



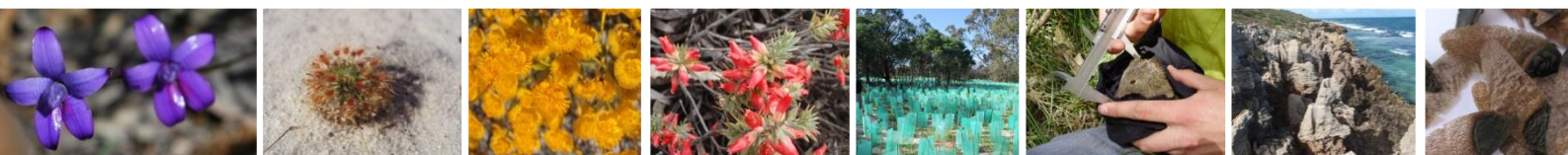
Natural Area
CONSULTING MANAGEMENT SERVICES

City of Kalamunda

Hartfield Park

**Flora, Fauna and Targeted Black Cockatoo
Habitat Survey**

Natural Area Holdings Pty Ltd
Whadjuk Country
57 Boulder Road, Malaga WA 6090
Ph: (08) 9209 2767
info@naturalarea.com.au
www.naturalarea.com.au



Acknowledgement of Country

Ngala kaaditj Noongar moort keyen kaadak nidja boodja.

Natural Area acknowledges the Traditional Owners of the lands on which we operate, and recognises their continuing connection to lands, waters and communities.

Disclaimer

Natural Area Holdings Pty Ltd, trading as Natural Area Consulting Management Services (Natural Area), has prepared this report for the sole use of the client and for the purposes as stated in the agreement between the client and Natural Area under which this work was completed. This report may not be relied upon by any other party without the express written agreement of Natural Area. No part of this document may be copied, duplicated, or disclosed by third parties without the express written permission of Natural Area.

Natural Area has exercised due and customary care in the preparation of this document and has not, unless specifically stated, independently verified information provided by others. No other warranty, expressed or implied, is made in relation to the contents of this report. Therefore, Natural Area assumes no liability for any loss resulting from errors, omission or misrepresentations made by others. This document has been made at the client. The use of this document by unauthorised third parties without written permission from Natural Area shall be at their own risk, and we accept no duty of care to any such third party.

Any recommendations, opinions or findings stated in this report are based on circumstances and facts as they existed at the time Natural Area performed the work. Any changes in such circumstances and facts upon which this document is based may adversely affect any recommendations, opinions or findings contained in this document.

System Certifications

Environmental management system registered to ISO 14001:2015

Quality management system registered to ISO 9001:2015

Occupational health and safety management system registered to ISO 45001:2018

Document Title		KAL R Hartfield Park –Flora, Fauna and Black Cockatoo Habitat Survey			
Location					
Draft/Version No.	Date	Changes	Prepared by	Approved by	Status
D1	Nov 2023	New Document	CK, ZS	BC	Superseded
V1	Mar 2024	Amendments	CK	KG	Released

Executive Summary

Natural Area Consulting Management Services (Natural Area) was commissioned by the City of Kalamunda (the City) to conduct a detailed flora and vegetation survey (including an assessment of threatened ecological communities), basic fauna survey, and targeted black cockatoo habitat survey. Information gathered during these studies will be used to inform the City of the environmental values within the area to support future development of community and sporting facilities as part of the Hartfield Park Master Plan Stage 2 Project.

The survey aimed to determine:

- flora species present (native and non-native)
- the extent and boundaries of vegetation type and condition
- the location of declared rare or priority flora, fauna and/or ecological communities
- fauna species present (including evidence of presence such as scats, tracks, and diggings)
- habitat assessment for threatened black cockatoo habitat including the tagging of trees with a diameter at breast height (DBH) of greater than 300 mm.

The flora and vegetation survey within the survey areas confirmed:

- the presence of five vegetation types:
 - *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest. Located at Reid Oval Expansion and Soccer Expansion survey areas
 - Introduced *Eucalyptus* spp. and *Eucalyptus marginata* (Jarrah) Open Woodland. Located at the Reid Oval Expansion survey area
 - *Eucalyptus gomphocephala* (Tuart), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest. Located at the Reid Oval Expansion survey area
 - *Banksia attenuata* (Slender Banksia), *Banksia menziesii* (Firewood Banksia) and *Eucalyptus* spp. Open Woodland. Located at the Bowls and Tennis Club survey area
 - *Eucalyptus marginata* (Jarrah) and *Allocasuarina fraseriana* (Sheoak) Open Woodland. Located at the Mens Shed Location A survey area.
- a total of 206 flora species present from 44 families
 - a total of 72 introduced (weeds) and 134 native flora species
- four confirmed conservation significant species:
 - *Conospermum undulatum* (Critically Endangered under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999). Located at Reid Oval Expansion and Bowls and Tennis Club survey areas.
 - *Isopogon autumnalis* (Priority 3 under the *Biodiversity Conservation Act (2016)* (BC Act 2016). Located at Reid Oval Expansion survey area.
 - *Grevillea thelemanniana* (Spider Net Grevillea) (Critically Endangered under the *EPBC Act 1999*). Located at Reid Oval Expansion survey area.
 - *Grevillea olivacea* (Olive Grevillea) (Priority 4 under the *BC Act 2016*). Located at Bowls and Tennis Club survey area.
- vegetation condition ranged from completely degraded to very good

- one Declared Pest (DP) and Weed of National Significance (WoNS) was identified within the survey area, being Bridal Creeper (*Asparagus asparagoides*)
- two threatened ecological communities (TEC) were determined likely to be present, being
 - Banksia Woodlands of the Swan Coastal Plain
 - *Banksia attenuata* woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. 1994).

The basic fauna survey identified:

- a total of 28 fauna species were observed during the survey, including 23 birds, two reptiles and three mammals
- four were introduced species: Red Fox (*Vulpes vulpes*), Rainbow Lorikeet (*Tricoglossus molucannus*), Laughing Kookaburra (*Dacelo novaeguineae*) and Rabbit (*Oryctolagus cuniculus*)
- three were conservation significant: Quenda (*Isoodon fusciventer*), Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) and white-tail black cockatoo (*Zanda* sp.).

The black cockatoo habitat survey identified:

- two black cockatoo species were recorded, the Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*) and white-tail black cockatoo (*Zanda* sp.). Additionally, evidence of foraging by black cockatoo species on Marri (*Corymbia calophylla*) nuts was observed within the survey area
- the survey area contained a total of 307 trees that satisfied the Commonwealth guidelines for black cockatoo habitat trees (DBH \geq 300 mm) with the majority being *Allocasuarina fraseriana* (Sheoak) and *Eucalyptus marginata* (Jarrah)
- of these 307 trees, six contained hollows, with the total number of hollows observed being 20. A total of eight hollows (from four trees) were considered potentially suitable for use by black cockatoos based on their entrance diameter, orientation and whether they were known to be currently occupied
- suitable fauna habitat is present throughout each of the survey areas. Fauna habitat values within the survey area include the presence of a large water body, mature trees, sufficient native vegetation structure and the presence of areas of leaf litter and dead wood.

Several minor limitations were present for the survey which have a bearing on the results of both the flora and fauna surveys of the site.

Contents

Introduction	7
1.1 Location	7
1.2 Scope	7
2.0 Site Characteristics	10
2.1 Regional Context	10
2.2 Climate.....	10
2.3 Topography and Soils	10
2.4 Vegetation Type	11
2.5 Black Cockatoo Habitat Survey.....	13
2.6 Other Site Characteristics.....	13
2.6.1 Hydrology	13
2.6.2 Heritage Values.....	13
3.0 Methodology	14
3.1 Desktop and Literature Review	14
3.2 On-ground Flora Survey.....	14
3.2.1 Vegetation Type.....	16
3.2.2 Vegetation Condition.....	16
3.3 On-ground Basic Fauna Survey.....	17
3.4 Black Cockatoo Habitat Survey.....	17
3.5 Limitations	20
4.0 Flora Survey Results.....	23
4.1 Desktop Survey	23
4.1.1 Threatened and Priority Ecological Communities	26
4.2 Flora Survey Results.....	27
4.2.1 Vegetation Types	27
4.2.2 Vegetation Condition.....	32
4.2.3 Flora.....	34
4.2.4 Threatened and Priority Communities	38
5.0 Fauna Survey Results.....	41
5.1 Desktop Survey	41
5.2 Fauna Survey Results.....	43

5.2.1	Basic Fauna Survey	43
5.2.2	Targeted Black Cockatoo Habitat Survey	46
6.0	Implications of Results.....	52
6.1	Flora and Vegetation	52
6.2	Significant Flora	53
6.3	Threatened/Priority Ecological Communities	54
6.3.1	Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain	55
6.3.2	Banksia Woodlands of the Swan Coastal Plain.....	55
6.3.3	<i>Banksia attenuata</i> woodlands over species rich dense shrublands.....	56
6.4	Fauna	56
6.5	Black Cockatoo Habitat Survey.....	57
7.0	References.....	58
	Appendix 1: PMST Report 10 km.....	61
	Appendix 2: Significant Species Guide.....	96
	Appendix 3: Conservation Codes.....	122
	Appendix 4: Quadrat Data.....	124
	Appendix 5: Species List	136
	Appendix 6: Habitat Tree Data	145

Introduction

Natural Area Consulting Management Services (Natural Area) was commissioned by the City of Kalamunda (the City) to conduct a detailed flora and vegetation survey (including an assessment of Threatened Ecological Communities), basic fauna survey and targeted black cockatoo habitat survey. Information gathered during these studies will be used to inform the City of the environmental values within the area to support future development of community and sporting facilities as part of the Hartfield Park Master Plan Stage 2 Project.

1.1 Location

The survey areas are located within Hartfield Park, Forrestfield in the City of Kalamunda. Hartfield Park is bordered by Tonkin Highway, Hale Road, Lewis Road and Welshpool Road East, approximately 12 km from Perth's Central Business District (CBD). Five separate patches of vegetation were surveyed covering approximately 5.8 ha. Each survey area has been named based on its location, and is referred to throughout the report as follows:

- Reid Oval Expansion
- Soccer Expansion
- Bowls and Tennis Club
- Mens Shed Location A
- Mens Shed Location B

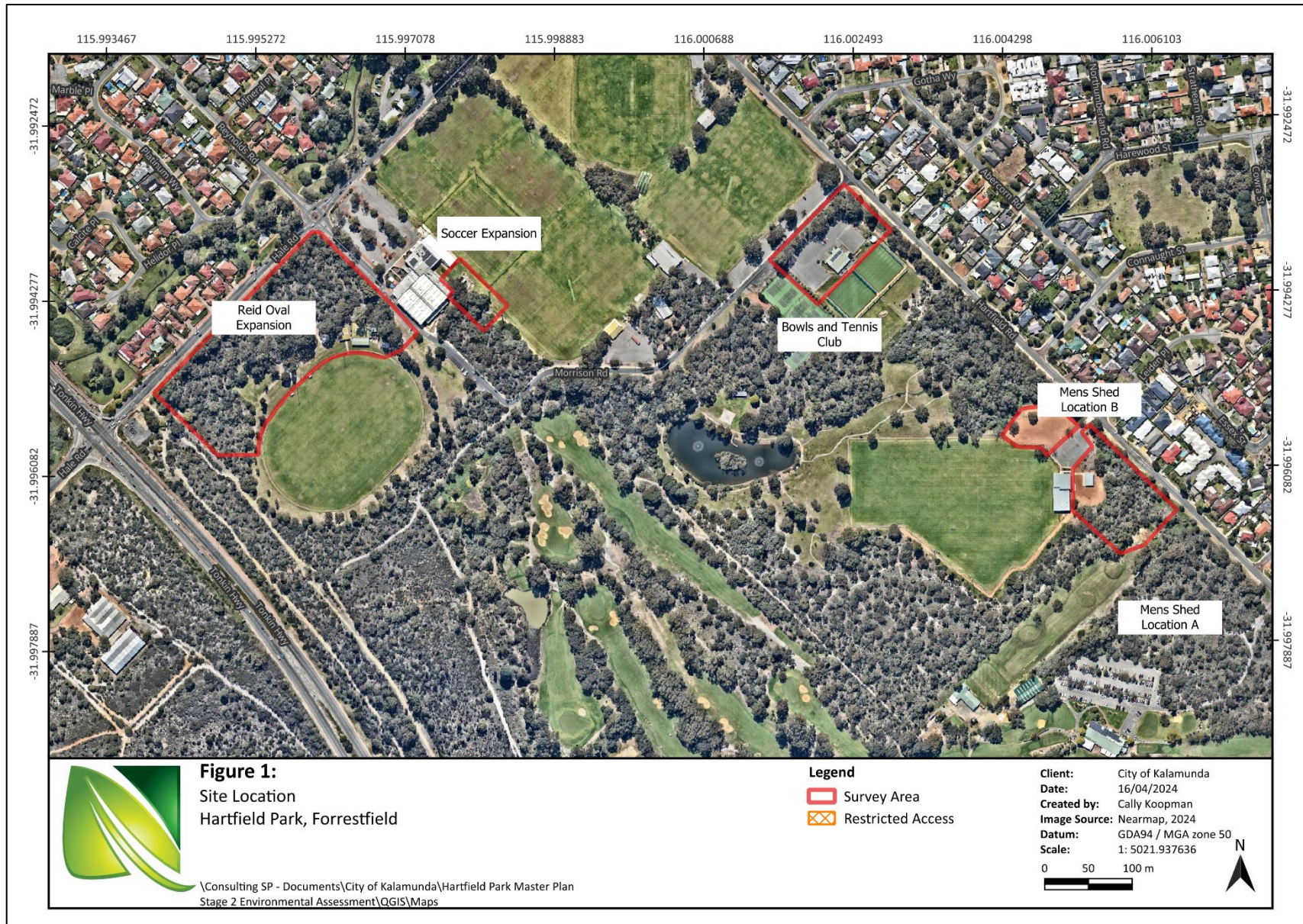
The survey areas are shown in Figure 1. The entirety of Hartfield Park occurs within an Environmentally Sensitive Area (Department of Water and Environmental Regulation (DWER, 2023) which is likely in association with the underlying Hartfield Park Bushland (Bush Forever Site No. 320).

1.2 Scope

Activities undertaken by Natural Area included:

- desktop assessment activities to determine potential flora and fauna species, declared rare and priority listed species (DRF) and ecological communities, with the potential to be present within the nominated area, including requests for Department of Biodiversity, Conservation and Attractions (DBCA) database searches for flora, fauna and ecological communities
- detailed flora survey conducted in October 2023 that included the installation of quadrats based on the number of vegetation types present in the survey area, in accordance with *EPA Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment 2016* (Environmental Protection Authority (EPA), 2016)
- basic fauna survey, opportunistically noting evidence of fauna including scats, tracks, and diggings in accordance with *EPA (2020) Technical Guidance -Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)
- targeted black cockatoo habitat survey to identify and record trees with a diameter at breast height (DBH) of ≥ 300 mm, with the following recorded:
 - species
 - condition and health
 - DBH

- the presence, size, type (e.g., chimney, side) and approximate distance above ground of hollows
- evidence of feeding (via presence of chewed fruit)
- presentation of findings in a formal report, and provision of maps representing assessment outcomes
- preparation of GIS shapefiles in IBSA format.



2.0 Site Characteristics

The characteristics of a site have a strong bearing on the flora, vegetation, fauna, and ecological communities present. The key characteristics of the survey area are outlined in this section.

2.1 Regional Context

According to the Interim Biogeographical Regionalisation of Australia (IBRA) descriptions, the survey area is located within the Swan Coastal Plain (SWA02) subregion. This region is a low-lying coastal plain characterised by soils comprised of sands of colluvial and aeolian origin, as well as alluvial river flats and coastal limestone. It is dominated by *Banksia* or Tuart vegetation types, as well as some areas of *Casuarina obesa*, *Melaleuca* sp. or Jarrah Woodlands (Mitchell, Williams, and Desmond, 2002).

2.2 Climate

The climate experienced in the area is Mediterranean, with dry, hot summers and cool, wet winters.

According to the Bureau of Meteorology (2023) and data recorded from the Maida Vale (Site ID 9182) and Perth Airport WA (Site ID 9021) stations, the region has an average:

- mean rainfall of 800.5 mm pa, with rain falling predominantly between May and August
- mean maximum temperatures ranging from 18 °C in winter to 32 °C in summer, with a maximum recorded temperature of 46.7 °C
- mean minimum temperatures ranging from 8.1 °C in winter to 17.6 °C in summer, with a minimum recorded temperature of -1.3 °C
- predominant wind directions include morning easterlies and westerly sea breezes during the summer months.

2.3 Topography and Soils

Using the NRInfo Portal, two soil types were identified on site which are detailed in Table 1 (Department of Primary Industries and Regional Development (DPIRD), 2023b). The survey areas are characterised by flat topography, ranging from 26 m Australian Height Datum (AHD) at the eastern-most survey area to 32 AHD in the west (DPIRD, 2023b) (Figure 2).

Table 1: Soil types within the survey area

Name	Symbol	Description
Pinjarra Phase Gf7	213Pj__Gf7	Minor rises with deep rapidly drained brownish, siliceous or bleached sands underlain by mottled yellow clay. Low woodland of <i>Banksia prionotes</i> and some tall <i>Corymbia calophylla</i> with <i>Eucalyptus rudis</i> along streamlines.
Pinjarra System	213Pj	Swan Coastal Plain from Perth to Capel. Poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes Jarrah, Marri, Wandoo, <i>Melaleuca</i> spp. and <i>Eucalyptus rudis</i> .

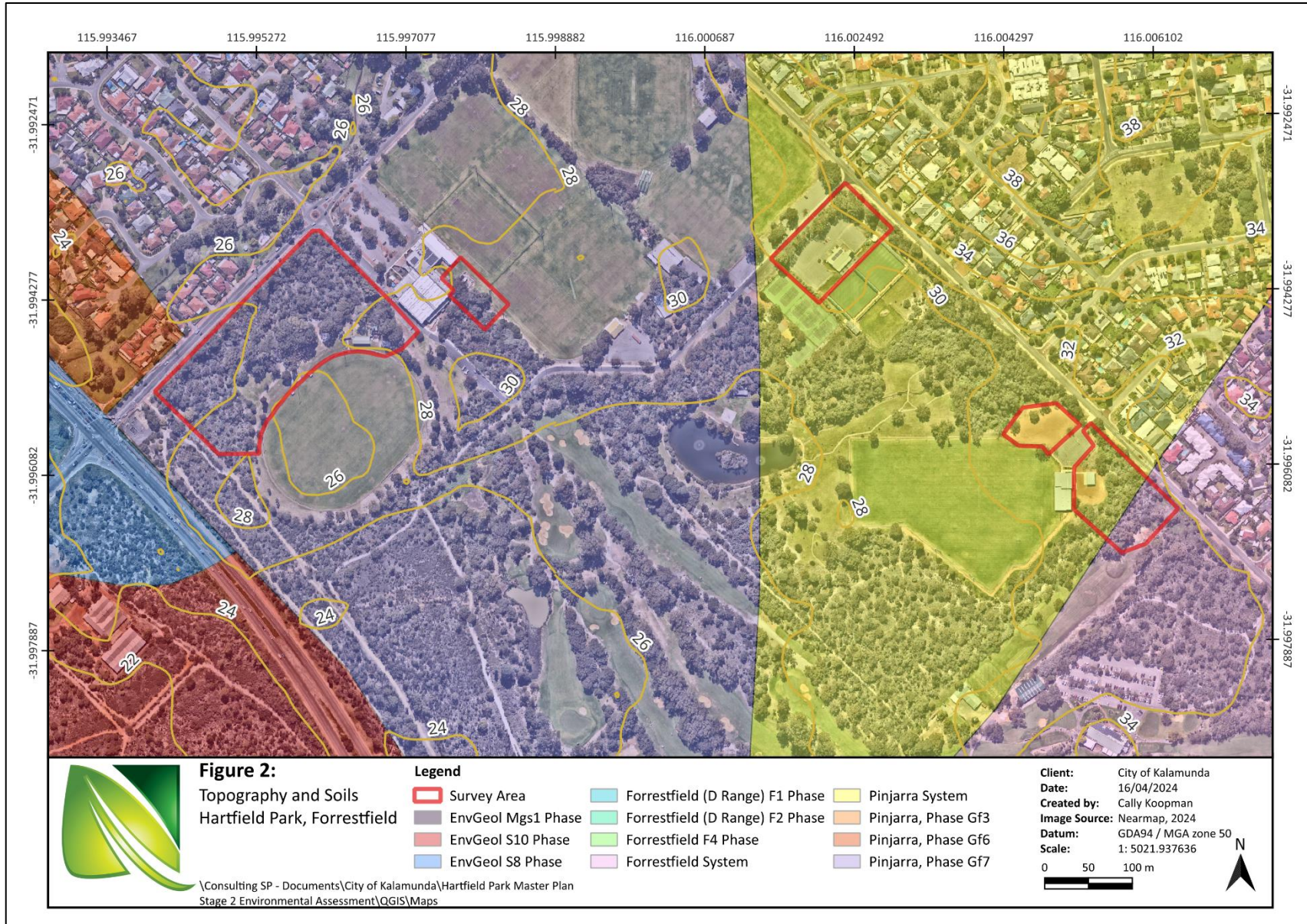
Source: DPIRD, 2023b

2.4 Vegetation Type

One vegetation type exists within the survey areas, namely 'Vegetation Type No. 3, Medium Forest and Woodland, Woodland: Jarrah (*Eucalyptus marginata*) Marri (*Corymbia calophylla*) and Wandoo (*Eucalyptus wandoo*)'. On the Swan Coastal Plain the vegetation is described by Beard *et al.* (2013) as a woodland of Marri and Jarrah with an understorey of *Banksia* spp., *Allocasuarina* spp., *Xanthorrhoea* spp. and mixed shrubs.

According to NationalMap, this Vegetation Type is associated with Vegetation Association 968 (DPIRD, 2023b). The pre-European extent of this vegetation association remaining is (Government of Western Australia, 2019):

- 6.62% within the Swan Coastal Plain
- 14.34% within the City of Kalamunda.



2.5 Black Cockatoo Habitat Survey

There is the potential for the three threatened black cockatoos and their habitat to occur within the vegetated areas of the survey area, including the Carnaby's Cockatoo (*Zanda latirostris*) and the Baudin's Cockatoo (*Zanda baudinii*) listed as Endangered, and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksia naso*) listed as Vulnerable under the *EPBC Act 1999* (Cwlth). All are listed as Threatened under the *Biodiversity Conservation Act 2016* (WA). There is potential for roosting, nesting, and foraging habitat to be present within the vegetated areas of the survey areas.

According to NationalMap the survey area occurs within an area classified as:

- Carnaby's Cockatoo Confirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA Regions (DBCA-054) (DBCA, 2023d)
- Carnaby's Cockatoo Areas requiring investigation as feeding habitat in the Jarrah Forest IBRA Region (DBCA-057) (DBCA, 2023c)
- Black Cockatoo Breeding Sites - Buffered (DBCA-063) (DBCA, 2023a)
- Black Cockatoo Roosting Sites - Buffered (DBCA-064) (DBCA, 2023b).

The survey area also occurs within close proximity to:

- Carnaby's Cockatoo Unconfirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA Regions (DBCA-055) (DBCA, 2023e), approximately 1km north of Hartfield Park.

A DBCA database fauna search has highlighted the presence of Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo within the Reid Oval Expansion survey area and other areas throughout Hartfield Park (DBCA, 2023h).

2.6 Other Site Characteristics

2.6.1 Hydrology

No known naturally occurring wetlands are present within the survey areas, although there are areas southeast of the Reid Oval Expansion survey area classified as a 'Resource Enhancement Dampland', as well as a 'Conservation Palusplain' (DBCA, 2016).

2.6.2 Heritage Values

One Aboriginal heritage registered site is recorded across the whole of Hartfield Park including and is known as 'Welshpool Reserve (Maamba Reserve)' (Place ID 3773; Type: Camp) (Department of Planning, Lands and Heritage (DPLH), 2023a). One other heritage site has been lodged and is located south of the Mens Shed Location and south-east of the Reid Oval Expansion. This is known as 'Hartfield Road, Forrestfield' (Place ID: 3643; Type: Artefacts/Scatter) (DPLH, 2023). No European heritage sites have been recorded within the survey areas (DPLH, 2023b).

3.0 Methodology

3.1 Desktop and Literature Review

The desktop survey included reviewing online databases to gather contextual knowledge and determine preliminary site characteristics including:

- likely native and non-native flora and fauna species present
- current extent of native vegetation
- general floristic community types
- likely presence of threatened or priority flora and fauna species
- likely presence of any threatened or priority ecological communities (TEC/PEC).

The following databases were accessed to obtain relevant information:

- NatureMap (DBCA, 2023f)
- Protected Matters Search Tool (Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2023) (Appendix 2)
- FloraBase (WA Herbarium, 1998-)
- threatened and priority flora (DBCA, 2023i), fauna (DBCA 2023h) and ecological community database searches (DBCA, 2023g).

Summary sheets of threatened flora potentially occurring in the area were created for quick reference in the field and are provided in Appendix 2. Conservation code definitions for the State and Commonwealth are provided in Appendix 3.

3.2 On-ground Flora Survey

The flora and vegetation survey was conducted in accordance with the methodology described in *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 detailed and targeted flora survey on 12, 13 and 23 October 2023, with key data recorded using Mappt software on a handheld tablet. Survey activities included:

- setting out a total of six quadrats across the three vegetation types present (Figure 3)
- a photograph of each quadrat was recorded as well as the GPS location using GDA94 datum
- recording landscape characteristics including soil types/colour, aspect, slope, surface rock, topography and drainage using Natural Area's modified recording sheets based on the NAIA templates developed for the Perth Biodiversity Project
- determining leaf litter depth, percentage cover, and percentage of bare ground within the quadrats
- recording percentage cover and height of flora species recorded within the quadrats
- marking locations of any conservation significant flora, Declared Pests (DP) and/or Weeds of National Significance (WoNS) identified
- recording vegetation type including dominant over, middle and understorey species (Table 2) and condition using the scale attributed to Keighery (Table 3) (Government of Western Australia, 2000)
- the use of GPS to map significant species and boundaries of differing vegetation type and condition
- recording evidence of disturbance, such as fire.



3.2.1 Vegetation Type

The vegetation type was determined using the structural classes described in *Bush Forever Volume 2* (Government of Western Australia, 2000), and records dominant over, middle and understorey species. A description of the various structural classes is provided in Table 2.

Table 2: Vegetation structural classes

Life Form/Height Class	Canopy Percentage Cover			
	100 – 70%	70 – 30%	30 – 10%	10 – 2 %
Trees over 30 m	Tall closed forest	Tall open forest	Tall woodland	Tall open woodland
Trees 10 – 30 m	Closed forest	Open forest	Woodland	Open woodland
Trees under 10 m	Low closed forest	Low open forest	Low woodland	Low open woodland
Tree Mallee	Closed tree mallee	Tree mallee	Open tree mallee	Very open tree mallee
Shrub Mallee	Closed shrub mallee	Shrub mallee	Open shrub mallee	Very open shrub mallee
Shrubs over 2 m	Closed tall scrub	Tall open scrub	Tall shrubland	Tall open shrubland
Shrubs 1 – 2 m	Closed heath	Open heath	Shrubland	Open shrubland
Shrubs under 1 m	Closed low heath	Open low heath	Low shrubland	Low open shrubland
Grasses	Closed grassland	Grassland	Open grassland	Very open grassland
Herbs	Closed herbland	Herbland	Open herbland	Very open herbland
Sedges	Closed sedgeland	Sedgeland	Open sedgeland	Very open sedgeland

Source: Government of Western Australia, 2000

3.2.2 Vegetation Condition

Vegetation condition was assessed using the rating scale attributed to Keighery in *Technical Guidance-Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016). Table 3 provides a description of the rating scale.

Table 3: 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.

Category	Description
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.
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

3.3 On-ground Basic Fauna Survey

The fauna survey was completed in accordance with a basic fauna survey as outlined in the *Technical Guidance, Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA, 2020). Natural Area environmental scientists undertook this survey in conjunction with other survey activities. A basic survey is defined as a low-intensity survey, which gathers broad fauna and habitat information including opportunistic fauna observations (EPA, 2020). The fauna survey included recording opportunistic sightings of fauna species while traversing the survey area, along with recording evidence of their presence in the form of:

- scats
- tracks
- diggings
- burrows, dens and warrens
- runnels (vegetative tunnels)
- calls.

3.4 Black Cockatoo Habitat Survey

A black cockatoo habitat survey was conducted in accordance with 'Referral guideline for 3 WA threatened black cockatoo species Carnaby's Cockatoo (*Zanda latirostris*), Baudin's Cockatoo (*Zanda baudinii*) and the Forest Red-tailed Black-cockatoo (*Calyptorhynchus banksii naso*)' (DAWE, 2022).

Natural Area environmental scientists undertook habitat assessment in conjunction with other survey activities. Survey activities included:

- traversing the whole site in a systematic grid search
- recording the location and evidence of breeding, roosting and foraging activities (e.g. chew marks, feathers, scats)
- marking the GPS locations and tagging each habitat tree with a diameter at breast height (DBH) \geq 300 mm
- recording the height, DBH, health and species of each habitat tree

- recording evidence of hollows, including size, type, and location within the tree if present

The black cockatoo foraging quality scoring tool (DAWE, 2022) was applied to the survey area to determine the quality of black cockatoo foraging habitat. This scoring tool assigns a habitat score between one and ten, with a score of ten representing the maximum possible score and very high-quality foraging habitat. Contextual adjustors (attributes that improve or reduce functionality of foraging habitat) such as tree species composition, distances from known breeding and roosting sites, distance from other foraging habitat, evidence of feeding debris, and presence of disease e.g. *Phytophthora* spp. or Marri Canker were used to evaluate habitat quality. The scoring tool template is provided in Table 4.

Table 4: Foraging quality scoring tool template

Starting score	Baudin's Cockatoo	Carnaby's Cockatoo	Forest Red-tailed Black-Cockatoo
10	Start at a score of 10 if your site is native eucalypt woodlands and forest, and proteaceous woodland and heath, particularly Marri, within the range of the species, including along roadsides and parkland cleared areas. Can include planted vegetation. This tool only applies to sites equal to or larger than 1 hectare in size.	Start at a score of 10 if your site is native shrubland, kwongan heathland or woodland, dominated by proteaceous plant species such as Banksia spp. (including Dryandra spp.), Hakea spp. and Grevillea spp., as well as native eucalypt woodland and forest that contains foraging species, within the range of the species, including along roadsides and parkland cleared areas. Also includes planted native vegetation. This tool only applies to sites equal to or larger than 1 hectare in size.	Start at a score of 10 if your site is Jarrah or Marri woodland and/or forest, or if it is on the edge of Karri forest, or if Wandoo and Blackbutt occur on the site, within the range of the subspecies, including along roadsides and parkland cleared areas. This tool only applies to sites equal to or larger than 1 hectare in size.
Attribute	Sub-tractions	Context adjustor (attributes reducing functionality of foraging habitat)	
Foraging potential	-2	Subtract 2 from your score if there is no evidence of feeding debris on your site.	Subtract 2 from your score if there is no evidence of feeding debris on your site.
Connectivity	-2	Subtract 2 from your score if you have evidence to conclude that there is no other foraging habitat within 12 km of your site.	Subtract 2 from your score if you have evidence to conclude that there is no other foraging habitat within 12 km of your site.
Proximity to breeding	-2	Subtract 2 if you have evidence to conclude that your site is more than 12 km from breeding habitat.	Subtract 2 if you have evidence to conclude that your site is more than 12 km from breeding habitat.
Proximity to roosting	-1	Subtract 1 if you have evidence to conclude that your site is more than 20 km from a known night roosting habitat.	Subtract 1 if you have evidence to conclude that your site is more than 20 km from a known night roosting habitat.
Impact from significant plant disease	-1	Subtract 1 if your site has disease present (e.g. Phytophthora spp. or Marri canker) and the disease is affecting more than 50% of the preferred food plants present.	Subtract 1 if your site has disease present (e.g. Phytophthora spp. or Marri canker) and the disease is affecting more than 50% of the preferred food plants present.
Total score		Enter score	Enter score
Appraisal		To support your habitat score, you should provide an overall appraisal of the habitat on the impact site and within 20km of the impact area to clearly explain and justify the score. It should include discussion on the foraging habitat's proximity to other resources (e.g. exact distance to proximate resources), frequency of use of proximate sites, the degree of evidence and description of vegetation type and condition.	

Source: DAWE, 2022

3.5 Limitations

Limitation associated with the flora and fauna surveys are outlined in Table 5.

Table 5: Flora survey limitations

Potential Limitation	Degree of Limitation	Comments
Availability of contextual information	None	Government data on regional and local contextual information are readily available for the survey area.
Competency/experience of team	None	Survey activities were undertaken by experienced environmental scientists who have extensive experience undertaking detailed flora, fauna and vegetation surveys as well as undertaking habitat assessments for black cockatoos within the Swan Coastal Plain and Jarrah Forest bioregions.
Proportion of flora/fauna recorded/collected, any identification issues	None (for the Site)	<p>Within the survey areas, a total of 206 flora species (taxa) were recorded from 44 families during the field survey, this comprised of 134 native species and 72 introduced (weed) species.</p> <p>A total of eight species were unable to be identified to species level due to the lack of diagnostic characteristics exhibited at the time of survey. These species were not flowering or fruiting at the time of survey. Three of the unidentified species contained characteristics of introduced flora, whilst five contain characteristics of genera that are native. Two of the species not identified were considered to potentially be conservation significant flora following comparison with desktop data.</p> <p><i>Isopogon autumnalis</i> was identified at the Reid Oval Expansion survey area, however confirmation of the identification of this species was conducted following field activities and therefore the location of individuals was not recorded at the time of the survey. It is recommended that a targeted survey is undertaken during peak flowering period for this species (February to June) to record the individual locations and population extent of this species.</p>
Survey effort and extent	Minor	<p>A detailed flora and vegetation survey and basic fauna survey was undertaken over a period of three days, with the entire survey area traversed except for the areas with access restrictions. A total of six quadrats were established to adequately survey the vegetation types present.</p> <p>The fauna survey scope requested was a basic survey undertaken by environmental scientists during daylight hours. As a result, some faunal groups, such as those which are nocturnal, cryptic or elusive, are very unlikely to be detected even if present within the survey area. In order to observe these species, a detailed fauna</p>

Potential Limitation	Degree of Limitation	Comments
		<p>survey utilising techniques such as trapping and motion-sensor cameras, as well as nocturnal surveys, would be required.</p> <p>A targeted black cockatoo habitat survey was undertaken to record trees with a DBH ≥ 300 mm and the characteristics of each habitat tree. Black cockatoo hollow assessment was conducted from the ground and is therefore limited to those hollows visible from ground-level. As such, not all hollows may have been observed, as new growth, dense foliage and position in the landscape can hide hollows from vision. Internal hollow inspections would be required to confirm hollow characteristics such as internal hollow depth and structure and therefore their suitability to support nesting by black cockatoos. No evidence of roosting was observed at the time of the survey an evening survey would be required to confirm the presence or absence of any roost sites within the survey areas.</p>
Access restrictions	Minor	<p>There were two areas that were inaccessible during the time of the survey. One was at the Reid Oval Expansion survey area where fencing had been erected for construction work. The other area was a small pocket at the Mens Shed Location A survey area alongside the golf course. This area was been used by golfers at the time of the survey and therefore a few of the habitat trees were unable to be recorded.</p> <p>There were no other access restrictions in the survey area.</p>
Survey timing (weather/season)	Minor	<p>The survey was undertaken within the main breeding season for black cockatoos, therefore this was not a limitation for the black cockatoo habitat assessment.</p> <p>The survey was undertaken during Spring which is the optimal season for flora surveys within the Swan Coastal Plain bioregion. Whilst the survey was undertaken during peak flowering season, some species may flower earlier or later in the season and therefore may not be able to be identified.</p> <p>All of the 18 conservation significant flora species identified in the desktop survey as being likely to occur within the survey area, have flowering periods within the survey period.</p> <ul style="list-style-type: none"> ▪ A total of 15 are perennial herb, shrub, or sedge species for which other characteristics would be present to enable

Potential Limitation	Degree of Limitation	Comments
		<p>identification to a minimum of genus level. However, flowers may be required for species level identification.</p> <ul style="list-style-type: none"> <li data-bbox="683 389 1406 506">▪ Two are annual herbaceous species which were likely to be presenting at the time of the survey as the peak flowering and growth periods are around spring. <p>Of the unidentified species, two species recorded during the survey could potentially be conservation significant flora. At the time of the survey diagnostic characteristics were no longer present despite the survey being undertaken during the optimal time for these species.</p>
Disturbances	None	No recent disturbances which may have had an impact on survey results (e.g. fire, recent clearing or floods) were identified during the survey.

4.0 Flora Survey Results

4.1 Desktop Survey

A desktop survey of online databases indicated the potential for a total of 113 conservation significant species to occur within 10 km of the survey area (Table 6). NatureMap indicated 55 conservation significant flora species listed under the *BC Act 2016* (WA) or by the Western Australian Herbarium (1998-), as potentially occurring within 10 km radius of the site (DBCA, 2023f). A review of the Protected Matters Search Tool (PMST) (DCCEE, 2023) indicated 35 conservation significant flora species listed under the *EPBC Act 1999* (Cwlth) as potentially occurring within a 10 km radius of the site (Appendix 1). A review of the DBCA (2023i) threatened and priority flora database indicated 97 threatened or priority species have been recorded within 10 km of the site. Of the 113 conservation significant species, it was determined that some of the bushland areas within the survey area had site conditions (soil type, drainage, location) that may be suitable for 20 (highlighted green) of these species (Table 6). Conservation code descriptions are provided in Appendix 3.

Table 6: Threatened and Priority flora species listed by NatureMap, PMST and DBCA

Species Name	Cons. Code	NatureMap	PMST	DBCA
<i>Acacia anomala</i>	VU	X	X	X
<i>Acacia aphylla</i>	VU		X	X
<i>Acacia drummondii</i> subsp. <i>Affinis</i>	P3	X		X
<i>Acacia horridula</i>	P3	X		X
<i>Acacia lasiocarpa</i> var. <i>racteolate long peduncle variant</i>	P1	X		X
<i>Acacia oncinophylla</i> subsp. <i>Oncinophylla</i>	P3	X		X
<i>Acacia oncinophylla</i> subsp. <i>Patulifolia</i>	P4			X
<i>Allocasuarina grevilleoides</i>	P3			X
<i>Andersonia gracilis</i>	EN	X	X	X
<i>Andersonia</i> sp. <i>Blepharifolia</i>	P2			X
<i>Angianthus micropodioides</i>	P3			X
<i>Anthocercis gracilis</i>	VU	X	X	X
<i>Aponogeton hexatepalus</i>	P4	X		X
<i>Asteridea gracilis</i>	P3	X		X
<i>Austrostipa bronweniae</i>	EN	X	X	X
<i>Babingtonia urbana</i>	P3	X		X
<i>Banksia mimica</i>	EN	X	X	X
<i>Banksia pteridifolia</i> subsp. <i>Vernalis</i>	P3			X
<i>Beaufortia purpurea</i>	P3			X

Species Name	Cons. Code	NatureMap	PMST	DBCA
<i>Bolboschoenus fluviatilis</i>	P1			X
<i>Boronia humifusa</i>	P1			X
<i>Byblis gigantea</i>	P3	X		X
<i>Caladenia huegelii</i>	EN	X	X	X
<i>Calandrinia uncinella</i>	P1			X
<i>Calectasia grandiflora</i>	P2			X
<i>Calothamnus accedens</i>	P4			X
<i>Calothamnus graniticus</i> subsp. <i>Leptophyllus</i>	P4	X		X
<i>Calytrix breviseta</i> subsp. <i>Breviseta</i>	EN	X	X	X
<i>Carex tereticaulis</i>	P3	X		X
<i>Chamaescilla gibsonii</i>	P3			X
<i>Comesperma griffinii</i>	P2			X
<i>Comesperma rhadinocarpum</i>	P3	X		X
<i>Commersonia</i> sp. <i>Lesmurdie</i>	P2			X
<i>Conospermum undulatum</i>	VU	X	X	X
<i>Cyanicula ixioides</i> subsp. <i>Ixioides</i>	P4			X
<i>Cyanothamnus tenuis</i>	P4	X		X
<i>Darwinia apiculata</i>	EN	X	X	X
<i>Diuris brevis</i>	P2	X		X
<i>Diuris drummondii</i>	VU		X	X
<i>Diuris purdiei</i>	EN	X	X	X
<i>Dodonaea hackettiana</i>	P4	X		X
<i>Drosera occidentalis</i>	P4	X		X
<i>Eleocharis keigheryi</i>	VU	X	X	X
<i>Eremophila glabra</i> subsp. <i>Chlorella</i>	EN	X	X	X
<i>Eryngium pinnatifidum</i> subsp. <i>Palustre</i>	P3	X		X
<i>Goodenia arthrotricha</i>	EN	X	X	X
<i>Grevillea dissectifolia</i>	P3	X		X
<i>Grevillea thelemanniana</i>	CR	X	X	X
<i>Haemodorum loratum</i>	P3	X		X
<i>Halgania corymbosa</i>	P3	X		X
<i>Haloragis scoparia</i>	P1			X

Species Name	Cons. Code	NatureMap	PMST	DBCA
<i>Hydrocotyle lemnoides</i>	P4	X		X
<i>Isopogon autumnalis</i>	P3			X
<i>Isotropis cuneifolia</i> subsp. <i>Glabra</i>	P3			X
<i>Jacksonia gracillima</i>	P3			X
<i>Jacksonia sericea</i>	P4			X
<i>Johnsonia pubescens</i> subsp. <i>Cygnorum</i>	P2	X		X
<i>Lasiopetalum bracteatum</i>	P4			X
<i>Lasiopetalum glutinosum</i> subsp. <i>Glutinosum</i>	P3			X
<i>Lepidosperma rostratum</i>	EN	X	X	X
<i>Lepyrodia curvescens</i>	P2			X
<i>Levenhookia preissii</i>	P1			X
<i>Macarthuria keigheryi</i>	EN	X	X	X
<i>Meionectes tenuifolia</i>	P3			X
<i>Melaleuca viminalis</i> (Gaertn.) Byrnes var. <i>viminalis</i>	P2			X
<i>Microtis quadrata</i>	P4			X
<i>Morelotia australiensis</i>	VU	X		X
<i>Myriophyllum echinatum</i>	P3			X
<i>Ornduffia submersa</i>	P4	X		X
<i>Pimelea rara</i>	P4	X		X
<i>Pithocarpa corymbulosa</i>	P3	X		X
<i>Platysace ramosissima</i>	P3	X		X
<i>Poranthera moorokatta</i>	P3			X
<i>Ptilotus pyramidatus</i>	CE	X	X	X
<i>Ptilotus sericostachyus</i> subsp. <i>Roseus</i>	Presumed extinct			X
<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	P2			X
<i>Schoenus benthamii</i>	P3	X		X
<i>Schoenus capillifolius</i>	P3	X		X
<i>Schoenus loliaceus</i>	P2			X
<i>Schoenus natans</i>	P4			X
<i>Schoenus pennisetis</i>	P3	X		X
<i>Schoenus</i> sp. <i>Beaufort</i>	P1			X
<i>Schoenus</i> sp. <i>Waroona</i>	P3			X

Species Name	Cons. Code	NatureMap	PMST	DBCA
<i>Senecio gilbertii</i>	P1			X
<i>Senecio leucoglossus</i>	P4	X		X
<i>Sporobolus blakei</i>	P3			X
<i>Stackhousia</i> sp. <i>Red-blotched corolla</i>	P3			X
<i>Stylidium aceratum</i>	P3			X
<i>Stylidium longitubum</i>	P4	X		X
<i>Stylidium striatum</i>	P4			X
<i>Styphelia filifolia</i>	P3			X
<i>Synaphea</i> sp. <i>Fairbridge Farm</i>	CR	X	X	X
<i>Thelymitra magnifica</i>	T	X		X
<i>Thelymitra stellata</i>	EN	X	X	X
<i>Thysanotus anceps</i>	P3	X		X
<i>Thysanotus cymosus</i>	P3			X
<i>Verticordia lindleyi</i> subsp. <i>Lindleyi</i>	P4	X		X

4.1.1 Threatened and Priority Ecological Communities

A review of the PMST report identified six listed threatened ecological communities that could potentially occur within 10 km of the site (Table 7) (DCCEEW, 2023). A review of DBCA Threatened Communities database identified seven recorded threatened/priority ecological communities within a 10 km radius of the site (highlighted green) (DBCA 2023b). The nearest known record occurs approximately 600 m to the west of the site and is a large area of the Central Northern Darling Scarp Granite Shrubland Community (Priority 4).

Table 7: Potential threatened (DCCEEW 2023) and priority (DBCA 2023b) ecological communities within the survey area

Name	Status	Presence
Banksia Woodlands of the Swan Coastal Plain	Endangered/P3	Community likely to occur within area (DCCEEW 2023); community recorded within survey area (DBCA, 2023g)
<i>Banksia attenuata</i> woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. 1994)	Critically Endangered	Community recorded within survey area (DBCA, 2023g)
Clay Pans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area (DCCEEW, 2023)
<i>Corymbia calophylla</i> – <i>Kingia australis</i> woodlands on heavy soils of the Swan Coastal Plain	Endangered	Community known to occur within area (DCCEEW, 2023)
Shrublands and Woodlands of the eastern Swan Coastal Plain	Endangered	Community known to occur within area (DCCEEW, 2023)

Name	Status	Presence
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area (DCCEEW, 2023)
Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area (DCCEEW, 2023)

4.2 Flora Survey Results

4.2.1 Vegetation Types

Five vegetation types were recorded across the survey areas (Figure 4):

- *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest
- *Banksia attenuata* (Slender Banksia), *Banksia menziesii* (Firewood Banksia) and *Eucalyptus* spp. Open Woodland
- Introduced *Eucalyptus* spp. And *Eucalyptus marginata* (Jarrah) Open Woodland
- *Eucalyptus gomphocephala* (Tuart), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest
- *Eucalyptus marginata* (Jarrah) and *Allocasuarina fraseriana* (Sheoak) Open Woodland.



The majority of the Reid Oval Expansion survey area contained *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest. A small pocket of Jarrah and Introduced *Eucalyptus* spp. Open Woodland was located around the football oval clubrooms and entrance road, and a pocket of *Eucalyptus gomphocephala* (Tuart), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest was located in a strip along the edge of the survey area parallel to Hale Road.



The Soccer Expansion survey area contained the same vegetation type as the majority of the Reid Oval Expansion survey area, namely *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest.




Banksia spp. And *Eucalyptus* spp. Open Woodland was recorded at the Bowls and Tennis Club survey area, and *Eucalyptus marginata* (Jarrah) and *Allocasuarina fraseriana* (Sheoak) Open Woodland was recorded at the Mens Shed Location A. The Mens Shed Location B is an existing gravel carpark containing five stand-alone trees, with no other native vegetation present.

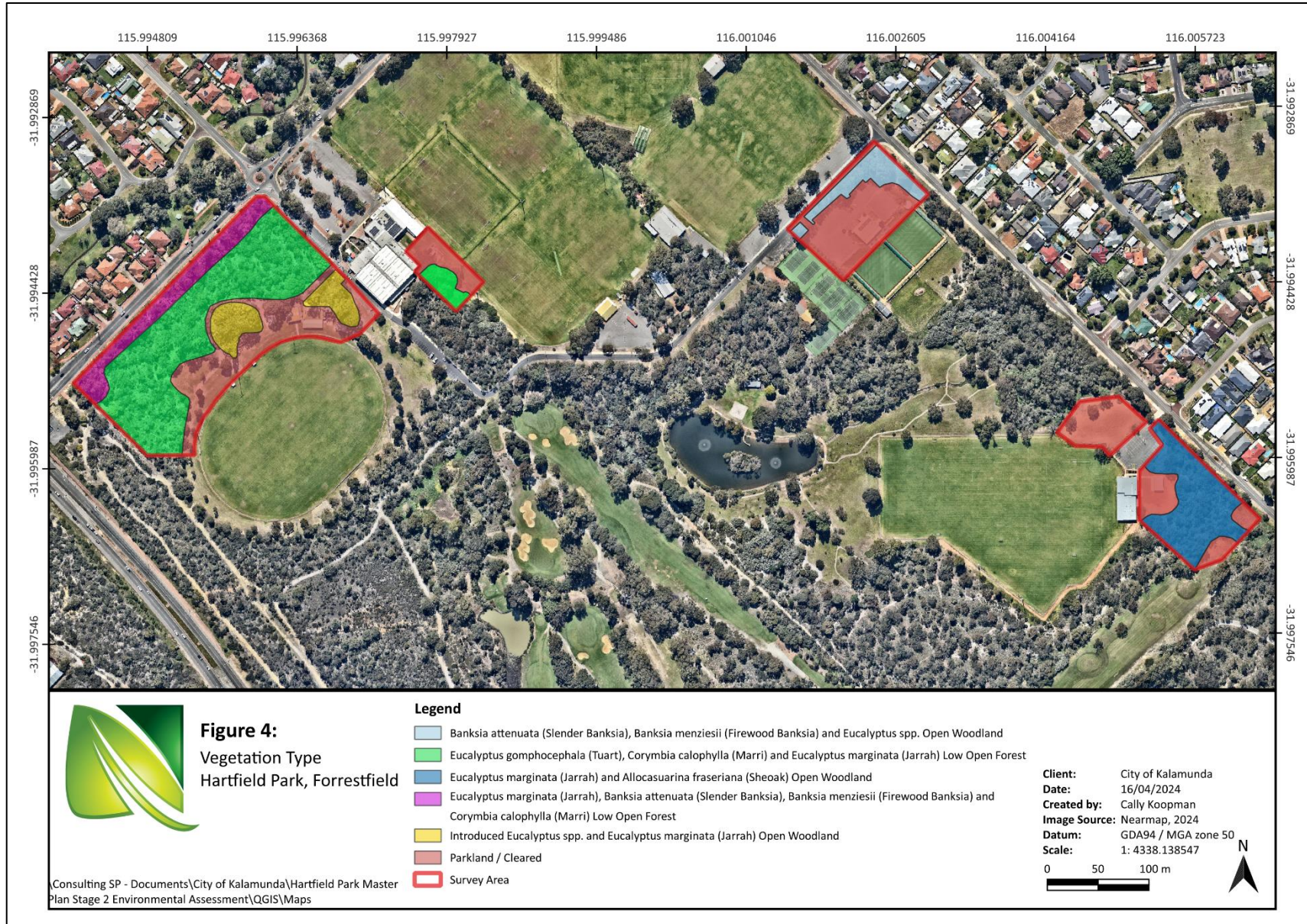
Descriptions of each vegetation type are provided in Table 8 below.

Table 8: Vegetation type within the survey areas

Vegetation Type	Description	Photograph
<p>Reid Oval Expansion</p> <p><i>Eucalyptus marginata</i> (Jarrah), <i>Banksia attenuata</i> (Slender Banksia), <i>Banksia menziesii</i> (Firewood Banksia) and <i>Corymbia calophylla</i> (Marri) Low Open Forest</p>	<p>A low open forest containing an upper storey of <i>Eucalyptus marginata</i> (Jarrah), <i>Banksia attenuata</i> (Slender Banksia), <i>Banksia menziesii</i> (Firewood Banksia) and <i>Corymbia calophylla</i> (Marri). A mid-storey of <i>Xanthorrhoea preissii</i>, and an understorey of native shrubs and sedges, including <i>Dasyopogon bromeliifolius</i>, <i>Mesomelaena pseudostygia</i>, <i>Eremaea pauciflora</i> and <i>Patersonia occidentalis</i>. This vegetation type contained a very low density of weeds.</p>	
<p>Introduced <i>Eucalyptus</i> spp. and <i>Eucalyptus marginata</i> (Jarrah) Open Woodland</p>	<p>An open woodland containing an upper storey of mixed <i>Eucalyptus</i> species, over a sparse understorey of native shrubs and introduced grasses. This vegetation type was dominated by introduced <i>Eucalyptus</i> spp. and was located around the perimeter of the oval and near the football clubrooms.</p>	

Vegetation Type	Description	Photograph
<p><i>Eucalyptus gomphocephala</i> (Tuart), <i>Corymbia calophylla</i> (Marri) and <i>Eucalyptus marginata</i> (Jarrah) Low Open Forest</p>	<p>A low open forest containing an upper storey of <i>Eucalyptus gomphocephala</i> (Tuart), <i>Corymbia calophylla</i> (Marri) and <i>Eucalyptus marginata</i> (Jarrah).</p> <p>The upper, mid and understorey of this vegetation type was consistent with the Jarrah and Banksia Low Open Forest vegetation type, but with the addition of Tuart as a dominant species. The Tuart trees appear to have been planted along the edge of the bushland, parallel to Hale Road.</p>	
<p>Soccer Expansion</p>		
<p><i>Eucalyptus marginata</i> (Jarrah), <i>Banksia attenuata</i> (Slender Banksia), <i>Banksia menziesii</i> (Firewood Banksia) and <i>Corymbia calophylla</i> (Marri) Low Open Forest</p>	<p>A low open forest containing an upper storey of <i>Eucalyptus marginata</i> (Jarrah), <i>Banksia attenuata</i> (Slender Banksia), <i>Banksia menziesii</i> (Firewood Banksia) and <i>Corymbia calophylla</i> (Marri). A mid-storey of <i>Xanthorrhoea preissii</i>, and an understorey of native shrubs and sedges, including <i>Dasyogon obliquifolius</i>, <i>Hibbertia hypericoides</i> and <i>Patersonia occidentalis</i>. This vegetation type contained a low density of weeds.</p>	

Vegetation Type	Description	Photograph
Bowls and Tennis Club		
<p><i>Banksia attenuata</i> (Slender Banksia), <i>Banksia menziesii</i> (Firewood Banksia) and <i>Eucalyptus</i> spp. Open Woodland</p>	<p>An open woodland containing an upper storey of introduced <i>Eucalyptus</i> spp. over <i>Banksia attenuata</i> (Slender Banksia) and <i>Banksia menziesii</i> (Firewood Banksia) over an understorey of native shrubs and sedges.</p>	
Mens Shed Location A		
<p><i>Eucalyptus marginata</i> (Jarrah) and <i>Allocasuarina fraseriana</i> (Sheoak) Open Woodland</p>	<p>An open woodland containing an upper storey of <i>Eucalyptus marginata</i> (Jarrah) and <i>Allocasuarina fraseriana</i> (Sheoak) over a mid-storey of <i>Kingia australis</i> (Kingia) and <i>Xanthorrhoea</i> spp. The understorey consists of native shrubs and sedges, including <i>Mesomelaena pseudostygia</i> and <i>Morelotia octandra</i>.</p>	
Mens Shed Location B		
<p>Parkland/cleared</p>	<p>Cleared area currently used as an informal gravel carpark. Scattered trees are present within this area.</p>	



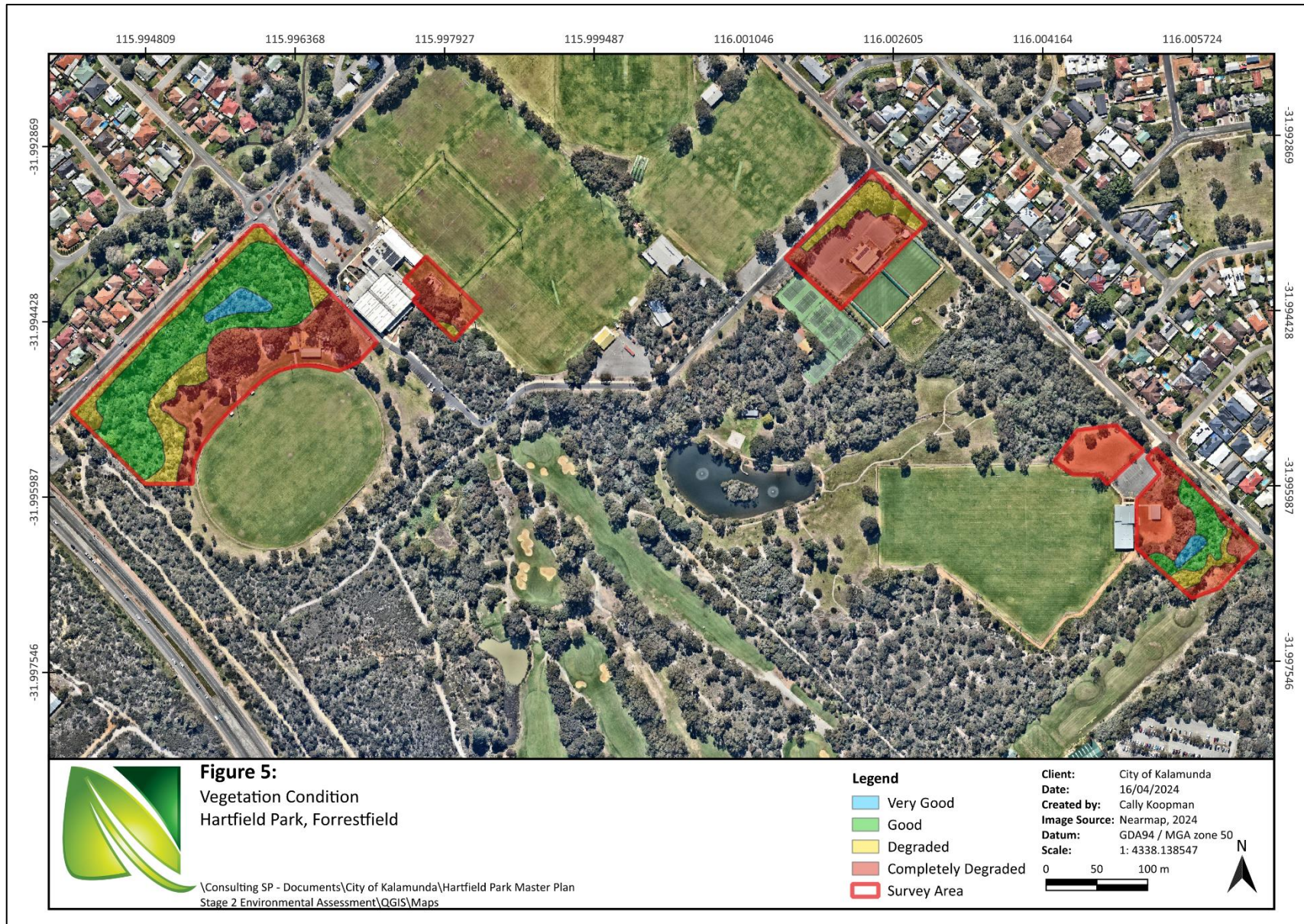
4.2.2 Vegetation Condition

Vegetation condition across the survey areas ranged from very good to completely degraded (Table 9, Figure 5). Within the Reid Oval Expansion and Mens Shed Location A survey areas, vegetation condition ranged from very good to completely degraded. Within the Bowls and Tennis Club survey area, vegetation condition ranged from completely degraded to degraded, and within the Soccer Expansion survey area, vegetation condition ranged from completely degraded to good. The Mens Shed Location B was completely degraded.

The patches of very good vegetation were found within the Reid Oval Expansion survey areas' *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest, and the Mens Shed Location A *Eucalyptus marginata* (Jarrah) and *Allocasuarina fraseriana* (Sheoak) Open Woodland. These were identified as such due to having an intact native vegetation structure and a low level of impact from invasive (weed) species.

Table 9: Vegetation condition within the survey area

Vegetation Condition	Pristine	Excellent	Very Good	Good	Degraded	Completely Degraded	Total
Area (ha)	0	0	0.16	1.68	0.94	3.0	5.78
Area (%)	0	0	2.77	29.0	16.27	51.96	100



4.2.3 Flora

A total of 206 flora species (taxa) were recorded from 44 families during the field survey. This was comprised of 134 native species and 72 introduced (weed) species. The Reid Oval Expansion survey area was observed to contain the highest diversity of native species (77), closely followed by the Mens Shed Location A (69), and Bowls and Tennis Club (61). The Soccer Expansion survey area had a smaller native species diversity with a total of 20 species.

Examples of flora species present are shown in Figure 6. The location of quadrats within each vegetation type is shown in Figure 3; quadrat data is provided in Appendix 4; and a complete flora species list is provided in Appendix 5.

Four conservation significant flora species were identified within the survey area at the time of the survey:

- *Conospermum undulatum* (listed as Critically Endangered under the *EPBC Act 1999*)
- *Isopogon autumnalis* (listed as Priority 3 (P3) at the State level under the *BC Act 2016*)
- *Grevillea thelemanniana* (Spider Net Grevillea) (listed as Critically Endangered under the *EPBC Act 1999*)
- *Grevillea olivacea* (Olive Grevillea) (listed as Priority 4 (P4) at the State level under the *BC Act 2016*).

Conospermum undulatum was represented by approximately 63 individuals throughout the Reid Oval Expansion survey area and six individuals at the Bowls and Tennis Club survey area. One individual *Grevillea olivacea* (Olive Grevillea) was recorded at the Bowls and Tennis Club survey area in the landscaped garden at the front of the buildings, and one individual of *Grevillea thelemanniana* was recorded at the Reid Oval Expansion survey area. *Isopogon autumnalis* was also identified at the Reid Oval Expansion survey area. Confirmation of the identification of this species was conducted following field activities and as a result, individual locations and population extent were not recorded. The locations of *Conospermum undulatum*, *Grevillea thelemanniana* and *Grevillea olivacea* are shown in Figure 7).

One Declared Pest (DP) and Weed of National Significance (WoNS) was identified within the survey area, Bridal Creeper (**Asparagus asparagoides*). This was observed within the Mens Shed Location A and Reid Oval Expansion survey areas (Figure 8). The Bowls and Tennis Club survey area contained the highest weed species diversity with a total of 46 species.

A total of eight species were unable to be identified to species level due to the lack of diagnostic characteristics exhibited at the time of survey. All unidentified species are as follows:

- **Plumeria* sp.
- **Rosa* sp.
- **Watsonia* sp.
- *Caladenia* sp.
- *Conostephium* sp.
- *Lomandra* sp.
- *Pterostylis* sp.
- *Thelymitra* sp.



Styloidium androsaceum (Book Triggerplant)



Conospermum undulatum (EN)



Lambertia multiflora (Many-flowered Honeysuckle)



Bridal Creeper (**Asparagus asparagoides*).

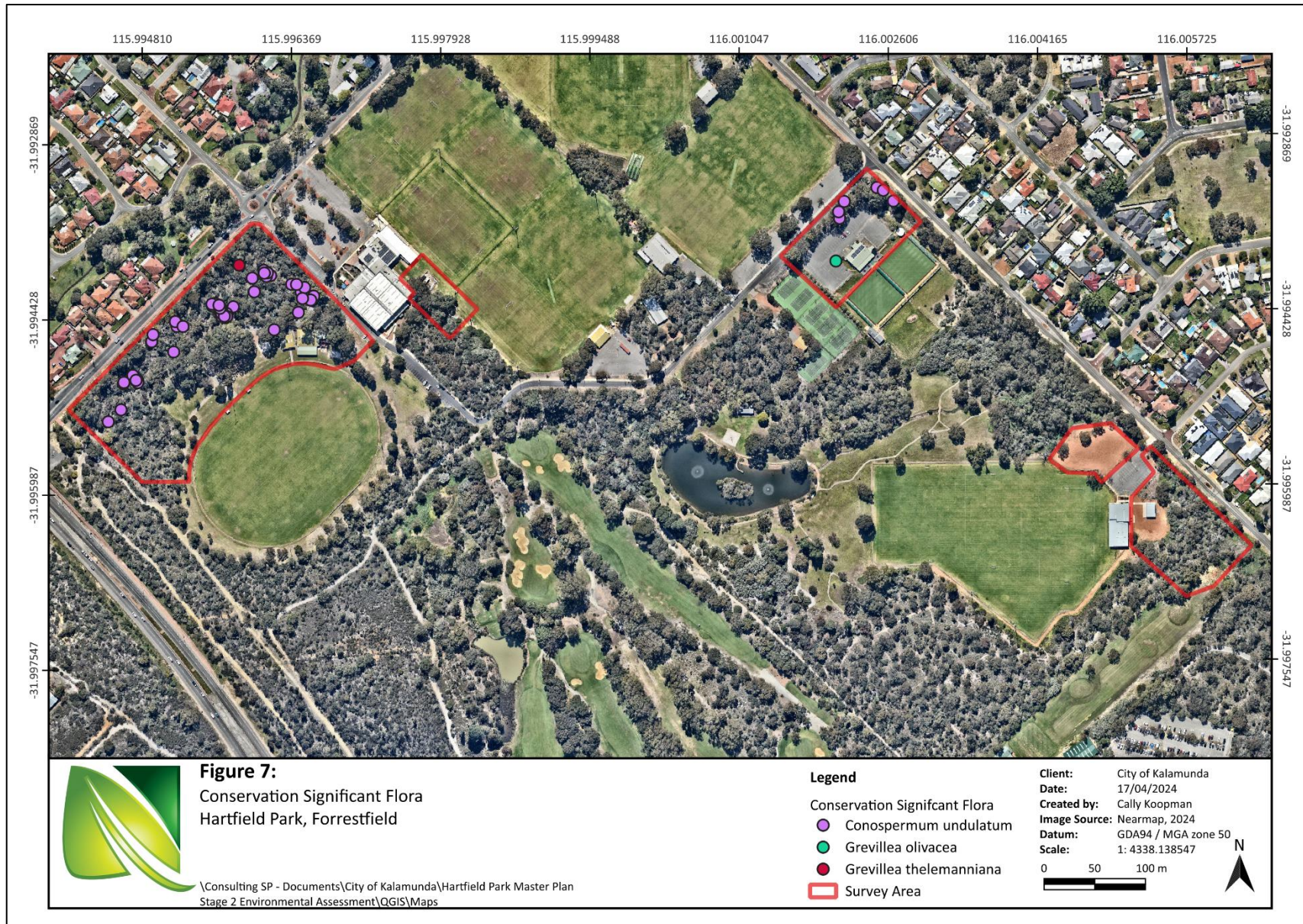


Ptilotus esquamatus



Jacksonia floribunda (Holly Pea)

Figure 6: Examples of native and introduced flora species recorded across the survey areas





4.2.4 Threatened and Priority Communities

Of the seven threatened and priority ecological communities that were identified as occurring within a 10 km radius of the survey area during the desktop assessment, following the field survey it was identified that three of these communities were likely to be represented within the survey areas:

- Banksia Woodlands of the Swan Coastal Plain (Endangered/P3)
- *Banksia attenuata* woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. 1994) (Critically Endangered)
- Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain TEC (Critically Endangered/Priority 3).

The location of these potential TECs/PECs are shown in Figure 9. The remaining TECs/PECs that were identified as potentially occurring in the desktop survey were not identified during the field survey.

4.2.4.1 Banksia Woodlands of the Swan Coastal Plain

The Banksia Woodlands of the Swan Coastal Plain TEC (listed under the *EPBC Act 1999*) is likely to be represented within the *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia), *Banksia menziesii* (Firewood Banksia) and *Corymbia calophylla* (Marri) Low Open Forest vegetation type that is present in the Reid Oval Expansion and Soccer Expansion survey areas.

The vegetation type meets the following diagnostic criteria provided in the *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community* (Department of the Environment and Energy, 2016):

- occurs within the Swan Coastal Plain
- contains diagnostic species including *Banksia attenuata* and *Banksia menziesii*
- diverse understory containing different native shrub and herb species
- presence of other common trees including *Eucalyptus todtiana*, *Allocasuarina fraseriana*, *Nuytsia floribunda* and *Xylomelum occidentale*.

The site also occurs within a known area listed as Banksia Woodlands of the Swan Coastal Plain ecological communities according to the DBCA database search (DBCA, 2023g).

4.2.4.2 Banksia attenuata woodlands over species rich dense shrublands

The *Banksia attenuata* woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. 1994) TEC is known to occur in the survey area (DBCA, 2023g) and is also likely to be represented within the *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia), *Banksia menziesii* (Firewood Banksia) and *Corymbia calophylla* (Marri) Low Open Forest vegetation type that is present in the Reid Oval Expansion and Soccer Expansion survey areas. The boundaries of this TEC and the Banksia Woodlands of the Swan Coastal Plain TEC align.

The vegetation type meets the following diagnostic criteria described in ‘Supergroup 3; FCT 20a’ provided in the *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community* (Department of the Environment and Energy, 2016):

- occurs on sands at the base of the Darling Scarp in the Forrestfield area

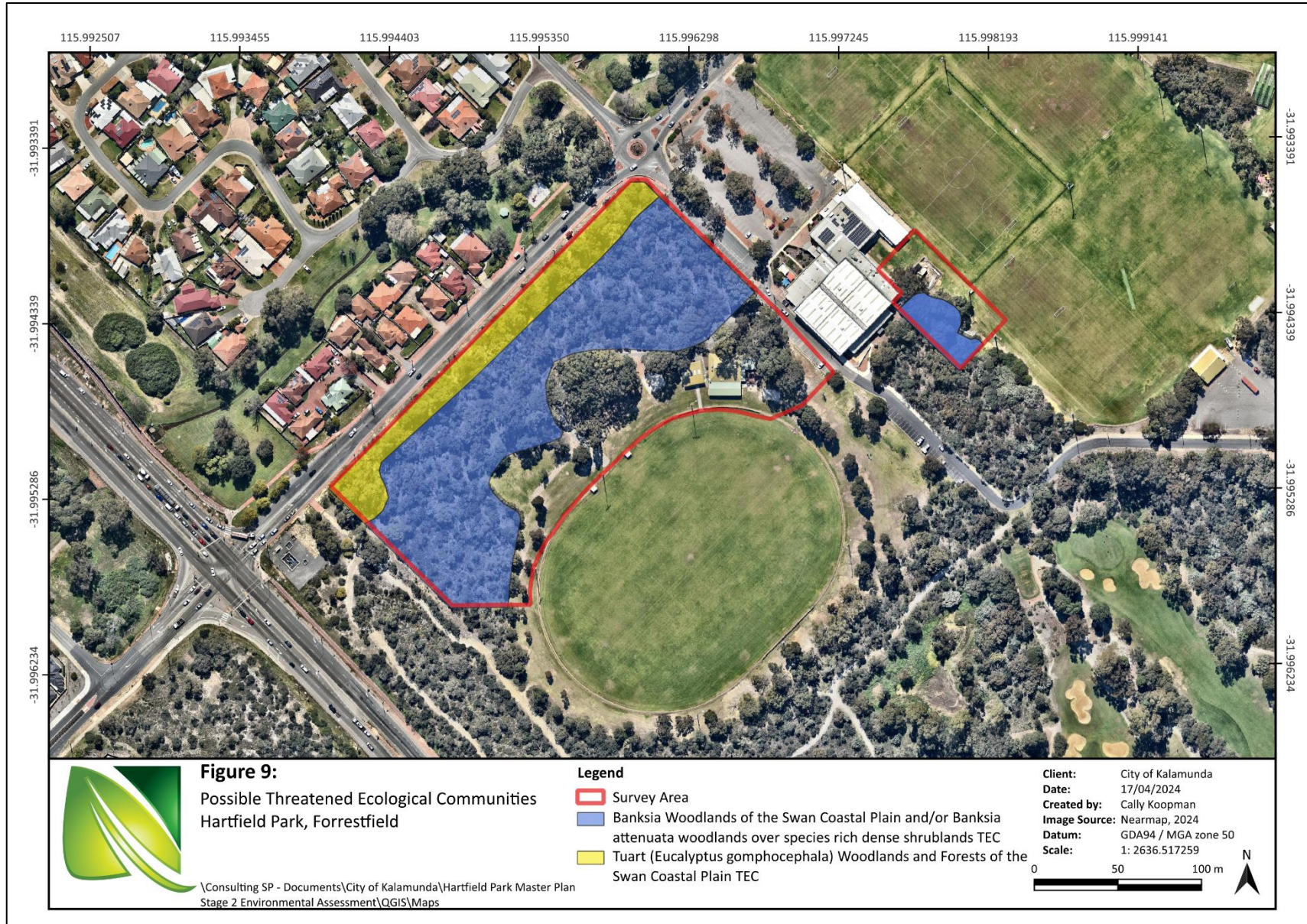
- dominated by *Banksia attenuata* (occasionally with *Eucalyptus marginata*) with a diverse understorey consisting of *Bossiaea eriocarpa*, *Conostephium pendulum*, *Hibbertia hypericoides*, *Scaevola repens*, *Stirlingia latifolia*, *Mesomelaena pseudostygia* and *Alexgeorgea nitens*.

4.2.4.3 Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain TEC

The Tuart ecological community was potentially represented by the vegetation mapped as *Eucalyptus gomphocephala* (Tuart), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest within the Reid Oval Expansion survey area.

The *Eucalyptus gomphocephala* (Tuart), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest vegetation type that was recorded within the Reid Oval Expansion survey area covers approximately 0.36 ha and the vegetation was assessed as being in a degraded condition. A preliminary assessment was conducted to indicate whether this vegetation type is likely to be part of the Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain TEC.

The vegetation type meets the majority of the key diagnostic criteria outlined in the *Approved Conservation Advice (incorporating listing advice) for the Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain ecological community* (Department of the Environment and Energy, 2019), however it does not meet the minimum patch size of 0.5 ha. This is discussed further in Section 6.3.1.



5.0 Fauna Survey Results

5.1 Desktop Survey

A desktop survey of online databases indicated the potential for a total of 39 conservation significant fauna species to occur within 10 km of the survey area (Table 10). NatureMap indicated 28 conservation significant species listed under the *BC Act 2016* (WA) as potentially occurring within a 10 km radius of the site (DBCA, 2023f) (Appendix 1). The PMST indicated 22 threatened species listed under the *EPBC Act 1999* (Cwlth) as potentially occurring within a 10 km radius of the site (DCCEEW, 2023) (Appendix 2). A review of the DBCA threatened and priority fauna species database indicated the potential for 27 conservation significant fauna species to occur within a 10 km radius of the site (DBCA, 2023h).

Both abiotic (soil, climate) as well as biotic (food resources, predator pressure) will determine the suitability of habitats for specific fauna assemblages, based on their ecological requirements. Evaluating the site locality, existing conditions and known home ranges, Natural Areas' desktop assessment determined that seven species (highlighted green in Table 10) have the potential to be present within some areas of the survey area. The DBCA database has records of 54 black cockatoo roost sites within 10 km of the survey area, and one known Forest Red-tailed Black Cockatoo roost (Roost ID: KALFORR003) is located within Hartfield Park approximately 170 m from the closest survey area (DBCA, 2023h).

Table 10: Threatened and Priority fauna species listed by NatureMap, PMST and DBCA

Species Name	Common Name	Cons. Code	NatureMap	PMST	DBCA
BIRD					
<i>Actitis hypoleucos</i>	Common sandpiper	MI	X	X	X
<i>Apus pacificus</i>	Fork-tailed Swift	MI		X	
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN		X	
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	MI		X	
<i>Calidris ferruginea</i>	Curlew sandpiper	CR	X	X	X
<i>Calidris melanotos</i>	Pectoral sandpiper	MI	X	X	X
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	X	X	X
<i>Charadrius leschenaultii</i>	Greater Sand Plover	VU		X	
<i>Falco peregrinus</i>	Peregrine falcon	OS	X		X
<i>Hydroprogne caspia</i>	Caspian Tern	MI	X		
<i>Leipoa ocellata</i>	Malleefowl	VU		X	
<i>Motacilla cinerea</i>	Grey Wagtail	MI		X	
<i>Numenius madagascariensis</i>	Eastern Curlew	CR		X	

Species Name	Common Name	Cons. Code	NatureMap	PMST	DBCA
<i>Oxyura australis</i>	Blue-billed duck	P4	X		X
<i>Pachyptila turtur subantarctica</i>	Fairy Prion	VU		X	
<i>Pandion haliaetus</i>	Osprey	MI	X	X	X
<i>Platycercus icterotis xanthogenys</i>	Western rosella (inland)	P4	X		X
<i>Plegadis falcinellus</i>	Glossy ibis	MI	X		X
<i>Rostratula australis</i>	Australian Painted Snipe	EN		X	
<i>Sternula nereis nereis</i>	Australian Fairy Tern	VU		X	
<i>Thalasseus bergii</i>	Crested tern	MI	X		X
<i>Tringa glareola</i>	Wood sandpiper	MI	X		X
<i>Tringa nebularia</i>	Common greenshank	MI	X	X	X
<i>Tringa stagnatilis</i>	Marsh sandpiper	MI	X		X
<i>Zanda baudinii</i>	Baudin's Cockatoo	EN	X	X	X
<i>Zanda latirostris</i>	Carnaby's Cockatoo	EN	X	X	X
MAMMAL					
<i>Bettongia penicillata ogilbyi</i>	Woylie	CR	X	X	X
<i>Dasyurus geoffroii</i>	Chuditch	VU	X	X	X
<i>Hydromys chrysogaster</i>	Water-rat	P4	X		X
<i>Isoodon fusciventer</i>	Quenda	P4	X		X
<i>Myrmecobius fasciatus</i>	Numbat	EN	X		X
<i>Notamacropus irma</i>	Western brush wallaby	P4	X		X
<i>Phascogale tapoatafa wambenger</i>	South-western brush-tailed phascogale	CD	X		X
<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	CR		X	
<i>Setonix brachyurus</i>	Quokka	VU	X	X	X
REPTILE					
<i>Acanthophis antarcticus</i>	Southern death adder	P3	X		X
<i>Lerista lineata</i>	Perth slider, lined skink	P3	X		X
<i>Neelaps calonotos</i>	Black-striped snake	P3	X		X

Species Name	Common Name	Cons. Code	NatureMap	PMST	DBCA
<i>Pseudemydura umbrina</i>	Western swamp tortoise	CR	X		X

5.2 Fauna Survey Results

5.2.1 Basic Fauna Survey

A total of 28 fauna species were observed in the survey areas, of which 24 were native species and four were introduced (Table 11). Of the native fauna recorded, the majority (23) were bird species, with two reptile and three mammal species also observed. The introduced species observed were the Rainbow Lorikeet (**Tricoglossus molucannus*), Laughing Kookaburra (**Dacelo novaeguineae*), Rabbit (**Oryctolagus cuniculus*) and Red Fox (**Vulpes vulpes*). One of the introduced species, the Rainbow Lorikeet is a Declared Pest under the *Biosecurity and Agriculture Management Act 2007* (WA). The Red Fox was identified through the presence of a den within the Reid Oval Expansion survey area and Rabbit carcasses were observed within the Reid Oval Expansion and Soccer Expansion survey areas.

Across the survey area three conservation significant species were identified; the Quenda (*Isoodon fusciventer*), which was identified indirectly through the presence of diggings within all of the survey areas; the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) and *Zanda* sp. (white-tail black cockatoo) which were heard calling throughout all of the survey areas. Secondary evidence in the form of chewed Marri nuts was also recorded. The *Zanda* spp. (white-tailed black cockatoo) was unable to be identified to species level at the time of the survey. All species observed are listed in Table 11 and examples of fauna species observed are shown in Figure 10.

Table 11: Fauna observations recorded within the survey area

Family	Species Name	Common Name
BIRD		
Acanthizidae	<i>Smicromis brevirostris</i>	Weebill
Alcedinidae	<i>*Dacelo novaeguineae</i>	Laughing Kookaburra
Anatidae	<i>Chenonetta jubata</i>	Australian Wood Duck (Wood Duck, Maned Duck)
Artamidae	<i>Cracticus nigrogularis</i>	Pied Butcherbird
Cacatuidae	<i>Cacatua sanguinea</i>	Little Corella
Cacatuidae	<i>Calyptorhynchus banksii naso</i> (VU)	Forest Red-tailed Black-Cockatoo
Cacatuidae	<i>Eolophus roseicapilla</i>	Galah
Cacatuidae	<i>Zanda</i> sp. (EN)	'white-tail' black cockatoo
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckooshrike
Columbidae	<i>Ocyphaps lophotes</i>	Crested Pigeon
Columbidae	<i>Phaps chalcoptera</i>	Common Bronzewing

Family	Species Name	Common Name
Columbidae	<i>Spilopelia senegalensis</i>	Laughing Turtle Dove
Corvidae	<i>Corvus coronoides</i>	Australian Raven
Meliphagidae	<i>Anthochaera carunculata</i>	Red Wattlebird
Meliphagidae	<i>Anthochaera lunulata</i>	Western Little Wattlebird
Meliphagidae	<i>Gavicalus virescens</i>	Singing Honeyeater
Meliphagidae	<i>Lichmera indistincta</i>	Brown Honeyeater
Monarchidae	<i>Grallina cyanoleuca</i>	Magpie-lark
Psittaculidae	<i>Barnardius zonarius</i>	Australian Ringneck
Psittaculidae	* <i>Tricoglossus molucannus</i> (DP)	Rainbow Lorikeet
Rallidae	<i>Fulica atra</i>	Eurasian Coot
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail
Zosteropidae	<i>Zosterops lateralis</i>	Grey-breasted White-eye (Silvereye)
MAMMAL		
Canidae	* <i>Vulpes vulpes</i> (DP)	Red Fox (den)
Leporidae	* <i>Oryctolagus cuniculus</i>	Rabbit
Peramelidae	<i>Isoodon fusciventer</i> (P4)	Quenda (diggings)
REPTILE		
Elapidae	<i>Pseudonaja affinis</i>	Dugite
Scincidae	<i>Tiliqua rugosa</i>	Bobtail



Galah (*Eolophus roseicapilla*)



Common Bronzewing (*Phaps chalcoptera*)



Pied Butcherbird (*Cracticus nigrogularis*)



Bobtail (*Tiliqua rugosa*)



Laughing Kookaburra (**Dacelo novaeguineae*)



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

Figure 10: Fauna observations recorded within the survey areas

5.2.2 Targeted Black Cockatoo Habitat Survey

A total of 307 trees that satisfied the Commonwealth guidelines (DAWE, 2022) for black cockatoo habitat trees (trees with DBH \geq 300 mm) were recorded within the survey areas. These trees were identified from 19 different species with the majority consisting of *Allocasuarina fraseriana* (Sheoak; 30.13%) and *Eucalyptus marginata* (Jarrah; 18.21%). Both Marri and Jarrah are high priority species for black cockatoo nesting, roosting and foraging (DAWE, 2022).

Many of the trees throughout the survey areas were observed to be in moderate to poor condition, showing signs of disease and insect attack. This is discussed further in Section 6. Examples of habitat trees observed are shown in Figure 11 and examples of hollows and secondary evidence of presence are shown in Figure 12. The locations of all habitat trees are shown in Figure 13.

Forest Red-tailed Black Cockatoos were observed and heard flying overhead at the Reid Oval Expansion, Soccer Expansion and Mens Shed Location survey areas. White-tailed black cockatoos (*Zanda* spp.) were also heard flying overhead near the Reid Oval Expansion survey area, however the species was unable to be confirmed at the time of the survey. Evidence of foraging (chewed Marri nuts) was also recorded at the Reid Oval Expansion site.

5.2.2.1 Roosting Habitat

No evidence of roosting in the form of scats or feathers was observed within the survey areas. Evening surveys were not conducted as part of this assessment, so the location of any potential roosting sites cannot be confirmed.

5.2.2.2 Foraging Habitat

All of the survey areas contained areas of vegetation that provide primary feeding resources for black cockatoos, including *Eucalyptus marginata*, *Eucalyptus calophylla*, *Eucalyptus todtiana*, *Banksia attenuata*, and *Banksia menziesii* (DEC, 2011). Evidence of foraging by Forest Red-tailed Black Cockatoos, parrots, and potentially Carnaby's or Baudin's Cockatoos, in the form of chewed Marri nuts, was recorded within the Reid Oval Expansion survey area (Figure 12).

The black cockatoo foraging quality scoring tool (DAWE, 2022) was applied across the survey areas and a score of 7 was assigned for the Baudin's Cockatoo and a score of 9 was assigned for Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo (Table 12). These scores represent areas that are considered to have high-quality native foraging habitat for Black Cockatoos.

Table 12: Foraging quality score for some areas of the survey area

	Baudin's Cockatoo	Carnaby's Cockatoo	Forest Red- tailed Black- Cockatoo	Appraisal
Starting score	10	10	10	
Foraging potential	8	10	10	Evidence of foraging by the Forest Red-tailed Black Cockatoo and potentially Carnaby's or Baudin's Cockatoo

	Baudin's Cockatoo	Carnaby's Cockatoo	Forest Red-tailed Black-Cockatoo	Appraisal
Connectivity	8	10	10	Foraging habitat is present within 12 km of the survey areas
Proximity to breeding	8	10	10	Survey areas are within a known breeding area for Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo (DBCA, 2023a, 2023d)
Proximity to roosting	8	10	10	Survey areas are within a known night roost site for black cockatoos (DBCA, 2023b). There is a known Forest Red-tailed Black Cockatoo roost site within Hartfield Park ~160 m from the survey areas (DBCA, 2023h)
Impact from significant plant disease	7	9	9	Marri canker and significant pest/disease was evident throughout the survey areas
Total Score	7	9	9	

5.2.2.3 Breeding Habitat

All of the survey areas contained areas of vegetation that could provide suitable breeding habitat for black cockatoos. The survey area is also within a known Carnaby's Cockatoo confirmed breeding area (DBCA, 2023d) and a black cockatoo breeding site (DBCA, 2023a).

Of the 307 habitat trees that were recorded, six were observed to contain hollows, with the total number of hollows observed being 20 (Table 13 and Figure 13). Five of the trees containing hollows were *Eucalyptus marginata* (Jarrah), and one was a *Corymbia calophylla* (Marri). Four of the trees containing hollows were within the Reid Oval Expansion survey area (three in the *Banksia* spp., *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest and one in the *Eucalyptus gomphocephala* (Tuart), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest). The remaining two trees containing hollows were within the Mens Shed Location A survey area (Figure 13).

Hollows recorded had entrance diameters ranging from 50 mm to 200 mm. Black cockatoos are known to utilise hollows that have a vertical to near-vertical orientation and have an entrance diameter of at least 100 mm (Cherriman, 2022). Secondary evidence of hollow use, including rubbing and chew marks was observed in eight of the hollows. No other secondary evidence such as scats or feathers were observed within the survey areas.

In total eight hollows (from four trees) were considered to be potentially suitable for black cockatoos, based on their entrance diameter, orientation and whether they were known to be currently occupied. As this survey was undertaken from the ground, the depth of these hollows was not recorded and therefore their suitability for breeding by black cockatoos cannot be confirmed. Examples of hollows observed are shown in Figure 12 and the locations of all trees with hollows are shown in Figure 13.

Table 13: Description of identified trees with hollows

Tree ID	Species	DBH (mm)	Condition	Number of Hollows	Location of Hollow	Size of Hollow (cm)	Type of Entrance	Height Above Ground	Chewing /Rubbing Evidence	Foraging Evidence	Potentially Suitable Hollows
225	<i>Corymbia calophylla</i>	955	Good	4	Main trunk	10x5, 10x10, 10x10, 15x15	Side entrance, near vertical spout, near vertical spout, near vertical spout	7, 12, 14, 16	Yes, not visible, not visible, not visible	Yes. Red-tail BC and parrots. Potentially Carnaby's or Baudins Cockatoos	3
32	<i>Eucalyptus marginata</i>	248	Good	1	Main trunk	10x10	Horizontal side entrance	6	Yes	No	
33	<i>Eucalyptus marginata</i>	214	Good	3	Main branch	20x10 (bees), 5x5, 5x5 (bees)	Side entrance, side entrance, side entrance	8, 10, 12	No, no, yes	No	
174	<i>Eucalyptus marginata</i>	981	Good	3	Side branch	15x15, 5x5, 5x5	Near vertical spout, horizontal spout, horizontal spout	10, 9, 14	Yes, no, yes	No	1
227	<i>Eucalyptus marginata</i>	1297	Poor	2	Main trunk	20x20, 10x10	Near vertical chimney, near vertical spout	10, 6	Not visible, yes	No	2
287	<i>Eucalyptus marginata</i>	892	Good	7	Trunk and side branches	5 small hollows at 5x5, 15x20, 15x15	Small hollows were all side entrances, near vertical spout, near vertical spout,	Small hollows between 8-10, 5, 8	Yes for two of the small hollows	No	2



Figure 11: Examples of habitat trees observed within the survey areas



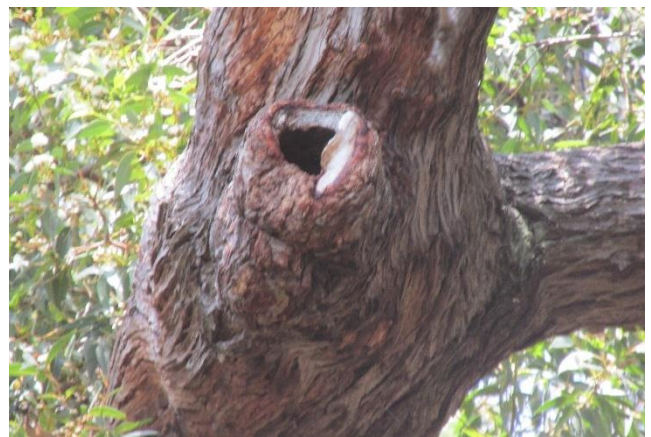
Tree ID 287



Tree ID 174



Tree ID 32

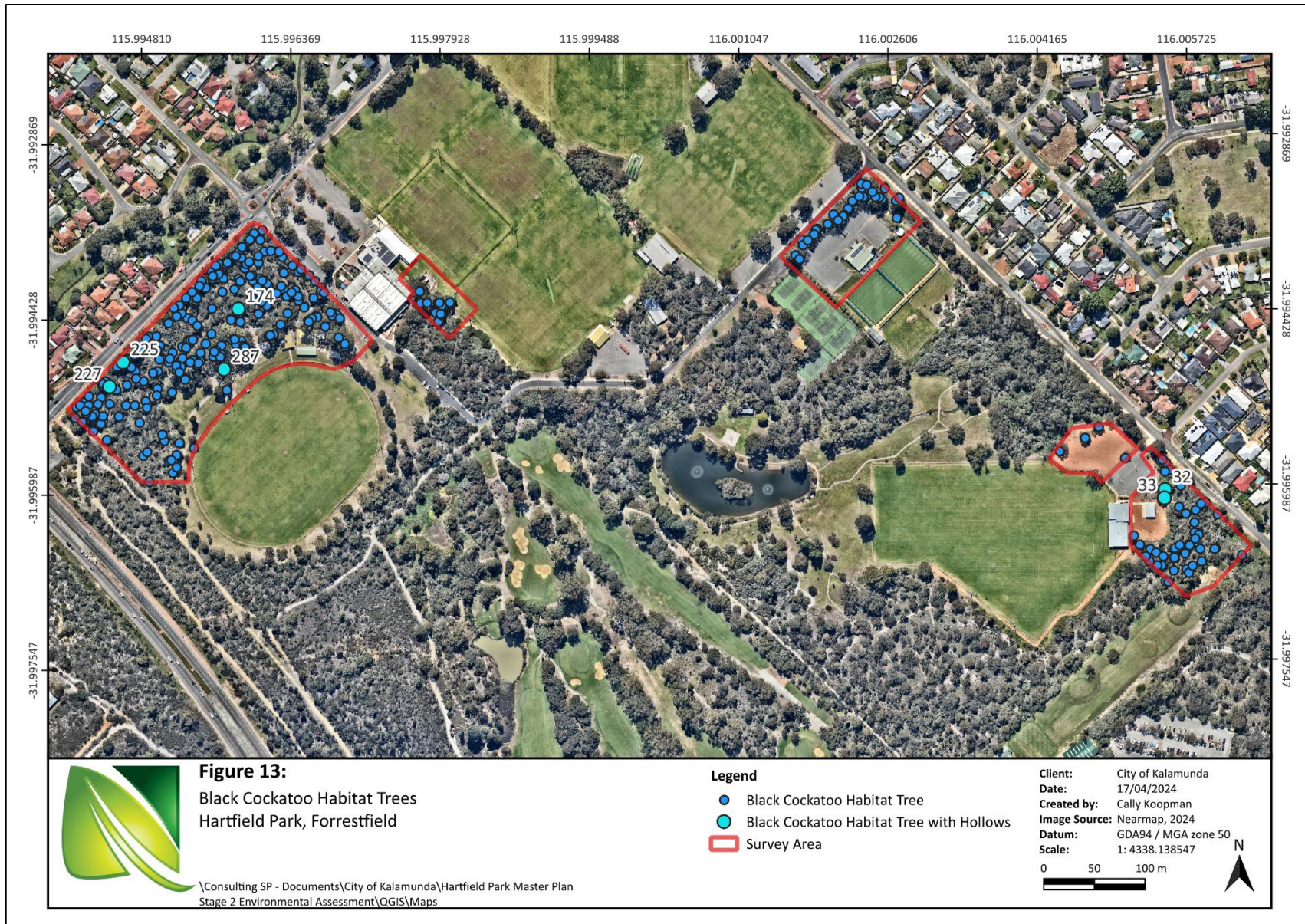


Tree ID 174



Evidence of foraging by Forest Red-tailed Black Cockatoos and parrots, and potentially Carnaby's or Baudin's Cockatoos

Figure 12: Examples of hollows and foraging evidence observed within the survey area



6.0 Implications of Results

6.1 Flora and Vegetation

A total of 206 flora species (taxa) were recorded from 44 families during the field survey. This was comprised of 134 native species and 72 introduced (weed) species. The Reid Oval Expansion survey area was observed to contain the highest diversity of native species (77), closely followed by the Mens Shed Location A (69), and Bowls and Tennis Club (61). The Soccer Expansion survey area had a smaller native species diversity with a total of 20 species. As the Mens Shed Location B is an existing gravel carpark, only one native species (*Eucalyptus marginata*) was observed within this survey area.

A total of eight species were unable to be identified to species level due to the lack of diagnostic characteristics exhibited at the time of survey. Three of the species contained the characteristics for introduced (weed) genus and five had the characteristics of genera native to the region.

The vegetation condition across the survey area ranged from completely degraded to very good (Table 14). The survey area was primarily composed of completely degraded areas which have been previously cleared for infrastructure development. The areas of retained vegetation within the survey area ranged from degraded to very good. The degraded areas within the vegetation extent contain a high presence of invasive (weed) species and would require intensive management to improve its condition.

Across the survey area five main vegetation types were recorded and are summarised in Table 14.

Table 14: Summary of vegetation type and condition across the survey areas

Survey Area	Vegetation Type	Vegetation Condition
	<i>Eucalyptus marginata</i> (Jarrah), <i>Banksia attenuata</i> (Slender Banksia) and <i>Banksia menziesii</i> (Firewood Banksia) Low Open Forest	degraded - very good
Reid Oval Expansion	Introduced <i>Eucalyptus</i> spp. and <i>Eucalyptus marginata</i> (Jarrah) Open Woodland	completely degraded
	<i>Eucalyptus gomphocephala</i> (Tuart), <i>Corymbia calophylla</i> (Marri) and <i>Eucalyptus marginata</i> (Jarrah) Low Open Forest	degraded - good
Soccer Expansion	<i>Eucalyptus marginata</i> (Jarrah), <i>Banksia attenuata</i> (Slender Banksia) and <i>Banksia menziesii</i> (Firewood Banksia) Low Open Forest	completely degraded - good
Bowls and Tennis Club	An open woodland containing an upper storey of introduced <i>Eucalyptus</i> spp. over <i>Banksia attenuata</i> (Slender Banksia) and <i>Banksia menziesii</i> (Firewood Banksia) over an understorey of native shrubs and sedges.	completely degraded - degraded
Mens Shed Location A	<i>Eucalyptus marginata</i> (Jarrah) and <i>Allocasuarina fraseriana</i> (Sheoak) Open Woodland	completely degraded - very good
Mens Shed Location B	Cleared gravel carpark	completely degraded

Many of the large habitat trees within all of the survey areas appear to be suffering from insect attack. These trees were in poor condition and were particularly evident at the Mens Shed Location A survey area where many of the trees had already died. Small holes were evident in the bark of *Allocasuarina fraseriana* (Sheoak), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah). The Polyphagous shot-hole borer (PSHB) *Euwallacea fornicatus* is a beetle native to Southeast Asia and has been identified throughout many local government areas in the Perth region. The beetle attacks a wide range of plants by tunnelling into trunks, stems and branches, which can be seen as small entry holes, discolouration of wood or gumming where the resin or sap pushes out of through the entry holes (DPIRD, 2023c). A quarantine area is in place, including Forrestfield, that restricts the movement of certain materials outside of this quarantine area (DPIRD, 2023c). It is recommended to contact DPIRD to request an assessment of the area and confirm the species present within the survey areas.

One Declared Pest species was identified within the survey area, namely Bridal Creeper (**Asparagus asparagoides*). This species was present at the Mens Shed Location A and Reid Oval expansions areas within the *Eucalyptus marginata* (Jarrah) and *Allocasuarina fraseriana* (Sheoak) Open Woodland, and the *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest. Declared Pests are listed on the Western Australian Organism List (WAOL) 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, 2023a). It is recommended that the control of these species be undertaken prior to any potential future works within the site to prevent the spread of these species.

6.2 Significant Flora

Across the survey area four conservation significant flora species were observed during the Spring 2023 survey: *Conospermum undulatum* (listed as Critically Endangered under the *EPBC Act 1999*); *Isopogon autumnalis* (listed as Priority 3 (P3) at the State level under the *Biodiversity Conservation Act (2016) (BC Act 2016)*); *Grevillea thelemanniana* (Spider Net Grevillea) (listed as Critically Endangered under the *EPBC Act 1999*); and *Grevillea olivacea* (Olive Grevillea) (listed as Priority 4 (P4) at the State level under the *BC Act 2016*).

One location of *Grevillea olivacea* was recorded within the Bowls and Tennis Club and one location of *Grevillea thelemanniana* was recorded at Reid Oval Expansion survey area. Across the Reid Oval Expansion and Bowls and Tennis Club survey areas 63 individuals of *Conospermum undulatum* were identified. *Isopogon autumnalis* was identified at the Reid Oval Expansion survey area, the identification of this species was confirmed conducted following field activities. It is recommended that a targeted survey is undertaken during peak flowering period for this species (February to June) to record the individual locations and population extent of this species.

As identified in the desktop survey, the survey areas are considered to be potentially suitable for all 18 conservation significant species. Of the 18 conservation significant flora to potentially reside within the survey boundary:

- A total of 15 are perennial herb, shrub, or sedge species for which other characteristics would be present to enable identification to a minimum of genus level. However, flowers may be required for species level identification.

- Two are annual herbaceous species which were likely to be presenting at the time of the survey as the peak flowering and growth periods are around spring.

The survey was conducted in season during spring to ensure the presence of diagnostic characteristics of most species to be present for identification. All of the potential conservation significant flora species are known to have flowering periods within the survey period.

A determination of the likelihood of the five unidentified species being of conservation significance, and therefore their impact on survey outcomes, is provided in Table 15.

A total of two species were determined to exhibit similarities with conservation significant species and require an additional targeted survey to assess further diagnostic characteristics. At the time of the survey diagnostic characteristics were no longer present despite the survey being undertaken during the optimal time for these species. This limitation is largely attributed to the increased temperatures and reduced rainfall experienced this season compared to previous years. As both of the unidentifiable species are Orchidaceae species, the timing of flowering is highly dependent on the local weather conditions both leading up to, and during spring, and they may also not necessarily flower each year. The flowering period can also be very short for these species. It is recommended that future targeted surveys are undertaken between August and October at regular intervals to give the highest probability of identification.

Table 15: Assessment of the likelihood of unidentified species being of conservation significance

Species	Likelihood	Assessment
<i>Caladenia</i> sp.	Possible	There are two possible <i>Calandrinia</i> species identified in the desktop survey, <i>C. uncinella</i> and <i>C. huegelii</i> . At the time of the survey diagnostic characteristics were no longer present to identify to species level.
<i>Conostephium</i> sp.	Unlikely	No conservation significant species of this genus were identified during the desktop survey.
<i>Lomandra</i> sp.	Unlikely	No conservation significant species of this genus were identified during the desktop survey.
<i>Pterostylis</i> sp.	Unlikely	No conservation significant species of this genus were identified during the desktop survey.
<i>Thelymitra</i> sp.	Possible	There are two possible <i>Thelymitra</i> species identified in the desktop survey <i>T. magnifica</i> (CR) and <i>T. stellata</i> (EN). At the time of the survey diagnostic characteristics were no longer present to identify to species level.

6.3 Threatened/Priority Ecological Communities

Of the seven TECs/PECs that were identified as occurring within a 10 km radius of the survey area during the desktop assessment, three were identified as being potentially represented within the survey areas; Banksia Woodlands of the Swan Coastal Plain; *Banksia attenuata* woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. 1994); and the Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological communities (Figure 9).

6.3.1 Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain

The Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain is a Critically Endangered ecological community listed under the *EPBC Act 1999*. This TEC was considered to be potentially represented by the vegetation type mapped as *Eucalyptus gomphocephala* (Tuart), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest within the Reid Oval Expansion survey area. These Tuart trees also appeared to have been planted, as they were in a straight line parallel to Hale Road.

This vegetation type meets the key diagnostic criteria for classification as the Tuart Woodlands and Forests of the Swan Coastal Plain ecological community (Department of the Environment and Energy, 2019), however it does not meet the minimum patch size of 0.5 ha. Although this patch does not meet the minimum size requirement, additional flora surveys in the surrounding areas would be required to determine the extent of the *Eucalyptus gomphocephala* (Tuart), *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) Low Open Forest vegetation type and confirm the overall size of patch.

6.3.2 Banksia Woodlands of the Swan Coastal Plain

The Banksia Woodlands of the Swan Coastal Plain is an ecological community listed as Endangered under the *EPBC Act 1999*. This ecological community typically consists of a distinctive upper layer dominated by *Banksia attenuata*, *Banksia menziesii*, *Banksia prionotes* or *Banksia ilicifolia*, with an emergent tree layer of *Corymbia calophylla*, *Eucalyptus marginata* or *Eucalyptus gomphocephala*. These are often co-dominant with *Eucalyptus todtiana*, *Nuytsia floribunda*, *Allocasuarina fraseriana*, *Callitris arenaria*, *Callitris pyramidalis* and *Xylomelum occidentale*. A high diversity of shrub and herb species is also present (Department of the Environment and Energy, 2016).

The *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest vegetation type, which is present within the Reid Oval Expansion and Soccer Expansion survey areas meets the key diagnostic criteria for this TEC.

The vegetation condition and patch size also need to be considered when determining whether a patch is part of this TEC. A patch needs to be at least the good condition category. For good vegetation condition the minimum patch size is 2 ha, and for very good condition the minimum size is 1 ha (Department of the Environment and Energy, 2016).

The patch in the Reid Oval Expansion survey has 1.43 ha of good condition vegetation and 0.1 ha of very good condition vegetation, and the patch in the Soccer Expansion survey area has 0.005 ha of good condition vegetation. Although the vegetation assessed as part of this survey shows these areas do not meet the condition threshold of minimum patch size, both of these survey areas are linked to a larger areas of vegetation and therefore it is likely that the patch extends beyond the survey areas. If this surrounding vegetation meets the key diagnostic criteria for classification as part of the TEC, then it is possible that the condition thresholds of minimum patch size and condition would also be met. Additional flora surveys in the surrounding areas would be required to confirm the vegetation type and whether this patch is part of the national protected ecological community.

6.3.3 *Banksia attenuata* woodlands over species rich dense shrublands

The *Banksia attenuata* woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. 1994) is listed as Critically Endangered under the *Biodiversity Conservation Act 2016* (WA), and is recognised as a sub-community of the Banksia Woodlands of the Swan Coastal Plain TEC which is listed as Endangered under the *EPBC Act 1999*. (Department of the Environment and Energy, 2016). The community is described in the *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain* ecological community (Department of the Environment and Energy, 2016). It is known to occur on sands at the base of the Darling Scarp in the Forrestfield area and is typically very species rich with approximately 80 spp./100m². It is dominated by *Banksia attenuata* and *Eucalyptus marginata* with an understorey of *Bossiaea eriocarpa*, *Conostephium pendulum*, *Hibbertia huegelii*, *Hibbertia hypericoides*, *Petrophile linearis*, *Scaevola repens*, *Stirlingia latifolia*, *Mesomelaena pseudostygia* and *Alexgeorgea nitens* (Department of the Environment and Energy, 2016).

No condition thresholds have been applied specifically to this community. This vegetation patch however does meet the description of the ecological community, as described in the approved conservation advice (Department of the Environment and Energy, 2016), and the patch within the survey area is connected to a larger patch of potentially similar vegetation. It is therefore likely that the *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest vegetation type, which is present within the Reid Oval Expansion and Soccer Expansion survey areas is part of the *Banksia attenuata* woodlands over species rich dense shrublands ecological community.

6.4 Fauna

A total of 28 fauna species, including three conservation significant species were observed during the survey. The Quenda (*Isoodon fusciventer*) was identified indirectly through the presence of diggings, the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) was seen flying overhead, and a *Zanda* spp. (white-tail black cockatoo) was identified indirectly through the identification of its call and potentially in the form of chewed Marri nuts. The *Zanda* sp. (Carnaby's or Baudin's Cockatoo) was unable to be confirmed at the time of the survey as they were not seen and only a partial call was heard during the survey.

The survey areas are considered to be potentially suitable for all seven conservation significant species identified in the desktop survey. Four of these species were identified during the survey, as outlined above, and the presence of the remaining three is also considered likely. A large water body is present within Hartfield Park providing fauna habitat for amphibians and birds, and as a water source for other animals. This is likely to provide suitable habitat for the Blue-billed duck (*Oxyura australis*). The shelter and foraging habitat present throughout the survey areas is also likely to provide suitable habitat for small reptiles such as the Perth slider (*Lerista lineata*) and Black-striped snake (*Neelaps calonotos*). It is recommended that a detailed fauna survey be undertaken in order to determine whether or not these conservation significant species are present.

All of the survey areas provided suitable fauna habitat for birds, small reptiles and mammals. Fauna habitat values include the presence of mature trees, sufficient native vegetation structure and the presence of areas of leaf litter and dead wood. These factors are likely to provide roosting or nesting opportunities for bird species, as well as shelter and foraging habitat for native mammals and reptiles. A number of native shrub

species were identified, such as *Banksia* spp., *Grevillea* spp. and *Hakea* spp. which have the potential to provide valuable food sources, such as nectar, nuts and seeds.

6.5 Black Cockatoo Habitat Survey

A total of 307 trees were recorded that satisfied the Commonwealth guidelines for black cockatoo habitat trees (DBH \geq 300 mm). All of the vegetation types across the survey areas provide high-quality foraging habitat for black cockatoos. Additionally, evidence of foraging by black cockatoo species on Marri (*Corymbia calophylla*) nuts was observed within the Reid Oval Expansion survey area.

No evidence of roosting was observed at the time of the survey however all of the survey areas provide suitable roosting habitat for black cockatoos. An evening survey would be required to confirm the presence or absence of any roost sites within the survey areas.

Of these 307 trees, six were observed to contain hollows, with the total number of hollows observed being 20. A total of eight hollows (from four trees) were considered potentially suitable for use by black cockatoos. These hollows were currently not known to be occupied by other fauna, they met the minimum entrance diameter requirement (100 mm) for hollows utilised by black cockatoos and were of a preferred near-vertical orientation (Cherriman, 2022). As this survey was undertaken from the ground, and the depth and internal characteristics of these hollows were not recorded, their suitability for use by black cockatoos cannot be confirmed at this stage. A detailed assessment of the internal characteristics of the hollow would be required to confirm its suitability for use by black cockatoos. All of the habitat trees within the survey area have the potential to form hollows in the future but it will likely take many years for hollows to form that are suitable for use by black cockatoos.

7.0 References

Beard, J.S., Beeston, G.R., Harvey, J. M., Hopkins, A. J. M. and Shepherd, D. P. (2013). The vegetation of Western Australia at the 1:3,000,000 scale. Explanatory memoir. Second edition. *Conservation Science Western Australia*. 9(1) 1–152.

Bureau of Meteorology. (2023). *Climate and Weather Statistics – Perth Airport, Site ID 009021*. Retrieved November 2023 via: http://www.bom.gov.au/climate/averages/tables/cw_009021_All.shtml

Bureau of Meteorology. (2023). *Climate and Weather Statistics – Maida Vale, Site ID 009182*. Retrieved November 2023 via: http://www.bom.gov.au/climate/averages/tables/cw_009021_All.shtml

Cherriman, S. (2022). *Hollowed Out?*. Perth, W.A.: Simon Cherriman.

Department of Agriculture, Water, and the Environment (DAWE). (2022). *Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black- cockatoo*. Retrieved from <https://www.dcceew.gov.au/sites/default/files/documents/referral-guideline-3-wa-threatened-black-cockatoo-species-2022.pdf>.

Department of Biodiversity, Conservation and Attractions (DBCA). (2016). *Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)*. Retrieved from <https://nationalmap.gov.au/>

Department of Biodiversity, Conservation and Attractions (DBCA). (2020). *Conservation Codes*. Retrieved from <https://www.dpaw.wa.gov.au/images/documents/plants-animals/threatened-species/Listings/Conservation%20code%20definitions.pdf>.

Department of Biodiversity, Conservation and Attractions (DBCA). (2023a). *Black Cockatoo Breeding Sites - Buffered (DBCA-063)*. Retrieved from: <https://nationalmap.gov.au/>

Department of Biodiversity, Conservation and Attractions (DBCA). (2023b). *Black Cockatoo Roosting Sites - Buffered (DBCA-064)*. Retrieved from: <https://nationalmap.gov.au/>

Department of Biodiversity, Conservation and Attractions (DBCA). (2023c). *Carnaby's Cockatoo Areas requiring investigation as feeding habitat in the Jarrah Forest IBRA Region (DBCA-057)*. Retrieved from: <https://nationalmap.gov.au/>

Department of Biodiversity, Conservation and Attractions (DBCA). (2023d). *Carnaby's Cockatoo Confirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA (DBCA-054)*. Retrieved from: <https://nationalmap.gov.au/>

Department of Biodiversity, Conservation and Attractions (DBCA). (2023e). *Carnaby's Cockatoo Unconfirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA regions (DBCA-055)*. Retrieved from: <https://nationalmap.gov.au/>

Department of Biodiversity, Conservation and Attractions (DBCA). (2023f). *NatureMap*. Prepared by the Species and Communities program for K. Grant and Natural Area for flora survey works.

Department of Biodiversity, Conservation and Attractions (DBCA). (2023g). *Threatened and Priority Ecological Communities Database Search for Forrestfield* retrieved 25/08/2023. Prepared by the Species and Communities program for K. Grant and Natural Area for flora survey works.

Department of Biodiversity, Conservation and Attractions (DBCA). (2023h). *Threatened and Priority Fauna Database Search for Forrestfield* retrieved 25/08/2023. Prepared by the Species and Communities program for K. Grant and Natural Area for fauna survey works.

Department of Biodiversity, Conservation and Attractions (DBCA). (2023i). *Threatened and Priority Flora Database Search for Forrestfield* retrieved 25/08/2023. Prepared by the Species and Communities program for K. Grant and Natural Area for flora survey works.

Department of Climate Change, Energy and the Environment (DCCEEW). (2023). *Protected Matters Search Tool*. Retrieved from <http://www.environment.gov.au/epbc/pmst/>.

Department of Environment and Conservation (2011). *Plants Used by Carnaby's Black Cockatoo*.

Department of the Environment and Energy (2016). *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community*. Retrieved from: <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/131-conservation-advice.pdf>

Department of the Environment and Energy (2019). *Approved Conservation Advice (incorporating listing advice) for the Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain ecological community*. Retrieved from: <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/153-conservation-advice.pdf>

Department of Primary Industries and Regional Development (DPIRD). (2023a). Declared plant requirements. Retrieved from <https://www.agric.wa.gov.au/declared-plants/declared-plant-requirements>

Department of Primary Industries and Regional Development (DPIRD). (2023b). *NRInfo for Western Australia: map application*. Retrieved from <https://www.agric.wa.gov.au/resource-assessment/nrinfo-western-australia>.

Department of Primary Industries and Regional Development (DPIRD). (2023c). Polyphagous shot-hole borer. Retrieved from <https://www.agric.wa.gov.au/borer>

Department of Planning, Lands and Heritage. (2023a). *Aboriginal Heritage Places (DPLH-001)*. Retrieved from <https://nationalmap.gov.au/>

Department of Planning, Lands and Heritage. (2023b). *Heritage Council WA - State Register (DPLH-006)*.

Retrieved from <https://nationalmap.gov.au/>

Department of Water and Environmental Regulation (DWER). (2023). *Clearing Regulations – Environmentally Sensitive Areas (DWER-046)*. Retrieved from <https://nationalmap.gov.au/>

Environmental Protection Authority. (2016). *Technical Guidance: Flora and Vegetation survey for Environmental Impact Assessment*. Retrieved from

http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf.

Environmental Protection Authority. (2020). *Technical Guidance: Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*. Retrieved from

https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA-Technical-Guidance-Vertebrate-Fauna-Surveys.pdf.

Government of Western Australia. (2019). *2018 South West Vegetation Complex Statistics. Current as of March 2019*. Perth, W.A.: Department of Biodiversity, Conservation and Attractions. Retrieved from

<https://catalogue.data.wa.gov.au/dataset/dbca>

Government of Western Australia. (2000). *Bush Forever (Vol. 2)*. Department of Environmental Protection, Perth, Western Australia.

Government of Western Australia. (2023). *inHerit -State heritage register*. Retrieved from

<http://inherit.stateheritage.wa.gov.au/Public/>.

Mitchell, D., Williams, K., & Desmond, A. (2002). *Swan Coastal Plain 2 (SWA2 –Swan Coastal Plain Subregion)*. Retrieved from <https://biodiversity-audit.dbca.wa.gov.au/#>

Western Australian (WA) Herbarium. (1998-). *FloraBase – The Western Australian Flora*. Retrieved from

<https://florabase.dpaw.wa.gov.au/>.

Appendix 1: PMST Report 10 km



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 29-Aug-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	69
Listed Migratory Species:	26

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	296
Commonwealth Heritage Places:	1
Listed Marine Species:	31
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	22
Regional Forest Agreements:	1
Nationally Important Wetlands:	3
EPBC Act Referrals:	50
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Forrestdale and thomsons lakes	Within 10km of Ramsar site	In buffer area only

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area	In feature area
Clay Pans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area	In buffer area only
Corymbia calophylla - Kingia australis woodlands on heavy soils of the Swan Coastal Plain	Endangered	Community known to occur within area	In buffer area only
Shrublands and Woodlands of the eastern Swan Coastal Plain	Endangered	Community known to occur within area	In buffer area only
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Botaurus poiciloptilus	Endangered	Species or species habitat likely to occur within area	In feature area
Australasian Bittern [1001]			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Zanda baudinii listed as Calyptorhynchus baudinii Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Roosting known to occur within area	In feature area
Zanda latirostris listed as Calyptorhynchus latirostris Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area	In feature area
FISH			
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
INSECT			
Leioproctus douglasiellus a short-tongued bee [66756]	Critically Endangered	Species or species habitat known to occur within area	In feature area
MAMMAL			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Dasyurus geoffroi Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area	In feature area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area	In buffer area only
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
OTHER			
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
PLANT			
Acacia anomala Grass Wattle, Chittering Grass Wattle [8153]	Vulnerable	Species or species habitat known to occur within area	In feature area
Acacia aphylla Leafless Rock Wattle [13553]	Vulnerable	Species or species habitat known to occur within area	In feature area
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat known to occur within area	In feature area
Anigozanthos viridis subsp. terraspectans Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Anthocercis gracilis Slender Tailflower [11103]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Austrostipa bronweniae listed as Austrostipa bronwenae [92773]	Endangered	Species or species habitat known to occur within area	In feature area
Austrostipa jacobsiana [87809]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Banksia mimica Summer Honeypot [82765]	Endangered	Species or species habitat known to occur within area	In feature area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat known to occur within area	In buffer area only
Calytrix breviseta subsp. breviseta Swamp Starflower [23879]	Endangered	Species or species habitat known to occur within area	In feature area
Chamelaucium lullfitzii listed as Chamelaucium sp. Gingin (N.G.Marchant 6) Gingin Wax [92777]	Endangered (listed as Chamelaucium sp. Gingin)	Species or species habitat may occur within area	In feature area
Conospermum undulatum Wavy-leaved Smokebush [24435]	Vulnerable	Species or species habitat known to occur within area	In feature area
Darwinia apiculata Scarp Darwinia [8763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Diplolaena andrewsii [6601]	Endangered	Species or species habitat likely to occur within area	In feature area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat known to occur within area	In feature area
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leafed Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area	In feature area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eremophila glabra subsp. chlorella [84927]	Endangered	Species or species habitat known to occur within area	In feature area
Eucalyptus x balanites Cadda Road Mallee, Cadda Mallee [87816]	Endangered	Species or species habitat may occur within area	In feature area
Goodenia arthrotricha [12448]	Endangered	Species or species habitat known to occur within area	In buffer area only
Grevillea curviloba subsp. incurva Narrow curved-leaf Grevillea [64909]	Endangered	Species or species habitat likely to occur within area	In feature area
Grevillea flexuosa Zig Zag Grevillea [2957]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Grevillea thelemanniana Spider Net Grevillea [32835]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Lepidosperma rostratum Beaked Lepidosperma [14152]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macarthuria keigheryi Keighery's Macarthuria [64930]	Endangered	Species or species habitat known to occur within area	In feature area
Ptilotus pyramidatus Pyramid Mulla-mulla [18216]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Synaphea sp. Fairbridge Farm (D.Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Synaphea sp. Pinjarra Plain (A.S.George 17182) [86878]	Endangered	Species or species habitat may occur within area	In feature area
Synaphea sp. Serpentine (G.R.Brand 103) [86879]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Thelymitra dedmaniarum Cinnamon Sun Orchid [65105]	Endangered	Species or species habitat may occur within area	In feature area
Thelymitra stellata Star Sun-orchid [7060]	Endangered	Species or species habitat known to occur within area	In feature area
Trithuria occidentalis Swan Hydatella [42224]	Endangered	Species or species habitat likely to occur within area	In buffer area only
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

SHARK

Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
--	------------------------	--	---------------------

Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
-----------------	---------------------	---------------	---------------

Migratory Marine Birds

Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Migratory Terrestrial Species			
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Defence		
Defence - AIRTC CANNINGTON [50232]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50231]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50229]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Defence - AIRTC CANNINGTON [50230]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50233]	WA	In buffer area only
Defence - BUSHMEAD RIFLE RANGE [50143]	WA	In buffer area only
Defence - BUSHMEAD TRAINING AREA [50260]	WA	In buffer area only
Defence - BUSHMEAD TRAINING AREA [50259]	WA	In buffer area only
Defence - BUSHMEAD TRAINING AREA [50258]	WA	In buffer area only
Defence - PALMER BARRACKS - SOUTH GUILDFORD [50180]	WA	In buffer area only
Defence - PALMER BARRACKS - SOUTH GUILDFORD [50179]	WA	In buffer area only
Defence - PALMER BARRACKS - SOUTH GUILDFORD [50177]	WA	In buffer area only
Defence - PALMER BARRACKS - SOUTH GUILDFORD [50176]	WA	In buffer area only
Defence - PALMER BARRACKS - SOUTH GUILDFORD [50178]	WA	In buffer area only
Unknown		
Commonwealth Land - [51255]	WA	In buffer area only
Commonwealth Land - [51254]	WA	In buffer area only
Commonwealth Land - [51921]	WA	In buffer area only
Commonwealth Land - [51261]	WA	In buffer area only
Commonwealth Land - [51308]	WA	In buffer area only
Commonwealth Land - [51278]	WA	In buffer area only
Commonwealth Land - [51260]	WA	In buffer area only
Commonwealth Land - [51516]	WA	In buffer area only
Commonwealth Land - [51257]	WA	In buffer area only
Commonwealth Land - [51515]	WA	In buffer area only
Commonwealth Land - [51256]	WA	In buffer area only
Commonwealth Land - [51359]	WA	In buffer area only
Commonwealth Land - [51259]	WA	In buffer area only
Commonwealth Land - [51303]	WA	In buffer area only
Commonwealth Land - [51258]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51295]	WA	In buffer area only
Commonwealth Land - [51294]	WA	In buffer area only
Commonwealth Land - [51297]	WA	In buffer area only
Commonwealth Land - [51358]	WA	In buffer area only
Commonwealth Land - [51181]	WA	In buffer area only
Commonwealth Land - [51180]	WA	In buffer area only
Commonwealth Land - [51187]	WA	In buffer area only
Commonwealth Land - [51186]	WA	In buffer area only
Commonwealth Land - [51183]	WA	In buffer area only
Commonwealth Land - [51182]	WA	In buffer area only
Commonwealth Land - [51252]	WA	In buffer area only
Commonwealth Land - [51366]	WA	In buffer area only
Commonwealth Land - [51251]	WA	In buffer area only
Commonwealth Land - [51250]	WA	In buffer area only
Commonwealth Land - [51218]	WA	In buffer area only
Commonwealth Land - [51369]	WA	In buffer area only
Commonwealth Land - [51185]	WA	In buffer area only
Commonwealth Land - [50816]	WA	In buffer area only
Commonwealth Land - [51195]	WA	In buffer area only
Commonwealth Land - [51355]	WA	In buffer area only
Commonwealth Land - [50817]	WA	In buffer area only
Commonwealth Land - [51367]	WA	In buffer area only
Commonwealth Land - [51189]	WA	In buffer area only
Commonwealth Land - [51368]	WA	In buffer area only
Commonwealth Land - [51188]	WA	In buffer area only
Commonwealth Land - [51191]	WA	In buffer area only
Commonwealth Land - [51192]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51193]	WA	In buffer area only
Commonwealth Land - [51194]	WA	In buffer area only
Commonwealth Land - [51253]	WA	In buffer area only
Commonwealth Land - [51190]	WA	In buffer area only
Commonwealth Land - [51330]	WA	In buffer area only
Commonwealth Land - [51249]	WA	In buffer area only
Commonwealth Land - [51334]	WA	In buffer area only
Commonwealth Land - [50866]	WA	In buffer area only
Commonwealth Land - [51335]	WA	In buffer area only
Commonwealth Land - [50828]	WA	In buffer area only
Commonwealth Land - [51332]	WA	In buffer area only
Commonwealth Land - [51241]	WA	In buffer area only
Commonwealth Land - [51333]	WA	In buffer area only
Commonwealth Land - [51242]	WA	In buffer area only
Commonwealth Land - [51225]	WA	In buffer area only
Commonwealth Land - [51338]	WA	In buffer area only
Commonwealth Land - [51280]	WA	In buffer area only
Commonwealth Land - [51224]	WA	In buffer area only
Commonwealth Land - [51162]	WA	In buffer area only
Commonwealth Land - [51227]	WA	In buffer area only
Commonwealth Land - [51336]	WA	In buffer area only
Commonwealth Land - [51244]	WA	In buffer area only
Commonwealth Land - [51226]	WA	In buffer area only
Commonwealth Land - [51337]	WA	In buffer area only
Commonwealth Land - [50867]	WA	In buffer area only
Commonwealth Land - [51248]	WA	In buffer area only
Commonwealth Land - [51372]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51365]	WA	In buffer area only
Commonwealth Land - [51364]	WA	In buffer area only
Commonwealth Land - [51361]	WA	In buffer area only
Commonwealth Land - [51360]	WA	In buffer area only
Commonwealth Land - [51363]	WA	In buffer area only
Commonwealth Land - [51362]	WA	In buffer area only
Commonwealth Land - [51339]	WA	In buffer area only
Commonwealth Land - [51922]	WA	In buffer area only
Commonwealth Land - [51197]	WA	In buffer area only
Commonwealth Land - [51977]	WA	In buffer area only
Commonwealth Land - [51427]	WA	In buffer area only
Commonwealth Land - [51928]	WA	In buffer area only
Commonwealth Land - [51271]	WA	In buffer area only
Commonwealth Land - [50839]	WA	In buffer area only
Commonwealth Land - [51198]	WA	In buffer area only
Commonwealth Land - [51309]	WA	In buffer area only
Commonwealth Land - [51911]	WA	In buffer area only
Commonwealth Land - [51907]	WA	In buffer area only
Commonwealth Land - [50821]	WA	In buffer area only
Commonwealth Land - [51910]	WA	In buffer area only
Commonwealth Land - [51906]	WA	In buffer area only
Commonwealth Land - [50820]	WA	In buffer area only
Commonwealth Land - [50949]	WA	In buffer area only
Commonwealth Land - [51912]	WA	In buffer area only
Commonwealth Land - [50838]	WA	In buffer area only
Commonwealth Land - [50827]	WA	In buffer area only
Commonwealth Land - [50826]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [50824]	WA	In buffer area only
Commonwealth Land - [51222]	WA	In buffer area only
Commonwealth Land - [51223]	WA	In buffer area only
Commonwealth Land - [51220]	WA	In buffer area only
Commonwealth Land - [51221]	WA	In buffer area only
Commonwealth Land - [51196]	WA	In buffer area only
Commonwealth Land - [51228]	WA	In buffer area only
Commonwealth Land - [51229]	WA	In buffer area only
Commonwealth Land - [51169]	WA	In buffer area only
Commonwealth Land - [51168]	WA	In buffer area only
Commonwealth Land - [51277]	WA	In buffer area only
Commonwealth Land - [51351]	WA	In buffer area only
Commonwealth Land - [51275]	WA	In buffer area only
Commonwealth Land - [51274]	WA	In buffer area only
Commonwealth Land - [51350]	WA	In buffer area only
Commonwealth Land - [51296]	WA	In buffer area only
Commonwealth Land - [51273]	WA	In buffer area only
Commonwealth Land - [51371]	WA	In buffer area only
Commonwealth Land - [51163]	WA	In buffer area only
Commonwealth Land - [51357]	WA	In buffer area only
Commonwealth Land - [51164]	WA	In buffer area only
Commonwealth Land - [51213]	WA	In buffer area only
Commonwealth Land - [51356]	WA	In buffer area only
Commonwealth Land - [51243]	WA	In buffer area only
Commonwealth Land - [51167]	WA	In buffer area only
Commonwealth Land - [51245]	WA	In buffer area only
Commonwealth Land - [51166]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51279]	WA	In buffer area only
Commonwealth Land - [51370]	WA	In buffer area only
Commonwealth Land - [50862]	WA	In buffer area only
Commonwealth Land - [50861]	WA	In buffer area only
Commonwealth Land - [51298]	WA	In buffer area only
Commonwealth Land - [51160]	WA	In buffer area only
Commonwealth Land - [51212]	WA	In buffer area only
Commonwealth Land - [50860]	WA	In buffer area only
Commonwealth Land - [51165]	WA	In buffer area only
Commonwealth Land - [51215]	WA	In buffer area only
Commonwealth Land - [51214]	WA	In buffer area only
Commonwealth Land - [51217]	WA	In buffer area only
Commonwealth Land - [51216]	WA	In buffer area only
Commonwealth Land - [51184]	WA	In buffer area only
Commonwealth Land - [51159]	WA	In buffer area only
Commonwealth Land - [51328]	WA	In buffer area only
Commonwealth Land - [51219]	WA	In buffer area only
Commonwealth Land - [51210]	WA	In buffer area only
Commonwealth Land - [51211]	WA	In buffer area only
Commonwealth Land - [50873]	WA	In feature area
Commonwealth Land - [50874]	WA	In feature area
Commonwealth Land - [51293]	WA	In buffer area only
Commonwealth Land - [51292]	WA	In buffer area only
Commonwealth Land - [51291]	WA	In buffer area only
Commonwealth Land - [51290]	WA	In buffer area only
Commonwealth Land - [50870]	WA	In buffer area only
Commonwealth Land - [50872]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51918]	WA	In buffer area only
Commonwealth Land - [51917]	WA	In buffer area only
Commonwealth Land - [50814]	WA	In buffer area only
Commonwealth Land - [51373]	WA	In buffer area only
Commonwealth Land - [51914]	WA	In buffer area only
Commonwealth Land - [51913]	WA	In buffer area only
Commonwealth Land - [51916]	WA	In buffer area only
Commonwealth Land - [51915]	WA	In buffer area only
Commonwealth Land - [51923]	WA	In buffer area only
Commonwealth Land - [51354]	WA	In feature area
Commonwealth Land - [51972]	WA	In buffer area only
Commonwealth Land - [51202]	WA	In buffer area only
Commonwealth Land - [51200]	WA	In buffer area only
Commonwealth Land - [51234]	WA	In buffer area only
Commonwealth Land - [51235]	WA	In buffer area only
Commonwealth Land - [51317]	WA	In buffer area only
Commonwealth Land - [51316]	WA	In buffer area only
Commonwealth Land - [51236]	WA	In buffer area only
Commonwealth Land - [51237]	WA	In buffer area only
Commonwealth Land - [51312]	WA	In buffer area only
Commonwealth Land - [51313]	WA	In buffer area only
Commonwealth Land - [51314]	WA	In buffer area only
Commonwealth Land - [51315]	WA	In buffer area only
Commonwealth Land - [51526]	WA	In buffer area only
Commonwealth Land - [51523]	WA	In buffer area only
Commonwealth Land - [51302]	WA	In buffer area only
Commonwealth Land - [51238]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51272]	WA	In buffer area only
Commonwealth Land - [51276]	WA	In buffer area only
Commonwealth Land - [51231]	WA	In buffer area only
Commonwealth Land - [51230]	WA	In buffer area only
Commonwealth Land - [51233]	WA	In buffer area only
Commonwealth Land - [51232]	WA	In buffer area only
Commonwealth Land - [51324]	WA	In buffer area only
Commonwealth Land - [51329]	WA	In buffer area only
Commonwealth Land - [51353]	WA	In buffer area only
Commonwealth Land - [51352]	WA	In buffer area only
Commonwealth Land - [51287]	WA	In buffer area only
Commonwealth Land - [51286]	WA	In buffer area only
Commonwealth Land - [51285]	WA	In buffer area only
Commonwealth Land - [51284]	WA	In buffer area only
Commonwealth Land - [51281]	WA	In buffer area only
Commonwealth Land - [51283]	WA	In buffer area only
Commonwealth Land - [51282]	WA	In buffer area only
Commonwealth Land - [50885]	WA	In buffer area only
Commonwealth Land - [51971]	WA	In buffer area only
Commonwealth Land - [51289]	WA	In buffer area only
Commonwealth Land - [51288]	WA	In buffer area only
Commonwealth Land - [51209]	WA	In buffer area only
Commonwealth Land - [51208]	WA	In buffer area only
Commonwealth Land - [51207]	WA	In buffer area only
Commonwealth Land - [51206]	WA	In buffer area only
Commonwealth Land - [51205]	WA	In buffer area only
Commonwealth Land - [50836]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [50835]	WA	In buffer area only
Commonwealth Land - [51924]	WA	In buffer area only
Commonwealth Land - [50837]	WA	In buffer area only
Commonwealth Land - [51310]	WA	In buffer area only
Commonwealth Land - [50834]	WA	In buffer area only
Commonwealth Land - [51311]	WA	In buffer area only
Commonwealth Land - [51318]	WA	In buffer area only
Commonwealth Land - [51319]	WA	In buffer area only
Commonwealth Land - [51374]	WA	In buffer area only
Commonwealth Land - [51203]	WA	In buffer area only
Commonwealth Land - [51204]	WA	In buffer area only
Commonwealth Land - [51344]	WA	In buffer area only
Commonwealth Land - [51347]	WA	In buffer area only
Commonwealth Land - [51175]	WA	In buffer area only
Commonwealth Land - [51343]	WA	In buffer area only
Commonwealth Land - [51340]	WA	In buffer area only
Commonwealth Land - [51341]	WA	In buffer area only
Commonwealth Land - [51346]	WA	In buffer area only
Commonwealth Land - [51348]	WA	In buffer area only
Commonwealth Land - [51349]	WA	In buffer area only
Commonwealth Land - [51270]	WA	In buffer area only
Commonwealth Land - [51342]	WA	In buffer area only
Commonwealth Land - [50850]	WA	In buffer area only
Commonwealth Land - [51267]	WA	In buffer area only
Commonwealth Land - [51264]	WA	In buffer area only
Commonwealth Land - [51265]	WA	In buffer area only
Commonwealth Land - [51172]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51174]	WA	In buffer area only
Commonwealth Land - [51345]	WA	In buffer area only
Commonwealth Land - [51177]	WA	In buffer area only
Commonwealth Land - [51170]	WA	In buffer area only
Commonwealth Land - [51173]	WA	In buffer area only
Commonwealth Land - [51176]	WA	In buffer area only
Commonwealth Land - [51171]	WA	In buffer area only
Commonwealth Land - [51909]	WA	In buffer area only
Commonwealth Land - [51199]	WA	In buffer area only
Commonwealth Land - [51246]	WA	In buffer area only
Commonwealth Land - [51908]	WA	In buffer area only
Commonwealth Land - [51247]	WA	In buffer area only
Commonwealth Land - [50859]	WA	In buffer area only
Commonwealth Land - [51986]	WA	In buffer area only
Commonwealth Land - [51307]	WA	In buffer area only
Commonwealth Land - [50842]	WA	In buffer area only
Commonwealth Land - [50845]	WA	In buffer area only
Commonwealth Land - [50841]	WA	In buffer area only
Commonwealth Land - [50843]	WA	In buffer area only
Commonwealth Land - [51920]	WA	In buffer area only
Commonwealth Land - [51305]	WA	In buffer area only
Commonwealth Land - [51375]	WA	In buffer area only
Commonwealth Land - [51263]	WA	In buffer area only
Commonwealth Land - [51262]	WA	In buffer area only
Commonwealth Land - [51304]	WA	In buffer area only
Commonwealth Land - [51299]	WA	In buffer area only
Commonwealth Land - [51266]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51179]	WA	In buffer area only
Commonwealth Land - [51178]	WA	In buffer area only
Commonwealth Land - [51525]	WA	In buffer area only
Commonwealth Land - [51322]	WA	In buffer area only
Commonwealth Land - [50847]	WA	In buffer area only
Commonwealth Land - [50844]	WA	In buffer area only
Commonwealth Land - [51323]	WA	In buffer area only
Commonwealth Land - [50853]	WA	In buffer area only
Commonwealth Land - [50849]	WA	In buffer area only
Commonwealth Land - [50819]	WA	In buffer area only
Commonwealth Land - [51301]	WA	In buffer area only
Commonwealth Land - [51927]	WA	In buffer area only
Commonwealth Land - [50950]	WA	In buffer area only
Commonwealth Land - [51300]	WA	In buffer area only
Commonwealth Land - [51201]	WA	In buffer area only
Commonwealth Land - [51269]	WA	In buffer area only
Commonwealth Land - [51268]	WA	In buffer area only
Commonwealth Land - [51325]	WA	In buffer area only
Commonwealth Land - [51326]	WA	In buffer area only
Commonwealth Land - [51306]	WA	In buffer area only
Commonwealth Land - [51321]	WA	In buffer area only
Commonwealth Land - [50848]	WA	In buffer area only
Commonwealth Land - [51327]	WA	In buffer area only
Commonwealth Land - [51320]	WA	In buffer area only

Commonwealth Heritage Places			[Resource Information]
Name	State	Status	Buffer Status
Historic Victoria Park Post Office	WA	Listed place	In buffer area only

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In buffer area only
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat likely to occur within area overfly marine area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In feature area
Mammal			
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Beelu	National Park	WA	In buffer area only
Canning River	Management Area	WA	In buffer area only
Dundas Road	Nature Reserve	WA	In buffer area only
Gooseberry Hill	National Park	WA	In buffer area only
Greenmount	National Park	WA	In buffer area only
Helena River	Management Area	WA	In buffer area only
Kalamunda	National Park	WA	In buffer area only
Kenwick Wetlands	Nature Reserve	WA	In buffer area only
Korung	National Park	WA	In buffer area only
Lesmurdie Falls	National Park	WA	In buffer area only
NTWA Bushland covenant (0074)	Conservation Covenant	WA	In buffer area only
Swan River	Management Area	WA	In buffer area only
Unnamed WA23076	Nature Reserve	WA	In buffer area only
Unnamed WA24657	Conservation Park	WA	In buffer area only
Unnamed WA29815	5(1)(h) Reserve	WA	In buffer area only
Unnamed WA36440	Management Area	WA	In buffer area only
Unnamed WA37997	Nature Reserve	WA	In buffer area only
Unnamed WA45106	5(1)(g) Reserve	WA	In buffer area only
Unnamed WA49079	Nature Reserve	WA	In buffer area only
Unnamed WA49299	Nature Reserve	WA	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Unnamed WA49362	Nature Reserve	WA	In buffer area only
Unnamed WA49363	Conservation Park	WA	In buffer area only

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
South West WA RFA	Western Australia	In buffer area only

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State	Buffer Status
Brixton Street Swamps	WA	In buffer area only
Perth Airport Woodland Swamps	WA	In buffer area only
Swan-Canning Estuary	WA	In buffer area only

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Land Clearing for Light Industrial Development	2022/09419		Completed	In buffer area only
Residential subdivision of Lot 126 Lawnbrook Road, Walliston	2021/9105		Completed	In buffer area only
Southern Link Road Stage 3 City of Canning	2020/8809		Assessment	In buffer area only

Controlled action

Airport & Freight Access Gateway	2010/5384	Controlled Action	Post-Approval	In feature area
Bushmead Residential Development, Hazelmere, WA	2015/7414	Controlled Action	Post-Approval	In buffer area only
Clearing for orchard expansion, Lot 400 Canning Road, Carmel, WA	2016/7647	Controlled Action	Completed	In buffer area only
Construction of Residential Dwelling, Ozone Terrace, Kalamunda	2006/3147	Controlled Action	Post-Approval	In buffer area only
Development of an Integrated Aged Care Facility, Kalumunda, WA	2013/6990	Controlled Action	Completed	In buffer area only
Garden Street road extension, Huntingdale, city of Gosnells, WA	2016/7735	Controlled Action	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
National Lifestyle Village, Lot 97 Adelaide Street	2009/5141	Controlled Action	Post-Approval	In buffer area only
Native vegetation clearing of Lot 21 Webster Road for Industrial Development	2011/6186	Controlled Action	Post-Approval	In buffer area only
Natural Gas Pipeline Expansion	2006/2813	Controlled Action	Post-Approval	In feature area
Nava-1 Cable System	2001/510	Controlled Action	Completed	In buffer area only
Residential Estate at Lot 1580 Warton Road, Southern River	2004/1471	Controlled Action	Post-Approval	In buffer area only
Roe Highway and Great Eastern Highway Bypass Grade Separation Interchange, Hazelmere WA	2020/8784	Controlled Action	Further Information Request	In buffer area only
Roe Highway and Kalamunda Road Interchange upgrade, WA	2018/8316	Controlled Action	Post-Approval	In buffer area only
Thornlie-Cockburn Link Project, WA	2018/8188	Controlled Action	Post-Approval	In buffer area only
Tonkin Highway Grade Separated Interchanges	2019/8529	Controlled Action	Post-Approval	In feature area
Not controlled action				
Berkshire Road and Roe Highway Interchange, Forrestfield, East Perth, WA	2014/7243	Not Controlled Action	Completed	In buffer area only
Burslem Drive Bridge Duplication Over Canning River, Maddington, WA	2014/7115	Not Controlled Action	Completed	In buffer area only
Clearing of Lot 400 Canning Road, Carmel, WA	2017/7979	Not Controlled Action	Completed	In buffer area only
Commercial development of Lot 106 Wright Road, Forrestdale WA	2003/1255	Not Controlled Action	Completed	In buffer area only
Community Centre Project, Kalamunda, WA	2019/8473	Not Controlled Action	Completed	In buffer area only
Construction of international rowing course and commercial/residential areas	2003/1034	Not Controlled Action	Completed	In buffer area only
Construction of the Perth Stadium and associated infrastructure	2013/6740	Not Controlled Action	Completed	In buffer area only
Curtin Main Street Project - Transformation of Bentley Campus to a major urban centre WA	2013/7044	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Development of Crown Towers Five Star Quality Hotel	2012/6695	Not Controlled Action	Completed	In buffer area only
Eradication of the European House Borer, Perth metropolitan area, WA	2009/5027	Not Controlled Action	Completed	In buffer area only
extensions to minerals laboratory	2005/2285	Not Controlled Action	Completed	In buffer area only
Forrestfield Airport Link, WA	2015/7399	Not Controlled Action	Completed	In buffer area only
Hartfield Park Sporting Field Extension	2013/7008	Not Controlled Action	Completed	In feature area
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Industrial Development (multiple lots) Edward Street, Kenwick, WA	2018/8231	Not Controlled Action	Completed	In buffer area only
Pipeline Extension, Hazelmere and Helena Valley, WA	2018/8239	Not Controlled Action	Completed	In buffer area only
Residential Development - Lot 608 Dixon Road, Kalamundah, WA	2014/7389	Not Controlled Action	Completed	In buffer area only
Residential development of Lots 302, 308, 320 and part of Lot 9502, Hawtin Rd, Forrestfield, WA	2016/7770	Not Controlled Action	Completed	In buffer area only
Ridge Hill Road intersection modification and offsite water main installation, Gooseberry Hill, WA	2020/8842	Not Controlled Action	Completed	In buffer area only
Roe Highway Noise Wall, High Wycombe, WA	2014/7149	Not Controlled Action	Completed	In buffer area only
To develop a residential development at Glyde Road, Lesmurdie, WA	2013/7096	Not Controlled Action	Completed	In buffer area only
Tonkin Highway Extension	2001/470	Not Controlled Action	Completed	In buffer area only
Tonkin Highway Upgrade, Guildford Road to Great Eastern Highway, WA	2019/8545	Not Controlled Action	Completed	In buffer area only
Translocation of orchids (Caladenia huegelii) from Roe Hway Reserve	2002/781	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Wungong Transfer Mains Project	2007/3532	Not Controlled Action	Completed	In buffer area only
Yule Brook Main Drain Flood Mitigation Works	2019/8572	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Commercial Estate and Aeronautical Infrastructure Development, Precincts 2A & 2B	2006/3021	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
South West Metropolitan Railway Project	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
State Football Centre	2020/8824	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Commercial development of Lot 414 Grove Road, Kenwick	2021/9022	Referral Decision	Referral Publication	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

[© Commonwealth of Australia](#)



Department of Climate Change, Energy, the Environment and Water


GPO Box 3090


Canberra ACT 2601 Australia





+61 2 6274 1111



Appendix 2: Significant Species Guide



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Acacia anomala</i> Photos: B.R. Maslin, D. Contes & S.D. Hopper</p>	Grass Wattle	Slender, rush-like shrub, 0.2-0.5 m high. Fl. Yellow.	Aug to Sep.	Lateritic soils. Slopes	VU	N
 <p><i>Acacia aphylla</i> Photos: S.D. Hopper & B.R. Maslin</p>	Leafless Rock Wattle	Divaricately branched, spinescent, glaucous shrub, 0.9-2.5 m high. Fl. Yellow.	Aug to Oct.	Sand, loam, clay loam. Granite outcrops, hills.	T/VU	N
<i>Acacia drummondii</i> subsp. <i>affinis</i>		Erect shrub, 0.3-1 m high. Fl. Yellow.	Jul to Aug.	Lateritic gravelly soils.	P3	N
<i>Acacia horridula</i>		Harsh, slender, single-stemmed shrub, 0.3-0.6(-1) m high. Fl. Yellow.	May to Aug.	Gravelly soils over granite,	P3	N





Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
				sand. Rocky hillsides.		
<i>Acacia lasiocarpa</i> var. <i>bracteolata</i> long peduncle variant (G.J. Keighery 5026)		Shrub, 0.4-1.5 m high. Fl. Yellow.	May or Aug.	Grey or black sand over clay. Swampy areas, winter wet lowlands.	P1	N
<i>Acacia oincophylla</i> subsp. <i>oincophylla</i>		Shrub, 0.9-2.5 m high, 'minni-ritchi' bark, phyllodes mostly 8-13 cm long, 1-2 mm wide. Fl. Yellow.	Aug to Oct.	Granitic soils.	P3	N
		Shrub, 0.5-2.5(-3) m high, 'minni-ritchi' bark, phyllodes 4-9 cm long, 3-6 mm wide. Fl. Yellow.	Aug to Nov or Nov to Dec.	Granitic soils, occasionally on laterite.	P4	N
<i>Allocasuarina grevilleoides</i>		Dioecious, lignotuberous shrub, 0.15-0.4 m high.	-	Sand over laterite, gravel.	P3	Y



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Andersonia gracilis</i> Photos: K. Atkins & M. Hislop</p>	Slender Andersonia	Slender erect or open straggly shrub, 0.1-0.5(-1) m high. Fl. white-pink-purple.	Sep to Nov.	White/grey sand, sandy clay, gravelly loam. Winter-wet areas, near swamps.	T	N
<i>Andersonia</i> sp. <i>Blepharifolia</i> (F. & J. Hort 1919)					P2	N
<i>Angianthus micropodioides</i>		Erect or decumbent annual, herb, 0.03-0.15 m high. Fl. yellow-white.	Nov to Dec or Jan to Feb.	Saline sandy soils. River edges, saline depressions, claypans.	P3	N


Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <small><i>Anthocercis gracilis</i></small>	 <small>Photos: S.D. Hopper & J.L. Robson</small>	Slender Tailflower	Erect, spindly shrub, to 0.6(-1) m high. Fl. yellow-green.	Sep to Oct.	Sandy or loamy soils. Granite outcrops.	T/VU N
 <small><i>Aponogeton hexatepalus</i></small>	 <small>Photos: J.L. Robson & A.P. Brown</small>	Stalked Water Ribbon	Rhizomatous or cormous, aquatic perennial, herb, leaves floating. Fl. green-white.	Jul to Oct.	Mud. Freshwater: ponds, rivers, claypans.	P4 N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Asteridea gracilis</i> Photo: H. Bowler</p>		Annual, herb, 0.15-0.35 m high. Fl. white-pink.	Sep to Dec.	Sand, clay, gravelly soils.	P3	Y
<i>Austrostipa bronweniae</i> listed as <i>Austrostipa bronwenae</i>			?	Per Herb	EN	N
<i>Babingtonia urbana</i>					P3	N
 <p><i>Banksia mimica</i> Photos: A.P. Brown & S. Patrick</p>	Summer Honeypot	Prostrate, lignotuberous shrub, 0.15-0.4 m high. Fl. yellow-brown.	Dec or Jan to Feb.	White or grey sand over laterite, sandy loam.	EN	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Banksia pteridifolia</i> subsp. <i>vernalis</i> Photos: M. Pieroni</p>		Prostrate, lignotuberous shrub, to 0.4 m high. Fl. cream-white/yellow.	Sep to Oct.	White/grey sand over laterite.	P3	N
 <p><i>Beaufortia purpurea</i> Photos: L. Anderson & K.R. Thiele</p>	Purple Beaufortia	Erect or spreading shrub, 0.3-1.5 m high. Fl. red-purple.	Oct to Dec or Jan to Feb.	Lateritic or granitic soils. Rocky slopes.	P3	N
<i>Bolboschoenus fluviatilis</i>					P1	N
<i>Boronia humifusa</i>		Low-growing, wiry perennial, herb, 0.1-0.2 m high. Fl. pink/red.	Jun or Sep.	Gravelly clay loam over laterite. Jarrah-marri open forest.	P1	Y



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
  <p><i>Byblis gigantea</i> Photos: B.A. Fuhrer & J. Hort</p>	Rainbow Plant	Small, branched perennial, herb (or sub-shrub), to 0.45 m high. Fl. pink-purple/white.	Sep to Dec or Jan.	Sandy-peat swamps. Seasonally wet areas.	P3	N
  <p><i>Caladenia huegelii</i> Photos: I. & M. Greeve & J.L. Robson</p>	Grand Spider-orchid	Tuberous, perennial, herb, 0.25-0.6 m high. Fl. green & cream & red.	Sep to Oct.	Grey or brown sand, clay loam.	EN	Y
<i>Calandrinia uncinella</i>					P1	Y

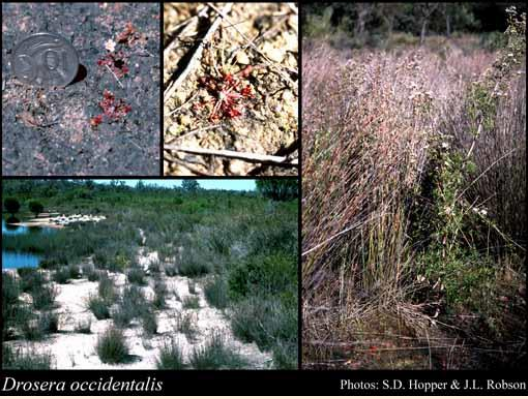

Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Calectasia grandiflora</i> Photos: P.J. Davies, M. Hislop</p>	Blue Tinsel Lily	Rhizomatous, perennial, herb (or undershrub), to 0.65 m high, without stilt roots. Fl. blue/purple.	Jun to Nov.	White, grey or yellow sand, sandy clay, gravel, laterite, granite. Swampy areas, rock outcrops, flats, slopes, ridges.	P2	Y
<i>Calothamnus accedens</i>		Erect & slender shrub, to 1.8 m high. Fl. pink-red.	-	Sandy soils over laterite. Road verge	P4	N
 <p><i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i> Photos: A. D. Cranford, M. Hancock & W. McGrath</p>		Erect, multi-stemmed shrub, 1-2 m high. Fl. red.	Jun to Aug.	Clay over granite, lateritic soils. Hillsides.	P4	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Calytrix breviseta</i> subsp. <i>breviseta</i> Photos: A.P. Brown, D. Coates & E. Holland</p>	Swamp Starflower	Shrub, 0.4-1 m high. Fl. purple-blue.	Oct to Nov.	Sandy clay. Swampy flats..	EN	Y
<i>Carex tereticaulis</i>		Monoecious, rhizomatous, tufted perennial, grass-like or herb (sedge), 0.7 m high. Fl. brown.	Sep to Oct.	Black peaty sand.	P3	N
<i>Chamaescilla gibsonii</i>		Clumped tuberous, herb. Fl. blue.	Sep	Clay to sandy clay. Winter-wet flats, shallow water-filled claypans	P3	N
<i>Comesperma griffinii</i>		Annual or perennial, herb, to 0.15 m high. Fl. white.	Oct.	Yellow or grey sand. Plains.	P2	N
<i>Comesperma rhadinocarpum</i>	Slender-fruited Comesperma	Perennial, herb. Fl. blue.	Oct to Nov.	Sandy soils.	P3	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
<i>Commersonia</i> sp. Lesmurdie (A.A. Mitchell 11429)					P2	N
 <p><i>Conospermum undulatum</i> Photos: A.D. Crawford & K.R. Thiele</p>		Erect, compact shrub, 0.6-2 m high. Fl. white-other.	May to Oct.	Grey or yellow-orange clayey sand.	T	Y
 <p><i>Cyanicula xixioides</i> subsp. <i>xixioides</i> Photos: I. & M. Greeve & G. Brumbauer</p>	Yellow China Orchid	Tuberous, perennial, herb, 0.05-0.15 m high. Fl. yellow.	Aug to Oct.	Laterite, gravel.	P4	N
<i>Cyanothamnus tenuis</i>	Blue Boronia				P4	N

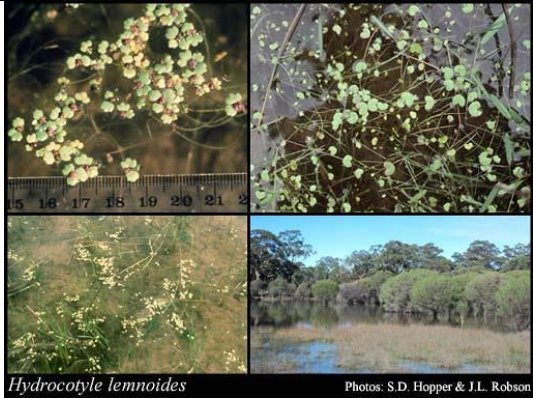
Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Darwinia apiculata</i> Photos: J.L. Robson</p>	Scarp Darwinia	Densely branched shrub, 0.4-0.5 m high. Fl. green & yellow/red.	Oct.	Lateritic soils.	EN	N
<i>Diuris brevis</i>	Short-nosed Donkey Orchid				P2	N
 <p><i>Diuris drummondii</i> Photos: A. P. Brown and I & M Greeve</p>	Tall Donkey Orchid	Tuberous, perennial, herb, 0.5-1.05 m high. Fl. yellow.	Nov to Dec or Jan.	Low-lying depressions, swamps.	VU	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Diuris purdiei</i></p> <p>Photos: I. & M. Greeve & S.D. Hopper</p>	Purdie's Donkey-orchid	Tuberous, perennial, herb, 0.15-0.35 m high. Fl. yellow.	Sep to Oct.	Grey-black sand, moist. Winter-wet swamps.	EN	N
 <p><i>Dodonaea hackettiana</i></p> <p>Photos: D. Bright, I.R. Dixon & S.J. Patrick</p>	Hackett's Hopbush	Erect shrub or tree, 1-5 m high. Fl. yellow-green/red.	Jul to Oct.	Sand. Outcropping limestone.	P4	N


Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Drosera occidentalis</i> Photos: S.D. Hopper & J.L. Robson</p>	Western Sundew	Fibrous-rooted, rosetted perennial, herb, to 0.025 m high. Fl. pink/white,	Oct to Dec or Jan.	-	P4	Y
 <p><i>Eleocharis keigheryi</i> Photo: G.J. Keighery</p>		Rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 m high. Fl. green.	Aug to Nov..	Clay, sandy loam. Emergent in freshwater: creeks, claypans	VU	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Eremophila glabra</i> subsp. <i>chlorella</i> Photos: A.P. Brown</p>		Prostrate & spreading or sprawling shrub, 0.2-1 m high. Fl. green-yellow.	Jul to Nov.	Sandy clay. Winter-wet depressions.	EN	N
<i>Eryngium pinnatifidum</i> subsp. <i>Palustre</i> (G.J. Keighery 13459)					P3	N
 <p><i>Goodenia arthrotricha</i> Photo: H. Bowler</p>		Erect perennial, herb, to 0.4 m high. Fl. blue.	Oct to Nov.	Gravel. Granite rocks, slopes.	EN	N
<i>Grevillea dissectifolia</i> (Syn. <i>Grevillea manglesii</i> subsp. <i>dissectifolia</i>)					P3	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Grevillea thelemanniana</i> Photo: L. Anderson</p>	Spider Net Grevillea	Spreading, lignotuberous shrub, 0.3-1.5 m high. Fl. pink-red.	May to Nov.	Sand, sandy clay. Winter-wet low-lying flats.	CR	N
<i>Haemodorum loratum</i>		Bulbaceous, perennial, herb, 0.45-1.2(-2) m high. Fl. black/brown-black/green.	Nov.	Grey or yellow sand, gravel.	P3	Y
 <p><i>Halganina corymbosa</i> Photo: H. Bowler</p>		Erect shrub, 0.35-1 m high. Fl. blue-purple.	Aug to Nov.	Gravelly soils, soils over granite.	P3	N

Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
<i>Haloragis scoparia</i>		Perennial, herb, 0.3-0.6 m high.			P1	N
					P4	N
<i>Isopogon autumnalis</i>	Autumn Isopogon				P3	N
<i>Isotropis cuneifolia</i> subsp. <i>glabra</i>		Prostrate to ascending, spreading perennial, herb or shrub, 0.05-0.15 m high. Fl. yellow/orange & red.	Sep.	Sand, clay loam. Winter-wet flats.	P3	N


Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Jacksonia gracillima</i> Photos: R. Davis</p>		Prostrate, spreading or scrambling, shrub, spindly shrub	Oct-Nov		P3	N
 <p><i>Jacksonia sericea</i> Photo: I.R. Dixon</p>	Waldjumi	Low spreading shrub, to 0.6 m high. Fl. orange.	Dec or Jan to Feb.	Calcareous & sandy soils.	P4	N
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>		Tufted perennial, herb, 0.15-0.25 m high. Fl. white-green.	Sep.	Grey-white-yellow sand. Flats, seasonally-wet sites.	P2	N


Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Lasiopetalum bracteatum</i> Photos: B. A. Fuhrer and A. Ireland</p>	Helena Velvet Bush	Erect, open shrub, 0.4-1.5 m high. Fl. pink-purple.	Aug to Nov.	Sandy clay, clay, lateritic gravel. Along drainage lines, creeks, gullies, granite outcrops.	P3	N
<i>Lasiopetalum glutinosum</i> subsp. <i>Glutinosum</i>					P3	N
<i>Lepidosperma rostratum</i>		Rhizomatous, tufted perennial, grass-like or herb (sedge), 0.5 m high. Fl. brown.		Peaty sand, clay.	EN	N
<i>Lepyrodia curvescens</i>		Dioecious, shortly creeping, tufted rhizomatous, herb, 0.24-0.4 m high, rhizomes on surface or to 1 cm deep.	Sep to Nov.	Sand, laterite. Seasonally inundated swampland.	P2	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Levenhookia preissii</i> Photo: J. Stevens</p>	Preiss's Stylewort	Annual (ephemeral), herb, 0.03-0.17 m high. Fl. pink-red.	Sep to Dec or Jan.	Grey or black, peaty sand. Swamps.	P1	N
 <p><i>Macarthuria keigheryi</i> Photos: G.J. Keighery</p>		Erect or spreading perennial, herb or shrub, 0.2-0.4 m high, 0.3-0.6 m wide.	Sep to Dec or Feb to Mar.	White or grey sand.	EN	N
<i>Meionectes tenuifolia</i>					P3	N
<i>Melaleuca viminalis</i>	Wongan Melaleuca				P2	N
<i>Microtis quadrata</i>	South Coast Mignonette Orchid				P4	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
<i>Morelotia australiensis</i>	Southern Tetraria				T	N
<i>Myriophyllum echinatum</i>		Erect annual, herb, 0.02-0.03 m high. Fl. red.	Nov.	Clay. Winter-wet flats.	P3	N
<i>Ornduffia submersa</i>					P4	N
 <p><i>Pimelea rara</i> Photos: H. Bowler, S.J. Patrick & J.L. Robson</p>	Summer Pimelea	Shrub, 0.2-0.35 m high. Fl. white.	Dec or Jan.	Lateritic soils.	P4	N
 <p><i>Pithocarpa corymbulosa</i> Photos: A. Cawley</p>	Corymbose Pithocarpa	Erect to scrambling perennial, herb, 0.5-1 m high. Fl. white.	Jan to Apr.	Gravelly or sandy loam. Amongst granite outcrops.	P3	N



Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
<i>Platysace ramosissima</i>		Perennial, herb, to 0.3 m high. Fl. white-cream.	Oct to Nov.	Sandy soils.	P3	N
<i>Poranthera moorokatta</i>					P2	N
<i>Ptilotus pyramidatus</i>		Small herb. Fl. white.			T	N
<i>Ptilotus sericostachyus</i> subsp. <i>roseus</i>		Prostrate to ascending perennial, herb. Fl. pink-white.	Sep to Dec.		PE	N
<i>Rytidosperma racemosum</i> var. <i>racemosum</i>					P2	N
<i>Schoenus benthamii</i>		Tufted perennial, grass-like or herb (sedge), 0.15-0.45 m high. Fl. brown.	Oct to Nov.	White, grey sand, sandy clay. Winter-wet flats, swamps.	P3	N
<i>Schoenus capillifolius</i>		Semi-aquatic tufted annual, grass-like or herb (sedge), 0.05 m high. Fl. green.	Oct to Nov.	Brown mud. Claypans.	P3	N
<i>Schoenus loliaceus</i>					P2	N
<i>Schoenus natans</i>	Floating Bog-rush	Annual, grass-like or herb (sedge), 0.03-0.06 m high.	Aug to Nov.	Sandy soils. Winter-wet depressions.	P4	N
<i>Schoenus pennisetis</i>		Tufted annual, grass-like or herb (sedge), 0.05-0.15 m high. Fl. purple-black.	Aug to Sep.	Grey or peaty sand, sandy clay. Swamps, winter-wet depressions.	P3	N

Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
<i>Schoenus</i> sp. Beaufort (G.J. Keighery 6291)		Annual, grass-like or herb (sedge), ca 0.05 m high. Fl. green.		Mud. Winter-wet claypans.	P1	N
<i>Schoenus</i> sp. Waroona (G.J. Keighery 12235)		Tufted annual, grass-like or herb (sedge), 0.02-0.06 m high. Fl. brown-red-green.	Oct to Nov.	Clay or sandy clay. Winter-wet flats.	P3	N
		Erect, slender perennial, herb, to 1.5 m high. Fl. yellow.	Sep to Nov.	Peaty sand. Swamps, slopes.	P1	N
<i>Senecio leucoglossus</i>		Erect annual, herb, to 1.3 m high. Fl. white.	Aug to Dec.	Gravelly lateritic or granitic soils. Granite outcrops, slopes.	P4	N
<i>Sporobolus blakei</i>		Tufted perennial, grass-like or herb, 0.45-0.6 m high. Fl. green-purple.	Mar or Jun to Jul.	Red sandy clay, loam. Creeks.	P3	N

Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
<i>Stackhousia</i> sp. Red-blotched corolla (A. Markey 911)					P3	N
<i>Stylidium aceratum</i>		Fibrous rooted annual, herb, 0.05-0.09 m high, leaves spatulate. Fl. pink/white.	Oct to Nov.	Sandy soils. Swamp heathland.	P3	Y
 <p><i>Stylidium longitubum</i> Photos: M. Hislop and P.G. Armstrong</p>	Jumping Jacks	Erect annual (ephemeral), herb, 0.05-0.12 m high. Fl. pink.	Oct to Dec.	Sandy clay, clay. Seasonal wetlands.	P4	N
<i>Stylidium striatum</i>	Fan-leaved Triggerplant	Rosetted perennial, herb, 0.15-0.55 m high, Leaves erect, oblanceolate to spatulate, 1.5-4 cm long, 1.5-6 mm wide, apex acute to acuminate, margin entire, glabrous, striate. Scape sparingly glandular on inflorescence axis, glabrous below. Inflorescence racemose. Fl. yellow.	Oct to Nov.	Brown clay loam over laterite. Hillslopes. Jarrah/Marri forest, Wandoo woodland.	P4	Y
<i>Styphelia filifolia</i>					P3	N

Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Synaphea</i> sp. Fairbridge Farm (D. Papenfus 696) Photos: R. Butcher</p>	Selena's Synaphea	Dense, clumped shrub, to 0.3 m high, to 0.4 m wide. Fl. yellow.	Oct.	Sandy with lateritic pebbles. Near winter-wet flats, in low woodland with weedy grasses.	CR	N
 <p><i>Thelymitra magnifica</i> ms Photos: J. Brown</p>	Crystal Brook Star Orchid	Perennial, herb.		Stony ridges.	T	Y

Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Thelymitra stellata</i> Photos: A.P. Brown & I. M. Greeve</p>	Star Sun-orchid	Tuberous, perennial, herb, 0.15-0.25 m high. Fl. yellow & brown.	Oct to Nov.	Sand, gravel, lateritic loam.	EN	Y
 <p><i>Thysanotus anceps</i> Photos: A. Ireland</p>		Rhizomatous, leafless perennial, herb, to 0.4 m high. Fl. purple.	Oct to Dec.	White or grey sand, lateritic gravel, laterite.	P3	Y

Species Name	Common Name	Description	Flowering Period	Habitat Type	Cons code	Likelihood
 <p><i>Thysanotus cymosus</i> Photo: N.H. Brittan</p>		Caespitose perennial, herb (with fibrous roots with ellipsoidal tubers), to 0.3 m high. Fl. purple.	Sep to Oct.	Clay, granitic or lateritic sand.	P3	Y
 <p><i>Verticordia lindleyi</i> subsp. <i>lindleyi</i> Photos: G. Coekerton</p>		Erect shrub, 0.2-0.75 m high. Fl. pink.	May or Nov to Dec or Jan.	Sand, sandy clay. Winter-wet depressions.	P4	Y

*Images sourced from FloraBase (WA Herbarium 1998-) and World Wide Wattle (DBCA 2023d)

Appendix 3: 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 evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or

Conservation Code	Name	Description
		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.
2	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.
3	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
4	Priority Four	Rare or near threatened and other species in need of monitoring.

(Source: DBCA, 2020a)

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

(Source: DBCA, 2019)

Appendix 4: Quadrat Data

Quadrat No.:	MS01
Survey Date:	13/10/2023
Personnel:	KE, TC
Northing:	6459549
Easting:	406093
Topography:	Flat
Aspect:	South
Slope:	<1
Soil:	Brown Sand
Gravel:	1%
Rock:	0%
Leaf Litter:	2%
Bare Ground:	<1%
Drainage:	Good
Condition:	Good



Notes: *Eucalyptus marginata* (Jarrah) and *Allocasuarina fraseriana* (Sheoak)
Open Woodland

Species	Cover (%)	Height (m)
<i>*Arctotheca calendula</i>	<0.5	0.1
<i>*Briza maxima</i>	5	0.2
<i>*Ehrharta calycina</i>	0.5	0.5
<i>*Ehrharta longiflora</i>	0.5	0.1
<i>*Hypochaeris glabra</i>	<0.5	0.1
<i>*Ipomoea indica</i>	<0.5	0.2
<i>*Sonchus oleraceus</i>	<0.5	0.1
<i>*Ursinia anthemoides</i>	<0.5	0.2
<i>*Wahlenbergia capensis</i>	<0.5	0.1
<i>Acacia willdenowiana</i>	<0.5	0.3
<i>Allocasuarina fraseriana</i>	30	5
<i>Banksia dallanneyi subsp. dallanneyi var. mellicula</i>	2	0.2
<i>Bossiaea eriocarpa</i>	1	0.3

Species	Cover (%)	Height (m)
<i>Burchardia congesta</i>	<0.5	0.3
<i>Caesia occidentalis</i>	<0.5	0.5
<i>Cristonia biloba</i>	<0.5	0.2
<i>Drosera erythrorhiza</i>	0.2	0.1
<i>Eucalyptus marginata</i>	40	6
* <i>Fumaria capreolata</i>	0.5	0.3
* <i>Gladiolus caryophyllaceus</i>	<0.5	0.3
<i>Gompholobium knightianum</i>	0.5	0.2
<i>Gompholobium marginatum</i>	0.5	0.2
<i>Gompholobium polymorphum</i>	0.5	0.2
<i>Haemodorum spicatum</i>	1	0.8
<i>Hibbertia hypericoides</i>	1	0.4
<i>Kingia australis</i>	2	3
<i>Laxmannia ramosa</i>	2	0.1
<i>Lomandra preissii</i>	0.5	0.3
<i>Lomandra preissii</i>	1	0.4
<i>Mesomelaena pseudostygia</i>	2	0.4
<i>Mesomelaena tetragona</i>	1	0.5
<i>Morelotia octandra</i>	98	0.4
* <i>Olea europaea</i>	<0.5	1
<i>Schoenus caespititius</i>	1	0.3
<i>Thysanotus multiflorus</i>	0.5	0.3
<i>Trachymene pilosa</i>	0.5	0.1
<i>Tricoryne elatior</i>	1	0.3
<i>Xanthorrhoea brunonis</i>	3	0.5
<i>Xanthorrhoea preissii</i>	6	1.5

Quadrat No.:	MSO2
Survey Date:	13/10/2023
Personnel:	KE, TC
Northing:	6459520
Easting:	406095
Topography:	Flat
Aspect:	North
Slope:	<1
Soil:	Brown Sand
Gravel:	0%
Rock:	0%
Leaf Litter:	10%
Bare Ground:	<0.5%
Drainage:	Good
Condition:	Good



Notes: *Eucalyptus marginata* (Jarrah) and *Allocasuarina fraseriana* (Sheoak)
Open Woodland

Species	Cover (%)	Height (m)
* <i>Briza maxima</i>	<0.5	0.2
* <i>Ehrharta calycina</i>	<0.5	1
* <i>Gladiolus caryophyllaceus</i>	<0.5	1
* <i>Hypochaeris glabra</i>	0.5	0.1
* <i>Sonchus oleraceus</i>	<0.5	0.2
* <i>Urospermum picroides</i>	<0.5	0.1
* <i>Ursinia anthemoides</i>	<0.5	0.2
<i>Acacia willdenowiana</i>	0.5	0.2
<i>Allocasuarina fraseriana</i>	40	8
<i>Banksia dallanneyi</i>	3	0.2
<i>Billardiera fraseri</i>	<0.5	0.3
<i>Bossiaea eriocarpa</i>	0.5	0.3
<i>Burchardia congesta</i>	<0.5	0.3
<i>Caesia occidentalis</i>	<0.5	0.5

Species	Cover (%)	Height (m)
<i>Caladenia flava</i>	<0.5	0.2
<i>Cristonia biloba</i>	<0.5	0.2
<i>Dampiera linearis</i>	0.5	0.2
<i>Desmocladius flexuosus</i>	<0.5	0.2
<i>Eucalyptus marginata</i>	50	7
<i>Haemodorum laxum</i>	1	1
<i>Hibbertia hypericoides</i>	2	0.4
<i>Hovea trisperma</i>	<0.5	0.2
<i>Hypochaeris radicata</i>	<0.5	0.1
<i>Jacksonia lehmannii</i>	0.5	0.1
<i>Kingia australis</i>	3	2.5
<i>Labichea punctata</i>	2	0.3
<i>Lambertia multiflora</i>	0.5	0.5
<i>Laxmannia ramosa</i>	0.5	0.2
<i>Lechenaultia biloba</i>	<0.5	0.1
<i>Lepidosperma calcicola</i>	1	0.2
<i>Lomandra preissii</i>	1.5	0.2
<i>Mesomelaena pseudostygia</i>	70	0.5
<i>Mesomelaena tetragona</i>	10	0.5
<i>Morelotia octandra</i>	5	0.4
<i>Patersonia occidentalis</i>	<0.5	0.3
<i>Thelymitra sp.</i>	0.5	0.6
<i>Thysanotus sparteus</i>	<0.5	0.3
<i>Tricoryne elatior</i>	0.5	0.3
<i>Xanthorrhoea brunonis</i>	3	0.5
<i>Xanthorrhoea preissii</i>	6	1

Note: *denotes introduced species.

Quadrat No.:	MSO3
Survey Date:	13/10/2023
Personnel:	KE, TC
Northing:	6459500
Easting:	406046
Topography:	Flat
Aspect:	East
Slope:	<1
Soil:	Grey Brown Sandy loam
Gravel:	0%
Rock:	0%
Leaf Litter:	10%
Bare Ground:	<0.5%
Drainage:	Good
Condition:	Very Good



Notes: *Eucalyptus marginata* (Jarrah) and *Allocasuarina fraseriana* (Sheoak)
Open Woodland

Species	Cover (%)	Height (m)
* <i>Acacia longifolia</i>	0.5	0.4
* <i>Briza maxima</i>	0.1	0.2
* <i>Ehrharta calycina</i>	<0.5	0.3
* <i>Gladiolus caryophyllaceus</i>	<0.5	0.5
* <i>Hypochaeris glabra</i>	<0.5	0.1
* <i>Hypochaeris radicata</i>	<0.5	0.1
* <i>Silene gallica</i>	<0.5	0.1
* <i>Sonchus oleraceus</i>	<0.5	0.2
* <i>Sonchus oleraceus</i>	0.5	0.4
* <i>Vulpia bromoides</i>	<0.5	0.2
<i>Acacia willdenowiana</i>	0.5	0.2
<i>Alexgeorgea nitens</i>	0.5	0.1
<i>Allocasuarina fraseriana</i>	50	10
<i>Banksia dallanneyi</i>	<0.5	0.2

Species	Cover (%)	Height (m)
<i>Bossiaea eriocarpa</i>	1	0.3
<i>Bossiaea eriocarpa</i>	<.5	0.3
<i>Burchardia congesta</i>	<0.5	0.4
<i>Caesia occidentalis</i>	<0.5	0.3
<i>Caladenia reptans</i>	<0.5	0.1
<i>Conostylis aculeata</i>	0.3	0.2
<i>Cristonia biloba</i>	<0.5	0.2
<i>Dampiera linearis</i>	<0.5	0.2
<i>Drosera erythrorhiza</i>	<0.5	0.1
<i>Drosera porrecta</i>	<0.5	0.2
<i>Eucalyptus marginata</i>	50	9
<i>Gompholobium tomentosum</i>	0.5	0.3
<i>Gompholobium polymorphum</i>	<0.5	0.2
<i>Hibbertia hypericoides</i>	0.5	0.5
<i>Kingia australis</i>	2	1.5
<i>Labichea punctata</i>	1	0.3
<i>Laxmannia ramosa</i>	0.5	0.2
<i>Lechenaultia biloba</i>	<0.5	0.2
<i>Lepidosperma calcicola</i>	<0.5	0.2
<i>Lomandra preissii</i>	0.5	0.2
<i>Mesomelaena pseudostygia</i>	3	0.4
<i>Mesomelaena tetragona</i>	3	0.4
<i>Patersonia occidentalis</i>	<0.5	0.3
<i>Pterostylis sanguinea</i>	<0.5	0.1
<i>Scaevola repens</i>	0.5	0.2
<i>Stirlingia latifolia</i>	3	0.4
<i>Tricoryne elatior</i>	0.5	0.3
<i>Xanthorrhoea brunonis</i>	2	0.5
<i>Xanthorrhoea preissii</i>	1	1

Quadrat No.:	BC04
Survey Date:	13/10/2023
Personnel:	KE, TC
Northing:	6459876
Easting:	405761
Topography:	Flat
Aspect:	North
Slope:	<1
Soil:	Brown Loam
Gravel:	0%
Rock:	0%
Leaf Litter:	45%
Bare Ground:	5%
Drainage:	Good
Condition:	Degraded



Notes: *Banksia attenuata* (Slender Banksia), *Banksia menziesii* (Firewood Banksia) and *Eucalyptus* spp. Open Woodland

Species	Cover (%)	Height (m)
* <i>Avena barbata</i>	<0.5	0.6
* <i>Briza maxima</i>	0.5	0.2
* <i>Ehrharta calycina</i>	15	0.5
* <i>Ehrharta longiflora</i>	<0.5	0.2
* <i>Eragrostis curvula</i>	1	0.6
* <i>Gladiolus caryophyllaceus</i>	<0.5	0.4
* <i>Hypochaeris glabra</i>	<0.5	0.1
* <i>Oxalis pes-caprae</i>	<0.5	0.1
* <i>Trifolium campestre</i>	<0.5	0.1
* <i>Watsonia</i> sp.	<0.5	0.6
<i>Acacia willdenowiana</i>	0.5	0.1
<i>Alexgeorgea nitens</i>	1	0.1
<i>Allocasuarina fraseriana</i>	5	6
<i>Allocasuarina humilis</i>	2	1.5

Species	Cover (%)	Height (m)
<i>Banksia attenuata</i>	5	9
<i>Banksia dallanneyi</i>	1	0.1
<i>Banksia menziesii</i>	20	8
<i>Bossiaea eriocarpa</i>	0.5	0.3
<i>Burchardia congesta</i>	<0.5	0.5
<i>Caesia occidentalis</i>	<0.5	0.5
<i>Calectasia narragara</i>	0.5	0.4
<i>Conospermum undulatum</i>	1	0.6
<i>Conostephium sp.</i>	0.5	0.3
<i>Dasyogon obliquifolius</i>	1	0.3
<i>Daviesia nudiflora</i>	1	0.6
<i>Desmocladius asper</i>	<0.5	0.1
<i>Eremaea pauciflora var. pauciflora</i>	2	0.6
<i>Eucalyptus camaldulensis</i>	50	15
<i>Haemodorum paniculatum</i>	<0.5	0.6
<i>Hibbertia hypericoides</i>	2	0.5
<i>Jacksonia floribunda</i>	1	0.4
<i>Lambertia multiflora</i>	3	1
<i>Lepidosperma apricola</i>	1	0.4
<i>Lomandra hermaphrodita</i>	<0.5	0.2
<i>Lomandra preissii</i>	0.5	0.2
<i>Mesomelaena pseudostygia</i>	35	0.4
<i>Mesomelaena tetragona</i>	1	0.4
<i>Morelotia octandra</i>	3	0.4
<i>Petrophile macrostachya</i>	2	0.5
<i>Pterostylis sp.</i>	<0.5	0.2
<i>Stirlingia latifolia</i>	1	0.5
<i>Tricoryne elatior</i>	1	0.3
<i>Xanthorrhoea brunonis</i>	2	0.6
<i>Xanthorrhoea preissii</i>	2	1

Quadrat No.:	RO05
Survey Date:	13/10/2023
Personnel:	KE, TC
Northing:	6459768
Easting:	405133
Topography:	Flat
Aspect:	North
Slope:	<1
Soil:	White Sandy Loam
Gravel:	0%
Rock:	0%
Leaf Litter:	15%
Bare Ground:	<1%
Drainage:	Good
Condition:	Very Good



Notes: *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest

Species	Cover (%)	Height (m)
* <i>Briza maxima</i>	<0.5	0.2
* <i>Ehrharta calycina</i>	0.5	0.5
* <i>Gladiolus caryophyllaceus</i>	<0.5	0.6
* <i>Sonchus oleraceus</i>	<0.5	0.2
<i>Acacia willdenowiana</i>	1	0.2
<i>Allocasuarina fraseriana</i>	5	7
<i>Banksia attenuata</i>	10	7
<i>Banksia dallanneyi</i>	2	0.2
<i>Banksia menziesii</i>	25	8
<i>Billardiera fusiformis</i>	0.5	0.3
<i>Bossiaea eriocarpa</i>	0.5	0.3
<i>Burchardia congesta</i>	<0.5	0.5
<i>Conostylis aculeata</i>	1	0.2
<i>Dampiera linearis</i>	0.5	0.2

Species	Cover (%)	Height (m)
<i>Dasypogon bromeliifolius</i>	0.5	0.3
<i>Daviesia divaricata</i>	<0.5	0.3
<i>Desmocladius asper</i>	0.5	0.1
<i>Eucalyptus marginata</i>	40	10
<i>Haemodorum laxum</i>	0.5	0.6
<i>Hakea ruscifolia</i>	1	0.4
<i>Hovea trisperma</i>	<0.5	0.2
<i>Hovea trisperma var. grandiflora</i>	0.5	0.2
<i>Isopogon autumnalis</i>	0.5	0.4
<i>Laxmannia ramosa</i>	2	0.1
<i>Lepidosperma asperatum</i>	0.5	1
<i>Lepidosperma costale</i>	<0.5	0.4
<i>Leucopogon capitellatu</i>	0.5	0.3
<i>Lomandra preissii</i>	0.5	0.3
<i>Lomandra suaveolens</i>	0.5	0.3
<i>Mesomelaena pseudostygia</i>	90	0.4
<i>Mesomelaena tetragona</i>	1	0.4
<i>Monotaxis grandiflora</i>	0.5	0.2
<i>Morelotia octandra</i>	1	0.6
<i>Patersonia occidentalis</i>	5	0.6
<i>Scaevola repens</i>	2	0.1
<i>Schoenus caespititius</i>	1	0.3
<i>Synaphea petiolaris</i>	<0.5	0.3
<i>Thysanotus manglesianus</i>	0.5	1
<i>Trachymene pilosa</i>	<0.5	0.1
<i>Tricoryne elatior</i>	0.5	0.3
<i>Xanthorrhoea brunonis</i>	1	0.4
<i>Xanthorrhoea preissii</i>	5	1.5
<i>Xylomelum occidentale</i>	1	1

Quadrat No.:	RO06
Survey Date:	13/10/2023
Personnel:	KE, TC
Northing:	6459655
Easting:	405018
Topography:	Flat
Aspect:	Northwest
Slope:	<1
Soil:	Grey White Sand
Gravel:	0%
Rock:	0%
Leaf Litter:	40%
Bare Ground:	1%
Drainage:	Good
Condition:	Good



Notes: *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Slender Banksia) and *Banksia menziesii* (Firewood Banksia) Low Open Forest

Species	Cover (%)	Height (m)
<i>*Briza maxima</i>	<0.5	0.2
<i>*Lysimachia arvensis</i>	<0.5	0.1
<i>Acacia willdenowiana</i>	<0.5	0.3
<i>Adenanthos cygnorum</i>	0.5	1
<i>Alexgeorgea nitens</i>	<0.5	0.1
<i>Allocasuarina fraseriana</i>	50	9
<i>Banksia menziesii</i>	10	7
<i>Bossiaea eriocarpa</i>	1	0.3
<i>Burchardia congesta</i>	<0.5	0.4
<i>Conospermum undulatum</i>	1	1.5
<i>Conostylis aculeata</i>	0.5	0.1
<i>Dampiera linearis</i>	1	0.2
<i>Dasypogon bromeliifolius</i>	10	0.4
<i>Dasypogon obliquifolius</i>	2	0.2

Species	Cover (%)	Height (m)
<i>Eremaea pauciflora</i>	4	0.8
<i>Eucalyptus marginata</i>	15	10
<i>Gompholobium tomentosum</i>	0.5	0.4
<i>Haemodorum laxum</i>	0.5	0.6
<i>Hemiandra linearis</i>	3	0.1
<i>Hibbertia hypericoides</i>	3	0.2
<i>Hypolaena exsulca</i>	2	0.2
<i>Jacksonia lehmannii</i>	0.5	0.1
<i>Laxmannia sessiliflora</i>	2	0.1
<i>Lomandra preissii</i>	<0.5	0.3
<i>Lomandra suaveolens</i>	<0.5	0.2
<i>Mesomelaena pseudostygia</i>	2	0.4
<i>Morelotia octandra</i>	1	0.4
<i>Synaphea petiolaris</i>	<0.5	0.2
<i>Thysanotus manglesianus</i>	<0.5	1
<i>Thysanotus sparteus</i>	<0.5	0.3
<i>Trachymene pilosa</i>	<0.5	0.1
<i>Tricoryne elatior</i>	0.5	0.3
<i>Xanthorrhoea brunonis</i>	1	1
<i>Xanthorrhoea preissii</i>	7	1.2

Appendix 5: Species List

The complete flora list for the site is provided in the table below with flora listed alphabetically by species. *Denotes introduced species and ^denotes dubious species. Declared Pest species are highlighted red and those species where the identification to species level was unable to be determined are highlighted orange.

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Fabaceae	* <i>Acacia baileyana</i>				X		
Fabaceae	* <i>Acacia iteaphylla</i>					X	
Fabaceae	* <i>Acacia longifolia</i>			X	X	X	
Asparagaceae	* <i>Agave americana</i>	Century Plant			X		
Poaceae	* <i>Aira caryophyllea</i>	Silvery Hairgrass			X		
Asteraceae	* <i>Arctotheca calendula</i>	Cape Weed	X	X	X	X	
Poaceae	* <i>Arundo donax</i>	Giant Reed				X	
Asparagaceae	* <i>Asparagus asparagoides</i>	Bridal Creeper	X			X	
Poaceae	* <i>Avena barbata</i>	Bearded Oat	X	X	X		
Malvaceae	* <i>Brachychiton populneus</i>	Kurrajong				X	
Poaceae	* <i>Briza maxima</i>	Blowfly Grass	X		X	X	X
Poaceae	* <i>Briza minor</i>	Shivery Grass			X		
Bignoniaceae	* <i>Campsis radicans</i>				X		
Fabaceae	* <i>Chamaecytisus palmensis</i>	Tagasaste				X	
Myrtaceae	* <i>Chamelaucium uncinatum</i>	Geraldton Wax			X	X	
Rutaceae	* <i>Citrus x limon</i>				X		
Myrtaceae	* <i>Corymbia citriodora</i>		X	X			
Myrtaceae	* <i>Corymbia maculata</i>		X	X			
Asteraceae	* <i>Cotula turbinata</i>	Funnel Weed		X			
Poaceae	* <i>Cynodon dactylon</i>	Couch	X	X			
Orchidaceae	* <i>Disa bracteata</i>	South African Orchid			X		
Poaceae	* <i>Ehrharta calycina</i>	Perennial Veldt Grass	X	X	X	X	

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Poaceae	<i>*Ehrharta longiflora</i>	Annual Veldt Grass			X	X	X
Poaceae	<i>*Eragrostis curvula</i>	African Lovegrass	X		X	X	
Myrtaceae	<i>*Eucalyptus botryoides</i>		X		X		
Myrtaceae	<i>^Eucalyptus camaldulensis</i>	River Gum	X	X	X	X	
Myrtaceae	<i>*Eucalyptus cladocalyx</i>		X				
Myrtaceae	<i>*Eucalyptus grandis</i>		X		X		
Myrtaceae	<i>*Eucalyptus sideroxylon</i>	Red-flowering Ironbark			X	X	
Myrtaceae	<i>*Eucalyptus globulus</i>		X				
Myrtaceae	<i>*Eucalyptus victrix</i>						X
Moraceae	<i>*Ficus macrophylla</i>		X				
Iridaceae	<i>*Freesia alba × leichtlinii</i>					X	
Papaveraceae	<i>*Fumaria capreolata</i>	Whiteflower Fumitory			X	X	
Myrtaceae	<i>*Gaudium laevigatum</i>	Coast Teatree	X	X	X		
Asteraceae	<i>*Gazania linearis</i>				X		
Iridaceae	<i>*Gladiolus caryophyllaceus</i>	Wild Gladiolus	X		X	X	
Iridaceae	<i>*Gladiolus undulatus</i>	Wild Gladiolus			X		
Araliaceae	<i>*Hedera helix</i>				X		
Poaceae	<i>*Hordeum vulgare</i>	Barley		X			
Poaceae	<i>*Hyparrhenia hirta</i>	Tambookie Grass			X		
Asteraceae	<i>*Hypochaeris glabra</i>	Smooth Cats-ear	X	X	X	X	
Asteraceae	<i>*Hypochaeris radicata</i>	Flat Weed			X	X	
Convolvulaceae	<i>*Ipomoea indica</i>	Morning Glory				X	
Asteraceae	<i>*Lactuca serriola</i>	Prickly Lettuce		X		X	
Poaceae	<i>*Lagurus ovatus</i>	Hare's Tail Grass		X			

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Poaceae	<i>*Lolium rigidum</i>	Wimmera Ryegrass	X		X		X
Primulaceae	<i>*Lysimachia arvensis</i>	Pimpernel	X				
Fabaceae	<i>*Medicago polymorpha</i>	Burr Medic		X	X		
Poaceae	<i>*Melinis repens</i>				X		
Onagraceae	<i>*Oenothera stricta</i>	Common Evening Primrose			X		
Oleaceae	<i>*Olea europaea</i>	Olive				X	
Oxalidaceae	<i>*Oxalis pes-caprae</i>	Soursob		X	X		
Arecaceae	<i>*Phoenix dactylifera</i>	Date Palm			X		
Apocynaceae	<i>*Plumeria sp.</i>				X		
Poaceae	<i>*Poa annua</i>	Winter Grass		X			
Iridaceae	<i>*Romulea rosea</i>	Guildford Grass			X		
Rosaceae	<i>*Rosa sp.</i>				X		
Lamiaceae	<i>*Rosmarinus officinalis</i>	Rosemary			X		
Caryophyllaceae	<i>*Silene gallica</i>	French Catchfly				X	
Solanaceae	<i>*Solanum nigrum</i>	Black Berry Nightshade		X		X	
Asteraceae	<i>*Sonchus oleraceus</i>	Common Sowthistle	X	X	X	X	
Poaceae	<i>*Stenotaphrum secundatum</i>	Buffalo Grass			X		
Asteraceae	<i>*Taraxacum khatoonae</i>	Dandelion		X	X		
Fabaceae	<i>*Trifolium arvense</i>	Hare's Foot Clover			X		
Fabaceae	<i>*Trifolium campestre</i>	Hop Clover			X		
Asteraceae	<i>*Urospermum picroides</i>	False Hawkbit				X	
Asteraceae	<i>*Ursinia anthemoides</i>	Ursinia			X	X	
Poaceae	<i>*Vulpia bromoides</i>	Squirrel Tail Fescue				X	
Campanulaceae	<i>*Wahlenbergia capensis</i>	Cape Bluebell				X	

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Arecaceae	<i>*Washingtonia filifer</i>				X		
Iridaceae	<i>*Watsonia sp.</i>				X	X	
Fabaceae	<i>Acacia applanata</i>				X		
Fabaceae	<i>Acacia pulchella</i>	Prickly Moses			X		
Fabaceae	<i>Acacia pulchella R.Br. var. pulchella</i>				X		
Fabaceae	<i>Acacia saligna</i>		X				
Fabaceae	<i>Acacia stenoptera</i>	Narrow Winged Wattle					X
Fabaceae	<i>Acacia willdenowiana</i>	Grass Wattle	X		X	X	
Proteaceae	<i>Adenanthos cygnorum</i>	Common Woollybush	X	X	X		
Myrtaceae	<i>Agonis flexuosa</i>	Peppermint	X				
Restionaceae	<i>Alexgeorgea nitens</i>		X		X	X	
Casuarinaceae	<i>Allocasuarina fraseriana</i>	Sheoak	X	X	X	X	
Casuarinaceae	<i>Allocasuarina humilis</i>	Dwarf Sheoak			X		
Haemodoraceae	<i>Anigozanthos manglesii</i>	Mangles Kangaroo Paw					X
Poaceae	<i>Austrostipa flavescens</i>		X				
Proteaceae	<i>Banksia attenuata</i>	Slender Banksia	X	X	X		
Proteaceae	<i>Banksia dallanneyi</i>	Couch Honeypot	X		X	X	
Proteaceae	<i>Banksia grandis</i>	Bull Banksia		X			
Proteaceae	<i>Banksia menziesii</i>	Firewood Banksia	X	X	X		
Proteaceae	<i>Banksia nivea</i>	Honeypot Dryandra	X				
Proteaceae	<i>Banksia dallanneyi subs p. dallanneyi var. mellic ula</i>						X
Myrtaceae	<i>Beaufortia elegans</i>	Elegant Beaufortia	X				

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Pittosporaceae	<i>Billardiera fusiformis</i>	Australian Bluebell	X				
Pittosporaceae	<i>Billardiera fraseri</i>	Elegant Pronaya				X	
Fabaceae	<i>Bossiaea eriocarpa</i>	Common Brown Pea	X		X	X	
Poaceae	<i>Bromus arenarius</i>	Sand Brome	X	X			
Colchicaceae	<i>Burchardia congesta</i>	Milkmaids	X	X	X	X	
Hemerocallidaceae	<i>Caesia occidentalis</i>				X	X	
Orchidaceae	<i>Caladenia flava</i>	Cowslip Orchid				X	
Orchidaceae	<i>Caladenia reptans</i>	Little Pink Fairy Orchid				X	
Orchidaceae	<i>Caladenia sp.</i>			X		X	
Dasygogonaceae	<i>Calectasia narragara</i>	Star of Bethlehem			X	X	
Hemerocallidaceae	<i>Chamaescilla corymbosa</i>	Blue Squill			X		
Polygalaceae	<i>Comesperma virgatum</i>	Milkwort	X				
Proteaceae	<i>Conospermum undulatum</i>		X		X		
Ericaceae	<i>Conostephium sp.</i>				X		
Haemodoraceae	<i>Conostylis aculeata</i>	Prickly Conostylis	X			X	
Myrtaceae	<i>Corymbia calophylla</i>	Marri	X	X			
Fabaceae	<i>Cristonia biloba</i>					X	
Goodeniaceae	<i>Dampiera linearis</i>	Common Dampiera	X			X	
Dasygogonaceae	<i>Dasygogon bromeliifolius</i>	Pineapple Bush	X		X		
Dasygogonaceae	<i>Dasygogon obliquifolius</i>		X	X	X	X	
Fabaceae	<i>Daviesia decurrens</i>	Prickly Bitter-pea			X		
Fabaceae	<i>Daviesia divaricata</i>	Marno	X				
Fabaceae	<i>Daviesia nudiflora</i>				X		

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Fabaceae	<i>Daviesia physodes</i>		X				
Fabaceae	<i>Daviesia angulata</i>					X	
Restionaceae	<i>Desmocladus asper</i>		X		X		
Restionaceae	<i>Desmocladus flexuosus</i>			X	X	X	
Hemerocallidaceae	<i>Dianella revoluta</i>	Blueberry Lily			X		
Droseraceae	<i>Drosera erythrorhiza</i>	Red Ink Sundew				X	
Droseraceae	<i>Drosera porrecta</i>	Leafy Sundew				X	
Myrtaceae	<i>Eremaea pauciflora</i> var. <i>pauciflora</i>				X		
Myrtaceae	<i>Eremaea pauciflora</i>		X			X	
Myrtaceae	<i>Eucalyptus gomphocephala</i>	Tuart	X				
Myrtaceae	<i>Eucalyptus marginata</i>	Jarraah	X	X	X	X	X
Myrtaceae	<i>Eucalyptus rudis</i>	Flooded Gum	X				
Myrtaceae	<i>Eucalyptus todtiana</i>	Pricklybark	X				
Fabaceae	<i>Gastrolobium capitatum</i>	Bacon and Eggs	X		X		
Fabaceae	<i>Gompholobium tomentosum</i>	Hairy Yellow Pea	X	X	X	X	
Fabaceae	<i>Gompholobium aristatum</i>					X	
Fabaceae	<i>Gompholobium knightianum</i>					X	
Fabaceae	<i>Gompholobium marginatum</i>					X	
Fabaceae	<i>Gompholobium polymorphum</i>					X	
Proteaceae	<i>Grevillea olivacea</i>	Olive Grevillea			X		
Proteaceae	<i>Grevillea thelemanniana</i>	Spider Net Grevillea	X				
Proteaceae	<i>Grevillea bipinnatifida</i>	Fuchsia Grevillea	X				
Haemodoraceae	<i>Haemodorum spicatum</i>	Bohn	X				

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Haemodoraceae	<i>Haemodorum laxum</i>		X			X	
Haemodoraceae	<i>Haemodorum paniculatum</i>				X		
Haemodoraceae	<i>Haemodorum spicatum</i>					X	
Proteaceae	<i>Hakea ruscifolia</i>	Candle Hakea	X		X	X	
Proteaceae	<i>Hakea undulata</i>	Wavy-leaved Hakea			X		
Proteaceae	<i>Hakea varia</i>	Variable-leaved Hakea	X				
Fabaceae	<i>Hardenbergia comptoniana</i>	Native Wisteria			X		
Lamiaceae	<i>Hemiandra linearis</i>	Speckled Snakebush	X				
Dilleniaceae	<i>Hibbertia hypericoides</i>	Yellow Buttercups	X	X	X	X	
Poaceae	<i>Hordeum leporinum</i>	Barley Grass	X				
Fabaceae	<i>Hovea trisperma</i>	Common Hovea	X		X	X	
Fabaceae	<i>Hovea trisperma var. grandiflora</i>		X				
Restionaceae	<i>Hypolaena exsulca</i>		X		X		
Proteaceae	<i>Isopogon autumnalis</i>		X				
Fabaceae	<i>Jacksonia floribunda</i>	Holly Pea	X		X		
Fabaceae	<i>Jacksonia lehmannii</i>		X		X	X	
Fabaceae	<i>Kennedia prostrata</i>	Scarlet Runner	X				
Dasygongonaceae	<i>Kingia australis</i>	Kingia	X			X	
Fabaceae	<i>Labichea punctata</i>	Lance-leaved Cassia				X	
Proteaceae	<i>Lambertia multiflora</i>	Many-flowered Honeysuckle			X	X	
Asparagaceae	<i>Laxmannia ramosa</i>	Branching Lily	X			X	
Asparagaceae	<i>Laxmannia sessiliflora</i>	Nodding Lily	X				
Goodeniaceae	<i>Lechenaultia biloba</i>	Blue Leschenaultia				X	

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Cyperaceae	<i>Lepidosperma asperatum</i>		X				
Cyperaceae	<i>Lepidosperma apricola</i>				X		
Cyperaceae	<i>Lepidosperma calcicola</i>					X	
Cyperaceae	<i>Lepidosperma costale</i>		X				
Cyperaceae	<i>Lepidosperma pubisquamum</i>					X	
Ericaceae	<i>Leucopogon capitellatus</i>		X				
Asparagaceae	<i>Lomandra hermaphrodita</i>				X		
Asparagaceae	<i>Lomandra preissii</i>	Preiss' Mat Rush	X		X	X	
Asparagaceae	<i>Lomandra suaveolens</i>		X				
Asparagaceae	<i>Lomandra hermaphrodita</i>				X		
Asparagaceae	<i>Lomandra micrantha</i>				X		
Asparagaceae	<i>Lomandra preissii</i>	Preiss' Mat Rush				X	
Asparagaceae	<i>Lomandra sp.</i>					X	
Anarthriaceae	<i>Lyginia imberbis</i>		X		X		
Cyperaceae	<i>Mesomelaena pseudostygia</i>	Semaphore Sedge	X		X	X	
Cyperaceae	<i>Mesomelaena tetragona</i>	Semaphore Sedge	X	X	X	X	
Orchidaceae	<i>Microtis media</i>	Tall Mignonette Orchid			X	X	
Euphorbiaceae	<i>Monotaxis grandiflora</i>	Diamond of the Desert	X			X	
Cyperaceae	<i>Morelotia octandra</i>		X		X	X	
Iridaceae	<i>Patersonia occidentalis</i>	Purple Flag	X	X	X	X	
Proteaceae	<i>Petrophile linearis</i>	Pixie Mops			X	X	
Proteaceae	<i>Petrophile macrostachya</i>				X		
Haemodoraceae	<i>Phlebocarya ciliata</i>				X		

Family	Species Name	Common Name	Survey Area				
			Reid Oval	Soccer	Bowls Club	Mens Shed A	Mens Shed B
Asteraceae	<i>Pterochaeta paniculata</i>					X	
Orchidaceae	<i>Pterostylis sanguinea</i>	Dark Banded Greenhood				X	
Orchidaceae	<i>Pterostylis</i> sp.				X		
Orchidaceae	<i>Pterostylis recurva</i>	Jug Orchid			X	X	
Amaranthaceae	<i>Ptilotus esquamatus</i>		X				
Orchidaceae	<i>Pyrorchis nigricans</i>	Red beaks				X	
Euphorbiaceae	<i>Ricinocarpos undulatus</i>	Wedding Bush	X				
Goodeniaceae	<i>Scaevola repens</i>		X		X	X	
Cyperaceae	<i>Schoenus caespititius</i>		X			X	
Proteaceae	<i>Stirlingia latifolia</i>	Blueboy	X	X	X	X	
Stylidiaceae	<i>Stylidium androsaceum</i>	Book Triggerplant				X	
Stylidiaceae	<i>Stylidium ciliatum</i>	Golden Triggerplant				X	
Proteaceae	<i>Synaphea petiolaris</i>	Synaphea	X				
Orchidaceae	<i>Thelymitra</i> sp.		X			X	
Asparagaceae	<i>Thysanotus manglesianus</i>	Mangles' Fringed Lily	X				
Asparagaceae	<i>Thysanotus sparteus</i>	Leafless Fringed Lily	X			X	
Asparagaceae	<i>Thysanotus multiflorus</i>	Many-flowered Fringe Lily				X	
Araliaceae	<i>Trachymene pilosa</i>	Native Parsnip	X			X	
Hemerocallidaceae	<i>Tricoryne elatior</i>	Yellow Autumn Lily	X		X	X	
Xanthorrhoeaceae	<i>Xanthorrhoea brunonis</i>		X	X	X	X	
Xanthorrhoeaceae	<i>Xanthorrhoea preissii</i>	Grass tree	X	X	X	X	
Proteaceae	<i>Xylomelum occidentale</i>	Woody Pear	X	X			

Appendix 6: Habitat Tree Data

ID	Species	DBH	Hollows	Easting	Northing
001	<i>*Corymbia citriodora</i>	295	No	405318.7	6459768
002	<i>*Corymbia maculata</i>	139	No	405319.6	6459757
003	<i>*Corymbia maculata</i>	229	No	405326	6459757
004	<i>Corymbia calophylla</i>	301	No	405336.6	6459757
005	<i>Corymbia calophylla</i>	186	No	405338	6459757
006	<i>Corymbia calophylla</i>	160	No	405340.4	6459754
007	<i>Corymbia calophylla</i>	201	No	405348.4	6459757
008	<i>Corymbia calophylla</i>	169	No	405334.6	6459747
009	<i>Corymbia calophylla</i>	100	No	405339.3	6459746
010	<i>Corymbia calophylla</i>	160	No	405340.4	6459745
011	<i>Eucalyptus marginata</i>	227	No	405337	6459738
012	<i>*Corymbia citriodora</i>	242	No	405244.8	6459713
013	<i>*Corymbia citriodora</i>	107	No	405244.8	6459716
014	<i>*Corymbia maculata</i>	90	No	405245.5	6459718
015	<i>Eucalyptus marginata</i>	403	No	405238.6	6459722
016	<i>*Corymbia citriodora</i>	291	No	405225.4	6459733
017	<i>*Eucalyptus globulus</i>	225	No	405212.2	6459741
018	<i>*Eucalyptus camaldulensis</i>	228	No	405209.2	6459738
019	<i>*Eucalyptus camaldulensis</i>	249	No	405208.8	6459739
020	<i>Allocasuarina fraseriana</i>	101	No	405217.6	6459743
021	<i>*Eucalyptus globulus</i>	175	No	405215.7	6459744
022	<i>Eucalyptus marginata</i>	314	No	405230.5	6459747
023	<i>*Corymbia citriodora</i>	237	No	405232.2	6459744
024	<i>*Eucalyptus botryoides</i>	201	No	405239.7	6459741
026	<i>*Eucalyptus sideroxylon</i>	121	No	406049.7	6459601
027	<i>*Eucalyptus camaldulensis</i>	136	No	406051.6	6459602
028	<i>*Eucalyptus camaldulensis</i>	142	No	406054.9	6459599
029	<i>Eucalyptus marginata</i>	114	No	406053.9	6459590
030	<i>*Eucalyptus sideroxylon</i>	124	No	406058.1	6459592
031	<i>Eucalyptus marginata</i>	132	No	406053.9	6459590

ID	Species	DBH	Hollows	Eastings	Northings
032	<i>Eucalyptus marginata</i>	248	Yes	406055	6459574
033	<i>Eucalyptus marginata</i>	214	Yes	406054.3	6459566
034	<i>Eucalyptus marginata</i>	109	No	406069.4	6459576
035	<i>Eucalyptus marginata</i>	99	No	406084.2	6459552
036	<i>Eucalyptus marginata</i>	126	No	406089.5	6459559
037	<i>Allocasuarina fraseriana</i>	122	No	406094.1	6459560
038	<i>Eucalyptus marginata</i>	183	No	406083	6459540
039	<i>Allocasuarina fraseriana</i>	122	No	406105.9	6459548
040	<i>Eucalyptus marginata</i>	120	No	406087.3	6459528
041	<i>Eucalyptus marginata</i>	140	No	406083.9	6459524
042	<i>Eucalyptus marginata</i>	214	No	406083.1	6459530
043	<i>Allocasuarina fraseriana</i>	121	No	406077.5	6459518
044	* <i>Eucalyptus camaldulensis</i>	370	No	405689.3	6459804
045	* <i>Eucalyptus camaldulensis</i>	308	No	405696.7	6459814
046	<i>Eucalyptus marginata</i>	174	No	405695.2	6459819
047	<i>Eucalyptus marginata</i>	200	No	405701.7	6459818
048	* <i>Eucalyptus camaldulensis</i>	162	No	405707.8	6459824
049	* <i>Eucalyptus camaldulensis</i>	154	No	405709.4	6459829
050	* <i>Eucalyptus camaldulensis</i>	118	No	405711.1	6459830
051	* <i>Eucalyptus camaldulensis</i>	142	No	405721.2	6459835
052	* <i>Eucalyptus camaldulensis</i>	147	No	405726.9	6459844
053	<i>Banksia attenuata</i>	102	No	405754.8	6459870
054	<i>Banksia attenuata</i>	130	No	405754.2	6459874
055	<i>Banksia attenuata</i>	122	No	405759.8	6459873
056	* <i>Eucalyptus camaldulensis</i>	234	No	405777.6	6459870
057	* <i>Eucalyptus botryoides</i>	220	No	405788.6	6459858
058	<i>Allocasuarina fraseriana</i>	96	No	405791.8	6459860
059	* <i>Eucalyptus camaldulensis</i>	187	No	405731.4	6459838
060	* <i>Eucalyptus camaldulensis</i>	127	No	405735.1	6459838
061	* <i>Eucalyptus camaldulensis</i>	102	No	405736.5	6459842
062	* <i>Eucalyptus camaldulensis</i>	162	No	405737.4	6459843
063	* <i>Eucalyptus camaldulensis</i>	127	No	405741.2	6459850

ID	Species	DBH	Hollows	Easting	Northing
064	<i>*Eucalyptus camaldulensis</i>	183	No	405745.5	6459857
065	<i>*Eucalyptus camaldulensis</i>	133	No	405752.3	6459862
066	<i>*Eucalyptus camaldulensis</i>	209	No	405756.5	6459861
067	<i>*Eucalyptus camaldulensis</i>	188	No	405763.6	6459864
068	<i>*Eucalyptus camaldulensis</i>	143	No	405765.3	6459866
069	<i>*Eucalyptus camaldulensis</i>	98	No	405768.2	6459861
070	<i>*Eucalyptus camaldulensis</i>	241	No	405771.4	6459860
071	<i>*Eucalyptus grandis</i>	170	No	405772	6459861
072	<i>*Eucalyptus camaldulensis</i>	145	No	405774.6	6459859
073	<i>Allocasuarina fraseriana</i>	108	No	405789.4	6459840
074	<i>Allocasuarina fraseriana</i>	178	No	405693.3	6459800
075	<i>Allocasuarina fraseriana</i>	618	No	406068.4	6459518
076	<i>Allocasuarina fraseriana</i>	377	No	406078.2	6459517
077	<i>Allocasuarina fraseriana</i>	476	No	406073.9	6459509
078	<i>Allocasuarina fraseriana</i>	432	No	406063.3	6459505
079	<i>Allocasuarina fraseriana</i>	707	No	406063.7	6459515
080	<i>Allocasuarina fraseriana</i>	470	No	406074.6	6459549
081	<i>Eucalyptus marginata</i>	323	No	406067.8	6459555
082	<i>Eucalyptus marginata</i>	759	No	406023.3	6459527
083	<i>Eucalyptus marginata</i>	445	No	406029.2	6459518
084	<i>Eucalyptus marginata</i>	655	No	406039.5	6459514
085	<i>Eucalyptus marginata</i>	495	No	406034.9	6459507
086	<i>Allocasuarina fraseriana</i>	421	No	406038.7	6459502
087	<i>Allocasuarina fraseriana</i>	517	No	406045.2	6459510
088	<i>Eucalyptus marginata</i>	318	No	406052.4	6459507
089	<i>Allocasuarina fraseriana</i>	789	No	406046.4	6459498
090	<i>Allocasuarina fraseriana</i>	359	No	406050.8	6459498
091	<i>Eucalyptus marginata</i>	394	No	406057.4	6459482
092	<i>Eucalyptus marginata</i>	381	No	406054.7	6459482
093	<i>Allocasuarina fraseriana</i>	737	No	406062.8	6459493
094	<i>Eucalyptus marginata</i>	351	No	406075.2	6459494
095	<i>Eucalyptus marginata</i>	761	No	406077.6	6459490

ID	Species	DBH	Hollows	Eastings	Northings
096	<i>Eucalyptus marginata</i>	404	No	406081.3	6459497
097	<i>Eucalyptus marginata</i>	442	No	406090.2	6459502
098	<i>Allocasuarina fraseriana</i>	576	No	406088.7	6459514
099	<i>Allocasuarina fraseriana</i>	528	No	406102.9	6459514
100	<i>Eucalyptus marginata</i>	336	No	406103.9	6459515
101	<i>Allocasuarina fraseriana</i>	552	No	406129.9	6459508
102	* <i>Eucalyptus camaldulensis</i>	610	No	405224.3	6459767
103	* <i>Eucalyptus camaldulensis</i>	365	No	405221.6	6459771
104	* <i>Eucalyptus camaldulensis</i>	738	No	405221.4	6459769
105	<i>Allocasuarina fraseriana</i>	856	No	405215.4	6459778
106	<i>Allocasuarina fraseriana</i>	318	No	405209.6	6459784
107	<i>Allocasuarina fraseriana</i>	416	No	405207.8	6459783
108	<i>Allocasuarina fraseriana</i>	520	No	405207.8	6459783
109	<i>Allocasuarina fraseriana</i>	355	No	405201.6	6459790
110	<i>Allocasuarina fraseriana</i>	384	No	405199.2	6459787
111	<i>Allocasuarina fraseriana</i>	469	No	405193.1	6459793
112	<i>Allocasuarina fraseriana</i>	501	No	405183	6459802
113	<i>Allocasuarina fraseriana</i>	831	No	405180	6459807
114	<i>Eucalyptus marginata</i>	323	No	405180	6459807
115	<i>Eucalyptus marginata</i>	409	No	405179.1	6459808
116	<i>Eucalyptus marginata</i>	370	No	405171.7	6459808
117	<i>Allocasuarina fraseriana</i>	470	No	405165.5	6459807
118	<i>Corymbia calophylla</i>	357	No	405161.1	6459819
119	<i>Allocasuarina fraseriana</i>	998	No	405163.4	6459828
120	<i>Corymbia calophylla</i>	348	No	405155.1	6459825
121	<i>Corymbia calophylla</i>	435	No	405153.9	6459823
122	<i>Corymbia calophylla</i>	311	No	405151	6459819
123	<i>Corymbia calophylla</i>	378	No	405150.3	6459817
124	<i>Allocasuarina fraseriana</i>	370	No	405159.4	6459803
125	<i>Allocasuarina fraseriana</i>	415	No	405159.6	6459796
126	<i>Allocasuarina fraseriana</i>	324	No	405183.4	6459788
127	<i>Allocasuarina fraseriana</i>	377	No	405184.5	6459786

ID	Species	DBH	Hollows	Eastings	Northings
128	<i>Allocasuarina fraseriana</i>	565	No	405184.5	6459786
129	<i>Allocasuarina fraseriana</i>	347	No	405192.2	6459767
130	<i>Allocasuarina fraseriana</i>	575	No	405195.8	6459769
131	<i>Allocasuarina fraseriana</i>	375	No	405198.7	6459763
132	<i>Eucalyptus marginata</i>	314	No	405199	6459759
133	<i>Allocasuarina fraseriana</i>	376	No	405204.8	6459752
134	* <i>Corymbia maculata</i>	372	No	405213.8	6459761
135	<i>Eucalyptus marginata</i>	508	No	405188.3	6459746
136	<i>Corymbia calophylla</i>	311	No	405187.3	6459763
137	<i>Eucalyptus marginata</i>	348	No	405184.7	6459770
138	<i>Allocasuarina fraseriana</i>	318	No	405182	6459773
139	<i>Allocasuarina fraseriana</i>	339	No	405168.1	6459776
140	<i>Allocasuarina fraseriana</i>	404	No	405169.4	6459774
141	<i>Eucalyptus marginata</i>	363	No	405163.2	6459779
142	<i>Allocasuarina fraseriana</i>	425	No	405161.3	6459781
143	<i>Allocasuarina fraseriana</i>	350	No	405154	6459778
144	<i>Allocasuarina fraseriana</i>	327	No	405151.2	6459783
145	<i>Allocasuarina fraseriana</i>	363	No	405153.3	6459784
146	<i>Allocasuarina fraseriana</i>	442	No	405145.9	6459791
147	<i>Allocasuarina fraseriana</i>	355	No	405147.5	6459795
148	<i>Eucalyptus marginata</i>	394	No	405150.4	6459797
149	<i>Eucalyptus gomphocephala</i>	452	No	405142.5	6459801
150	<i>Eucalyptus gomphocephala</i>	409	No	405140.5	6459801
151	<i>Eucalyptus gomphocephala</i>	409	No	405137.2	6459803
152	<i>Eucalyptus gomphocephala</i>	385	No	405134.8	6459803
153	<i>Eucalyptus marginata</i>	555	No	405140.6	6459807
154	<i>Eucalyptus gomphocephala</i>	329	No	405143.4	6459812
155	<i>Allocasuarina fraseriana</i>	621	No	405128.8	6459796
156	<i>Eucalyptus gomphocephala</i>	470	No	405127.9	6459794
157	<i>Eucalyptus gomphocephala</i>	342	No	405120.3	6459795
158	<i>Eucalyptus gomphocephala</i>	338	No	405117.3	6459793
159	<i>Eucalyptus marginata</i>	599	No	405113.2	6459787

ID	Species	DBH	Hollows	Easting	Northings
160	<i>Allocasuarina fraseriana</i>	472	No	405114.5	6459783
161	<i>Allocasuarina fraseriana</i>	574	No	405120	6459785
162	<i>Allocasuarina fraseriana</i>	462	No	405124.9	6459781
163	<i>Allocasuarina fraseriana</i>	420	No	405140	6459780
164	<i>Allocasuarina fraseriana</i>	344	No	405141.5	6459778
165	<i>Banksia attenuata</i>	330	No	405135.7	6459770
166	<i>Allocasuarina fraseriana</i>	530	No	405158.6	6459772
167	<i>Allocasuarina fraseriana</i>	358	No	405160.5	6459767
168	<i>Banksia menziesii</i>	357	No	405153.3	6459761
169	<i>Banksia menziesii</i>	316	No	405162.3	6459758
170	<i>Banksia menziesii</i>	349	No	405177.4	6459766
171	<i>Allocasuarina fraseriana</i>	336	No	405167.8	6459754
172	* <i>Eucalyptus globulus</i>	683	No	405181.2	6459735
173	<i>Allocasuarina fraseriana</i>	491	No	405159.8	6459746
174	<i>Eucalyptus marginata</i>	981	Yes	405140.7	6459752
175	<i>Eucalyptus gomphocephala</i>	501	No	405103	6459778
176	<i>Eucalyptus marginata</i>	314	No	405114.2	6459781
177	<i>Allocasuarina fraseriana</i>	376	No	405124	6459767
178	<i>Allocasuarina fraseriana</i>	375	No	405132.5	6459740
179	* <i>Corymbia maculata</i>	384	No	405141.7	6459738
180	<i>Allocasuarina fraseriana</i>	335	No	405113.7	6459751
181	<i>Allocasuarina fraseriana</i>	492	No	405107.4	6459771
182	<i>Eucalyptus gomphocephala</i>	355	No	405101.3	6459773
183	<i>Eucalyptus gomphocephala</i>	430	No	405094	6459767
184	<i>Eucalyptus marginata</i>	839	No	405098.8	6459761
185	* <i>Corymbia maculata</i>	331	No	405113.1	6459726
186	* <i>Eucalyptus grandis</i>	370	No	405107.5	6459716
187	<i>Eucalyptus marginata</i>	939	No	405099.2	6459734
188	<i>Banksia menziesii</i>	406	No	405094.5	6459739
189	<i>Allocasuarina fraseriana</i>	329	No	405089.5	6459742
190	<i>Banksia menziesii</i>	379	No	405078.9	6459743
191	<i>Allocasuarina fraseriana</i>	528	No	405083.7	6459746

ID	Species	DBH	Hollows	Easting	Northings
192	<i>Acacia saligna</i>	445	No	405076	6459752
193	<i>Eucalyptus gomphocephala</i>	323	No	405081.6	6459754
194	<i>Eucalyptus marginata</i>	897	No	405088.1	6459762
195	<i>Eucalyptus marginata</i>	386	No	405070.8	6459737
196	<i>Allocasuarina fraseriana</i>	714	No	405092.3	6459720
197	<i>Allocasuarina fraseriana</i>	404	No	405094.8	6459720
198	* <i>Eucalyptus grandis</i>	389	No	405102.4	6459707
199	* <i>Eucalyptus grandis</i>	502	No	405102.3	6459704
200	* <i>Eucalyptus camaldulensis</i>	338	No	405102.2	6459699
201	<i>Allocasuarina fraseriana</i>	695	No	405090.1	6459720
202	* <i>Eucalyptus grandis</i>	493	No	405084.5	6459713
203	<i>Allocasuarina fraseriana</i>	361	No	405074.8	6459707
204	<i>Allocasuarina fraseriana</i>	444	No	405072.1	6459702
205	<i>Allocasuarina fraseriana</i>	333	No	405070.9	6459698
206	<i>Eucalyptus marginata</i>	330	No	405061.7	6459701
207	<i>Eucalyptus marginata</i>	441	No	405059.5	6459710
208	<i>Corymbia calophylla</i>	475	No	405062.2	6459714
209	<i>Allocasuarina fraseriana</i>	354	No	405058.9	6459724
210	<i>Eucalyptus gomphocephala</i>	514	No	405050.7	6459723
211	<i>Eucalyptus gomphocephala</i>	367	No	405048.6	6459721
212	<i>Eucalyptus gomphocephala</i>	631	No	405042.1	6459710
213	<i>Eucalyptus gomphocephala</i>	344	No	405037.1	6459705
214	<i>Banksia menziesii</i>	369	No	405046.8	6459708
215	<i>Eucalyptus marginata</i>	915	No	405060.3	6459689
216	<i>Eucalyptus marginata</i>	907	No	405057.6	6459687
217	<i>Allocasuarina fraseriana</i>	326	No	405055.5	6459687
218	<i>Allocasuarina fraseriana</i>	535	No	405059.9	6459672
219	<i>Eucalyptus marginata</i>	365	No	405059.2	6459665
220	<i>Allocasuarina fraseriana</i>	339	No	405046.2	6459679
221	<i>Allocasuarina fraseriana</i>	436	No	405038.8	6459682
222	<i>Allocasuarina fraseriana</i>	359	No	405038.1	6459689
223	<i>Allocasuarina fraseriana</i>	365	No	405034.2	6459693

ID	Species	DBH	Hollows	Eastings	Northings
224	<i>Eucalyptus gomphocephala</i>	302	No	405029.6	6459701
225	<i>Corymbia calophylla</i>	955	Yes	405026.9	6459700
226	<i>Corymbia calophylla</i>	401	No	405020.1	6459693
227	<i>Eucalyptus marginata</i>	1297	Yes	405013.5	6459675
228	<i>Eucalyptus gomphocephala</i>	535	No	405008.8	6459679
229	<i>Eucalyptus gomphocephala</i>	365	No	405006.5	6459677
230	<i>Eucalyptus gomphocephala</i>	460	No	405005.3	6459675
231	<i>Allocasuarina fraseriana</i>	709	No	405004.3	6459663
232	<i>Allocasuarina fraseriana</i>	555	No	405029.9	6459676
233	<i>Allocasuarina fraseriana</i>	362	No	405048.3	6459660
234	<i>Banksia menziesii</i>	345	No	405049.5	6459653
235	<i>Allocasuarina fraseriana</i>	417	No	405037.6	6459656
236	<i>Allocasuarina fraseriana</i>	431	No	405028.8	6459656
237	<i>Allocasuarina fraseriana</i>	407	No	405019.3	6459671
238	<i>Eucalyptus marginata</i>	374	No	405012.6	6459657
239	<i>Banksia menziesii</i>	371	No	405001.3	6459657
240	<i>Eucalyptus gomphocephala</i>	468	No	404992.2	6459664
241	<i>Eucalyptus gomphocephala</i>	375	No	404989.2	6459661
242	<i>Eucalyptus marginata</i>	470	No	404987.3	6459658
243	<i>Eucalyptus gomphocephala</i>	389	No	404991.8	6459656
244	<i>Eucalyptus gomphocephala</i>	364	No	404995.5	6459644
245	<i>Eucalyptus gomphocephala</i>	501	No	404989.6	6459647
246	<i>Eucalyptus gomphocephala</i>	326	No	404989	6459650
247	<i>Acacia saligna</i>	320	No	404983.6	6459656
248	<i>Acacia saligna</i>	370	No	404980	6459654
249	<i>Acacia saligna</i>	325	No	404978.8	6459643
250	<i>Eucalyptus gomphocephala</i>	450	No	404985.5	6459639
251	<i>Eucalyptus gomphocephala</i>	478	No	404998.1	6459647
252	<i>Allocasuarina fraseriana</i>	395	No	405006.1	6459645
253	<i>Allocasuarina fraseriana</i>	675	No	405004.1	6459637
254	<i>Allocasuarina fraseriana</i>	319	No	405021.8	6459644
255	<i>Eucalyptus todtiana</i>	607	No	405042.3	6459638

ID	Species	DBH	Hollows	Eastings	Northings
256	<i>Eucalyptus marginata</i>	435	No	405074.3	6459668
257	* <i>Ficus macrophylla</i>	405	No	405074.3	6459668
258	<i>Allocasuarina fraseriana</i>	430	No	405081.6	6459688
259	<i>Allocasuarina fraseriana</i>	304	No	405079.1	6459690
261	* <i>Eucalyptus camaldulensis</i>	581	No	405100.3	6459697
262	* <i>Eucalyptus camaldulensis</i>	435	No	405099.4	6459695
263	* <i>Eucalyptus camaldulensis</i>	545	No	405098.9	6459695
264	* <i>Eucalyptus grandis</i>	485	No	405087.2	6459681
265	* <i>Eucalyptus grandis</i>	370	No	405094.1	6459700
266	* <i>Eucalyptus camaldulensis</i>	412	No	405092.1	6459698
267	* <i>Eucalyptus grandis</i>	570	No	405084.6	6459702
268	* <i>Eucalyptus grandis</i>	390	No	405084.9	6459700
269	* <i>Eucalyptus grandis</i>	640	No	405082.4	6459699
270	* <i>Eucalyptus grandis</i>	475	No	405078.2	6459695
271	* <i>Eucalyptus grandis</i>	565	No	405083.3	6459693
272	* <i>Corymbia maculata</i>	423	No	405096.1	6459613
273	<i>Eucalyptus todtiana</i>	39	No	405064.6	6459627
274	<i>Eucalyptus todtiana</i>	741	No	405066.7	6459620
275	<i>Eucalyptus todtiana</i>	359	No	405049.8	6459609
276	<i>Eucalyptus todtiana</i>	341	No	405045.9	6459606
277	<i>Acacia saligna</i>	311	No	405010.1	6459621
278	<i>Allocasuarina fraseriana</i>	585	No	404996.5	6459630
279	<i>Banksia menziesii</i>	363	No	405051.9	6459580
280	<i>Xylomelum occidentale</i>	430	No	405075.1	6459589
281	<i>Eucalyptus rudis</i>	486	No	405078.9	6459594
282	<i>Eucalyptus todtiana</i>	46	No	405073.6	6459601
283	<i>Eucalyptus todtiana</i>	356	No	405071.2	6459601
284	<i>Eucalyptus rudis</i>	345	No	405078.7	6459606
285	<i>Corymbia calophylla</i>	328	No	405081.6	6459618
286	* <i>Corymbia maculata</i>	366	No	405128.4	6459671
287	<i>Eucalyptus marginata</i>	892	Yes	405126.6	6459693
288	* <i>Eucalyptus cladocalyx</i>	549	No	405115.1	6459704

ID	Species	DBH	Hollows	Eastings	Northings
289	<i>*Eucalyptus grandis</i>	553	No	405121.8	6459703
290	<i>*Eucalyptus grandis</i>	706	No	405122.8	6459706
291	<i>*Eucalyptus grandis</i>	551	No	405115.9	6459708
292	<i>*Eucalyptus grandis</i>	817	No	405117.5	6459710
293	<i>*Eucalyptus grandis</i>	747	No	405122.9	6459714
294	<i>*Eucalyptus camaldulensis</i>	602	No	405133.7	6459720
295	<i>*Eucalyptus camaldulensis</i>	80	No	405136.1	6459721
296	<i>*Eucalyptus cladocalyx</i>	444	No	405137.2	6459716
297	<i>*Eucalyptus grandis</i>	388	No	405142.6	6459719
298	<i>*Eucalyptus grandis</i>	403	No	405145	6459714
299	<i>*Eucalyptus grandis</i>	628	No	405144.2	6459714
300	<i>*Eucalyptus cladocalyx</i>	591	No	405146.2	6459712
301	<i>*Eucalyptus grandis</i>	809	No	405144.2	6459711
302	<i>*Corymbia maculata</i>	481	No	405169.4	6459724
303	<i>*Corymbia maculata</i>	861	No	405171	6459725
304	<i>*Corymbia maculata</i>	605	No	405174.5	6459726
Tree 4	<i>Eucalyptus marginata</i>	610	No	406014.8	6459603.2
Tree 1	<i>Eucalyptus marginata</i>	619	No	405988.8	6459634.4
Tree 3	<i>Eucalyptus marginata</i>	537	No	405975.3	6459623.3
Tree 5	<i>Eucalyptus marginata</i>	890	No	405950.2	6459610.1