



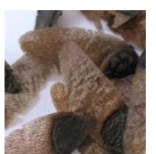
Natural Area
CONSULTING MANAGEMENT SERVICES

Shire of Capel

Level 2 Flora and Level 1 Fauna Assessment – Payne Street, Boyanup

V1.1: 04 February 2020

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Executive Summary

Natural Area Consulting Management Services (Natural Area) was contracted by the Shire of Capel to undertake a detailed flora and vegetation survey and a level 1 fauna survey along a 1.4 km (approx. 3.4 ha) section of road verge on Payne Street, Boyanup. Survey outcomes provided in this report will inform the environmental approvals process associated with a clearing permit application. The survey was undertaken during spring flora season in November 2019.

The aims of the Level 2 Flora survey were to:

- flora species present
- the extent and boundaries of vegetation type and condition
- the location of declared rare or priority flora and/or ecological communities.

The level 2 flora and vegetation survey within the proposed area along Payne Street confirmed:

- a total of 129 flora species present from 36 families
- a total of 62 weeds and 77 native flora species
- no priority or threatened flora species were found within the survey boundary
- two vegetation types, Marri Woodland and *Viminaria juncea* Shrubland occurred within the site
- vegetation condition across the site was either Good or Completely Degraded.

The aims of the Level 1 Fauna survey were to:

- evidence of feeding of black cockatoos
- location of suitable habitat trees and hollows, where tree diameter at breast height was more than 500 mm and hollows larger than 100 mm that could be used by black cockatoos
- evidence of roosting or nesting of black cockatoos
- evidence of the presence of the Western Ringtail Possum within the site, such as scats and dreys.

The Level 1 fauna survey within the proposed area along Payne Street confirmed:

- total of 18 fauna species, 16 birds and two mammals
- no species of black cockatoo were observed during the survey
- 202 black cockatoo habitat trees larger than 500 mm at breast height
- no hollows were present that were larger than 100 mm
- no signs of nesting/roosting of black cockatoos was observed
- no evidence of the presence of Western Ringtail Possum was found within the site.

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1.0 Introduction

Natural Area Consulting Management Services (Natural Area) was contracted by the Shire of Capel to undertake a level 2 flora and vegetation survey and a level 1 fauna survey, which included inspections for evidence of threatened black cockatoo feeding, roosting and nesting and evidence of the Western Ringtail Possum along a 1.4 km section of road reserve along Payne Street, near the town of Boyanup in Western Australia.

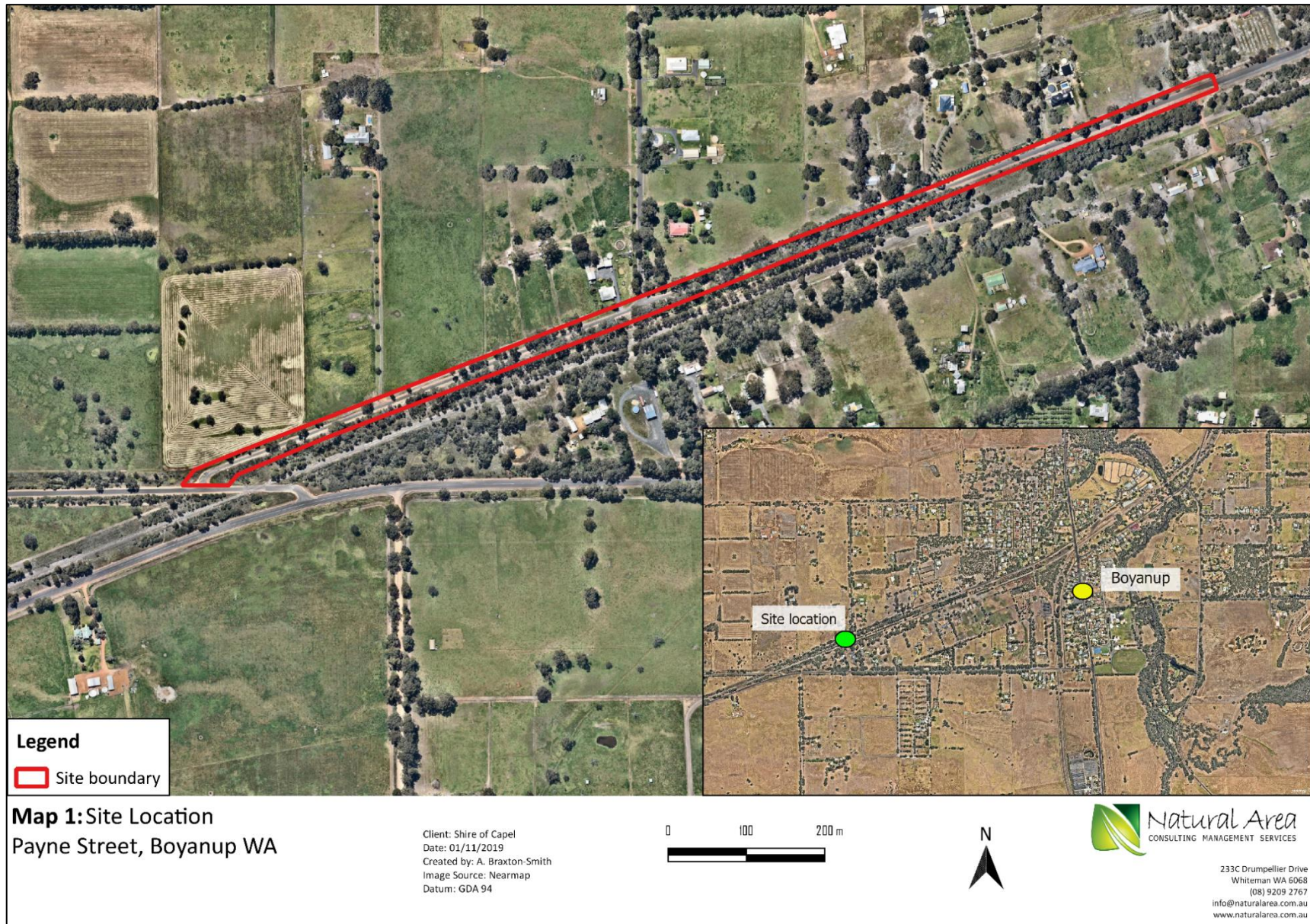
1.1 Location

The Payne Street site (SLK 1.01 – SLK 2.1) is located approximately 600 m west of the Boyanup town centre, within the Shire of Capel. The surveyed section of road reserve started at the intersection of Payne Street and Boyanup Road West and ended 1.4 km north-east towards the town centre of Boyanup (Map 1).

1.2 Scope

Natural Area's scope of works associated with the Level 2 flora and Level 1 fauna surveys included:

- undertaking a desktop survey of literature and databases to determine site characteristics and species that are likely to be present within the area
- flora identification
- assessing the vegetation structure and cover to determine vegetation types using the descriptions outlined in Bush Forever Volume 2 (Government of Western Australia, 2000)
- assessing and mapping vegetation condition using the rating scale attributed to Keighery in Bush Forever Volume 2 (Government of Western Australia, 2000)
- mapping the location of any declared rare or priority plant species that are noted in the field
- identifying and mapping locations of declared weeds within the surveyed area
- recording GPS coordinates of key locations of the above
- identifying and mapping areas for evidence of Black Cockatoo feeding, nesting/roosting
- mapping location of suitable trees (diameter of >500mm at breast height) for Black Cockatoos
- mapping location of suitable hollows (>100mm diameter) that are potential nesting/roosting of Black Cockatoos
- identifying and mapping areas for evidence of Western Ringtail Possum (*Pseudocheirus occidentalis*); through observation of the animal itself, tracks, scats, scratching and dreys
- recording sightings of other vertebrate fauna found on site.



2.0 Site Characteristics

Site characteristics have a strong bearing on the flora, vegetation, fauna, and ecological communities present. Key characteristics of the site along Payne Street are outlined in this section.

2.1 Regional Context

According to Interim Biogeographical Regionalisation of Australia (IBRA) descriptions, Payne Street is located within the Swan Coastal Plain (SWA 2 – Swan Coastal Plain subregion) (NRInfo Portal, 2019). This area is described as a being a low-lying coastal plain with sands of colluvial and aeolian origin. The region is dominated by Banksia and/or Jarrah Woodland over sandy soils associated with the dune systems, with Paperbark (*Melaleuca*) in swampy/damp areas and Jarrah Woodland to the east where the Swan Coastal Plain rises (Mitchell, Williams & 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 (Bunbury, Station ID 009965, 2019):

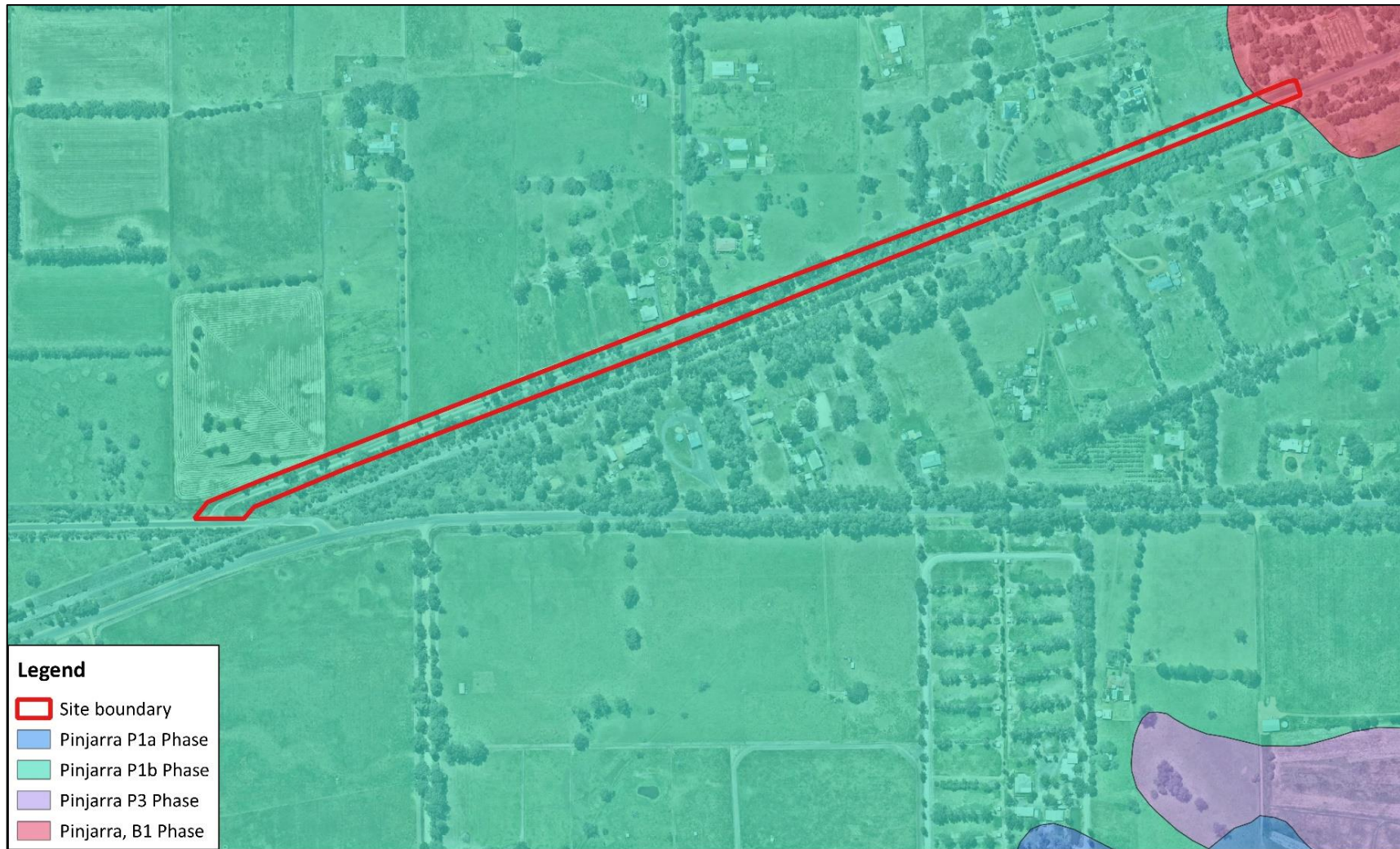
- average rainfall is 726.1mm per annum, with the majority falling between May and September
- average maximum temperatures range from 19.4 °C in winter to 31.4 °C in summer
- average minimum temperatures range from 4.6 °C in winter to 13.0 °C in summer.

2.3 Topography and soils

Topography across the site ranges from 28 – 36 m AHD with 34m AHD at the southern boundary, 36 m AHD through the middle and 28 m AHD at the northern boundary (Map 3). Two soil types are present, most dominantly Pinjarra P1b Phase (213Pj__P1b) and least being Pinjarra B1 Phase (213Pj__B1), identified using the NRInfo Portal (Department of Primary Industries and Regional Development, 2019, Map 2). Descriptions of these soil types are shown in Table 1.

Table 1: Payne Street Site Soil Types and Descriptions

Code	Soil Type	Description
213Pj__P1b	Pinjarra P1b Phase	Flat to very gently undulating plain with deep acidic mottled yellow duplex soils. Moderately deep pale sand to loamy sand over clay: imperfectly drained and moderately susceptible to salinity in limited areas.
213Pj__B1	Pinjarra B1 Phase	Extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands sometimes with a pale-yellow B horizon or a weak iron-organic hardpan at depths generally greater than 2 m; banksia dominant.



Legend

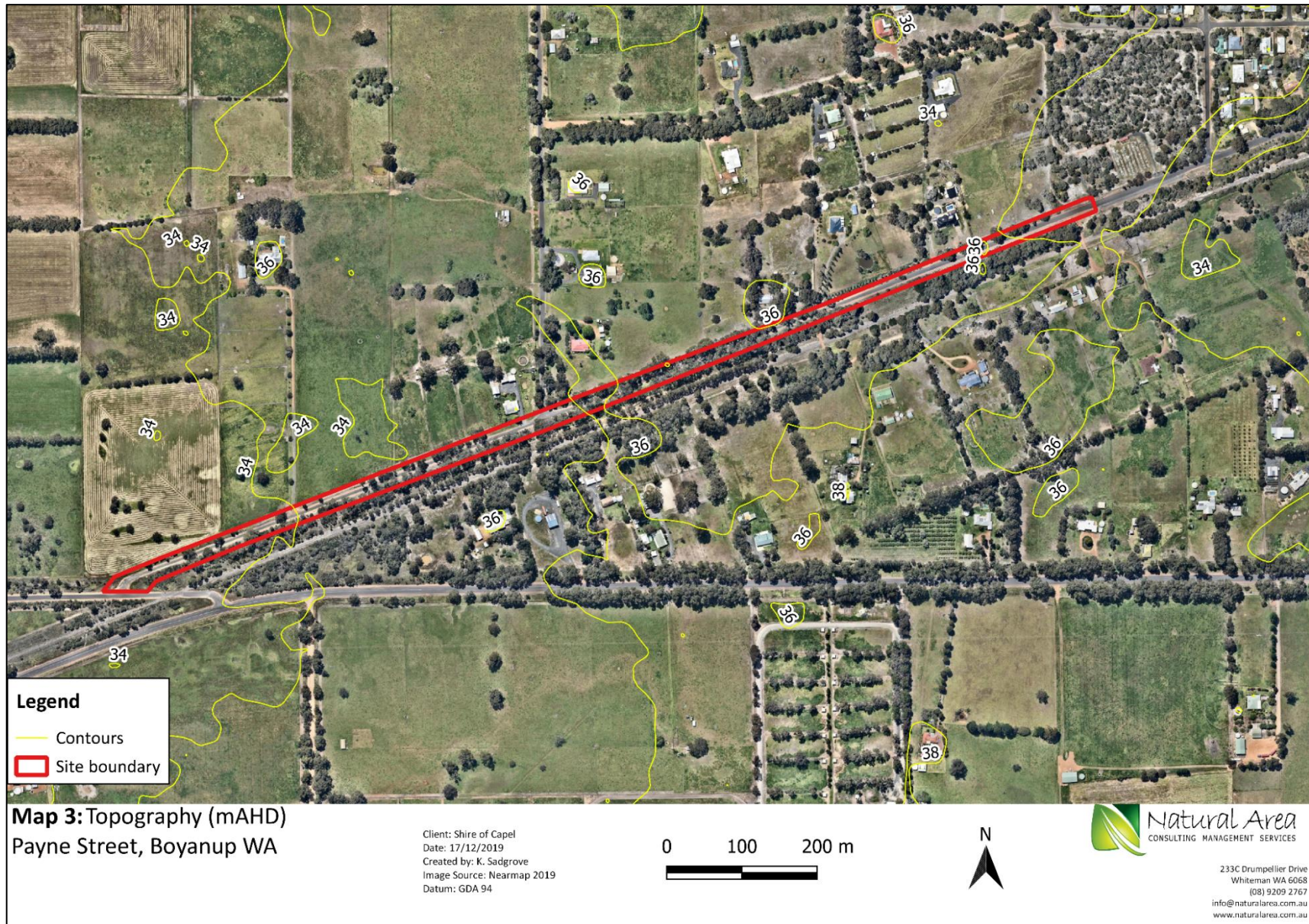
- Site boundary
- Pinjarra P1a Phase
- Pinjarra P1b Phase
- Pinjarra P3 Phase
- Pinjarra, B1 Phase

Map 2: Soil Types
Payne Street, Boyanup WA

Client: Shire of Capel
Date: 01/11/2019
Created by: A. Braxton-Smith
Image Source: Nearmap
Datum: GDA 94



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2.4 Vegetation Complex

The vegetation complex indicated by the WALGA Environmental Planning Tool (2019) as occurring within the site is the Guilford Complex (WALGA, 2019). The Guilford Complex is described as a mixture of open forest to tall open forest of *Corymbia calophylla*, *Eucalyptus wandoo*, *Eucalyptus marginata* and woodland of *Eucalyptus wandoo* with rare occurrences of *Eucalyptus lane-poolei* (Salmon White Gum). Minor components include *Eucalyptus rudis* and *Melaleuca raphiophylla* (Hedde et al, 1980).

2.5 Hydrology

No wetland or other water courses were identified within the study area although a drainage area was observed within the site.

2.6 Fauna Habitat

A review of the NatureMap and PMST reports indicated the potential presence of the threatened Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*), Carnaby's Cockatoo (*Calyptorhynchus latirostris*) and Baudin's Cockatoo (*Calyptorhynchus baudinii*) within the site. These species are listed as threatened under the *Biodiversity Conservation Act 2016* (WA), and as vulnerable (Forest Red-tailed Black Cockatoo) and endangered (Baudin's Cockatoo and Carnaby's Cockatoo) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth).

According to the WALGA Environmental Planning Tool (2019), Payne Street, Boyanup is located within a possible breeding, confirmed roosting and potential feeding area for the Carnaby's Black Cockatoo. The area of road surveyed also occurs within an area classified as medium habitat suitability for the Critically Endangered Western Ringtail Possum (WALGA Environmental Planning Tool, 2019).

3.0 Methodology

3.1 Objective

The objective of the survey was to collect sufficient data to adequately assess the proposed area to be cleared against the ten clearing principles. This included undertaking a desktop review, determining flora species present, assessing vegetation type and condition, recording vertebrate fauna species noted during assessment and the recording the presence of key habitats which can be used by cockatoos and Western Ringtail Possums.

3.2 Desktop and Literature Review

A desktop flora and vegetation survey was undertaken to determine the:

- 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.

The following databases were accessed to obtain relevant information:

- NatureMap (Department of Biodiversity, Conservation and Attractions, 2019d) (Appendix 1)
- Protected Matters Search Tool (Department of the Environment and Energy (DoEE), 2019a) (Cwlth) (Appendix 2)
- FloraBase (Department of Biodiversity, Conservation and Attractions, 2019b)
- Threatened and priority flora and ecological community database searches (Department of Biodiversity, Conservation and Attractions, 2019e).

Summary sheets of threatened flora potentially occurring in the area were created for quick reference in the field (Appendix 3).

3.3 On-ground Flora Methodology

Natural Area Botanists Sharon Hynes and Aster Braxton-Smith traversed the site on two days on the 5th and 6th of November 2019, with key GPS data recorded using a handheld Samsung tablet loaded with GIS mapping software (Mappt), including:

- identification of flora species present by walking the site, including targeting declared rare and priority species indicated as potentially present during desktop assessments
- assessing vegetation type and condition across the site
- using a GPS to map significant species and boundaries of differing vegetation condition
- determining the presence of any further threatened or priority listed flora species and/or ecological communities listed under the *Biodiversity and Conservation Act 2016 (WA)* and/or the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
- location of trees which have the potential to provide habitat in the form of hollows for cockatoos.

The area of the site was small enough that the entirety of the site was seen as one large quadrat/relevé, as such the following was recorded:

- location
- vegetation description
- aspect
- habitat
- soil type and colour
- inundation
- leaf litter depth (cm) and cover (%)
- evidence of disturbance, including fire
- height of species
- percentage foliar cover of each species.

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

3.3.1 Flora Species

Flora species were recorded on observation while traversing the site, with the list of potential declared rare or priority flora species used to guide targeted searches for those species (Appendix 3).

3.3.2 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 (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)

3.3.3 Vegetation Condition

Vegetation condition was assessed using the rating scale attributed to Keighery in *Bush Forever Volume 2* (Government of Western Australia, 2000). A tablet loaded with GIS mapping software (Mappt) was used to differentiate the locations of the vegetation condition across the site and assist with mapping outcomes (Table 3).

Table 3: Vegetation condition ratings

Category	Description
1 Pristine	Pristine or nearly so, no obvious signs of disturbance.
2 Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
3 Very Good	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
4 Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, 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. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, 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: Government of Western Australia, 2000)

3.4 Limitations

The survey was carried out in spring, the optimal time to survey native vegetation in the Swan Coastal Plain Region of Western Australia. However, certain limitations for the survey works still exist, including:

- database searches only provide an indication of what flora species may be present, with on ground surveys required to confirm those present
- the differing databases are reliant on information submitted via various reporting mechanisms, so all records of a flora species or ecological community in a specified area may not be complete
- on-ground surveys indicate species present at the time of the assessment, with species flowering at different times not always able to be identified
- not all species flower every year.

Despite these limitations, Natural Area believes 80 – 90% of flora species were identified.

3.5 Fauna On-Ground Methodology

A level 1 fauna survey was undertaken in conjunction with other survey activities. The fauna survey included recording opportunistic sightings of fauna species in the survey area and evidence of their occurrence, in the form of:

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

Included in the fauna assessment, the presence of the Western Ringtail Possum (*Pseudocheirus occidentalis*) was assessed through recording of opportunistic sightings of animals and recording of evidence of their presence in the form of:

- tracks
- scats
- scratching
- dreys.

The site was traversed and potential habitat trees for the three black cockatoos and signs of their presence were recorded using a handheld GPS device, including:

- roosting trees with a diameter at breast height (DBH) > 500 mm
- nesting tree with hollows large enough for black cockatoos to utilise
- signs of foraging by black cockatoos in the form of chewed Marri nuts, and Banksia flowers and cones
- any sightings or calls.

4.0 Flora Survey Results

Survey works for Payne Street included desktop and field activities; outcomes of both are provided in this section.

4.1 Desktop Survey

A review of NatureMap identified a total of 669 flora species which could potentially occur within a 10 km radius of the site include:

- four mosses
- 405 dicotyledons
- three gymnosperms
- 230 monocotyledons
- five ferns.

4.1.1 Significant Flora

A review of NatureMap indicated 61 conservation significant flora species listed under the *Biodiversity Conservation Act 2016* (WA) as potentially occurring within 10 km of the site (Department of Biodiversity Conservation and Attractions, 2019d). A review of the Protected Matters Search Tool (PMST) (Department of the Environment and Energy, 2019) indicated 18 threatened flora species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Cwlth) as potentially occurring within a 10 km radius of the site. Of the 62 conservation significant species potentially found in the area, it was determined that the site conditions (soil type, drainage, location) may be suitable for 43 (highlighted in green) of these species (Table 4).

Table 4: Potential threatened and priority species

Species	Common Name	Cons. Code	NM	PMST	DBCA
<i>Acacia drummondii</i> subsp. <i>affinis</i>		P3	X		
<i>Acacia flagelliformis</i>		P4	X		X
<i>Acacia semitrullata</i>		P4	X		X
<i>Adelphacme minima</i>		P3	X		X
<i>Andersonia gracilis</i>	Slender Andersonia	T, EN	X	X	
<i>Angianthus drummondii</i>		P3	X		
<i>Aponogeton hexatepalus</i>		P4	X		X
<i>Banksia nivea</i> subsp. <i>uliginosa</i>		T, EN	X	X	
<i>Banksia squarrosa</i> subsp. <i>argillacea</i>	Whicher Range Dryandra	T, V	X	X	
<i>Boronia humifusa</i>		P1	X		X
<i>Boronia tetragona</i>		P3	X		X
<i>Brachyscias verecundus</i>	Ironstone Brachyscias	T, CR	X	X	
<i>Caladenia hoffmanii</i>	Hoffman's Spider Orchid	T, EN	X	X	

Species	Common Name	Cons. Code	NM	PMST	DBCA
<i>Caladenia huegelii</i>	King Spider Orchid, Grand Spider Orchid, Rusty Spider Orchid	T, EN	X	X	
<i>Caustis</i> sp. Boyanup		P3	X		X
<i>Chamaescilla gibsonii</i>		P3	X		X
<i>Chamelaucium</i> sp. S Coastal Plain	Royce's Waxflower	T, V	X	X	
<i>Cyathochaeta teretifolia</i>		P3	X		X
<i>Darwinia whicherensis</i>		T	X		X
<i>Daviesia elongata</i>		V		X	X
<i>Diuris drummondii</i>	Tall Donkey Orchid	T, V	X	X	
<i>Diuris micrantha</i>	Dwarf Bee-Orchid	T, V	X	X	X
<i>Diuris purdiei</i>	Purdie's Donkey Orchid	T, EN	X	X	
<i>Drakaea elastica</i>	Glossy-leaved Hammer Orchid	T, EN	X	X	X
<i>Drakaea micrantha</i>	Dwarf Hammer Orchid)	T, V	X	X	X
<i>Eleocharis keigheryi</i>	Keighley's Eleocharis	T, V	X	X	X
<i>Franklandia triaristata</i>	Lanoline Bush	P4	X		X
<i>Gastrolobium papilio</i>	Butterfly-leaved Gastrolobium	T, EN	X	X	
<i>Gastrolobium whicherense</i>		P2	X		X
<i>Gastrolobium</i> sp. Yoongarillup		P1	X		X
<i>Grevillea bronwenae</i>		P3	X		X
<i>Grevillea maccutcheonii</i>		T	X		
<i>Isopogon formosus</i> subsp. <i>dasylepis</i>		P3	X		X
<i>Jacksonia gracillima</i>		P3	X		X
<i>Lambertia echinata</i> subsp. <i>occidentalis</i>	Western Prickly Honeysuckle	T, EN	X	X	
<i>Lasiopetalum membranaceum</i>		P3	X		
<i>Leptomeria furtiva</i>		P2	X		X
<i>Leucopogon</i> sp. Busselton		P2	X		X
<i>Lomandra whicherensis</i>		P3	X		X
<i>Orianthera wendyae</i>		P1	X		
<i>Ornduffia submersa</i>		P4	X		X
<i>Petrophile latericola</i>	Laterite Petrophile	T, EN	X	X	
<i>Pithocarpa corymbulosa</i>		P3	X		
<i>Platytheca anasima</i>		P2	X		X
<i>Pultenaea pinifolia</i>		P3	X		
<i>Pultenaea skinneri</i>	Skinner's Pea	P4	X		X
<i>Schoenus loliaceus</i>		P2	X		X

Species	Common Name	Cons. Code	NM	PMST	DBCA
<i>Sphenotoma drummondii</i>	Mountain Paper-heath	T, EN	X	X	
<i>Stenanthemum sublineare</i>		P2	X		
<i>Stylidium acuminatum</i> (Carlquist) <i>Wege</i> subsp. <i>acuminatum</i>		P2	X		X
<i>Synaphea hians</i>		P3	X		X
<i>Synaphea odocoileops</i>		P1	X		X
<i>Synaphea petiolaris</i> subsp. <i>simplex</i>		P3	X		X
<i>Synaphea polypodioides</i>		P3	X		X
<i>Synaphea</i> sp. Fairbridge Farm	Selena's <i>Synaphea</i>	T	X		
<i>Synaphea</i> sp. Pinjarra Plain		T	X		X
<i>Synaphea</i> sp. Serpentine		T	X		X
<i>Synaphea stenoloba</i>		T	X		X
<i>Thelymitra variegata</i>		P2	X		X
<i>Trithuria australis</i>		P4	X		X
<i>Verticordia attenuata</i>		P3	X		
<i>Verticordia densiflora</i> subsp. <i>pedunculata</i>		T	X		X

A review of the DBCA's threatened and priority flora database indicated a total of 39 species, 10 are threatened and 29 priority species have been previously recorded within 10 km of the survey site, with none recorded within the boundary. Of these, the *Aponogeton hexatepalus* (P4) was recorded 10 m to the south east and 50 m to the north west and the *Pultenaea skinneri* (P4) was 115 m to the north east; all other species were more than 500 m from the survey site.

4.1.2 Threatened Ecological Communities

A review of the PMST report (Department of the Environment and Energy (DoEE), 2019) indicated the potential for two threatened ecological communities to occur within the site; these are summarised in Table 5.

Table 5: Threatened Ecological Communities potential occurring within the survey site

Community Description	Cons. Code (WA)	Cons. Code (Cwlth)	Presence
Banksia Woodlands of the Swan Coastal Plain	P3	EN	Likely to occur within area
Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plan	P3	CR	Likely to occur within area

One ecological community is listed as critically endangered and the other as endangered under the *EPBC Act 1999* (Cwlth) (DoEE, 2019). A review of the DBCA threatened ecological community's database indicated that neither of these communities occur within the site (DBCA, 2019e).

4.2 On-ground Flora Survey

4.2.1 Flora

A total of 129 flora species were identified from 36 families. Of these, 62 were weeds and 67 were native species. Two conservation significant flora species (Priority 4) were found on site, *Grevillea olivacea* and *Grevillea pimeleoides*, although these had both been planted and were not naturally occurring. Examples of native flora species are shown in Figure 1, with weed species shown in Figure 2. The complete flora list is provided in Appendix 5.

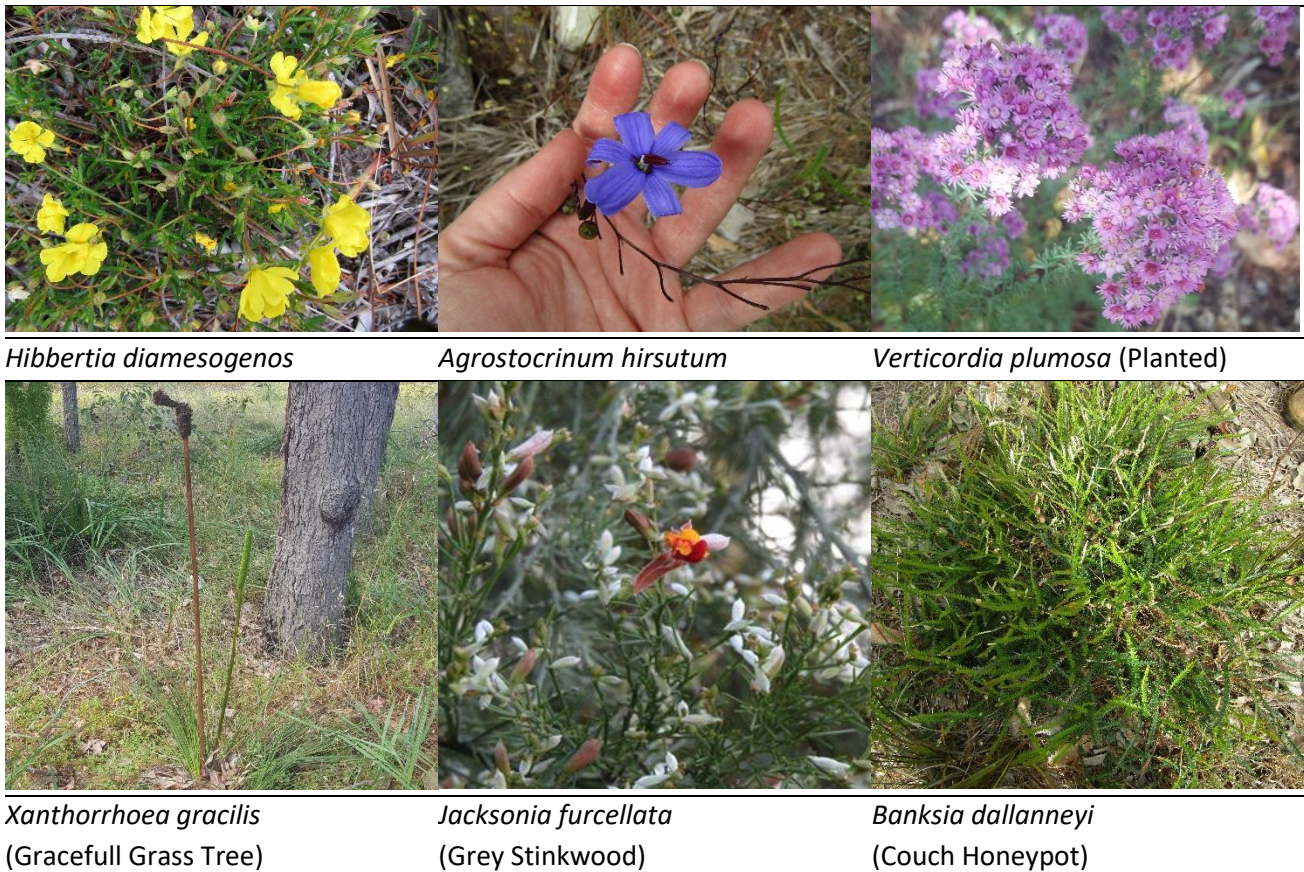


Figure 1: Examples of native flora species at Payne Road

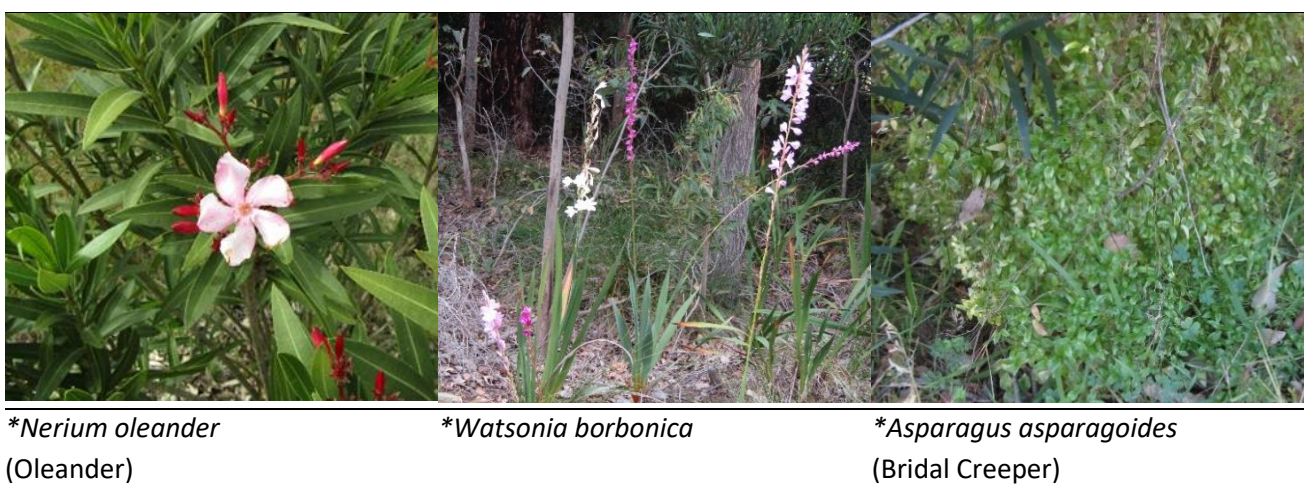


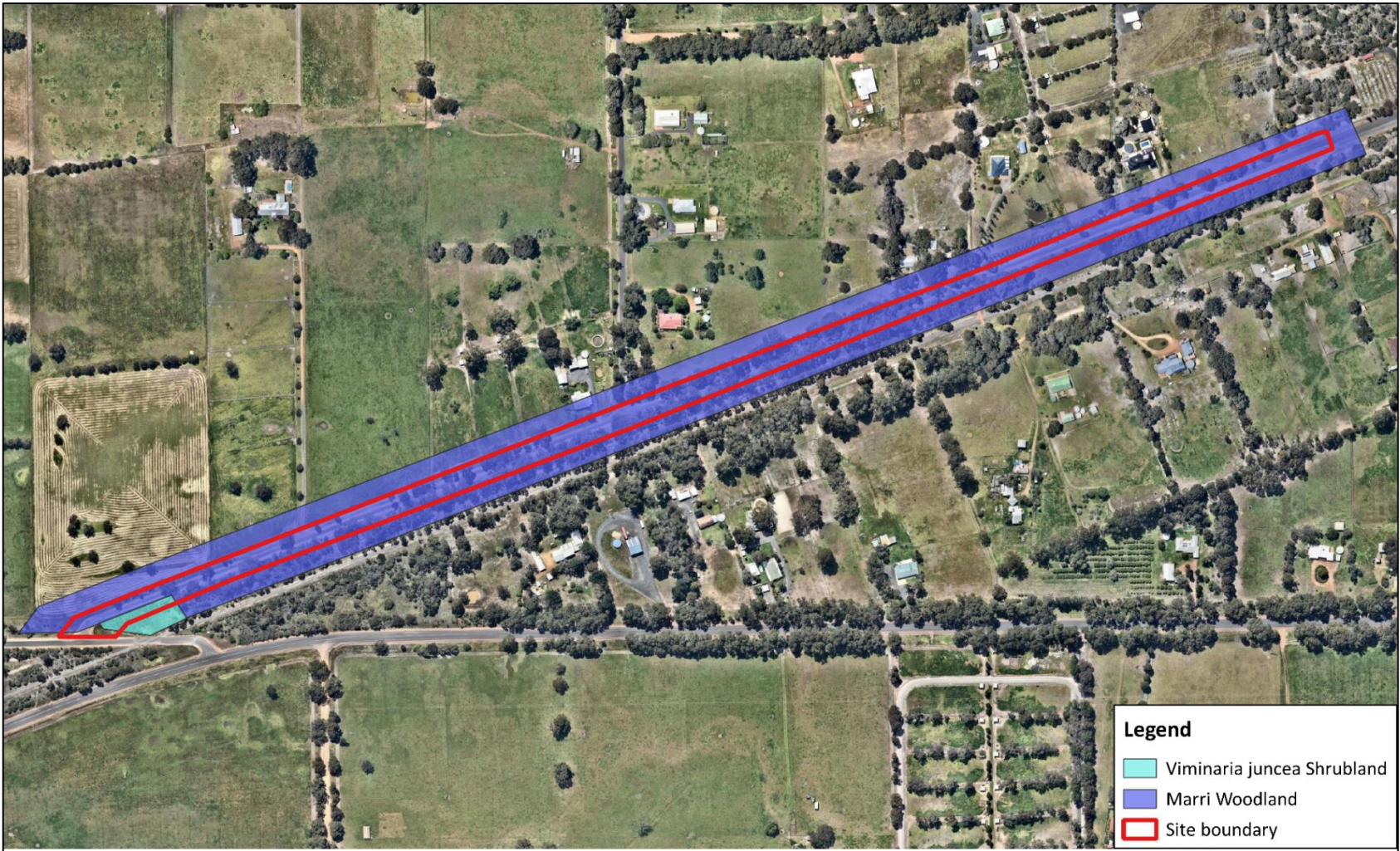
Figure 2: Examples of weed species found on site

4.2.2 Vegetation Types

Two vegetation types were recorded on site, namely Marri Woodland and *Viminaria juncea* (Swishbush) Shrubland (Map 4, Figure 3). The Marri Woodland vegetation community is comprised of a woodland of *Corymbia calophylla* (Marri), a middle story of *Xanthorrhoea* species and a weedy understory of introduced grasses. The *Viminaria juncea* Shrubland vegetation community is comprised of *Viminaria juncea* (Swishbush) over *Melaleuca viminea* and an understory of *Chorizandra enodis* and mixed native sedges. Marri Woodland was the dominant vegetation type across the site with *Viminaria juncea* Shrubland occurring in a small section to the south of the site. The borders of the vegetation type map (Map 4) have been extended past the site boundary for ease of viewing.



Figure 3: Marri Woodland at Payne Street.

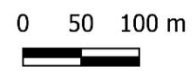


Legend

- Viminaria juncea Shrubland
- Marri Woodland
- Site boundary

Map 4:
Vegetation Types
Payne Street, Boyanup

Client: Shire of Capel
Date: 5/12/2019
Created by: K. Sadgrove
Image Source: Nearmap 2019
Datum: GDA 94



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4.2.3 Threatened Ecological Communities

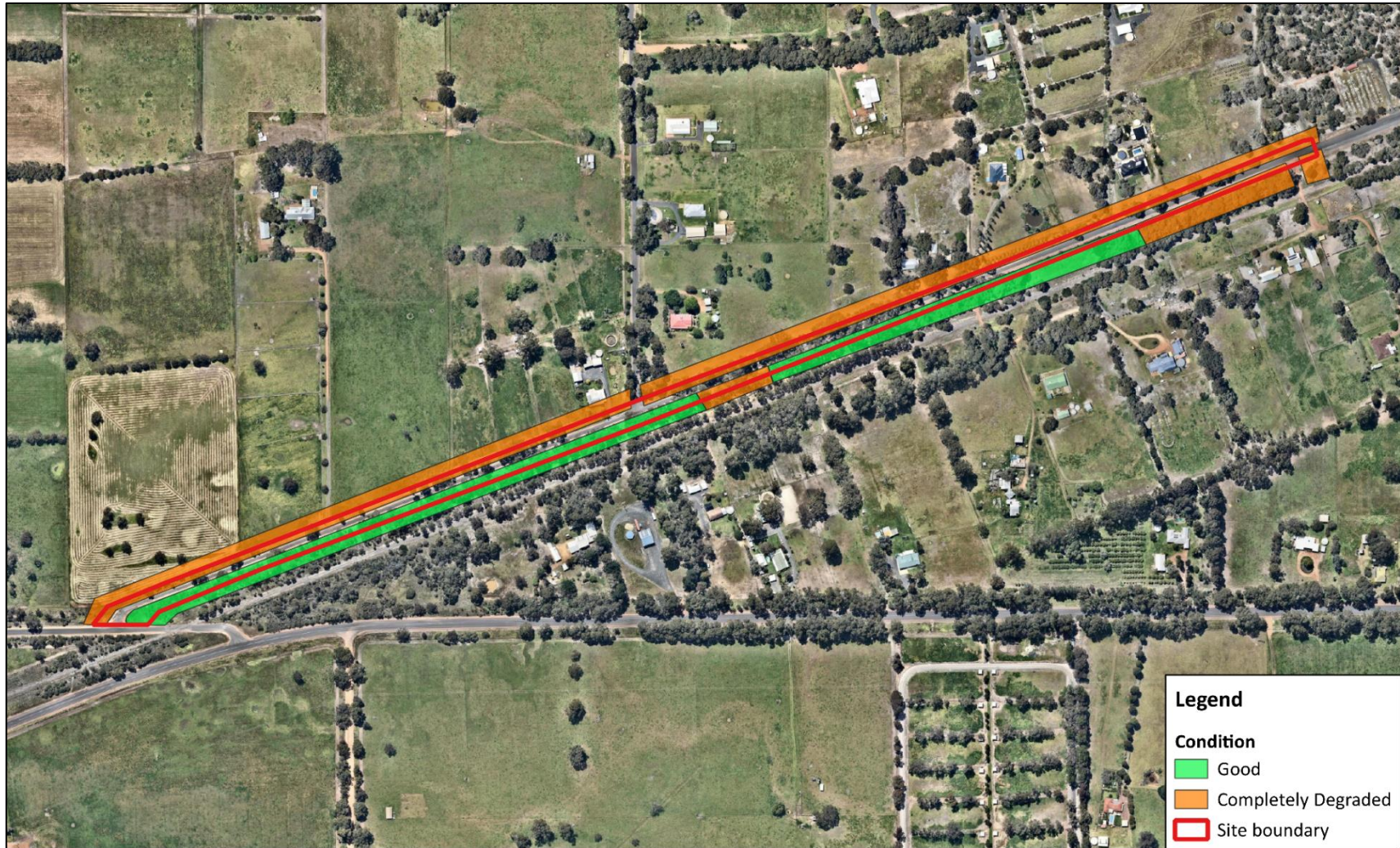
The survey area was not determined to be either of the two threatened ecological communities identified through the PMST report, as the dominant species for these communities were not present.

4.2.4 Vegetation Condition

Vegetation condition on site was classified as Good or Completely Degraded, with the areas of the vegetation condition similar in amount of site covered, 52% Good and 48% Completely Degraded (Table 6, Map 5). The majority of the areas classified as Completely Degraded occurred adjacent to agricultural properties which have previously been cleared. The borders of the vegetation condition map (Map 5) have been extended past the site boundary for ease of viewing.

Table 6: Vegetation condition

Vegetation Condition	Excellent	Very Good	Good	Degraded	Completely Degraded	Totals
Area (ha)	0	0	0.99	0	0.92	1.91
Area (%)	0	0	52%	0	48%	100



Map 5:
Vegetation Condition
Payne Street, Boyanup

Client: Shire of Capel
Date: 17/12/2019
Created by: K. Sadgrove
Image Source: Nearmap 2019
Datum: GDA 94



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5.0 Fauna Survey Results

The level 1 fauna survey works for Payne Street included desktop and field activities; outcomes of both are provided in this section.

5.1 Desktop Survey

A review of NatureMap identified a total of 156 species which could potentially occur within a 10 km radius of the site include:

- six amphibians
- 112 birds
- 15 invertebrates
- 14 mammals
- 9 reptiles.

5.2 Conservation Significant Fauna

A review of NatureMap indicated 15 conservation significant fauna species listed under the *Biodiversity Conservation Act 2016* (WA) as potentially occurring within 10 km of the site (Department of Biodiversity Conservation and Attractions, 2019d). A review of the Protected Matters Search Tool (PMST) (Department of the Environment and Energy, 2019) indicated 11 significant fauna species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Cwlth) as potentially occurring within a 10 km radius of the site. Note that marine species listed on the PMST report have not been included, as they are unlikely to occur within site boundary. Those species with a suitable habitat present within the site are highlighted green (Table 7).

Table 7: Conservation significant fauna

Species	Common Name	Cons. Code	NM	PMST	Comment
<i>Bettongia penicillata</i> subsp. <i>ogilbyi</i>	Woylie, Brush-tailed Bettong	T	X		Unlikely- habitat unsuitable
<i>Bertmainius opimus</i>	Western Pygmy Trapdoor Spider	P3	X		Unlikely- habitat unsuitable
<i>Botaurus poiciloptilus</i>	Australian Bittern				Unlikely- habitat unsuitable
<i>Calidris canutus</i>	Red Knot	EN		X	Unlikely- habitat unsuitable
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR		X	Unlikely- habitat unsuitable
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	T, VU	X	X	Likely to occur- habitat suitable
<i>Calyptorhynchus baudinii</i>	Baudin's Cockatoo	T, EN	X	X	Likely to occur- habitat suitable
<i>Calyptorhynchus latirostris</i>	Carnaby's Cockatoo	T, EN	X	X	Likely to occur - habitat suitable
<i>Dasyurus geoffroii</i>	Chuditch, Western Quoll	T, VU	X	X	Likely to occur - habitat suitable

Species	Common Name	Cons. Code	NM	PMST	Comment
<i>Falco peregrinus</i>	Peregrine Falcon	S	X		Unlikely- habitat unsuitable
<i>Falsistrellus mackenziei</i>	Western False Pipistrelle, Western Falsistrelle	P4	X		Unlikely- habitat unsuitable
<i>Isoodon fusciventer</i>	Southern Brown Bandicoot, Quenda	P4	X		Unlikely- habitat unsuitable
<i>Idiosoma sigillatum</i>	Swan Coastal Plain shield-backed trapdoor spider	P3	X		Unlikely- habitat unsuitable
<i>Notamacropus irma</i>	Western Brush Wallaby	P4	X		Unlikely- habitat unsuitable
<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	CR		X	Unlikely- habitat unsuitable
<i>Pandion haliaetus</i>	Osprey	IA	X		Unlikely- habitat unsuitable
<i>Phascogale tapoatafa subsp. wambenger</i>	South-western Brush-tailed Phascogale	S	X		Likely - Habitat suitable
<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	T, CR	X	X	Likely - Habitat suitable
<i>Setonix brachyurus</i>	Quokka	T, V		X	Likely - Habitat suitable
<i>Sterna nereis nereis</i>	Australian Fairy Tern	V		X	Unlikely- habitat unsuitable
<i>Tringa hypoleucos</i>	Common Sandpiper	IA	X		Unlikely- habitat unsuitable

5.3 Fauna Recorded

During the flora survey opportunistic sightings of fauna were recorded, either directly or via indications of their presence. A total of 18 different fauna species were recorded, including 16 species of birds and evidence of the presence of rabbits (diggings) and a deceased fox (*Vulpes vulpes*) which are classified as C3 declared pests (Table 8).

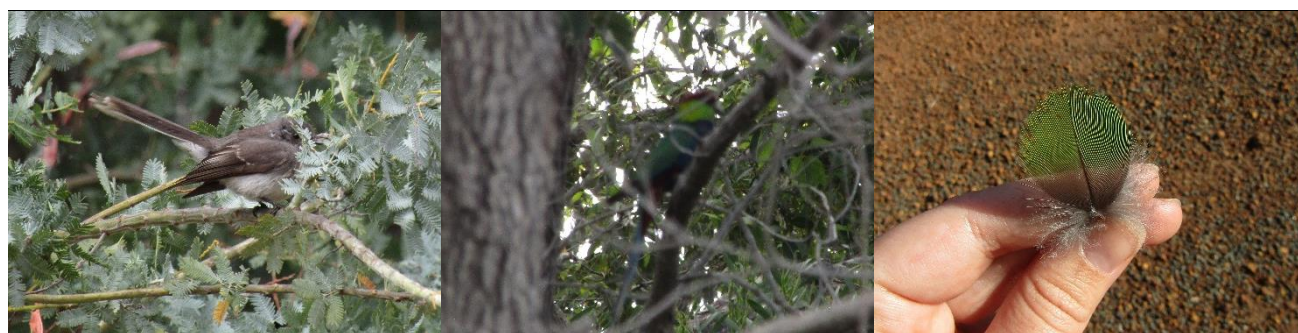
No indications of the presence of Western Ringtail Possum (*Pseudocheirus occidentalis*) were recorded during the November 2019 survey. Examples of fauna recorded during the survey are shown in Figure 4.

Table 8: Fauna recorded at Payne Street, Boyanup.

Family	Species	Common Name	Group
Meliphagidae	<i>Anthochaera carunculata</i>	Red Wattlebird	Bird
Ardeidae	<i>Ardea novaehollandiae</i>	White-faced Heron	Bird
Cacatuidae	<i>Cacatua roseicapilla</i>	Galah	Bird
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	Bird
Corvidae	<i>Corvus coronoides</i>	Australian Raven	Bird
Cracticidae	<i>Cracticus tibicen</i>	Australian Magpie	Bird

Family	Species	Common Name	Group
Meliphagidae	<i>Lichmera indistincta</i>	Brown Honeyeater	Bird
Columbidae	<i>Ocyphaps lophotes</i>	Crested Pigeon	Bird
Leporidae	<i>Oryctolagus cuniculus*</i>	Rabbit	Mammal
Pachycephalidae	<i>Pachycephala rufiventris</i>	Rufous Whistler	Bird
Columbidae	<i>Phaps chalcoptera</i>	Common Bronzewing	Bird
Psittacidae	<i>Platycercus spurius</i>	Red-capped Parrot	Bird
Psittacidae	<i>Platycercus zonarius subsp. semitorquatus</i>	Twenty-eight Parrot	Bird
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail	Bird
Rhipiduridae	<i>Rhipidura leucophrys</i>	Willie Wagtail	Bird
Columbidae	<i>Spilopelia senegalensis</i>	Laughing Turtle-Dove	Bird
Alcedinidae	<i>Todiramphus sanctus</i>	Sacred Kingfisher	Bird
Canidae	<i>Vulpes vulpes*</i>	Red Fox	Mammal

*Denotes introduced species



Rhipidura albiscapa
(Grey Fantail)

Platycercus spurius
(Red-capped Parrot)

Platycercus zonarius feather
(Twenty-Eight)

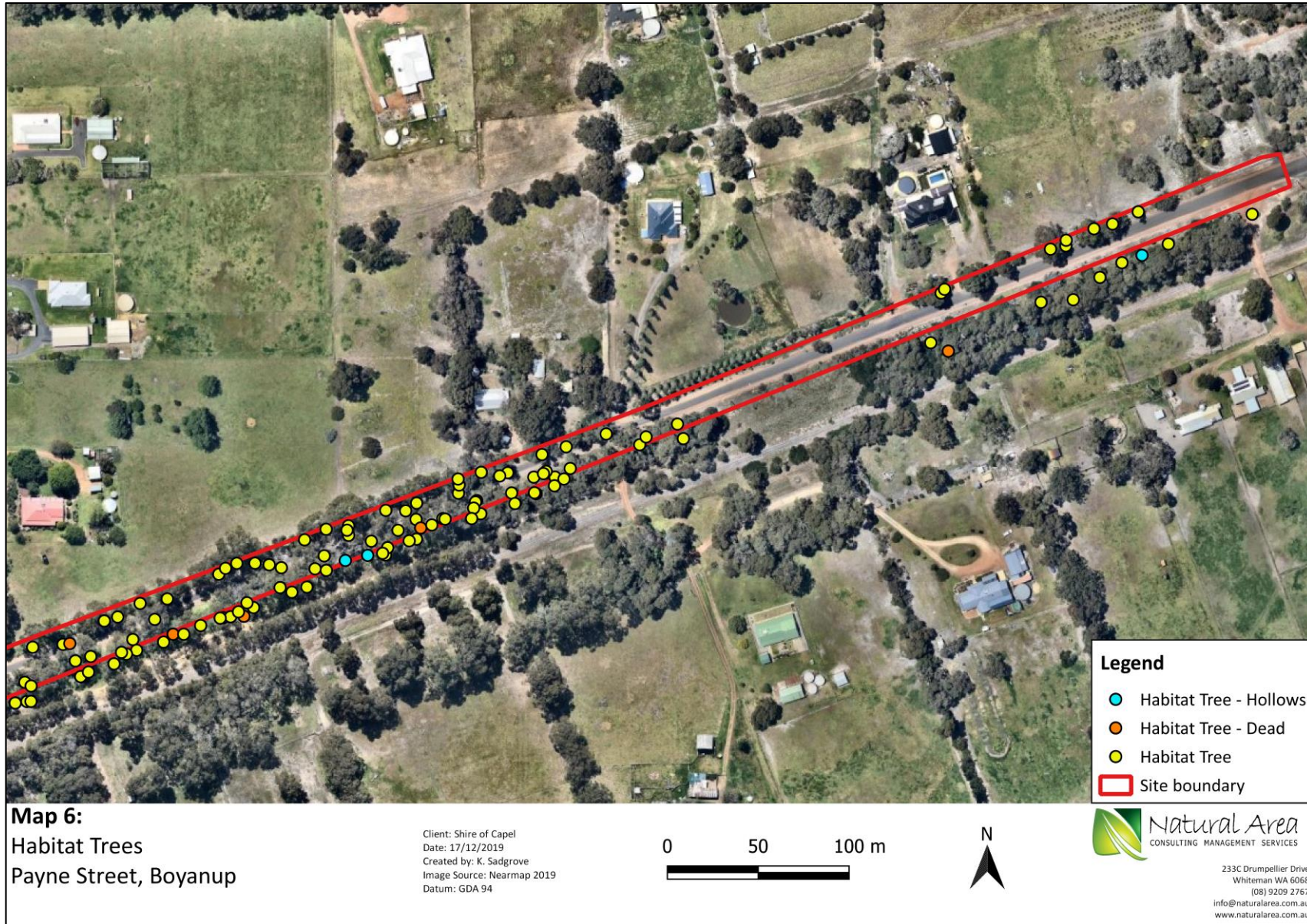
Figure 4: Examples of fauna recorded during the survey.

5.4 Cockatoo Habitat

The Payne Street survey identified 202 trees with a diameter at breast height greater than 500 mm, which have the potential to provide habitat (roosting locations and hollows) (Table 9, Map 6 and 7). Of the four tree species recorded, two are preferred species for breeding (Marri and Jarrah). Not all of the recorded trees occur within the potential clearing (site boundary) as the survey area was larger but have been included for reference purposes. No evidence of cockatoo feeding, or individual birds were observed during the survey. Hollows present were not large enough to be used for nesting by black cockatoos, with those recorded having an entrance less than 10 cm in diameter.

Table 9: Habitat trees present at Payne Street

Species	Total Number of Trees	Hollows Present	Comments
Preferred breeding tree species			
<i>Corymbia calophylla</i> (Marri)	191	2	Beehive present in one tree hollow
<i>Eucalyptus marginata</i> (Jarrah)	2		
Other tree species			
<i>Agonis flexuosa</i>	2		
<i>Eucalyptus rudis</i>	7	1	





Legend

- Habitat Tree - Hollows
- Habitat Tree- Dead
- Habitat Tree
- Site boundary

Map 7:
Habitat Trees
Payne Street, Boyanup

Client: Mark Stratfold, Riverstone
Date: 15/07/2019
Created by: S. Hynes
Image Source: new column
Datum: GDA 94



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6.0 Implications of Results

6.1 Flora Species

Natural Area's Level 2 flora survey at the Payne Street site recorded 129 flora species from 36 families, 62 of which were introduced and 67 were native species. Two vegetation types, Marri Woodland and *Viminaria juncea* Shrubland were recorded, with the vegetation condition of the surveyed area classified as Good or Completely Degraded.

6.2 Significant Flora

No naturally occurring threatened or priority species were recorded during the on-ground 2019 spring survey, with the P4 listed *Grevillea olivacea* and the *Grevillea pimeleoides* both having been planted outside their normal location. While the P4 listed *Aponogeton hexatepalus* and the *Pultenaea skinneri* were located within 100 m of the survey site, with the closest being the *Aponogeton* at 10 m and 50 m from the site boundary, all other significant flora species were recorded at least 500 m from the site. Accordingly, no population is likely to be impacted when clearing works ahead of road widening occurs.

6.3 Threatened Ecological Communities

No threatened ecological communities were recorded on site.

6.4 Fauna Species

Natural Area's Level 1 fauna survey recorded 18 different species from two groups, namely mammals and birds. Two of the species observed are introduced; Red Fox (*Vulpes vulpes*) and Rabbit (*Oryctolagus cuniculus*). No significant fauna species were observed during the survey. No evidence of use by black cockatoos or indications of the presence of Western Ringtail Possum (*Pseudocheirus occidentalis*) were recorded during the November survey.

6.5 Black Cockatoo Habitat

It is noted that Marri is a common food source for the Carnaby's Cockatoo, Baudin's Cockatoo and Forest Red-tailed Black Cockatoo species. Carnaby's Cockatoo (*Calyptorhynchus latirostris*) is listed as endangered under the *EPBC Act 1999* (Cwlth), with the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksia naso*) and the Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) listed as vulnerable; all are listed as threatened under the *Biodiversity Conservation Act 2016* (WA). A total of 191 Marri trees were identified as occurring within the site.

Despite the high number of trees recorded within the site, there were no evidence of roosting, feeding or use of hollows being used by black cockatoos for nesting. This suggests that this area is not currently or recently been utilised by black cockatoos in any capacity, regardless of there being more than 1 ha of good quality foraging habitat. On that basis, a referral to the Department of the Environment and Energy (DoEE, Cwlth) is not warranted. An assessment of the site against the referral guidelines for black cockatoos is provided in Table 9.

Table 9: Referral guidelines for the 3 threatened Black Cockatoo species

Guideline	Comment
<p>High risk of significant impacts: referral recommended</p> <ul style="list-style-type: none"> ▪ Clearing of any known nesting tree ▪ Clearing or degradation of any part of a vegetation community known to contain breeding habitat ▪ Clearing of more than 1 ha of quality foraging habitat. ▪ Clearing or degradation (including pruning the top canopy) of a known night roosting site ▪ Creating a gap of greater than 4 km between patches of black cockatoo habitat (breeding, foraging or roosting). 	<ul style="list-style-type: none"> ▪ Payne Street is located within a possible breeding area for Carnaby's Black Cockatoo (WALGA 2019) ▪ No signs of nesting were observed during the November survey by Natural Area botanists ▪ Payne Street is a confirmed roosting area for Carnaby's Black Cockatoo (WALGA 2019) ▪ The site is classified as a potential feeding area for Carnaby's Black Cockatoo (WALGA 2019) ▪ While the Payne Street site is more than 1 ha overall and contains 202 potential habitat trees, there is no evidence of any usage by this species at the site for breeding, roosting or foraging, thus no individuals are likely to be impacted ▪ No evidence of foraging in the form of chewed Marri nuts or similar was noted during the November survey carried out by Natural Area ▪ The Payne Street site is an existing road and road reserve with agricultural land that includes remnant trees, some treed areas and other areas of remnant vegetation within 2 km of the site
<p>Uncertainty: referral recommended or contact the department</p> <ul style="list-style-type: none"> ▪ Degradation (such as through altered hydrology or fire regimes) of more than 1 ha of foraging habitat. Significance will depend on the level and extent of degradation and the quality of the habitat. ▪ Clearing or disturbance in areas surrounding black cockatoo breeding, foraging or night roosting habitat that has the potential to degrade habitat through introduction of invasive species, edge effects, hydrological changes, increased human visitation or fire. 	<ul style="list-style-type: none"> ▪ The Payne Street site is an existing road and road reserve with agricultural land and remnant trees and bushland within 2 km of the site. ▪ The site represents the edge of existing vegetation, with the additional clearing meaning the edge will move approximately 5 m; accordingly, edge effects and the introduction of invasive species is not likely to be significantly greater than they already are ▪ The survey area represents the maximum area to be cleared, with the expectation that it will be less

Guideline	Comment
<ul style="list-style-type: none"> ▪ Actions that do not directly affect the listed species but that have the potential for indirect impacts such as increasing competitors for nest hollows. ▪ Actions with the potential to introduce known plant diseases such as <i>Phytophthora</i> spp. to an area where the pathogen was not previously known. 	<ul style="list-style-type: none"> ▪ The vegetation condition across the site is classified as either Good or Completely Degraded with the majority of the site classified as Good (52%).
<p>Low risk of significant impacts: referral may not be required</p>	<ul style="list-style-type: none"> ▪ Actions that do not affect black cockatoo habitat or individuals. ▪ Actions whose impacts occur outside the modelled distribution of the three black cockatoos. <ul style="list-style-type: none"> ▪ While the survey recorded 202 potential habitat trees with a DBH of more than 500 mm, there is no evidence of usage for foraging, roosting or nesting by any endangered black cockatoo species, suggesting the site is not an important one to them ▪ No individuals are likely to be impacted as a result of this proposal

6.6 Assessment Against Clearing Principles

It is considered unlikely that many trees may need to be cleared within the survey boundary although the total area to be cleared is yet to be determined. An assessment of information obtained during the November 2019 survey has been made against the Western Australian clearing principles. It is suggested that the clearing application may be at variance with one of the ten clearing principles (Table 10).

Table 10: Assessment against clearing principles

Clearing Principle	Comment
A Native vegetation should not be cleared if it comprises a high level of biological diversity.	<p>The area to be cleared is unlikely to be at variance with this principle:</p> <ul style="list-style-type: none"> A total of 129 flora species, 62 were introduced species (weeds), 67 were native During the November 2019 survey by Natural Area botanists two Priority 4 species were recorded although these were planted within the site rather than naturally occurring The majority of the vegetation condition of the site is Good (52%)
B Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	<p>The area to be cleared may be at variance with this principle:</p> <ul style="list-style-type: none"> A review of the information available on WALGA (2019) identified that the site is classified as a possible breeding, confirmed roosting and potential feeding area for the Carnaby's Black Cockatoo. NatureMap and PMST reports indicated the potential presence of the threatened Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>), the Carnaby's Cockatoo (<i>Calyptorhynchus latirostris</i>) and Baudin's Cockatoo (<i>Calyptorhynchus baudinii</i>), Red-tailed Black-Cockatoo (<i>Calyptorhynchus banksii</i>) No evidence of use by black cockatoos in terms of feeding, roosting and nesting was noted during the survey Payne Street site occurs within an area classified as medium habitat suitability for the Critically Endangered Western Ringtail Possum (WALGA Environmental Planning Tool 2019)
C Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	<p>The area to be cleared is not likely to be at variance with this principle:</p> <ul style="list-style-type: none"> During the November 2019 survey by Natural Area botanists, no conservation significant flora was identified within the proposed clearing area There is a recorded observation of the priority four species <i>Aponogeton hexatepalus</i> occurring approximately 10 m outside of the site, and which is unlikely to be impacted when road widening occurs
D Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.	<p>The area to be cleared is not likely to be at variance with this principle:</p> <ul style="list-style-type: none"> No threatened or priority ecological communities were recorded during the site survey Threatened and priority flora and ecological community database search (Department of Biodiversity, Conservation and Attractions, 2019e) identified that there are no known Threatened or Priority Ecological Communities within a 10 km radius of the site

Clearing Principle	Comment
E Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	The area to be cleared is not likely to be at variance with this principle: <ul style="list-style-type: none"> ▪ The site follows an existing alignment of the road and road reserve ▪ The area surrounding the site has been previously cleared for agricultural use and is not associated with any areas of remnant vegetation
F Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	The area to be cleared is not likely to be at variance with this principle as the site is no association with a watercourse or wetland.
G Native Vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	The area to be cleared is not likely to be at variance with this principle as it is not expected to cause further land degradation and the area to be cleared is proposed to follow the existing alignment of the road.
H Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	The area to be cleared is not likely to be at variance with this principle as the land surrounding the proposed clearing area is agricultural land.
I Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the	The area to be cleared is not likely to be at variance with this principle as no surface water courses were identified during the November 2019 survey by Natural Area botanists.

Clearing Principle	Comment
quality of surface or underground water.	
J Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.	The area to be cleared is not likely to be at variance with this principle: <ul style="list-style-type: none"><li data-bbox="663 395 2038 469">▪ The area proposed to be cleared is located within the designated road reserve and is not expected to change or exacerbate the incidence of flooding<li data-bbox="663 480 1581 507">▪ Road design will consider stormwater movement in proximity to the road

7.0 References

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Western Australian Local Government Association (WALGA), (2019), *Environmental Planning Tool – Vegetation Complexes*, accessed December 2019 via: <http://lbp.asn.au/module/enviro#map>.

Appendix 1: NatureMap Report

NatureMap Species Report

Created By Guest user on 29/10/2019

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 115° 42' 51" E, 33° 29' 10" S
Buffer 10km
Group By Species Group

Species Group	Species	Records
Amphibian	6	28
Bird	112	927
Bryopsid (Moss)	4	4
Dicotyledon	405	921
Fungus	11	47
Gymnosperm	3	7
Invertebrate	15	23
Lichen	11	11
Mammal	14	576
Monocotyledon	230	463
Pteridophyte (Fern)	5	6
Reptile	9	12
TOTAL	825	3025

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Amphibian				
1.	25398 <i>Crinia georgiana</i> (Quacking Frog)			
2.	25400 <i>Crinia insignifera</i> (Squelching Froglet)			
3.	25401 <i>Crinia pseudinsignifera</i> (Bleating Froglet)			
4.	25404 <i>Geocrinia leai</i> (Ticking Frog)			
5.	25410 <i>Heleioporus eyrei</i> (Moaning Frog)			
6.	25411 <i>Heleioporus inornatus</i> (Whooping Frog)			
Bird				
7.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
8.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
9.	24262 <i>Acanthiza inornata</i> (Western Thornbill)			
10.	24560 <i>Acanthorhynchus superciliosus</i> (Western Spinebill)			
11.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
12.	25755 <i>Acrocephalus australis</i> (Australian Reed Warbler)			
13.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
14.	25544 <i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
15.	24301 <i>Aegotheles cristatus subsp. cristatus</i> (Australian Owlet-nightjar)			
16.	24312 <i>Anas gracilis</i> (Grey Teal)			
17.	24313 <i>Anas platyrhynchos</i> (Mallard)			
18.	24315 <i>Anas rhynchotis</i> (Australasian Shoveler)			
19.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
20.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
21.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
22.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
23.	41324 <i>Ardea modesta</i> (great egret, white egret)			
24.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
25.	24610 <i>Ardeotis australis</i> (Australian Bustard)			
26.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
27.	24353 <i>Artamus cyanopterus</i> (Dusky Woodswallow)			
28.	24318 <i>Aythya australis</i> (Hardhead)			
29.	<i>Barnardius zonarius</i>			
30.	24319 <i>Biziura lobata</i> (Musk Duck)			
31.	25598 <i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
32.	25717 <i>Calyptorhynchus banksii</i> (Red-tailed Black-Cockatoo)			
33.	24731 <i>Calyptorhynchus banksii subsp. naso</i> (Forest Red-tailed Black Cockatoo)		T	
34.	24733 <i>Calyptorhynchus baudinii</i> (Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo)			T
35.	24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
	Cockatoo)		T	
36.	48400 <i>Calyptorhynchus</i> sp. (white-tailed black cockatoo)		T	
37.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
38.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
39.	24288 <i>Circus approximans</i> (Swamp Harrier)			
40.	24774 <i>Cladorhynchus leucocephalus</i> (Banded Stilt)			
41.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
42.	24399 <i>Columba livia</i> (Domestic Pigeon)	Y		
43.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
44.	25592 <i>Corvus coronoides</i> (Australian Raven)			
45.	24671 <i>Coturnix pectoralis</i> (Stubble Quail)			
46.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
47.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
48.	<i>Cracticus torquatus</i>			
49.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
50.	24322 <i>Cygnus atratus</i> (Black Swan)			
51.	30901 <i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
52.	25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella)			
53.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
54.	<i>Egretta garzetta</i>			
55.	<i>Egretta novaehollandiae</i>			
56.	<i>Elanus axillaris</i>			
57.	47937 <i>Euseyornis melanops</i> (Black-fronted Dotterel)			
58.	<i>Eolophus roseicapillus</i>			
59.	24652 <i>Eopsaltria georgiana</i> (White-breasted Robin)			
60.	24567 <i>Epthianura albifrons</i> (White-fronted Chat)			
61.	25621 <i>Falco berigora</i> (Brown Falcon)			
62.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
63.	25623 <i>Falco longipennis</i> (Australian Hobby)			
64.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
65.	24616 <i>Falculculus frontatus</i> subsp. <i>leucogaster</i> (Western Shrike-tit, Crested Shrike-tit)			
66.	25727 <i>Fulica atra</i> (Eurasian Coot)			
67.	25729 <i>Gallinula tenebrosa</i> (Dusky Moorhen)			
68.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
69.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
70.	24293 <i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)			
71.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
72.	47965 <i>Hieraaetus morphnoides</i> (Little Eagle)			
73.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
74.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
75.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
76.	25650 <i>Malurus elegans</i> (Red-winged Fairy-wren)			
77.	25654 <i>Malurus splendens</i> (Splendid Fairy-wren)			
78.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
79.	<i>Microcarbo melanoleucos</i>			
80.	24738 <i>Neophema elegans</i> (Elegant Parrot)			
81.	25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron)			
82.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
83.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
84.	48591 <i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
85.	25681 <i>Pardalotus punctatus</i> (Spotted Pardalote)			
86.	24626 <i>Pardalotus punctatus</i> subsp. <i>xanthopyge</i> (Yellow-rumped Pardalote)			
87.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
88.	24648 <i>Pelecanus conspicillatus</i> (Australian Pelican)			
89.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			
90.	48066 <i>Petroica boodang</i> (Scarlet Robin)			
91.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
92.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
93.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
94.	25699 <i>Phalacrocorax varius</i> (Pied Cormorant)			
95.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
96.	48071 <i>Phylidonyris niger</i> (White-cheeked Honeyeater)			
97.	24596 <i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			
98.	24841 <i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
99.	25720 <i>Platycercus icterotis</i> (Western Rosella)			
100.	25703 <i>Podargus strigoides</i> (Tawny Frogmouth)			
101.	24681 <i>Poliiocephalus poliocephalus</i> (Hoary-headed Grebe)			
102.	25722 <i>Polytelis anthopeplus</i> (Regent Parrot)			
103.	25731 <i>Porphyrio porphyrio</i> (Purple Swamphen)			
104.	24767 <i>Porphyrio porphyrio</i> subsp. <i>bellus</i> (Purple Swamphen)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
105.	<i>Purpurecephalus spurius</i>			
106.	48096 <i>Rhipidura albiscapa</i> (Grey Fantail)			
107.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
108.	25534 <i>Sericornis frontalis</i> (White-browed Scrubwren)			
109.	30948 <i>Smicronis brevirostris</i> (Weebill)			
110.	24645 <i>Stagonopleura oculata</i> (Red-eared Firetail)			
111.	25597 <i>Strepera versicolor</i> (Grey Currawong)			
112.	25590 <i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
113.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
114.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
115.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
116.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
117.	48147 <i>Turnix varius</i> (Painted Button-quail)			
118.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			

Bryopsid (Moss)

119.	<i>Bryum</i> sp.			
120.	32338 <i>Campylopus introflexus</i>	Y		
121.	32480 <i>Racomitrium cuspidigerum</i> var. <i>convolutaceum</i>			
122.	32439 <i>Syntrichia papillosa</i>			

Dicotyledon

123.	15466 <i>Acacia applanata</i>			
124.	3247 <i>Acacia browniana</i>			
125.	11377 <i>Acacia browniana</i> var. <i>obscura</i>			
126.	11229 <i>Acacia drummondii</i> subsp. <i>affinis</i>		P3	
127.	11192 <i>Acacia drummondii</i> subsp. <i>elegans</i>			
128.	3331 <i>Acacia extensa</i> (Wiry Wattle)			
129.	3339 <i>Acacia flagelliformis</i>		P4	
130.	3374 <i>Acacia huegelii</i>			
131.	18217 <i>Acacia iteaphylla</i>	Y		
132.	3410 <i>Acacia lateritica</i>			
133.	3448 <i>Acacia mooreana</i>			
134.	3454 <i>Acacia nervosa</i> (Rib Wattle)			
135.	3464 <i>Acacia obovata</i>			
136.	3496 <i>Acacia preissiana</i>			
137.	3502 <i>Acacia pulchella</i> (Prickly Moses)			
138.	15481 <i>Acacia pulchella</i> var. <i>glaberrima</i>			
139.	15483 <i>Acacia pulchella</i> var. <i>pulchella</i>			
140.	3537 <i>Acacia semitrullata</i>		P4	
141.	3557 <i>Acacia stenoptera</i> (Narrow Winged Wattle)			
142.	3574 <i>Acacia teretifolia</i>			
143.	3591 <i>Acacia urophylla</i>			
144.	15487 <i>Acacia varia</i> var. <i>varia</i>			
145.	3602 <i>Acacia willdenowiana</i> (Grass Wattle)			
146.	5315 <i>Actinodium cunninghamii</i> (Albany Daisy)			
147.	6203 <i>Actinotus glomeratus</i>			
148.	43201 <i>Adelphacme minima</i>		P3	
149.	1790 <i>Adenanthos meisneri</i>			
150.	1791 <i>Adenanthos obovatus</i> (Basket Flower)			
151.	28281 <i>Adenanthos</i> sp. <i>Whicher Range</i> (G.J. Keighery 9736)			
152.	5316 <i>Agonis flexuosa</i> (Peppermint, Wonil)			
153.	17202 <i>Agonis flexuosa</i> var. <i>flexuosa</i>			
154.	1732 <i>Allocasuarina humilis</i> (Dwarf Sheoak)			
155.	1739 <i>Allocasuarina thuyoides</i> (Horned Sheoak)			
156.	2655 <i>Amaranthus albus</i> (Tumbleweed)	Y		
157.	4585 <i>Amperea ericoides</i>			
158.	6306 <i>Andersonia caerulea</i> (Foxtails)			
159.	6311 <i>Andersonia heterophylla</i>			
160.	6312 <i>Andersonia involucrata</i>			
161.	6314 <i>Andersonia lehmanniana</i>			
162.	7829 <i>Angianthus drummondii</i>		P3	
163.	3686 <i>Aotus cordifolia</i>			
164.	3688 <i>Aotus gracillima</i>			
165.	3689 <i>Aotus intermedia</i>			
166.	7838 <i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y		
167.	20283 <i>Astartea scoparia</i> (Common Astartea)			
168.	7851 <i>Asteridea pulverulenta</i> (Common Bristle Daisy)			
169.	6323 <i>Astroloma ciliatum</i> (Candle Cranberry)			
170.	6334 <i>Astroloma pallidum</i> (Kick Bush)			
171.	36441 <i>Babingtonia camphorosmae</i> (Camphor Myrtle)			

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172.	1800 <i>Banksia attenuata</i> (Slender Banksia, Piara)			
173.	1819 <i>Banksia grandis</i> (Bull Banksia, Pulgarla)			
174.	1822 <i>Banksia ilicifolia</i> (Holly-leaved Banksia)			
175.	1830 <i>Banksia littoralis</i> (Swamp Banksia, Pungura)			
176.	3165 <i>Billardiera variifolia</i>			
177.	4415 <i>Boronia defoliata</i>			
178.	4416 <i>Boronia denticulata</i>			
179.	4417 <i>Boronia dichotoma</i>			
180.	4420 <i>Boronia fastigiata</i> (Bushy Boronia)			
181.	16618 <i>Boronia humifusa</i>		P1	
182.	4438 <i>Boronia ramosa</i>			
183.	4441 <i>Boronia spathulata</i> (Boronia)			
184.	17804 <i>Boronia tetragona</i>		P3	
185.	3710 <i>Bossiaea eriocarpa</i> (Common Brown Pea)			
186.	3714 <i>Bossiaea ornata</i> (Broad Leaved Brown Pea)			
187.	3717 <i>Bossiaea pulchella</i>			
188.	3718 <i>Bossiaea rufa</i>			
189.	10915 <i>Brachychiton populneus</i> (Kurrajong)	Y		
190.	4717 <i>Callitriche stagnalis</i> (Common Starwort)	Y		
191.	5415 <i>Calothamnus lateralis</i>			
192.	5429 <i>Calothamnus sanguineus</i> (Silky-leaved Blood flower, Pindak)			
193.	16493 <i>Calycopeplus oligandrus</i>			
194.	5458 <i>Calytrix flavescens</i> (Summer Starflower)			
195.	5460 <i>Calytrix fraseri</i> (Pink Summer Calytrix)			
196.	5465 <i>Calytrix leschenaultii</i>			
197.	5483 <i>Calytrix tetragona</i> (Common Fringe-myrtle)			
198.	2952 <i>Cassytha glabella</i> (Tangled Dodder Laurel)			
199.	2957 <i>Cassytha racemosa</i> (Dodder Laurel)			
200.	6539 <i>Centaurium erythraea</i> (Common Centaury)	Y		
201.	7366 <i>Centranthus macrosiphon</i>	Y		
202.	2491 <i>Chenopodium macrospermum</i>	Y		
203.	8971 <i>Chorizema cordatum</i>			
204.	3757 <i>Chorizema glycinifolium</i>			
205.	3761 <i>Chorizema rhombeum</i>			
206.	6543 <i>Cicendia filiformis</i> (Slender Cicendia)	Y		
207.	4550 <i>Comesperma calymega</i> (Blue-spike Milkwort)			
208.	1863 <i>Conospermum capitatum</i>			
209.	16850 <i>Conospermum flexuosum</i> subsp. <i>laevigatum</i>			
210.	6348 <i>Conostephium pendulum</i> (Pearl Flower)			
211.	17104 <i>Corymbia calophylla</i> (Marri)			
212.	17105 <i>Corymbia haematoxylon</i> (Mountain Marri)			
213.	44791 <i>Corymbia maculata</i>	Y		
214.	7945 <i>Cotula coronopifolia</i> (Waterbuttons)	Y		
215.	7947 <i>Cotula turbinata</i> (Funnel Weed)	Y		
216.	13354 <i>Craspedia variabilis</i>			
217.	48914 <i>Cuscuta suaveolens</i>	Y		Y
218.	7420 <i>Dampiera alata</i> (Winged-stem Dampiera)			
219.	7454 <i>Dampiera linearis</i> (Common Dampiera)			
220.	7462 <i>Dampiera pedunculata</i>			
221.	34765 <i>Darwinia whicherensis</i>		T	
222.	19747 <i>Daviesia decurrens</i> subsp. <i>decurrens</i>			
223.	18560 <i>Daviesia divaricata</i> subsp. <i>divaricata</i>			
224.	3808 <i>Daviesia elongata</i>		T	
225.	11879 <i>Daviesia hakeoides</i> subsp. <i>hakeoides</i>			
226.	3832 <i>Daviesia physodes</i>			
227.	3839 <i>Daviesia rhombifolia</i>			
228.	3091 <i>Drosera bulbigena</i> (Midget Sundew)			
229.	48751 <i>Drosera drummondii</i>			
230.	3095 <i>Drosera erythrorhiza</i> (Red Ink Sundew)			
231.	48747 <i>Drosera geniculata</i>			
232.	3102 <i>Drosera huegelii</i> (Bold Sundew)			
233.	48769 <i>Drosera indumenta</i>			
234.	3108 <i>Drosera marchantii</i>			
235.	3109 <i>Drosera menziesii</i> (Pink Rainbow)			
236.	48710 <i>Drosera micrantha</i>			
237.	3110 <i>Drosera microphylla</i> (Golden Rainbow)			
238.	3112 <i>Drosera myriantha</i> (Star Rainbow)			
239.	3118 <i>Drosera pallida</i> (Pale Rainbow)			
240.	3123 <i>Drosera platystigma</i> (Black-eyed Sundew)			
241.	8911 <i>Drosera rosulata</i>			

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242.	49090 <i>Drosera</i> sp. <i>Branched styles</i> (S.C. Coffey 193)			
243.	13385 <i>Drosera stelliflora</i>			
244.	3131 <i>Drosera stolonifera</i> (Leafy Sundew)			
245.	33480 <i>Dysphania pumilio</i> (Clammy Goosefoot)			
246.	5187 <i>Elatine gratiolooides</i> (Waterwort)			
247.	13949 <i>Eremaea asterocarpa</i>			
248.	14104 <i>Eremaea pauciflora</i> var. <i>pauciflora</i>			
249.	4332 <i>Erodium botrys</i> (Long Storksbill)	Y		
250.	5708 <i>Eucalyptus marginata</i> (Jarrah, Djara)			
251.	5763 <i>Eucalyptus rudis</i> (Flooded Gum, Kulurda)			
252.	12906 <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>			
253.	3872 <i>Euchilopsis linearis</i> (Swamp Pea)			
254.	3880 <i>Eutaxia virgata</i>			
255.	1945 <i>Franklandia triaristata</i> (Lanoline Bush)		P4	
256.	3891 <i>Gastrolobium bilobum</i> (Heart Leaf Poison)			
257.	20512 <i>Gastrolobium praemorsum</i>			
258.	30453 <i>Gastrolobium</i> sp. <i>Yoongarillup</i> (S.Dilkes s.n. 1/9/1969)		P1	
259.	20474 <i>Gastrolobium whicherense</i>		P2	
260.	3936 <i>Genista linifolia</i> (Flaxleaf Broom)	Y		
261.	4337 <i>Geranium dissectum</i> (Cutleaf Cranesbill)	Y		
262.	33620 <i>Glischrocaryon angustifolium</i>			
263.	7060 <i>Glossostigma diandrum</i>			
264.	6587 <i>Gomphocarpus fruticosus</i> (Narrowleaf Cottonbush)	Y		
265.	3948 <i>Gompholobium capitatum</i>			
266.	10909 <i>Gompholobium confertum</i>			
267.	3950 <i>Gompholobium knightianum</i>			
268.	3951 <i>Gompholobium marginatum</i>			
269.	3954 <i>Gompholobium polymorphum</i>			
270.	3955 <i>Gompholobium preissii</i>			
271.	3956 <i>Gompholobium shuttleworthii</i>			
272.	3957 <i>Gompholobium tomentosum</i> (Hairy Yellow Pea)			
273.	6160 <i>Gonocarpus paniculatus</i>			
274.	7505 <i>Goodenia eatoniana</i>			
275.	7517 <i>Goodenia incana</i> (Hoary Goodenia)			
276.	19284 <i>Goodenia pulchella</i> subsp. <i>Coastal Plain B</i> (L.W. Sage 2336)			
277.	12219 <i>Grevillea bronwenae</i>		P3	
278.	13429 <i>Grevillea diversifolia</i> subsp. <i>diversifolia</i>			
279.	13427 <i>Grevillea manglesioides</i> subsp. <i>manglesioides</i>			
280.	2066 <i>Grevillea pilulifera</i> (Woolly-flowered Grevillea)			
281.	2078 <i>Grevillea pulchella</i> (Beautiful Grevillea)			
282.	15990 <i>Grevillea pulchella</i> subsp. <i>ascendens</i>			
283.	15991 <i>Grevillea pulchella</i> subsp. <i>pulchella</i>			
284.	2080 <i>Grevillea quercifolia</i> (Oak-leaf Grevillea)			
285.	2112 <i>Grevillea trifida</i>			
286.	12824 <i>Grevillea vestita</i> subsp. <i>vestita</i>			
287.	2128 <i>Hakea amplexicaulis</i> (Prickly Hakea)			
288.	2137 <i>Hakea ceratophylla</i> (Horned Leaf Hakea)			
289.	2152 <i>Hakea cyclocarpa</i> (Ramshorn)			
290.	2175 <i>Hakea lissocarpha</i> (Honey Bush)			
291.	2206 <i>Hakea stenocarpa</i> (Narrow-fruited Hakea)			
292.	2216 <i>Hakea varia</i> (Variable-leaved Hakea)			
293.	3961 <i>Hardenbergia comptoniana</i> (Native Wisteria)			
294.	6710 <i>Heliotropium europaeum</i> (Common Heliotrope)	Y		
295.	6839 <i>Hemiantra pungens</i> (Snakebush)			
296.	6855 <i>Hemigenia humilis</i>			
297.	6856 <i>Hemigenia incana</i> (Silky Hemigenia)			
298.	5108 <i>Hibbertia acerosa</i> (Needle Leaved Guinea Flower)			
299.	5109 <i>Hibbertia amplexicaulis</i>			
300.	5112 <i>Hibbertia aurea</i>			
301.	5114 <i>Hibbertia commutata</i>			
302.	20051 <i>Hibbertia diamesogenos</i>			
303.	5125 <i>Hibbertia ferruginea</i>			
304.	5134 <i>Hibbertia huegelii</i>			
305.	5135 <i>Hibbertia hypericoides</i> (Yellow Buttercups)			
306.	45534 <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>			
307.	5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
308.	5172 <i>Hibbertia stellaris</i> (Orange Stars)			
309.	5176 <i>Hibbertia vaginata</i>			
310.	5816 <i>Homalospermum firmum</i>			
311.	3968 <i>Hovea trisperma</i> (Common Hovea)			

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312.	12907 <i>Hovea trisperma</i> var. <i>grandiflora</i>			
313.	12859 <i>Hovea trisperma</i> var. <i>trisperma</i>			
314.	12742 <i>Hyalosperma demissum</i>			
315.	16759 <i>Hyalosperma simplex</i> subsp. <i>simplex</i>			
316.	12007 <i>Hybanthus floribundus</i> subsp. <i>floribundus</i>			
317.	6226 <i>Hydrocotyle callicarpa</i> (Small Pennywort)			
318.	5817 <i>Hypocalymma angustifolium</i> (White Myrtle, Kudjid)			
319.	35070 <i>Hypocalymma angustifolium</i> subsp. <i>Swan Coastal Plain (G.J. Keighery 16777)</i>			
320.	5819 <i>Hypocalymma ericifolium</i>			
321.	5825 <i>Hypocalymma robustum</i> (Swan River Myrtle)			
322.	8086 <i>Hypochoeris glabra</i> (Smooth Catsear)	Y		
323.	16522 <i>Isopogon formosus</i> subsp. <i>dasylopis</i>		P3	
324.	2237 <i>Isopogon sphaerocephalus</i> (Drumstick Isopogon)			
325.	7399 <i>Isotoma scapigera</i> (Long-scaped Isotome)			
326.	3992 <i>Isotropis cuneifolia</i> (Granny Bonnets)			
327.	4012 <i>Jacksonia furcellata</i> (Grey Stinkwood)			
328.	20462 <i>Jacksonia gracillima</i>		P3	
329.	4017 <i>Jacksonia horrida</i>			
330.	4018 <i>Jacksonia lehmannii</i>			
331.	4036 <i>Kennedia carinata</i>			
332.	4037 <i>Kennedia coccinea</i> (Coral Vine)			
333.	4044 <i>Kennedia prostrata</i> (Scarlet Runner)			
334.	15498 <i>Kunzea glabrescens</i> (Spearwood)			
335.	17461 <i>Kunzea micrantha</i> subsp. <i>micrantha</i>			
336.	5841 <i>Kunzea recurva</i>			
337.	14776 <i>Kunzea rostrata</i>			
338.	2249 <i>Lambertia multiflora</i> (Many-flowered Honeysuckle)			
339.	45084 <i>Lasiopetalum laxiflorum</i>		P3	
340.	4052 <i>Latrobea tenella</i>			
341.	7568 <i>Lechenaultia biloba</i> (Blue Leschenaultia)			
342.	7574 <i>Lechenaultia floribunda</i> (Free-flowering Leschenaultia)			
343.	2342 <i>Leptomeria cunninghamii</i>			
344.	17702 <i>Leptomeria furtiva</i>		P2	
345.	2353 <i>Leptomeria scrobiculata</i>			
346.	6360 <i>Leucopogon australis</i> (Spiked Beard-heath)			
347.	6367 <i>Leucopogon capitellatus</i>			
348.	6374 <i>Leucopogon conostephioides</i>			
349.	6375 <i>Leucopogon cordatus</i>			
350.	6396 <i>Leucopogon glabellus</i>			
351.	6425 <i>Leucopogon oxycedrus</i>			
352.	6436 <i>Leucopogon propinquus</i>			
353.	6439 <i>Leucopogon pulchellus</i> (Beard-heath)			
354.	6441 <i>Leucopogon reflexus</i> (Heart-leaf Beard-heath)			
355.	29492 <i>Leucopogon</i> sp. <i>Busselton (D. Cooper 243)</i>		P2	
356.	6454 <i>Leucopogon verticillatus</i> (Tassel Flower)			
357.	7676 <i>Levenhookia pusilla</i> (Midget Stylewort)			
358.	7677 <i>Levenhookia stipitata</i> (Common Stylewort)			
359.	4363 <i>Linum trigynum</i> (French Flax)	Y		
360.	7405 <i>Lobelia rarifolia</i>			
361.	7407 <i>Lobelia rhytidosperra</i> (Wrinkled-seeded Lobelia)			
362.	7408 <i>Lobelia tenuior</i> (Slender Lobelia)			
363.	9356 <i>Logfia gallica</i>	Y		
364.	4059 <i>Lotus angustissimus</i> (Narrowleaf Trefoil)	Y		
365.	6456 <i>Lysinema ciliatum</i> (Curry Flower)			
366.	34736 <i>Lysinema pentapetalum</i>			
367.	17630 <i>Marianthus tenuis</i>			
368.	31237 <i>Mauranthemum paludosum</i>	Y		
369.	5921 <i>Melaleuca incana</i> (Grey Honeymyrtle)			
370.	5926 <i>Melaleuca lateritia</i> (Robin Redbreast Bush)			
371.	18394 <i>Melaleuca parviceps</i>			
372.	5978 <i>Melaleuca teretifolia</i> (Banbar)			
373.	5980 <i>Melaleuca thymoides</i>			
374.	5983 <i>Melaleuca trichophylla</i>			
375.	13280 <i>Melaleuca viminea</i> subsp. <i>viminea</i>			
376.	6883 <i>Mentha pulegium</i> (Pennyroyal)	Y		
377.	8105 <i>Millotia myosotidifolia</i>			
378.	8106 <i>Millotia tenuifolia</i> (Soft Millotia)			
379.	2894 <i>Moenchia erecta</i> (Erect Chickweed)	Y		
380.	4662 <i>Monotaxis grandiflora</i> (Diamond of the Desert)			
381.	4666 <i>Monotaxis occidentalis</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
382.	8117 <i>Myriocephalus helichrysoides</i>			
383.	6464 <i>Needhamiella pumilio</i>			
384.	2401 <i>Nuytsia floribunda</i> (Christmas Tree, Mudja)			
385.	2365 <i>Olx benthamiana</i>			
386.	8133 <i>Olearia elaeophila</i>			
387.	8143 <i>Olearia paucidentata</i> (Autumn Scrub Daisy)			
388.	46316 <i>Orianthera serpyllifolia</i> subsp. <i>angustifolia</i>			
389.	46315 <i>Orianthera serpyllifolia</i> subsp. <i>serpyllifolia</i>			
390.	46256 <i>Orianthera wendyae</i>		P1	
391.	36181 <i>Ornduffia parnassifolia</i>			
392.	36200 <i>Ornduffia submersa</i>		P4	
393.	4113 <i>Ornithopus compressus</i> (Yellow Serradella)	Y		
394.	4115 <i>Ornithopus sativus</i> (French Serradella)	Y		
395.	7122 <i>Orobanche minor</i> (Lesser Broomrape)	Y		
396.	17756 <i>Osteospermum ecklonis</i>	Y		
397.	4352 <i>Oxalis glabra</i>	Y		
398.	4355 <i>Oxalis perennans</i>			
399.	20101 <i>Paragonis grandiflora</i>			
400.	17114 <i>Paraserianthes lophantha</i> subsp. <i>lophantha</i>			
401.	6006 <i>Pericalymma ellipticum</i> (Swamp Teatree)			
402.	16477 <i>Pericalymma ellipticum</i> var. <i>ellipticum</i>			
403.	16478 <i>Pericalymma ellipticum</i> var. <i>floridum</i>			
404.	15501 <i>Pericalymma spongiocaula</i>			
405.	11052 <i>Persicaria prostrata</i>			
406.	2267 <i>Persoonia longifolia</i> (Snottygobble)			
407.	2273 <i>Persoonia saccata</i> (Snottygobble)			
408.	2299 <i>Petrophile linearis</i> (Pixie Mops)			
409.	19825 <i>Petrophragma dubia</i>	Y		
410.	18529 <i>Philotheca spicata</i> (Pepper and Salt)			
411.	2793 <i>Phytolacca octandra</i> (Red Ink Plant)	Y		
412.	14371 <i>Picris angustifolia</i>			
413.	5231 <i>Pimelea angustifolia</i> (Narrow-leaved Pimelea)			
414.	11928 <i>Pimelea ciliata</i> subsp. <i>ciliata</i>			
415.	5252 <i>Pimelea lanata</i>			
416.	11182 <i>Pimelea lehmanniana</i> subsp. <i>nervosa</i>			
417.	5255 <i>Pimelea longiflora</i>			
418.	5259 <i>Pimelea preissii</i>			
419.	5261 <i>Pimelea rosea</i> (Rose Banjine)			
420.	18117 <i>Pimelea rosea</i> subsp. <i>rosea</i>			
421.	12041 <i>Pimelea suaveolens</i> subsp. <i>suaveolens</i>			
422.	5268 <i>Pimelea sulphurea</i> (Yellow Banjine)			
423.	8163 <i>Pithocarpa corymbulosa</i> (Corymbose Pithocarpa)		P3	
424.	18352 <i>Pithocarpa pulchella</i> var. <i>melanostigma</i>			
425.	6249 <i>Platysace compressa</i> (Tapeworm Plant)			
426.	6253 <i>Platysace filiformis</i>			
427.	6259 <i>Platysace tenuissima</i>			
428.	33377 <i>Platytheca anasima</i>		P2	
429.	4524 <i>Platytheca galioides</i>			
430.	8175 <i>Podolepis gracilis</i> (Slender Podolepis)			
431.	17211 <i>Prunus cerasifera</i>	Y		
432.	46201 <i>Prunus persica</i>	Y		
433.	4177 <i>Pultenaea ochreatea</i>			
434.	4180 <i>Pultenaea radiata</i>			
435.	4183 <i>Pultenaea skinneri</i> (Skinner's Pea)		P4	
436.	18391 <i>Pyrus communis</i>	Y		
437.	8195 <i>Quinetia urvillei</i>			
438.	13300 <i>Rhodanthe citrina</i>			
439.	13312 <i>Rhodanthe pyrethrum</i>			
440.	13683 <i>Ricinocarpos cyanescens</i>			
441.	4705 <i>Ricinus communis</i> (Castor Oil Plant)	Y		
442.	2429 <i>Rumex acetosella</i> (Sorrel)	Y		
443.	7602 <i>Scaevola calliptera</i>			
444.	6263 <i>Schoenolaena juncea</i>			
445.	8203 <i>Senecio diaschides</i>			
446.	20663 <i>Senecio multicaulis</i> subsp. <i>multicaulis</i>			
447.	3071 <i>Sisymbrium officinale</i> (Hedge Mustard)	Y		
448.	9367 <i>Sonchus hydrophilus</i> (Native Sowthistle)			
449.	2912 <i>Spergula arvensis</i> (Corn Spurry)	Y		
450.	2915 <i>Spergularia rubra</i> (Sand Spurry)	Y		
451.	4205 <i>Sphaerolobium linophyllum</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
452.	4206 <i>Sphaerolobium macranthum</i>			
453.	4207 <i>Sphaerolobium medium</i>			
454.	4210 <i>Sphaerolobium scabriusculum</i>			
455.	31931 <i>Sphenotoma capitata</i>			
456.	4716 <i>Stachystemon vermicularis</i>			
457.	20537 <i>Stachystemon virgatus</i>			
458.	4733 <i>Stackhousia monogyna</i>			
459.	19704 <i>Stenanthemum sublineare</i>		P2	
460.	2316 <i>Stirlingia latifolia</i> (Blueboy)			
461.	40480 <i>Stylidium acuminatum</i> subsp. <i>acuminatum</i>		P2	
462.	7684 <i>Stylidium amoenum</i> (Lovely Triggerplant)			
463.	30278 <i>Stylidium androsaceum</i>			
464.	39880 <i>Stylidium angustifolium</i> subsp. <i>glaucofolium</i>			
465.	25831 <i>Stylidium araeophyllum</i> (Stilt Walker)			
466.	7693 <i>Stylidium brunonianum</i> (Pink Fountain Triggerplant)			
467.	7699 <i>Stylidium carnosum</i> (Fleshy-leaved Triggerplant)			
468.	7702 <i>Stylidium ciliatum</i> (Golden Triggerplant)			
469.	25801 <i>Stylidium hesperium</i>			
470.	7745 <i>Stylidium junceum</i> (Reed Triggerplant)			
471.	7752 <i>Stylidium lineatum</i> (Sunny Triggerplant)			
472.	25829 <i>Stylidium neurophyllum</i> (Coastal Plain Triggerplant)			
473.	7773 <i>Stylidium petiolare</i> (Horn Triggerplant)			
474.	7774 <i>Stylidium piliferum</i> (Common Butterfly Triggerplant)			
475.	7782 <i>Stylidium pulchellum</i> (Thumbelina Triggerplant)			
476.	7785 <i>Stylidium repens</i> (Matted Triggerplant)			
477.	7798 <i>Stylidium schoenoides</i> (Cow Kicks)			
478.	7799 <i>Stylidium spathulatum</i> (Creamy Triggerplant)			
479.	23511 <i>Stylidium thesioides</i> (Delicate Triggerplant)			
480.	7806 <i>Stylidium utricularioides</i> (Pink Fan Triggerplant)			
481.	7808 <i>Stylidium violaceum</i> (Violet Triggerplant)			
482.	6476 <i>Styphelia tenuiflora</i> (Common Pinheath)			
483.	15529 <i>Synaphea floribunda</i>			
484.	2323 <i>Synaphea gracillima</i>			
485.	16769 <i>Synaphea hians</i>		P3	
486.	16865 <i>Synaphea odocoileops</i>		P1	
487.	2324 <i>Synaphea petiolaris</i> (<i>Synaphea</i>)			
488.	16862 <i>Synaphea petiolaris</i> subsp. <i>simplex</i>		P3	
489.	16863 <i>Synaphea petiolaris</i> subsp. <i>triloba</i>			
490.	31767 <i>Synaphea polypodioides</i>		P3	
491.	18590 <i>Synaphea</i> sp. Fairbridge Farm (D. Papenfus 696)		T	
492.	30751 <i>Synaphea</i> sp. Pinjarra Plain (A.S. George 17182)		T	
493.	28354 <i>Synaphea</i> sp. Serpentine (G.R. Brand 103)		T	
494.	16749 <i>Synaphea stenoloba</i>		T	
495.	20135 <i>Taxandria linearifolia</i>			
496.	20133 <i>Taxandria parviceps</i>			
497.	4535 <i>Tetratheca hirsuta</i> (Black Eyed Susan)			
498.	48341 <i>Tetratheca hirsuta</i> subsp. <i>viminea</i>			
499.	5084 <i>Thomasia grandiflora</i> (Large Flowered Thomasia)			
500.	5086 <i>Thomasia macrocalyx</i>			
501.	8248 <i>Tolpis barbata</i> (Yellow Hawkweed)	Y		
502.	6279 <i>Trachymene ornata</i> (Spongefruit)			
503.	6280 <i>Trachymene pilosa</i> (Native Parsnip)			
504.	8251 <i>Trichocline spathulata</i> (Native Gerbera)			
505.	4302 <i>Trifolium ligusticum</i> (Ligurian Clover)	Y		
506.	4313 <i>Trifolium subterraneum</i> (Subterranean Clover)	Y		
507.	4737 <i>Tripterococcus brunonis</i> (Winged Stackhousia)			
508.	33019 <i>Trithuria australis</i>		P4	
509.	1139 <i>Trithuria bibracteata</i>			
510.	1141 <i>Trithuria submersa</i>			
511.	8255 <i>Ursinia anthemoides</i> (<i>Ursinia</i>)	Y		
512.	38388 <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Y		
513.	7665 <i>Velleia trinervis</i>			
514.	8257 <i>Vellereophyton dealbatum</i> (White Cudweed)	Y		
515.	12388 <i>Verticordia acerosa</i> var. <i>preissii</i>			
516.	12392 <i>Verticordia attenuata</i>		P3	
517.	6076 <i>Verticordia densiflora</i> (Compacted Featherflower)			
518.	12411 <i>Verticordia densiflora</i> var. <i>cespitosa</i>			
519.	12412 <i>Verticordia densiflora</i> var. <i>pedunculata</i>		T	
520.	15618 <i>Verticordia plumosa</i> var. <i>plumosa</i>			
521.	11474 <i>Vicia sativa</i> subsp. <i>nigra</i>	Y		

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
522.	6575 <i>Vinca major</i> (Blue Periwinkle)	Y		
523.	6284 <i>Xanthosia candida</i>			
524.	6285 <i>Xanthosia ciliata</i>			
525.	6289 <i>Xanthosia huegelii</i>			
526.	19330 <i>Xanthosia tasmanica</i>			
527.	2331 <i>Xylomelum occidentale</i> (Woody Pear, Djandin)			

Fungus

528.	<i>Agaricus</i> sp.			
529.	<i>Hygrocybe polychroma</i>			
530.	<i>Laccaria lateritia</i>			
531.	31280 <i>Lichenomphalia chromacea</i>			
532.	<i>Phytophthora cinnamomi</i>			
533.	48974 <i>Pisolithus marmoratus</i>			
534.	<i>Poronia erici</i>			
535.	48835 <i>Pycnoporus coccineus</i>			
536.	48909 <i>Russula clelandii</i>			
537.	38840 <i>Stereum hirsutum</i>			
538.	48858 <i>Trametes muelleri</i>			

Gymnosperm

539.	36520 <i>Callitris acuminata</i> (Dwarf Cypress)			
540.	85 <i>Macrozamia riedlei</i> (<i>Zamia</i> , Djiridji)			
541.	86 <i>Podocarpus drouynianus</i> (Wild Plum, Kula)			

Invertebrate

542.	<i>Akamptogonus novarae</i>			
543.	<i>Allothreua maculata</i>			
544.	<i>Antichiropus nanus</i>			
545.	<i>Arachnura higginsi</i>			
546.	<i>Araneus senicaudatus</i>			
547.	<i>Austracantha minax</i>			
548.	47873 <i>Bertmainius opimus</i> (western pygmy trapdoor spider)		P3	
549.	<i>Cormocephalus hartmeyerii</i>			
550.	<i>Cyclosa trilobata</i>			
551.	48935 <i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)		P3	
552.	<i>Isopedella castanea</i>			
553.	<i>Missulena granulosa</i>			
554.	<i>Ommatoiulus moreletii</i>			
555.	<i>Urodacus novaehollandiae</i>			
556.	34113 <i>Westralunio carteri</i> (Carter's Freshwater Mussel)		T	

Lichen

557.	27618 <i>Calicium glaucellum</i>			
558.	27645 <i>Candelariella xanthostigmoides</i>			
559.	27697 <i>Cladonia tessellata</i>			
560.	27778 <i>Heterodermia speciosa</i>			
561.	45299 <i>Jackelixia elixii</i>			
562.	44912 <i>Parmotrema cetratum</i>			
563.	27992 <i>Porpidia macrocarpa</i>			
564.	28009 <i>Punctelia subrudecta</i>			
565.	28223 <i>Ramalina celastris</i> subsp. <i>ovalis</i>			
566.	28087 <i>Usnea inermis</i>			
567.	28092 <i>Usnea scabrida</i>			

Mammal

568.	24162 <i>Bettongia penicillata</i> subsp. <i>ogilbyi</i> (Woylie, Brush-tailed Bettong)			T
569.	24251 <i>Bos taurus</i> (European Cattle)	Y		
570.	24086 <i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
571.	24092 <i>Dasyurus geoffroyi</i> (Chuditch, Western Quoll)			T
572.	24189 <i>Falsistrellus mackenziei</i> (Western False Pipistrelle, Western Falsistrelle)			P4
573.	48588 <i>Isoodon fusciventer</i> (Quenda, southwestern brown bandicoot)			P4
574.	24132 <i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
575.	48022 <i>Notamacropus irma</i> (Western Brush Wallaby)			P4
576.	48070 <i>Phascogale tapoatafa</i> subsp. <i>wambenger</i> (South-western Brush-tailed Phascogale, Wambenger)			S
577.	24166 <i>Pseudocheirus occidentalis</i> (Western Ringtail Possum, ngwayir)			T
578.	24245 <i>Rattus rattus</i> (Black Rat)	Y		
579.	24145 <i>Setonix brachyurus</i> (Quokka)			T
580.	25521 <i>Trichosurus vulpecula</i> (Common Brushtail Possum)			
581.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		

Monocotyledon

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
582.	23474 <i>Agrostocrinum hirsutum</i>			
583.	1261 <i>Agrostocrinum scabrum</i> (Blue Grass Lily)			
584.	184 <i>Aira caryophyllea</i> (Silvery Hairgrass)	Y		
585.	186 <i>Aira elegantissima</i>	Y		
586.	1489 <i>Amaryllis belladonna</i> (Belladonna Lily)	Y		
587.	13380 <i>Amphibromus nervosus</i>			
588.	194 <i>Amphipogon amphipogonoides</i>			
589.	20184 <i>Amphipogon laguroides</i> subsp. <i>laguroides</i>			
590.	200 <i>Amphipogon turbinatus</i>			
591.	1062 <i>Anarthria prolifera</i>			
592.	11434 <i>Anigozanthos humilis</i> subsp. <i>humilis</i>			
593.	1411 <i>Anigozanthos manglesii</i> (Mangles Kangaroo Paw, Kurulbrang)			
594.	202 <i>Anthoxanthum odoratum</i> (Sweet Vernal Grass)	Y		
595.	1117 <i>Aphelia cyperoides</i>			
596.	1118 <i>Aphelia drummondii</i>			
597.	141 <i>Aponogeton hexatepalus</i> (Stalked Water Ribbons)		P4	
598.	8779 <i>Asparagus asparagoides</i> (Bridal Creeper)	Y		
599.	17233 <i>Austrostipa campylachne</i>			
600.	17234 <i>Austrostipa compressa</i>			
601.	17253 <i>Austrostipa semibarbata</i>			
602.	234 <i>Avena fatua</i> (Wild Oat)	Y		
603.	1382 <i>Baeometra uniflora</i>	Y		
604.	740 <i>Baumea arthropphylla</i>			
605.	1272 <i>Borya scirpoidea</i>			
606.	244 <i>Briza maxima</i> (Blowfly Grass)	Y		
607.	1366 <i>Bulbine semibarbata</i> (Leek Lily)			
608.	12770 <i>Burchardia congesta</i>			
609.	1385 <i>Burchardia multiflora</i> (Dwarf Burchardia)			
610.	15332 <i>Caladenia attingens</i> subsp. <i>atingens</i>			
611.	15579 <i>Caladenia chapmanii</i>			
612.	1586 <i>Caladenia discoidea</i> (Dancing Orchid)			
613.	15348 <i>Caladenia flava</i> subsp. <i>flava</i>			
614.	1596 <i>Caladenia huegelii</i> (Grand Spider Orchid)		T	
615.	1599 <i>Caladenia latifolia</i> (Pink Fairy Orchid)			
616.	13859 <i>Caladenia longicauda</i> subsp. <i>clivicola</i>			
617.	15372 <i>Caladenia nana</i> subsp. <i>unita</i>			
618.	17760 <i>Caladenia nobilis</i>			
619.	18026 <i>Caladenia pendens</i> subsp. <i>pendens</i>			
620.	15377 <i>Caladenia reptans</i> subsp. <i>reptans</i>			
621.	18019 <i>Caladenia vulgata</i>			
622.	19309 <i>Calectasia narragara</i>			
623.	1162 <i>Cartonema philydroides</i>			
624.	13766 <i>Caustis</i> sp. <i>Boyanup</i> (G.S. McCutcheon 1706)		P3	
625.	41564 <i>Cenchrus clandestinus</i> (Kikuyu Grass)	Y		
626.	41567 <i>Cenchrus macrourus</i> (African Feather Grass)	Y		
627.	1121 <i>Centrolepis aristata</i> (Pointed Centrolepis)			
628.	1125 <i>Centrolepis drummondiana</i>			
629.	1129 <i>Centrolepis glabra</i> (Smooth Centrolepis)			
630.	1134 <i>Centrolepis polygyna</i> (Wiry Centrolepis)			
631.	1280 <i>Chamaescilla corymbosa</i> (Blue Squill)			
632.	19338 <i>Chamaescilla gibsonii</i>		P3	
633.	1217 <i>Chamaexeros serra</i> (Little Fringe-leaf)			
634.	763 <i>Chorizandra enodis</i> (Black Bristlerush)			
635.	1418 <i>Conostylis aculeata</i> (Prickly Conostylis)			
636.	11826 <i>Conostylis aculeata</i> subsp. <i>aculeata</i>			
637.	1438 <i>Conostylis laxiflora</i>			
638.	1453 <i>Conostylis serrulata</i>			
639.	1454 <i>Conostylis setigera</i> (Bristly Cottonhead)			
640.	11597 <i>Conostylis setigera</i> subsp. <i>setigera</i>			
641.	48259 <i>Cortaderia selloana</i> subsp. <i>selloana</i>	Y		
642.	11883 <i>Corynotheca micrantha</i> var. <i>elongata</i>			
643.	1627 <i>Cryptostylis ovata</i> (Slipper Orchid)			
644.	15114 <i>Cyanicula gemmata</i>			
645.	15404 <i>Cyanicula sericea</i>			
646.	768 <i>Cyathochaeta avenacea</i>			
647.	16245 <i>Cyathochaeta teretifolia</i>		P3	
648.	17692 <i>Cytogonidium leptocarpoides</i>			
649.	1218 <i>Dasypogon bromeliifolius</i> (Pineapple Bush)			
650.	17691 <i>Desmocladius fasciculatus</i>			
651.	16595 <i>Desmocladius flexuosus</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
652.	16455 <i>Desmocladius virgatus</i>			
653.	299 <i>Deyeuxia quadriseta</i> (Reed Bentgrass)			
654.	1289 <i>Dichopogon preissii</i>			
655.	320 <i>Digitaria sanguinalis</i> (Crab Grass)	Y		
656.	19649 <i>Disa bracteata</i>	Y		
657.	48253 <i>Diuris porphyrochila</i>			
658.	1639 <i>Drakaea elastica</i> (Glossy-leaved Hammer Orchid)		T	
659.	11156 <i>Drakaea livida</i>			
660.	13635 <i>Drakaea micrantha</i>		T	
661.	347 <i>Ehrharta calycina</i> (Perennial Veldt Grass)	Y		
662.	349 <i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
663.	822 <i>Eleocharis acuta</i> (Common Spikerush)			
664.	17605 <i>Eleocharis keigheryi</i>		T	
665.	1643 <i>Elythranthera brunonis</i> (Purple Enamel Orchid)			
666.	376 <i>Eragrostis curvula</i> (African Lovegrass)	Y		
667.	379 <i>Eragrostis elongata</i> (Clustered Lovegrass)			
668.	1646 <i>Eriochilus dilatatus</i> (White Bunny Orchid)			
669.	15411 <i>Eriochilus dilatatus</i> subsp. <i>magnus</i>			
670.	15412 <i>Eriochilus dilatatus</i> subsp. <i>multiflorus</i>			
671.	835 <i>Evandra pauciflora</i>			
672.	1515 <i>Ferraria crispa</i> (Black Flag)	Y		
673.	18392 <i>Freesia alba</i> x <i>leichtlinii</i>	Y		
674.	11919 <i>Gladiolus communis</i> subsp. <i>byzantinus</i>	Y		Y
675.	1523 <i>Gladiolus tristis</i> (Largeflower Gladiolus)	Y		
676.	17043 <i>Glyceria declinata</i>	Y		
677.	1468 <i>Haemodorum laxum</i>			
678.	1474 <i>Haemodorum sparsiflorum</i>			
679.	1475 <i>Haemodorum spicatum</i> (Mardja)			
680.	1294 <i>Hodgsoniola junciformis</i>			
681.	43505 <i>Hyacinthoides non-scripta</i>	Y		
682.	1070 <i>Hypolaena exsulca</i>			
683.	17841 <i>Hypolaena pubescens</i>			
684.	20198 <i>Isolepis fluitans</i> var. <i>fluitans</i>			
685.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
686.	919 <i>Isolepis oldfieldiana</i>			
687.	1532 <i>Ixia maculata</i> (Yellow Ixia)	Y		
688.	1533 <i>Ixia paniculata</i>	Y		
689.	1295 <i>Johnsonia acaulis</i>			
690.	1297 <i>Johnsonia lupulina</i> (Hooded Lily)			
691.	1179 <i>Juncus caespiticus</i> (Grassy Rush)			
692.	1186 <i>Juncus microcephalus</i>	Y		
693.	1221 <i>Kingia australis</i> (Kingia, Pulonok)			
694.	13562 <i>Lachenalia aloides</i>	Y		
695.	20019 <i>Lachnagrostis filiformis</i>			
696.	11464 <i>Laxmannia sessiliflora</i> subsp. <i>australis</i>			
697.	925 <i>Lepidosperma angustatum</i>			
698.	930 <i>Lepidosperma costale</i>			
699.	937 <i>Lepidosperma longitudinale</i> (Pithy Sword-sedge)			
700.	940 <i>Lepidosperma pubisquamum</i>			
701.	944 <i>Lepidosperma scabrum</i>			
702.	945 <i>Lepidosperma squamatum</i>			
703.	946 <i>Lepidosperma striatum</i>			
704.	1653 <i>Leporella fimbriata</i> (Hare Orchid)			
705.	19833 <i>Leptocarpus laxus</i>			
706.	46382 <i>Leptocarpus roycei</i>			
707.	1082 <i>Leptocarpus tenax</i> (Slender Twine Rush)			
708.	1087 <i>Lepyrodia hermaphrodita</i>			
709.	1088 <i>Lepyrodia macra</i> (Large Scale Rush)			
710.	1090 <i>Lepyrodia muirii</i>			
711.	1493 <i>Leucojum aestivum</i> (Snowflake)	Y		
712.	476 <i>Lolium perenne</i> (Perennial Ryegrass)	Y		
713.	1222 <i>Lomandra brittanii</i>			
714.	1223 <i>Lomandra caespitosa</i> (Tufted Mat Rush)			
715.	1225 <i>Lomandra drummondii</i>			
716.	1228 <i>Lomandra hermaphrodita</i>			
717.	1234 <i>Lomandra nigricans</i>			
718.	1235 <i>Lomandra nutans</i>			
719.	1236 <i>Lomandra odora</i> (Tiered Matrush)			
720.	1238 <i>Lomandra pauciflora</i>			
721.	1239 <i>Lomandra preissii</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
722.	1243 <i>Lomandra sericea</i> (Silky Mat Rush)			
723.	1245 <i>Lomandra spartea</i>			
724.	1246 <i>Lomandra suaveolens</i>			
725.	33298 <i>Lomandra whicherensis</i>		P3	
726.	1092 <i>Loxocarya cinerea</i>			
727.	1198 <i>Luzula meridionalis</i> (Field Woodrush)			
728.	1097 <i>Lyginia barbata</i>			
729.	18049 <i>Lyginia imberbis</i>			
730.	953 <i>Mesomelaena graciliceps</i>			
731.	11473 <i>Mesomelaena stygia</i> subsp. <i>stygia</i>			
732.	957 <i>Mesomelaena tetragona</i> (Semaphore Sedge)			
733.	31713 <i>Microtis cupularis</i>			
734.	15419 <i>Microtis media</i> subsp. <i>media</i>			
735.	1660 <i>Microtis orbicularis</i> (Dark Mignonette Orchid)			
736.	19179 <i>Moraea flaccida</i> (One-leaf Cape Tulip)	Y		
737.	19438 <i>Moraea ochroleuca</i>	Y		
738.	1494 <i>Narcissus pseudonarcissus</i>	Y		
739.	44496 <i>Narcissus tazetta</i> subsp. <i>italicus</i>	Y		
740.	492 <i>Neurachne alopecuroidea</i> (Foxtail Mulga Grass)			
741.	1372 <i>Ornithogalum arabicum</i> (Lesser Cape Lily)	Y		
742.	168 <i>Ottelia ovalifolia</i> (Swamp Lily)			
743.	1667 <i>Paracaleana nigrita</i> (Flying Duck Orchid)			
744.	527 <i>Paspalum dilatatum</i>	Y		
745.	528 <i>Paspalum distichum</i> (Water Couch)	Y		
746.	1542 <i>Patersonia babianoides</i>			
747.	1546 <i>Patersonia juncea</i> (Rush Leaved Patersonia)			
748.	1548 <i>Patersonia limbata</i>			
749.	1550 <i>Patersonia occidentalis</i> (Purple Flag, Koma)			
750.	11550 <i>Patersonia umbrosa</i> var. <i>xanthina</i> (Yellow Flags)			
751.	43782 <i>Pauridia vaginata</i> var. <i>vaginata</i>			
752.	547 <i>Phalaris angusta</i>	Y		
753.	548 <i>Phalaris aquatica</i> (Phalaris)	Y		
754.	1478 <i>Phlebotocarya ciliata</i>			
755.	1479 <i>Phlebotocarya filifolia</i>			
756.	571 <i>Poa annua</i> (Winter Grass)	Y		
757.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
758.	583 <i>Polypogon tenellus</i>			
759.	15424 <i>Praecoxanthus aphyllus</i>			
760.	1671 <i>Prasophyllum elatum</i> (Tall Leek Orchid)			
761.	1672 <i>Prasophyllum fimbria</i> (Fringed Leek Orchid)			
762.	10853 <i>Prasophyllum plumiforme</i>			
763.	1686 <i>Pterostylis barbata</i> (Bird Orchid)			
764.	1693 <i>Pterostylis recurva</i> (Jug Orchid)			
765.	18655 <i>Pterostylis</i> sp. <i>crinkled leaf</i> (G.J. Keighery 13426)			
766.	1698 <i>Pterostylis vittata</i> (Banded Greenhood)			
767.	14924 <i>Romulea rosea</i> var. <i>communis</i>	Y		
768.	40431 <i>Rytidosperma acerosum</i>			
769.	40425 <i>Rytidosperma caespitosum</i>			
770.	40426 <i>Rytidosperma occidentale</i>			
771.	973 <i>Schoenus asperocarpus</i> (Poison Sedge)			
772.	975 <i>Schoenus bifidus</i>			
773.	978 <i>Schoenus brevisetis</i>			
774.	984 <i>Schoenus curvifolius</i>			
775.	986 <i>Schoenus efoliatus</i>			
776.	999 <i>Schoenus loliaceus</i>		P2	
777.	17614 <i>Schoenus plumosus</i>			
778.	1017 <i>Schoenus subbulbosus</i>			
779.	1020 <i>Schoenus sublateralis</i>			
780.	1023 <i>Schoenus tenellus</i>			
781.	48862 <i>Sisyrinchium rosulatum</i>	Y		
782.	617 <i>Sorghum halepense</i> (Johnson Grass)	Y		
783.	1034 <i>Tetraria capillaris</i> (Hair Sedge)			
784.	1036 <i>Tetraria octandra</i>			
785.	667 <i>Tetrarrhena laevis</i> (Forest Ricegrass)			
786.	1705 <i>Thelymitra crinita</i> (Blue Lady Orchid)			
787.	1707 <i>Thelymitra flexuosa</i> (Twisted Sun Orchid)			
788.	11053 <i>Thelymitra macrophylla</i>			
789.	20730 <i>Thelymitra paludosa</i>			
790.	1717 <i>Thelymitra variegata</i> (Queen of Sheba)		P2	
791.	1318 <i>Thysanotus arbuscula</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
792.	1319 <i>Thysanotus arenarius</i>			
793.	1328 <i>Thysanotus dichotomus</i> (Branching Fringe Lily)			
794.	1339 <i>Thysanotus multiflorus</i> (Many-flowered Fringe Lily)			
795.	1343 <i>Thysanotus patersonii</i>			
796.	1345 <i>Thysanotus pseudojunceus</i>			
797.	1351 <i>Thysanotus sparteus</i>			
798.	1354 <i>Thysanotus tenellus</i>			
799.	1357 <i>Thysanotus thyrsoides</i>			
800.	1482 <i>Tribonanthes brachypetala</i> (Nodding Tiurmdin)			
801.	1483 <i>Tribonanthes longipetala</i> (Branching Tiurmdin)			
802.	1361 <i>Tricoryne elatior</i> (Yellow Autumn Lily)			
803.	1362 <i>Tricoryne humilis</i>			
804.	1363 <i>Tricoryne tenella</i>			
805.	1561 <i>Tritonia crocata</i>	Y		
806.	12072 <i>Wurmbea dioica</i> subsp. <i>alba</i>			
807.	1249 <i>Xanthorrhoea acanthostachya</i>			
808.	14544 <i>Xanthorrhoea brunonis</i> subsp. <i>brunonis</i>			
809.	14545 <i>Xanthorrhoea brunonis</i> subsp. <i>semibarbata</i>			
810.	1253 <i>Xanthorrhoea gracilis</i> (Graceful Grass Tree, Mimidi)			
811.	1256 <i>Xanthorrhoea preissii</i> (Grass tree, Palga)			

Pteridophyte (Fern)

812.	59 <i>Lindsaea linearis</i> (Screw Fern)			
813.	74 <i>Marsilea drummondii</i> (Common Nardoo)			
814.	78 <i>Pilularia novae-hollandiae</i> (Austral Pillwort)			
815.	41651 <i>Pteridium esculentum</i> subsp. <i>esculentum</i>			
816.	6 <i>Selaginella gracillima</i> (Tiny Clubmoss)			

Reptile

817.	25047 <i>Ctenotus impar</i>			
818.	25250 <i>Elapognathus coronatus</i> (Crowned Snake)			
819.	25119 <i>Hemiergis quadrilineata</i>			
820.	25005 <i>Lialis burtonis</i>			
821.	25191 <i>Morethia lineocellata</i>			
822.	25252 <i>Notechis scutatus</i> (Tiger Snake)			
823.	25255 <i>Parasuta nigriceps</i>			
824.	25259 <i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)			
825.	25207 <i>Tiliqua rugosa</i> subsp. <i>rugosa</i>			

Conservation Codes

T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

Appendix 2: Protected Matter Search Tool Report



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 29/10/19 15:06:57

[Summary](#)

[Details](#)

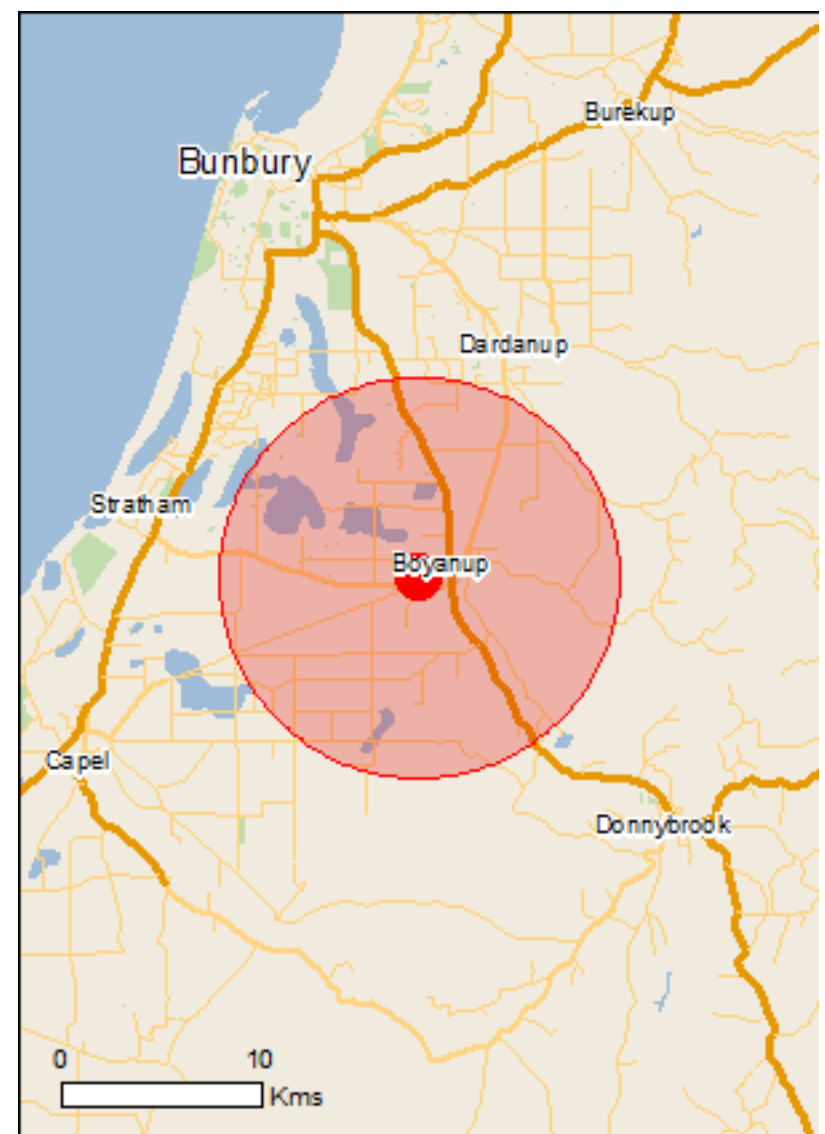
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

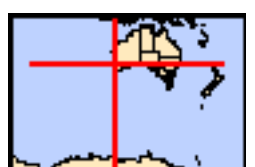
[Acknowledgements](#)



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[Coordinates](#)

[Buffer: 10.0Km](#)



Summary

Matters of National Environmental 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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	34
Listed Migratory Species:	10

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 <http://www.environment.gov.au/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 Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	4
Regional Forest Agreements:	1
Invasive Species:	31
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

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.

Name	Status	Type of Presence
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area

Listed Threatened Species

[\[Resource Information \]](#)

Name	Status	Type of Presence
------	--------	------------------

Birds

Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769]	Endangered	Breeding known to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area

Mammals

Dasyurus geoffroi Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat known to occur within area
Other		
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
Banksia nivea subsp. uliginosa Swamp Honeypot [82766]	Endangered	Species or species habitat may occur within area
Banksia squarrosa subsp. argillacea Whicher Range Dryandra [82769]	Vulnerable	Species or species habitat likely to occur within area
Brachyscias verecundus Ironstone Brachyscias [81321]	Critically Endangered	Species or species habitat may occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat may occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat likely to occur within area
Chamelaucium sp. S coastal plain (R.D.Royce 4872) Royce's Waxflower [87814]	Vulnerable	Species or species habitat may occur within area
Daviesia elongata subsp. elongata Long-leaved Daviesia [64883]	Vulnerable	Species or species habitat known to occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
Drakaea elastica Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat known to occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area
Gastrolobium papilio Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species habitat may occur within area
Lambertia echinata subsp. occidentalis Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat may occur within

Name	Status	Type of Presence area
Petrophile latericola Laterite Petrophile [64532]	Endangered	Species or species habitat may occur within area
Sphenotoma drummondii Mountain Paper-heath [21160]	Endangered	Species or species habitat may occur within area
Synaphea sp. Fairbridge Farm (D. Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area
Synaphea sp. Serpentine (G.R. Brand 103) [86879]	Critically Endangered	Species or species habitat known to occur within area
Synaphea stenoloba Dwellingup Synaphea [66311]	Endangered	Species or species habitat known to occur within area
Verticordia densiflora var. pedunculata Long-stalked Featherflower [55689]	Endangered	Species or species habitat known to occur within area

Listed Migratory Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land

[[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.

Name

Commonwealth Land -

Listed Marine Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Dardanup	WA
NTWA Bushland covenant (0022)	WA
NTWA Bushland covenant (0107)	WA
Unnamed WA49857	WA

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

Note that all areas with completed RFAs have been included.

Name	State
South West WA RFA	Western Australia

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
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Birds

Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area

Mammals

Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur
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Name	Status	Type of Presence within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus declinatus Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
<p>Olea europaea Olive, Common Olive [9160]</p>		<p>Species or species habitat may occur within area</p>
<p>Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]</p>		<p>Species or species habitat may occur within area</p>
<p>Rubus fruticosus aggregate Blackberry, European Blackberry [68406]</p>		<p>Species or species habitat likely to occur within area</p>
<p>Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]</p>		<p>Species or species habitat likely to occur within area</p>
<p>Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]</p>		<p>Species or species habitat likely to occur within area</p>

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-33.48624 115.71425

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.


Appendix 3: Potential Priority and Threatened Flora



Note: Green represents potential occurring species


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment	
<i>Acacia drummondii</i> subsp. <i>affinis</i>		Erect shrub, 0.3-1 m high. Fl. yellow	Jul - Aug	Lateritic gravelly soils	P3	Y	Soil type may be suitable in areas	
			Rush-like, erect or sprawling shrub, 0.3-0.75(-1.6) m high. Fl. yellow.	May - Sep	Sandy soils. Winter-wet areas.	P4	Y	Soil type suitable although area may be too degraded
			Slender, erect, pungent shrub, (0.1)0.2-0.7(-1.5) m high. Fl. cream-white.	May - Oct	White/grey sand, sometimes over laterite, clay. Sandplains, swampy areas.	P4	Y	Soil type suitable although area may be too degraded
<i>Adelphacme minima</i>					P3		Unable to assess	



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <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 - Nov	White/ grey sand, sandy clay, gravelly loam. Winter-wet areas, near swamps.	T, EN	Y	Soil type suitable although area may be too degraded
<p><i>Angianthus drummondii</i></p>		Erect annual, herb, 0.1 m high. Fl. yellow.	Oct - Dec	Grey or brown clay soils, ironstone. Seasonally wet flats.	P3	N	Soil type unsuitable
 <p><i>Aponogeton hexatepalus</i> Photos: J.L. Robson & A.P. Brown</p>		Rhizomatous or cormous, aquatic perennial, herb, leaves floating. Fl. green-white	Jul to Oct	Mud. Freshwater: ponds, rivers, claypans	P4	N	Soil type may be unsuitable, has been found on the site previously, around 350m from WSW start point.



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Banksia nivea</i> subsp. <i>uliginosa</i> Photos: J.A. Cochrane & M. Pieroni</p>	Swamp Honeypot	Dense, erect, non-lignotuberous shrub, 0.2-1.5 m high. Fl. yellow-brown.	Aug - Sep	Sandy clay, gravel.	T, EN	Y	Soil type may be suitable
 <p><i>Banksia squarrosa</i> subsp. <i>argillacea</i> Photos: M. Pieroni</p>	Whicher Range Dryandra	Erect, open, non-lignotuberous shrub, 1.2-4 m high. Fl. yellow.	Jun - Nov	Winter-wet flats, clay flats.	T, V	N	Soil type and drainage may not be suitable




Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Boronia humifusa</i> Photos: J.A. Cochrane, F. Hort & L. Sander</p>		<p>Low growing, wiry perennial herb. 0.1-0.2m high. Fl pink/red.</p>	<p>Jun - Sep</p>	<p>Gravel clay loam over laterite, Jarrah-marri open forest.</p>	<p>P1</p>	<p>N</p>	<p>Soil not suitable</p>
<p><i>Boronia tetragona</i></p>		<p>Perennial, herb, 0.3-0.7 m high, leaves sessile, entire, with papillate margins, branches.</p>	<p>Oct - Dec</p>	<p>Black/white sand, laterite, brown sandy loam. Winter-wet flats, swamps, open woodland.</p>	<p>P3</p>	<p>Y</p>	<p>Soil type and drainage may be suitable</p>
<p><i>Brachyscias verecundus</i></p>	<p>Ironstone Brachyscias</p>	<p>Annual (or ephemera), herb, 0.012-0.022 m high. Entirely glabrous. Fl. white/cream.</p>		<p>In a moss sward. On a granite outcrop.</p>	<p>T, CR</p>	<p>N</p>	<p>Soil type not suitable</p>



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Caladenia hoffmanii</i> Photos: A.P. Brown, S.D. Hopper & S.J. Patrick</p>	Hoffman's Spider Orchid	Tuberous, perennial, herb, 0.13-0.3 m high. Fl. green and yellow and red.	Aug - Oct	Clay, loam, laterite, granite. Rocky outcrops and hillsides, ridges, swamps and gullies.	T, EN	N	Soil type may not be suitable
 <p><i>Caladenia huegelii</i> Photos: I. & M. Greeve & J.L. Robson</p>	King Spider Orchid, Grand Spider Orchid, Rusty Spider Orchid	Tuberous, perennial, herb, 0.25-0.6 m high. Fl. green and cream and red.	Sep - Oct	Grey or brown sand, clay loam.	T, EN	Y	soil type may be suitable
<i>Caustis sp. Boyanup</i>		Rhizomatous, clumped perennial, grass-like or herb (sedge), 0.7-1 m high		White or grey sand	P3	Y	Soil type suitable
<i>Chamaescilla gibsonii</i>		Clumped tuberous, herb. Fl. Blue	Sep	Clay to sandy clay. Winter-wet flats, shallow water-filled claypans.	P3	Y	Found nearby, soil type may be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
<i>Chamelaucium sp. S Coastal Plain</i>	Royce's Waxflower				T, V	Y	Found nearby
<i>Cyathochaeta teretifolia</i>		Rhizomatous, clumped, robust perennial, grass-like or herb (sedge), to 2 m high, to 1.0 m wide. Fl. brown		Grey sand, sandy clay. Swamps, creek edges.	P3	Y	Suitable soil type
<i>Darwinia whicherensis</i>		Unknown		Shallow sandy clay winter flats	T	Y	Individual found 4km ENE of site
<i>Daviesia elongata</i>		Spreading or sprawling shrub, 0.4-1 m high. Fl. Yellow & orange & red	Sep to Dec or Jan to Feb	Sand, laterite.	V	Y	Soil type may be suitable
 <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 – Dec or Jan	Low-lying depressions, swamps.	T, V	N	Habitat not suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Diuris micrantha</i> Photos: A.P. Brown, I. & M. Greeve & B. Jackson</p>	Dwarf Bee-Orchid	Tuberous, perennial, herb, 0.3-0.6 m high. Fl. yellow and brown.	Sep - Oct	Brown loamy clay. Winter-wet swamps, in shallow water.	T, V	N	Not found south of Harvey.
 <p><i>Diuris purdiei</i> Photos: I. & M. Greeve & S.D. Hopper</p>	Purdie's Donkey Orchid	Tuberous, perennial, herb, 0.15-0.35 m high. Fl. yellow.	Sep - Oct	Grey-black sand, moist. Winter-wet swamps.	T, EN	Y	Soil type may be suitable

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Drakaea elastica</i> Photos: A. Brown & S.D. Hopper</p>	<p>Glossy-leaved Hammer Orchid</p>	<p>Tuberous, perennial, herb, 0.12-0.3 m high. Fl. red, green and yellow.</p>	<p>Oct - Nov</p>	<p>White or grey sand. Low-lying situations adjoining winter-wet swamps.</p>	<p>T, EN</p>	<p>Y</p>	<p>Soil type may be suitable in areas</p>
 <p><i>Drakaea micrantha</i> Photos: S.D. Hopper, A.P. Brown & I. & M. Greeve</p>	<p>Dwarf Hammer Orchid</p>	<p>Tuberous, perennial, herb, 0.15-0.3 m high. Fl. red and yellow.</p>	<p>Sep - Oct</p>	<p>White-grey sand.</p>	<p>T, V</p>	<p>Y</p>	<p>Soil type may be suitable in areas</p>



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Eleocharis keigheryi</i> Photo: G.J. Keighery</p>	<p>Keighley's Eleocharis</p>	<p>Rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 m high. Fl. green.</p>	<p>Aug - Nov</p>	<p>Clay, sandy loam. Emergent in freshwater: creeks, claypans.</p>	<p>T, V</p>	<p>Y</p>	<p>Soil type may be suitable</p>
 <p><i>Franklandia triaristata</i></p>	 <p>Lanoline Bush</p>	<p>Erect, lignotuberous shrub, 0.2-1 m high. Fl. white-cream-yellow/ brown-purple.</p>	<p>Aug - Oct</p>	<p>White or grey sand</p>	<p>P4</p>	<p>Y</p>	<p>Soil type may be suitable and has been found in area previously</p>


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Gastrolobium papilio</i> Photos: G.J. Keighery & D. Papenfus</p>	<p>Butterfly-leaved Gastrolobium</p>	<p>Tangled, clumped shrub, to 1.5m high. Fl. cream-red.</p>	<p>Oct - Dec</p>	<p>Sandy clay over ironstone and laterite. Flat plains.</p>	<p>T, EN</p>	<p>Y</p>	<p>Soil type may be suitable</p>
 <p><i>Gastrolobium whicherense</i> Photos: A.D. Crawford</p>		<p>Slender, open shrub, to 1.6 m high. Fl. orange/yellow/red</p>	<p>Oct</p>	<p>Red-grey sandy clay over quartzite. Steep westerly slopes.</p>	<p>P2</p>	<p>Y</p>	<p>Soil type may be suitable in areas</p>
<p><i>Gastrolobium sp. Yoongarillup</i></p>		<p>An erect perennial shrub to 1 metre high. It produces yellow and orange flowers</p>		<p>Dry brown sandy clay soil type</p>	<p>P1</p>	<p>Y</p>	<p>Soil type may be suitable</p>
<p><i>Grevillea bronwenae</i></p>		<p>Slender, erect shrub, 0.5-1.6 m high. Fl. red.</p>	<p>Jun - Dec</p>	<p>Grey sand over laterite, lateritic loam. Hillslopes.</p>	<p>P3</p>	<p>Y</p>	<p>Soil type may be suitable</p>


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p data-bbox="174 678 672 699"><i>Grevillea maccutcheonii</i> Photos: J.A. Cochrane, I. & M. Greeve & M. Hancock</p>		<p data-bbox="936 320 1191 539">Densely branched shrub, 1.5m high, alternate leaves, inflorescence terminal green and/or red</p>	<p data-bbox="1211 320 1330 352">Jul- Nov</p>	<p data-bbox="1373 320 1617 427">Shallow soils over laterite, seasonally inundated</p>	<p data-bbox="1637 320 1700 352">T</p>	<p data-bbox="1771 320 1812 352">Y</p>	<p data-bbox="1877 320 2092 395">Soil type may be suitable</p>
 <p data-bbox="174 1054 672 1077"><i>Isopogon formosus</i> subsp. <i>dasylepis</i> Photos: J.A. Cochrane & J. Stevens</p>		<p data-bbox="936 703 1191 879">Low, bushy or slender, upright, non-lignotuberous shrub, 0.2-2 m high. Fl. pink-purple/red.</p>	<p data-bbox="1211 703 1330 735">Jun - Dec</p>	<p data-bbox="1373 703 1617 879">Sand, sandy clay, gravelly sandy soils over laterite. Often swampy areas.</p>	<p data-bbox="1637 703 1700 735">P3</p>	<p data-bbox="1771 703 1812 735">Y</p>	<p data-bbox="1877 703 2092 778">Soil type may be suitable</p>



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Jacksonia gracillima</i> Photos: R. Davis</p>					P3		No information – unable to assess
 <p><i>Lambertia echinata</i> subsp. <i>occidentalis</i> Photos: A.P. Brown & J.A. Cochrane</p>	Western Prickly Honeysuckle	Prickly, much branched, non-lignotuberous shrub, to 3m high. Fl. yellow.	Feb or Apr - Dec	White sandy soils over laterite, orange/brown-red clay over ironstone. Flats to foothills, winter-wet sites.	T, EN	Y	Soil type may be suitable
<i>Lasiopetalum membranaceum</i>		Multi-stemmed shrub, 0.2-1 m high. Fl. pink-blue-purple.	Sep - Dec	Sand over limestone.	P3	Y	Soil type may be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
	<i>Leptomeria furtiva</i>	Lax, sprawling shrub, 0.2-0.45 m high. Fl. orange-brown.	Aug - Oct	Grey or back peaty sand. Winter-wet flats.	P2	Y	Soil type and drainage may be suitable
	<i>Leucopogon sp. Busselton</i>				P2		Unable to assess
	<i>Lomandra whicherensis</i>				P3		Unable to assess
	<i>Orianthera wendyae</i>				P1		No information
	<i>Ornduffia submersa</i>	Small aquatic waterlily-like plant with hairy white flowers and glossy leaves	Oct-Dec	Swamps	P4	N	Found nearby previously but habitat may not be suitable
	<i>Petrophile latericola</i>	Multi-stemmed shrub, 0.4-1.5m high. Fl. yellow.	Nov	Red lateritic clay. Winter-wet flats.	T, EN	N	Soil type not suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Pithocarpa corymbulosa</i> Photos: A. Cawley</p>		<p>Erect to scrambling perennial, herb, 0.5-1 m high. Fl. white</p>	<p>Jan - Apr</p>	<p>Gravelly or sandy loam. Amongst granite outcrops.</p>	<p>P3</p>	<p>Y</p>	<p>Soil type may be suitable in areas</p>
 <p><i>Platytheca anasima</i> Photos: R. Butcher</p>		<p>Sprawling to erect shrub, 0.5-1.5m high</p>		<p>It grows on gentle slopes of white-grey sand or brown sandy loam</p>	<p>P2</p>	<p>Y</p>	<p>Suitable soil type and has been found 15km SE from Capel</p>



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Pultenaea pinifolia</i> Photos: S. Clarke & J.A. Cochrane</p>		Erect slender shrub, 1-3m high. Fl yellow-orange	Oct – Nov	Loam or clay floodplains, swampy area	P3	N	Soil type not suitable
<p>Pultenaea skinneri</p>	Skinner’s Pea	Slender shrub, 1-2 m high. Fl. yellow/orange and red.	Jul - Sep	Sandy or clayey soils. Winter-wet depressions.	P4	Y	Soil type and drainage may be suitable. Has also been located approximately 100m from ENE end of site boundary.
<p><i>Schoenus loliaceus</i></p>		Annual, grass-like or herb (sedge), 0.03-0.06 m high.	Aug - Nov	Sandy soils. Winter-wet depressions.	P2	Y	Soil type may be suitable


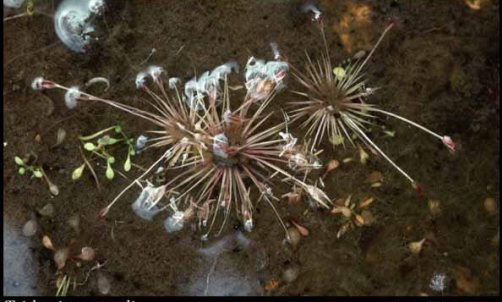
Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Sphenotoma drummondii</i> Photos: A. Brown, J.A. Cochrane & S.D. Hopper</p>	<p><i>Mountain Paperheath</i></p>	<p>Tufted shrub, 0.15-0.5m high. Fl. white.</p>	<p>Sep - Dec</p>	<p>Stony or shallow soils over granite or quartzite. Steep rocky slopes, crevices or rocks.</p>	<p>T, EN</p>	<p>N</p>	<p>Soil type unsuitable</p>
<p><i>Stenanthemum sublineare</i></p>		<p>Erect shrub, to 0.1 m high. Fl. green</p>	<p>Oct - Dec</p>	<p>Littered white sand</p>	<p>P2</p>	<p>N</p>	<p>Not suitable as it is a Coastal species</p>
<p><i>Stylidium acuminatum subsp. acuminatum</i></p>					<p>P2</p>		<p>No information available</p>


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Synaphea hians</i> Photos: R. Butcher</p>		<p>Prostrate or decumbent shrub, 0.15-0.6 m high, to 1 m wide. Fl. yellow.</p>	<p>Jul or Sep - Nov</p>	<p>Sandy soils. Rises.</p>	<p>P3</p>	<p>Y</p>	<p>Soil type suitable although landforms may not be suitable</p>
 <p><i>Synaphea odocoileops</i> Photos: R. Butcher</p>		<p>Tufted, compact shrub, 0.2-0.5 m high. Fl. yellow.</p>	<p>Aug - Oct</p>	<p>Brown-orange loam and sandy clay, granite. Swamps, winter-wet areas.</p>	<p>P1</p>	<p>Y</p>	<p>Soil type may be suitable</p>

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
		Tufted shrub, 0.1-0.6 m high. Fl. yellow.	Sep - Oct	Flats, winter-wet areas.	P3	Y	Habitat type may be suitable.
		Clumped shrub, 0.35-0.4 m high. Fl. yellow.		Light brown loam, red-brown sandy loam, gravelly, brown sandy clay over laterite. In undulating areas.	P3	Y	Soil type may be suitable in areas

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Synaphea</i> sp. Fairbridge Farm (D. Papenfus 696) Photos: R. Butcher</p>	<p>Selena's Synaphea</p>	<p>Dense, clumped shrub, to 0.3 m high, to 0.4 m wide. Fl. yellow</p>	<p>Oct</p>	<p>Sandy with lateritic pebbles. Near winter-wet flats, in low woodland with weedy grasses.</p>	<p>T</p>	<p>Y</p>	<p>Soil type may be suitable.</p>
 <p><i>Synaphea</i> sp. Pinjarra Plain (A.S. George 17182) Photos: R. Butcher</p>		<p>Erect, clumped shrub (sub-shrub), to 0.8 m high. Fl. yellow.</p>	<p>Sep - Nov</p>	<p>Grey sandy loam or clay, grey-brown clayey sand, brown clayey loam, laterite. Flats, seasonally wet areas, railroad reserves often with wet depressions or drains.</p>	<p>T</p>	<p>Y</p>	<p>Soil type may be suitable</p>

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Synaphea</i> sp. Serpentine (G.R. Brand 103) Photos: R. Butcher</p>		<p>Perennial, erect, clumped shrub to 60cm high by 50cm wide with yellow flowers borne on long spikes well above the leaves.</p>	<p>Aug - Nov</p>	<p>Grey-brown sandy-loam or clay in seasonally wet areas</p>	<p>T</p>	<p>Y</p>	<p>Soil may be suitable. Individual identified 7km north of Weld Rd and 7km west of Payne St.</p>
 <p><i>Synaphea stenoloba</i> Photos: J. Koch</p>		<p>Caespitose shrub, 0.3-0.45 m high. Fl. yellow</p>	<p>Aug - Oct</p>	<p>Sandy or sandy clay soils. Winter-wet flats, granite</p>	<p>T</p>	<p>Y</p>	<p>Suitable soil types, individuals located halfway between Weld Rd and Payne St</p>

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p><i>Thelymitra variegata</i> Photos: S.D. Hepper & G. Brumbauer</p>		Tuberous, perennial, herb, 0.1-0.35 m high. Fl. orange & red & purple & pink	Jun - Sep	Sandy clay, sand, laterite.	P2	Y	Soil type may be suitable, previously found 500m NE of site
 <p><i>Trithuria australis</i> Photo: G.J. Keighery</p>					P4	Y	Recorded in area previously
<p><i>Verticordia attenuata</i></p>		Shrub, 0.4-1 m high. Fl. pink.	Aug - Oct Dec/Jan - May	White or grey sand. Winter-wet depressions	P3	Y	Soil type may be suitable

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood (Y/N)	Comment
 <p data-bbox="174 676 669 695"><i>Verticordia densiflora</i> var. <i>pedunculata</i> Photos: E.A. George</p>		Erect to spreading shrub, 0.3-0.6 m high. Fl. pink/pink-white.	Dec or Jan	Grey/ yellow sand, sandy loam. Winter-wet low-lying areas.	T	Y	Soil type and drainage may be suitable

(Source: FloraBase, DBCA, 2019b)

Appendix 4: Conservation Codes

Western Australia

Conservation Code	Name	Description
T	Threatened	Flora or fauna that is rare or likely to become extinct (Schedule 1 of the <i>Wildlife Conservation Act 1950</i>)
X	Presumed Extinct	Flora or fauna that is presumed to be extinct in the wild (Schedule 2 of the <i>Wildlife Conservation Act 1950</i>)
IA	International Agreement	Birds protected under international agreement (Schedule 3 of the <i>Wildlife Conservation Act 1950</i>)
S	Specially Protected	Other specially protected fauna (Schedule 4 of the <i>Wildlife Conservation Act 1950</i>)
<i>Schedule 1 species are ranked by DPaW according to their level of threat using IUCN Red List criteria</i>		
CR	Critically endangered	Species considered to be facing an extremely high risk of extinction within the wild
EN	Endangered	Species considered to be facing a very high risk of extinction within the wild
VU	Vulnerable	Species considered to be facing a high risk of extinction in the wild
<i>Species that have not been adequately surveyed for listing under Schedule 1 or 2 of the Wildlife Protection Act</i>		
1	Priority One	Poorly known species – known from one or a few collections or sight records (generally <5), on all 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 – known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, such as national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves and similar.
3	Priority Three	Poorly known species – known collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large 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.
5	Priority Five	Conservation dependent species that are not threatened but are subject to a specific conservation program, the cessation of which would result in them becoming threatened within five years.

(Source: Department of Biodiversity, Conservation and Attractions, 2019a)

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: Department of the Environment and Energy, 2019a)

Appendix 5: Flora Species List

A complete flora list is provided in the table below. *Denote introduced species (weeds). Species are listed in alphabetical order by species name, with weeds first then natives.

Family	Species	Common Name
Fabaceae	* <i>Acacia baileyana</i>	
Fabaceae	* <i>Acacia dealbata</i> subsp. <i>dealbata</i>	
Fabaceae	* <i>Acacia iteaphylla</i>	Flinders Range Wattle
Fabaceae	* <i>Acacia longifolia</i>	
Alliaceae	* <i>Allium triquetrum</i>	Three-cornered Garlic
Asteraceae	* <i>Arctotheca calendula</i>	Cape Weed
Asparagaceae	* <i>Asparagus asparagoides</i>	Bridal Creeper
Poaceae	* <i>Avena barbata</i>	Wild Oat
Iridaceae	* <i>Babiana angustifolia</i>	Baboon Flower
Poaceae	* <i>Briza maxima</i>	
Poaceae	* <i>Briza minor</i>	
Poaceae	* <i>Bromus diandrus</i>	Great Brome
Poaceae	* <i>Cenchrus clandestinus</i>	Kikuyu Grass
Asteraceae	* <i>Cotula turbinata</i>	Funnel Weed
Cucurbitaceae	* <i>Citrullus amarus</i>	Pie Melon
Cucurbitaceae	* <i>Cucumis myriocarpus</i>	Paddy Melon
Poaceae	* <i>Cynodon dactylon</i>	Couch
Cyperaceae	* <i>Cyperus eragrostis</i>	Umbrella Sedge
Orchidaceae	* <i>Disa bracteata</i>	South African Orchid
Poaceae	* <i>Ehrharta calycina</i>	Perennial Veldt Grass
Poaceae	* <i>Eragrostis curvula</i>	African Lovegrass
Geraniaceae	* <i>Erodium botrys</i>	Long Storksbill
Iridaceae	* <i>Freesia alba</i> × <i>leichtlinii</i>	Freesia
Papaveraceae	* <i>Fumaria capreolata</i>	Whiteflower Fumitory
Rubiaceae	* <i>Galium murale</i>	Small Goosegrass
Iridaceae	* <i>Gladiolus undulatus</i>	
Poaceae	* <i>Holcus lanatus</i>	Yorkshire Fog
Poaceae	* <i>Hordeum marinum</i>	Barley Grass
Asteraceae	* <i>Hypochaeris radicata</i>	Flat Weed
Asteraceae	* <i>Hypochaeris glabra</i>	Smooth Cats-ear
Juncaceae	* <i>Juncus bufonius</i>	Toad Rush
Cyperaceae	* <i>Juncus microcephalus</i>	
Poaceae	* <i>Lolium rigidum</i>	Rye Grass
Fabaceae	* <i>Lotus subbiflorus</i>	
Lythraceae	* <i>Lythrum hyssopifolia</i>	Lesser Loosestrife
Malvaceae	* <i>Malva parviflora</i>	Marshmallow
Campanulaceae	* <i>Monopsis debilis</i>	

Family	Species	Common Name
Apocynaceae	* <i>Nerium oleander</i>	
Orobanchaceae	* <i>Orobanche minor</i>	Lesser Broomrape
Oxalidaceae	* <i>Oxalis glabra</i>	
Oxalidaceae	* <i>Oxalis incarnata</i>	
Oxalidaceae	* <i>Oxalis purpurea</i>	Largeflower Wood Sorrel
Oxalidaceae	* <i>Oxalis pes-caprae</i>	Soursob
Poaceae	* <i>Paspalum dilatatum</i>	
Poaceae	* <i>Poa annua</i>	Winter Grass
Polygonaceae	* <i>Polygonum aviculare</i>	Wireweed
Poaceae	* <i>Polypogon monspeliensis</i>	Beard Grass
Salicaceae	* <i>Populus alba</i>	
Asteraceae	* <i>Pseudognaphalium luteoalbum</i>	Jersey Cudweed
Brassicaceae	* <i>Raphanus raphanistrum</i>	Wild Radish
Polygonaceae	* <i>Rumex crispus</i>	Curled Dock
Caryophyllaceae	* <i>Sagina apetala</i>	Annual Pearlwort
Solanaceae	* <i>Solanum nigrum</i>	Black Berry Nightshade
Asteraceae	* <i>Sonchus oleraceus</i>	Common Sowthistle
Lamiaceae	* <i>Stachys arvensis</i>	Staggerweed
Asteraceae	* <i>Symphyotrichum squamatum</i>	Bushy Starwort
Fabaceae	* <i>Trifolium campestre</i>	Hop Clover
Fabaceae	* <i>Trifolium hirtum</i>	
Poaceae	* <i>Triticum aestivum</i>	Wheat
Fabaceae	* <i>Vicia sativa</i>	Vetch
Iridaceae	* <i>Watsonia borbonica</i>	
Iridaceae	* <i>Watsonia marginata</i>	
Fabaceae	<i>Acacia pulchella</i>	Prickly Moses
Fabaceae	<i>Acacia stenoptera</i>	Narrow Winged Wattle
Myrtaceae	<i>Agonis flexuosa</i>	Peppermint
Hemerocallidaceae	<i>Agrostocrinum hirsutum</i>	
Proteaceae	<i>Banksia dallanneyi</i>	Couch Honeypot
Hemerocallidaceae	<i>Caesia micrantha</i>	Pale Grass-lily
Hemerocallidaceae	<i>Caesia occidentalis</i>	
Myrtaceae	<i>Callistemon phoeniceus</i>	Lesser Bottlebrush (Planted)
Myrtaceae	<i>Calothamnus rupestris</i>	Mouse Ears
Lauraceae	<i>Cassytha racemosa</i>	Dodder Laurel
Cyperaceae	<i>Chorizandra enodis</i>	
Haemodoraceae	<i>Conostylis aculeata</i>	Prickly Conostylis
Myrtaceae	<i>Corymbia calophylla</i>	Marri
Cyperaceae	<i>Cyathochaeta avenacea</i>	
Goodeniaceae	<i>Dampiera linearis</i>	Common Dampiera
Myrtaceae	<i>Eucalyptus rudis</i>	Flooded Gum
Proteaceae	<i>Grevillea intricata</i>	
Proteaceae	<i>Grevillea olivacea</i>	Olive Grevillea (Planted) P4

Family	Species	Common Name
Proteaceae	<i>Grevillea thelemanniana</i>	Spider Net Grevillea (Planted)
Proteaceae	<i>Grevillea vestita</i>	
Proteaceae	<i>Grevillea pimeleoides</i>	(Planted) P4
Haemodoraceae	<i>Haemodorum laxum</i>	
Haemodoraceae	<i>Haemodorum simplex</i>	
Haemodoraceae	<i>Haemodorum spicatum</i>	
Proteaceae	<i>Hakea elliptica</i>	
Proteaceae	<i>Hakea francisiana</i>	Emu Tree (Planted)
Proteaceae	<i>Hakea lissocarpha</i>	Honey Bush
Proteaceae	<i>Hakea prostrata</i>	Harsh Hakea
Proteaceae	<i>Hakea varia</i>	Variable-Leaved Hakea
Dilleniaceae	<i>Hibbertia diamesogenos</i>	
Myrtaceae	<i>Hypocalymma robustum</i>	Swan River Myrtle
Cyperaceae	<i>Isolepis marginata</i>	Coarse Club-rush
Fabaceae	<i>Jacksonia furcellata</i>	
Juncaceae	<i>Juncus holoschoenus</i>	
Juncaceae	<i>Juncus pallidus</i>	Pale Rush
Fabaceae	<i>Kennedia nigricans</i>	Black Kennedia (Planted)
Fabaceae	<i>Kennedia prostrata</i>	Running Postman
Poaceae	<i>Lachnagrostis filiformis</i>	
Cyperaceae	<i>Lepidosperma longitudinale</i>	Pithy Sword-sedge
Cyperaceae	<i>Lepidosperma pubisquameum</i>	
Cyperaceae	<i>Lepidosperma squamatum</i>	
Restionaceae	<i>Leptocarpus canus</i>	Hoary Twine-rush
Restionaceae	<i>Leptocarpus thysananthus</i>	
Asparagaceae	<i>Lomandra odora</i>	Tiered Matrush
Myrtaceae	<i>Melaleuca lateritia</i>	Robin Redbreast Bush
Myrtaceae	<i>Melaleuca preissiana</i>	Moonah
Myrtaceae	<i>Melaleuca viminea</i>	Mohan
Myrtaceae	<i>Melaleuca nesophila</i>	
Myrtaceae	<i>Melaleuca viminea subsp. viminea</i>	
Cyperaceae	<i>Mesomelaena tetragona</i>	Semaphore Sedge
Poaceae	<i>Microlaena stipoides</i>	Weeping Grass
Iridaceae	<i>Patersonia occidentalis</i>	Purple Flag
Proteaceae	<i>Persoonia longifolia</i>	Snottygobble
Fabaceae	<i>Pultenaea skinneri</i>	
Euphorbiaceae	<i>Ricinocarpos glaucus</i>	Wedding Bush
Poaceae	<i>Rytidosperma sp.</i>	
Goodeniaceae	<i>Scaevola calliptera</i>	
Goodeniaceae	<i>Scaevola anchusifolia</i>	
Cyperaceae	<i>Tetaria octandra</i>	
Hemerocallidaceae	<i>Tricoryne elatior</i>	Yellow Autumn Lily
Hemerocallidaceae	<i>Tricoryne tenella</i>	

Family	Species	Common Name
Myrtaceae	<i>Verticordia chrysanthella</i>	(Planted)
Myrtaceae	<i>Verticordia plumosa</i>	Plumed Featherflower (Planted)
Fabaceae	<i>Viminaria juncea</i>	Swishbush
Xanthorrhoeaceae	<i>Xanthorrhoea brunonis</i>	
Xanthorrhoeaceae	<i>Xanthorrhoea gracilis</i>	Graceful Grass Tree
Xanthorrhoeaceae	<i>Xanthorrhoea preissii</i>	Grass Tree