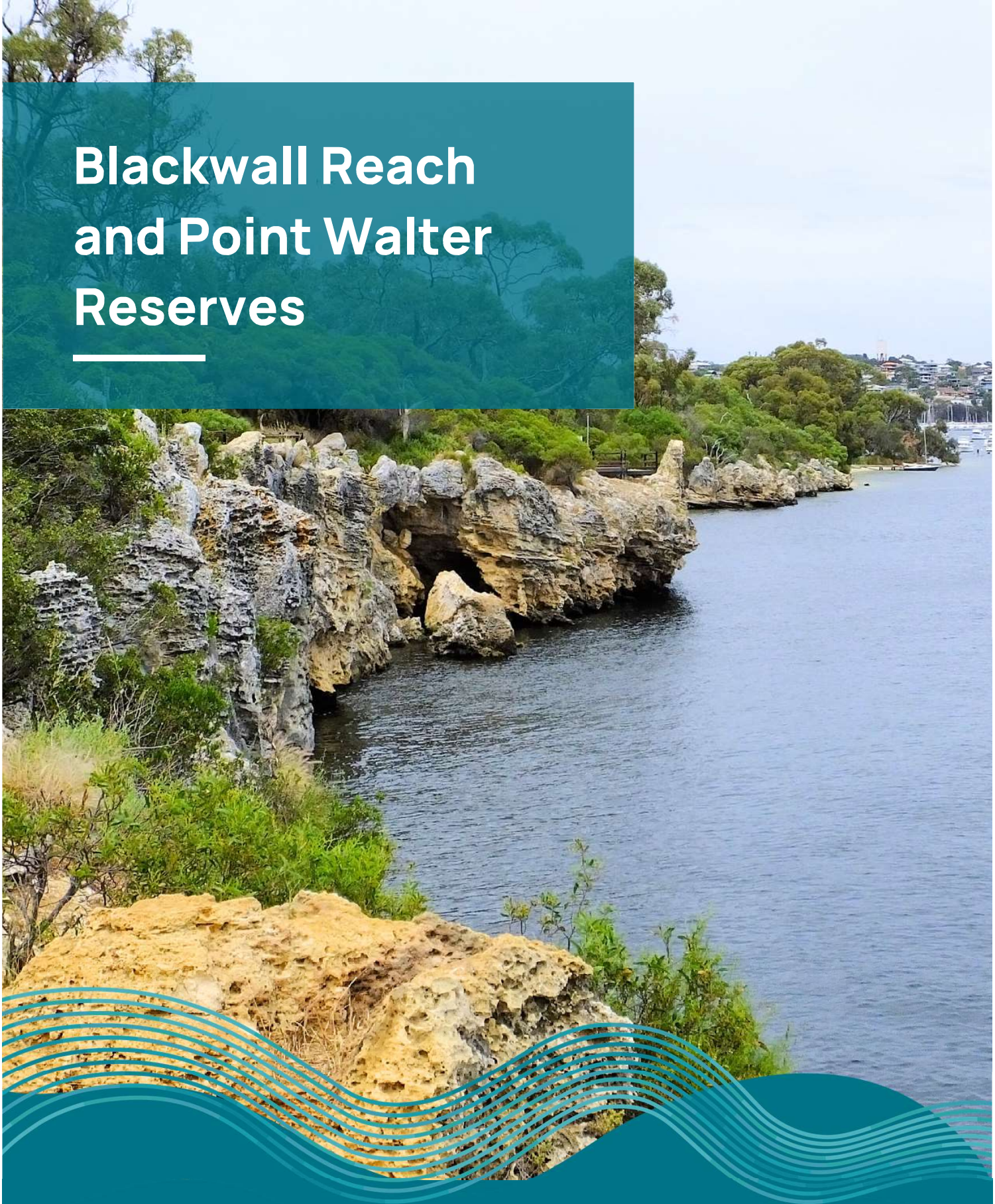
Blackwall Reach and Point Walter Reserves



Strategic Management Plan
2025-2030

City of Melville

Executive Summary

Strategic management plans are required to be developed for selected reserves and periodically updated according to the guidance provided in the City of Melville's (the City) Natural Areas Asset Management Plan (NAAMP). The assets and threats identified within the reserves outlined assist in determining the success and protection of the reserves, allowing the prioritisation of management techniques within the reserves. Strategic management plans have previously been developed for Blackwall Reach and Point Walter Reserves as part of the Estuarine Reserve Strategic Management Plan in 2014 and 2020.

Assets present within the Blackwall Reach and Point Walter Reserves were identified and determine how the City is performing in relation to measurable indices outlined in the City's NAAMP. Assets identified within Blackwall Reach and Point Walter Reserves include:

- Bush Forever Site (ID 331).
- High value ecological linkages: part of the Swan River regional linkage and part of the local linkage between Point Walter, Wal Hughes and Harry Sandon Reserves.
- A total of eight different vegetation types:
  - *Acacia rostellifera* shrubland
  - *Agonis flexuosa* woodland
  - *Eucalyptus gomphocephala* woodland
  - *Agonis flexuosa* and *Eucalyptus gomphocephala* woodland
  - *Casuarina obesa* woodland
  - *Corymbia calophylla*, *Eucalyptus marginata* and Banksia woodland
  - Revegetation
  - Parkland / cleared.
- Vegetation condition ranges from degraded to very good.
- Characteristics of the Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community, listed as Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), are represented within Blackwall Reach and Point Walter Reserves.
- Contains Aboriginal and European Cultural Heritage sites (site/place no. 3536, 3650, 18715, 6070).
- A total of 96 native flora species from 31 families.
- Two conservation significant flora species, *Grevillea thelemanniana*, listed as Threatened under the *Biodiversity Conservation Act 2016* (WA) (BC Act) and EPBC Act, and *Dodonaea hackettiana*, listed as Priority 4 under the BC Act.
- A total of 39 native fauna species from 26 families, comprised of:
  - 26 birds
  - 3 mammals
  - 7 reptiles
  - 3 invertebrates.
- Two conservation significant fauna species: Carnaby's Cockatoo (*Zanda latirostris*), listed as Endangered under the BC Act and EPBC Act and Forest Red-tailed Black Cockatoo *(Calyptorhynchus banksii naso*), listed Vulnerable under the BC Act and EPBC Act.
- A total of three fauna habitat types.

- A total of 398 potential habitat trees, 60 of which contain hollows.

Threats present within Blackwall Reach and Point Walter Reserves were identified and measured against performance indices outline in the NAAMP. Threats identified include:

- Physical disturbances in the form of informal tracks and illegal dumping of household rubbish and construction material.
- One small fire within Blackwall Reach Reserve in 2021.
- A total of 73 weed species across the reserves, an increase of 6 species compared to the 2020 Management Plan.
- A total of seven very high impact weeds, including four declared pests and Weeds of National Significance (WoNS):
    - Arum Lily (**Zantedeschia aethiopica*)
    - One-leaf Cape Tulip (**Moraea flaccida*)
    - Bridal Creeper (**Asparagus asparagoides*)
    - Lantana (**Lantana camara*).
- A total of eight introduced fauna species, of which three are declared pests: Rainbow Lorikeet (**Trichoglossus moluccanus*), Red Fox (**Vulpes vulpes*), and Rabbit (**Oryctolagus cuniculus*).
- No evidence of disease and pathogens were present at the time of the survey.
- Vegetation decline due to consecutive years of drought and low rainfall.

Management strategies to improve and maintain assets and to contain and reduce threats include:

- Continue rehabilitation works including weed control, planting of site-specific species, and erosion control.
- Ensure the population of *Dodonaea hackettiana* is maintained within Blackwall Reach Reserve.
- Retain all identified potential habitat trees.
- Increase the number of bird and bat boxes.
- Continue to support community involvement.
- Continue removal of European Bee hives.
- Continue feral animal control and promoting responsible pet ownership.
- Revegetate informal tracks.
- Continue rubbish and vandalism removal.
- Undertake fire fuel load reduction.
- Continue to prevent the introduction and spread of plant diseases and pathogens.
- Monitor and manage reticulation to ensure that there is no overspray into the bushland.
- Continue monitoring climate change impacts.

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1 Introduction

1.1 Background

Strategic management plans are required to be developed for selected reserves and periodically updated according to the guidance provided in the City of Melville's (the City) Natural Areas Asset Management Plan (NAAMP). Content discussed in detail in the NAAMP is not repeated in this management plan; it is recommended that this document is applied in conjunction with the guidance provided in the NAAMP (Woodgis, 2019).

This management plan comprises Blackwall Reach Reserve and Point Walter Reserve (referred to as the 2025 Management Plan). Two previous management plans have been developed for Blackwall Reach and Point Walter Reserves:

- Estuarine Reserves Strategic Management Plan 2014 - 2019 (Waters, 2014), referred to as the 2014 Management Plan.
- Estuarine Reserves Strategic Management Plan 2020 (Natural Area Consulting Management Services (Natural Area), 2020), referred to as the 2020 Management Plan.

These previous management plans included other reserves that are not part of this 2025 Management Plan.

1.2 Objectives

The objective of this management plan is to update and expand on content provided in the previous management plans regarding the management of Blackwall Reach and Point Walter Reserves. The outcomes and effectiveness of management strategies, objectives and guidelines set in the previous management plans are reviewed to develop appropriate recommendations in future management plans. The finalised strategic management reserve is intended to guide management activities in the reserves for the proceeding five-year period.

1.3 Scope

Blackwall Reach and Point Walter Reserves are located in the suburb of Bicton within the City of Melville, approximately 10 km south-west of the Perth Central Business District (CBD). Blackwall Reach Reserve is 12.77 ha in size and Point Walter Reserve is 10.40 ha (Map 1).

Under the framework described in the NAAMP (summarised in Table 1) this strategic management plan is required to:

- Describe any environmental assets present (flora, fauna or vegetation communities, community usage and heritage).
- Assess any change evident in the assets present, comparing against previous surveys and plans.
- Identify current potential threats to environmental assets.
- Identify management priorities.

- Identify reserve specific management strategies.
- Provide recommendations for implementation of reserve specific management strategies.
- Provide assessment of the success of previously identified objectives and management strategies with consideration of the use of these as leading or lagging indicators.

Table 1: Interactions between assets, threats and management guidelines

Priorities for Protection from Threats										Threats impacting on assets and therefore subject to Management	Techniques for Management of Threats									
BIODIVERSITY ASSETS										THREATS	MANAGEMENT GUIDELINES									
Bush Forever Reserves	Ecological Linkage Reserves	Ecological Community Sites	Fauna Habitat Sites	Wetland Sites	Heritage Sites	Community Interest Sites	Reference Sites	Native Flora Species	Native Fauna Species		Sign, Path and Barrier Guidelines	Bushfire Strategy	Weed Control Strategy & Guidelines	Revegetation Strategy & Guidelines	Feral Animal Strategy and Guidelines	Diseases and Pathogen Guidelines	Stormwater Management Strategy	Reticulation Guidelines	Acid Sulfate Soils Guidelines	Community Engagement
X	X	X	X		X	X	X	X		Physical Disturbance	X	X	X	X	X	X	X	X	X	X
X	X	X	X		X	X		X	X	Fire		X	X	X				X		X
X	X	X	X	X	X	X		X	X	Weeds		X	X	X				X		X
X	X	X	X					X	X	Habitat Loss				X	X					X
X	X	X	X					X	X	Feral Animals				X	X					X
X	X	X	X	X	X	X	X	X	X	Diseases & Pathogens	X					X				X
X	X	X	X	X	X		X	X	X	Stormwater							X			X
								X		Reticulation								X		
X	X	X	X	X	X			X	X	Acid Sulfate Soils									X	
X	X	X	X	X	X			X		Climate Change			X	X						

Source: Woodgis, 2019

2 Assets

2.1 Reserve Assets

2.1.1 Bush Forever

Bush Forever Sites are regionally significant bushland and wetland areas within the Swan Coastal Plain that were identified as needing protection in Perth's Bushland Project (Government of Western Australia, 2000a, 2000b).

Bush Forever Site 331 contains all the bushland in Blackwall Reach and Point Walter Reserves as well as additional areas along the foreshore to the east. The two reserves meet five of the Bush Forever selection criteria listed in the City's NAAMP (Table 2).

Table 2: Bush Forever Criteria, Blackwall Reach and Point Walter Reserves

Bush Forever Criteria	Comments
Representation of ecological communities	• Within the vegetation complex Karrakatta Complex - Central and South. • Floristic community types are comprised of Seasonal Wetlands and Uplands centred on the Spearwood Dunes.
Rarity	• Blackwall Reach Reserve contains *Eucalyptus gomphocephala* Woodlands • Locally significant flora is known to occur in the area which include, *Lechenaultia linarioides* and *Caladenia latifolia.*
Maintaining ecological processes or natural systems	• As fringing vegetation on the Swan River, the reserves play a role in hydrological cycles, reduction of erosion and nutrient stripping of material and water before it enters the River.
General criteria for the protection of wetland, streamline and estuarine fringing vegetation and coastal vegetation	• Blackwall Reach Reserve is located on the banks of the Swan River (listed as a Conservation Category Wetland (UFI 13316)) and is comprised of coastal and riparian vegetation.
Criteria not relevant to determination of regional significance, but which may be applied when evaluating areas having similar values	• The area provides habitat for fauna. • Provides a linkage between areas of bushland enabling fauna movements. • Contains both European and Aboriginal heritage sites.

Source: Government of Western Australia (2000a, 2000b) and the NAAMP.

Table 3: Bush Forever Listing Indicator

Asset	Objective	Assessment of Success
Bush Forever Listing	Monitor - no change to Bush Forever system expected.	Successful

2.1.2 Ecological Linkages

Ecological linkages are broadly mapped patches of remnant isolated bushlands that represent link habitats to facilitate ecological movements and processes across a landscape. Ecological linkages can maintain genetic diversity of flora and fauna species and provide refuge for fauna to move between natural bushlands.

The City's NAAMP (2019) assessed Blackwall Reach and Point Walter Reserves to be of a very high value linkage. Both reserves form part of the Swan River regional linkage, and Point Walter also forms part of the local linkage between Point Walter, Wal Hughes and Harry Sandon reserves. The Perth Metropolitan Regional ecological linkages and native vegetation extents are provided in Map 2.

Table 4: Ecological Linkages Indicator

Asset	Objective	Assessment of Success
Ecological Linkages	Monitor - no change to Ecological linkages expected.	Successful

2.2 Site Assets

2.2.1 Vegetation

2.2.1.1 Vegetation Types

The vegetation types across Blackwall Reach and Point Walter Reserves were mapped by Natural Area in accordance with the *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016). The full methodology is provided in Appendix 1.

A total of eight vegetation types were present across Blackwall Reach and Point Walter Reserves, including:

- *Acacia rostellifera* shrubland
- *Agonis flexuosa* woodland
- *Eucalyptus gomphocephala* woodland
- *Agonis flexuosa* and *Eucalyptus gomphocephala* woodland
- *Casuarina obesa* woodland
- *Corymbia calophylla*, *Eucalyptus marginata* and Banksia woodland
- Revegetation
- Parkland / cleared.

Vegetation types have remained relatively consistent since those recorded in the 2014 and 2020 management plans. One vegetation type, *Eucalyptus gomphocephala* woodland, that was recorded in the 2020 management plan was split into two vegetation types in 2024 to allow for a better representation of the upper storey and emergent species. The *Banksia prionotes and Eucalyptus gomphocephala* woodland recorded at Point Walter in 2020 was combined with the *Eucalyptus gomphocephala* woodland in 2024. The areas of coastal shrubland species were split into three vegetation types in 2014 and then combined into one vegetation type of mixed coastal shrubland in

2020. In 2024 these areas were recorded as *Acacia rostellifera* shrubland due to the *Acacia rostellifera* becoming the dominant species.

A summary of the vegetation types across the management plans are provided in Table 5. The vegetation types from the 2024 survey are described in detail in Table 6 and displayed in Map 3.

Table 5: Summary of vegetation types recorded within the reserves and their current extents

2014 Management Plan	2020 Management Plan	2025 Management Plan	Extent Summary	
			Area (ha)	%
Corymbia calophylla and *Eucalyptus marginata* woodland	*Corymbia calophylla*, *Eucalyptus marginata* and Banksia woodland	*Corymbia calophylla*, *Eucalyptus marginata* and Banksia woodland	5.97	25.74
Banksia menziesii and *Banksia attenuata* woodland				
Casuarina obesa woodland	*Casuarina obesa* woodland	*Casuarina obesa* woodland	0.36	1.55
Alyxia buxifolia shrubland	Mixed coastal shrubland	*Acacia rostellifera* shrubland	1.40	6.03
Banksia sessilis shrubland				
Melaleuca systena shrubland				
Eucalyptus gomphocephala woodland	*Eucalyptus gomphocephala* woodland	*Eucalyptus gomphocephala* woodland	7.99	34.44
		Agonis flexuosa and *Eucalyptus gomphocephala* woodland	3.75	16.16
Agonis flexuosa woodland	*Agonis flexuosa* woodland	*Agonis flexuosa* woodland	1.60	6.90
Banksia prionotes woodland	*Banksia prionotes* and *Eucalyptus gomphocephala* woodland	Not described	-	-
Not described	Not described	Revegetation	1.01	4.35
Not described	Not described	Parkland / Cleared	1.12	4.83

Table 6: Vegetation types recorded across the reserve

Code	Vegetation Type	Vegetation Description	Photo
ArS	*Acacia rostellifera* shrubland	A shrubland of *Acacia rostellifera* over mixed native and introduced herbs and grasses.	
AfW	*Agonis flexuosa* woodland	A woodland of *Agonis flexuosa* over mixed native shrubs over native herbs and introduced grasses and herbs.	

EgW	*Eucalyptus gomphocephala* woodland	A woodland of *Eucalyptus gomphocephala* over mixed native shrubs over mixed introduced herbs and grasses.	
AfEgW	*Agonis flexuosa* and *Eucalyptus gomphocephala* woodland	A woodland of *Agonis flexuosa* and *Eucalyptus gomphocephala* with scattered *Banksia sessilis* over *Rhagodia baccata* and mixed introduced herbs and grasses.	

CoW	*Casuarina obesa* woodland	A woodland of *Casuarina obesa* over *Juncus* spp., *Ficinia nodosa* and mixed introduced species.	
CcEmBW	*Corymbia calophylla*, *Eucalyptus marginata* and *Banksia woodland*	A woodland of *Corymbia calophylla, Eucalyptus marginata* and *Banksia* over mixed native shrubs over mixed native and introduced herbs and species.	
Revegetation	Revegetation	Revegetation within the Dyoondalup Bike Park.	No photograph.

Parkland	Parkland	Parkland / Cleared	

2.2.1.2 Vegetation Condition

Vegetation condition across Blackwall Reach and Point Walter Reserves ranged from degraded to very good (Table 7, Map 4). The vegetation condition was predominantly good (59 %), followed by degraded (26 %) and very good (15 %).

The areas in very good condition were mainly along the foreshore edge in Blackwall Reach Reserve which supported a high diversity of flora species, likely due to lower human disturbance as it is further away from developed areas. The remainder of Blackwall Reach Reserve was in good condition. Much of Point Walter Reserve was in degraded condition in the *Eucalyptus gomphocephala* woodland and the *Corymbia calophylla* and *Eucalyptus marginata* woodland. These areas contained a reduced number of native flora species, particularly in the middle and lower stratum, with high weed loads.

A comparison of the vegetation condition compared to the previous management plans was unable to be assessed as vegetation condition was not recorded in the 2014 and 2020 management plans.

Table 7: Vegetation condition across the native vegetation recorded across Blackwall Reach and Point Walter Reserves

Area	Vegetation Condition						
	Pristine	Excellent	Very Good	Good	Degraded	Completely Degraded	Total
ha	0.00	0.00	3.10	12.41	6.48	0.00	21.99
%	0	0	14.10	56.43	29.47	0	100

The vegetation condition extent of the natural areas makes up 95 % of the survey boundary. The remaining 5 % is comprised of parkland and cleared.

2.2.1.3 Ecological communities

Characteristics of the Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community are represented within Blackwall Reach and Point Walter Reserves. This threatened ecological community is listed as Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) and is listed in the NAAMP as being of very high value. The Tuart woodland patches in Blackwall Reach Reserve (10 ha) and Point Walter Reserve (3 ha) meet the minimum patch size criteria of 0.5 ha.

Table 8: Vegetation Asset Indicator

Asset	Objective	Assessment of Success
Vegetation type diversity	Maintain or Enhance	Successful - seven vegetation types are currently described
Extent of native vegetation	Maintain or Enhance - Expand area of native vegetation	Successful - native vegetation extent remains the same as what was

Asset	Objective	Assessment of Success
		recorded in the previous management plans
Condition of native vegetation	Maintain or Enhance - improve condition of native vegetation	Indeterminate - no vegetation condition data was recorded in the previous management plans
Significant communities	Maintain or Enhance - improve overall condition of native vegetation	Indeterminate - no vegetation condition data was recorded in the previous management plans

2.2.2 Wetlands

No wetlands were identified within Blackwall Reach and Point Walter Reserves, although they are adjacent to the Swan River Estuary, which is listed as a conservation category wetland (ID 13316) (Department of Biodiversity, Conservation and Attractions (DBCA), 2023a). Riparian vegetation is present at Blackwall Reach Reserve which is associated with wetland areas along rivers and would experience intermittent tidal activity.

Table 10: Wetland Asset Indicator

Asset	Objective	Assessment of Success
Conservation Category Wetland listing	Maintain or Enhance - Environmental criteria leading to listing as Conservation Category	Successful - adjacent Swan River Estuary remains conservation category listing

2.2.3 Heritage

The reserves are within the Whadjuk People Indigenous Land Use Agreement area. The heritage sites are specifically protected under the EPBC Act, *Aboriginal Heritage Act 1972* (WA) and/or *Heritage Act 2018* (WA). A list of heritage sites associated with Blackwall Reach and Point Walter is provided in Table 11.

Table 11: Heritage sites associated with Jenalup (Blackwall Reach) and Dyoondalup (Point Walter Reserves)

Heritage Site	Site or Place Number	Reserve	Comments
Swan River	3536	Adjacent to Blackwall Reach	Place type: creation / dreaming narrative
Blackwall Reach	3650	Blackwall Reach	Place type: water source
Point Walter Former Army Campy Site	18715	Point Walter	Contains the Point Walter Recreation and Conference

Heritage Site	Site or Place Number	Reserve	Comments
			Centre. This site is of cultural heritage significance though its original use as an army training and rehabilitation centre in 1941 during World War 2, and consecutively a Detention Barracks for Prisoners of War in 1946 to 1947, and Migrant reception centre from 1947 to 1971 after World War 2
Honour Avenue Memorial Drive	6070	Adjacent to Blackwall Reach and Point Walter	Connected with the western side of the road and commemorates soldiers who died in World War 1 and 2. The heritage site include the trees and associated metal plaques within the verge area

Table 12: Heritage Asset Indicator

Asset	Objective	Assessment of Success
Registered Heritage Site	Monitor - Remain aware of new heritage discoveries or changes to conditions. Any works causing significant disturbance in mapped area should be discussed with Department of Lands Planning and Heritage	Successful

2.2.4 Community Interest

Blackwall Reach and Point Walter Reserves are identified as being medium value community sites in the NAAMP. There are three environmental groups operating within Blackwall Reach and Point Walter Reserves:

- Bicton Environmental Action Group
- Swan Estuary Reserves Action Group
- Friends of Melville Bird Sanctuary.

Works undertaken by these community groups include restoration and erosion control, planting days, hand weeding, rubbish collection, installation and maintenance of bat boxes, and holding school, community and corporate education and activity days.

Table 13: Community Interest Asset Indicator

Asset	Objective	Assessment of Success
Community Interest	Maintain or Enhance - improve number or size of active community groups and area being actively managed.	Successful – addition of one community group, Friends of Melville Bird Sanctuary.

2.2.5 Reference Sites

No reference sites for long term monitoring or research have been established in Blackwall Reach and Point Walter Reserves.

Table 14: Reference Site Asset Indicator

Asset	Objective	Assessment of Success
Reference Sites	Monitor - no change expected.	Not assessable

2.3 Species

The survey of Blackwall Reach and Point Walter Reserves assessed the flora and fauna species present within the reserve boundaries. Native flora and fauna are described in section 2.3.1 and 2.3.2 with introduced species described within the Threats Sections 3.3 and 3.5.

2.3.1 Native Flora

A compile of all previous surveys undertaken within Blackwall Reach and Point Walter Reserves since 2014 identified a total of 188 native flora species recorded from 46 families. The compiled data makes up approximately 39 % of the native flora species indicated in the NAAMP recorded within the City. Examples of native flora species present across the reserves in 2024 are displayed in Figure 1.

The 2014 Management Plan identified a total of 146 native flora species from 42 families within Blackwall Reach and Point Walter Reserves (Table 15). The 2020 Management Plan identified 108 native flora species from 45 families. The 2024 spring survey identified a total of 96 native flora species recorded from 31 families during the field survey. A compile of the native flora species identified across each survey period are provided in Appendix 3.

The overall native species diversity in 2024 has decreased since the 2013 survey by 51 species. However, additional species not noted in the previous management plans were recorded during the 2024 spring survey, with four new species recorded in 2024 that have not been previously recorded.

Species richness within Blackwall Reach Reserve has decreased since the 2013 survey; however, the 2024 survey recorded greater species richness compared to the 2019 survey. Point Walter Reserve has also experienced a decline in species richness compared to the 2013 survey data, despite the 2019 survey recording a greater number of species. The number of families present within Blackwall Reach and Point Walter Reserves has experienced the same trends as species richness.

Two conservation significant species were identified during the 2024 survey. *Grevillea thelemanniana* (Spider-Net Grevillea), listed as Threatened under the *Biodiversity Conservation Act 2016* (WA) (BC Act) and EPBC Act, was recorded in Point Walter Reserve during the 2024 and 2019 surveys. *Dodonaea hackettiana* (Hackett's Hopbush), listed as Priority 4 under the BC Act, was recorded in Blackwall Reach Reserve during the 2013, 2019 and 2024 surveys. Both species were likely planted and as such are landscape varieties. *Dodonaea hackettiana* is listed as a very high value plant species in the NAAMP.

Table 15: Number of species and families recorded across Blackwall Reach and Point Walter Reserves

Reserve	Management Plan		
	2014	**2020**	**2025**
Blackwall Reach			
Species No.	123	56	64
Family No.	41	24	27
Point Walter			
Species No.	73	85	64
Family No.	24	27	21

Rhodanthe chlorocephala (Common Everlasting)

Banksia prionotes (Acorn Banksia)

Eremaea pauciflora

Thysanotus manglesianus (Mangle's Fringed Lily)

Figure 1: Examples of native flora species recorded across the reserves.

Table 16: Native Flora Asset Indicator

Asset	Objective	Assessment of Success
Species diversity	Maintain or Enhance - increase native species diversity.	Unsuccessful - decrease in 12 native flora species in the 2024 surveys compared to the 2020 Management Plan
Very high value plant species	Maintain or Enhance	Successful - *Dodonaea hackettiana* (P4) presence maintained within Blackwall Reach Reserve

2.3.2 Native Fauna

A compile of all previous surveys undertaken within Blackwall Reach and Point Walter Reserves since 2013 identified a total of 61 native vertebrate fauna species recorded from 34 families. The compiled data makes up approximately 23 % of the native fauna species indicated in the NAAMP recorded within the City. Examples of native fauna species recorded across the reserves in 2024 are provided in Figure 2.

A total of 44 native vertebrate fauna species from 24 families were recorded in the 2014 Management Plan, whilst 28 native vertebrate fauna species from 21 families were recorded in the 2020 Management Plan and a total of 36 native vertebrate fauna species from 24 families were recorded during the 2024 spring surveys. The 2024 field surveys recorded an increase in the total number of native vertebrate fauna spe cies compared to the 2020 Management Plan, but a decrease in the total number of native species compared to the 2014 Management Plan.

There were 11 native invertebrate species recorded in the 2020 Management Plan. No native invertebrate species were recorded in the 2014 Management Plan or during the 2024 field surveys; however, a native bee survey undertaken in November 2024 recorded three native bee species at Blackwall Reach (Prendergast, 2024).

Two conservation significant fauna species were recorded within Blackwall Reach and Point Walter Reserves, the Carnaby's Cockatoo (*Zanda latirostris*) and Forest Red-tailed Black Cockatoo *(Calyptorhynchus banksii naso*). The Carnaby's Cockatoo is listed as Endangered under the BC Act and EPBC Act, and the Forest Red-tailed Black Cockatoo is listed as Vulnerable under the BC Act and EPBC Act. The Carnaby's Cockatoo was previously recorded in the 2014 Management Plan at Blackwall Reach Reserve. The *City of Melville Black Cockatoo Conservation Action Plan* (Murdoch University Black Cockatoo Conservation Management Project, 2023), highlights management practices that can be undertaken by the City to mitigate key threatening processes. These management practices should be followed across Blackwall Reach and Point Walter, including retaining and enhancing existing habitat, vegetation, roosting, and food resources that support black

cockatoos. Specifically, one recommended management practice is the installation of cockitrough watering stations across the City, one of which was recently installed at Point Walter.

One seasonal migratory species was observed during the 2024 field surveys at Point Walter, namely the Rainbow Bee-eater (*Merops ornatus*). This species was also recorded in the 2014 and 2020 Management Plans at Point Walter and Blackwall Reach. One other migratory species was recorded at Blackwall Reach in the 2020 Management Plan, the Grey-tailed Tattler (*Tringa brevipes*), which is also listed as Priority 4 under the BC Act.

The number of native fauna species recorded across the reserves grouped by class is provided in Table 17 and for each reserve in Table 18. The native fauna recorded in 2024 and a table comparing occurrences listed in the previous management plans from 2014 and 2020 are provided in Appendix 4.

Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*)

Striated Pardalote (*Pardalotus striatus*)

Ctenotus fallens

Common Brushtail Possum (*Trichosurus vulpecula hypoleucos*)

Figure 2: Examples of native fauna species recorded across the reserve.

Table 17: Number of native fauna species recorded grouped by class

Class	Management Plan		
	2014	2020	2025
Amphibians	0	0	0
Birds	33	22	26
Mammals	2	1	3
Reptiles	8	5	7
Invertebrates	0	23	3
Total	**43**	**51**	**39**

Table 18: Number of native fauna species recorded across each reserve grouped by class

Reserve Name	Management Plan		
	2014	2020	2025
Amphibians			
Blackwall Reach Reserve	0	0	0
Point Walter Reserve	0	0	0
Birds			
Blackwall Reach Reserve	31	20	20
Point Walter Reserve	16	8	15
Mammals			
Blackwall Reach Reserve	0	1	3
Point Walter Reserve	3	1	1
Reptiles			
Blackwall Reach Reserve	7	3	4
Point Walter Reserve	0	4	7
Invertebrates			
Blackwall Reach Reserve	0	8	3
Point Walter Reserve	0	5	0

A total of three fauna habitat types, 398 potential black cockatoo habitat trees, and 4 bird and bat boxes were recorded across Blackwall Reach and Point Walter during the 2024 surveys (Table 16, Map 4). Blackwall Reach and Point Walter provide important habitat for native fauna at a local scale, and they provide habitat for mobile fauna (birds and bats that utilise the regional ecological linkage. Across the reserves there is suitable habitat for refuge with areas of dense understorey, leaf litter and fallen logs, as well as hollows providing refuge and breeding habitat.

The on-ground survey assessed potential habitat trees (with a DBH > 500 mm) across the reserves. Of the 398 potential habitat trees recorded, 60 were observed to contain hollows, with the total

number of hollows observed being 130. Of the observed hollows, 46 contained characteristics suitable for black cockatoo breeding with a near vertical orientation and an entrance dimension of at least 100 mm (Cherriman, 2022).

Blackwall Reach and Point Walter provide important habitat for seasonal migratory bird species, such as Rainbow-bee Eaters which are known to nest within the golf course and the bushland adjacent to the Dyoondalup Bike Park. The Swan River foreshore along Blackwall Reach and Point Walter, including the Point Walter Spit, also provides high quality nesting habitat for migratory marine bird species, such as the Vulnerable (EPBC Act) Fairy Tern (*Sternula nereis nereis*).

Table 16: Fauna habitat types present across the survey area.

Fauna Habitat Type	Description	Photograph
Woodland	A woodland of *Casuarina obesa*, *Eucalyptus* spp., *Agonis flexuosa*, and *Banksia* spp. over mixed shrubland over mixed herbs and grasses.	
Shrubland	A shrubland of *Acacia rostellifera* over mixed herbs.	
Parkland	Isolated trees	

Table 19: Native Fauna Asset Indicator

Asset	Objective	Assessment of Success
Mammal species	Maintain - continue to protect species diversity and manage habitat to allow ongoing use of reserve by species.	Successful
Amphibian species		Indeterminate
Reptile species		Successful
Bird species		Successful
Invertebrate species		Successful

3 Threats

Significant threats to natural areas in the City were identified in the NAAMP. The 10 most significant threats include physical disturbance, fire, weeds, habitat loss, feral animals, disease and pathogens, stormwater, reticulation, acid sulfate soils, and climate change. The success of each of the threats as outlined against the objectives provided in the 2020 Management Plan are described at the bottom of each threat discussed.

3.1 Physical Disturbance

Inappropriate access and the presence of rubbish was evident across Blackwall Reach and Point Walter Reserves. Microplastic accumulation from the Swan River has recently been observed by the City along the foreshore at Blackwall Reach. These disturbances were observed at low levels with only a few occurrences noted. The physical disturbances recorded across Blackwall Reach and Point Walter Reserves over the survey years are indicated in Table 20 and the locations of disturbances noted in 2024 are displayed in Map 6.

Rubbish and vandalism removal across the reserves is undertaken on a regular basis by community groups and the City. The City undertakes maintenance every 6 weeks when required. As rubbish and vandalism were minimal during the field survey, it is suggested that the effort undertaken to control physical disturbance is relatively effective and is recommended to continue.

Table 20: Physical Disturbances recorded across Blackwall Reach and Point Walter Reserves over the survey years

Physical Disturbance	**Management Plan**		
	2014	**2020**	**2025**
Trampling (Informal tracks)	None	Informal tracks including BMX tracks. Approx. 1,000 m^2	Blackwall Reach - approx. 900 m over multiple tracks. Point Walter - approx. 738 m over multiple tracks.
Disturbance for likely propagation of prohibited substances	None	None	None
Rubbish dumping	Rubbish dumping within vegetation (22-32 m^3 / month)	Minimal rubbish dumping within vegetation (< 1 m^3)	Minimal rubbish dumping within vegetation (< 1 m^3)
Tree poisoning	None	None	None
Illegal clearing	1 tree cut down around 2008	None	None
Firewood collection	None	None	None

Physical Disturbance	Management Plan		
	2014	2020	2025
Vandalism	No data	2 incidences: vandalism on signage and children's cubby in the vegetation	None
Erosion/sedimentation	1,100 m^2	1,100 m^2	None

Table 21: Physical Disturbance Threat Indicator

Threat	Objective	Assessment of Success
Informal Tracks	Eliminate - reduce number and extent of informal tracks in bushland.	Unsuccessful - extent of informal tracks has increased.
Rubbish Dumping	Manage - continue ongoing rubbish removal program. Maintain rubbish occurrence at low levels currently recorded, target no large occurrences of garden waste or household rubbish dumping.	Successful - extent of rubbish dumping has not increased since 2019.
Tree poisoning Illegal Clearing Firewood Collection	Prevent - no occurrences.	Successful
Vandalism	Manage - maintain current low levels of graffiti on signage only.	Successful - zero incidences of vandalism

3.2 Fire

The NAAMP identified that small urban bushland remnants are more susceptible to the negative impacts of fire. Frequent fire events and large fire extent that impact more than 50 % of the reserve are more likely to experience local extinction of fire vulnerable species.

Records provided by the City indicate that one fire has occurred within the Blackwall Reach and Point Walter Reserves in the last six years (Table 22). An unauthorised fire occurred within the west portion of Blackwall Reach Reserve in December 2021 covering approximately 0.6 ha.

Across the reserves there was a high accumulation of dead branches, particularly in the *Agonis flexuosa* and *Eucalyptus gomphocephala* woodlands. It is recommended that fire fuel load reduction activities are undertaken across the reserves. Bushfire control and management should be undertaken in line with the City of Melville's Bushfire Management Guideline (City of Melville, 2019) and Bushfire Risk Management Plan (City of Melville, 2022).

Table 22: Fire Indices

Fires	Extent of Fires		
	2004 - 2013	2014 - 2019	2019 - 2024
Large fires	0 ha	0 ha	0 ha
Repeat fires	0 ha	0 ha	0 ha
Small spot fires, unauthorised campfires and bonfires	0 ha	< 1 ha (4 incidences at Blackwall Reach and 1 at Point Walter)	< 1 ha (1 incident at Blackwall Reach)
Vehicle fire in carpark areas	No data	0 ha (1 incident, only occurred in carpark area of Point Walter)	0 ha

Table 23: Fire Threat Indicator

Threat	Objective	Assessment of Success
Fire	Prevent - manage the reserve so as to prevent any large (>50 % of reserve burnt) or overly frequent (frequency <8 years) fires occurring.	Successful

3.3 Weeds

A compile of all previous surveys undertaken within Blackwall Reach and Point Walter Reserves since 2004 identified a total of 107 weed species recorded from 42 families.

The 2014 Management Plan identified 70 weed species from 30 families within Blackwall Reach and Point Walter Reserve (Table 24). The 2020 Management Plan identified 67 weed species from 26 families. The 2024 spring survey identified a total of 73 weed species from 26 families. A compilation of the weed species identified across both reserves is provided in Appendix 5.

The NAAMP classifies weed species into impact classes of very high, high, medium and low. The number of species present across each impact class across the survey periods is provided in Table 25 and further categorised into type in Table 26 with the number of species and extent (percentage cover) shown for each weed type. The extent of weeds in the 2014 Management Plan has not been provided in Table 26 because some weeds were categorised differently to the 2025 Management Plan and consequently the percentages could not be accurately compared. The following weeds were classified as high impact (within Annual Clumping Grasses) in the previous management plans but were classified as low impact in this 2025 Management Plan due to not being considered clumping grasses:

- Bearded Oat (*Avena barbata*)
- Great Brome (*Bromus diandrus*)
- Wimmera Ryegrass (*Lolium rigidum*)

- Hare's Tail Grass (*Lagurus ovatus*).

The location of weeds present across the survey area are provided in Maps 7 to 12.

A total of seven very high impact weeds were identified across the survey area during the 2024 field surveys. Of these, four are declared pests and/or Weeds of National Significance (WoNS):

- Arum Lily (**Zantedeschia aethiopica*) - Declared Pest - s22(2) (Exempt)
- One-leaf Cape Tulip (**Moraea flaccida*) - Declared Pest - s22(2) (Exempt)
- Bridal Creeper (**Asparagus asparagoides*) - Declared Pest - s22(2) (Exempt) and WoNS
- Lantana (**Lantana camara*) - Declared Pest - s22(2) (Exempt) and WoNS
- Perennial Veldt Grass (**Ehrharta calycina*)
- Brazilian Pepper (*Schinus terebinthifolia)
- Soldiers (*Lachenalia reflexa).

Declared pests are listed on the Western Australian Organism List (WAOL) (Department of Primary Industries and Regional Development (DPIRD), 2023), under the *Biosecurity and Agriculture Management Act 2007* (WA). This classification requires the landowner/land manager to control the population to limit damage as a result of the presence of these species (DPIRD, 2019).

It is recommended that weed control is undertaken across the reserves prioritising declared pests, WoNS and the species listed under the very high impact class. Weed management across the reserves is undertaken in accordance with the City of Melville's Environmental Weed Management Guidelines (City of Melville, 2018a).

Table 24: Number of weed species recorded across each reserve

Reserve Name	Management Plan		
	2014	2020	2025
Blackwall Reach Reserve			
Species No.	64	47	62
Family No.	28	21	23
Point Walter Reserve			
Species No.	27	56	56
Family No.	15	21	20

Table 25: Number of weed species within each impact class recorded at Blackwall Reach and Point Walter Reserves over the survey years

Impact Class	2014 Management Plan	2020 Management Plan	2025 Management Plan
Very High	6	7	7
High	19	18	14
Medium	10	3	2
Low	35	39	50

Table 26: Weeds recorded within each rating and category at Blackwall Reach and Point Walter Reserves over the survey years

Impact Class	Weed	Management Plan					
		2014		2020		2025	
		Species No.	Extent (%)	Species No.	Extent (%)	Species No.	Extent (%)
Very High	Bridal Creeper	1	-	1	0.5	1	5
	Lantana	1	-	1	0.5	1	0.5
	Arum Lily	0	-	0	0	1	0.5
	One Leaf Cape Tulip	0	-	1	4	1	0.5
	African Love Grass	1	-	1	8	0	0
	Soldiers	1	-	1	37	1	20
	Brazilian Pepper	1	-	1	4	1	0.5
	Perennial Veldt Grass	1	-	1	57	1	51
High	Annual Clumping Grasses	1	-	2	32	2	80
	Perennial Running Grasses	3	-	3	5	1	2
	Clumping Geophytes	6	-	4	90	4	67
	Giant Grasses	0	-	0	0	0	0
	Trees and Shrubs	9	-	8	31	6	17
Medium	All Other Perennial Weeds	10	-	3	9	2	4
Low	All Other Annual Weeds	36	-	38	100	51	95

Table 27: Weeds Threat Indicator

Threat	Objective	Assessment of Success
Very High Impact weed species	Prevent - very high impact weed species not present onsite	Successful
	Eliminate - Brazilian Pepper, Soldiers, One-leaf Cape Tulip, Bridal Creeper, Lantana	Unsuccessful - species still present
	Contain- Perennial Clumping Grasses (*Ehrharta calycina, Paspalum dilatatum*).	Successful - extent has reduced since 2019
High Impact weed species	Eliminate - Annual Clumping Grasses, Perennial Running Grasses, Clumping Geophytes, Trees and Shrubs, Giant Grasses	Unsuccessful - high impact weed species still present, however extent of Perennial Running Grasses, Clumping

Threat	Objective	Assessment of Success
		Geophytes and Trees and Shrubs has reduced.
	Prevent - Giant Grasses	Successful
Medium and Low Impact weed species	Manage - reduce impact on bushland or revegetation projects when possible.	Unsuccessful - increase in number of low impact species.

3.4 Habitat Loss

Habitat loss is a significant threat to the long-term viability of some species in urban areas. The NAAMP identified that fragmentation can reduce species diversity and immediate loss of species diversity.

Blackwall Reach and Point Walter Reserves intersect with two vegetation complexes: Karrakatta Complex - Central and South, and Cottesloe Complex - Central and South.

The pre-European extent of the Karrakatta Complex - Central and South remaining is:

- 23.49 % within the Swan Coastal Plain
- 4.70 % within the City of Melville (Government of Western Australia, 2019).

The pre-European extent of the Cottesloe Complex - Central and South remaining is:

- 32.16 % within the Swan Coastal Plain
- 0.42 % within the City of Melville (Government of Western Australia, 2019).

The EPA, *Position Statement No. 2 Environmental Protection of Native Vegetation in Western Australia* (EPA, 2000) acknowledges that 30 % of the original extent of each vegetation type is regarded as the threshold level at which species loss appears to accelerate exponentially at an ecosystem level, and 10 % of the original extent of each vegetation type is regarded as the level representing endangered. Of the two vegetation complexes recorded in Blackwall Reach and Point Walter Reserves, the Karrakatta Complex - Central and South has less than 30 % of the original extent remaining in the Swan Coastal Plain subregion, whilst both vegetation complexes have less than 10 % remaining within the City of Melville.

The NAAMP identified that habitat loss can be assessed by determining the native species cover, bare ground, weed cover and increased fire risk with dense grass infestation. Bare ground cover, weed cover and vegetation condition was assessed across the survey area to determine potential habitat loss.

3.4.1 Weed Density

The 2024 surveys determined combined weed density ranged from < 5 % to > 25 % across both Blackwall Reach and Point Walter Reserves (Table 28, Map 7). Weed density was greater within the northern half of Blackwall Reach Reserve compared to the southern half, being predominantly 5 - 25 %. The majority of the northern portion of Point Walter Reserve had weed densities of < 5 %,

whilst the southern portion was mostly 5-25 % weed density. Weed density coverage has decreased at both Blackwall Reach and Point Walter Reserves compared to the 2014 and 2020 Management Plans.

Table 28: Weed coverage comparison across each reserve

Reserve	Weed Coverage			Total
	< 5 %	5-25 %	> 25 %	
Blackwall Reach Reserve				
2013	19	26	55	100
2019	64	20	16	100
2024	31	63	6	100
Point Walter Reserve				
2013	8	15	77	100
2019	20	28	52	100
2024	50	44	6	100

3.4.2 Bare Ground

The 2024 surveys determined the percentage of bare ground varied between < 5 % to > 25 % across Blackwall Reach and Point Walter Reserves (Table 29, Map 13), with the majority of both reserves having < 5 % bare ground. Higher percentages of bare ground were recorded at the southern end of Blackwall Reach Reserve where previous revegetation works have occurred. Bare ground coverage in 2024 has increased compared to the 2014 Management Plan across both Blackwall Reach and Point Walter Reserves; however, bare ground in 2024 has decreased compared to the 2020 Management Plan. Bare ground has a higher risk of erosion and therefore it is important to revegetate areas of bare ground to mitigate the impact of erosion on the environment.

Table 29: Bare ground comparison across each reserve

Reserve	Bare Ground			Total
	< 5 %	5-25 %	> 25 %	
Blackwall Reach Reserve				
2013	97	3	0	100
2019	24	33	43	100
2024	74	19	7	100
Point Walter Reserve				
2013	93	5	2	100
2019	83	15	2	100

2024	85	10	5	100

3.4.3 Vegetation Condition

Vegetation condition has not been recorded in the previous management plans and there is insufficient data for comparison to determine any change in vegetation condition over the years. The vegetation condition recorded in the 2024 field surveys is provided in Section 2.2.1 Vegetation.

3.4.4 Fauna Habitat

A total of 398 habitat trees were recorded during the 2024 field surveys, compared to 327 habitat trees recorded in the 2020 Management Plan. However, the number of habitat trees cannot be accurately compared between years because trees with a diameter at breast height (DBH) >600 mm were recorded in 2019 compared to trees with a DBH >500 mm were recorded in 2024. This may be the reason more habitat trees were recorded in 2024 compared to 2019.

A total of 4 bird and bat boxes were identified during the 2024 field surveys within Blackwall Reach and Point Walter Reserves, decreasing from 14 bird and bat boxes recorded in the 2020 Management Plan.

3.4.5 Revegetation

It is recommended that weed management is undertaken alongside revegetation works to improve the vegetation condition of Blackwall Reach and Point Walter Reserves. Areas suitable for revegetation are outlined in Map 14. It is recommended that further revegetation works, including infill planting are undertaken across the reserve.

Table 30: Habitat Loss Threat Indicator

Threat	Objective	Assessment of Success
Habitat loss	Manage –limit fragmentation of bushland within reserves	Indeterminate - weed density and bare ground has decreased across Blackwall Reach and Point Walter Reserves compared to the 2020 Management Plan. However, vegetation condition was not recorded in the previous management plans and fauna habitat data was collected inconsistently. As such the success is unable to be determined.

3.5 Feral Animals

A total of seven introduced vertebrate fauna species were identified during the 2024 field surveys, and one introduced invertebrate fauna species (Table 31):

- Laughing Kookaburra (**Dacelo novaeguineae*)
- Black Rat (**Rattus rattus*)
- Red Fox (**Vulpes vulpes*)
- Rabbit (**Oryctolagus cuniculus*)
- Spotted Turtle Dove (**Spilopelia chinensis*)
- Laughing Turtle Dove (**Spilopelia senegalensis*)
- Rainbow Lorikeet (**Trichoglossus moluccanus*)
- European Bee (**Apis mellifera*).

Three of these species are declared pests: Rainbow Lorikeet (**Trichoglossus moluccanus*), Red Fox (**Vulpes vulpes*), and Rabbit (**Oryctolagus cuniculus*). Rainbow Lorikeets (**Trichoglossus moluccanus*) and Laughing Kookaburras (**Dacelo novaeguineae*) are identified in the NAAMP as competing with native birds for resources, including tree hollows (Figure 3). Red Foxes (**Vulpes vulpes*) are identified in the NAAMP as a threat to native birds, mammals, reptiles and amphibians via predation. Rabbits (**Oryctolagus cuniculus*) are identified in the NAAMP to cause land degradation and competition with native fauna species.

Three species are listed by the City as very high impact: Red Fox, Cat, and Rabbit. Red Foxes and Rabbits were both recorded in Blackwall Reach during the 2024 surveys by indirect evidence (fox dens, scats and diggings). Cats were recorded in the 2020 Management Plan; however, were not identified during the 2024 field survey. Due to the proximity of urbanised development, the cats previously identified are likely to be free roaming domestic cats rather than feral. It is recommended to control domestic and stray cats by promoting responsible pet ownership through education and awareness campaigns to the residents within the City.

The European Bee is listed by the City as high impact. European Bees pose a threat to native bees by competing for resources and they also impact hollow-nesting birds and possums by establishing hives within hollows. Two hives were identified during the 2024 surveys undertaken by Natural Area (Figure 3), and the native bee survey undertaken by Prendergast (2024) noted instances of extremely high abundances of European Bees, which appeared to be excluding native bees from foraging on preferred resources including *Melaleuca huegelii* at Blackwall Reach. Prendergast (2024) identified the lowest abundance and diversity of native bees at Blackwall Reach compared to five other reserves within the City of Melville, which may be partly due to the high density of European Bees dominating the main flowering resources at Blackwall Reach.

Active control programs for the listed terrestrial species are undertaken on an ongoing basis by contractors for the City under the Feral Animals Management Guidelines (City of Melville, 2015). Feral animal trapping programs trapped a total of three foxes in 2023/2024. Additionally, a total of 15 European Bee hives have been removed or treated since 2021, including 4 hives removed/treated in 2023/2024.

Table 31: Feral Animals recorded across Blackwall Reach and Point Walter Reserves

Impact Rating	Feral Animal Species	Management Plan		
		2014	2020	2025
Very High	Feral Cat		X	
	Fox	X		X
	Rabbit	X	X	X
High	European Bee	X	X	X
Low	Black Rat	X	X	X
	Laughing Kookaburra	X	X	X
	Laughing Turtle Dove	X	X	X
	Spotted Dove	X	X	X
	Rainbow Lorikeet	X	X	X
	Rock Dove	X	X	
	Eastern Long-billed Corella	X	X	

Figure 3: Evidence of competition for hollows by European Bees and Rainbow Lorikeets.

Table 32: Feral Animal Threat Indicator

Threat	Objective	Assessment of Success
Feral Cats	Contain - Attempt to drive a reduction in observations of cat activity in the reserve.	Successful
Fox and Rabbits	Eliminate - implement controls	Unsuccessful - still present within the reserves
European Bee	Eliminate - implement controls	Unsuccessful - still present within the reserves

3.6 Diseases and Pathogens

Vegetation can be subject to diseases that result in a decline in their vigour or death in the longer term. Common plant pathogens include *Phytophthora* (dieback), *Armillaria luteobubalina*, *Quambalaria* (Marri Canker) and Myrtle Rust. No evidence of *Armillaria luteobubalina*, *Quambalaria* or Myrtle Rust was found within Blackwall Reach and Point Walter Reserves during the 2024 surveys.

A *Phytophthora* dieback occurrence assessment was undertaken within Point Walter Reserve in 2023 which confirmed no dieback was present. The last phytophthora dieback occurrence assessment within Blackwall Reach Reserve was undertaken in 2016, with results being uninterpretable due to lack of indicator species.

It is recommended that the City continues to prevent infestation of diseases and pathogens within Blackwall Reach and Point Walter Reserves. The management of diseases and pathogens for the reserves are outlined in the City of Melville Disease and Pathogen Management Guidelines (City of Melville, 2018b).

No evidence of other diseases or plant pathogens were recorded.

Table 33: Disease and Pathogens Threat Indicator

Threat	Objective	Assessment of Success
Diseases and Pathogens	Confirm	Successful - assessment undertaken and confirmed no diseases or pathogens are present

3.7 Stormwater

Three stormwater drains are present within Blackwall Reach Reserve, diverting stormwater into the bushland. No erosion or other impacts on the bushland surrounding the drains were noted during the 2024 survey. Water quality monitoring has not been undertaken within Blackwall Reach and Point Walter Reserves.

Table 34: Stormwater Threat Indicator

Threat	Objective	Assessment of Success
Stormwater	Manage - no stormwater to be diverted into the bushland reserves	Unsuccessful - stormwater still being diverted into bushland via the drains

3.8 Reticulation

No reticulation is present within areas that may affect bushland within Blackwall Reach and Point Walter Reserves. Reticulated lawn is present within the adjacent parkland and golf course. No sighting of excessive overspray was recorded to be impacting the bushland. The areas of

reticulated grass in the parkland and gold course are sufficiently buffered from bushland and wetland areas.

Table 35: Reticulation Threat Indicator

Threat	Objective	Assessment of Success
Reticulation	Prevent - prevent overspray/leakage from reticulation entering bushland	Successful

3.9 Acid Sulfate Soils

Acid sulfate soils are naturally occurring soils and sediments which contain iron sulphides. When exposed to the air, these soils react and produce different iron compounds and sulfuric acid. As a result of this reaction, other substances such as heavy metals can be released into the groundwater and surrounding environment.

An assessment of the Acid Sulfate Soils Risk Map, Swan Coastal Plain (DWER-055) (DWER, 2017) shows Blackwall Reach Reserve has a moderate to high risk of having acid sulfate soils along the foreshore edge and a small area at the north-east corner of Point Walter Reserve has a low to moderate risk of having acid sulfate soils. No evidence of acid sulfate soils within Blackwall Reach and Point Walter Reserves was observed during the 2024 survey; this is consistent with historical data.

Table 36: Acid Sulfate Soils Threat Indicator

Threat	Objective	Assessment of Success
Acid Sulfate Soils	Prevent - Prevent physical disturbance of acid sulfate soils. Any soil disturbing activities should undertake a risk assessment prior to commencement.	Successful - these should not occur as no excavation or groundwater extraction is proposed

3.10 Climate Change

Climate change within the south-west of Western Australia is expected to increase occurrences and intensity of weather events, decrease annual rainfall, and increase temperatures. These changes are likely to increase likelihood of erosion during storm events and increased water stress on plants. Decreases in water levels lead to a shift in vegetation types and complexes which has the potential to alter the ecosystem structure and function, including the fauna species that the environment supports. The Perth Metropoiltan Region has experienced a decline in vegetation due to the biophysical impacts caused by water deficits and prolonged heat events (Moore et al., 2025), including reports of vegetation decline at Blackwall Reach and Point Walter as a result of heat stress following consecutive years of drought and low rainfall (Arbor Carbon, 2022). The decline in vegetation following changes in climate is a concern for the viability of natural areas and the continuation of ecosystems and their services. Natural areas should be monitored in addition to latest research findings to ensure that mitigation techniques are undertaken where possible.

Climate data was collected from the Bureau of Meteorology (BOM, 2025). According to the weather station, Perth Airport, ID 009021, the average rainfall between 2020 and 2024 is lower and temperatures are higher compared to the long-term average of the weather station (1944-2024) (Figure 4).

The average annual rainfall recorded across each management plan period has decreased over time and is below the long-term average, though there was a slight increase in average annual rainfall in 2020-2024 compared to 2014-2019 (Figure 5 and 6). Between 2020 and 2024 there was 654.6 mm of annual rainfall recorded, compared to 646.4 mm between 2014-2019 and 671.8 between 2004-2013. This 2025 Management Plan notes that all years between 2020-2024 except for 2021 recorded annual rainfall below the long-term average rainfall data of 752.9, with the lowest rainfall recorded in 2023 with 554.0 mm.

The average maximum temperature for each month between 2020 and 2024 was higher than the long-term statistics (Figure 7). The average annual maximum temperature recorded across each management plan period has increased compared to the previous management plan period and are above the long-term average (Figure 8). The average maximum annual temperature recorded in the 2020-2024 management plan period was 26.0 degrees, which is an increase of 0.6 degrees since the previous management plan period 2014-2019.

The average annual minimum temperature recorded across each management plan period has increased compared to the previous management plan period and are above the long-term average (Figure 9). The average minimum temperature for each month between 2020 and 2024 recorded higher than the long-term statistics expect for in the month of June (Figure 7).

Table 37: Climate Change Threat Indicator

Threat	Objective	Assessment of Success
Climate Change	Manage - continue to manage climate change impacts.	Indeterminate

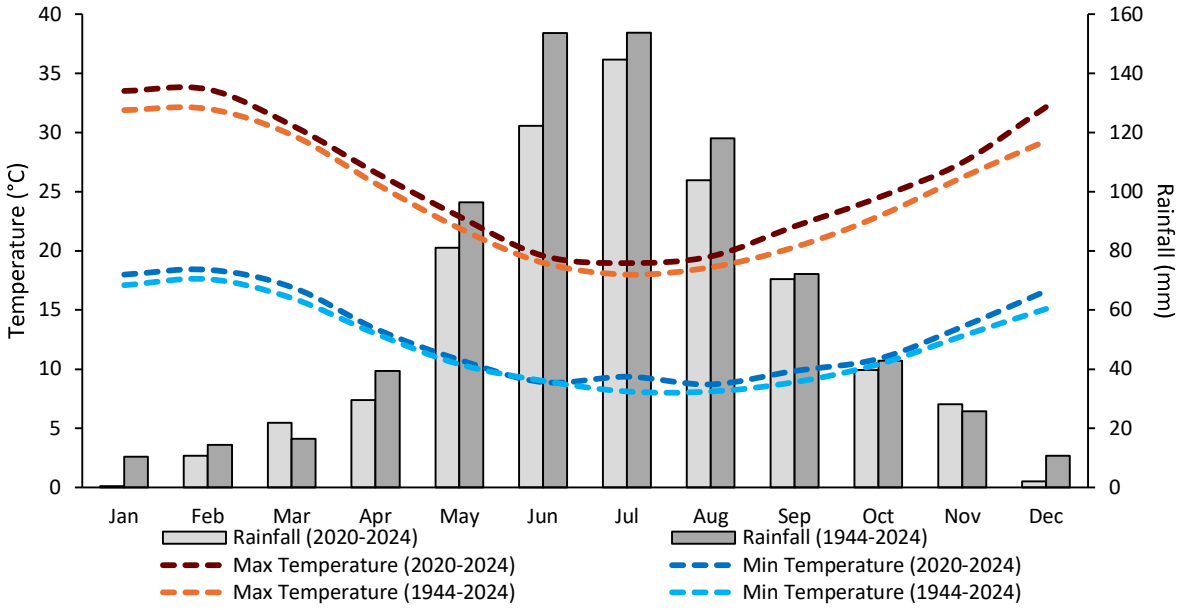


Figure 4: Climate data average for 2020-2024 compared to long term average (1944-2024)

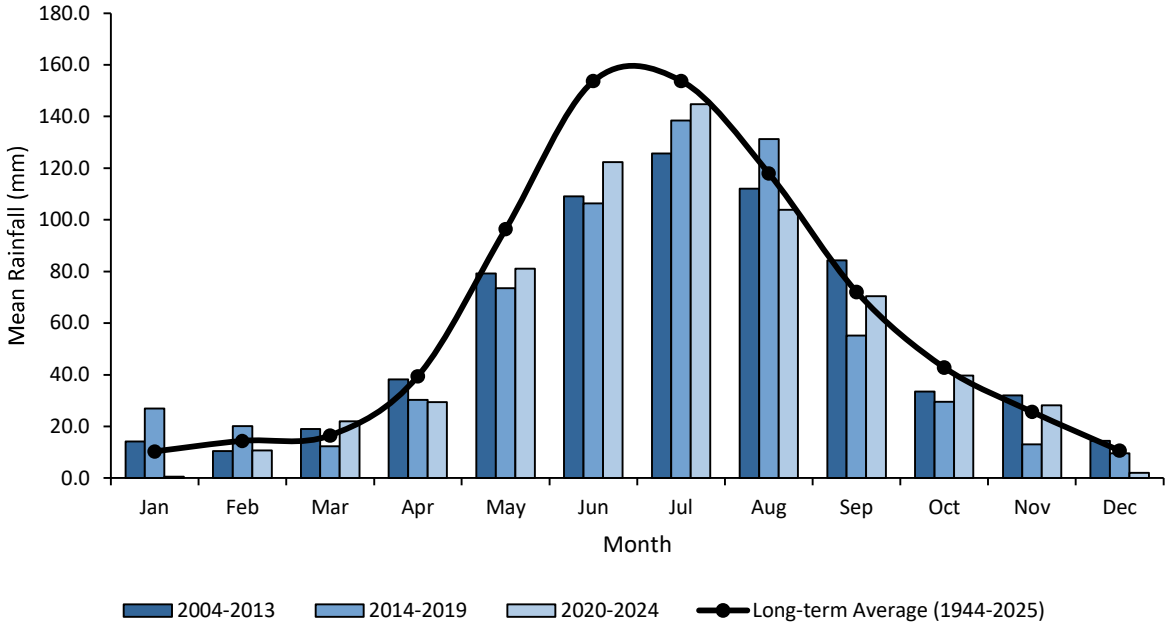


Figure 5: Average rainfall over each management period compared to the long-term average

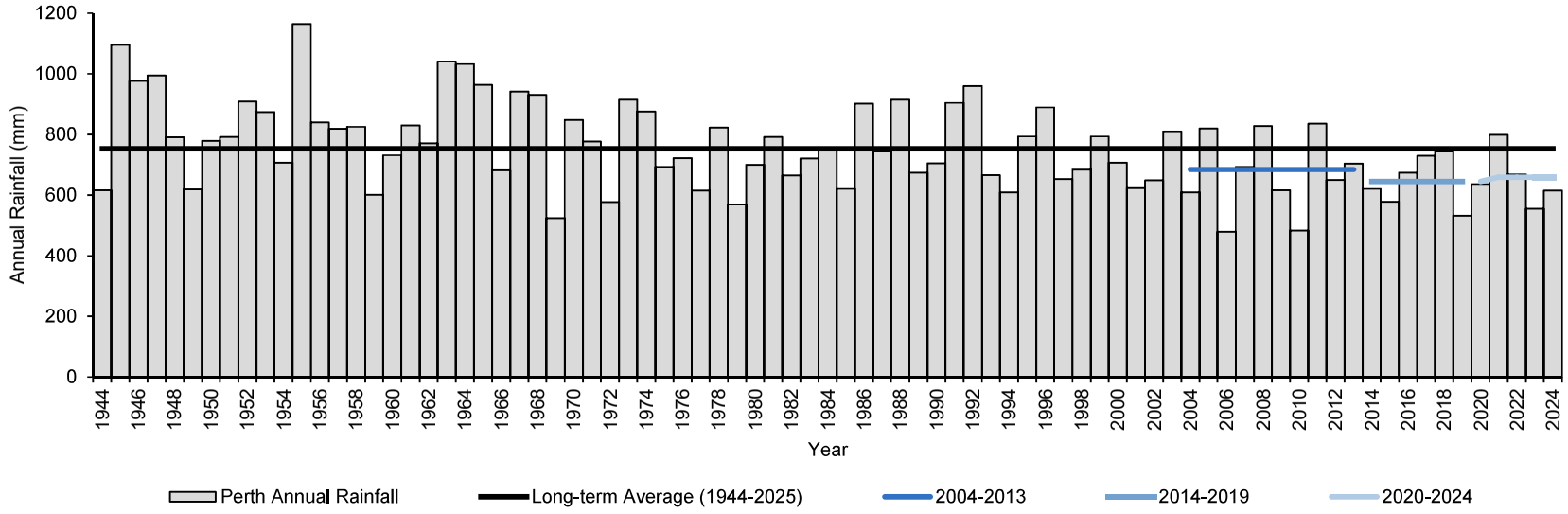


Figure 6: Average annual rainfall and the average annual rainfall for each management period

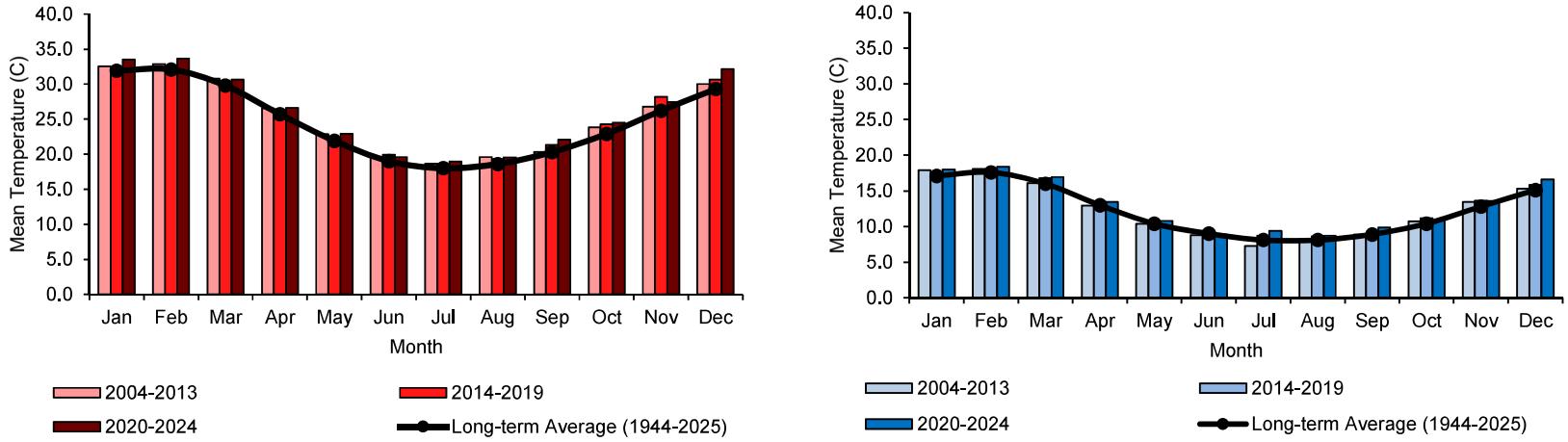


Figure 7: Average maximum temperature over each management period compared to the long-term average (*left*) and average minimum temperature over each management period compared to the long-term average (*right*).

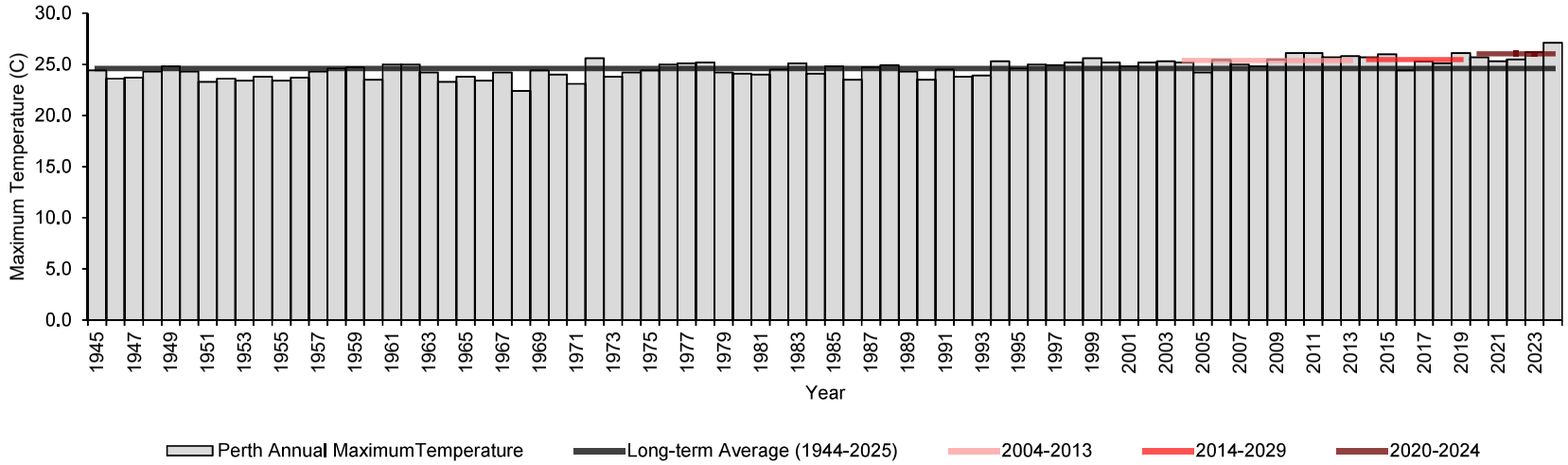


Figure 8: Average annual maximum temperature and the average maximum temperature for each management period.

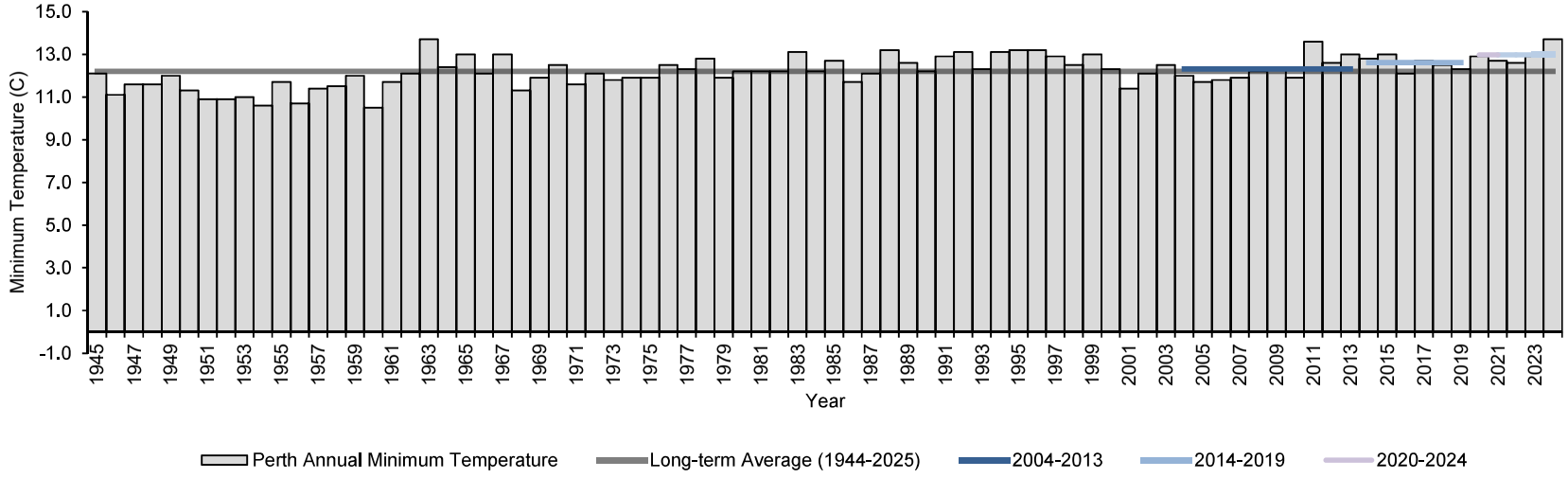


Figure 9: Average annual minimum temperature and the average minimum temperature for each management period.

4 Implementation

The management objective and implementation strategies will be measured in relation to the Key Performance Indicators (KPI).

4.1 Key Performance Indicators (KPI)

Review of previous management objectives and an assessment of success was undertaken. Some objectives could not be assessed due to an unavailability of data to undertake an accurate assessment. A summary of the assessment of success of measurable indices for management objectives is provided in Table 38.

Table 38: Summary of Key Performance Indicators

Asset or Threat		Successful Indices	Unsuccessful Indices	Indeterminate or Un-assessable
Assets	Bush Forever Listing	1	0	0
	Ecological Linkages	1	0	0
	Ecological Communities	3	0	1
	Wetlands	1	0	0
	Heritage	1	0	0
	Community Interest	1	0	0
	Reference	0	0	1
	Native Flora	1	1	0
	Native Fauna	4	0	1
Threats	Physical Disturbance	3	1	0
	Fire	1	0	0
	Weeds	3	3	0
	Habitat Loss	0	0	1
	Feral Animals	1	2	0
	Diseases and Pathogens	1	0	0
	Stormwater	0	1	0
	Reticulation	1	0	0
	Acid Sulfate Soils	1	0	0
	Climate Change	0	0	1

4.1.1 Lagging Indicators

Lagging indicators are associated with changes and trends of assets. The tiered objects for assets and associated lagging indicators are indicated in Table 39. The implementation recommendations for each asset are described in Table 40.

Table 39: Tiered Objects for Assets and Associated Lagging Indicators

Objective	Lagging Indicator	Applicable When
Enhance	Increase in either: ▪ extent ▪ density ▪ abundance	Assets can be enhanced for reasonable cost or where enhancement may reduce operational costs
Maintain	No decrease in: ▪ extent ▪ density ▪ abundance	Asset can be maintained or when there is insufficient knowledge or resources currently available to enhance
Confirm	Decrease number of assets for which information is limited or none available	Potential to be present but currently unknown
Monitor	No measurable indicator	Assets that cannot be managed by action within the City or where asset is not considered critical

Table 40: Asset Management Objectives and Recommendations for 2025-2030, according to the guidance provided in the City's NAAMP

Section Reference	Asset	Sub-heading	Objective (Lagging Indicator)	Implementation Recommendation
2.1.1	Bush Forever Listing		Monitor - no change to Bush Forever Listing expected.	▪ No action required.
2.1.2	Ecological Linkages		Monitor - no change to Ecological linkages expected.	▪ No action required.
2.2.1	Ecological Communities	Vegetation type diversity	Maintain or Enhance - seven vegetation types are currently described.	▪ Prevent the spread of dieback by ensuring all vehicles and equipment are clean on entry and exit. ▪ Prevent the introduction of other diseases / pathogens by ensuring all vehicles and equipment are clean on entry and exit. ▪ Continue weed management as outlined in the City's Environmental Weed Management Guideline. ▪ Prevent high intensity fires through fire fuel load reduction.
		Extent of native vegetation	Maintain or Enhance - expand area of native vegetation.	▪ Continue rehabilitation works including weed control, planting of site-specific species, and erosion control. Prioritise areas which are in a degraded or completely degraded condition.
		Condition of native vegetation	Maintain or Enhance - improve condition of native vegetation.	▪ Continue rehabilitation works including, weed control, planting of site-specific species, and erosion control. ▪ Continue management of threats within the reserves.

Section Reference	Asset	Sub-heading	Objective (Lagging Indicator)	Implementation Recommendation
		Significant communities	Maintain or Enhance - improve condition of and expand extent of native vegetation types: *Eucalyptus gomphocephala* woodland and *Agonis flexuosa* and *Eucalyptus gomphocephala* woodland. These vegetation types satisfy the criteria in terms of species composition and structural description to qualify as *Eucalyptus gomphocephala* Woodland TEC.	▪ Continue revegetation works and weed management across the reserve focusing on good vegetation condition areas within the *Eucalyptus gomphocephala* woodland and *Agonis flexuosa* and *Eucalyptus gomphocephala* woodland. ▪ Undertake revegetation works within areas that contain *Melaleuca huegelii*, *Melaleuca systena*, and *Banksia sessilis*, prioritising planting of these species as well as *Grevillea thelemanniana* (Threatened) to restore remnant Honeymyrtle shrubland.
2.2.2	Wetlands	Conservation Category Wetland listing	Maintain or Enhance - environmental criteria leading to listing as Conservation Category.	▪ No action required.
2.2.3	Heritage	Registered Aboriginal Site	Monitor - remain aware of new heritage discoveries or changes to conditions. Any works causing significant disturbance in mapped area should be discussed with Department of Lands Planning and Heritage.	▪ Ensure that liaison is undertaken with Department of Lands, Planning and Heritage for any works that will create significant disturbance.
2.2.4	Community Interest		Maintain or Enhance - improve number or size of active community groups and area being actively managed.	▪ Support and maintain community partner relationships. ▪ City has the opportunity to provide equipment, resources and relevant training to active community groups.
2.2.5	Reference Sites		Monitor - no change expected.	▪ No action required

Section Reference	Asset	Sub-heading	Objective (Lagging Indicator)	Implementation Recommendation
2.3.1	Native Flora	Species diversity	Maintain or Enhance - increase native species diversity.	▪ Continue rehabilitation works including weed control, planting of site-specific species, and erosion control. ▪ Continue management of threats within the reserves.
		Very high value plant species	Maintain – continue to protect very high value plant species present within the reserves	▪ Ensure the population of *Dodonaea hackettiana* is maintained within Blackwall Reach Reserve.
2.3.2	Native Fauna	Mammal species	Maintain - continue to protect species diversity and manage habitat to allow ongoing use of reserve by species	▪ Continue rehabilitation works including weed control, planting of site-specific species, and erosion control. ▪ Continue feral animal control. ▪ Inform local residents regarding cat laws and promote responsible pet ownership.
		Amphibian species		
		Reptile species		
		Bird species		
		Conservation Significant Fauna	Maintain - continue to protect and support conservation significant fauna (Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo)	▪ Undertake feral animal control. ▪ Inform local residents regarding cat laws and promote responsible pet ownership. ▪ Continue revegetation works and weed management (prioritising suitable black cockatoo foraging species in revegetation) ▪ Retain all identified potential habitat trees.
		Fauna Habitat	Maintain or Enhance - increase the number of bird and bat boxes and number of suitable habitat trees.	▪ Increase number of bird and bat boxes to provide suitable habitat. ▪ Ensure that hollows and bird and bat boxes are maintained and are free from European Bees.

Section Reference	Asset	Sub-heading	Objective (Lagging Indicator)	Implementation Recommendation
				▪ Consider planting species with the potential to develop into black cockatoo habitat trees. ▪ Undertake management actions outlined in the *City of Melville Black Cockatoo Conservation Action Plan* (Murdoch University Black Cockatoo Conservation Management Project, 2023)

4.1.2 Leading Indicators

Leading indicators are associated with changes in the density / abundance / extent / occurrences of threats. The tiered objects for threats and associated leading indicators are indicated in Table 41. The implementation recommendation for each threat is described in Table 42.

Table 41: Tiered Objects for Threats and Associated Leading Indicators

Objective	Leading Indicator	Applicable When
Prevent	Prevent introduction or occurrence of	Threat not currently present in an area or the reserve
Eliminate	Reduce extent, density or abundance working towards eventual complete removal	Elimination is feasible Impact has potential to be high
Contain	Stop, restrict or reduce rate of spread or frequency of occurrence	Elimination is not feasible Impact has potential to be high
Manage	Limit negative impacts on assets	Threat is believed to be already at or near maximum impact
None	No measurable indicator	Threat is absent from reserve and will not be accidentally introduced or naturally develop

Table 42: Threat Management Objectives and Recommendations for 2025-2030, according to the guidance provided in the City's NAAMP

Section Reference	Threats	Sub-heading	Objective (Leading Indicator)	Implementation Recommendation
3.1	Physical Disturbance	Informal Tracks	Eliminate - reduce number and extent of informal tracks in bushland.	▪ Revegetate along informal tracks. ▪ Use natural materials (fallen logs) to block access to informal tracks to deter use. ▪ Maintain fencing to deter inappropriate access.
		Rubbish Dumping	Manage - continue ongoing rubbish removal program. Maintain rubbish occurrence at low levels currently recorded, target no large occurrences of garden waste or household rubbish dumping.	▪ Continue regular maintenance of routine rubbish removal across the reserves. ▪ Revegetate along informal tracks. ▪ Consider using natural materials (fallen logs) to deter use.
		Tree poisoning Illegal Clearing Firewood Collection	Prevent - no occurrences.	▪ Continue to promote values of natural areas in the community.
		Vandalism	Manage - maintain current low levels of graffiti.	▪ Continue removal of graffiti across the reserve.
3.2	Fire		Prevent - manage the reserve so as to prevent any large (>50 % of reserve burnt) or overly frequent (frequency <8 years) fires occurring.	▪ Undertake fire fuel load reduction.
3.3	Weeds	Very High Impact weed species	Prevent - prevent introduction of new very high impact weed species	▪ Continue weed management following the City's Environmental Weed Management Guideline.
			Eliminate - Brazilian Pepper, Soldiers, One Leaf Cape Tulip, Bridal Creeper, Lantana	
			Contain - Perennial Clumping Grasses (*Ehrharta calycina*).	

Section Reference	Threats	Sub-heading	Objective (Leading Indicator)	Implementation Recommendation
		High Impact weed species	Prevent - prevent introduction of new high impact weed species	▪ Undertake targeted weed removal for very high impact weeds. ▪ Continue weed management following the City's Environmental Weed Management Guideline. ▪ Weed control should be prioritised in areas that are in good or better condition to maintain their condition.
			Contain - mitigate increased population extents	
		Medium and Low Impact weed species	Prevent - prevent introduction of new medium and low impact weed species	
			Contain - reduce impact on bushland where possible	
3.4	Habitat Loss		Manage - prevent habitat loss at a reserve scale.	▪ Continue rehabilitation works including weed control, planting of site-specific species, and erosion control.
3.5	Feral Animals	Feral Cats	Manage - reduce presence (within guidelines	▪ Inform local residents regarding cat laws and promote responsible pet ownership. ▪ Monitor populations and control if necessary, following the City's Feral Animals Management Guidelines.
		Fox and Rabbits	Manage - reduce presence (within guidelines).	▪ Monitor and continue feral animal control if necessary, following the City's Feral Animals Management Guidelines.
		European Bee	Manage - reduce presence (within guidelines).	▪ Continue control and removal of European Bees following the City's Feral Animals Management Guidelines.
3.6	Diseases and Pathogens		Prevent - ensure infestations of diseases and pathogens do not become established.	▪ Monitor the vegetation, if there is the likelihood of any plant disease and pathogens, undertake an assessment by an approved contractor.

Section Reference	Threats	Sub-heading	Objective (Leading Indicator)	Implementation Recommendation
			Manage - reduce impact on native vegetation where possible	▪ Monitor vegetation health and death, consider infilling with flora species that are not susceptible to dieback.
3.7	Stormwater	Stormwater	Manage - no stormwater to be diverted into the bushland reserves	▪ Ensure that drains are not blocked by rubbish or weeds. ▪ Install retention basins adjacent to the drains, planted with nutrient stripping species to reduce excess nutrients and weeds entering the reserves.
3.8	Reticulation		Prevent - prevent overspray/leakage from reticulation entering bushland.	▪ Monitor and rectify overspray/leakage as required.
3.9	Acid Sulfate Soils		Manage - no change expected	▪ No action required.
3.10	Climate Change		Manage - continue to manage climate change impacts.	▪ Continue to monitor and manage climate change impact.

Maps

Map 1:
Site Location

Point Walter and Blackwall Reach, Bicton

Legend

Reserve Boundary

Client:	City of Melville
Date:	24/04/2025
Created by:	S. Treloar
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Map 2:
Ecological Linkages

Point Walter and Blackwall Reach, Bicton

Legend

- Ecological Linkage
- Native Vegetation Extent
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	S. Treloar
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 16000

0 200 400 m

N

Map 3:

Vegetation Type

Point Walter and Blackwall Reach, Bicton

Legend

- Quadrat
- AfEgW
- AfW
- ArS
- CoW
- EgW
- CcEmBW
- Parkland/Cleared
- Revegetation
- Reserve Boundary

Client:	City of Melville
Date:	26/06/2025
Created by:	S. Treloar
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Map 4:

Vegetation Condition

Point Walter and Blackwall Reach, Bicton

Legend

- Very Good
- Good
- Degraded
- Parkland/Cleared
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	S. Treloar
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Map 5:

Fauna Habitat

Point Walter and Blackwall Reach, Bicton

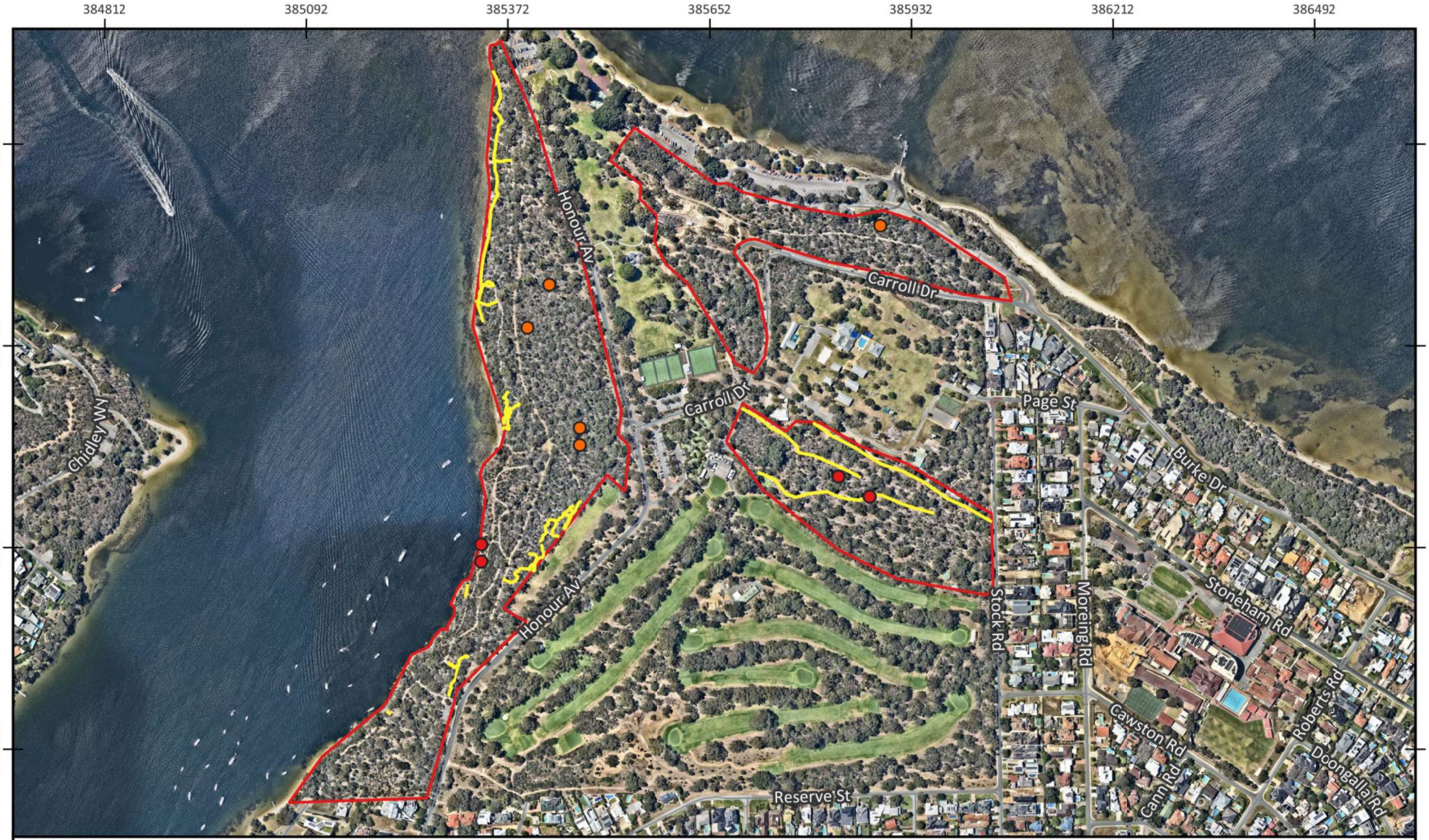
Legend

- Bird Box
- Potential Habitat Trees
- Potential Habitat Trees with Hollows
- Isolated Trees and Parkland Cleared
- Shrubland
- Woodland
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	S. Treloar
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N



Map 6:

Physical Disturbances

Point Walter and Blackwall Reach, Bicton

Legend

- Tracks / Paths
- Fox Den
- Rubbish
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Map 7:
Combined Weed Densities

Point Walter and Blackwall Reach, Bicton

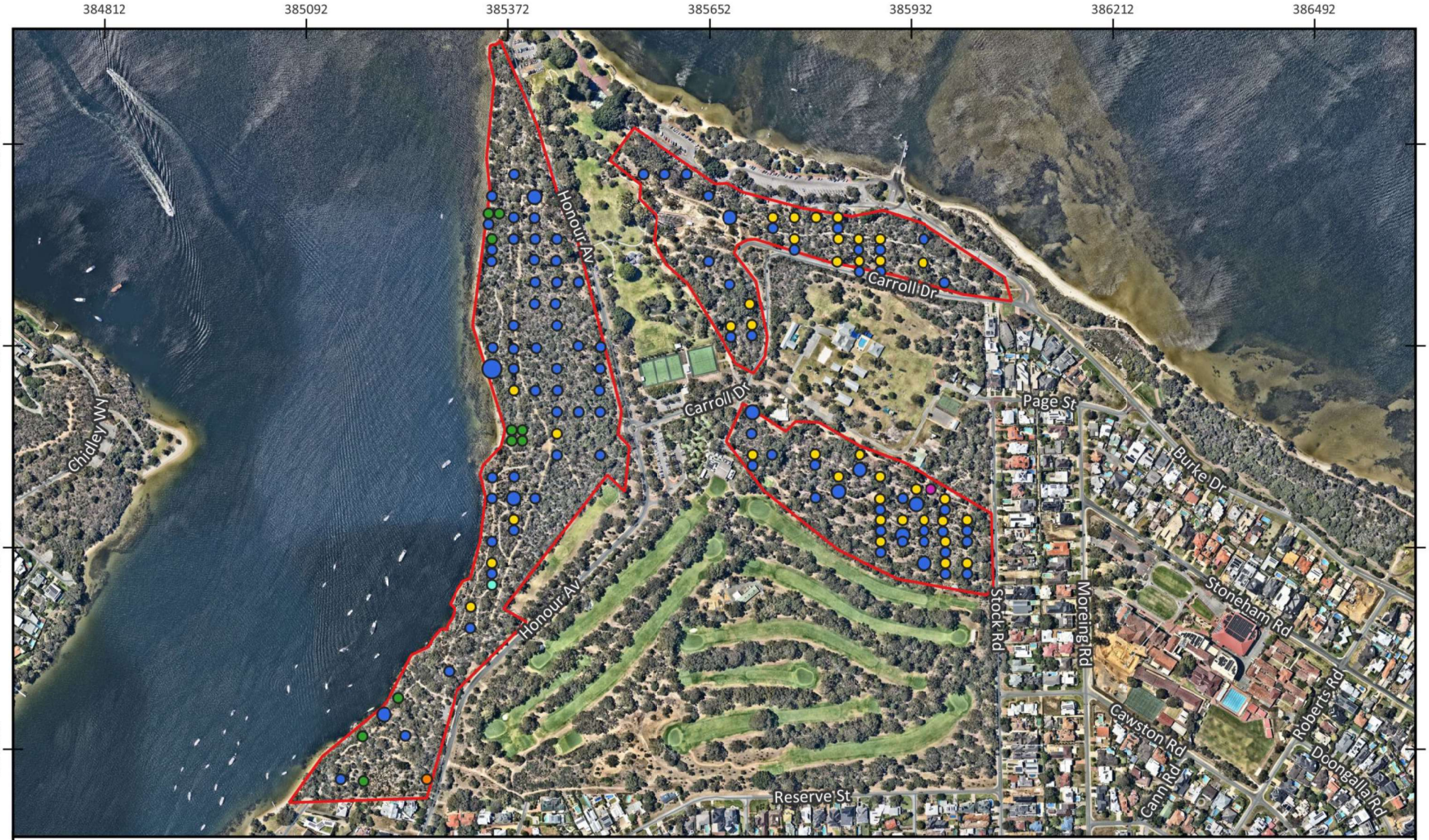
Legend

- <5%
- 5-25%
- >25%
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N



Map 8:

Very High Weeds

Point Walter and Blackwall Reach, Bicton

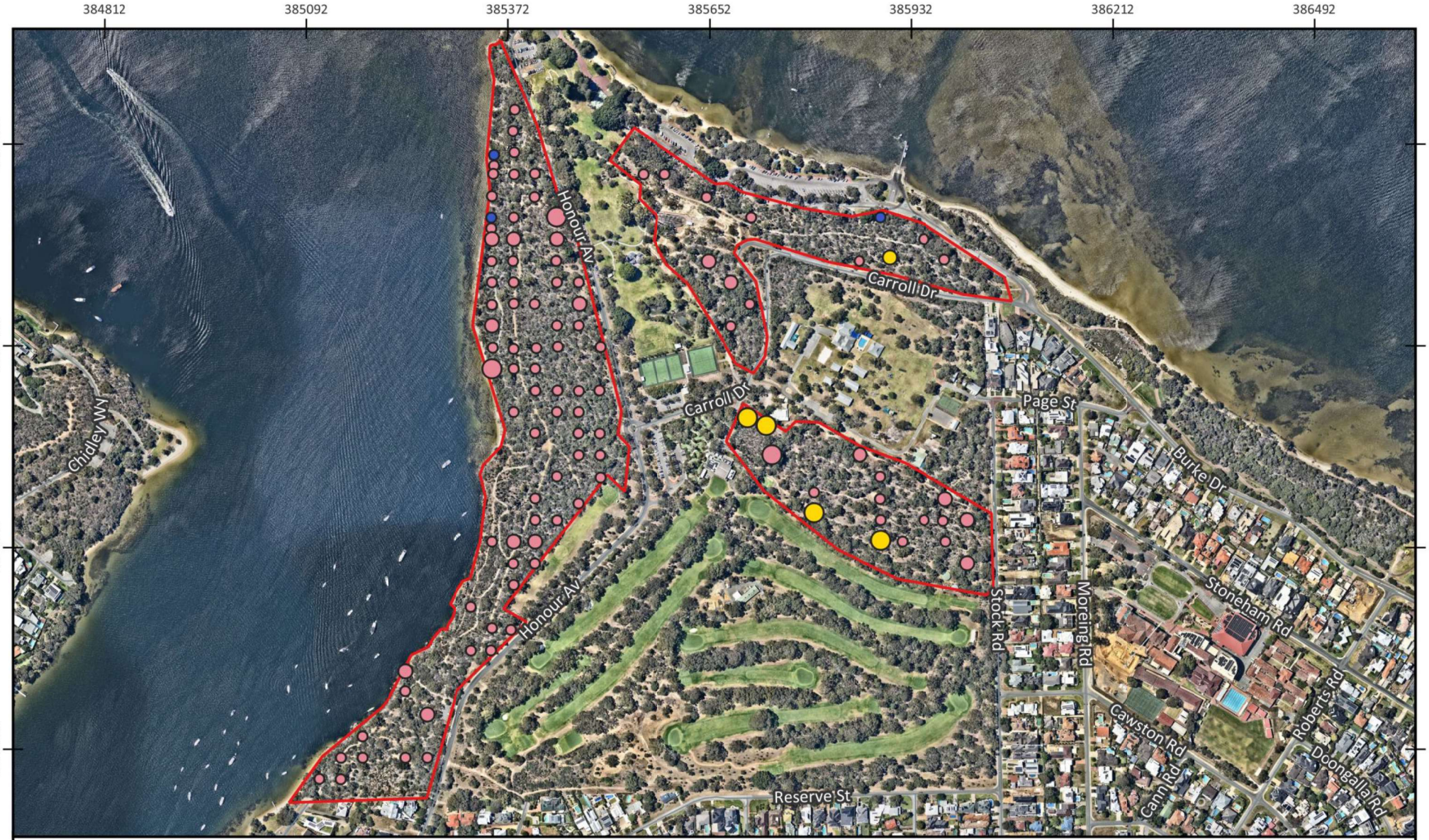
Legend

- Asparagus asparagoides <5%
- Ehrharta calycina <5%
- Ehrharta calycina 5-25%
- Ehrharta calycina >25%
- Lachenalia reflexa <5%
- Moraea flaccida <5%
- Schinus terebinthifolia <5%
- Zantedeschia aethiopica <5%
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N



Map 9:
High Weeds

Point Walter and Blackwall Reach, Bicton

Legend

- Ehrharta longiflora <5%
- Ehrharta longiflora 5-25%
- Ehrharta longiflora >25%
- Cynodon dactylon <5%
- Acacia iteaphylla 5-25%
- Acacia iteaphylla >25%
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Map 10:
High Weeds

Point Walter and Blackwall Reach, Bicton

Legend

- Ferraria crispa <5%
- Ferraria crispa 5-25%
- Freesia leichtlinii subsp. alba x leichtlinii subsp leichtinii <5%
- Freesia leichtlinii subsp. alba x leichtlinii subsp leichtinii 5-25%
- Gladiolus caryophyllaceus <5%
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Map 11:
High Weeds

Point Walter and Blackwall Reach, Bicton

Legend

- Lantana camara <5%
- Olea europaea <5%
- Olea europaea 5-25%
- Plumbago auriculata <5%
- Solanum lycopersicum <5%
- Solanum nigrum <5%
- Watsonia meriana <5%
- Pelargonium capitatum <5%
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Map 12:

Combined Medium and Low Priority Weed Densities

Point Walter and Blackwall Reach, Bicton

Legend

- <5%
- 5-25%
- >25%
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Map 13:

Bare Ground

Point Walter and Blackwall Reach, Bicton

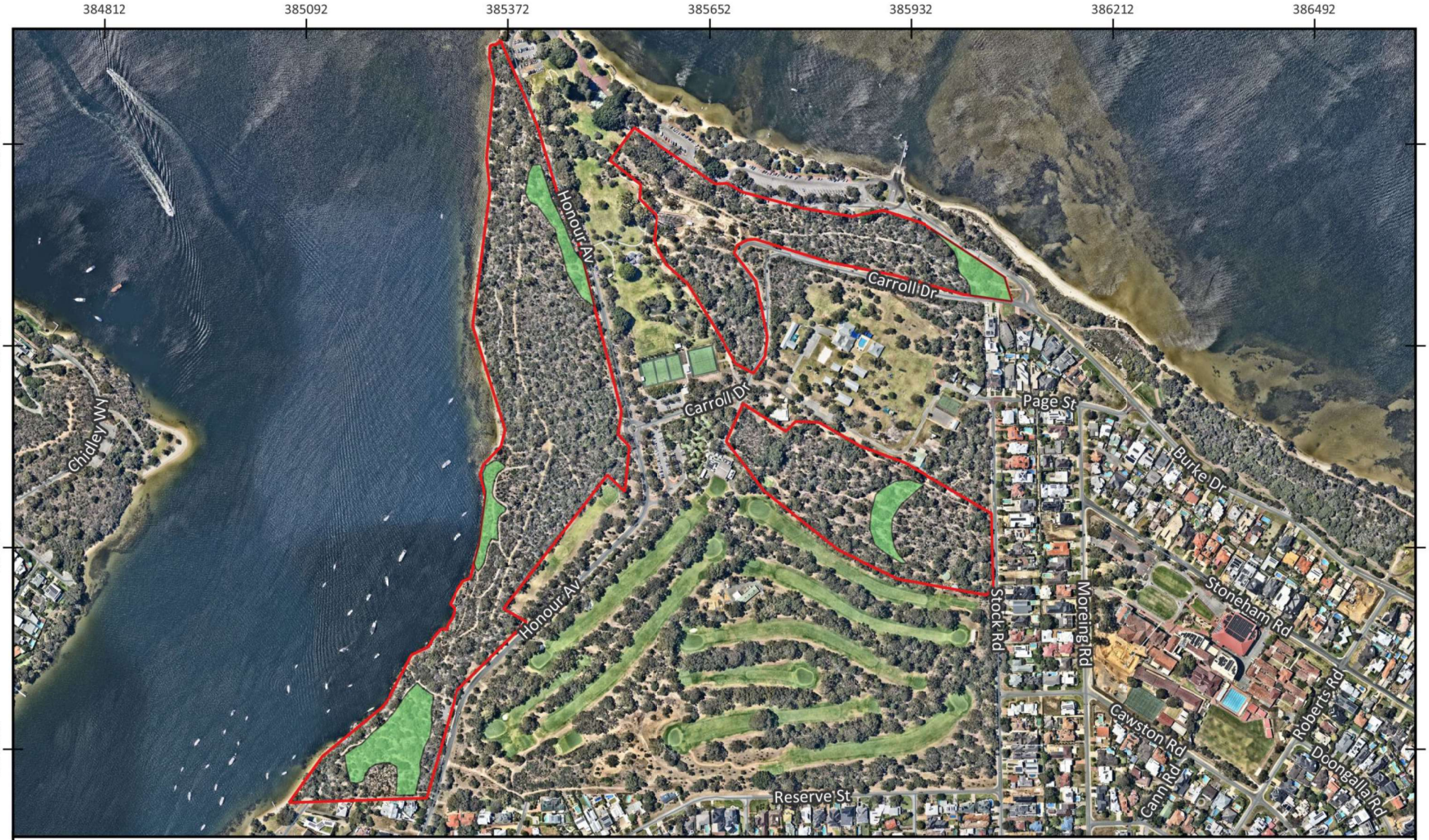
Legend

- <5%
- 5-25%
- >25%
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N



Map 14:

Priority Areas for Revegetation

Point Walter and Blackwall Reach, Bicton

Legend

- Proposed Revegetation Areas
- Reserve Boundary

Client:	City of Melville
Date:	13/06/2025
Created by:	Z. Stoney
Image Source:	Nearmap, 2025
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

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Appendix 1: Survey Methodology

Natural Area Consulting Management Services (Natural Area) was contracted by City of Melville to undertake a basic flora survey, a detailed fauna survey and weed mapping across Blackwall Reach and Point Walter Reserves.

A1.1 On-ground Flora Survey

The flora and vegetation survey was conducted in accordance with *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016). Samples were collected, or photographs taken of unfamiliar species to enable later identification.

Natural Area environmental scientists undertook the survey between September 25 and 26, 2024, with key data recorded using Qfield software on a handheld tablet. Survey activities included:

- Traversing the entirety of the site in grid format.
- Recording all species present, including native and invasive species.
- Recording the weed species and cover present at each grid point.
- Recording the percentage of bare ground.
- Marking locations of any conservation significant flora, declared pests (DP) and/or Weeds of National Significance (WoNS) identified.
- Establishment of one 10 x 10 m quadrat within the *Agonis flexuosa* and *Eucalyptus gomphocephala* woodland.
- Recording vegetation type including dominant over, middle and understorey species using the structural classes described in NVIS Level V (Executive Steering Committee for Australian Vegetation Information (ESCAVI), 2003).
- Recording vegetation condition using the scale attributed to Keighery (Table 34).
- The use of GPS to map significant species and boundaries of differing vegetation type and condition
- Recording evidence of disturbance, such as fire.

Table 34: Vegetation condition ratings

Category		Description
1	Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.
2	Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.
3	Very Good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
4	Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds, partial clearing, dieback and grazing.

Category		Description
5	Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.
6	Completely Degraded	The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Source: EPA, 2016

A1.2 On-ground Fauna Survey

The fauna survey was conducted in accordance with a detailed fauna survey as outlined in the *Technical Guidance - Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA, 2020). Natural Area environmental scientists undertook the survey between November 30 and October 4, 2024, with survey activities including:

- Trapping over five consecutive days (four nights) with trap-line, Elliott traps and camera traps (Table 35).
- Setting up four trap-lines which included two to three pitfalls and two funnel traps along a drift fence with vegetation used to cover funnel traps and placed in pitfall buckets to provide protection from the elements.
- Setting up 10 Elliott traps with universal bait (oats and peanut butter), newspaper being placed inside for bedding and then traps were covered with a hessian bag or foliage to provide protection from the elements.
- Setting up three motion activated camera traps.
- All trap and trap line coordinates were recorded using a hand-help GPS and marked with flagging tape (GPS coordinates are provided in Table 36 and displayed in Map 14).
- Checking traps daily within three hours of sunrise as per DBCA licence conditions, along with recording and releasing captured species back into the site.
- Active searching including searching under logs, rocks and hand raking through leaf litter.
- Static bird census was undertaken during trapping events with five-minute census undertaken at each trap line location recording visual observations of birds and calls heard.
- Walking the site to record opportunistic sightings or signs of birds and larger mammals, including calls, tracks, diggings, and scats.
- Undertaking two nocturnal surveys recording fauna using a combination of thermal imaging, spotlighting and an acoustic recorder.
- Recording the outcomes of the trapping and observation activities.

Table 35: Total trap nights

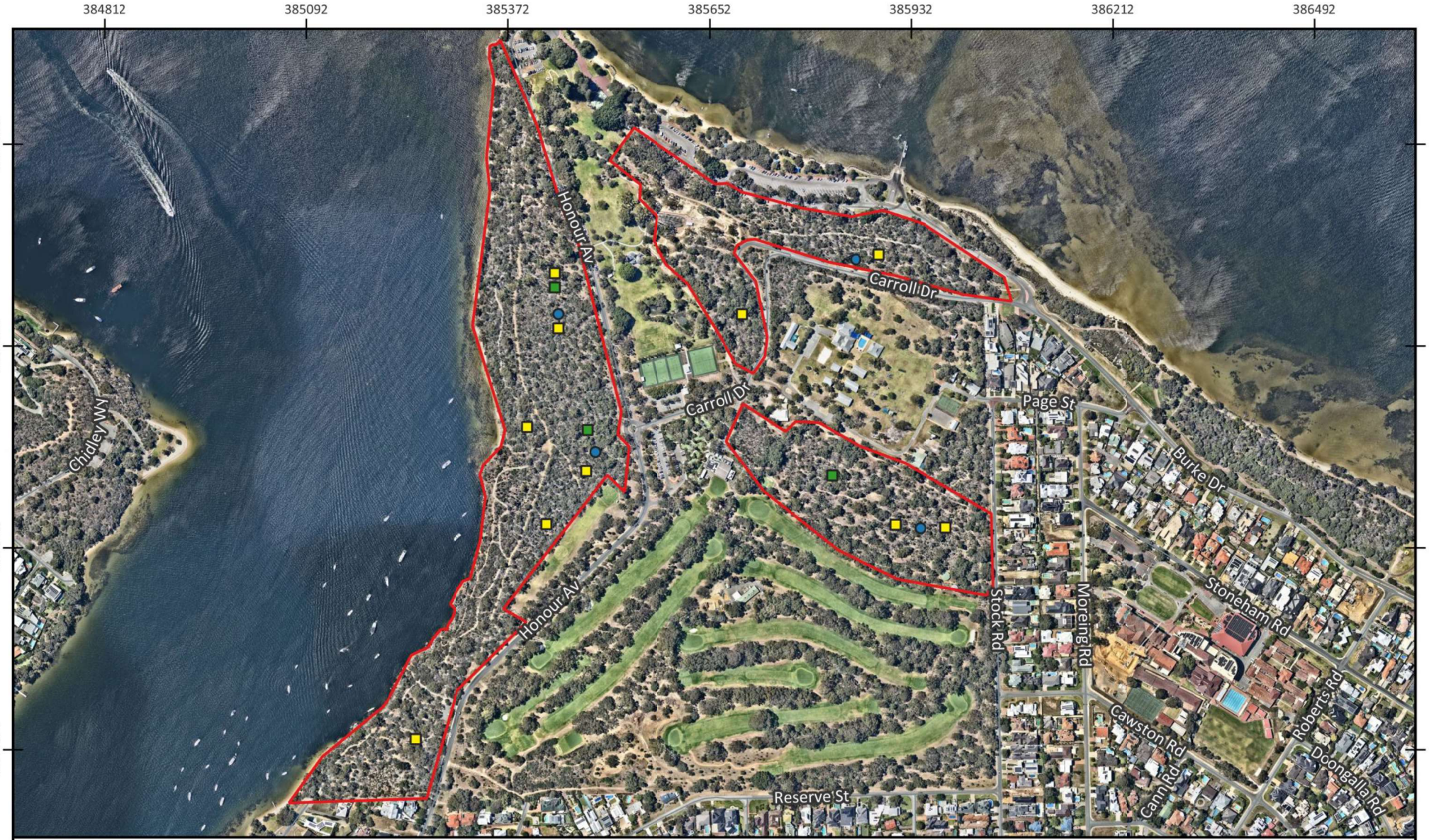
Number of Traps	Number of Nights	Number of Trap nights
11 Pitfalls (Trapline)	4	44
12 Funnels (Trapline)		48
10 Elliots		40
3 Trail Cameras		12
		Total: 144

Weather Conditions

Local weather conditions can affect fauna activity, with low temperatures and rain likely to reduce mammal and reptile activity. The first two days of the trapping period experienced cool mornings and warmer days with the average maximum temperature being 28 °C and 0 mm of rainfall, according to the Perth Airport Weather Station ID:009022 (BOM, 2025). Weather conditions declined over the remaining three days of the trapping period, with the average maximum temperature being 18.6 °C and an average of 11.5 mm of rainfall being recorded over the three days (BOM, 2025). Captures significantly reduced on the final two days of the trapping period due to the weather conditions.

Table 36: Fauna trapping locations provided as GPS Coordinates

ID	Type	Northing	Easting
BR-E22	Elliot Trap	6457322	385440
BR-E23	Elliot Trap	6457257	385437
BR-E24	Elliot Trap	6457109	385399
BR-E25	Elliot Trap	6457048	385481
BR-E26	Elliot Trap	6456975	385426
BR-E27	Elliot Trap	6456676	385244
PW-E28	Elliot Trap	6456970	385980
PW-E29	Elliot Trap	6456974	385911
PW-E30	Elliot Trap	6457349	385887
PW-E31	Elliot Trap	6457266	385697
BR-TL9	Trap Line	6457275	385448
BR-TL10	Trap Line	6457075	385494
PW-TL11	Trap Line	6456969	385945
PW-TL12	Trap Line	6457342	385855
BR-C8	Trail Camera	6457105	385483
BR-C9	Trail Camera	6457324	385434
PW-C10	Trail Camera	6457042	385822



Map 14:

Trap Locations

Point Walter and Blackwall Reach, Bicton

Legend

- Elliot
- Trap Line
- Trail Camera
- Reserve Boundary

Client:	City of Melville
Date:	16/12/2024
Created by:	Z. Stoney
Image Source:	Nearmap, 2024
Datum:	GDA2020 / MGA zone 50
Scale:	1: 7000

0 100 200 m

N

Appendix 2: Conservation Codes

Western Australia

Conservation Code	Name	Description
T	Threatened	Flora or fauna that is rare or likely to become extinct, ranked according to their level of threat using IUCN Red List criteria (Schedules 1-3 of the Wildlife Conservation (Specially Protected Fauna) Notice or the Wildlife Conservation (Rare Flora) Notice)
CR	Critically endangered	Species considered to be facing an extremely high risk of extinction within the wild in the immediate future
EN	Endangered	Species considered to be facing a very high risk of extinction in the wild in the near future
VU	Vulnerable	Species considered to be facing a high risk of extinction in the wild in the medium-term future
EX	Extinct Species	Species where 'there is no reasonable doubt that the last member of the species has died (Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice or the Wildlife Conservation (Rare Flora) Notice)
EW	Extinct in the Wild	Species that are known to only survive in cultivation, in captivity, or as a naturalised population well outside its past range; and it has not been recorded in its known or expected habitat at appropriate seasons anywhere in its past range, despite surveys over a timeframe appropriate to its life cycle and form
MI	Migratory Species	Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth (Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice)
CD	Conservation Dependent	Species of special conservation interest (conservation dependent fauna), being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened (Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice)
OS	Specially Protected	Fauna otherwise in need of special protection to ensure their conservation (Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice)
P	Priority Species	Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and

Conservation Code	Name	Description
		evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.
P1	Priority One	Poorly known species – Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either very small or on lands not managed for conservation, such as road verges, urban areas, farmland, active mineral lease and under threat of habitat destruction or degradation.
P2	Priority Two	Poorly known species – Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, such as national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves and similar.
P3	Priority Three	Poorly known species – Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat
P4	Priority Four	Rare or near threatened and other species in need of monitoring.

(Source: DBCA, 2023b)

Commonwealth

Category	Description
Critically Endangered	Species facing an extremely high risk of extinction in the wild in the immediate future
Endangered	Species facing a very high risk of extinction in the wild in the near future
Vulnerable	Species facing a high risk of extinction in the wild in the medium term

Appendix 3: Species List (Flora)

Native flora species identified within the reserves from each management plan are listed below by Family. Species highlighted in green are conservation significant species.

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Aizoaceae	*Tetragonia tetragonoides*	New Zealand Spinach	x					
Amaranthaceae	*Apium prostratum* var. *prostratum*		x					
Amaranthaceae	*Ptilotus drummondii*		x					
Amaranthaceae	*Ptilotus polystachyus*	Prince of Wales Feather	x			x	x	x
Anarthriaceae	*Lyginia imberbis*						x	
Apiaceae	*Daucus glochidiatus*	Australian Carrot	x					
Apiaceae	*Eryngium pinnatifidum*	Blue Devils					x	
Apiaceae	*Homalosciadium homalocarpum*		x					
Apocynaceae	*Alyxia buxifolia*	Dysentery Bush	x	x	x			
Araliaceae	*Trachymene pilosa*	Native Parsnip		x	x			
Asparagaceae	*Acanthocarpus preissii*		x	x	x	x	x	x
Asparagaceae	*Lagenophora huegelii*		x					
Asparagaceae	*Lomandra caespitosa*	Tufted Mat Rush	x	x	x	x	x	x
Asparagaceae	*Lomandra hermaphrodita*			x	x		x	x
Asparagaceae	*Lomandra maritima*	Maritime Mat Rush	x				x	x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Asparagaceae	*Lomandra micrantha* subsp. *micrantha*		x			x		
Asparagaceae	*Lomandra nigricans*					x		
Asparagaceae	*Lomandra preissii*	Preiss' Mat Rush	x					
Asparagaceae	*Lomandra suaveolens*						x	x
Asparagaceae	*Sowerbaea laxiflora*	Purple Tassels	x	x	x	x	x	x
Asparagaceae	*Thysanotus arenarius*	Sand-dune Fringed Lily	x	x	x	x	x	
Asparagaceae	*Thysanotus manglesianus*	Mangles' Fringed Lily		x	x		x	x
Asparagaceae	*Thysanotus patersonii*	Paterson's Fringed Lily					x	x
Asparagaceae	*Thysanotus sparteus*	Leafless Fringed Lily				x	x	x
Asparagaceae	*Laxmannia squarrosa*	Paper Lily	x			x		
Asteraceae	*Olearia axillaris*	Coastal Daisybush	x		x			
Asteraceae	*Rhodanthe chlorocephala*							x
Asteraceae	*Senecio pinnatifolius*		x					
Campanulaceae	*Lobelia tenuior*	Slender Lobelia				x		
Casuarinaceae	*Allocasuarina fraseriana*	Sheoak	x			x	x	x
Casuarinaceae	*Allocasuarina humilis*	Dwarf Sheoak	x	x	x	x	x	x
Casuarinaceae	*Allocasuarina lehmanniana*	Dune Sheoak					x	x
Casuarinaceae	*Casuarina obesa*	Swamp Sheoak	x	x	x			
Chenopodiaceae	*Atriplex cinerea*		x					

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Chenopodiaceae	*Rhagodia baccata*	Berry Saltbush		x	x		x	x
Chenopodiaceae	*Rhagodia baccata* subsp. *baccata*	Berry Saltbush		x	x			
Chenopodiaceae	*Rhagodia baccata* subsp. *dioica*		x					
Chenopodiaceae	*Salicornia quinqueflora*	Bearded Samphire	x					
Chenopodiaceae	*Suaeda australis*	Seablite	x					
Chenopodiaceae	*Threlkeldia diffusa*	Coast Bonefruit	x		x			
Colchicaceae	*Burchardia congesta*	Milkmaids	x			x	x	x
Colchicaceae	*Crassula colorata* var. *colorata*		x					
Crassulaceae	*Crassula decumbens*	Rufous Stonecrop	x					
Crassulaceae	*Crassula exserta*		x					
Cupressaceae	*Callitris preissii*	Rottnest Island Pine			x		x	x
Cyperaceae	*Ficinia nodosa*	Knotted Club Rush	x					
Cyperaceae	*Gahnia trifida*	Coast Saw-sedge	x	x	x			
Cyperaceae	*Lepidosperma angustatum*		x					
Cyperaceae	*Lepidosperma gladiatum*	Coast Sword-sedge	x	x	x			
Cyperaceae	*Lepidosperma leptostachyum*		x					
Cyperaceae	*Lepidosperma longitudinale*	Pithy Sword-sedge	x					
Cyperaceae	*Lepidosperma scabrum*	Scabrid Sword-sedge		x				

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Cyperaceae	*Lepidosperma* sp.						x	
Cyperaceae	*Lepidosperma squamatum*		x				x	
Cyperaceae	*Machaerina juncea*	Bare Twigrush	x					
Cyperaceae	*Mesomelaena pseudostygia*	Semaphore Sedge	x	x	x	x	x	x
Cyperaceae	*Morelotia octandra*		x					
Cyperaceae	*Morelotia octandra*						x	x
Cyperaceae	*Schoenus clandestinus*		x				x	x
Dilleniaceae	*Hibbertia cuneiformis*	Cutleaf Hibbertia					x	x
Dilleniaceae	*Hibbertia huegelii*					x		
Dilleniaceae	*Hibbertia hypericoides*	Yellow Buttercups	x			x		
Dilleniaceae	*Hibbertia racemosa*	Stalked Guinea Flower	x	x	x			
Dilleniaceae	*Hibbertia subvaginata*					x		
Droseraceae	*Drosera erythrorhiza*	Red Ink Sundew	x			x	x	
Droseraceae	*Drosera pallida*	Pale Rainbow	x			x		
Droseraceae	*Drosera stolonifera*	Leafy Sundew				x	x	
Ericaceae	*Leucopogon parviflorus*	Coast Beard-heath	x			x		
Ericaceae	*Styphelia pallida*	Kick Rush				x		
Ericaceae	*Styphelia propinqua*		x	x			x	x
Fabaceae	*Acacia cochlearis*	Rigid Wattle	x					
Fabaceae	*Acacia cyclops*	Coastal Wattle	x	x	x		x	x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Fabaceae	*Acacia lasiocarpa*	Panjang	x		x	x		
Fabaceae	*Acacia pulchella*	Prickly Moses	x				x	x
Fabaceae	*Acacia rostellifera*	Summer-scented Wattle	x	x	x			
Fabaceae	*Acacia saligna*	Orange Wattle	x		x	x	x	x
Fabaceae	*Acacia xanthina*	White-stemmed Wattle	x	X	x	x		
Fabaceae	*Daviesia triflora*					x	x	
Fabaceae	*Gompholobium aristatum*		x			x		
Fabaceae	*Gompholobium tomentosum*	Hairy Yellow Pea		x	x	x	x	x
Fabaceae	*Isotropis cuneifolia* subsp. *cuneifolia*	Granny Bonnets	x			x		
Fabaceae	*Isotropis* sp.						x	
Fabaceae	*Jacksonia furcellata*	Grey Stinkwood	x	x	x	x	x	x
Fabaceae	*Jacksonia sternbergiana*	Stinkwood	x	x	x	x	x	x
Fabaceae	*Kennedia prostrata*	Scarlet Runner	x			x		
Fabaceae	*Templetonia retusa*	Cockies Tongues	x	x	x			
Fabaceae	*Hardenbergia comptoniana*	Native Wisteria	x	x	x	x	x	x
Goodeniaceae	*Lechenaultia floribunda*	Free-flowering Leschenaultia				x		
Goodeniaceae	*Lechenaultia linarioides*	Yellow Leschenaultia	x	x	x		x	x
Goodeniaceae	*Scaevola anchusifolia*	Silky Scaevola	x	x		x		

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Goodeniaceae	*Scaevola canescens*	Grey Scaevola	x		x		x	x
Goodeniaceae	*Scaevola nitida*	Shining Fanflower	x				x	
Goodeniaceae	*Scaevola repens*		x					
Goodeniaceae	*Scaevola crassifolia*	Thick-leaved Fan-flower	x	x	x		x	x
Haemodoraceae	*Conostylis aculeata* subsp. *Cygnorum*		x			x		
Haemodoraceae	*Conostylis candicans*	Grey Cottonhead	x	x	x		x	x
Haemodoraceae	*Conostylis candicans* subsp. *candicans*		x					
Haemodoraceae	*Conostylis setigera*					x		
Haemodoraceae	*Haemodorum spicatum*	Bohn	x			x		
Hemerocallidaceae	*Caesia micrantha*	Pale Grass-lily	x			x	x	x
Hemerocallidaceae	*Corynotheca micrantha*	Hexagon Zigzag Lily	x			x	x	x
Hemerocallidaceae	*Dianella revoluta*	Blueberry Lily		x	x		x	x
Hemerocallidaceae	*Dianella revoluta* var. *divaricata*		x			x		
Hemerocallidaceae	*Tricoryne elatior*	Yellow Autumn Lily	x	x	x		x	x
Iridaceae	*Orthrosanthus laxus*	Morning Iris	x					
Iridaceae	*Patersonia occidentalis*	Purple Flag	x					
Juncaceae	*Juncus kraussii*	Sea Rush	x	x	x			
Juncaceae	*Luzula meridionalis*	Field Woodrush					x	

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Lamiaceae	*Hemiandra glabra*			x	x			
Lamiaceae	*Hemiandra pungens*	Snakebush	x					
Loganiaceae	*Logania vaginalis*	White Spray	x					
Malvaceae	*Alyogyne huegelii*	Lilac Hibiscus	x	x	x	x		
Myrtaceae	*Agonis flexuosa*	Peppermint	x	x	x		x	x
Myrtaceae	*Callistemon phoeniceus*	Lesser Bottlebrush				x		
Myrtaceae	*Calothamnus quadrifidus*	One-sided Bottlebrush	x	x	x	x	x	x
Myrtaceae	*Calothamnus rupestris*	Mouse Ears		x	x		x	x
Myrtaceae	*Corymbia calophylla*	Marri	x	x	x		x	x
Myrtaceae	*Eremaea pauciflora*					x		
Myrtaceae	*Eucalyptus gomphocephala*	Tuart	x	x	x	x	x	x
Myrtaceae	*Eucalyptus marginata*	Jarrah		x	x		x	x
Myrtaceae	*Eucalyptus marginata* subsp. *marginata*	Jarrah	x			x		
Myrtaceae	*Hypocalymma angustifolium*	White Myrtle				x		
Myrtaceae	*Melaleuca cuticularis*	Saltwater Paperbark				x	x	x
Myrtaceae	*Melaleuca huegelii*	Chenille Honeymyrtle					x	x
Myrtaceae	*Melaleuca rhaphiophylla*	Swamp Paperbark				x		
Myrtaceae	*Melaleuca scabra*	Rough Honeymyrtle	x			x		
Myrtaceae	*Melaleuca systena*	Coastal Honeymyrtle	x	x	x	x	x	x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Myrtaceae	*Melaleuca trichophylla*						x	x
Orchidaceae	*Caladenia arenicola*	Carousel Spider Orchid	x			x		
Orchidaceae	*Caladenia flava*	Cowslip Orchid				x	x	
Orchidaceae	*Caladenia latifolia*	Pink Fairies				x	x	x
Orchidaceae	*Diuris longifolia*	Purple Pansy Orchid	x					
Orchidaceae	*Diuris* sp.						x	
Orchidaceae	*Microtis media*	Tall Mignonette Orchid			x		x	
Orchidaceae	*Pterostylis vittata*	Banded Greenhood			x		x	
Phyllanthaceae	*Lysiandra calycina*	False Boronia	x					
Pittosporaceae	*Pittosporum ligustrifolium*		x					
Poaceae	*Austrostipa compressa*				x			
Poaceae	*Austrostipa elegantissima*		x				x	
Poaceae	*Austrostipa flavescens*		x				x	
Poaceae	*Austrostipa variabilis*		x			x		
Poaceae	*Sporobolus virginicus*	Marine Couch	x		x			
Polygalaceae	*Comesperma integerrimum*		x					
Primulaceae	*Samolus repens*	Creeping Brookweed	x					
Proteaceae	*Adenanthos cygnorum* subsp. *cygnorum*					x		
Proteaceae	*Banksia attenuata*	Slender Banksia	x	x	x	x	x	x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Proteaceae	*Banksia dallanneyi*	Couch Honeypot		x			x	
Proteaceae	*Banksia grandis*	Bull Banksia	x			x	x	x
Proteaceae	*Banksia lindleyana*	Porcupine Banksia	x			x		
Proteaceae	*Banksia menziesii*	Firewood Banksia	x		x	x	x	x
Proteaceae	*Banksia prionotes*	Acorn Banksia			x	x	x	x
Proteaceae	*Banksia sessilis*	Parrot Bush	x	x	x	x	x	x
Proteaceae	*Grevillea crithmifolia*					x	x	x
Proteaceae	*Grevillea preissii*		x					
Proteaceae	*Grevillea thelemanniana*	Spider Net Grevillea					x	x
Proteaceae	*Grevillea vestita*			x	x		x	
Proteaceae	*Grevillea vestita* subsp. *vestita*		x					
Proteaceae	*Hakea lissocarpha*	Honey Bush				x		
Proteaceae	*Hakea petiolaris*	Sea Urchin Hakea			x			
Proteaceae	*Hakea prostrata*	Harsh Hakea	x	x		x	x	x
Proteaceae	*Hakea trifurcata*	Two-leaf Hakea		x	x		x	x
Proteaceae	*Hakea varia*	Varied-leaved Hakea				x		
Proteaceae	*Petrophile linearis*	Pixie Mops	x			x	x	x
Proteaceae	*Petrophile macrostachya*		x				x	
Proteaceae	*Stirlingia latifolia*	Blueboy	x				x	x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Ranunculaceae	*Clematis linearifolia*	Slender Clematis	x					
Ranunculaceae	*Clematis pubescens*	Common Clematis		x	x			
Restionaceae	*Desmocladus fasciculatus*		x			x		
Restionaceae	*Desmocladus flexuosus*						x	x
Restionaceae	*Loxocarya cinerea*						x	
Rhamnaceae	*Spyridium globulosum*	Basket Bush	x	x	x			
Rhamnaceae	*Trymalium odoratissimum* subsp. *odoratissimum*		x					
Rubiaceae	*Opercularia vaginata*	Dog Weed	x					
Rutaceae	*Diplolaena drummondii*				x			
Sapindaceae	*Diplopeltis huegelii*			x				
Sapindaceae	*Diplopeltis huegelii* subsp. *huegelii*		x					
Sapindaceae	*Dodonaea aptera*	Coast Hop-bush			x			
Sapindaceae	*Dodonaea hackettiana*	Hackett's Hopbush	x	x	x			
Sapindaceae	*Dodonaea viscosa*	Sticky Hopbush	x					
Scrophulariaceae	*Eremophila glabra*	Tar Bush		x				
Scrophulariaceae	*Eremophila glabra* subsp. *albicans*	Tar Bush	x					
Scrophulariaceae	*Myoporum insulare*	Blueberry Tree	x			x		
Thymelaeaceae	*Pimelea rosea*	Rose Banjine	x	x		x	x	

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Violaceae	*Pigea calycina*	Wild Violet	x		x	x	x	x
Xanthorrhoeaceae	*Xanthorrhoea brunonis*						x	x
Xanthorrhoeaceae	*Xanthorrhoea preissii*	Grass tree	x	x	x	x	x	x
Zamiaceae	*Macrozamia riedlei*	Zamia	x	x	x		x	x

Appendix 4: Species List (Fauna)

Fauna species recorded across the reserves from each management plan are listed below by family. Species highlighted in red are declared pests and those that are highlighted in green are conservation significant species.

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Bird								
Acanthizidae	*Gerygone fusca*	Western Gerygone				x		
Acanthizidae	*Smicrornis brevirostris*	Weebill	x			x		
Accipitridae	*Elanus axillaris*	Black-shouldered Kite	x					
Accipitridae	*Haliastur sphenurus*	Whistling Kite	x					
Accipitridae	*Tachyspiza fasciata*	Brown Goshawk	x				x	
Alcedinidae	**Dacelo novaeguineae*	Laughing Kookaburra	x	x	x		x	x
Alcedinidae	*Todiramphus sanctus*	Sacred Kingfisher	x					
Anatidae	*Anas superciliosa*	Pacific Black Duck		x				
Anatidae	*Tadorna tadornoides*	Australian Shelduck	x					
Anhingidae	*Anhinga novaehollandiae*	Australasian Darter		x				
Anthochaera	*Anthochaera carunculata*	Red Wattlebird	x	x		x	x	
Ardeidae	*Egretta novaehollandiae*	White-faced Heron			x			
Artamidae	*Cracticus torquatus*	Grey Butcherbird	x		x			
Artamidae	*Gymnorhina tibicen*	Australian Magpie	x	x	x	x	x	

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Cacatuidae	**Cacatua tenuirostris*	Eastern Long Billed Corella	x	x		x	x	
Cacatuidae	*Cacatua sanguinea*	Little Corella	x	x	x	x		
Cacatuidae	*Calyptorhynchus banksii naso*	Red-tailed Black Cockatoo						x
Cacatuidae	*Eolophus roseicapilla*	Galah	x	x	x	x	x	x
Cacatuidae	*Zanda latirostris*	Carnaby's Cockatoo	x		x			x
Campephagidae	*Coracina novaehollandiae*	Black-faced Cuckooshrike	x		x	x	x	x
Columbidae	**Columba livia*	Domestic Pigeon (Rock Dove)	x	x				
Columbidae	**Spilopelia chinensis*	Spotted Turtle Dove	x	x	x	x		x
Columbidae	**Spilopelia senegalensis*	Laughing Turtle Dove	x	x	x			x
Columbidae	*Ocyphaps lophotes*	Crested Pigeon						x
Corvidae	*Corvus coronoides*	Australian Raven	x	x	x	x	x	
Falconidae	*Falco longipennis*	Australian Hobby				x		
Hirundinidae	*Hirundo neoxena*	Welcome Swallow	x	x	x	x		
Hirundinidae	*Petrochelidon nigricans*	Tree Martin	x			x		
Laridae	*Chroicocephalus novaehollandiae*	Silver Gull		x	x			x
Meliphagidae	*Anthochaera lunulata*	Western Little Wattlebird	x					
Meliphagidae	*Gavicalis virescens*	Singing Honeyeater	x	x	x	x		x
Meliphagidae	*Lichmera indistincta*	Brown Honeyeater	x	x	x	x		x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Meliphagidae	*Phylidonyris niger*	White-cheeked Honeyeater	x	x	x		x	x
Meliphagidae	*Phylidonyris novaehollandiae*	New Holland Honeyeater	x					
Meropidae	*Merops ornatus*	Rainbow Bee-eater	x	x			x	x
Monarchidae	*Grallina cyanoleuca*	Magpie-lark	x			x		
Pachycephalidae	*Pachycephala rufiventris*		x					
Pandionidae	*Pandion haliaetus*	Osprey	x		x			x
Pardalotidae	*Pardalotus punctatus*	Spotted Pardalote	x					
Pardalotidae	*Pardalotus striatus*	Striated Pardalote	x	x	x	x		
Pelecanidae	*Pelecanus conspicillatus*	Australian Pelican			x			
Petroicidae	*Microeca fascinans*	Jacky Winter						x
Phalacrocoracidae	*Phalacrocorax sulcirostris*	Little Black Cormorant		x	x			
Phalacrocoracidae	*Phalacrocorax varius*	Pied Cormorant (Australian Pied Cormorant)		x	x			
Podargidae	*Podargus strigoides*	Tawny Frogmouth		x	x			
Psittaculidae	**Trichoglossus moluccanus*	Rainbow Lorikeet	x	x	x	x	x	x
Psittaculidae	*Barnardius zonarius*	Australian Ringneck	x	x	x	x		x
Psittaculidae	*Purpureicephalus spurius*	Red-capped Parrot	x					
Rhipiduridae	*Rhipidura leucophrys*	Willie Wagtail	x	x	x			x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Scolopacidae	*Tringa brevipes*	Grey-tailed Tattler		x				
Zosteropidae	*Zosterops lateralis*	Grey-breasted White-eye (Silvereye)	x		x			x
Mammal								
Canidae	**Vulpes vulpes*	Red Fox	x		x	x		
Delphinidae	*Delphinus delphis delphis*	Common Dolphin			x			
Felidae	**Felis catus*	Domestic Cat		x			x	
Leporidae	**Oryctolagus cuniculus*	Rabbit	x	x	x		x	
Molossidae	*Austronomus australis*	White-striped Free-tailed Bat				x		
Muridae	**Rattus rattus*	Black Rat	x	x	x		x	x
Phalangeridae	*Trichosurus vulpecula hypoleucus*	Common Brushtail Possum		x	x		x	
Vespertilionidae	*Chalinolobus gouldii*	Gould's Wattled Bat			x	x		x
Vespertilionidae	*Vespadelus regulus*	Southern Forest Bat				x		
Reptile								
Gekkonidae	*Christinus marmoratus*	Marbled Gecko	x					x
Scincidae	*Cryptoblepharus buchananii*		x		x		x	x
Scincidae	*Ctenotus australis*		x					
Scincidae	*Ctenotus fallens*		x	x	x		x	x
Scincidae	*Hemiergis quadrilineatus*				x			x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Scincidae	*Lerista lineata*			x				
Scincidae	*Lerista praepedita*		x					
Scincidae	*Menetia greyii*		x					x
Scincidae	*Morethia lineoocellata*		x					
Scincidae	*Morethia obscura*						x	x
Scincidae	*Tiliqua rugosa rugosa*	Bobtail	x	x	x		x	x
Invertebrate								
Acrididae	*Coryphistes ruricola*	Bark Mimicking Grasshopper					x	
Blattidae	*Drymaplaneta shelfordi*	Cockroach		x				
Colletidae	*Euhesma jaffajacksonia*	Bee			x			
Salticidae	*Maratus pavonis*	Peacock Spider		x				
Megachilidae	*Megachile chrysopyga*	Bee			x			
Megachilidae	*Megachile canifrons*	Bee			x			
Pisauridae	*Megadolomedes australianus*	Giant Water Spider		x				
Formicidae	*Myrmecia vindex*	Bull Ant		x				
Blattidae	*Platyzosteria circumducta*	Bordered Woodland Cockroach		x			x	
Gnaphosidae	*Scotophaeus sp.*	Spider		x				
Folcidae	*Smeringopus pallidus*	Daddy Long-Leg Spider					x	

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Carabidae		Ground Beetle					x	
Pisauridae		Nursery Web Spider		x			x	
Scutelleridae		Jewel Beetle		x				

Appendix 5: Species List (Weeds)

Weed species recorded across the reserves from each management plan are listed below by family. Species highlighted in red are declared pests and / or WoNS.

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Aizoaceae	**Carpobrotus edulis*	Hottentot Fig	x					
Aizoaceae	**Tetragonia decumbens*	Sea Spinach	x	x				
Amaryllidaceae	**Narcissus tazetta*	Jonquil	x			x		
Anacardiaceae	**Schinus terebinthifolia*		x	x	x	x	x	
Apocynaceae	**Plumeria* sp.						x	
Araceae	**Zantedeschia aethiopica*	Arum Lily			x			
Araliaceae	**Hedera* sp.				x			
Arecaceae	**Washingtonia filifera*	Cotton Palm	x			x		
Asparagaceae	**Asparagus asparagoides*	Bridal Creeper	x	x	x			
Asparagaceae	**Dracaena trifasciata*		x					
Asparagaceae	**Lachenalia reflexa*		x	x	x	x	x	x
Asphodelaceae	**Asphodelus fistulosus*	Onion Weed	x					
Asphodelaceae	**Trachyandra divaricata*		x					
Asteraceae	**Arctotheca calendula*	Cape Weed	x	x	x	x	x	x
Asteraceae	**Argyranthemum frutescens*	Marguerite	x					

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Asteraceae	**Cotula turbinata*	Funnel Weed		x	x			
Asteraceae	**Erigeron bonariensis*		x	x	x	x	x	x
Asteraceae	**Hypochaeris glabra*	Smooth Cats-ear	x	x	x	x	x	x
Asteraceae	**Hypochaeris radicata*	Flat Weed			x			
Asteraceae	**Lactuca serriola*	Prickly Lettuce	x	x	x	x	x	x
Asteraceae	**Monoculus monstrosus*		x	x	x		x	x
Asteraceae	**Pseudognaphalium luteoalbum*	Jersey Cudweed			x			x
Asteraceae	**Senecio vulgaris*	Common Groundsel		x	x			x
Asteraceae	**Sonchus asper*	Rough Sowthistle			x			x
Asteraceae	**Sonchus oleraceus*	Common Sowthistle	x	x	x		x	x
Asteraceae	**Urospermum picroides*	False Hawkbit	x	x	x		x	x
Asteraceae	**Ursinia anthemoides*	Ursinia	x	x	x	x	x	x
Brassicaceae	**Brassica tournefortii*	Mediterranean Turnip	x	x	x		x	x
Brassicaceae	**Diplotaxis muralis*	Wall Rocket			x			
Brassicaceae	**Heliophila pusilla*		x	x	x			x
Brassicaceae	**Lobularia maritima*	Sweet Alyssum	x		x			
Brassicaceae	**Raphanus raphanistrum*	Wild Radish	x		x		x	x
Campanulaceae	**Wahlenbergia capensis*	Cape Bluebell					x	x
Caryophyllaceae	**Cerastium glomeratum*	Mouse Ear Chickweed	x					

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Caryophyllaceae	**Petrorhagia dubia*		x	x	x	x	x	x
Caryophyllaceae	**Sagina apetala*	Annual Pearlwort	x					
Caryophyllaceae	**Silene gallica*	French Catchfly		x	x	x	x	x
Caryophyllaceae	**Stellaria media*	Chickweed		x	x		x	x
Casuarinaceae	**Casuarina glauca*						x	x
Chenopodiaceae	**Atriplex prostrata*	Hastate Orache		x				
Convolvulaceae	**Ipomoea indica*	Morning Glory	x					
Crassulaceae	**Crassula alata*				x			
Cyperaceae	**Ficinia marginata*	Coarse Club Rush			x			x
Dilleniaceae	**Hibbertia scandens*						x	
Euphorbiaceae	**Euphorbia terracina*	Geraldton Carnation Weed	x	x	x		x	x
Euphorbiaceae	**Euphorbia peplus*	Petty Spurge	x	x	x		x	x
Fabaceae	**Acacia iteaphylla*		x	x		x	x	x
Fabaceae	**Erythrina xsykesii*	Indian Coral Tree	x					
Fabaceae	**Lupinus angustifolius*	Narrowleaf Lupin			x			x
Fabaceae	**Lupinus cosentinii*		x	x	x	x	x	x
Fabaceae	**Medicago polymorpha*	Burr Medic	x	x	x		x	x
Fabaceae	**Trifolium angustifolium*	Narrowleaf Clover				x		
Fabaceae	**Trifolium campestre*	Hop Clover		x	x		x	x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Fabaceae	**Trifolium cernuum*	Drooping Flower Clover	x					
Fabaceae	**Vicia sativa*	Common Vetch	x	x	x			
Geraniaceae	**Erodium botrys*	Long Storksbill		x	x		x	
Geraniaceae	**Erodium moschatum*	Musky Crowfoot	x					
Geraniaceae	**Geranium molle*	Dove's Foot Cranesbill			x			
Geraniaceae	**Pelargonium capitatum*	Rose Pelargonium	x	x	x	x	x	x
Iridaceae	**Chasmanthe floribunda*	African Corn-flag	x			x		
Iridaceae	**Ferraria crispa*	Black Flag	x	x	x		x	x
Iridaceae	**Freesia leichtlinii* subsp. *alba* × *leichtlinii* subsp. *leichtlinii*		x				x	x
Iridaceae	**Gladiolus caryophyllaceus*	Wild Gladiolus					x	x
Iridaceae	**Moraea flaccida*	One-leaf Cape Tulip					x	x
Iridaceae	**Romulea rosea*	Guildford Grass	x				x	
Iridaceae	**Watsonia meriana*	Bulbil Watsonia	x	x			x	x
Malvaceae	**Brachychiton populneus*	Kurrajong				x	x	x
Malvaceae	**Malva parviflora*	Marshmallow	x	x	x			
Myrtaceae	**Eucalyptus* sp.			x				
Myrtaceae	**Gaudium laevigatum*	Coast Teatree	x					
Oleaceae	**Olea europaea*	Olive	x	x	x	x	x	x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Onagraceae	**Oenothera glazioviana*	Evening Primrose	x					
Orchidaceae	**Disa bracteata*					x		
Orobanchaceae	**Orobanche minor*	Lesser Broomrape	x					
Oxalidaceae	**Oxalis pes-caprae*	Soursob	x	x	x	x	x	x
Papaveraceae	**Fumaria capreolata*	Whiteflower Fumitory	x	x	x		x	x
Papaveraceae	**Fumaria muralis*	Wall Fumitory			x			x
Pinaceae	**Pinus pinaster*	Pinaster Pine	x					
Plumbaginaceae	**Plumbago auriculata*						x	x
Poaceae	**Aira caryophyllea*	Silvery Hairgrass			x			x
Poaceae	**Aira cupaniana*	Silvery Hairgrass	x					
Poaceae	**Avena barbata*	Bearded Oat		x	x		x	x
Poaceae	**Briza maxima*	Blowfly Grass	x	x	x	x	x	x
Poaceae	**Briza minor*	Shivery Grass			x		x	x
Poaceae	**Bromus diandrus*	Great Brome	x	x	x		x	x
Poaceae	**Bromus hordeaceus*	Soft Brome					x	x
Poaceae	**Cenchrus clandestinus*	Kikuyu					x	
Poaceae	**Cenchrus longisetus*	Feathertop	x					
Poaceae	**Cynodon dactylon*	Couch	x		x	x	x	x
Poaceae	**Ehrharta calycina*	Perennial Veldt Grass	x	x	x	x	x	x
Poaceae	**Ehrharta longiflora*	Annual Veldt Grass		x	x		x	x

Family	Species Name	Common Name	Blackwall Reach Reserve			Point Walter Reserve		
			2014	2020	2025	2014	2020	2025
Poaceae	**Eragrostis curvula*	African Love Grass	x			x	x	
Poaceae	**Hordeum leporinum*	Barley Grass			x		x	x
Poaceae	**Lagurus ovatus*	Hare's Tail Grass	x		x	x	x	x
Poaceae	**Lolium rigidum*	Wimmera Ryegrass	x	x	x		x	x
Poaceae	**Melinis repens*	Natal Redtop				x	x	
Poaceae	**Stenotaphrum secundatum*	Buffalo Grass	x				x	
Poaceae	**Vulpia myuros*	Rat's Tail Fescue		x	x		x	x
Polygonaceae	**Rumex crispus*	Curled Dock	x					
Portulacaceae	**Portulaca oleracea*	Purslane			x			
Primulaceae	**Lysimachia arvensis*	Pimpernel		x	x			x
Proteaceae	**Hakea petiolaris*	Sea Urchin Hakea	x					
Rubiaceae	**Galium murale*	Small Goosegrass	x	x	x		x	x
Scrophulariaceae	**Dischisma arenarium*		x					
Solanaceae	**Solanum lycopersicum*	Tomato			x			
Solanaceae	**Solanum nigrum*	Black Berry Nightshade	x	x	x		x	x
Verbenaceae	**Lantana camara*	Common Lantana		x	x	x		