machaerina arthropphylla</i> (Fine Twig-sedge), <i>Machaerina juncea</i> (Bare Twig-sedge), <i>Hemarthria uncinata</i> (Mat-grass), [REDACTED]
Plains Grassy Wetland /Brackish Herbland Complex EVC 767	Description (2022) The areas of this EVC occur at the drier extremes of the EVC description but within wet years such as 2022, there was a clearer expression of the wetland flora within these areas. Some of the species present included [REDACTED], <i>Themeda triandra</i> (Kangaroo Grass), <i>Phragmites australis</i> (Common Reed), [REDACTED]
Plains Grassland EVC 132	Description As identified, the gradient between some of the areas between Plains Grassy Wetland and Plains Grassland isn't always clear. Species present include: <i>Themeda triandra</i> (Kangaroo Grass), <i>Poa labillardierei</i> (Common Tussock-grass), <i>Pimelea glauca</i> (Smooth Rice-flower).
Threatened Flora (across all EVC's)	Kingston-Endangered: [REDACTED]


	Kingston-Rare:	[Redacted]
	Kingston-Vulnerable:	[Redacted]
	Kingston-Poorly Known:	[Redacted]

HABITAT VALUES

Fauna habitat and values	The open grassland habitats provide habitat for reptiles and ground birds. Fringing planted trees are frequented by a low diversity of woodland birds. The grassy-sedgy wetlands provide habitat for frogs and occasional wetland birds.
Hollow bearing trees – absent/present	Absent
Habitat connectivity	Epsom Grassland has partial connectivity to Mordialloc Creek to south, via constructed wetlands and sports fields. However, this corridor is too fragmented for many fauna species to utilise.
Habitat suitability for threatened species	No threatened fauna species have been recorded at the site. It is possible that some threatened birds may occasionally visit the site, including Latham's Snipe around seasonally inundated wetlands.

**Note:* Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.


D.1.11. Grange Heathland Reserve

SITE CONTEXT	
Site Name	GRANGE HEATHLAND RESERVE
Location	Osbourne Ave, Clayton South
Landscape context	<p>Ecological significant council reserve of largely remnant vegetation across a gradient of the deeper sand's heathy woodlands to the low-lying areas of Swamp Paper-bark. Largely surrounded by a combination of suburbia and open space associated with the Spring Valley Golf Course.</p> 
Damps-sands Herb-rich Woodland EVC 3 / Heathy Woodland EVC 48	<p>Description</p> <p>Area represents remnant vegetation of these EVC's across their gradient. Over storey dominated by <i>Eucalyptus viminalis subsp. pryoriana</i> (Coast Manna-gum) over a diverse understory that varied depending on the localised conditions but also included areas with [REDACTED] flowering at the time of assessment. The floristic significance of the areas is well documented with 202 indigenous species recorded within this small relatively small reserve.</p>
Swamp Scrub EVC 53 /Swampy Riparian Woodland EVC 83	<p>Description</p> <p>Largely dominated by <i>Melaleuca ericifolia</i> (Swamp Paper-bark) with emergent <i>Eucalyptus ovata</i> (Swamp Gum) in some areas.</p>
*Threatened Flora (across reserve)	Kingston-Endangered 51 species, Kingston-Poorly Known 18 species, Kingston-are 23 species, Kingston-Vulnerable 25 species
HABITAT VALUES	
Fauna habitat and values	The Grange is one of the larger patches of bushland occurring within the Council Reserve system. The diverse plant communities and areas of dense vegetation provide important habitat for birds, including small-bodied species, and mammals such as Ringtail Possum. Large patches of Chaffy Saw-sedge likely support a range of skipper butterflies (family Hesperidae), whose larvae feed exclusively on the leaves of this species.
Hollow bearing trees – absent/present	Yes, small hollows observed in Coast Manna Gums


Habitat connectivity	Connectivity to the north, east and west has been largely severed through high density residential development. The southern boundary sits adjacent to the Spring Valley Golf Course, providing connectivity to a large area of partly vegetated open space.
Habitat suitability for threatened species	No threatened fauna has been recorded within the reserve, although suitable habitat for Southern Brown Bandicoot is present.

**Note:* Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.


D.1.12. Groves Reserve

SITE CONTEXT		
Site Name	GROVES RESERVE	
Location	Nepean Hwy and railway line (opposite Watkins Reserve), Mordialloc	
Landscape context	<p>Narrow linear strip between the railway line and Nepean Hwy that would have historically been a dune swale which still contains a number of remnant <i>Banksia integrifolia</i> (Coast Banksia) with some other plantings.</p> 	
VEGETATION CATEGORIES		
Coast Banksia Woodland EVC 2 (modified)	Description	Remnant mature <i>Banksia integrifolia</i> (Coast Banksia) with <i>Leptospermum laevigatum</i> (Coastal Tea-tree) and <i>Rhagodia candolleana</i> (Seaberry Saltbush) with other horticultural plantings and mown areas.
	Locally Threatened Flora	None but the mature Coast Banksia should be considered a significant large tree within the context of the council
HABITAT VALUES		
Fauna habitat and values	The large old Saw Banksia are an important nectar source for birds and mammals.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	Partial connectivity to Mordialloc Creek, which connects to Port Philip Bay.	
Habitat suitability for threatened species	Grey-headed Flying Fox would likely feed on Banksia flowers.	


D.1.13. Henry Street Trail

SITE CONTEXT		
Site Name	HENRY STREET TRAIL	
Location	Heatherton	
Landscape context	<p>Area assessed included a range of different plantings amongst mown areas with pathway.</p> 	
VEGETATION CATEGORIES		
Modified non-indigenous Vegetation EVC 999	Description	Consisted of different plantings such as <i>Melaleuca armillaris</i> (Giant Honey-myrtle) and non-indigenous Eucalypts.
	Locally Threatened Flora	None recorded
HABITAT VALUES		
Fauna habitat and values	The Henry Street Trail provides a narrow corridor of habitat occurring in an otherwise cleared part of the municipality. There are several hollow bearing trees and scattered logs.	
Hollow bearing trees – absent/present	Present. Small hollows observed in several dead trees.	
Habitat connectivity	The Henry Street Trail connects to other linear remnants along Old Dandenong Road to the east.	
Habitat suitability for threatened species	No threatened species have been recorded within the site and suitability is generally low.	

D.1.14. John Lindsay Reserve

SITE CONTEXT		
Site Name	JOHN LINDSAY RESERVE-PATTERSON LAKES	
Location	Patterson Lakes-public point to view lakes complex	
Landscape context	<p>Small grasses reserve that allows a visual access to the lakes. Constructed lake system with limited public open space but a unique area of habitat.</p> 	
VEGETATION CATEGORIES		
Coastal Saltmarsh Aggregate EVC 9 (modified)	Description	Shoreline of lakes largely unvegetated but with some areas of [REDACTED] and [REDACTED]
	Locally Threatened Flora	Kingston-Presumed extinct: [REDACTED] Kingston-Vulnerable: [REDACTED] Kingston-Rare: [REDACTED]
HABITAT VALUES		
Fauna habitat and values	The Patterson Lake complex is estuarine, having direct connectivity with Port Phillip Bay. It therefore provides potential habitat for estuarine species of fish including Black Bream, Estuary Perch, Bridled Goby, Spotted Galaxias, Common Galaxias and Short-finned Eel. The banks and open water of the complex are frequented by many waterbirds such as cormorants, pelicans, black swan, herons, and waterfowl, which feed on fish and other estuarine species.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	The Patterson Lake complex is connected to the Patterson's River to the north; however it is surrounded on all sides by high density residential estates, which significantly limits habitat connectivity.	
Habitat suitability for threatened species	The threatened Australasian Bittern, Australasian Shoveler and Hardhead have been recorded in the vicinity of the Patterson Lakes complex. The site supports potential habitat for other threatened wetland birds and potentially threatened estuarine fish.	

D.1.15. Karkarook Wetlands

SITE CONTEXT		
Site Name	KARKAROOK WETLANDS	
Location	Warringal Road, Heatherton	
Landscape context	<p>Series of constructed wetlands that provide a range of habitat types in amongst areas of public open space.</p> 	
Constructed Wetland Aggregate	Description	The collective label for the suite of species and EVC associated with these constructed systems. Typically includes a band of Wet Verge Sedgeland, Aquatic Sedgeland, Tall Marsh and Submerged Aquatic Herbland.
	Locally Threatened Flora	<p>Due to the large scale of the site the area wasn't comprehensively assessed but likely to have many of the City of Kingston threatened wetland species such as:</p> <p>Kingston-Endangered: [REDACTED]</p> <p>Kingston- Rare: [REDACTED]</p>
Plains Grassy Woodland EVC 55 (modified)	Description	Revegetated areas with affinities to Plains Grassy Woodland, semi-mature <i>Eucalyptus camaldulensis</i> (River Red Gum), with a range of other species such as <i>Acacia mearnsii</i> (Black Wattle) many of which are now starting to senesce. Rank grass understorey
	Locally Threatened Flora	Non recorded
HABITAT VALUES		
Fauna habitat and values	Karkarook Park contains a series of wetlands, including a large lake (previously a sand mine) in the north-east and a complex of constructed wetlands in the north-west. The wetlands are important habitat for wetland birds, fish and turtles. Short-finned Eels have been recorded in the lake. Areas of revegetation throughout the park provide habitat for a small variety of woodland birds.	
Hollow bearing trees – absent/present	Absent	


Habitat connectivity

Karkarook Park has limited connectivity to other areas of habitat due to surrounding residential and industrial development.

Habitat suitability for threatened species


Threatened wetland birds recorded throughout the wetlands include Australasian Shoveler, Australian Little Bittern, Blue-billed Duck, Eastern Great Egret, Hardhead and Musk Duck. The Eastern Snake-necked Turtle and Murray River Turtle have both been recorded in the wetlands, however the latter is an introduction to the Melbourne area.

D.1.16. Kingston Heath Golf Club

SITE CONTEXT	
Site Name	KINGSTON HEATH GOLF CLUB
Location	Cheltenham
Landscape context	<p>Remnant areas of heathland and heathy woodlands that occur alongside the fairways across the course. Golf course has been actively managing these areas as modified heathlands that is now part of the amenity of the course.</p> 
VEGETATION CATEGORIES	
Description	<p>Small patches of remnant vegetation alongside the course that have varying levels of management from sections with stands of Silky Tea-tree (<i>Leptospermum myrsinoides</i>) through to more open areas. As some of the revegetation within these areas are using indigenous planting stock within remnant areas, it is difficult to accurately know what vegetation is remnant, and what has been planted. For those species consistent with the areas and EVC they have been considered remnant for the assessment criteria.</p>
Heathland (modified remnants)	<p>Kingston-Presumed Extinct: [REDACTED]</p> <p>Kingston- Vulnerable: [REDACTED]</p>
Locally Threatened Flora	<p>[REDACTED]</p> <p>Kingston-Rare: [REDACTED]</p> <p>[REDACTED]</p>
HABITAT VALUES	
Fauna habitat and values	<p>Kingston Heath Golf Course represents a large area of open space with extensive planted and remnant vegetation, providing habitat for a variety of woodland birds. There are several dams scattered across the course that would attract a small variety of waterbirds, however the dams support limited wetland vegetation.</p>
Hollow bearing trees – absent/present	<p>There are scattered small hollows in some trees.</p>

Habitat connectivity	The Golf Club is northerly adjacent to the Kingston Heath Reserve and is subsequently connected to Capital Golf Course.
Habitat suitability for threatened species	The dams would likely be occasionally visited by threatened waterbirds such as Hardhead.


D.1.17. Mentone to Mordiallic Foreshore

SITE CONTEXT		
Site Name	MENTONE TO MORDIALLIC FORESHORE	
Location	Beach Road, Mentone	
Landscape context	<p>Long linear strip of native vegetation along Port Phillip Bay to Beach Road. Width of remnant vegetation somewhat determined by the landform in the area (E.g cliffs versus dune slope). This site sits within the Kingston Council managed Foreshore North Reserve.</p> 	
Coast Headland Scrub EVC 161	Description	Dense shrub dominated vegetation that includes <i>Banksia integrifolia</i> (Coast Banksia), <i>Allocasuarina verticillata</i> (Drooping Sheoak), <i>Leptospermum laevigatum</i> (Coastal Tea-tree), <i>Pomaderris paniculosa</i> ssp. <i>paralia</i> (Coast Pomaderris), <i>Olearia glutinosa</i> (Sticky Daisy-bush) and <i>Rhagodia candolleana</i> (Seaberry Saltbush)
	*Locally Threatened Flora	Kingston-Endangered 18 Species, Kingston-Poorly Known 6 species, Kingston-Rare 7 species, Kingston-Vulnerable 18 species
Berm Grassy Shrubland EVC 311	Description	Very fragmented and restricted to small areas along that bay that have been able to persist against the beach wall. Restricted to <i>Atriplex cinerea</i> (Coast Saltbush) and <i>Spinifex sericeus</i> (Hairy Spinifex).
	Locally Threatened Flora	Kingston-Vulnerable: [REDACTED]
HABITAT VALUES		


Fauna habitat and values	An important feature of the City of Kingston is its frontage with Port Phillip Bay, an area that supports fish, birds, and other marine life. The northern section of coastline, south to around Mordialloc Creek, contains a linear corridor of coastal scrub along elevated cliffs, backing onto a sandy beach. The coastal scrub supports a relatively high diversity of native plants and has dense cover, providing important habitat for a variety of birds, including small-bodied species such as silvereyes, thornbills, and grey fantail.
Hollow bearing trees – absent/present	Absent
Habitat connectivity	There is connectivity along most of the foreshore reserve, however the lack of shrub cover south of Mordialloc Creek reduces its suitability for many birds. There is limited connectivity between the foreshore and inland habitats due to dense residential development, with Mordialloc Creek and Patterson River providing some of the few connecting corridors.
Habitat suitability for threatened species	Shy Albatross have been recorded near the Mordialloc Creek outlet. The foreshore supports suitable habitat for other threatened shorebirds; however, this suitability is compromised by high visitor activity (e.g. walkers, swimmers, dogs)

**Note:* Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.

D.1.18. Mentone Pony Club

SITE CONTEXT		
Site Name	MENTONE PONY CLUB	
Location	Carrum Downs	
Landscape context	<p>Small seasonal freshwater wetland in amongst the cleared area, dominated by rank grasses associated with the pony club. Access restricted to Learmouth Road and possibly other similar wetland features across the site. Area worth reassessing during wet years for other features.</p> 	
VEGETATION CATEGORIES		
Spike-sedge Wetland EVC 819	Description	Appeared to be dominated almost exclusively by <i>Eleocharis acuta</i> (Common Spike-sedge) with other introduced grasses.
	Locally Threatened Flora	NA-Visual assessment from roadside.
HABITAT VALUES		
Fauna habitat and values	The small wetlands and rank grassland provide habitat for frogs and wetland and paddock birds.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	The property has connectivity across mostly cleared paddocks to sites of high faunal significance, including the Eastern Treatment Plant to the north and Banyan Wetland to the south-east. The site is bounded by major roads and high-density residential development to the west.	
Habitat suitability for threatened species	The property supports potential habitat for the threatened Latham's Snipe and other waterbirds that prefer shallow, grassy wetlands.	

D.1.19. Mordialloc Creek Reserve


SITE CONTEXT		
Site Name	MORDIALLOC CREEK RESERVE	
Location	Mordialloc	
Landscape context	<p>Lower reaches of Mordialloc Creek (above mariner), some degree of riparian vegetation (combination of remnant and revegetation) within 20m of the waterway. significant linear linkage between Port Phillip Bay, Waterways Housing Estate and Braeside Park.</p> 	
VEGETATION CATEGORIES		
Swampy Riparian Woodland EVC 83 (modified)	Description	Linear band of vegetation along the waterway with a planted semi-mature canopy of <i>Eucalyptus camaldulensis</i> (River Red Gum), <i>Melaleuca ericifolia</i> (Swamp Paper-bark) coppices, and stands of <i>Phragmites australis</i> (Common Reed). A range of other species have been planted throughout the area.
	*Locally Threatened Flora	None recorded but possibly present. Suitable habitat and conditions for plantings of species such as [REDACTED] (remnant populations on lower reaches of Kananook Creek).
HABITAT VALUES		
Fauna habitat and values	The banks of Mordialloc Creek supports dense reedbeds and shrubland, providing habitat for a diversity of birds, including crane and rail species. The creek provides habitat for many estuarine species of fish including Black Bream, Estuary Perch, Bridled Goby, Spotted Galaxias, Common Galaxias and Short-finned Eel.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	Mordialloc Creek serves as a local habitat corridor that extends west from Port Phillip Bay. There is connectivity to Yammerbook Nature Reserve to the south-east, which contains a partly constructed brackish wetland. The creek corridor to the east of Boundary Road has been channelised and only supports a narrow band of native vegetation, limiting connectivity to the Waterways Estate further east. Revegetation and restoration along this section would greatly improve its function as a corridor between Port Phillip Bay and the Waterways Estate.	

Habitat suitability for threatened species

The creek supports potential habitat for threatened wetland birds and fish.


**Note:* Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.

D.1.20. Patterson River


SITE CONTEXT		
Site Name	PATTERSON RIVER	
Location	From Wannarkladdin through to the Wells Road overpass	
Landscape context	<p>Highly modified landform, hydrology, and vegetation structure. Despite this, the site forms a significant linear linkage between Port Phillip Bay, Wannarkladdin Wetlands and Eastern Treatment Plant.</p> 	
Estuarine Wetland EVC 10	Description	Restricted to narrow linear band along waterway. Largely dominated by [REDACTED], <i>Phragmites australis</i> (Common Reed) and low cover of herbs.
	Locally Threatened Flora	Kingston-Vulnerable: [REDACTED] Kingston-Rare: [REDACTED]
Estuarine Scrub EVC 953	Description	Stunted coppices of <i>Melaleuca ericifolia</i> (Swamp Paper-bark) largely confined to the right-hand band where there is an elevated terrace.
	Locally Threatened Flora	None recorded
NA-Unmanaged EVC 999	Description	Stunted coppices of <i>Melaleuca ericifolia</i> (Swamp Paper-bark) largely to confined to the right-hand band where there is an elevated terrace. Dominate species include <i>*Phalaris aquatica</i> (Toowoomba Canary-grass), <i>Phragmites australis</i> (Common Reed), <i>*Cenchrus clandestinus</i> (Kikuyu).
	Locally Threatened Flora	None recorded-not thoroughly assessed
HABITAT VALUES		
Fauna habitat and values	The Patterson River is the largest waterway that runs through the City of Kingston. This section of the river is estuarine, having direct connectivity with Port Phillip Bay. The river provides habitat for many estuarine species of fish including Black Bream, Estuary Perch, Bridled Goby, Spotted Galaxias, Common Galaxias and Short-finned Eel. Some of these species may be restricted from migrating to the east due to the barrier created by the Mornington Peninsular Freeway. The riverbanks and open water are frequented by many waterbirds such as cormorants, pelicans, black swan, herons and waterfowl, which feed on fish and other	

	<p>estuarine species within the river. Dense reedbeds provide habitat for crake and rail species.</p>
<p>Hollow bearing trees – absent/present</p>	<p>Absent</p>
<p>Habitat connectivity</p>	<p>The Patterson River is an essential component of an important network of habitat corridors. The river itself provides connectivity between Port Phillip Bay and the eastern portion of the municipality, although the width and integrity of the corridor is compromised by residential development to each side. It also connects to remnant vegetation within the Wannarkladdin Wetlands, which adjoin the highly significant habitats within the Edithvale Wetlands to the north. A corridor then continues along the Edithvale Wetland Trail to the Mordialloc Creek.</p>
<p>Habitat suitability for threatened species</p>	<p>During the 2023 survey, an Eastern Great Egret was observed feeding on the banks of the river near the Morning Peninsular Freeway. The river provides habitat for other threatened wetland birds and potentially threatened fish species.</p>

D.1.21. Rosedale Golf Club

SITE CONTEXT		
Site Name	ROSSDALE GOLF CLUB	
Location	Aspendale	
Landscape context	<p>Visual assessment from Sixth Ave, area of golf course with many remnant <i>Banksia integrifolia</i> (Coast Banksia). Area not accessed but warrants further assessment to identify other values in the area. Recruitment of Coast Banksia in area is required to replace senescing trees.</p> 	
VEGETATION CATEGORIES		
Coast Banksia Woodland EVC 2	Description	Highly modified and consisted largely of mature <i>Banksia integrifolia</i> (Coast Banksia) and <i>Leptospermum laevigatum</i> (Coastal Tea-tree).
	Locally Threatened Flora	None recorded-assessment outside of the property
HABITAT VALUES		
Fauna habitat and values	The stands of old Coast Banksia support thousands of nectar-rich flowers which are an important food source for woodland and coastal birds.	
Hollow bearing trees – absent/present	Likely absent. There may be small hollows in some of the Coast Banksia trees.	
Habitat connectivity	There are rows of planted and remnant trees throughout the golf course, providing connectivity to the adjacent Edithvale Wetlands to the east, as well as the Edithvale Trail that extends to the north.	
Habitat suitability for threatened species	The threatened Grey-headed Flying-fox is likely to occasionally feed on Coast Banksia trees when in flower.	


D.1.22. Rowan Road Reserve

SITE CONTEXT		
Site Name	ROWAN ROAD RESERVE	
Location	Rowan Road, Dingley Village	
Landscape context	<p>Large area of remnant vegetation situated within open space/sporting grounds.</p> 	
VEGETATION CATEGORIES		
Damp-sands Herb-rich Woodland EVC 3 (grading to other EVC in low lying areas)	Description	Intact and structurally diverse woodland with an overstorey largely of <i>Eucalyptus viminalis subsp. pryoriana</i> (Coast Manna-gum), with range of small shrub species and intact ground layer that included a number of species difficult to establish with revegetation such as <i>Gahnia radula</i> (Thatch Saw-sedge), <i>Exocarpos cupressiformis</i> (Cherry Ballart).
	*Locally Threatened Flora	Kingston-Endangered 26 species, Kingston-Vulnerable 13 species, Kingston-Rare 15 species, Kingston-Poorly Known 7 species
HABITAT VALUES		
Fauna habitat and values	Rowan Road Reserve supports one of the larger remnants of bushland within the City of Kingston. The high structural and plant diversity represent important habitat for birds, mammals, reptiles and insects.	
Hollow bearing trees – absent/present	Scattered small hollows in Coast Manna Gums are present.	
Habitat connectivity	Rowan Road Reserve has partial connectivity to large areas of open space and bushland. The site backs onto a partly treed property that occurs adjacent to the Dingley Village Adventure Golf Course, which connects to the Southern Gold Course and then Braeside Park.	
Habitat suitability for threatened species	Wet depressions support potential habitat for Southern Toadlet, however it is currently unknown if this species survives within the municipality.	

*Note: Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.

Damp-sands Herb-rich Woodland EVC 3	Description	Small fragmented patches of remnant vegetation on the northern part of the golf course (southern side of the Grange Reserve). Dominant species include <i>Eucalyptus viminalis subsp. pryoriana</i> (Coast Manna-gum) and <i>Leptospermum laevigatum</i> (Coastal tea-tree).
	Locally Threatened Flora	Area not formally assessed.
HABITAT VALUES		
Fauna habitat and values		Spring Valley Golf Course represents a large area of open space with extensive planted and occasional remnant vegetation, providing habitat for a variety of woodland birds. Shrub thickets provide habitat for small birds. There are several dams scattered across the course that would attract a small variety of waterbirds, however the dams support limited wetland vegetation.
Hollow bearing trees – absent/present		There are scattered small hollows in some trees.
Habitat connectivity		The golf course has direct connectivity to the Grange Heathland Reserve, an important area of bushland habitat.
Habitat suitability for threatened species		The dams would likely be occasionally visited by threatened waterbirds such as Hardhead.

D.1.24. Thompson Road Off Ramp Drain

SITE CONTEXT		
Site Name	THOMPSON ROAD OFF RAMP DRAIN	
Location	Carrum Downs	
Landscape context	<p>Treed section of roadside drain with a high proportion of native wetland vegetation. Area is close in proximity to the Eastern Treatment Plant and has the potential to provide some basic landscape conductivity. Area is slashed annual in summer which has helped to maintain the areas values. Possibly more areas with similar habitat qualities along the freeway easements.</p> 	
VEGETATION CATEGORIES		
Plains Swampy Woodland EVC 651 (modified)	Description	Planted semi-mature (not hollow bearing) <i>Eucalyptus camaldulensis</i> (River Red Gum) with [REDACTED]
	Locally Threatened Flora	<p>Kingston-Endangered: [REDACTED]</p> <p>Kingston-Vulnerable: [REDACTED]</p> <p>Kingston-Rare: [REDACTED]</p> <p>Kingston-Poorly Known: [REDACTED]</p>
HABITAT VALUES		
Fauna habitat and values	The vegetated drains provide habitat for frogs and some wetland birds.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	The site has partial connectivity across roads and cleared land to the adjacent Eastern Treatment Plant to the north-east.	
Habitat suitability for threatened species	The site supports suitable habitat for Latham's Snipe and may be occasionally visited by other threatened wetland bird species.	

*Note: Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.


D.1.25. Wannarkladdin

SITE CONTEXT		
Site Name	WANNARKLADDIN	
Location	Patterson Lakes	
Landscape context	<p>Large area of open space that contains a series of constructed wetland and low-lying areas, with stands of tall marsh and rank grassland. Forms an important wetland link as it is adjacent to the Patterson River and other large wetlands such as Waterways and Braeside.</p> 	
Brackish Wetland Aggregate EVC 656 (modified)	Description	Wetlands of low-lying areas with a range of species tolerant of the brackish conditions. Largely dominated by [REDACTED], <i>Phragmites australis</i> (Common Reed), [REDACTED] and [REDACTED]. Areas prone to more prolonged inundation also have [REDACTED].
	Locally Threatened Flora	Kingston-Endangered: [REDACTED] Kingston-Vulnerable: [REDACTED] Kingston-Rare: [REDACTED] Kingston-Poorly Known: [REDACTED]
Tall Marsh EVC 821 and Rank Grass	Description	<i>Phragmites australis</i> (Common Reed) dominated areas with rank exotic grass interspersed throughout. Area is periodically slashed and has some revegetation of trees and shrubs. <i>Carex divisa</i> is widespread and common through some parts of the site.
	Locally Threatened Flora	None recorded
HABITAT VALUES		
Fauna habitat and values	The complex of constructed wetlands, revegetation and rank grassland provide habitat for frogs and a variety of woodland and wetland bird species.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	Wannarkladdin is an integral component of a north-south habitat corridor that extends from the Patterson River to the south, through Wannarkladdin and Edithvale Wetlands and along the Edithvale Trail, before connecting with Mordialloc Creek.	


Habitat suitability for threatened species

No threatened fauna has been recorded within the site, however there is potential habitat for threatened wetland birds such as Latham's Snipe, Australasian Bittern and waterfowl.

D.1.26. Waterways Conservation Reserve

SITE CONTEXT	
Site Name	WATERWAYS CONSERVATION RESERVE
Location	Waterways
Landscape context	<p>Large complex of storm water treatment wetlands, seasonal freshwater wetlands, scrubs, grassland and woodlands. Restoration project >20 years old and ecological representative of local plant communities and contains a high diversity of regionally threatened species.</p> 
Description	Series of small seasonal freshwater wetlands through the conservation area of Waterways. These wetlands demonstrate a high-quality example of EVC and site appropriate ecological restoration.
State/ Federally Threatened Flora	EPBC-Vulnerable and FFG-Critically Endangered [REDACTED]
Plains Sedgy Wetland EVC 647 /Aquatic Herbland EVC 653 Complex (restoration)	<p>Rapid assessment, a thorough review of wetlands is likely to reveal additional listed species.</p> <p>Not previously recorded in Kingston: [REDACTED]</p> <p>Kingston- Presumed Extinct: [REDACTED]</p> <p>Kingston-Endangered: [REDACTED]</p> <p>Kingston- Rare: [REDACTED]</p>
Locally Threatened Flora	[REDACTED]

		<p>Kingston-Vulnerable: [REDACTED]</p> <p>Kingston- Poorly Known: [REDACTED]</p>
<p>Plains Grassland EVC 132 / Plains Grassy Woodland EVC 55 (restoration)</p>	<p>Description</p>	<p>Conservation area which has been restored to represent Plains Grassland and Plains Grassy Woodlands community. Trees are semi-mature, with recruitment of tree species such as <i>Allocasuarina littoralis</i> (Black Sheoak) present. Grassland areas are rich in a high cover of threatened herbs, with some sections have a high cover of introduced weed species.</p>
	<p>State/ Federally Threatened Flora</p>	<p>FFG-Critically Endangered [REDACTED]</p>
	<p>Locally Threatened Flora</p>	<p>Kingston-Endangered: [REDACTED]</p> <p>Kingston-Rare: [REDACTED]</p> <p>Kingston-Vulnerable: [REDACTED]</p>
<p>Constructed Stormwater Wetland Aggregate</p>	<p>Description</p>	<p>The collective label for the suite of species and EVC associated with these constructed systems. Typically includes a band of Wet Verge Sedgeland, Aquatic Sedgeland, Tall Marsh and Submerged Aquatic Herbland. In the well-developed sites such as Woodlands each of these zones can have a dense cover of native vegetation, with specific species.</p>
	<p>State/ Federally Threatened Flora</p>	<p>FFG-Endangered [REDACTED]</p>
HABITAT VALUES		
<p>Fauna habitat and values</p>		<p>The constructed wetlands and grasslands at the Waterways Estate provide important habitat for wetland and woodland birds, frogs, insects, and reptiles. The larger wetlands contain abundant submerged aquatic vegetation, providing ideal foraging habitat for waterfowl, swans, and grebes. The diverse reedbeds support crakes and rail habitat.</p>
<p>Hollow bearing trees – absent/present</p>		<p>Absent</p>
<p>Habitat connectivity</p>		<p>The Waterways Estate has partial connectivity to the Braeside Park Wetlands across Governor Road to the north. The Mordialloc Creek corridor to the east of Boundary Road has been channelised and only supports a narrow band of native vegetation, limiting connectivity to the Waterways Estate further east. Revegetation</p>

<p>Habitat suitability for threatened species</p>	<p>and restoration along this section would greatly improve its function as a corridor between Port Phillip Bay and the Waterways Estate.</p> <p>The threatened Australasian Shoveler, Blue-billed Duck, Eastern Great Egret, Hardhead and Magpie Goose have been recorded around the wetlands. The site supports potential habitat for other threatened wetland bird species such as bitterns, as well as the Growling Grass-frog.</p>
<p>THREATS</p>	
<p>Threat: Smooth Newt found on site.</p>	<p>Description</p> <p>Invasive species - smooth newt should be reported Smooth newts are not native to Australia and may pose a risk to native species if they were to establish and breed. They have the potential to carry disease and predate or compete with small native species.</p> <p>Smooth newts are classified as a prohibited pest animal under the Victorian Catchment and Land Protection Act 1994</p> 

D.1.27. Woodlands Estate Wetlands

SITE CONTEXT	
Site Name	WOODLANDS INDUSTRIAL ESTATE-WETLANDS
Location	Braeside
Landscape context	Series of constructed wetlands that provide a range of habitat types and form part of series wetland areas associated with Braeside Park, Waterways Housing Estate and Mordialloc Creek.



VEGETATION CATEGORIES

Constructed Stormwater Wetland Agg	Description	The collective label for the suite of species and EVC associated with these constructed systems. Typically, it includes a band of Wet Verge Sedgeland, Aquatic Sedgeland, Tall Marsh and Submerged Aquatic Herbland. In the well-developed sites such as Woodlands each of these zones can have a dense cover of native vegetation, with specific species.
	Locally Threatened Flora	<p>[REDACTED] (Not recorded in Kingston). Due to the large scale of the site the area wasn't comprehensively assessed but likely to have many of the City of Kingston threatened wetland species. Species recorded include:</p> <p>Kingston-Endangered: [REDACTED]</p> <p>Kingston-Rare: [REDACTED]</p>

Plains Grassy Woodland (modified)	Description	Revegetated areas with affinities to Plains Grassy Woodland, semi-mature <i>Eucalyptus camaldulensis</i> (River Red Gum), with a range of other species such as <i>Acacia mearnsii</i> (Black Wattle) many of which are now starting to senesce. Rank grass understorey.
	Locally Threatened Flora	None recorded but likely to contain some grass and herb species listed as threatened within the City of Kingston.


HABITAT VALUES

Fauna habitat and values	Woodlands Industrial Estate supports extensive areas of constructed wetlands. During the 2023 assessment it was noted that the northern wetland contained abundant submerged aquatic vegetation, providing ideal habitat for waterfowl and swans. The wetlands are fringed by dense reedbeds and shrubland, providing habitat for crakes, rails and bitterns.
Hollow bearing trees – absent/present	Absent
Habitat connectivity	There is partial connectivity across cleared paddocks to Braeside Park to the east, including the Braeside Park Wetlands. Lands to the immediate north and west have been cleared for industrial development. There is partial connectivity across cleared and undeveloped land across Governor Road to the south to a channelised section of Mordialloc Creek, however these lands are marked for development in the near future.

Habitat suitability for threatened species

The threatened Australasian Little Bittern, Australasian Shoveler, Eastern Great Egret and Hardhead have been recorded around the wetlands. The site supports potential habitat for other threatened wetland bird species.

D.1.28. Yammerbrook Nature Reserve (wetland)

SITE CONTEXT		
Site Name	YAMMERBOOK NATURE RESERVE (WETLAND)	
Location	Mordialloc	
Landscape context	<p>Area of open space (mown), woodland revegetation areas and estuarine wetland adjacent to the Mordialloc Creek.</p> 	
VEGETATION CATEGORIES		
Estuarine Wetland EVC 10	Description	Wetland area largely dominated by [REDACTED] with [REDACTED]. Some thickets of <i>Melaleuca ericifolia</i> (Swamp Paper-bark) in some areas.
	*Locally Threatened Flora	Kingston-Vulnerable: [REDACTED]
		Kingston- Poorly Known: [REDACTED]
HABITAT VALUES		
Fauna habitat and values	The reserve supports habitat for wetland and woodland bird species. The water is too brackish for most local frogs.	
Hollow bearing trees – absent/present	Absent	
Habitat connectivity	There is connectivity across open space containing scattered planted and remnant trees to Mordialloc Creek to the north-west.	
Habitat suitability for threatened species	The threatened Hardhead has been recorded at the wetland. Other threatened waterfowl and wetland birds are likely to visit the site.	

*Note: Because this site is a Kingston managed bushland reserve, the full locally threatened species list has not been provided. Refer to the Kingston flora database for the most up to date species list for this site.

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