BIODIVERSITY STRATEGY

2017–22

Our Place
Connected, green, healthy

HOBSONS BAY CITY COUNCIL

Acknowledgements

This strategy was written by Hobsons Bay City Council with input from Ecology Australia Pty Ltd. It makes reference the desk top assessment and Biodiversity Strategy Technical Report 2016 developed by Ecology Australia Pty Ltd. The technical report and desktop assessment include all references and sources of data presented in this strategy. For further information contact Hobsons Bay City Council on 9932 1000 www.hobsonsbay.vic.gov.au

Council acknowledges all language groups of the Kulin Nation as the traditional owners of these municipal lands. We recognise the first people's relationship to this land and offer our respect to their elders past and present. Council acknowledges the legal responsibility to comply with the *Charter of Human Rights and Responsibilities Act 2006* and the *Equal Opportunity Act 2010*. The Charter of Human Rights and Responsibilities is designed to protect the fundamental rights and freedoms of citizens. The Charter gives legal protection to 20 fundamental human rights under four key values that include freedom, respect, equality and dignity.

February 2017

Biodiversity supports the healthy functioning of the ecosystem services that we depend upon for water and food, health and recreation.

CONTENTS

Definitions and abbreviations 06

Executive summary 08

1. Why is managing biodiversity important 10
- 1.1 Building the evidence base 11

2. Creating a vision and establishing goals 12
- **Vision** – Value and protect our unique biodiversity for current and future generations 14
- **Goal 1** – Build ecosystem resilience through long term, adaptive planning 14
- **Goal 2** – Utilise best practice pest management to reduce threats to our unique biodiversity 14
- **Goal 3** – Utilise urban ecology and natural area management to prevent the loss of species 14
- **Goal 4** – Protect our unique biodiversity through holistic strategic land use planning 15
- **Goal 5** – Assist our community to value our unique biodiversity through education and engagement 15
- **Goal 6** – Incorporate community recreational benefits without compromising our unique biodiversity 15

3. Background 16
- 3.1 Council's definition of biodiversity 17
- 3.2 State and federal government policy on biodiversity 17
- 3.3 Local government policy on biodiversity 18
- 3.4 The role of land use planning in the management of biodiversity 19

4. Biodiversity in Hobsons Bay 20
- 4.1 Council's current contribution to biodiversity management 22
- 4.2 Remnant vegetation in Hobsons Bay 24
- 4.3 The current condition of flora in Hobsons Bay 26
- 4.4 The current condition of fauna in Hobsons Bay 28

5. Key issues for biodiversity management in Hobsons Bay 30
- 5.1 Climate change 31
- 5.2 Pest plants 31
- 5.3 Pest animals 34
- 5.4 Creating and protecting biolinks between areas of biodiversity value 35
- 5.5 Indigenous heritage 35
- 5.6 Recreation and biodiversity management 36
- 5.7 Dumping and encroachment 38

6. Management responses to key issues 40
6.1 Mapping and monitoring 41
6.2 Managing weed spread 41
6.3 A holistic approach to managing pest animals 41
6.4 Ecological burning management 42
6.5 Utilising tools within the planning scheme 42
6.6 Potential offsets 45
6.7 Conservation engagement events 45
6.8 Raising the profile of sites 45
6.9 Possums 46
6.10 Snakes 46
6.11 Urban ecology 46

7. An action plan for the management of biodiversity in Hobsons Bay 49
7.1 Monitoring and review 56

8. Conclusion 59

Appendix 1 Summary of community consultation outcomes 60
Community feedback 60
Government and industry feedback 63

Appendix 2 Pest animal management 64
Cats 64
Foxes 65
Indian Mynas 65
Rabbits 65

Appendix 3 Legislation 66
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) 66
Flora and Fauna Guarantee Act 1988 (FFG Act) 66
Catchment and Land Protection Act 1994 (CaLP Act) 66
Planning and Environment Act 1987 (P&E Act) 67
Coastal Management Act 1995 67

DEFINITIONS AND ABBREVIATIONS

Aquatic
relating to or living in water

Biodiversity
is the variety of life, including the diversity of species, the genetic diversity within a species and the diversity of ecosystems. A full description of biodiversity is provided on page 17

Biolinks
biolinks are a part of the landscape that provides connectivity for species (and consequently ecological communities) to adapt their distribution and abundance under changing climates

Conservation
throughout this document the term conservation has been used to:
- describe an area of land that has been identified as having good biodiversity value
- describe the act of looking after and protecting areas of good biodiversity value

DELWP
Department of Environment Land Water and Planning

DPI
Department of Primary Industries

Ecological Vegetation Class (EVC)
a standard unit for classifying vegetation types in Victoria. It considers the characteristics of plants, animals and ecological processes that make up different types of vegetation

Ecosystem
a system or group of living things, and their physical environment that are interconnected and influence each other's survival

ESO
Environmental Significance Overlay

Forbs
herbs other than grasses, sedges, rushes, and similar (graminoids)

GIS
Geographic Information System

NGO
Non-Government Organisation

Ramsar
the Ramsar wetlands are internationally protected sites for migratory birds. They are protected under the Convention on Wetlands

Terrestrial
relating to or living on land

Urban Ecology
a system or group of living things and the interconnectedness between these living things and the urban environment

VPP
Victorian Planning Provisions

EXECUTIVE SUMMARY

Biodiversity supports the healthy functioning of the ecosystem services that we depend upon for water and food, health and recreation. Ensuring a wide range and variation of species promotes greater resistance to both shocks and gradual environmental variations that occur as a result of changes in climate, water availability or habitat disturbance.

Hobsons Bay supports a diverse array of ecosystems that includes significant marine areas, wetlands, including the Ramsar listed Cheetham Wetlands, and coastal parks along with five waterways that provide habitat to an impressive range of flora and fauna, including many rare and threatened species. These unique assets are managed by a range of agencies, including Hobsons Bay City Council, Parks Victoria, Melbourne Water and the Department of Environment Land Water and Planning.

Council conducts a significant array of conservation activities each year. This includes weed management, pest animal control, ecological burning, educational events and revegetation works in partnership with volunteers and the community. Despite these significant works there are areas where Council has determined that biodiversity management could be further strengthened.

Consultation with the community and key stakeholders assisted Council to identify key actions to undertake in relation to biodiversity. The most important actions identified are to protect and preserve biodiversity within the municipality and to continue Council's extensive program of conservation education and engagement activities. To respond to these priorities Council developed an evidence base to form the basis for a Biodiversity Strategy. The evidence base includes:

1. a Biodiversity Discussion Paper (2014)
2. species surveys at key Council managed conservation sites (2015)
3. an independent review of the state of biodiversity in Hobsons Bay leading to the Biodiversity Strategy Technical Report 2016
4. community consultation

As a result of the evidence and in consultation with the community, the Biodiversity Strategy was developed articulating Council's commitment to undertake the following actions over the next five years:

- strengthening land use planning practices to better protect connectivity and biolinks as well as other biodiversity values within the planning scheme
- utilise mapping and monitoring tools to enhance Council's capacity to effectively deliver biodiversity management
- strengthen partnerships with neighbouring land managers to better coordinate weed and pest animal management activities
- strengthen the connection between biodiversity management and open space planning, through the Open Space Strategy, to preserve both biodiversity and recreational values and manage conflicting uses
- review Council's conservation engagement events to ensure maximum value for the natural environment and local community
- engage with traditional owners and incorporate the actions identified in the draft Reconciliation Action Plan into conservation activities

To ensure the effective implementation of this strategy Council will review the biodiversity actions annually. The progress of the strategy will be monitored, evaluated and reported on annually.

1. WHY IS MANAGING BIODIVERSITY IMPORTANT

Hobsons Bay has local, regional, national and internationally significant biodiversity. The diverse array of native plants and animals within the municipality is particularly prevalent along its coastline and five waterways. Biodiversity is important for the large range of ecosystem services it provides to the community.

Hobsons Bay supports significant marine areas, wetlands and coastal parks including Truganina Swamp, the Truganina Explosives Reserve, Cherry Lake, the Altona Coastal Park, Jawbone Reserve, Newport Lakes and the internationally recognised, Ramsar listed, Cheetham Wetlands. A total of five waterways run through the municipality including Skeleton Creek, Laverton Creek, Cherry Creek, Kororoit Creek and Stony Creek. These open spaces provide a diverse range of ecosystems that provide habitat to an impressive range of flora and fauna, including many rare and threatened species. These unique assets are managed by Hobsons Bay City Council, Parks Victoria, Melbourne Water and the Department of Environment Land Water and Planning.

There are a number of rare and threatened species within Hobsons Bay that have national and state significance including:

- Altona Skipper Butterfly
- Golden Sun Moth
- Swift Parrot (migratory)
- Striped Legless Lizard
- Growling Grass Frog
- Spiny Rice Flower
- Button Winklewort
- Sunshine Diuris
- Tough Scurf-pea

The municipality is also home to the Natural Temperate Grassland of the Victorian Volcanic Plains, which is critically endangered and protected under commonwealth legislation.

Consultation with the community, undertaken as part of the development of the Hobsons Bay 2030 Community Vision, Council Plan 2013-17, draft Open Space Strategy and in preparation for the Biodiversity Strategy, has shown that Hobsons Bay's coastline, waterways and natural environment are important to the community and should be conserved and protected for current and future generations.

1.1 Building the evidence base

What the community told Council

Council engaged community, industry and government stakeholders to obtain input into the development of a biodiversity strategy.

The two most important actions identified by the community are:

1. protect and preserve biodiversity within the municipality
2. continue Council's extensive program of conservation engagement activities

Industry stakeholders highlighted concerns in relation to pest animals, particularly rabbits, and sought a mechanism to enable neighbouring land managers to work collaboratively to manage this issue.

Government stakeholders sought to build on and further strengthen collaboration around biodiversity management across our agencies.

To respond to the issues identified through the community consultation process, Council developed a strong evidence base to guide decision making and land use planning outcomes to protect and enhance biodiversity in Hobsons Bay. The evidence base includes:

- a Biodiversity Discussion Paper (2014)
- species surveys at key Council managed conservation sites (2015)
- a Biodiversity Strategy Technical Report, including an independent review on the state of biodiversity within Hobsons Bay (2016)

Council acknowledges that managing biodiversity effectively requires good decision making and a clearly defined planning process. The aim of the strategy will be to move beyond day to day operational outcomes to a long term strategic management approach that provides certainty for key stakeholders and decision makers.

2. CREATING A VISION AND ESTABLISHING GOALS

As a result of the community engagement process, a review of biodiversity condition and priority planning within the municipality, six goals were developed. These goals will guide Council's work over the life of the strategy and will enable Council to achieve its vision for the protection of biodiversity for current and future generations.

VISION

Value and protect our unique biodiversity for current and future generations

The importance of protecting the natural assets we have within Hobsons Bay was the strongest message from the community consultation that was undertaken as part of the development of this strategy. Protecting what we have for current and future generations forms the guiding principal for this strategy and will guide Council's work in this area.

01

GOAL 1:
Build ecosystem resilience through long term, adaptive planning

In a healthy ecosystem plants and animals live in balance with one another. Changing one part of an ecosystem impacts on the species that live in that ecosystem. For example, in a woodland many ground covering plants like dappled light or part shade. Removing trees in this landscape exposes ground covers to the full intensity of the summer sun and heat. Many plants may not cope with this change. By contrast, adding trees to a grassland may directly displace threatened grassland plants, reduce habitat area for endangered fauna such as the Golden Sun Moth, alter fire behaviour and predator prey interactions.

Protecting the health of the entire ecosystem gives each species within that ecosystem its best chance of survival.

Planning for the long term management and protection of ecosystems in their entirety will help to preserve the important ecosystems still remaining within Hobsons Bay.

02

GOAL 2:
Utilise best practice pest management to reduce threats to our unique biodiversity

One of the greatest threats to our native plants and animals is the invasion of weeds and feral animals. Some weed species, if left unmanaged, can out-compete native plants and significantly change ecosystems. Pest animals can out hunt, out graze or generally out-compete many native animals. Using best practice pest management to keep these threats in check will help to protect local ecosystems.

03

GOAL 3:
Utilise urban ecology and natural area management to prevent the loss of species

There are many locally, regionally and nationally rare and threatened species within Hobsons Bay. Using strong natural area management techniques, including recognising that some plants need natural disturbances like fire and flood to regenerate, is critical for preserving many of our local species. Natural area management can be further enhanced by improving connectivity between areas of conservation value and extending habitat into urban areas through habitat gardening.

04

GOAL 4:
Protect our unique biodiversity through holistic strategic land use planning

There are a range of land use planning tools that can be used to protect and enhance our biodiversity, for example the Environmental Significance Overlay. This overlay is applicable to land where development opportunities are restricted under local, state and federal legislation aimed at protecting biodiversity.

Clarifying and strengthening land use planning practices will ensure that land holders who have native vegetation on their land are aware of their legal obligations under biodiversity legislation.

05

GOAL 5:
Assist our community to value our unique biodiversity through education and engagement

Council undertakes a large range of natural environmental education and engagement activities each year. Community feedback shows that these events are very popular and should remain an ongoing focus of Council's biodiversity activities. These activities will be used to strengthen community understanding of and appreciation for our local grasslands and other valuable ecosystems.

06

GOAL 6:
Incorporate community recreational benefits without compromising our unique biodiversity

Engaging with the natural environment is an important part of valuing the natural environment, and yet some environments are so sensitive that restricting access is the only way to protect them. Providing opportunities for people to interact with the natural environment is important in areas where the biodiversity is robust enough to support these activities, such as providing dog off leash opportunities. Restricting access to protect sensitive areas can provide the greatest community benefit for the value and protection of biodiversity.

3. BACKGROUND

"the variety of life. It includes not only the diversity of species of plants, animals, fungi, bacteria and viruses that inhabit our planet, but also the genetic material within those species, the diversity of ecosystems, habitats and communities within which they live, and the diversity of processes that are performed by genes and species and the interactions among them."

3.1 Council's definition of biodiversity

The term biodiversity has been defined by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities as:

"the variety of life. It includes not only the diversity of species of plants, animals, fungi, bacteria and viruses that inhabit our planet, but also the genetic material within those species, the diversity of ecosystems, habitats and communities within which they live, and the diversity of processes that are performed by genes and species and the interactions among them" (Department of Sustainability, Environment, Water, Population and Communities, 2011).

This definition of biodiversity has been adopted for the purposes of this strategy.

3.2 State and federal government policy on biodiversity

A suite of legislation, both federal and state government, provides for the protection of biodiversity values. The *Environmental Protection Biodiversity and Conservation Act 1999* (Australian Government) and the *Fauna and Flora Guarantee Act 1988* (Victorian Government) protects individual species and ecosystems that have biodiversity values which are threatened.

The *Planning and Environment Act 1987* determines what land use and development can occur within a given area. There are many species within Hobsons Bay that are protected through this legislation and permits are required to clear native vegetation. The legislation is managed through the Hobsons Bay Planning Scheme, for which Council is the responsible authority. When an application to remove native vegetation is received Council refers the application to the appropriate government department for review and approval under the legislation.

The *Catchment and Land Protection Act 1994* provides a framework for the management of land within Victoria. This includes the management of noxious weeds and pest animals. Under this legislation both public and private land holders must take reasonable steps to control listed weeds and pest animals on their land.

The *Coastal Management Act 1995* provides for coordinated strategic planning and management for Victorian coasts. It does this through the Victorian Coastal strategy.

A more comprehensive discussion on federal and state government legislation relating to biodiversity is provided in Appendix 3.

Figure 1: Hierarchy of Council's strategic plans and policies.

3.3 Local government policy on biodiversity

The Biodiversity Strategy is part of a suite of policies that guide and inform Council business planning. Figure 1 below shows the hierarchy of Council's strategic plans and policies.

3.4 The role of land use planning in the management of biodiversity

Clause 12.01 (Biodiversity) of the Hobsons Bay Planning Scheme requires that any future land use planning avoids and minimises any significant impacts on Victoria's biodiversity, assists in the protection and management of high value biodiversity, and assists to re-establish links between isolated habitat remnants containing high value biodiversity.

The Hobsons Bay Planning Scheme (Clause 52.17 Native Vegetation) aims to ensure that there is no net loss of native vegetation in Hobsons Bay. This is achieved by avoiding the removal of native vegetation, minimising the impacts of any unavoidable removal of native vegetation and offsetting any permitted removal of native vegetation.

Additionally, the Hobsons Bay Planning Scheme sets out permit requirements for the removal of native vegetation. When deciding to grant a planning permit for the removal of native vegetation, Council is required to consider:

- the condition and area of vegetation, the biodiversity value of the vegetation and whether it is important habitat for rare or threatened species
- whether the removal of the native vegetation triggers a low, moderate or high risk pathway assessment as defined by the Permitted Clearing of Native Vegetation – Biodiversity Assessment Guidelines (DEPI 2013) as well as whether there has been an appropriate assessment made to inform the application
- whether the removed vegetation requires an offset and what form an offset should take

The Biodiversity Assessment Guidelines provide guidance on how the impacts on biodiversity should be considered when assessing an application to remove native vegetation. The guidelines have been designed to assess the impacts to biodiversity at a state level and not a local level. As such, there can be some limitations on their effectiveness when used at a municipal level. A solution for this is discussed further in section 6.5.

4. BIODIVERSITY IN HOBSONS BAY

Council manages 290 hectares of land for its biodiversity value and these are located over 20 sites across the municipality. Council also works closely with other government departments and agencies who manage land for its conservation value within the municipality.

4.1 Council's current contribution to biodiversity management

Each year Council dedicates significant resources to conservation management. In 2015-16 this included:

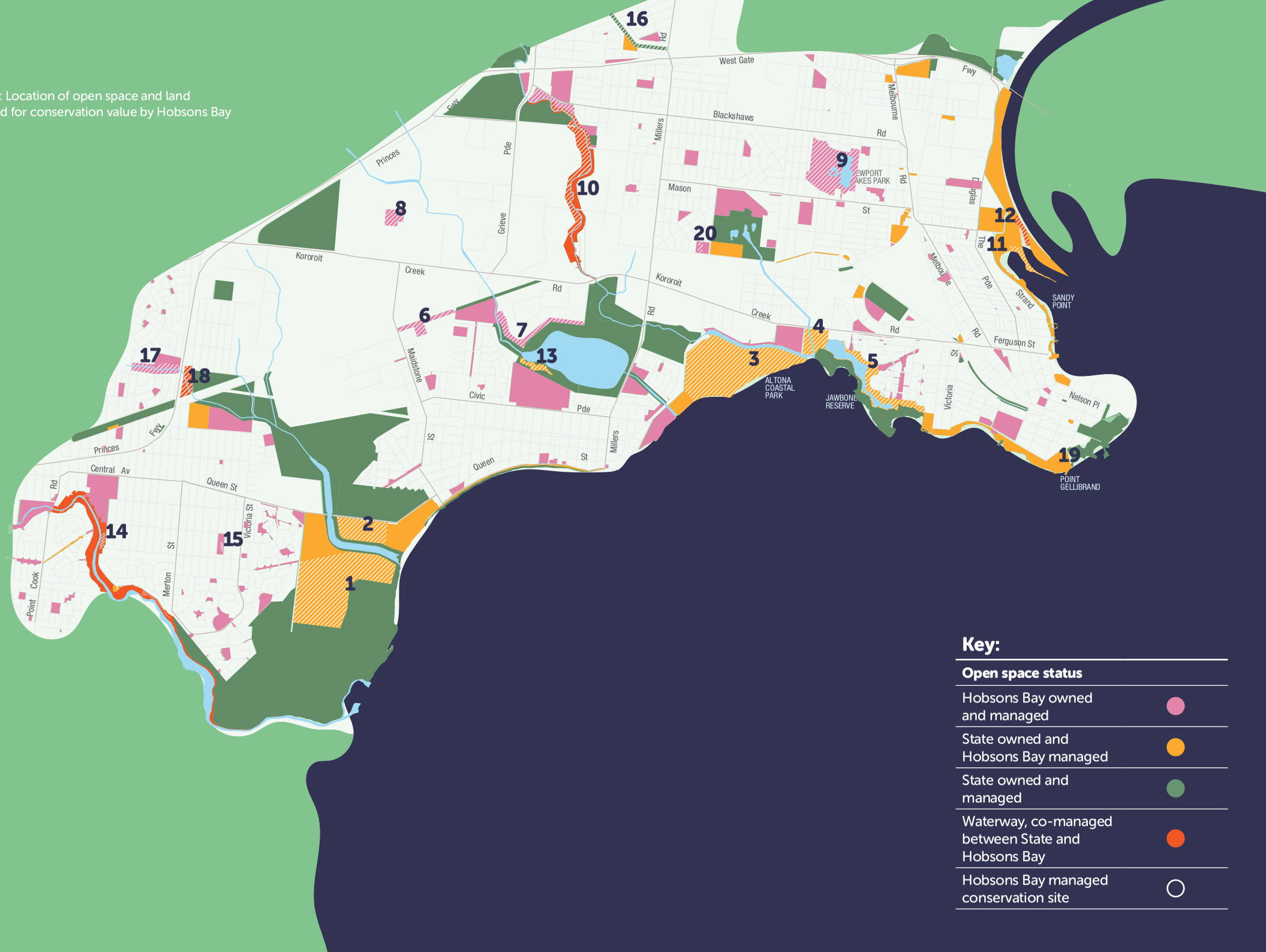
- planting 17,832 tube stock, trees and groundcovers, with the help of local volunteers, friends of group members, school groups and local industry stakeholders
- managing weed threats across 20 sites
- re-vegetation works at several sites including Altona Coastal Park, Laverton Creek and Skeleton Creek
- ecological burning to protect grasslands at Maidstone Street and Horsburgh Drive
- 94 conservation events including 47 friends of group and 47 community, school and industry events. These included planting days and educational tours

Council manages 290 hectares of land for its biodiversity value and these are located over 20 sites across the municipality. Council also works closely with other government departments and agencies who manage land for its conservation value within the municipality. In many cases there is shared responsibility for the management of conservation areas within Hobsons Bay as shown in table one below. A map showing the location of open space and conservation areas within Hobsons Bay is shown in Figure 2 on page 23.

Number	Reserve Name	Shared Management
1	Truganina Park	Parks Vic, Unmanaged Crown Land
2	Explosives Reserve	DELWP
3	Altona Coastal Park	DELWP
4	Paisley Challis	
5	Rifle Range and Jawbone Reserve	Parks Vic
6	Maidstone St Grassland	Offset Management Plan
7	Altona Buffer Mound	
8	Horsburgh Dve Grassland	Offset Management Plan
9	Newport Lakes	
10	Kororoit Creek	Melbourne Water
11	Sandy Point	
12	The Spit	Port Authority
13	Cherry lake	Melbourne Water
14	Skeleton Creek	Melbourne Water
15	Altona Meadows Community Reserve	
16	Federation Trail	
17	McCormack Park	
18	Laverton Stormwater Harvesting Wetland	
19	Cyril Curtain Reserve Wetland	
20	Clement Reserve	

Table 1: Sites managed for their conservation value by Council's conservation team

Figure 2: Location of open space and land managed for conservation value by Hobsons Bay



4.2 Remnant vegetation in Hobsons Bay

Approximately 85 per cent of Hobsons Bay is currently developed with homes, businesses, schools and sporting grounds taking up much of the land. As a result only 15 per cent of the vegetation that once flourished in Hobsons Bay still remains as shown in Figure 3.

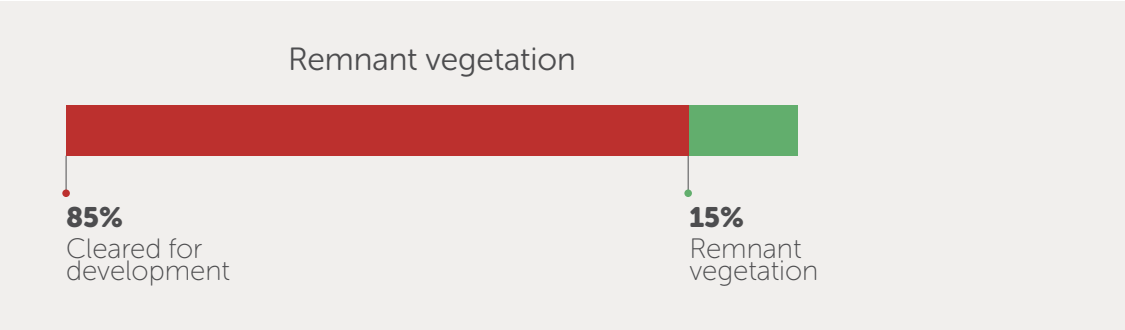


Figure 3: Remnant vegetation within Hobsons Bay

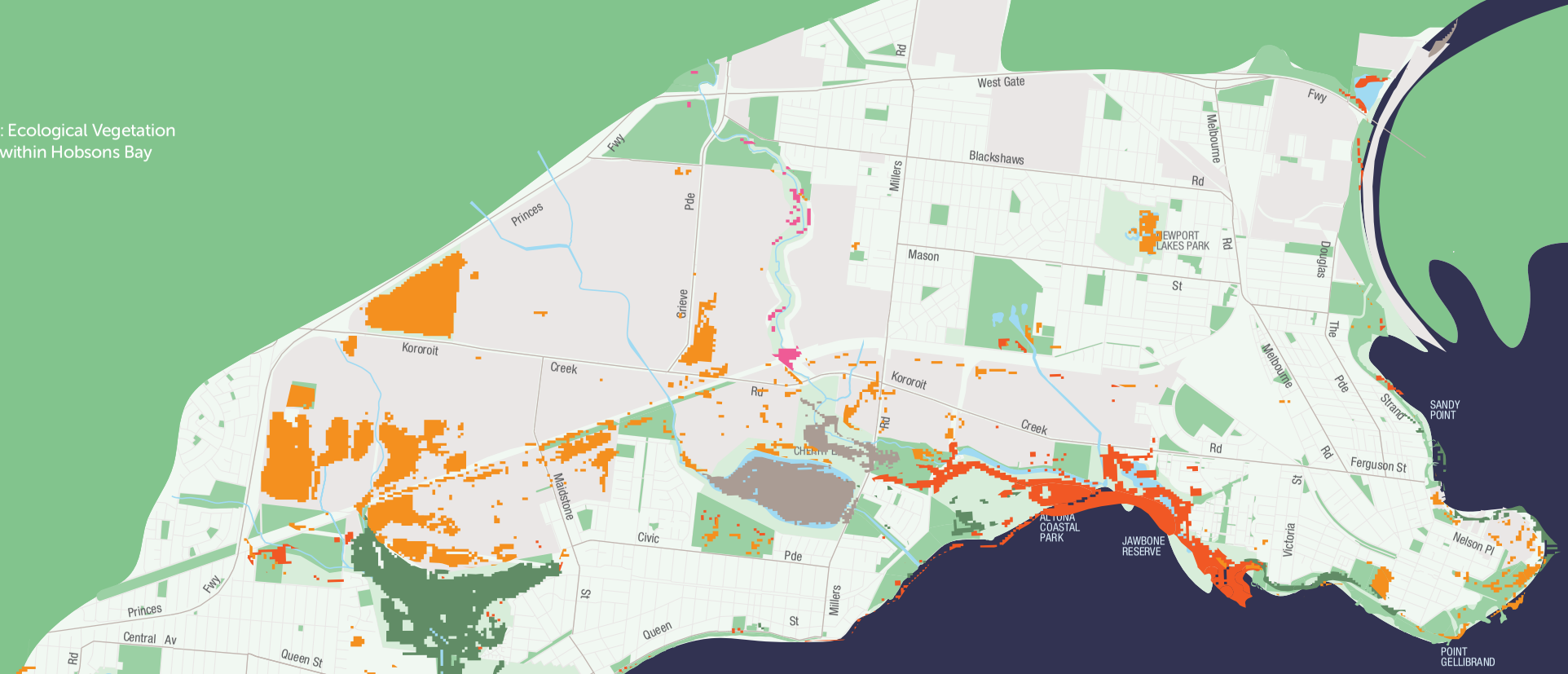
Within Victoria different vegetation types are defined for planning purposes as Ecological Vegetation Classes (EVCs). The location of EVCs across Victoria and within Hobsons Bay have been modeled by the Victorian Government. This modelling is considered to be very accurate for coastal vegetation however the modelling is somewhat limited in its ability to identify different types of grassland communities. In some areas further field mapping or modelling may be needed to strengthen local knowledge of remnant grassland locations and condition. For further information on this refer to section 6.3 of this report.

Figure 4 shows the location of the main remnant vegetation types found in Hobsons Bay. A full list of the type and location of EVCs that make up these main vegetation types can be found in Figure 5, page 28, of the Biodiversity Strategy Technical Report 2016.

The main vegetation types are:

- **Riparian Scrubs or Swampy Scrubs and Woodlands** – found primarily along Kororoit Creek, north of Kororoit Creek Road.
- **Plains Grasslands and Chenopod Shrublands** – found primarily in Laverton North Grasslands and Altona North, either side of the railway line, between Laverton Creek and Kororoit Creek.
- **Coastal Scrubs Grasslands and Woodlands** – found primarily around the Cheetham Wetlands, Laverton Creek and Truganina Swamp.
- **Salt-tolerant and /or Succulent Shrublands** – found around Skeleton Creek, Laverton Creek, Kororoit Creek and Jawbone Nature Reserve and even a small amount along the Yarra River and Stony Creek.
- **Wetlands** – found primarily around Chery Lake and Kororoit Creek between Millers Road and Kororoit Creek Road.

Figure 4: Ecological Vegetation Classes within Hobsons Bay



Wetlands

Salt-tolerant and/or Succulent Shrublands

Coastal Scrubs Grasslands and Woodlands

Plains Grasslands and Chenopod Shrublands

Riparian Scubs or Swampy Scrubs and Woodlands

Key:

- Riparian Scubs or Swampy Scrubs and Woodlands
- Plains Grasslands and Chenopod Shrublands
- Coastal Scrubs Grasslands and Woodlands
- Salt-tolerant and/or Succulent Shrublands
- Wetlands

- Reserves
- Conservation reserves
- Creekline
- Industrial zone

4.3 The current condition of flora in Hobsons Bay

A total of 371 indigenous plants species and sub-species have been identified as existing in Hobsons Bay prior to the 1800s. The different plant types are shown in table two.

Plant group/ life form	Number of taxa
Trees	7
Medium / Large Shrubs	15
Small Shrubs	32
Grasses	57
Forbs	200
Climbers	4
Sedges, rushes and allies	38
Ferns and fern allies	9
Mosses	6
Liverworts	3

Table 2: Number of indigenous plants within each plant group

Of these plants 18 per cent have been identified as being extinct within Hobsons Bay today. In addition, nearly 52 per cent of indigenous plants have been identified as threatened, 20 per cent as near threatened, and approximately 10 per cent of indigenous plant species within Hobsons Bay are thought to be in a reasonable condition, as shown in Figure 5.

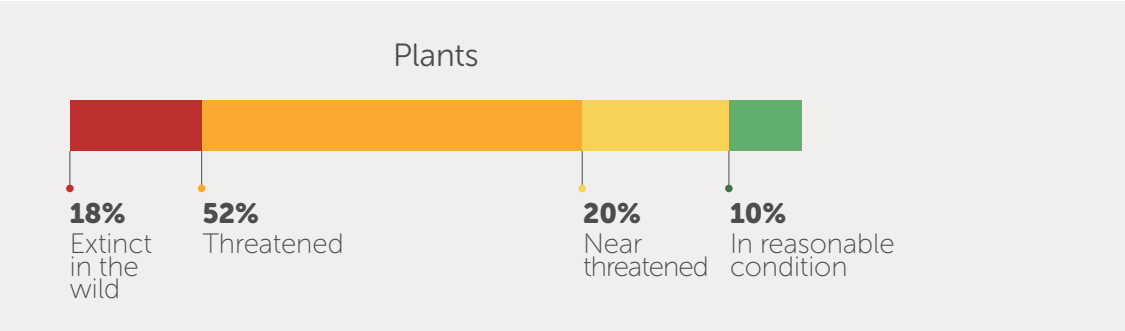
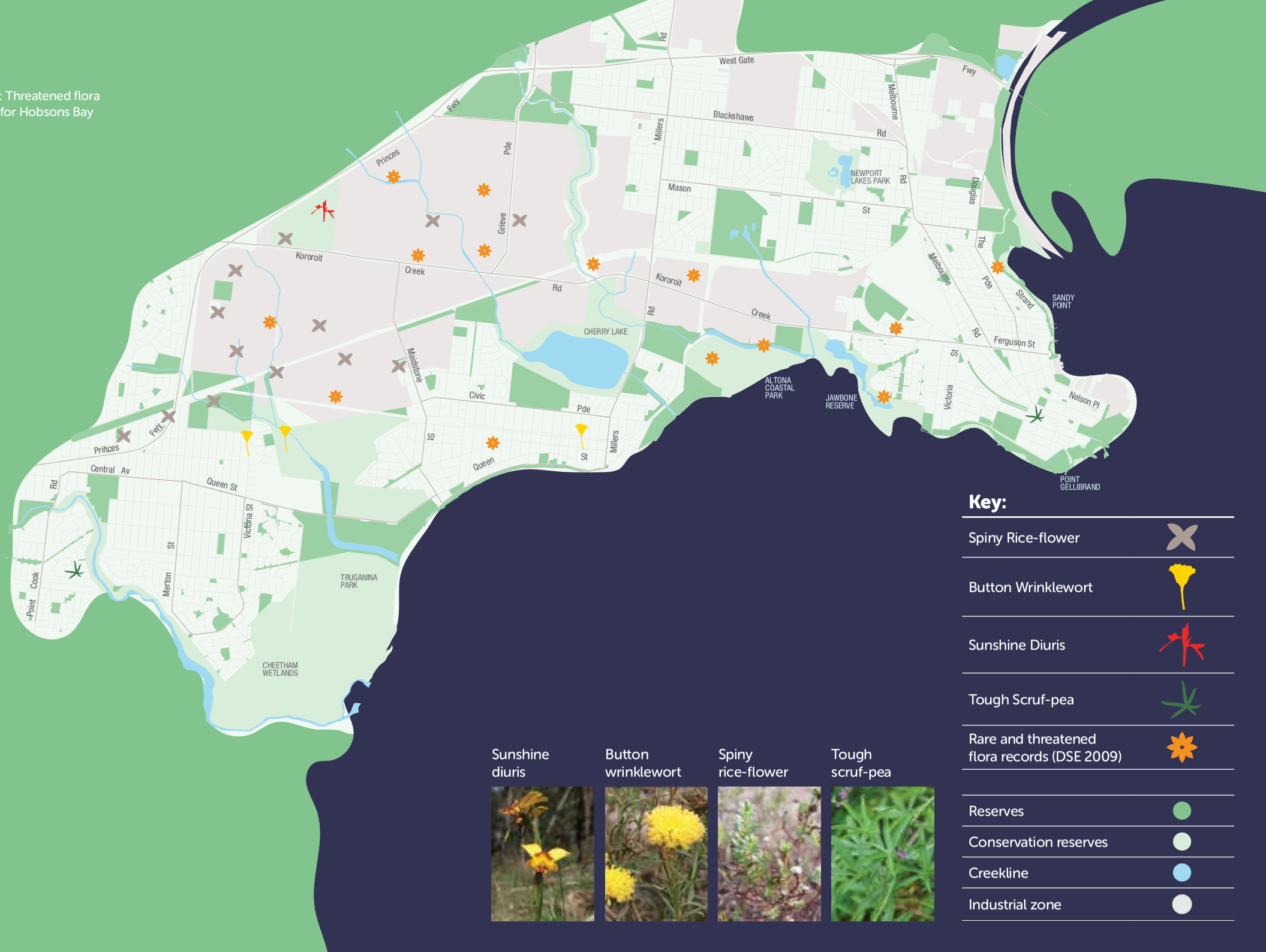


Figure 5: Conservation status of plants within Hobsons Bay today

A full list of plants found within Hobsons Bay and their conservation status can be found in appendix one of the Biodiversity Strategy Technical Report 2016. A map of threatened flora records for Hobsons Bay is shown in Figure 6.

Figure 6: Threatened flora records for Hobsons Bay



4.4 The current condition of fauna in Hobsons Bay

A total of 314 indigenous species and sub-species of animal have been identified as existing in Hobsons Bay prior to the 1800s. The different animal types are shown in table three. It is noted that insects and macro-invertebrates are missing from this list. This is due to a historic lack of records and sampling of insects and micro-invertebrates within many areas including Hobsons Bay.

Animal group	Number of Indigenous species	Number of Non-indigenous/ exotic species	Total
Birds	259	19	278
Mammals	17	8	26
Reptiles	15	3	18
Amphibians	6	0	6
Fish	17	6	23
Total	**314**	**36**	**351**

Table 3: number of indigenous animals within each animal group

Of the terrestrial (land) animals three per cent have been identified as being extinct within Hobsons Bay today. In addition, approximately 59 per cent of indigenous terrestrial animals have been identified as threatened, four per cent as near threatened and approximately 34 per cent of indigenous terrestrial animal species within Hobsons Bay are thought to be in a reasonable condition as shown in Figure 7.

Of the fish 12 per cent have been identified as being extinct within Hobsons Bay today. In addition, approximately 41 per cent of indigenous fish have been identified as threatened, 18 per cent as near threatened and approximately 29 per cent of indigenous fish species within Hobsons Bay are thought to be in a reasonable condition as shown in Figure 8.

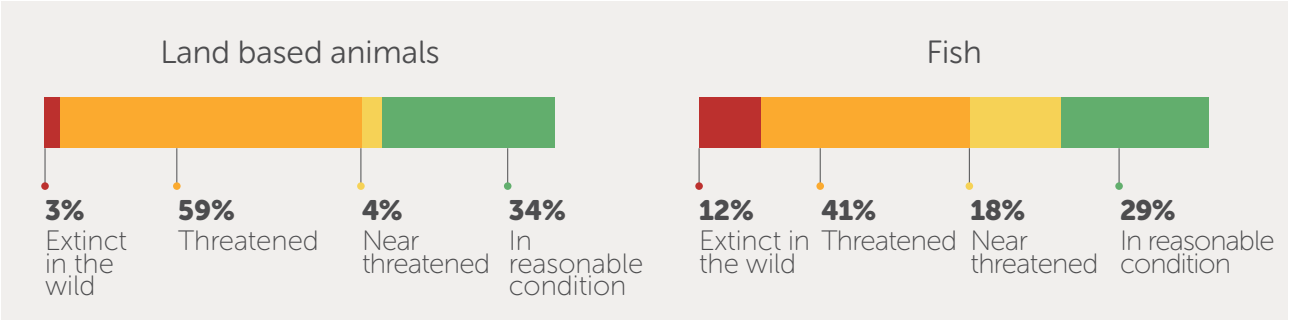
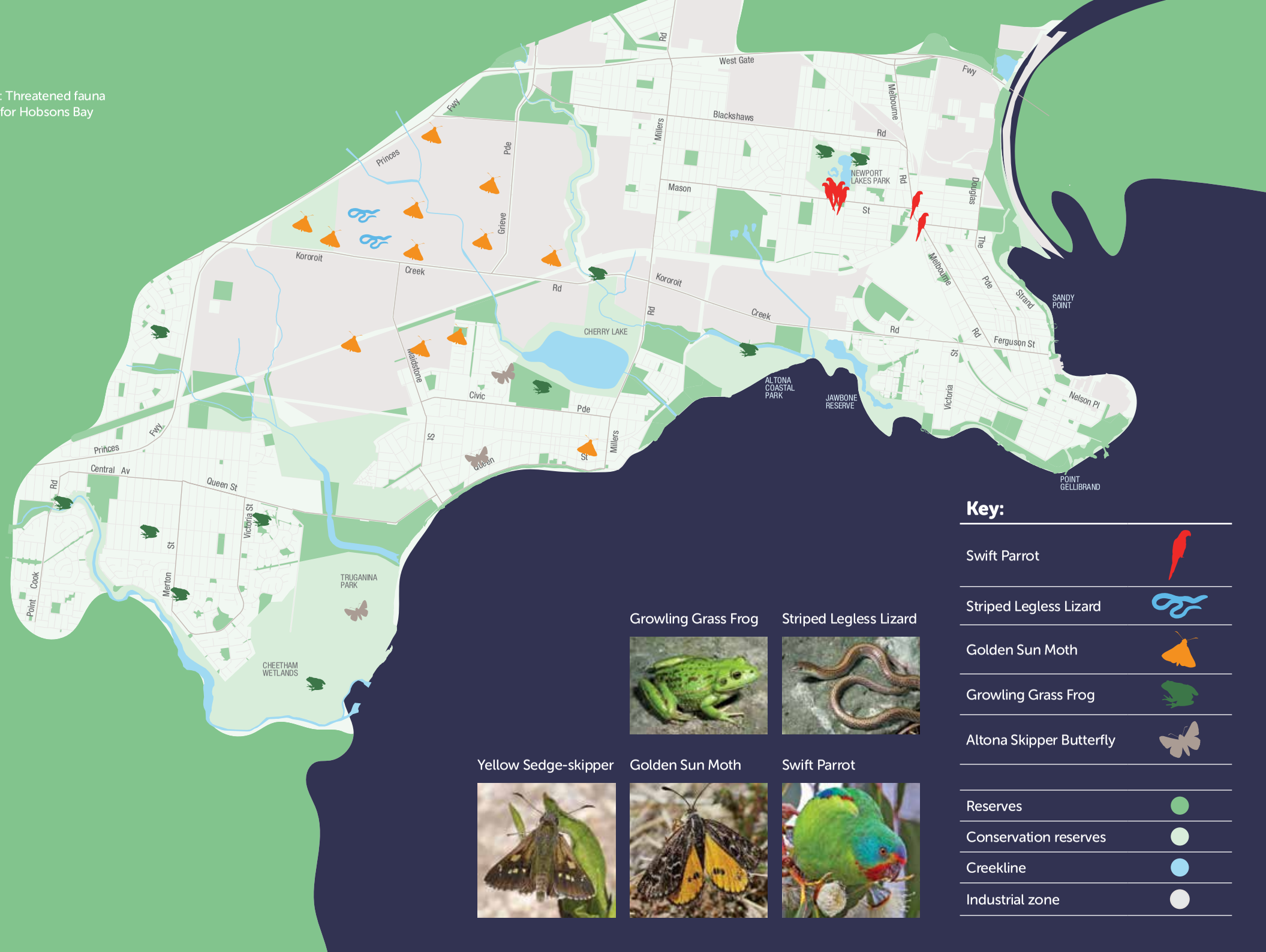


Figure 7: Conservation status of terrestrial animals (land based animals including birds) within Hobsons Bay today

Figure 8: Conservation status of fish within Hobsons Bay today

A full list of animals found within Hobsons Bay and their conservation status can be found in appendix one of the Biodiversity Strategy Technical Report 2016. A map of threatened fauna records for Hobsons Bay is shown in Figure 9.

Figure 9: Threatened fauna records for Hobsons Bay



5. KEY ISSUES FOR BIODIVERSITY MANAGEMENT IN HOBSONS BAY

5.1 Climate change

Climate change poses a significant threat to biodiversity both locally and globally. Council has a number of strategies in place to assist in reducing the threat of climate change including reducing Council's carbon footprint (Corporate Greenhouse Strategy 2013-20) and collaborating with the community to reduce the community greenhouse footprint (Community Greenhouse Strategy 2013-30). In addition to Council policies, effective land management practices are needed to provide local biodiversity with its best chance of adapting to climate change impacts.

Grasslands will be impacted by increasing temperatures and decreasing rainfall. The most effective way to enable grasslands to adapt to climate change impacts is to manage current threats such as weeds and pest animals and to maximise patch size and connectivity by protecting and improving biolinks. This is discussed further in the strategy.

Waterways and wetlands will be impacted by reduced rainfall and runoff as well as a decline in groundwater. The most effective way to enable waterways and wetlands to adapt to climate change impacts is to manage current threats such as pollutant loads in stormwater, to use Water Sensitive Urban Design techniques to mimic natural flow patterns, allow rainwater to infiltrate into the ground and, where possible, use stormwater to top up wetlands. Council's commitment to incorporating such activities into Council works is detailed in Council's Integrated Water Management Plan 2014-19.

Coastal ecosystems will be impacted by sea level rise. As sea levels rise, erosion will occur in some of the sandy coastal parks around Hobsons Bay while other areas of coastal parkland will become inundated. The most effective way to enable coastal ecosystems to adapt to climate change impacts is to leave space for coastal ecosystems to retreat, particularly along waterways, to build resilience through revegetating and to reduce current threats such as weeds and pest animals. Biolinks along Kororoit Creek and Laverton Creek will be particularly important to manage due to the climate change impacts on Altona Coastal Park and the Cheetham Wetlands. These measures are discussed further in the strategy.

5.2 Pest plants

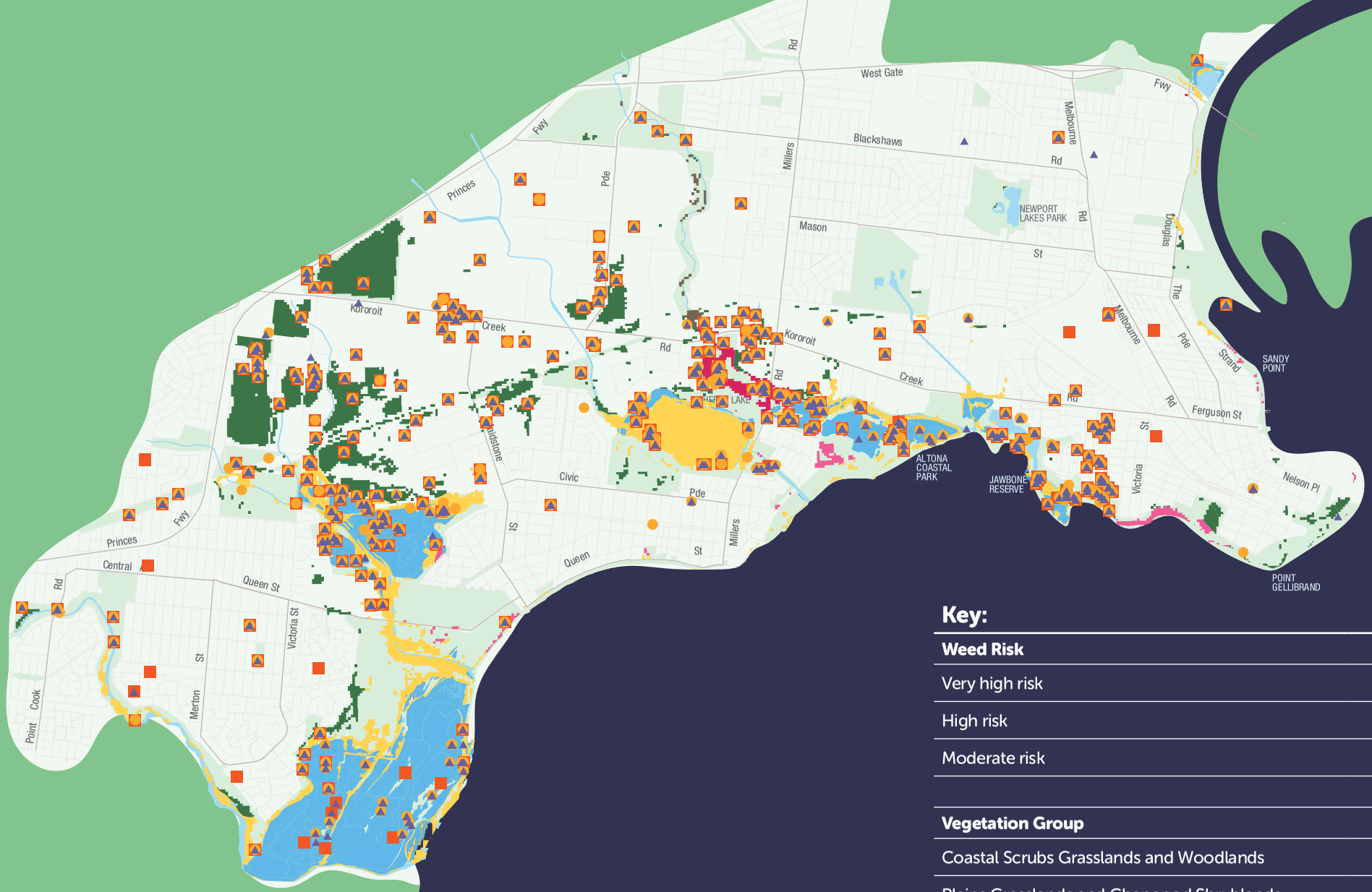
Weed invasion is considered to be the greatest threat to biodiversity on land within Hobsons Bay. Hobsons Bay is home to areas of remnant basalt grasslands. Grasslands, once damaged, are one of the most difficult types of vegetation to rehabilitate and restore to health. As such it is important for all land holders, both public and private, to work together and reduce the spread of weeds.

The top ten weeds that pose a threat to biodiversity within Hobsons Bay are:

- African Boxthorn *Lycium ferrocissium*
- Chilean Needle-grass *Nassella neesiana*
- Spiny Rush *Juncus acutus*
- Carpet Weed *Galenia pubescens*
- Wild Radish (also known as Twiggy Turnip or Giant Mustard) *Brassicaceae spp.*
- Kikuyu *Cenchrus clandestinus*
- Couch *Cynodon dactylon*
- Soursob *Oxalis pes-caprae*
- Onion grass *Romulea rosea*
- Wild Oats *Avena fatua*

A full list of weeds that should be removed from property within Hobsons Bay can be found at www.agriculture.vic.gov.au

Figure 10 shows state records of the location of listed weeds within Hobsons Bay. It is noted that many high risk weeds are located near areas of remnant vegetation. Managing weeds in these areas is a high priority. Strengthened collaboration between public and private land holders to manage these weeds will help to reduce the threat they pose to local biodiversity.



Key:

Weed Risk

- Very high risk
- High risk
- Moderate risk

Vegetation Group

- Coastal Scrubs Grasslands and Woodlands
- Plains Grasslands and Chenopod Shrublands
- Plains Woodlands or Forests
- Riparian Scrubs or Swampy Scrubs and Woodlands
- Salt-tolerant and/or succulent Shrublands
- Saltmarsh
- Wetlands

Figure 10: Pest plant records for Hobsons Bay

A recent review of weed management practices on Council managed land showed that:

- Council is effectively prioritising and managing the top weed threats to its conservation reserves. This is done by using a risk management approach that considers
  - location of weeds
  - type of weeds
  - the conservation area being protected
- the use of mapping and monitoring tools to locate and track weed spread and the effectiveness of control works is currently limited. The use of such tools is a very important component of improving the efficiency and effectiveness of weed control activities and should be strongly considered
- Council conservation staff use machine hygiene practices to stop machinery such as lawn mowers spreading weed seeds. This could be improved by extending machine hygiene practices to other areas of Council operations
- there is a risk that weed seeds could be imported onto Council land through the purchase of soil and other landscaping materials. This risk could be managed by adding a clause into Council contracts requiring the materials to be clean and free from weed materials
- community and industry knowledge of weed impacts on biodiversity is currently limited. The risk of weed spread from private property could be reduced by further education and collaboration. This will be considered as part of a review into Council's conservation engagement activities

5.3 Pest animals

There are a number of pest animals that pose a risk to native plants and animals within Hobsons Bay. They include, but are not limited to, cats, foxes, Indian Mynas and rabbits. These species have been discussed in detail in appendix two.

The presence of one pest animal can influence the survival and success of another. Foxes preying on rabbits is one example of the interconnectedness between pest animals. A holistic pest animal management plan is needed to ensure that pest animals are managed in the most effective way possible.

There is a lack of funding and grants available to support the protection of biodiversity in the long term. Consideration needs to be given to the ongoing resourcing of any works identified in the pest animal management plan.

Pest animals are highly mobile and easily move from one property to another. To be effective in controlling pest animals neighbouring land managers should work collaboratively to manage pest animals. Consultations with government and industry shows that there is a willingness to collaborate further on this issue. A network for enabling this collaboration to take place should be investigated.

5.4 Creating and protecting biolinks between areas of biodiversity value

The health of an area of conservation value can be impacted by its size and connectedness with other conservation areas. The deeper and wider a conservation area is the less likely weeds are to penetrate all the way through the area. When a conservation area is larger there are a greater number of plants that can cross pollinate with each other and a greater number of mating pairs of animals. This helps to protect genetic diversity within species. When there are effective biolinks - creating good connectivity between one site and another, animals are able to move freely from site to site to find food and shelter and plants are more likely to be able to spread their seeds from one location to another.

Maintaining and improving connectivity between areas of conservation value is an important component of protecting biodiversity within Hobsons Bay. The areas where there is the greatest benefit and greatest opportunity to improve and protect connectivity are along Laverton Creek, including Kayes Drain which is a tributary to Laverton Creek, along Kororoit Creek, along the rail corridor between Laverton Creek and Kororoit Creek and between coastal areas. This is shown by the green patches of high and very high areas of biodiversity significance shown in Figure 11 on page 44. The use of legislative tools to preserve biolinks and connectivity is discussed in section 6.5.

5.5 Indigenous heritage

Local waterways, coastal parks and grasslands are an important part of cultural heritage within Hobsons Bay and are valued by the Traditional Owners of the Kulin Nation. Council recognises the need to engage more effectively with Traditional Owner groups to ensure that culturally sensitive areas are managed with respect to traditional values. Council is committed to building relationships and identifying opportunities for reconciliation through the draft Reconciliation Action Plan.

Council will work to integrate the objectives identified in the draft Reconciliation Action Plan into its conservation activities as it develops its relationship with the Aboriginal community over the life of the strategy.

5.6 Recreation and biodiversity management

The natural environment is a core part of what makes Hobsons Bay such a unique place to live. Our coastline and waterways are some of our community's favourite places to relax and unwind. Our natural environment provides areas for recreation and tourism and as such is an important part of the local economy.

Factoring sensitivity into open space planning

Each conservation area varies in its ability to support biodiversity and in its ability to support recreational activities. In order to enable people to interact with the natural environment while protecting sensitive areas it is important to understand:

- which sites have high biodiversity value and are sensitive to disturbances

  e.g. shorebirds are easily disturbed from their foraging. Many migratory birds, such as the Curlew Sandpiper and Red Necked Stint feed at coastal parks within Hobsons Bay, including Cheetham Wetlands, before flying home to their breeding grounds in places as far away as Arctic Tundra in Siberia. How well they feed before flying home to their breeding grounds can impact on their breeding success rate. Therefore ensuring that they are not disturbed from their foraging is important for the species survival

- which sites have good biodiversity value while being able to support some recreational activities

  e.g. Newport Lakes was once a quarry that has been rehabilitated and now supports significant biodiversity as well as walking paths and picnic areas

- which sites have low biodiversity value and can support a range of recreational activities

  e.g. Logan Reserve near the Altona pier has a few large trees that will support some biodiversity but is primarily a recreation site with playground, rotunda, walking paths and picnic areas

Mapping these conservation areas will help to inform open space planning and ensure that recreational spaces are provided for the community to enjoy while protecting biodiversity. This mapping will help to identify where open space is not restricted by biodiversity considerations as well as where it is. It will assist in the management of conflicting land uses. This work will be undertaken in conjunction with the development of the Open Space Strategy.

Biodiversity considerations for open space planning

Recreational activities that have the potential to impact on biodiversity and sensitive conservation areas are listed in table four below. The impact of these activities on sensitive conservation sites will be considered within open space planning. There are a diverse range of sites that can support different recreational activities within Hobsons Bay and this will be reflected in Council's Open Space Strategy.

Due to natural processes ecosystems change. This can create conflict with recreational uses where none previously existed. An example of this is tidal processes that move the sand dunes from Cheetham Wetlands east towards the Doug Grant reserve. This has created conflict between dog walkers, kite surfers and migratory birds. This can be managed through the clear delineation between land uses, separating dog off lead areas and the sand dunes. It is important to advocate for biodiversity values to be protected in commercial agreements between the state and coastal users. This is detailed in Table 4.

Recreational activity	Potential impact	Management consideration
Fishing	Injury to wildlife from discarded fishing line. Pollution of waterways from discarded bait bags. Disturbance to shorebird behaviour.	Council partners with Zoos Victoria and Fishcare to manage these issues through the Seal the Loop program. This includes the provision of bins in fishing hotspots like the Warmies in Newport. Council also support Friends of Group activities in these areas
Kite surfing	Damage to shoreline vegetation. Disturbance to shorebird behaviour.	Collaborating with other agencies to ensure that biodiversity values are recognised in commercial agreements that approve kite surfing in coastal areas will assist in the protection of biodiversity
Four wheel driving, mountain bike riding and trail bike riding	Damage to vegetation and fauna habitats (e.g. at Truganina Park). Creation of new tracks and fragmentation of vegetation patches.	Fencing, signage and plantings are used to deter these activities in sensitive areas
Dog walking	Access and damage to mudflats and associated habitats. Disturbance to shorebird behaviour including foraging.	The use of clearer signs, buffers and boundaries between adjoining land uses can assist in separating dog parks and conservation areas. Defining clear boundaries and raising awareness of the sensitive biodiversity value of a site and why it is protected will assist responsible dog owners in identifying and avoiding sensitive areas while enjoying designated dog off lead areas
Wildlife collecting	Removal of species from wild populations could threaten the survival of some species e.g. Cunninghams Skink.	Wildlife collecting or poaching is illegal and should be reported to DELWP for prosecution under the Wildlife Act 1975. Phone 136 186 or email customer.service@depi.vic.gov.au
Bird feeding	Increase carrying capacity of some species. Health implications due to changes in diet. Changes to animal behaviour e.g. foraging.	Discouraging activities such as picnicking in sensitive shorebird areas and educating the community through conservation events will assist with managing this issue. This may include promoting the benefits of habitat plantings over bird feeders.
Horses	Damage to soil structure and native plants. Spread of weeds.	Council has a permit system in place to ensure that horses are only given access to sites that will not be damaged by horse riding activities. Both temporary and twelve month permits are available

Table 4: Recreational activities that may impact on biodiversity if not managed

5.7 Dumping and encroachment

Dumping materials on land that looks undeveloped can pose a significant problem for local grasslands and other natural environments. The dumping of soils and other materials can introduce weed threats into grasslands. It can also smother plants causing them to die back.

Dumping of materials within Hobsons Bay is illegal and local laws officers can charge offenders. Current action to manage dumping could be strengthened through the identification of areas at risk of dumping and raising the profile of the area. Combined with public education this will assist to make people more aware of the value of significant sites.

Encroachment is when an individual or group of individuals extend their mowing, domestic storage or gardening activities into public land. This can impact grasslands and other natural areas. Mowing can prevent native grasses and other plants from developing seeds that many native animals feed on and that plants need to reproduce. When gardens are extended into natural areas native plants are dug up and replaced with other exotic species that can spread and become weeds.

As with dumping, raising the profile of an area combined with public education can reduce the risk of encroachment.

Hobsons Bay supports significant marine areas, wetlands and coastal parks including Truganina Swamp, the Truganina Explosives Reserve, Cherry Lake, the Altona Coastal Park, Jawbone Reserve, Newport Lakes and the internationally recognised Cheetham Wetlands.

6. MANAGEMENT RESPONSES TO KEY ISSUES

6.1 Mapping and monitoring

Improved mapping and monitoring will guide works and decision making. The use of GIS mapping tools will enable the effectiveness of weed management and pest animal management works to be tracked and evaluated. The learnings from this evaluation will enable pest plant and animal management activities to be tailored to achieve maximum efficiency.

Mapping areas of biodiversity value, including areas of priority for improving connectivity will help guide revegetation works for Council staff and volunteers. Mapping sensitivity will assist in informing open space planning, ensuring that sensitive areas are protected from activities that may disturb areas of biodiversity value such as shorebird habitat. This mapping will also identify where open space is unrestricted by biodiversity considerations.

6.2 Managing weed spread

Preventing the spread of weeds is a high priority for the protection of biodiversity within Hobsons Bay. Weed management activities will be strengthened through the extension of machine hygiene practices to all areas of Council operations. This will ensure that weed seeds are removed from machinery such as lawn mowers.

Council contracts will be updated to include a clause requiring that soils and other materials used in landscaping are free of weed seeds.

Increasing community knowledge of weeds and their impact on biodiversity will be investigated as part of the review into Council's conservation engagement events program. While industry knowledge of weeds will be investigated and strengthened through the network established to improve collaboration on pest animal management.

6.3 A holistic approach to managing pest animals

To effectively manage pest animals a holistic pest animal management plan is needed along with strengthened collaboration between neighbouring land managers. An effective pest animal management plan should, as a minimum, consider:

- what species pose a risk to local biodiversity
- where the source of the risk comes from, for example, are feral cats an issue or are domestic cats getting into conservation areas?
- what areas of biodiversity are most at risk? For example, ground nesting birds such as the many migratory birds that forage in Hobsons Bay each summer are at high risk of predation by cats and foxes both night and day
- how does controlling one species impact on another? For example, controlling foxes without controlling rabbits can lead to a boom in rabbit populations
- the identification of priority areas for protection and recommended control programs
- the plan should align with the state government's Invasive Species and Animals Framework

As part of the implementation of this strategy Council will investigate options for establishing a network that will enable Council, industry and government agencies to collaborate on pest animal management. This will include an investigation of governance models and determine whether any agency, including non-government organisations, has the potential to lead and support such a network. We will engage with industry and government stakeholders to determine and agree on the most suitable solution.

6.4 Ecological burning management

Natural disturbances, such as fire, are needed for many native plants, including many basalt grasslands species, to regenerate. The Chaffy Saw Sedge (Gahnia filum) is one plant that benefits from a cool burn at a small scale every few years. These plants send up new growth once they have been burnt. The young shoots of these plants are the primary source of food for the endangered Altona Skipper Butterfly when it is in its caterpillar form.

Fire also plays a role in reducing biomass or fuel from old dry leaves, and other plant material. This can both reduce the risk of a hot fire and help to keep a healthy balance in the ecosystem between new and old plant growth. Burning native grasslands has most benefits when the burn is cool and patchy, with a different area being burnt each year on a three to four year cycle. This leaves a patchwork of different aged vegetation that supports different animal and insect communities.

It can be difficult to burn grasslands within Hobsons Bay due to the surrounding development and infrastructure. For example, even if a burn takes place at a safe distance from the railway line, wind may blow smoke across the train track. This can cause visibility problems for train drivers and make it unsafe for trains to run. A combination of collaboration between land managers, good planning and the right weather is needed to enable ecological burning to take place.

Council's ability to undertake ecological burning on Council managed conservation areas would be strengthened by a review of Council's Ecological Burning practices and procedure and strengthened collaboration between land managers.

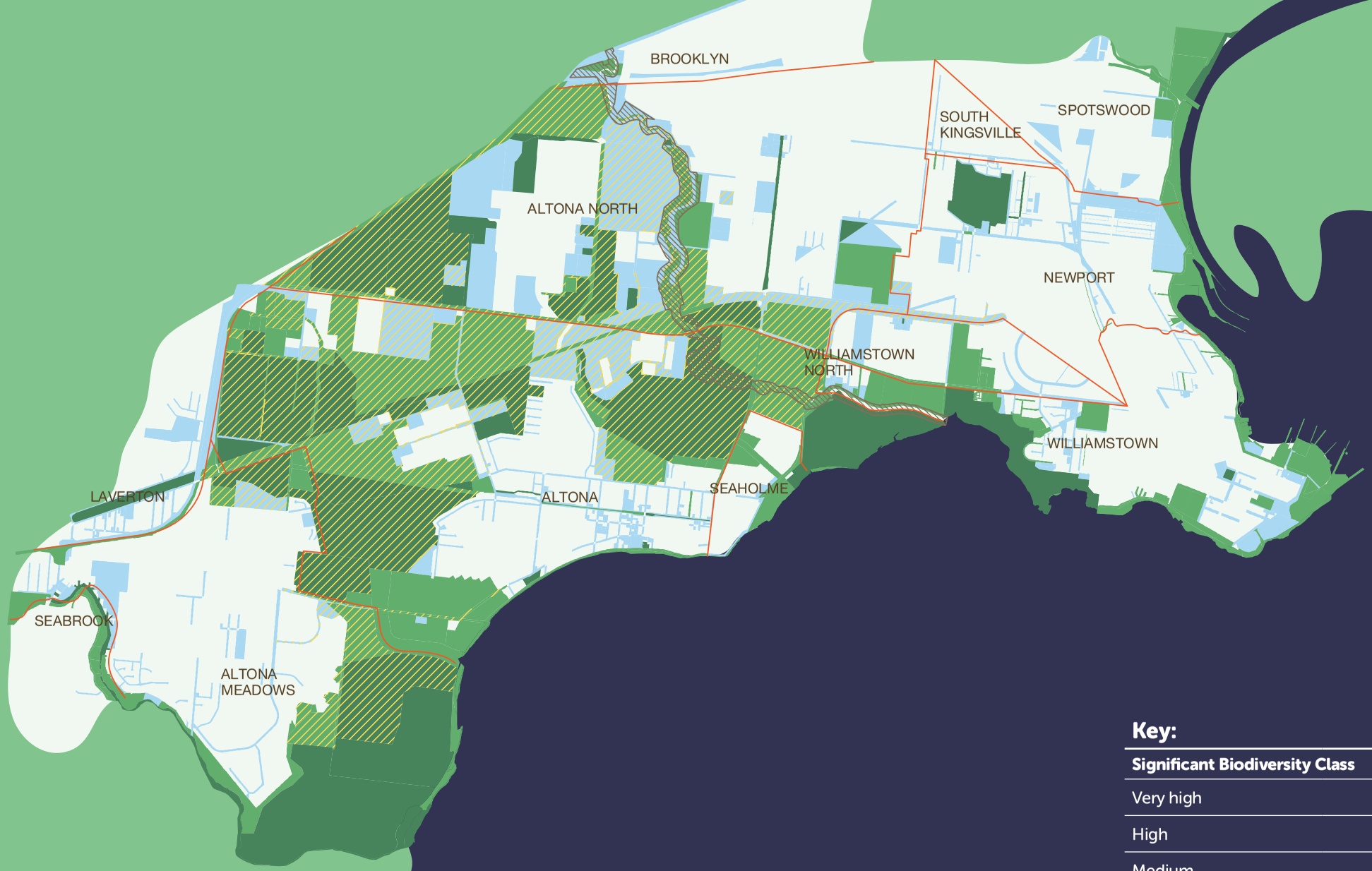
6.5 Utilising tools within the planning scheme

The Environmental Significance Overlay (ESO) is a planning tool that can assist with the protection of biodiversity at a local level. An ESO can provide greater security for high quality vegetation and habitat within Hobsons Bay. This is particularly important for the basalt grasslands. An ESO could consider significant species and the value of connectivity between parcels of land to enable species to move freely within their habitat zone.

Currently the land along Kororoit Creek is the only area to have an ESO within the Hobsons Bay Planning Scheme. The ESO along Kororoit Creek is approximately 30 metres wide as shown in Figure 11 on page 44. To determine whether other areas within Hobsons Bay warrant the protection of an ESO an assessment must first be undertaken to determine the significance of the vegetation or habitat.

Modelling was undertaken to enable Council to determine the location of significant vegetation and habitats. This modelling will assist with the allocation of resources when determining where the ESOs should be applied. It also identifies properties that have had records of rare or threatened fauna and flora over the last 50 years. It rates properties as having potentially very high, potentially high and potentially medium native vegetation value. In some cases land has since been developed, in other cases a species record may have occurred on the boundary of two properties and so both properties have been shown as potentially high in the modelling. As such the modelling is limited, however, it provides guidance on where an assessment of vegetation and habitat significance could be considered, as shown in Figure 11.

It is noted that in Figure 11 the coastal areas of Cheetham Wetlands, Altona Coastal Park and Jawbone Reserve are listed as having very high native vegetation values. However these three sites are not identified as areas for the investigation of Environmental Significance Overlays as they are publicly owned parkland and as such are already considered protected. However, given the different land managers involved, it is important for Council to pursue a collaborative approach that is consistent across all land tenures to maximise the biodiversity outcomes. It is also important that Council undertake this process in collaboration with its upcoming Open Space Strategy.



Key:

Significant Biodiversity Class	
Very high	
High	
Medium	
Low	
Candidate ESO areas	
Suburb boundry	
Existing Environmental Significance Overlay	

This preliminary modelling provides guidance on where a more detailed vegetation assessment should be undertaken to determine whether an Environmental Significance Overlay is required. It is not representative of the final outcome.

Figure 11: Historical records of significant fauna and flora by property boundary to identify potential sites for biolinks.

6.6 Potential offsets

Under local, state and federal legislation an offset may be required as part of a permit to clear native vegetation. The offset is a site that is protected in perpetuity (forever). It protects the same vegetation types or species that are being removed from the development site. In some cases an offset will be secured locally, in other cases they will be located elsewhere in the state.

Offsets have the most value when:

- they are large enough to support the ongoing existence of the species found on the site
- the site connects to an existing area of biodiversity significance and so improves connectivity or makes the overall area of value larger
- the threats from neighbouring properties, such as weed species, is small

Some sites are small and isolated. This can mean a lack of genetic diversity for plants to regenerate in the long term or an area too small for animals to forage.

In some cases, where these conditions cannot be met inside the municipality, it may be better for an offset to be located outside of the municipality. Where these conditions can be met inside the municipality it is preferable that the offset be located within the municipality. An offset policy that addresses these issues would provide greater direction over where and when an offset should be located within the municipality or located elsewhere.

Sometimes Council is approached by a developer to take on the ongoing management of an offset. When determining whether or not Council will agree to take on the ongoing management of an offset site Council will have regard for the ongoing cost of managing and maintaining the offset site as well as the above criteria. This should be incorporated into any offset policy.

6.7 Conservation engagement events

Council runs more than 90 conservation education and engagement events with the community, friends of groups, schools and businesses each year. Community feedback shows that these events are very popular and there is a strong desire for them to continue. Community consultation showed that:

- the community are interested in learning about our local biodiversity
- that the community are concerned about a lack of appreciation for the natural environment, particularly local, remnant grasslands
- there is a need to improve education around weed management
- interests of different age groups should be considered when designing events
- there is the potential to make some events accessible to people with a disability

A review of how Council plan and deliver these events will enable this feedback to be incorporated into Council's program of events.

6.8 Raising the profile of sites

Improving awareness about the unique values of a site can assist in increasing community appreciation and ownership of a site, raising the profile of a site. This can be done through a range of techniques including the design, look and feel of the entrance to a site. It can also be done through interpretive signs, providing information about the site.

Combining these changes with public education can reduce the risk of encroachment and dumping at a site. Council will map and identify priority areas for profile raising to inform capital works planning.

6.9 Possums

There are two species of possum that are common to Hobsons Bay. The Common Ring-tail Possum is a small possum that nests in shrubs and eats fruit and flowers. Occasionally, Ring-tails can damage urban gardens but generally are not a problem to most residents. The Brush-tail Possum is a larger possum that can be boisterous and take up residence in house roofs, if the opportunity is there e.g. loose tiles and gaps. Both species will occupy possum boxes specifically designed for them in preference to houses. Relocation of possums can cause problems because most suitable habitat is already occupied and the displaced possum will not be able to find a suitable home.

6.10 Snakes

There are a variety of snakes that naturally occur in Hobsons Bay including Little Whip Snake, White-lipped Snake and Tiger Snake. All species of native snakes are protected under the *Wildlife Act 1975* which states that it is illegal to disturb or to destroy protected wildlife.

Snakes fulfil a vital role in the proper functioning of an ecosystem whereby they fill the niche of a middle-order predator.

Council undertakes routine maintenance within recreational reserves and open space areas which helps reduce the presence of snakes. Signs are also provided to alert people to the presence of snakes when the weather is warmer.

6.11 Urban ecology

Urban ecology is the inclusion of habitat that can support native species in urban areas. Urban ecology cannot replace pristine natural environments but it can help to preserve some species. Areas where urban ecology is important for preserving native plants and animals in Hobsons Bay include:

- planting Chaffy Saw Sedge in private gardens around Altona and surrounding areas to connect populations of the Altona Skipper Butterfly that exist around Kororoit Creek and Laverton Creek
- winter flowering eucalyptus trees around Newport and surrounding areas to support

the migratory Swift Parrot. When selecting trees for private gardens consideration should be given to the size and suitability of individual tree species for urban gardens

- old hollow bearing trees for owls in Williamstown and surrounding areas

Council provides information to the community about habitat gardening through its Sustainable Gardening guide. Including the identification of hollow bearing trees in Councils significant tree study will assist in the protection of this habitat. Reviewing how habitat gardening is included in and strengthened in existing conservation engagement activities would assist to further promote habitat gardening around Hobsons Bay.

7. AN ACTION PLAN FOR THE MANAGEMENT OF BIODIVERSITY IN HOBSONS BAY

The Biodiversity Strategy is a five year strategy that will be implemented between the 2017-18 and 2021-22 financial years. A detailed and costed action plan has been developed and is set out in table five below. The action plan identifies how each of the six biodiversity goals will be achieved over the five year period.

The costing used in the action plan are:

Indicative cost	Classification
Staff or monetary resources included in existing Council operations	Existing resources
$0–$20,000	Low cost
$20,001–$100,000	Medium cost
$100,001+	High cost

Action	Goal						Indicative cost
	Building ecosystem resilience through long term, adaptive planning	Utilising best practice pest management to reduce threats to our unique biodiversity	Utilising urban ecology and natural area management to prevent the loss of species	Optimise the biodiversity protection opportunities that can be achieved through excellence in land use management	Assisting our community to value our unique biodiversity through education and engagement	Incorporating community recreational benefits without compromising our unique biodiversity	
Objective 1 - Capacity building and collaboration to deliver effective biodiversity management							
1.1 As part of an organisation wide review into Council GIS service needs, review biodiversity data mapping and monitoring needs including: - type of data needed - frequency of data collection needed - time and resources needed to collect data both initially and on an ongoing basis	✔	✔	✔	✔		✔	Internal resources
1.2 Undertake a review of the resources required to implement the Biodiversity strategy, including: - time and capacity to liaise with government agencies and industry to effectively collaborate on regional biodiversity management (with a particular focus on pest plant and animal management) - management and analysis of biodiversity data, monitoring control efforts and reporting - capacity to advise Council on biodiversity related land management issues	✔	✔	✔	✔		✔	Medium Cost
1.3 Continue to, and where needed, strengthen collaborate with other government agencies to protect and preserve biodiversity	✔	✔	✔	✔	✔	✔	Low Cost

1.4 Collaborate with industry and private land managers to build their capacity to protect and preserve native vegetation held on private land. This may include: - investigate the potential for a network to be established to manage issues such as pest plants and animals - investigate a corporate social responsibility type program to assist private land managers to identify and care for native vegetation - investigate a rewards and recognition program for good corporate social responsibility in the field of biodiversity protection - investigate, in collaboration with land managers, potential financial opportunities for the preservation of native vegetation including carbon and biodiversity offsets	✓		✓	✓	✓		Low Cost
1.5 Continue to advocate to the relevant state and federal authorities for the increased protection of native vegetation and long term funding arrangements for the management of offset sites.	✓		✓	✓	✓	✓	Internal resources
Objective 2 - Actively reduce the threat posed by pest plant and animals on biodiversity within Hobsons Bay							
2.1 Continue core pest plant control at Council managed conservation reserves as per site management plans.	✓	✓	✓				High cost
2.2 Undertake a pest plant control review in collaboration with neighbouring land managers to effectively manage: - key conservation areas to be protected and the top weed threats - broader pest plant management needs - options for reducing weed threats	✓	✓	✓				Medium cost

Action	Goal						Indicative cost
	Building ecosystem resilience through long term, adaptive planning	Utilising best practice pest management to reduce threats to our unique biodiversity	Utilising urban ecology and natural area management to prevent the loss of species	Optimise the biodiversity protection opportunities that can be achieved through excellence in land use management	Assisting our community to value our unique biodiversity through education and engagement	Incorporating community recreational benefits without compromising our unique biodiversity	
2.3 Review and update Council practices for machine hygiene and cleanliness to ensure that weed seeds are not spread by machinery.	✔	✔	✔				Internal resources
2.4 As part of the development and implementation of a pest animal management plan, identify: - Council-wide pest animal control needs for rabbits, foxes, cats, Indian mynas and other relevant species - develop an annual program of works to manage pest animals, including rabbits and foxes, at conservation reserves - options for improving collaboration with neighbouring land managers to effectively manage pest animals including rabbits - the suitability of pest animal control options for the urban context - advocacy needs to manage key species such as Indian mynas	✔	✔	✔				Medium cost
Objective 3 - Actively enhance the connectivity of conservation areas							
3.1 Identify areas of priority for increasing connectivity and biolinks both within the municipality and across the region. This may include: - keeping offsets within the municipality where they would contribute to biodiversity (to be guided by the outcome of action 5.1)	✔		✔	✔	✔	✔	Medium cost

This will include: - identify where restoration works should be prioritised to increase connectivity - identify where connectivity is important to allow for the upstream migration of species retreating from sea level rise	✓		✓	✓	✓	✓	Medium cost
3.2 Link biodiversity corridors with conservation reserves, creeks and open spaces across the municipality through revegetation and landscaping techniques.	✓		✓	✓	✓	✓	
3.3 As part of a broader project to identify and protect significant trees - map trees with significant conservation values such as those containing hollows for fauna habitat.	✓		✓	✓	✓	✓	
Objective 4 - Enhance land management practices for biodiversity protection							
4.1 Where gaps exist in current mapping and modelling of vegetation, undertake further mapping to support decision making and potential planning controls such as Environmental Significance Overlays.	✓		✓	✓			Medium cost
4.2 Review of ecological burn practices.	✓		✓				Internal resources
4.3 Review fire notices. This will include a review of mapping and identification of areas subject to fire notice that have significant habitat.	✓		✓	✓			Internal resources
4.4 Collaborate with key stakeholders and agencies to establish a citizen science program to monitor the health of biodiversity, including shore birds, within the municipality. Investigate how the citizen science program can make use of and contribute to publicly accessible data bases for the sharing of knowledge between the community and agencies working to protect biodiversity.	✓		✓		✓		Internal resources

Action	Goal						Indicative cost
	Building ecosystem resilience through long term, adaptive planning	Utilising best practice pest management to reduce threats to our unique biodiversity	Utilising urban ecology and natural area management to prevent the loss of species	Optimise the biodiversity protection opportunities that can be achieved through excellence in land use management	Assisting our community to value our unique biodiversity through education and engagement	Incorporating community recreational benefits without compromising our unique biodiversity	
Objective 5 - Enhance land use management practices for biodiversity protection							
5.1 Develop a procedure to guide when and under what condition Council: - will accept and manage offsets - determines if offsets are to be retained within the municipality or sought elsewhere	✔		✔	✔			Internal resources
5.2 Strengthen the protection of native grasslands within the local planning scheme by investigating Environmental Significance Overlays for the increased protection of sites with high value vegetation.	✔		✔	✔			High cost
Objective 6 - Education and engagement							
6.1 Review the balance of using existing resources for community engagement activities and core conservation actions, including: - how events are promoted and communicated to the community - the demand for events - resources necessary to deliver these activities - how we engage with our volunteers					✔	✔	Internal resources
6.2 Review how the Enviro Centre and Council's biodiversity resources can be utilised to more effectively support volunteers and community members who are interested in biodiversity.					✔	✔	Internal resources

6.3 Embed in Council's signage and way finding strategy an interpretive signage suite for conservation areas.					✓	✓	Internal resources
Objective 7 - People and biodiversity management							
7.1 In line with Council's draft Reconciliation Action Plan, Council will commence the process of increasing community recognition of reconciliation and Aboriginal culture by engaging with the Aboriginal community.					✓		Medium cost
7.2 Identify key conservation sites at risk of dumping. Develop a plan to manage the risk to these sites. This should consider site profile raising, signage and awareness raising activities.	✓		✓		✓		Internal resources
7.3 Identify and map conservation sites for high biodiversity protection and significant sites for medium biodiversity protection. Develop a plan to manage the impacts of dogs and other recreational uses in these areas. This may include clearer signs, buffers and boundaries between adjoining land uses.	✓		✓		✓	✓	Internal resources
7.4 Work collaboratively with other agencies to clarify biodiversity values and responsibilities. Incorporate the protection of conservation areas into all commercial agreements such as kite surfing agreements.	✓		✓			✓	Internal resources
7.5 Following the mapping and identification of significant trees, review approval and enforcement processes for the removal of trees and strengthen as appropriate.	✓	✓	✓	✓			Internal resources

Table 5: Biodiversity Action Plan for 2017-18 to 2021-22

7.1 Monitoring and review

Three important steps will be developed once the Biodiversity Strategy is finalised to support implementation of the action plan and to ensure that any work program benefits communities and biodiversity through an emphasis on monitoring, evaluation and reporting (MER). A well developed monitoring and evaluation process allows land managers to quantify the effectiveness of their management strategies and provides data and information so that Council can report on management outcomes to the community. The MER process supports continuous improvement through evidence-based decision making.

Implementation of this strategy through the actions set out in Table 5 along with the associated monitoring and evaluation process will be reported on annually.

Walking and cycling paths was the top thing the community value about Hobsons Bay's natural environment. This suggests that what people value most about the natural environment is being able to interact with it.

8. CONCLUSION

Hobsons Bay contains many significant plants, animals and ecosystems. The ongoing protection and management of these areas is important to the local community. Council will be able to strengthen its existing approach to biodiversity management by:

- **strengthening the use of land use planning tools**
- **integrating biodiversity and open space planning**
- **building relationships and partnerships to coordinate the management of pest plant and animals**

An important part of the process is to educate the community so that they in turn value and protect their unique biodiversity. Building community support for the implementation of the actions set out in Table 5 will lead to an increase in support for the protection of significant biodiversity assets across Hobsons Bay and ensure that they can be preserved for the benefit of future generations.

APPENDIX 1
SUMMARY OF COMMUNITY CONSULTATION OUTCOMES

Stakeholder engagement on the development of the Biodiversity Strategy was held between September and November 2015. The stakeholder engagement had three components:

- a community survey was undertaken to develop an initial understanding of what aspects of biodiversity are important to the local community
- three workshops were held to further explore and deepen Council's understanding of issues and findings from the survey results
- government and industry stakeholders were contacted and given the opportunity to discuss issues around land management and biodiversity via a group workshop or phone interview

Community feedback

A total of 153 people responded to the survey and 41 people attended the workshops. The key findings from the community consultation are:

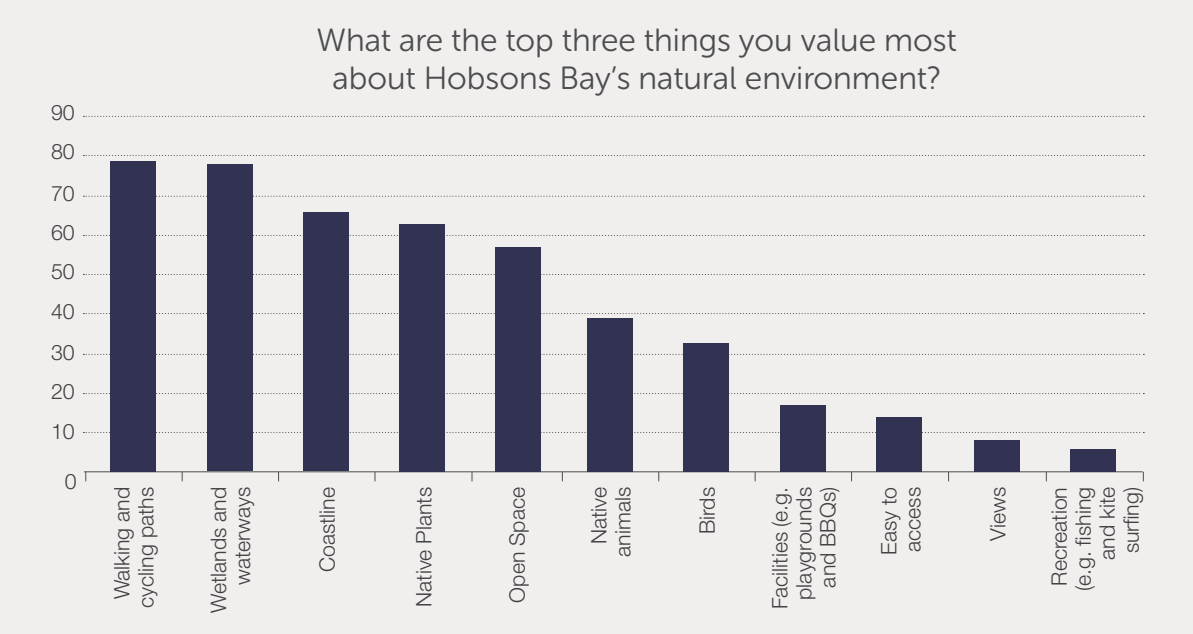


Figure 12: Top three things the community value most about Hobsons Bay's natural environment

Walking and cycling paths was the top thing the community value about Hobsons Bay's natural environment. This suggests that what people value most about the natural environment is being able to interact with it. It is therefore important for there to be close alignment between Council's Biodiversity Strategy and future Open Space Strategy.

Wetlands and waterways came a close second followed by the coastline. This suggests that water and places relating to water are important to the community. This was echoed in the community workshops where members of the community expressed concerns about climate change causing natural places to become dryer. Community members felt that it was important to use rainwater and let it soak into the ground instead of sheeting off as stormwater. These issues are identified and managed through Council's 2014-19 Integrated Water Management Plan.

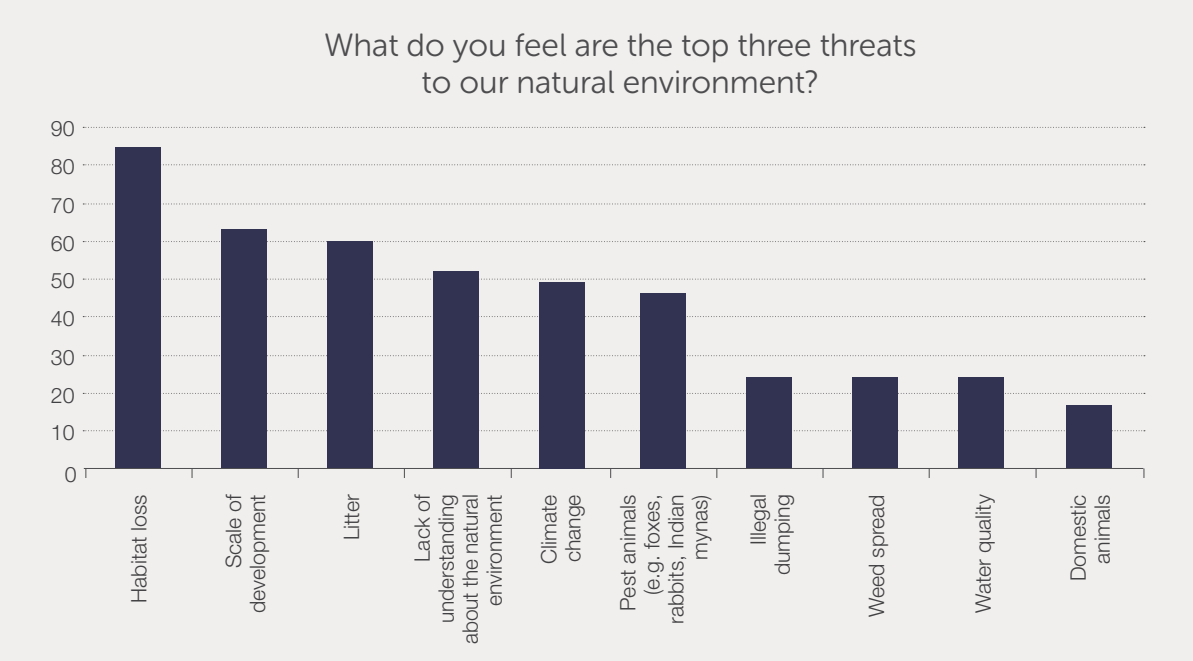


Figure 13: Top three things the community consider to be a threat to the natural environment

Habitat loss followed by the scale of developments were the top two things considered to be a threat to the natural environment by the community. This is recognised in the Biodiversity Strategy through the commitment to investigate where an Environmental Significance Overlay could be utilised within the planning scheme to strengthen protection for local biodiversity.

Concern about a lack of understanding about the natural environment was the third most significant threat to biodiversity identified by the community. This was echoed in the community workshops by concern about a lack of appreciation and understanding about remnant grassland. This concern is recognised in the Biodiversity Strategy through the review of Council's conservation engagement events and by the need to raise the profile of remnant grasslands, and reduce illegal dumping in areas where grasslands are present.

The spread of weeds is listed as the third last threat to biodiversity as identified by the community. This is despite independent experts identifying weeds as the top threat to biodiversity within Hobsons Bay. This suggests that further work is needed to educate the community about the threat of weeds. This is recognised in the Biodiversity Strategy through the review and promotion of Council's conservation engagement events.

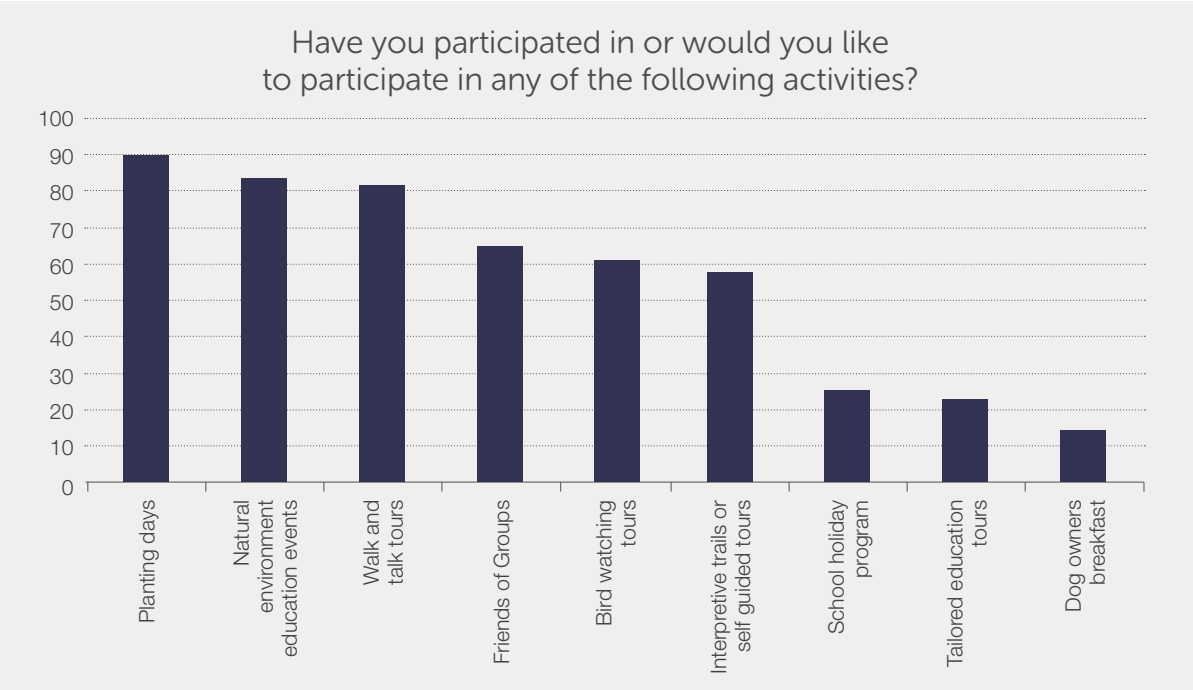


Figure 14: Events that the community have or would like to participate in

Events that the community are interested in participating in varied by age although planting days and natural environment education events were popular across all age groups. One of the key messages from the community workshops was that residents are particularly interested in learning more about the local biodiversity specific to Hobsons Bay.

Key aged based trends for activities the community would like to participation in are:

- interpretive trails or self guided tours
  - high interest from the 25 to 34 age group
  - moderate interest from all other age groups
- Friends of groups
  - low interest from under 35's
  - moderate interest from 35 to 50
  - high interest from over 50's
- Bird watching
  - high interest from under 25's, particularly school aged students
  - low to moderate interest from 25 to 60
  - high interest from over 60's

In addition, feedback from Council's Disability Advisory Group suggested that a few conservation community engagement events could be made accessible to people with a disability. For example hearing loops could be used on walk and talk tours to enable people with hearing impairments to hear the talk while an event such as a reptile talk at the Enviro Centre might be suitable for someone in a wheelchair.

All of this feedback will inform the review into how Council delivers its conservation activities.

Government and industry feedback

A total of 24 government and industry stakeholders participated in the stakeholder consultation. This consultation focused on pest plant and animal management. Pest animals were considered to be a particular concern for industry. Responses about industry concerns around pest animal management are shown below in table six.

Pest animal	Responses
Mice	Baiting stations to manage mice are used by a small number of industry groups.
Rabbits	Many of the large industry groups undertake periodic rabbit control.
	Rabbits cause damage to a number of assets including, bunds, lawn, garden beds and graves.
	Rabbits can get into drains, leaving droppings that increases pollutant loads in stormwater outlets.
	Recolonisation of rabbits from neighbouring properties after baiting is a serious issue.
	There is support for a coordinated approach to rabbit control from industrial groups and government agencies.
Foxes	Some government agencies undertake fox control on their land.

Table 6: Industry responses on pest animal management

Industry stakeholders often manage weeds on their properties but are not always aware of which species pose the greatest threat to neighbouring conservation areas.

Industry stakeholders were supportive of increased collaboration between land managers, particularly to manage pest animals.

Governments and government agencies recognise that we often collaborate with each other on projects where our land abuts. It is recognised that this could be strengthened through a more regional focus on collaboration.

As a result of this consultation improving collaboration, particularly around pest animal management, is a key action in the Biodiversity Strategy.

APPENDIX 2
PEST ANIMAL MANAGEMENT

An integrated pest animal management plan should clearly identify the current threats posed to biodiversity from pest animals. It should identify the level of risk posed by pest animals for different conservation areas. It should consider interactions between pest animals and the most effective method for jointly managing these pests.

As a minimum an integrated pest animal management strategy will need to consider:

Cats

Cats can pose a significant threat to local wildlife. Ground nesting birds such as those commonly found in coastal parklands around Hobsons Bay are particularly vulnerable to predation by cats. To effectively manage the threat posed by cats to wildlife it is important to know where the risk comes from as demonstrated below.

True ferals – feral cats cover a large hunting area and stalk everything from native animals to introduced species such as mice. In built-up areas cage traps are the recommended option for catching feral cats to avoid harm to domestic cats. This can be both resource and cost intensive as traps need to be manually checked several times a day.

Semi owned – semi owned cats are half way between domestic and feral cats. They can often stop by one or more households for the odd meal and are free to roam the streets and parklands as they please. This causes a problem for local wildlife. The best way to manage semi owned cats is to encourage responsible pet ownership thereby preventing cats from becoming semi owned.

Domestic cats – domestic cats can have a hunting range up to 7.9 hectares. As many shore birds within Hobsons Bay are ground nesting they are just as vulnerable to predation by cats during the day as they are at night. Therefore keeping cats indoors at night will not be sufficient to protect local wildlife. Education is needed to ensure that cat owners act responsibly and are aware of local conservation needs.

To manage the impacts of cats on local wildlife effectively more information is needed on which types of cats are entering conservation sites within Hobsons Bay. This information will help to inform an action plan to manage their impact.

Foxes

Foxes can pose a significant threat to local wildlife, including to ground nesting shorebirds. Council currently manages fox populations in key conservation areas as and when funding is available through state and federal fox control programs.

The management of foxes across Hobsons Bay could be strengthened by establishing Council's own regular fund for the management of foxes and

by developing a holistic pest animal management plan. Such a plan should consider how the management of foxes impacts on the population of other pests such as rabbits. It should also consider cost effective control measures that are suitable for the urban environment.

Indian Mynas

Indian Mynas are a very invasive species. They are known to be aggressive to other birds and to displace them from nesting and feeding sites. Unlike other pest animals there is currently no state or national program to manage Indian Mynas. Indian Mynas are highly mobile and as such, controlling them at a local or municipal level is ineffective. A regional approach is needed to effectively manage Indian Mynas. Advocacy is needed to establish a state or national program to control this species.

Rabbits

Rabbits can out-compete other herbivores and can decimate grasses and other ground covering plants. They pose a significant risk to local wildlife. The most effective time to control rabbits is at the end of summer or early autumn when the grasses are at their driest and before the rain brings new growth.

Rabbits are controlled most effectively when neighbouring land owners and managers work together to control rabbit populations. Consultation with local industry and government stakeholders shows that there is a willingness for land managers to work together to manage this issue.

Rabbit numbers can increase significantly when other predators such as foxes are controlled without any action being taken to control rabbits. A holistic approach to pest animal management is needed to avoid any accidental consequences of managing species in isolation.

APPENDIX 3
LEGISLATION

There is a suite of legislation in place at both federal and state levels that assist in protecting biodiversity values. This legislation includes:

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act covers matters of national environmental significance. This includes:

- species or ecosystems that are threatened across the nation
- birds that are migratory or fly over Australian land or marine areas and are threatened nationally or internationally
- Ramsar Wetlands that are internationally listed for the protection of migratory birds
- Commonwealth Marine Areas

There are eight plants and 11 animals within Hobsons Bay that are protected under this legislation. If proposed works or actions, including the clearing of vegetation from public or private property, has the potential to impact on any of these things then approval must be obtained from the Commonwealth Environment Minister.

Flora and Fauna Guarantee Act 1988 (FFG Act)

The FFG Act covers plants and animals that are recognised as being threatened in some way within Victoria. It also covers processes that provide a threat to indigenous plants and animals. This includes removing trees with hollows that could be used by wildlife.

There are 13 plants and 26 animals within Hobsons Bay that are protected under this legislation. If proposed works or actions, including the clearing of trees or vegetation from public or private property, has the potential to impact on any of these things then approval must be obtained from the Department of Environment Land Water and Planning.

Catchment and Land Protection Act 1994 (CaLP Act)

The CaLP Act provides a framework for the management of land within Victoria. This includes the control of noxious weeds and pest animals. Under this legislation both public and private land holders must take reasonable steps to control noxious weeds and pest animals on their land.

Planning and Environment Act 1987 (P&E Act)

The purpose of the Victorian P&E Act is to establish a framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians. The P&E Act requires that each Council must prepare a planning scheme for its municipal district. This planning scheme determines what land use and development can occur within a given area. The Hobsons Bay Planning Scheme sets out controls for land use planning in accordance with the Act, as follows:

- state and local policies that guide decisions on land use and development
- use and development that is allowed without a permit
- use and development that requires a permit
- prohibited use and development

The Hobsons Bay Planning Scheme contains a provision for the protection and conservation of biodiversity (Clause 12.01) and another to ensure that there is no net loss of native vegetation (Clause 52.17). Planning schemes can also contain complementary controls and other provisions to recognise and protect natural environmental values and biodiversity.

Hobsons Bay City Council is the Responsible Authority for administering the provisions in the Hobsons Bay Planning Scheme.

Coastal Management Act 1995

The Coastal Management Act 1995 provides for coordinated strategic planning and management for Victorian coasts. It does this through the Victorian Coastal strategy which provides a state wide vision and guidance for regional coastal plans.

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