



Natural Area  
CONSULTING MANAGEMENT SERVICES

## Shire of Chittering Detailed Flora and Basic Fauna Survey, Bindoon

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## Executive Summary

The Shire of Chittering (the Shire) is proposing the construction of a mountain bike trail development at Lot 3874, Bindoon. As part of the development process, the Shire has commissioned Natural Area Consulting Management and Services (Natural Area) to undertake biological surveys at the proposed site. Surveys included a detailed flora and vegetation survey and a basic fauna survey, including a preliminary black cockatoo habitat assessment. Information gathered during the surveys will inform stakeholders of the environmental values of the site

The survey aimed to determine:

- flora and fauna species present (native and non-native)
- the extent and boundaries of vegetation type and condition
- the location of declared rare or priority flora, fauna and/or ecological communities
- preliminary habitat assessment for threatened black cockatoo habitat.

The flora and vegetation survey within site confirmed:

- a total of 163 flora species present from 46 families
- a total of 27 introduced (weeds), one dubious (planted) species and 135 native flora species
- no priority or threatened flora species were found during the survey
- three vegetation types occurred within the site with one small area containing no vegetation:
  - *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Open Woodland
  - *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Cleared Open Farmland
  - *Eucalyptus accedens* Woodland
- vegetation condition across the site ranged from Completely Degraded to Excellent, with majority of the site (41.6%) in Completely Degraded condition.

The fauna survey within the site confirmed:

- a total of 17 fauna species present
- four mammals, two reptiles and 11 bird species within the survey area
- four introduced species (one bird and two mammals) and one domestic livestock
- signs of feeding at three locations by threatened black cockatoos on *Corymbia calophylla* (Marri) nuts was observed within a small flock Carnaby's Cockatoo (*Calyptorhynchus latirostris*) flying over the site
- preliminary habitat assessment noted a total of 12 habitat trees with hollows which are potentially suitable to provide nesting habitat due to their sufficient hollow size and opening direction of the hollows for threatened black cockatoos
- the site overall contain several foraging opportunities in the form of Marri trees across the entire site with many mature large trees present which have the potential to provide suitable habitat for cockatoos.

Recommendations have been made for the site in terms of proposed clearing areas which avoid the mature trees and the placement of infrastructure to maximise the amount of quality vegetation to be retained. Outcomes from the Phytophthora (Dieback) assessment concluded that no evidence of the pathogen was observed, with the majority of the site classified as Uninterpretable due to the lack of indicator flora species. Hygiene management recommendations have been made to limit weed spread and the potential for spread and/or introduction of Dieback within the site.

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## 1.0 Introduction

The Shire of Chittering (the Shire) is proposing the construction of a mountain bike trail development at Lot 3874, Bindoon. As part of the development process, the Shire has commissioned Natural Area Consulting Management Services (Natural Area) to undertake biological surveys at the proposed site. Surveys included a detailed flora and vegetation survey and a basic fauna survey, including a preliminary black cockatoo habitat assessment. Information gathered during the surveys will inform stakeholders of the environmental values of the site and provide supporting information for potential clearing permit application to the Department of Water and Environmental Regulation (DWER).

### 1.1 Location

The survey area is approximately 89.5 ha and is located on Lot 3874 Red Hill Road, within the suburb of Bindoon. It is within the Shire of Chittering and approximately 500 m to the east of Bindoon town centre (Figure 1). The survey site occurs outside of an environmentally sensitive area (Department of Water and Environmental Regulation 2021). A change in site boundary was sent post field surveys, with the additional area shown in blue on Figure 1.

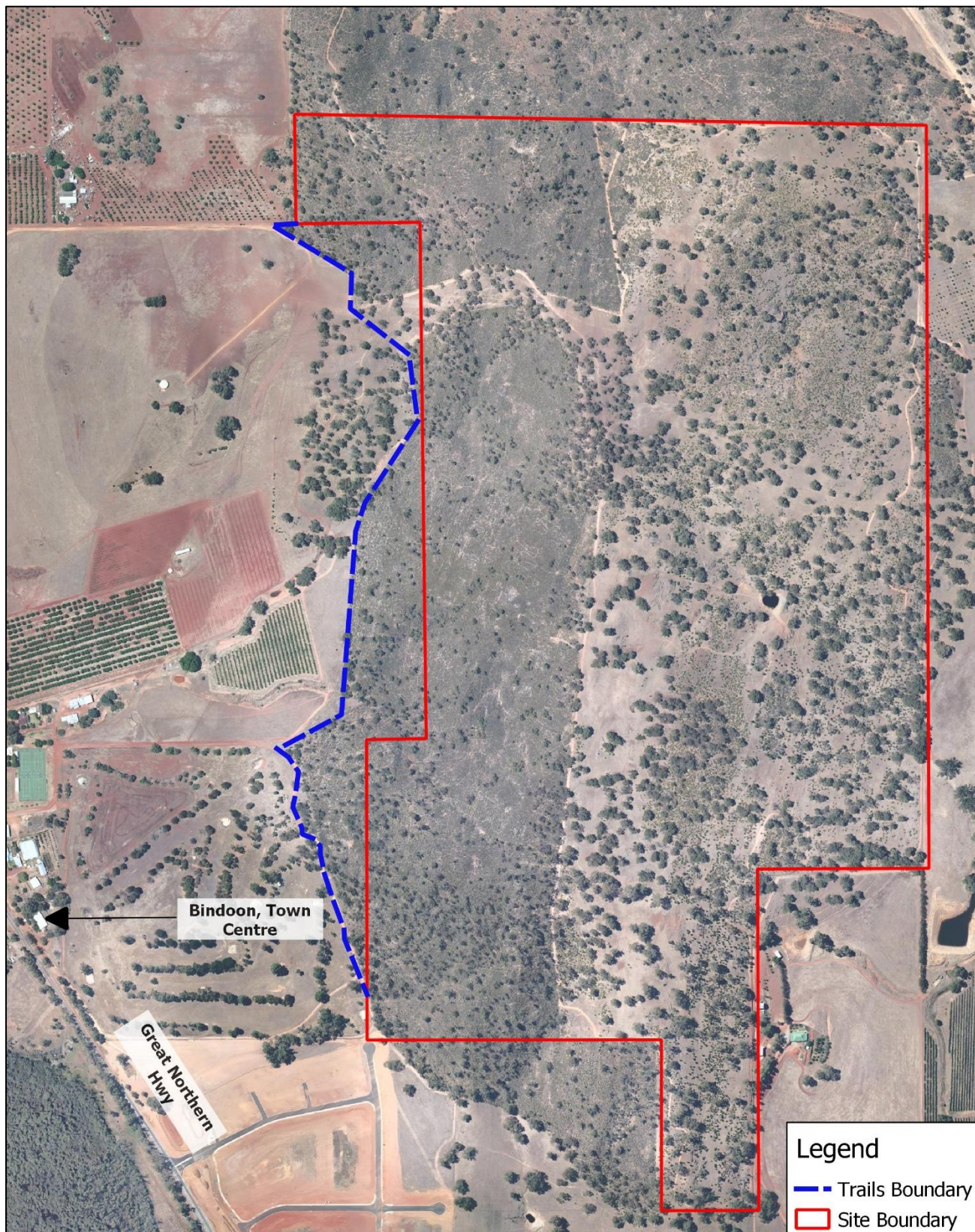
### 1.2 Scope

Activities undertaken by Natural Area included:

- Desktop database searches to identify potential conservation significant flora and fauna species, along with any threatened or priority ecological communities. Desktop searches include, but is not limited to, Protected Matters Search Tool (PMST), NatureMap, Department of Biodiversity, Conservation and Attractions (DBCA) flora, fauna and communities database searches.
- Detailed flora and vegetation survey to determine the extent of the vegetation condition and type, as well as recording flora (native and introduced) species present, including the presence of any threatened or priority species.
- Basic fauna survey to record any opportunistic sightings and evidence of presence of fauna.
- Preliminary black cockatoo habitat assessment to record sightings of threatened black cockatoo species, presence of potential breeding hollows, location of habitat trees (diameter at breast height (DBH) >500 mm) or evidence of their presence.
- Reporting outcomes of the assessment activities.

### 1.3 Objectives

The main objective of the survey was to collect sufficient data to adequately inform future clearing permit applications to DWER, as required by clearing provisions under the *Environmental Protection Act 1986* (WA) (EP Act) and *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (WA) (Regulations).



**Figure 1:**  
Site Location  
Bindoon, Shire of Chittering

0 100 200 m



Client: Shire of Chittering  
Date: 02/12/2021  
Created by: K. Sadgrove  
Image Source: Nearmap 2021  
Datum: GDA 94

## 2.0 Site Characteristics

The characteristics of a site have a strong bearing on the flora, vegetation, fauna, and ecological communities present. Key characteristics of Lot 3874 are outlined in this section.

### 2.1 Regional Context

According to the Interim Biogeographical Regionalisation of Australia (IBRA) descriptions, the site is located within the Northern Jarrah Forest (JAF01) subregion. This region constitutes the area east of the Darling Scarp, overlying Archean granite and metamorphic rock of an average elevation of 300 m, capped by an extensive lateritic duricrust, dissected by later drainage and broken by occasional granite hills (Mitchell and Williams, 2001). Vegetation comprises of areas of Jarrah - Marri forest in the west with Bullich (*Eucalyptus megacarpa*) and Blackbutt (*Eucalyptus patens*) concentrated in valleys. Wandoo (*Eucalyptus wandoo*) and Marri (*Corymbia calophylla*) woodlands in the east with Powderbark (*Eucalyptus accedens*) on breakaways (Mitchell and Williams, 2001). Heathland is found on granite rocks and as a common understorey of forests and woodlands in the north and east (Mitchell and Williams, 2001).

### 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 (2021); Gingin Aero (009178), the region has:

- mean rainfall of 620.7 mm annually, with rain falling predominantly between June and August
- mean maximum temperature ranging from 18.4 °C in winter to 33.1 °C in summer, with a maximum recorded temperature of 46.3 °C
- mean minimum temperatures ranging from 6.4 °C in winter to 17 °C in summer, with a minimum recorded temperature of -3.7 °C
- predominant wind directions include morning easterlies and westerly sea breezes during the summer months, with an average wind speed of 19.3 km/h.

### 2.3 Topography and Soils

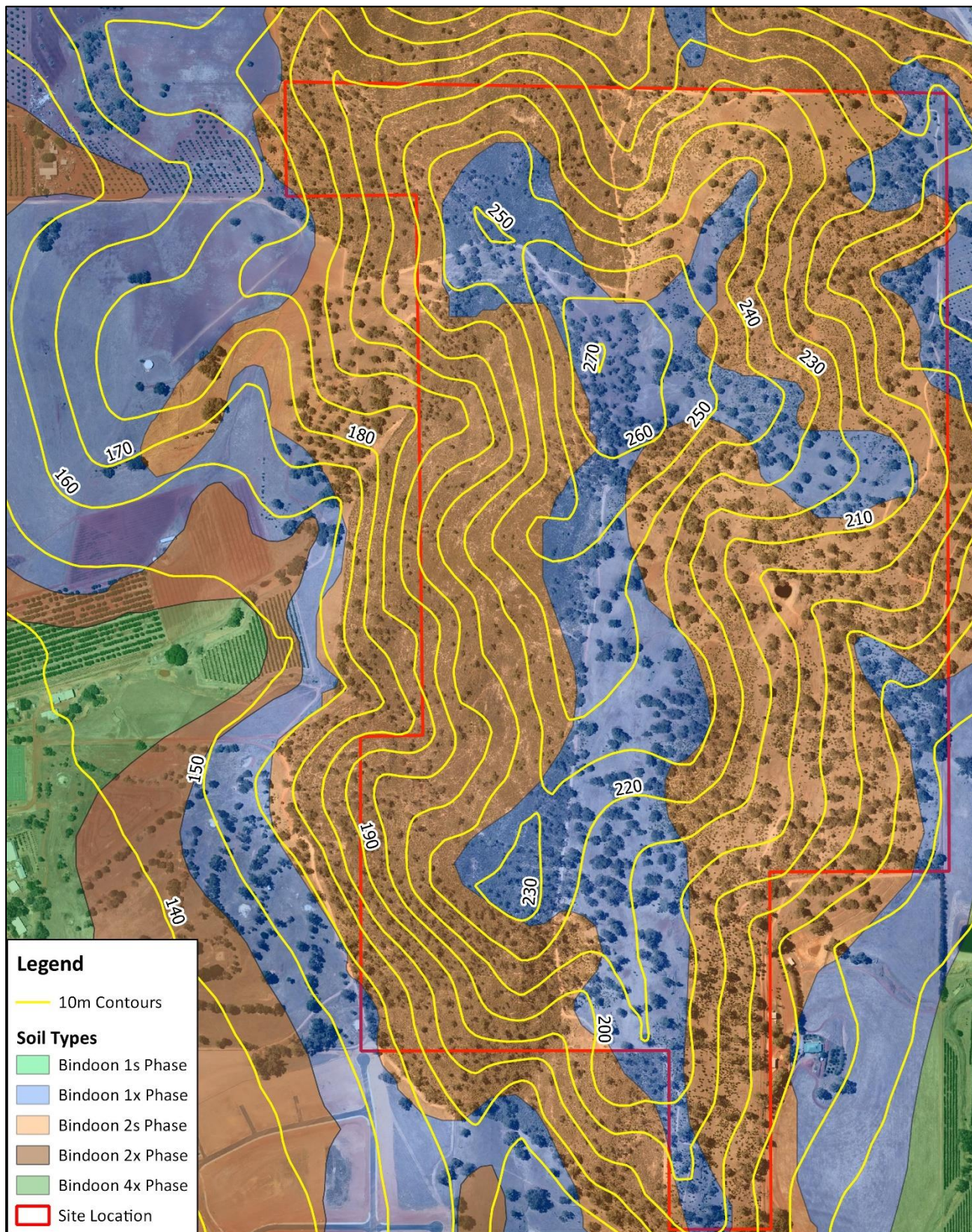
The site is elevated and undulating with Australian Height Datum (AHD) ranging from 160 m in the south-west corner of the site to 270 m at the crest of the hill (Department of Primary Industries and Regional Development (DPIRD), 2021) (Figure 2). Two soil types are present within the site, Bindoon 1x Phase and Bindoon 2s Phase (DPIRD, 2021) (Figure 2). Table 1 lists the soil types found within the survey site and their corresponding descriptions.

**Table 1:** Soil types within site

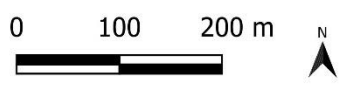
Name	Symbol	Description
Bindoon 1x Phase	253Bn_1x	Very gentle to moderately sloping (<15%) crests and hill slopes. Fine to medium textured, often shallow soils with much coarse fraction. <i>Eucalyptus marginata</i> , <i>calophylla</i> , <i>wandoo</i> and <i>accedens</i> and some <i>Allocasuarina huegeliana</i> on rock.
Bindoon 2s Phase	253Bn_2s	Gentle to moderate (3-25%) middle and lower hill slopes. Mixed red and yellow duplex soils with some uniform fine and medium textured, structured soils.

Source: DPIRD, 2021





**Figure 2:**  
 Soil and Topography  
 Bindoon, Shire of Chittering



Client: Shire of Chittering  
 Date: 13/10/2021  
 Created by: K. Sadgrove  
 Image Source: Nearmap 2021  
 Datum: GDA 94

## 2.4 Vegetation Complex

Two vegetation complexes are identified as occurring within the site boundary, the Yalanbee and Bindoon Complex (Table 2 and Figure 3) (DBCA, 2021d). Majority of the site consists of the Yalanbee Complex transitioning into Bindoon complex to the southern and eastern boundaries (Figure 3).

**Table 2:** Vegetation Complexes

Name	Symbol	Description
Yalanbee Complex	Y6	<i>Eucalyptus wandoo</i> and <i>Eucalyptus accedens</i> woodlands overlapping adjacent complexes with minor occurrences of Wandoo-Marri and open forest of Jarrah-Marri woodlands.
Bindoon Complex	Bi	Predominantly <i>Eucalyptus loxophleba</i> , flanked by Wandoo woodlands on the upper slopes. The occurrence of <i>Casuarina huegeliana</i> is associated with the rock outcrops.

Source: Heddle *et al.*, 1980

## 2.5 Heritage Values

No known European or Aboriginal heritage sites exist within the survey site (Department of Planning, Lands and Heritage (DPLH), 2021 & Government of Western Australia, 2021). The Aboriginal Heritage Inquiry System indicated that two registered sites and three other heritage places exist within 5 km of the survey area (Table 3). With the closest being the registered site 38659, which is the Needonga (Brockman River) which holds value as a mythological and water source site (DPLH, 2021).

**Table 3:** Known Aboriginal Heritage sites within 5 km of the survey site

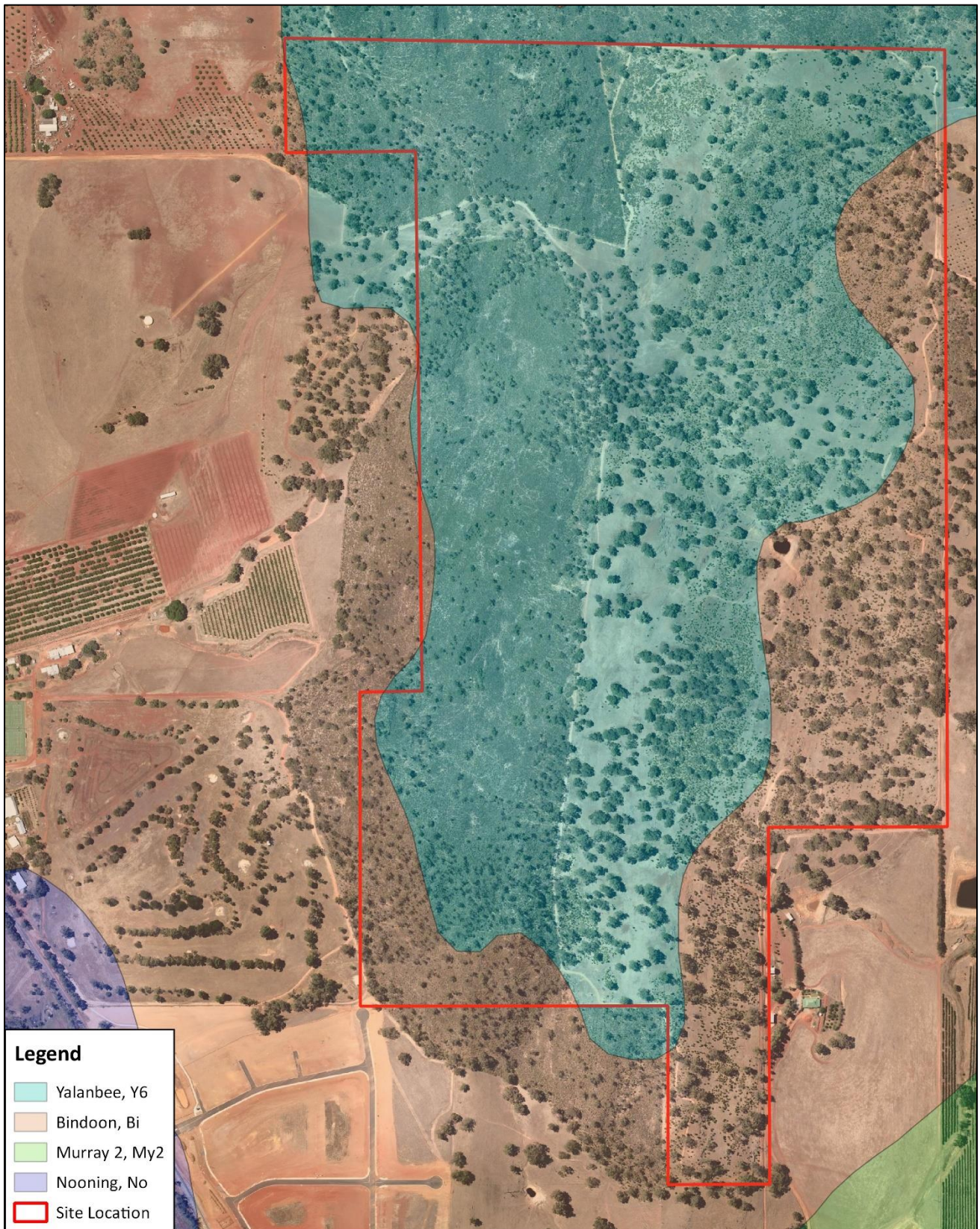
Site FID	Name	Type	Distance to Site
<b>Registered Aboriginal Sites</b>			
38659	Needonga (Brockman River)	Mythological, Water Source	< 1 km W
20008	Gingin Brook Waggy Site	Historical, Mythological, Camp, Hunting Place, Plant Resource, Water Source	5 km W
<b>Other Heritage Places</b>			
36742	Bel Hill Reserve	Artefacts / Scatter, Ceremonial	2 km W
3422	Bindoon Hill	Skeletal Material / Burial	3 km NNW
3353	Brockman River Creek	Artefacts / Scatter	3 km NNW

Source: DPLH, 2021

## 2.6 Fauna Habitat

There is potential for the three threatened black cockatoos and their habitat to occur on site including, the Carnaby's Cockatoo (*Calyptorhynchus latirostris*) listed as endangered under the *EPBC Act 1999* (Cwlth), 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). According to NationalMap the survey site occurs within an area classified as:

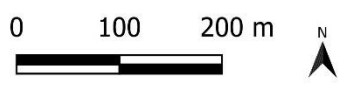
- Carnaby's Cockatoo Areas requiring investigation as feeding habitat in the Jarrah Forest IBRA Region (DBCA 2021e)
- Carnaby's Cockatoo Unconfirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA regions (DBCA 2021f)
- Carnaby's Cockatoo Confirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA region (DBCA 2021g).



- Legend**
- Yalanbee, Y6
  - Bindoon, Bi
  - Murray 2, My2
  - Nooning, No
  - Site Location



**Figure 3:**  
 Vegetation Complexes  
 Bindoon, Shire of Chittering



Client: Shire of Chittering  
 Date: 19/10/2021  
 Created by: K. Sadgrove  
 Image Source: Nearmap 2021  
 Datum: GDA 94

## 3.0 Methodology

### 3.1 Desktop and Literature Review

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

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

The following databases were accessed to obtain relevant information:

- NatureMap (DBCA, 2021a) (Appendix 1)
- Protected Matters Search Tool (DAWE, 2021) (Appendix 2)
- FloraBase (DBCA, 2021b)
- Threatened and priority flora and ecological community database searches (DBCA, 2021c).

Summary sheets of threatened flora potentially occurring in the area were created for quick reference in the field and are provided in Appendix 4.

### 3.2 On-ground Flora Survey

Natural Area lead botanists Kylie Sadgrove and field assistant Karri Grant undertook monitoring survey between the 13<sup>th</sup> to 15<sup>th</sup> and the 17<sup>th</sup> of September 2021, with key data recorded using Mappt software on a handheld tablet. Survey activities included:

- identification of flora species present by walking the site, including targeting declared rare and priority species indicated as potentially present during desktop assessments
- assessing boundaries of vegetation type and condition extent across the site
- installation of a total of eleven 10 x 10 m quadrats across the three vegetation types present (Figure 6), recording landscape characteristics including soil types/colour, aspect, slope, surface rock, topography and drainage, determining leaf litter depth, percentage cover, and percentage of bare ground and species composition (height and cover) within quadrats
- 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)*

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

### 3.2.1 Vegetation Type

Vegetation type was determined using the structural classes described in *Bush Forever Volume 2* (Government of Western Australia, 2000), and records dominant over, middle and understorey species. A tablet equipped with GPS mapping software (Mappt) was used to mark the change in vegetation type across the site. A description of the various structural classes is provided in Table 4.

**Table 4:** 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 hermland	Hermland	Open hermland	Very open hermland
Sedges	Closed sedgeland	Sedgeland	Open sedgeland	Very open sedgeland

Source: Government of Western Australia, 2000

### 3.2.2 Vegetation Condition

Vegetation condition was assessed using the rating scale attributed to Keighery in *Technical Guidance-Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016) (Table 5). A tablet equipped with GPS mapping software (Mappt) was used to mark the vegetation condition across the site.

**Table 5:** Vegetation condition ratings

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

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

Source: EPA, 2016

### 3.3 On-ground Fauna Survey

A basic fauna survey and preliminary black cockatoo habitat was undertaken in conjunction with other survey activities. The fauna survey was completed in accordance with a Basic Fauna Survey as outlined in the Environmental Protection Authority (EPA) *Technical Guidance, Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA, 2020). A basic survey is defined as a low-intensity survey, which gathers broad fauna and habitat information including opportunistic fauna observations (EPA, 2020). The fauna survey included:

- preliminary recording locations of potential habitat trees encountered with a diameter at breast height (DBH) greater than 500 mm which have the potential to provide habitat in the form of foraging, roosting and/or nesting for threatened black cockatoos
- opportunistic sightings of fauna were recorded while traversing the site (either directly or indications of their presence) including scats, tracks, calls, diggings and the evidence of foraging in the form of chewed nuts.

### 3.4 Limitations

Several limitations associated with both desktop and on-ground flora and fauna surveys exist, including:

- database searches provide an indication of what flora species may be present, with on ground surveys required to confirm those present, this is negligible as a field survey was undertaken
- information on flora species provided on some databases include out-of-date species names, meaning that names provided are checked for currency and updated if required
- the differing databases are reliant on information submitted via various reporting mechanisms, so all records of a particular species or ecological community within a specified area may not be complete
- plant species flower at different times and are not always able to be identified
- on-ground surveys indicate species present at the time of the assessment, with species flowering at different times not always able to be identified, with not all species flower every year
- some fauna species are highly mobile and may utilise the site as part of their range but may not be present within the site at the time of the survey

- certain fauna species are shy, difficult to observe or active at different times of the day and may not be observed even though they are present on site.
- An amendment to the survey boundary was provided after field works completion and therefore this area was not intensely surveyed for targeted priority and threatened species. This area was however traversed to access the survey area within the survey site boundary whilst undertaking field surveys; therefore, the vegetation type and condition for these areas was able to be included and extrapolated out within the respective maps.



## 4.0 Flora Survey Results

### 4.1 Desktop Survey

NatureMap identified a total of 527 flora species which could potentially occur within a 10 km radius of the survey area including:

- 387 dicotyledons
- one gymnosperm
- 138 monocotyledons
- one fern.

#### 4.1.1 Significant Flora

A desktop survey of online databases indicated the potential for a total of 56 conservation significant species to occur within a 10 km radius of the survey area (Table 6). NatureMap indicated a total of 31 conservation significant flora species listed under the *Biodiversity Conservation Act 2016* (WA), as potentially occurring within 10 km radius of the site (Department of Biodiversity Conservation and Attractions, 2021) (Appendix 1). A review of the Protected Matters Search Tool (PMST) (Department of Agriculture, Water, and the Environment, 2021) indicated 18 significant flora species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) as potentially occurring within a 10 km radius of the site (Appendix 2). A review of the DBCA (2021c) threatened and priority flora database indicated 45 threatened or priority species have been recorded within 10 km radius of the site. Results of the DBCA database searches identified no records of threatened or priority flora within the site with the closest record of *Acacia oncinophylla* subsp. *oncinophylla*, approximately 390 m to the east of the site boundary.

Of the conservation significant species identified as potentially occurring within the site boundary, it was determined that the site conditions (soil type, drainage, location) may be suitable for 23 (highlighted green) of these species (Table 6). Conservation code descriptions are provided in Appendix 3.

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

Species Name	Common Name	Cons. Code	Nature Map	PMST	DBCA
<i>Acacia anarthros</i>		P3	X		X
<i>Acacia browniana</i> var. <i>glaucescens</i>		P2	X		X
<i>Acacia drummondii</i> subsp. <i>affinis</i>		P3	X		X
<i>Acacia oncinophylla</i> subsp. <i>oncinophylla</i>		P3	X		X
<i>Acacia pulchella</i> var. <i>reflexa acuminata bracteole variant</i>		P3	X		X
<i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i>		P3	X		X
<i>Andersonia gracilis</i>		T/EN		X	X
<i>Asteridea gracilis</i>		P3	X		X
<i>Asterolasia grandiflora</i>		P4	X		X

Species Name	Common Name	Cons. Code	Nature Map	PMST	DBCA
<i>Calothamnus pachystachyus</i>		P4	X		X
<i>Chamelaucium lullfitzii</i>		T			X
<i>Chamelaucium</i> sp. <i>Gingin</i>		T/EN		X	X
<i>Conospermum densiflorum</i> subsp. <i>unicephalatum</i>		T/EN		X	
<i>Cyanicula ixiooides</i> subsp. <i>candida</i>		P2	X		X
<i>Darwinia carnea</i>	Mogumber Bell	T/EN		X	
<i>Darwinia</i> sp. <i>Bindoon</i>					X
<i>Diplolaena andrewsii</i>		T/EN		X	
<i>Diuris drummondii</i>	Tall Donkey Orchid	T/EN		X	
<i>Drakaea elastica</i>	Glossy-leaved Hammer Orchid	T/EN		X	X
<i>Eleocharis keigheryi</i>		T/EN	X	X	X
<i>Eucalyptus exilis</i>	Boyagin Mallee	P4	X		X
<i>Eucalyptus leprophloia</i>	Scaly Butt Mallee	T/EN		X	
<i>Gastrolobium crispatum</i>		P1	X		X
<i>Gastrolobium nudum</i>		P2	X		X
<i>Goodenia arthrotricha</i>		T/EN	X	X	X
<i>Grevillea corrugata</i>		T/EN	X	X	X
<i>Grevillea curviloba</i>		T/EN		X	
<i>Grevillea flexuosa</i>	Tangled Grevillea	T/EN		X	
<i>Halgania corymbosa</i>		P3	X		X
<i>Hibbertia glomerata</i> subsp. <i>ginginensis</i>		P2	X		X
<i>Hibbertia miniata</i>	Orange Hibbertia	P4	X		X
<i>Hydrocotyle lemnoides</i>	Aquatic Pennywort	P4	X		X
<i>Hypocalymma sylvestre</i>		T/EN	X	X	X
<i>Hypolaena robusta</i>		P4			X
<i>Johnsonia inconspicua</i>		P3			X
<i>Lasiopetalum caroliae</i>		P3			X
<i>Lechenaultia magnifica</i>		P1			X
<i>Melaleuca sciotostyla</i>	Wongan Melaleuca	T/EN		X	
<i>Millotia tenuifolia</i> var. <i>laevis</i>		P2			X

Species Name	Common Name	Cons. Code	Nature Map	PMST	DBCA
<i>Oxymyrrhine coronata</i>		P4	X		X
<i>Persoonia rudis</i>		P3			X
<i>Persoonia sulcata</i>		P4	X		X
<i>Ptychosema pusillum</i>	Dwarf Pea	T/VU		X	X
<i>Schoenus capillifolius</i>		P3	X		X
<i>Schoenus loliaceus</i>		P2	X		
<i>Schoenus natans</i>	Floating Bog-rush	P4	X		X
<i>Senecio gilbertii</i>		P1	X		X
<i>Stylidium longitubum</i>	Jumping Jacks	P4	X		X
<i>Stylidium roseonanum</i>		P3	X		
<i>Styphelia allittii</i>		P3			X
<i>Synaphea panhesya</i>		P1			X
<i>Synaphea rangiferops</i>		P2	X		X
<i>Tetratheca pilifera</i>		P3	X		X
<i>Thelymitra dedmaniarum</i>	Cinnamon Sun Orchid	T/EN		X	
<i>Thelymitra stellata</i>	Star Orchid	T/EN		X	X
<i>Thysanotus</i> sp. <i>Badgingarra</i>		P2			X
<i>Verticordia rutilastra</i>		P3			X

#### 4.1.2 Threatened and Priority Ecological Communities

A review of the PMST report identified one Threatened Ecological Communities (TEC) that could potentially occur within 10km of the site, Banksia Woodlands of the Swan Coastal Plain which is listed as Endangered (DAWE, 2021). A review of the DBCA's Threatened Communities database indicated that no TEC's have been previously recorded within the site boundary with the closest recording of the Priority 3 community, *Banksia Dominated Woodlands of the Swan Coastal Plain*, approximately 5 km to west of the site boundary (DBCA 2021c).

## 4.2 Flora Survey Results

Due to the change in site boundary vegetation type and condition was extrapolated out from the current boundaries to the trails boundary as these areas were traversed at the time of the survey to access other areas of the site. A priority and threatened flora search in this extended area was not actively undertaken and as such could not be ruled out as occurring. Priority flora within this area is not considered likely to occur, due to similar vegetation type of the surveyed areas and no species were located within this area according to DBCA database searches.

#### 4.2.1 Flora

A total of 163 flora species (taxa) were recorded from 46 families during the field survey, including 27 introduced (weeds), one dubious species which is native to Western Australia but not the Chittering region and 135 native species. Examples of native flora species are shown in Figure 4 and weed species in Figure 5. Quadrat data is listed in Appendix 5 with a complete flora species list is provided in Appendix 6.

Two species of declared pests which are also Weeds of National Significance (WoNS) are present within the site, Bridal Creeper (*\*Asparagus asparagoides*) and Narrowleaf Cottonbush (*\*Gomphocarpus fruticosus*). The *Biosecurity and Agriculture Management Act 2007* requires the landowner/land manager to control the population of the classified species present to limit damage as a result of their presence (Department of Primary Industries and Regional Development 2021a).



*Gastrolobium calycinum*  
(York Road Poison)



*Grevillea bipinnatifida*  
(Fuchsia Grevillea)



*Hakea undulata* (Wavy-leaved  
Hakea)



*Hibbertia hibbertioides* var.  
*hibbertioides*



*Lechenaultia biloba* (Blue  
Leschenaultia)



*Caladenia flava* (Cowslip Orchid)

**Figure 4:** Examples of native flora species recorded



Pimpernel  
(\**Lysimachia arvensis*)



Cape Weed  
(\**Arctotheca calendula*)



Bridal Creeper (\**Asparagus asparagoides*) – Declared Pest



Guildford Grass  
(\**Romulea rosea*)

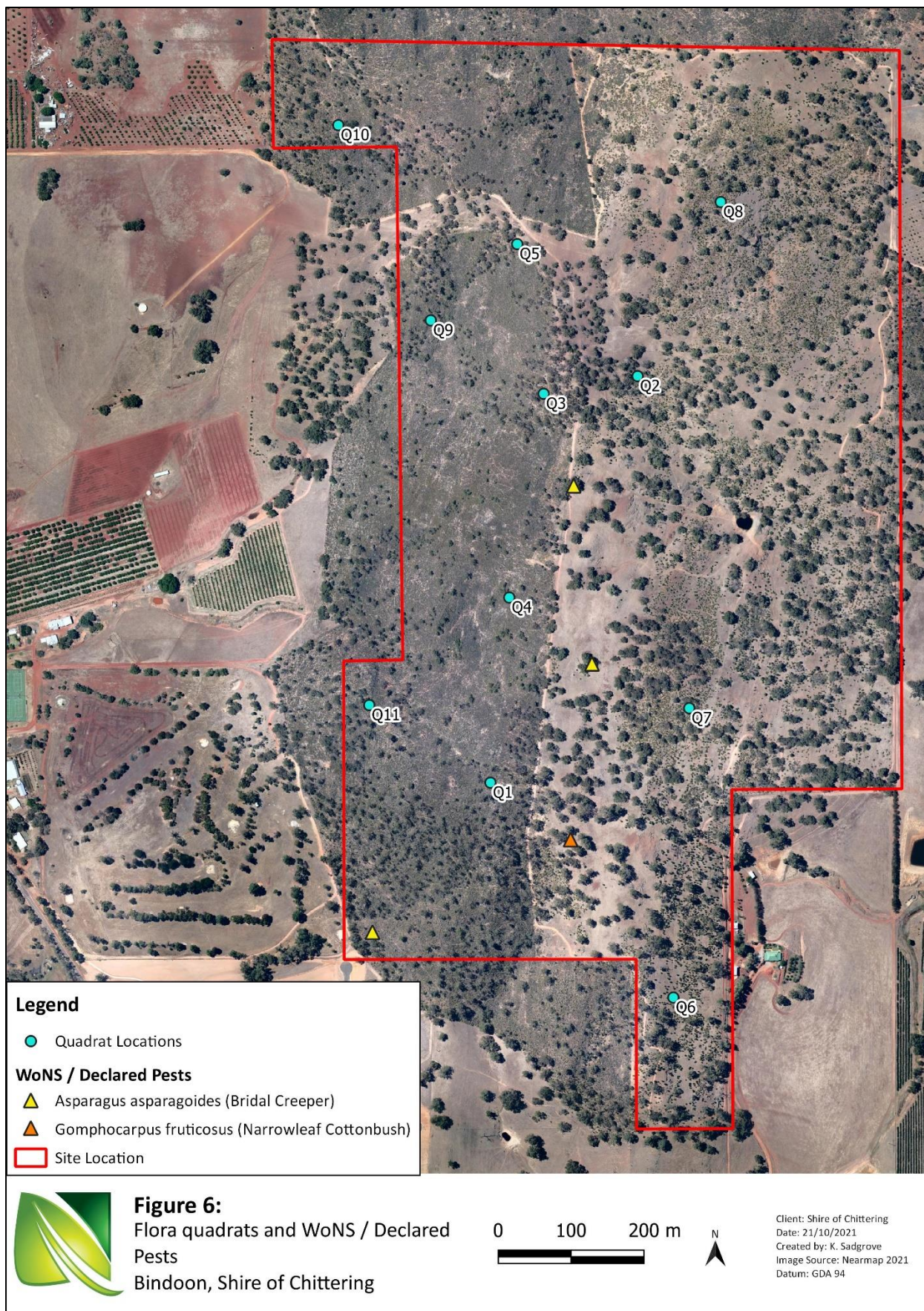


Common Sowthistle  
(\**Sonchus oleraceus*)



Narrowleaf Cottonbush  
(\**Gomphocarpus fruticosus*) – Declared Pest

**Figure 5:** Examples of introduced flora species recorded



#### 4.2.2 Vegetation Types

Three vegetation types were recorded within the survey area which are described in Table 7 and shown in Figure 7. A small portion of the site was devoid of vegetation in the southwest corner and is recorded as Cleared which is adjacent to a residential development.

#### 4.2.3 Vegetation Condition

Vegetation condition on site ranged from Excellent to Completely Degraded (Table 8, Figure 8). The survey area consisted of a heavily vegetated area to the west of the crest of the hill which was mainly in Excellent condition and the areas which have been subjected to farming practices such as grazing is mainly in a Completely Degraded state.



**Table 8:** Vegetation condition within the survey site. Note: calculations of the area are based on the survey site boundary shown in red (Figure 1).

<b>Vegetation Condition</b>	<b>Pristine</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Degraded</b>	<b>Completely Degraded</b>	<b>Total</b>
<b>Area (ha)</b>	0	29.6	0.9	5.6	16.2	37.2	89.5
<b>Area (%)</b>	0	33	1	6.3	18.1	41.6	100


#### 4.2.4 Threatened and Priority Communities

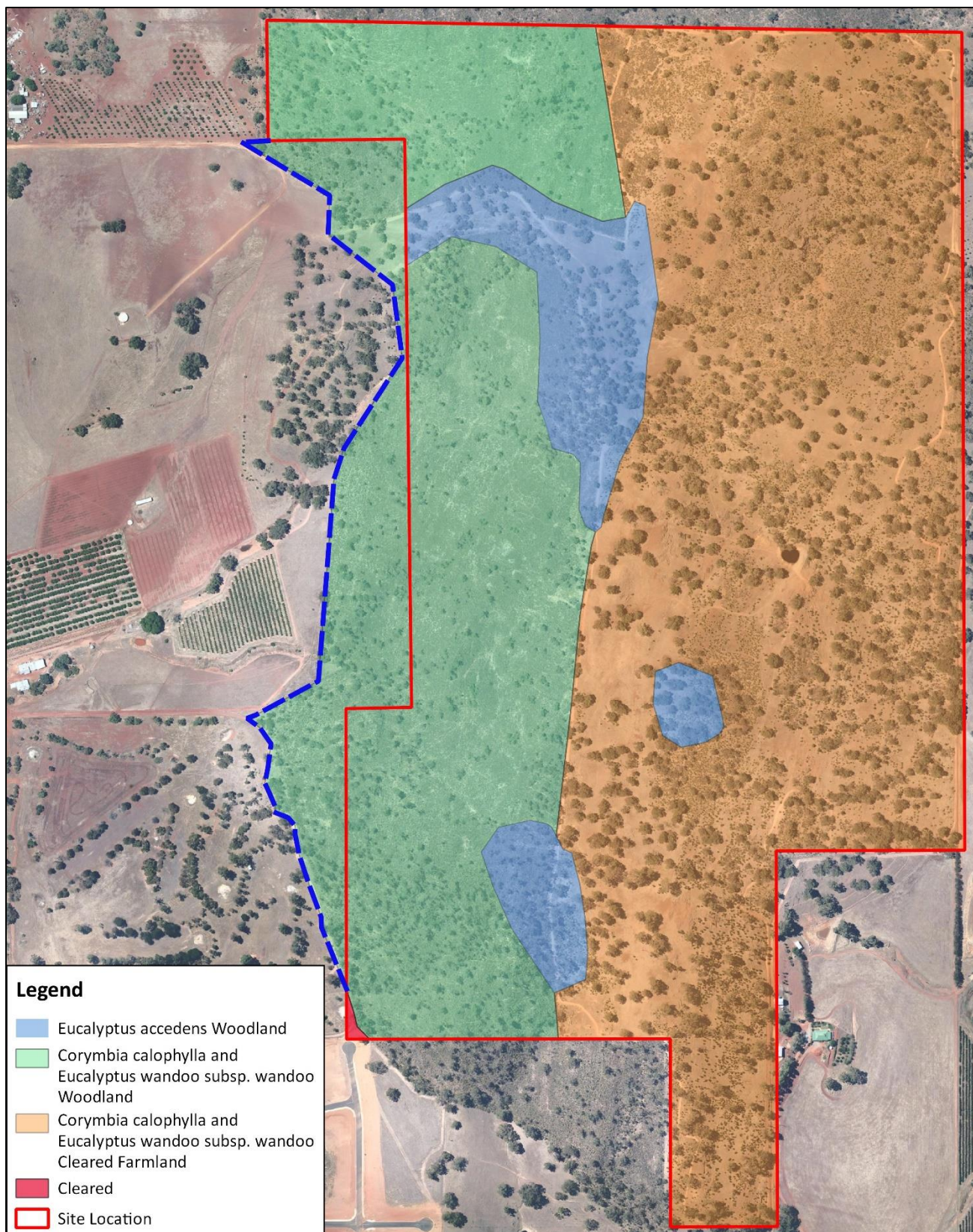
No threatened or priority ecological communities were found on site during the 2021 survey.

**Table 7:** Vegetation type within the survey site

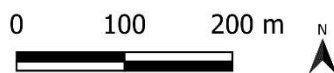
Vegetation Type	Description	Photograph
<p><i>Corymbia calophylla</i> and <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> Open Woodland</p>	<p>Open woodland of <i>Corymbia calophylla</i> (Marri) and <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> (Wandoo) over a dense middle storey of <i>Xanthorrhoea acanthostachya</i> and <i>Gastrolobium calycinum</i> over an understorey <i>Desmocladius flexuosus</i> and mixed native herbs and grasses.</p>	
<p><i>Corymbia calophylla</i> and <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> Cleared Open Farmland</p>	<p>Open Woodland of <i>Corymbia calophylla</i> (Marri) and <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> (Wandoo) over a middle storey which has been majority cleared of vegetation although sparse pockets consisting of <i>Xanthorrhoea acanthostachya</i> remaining. Understorey within this vegetation type consists of mixed introduced herbs and grasses.</p>	



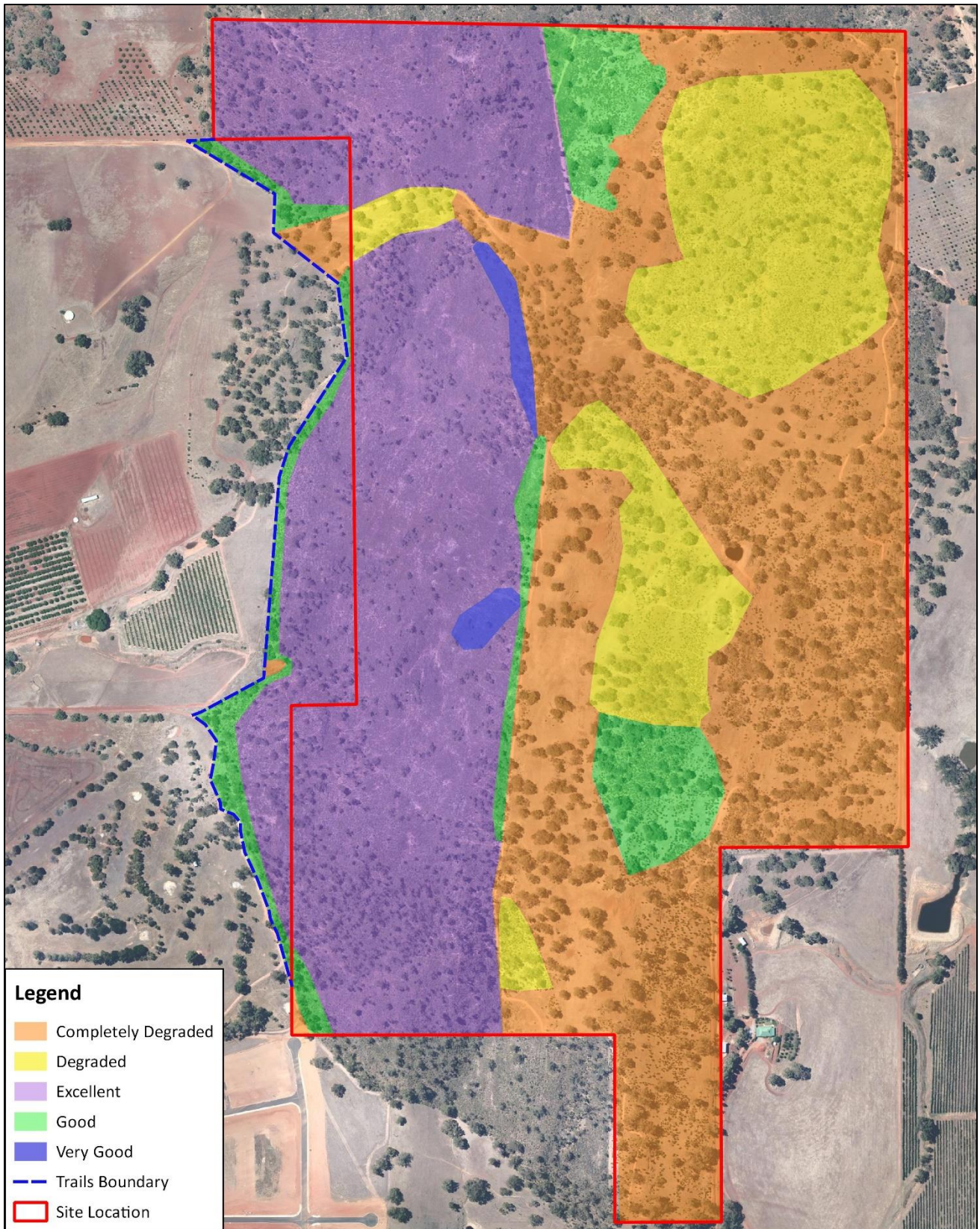
Vegetation Type	Description	Photograph
<i>Eucalyptus accedens</i> Woodland	A woodland of <i>Eucalyptus accedens</i> (Powderbark Wandoo) over a middle storey comprising of <i>Gastrolobium calycinum</i> and <i>Xanthorrhoea acanthostachya</i> shrubland and an understorey of mixed native herbs.	



**Figure 7:**  
 Vegetation Type  
 Bindoon, Shire of Chittering



Client: Shire of Chittering  
 Date: 02/12/2021  
 Created by: K. Sadgrove  
 Image Source: Nearmap 2021  
 Datum: GDA 94

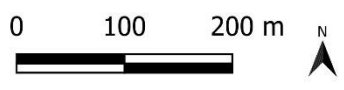


**Legend**

- Completely Degraded
- Degraded
- Excellent
- Good
- Very Good
- Trails Boundary
- Site Location



**Figure 8:**  
 Vegetation Condition  
 Bindoon, Shire of Chittering



Client: Shire of Chittering  
 Date: 02/12/2021  
 Created by: K. Sadgrove  
 Image Source: Nearmap 2021  
 Datum: GDA 94

## 5.0 Fauna Survey Results

### 5.1 Desktop Survey

A desktop survey of online databases indicated the potential for a total of 27 conservation significant fauna species to occur within 10 km radius of the survey area (Table 9). NatureMap indicated 17 conservation significant species listed under the *Biodiversity Conservation Act 2016* (WA) as potentially occurring within a 10 km radius of the site (DBCA, 2021a) (Appendix 1). The Protected Matters Search Tool (PMST) indicated five threatened species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) as potentially occurring within a 10 km radius of the site (DAWE, 2021) (Appendix 2). A review of the DBCA threatened and priority fauna species database indicated the potential for 19 conservation significant fauna species to occur within a 10 km radius of the site (DBCA, 2021c).

Both abiotic (soil, climate) as well as biotic (food resources, predator pressure) will determine the suitability of habitats for specific fauna assemblages, based on their ecological requirements. Evaluating the site locality, existing conditions and known home ranges. Natural Area determined that there is the potential for eight species to occur within the survey site (highlighted green in Table 9).

**Table 9:** Threatened and Priority fauna species listed by NatureMap, PMST and DBCA

Lifeform	Species	Common Name	Cons. Code	Nature Map	PMST	DBCA
Bird	<i>Actitis hypoleucos</i>	Common Sandpiper	MI	X		
Mammal	<i>Bettongia penicillata ogilbyi</i>	Woylie	CR			X
Bird	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	MI	X		
Bird	<i>Calidris ferruginea</i>	Curlew Sandpiper	T/VU		X	X
Bird	<i>Calidris melanotos</i>	Pectoral Sandpiper	MI	X		X
Bird	<i>Calidris ruficollis</i>	Red-necked Stint	MI	X		X
Bird	<i>Calidris subminuta</i>	Long-toed Stint	MI	X		X
Bird	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	T/VU	X		X
Bird	<i>Calyptorhynchus baudinii</i>	Baudin's Cockatoo	T/EN	X		
Bird	<i>Calyptorhynchus latirostris</i>	Carnaby's Cockatoo	T/EN	X		X
Reptile	<i>Ctenotus delli</i>	Dell's Skink, Darling Range Southwest Ctenotus	P4			X
Mammal	<i>Dasyurus geoffroii</i>	Western Quoll, Chuditch	T/VU	X		X
Invertebrate	<i>Idiosoma mcclementsorum</i>	Julimar shield-backed trapdoor spider	P2	X		X
Mammal	<i>Isoodon fusciventer</i>	Quenda	P4	X		X
Bird	<i>Leipoa ocellata</i>	Malleefowl	T/VU		X	

Lifeform	Species	Common Name	Cons. Code	Nature Map	PMST	DBCA
Mammal	<i>Leporillus conditor</i>	Greater Stick-nest Rat	T/VU	X		
Mammal	<i>Notamacropus eugenii derbianus</i>	Tammar Wallaby	P4			X
Mammal	<i>Notamacropus irma</i>	Western Brush Wallaby	P4			X
Bird	<i>Numenius madagascariensis</i>	Far Eastern Curlew	IA/VU		X	
Bird	<i>Oxyura australis</i>	Blue-billed Duck	P4	X		X
Mammal	<i>Phascogale calura</i>	Red-tailed Phascogale	T/EN		X	
Mammal	<i>Phascogale tapoatafa wambenger</i>	South-western brush-tailed phascogale, wambenger	CD-Specially Protected			X
Bird	<i>Plegadis falcinellus</i>	Glossy Ibis	MI	X		X
Bird	<i>Rostratula australis</i>	Australian Painted Snipe	IA/EN		X	
Bird	<i>Tringa glareola</i>	Wood Sandpiper	MI	X		X
Bird	<i>Tringa nebularia</i>	Common Greenshank	MI	X		X
Invertebrate	<i>Westralunio carteri</i>	Carter's Freshwater Mussel	T/VU	X		X

## 5.2 On-ground Fauna Survey Results

A total of 17 fauna species were recorded during the September 2021 survey, either directly or via indications of their presence (Table 10, Figure 9). Of the species observed 11 were birds, two were reptiles, and four were mammals. The mammals included two introduced species the Rabbit (*Oryctolagus cuniculus*) and European Fox (*Vulpes vulpes*), and one domestic livestock, Sheep (*Ovis* sp.). A small flock (approximately five individuals) of Carnaby's Cockatoo (*Calyptorhynchus latirostris*) were observed flying over the site.

**Table 10:** Fauna observations within the site. \* denotes introduced species

Family	Species Name	Common Name
<b>Bird</b>		
Acanthizidae	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill
Meliphagidae	<i>Anthochaera lunulata</i>	Western Little Wattlebird
Psittaculidae	<i>Barnardius zonarius</i>	Australian Ringneck
Cacatuidae	<i>Cacatua roseicapilla</i>	Galah
Cacatuidae	<i>Calyptorhynchus latirostris</i>	Carnaby's Cockatoo
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike
Corvidae	<i>Corvus coronoides</i>	Australian Raven
Alcedinidae	* <i>Dacelo novaeguineae</i>	Laughing Kookaburra

Family	Species Name	Common Name
Artamidae	<i>Gymnorhina tibicen</i>	Australian Magpie
Maluridae	<i>Malurus splendens</i>	Splendid Fairywren
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail
<b>Mammal</b>		
Macropodinae	<i>Macropus fuliginosus melanops</i>	Western Grey Kangaroo
Bovidae	* <i>Ovis</i> sp.	Sheep (scat)
Leporidae	* <i>Oryctolagus cuniculus</i>	Rabbit (scat)
Canidae	* <i>Vulpes vulpes</i>	European Fox (scat)
<b>Reptile</b>		
Scincidae	<i>Menetia greyii</i>	
Agamidae	<i>Pogona minor minor</i>	Western Bearded Dragon



European Fox scats (\**Vulpes vulpes*)



Western Bearded Dragon (*Pogona minor minor*)



Yellow-rumped Thornbill (*Acanthiza chrysorrhoa*)



Western Grey Kangaroo (*Macropus fuliginosus melanops*)

**Figure 9:** Fauna species observes, including direct and indirect indication of presence. \*denoted introduced species.

### 5.3 Fauna Habitat

A preliminary cockatoo habitat survey was undertaken to determine if the survey area contained potential habitat for threatened black cockatoos and the presence of foraging habitat for these species. Evidence of feeding on Marri (*Corymbia calophylla*) nuts by black cockatoos was observed at three locations within the site (Figures 10 and 11). There is the potential for more foraging sources to be present within the site due to Marri trees comprising one of the dominant vegetation types present across the entire survey area.

The preliminary habitat assessment noted a total of 12 habitat trees with hollows which are potentially suitable to provide nesting habitat due to their sufficient hollow size and direction of hollow opening for threatened black cockatoos (Figures 10 and 11). Many mature trees are present across the site and would meet the habitat tree size requirements of diameter at breast height (DBH) of greater than 500 mm. Nesting Australian Ringneck (*Barnardius zonarius*) were also observed within a Marri tree within a small hollow which currently would be too small to provide habitat for cockatoos although may provide suitable habitat in the future. Due to the variety of habitat types including areas containing dense vegetation, numerous mature trees and areas containing rocky outcrops the site has the capacity to support different fauna assemblages including reptiles, mammals and birds.

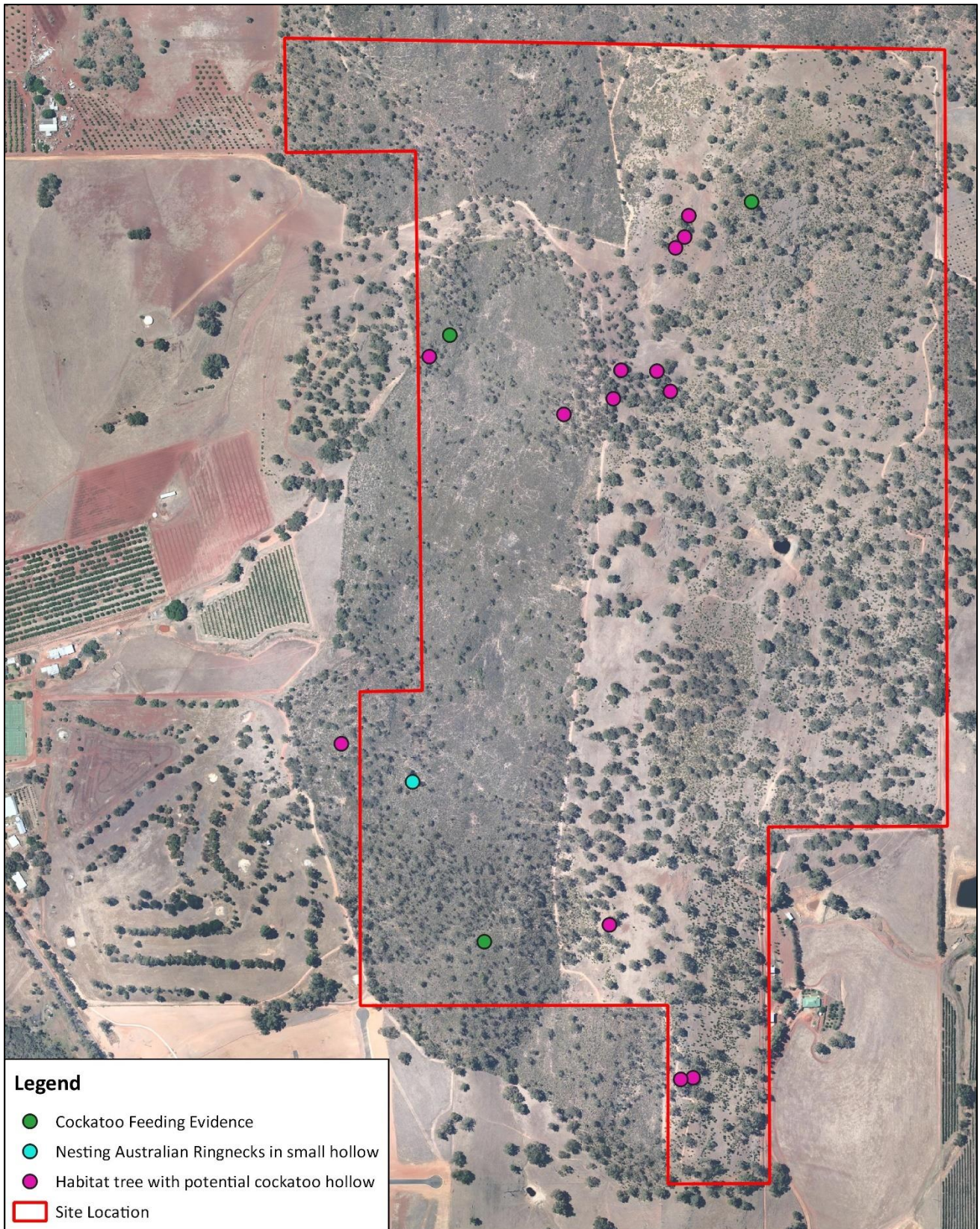


Black cockatoo feeding evidence on Marri (*Corymbia calophylla*) nuts

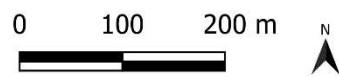


Potential hollows within a habitat tree

**Figure 10:** Evidence of feeding and example of a habitat tree with hollows



**Figure 11:**  
Habitat Trees and Cockatoo Feeding  
Bindoon, Shire of Chittering



Client: Shire of Chittering  
Date: 21/10/2021  
Created by: K. Sadgrove  
Image Source: Nearmap 2021  
Datum: GDA 94



## 6.0 Implications of Results

### 6.1 Flora and Vegetation

Natural Area's September survey recorded a total of 163 flora species (taxa) from 46 families, which includes 27 (16.4%) introduced (weed) species, one (0.6%) dubious or planted species and 135 (82.7%) native species. Three vegetation types were recorded within the site, *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Open Woodland, *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Cleared Open Farmland and *Eucalyptus accedens* Woodland. One small portion of the site was devoid of vegetation in the south-west corner and is recorded as Cleared. Vegetation condition across the site ranged from Completely Degraded to Excellent, with the majority of the site in Completely Degraded condition (41.6%). The areas classified as Completely Degraded and Degraded have been previously cleared for farming purposes and livestock were observed to be grazing within the area.

Two species of declared pests which are also Weeds of National Significance (WoNS) are present within the site, Bridal Creeper (*\*Asparagus asparagoides*) and Narrowleaf Cottonbush (*\*Gomphocarpus fruticosus*). The *Biosecurity and Agriculture Management Act 2007* requires the landowner/land manager to control the population

### 6.2 Significant Flora

No threatened or priority flora species were identified during the September 2021 survey. The DBCA searches did not identify any threatened or priority species within the site boundary (DBCA 2021c) with the closest recording to the site occurring to the east on previously cleared farmland.

### 6.3 Threatened Ecological Communities

Results of the DBCA database search did not identify any priority or threatened ecological communities occurring within the site boundary or within close proximity (DBCA 2021c). Results of the PMST report (DAWE, 2021) indicated the potential presence of one threatened ecological, Banksia Woodlands of the Swan Coastal Plain to occur within or in a 10 km proximity to the site (refer to section 4.1.2). Species composition recorded during the site survey does not meet that required for the TEC identified through desktop searches and is therefore not classified as a TEC.

### 6.4 Fauna

A total of 17 fauna species were recorded during the survey, including 11 birds (one introduced and 10 native), two reptiles (both native), four mammals (one native, two introduced and one domestic livestock). The two introduced mammals the European Fox (*\*Vulpes vulpes*) and Rabbit (*\*Oryctolagus cuniculus*) are listed as a category C3 declared pests under the *Biosecurity and Agriculture Management Act 2007* (WA) and requires control by landowners and/or managers to reduce the harmful impacts of the organism, reduce its number and contain the spread of the species. Nesting Australian Ringneck (*Barnardius zonarius*) were also observed within the survey area and a small flock (approximately five individuals) Carnaby's Cockatoo (*Calyptorhynchus latirostris*) were observed flying over the site.

Results of the preliminary noted a total of 12 habitat trees with hollows which are potentially suitable to provide nesting habitat due to their sufficient size and opening direction of the hollows for threatened black

cockatoos. Many mature trees are present across the site and would meet the habitat tree size requirements of diameter at breast height (DBH) of 500 mm and greater. Evidence of feeding on Marri (*Corymbia calophylla*) nuts by black cockatoos was observed at three locations within the site with numerous food sources in the form of Marri trees present across the site.

## 6.5 Clearing Recommendations

As the survey area is proposed to be developed for mountain bike trails, the following is recommended when considering areas to be cleared:

- avoid mature trees to enable potential habitat of both foraging and roosting by black cockatoos to be retained
- avoid trees which contain hollows as this provides nesting habitat for all bird species
- when considering placement of building and other infrastructure these should be placed in areas which are classified in Completely Degraded or Degraded condition avoiding mature trees with preference for sites which have already been subjected to clearing within the farmland area.

Once a defined clearing boundary is set the results of the survey and the area to be cleared can be assessed against the ten clearing principles.

## 6.6 Environmental Management

### 6.6.1 Dieback Assessment

*Phytophthora cinnamomi* or Dieback is an introduced fungal pathogen with a widespread distribution in areas of south-west Western Australia. The fungus acts by infecting the roots, absorbing the carbohydrates and nutrients from the plants and causing the roots to rot resulting in the death of the plant. Dieback spreads quickly down slopes in surface and sub-surface water flow as well as uphill via root-to-root contact. Human activities cause the greatest spread of Dieback through the natural landscape with the pathogen able to be spread through the transportation of soil materials on equipment and machinery, shoes and vehicle tyres (including bicycles). Recommendations for hygiene management in regard to Dieback are provided in Section 6.6.3.

A Dieback assessment of the site was conducted by Glevan Consulting (2021) which found that the disease expression was non-existent across the site with areas of interpretability which were classified as extremely low due to the lack of reliably susceptible vegetation and as such no soil or tissue samples were collected for analysis. No Dieback was observed within the site boundary with the vegetated areas determined to be Uninterpretable Protectable due to the lack of indicator species which present symptoms of the pathogen if present within a site (Glevan Consulting 2021). No deaths of susceptible flora species were recorded during the Dieback assessment. Dieback map of the site is provided in Appendix 7.

### 6.6.2 Erosion Considerations

Erosion can be mitigated through the use of contouring tracks to the existing slope and aspect of the site. Areas which may be prone to erosion can be revegetated using locally endemic species sourced from a Nursery Industry Accreditation Scheme Australia (NIASA) accredited nursery. To assist erosion management prior to revegetation areas prone to erosion can be matted with coir matting to assist in soil retention prior

to the revegetation becoming established. Consideration of water flows from rainwater and drainage of the site are required when constructing trails to ensure water flows do not exacerbate erosion and water is directed away from infrastructure.

Inclusion of educational signage throughout the site can be incorporated to inform people to keep to designated track and paths can aid to limit any erosion. Educational signage within the site can be used to inform and involve the public of key flora and fauna species within the region and the importance of preventing the spread of pathogens within the site.

### 6.6.3 Hygiene Management

Hygiene management is recommended to limit the spread of weeds during and post construction within the site and to ensure that the introduction and spread of Dieback does not occur. Weed seeds can be spread a variety of ways, including on tools, machinery, equipment and footwear. The following procedure should be implemented to mitigate the spread of weed seeds as a result of construction and any revegetation activities:

- Ensure vehicle/equipment tyres/tracks are clean and free of weed seed when entering and exiting the site.
- Ensure equipment, tools and footwear are clean and free of weed seed when entering and exiting the site.
- Any weed material removed from site should be transported in a manner that prevents the spread of weed seed during transit.
- Any weed material removed from site should be disposed of at an appropriate green waste disposal facility.

Currently no method of completely eradicating *Phytophthora* has been discovered; as such management methods and objectives are geared toward minimising the spread into uninfected areas and to mitigate the impacts where infections are present. Hygiene management can be implemented to reduce the risk of moving infected material from one location to another particularly through human assisted movements (on shoes and vehicle/bicycle tyres). The following precautions are recommended to be implemented:

- Activities in bushland areas are to be undertaken when the soil is dry to minimise the transport of soil material (where possible).
- Vehicles are to remain on designated vehicle tracks unless it is absolutely necessary for management purposes.
- All vehicles, equipment and footwear are to be free of soil/mud before entering and departing the site. It is recommended to designate washdown/brush down areas where shoes and bicycle tyres can be cleaned before entering the proposed trails.
- Personnel working in infected areas or potentially infected with Dieback or other plant diseases must be aware of the appropriate concentrations used to make up disinfectant solutions for use in areas with no wash down facilities, namely: 70% disinfectant (methylated spirits) to 30% water. Cleaning of all tools, footwear and vehicle tyres should be conducted when moving between sites and potentially affected areas.

The potential spread of Dieback can be reduced through creating trails which are free-draining and reduced the amount of puddles and inundated trails which in turn reduces the amount of dirt which can stick to shoes and bicycle tyres (Department of Biodiversity, Conservation and Attractions 2019a). Installation of boot cleaning stations and bicycle rumble grids at entrances and/or exits to trails can be installed to limit the potential for spread of Dieback from outside sources as well as potential spread within the site.

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## **Appendix 1: NatureMap Report 10 km**



# NatureMap Species Report

Created By Guest user on 28/06/2021

**Current Names Only** Yes  
**Core Datasets Only** Yes  
**Method** 'By Circle'  
**Centre** 116° 06' 25" E, 31° 23' 10" S  
**Buffer** 10km  
**Group By** Species Group

Species Group	Species	Records
Amphibian	12	87
Bird	123	1034
Bryopsid (Moss)	11	13
Dicotyledon	387	733
Fish	4	7
Fungus	5	7
Gymnosperm	1	1
Hepatic (Liverwort)	1	1
Invertebrate	60	178
Lichen	14	15
Mammal	19	131
Monocotyledon	138	217
Pteridophyte (Fern)	1	1
Reptile	53	218
<b>TOTAL</b>	<b>829</b>	<b>2643</b>

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
<b>Amphibian</b>				
1.	25398 <i>Crinia georgiana</i> (Quacking Frog)			
2.	25399 <i>Crinia glauerti</i> (Clicking Frog)			
3.	25400 <i>Crinia insignifera</i> (Squelching Froglet)			
4.	25401 <i>Crinia pseudinsignifera</i> (Bleating Froglet)			
5.	25410 <i>Heleioporus eyrei</i> (Moaning Frog)			
6.	25411 <i>Heleioporus inornatus</i> (Whooping Frog)			
7.	25412 <i>Heleioporus psammophilus</i> (Sand Frog)			
8.	25415 <i>Limnodynastes dorsalis</i> (Western Banjo Frog)			
9.	25378 <i>Litoria adelaidensis</i> (Slender Tree Frog)			
10.	25388 <i>Litoria moorei</i> (Motorbike Frog)			
11.	25420 <i>Myobatrachus gouldii</i> (Turtle Frog)			
12.	25433 <i>Pseudophryne guentheri</i> (Crawling Toadlet)			
<b>Bird</b>				
13.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
14.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
15.	24262 <i>Acanthiza inornata</i> (Western Thornbill)			
16.	24560 <i>Acanthorhynchus superciliosus</i> (Western Spinebill)			
17.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
18.	25755 <i>Acrocephalus australis</i> (Australian Reed Warbler)			
19.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
20.	24312 <i>Anas gracilis</i> (Grey Teal)			
21.	24315 <i>Anas rhynchotis</i> (Australasian Shoveler)			
22.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
23.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
24.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
25.	24562 <i>Anthochaera lunulata</i> (Western Little Wattlebird)			
26.	25670 <i>Anthus australis</i> (Australian Pipit)			
27.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
28.	41324 <i>Ardea modesta</i> (great egret, white egret)			
29.	24340 <i>Ardea novaehollandiae</i> (White-faced Heron)			
30.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
31.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
32.	24353 <i>Artamus cyanopterus</i> (Dusky Woodswallow)			
33.	24318 <i>Aythya australis</i> (Hardhead)			
34.	<i>Barnardius zonarius</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
35.	24319 <i>Biziura lobata</i> (Musk Duck)			
36.	25714 <i>Cacatua pastinator</i> (Western Long-billed Corella)			
37.	25715 <i>Cacatua roseicapilla</i> (Galah)			
38.	24725 <i>Cacatua roseicapilla</i> subsp. <i>assimilis</i> (Galah)			
39.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
40.	25598 <i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
41.	42307 <i>Cacomantis pallidus</i> (Pallid Cuckoo)			
42.	24779 <i>Calidris acuminata</i> (Sharp-tailed Sandpiper)		IA	
43.	24786 <i>Calidris melanotos</i> (Pectoral Sandpiper)		IA	
44.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)		IA	
45.	24789 <i>Calidris subminuta</i> (Long-toed Stint)		IA	
46.	25717 <i>Calyptorhynchus banksii</i> (Red-tailed Black-Cockatoo)			
47.	24731 <i>Calyptorhynchus banksii</i> subsp. <i>naso</i> (Forest Red-tailed Black Cockatoo)		T	
48.	24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
49.	48400 <i>Calyptorhynchus</i> sp. (white-tailed black cockatoo)		T	
50.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
51.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
52.	24288 <i>Circus approximans</i> (Swamp Harrier)			
53.	24774 <i>Cladorhynchus leucocephalus</i> (Banded Stilt)			
54.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
55.	24613 <i>Colluricincla harmonica</i> subsp. <i>rufiventris</i> (Grey Shrike-thrush)			
56.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
57.	25592 <i>Corvus coronoides</i> (Australian Raven)			
58.	24417 <i>Corvus coronoides</i> subsp. <i>perplexus</i> (Australian Raven)			
59.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
60.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
61.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
62.	24322 <i>Cygnus atratus</i> (Black Swan)			
63.	30901 <i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
64.	25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella)			
65.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
66.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
67.	<i>Egretta novaehollandiae</i>			
68.	<i>Elanus axillaris</i>			
69.	24290 <i>Elanus caeruleus</i> subsp. <i>axillaris</i> (Australian Black-shouldered Kite)			
70.	47937 <i>Eiseyornis melanops</i> (Black-fronted Dotterel)			
71.	<i>Eolophus roseicapillus</i>			
72.	24379 <i>Erythronyctis cinctus</i> (Red-kneed Dotterel)			
73.	25621 <i>Falco berigora</i> (Brown Falcon)			
74.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
75.	25727 <i>Fulica atra</i> (Eurasian Coot)			
76.	24761 <i>Fulica atra</i> subsp. <i>australis</i> (Eurasian Coot)			
77.	24763 <i>Gallinula tenebrosa</i> subsp. <i>tenebrosa</i> (Dusky Moorhen)			
78.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
79.	47962 <i>Glyciphila melanops</i> (Tawny-crowned Honeyeater)			
80.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
81.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
82.	47965 <i>Hieraaetus morphnoides</i> (Little Eagle)			
83.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
84.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
85.	24367 <i>Lalage tricolor</i> (White-winged Triller)			
86.	24511 <i>Larus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Silver Gull)			
87.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
88.	24326 <i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
89.	25650 <i>Malurus elegans</i> (Red-winged Fairy-wren)			
90.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
91.	25654 <i>Malurus splendens</i> (Splendid Fairy-wren)			
92.	25758 <i>Megalurus gramineus</i> (Little Grassbird)			
93.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
94.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
95.	<i>Microcarbo melanoleucos</i>			
96.	24738 <i>Neophema elegans</i> (Elegant Parrot)			
97.	25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron)			
98.	24328 <i>Oxyura australis</i> (Blue-billed Duck)		P4	
99.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
100.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
101.	24648 <i>Pelecanus conspicillatus</i> (Australian Pelican)			
102.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			
103.	48066 <i>Petroica boodang</i> (Scarlet Robin)			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
104.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
105.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
106.	25698 <i>Phalacrocorax melanoleucos</i> (Little Pied Cormorant)			
107.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
108.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
109.	48071 <i>Phylidonyris niger</i> (White-cheeked Honeyeater)			
110.	24596 <i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			
111.	24841 <i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
112.	24747 <i>Platycercus spurius</i> (Red-capped Parrot)			
113.	25721 <i>Platycercus zonarius</i> (Australian Ringneck, Ring-necked Parrot)			
114.	24843 <i>Plegadis falcinellus</i> (Glossy Ibis)		IA	
115.	25703 <i>Podargus strigoides</i> (Tawny Frogmouth)			
116.	25704 <i>Podiceps cristatus</i> (Great Crested Grebe)			
117.	24681 <i>Poliiocephalus poliocephalus</i> (Hoary-headed Grebe)			
118.	25731 <i>Porphyrio porphyrio</i> (Purple Swamphen)			
119.	24767 <i>Porphyrio porphyrio</i> subsp. <i>bellus</i> (Purple Swamphen)			
120.	<i>Purpureicephalus spurius</i>			
121.	24776 <i>Recurvirostra novaehollandiae</i> (Red-necked Avocet)			
122.	48096 <i>Rhipidura albiscapa</i> (Grey Fantail)			
123.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
124.	25534 <i>Sericornis frontalis</i> (White-browed Scrubwren)			
125.	30948 <i>Smicornis brevirostris</i> (Weebill)			
126.	25597 <i>Strepera versicolor</i> (Grey Currawong)			
127.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
128.	24682 <i>Tachybaptus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
129.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
130.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
131.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
132.	48141 <i>Tribonyx ventralis</i> (Black-tailed Native-hen)			
133.	24806 <i>Tringa glareola</i> (Wood Sandpiper)		IA	
134.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
135.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			

### Bryopsid (Moss)

136.	32315 <i>Barbula calycina</i>			
137.	32334 <i>Campylopus australis</i>			
138.	32462 <i>Ceratodon purpureus</i> subsp. <i>convolutus</i>			
139.	32351 <i>Eccleridium pulchellum</i>			
140.	32381 <i>Gemmabryum preissianum</i>			
141.	32473 <i>Grimmia pulvinata</i> var. <i>africana</i>			
142.	32408 <i>Phascopsis rubicunda</i>			
143.	32478 <i>Pleuroidium nervosum</i> var. <i>nervosum</i>			
144.	32480 <i>Racopilum cuspidigerum</i> var. <i>convolutaceum</i>			
145.	44608 <i>Rosulabryum billardieri</i>			
146.	32433 <i>Sematophyllum homomallum</i>			

### Dicotyledon

147.	3200 <i>Acacia acuminata</i> (Jam, Mangard)			
148.	3210 <i>Acacia anarthros</i>		P3	
149.	15466 <i>Acacia applanata</i>			
150.	15469 <i>Acacia barbinervis</i> subsp. <i>barbinervis</i>			
151.	11655 <i>Acacia browniana</i> var. <i>glaucescens</i>		P2	
152.	14061 <i>Acacia clydonophora</i>			
153.	11926 <i>Acacia drewiana</i> subsp. <i>drewiana</i>			
154.	11229 <i>Acacia drummondii</i> subsp. <i>affinis</i>		P3	
155.	11303 <i>Acacia drummondii</i> subsp. <i>candolleana</i>			
156.	11192 <i>Acacia drummondii</i> subsp. <i>elegans</i>			
157.	3323 <i>Acacia ericifolia</i>			
158.	3331 <i>Acacia extensa</i> (Wiry Wattle)			
159.	11611 <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>			
160.	15721 <i>Acacia lasiocarpa</i> var. <i>sedifolia</i>			
161.	3410 <i>Acacia lateriticola</i>			
162.	3454 <i>Acacia nervosa</i> (Rib Wattle)			
163.	14129 <i>Acacia oncinophylla</i> subsp. <i>oncinophylla</i>		P3	
164.	17860 <i>Acacia podalyriifolia</i>	Y		
165.	3502 <i>Acacia pulchella</i> (Prickly Moses)			
166.	15481 <i>Acacia pulchella</i> var. <i>glaberrima</i>			
167.	15482 <i>Acacia pulchella</i> var. <i>goadbyi</i>			
168.	15480 <i>Acacia pulchella</i> var. <i>reflexa</i>			
169.	14927 <i>Acacia pulchella</i> var. <i>reflexa acuminata bracteole variant</i> (R.J. Cumming 882)		P3	

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
170.	3527 <i>Acacia saligna</i> (Orange Wattle, Kudjong)			
171.	30033 <i>Acacia saligna</i> subsp. <i>lindleyi</i>			
172.	3541 <i>Acacia sessilis</i>			
173.	3543 <i>Acacia shuttleworthii</i>			
174.	3554 <i>Acacia squamata</i>			
175.	3557 <i>Acacia stenoptera</i> (Narrow Winged Wattle)			
176.	3574 <i>Acacia teretifolia</i>			
177.	3591 <i>Acacia urophylla</i>			
178.	3184 <i>Acaena echinata</i> (Sheep's Burr)			
179.	11336 <i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i>		P3	
180.	11837 <i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i> (Common Woollybush)			
181.	1721 <i>Allocasuarina campestris</i>			
182.	1731 <i>Allocasuarina huegeliana</i> (Rock Sheoak, Kwool)			
183.	6314 <i>Andersonia lehmanniana</i>			
184.	7838 <i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y		
185.	6580 <i>Asclepias curassavica</i> (Redhead Cottonbush)	Y		
186.	7849 <i>Asteridea gracilis</i>		P3	
187.	4398 <i>Asterolasia grandiflora</i>		P4	
188.	4400 <i>Asterolasia pallida</i>			
189.	6326 <i>Astroloma epacridis</i>			
190.	6328 <i>Astroloma glaucescens</i>			
191.	6330 <i>Astroloma macrocalyx</i> (Swan Berry)			
192.	42144 <i>Astroloma oblongifolium</i>			
193.	6334 <i>Astroloma pallidum</i> (Kick Bush)			
194.	6336 <i>Astroloma serratifolium</i> (Kondrung)			
195.	45416 <i>Babingtonia grandiflora</i> (Large-flowered Babingtonia)			
196.	45403 <i>Babingtonia pelloeae</i> (Pelloe's Babingtonia)			
197.	32580 <i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>dallanneyi</i>			
198.	32560 <i>Banksia drummondii</i> subsp. <i>hiemalis</i>			
199.	32523 <i>Banksia fraseri</i> var. <i>fraseri</i>			
200.	32159 <i>Banksia polycephala</i> (Many-headed Dryandra)			
201.	33401 <i>Banksia sphaerocarpa</i> var. <i>pumilio</i>			
202.	12111 <i>Banksia sphaerocarpa</i> var. <i>sphaerocarpa</i> (Fox Banksia)			
203.	32045 <i>Banksia squarrosa</i> subsp. <i>squarrosa</i>			
204.	5382 <i>Beaufortia elegans</i> (Elegant Beaufortia)			
205.	7046 <i>Bellardia trixago</i> (Bellardia)	Y		
206.	25788 <i>Billardiera fraseri</i> (Elegant Pronaya)			
207.	4406 <i>Boronia busselliana</i>			
208.	4432 <i>Boronia ovata</i>			
209.	11564 <i>Boronia ramosa</i> subsp. <i>ramosa</i>			
210.	16639 <i>Boronia scabra</i> subsp. <i>scabra</i>			
211.	3710 <i>Bossiaea eriocarpa</i> (Common Brown Pea)			
212.	3719 <i>Bossiaea spinescens</i>			
213.	10915 <i>Brachychiton populneus</i> (Kurrajong)	Y		
214.	7878 <i>Brachyscome iberidifolia</i>			
215.	2848 <i>Calandrinia corrigioloides</i> (Strap Purslane)			
216.	2854 <i>Calandrinia granulifera</i> (Pygmy Purslane)			
217.	5421 <i>Calothamnus pachystachyus</i>		P4	
218.	5429 <i>Calothamnus sanguineus</i> (Silky-leaved Blood flower, Pindak)			
219.	5441 <i>Calytrix aurea</i>			
220.	13654 <i>Calytrix breviseta</i> subsp. <i>stipulosa</i>			
221.	5461 <i>Calytrix glutinosa</i>			
222.	5479 <i>Calytrix strigosa</i>			
223.	5481 <i>Calytrix sylvana</i>			
224.	7909 <i>Carduus pycnocephalus</i> (Slender Thistle)	Y		
225.	7911 <i>Carthamus lanatus</i> (Saffron Thistle)	Y		
226.	11206 <i>Cassutha glabella</i> forma <i>bicallosa</i>			
227.	6542 <i>Centaureum tenuiflorum</i>	Y		
228.	18156 <i>Chamaecytisus palmensis</i> (Tagasaste)	Y		
229.	5498 <i>Chamaelaucium uncinatum</i> (Geraldton Wax)			
230.	7925 <i>Chondrilla juncea</i> (Skeleton Weed)	Y		
231.	3753 <i>Chorizema dicksonii</i> (Yellow-eyed Flame Pea)			
232.	6543 <i>Cicendia filiformis</i> (Slender Cicendia)	Y		
233.	7937 <i>Cirsium vulgare</i> (Spear Thistle, Scotch Thistle)	Y		
234.	2929 <i>Clematis pubescens</i> (Common Clematis)			
235.	4550 <i>Comesperma calymega</i> (Blue-spike Milkwort)			
236.	4555 <i>Comesperma integerrimum</i>			
237.	4561 <i>Comesperma scoparium</i> (Broom Milkwort)			
238.	1864 <i>Conospermum crassinervium</i> (Summer Smokebush)			
239.	14876 <i>Conospermum densiflorum</i> subsp. <i>densiflorum</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
240.	1874 <i>Conospermum glumaceum</i> (Hooded Smokebush)			
241.	1875 <i>Conospermum huegelii</i> (Slender Smokebush)			
242.	1880 <i>Conospermum polycephalum</i>			
243.	6348 <i>Conostephium pendulum</i> (Pearl Flower)			
244.	6349 <i>Conostephium preissii</i>			
245.	6614 <i>Convolvulus remotus</i>			
246.	7945 <i>Cotula coronopifolia</i> (Waterbuttons)	Y		
247.	7946 <i>Cotula cotuloides</i> (Smooth Cotula)			
248.	13354 <i>Craspedia variabilis</i>			
249.	17701 <i>Crassula closiana</i>			
250.	3137 <i>Crassula colorata</i> (Dense Stonecrop)			
251.	11563 <i>Crassula colorata</i> var. <i>colorata</i>			
252.	11349 <i>Crassula decumbens</i> var. <i>decumbens</i>			
253.	15706 <i>Crassula natans</i> var. <i>minus</i>	Y		
254.	3144 <i>Crassula peduncularis</i> (Purple Stonecrop)			
255.	13470 <i>Cryptandra arbutiflora</i> var. <i>arbutiflora</i>			
256.	6663 <i>Cuscuta epithymum</i> (Lesser Dodder, Greater Dodder)	Y		
257.	7420 <i>Dampiera alata</i> (Winged-stem Dampiera)			
258.	7428 <i>Dampiera coronata</i> (Wedge-leaved Dampiera)			
259.	5508 <i>Darwinia citriodora</i> (Lemon-scented Darwinia)			
260.	35779 <i>Darwinia</i> sp. <i>Bindoon</i> (S. Patrick 281)			
261.	5531 <i>Darwinia thymoides</i>			
262.	18193 <i>Darwinia thymoides</i> subsp. <i>thymoides</i>			
263.	3793 <i>Daviesia angulata</i>			
264.	19747 <i>Daviesia decurrens</i> subsp. <i>decurrens</i>			
265.	11879 <i>Daviesia hakeoides</i> subsp. <i>hakeoides</i>			
266.	3815 <i>Daviesia horrida</i> (Prickly Bitter-pea)			
267.	3819 <i>Daviesia longifolia</i>			
268.	16585 <i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>			
269.	3832 <i>Daviesia physodes</i>			
270.	3834 <i>Daviesia polyphylla</i>			
271.	3835 <i>Daviesia preissii</i>			
272.	20367 <i>Dillwynia laxiflora</i>			
273.	7961 <i>Dittrichia graveolens</i> (Stinkwort)	Y		
274.	48724 <i>Drosera collina</i>			
275.	48751 <i>Drosera drummondii</i>			
276.	3095 <i>Drosera erythrorhiza</i> (Red Ink Sundew)			
277.	3098 <i>Drosera glanduligera</i> (Pimpernel Sundew)			
278.	48768 <i>Drosera hirsuta</i>			
279.	3109 <i>Drosera menziesii</i> (Pink Rainbow)			
280.	48709 <i>Drosera minutiflora</i>			
281.	3125 <i>Drosera pycnoblata</i> (Pearly Sundew)			
282.	49090 <i>Drosera</i> sp. <i>Branched styles</i> (S.C. Coffey 193)			
283.	13185 <i>Drosera spilos</i>			
284.	3131 <i>Drosera stolonifera</i> (Leafy Sundew)			
285.	3133 <i>Drosera subhirtella</i> (Sunny Rainbow)			
286.	5542 <i>Eremaea purpurea</i>			
287.	45215 <i>Ericomyrtus tenuior</i>			
288.	4332 <i>Erodium botrys</i> (Long Storksbill)	Y		
289.	15446 <i>Eryngium pinnatifidum</i> subsp. <i>pinnatifidum</i>			
290.	5545 <i>Eucalyptus accedens</i> (Powderbark Wandoo)			
291.	42020 <i>Eucalyptus armillata</i> (Red-flowered Mallee)			
292.	13534 <i>Eucalyptus aspersa</i>			
293.	5642 <i>Eucalyptus exilis</i> (Boyagin Mallee)		P4	
294.	11295 <i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i> (York Gum)			
295.	13530 <i>Eucalyptus macrocarpa</i> subsp. <i>macrocarpa</i> (Mottlecah)			
296.	5708 <i>Eucalyptus marginata</i> (Jarrah, Djara)			
297.	13548 <i>Eucalyptus marginata</i> subsp. <i>thalassica</i> (Blue-leaved Jarrah)			
298.	5797 <i>Eucalyptus wandoo</i> (Wandoo, Wondou)			
299.	12906 <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>			
300.	1747 <i>Ficus carica</i> (Common Fig)	Y		
301.	7321 <i>Galium divaricatum</i>	Y		
302.	3887 <i>Gastrolobium acutum</i>			
303.	20515 <i>Gastrolobium axillare</i>			
304.	3895 <i>Gastrolobium calycinum</i> (York Road Poison)			
305.	20475 <i>Gastrolobium capitatum</i>			
306.	20481 <i>Gastrolobium crispatum</i>		P1	
307.	3906 <i>Gastrolobium ilicifolium</i>			
308.	3909 <i>Gastrolobium microcarpum</i> (Sandplain Poison)			
309.	20514 <i>Gastrolobium nudum</i>		P2	

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
310.	3912 <i>Gastrolobium oxylobioides</i> (Champion Bay Poison)			
311.	20512 <i>Gastrolobium praemorsum</i>			
312.	3923 <i>Gastrolobium spathulatum</i> (Poison Bush)			
313.	3924 <i>Gastrolobium spinosum</i> (Prickly Poison)			
314.	3933 <i>Gastrolobium villosum</i> (Crinkle-leaved Poison)			
315.	7060 <i>Glossostigma diandrum</i>			
316.	7991 <i>Gnephosis drummondii</i>			
317.	<i>Gnephosis tenuissima</i> - <i>drummondii</i> complex			
318.	3950 <i>Gompholobium knightianum</i>			
319.	3951 <i>Gompholobium marginatum</i>			
320.	29267 <i>Gompholobium muticum</i>			
321.	3956 <i>Gompholobium shuttleworthii</i>			
322.	6149 <i>Gonocarpus cordiger</i>			
323.	6159 <i>Gonocarpus nodulosus</i>			
324.	6161 <i>Gonocarpus pithyoides</i>			
325.	7491 <i>Goodenia arthrotricha</i>		T	
326.	7495 <i>Goodenia berardiana</i>			
327.	8614 <i>Goodenia claytoniacea</i>			
328.	29362 <i>Goodenia coerulea</i>			
329.	12551 <i>Goodenia micrantha</i>			
330.	7527 <i>Goodenia mimuloides</i>			
331.	14282 <i>Gratiola pubescens</i>			
332.	19628 <i>Grevillea bipinnatifida</i> subsp. <i>bipinnatifida</i>			
333.	1965 <i>Grevillea biternata</i>			
334.	14319 <i>Grevillea corrugata</i>		T	
335.	1997 <i>Grevillea endlicheriana</i> (Spindly Grevillea)			
336.	2066 <i>Grevillea pilulifera</i> (Woolly-flowered Grevillea)			
337.	17745 <i>Grevillea shuttleworthiana</i> subsp. <i>canarina</i>			
338.	2101 <i>Grevillea synapheae</i> (Catkin Grevillea)			
339.	14421 <i>Grevillea synapheae</i> subsp. <i>synapheae</i>			
340.	5012 <i>Guichenotia macrantha</i> (Large-flowered Guichenotia)			
341.	2128 <i>Hakea amplexicaulis</i> (Prickly Hakea)			
342.	2136 <i>Hakea candolleana</i>			
343.	2149 <i>Hakea cristata</i> (Snail Hakea)			
344.	2152 <i>Hakea cyclocarpa</i> (Ramshorn)			
345.	2158 <i>Hakea erinacea</i> (Hedge-hog Hakea)			
346.	2175 <i>Hakea lissocarpha</i> (Honey Bush)			
347.	31413 <i>Hakea</i> sp. <i>Walyunga</i> (B. Keighery 2599)			
348.	2214 <i>Hakea trifurcata</i> (Two-leaf Hakea)			
349.	2215 <i>Hakea undulata</i> (Wavy-leaved Hakea)			
350.	2216 <i>Hakea varia</i> (Variable-leaved Hakea)			
351.	6686 <i>Halgania corymbosa</i>		P3	
352.	8024 <i>Helichrysum leucopsidium</i>			
353.	6707 <i>Heliotropium curassavicum</i> (Smooth Heliotrope)			
354.	6838 <i>Hemandra linearis</i> (Speckled Snakebush)			
355.	6855 <i>Hemigenia humilis</i>			
356.	6875 <i>Hemigenia westringioides</i> (Open Hemigenia)			
357.	5108 <i>Hibbertia acerosa</i> (Needle Leaved Guinea Flower)			
358.	5109 <i>Hibbertia amplexicaulis</i>			
359.	5114 <i>Hibbertia commutata</i>			
360.	20051 <i>Hibbertia diamesogenos</i>			
361.	19775 <i>Hibbertia glomerata</i> subsp. <i>ginginensis</i>		P2	
362.	20046 <i>Hibbertia hibbertioides</i> var. <i>hibbertioides</i>			
363.	5134 <i>Hibbertia huegelii</i>			
364.	5135 <i>Hibbertia hypericoides</i> (Yellow Buttercups)			
365.	45534 <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>			
366.	5139 <i>Hibbertia lasiopus</i> (Large Hibbertia)			
367.	5145 <i>Hibbertia miniata</i> (Orange Hibbertia)		P4	
368.	5157 <i>Hibbertia polystachya</i>			
369.	5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
370.	6222 <i>Homalosciadium homalocarpum</i>			
371.	3966 <i>Hovea pungens</i> (Devil's Pins, Puyenak)			
372.	3968 <i>Hovea trisperma</i> (Common Hovea)			
373.	12741 <i>Hyalosperma cotula</i>			
374.	12742 <i>Hyalosperma demissum</i>			
375.	6223 <i>Hydrocotyle alata</i>			
376.	6226 <i>Hydrocotyle callicarpa</i> (Small Pennywort)			
377.	6233 <i>Hydrocotyle lemnoides</i> (Aquatic Pennywort)		P4	
378.	5817 <i>Hypocalymma angustifolium</i> (White Myrtle, Kudjid)			
379.	35074 <i>Hypocalymma angustifolium</i> subsp. <i>Dandaragan plateau</i> (S. Patrick 702A)			

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380.	19601 <i>Hypocalymma sylvestre</i>		T	
381.	5829 <i>Hypocalymma xanthopetalum</i>			
382.	8086 <i>Hypochoeris glabra</i> (Smooth Catsear)	Y		
383.	2227 <i>Isopogon divergens</i> (Spreading Coneflower)			
384.	7396 <i>Isotoma hypocrateriformis</i> (Woodbridge Poison)			
385.	7398 <i>Isotoma pusilla</i> (Small Isotome)			
386.	4025 <i>Jacksonia restioides</i>			
387.	4029 <i>Jacksonia sternbergiana</i> (Stinkwood, Kapur)			
388.	4044 <i>Kennedia prostrata</i> (Scarlet Runner)			
389.	4045 <i>Kennedia stirlingii</i> (Bushy Kennedia)			
390.	5831 <i>Kunzea baxteri</i> (Baxter's Kunzea)			
391.	5835 <i>Kunzea micrantha</i>			
392.	17785 <i>Kunzea micrantha</i> subsp. <i>petiolata</i>			
393.	11289 <i>Labichea lanceolata</i> subsp. <i>lanceolata</i>			
394.	6781 <i>Lachnostachys ferruginea</i> (Rusty Lambstail)			
395.	18585 <i>Lagenophora huegelii</i>			
396.	14083 <i>Lambertia multiflora</i> var. <i>darlingensis</i>			
397.	5033 <i>Lasiopetalum floribundum</i> (Free Flowering Lasiopetalum)			
398.	45082 <i>Lasiopetalum glutinosum</i> subsp. <i>latifolium</i>			
399.	38323 <i>Lavandula stoechas</i> subsp. <i>stoechas</i>	Y		
400.	7568 <i>Lechenaultia biloba</i> (Blue Leschenaultia)			
401.	7574 <i>Lechenaultia floribunda</i> (Free-flowering Leschenaultia)			
402.	5847 <i>Leptospermum erubescens</i> (Roadside Teatree)			
403.	6373 <i>Leucopogon concinnus</i>			
404.	6439 <i>Leucopogon pulchellus</i> (Beard-heath)			
405.	20871 <i>Leucopogon</i> sp. <i>Bolgart</i> (M. Hislop & F. Hort MH2486)			
406.	34163 <i>Leucopogon</i> sp. <i>Newdegate</i> (M. Hislop 3585)			
407.	20086 <i>Leucopogon</i> sp. <i>Northern Scarp</i> (M. Hislop 2233)			
408.	6444 <i>Leucopogon sprengelioides</i>			
409.	7676 <i>Levenhookia pusilla</i> (Midget Stylewort)			
410.	36160 <i>Liparophyllum capitatum</i>			
411.	7406 <i>Lobelia rhombifolia</i> (Tufted Lobelia)			
412.	7407 <i>Lobelia rhytidosperra</i> (Wrinkled-seeded Lobelia)			
413.	4059 <i>Lotus angustissimus</i> (Narrowleaf Trefoil)	Y		
414.	8564 <i>Lotus subbiflorus</i>	Y		
415.	4066 <i>Lupinus cosentinii</i>	Y		
416.	2396 <i>Lysiana casuarinae</i>			
417.	36375 <i>Lysimachia arvensis</i> (Pimpernel)	Y		
418.	34736 <i>Lysinema pentapetalum</i>			
419.	17636 <i>Marianthus coeruleopunctatus</i> (Blue-spotted Marianthus)			
420.	4079 <i>Medicago polymorpha</i> (Burr Medic)	Y		
421.	5893 <i>Melaleuca concreta</i>			
422.	5926 <i>Melaleuca lateritia</i> (Robin Redbreast Bush)			
423.	41120 <i>Melaleuca marginata</i>			
424.	5983 <i>Melaleuca trichophylla</i>			
425.	5987 <i>Melaleuca viminea</i> (Mohan)			
426.	6897 <i>Microcorys longifolia</i>			
427.	8106 <i>Millotia tenuifolia</i> (Soft Millotia)			
428.	7410 <i>Monopsis debilis</i>	Y		
429.	8114 <i>Myriocephalus appendiculatus</i> (White-tip Myriocephalus)			
430.	6192 <i>Myriophyllum drummondii</i>			
431.	18255 <i>Opercularia vaginata</i> (Dog Weed)			
432.	17756 <i>Osteospermum ecklonis</i>	Y		
433.	34843 <i>Oxymyrrhine coronata</i>		P4	
434.	7089 <i>Parentucellia latifolia</i> (Common Bartsia)	Y		
435.	4346 <i>Pelargonium littorale</i>			
436.	2278 <i>Persoonia sulcata</i>		P4	
437.	2292 <i>Petrophile divaricata</i>			
438.	2309 <i>Petrophile serruriae</i>			
439.	2312 <i>Petrophile striata</i>			
440.	18534 <i>Philothea nodiflora</i> subsp. <i>nodiflora</i>			
441.	18529 <i>Philothea spicata</i> (Pepper and Salt)			
442.	4675 <i>Phyllanthus calycinus</i> (False Boronia)			
443.	5232 <i>Pimelea argentea</i> (Silvery Leaved Pimelea)			
444.	11928 <i>Pimelea ciliata</i> subsp. <i>ciliata</i>			
445.	12041 <i>Pimelea suaveolens</i> subsp. <i>suaveolens</i>			
446.	6255 <i>Platysace juncea</i>			
447.	45237 <i>Podolepis aristata</i> subsp. <i>aristata</i>			
448.	8175 <i>Podolepis gracilis</i> (Slender Podolepis)			
449.	8177 <i>Podolepis lessonii</i>			

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450.	4691 <i>Poranthera microphylla</i> (Small Poranthera)			
451.	17211 <i>Prunus cerasifera</i>	Y		
452.	46200 <i>Prunus dulcis</i>	Y		Y
453.	46202 <i>Prunus persica</i> var. <i>persica</i>	Y		
454.	13255 <i>Pterochaeta paniculata</i>			
455.	2716 <i>Ptilotus declinatus</i> (Curved Mulla Mulla)			
456.	11260 <i>Ptilotus drummondii</i> var. <i>drummondii</i> (Pussytail)			
457.	2733 <i>Ptilotus humilis</i>			
458.	8195 <i>Quinetia urvillei</i>			
459.	3061 <i>Raphanus raphanistrum</i> (Wild Radish)	Y		
460.	15035 <i>Rhodanthe corymbosa</i>			
461.	13234 <i>Rhodanthe manglesii</i>			
462.	6483 <i>Samolus junceus</i>			
463.	7613 <i>Scaevola glandulifera</i> (Viscid Hand-flower)			
464.	12585 <i>Scaevola repens</i>			
465.	6033 <i>Scholtzia involucrata</i> (Spiked Scholtzia)			
466.	8203 <i>Senecio diaschides</i>			
467.	8205 <i>Senecio gilbertii</i>		P1	
468.	14583 <i>Siloxerus multiflorus</i>			
469.	7018 <i>Solanum lasiophyllum</i> (Flannel Bush, Mindjulu)			
470.	7025 <i>Solanum oldfieldii</i>			
471.	8230 <i>Sonchus asper</i> (Rough Sowthistle)	Y		
472.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
473.	8900 <i>Spergularia marina</i>			
474.	4207 <i>Sphaerolobium medium</i>			
475.	9070 <i>Stackhousia pubescens</i> (Downy Stackhousia)			
476.	2316 <i>Stirlingia latifolia</i> (Blueboy)			
477.	7681 <i>Stylidium affine</i> (Queen Triggerplant)			
478.	7684 <i>Stylidium amoenum</i> (Lovely Triggerplant)			
479.	25831 <i>Stylidium araeophyllum</i> (Stilt Walker)			
480.	48457 <i>Stylidium bindoon</i>			
481.	7696 <i>Stylidium calcaratum</i> (Book Triggerplant)			
482.	7702 <i>Stylidium ciliatum</i> (Golden Triggerplant)			
483.	19249 <i>Stylidium cilium</i>			
484.	7712 <i>Stylidium despectum</i> (Dwarf Triggerplant)			
485.	7716 <i>Stylidium diuroides</i> (Donkey Triggerplant)			
486.	7719 <i>Stylidium ecome</i> (Foot Triggerplant)			
487.	7736 <i>Stylidium hispidum</i> (White Butterfly Triggerplant)			
488.	7756 <i>Stylidium longitubum</i> (Jumping Jacks)		P4	
489.	25829 <i>Stylidium neurophyllum</i> (Coastal Plain Triggerplant)			
490.	7768 <i>Stylidium obtusatum</i> (Pinafore Triggerplant)			
491.	7785 <i>Stylidium repens</i> (Matted Triggerplant)			
492.	7790 <i>Stylidium roseoalatum</i> (Pink-wing Triggerplant)			
493.	7791 <i>Stylidium roseonanum</i>		P3	
494.	25806 <i>Stylidium scariosum</i>			
495.	7798 <i>Stylidium schoenoides</i> (Cow Kicks)			
496.	<i>Stylidium</i> sp.			
497.	45594 <i>Stylidium tenue</i> subsp. <i>majusculum</i> (Showy Fountain Triggerplant)			
498.	3181 <i>Stylobasium australe</i>			
499.	6476 <i>Styphelia tenuiflora</i> (Common Pinheath)			
500.	2321 <i>Synaphea acutiloba</i> (Granite Synaphea)			
501.	12914 <i>Synaphea decorticans</i>			
502.	2323 <i>Synaphea gracillima</i>			
503.	16773 <i>Synaphea rangiferops</i>		P2	
504.	29186 <i>Synaphea</i> sp. <i>Udumung</i> (A.S. George 17058)			
505.	15532 <i>Synaphea spinulosa</i> subsp. <i>spinulosa</i>			
506.	4528 <i>Tetralthea confertifolia</i>			
507.	4535 <i>Tetralthea hirsuta</i> (Black Eyed Susan)			
508.	48342 <i>Tetralthea hirsuta</i> subsp. <i>hirsuta</i>			
509.	4537 <i>Tetralthea nuda</i>			
510.	4540 <i>Tetralthea pilifera</i>		P3	
511.	5080 <i>Thomasia foliosa</i>			
512.	6280 <i>Trachymene pilosa</i> (Native Parsnip)			
513.	1139 <i>Trithuria bibracteata</i>			
514.	4839 <i>Trymalium angustifolium</i>			
515.	13479 <i>Trymalium ledifolium</i> var. <i>rosmarinifolium</i>			
516.	33418 <i>Trymalium odoratissimum</i> subsp. <i>odoratissimum</i>			
517.	4844 <i>Trymalium urceolare</i>			
518.	8255 <i>Ursinia anthemoides</i> (Ursinia)	Y		
519.	38388 <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Y		



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520.	7138 <i>Utricularia inaequalis</i>			
521.	7148 <i>Utricularia multifida</i>			
522.	19921 <i>Utricularia petertaylorii</i>			
523.	7666 <i>Verreauxia reinwardtii</i> (Common Verreauxia)			
524.	12388 <i>Verticordia acerosa</i> var. <i>preissii</i>			
525.	12395 <i>Verticordia bifimbriata</i>			
526.	15432 <i>Verticordia densiflora</i> var. <i>densiflora</i>			
527.	15433 <i>Verticordia huegelii</i> var. <i>huegelii</i>			
528.	6116 <i>Verticordia serrata</i>			
529.	12458 <i>Verticordia serrata</i> var. <i>ciliata</i>			
530.	7384 <i>Wahlenbergia capensis</i> (Cape Bluebell)	Y		
531.	7386 <i>Wahlenbergia gracilentia</i> (Annual Bluebell)			
532.	13328 <i>Waitzia nitida</i>			
533.	6285 <i>Xanthosia ciliata</i>			

#### Fish

534.	<i>Atherinosoma wallacei</i>			
535.	<i>Bostockia porosa</i>			
536.	<i>Edelia vittata</i>			
537.	<i>Pseudogobius olorum</i>			

#### Fungus

538.	<i>Colletotrichum gloeosporioides</i>			
539.	38873 <i>Cortinarius fibrillosus</i>			
540.	<i>Hebeloma aminophilum</i>			
541.	<i>Phytophthora cinnamomi</i>			
542.	<i>Scleroderma cepa</i>			

#### Gymnosperm

543.	85 <i>Macrozamia riedlei</i> ( <i>Zamia</i> , <i>Djiridji</i> )			
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#### Hepatic (Liverwort)

544.	<i>Riccia bifurca</i>			
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#### Invertebrate

545.	<i>Acariformes</i> sp.			
546.	<i>Ambicodamus kochi</i>			
547.	<i>Athericidae</i> sp.			
548.	<i>Austracantha minax</i>			
549.	<i>Australomimetes ovidi</i>			
550.	<i>Backbourkia heroine</i>			
551.	<i>Bindoona glauerti</i>			Y
552.	<i>Brentidae</i> sp.			
553.	<i>Carabidae</i> sp.			
554.	<i>Ceinidae</i> sp.			
555.	<i>Ceratopogonidae</i> sp.			
556.	<i>Chironominae</i> sp.			
557.	<i>Coenagrionidae</i> sp.			
558.	<i>Corixidae</i> sp.			
559.	<i>Culicidae</i> sp.			
560.	<i>Dugesidae</i> sp.			
561.	<i>Dytiscidae</i> sp.			
562.	<i>Eriophora biapicata</i>			
563.	<i>Gripopterygidae</i> sp.			
564.	<i>Gyrinidae</i> sp.			
565.	<i>Hemicorduliidae</i> sp.			
566.	<i>Hydraenidae</i> sp.			
567.	<i>Hydrophilidae</i> sp.			
568.	<i>Hydroptilidae</i> sp.			
569.	<i>Hypsimepodidae</i> sp.			
570.	<i>Idiommata blackwalli</i>			
571.	48928 <i>Idiosoma mclelementsorum</i> ( <i>Julimar shield-backed trapdoor spider</i> )		P2	
572.	<i>Isopeda leishmanni</i>			
573.	<i>Isopedella cana</i>			
574.	<i>Lampona brevipes</i>			
575.	<i>Lampona cylindrata</i>			
576.	<i>Leptoceridae</i> sp.			
577.	<i>Leptophlebiidae</i> sp.			
578.	<i>Libellulidae</i> sp.			
579.	<i>Ljunghia hoggi</i>			Y
580.	<i>Megapodagrionidae</i> sp.			
581.	<i>Missulena granulosa</i>			
582.	<i>Molycrta quadricauda</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
583.	<i>Nephila edulis</i>			
584.	<i>Notiasemus glauerti</i>			
585.	<i>Notonectidae</i> sp.			
586.	<i>Oligochaeta</i> sp.			
587.	<i>Orthocladinae</i> sp.			
588.	<i>Paramelitidae</i> sp.			
589.	<i>Parastacidae</i> sp.			
590.	<i>Philopotamidae</i> sp.			
591.	<i>Raveniella cirrata</i>			
592.	<i>Scirtidae</i> sp.			
593.	<i>Simuliidae</i> sp.			
594.	<i>Supunna picta</i>			
595.	<i>Tabanidae</i> sp.			
596.	<i>Tanypodinae</i> sp.			
597.	<i>Tasmanicosa leuckartii</i>			
598.	<i>Tipulidae</i> sp.			
599.	<i>Unixenus mjoebergi</i>			
600.	<i>Urodacus armatus</i>			
601.	<i>Urodacus novaehollandiae</i>			
602.	<i>Velliidae</i> sp.			
603.	<i>Venatrix pullastra</i>			
604.	34113 <i>Westralunio carteri</i> (Carter's Freshwater Mussel)		T	
<b>Lichen</b>				
605.	43942 <i>Austroparmelia pruinata</i>			
606.	27624 <i>Caloplaca cerina</i>			
607.	41653 <i>Caloplaca kaernefeltii</i>			
608.	<i>Caloplaca</i> sp.			
609.	27707 <i>Collema subconveniens</i>			
610.	27748 <i>Flavoparmelia rutidota</i>			
611.	<i>Lecidea</i> sp.			
612.	27839 <i>Leptogium corniculatum</i>			
613.	27852 <i>Menegazzia caesiopruinosa</i>			
614.	27880 <i>Normandina pulchella</i>			
615.	27973 <i>Physcia nubila</i>			
616.	28224 <i>Ramalina inflata</i> subsp. <i>australis</i>			
617.	28086 <i>Usnea dasaea</i>			
618.	28192 <i>Xanthoparmelia yowaensis</i>			
<b>Mammal</b>				
619.	24086 <i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
620.	24092 <i>Dasyurus geoffroi</i> (Chuditch, Western Quoll)		T	
621.	24041 <i>Felis catus</i> (Cat)	Y		
622.	48588 <i>Isodon fusciventer</i> (Quenda, southwestern brown bandicoot)		P4	
623.	24219 <i>Leporillus conditor</i> (Greater Stick-nest Rat, Wopilkara)		S	
624.	24132 <i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
625.	24135 <i>Macropus robustus</i> subsp. <i>erubescens</i> (Euro, Biggada)			
626.	24223 <i>Mus musculus</i> (House Mouse)	Y		
627.	24229 <i>Notomys mitchellii</i> (Mitchell's Hopping-mouse)			
628.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
629.	24230 <i>Pseudomys albocinereus</i> (Ash-grey Mouse)			
630.	24237 <i>Pseudomys hermannsburgensis</i> (Sandy Inland Mouse)			
631.	24245 <i>Rattus rattus</i> (Black Rat)	Y		
632.	24109 <i>Sminthopsis dolichura</i> (Little long-tailed Dunnart)			
633.	24111 <i>Sminthopsis gilberti</i> (Gilbert's Dunnart)			
634.	<i>Sminthopsis murina</i>			
635.	24207 <i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			
636.	24167 <i>Tarsipes rostratus</i> (Honey Possum, Noolbenger)			
637.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
<b>Monocotyledon</b>				
638.	184 <i>Aira caryophyllea</i> (Silvery Hairgrass)	Y		
639.	13380 <i>Amphibromus nervosus</i>			
640.	11470 <i>Anigozanthos bicolor</i> subsp. <i>bicolor</i>			
641.	1409 <i>Anigozanthos humilis</i> (Catspaw)			
642.	11434 <i>Anigozanthos humilis</i> subsp. <i>humilis</i>			
643.	1411 <i>Anigozanthos manglesii</i> (Mangles Kangaroo Paw, Kurulbrang)			
644.	1118 <i>Aphelia drummondii</i>			
645.	43548 <i>Aphelia</i> sp. Albany (B.G. Briggs 596)			
646.	233 <i>Avena barbata</i> (Bearded Oat)	Y		
647.	235 <i>Avena sativa</i> (Common Oat)	Y		
648.	18279 <i>Babiana angustifolia</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
649.	1273 <i>Borya sphaerocephala</i> (Pincushions)	Y		
650.	244 <i>Briza maxima</i> (Blowfly Grass)	Y		
651.	1383 <i>Burchardia bairdiae</i>			
652.	1385 <i>Burchardia multiflora</i> (Dwarf Burchardia)			
653.	1276 <i>Caesia micrantha</i> (Pale Grass Lily)			
654.	13853 <i>Caladenia arrecta</i>			
655.	11136 <i>Caladenia denticulata</i>			
656.	44893 <i>Caladenia denticulata</i> subsp. <i>denticulata</i>			
657.	1586 <i>Caladenia discoidea</i> (Dancing Orchid)			
658.	11106 <i>Caladenia filifera</i>			
659.	1592 <i>Caladenia flava</i> (Cowslip Orchid)			
660.	15377 <i>Caladenia reptans</i> subsp. <i>reptans</i>			
661.	760 <i>Caustis dioica</i>			
662.	1120 <i>Centrolepis alepyroides</i>			
663.	1121 <i>Centrolepis aristata</i> (Pointed Centrolepis)			
664.	1125 <i>Centrolepis drummondiana</i>			
665.	1129 <i>Centrolepis glabra</i> (Smooth Centrolepis)			
666.	1133 <i>Centrolepis pilosa</i>			
667.	1134 <i>Centrolepis polygyna</i> (Wiry Centrolepis)			
668.	1280 <i>Chamaescilla corymbosa</i> (Blue Squill)			
669.	11299 <i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>			
670.	1513 <i>Chasmanthe floribunda</i> (African Cornflag)	Y		
671.	763 <i>Chorizandra enodis</i> (Black Bristlerush)			
672.	1418 <i>Conostylis aculeata</i> (Prickly Conostylis)			
673.	12109 <i>Conostylis aculeata</i> subsp. <i>preissii</i>			
674.	1420 <i>Conostylis androstemma</i> (Trumpets)			
675.	1446 <i>Conostylis prolifera</i> (Mat Cottonheads)			
676.	1454 <i>Conostylis setigera</i> (Bristly Cottonhead)			
677.	11597 <i>Conostylis setigera</i> subsp. <i>setigera</i>			
678.	1455 <i>Conostylis setosa</i> (White Cottonhead)			
679.	1285 <i>Corynotheca micrantha</i> (Sand Lily)			
680.	17964 <i>Crinum moorei</i>	Y		
681.	15403 <i>Cyanicula ixiooides</i>			Y
682.	13827 <i>Cyanicula ixiooides</i> subsp. <i>candida</i>		P2	
683.	15404 <i>Cyanicula sericea</i>			
684.	40661 <i>Cycnogeton lineare</i>			
685.	794 <i>Cyperus gymnocaulos</i> (Spiny Flat-sedge)			
686.	806 <i>Cyperus polystachyos</i> (Bunchy Sedge)			
687.	810 <i>Cyperus rotundus</i> (Nut Grass)	Y		
688.	815 <i>Cyperus tenellus</i> (Tiny Flatsedge)	Y		
689.	1289 <i>Dichopogon preissii</i>			
690.	1634 <i>Diuris laxiflora</i> (Bee Orchid)			
691.	822 <i>Eleocharis acuta</i> (Common Spikerush)			
692.	17605 <i>Eleocharis keigheryi</i>		T	
693.	15415 <i>Eriochilus scaber</i> subsp. <i>scaber</i>			
694.	18392 <i>Freesia alba</i> x <i>leichtlinii</i>	Y		
695.	1520 <i>Gladiolus caryophyllaceus</i> (Wild Gladiolus)	Y		
696.	1472 <i>Haemodorum simplex</i>			
697.	1473 <i>Haemodorum simulans</i>			
698.	450 <i>Hordeum marinum</i>	Y		
699.	1070 <i>Hypolaena exsulca</i>			
700.	20200 <i>Isolepis cernua</i> var. <i>setiformis</i>			
701.	911 <i>Isolepis congrua</i>			
702.	914 <i>Isolepis hookeriana</i> (Bristle Club Rush)			
703.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
704.	10831 <i>Isolepis prolifera</i> (Budding Club-rush)	Y		
705.	924 <i>Isolepis stellata</i> (Star Club-rush)			
706.	19632 <i>Johnsonia pubescens</i> subsp. <i>pubescens</i>			
707.	1178 <i>Juncus bufonius</i> (Toad Rush)	Y		
708.	1180 <i>Juncus capitatus</i> (Capitate Rush)	Y		
709.	1186 <i>Juncus microcephalus</i>	Y		
710.	1188 <i>Juncus pallidus</i> (Pale Rush)			
711.	20019 <i>Lachnagrostis filiformis</i>			
712.	1307 <i>Laxmannia ramosa</i> (Branching Lily)			
713.	1308 <i>Laxmannia sessiliflora</i> (Nodding Lily)			
714.	11464 <i>Laxmannia sessiliflora</i> subsp. <i>australis</i>			
715.	1309 <i>Laxmannia squarrosa</i>			
716.	1075 <i>Lepidobolus preissianus</i>			
717.	936 <i>Lepidosperma leptostachyum</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
718.	944 <i>Lepidosperma scabrum</i>			
719.	<i>Lepidosperma</i> sp.			
720.	945 <i>Lepidosperma squamatum</i>			
721.	1653 <i>Leporella fimbriata</i> (Hare Orchid)			
722.	1078 <i>Leptocarpus coangustus</i>			
723.	<i>Lolium</i> sp.			
724.	1223 <i>Lomandra caespitosa</i> (Tufted Mat Rush)			
725.	1228 <i>Lomandra hermaphrodita</i>			
726.	1243 <i>Lomandra sericea</i> (Silky Mat Rush)			
727.	1198 <i>Luzula meridionalis</i> (Field Woodrush)			
728.	1097 <i>Lyginia barbata</i>			
729.	1477 <i>Macropidia fuliginosa</i> (Black Kangaroo Paw)			
730.	953 <i>Mesomelaena graciliceps</i>			
731.	955 <i>Mesomelaena pseudostygia</i>			
732.	15419 <i>Microtis media</i> subsp. <i>media</i>			
733.	11749 <i>Orthrosanthus laxus</i> var. <i>laxus</i> (Morning Iris)			
734.	40424 <i>Pentameris airoides</i> subsp. <i>airoides</i>	Y		
735.	40422 <i>Pentameris pallida</i>	Y		
736.	548 <i>Phalaris aquatica</i> (Phalaris)	Y		
737.	20460 <i>Pheladenia deformis</i>			
738.	1173 <i>Philydrella pygmaea</i> (Butterfly Flowers)			
739.	578 <i>Poa porphyroclados</i>			
740.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
741.	1676 <i>Prasophyllum hians</i> (Yawning Leek Orchid)			
742.	48677 <i>Pterostylis ectypha</i>			
743.	48674 <i>Pterostylis orbiculata</i>			
744.	1698 <i>Pterostylis vittata</i> (Banded Greenhood)			
745.	16367 <i>Pyrorchis nigricans</i> (Red beaks, Elephants ears)			
746.	1556 <i>Romulea rosea</i> (Guildford Grass)	Y		
747.	40431 <i>Rytidosperma acerosum</i>			
748.	40425 <i>Rytidosperma caespitosum</i>			
749.	980 <i>Schoenus capillifolius</i>		P3	
750.	984 <i>Schoenus curvifolius</i>			
751.	999 <i>Schoenus loliaceus</i>		P2	
752.	1002 <i>Schoenus nanus</i> (Tiny Bog Rush)			
753.	1003 <i>Schoenus natans</i> (Floating Bog-rush)		P4	
754.	1006 <i>Schoenus odontocarpus</i>			
755.	17614 <i>Schoenus plumosus</i>			
756.	1013 <i>Schoenus sculptus</i> (Gimlet Bog-rush)			
757.	16252 <i>Schoenus subflavus</i> subsp. <i>subflavus</i>			
758.	1023 <i>Schoenus tenellus</i>			
759.	1026 <i>Schoenus unispiculatus</i>			
760.	611 <i>Setaria sphacelata</i> (South African Pigeon Grass)	Y		
761.	1558 <i>Sparaxis bulbifera</i>	Y		
762.	635 <i>Sporobolus virginicus</i> (Marine Couch)			
763.	1260 <i>Stypandra glauca</i> (Blind Grass)			
764.	1328 <i>Thysanotus dichotomus</i> (Branching Fringe Lily)			
765.	<i>Thysanotus manglesianus/patersonii</i> complex			
766.	1343 <i>Thysanotus patersonii</i>			
767.	1351 <i>Thysanotus sparteus</i>			
768.	1354 <i>Thysanotus tenellus</i>			
769.	1483 <i>Tribonanthes longipetala</i> (Branching Tiurmdin)			
770.	98 <i>Typha domingensis</i> (Bulrush, Djandjid)			
771.	11018 <i>Vulpia muralis</i>	Y		
772.	33101 <i>Vulpia myuros</i> forma <i>myuros</i>	Y		
773.	<i>Vulpia</i> sp.			
774.	12072 <i>Wurmbea dioica</i> subsp. <i>alba</i>			
775.	1256 <i>Xanthorrhoea preissii</i> (Grass tree, Palga)			

**Pteridophyte (Fern)**

776. 66 *Pleurosorus subglandulosus*

**Reptile**

777. 25241 *Antaresia stimsoni* subsp. *stimsoni* (Stimson's Python)

778. 24990 *Aprasia pulchella* (Granite Worm-lizard)

779. 24991 *Aprasia repens* (Sand-plain Worm-lizard)

780. 42381 *Brachyurophis semifasciatus* (Southern Shovel-nosed Snake)

781. 24918 *Crenadactylus ocellatus* subsp. *ocellatus* (Clawless Gecko)

782. 30893 *Cryptoblepharus buchananii*

783. 25020 *Cryptoblepharus plagiocephalus*

784. 30899 *Ctenophorus adelaidensis* (Southern Heath Dragon, Western Heath Dragon)

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
785.	24889	<i>Ctenophorus scutulatus</i> (Lozenge-marked Dragon)		
786.	25027	<i>Ctenotus australis</i>		
787.	25039	<i>Ctenotus fallens</i>		
788.	25047	<i>Ctenotus impar</i>		
789.	25054	<i>Ctenotus mimetes</i>		
790.	25463	<i>Ctenotus pantherinus</i> (Leopard Ctenotus)		
791.	25074	<i>Ctenotus schomburgkii</i>		
792.	25465	<i>Ctenotus uber</i> (Spotted Ctenotus)		
793.	24999	<i>Delma grayii</i>		
794.	25469	<i>Diplodactylus granariensis</i>		
795.	24929	<i>Diplodactylus granariensis</i> subsp. <i>granariensis</i>		
796.	24940	<i>Diplodactylus pulcher</i>		
797.	25251	<i>Echlopsis curta</i> (Bardick)		
798.	25100	<i>Egernia napoleonis</i>		
799.	25109	<i>Eremiascincus richardsonii</i> (Broad-banded Sand Swimmer)		
800.	24959	<i>Gehyra variegata</i>		
801.	24961	<i>Heteronotia binoei</i> (Bynoe's Gecko)		
802.	25128	<i>Lerista christinae</i>		
803.	25131	<i>Lerista distinguenda</i>		
804.	25133	<i>Lerista elegans</i>		
805.	25137	<i>Lerista gerrardii</i>		
806.	30927	<i>Lerista kingi</i>		
807.	25165	<i>Lerista praepedita</i>		
808.	25005	<i>Lialis burtonis</i>		
809.	25184	<i>Menetia greyii</i>		
810.	25240	<i>Morelia spilota</i> subsp. <i>imbricata</i> (Carpet Python)		
811.	25190	<i>Morethia butleri</i>		
812.	25191	<i>Morethia lineocellata</i>		
813.	25192	<i>Morethia obscura</i>		
814.	25253	<i>Parasuta gouldii</i>		
815.	25254	<i>Parasuta monachus</i>		
816.	25007	<i>Pletholax gracilis</i> subsp. <i>gracilis</i> (Keeled Legless Lizard)		
817.	25510	<i>Pogona minor</i> (Dwarf Bearded Dragon)		
818.	25261	<i>Pseudechis australis</i> (Mulga Snake)		
819.	25259	<i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)		
820.	25009	<i>Pygopus nigriceps</i>		
821.	24982	<i>Rhynchoedura ornata</i> (Western Beaked Gecko)		
822.	25266	<i>Simoselaps bertholdi</i> (Jan's Banded Snake)		
823.	24923	<i>Strophurus assimilis</i> (Goldfields Spiny-tailed Gecko)		
824.	24943	<i>Strophurus spinigerus</i> subsp. <i>inornatus</i>		
825.	25519	<i>Tiliqua rugosa</i>		
826.	25207	<i>Tiliqua rugosa</i> subsp. <i>rugosa</i>		
827.	24983	<i>Underwoodisaurus milii</i> (Barking Gecko)		
828.	25211	<i>Varanus caudolineatus</i>		
829.	25218	<i>Varanus gouldii</i> (Bungarra or Sand Monitor)		

**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

<sup>1</sup> 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: PMST Report 10km**



# 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: 28/06/21 10:26:28

[Summary](#)

[Details](#)

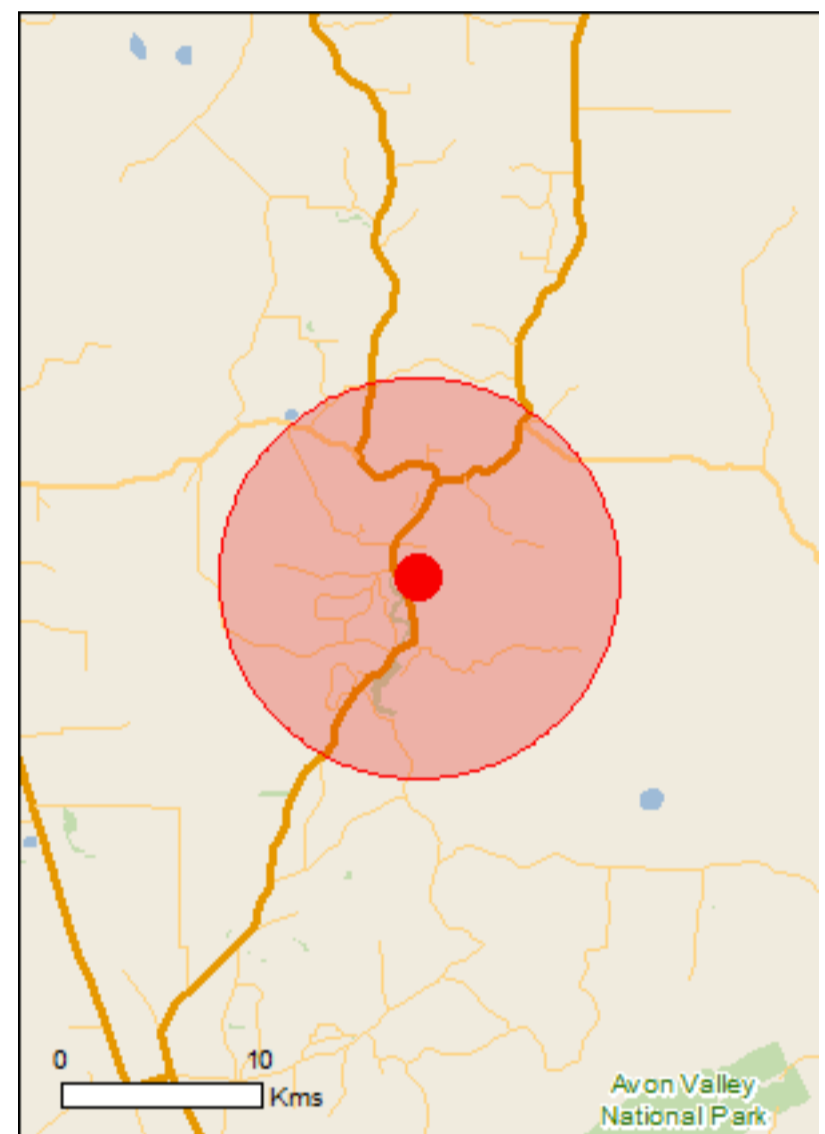
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

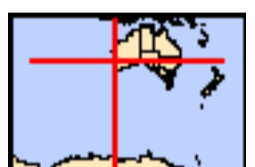
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[Coordinates](#)

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](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance:</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	3
<a href="#">Listed Threatened Species:</a>	27
<a href="#">Listed Migratory Species:</a>	8

## 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.

<a href="#">Commonwealth Land:</a>	1
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	12
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None

## Extra Information

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

<a href="#">State and Territory Reserves:</a>	5
<a href="#">Regional Forest Agreements:</a>	1
<a href="#">Invasive Species:</a>	18
<a href="#">Nationally Important Wetlands:</a>	1
<a href="#">Key Ecological Features (Marine)</a>	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
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community likely to occur within area
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community likely to occur within area
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community likely to occur within area

### Listed Threatened Species

[\[ Resource Information \]](#)

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

#### Birds

<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Calyptorhynchus banksii naso</a> Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calyptorhynchus latirostris</a> Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding known to occur within area
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area

#### Mammals

<a href="#">Dasyurus geoffroii</a> Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Phascogale calura</a> Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]	Vulnerable	Species or species habitat likely to occur within area

#### Other

<a href="#">Westralunio carteri</a> Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat likely to occur within area
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#### Plants

Name	Status	Type of Presence
<a href="#">Andersonia gracilis</a> Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
<a href="#">Chamelaucium sp. Gingin (N.G.Marchant 6)</a> Gingin Wax [88881]	Endangered	Species or species habitat likely to occur within area
<a href="#">Conospermum densiflorum subsp. unicephalatum</a> One-headed Smokebush [64871]	Endangered	Species or species habitat may occur within area
<a href="#">Darwinia carnea</a> Mogumber Bell, Narrogin Bell [9736]	Endangered	Species or species habitat may occur within area
<a href="#">Diplolaena andrewsii</a> [6601]	Endangered	Species or species habitat may occur within area
<a href="#">Diuris drummondii</a> Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat may occur within area
<a href="#">Drakaea elastica</a> Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat may occur within area
<a href="#">Eleocharis keigheryi</a> Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Eucalyptus leprophloia</a> Scaly Butt Mallee, Scaly-butt Mallee [56712]	Endangered	Species or species habitat may occur within area
<a href="#">Goodenia arthrotricha</a> [12448]	Endangered	Species or species habitat known to occur within area
<a href="#">Grevillea corrugata</a> a shrub [65445]	Endangered	Species or species habitat known to occur within area
<a href="#">Grevillea curviloba subsp. incurva</a> Narrow curved-leaf Grevillea [64909]	Endangered	Species or species habitat may occur within area
<a href="#">Grevillea flexuosa</a> Zig Zag Grevillea [2957]	Vulnerable	Species or species habitat may occur within area
<a href="#">Hypocalymma sylvestre</a> [86384]	Endangered	Species or species habitat known to occur within area
<a href="#">Melaleuca sciotostyla</a> Wongan Melaleuca [24324]	Endangered	Species or species habitat may occur within area
<a href="#">Ptychosema pusillum</a> Dwarf Pea [11268]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thelymitra dedmaniarum</a> Cinnamon Sun Orchid [65105]	Endangered	Species or species habitat may occur within area
<a href="#">Thelymitra stellata</a> Star Sun-orchid [7060]	Endangered	Species or species habitat likely 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
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### 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 may occur within area

[Calidris acuminata](#)

Sharp-tailed Sandpiper [874]

Species or species habitat may 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

## 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
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#### Birds

[Actitis hypoleucos](#)

Common Sandpiper [59309]

Species or species habitat may occur within area

[Apus pacificus](#)

Fork-tailed Swift [678]

Species or species habitat likely 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 may occur within area

Name	Threatened	Type of Presence
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat likely to occur within area
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

## Extra Information

State and Territory Reserves	[ Resource Information ]
Name	State
Burroloo Well	WA
Chittering Lakes	WA
Mount Byroomanning	WA
Unnamed WA42560	WA
Unnamed WA44713	WA

Regional Forest Agreements	[ Resource Information ]
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Note that all areas with completed RFAs have been included.

Name	State
<a href="#">South West WA RFA</a>	Western Australia

Invasive Species	[ Resource Information ]
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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
<b>Birds</b>		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species

Name	Status	Type of Presence
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		habitat likely to occur within area  Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
<b>Mammals</b>		
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
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
<b>Plants</b>		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to 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 within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

Nationally Important Wetlands		[ Resource Information ]
Name		State
<a href="#">Chittering-Needonga Lakes</a>		WA



# 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

-31.38619 116.10683

# 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.

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## Appendix 3: Conservation Codes

### Western Australia

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

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



(Source: Department of Biodiversity, Conservation and Attractions, 2020)

#### Commonwealth



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



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



**Appendix 4: Significant Flora Species Guide**



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Acacia anarthros</i> Photos: S.D. Hopper</p>		Erect or prostrate, spinose shrub, 0.1-0.5 m high.	Fl. yellow, Jun to Sep..	Lateritic gravelly soils. Slopes	P3	Habitat may be suitable
 <p><i>Acacia browniana</i> var. <i>glaucescens</i> Photo: B.R. Maslin</p>		Multi-stemmed shrub, 0.2-0.5 m high, spreading by subterranean runners.	Fl. yellow, Aug.	Lateritic gravelly soils.	P2	Habitat may be suitable

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
		Erect shrub, 0.3-1 m high.	Fl. yellow, Jul to Aug.	Lateritic gravelly soils.	P3	Habitat may be suitable
<p><i>Acacia oncinophylla</i> subsp. <i>oncinophylla</i></p>		Shrub, 0.9-2.5 m high, 'minni-ritchi' bark, phyllodes mostly 8-13 cm long, 1-2 mm wide.	Fl. yellow, Aug to Oct.	Granitic soils.	P3	Habitat may be suitable
<p><i>Acacia pulchella</i> var. <i>reflexa acuminata bracteole variant</i></p>		Shrub, 0.3-1 m high.	Fl. yellow, Jul to Sep.	Sandy loam or sandy clay over laterite. Woodland.	P3	Unlikely- habitat may not be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p data-bbox="168 762 801 794"><i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i> Photos: A.S. George</p>		Prostrate, mat-forming, non-lignotuberous shrub, to 0.3 m high.	Fl. white-cream-pink-green/green, Jul or Sep to Dec or Jan.	Grey sand, lateritic gravel.	P3	Habitat may be suitable
 <p data-bbox="168 1201 801 1235"><i>Asteridea gracilis</i> Photo: H. Bowler</p>		Annual, herb, 0.15-0.35 m high.	Fl. white-pink, Sep to Dec.	Sand, clay, gravelly soils.	P3	Unlikely- Habitat may not be suitable


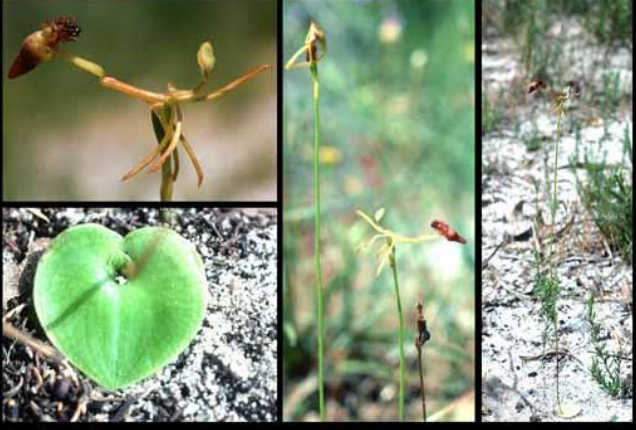
Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Asterolasia grandiflora</i> Photos: S.D. Hopper &amp; J.L. Robson</p>		Slender open shrub, 0.2-0.6(-0.8) m high.	Fl. pink/white, Jul to Oct.	Lateritic soils, clay over granite. Breakaways, hills.	P4	Habitat may be suitable
 <p><i>Andersonia gracilis</i> Photos: K. Atkins &amp; M. Hislop</p>		Slender erect or open straggly shrub, 0.1-0.5(-1) m high.	Fl. white-pink-purple, Sep to Nov..	White/grey sand, sandy clay, gravelly loam. Winter-wet areas, near swamps	T/EN	Unlikely-habitat may not be suitable


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Calothamnus pachystachyus</i> Photos: A.D. Crawford &amp; M. Hislop</p>		Erect, much-branched, often straggly shrub, (0.3-)0.6-1.7 m high.	Fl. red-brown-black, Aug to Oct.	Lateritic soils, often gravelly. Ridges, road verges.	P4	Habitat may be suitable
<p><i>Chamelaucium lullfitzii</i> (syn. <i>Chamelaucium</i> sp. Gingin)</p>					T/EN	Unable to assess
 <p><i>Conospermum densiflorum</i> subsp. <i>unicephalatum</i> Photos: S.J. Patrick</p>		Erect, much-branched shrub, 0.3-0.6 m high, inflorescence a spike.	Fl. cream/white & blue, Sep to Nov.	Clay soils. Low-lying areas.	T/EN	Unlikely – habitat may not be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Cyanicula ictioides</i> subsp. <i>candida</i> Photo: A.P. Brown</p>		Tuberous, perennial, herb, 0.04-0.12 m high.	Fl. white, Aug to Oct.	Sand, laterite, gravel.	P2	Habitat may be suitable
 <p><i>Darwinia carnea</i> Photos: M. Hancock &amp; S.D. Hopper</p>	Mogumber Bell	Spreading shrub, 0.2-0.45 m high.	Fl. green & red, Oct to Dec.	Lateritic loam & gravel.	T/EN	Habitat may be suitable






Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Darwinia carnea</i> Photos: M. Hancock</p>						
<p><i>Darwinia sp. Bindoon</i></p>					P1	Unable to assess
 <p><i>Diplolaena andrewsii</i> Photo: V.T. Clarke</p>		Erect shrub, 0.5-1 m high, inner involucral bracts glabrous, leaves broadly cordate.	Fl. red, Jul to Oct.	Loam, clay. Granite outcrops & hillsides.	T/EN	Habitat may be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Diuris drummondii</i> Photos: A. P. Brown and I &amp; M Greeve</p>	Tall Donkey Orchid	Tuberous, perennial, herb, 0.5-1.05 m high.	Fl. yellow, Nov to Dec or Jan.	Low-lying depressions, swamps.	T/VU	Unlikely-habitat may not be suitable
 <p><i>Drakaea elastica</i> Photos: A. Brown &amp; S.D. Hopper</p>	Glossy-leaved Hammer Orchid	Tuberous, perennial, herb, 0.12-0.3 m high.	Fl. red & green & yellow, Oct to Nov.	White or grey sand. Low-lying situations adjoining winter-wet swamps.	T/EN	Unlikely-habitat may not be suitable

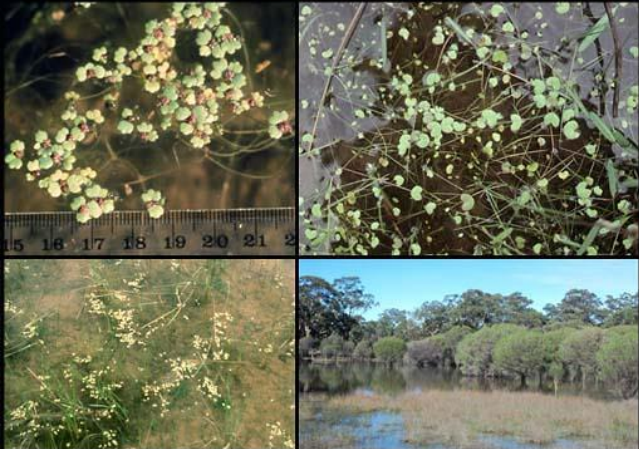
Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Eleocharis keigheryi</i> Photo: G.J. Keighery</p>		Rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 m high.	Fl. green, Aug to Nov.	Clay, sandy loam. Emergent in freshwater: creeks, claypans.	V/T	Unlikely-habitat may not be suitable
<i>Eucalyptus exilis</i>	Boyagin Mallee	(Whipstick mallee), 2-6 m high, bark smooth.	Fl. white, Aug to Oct	Grey sand, gravelly loam. Lateritic ridges.	P4	Habitat may be suitable
<i>Eucalyptus leprophloia</i>	Scaly Butt Mallee	(Mallee), 2-5(-8) m high, bark rough loose & flaky to 1 m.	Fl. cream-white, Aug to Oct.	White or grey sand over laterite. Valley slopes.	T/EN	Habitat may be suitable

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Gastrolobium crispatum</i> Photos: M. Hislop &amp; S.J. Patrick</p>		Tall shrub, to 2.5 m high.	Fl. Yellow & orange & red, Sep to Oct.		P1	Unable to assess
 <p><i>Gastrolobium nudum</i> Photo: J. Hort</p>		Spreading, twiggy shrub, to 0.8 m high.	Fl. Orange & red, Feb.	Red-brown clay, brown loam, gravel, laterite, granite. Flats, slopes, hilltops, ridges, valleys, breakaways.	P2	Habitat may be suitable


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Goodenia arthrotricha</i> Photo: H. Bowler</p>		Erect perennial, herb, to 0.4 m high.	Fl. blue, Oct to Nov.	Gravel. Granite rocks, slopes.	T	Habitat may be suitable
<p><i>Grevillea corrugata</i></p>					EN/T	Unable to assess
<p><i>Grevillea curviloba</i> (syn. <i>Grevillea curviloba</i> subsp. <i>incurva</i>)</p>		Prostrate to erect shrub, 0.1-2.5 m high.	Fl. white-cream, Aug to Oct.	Grey sand, sandy loam. Winter-wet heath.	EN/T	Unlikely-habitat may not be suitable

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Grevillea flexuosa</i> Photos: L. Robson, A.P. Brown &amp; M. Hancock</p>	Tangled Grevillea	Irregular, few-branched, non-lignotuberous shrub, to 2 m high.	Fl. creamy-yellow, Jul to Oct.	Red-brown sand with laterite & gravel, sand over granite. Ridgetop plateau & associated breakaways.	T/VU	Habitat may be suitable
 <p><i>Halgania corymbosa</i> Photo: H. Bowler</p>		Erect shrub, 0.35-1 m high.	Fl. blue-purple, Aug to Nov.	Gravelly soils, soils over granite.	P3	Habitat may be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Hibbertia glomerata</i> subsp. <i>ginginensis</i> Photos: A.D. Crawford &amp; J. Hort</p>		Erect shrub, to 0.5 m high.	Fl. yellow, Jul to Sep.	Sand, brown clay, laterite. Near roadsides.	P2	Unlikely-habitat may not be suitable
 <p><i>Hibbertia miniata</i> Photos: C. Chapman, P.J. Davies, C.A. Gardner, S.D. Hopper &amp; J.C. Morgan</p>		Decumbent or erect shrub, 0.1-1 m high.	Fl. orange/orange-red, Aug to Nov..	Lateritic gravelly soils	P4	Habitat may be suitable


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Hydrocotyle lemnoides</i> Photos: S.D. Hopper &amp; J.L. Robson</p>		Aquatic, floating annual, herb.	Fl. purple, Aug to Oct.	Swamps.	P4	Unlikely-habitat may not be suitable
<p><i>Hypocalymma sylvestre</i></p>		Spreading shrub, 0.6 m high.	Fl. yellow, Aug.	Yellow-brown sandy loam. Woodland on lateritic hilltop.	T/EN	Unlikely-habitat may not be suitable






Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Hypolaena robusta</i> Photos: A.D. Crawford</p>		Dioecious rhizomatous, perennial, herb, ca 0.5 m high.	Fl. Sep to Oct	White sand. Sandplains.	P4	Unlikely-habitat may not be suitable
<i>Johnsonia inconspicua</i>		Rhizomatous, tufted perennial, grass-like or herb, 0.1-0.3 m high, to 0.2 m wide.	Fl. green-white/pink, Oct to Nov.	White-grey or black sand. Low dunes, winter-wet flats.	P3	Unlikely-habitat may not be suitable
<i>Lasiopetalum caroliae</i>		Shrub. Stems hairy. Leaves 3-15 mm long, 2.5-12 mm wide, not lobed; margins sinuate or dentate; indumentum present, with stellate hairs; stipules apparently absent, even from youngest leaves. Perianth of two whorls but the corolla reduced to small scales or tiny lobes at the base of the ovary. Pedicel	Flowering time September or October.		P3	Unable to assess


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
		<p>present, 2-4.5 mm long; indumentum present, with stellate hairs, with scales. Epicalyx (extra segments or 'bracteoles' immediately below the calyx) present, NaN (?) mm long. Calyx pink or purple, 3-5 mm long, the lobes fused less than half their length, stellate hairs present, scales present, number of ribs absent. Corolla glabrous. Stamens five, free and inserted at the base of the ovary; filaments present, 0.1-0.4 mm long; anthers 1.5-2 mm long, indumentum absent (anthers glabrous). Staminodes appendages absent. Ovary hairs or scales present, stellate hairs present; style 1, with a lobed or capitate stigma, 2.8-4.3 mm long, with one style branches or lobes, hairy for most of length.</p>				


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Lechenaultia magnifica</i> Photos: J. Hort</p>		Erect perennial, herb or shrub (subshrub), to 0.6 m high.		Brown, grey, yellow or white sand, brown sandy loam, laterite. Slopes and flats.	P1	Unlikely-habitat may not be suitable
 <p><i>Melaleuca sciostyla</i> Photo: P. Brown</p>	Wongan Melaleuca	Spreading shrub, 0.6-1.5 m high.	Fl. Aug.	Orange clayey sand with lateritic pebbles. Scree slopes.	T	Habitat may be suitable
<i>Millotia tenuifolia</i> var. <i>laevis</i>		Ascending to erect annual, herb, 0.02-0.1 m high.	Fl. yellow, Sep to Oct.	Granite or laterite soils.	P2	Habitat may be suitable

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
<i>Oxymyrrhine coronata</i>					P4	Unable to assess
		Erect, often spreading shrub, 0.2-1 m high.	Fl. yellow, Sep to Dec or Jan.	White, grey or yellow sand, often over laterite.	P3	Unlikely-habitat may not be suitable
<i>Persoonia sulcata</i>		Erect, spreading to decumbent shrub, 0.2-1 m high.	Fl. yellow, Sep to Nov.	Lateritic or granitic soils.	P4	Unlikely-habitat may not be suitable


Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Ptychosema pusillum</i> Photos: S.J. Patrick, I. &amp; M. Greeve &amp; J.L. Robson</p>	Dwarf Pea	Perennial, herb, mostly 0.05-0.1 m high.	Fl. red & brown & yellow, Aug to Oct.	Sand. Rises.	T/VU	Unlikely-habitat may not be suitable
<i>Schoenus capillifolius</i>		Semi-aquatic tufted annual, grass-like or herb (sedge), 0.05 m high.	Fl. green, Oct to Nov.	Brown mud. Claypans.	P3	Unlikely-habitat may not be suitable
<i>Schoenus loliaceus</i>		Annual, grass-like or herb (sedge), 0.03-0.06 m high.	Fl. Aug to Nov.	Sandy soils. Winter-wet depressions.	P2	Unlikely-habitat may not be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Schoenus natans</i> Photos: G.J. Keighery &amp; J.L. Robson</p>		Aquatic annual, grass-like or herb (sedge), 0.3 m high.	Fl. brown, Oct.	Winter-wet depressions.	P4	Unlikely-habitat may not be suitable
 <p><i>Senecio gilbertii</i> Photo: S.J. Patrick</p>		Erect, slender perennial, herb, to 1.5 m high.	Fl. yellow, Sep to Nov.	Peaty sand. Swamps, slopes.	P1	Unlikely-habitat may not be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Stylidium longitubum</i> Photos: M. Hislop and P.G. Armstrong</p>	Jumping Jacks	Erect annual (ephemeral), herb, 0.05-0.12 m high.	Fl. pink, Oct to Dec.	Sandy clay, clay. Seasonal wetlands.	P4	Unlikely-habitat may not be suitable
<i>Stylidium roseonatum</i>		Diminutive, short-lived annual, herb, 0.015-0.03 m high.	Fl. red-white, Oct.	Swamps.	P3	Unlikely, outside of natural distribution (Great Southern)
<i>Styphelia allittii</i>						Unable to assess

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p data-bbox="168 1114 797 1161"><i>Synaphea panhesya</i> Photos: R. Butcher</p>		Erect shrub, 0.3-0.6 m high.	Fl. yellow, Aug to Sep.	Gravelly loam & sandy gravel.	P1	Habitat may be suitable



Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Synaphea rangiferops</i> Photos: R. Butcher</p>		Shrub, ca 0.3 m high.	Fl. yellow, Jul to Sep.	Sandy loam, gravel.	P2	Unlikely-habitat may not be suitable

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
		Spreading shrub, 0.1-0.3 m high.	Fl. purple, Aug to Oct.	Gravelly soils.	P3	Habitat may be suitable
	Cinnamon Sun Orchid	Tuberous, perennial, herb, to 0.8 m high.	Fl. yellow, Nov to Dec or Jan.	Granite.	EN/T	Habitat may be suitable

Picture	Common Name	Description	Flowering Period	Habitat Type	Cons Code	Likelihood
 <p><i>Thelymitra stellata</i> Photos: A.P. Brown &amp; I. &amp; M. Greeve</p>		Tuberous, perennial, herb, 0.15-0.25 m high.	Fl. yellow & brown, Oct to Nov.	Sand, gravel, lateritic loam.	T/EN	Habitat may be suitable
<p><i>Thysanotus</i> sp. Badgingarra</p>		Perennial, herb (with tuberous roots), ca 0.35 m high.	Fl. blue, Dec.	Grey sand with lateritic gravel.	P2	Habitat may be suitable
 <p><i>Verticordia rutilastra</i> Photos: E.A. Berndt &amp; M. Pieroni</p>		Shrub, 0.2-0.9 m high.	Fl. yellow, Sep to Nov.	Sand & lateritic gravel. Hills.	P3	Habitat may be suitable

## Appendix 5: Quadrat Data

Quadrat No.: Q1  
 Survey Date: 13/09/2021  
 Personnel: KS KG  
 Eastings: 414950.453  
 Northings: 6526997.072  
 Topography: Upper Slope  
 Aspect: North West  
 Slope: 1-5%  
 Soil: Brown Loam  
 Gravel: 30%  
 Rock: Granite 0.5%  
 Leaf Litter: 1%  
 Bare Ground: 10%  
 Drainage: Well  
 Condition: Excellent



Notes: *Eucalyptus accedens* Woodland  
 Kangaroo scat present

Species	Cover (%)	Height (m)
<i>Banksia bipinnatifida</i> subsp. <i>multifida</i>	0.2	0.2
<i>Banksia dallanneyi</i>	3	0.2
<i>Caladenia flava</i>	0.5	0.1
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	0.1	0.1
<i>Dichopogon capillipes</i>	0.1	0.1
<i>Drosera erythrorhiza</i>	0.1	0.1
<i>Drosera pallida</i>	0.1	0.1
<i>Ehrharta longiflora</i> *	0.2	0.1
<i>Eucalyptus accedens</i>	5	20
<i>Gastrolobium calycinum</i>	60	1.5
<i>Gladiolus caryophyllaceus</i> *	0.1	0.2
<i>Haemodorum laxum</i>	1	0.2
<i>Hakea lissocarpha</i>	1	0.5
<i>Hibbertia hibbertioides</i> var. <i>hibbertioides</i>	0.5	0.2
<i>Hibbertia hypericoides</i>	0.5	0.2
<i>Hypochaeris radicata</i> *	0.5	0.1
<i>Lagenophora huegelii</i>	0.1	0.1
<i>Laxmannia grandiflora</i>	0.1	0.1
<i>Lomandra caespitosa</i>	0.5	0.2
<i>Neurachne alopecuroidea</i>	0.5	0.1
<i>Olearia elaeophila</i>	0.1	0.1

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<b>Species</b>	<b>Cover (%)</b>	<b>Height (m)</b>
<i>Opercularia vaginata</i>	5	0.1
<i>Petrophile biloba</i>	1	1
<i>Phyllanthus calycinus</i>	0.1	0.2
<i>Romulea rosea</i> *	0.2	0.1
<i>Stylidium affine</i>	1	0.5
<i>Synaphea acutiloba</i>	0.2	0.3
<i>Thysanotus manglesianus</i>	0.1	0.3
<i>Trachymene pilosa</i>	0.5	0.1
<i>Trymalium ledifolium</i>	0.4	1
<i>Ursinia anthemoides</i> *	0.2	0.2
<i>Xanthorrhoea acanthostachya</i>	10	1.5
<i>Xanthorrhoea gracilis</i>	3	0.5

Note: \*denotes introduced species.

Quadrat No.: Q2  
 Survey Date: 14/09/2021  
 Personnel: KS KG  
 Eastings: 415152.359  
 Northings: 6527554.358  
 Topography: Mid slope  
 Aspect: South East  
 Slope: 10%  
 Soil: Red clay-loam  
 Gravel: 5%  
 Rock: 2%  
 Leaf Litter: 1%  
 Bare Ground: 1%  
 Drainage: Well  
 Condition: Completely Degraded



Notes: *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Cleared Open Farmland.  
 Livestock grazing evidence

Species	Cover (%)	Height (m)
<i>Arctotheca calendula</i> *	60	0.2
<i>Corymbia calophylla</i>	10	10
<i>Crassula exserta</i>	1	0.1
<i>Ehrharta longiflora</i> *	1	0.1
<i>Erodium botrys</i> *	1	0.1
<i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>	2	10
<i>Hakea lissocarpha</i>	1	0.5
<i>Hordeum leporinum</i> *	1	0.1
<i>Romulea rosea</i> *	5	0.1
<i>Trifolium campestre</i> *	1	0.1
<i>Ursinia anthemoides</i> *	1	0.1
<i>Xanthorrhoea acanthostachya</i>	5	2

Quadrat No.: Q3  
 Survey Date: 14/09/2021  
 Personnel: KS KG  
 Eastings: 415023.431  
 Northings: 6527530.407  
 Topography: Mid slope  
 Aspect: West  
 Slope: 15%  
 Soil: Brown loam  
 Gravel: 1%  
 Rock: 2%  
 Leaf Litter: 80%  
 Bare Ground: 1%  
 Drainage: Well  
 Condition: Very Good



Notes: *Eucalyptus accedens* Woodland

Species	Cover (%)	Height (m)
<i>Banksia bipinnatifida</i> subsp. <i>multifida</i>	0.5	0.1
<i>Banksia dallaneyi</i>	0.2	0.2
<i>Briza maxima</i> *	0.05	0.1
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	0.1	0.1
<i>Conostylis setigera</i>	0.2	0.2
<i>Dampiera alata</i>	40	0.2
<i>Dichopogon capillipes</i>	0.1	0.1
<i>Drosera erythrorhiza</i>	0.5	0.1
<i>Drosera menziesii</i>	0.1	0.2
<i>Eucalyptus accedens</i>	15	30
<i>Gastrolobium calycinum</i>	5	1.5
<i>Hibbertia hibbertioides</i> var. <i>hibbertioides</i>	0.5	0.3
<i>Hibbertia hypericoides</i>	0.5	0.5
<i>Lagenophora huegelii</i>	1	0.2
<i>Lepidosperma scabrum</i>	0.1	0.1
<i>Neurachne alopecuroidea</i>	1	0.1
<i>Opercularia vaginata</i>	5	0.2
<i>Pterostylis vittata</i>	0.2	0.1
<i>Romulea rosea</i> *	0.5	0.1
<i>Stylidium affine</i>	0.5	0.2
<i>Synaphea acutiloba</i>	0.1	0.3
<i>Thelymitra crinita</i>	0.5	0.2
<i>Trachymene pilosa</i>	0.5	0.1
<i>Xanthorrhoea acanthostachya</i>	8	2

Quadrat No.: Q4  
Survey Date: 14/09/2021  
Personnel: KS KG  
Eastings: 414976.253  
Northings: 6527250.991  
Topography: Mid slope  
Aspect: West  
Slope: 15%  
Soil: Brown loam  
Gravel 1%  
Rock: 5%  
Leaf Litter: 10%  
Bare Ground: 2%  
Drainage: Well  
Condition: Very Good



Notes: *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Open Woodland

Species	Cover (%)	Height (m)
<i>Anigozanthos bicolor</i>	0.1	0.2
<i>Arctotheca calendula</i> *	0.1	0.1
<i>Banksia dallaneyi</i>	0.5	0.2
<i>Briza minor</i> *	0.1	0.1
<i>Burchardia congesta</i>	0.1	0.1
<i>Burchardia multiflora</i>	0.1	0.1
<i>Caladenia flava</i>	0.1	0.1
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	0.5	0.1
<i>Cheilanthes austrotenuifolia</i>	0.5	0.2
<i>Conostylis setosa</i>	0.1	0.2
<i>Corymbia calophylla</i>	40	20
<i>Cyanicula sericea</i>	0.1	0.1
<i>Dampiera lavandulacea</i>	0.6	0.2
<i>Darwinia thymoides</i>	1	0.2
<i>Desmocladius flexuosus</i>	2	0.1
<i>Dichopogon capillipes</i>	0.3	0.1
<i>Dioscorea hastifolia</i>	0.1	0.5
<i>Diuris porrifolia</i>	0.1	0.2
<i>Drosera erythrorhiza</i>	0.1	0.1
<i>Drosera pallida</i>	0.1	0.1
<i>Ehrharta longiflora</i> *	0.1	0.1
<i>Elythranthera brunonis</i>	0.1	0.1



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<b>Species</b>	<b>Cover (%)</b>	<b>Height (m)</b>
<i>Gastrolobium calycinum</i>	60	2
<i>Gladiolus caryophyllaceus*</i>	0.2	0.4
<i>Grevillea bipinnatifida</i>	1	0.3
<i>Haemodorum laxum</i>	0.1	0.3
<i>Hakea incrassata</i>	2	0.3
<i>Hakea trifurcata</i>	0.5	0.5
<i>Hibbertia hibbertioides var. hibbertioides</i>	0.1	0.2
<i>Hibbertia hypericoides</i>	3	0.5
<i>Hyalosperma cotula</i>	0.1	0.1
<i>Lagenophora huegelii</i>	0.1	0.1
<i>Laxmannia grandiflora</i>	0.1	0.1
<i>Lepidobolus preissianus</i>	5	0.3
<i>Lepidosperma scabrum</i>	0.1	0.2
<i>Lysimachia arvensis*</i>	0.1	0.1
<i>Melaleuca radula</i>	2	0.3
<i>Morelotia octandra</i>	0.1	0.3
<i>Neurachne alopecuroidea</i>	0.5	0.1
<i>Opercularia vaginata</i>	1	0.2
<i>Phyllanthus calycinus</i>	1	0.3
<i>Rhodanthe manglesii</i>	5	0.1
<i>Romulea rosea*</i>	2	0.1
<i>Stylidium affine</i>	0.1	0.1
<i>Stypandra glauca</i>	8	0.3
<i>Synaphea acutiloba</i>	0.2	0.3
<i>Trachymene pilosa</i>	0.5	0.1
<i>Verticordia acerosa</i>	1	0.5
<i>Xanthorrhoea acanthostachya</i>	8	1.5

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Quadrat No.: Q5  
 Survey Date: 14/09/2021  
 Personnel: KS KG  
 Eastings: 414987.138  
 Northings: 6527735.703  
 Topography: Mid slope  
 Aspect: North west  
 Slope: 15%  
 Soil: Brown loam  
 Gravel: 2%  
 Rock: 3%  
 Leaf Litter: 5%  
 Bare Ground: 30%  
 Drainage: Well  
 Condition: Very Good



Notes: *Eucalyptus accedens* Woodland

Species	Cover (%)	Height (m)
<i>Banksia bipinnatifida</i> subsp. <i>multifida</i>	0.1	0.1
<i>Banksia dallanneyi</i>	5	0.3
<i>Caladenia flava</i>	0.1	0.1
<i>Calothamnus sanguineus</i>	1	0.3
<i>Conostylis setosa</i>	0.1	0.2
<i>Dampiera alata</i>	1	0.3
<i>Daucus glochidiatus</i>	0.1	0.1
<i>Dichopogon capillipes</i>	0.1	0.1
<i>Drosera erythrorhiza</i>	0.1	0.1
<i>Drosera pallida</i>	0.1	0.1
<i>Ehrharta longiflora</i> *	0.1	0.1
<i>Eucalyptus accedens</i>	30	20
<i>Gastrolobium bilobum</i>	3	0.3
<i>Gladiolus caryophyllaceus</i> *	0.1	0.3
<i>Hakea trifurcata</i>	1	0.5
<i>Hibbertia hibbertioides</i> var. <i>hibbertioides</i>	2	0.3
<i>Hibbertia hypericoides</i>	0.3	0.3
<i>Hypochaeris radicata</i> *	0.1	0.1
<i>Lagenophora huegelii</i>	0.1	0.1
<i>Lechenaultia biloba</i>	0.1	0.3
<i>Lepidosperma tenue</i>	0.1	0.2
<i>Lomandra caespitosa</i>	0.1	0.1
<i>Lomandra sericea</i>	0.4	0.3
<i>Olearia elaeophila</i>	0.1	0.2


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<b>Species</b>	<b>Cover (%)</b>	<b>Height (m)</b>
<i>Petrophile striata</i>	0.1	0.3
<i>Philothea spicata</i>	0.1	0.2
<i>Pterostylis vittata</i>	0.1	0.1
<i>Romulea rosea</i> *	1	0.1
<i>Stylidium affine</i>	0.2	0.1
<i>Thelymitra crinita</i>	0.1	0.1
<i>Trachymene pilosa</i>	0.1	0.1
<i>Ursinia anthemoides</i> *	0.1	0.2
<i>Xanthorrhoea acanthostachya</i>	15	2
<i>Xanthorrhoea gracilis</i>	1	0.7

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<p>           Quadrat No.: Q6            Survey Date: 15/09/2021            Personnel: KS KG            Eastings: 415201.4182            Northings: 6526702.390            Topography: Mid slope            Aspect: South east            Slope: 15%            Soil: Brown clay-loam            Gravel: 0%            Rock: 1%            Leaf Litter: 0%            Bare Ground: 0%            Drainage: Well            Condition: Completely Degraded         </p>		<p>Notes: <i>Corymbia calophylla</i> and <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> Cleared Farmland.</p>
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Species	Cover (%)	Height (m)
<i>Arctotheca calendula</i> *	3	0.1
<i>Austrostipa flavescens</i>	0.1	0.3
<i>Avena barbata</i> *	1	0.1
<i>Corymbia calophylla</i>	8	15
<i>Drosera glanduligera</i>	0.1	0.1
<i>Ehrharta longiflora</i> *	30	0.2
<i>Erodium botrys</i> *	3	0.2
<i>Haemodorum laxum</i>	0.2	0.3
<i>Hypochaeris radicata</i> *	1	0.1
<i>Lolium rigidum</i> *	0.1	0.3
<i>Lotus subbiflorus</i> *	0.5	0.1
<i>Morelotia octandra</i>	0.5	0.3
<i>Ptilotus polystachyus</i>	0.1	0.2
<i>Romulea rosea</i> *	5	0.2
<i>Sonchus oleraceus</i> *	0.5	0.1
<i>Trifolium campestre</i> *	0.5	0.1
<i>Ursinia anthemoides</i> *	0.1	0.2
<i>Xanthorrhoea acanthostachya</i>	40	2

Quadrat No.: Q7  
 Survey Date: 15/09/2021  
 Personnel: KS KG  
 Eastings: 415223.195  
 Northings: 6527099.221  
 Topography: Mid slope  
 Aspect: South east  
 Slope: 15%  
 Soil: Brown clay-loam  
 Gravel: 2%  
 Rock: 2%  
 Leaf Litter: 5%  
 Bare Ground: 1%  
 Drainage: Well  
 Condition: Good



Notes: *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Cleared Farmland.

Species	Cover (%)	Height (m)
<i>Arctotheca calendula</i> *	3	0.1
<i>Billardiera heterophylla</i>	20	0.3
<i>Briza maxima</i> *	1	0.1
<i>Corymbia calophylla</i>	5	8
<i>Dichopogon capillipes</i>	0.1	0.1
<i>Drosera glanduligera</i>	0.2	0.1
<i>Drosera menziesii</i>	0.1	0.1
<i>Ehrharta longiflora</i> *	0.2	0.1
<i>Erodium botrys</i> *	2	0.3
<i>Hakea lissocarpha</i>	1	0.7
<i>Hibbertia commutata</i>	10	0.5
<i>Romulea rosea</i> *	2	0.1
<i>Sonchus oleraceus</i> *	0.1	0.2
<i>Trifolium campestre</i> *	0.5	0.1
<i>Ursinia anthemoides</i> *	0.2	0.2
<i>Xanthorrhoea acanthostachya</i>	40	2

Quadrat No.: Q8  
 Survey Date: 15/09/2021  
 Personnel: KS KG  
 Eastings: 415266.509  
 Northings: 6527793.460  
 Topography: Mid slope  
 Aspect: South east  
 Slope: 15%  
 Soil: Brown clay-loam  
 Gravel: 1%  
 Rock: 5%  
 Leaf Litter: 10%  
 Bare Ground: 5%  
 Drainage: Well  
 Condition: Degraded



Notes: *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Cleared Farmland.

Species	Cover (%)	Height (m)
<i>Cheilanthes austrotenuifolia</i>	0.2	0.2
<i>Corymbia calophylla</i>	20	10
<i>Dichopogon capillipes</i>	0.1	0.1
<i>Drosera erythrorhiza</i>	0.1	0.1
<i>Drosera glanduligera</i>	0.1	0.1
<i>Drosera menziesii</i>	0.1	0.1
<i>Ehrharta longiflora</i> *	0.5	0.2
<i>Hibbertia commutata</i>	3	0.3
<i>Hibbertia hibbertioides</i> var. <i>hibbertioides</i>	8	0.3
<i>Hypochaeris radicata</i> *	0.1	0.1
<i>Laxmannia grandiflora</i>	0.2	0.1
<i>Lotus subbiflorus</i> *	0.1	0.4
<i>Lysimachia arvensis</i> *	0.1	0.1
<i>Morelotia octandra</i>	1	0.3
<i>Neurachne alopecuroidea</i>	0.5	0.2
<i>Romulea rosea</i> *	5	0.2
<i>Stachys arvensis</i> *	0.2	0.2
<i>Trifolium campestre</i> *	0.2	0.1
<i>Ursinia anthemoides</i> *	0.1	0.2
<i>Xanthorrhoea acanthostachya</i>	55	2

Quadrat No.: Q9  
 Survey Date: 17/09/2021  
 Personnel: KS KG  
 Eastings: 414868.492  
 Northings: 6527631.085  
 Topography: Mid slope  
 Aspect: South  
 Slope: 15%  
 Soil: Brown clay-loam  
 Gravel: 0%  
 Rock: 1%  
 Leaf Litter: 2%  
 Bare Ground: 1%  
 Drainage: well  
 Condition: Excellent



Notes: *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Woodland  
Cockatoo feeding evidence

Species	Cover (%)	Height (m)
<i>Allocasuarina humilis</i>	3	2
<i>Banksia bipinnatifida</i> subsp. <i>multifida</i>	1	0.3
<i>Banksia dallanneyi</i>	30	0.2
<i>Billardiera heterophylla</i>	1	0.3
<i>Briza maxima</i> *	0.1	0.1
<i>Calothamnus sanguineus</i>	0.2	0.5
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	0.1	0.2
<i>Cheilanthes austrotenuifolia</i>	1	0.1
<i>Conostylis setigera</i>	0.1	0.3
<i>Conostylis setosa</i>	0.5	0.3
<i>Corymbia calophylla</i>	3	10
<i>Dampiera alata</i>	15	0.3
<i>Desmodium flexuosus</i>	5	0.2
<i>Dichopogon capillipes</i>	5	0.1
<i>Diuris brumalis</i>	0.1	0.3
<i>Drosera erythrorhiza</i>	0.5	0.1
<i>Drosera pallida</i>	0.1	0.3
<i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>	10	15
<i>Gastrolobium calycinum</i>	10	1.5
<i>Gladiolus caryophyllaceus</i> *	0.5	0.5
<i>Grevillea pilulifera</i>	0.1	0.3
<i>Haemodorum laxum</i>	0.1	0.8
<i>Hakea lissocarpha</i>	0.5	1

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<b>Species</b>	<b>Cover (%)</b>	<b>Height (m)</b>
<i>Hakea undulata</i>	1	1
<i>Hibbertia commutata</i>	0.1	0.3
<i>Hibbertia hibbertioides</i> var. <i>hibbertioides</i>	1	0.3
<i>Hibbertia hypericoides</i>	10	0.5
<i>Hypocalymma angustifolium</i>	1	0.7
<i>Laxmannia grandiflora</i>	0.1	0.2
<i>Lepidosperma scabrum</i>	0.2	0.6
<i>Melaleuca radula</i>	0.5	1
<i>Morelotia octandra</i>	0.3	0.2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Phyllanthus calycinus</i>	0.5	0.5
<i>Ptilotus manglesii</i>	0.1	0.5
<i>Rhodanthe manglesii</i>	0.1	0.2
<i>Sowerbaea laxiflora</i>	0.5	0.3
<i>Stylidium affine</i>	0.2	0.2
<i>Synaphea acutiloba</i>	0.1	0.2
<i>Thelymitra crinita</i>	0.1	0.1
<i>Thysanotus manglesianus</i>	0.1	0.2
<i>Trachymene pilosa</i>	0.1	0.1
<i>Tribonanthes longipetala</i>	0.1	0.2
<i>Trymalium ledifolium</i>	0.2	0.4
<i>Xanthorrhoea acanthostachya</i>	5	2



Shire of Chittering  
Detailed flora and basic fauna survey, Bindoon

Quadrat No.: Q10  
 Survey Date: 17/09/2021  
 Personnel: KS KG  
 Eastings: 414741.616  
 Northings: 6527898.783  
 Topography: Mid slope  
 Aspect: West  
 Slope: 10%  
 Soil: Brown loam  
 Gravel: 0%  
 Rock: 0%  
 Leaf Litter: 2%  
 Bare Ground: 0%  
 Drainage: Well  
 Condition: Excellent



Notes: *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Woodland

Species	Cover (%)	Height (m)
<i>Acacia pulchella</i> var. <i>goadbyi</i>	0.5	0.7
<i>Arctotheca calendula</i> *	1	0.3
<i>Briza maxima</i> *	20	0.2
<i>Briza minor</i> *	0.4	0.2
<i>Caesia micrantha</i>	0.2	0.3
<i>Centranthus macrosiphon</i> *	1	0.2
<i>Cheilanthes austrotenuifolia</i>	30	0.2
<i>Desmocladius flexuosus</i>	20	0.2
<i>Dichopogon capillipes</i>	0.2	0.2
<i>Drosera menziesii</i>	0.1	0.2
<i>Ehrharta longiflora</i> *	0.5	0.2
<i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>	20	7
<i>Gastrolobium calycinum</i>	60	1.5
<i>Haemodorum laxum</i>	0.7	0.3
<i>Hypocalymma angustifolium</i>	10	0.5
<i>Hypochaeris radicata</i> *	5	0.1
<i>Lepidosperma apricola</i>	0.2	0.5
<i>Lysimachia arvensis</i> *	0.5	0.2
<i>Neurachne alopecuroidea</i>	1	0.2
<i>Phyllanthus calycinus</i>	0.5	0.7
<i>Ptilotus manglesii</i>	0.1	0.3
<i>Romulea rosea</i> *	3	0.2
<i>Stachys arvensis</i> *	0.5	0.3
<i>Trachymene pilosa</i>	0.2	0.1

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<b>Species</b>	<b>Cover (%)</b>	<b>Height (m)</b>
<i>Trifolium campestre</i> *	0.5	0.1
<i>Ursinia anthemoides</i>	2	0.4
<i>Xanthorrhoea acanthostachya</i>	2	1
<i>Xanthosia huegelii</i>	0.1	0.1

Shire of Chittering  
Detailed flora and basic fauna survey, Bindoon

Quadrat No.: Q11  
 Survey Date: 17/09/2021  
 Personnel: KS KG  
 Eastings: 414784.093  
 Northings: 6527103.425  
 Topography: Upper slope  
 Aspect: North west  
 Slope: 5%  
 Soil: Brown loam  
 Gravel: 0%  
 Rock: 2%  
 Leaf Litter: 5%  
 Bare Ground: 1%  
 Drainage: Well  
 Condition: Excellent



Notes: *Corymbia calophylla* and *Eucalyptus wandoo* subsp. *wandoo* Woodland

Species	Cover (%)	Height (m)
<i>Allocasuarina humilis</i>	0.5	1
<i>Banksia fraseri</i>	1	0.4
<i>Billardiera heterophylla</i>	1	0.5
<i>Briza maxima</i> *	0.1	0.2
<i>Caladenia flava</i>	0.1	0.2
<i>Cheilanthes austrotenuifolia</i>	0.2	0.2
<i>Daviesia horrida</i>	1	1
<i>Desmocladius flexuosus</i>	25	0.3
<i>Dichopogon capillipes</i>	3	0.2
<i>Dioscorea hastifolia</i>	0.3	0.2
<i>Drosera erythrorhiza</i>	0.5	0.1
<i>Drosera pallida</i>	1	0.2
<i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>	15	20
<i>Gastrolobium calycinum</i>	40	1.5
<i>Goodenia berardiana</i>	0.1	0.2
<i>Hakea incrassata</i>	2	1
<i>Hypochaeris radicata</i> *	0.1	0.1
<i>Laxmannia grandiflora</i>	0.1	0.3
<i>Lysimachia arvensis</i> *	0.2	0.3
<i>Neurachne alopecuroidea</i>	0.2	0.3
<i>Opercularia vaginata</i>	1	0.3
<i>Orthrosanthus laxus</i>	0.1	0.3
<i>Parentucellia latifolia</i> *	0.1	0.2
<i>Phyllanthus calycinus</i>	0.5	0.5

Shire of Chittering

Detailed flora and basic fauna survey, Bindoon

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<b>Species</b>	<b>Cover (%)</b>	<b>Height (m)</b>
<i>Ptilotus manglesii</i>	0.2	0.3
<i>Rhodanthe manglesii</i>	10	0.3
<i>Romulea rosea*</i>	0.5	0.2
<i>Stylidium affine</i>	0.5	0.3
<i>Trachymene pilosa</i>	0.2	0.2
<i>Trymalium ledifolium</i>	1	0.3
<i>Xanthorrhoea acanthostachya</i>	25	2

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## Appendix 6: Species List

The complete flora list for the site is provided in the table below. \*Denotes introduced species and # denotes species that are native to Western Australia but not to this local region.

Family	Species	Common Name
Fabaceae	<i>Acacia drummondii</i>	Drummond's Wattle
Fabaceae	<i>Acacia lasiocarpa</i> var. <i>bracteolata</i>	
Fabaceae	<i>Acacia pulchella</i>	Prickly Moses
Fabaceae	<i>Acacia pulchella</i> var. <i>goadbyi</i>	
Proteaceae	<i>Adenanthos cygnorum</i>	Common Woollybush
Poaceae	<i>Aira cupaniana</i> *	Silvery Hairgrass
Casuarinaceae	<i>Allocasuarina huegeliana</i>	Rock Sheoak
Casuarinaceae	<i>Allocasuarina humilis</i>	Dwarf Sheoak
Haemodoraceae	<i>Anigozanthos bicolor</i>	Little Kangaroo Paw
Asteraceae	<i>Arctotheca calendula</i> *	Cape Weed
Asparagaceae	<i>Asparagus asparagoides</i> *	
Poaceae	<i>Austrostipa flavescens</i>	
Poaceae	<i>Avena barbata</i> *	Bearded Oat
Myrtaceae	<i>Babingtonia camphorosmae</i>	Camphor Myrtle
Proteaceae	<i>Banksia bipinnatifida</i> subsp. <i>multifida</i>	
Proteaceae	<i>Banksia dallanneyi</i>	Couch Honeypot
Proteaceae	<i>Banksia fraseri</i>	
Pittosporaceae	<i>Billardiera heterophylla</i>	Australian Bluebell
Boryaceae	<i>Borya sphaerocephala</i>	
Poaceae	<i>Briza maxima</i> *	Blowfly Grass
Poaceae	<i>Briza minor</i> *	Shivery Grass
Colchicaceae	<i>Burchardia congesta</i>	
Colchicaceae	<i>Burchardia multiflora</i>	Dwarf Burchardia
Hemerocallidaceae	<i>Caesia micrantha</i>	Pale Grass-lily
Orchidaceae	<i>Caladenia flava</i>	Cowslip Orchid
Myrtaceae	<i>Calothamnus sanguineus</i>	Silky-leaved Blood flower
Caprifoliaceae	<i>Centranthus macrosiphon</i> *	
Hemerocallidaceae	<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	
Pteridaceae	<i>Cheilanthes austrotenuifolia</i>	

Family	Species	Common Name
Haemodoraceae	<i>Conostylis aculeata</i>	Prickly Conostylis
Haemodoraceae	<i>Conostylis setigera</i>	Bristly Cottonhead
Haemodoraceae	<i>Conostylis setosa</i>	White Cottonhead
Myrtaceae	<i>Corymbia calophylla</i>	Marri
Crassulaceae	<i>Crassula exserta</i>	
Orchidaceae	<i>Cyanicula sericea</i>	
Poaceae	<i>Cynodon dactylon</i> *	Couch
Goodeniaceae	<i>Dampiera linearis</i>	Common Dampiera
Goodeniaceae	<i>Dampiera alata</i>	Winged-stem Dampiera
Goodeniaceae	<i>Dampiera lavandulacea</i>	
Myrtaceae	<i>Darwinia thymoides</i>	
Apiaceae	<i>Daucus glochidiatus</i>	Australian Carrot
Fabaceae	<i>Daviesia hakeoides</i> subsp. <i>subnuda</i>	
Fabaceae	<i>Daviesia horrida</i>	Prickly Bitter-pea
Restionaceae	<i>Desmocladus asper</i>	
Restionaceae	<i>Desmocladus flexuosus</i>	
Asparagaceae	<i>Dichopogon capillipes</i>	
Dioscoreaceae	<i>Dioscorea hastifolia</i>	Warrine
Orchidaceae	<i>Diuris brumalis</i>	
Orchidaceae	<i>Diuris porrifolia</i>	
Droseraceae	<i>Drosera bulbosa</i>	Red-leaved Sundew
Droseraceae	<i>Drosera erythrorhiza</i>	Red Ink Sundew
Droseraceae	<i>Drosera glanduligera</i>	Pimpernel Sundew
Droseraceae	<i>Drosera menziesii</i>	Pink Rainbow
Droseraceae	<i>Drosera pallida</i>	
Droseraceae	<i>Drosera spilos</i>	
Poaceae	<i>Ehrharta longiflora</i> *	Annual Veldt Grass
Orchidaceae	<i>Elythranthera brunonis</i>	Purple Enamel Orchid
Orchidaceae	<i>Elythranthera emarginata</i>	Pink Enamel Orchid
Geraniaceae	<i>Erodium botrys</i> *	Long Storksbill
Myrtaceae	<i>Eucalyptus accedens</i>	Powderbark Wandoo
Myrtaceae	<i>Eucalyptus cladocalyx</i> #	(planted farm tree)

Family	Species	Common Name
Myrtaceae	<i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>	
Fabaceae	<i>Gastrolobium acutum</i>	
Fabaceae	<i>Gastrolobium bilobum</i>	Heart leaf Poison
Fabaceae	<i>Gastrolobium calycinum</i>	York Road Poison
Fabaceae	<i>Gastrolobium dilatatum</i>	
Iridaceae	<i>Gladiolus caryophyllaceus</i> *	Wild Gladiolus
Apocynaceae	<i>Gomphocarpus fruticosus</i> *	Narrowleaf Cottonbush
Fabaceae	<i>Gompholobium marginatum</i>	
Goodeniaceae	<i>Goodenia berardiana</i>	
Proteaceae	<i>Grevillea bipinnatifida</i>	Fuchsia Grevillea
Proteaceae	<i>Grevillea pilulifera</i>	Woolly-flowered Grevillea
Proteaceae	<i>Grevillea vestita</i>	
Malvaceae	<i>Guichenotia micrantha</i>	Small Flowered Guichenotia
Haemodoraceae	<i>Haemodorum laxum</i>	
Proteaceae	<i>Hakea candolleana</i>	
Proteaceae	<i>Hakea incrassata</i>	Marble Hakea
Proteaceae	<i>Hakea lissocarpha</i>	Honey Bush
Proteaceae	<i>Hakea trifurcata</i>	Two-leaf Hakea
Proteaceae	<i>Hakea undulata</i>	Wavy-leaved Hakea
Dilleniaceae	<i>Hibbertia commutata</i>	
Dilleniaceae	<i>Hibbertia hibernioides</i> var. <i>hibbertioides</i>	
Dilleniaceae	<i>Hibbertia hypericoides</i>	Yellow Buttercups
Dilleniaceae	<i>Hibbertia lasiopus</i>	Large Hibbertia
Poaceae	<i>Hordeum leporinum</i> *	Barley Grass
Fabaceae	<i>Hovea pungens</i>	Devil's Pins
Asteraceae	<i>Hyalosperma cotula</i>	
Araliaceae	<i>Hydrocotyle callicarpa</i>	Small Pennywort
Myrtaceae	<i>Hypocalymma angustifolium</i>	White Myrtle
Asteraceae	<i>Hypochaeris radicata</i> *	Flat Weed
Proteaceae	<i>Isopogon divergens</i>	Spreading Coneflower
Asteraceae	<i>Lagenophora huegelii</i>	
Asparagaceae	<i>Laxmannia grandiflora</i>	

Family	Species	Common Name
Goodeniaceae	<i>Lechenaultia biloba</i>	Blue Leschenaultia
Restionaceae	<i>Lepidobolus preissianus</i>	
Cyperaceae	<i>Lepidosperma apricola</i>	
Cyperaceae	<i>Lepidosperma scabrum</i>	
Cyperaceae	<i>Lepidosperma tenue</i>	
Myrtaceae	<i>Leptospermum erubescens</i>	Roadside Teatree
Poaceae	<i>Lolium rigidum*</i>	Wimmera Ryegrass
Asparagaceae	<i>Lomandra caespitosa</i>	Tufted Mat Rush
Asparagaceae	<i>Lomandra hermaphrodita</i>	
Asparagaceae	<i>Lomandra sericea</i>	Silky Mat Rush
Fabaceae	<i>Lotus subbiflorus*</i>	
Juncaceae	<i>Luzula meridionalis</i>	Field Woodrush
Primulaceae	<i>Lysimachia arvensis*</i>	Pimpernel
Zamiaceae	<i>Macrozamia fraseri</i>	
Myrtaceae	<i>Melaleuca aspalathoides</i>	
Myrtaceae	<i>Melaleuca parviceps</i>	
Myrtaceae	<i>Melaleuca radula</i>	Graceful Honeymyrtle
Cyperaceae	<i>Morelotia octandra</i>	
Poaceae	<i>Neurachne alopecuroidea</i>	Foxtail Mulga Grass
Loranthaceae	<i>Nuytsia floribunda</i>	Christmas Tree
Asteraceae	<i>Olearia elaeophila</i>	
Rubiaceae	<i>Opercularia vaginata</i>	Dog Weed
Iridaceae	<i>Orthrosanthus laxus</i>	Morning Iris
Asteraceae	<i>Panaetia lessonii</i>	
Orobanchaceae	<i>Parentucellia latifolia*</i>	Common Bartsia
Iridaceae	<i>Patersonia juncea</i>	Rush Leaved Patersonia
Proteaceae	<i>Petrophile biloba</i>	Granite Petrophile
Proteaceae	<i>Petrophile striata</i>	
Caryophyllaceae	<i>Petrorhagia dubia*</i>	
Rutaceae	<i>Philotheca spicata</i>	Pepper and Salt
Phyllanthaceae	<i>Phyllanthus calycinus</i>	False Boronia
Thymelaeaceae	<i>Pimelea imbricata</i>	



Family	Species	Common Name
Orchidaceae	<i>Pterostylis platypetala</i>	
Orchidaceae	<i>Pterostylis vittata</i>	Banded Greenhood
Amaranthaceae	<i>Ptilotus manglesii</i>	Pom Poms
Amaranthaceae	<i>Ptilotus polystachyus</i>	Prince of Wales Feather
Asteraceae	<i>Rhodanthe manglesii</i>	
Iridaceae	<i>Romulea rosea*</i>	Guildford Grass
Goodeniaceae	<i>Scaevola platyphylla</i>	Broad-leaved Fanflower
Solanaceae	<i>Solanum nigrum*</i>	Black Berry Nightshade
Asteraceae	<i>Sonchus asper*</i>	
Asteraceae	<i>Sonchus oleraceus*</i>	Common Sowthistle
Asparagaceae	<i>Sowerbaea laxiflora</i>	Purple Tassels
Lamiaceae	<i>Stachys arvensis*</i>	Staggerweed
Stylidiaceae	<i>Stylidium affine</i>	Queen Triggerplant
Stylidiaceae	<i>Stylidium petiolare</i>	Horn Triggerplant
Stylidiaceae	<i>Stylidium xanthellum</i>	
Hemerocallidaceae	<i>Stypandra glauca</i>	Blind Grass
Ericaceae	<i>Styphelia tenuiflora</i>	Common Pinheath
Proteaceae	<i>Synaphea acutiloba</i>	Granite Synaphea
Orchidaceae	<i>Thelymitra antennifera</i>	Vanilla Orchid
Orchidaceae	<i>Thelymitra crinita</i>	Blue Lady Orchid
Asparagaceae	<i>Thysanotus arenarius</i>	
Asparagaceae	<i>Thysanotus manglesianus</i>	Fringed Lily
Araliaceae	<i>Trachymene pilosa</i>	Native Parsnip
Araliaceae	<i>Trachymene pilosa</i>	Native Parsnip
Haemodoraceae	<i>Tribonanthes longipetala</i>	Branching Tiurndin
Asteraceae	<i>Trichocline spathulata</i>	Native Gerbera
Hemerocallidaceae	<i>Tricoryne elatior</i>	Yellow Autumn Lily
Fabaceae	<i>Trifolium campestre*</i>	Hop Clover
Fabaceae	<i>Trifolium dubium*</i>	Suckling Clover
Fabaceae	<i>Trifolium subterraneum</i>	Subterranean Clover
Celastraceae	<i>Tripterococcus brunonis</i>	Winged Stackhousia
Rhamnaceae	<i>Trymalium ledifolium</i>	

<b>Family</b>	<b>Species</b>	<b>Common Name</b>
Asteraceae	<i>Ursinia anthemoides*</i>	Ursinia
Myrtaceae	<i>Verticordia acerosa</i>	
Xanthorrhoeaceae	<i>Xanthorrhoea acanthostachya</i>	
Xanthorrhoeaceae	<i>Xanthorrhoea gracilis</i>	Graceful Grass Tree
Apiaceae	<i>Xanthosia huegelii</i>	

## **Appendix 7:     Phytophthora Occurrence Map**

# Phytophthora Dieback Occurrence Map

414000

415000

416000




**Natural Area  
Consulting &  
Management  
Services**

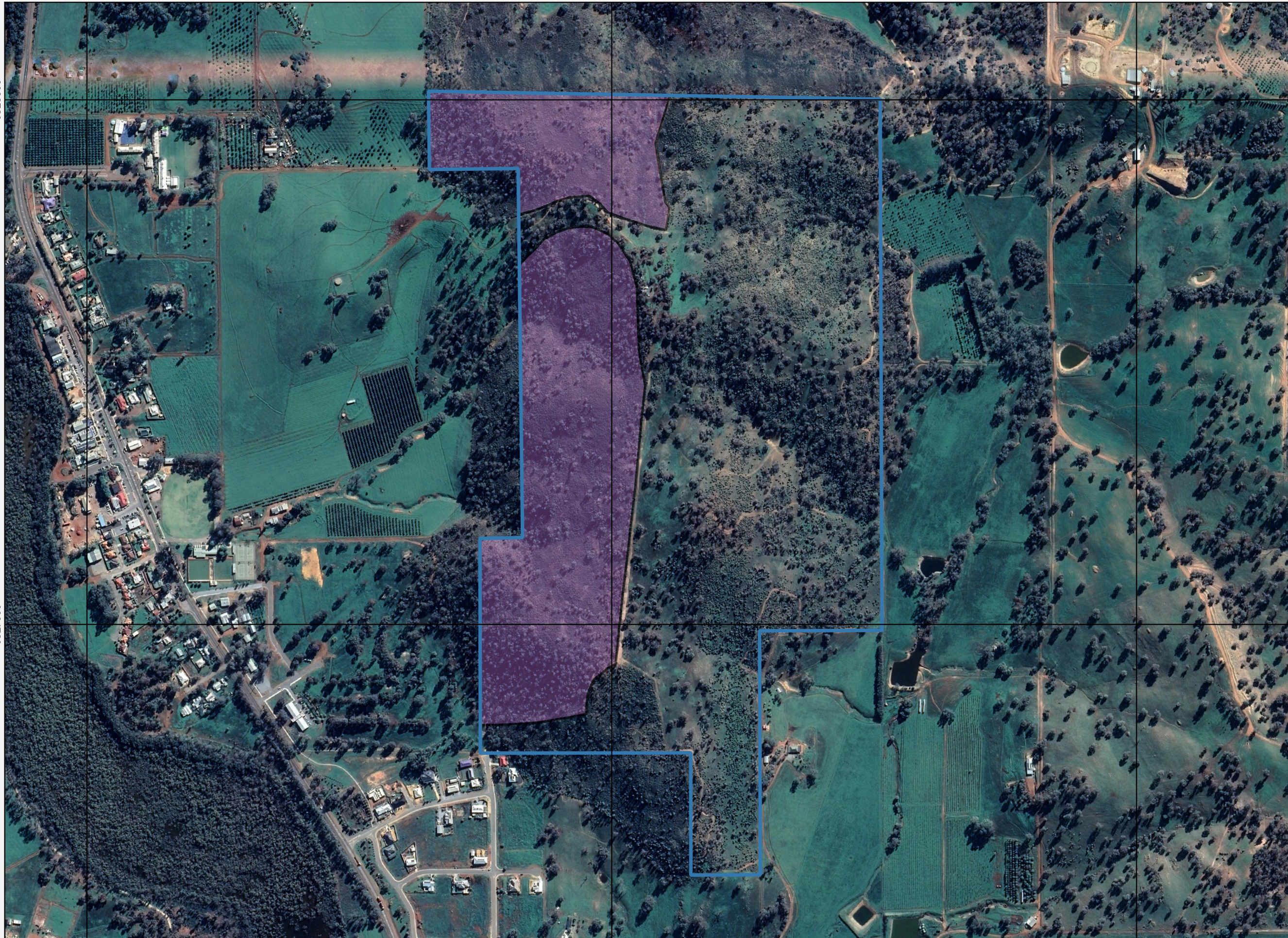
**GC-21-1351  
Bindoon Bike  
trails**

Scale (@A3) = 1:7000

## LEGEND

PHYTOPHTHORA DIEBACK OCCURRENCE CATEGORIES

-  Project Boundary
-  Uninterpretable  
Undisturbed areas where susceptible plants are absent,  
or too few to make a determination of the presence or absence of  
*P. cinnamomi*
-  Excluded  
Areas of high disturbance where natural vegetation  
has been cleared and is unlikely to recover to a level that is  
interpretable



Assessment Completion	29/10/2021
Interpreter(s)	PC, EB
Map expiry date	10/2022

Phytophthora Dieback Occurrence Category	Area Statement (Hectares)	
	Protectable Vegetation	Unprotectable Vegetation
Infested	0	0
Uninfested	0	0
Uninterpretable	30.48	0
Temporarily Uninterpretable	0	0
Not Yet Resolved	0	0
Assessed Area Total	30.48	
Excluded Area	59.02	0
Project Area Total	89.5	

Map produced by Peter Chapman  
Projection UTM Zone 50, Datum GDA94

6528000

6527000