



Basalt Quarry, Shire of Capel

Native Vegetation Clearing Permit: Supporting Documentation

Prepared for

Mobile Concreting Solutions Pty Ltd

April 2020

● people ● planet ● professional

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1 Introduction

1.1 Background

360 Environmental Pty Ltd (360 Environmental) was commissioned by Mobile Concreting Solutions Pty Ltd (MCS) (the Proponent) to prepare a Native Vegetation Clearing Permit (NVCP) application to facilitate the construction of a basalt extraction quarry. The proposed quarry is located at 864 Cain Road, Elgin (the site), which is in the southwest of Western Australia within the Shire of Capel (Figure 1). MCS propose to clear 0.61 ha of remnant vegetation to enable the construction of the quarry within Lot 6 (Figure 2).

Under the Greater Bunbury Region Scheme (GBRS) the site is zoned Rural (Department of Planning, 2019). Extractive Industry activities in Rural zoning requires planning consent from the Shire, the application for which is currently being considered. The site is located within 200 m of a residential dwelling which is considered a sensitive land use. The residents have been consulted extensively and are supportive of the proposal.

A current mining tenement M70/105 exists over the site and is held by Iluka Resources. The land access agreement between the landowner and Iluka has been fulfilled and no encumbrance occurs on land title coinciding with the basalt extraction site. MCS is proposing a throughput of 100,000 tonnes per annum and both crushing and screening will occur on site. All approvals and licences will be obtained, and any conditions will be complied with.

As such, a Native Vegetation Clearing Permit is required to clear the 0.61 ha of native vegetation within the 12.94 ha footprint of the proposed quarry, to enable the development of the quarry.

1.2 Purpose of Clearing Permit Application

The purpose of this Native Vegetation Clearing Permit (NVCP) supporting document is to present the results of an assessment of the clearing aspects of this proposal against the ten clearing principles as outlined in the (then) Department of Environment Regulation (DER)'s A guide to the assessment of applications to clear native vegetation (2014a) under Part V Division 2 of the *Environmental Protection Act 1986* (EP Act). This report identifies the potential environmental impacts associated with the proposal based on the best available data. This document and accompanying NVCP Area Permit application will be submitted to the Department of Water and Environmental Regulation (DWER) for assessment.

1.3 Responsible Applicant

Mobile Concreting Solutions Pty Ltd is the responsible applicant for this Native Vegetation Clearing Permit proposal. Correspondence relating to this NVCP application should be addressed to:

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2 Site Overview

2.1 Climate

The closest long-term Bureau of Meteorology (BoM) weather station with a complete dataset is Busselton Aero (9603), located approximately 19.8 km southwest of the site. Temperature data for the periods 1997 to 2019 is summarised in Plate 1 (Bureau of Meteorology, 2019). The long-term mean minimum temperature for Busselton ranges from 6.9°C in July to 14.6°C in February; the long-term mean maximum temperature ranges from 16.8°C in June to 30.1°C in January. The long-term annual average rainfall is 684.8 mm.

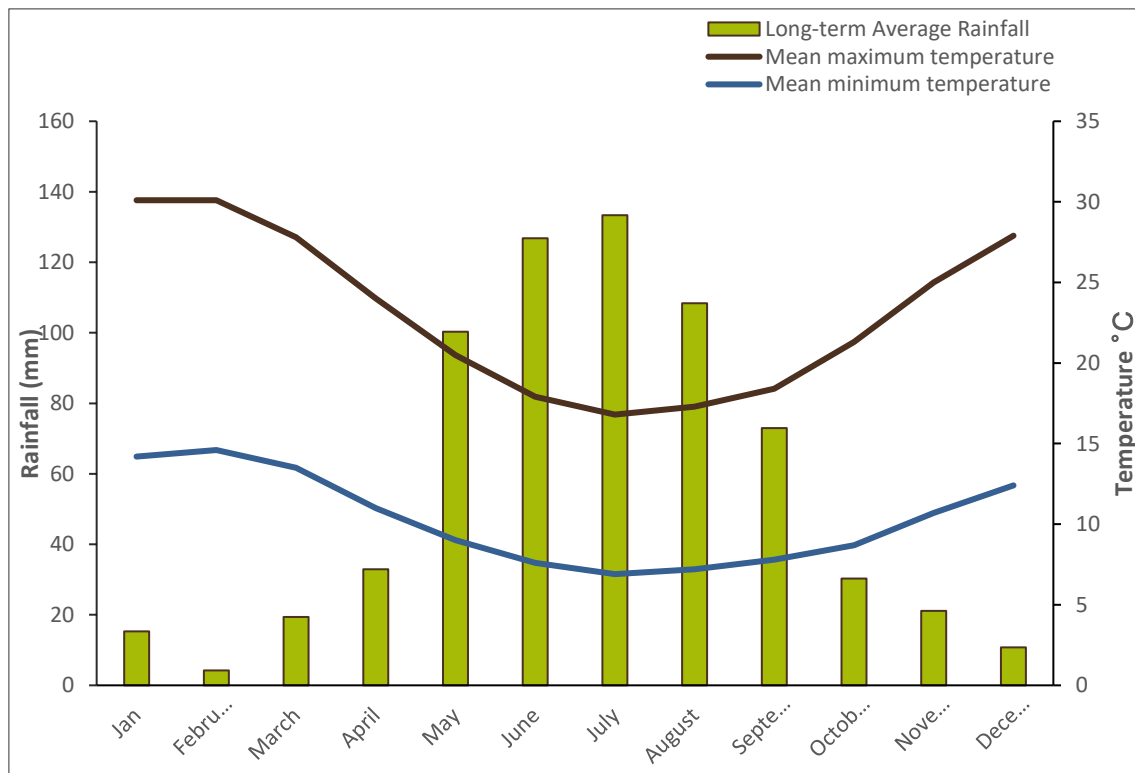


Plate 1: Long Term Average Rainfall, Maximum and Minimum Temperatures for Busselton (9603)

2.2 Topography and Soils

Regional topography contours indicate the range within the clearing permit area is between approximately 34 to 48 m Australian Height Datum (AHD). The northern most portion of the sits between 34 to 41 m AHD and the highest point is located close to the centre of the area under application, at approximately 48 m AHD.

Regional Environmental Geology Mapping indicates that the lithology of the area is cretaceous mafic volcanics, mainly consisting of basaltic rocks and potentially includes minor ultramafic volcanics. Additionally, the lithostratigraphic unit, Bassendean Sands, is also present. The Bassendean sands are basal conglomerate overlain by dune quartz with heavy mineral concentrations (Department of Mines, 2019).

Soil-landscape system mapping of Western Australia describes broad soil and landscape characteristics from regional to local scales. The clearing permit area is within the Pinjarra System. The system is described as the Swan Coastal Plain from Perth to Capel. It is characterised as poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes jarrah, marri, wandoo, paperbark sheoaks and rudis (Department of Primary Industries and Regional Development, 2018).

2.3 Hydrology

A review of GIS datasets indicates that there are no streams located within the property boundary (Department of Water and Environmental Regulation, 2016), which was confirmed by the Biological Survey (360 Environmental, 2019). The area under application is not mapped within a Public Drinking Water Source Area (PDWSA) (Department of Water and Environmental Regulation, 2019). The site is located within the Capel River Surface Water Area (DWER, 2018). The site is located within the Busselton- Capel Groundwater Area and is serviced by three aquifers: Superficial Swan, Leederville and the Yarragadee South aquifer.

The western part of the proposed clearing area contains a Multiple Use Wetland (MUW), as mapped by DBCA (Department of Biodiversity Conservation and Attractions, 2019). A Resource Enhancement Wetland (REW) 966 is located approximately 120 m south east of the site, and will be avoided by the proposed works, and protected by a buffer of 50m to the edge of the vegetated area. If dewatering is required, all appropriate dewatering licences will be applied for and conditions adhered to. Vegetation condition monitoring will be undertaken, and mitigation measures put in place to ensure impacts to the wetland are minimised.

2.4 Flora and Vegetation

2.4.1 Broad Vegetation Associations and Complexes

The Interim Biogeographic Regionalisation of Australia (IBRA) divides Australia into 89 bioregions based on major biological and geographical/geological attributes. These bioregions are subdivided into 419 subregions, as part of a refinement of the IBRA framework. The area under application is in the Swan Coastal Plain bioregion, and more specifically within the Perth subregion (SWA02).

Mapping of the vegetation of WA was completed at a broad scale (1:250,000) by Beard (1981). These vegetation units were re-assessed by Shepherd et al. (2001) to account for clearing in the intensive land use zone, dividing some larger vegetation units into smaller units.

One broad vegetation type, Pinjarra 1136, is mapped over the site including the area under application for the Native Vegetation Clearing Permit. The vegetation is described as jarrah, marri and wandoo *Eucalyptus marginata*, *Corymbia calophylla*, *E. wandoo* and its representation across the state, bioregion and local government authority is shown in Table 1.

Table 1: Remnant Vegetation at the scale of State, Bioregion, Subregion and Local Government Authority

Vegetation Type	Pre-European Extent (HA)	Current Extent (ha)	Remaining (%)	Current Extent Managed in DBCA Lands (%)
Vegetation Type in Western Australia				
Pinjarra 1136	48,124.57	3,345.51	6.95	3.85
Vegetation Type in the Swan Coastal Plain IBRA bioregion				
Pinjarra 1136	48,118.01	3,341.18	6.94	3.86
Vegetation in the IBRA subregion				
Pinjarra 1136	48,118.01	3,341.18	6.94	3.86
Vegetation in the Shire of Capel				
Pinjarra 1136	9,178.08	704.73	7.68	6.6

Vegetation complexes of the Swan Coastal Plain have been mapped by Heddle et al. (1980). The site contains one vegetation complex which relates to the underlying soil profile which is the Abba Complex - open forest and woodland.

2.4.2 Desktop Assessment

An initial desktop assessment was undertaken which included a review of current and relevant tenure and land ownership details, literature sources, database and GIS information to determine:

- Possible environmental survey and approvals requirements
- The location of areas with minimal environmental sensitivities/constraints and any highly constrained areas.

Background information on the flora and vegetation of the site can be found in Appendix A. Recent database searches (2019) of the Department of Agriculture, Water and the Environment Protected Matters Search Tool (PMST) and the Department of Biodiversity Conservation and Attractions (DBCA)'s NatureMap Search Tool were undertaken to compile a list of Threatened or Priority species and Threatened and Priority Ecological Communities (TECs and PECs) that may occur in the area.

The desktop assessment identified 13 Threatened and Priority Ecological Communities as potentially occurring within the 20 km buffer. DBCA mapping of listed TECs and PECs identified two as potentially occurring within the survey area:

- Banksia dominated Woodlands of the Swan Coastal Plain IBRA region (Priority 3 as listed by DBCA, Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* [EPBC Act])

- Whicher Scarp Jarrah woodland of deep coloured sands (Priority 3 [DBCA], Endangered [EPBC Act]).

The NatureMap species report identified the presence of 26 Threatened species, 22 Priority 4 species, 36 Priority 3 species, 17 Priority 2 species and 12 Priority 1 species as potentially occurring within the project footprint. The PMST search also identified 15 Endangered species, 3 Critically Endangered species and 7 Vulnerable species as potentially occurring within the project footprint.

2.4.3 Likelihood Assessment

A likelihood of occurrence assessment was undertaken (see Appendix A) based on the desktop assessment. This determined 10 species as having a high likelihood of occurrence, 19 species as having a medium likelihood of occurrence, 67 as having a low likelihood of occurrence and 15 species having an undeterminable likelihood of occurrence due to the lack of publicly available information about these priority species.

Conservation significant flora species identified as having a high likelihood of occurrence include:

- *Daviesia elongata* (T, VU)
- *Boronia capitata* subsp. *gracilis* (P3)
- *Caustis* sp. *Boyanup* (P3)
- *Cyathochaeta teretifolia* (P3)
- *Schoenus pennisetis* (P3)
- *Stylidium paludicola* (P3)
- *Acacia flagelliformis* (P4)
- *Acacia semitrullata* (P4)
- *Caladenia speciosa* (P4)
- *Franklandia triaristata* (P4).

The full likelihood assessment can be found in the Biological Survey Report (360 Environmental, 2019) (Appendix A).

2.4.4 Field Survey

A field survey was undertaken on 10 October 2019 by experienced botanist Shenaye Hummerston (Flora Licence FB62000125). The field survey included Lot 6 and the adjacent lot, Lot 10, which is outside of the project footprint boundary.

The Biological Survey recorded the floristic composition and vegetation types across the wider survey area. The survey recorded a total of 32 taxa from 21 genera across 8 families (360 Environmental, 2019).

2.4.5 Flora of Conservation Significance

No protected or priority flora species pursuant to the EPBC Act and/or gazetted Declared Rare Flora pursuant to the *Biodiversity Conservation Act 2016* (BC Act) or listed as Priority Flora by DBCA were recorded during the survey (360 Environmental, 2019).

2.4.6 Vegetation Associations

The Biological Survey (360 Environmental, 2019) identified one natural vegetation association within the project footprint (Figure 3) as shown in Table 2.

Table 2: Vegetation Associations Recorded within the Project Footprint

Vegetation Association Code	Description	Area (ha)
Cc	<i>Corymbia calophylla</i> over grasses/weeds	0.61

2.4.7 Vegetation Condition

Vegetation condition across the entire Project area (Lot 6 and Lot 10) was considered to be in Completely Degraded condition (Figure 4) (360 Environmental, 2019). The main disturbance to the site has been the historic clearing for agricultural purposes, as well as extensive mining of mineral sands to the north of the site by Iluka Resources.

2.5 Fauna

2.5.1 Desktop Assessment

The PMST database search (2019) identified a variety of significant fauna species, including birds, fish, mammals, migratory, marine and other species:

- Birds: 4 Endangered species, 2 Critically Endangered, 2 Vulnerable
- Fish: 1 Critically Endangered, 3 Vulnerable
- Migratory Birds: 1 Endangered species, 2 Critically Endangered species
- Marine Birds: 1 Endangered species, 2 Critically Endangered species
- Other: 1 Vulnerable species.

The NatureMap species report identified 14 threatened species as potentially occurring within the area. The search also identified the presence of seven Priority 4 species, four Priority 3 species, and one Priority 1 species as potentially occurring.

2.5.2 Field Survey

28 terrestrial vertebrate fauna species from 21 families were recorded during the field survey, comprising:

- 23 bird species from 16 families
- Five mammal species from five families.

Four fauna species of conservation significance were recorded within or directly surrounding the survey area. The species are:

- Forest Red Tailed Black Cockatoo - *Calyptorhynchus banksii naso* (VU)
- Baudin's Black Cockatoo - *Calyptorhynchus baudinii* (EN)
- Carnaby's Black Cockatoo - *Calyptorhynchus latirostris* (EN)
- Quenda - *Isodon fusciventer* (P4).

Targeted searches for the Western Ringtail Possum (*Pseudocheirus occidentalis*) were undertaken by traversing the survey area. No evidence of the Western Ringtail Possum (e.g. drey or scats) was recorded, and no suitable habitat was recorded.

2.6 Black Cockatoo Habitat Assessment

2.6.1 Desktop Assessment

Black Cockatoo habitat has been assessed as outlined by the EPBC Act Referral guidelines for three threatened Black Cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and Forest Red-tailed Black Cockatoo (EPBC referral guidelines) (DSEWPac, 2012). The survey area occurs within the modelled distribution for all three Black Cockatoo species.

2.6.2 Foraging Habitat

The Black Cockatoo foraging resources within the Survey Area was primarily comprised of Marri (*Corymbia calophylla*) which is considered high quality foraging habitat for all three Black Cockatoos. Some Jarrah (*Eucalyptus marginata*) which is commonly utilised for seeds by Forest Red-tailed Black Cockatoos were recorded as well as a few large Banksia trees commonly utilised for seeds by Carnaby's Black Cockatoos. Evidence (chewed nuts) of Black Cockatoo foraging on Marri nuts was observed on two occasions during the survey. Baudin's Black Cockatoo calls were recorded twice during the survey and calls of Forest Red-tailed Black Cockatoos were also recorded once. Foraging habitat for Black Cockatoos is shown in Figure 5 There is approximately 0.61 ha of suitable foraging habitat present within the Project Area.

2.6.3 Breeding Habitat

The Black Cockatoo habitat assessment identified 152 potential Black Cockatoo habitat trees within the entire Survey Area (207.55 ha, encompassing all of Lots 6 and 10). Potential Black Cockatoo habitat trees are those trees with a Diameter at Breast Height (DBH) of greater than 500 mm (DBH is 300 mm for Wandoo, none of which were present). The trees comprised of Marri (147 trees), Jarrah (2 trees), Tuart (1 tree) and Flooded Gum (2 trees). Of the 152 potential breeding trees identified within the Survey Area, 24 trees were recorded as having hollows (39 hollows in total). Of these, seven trees contained hollows with an opening diameter greater than 12 cm. In total 14 Black Cockatoo suitable (based on entrance size, internal dimensions were not assessed) hollows were recorded within the Survey Area. 11 of these hollows were recorded in standing dead trees (stags). Signs of use were recorded for one Marri tree, with chew marks

being observed surrounding the entrance to the hollow. No observations of hollow occupancy by Black Cockatoos were recorded within the Survey Area.

Note that the Project Area is significantly less than the total Survey area (12.94 ha from a Survey Area of 207.55 ha) and contains 30 potential breeding trees, all of which are marri, and one of which contained a suitable hollow, which was utilised by bees. No signs of use were noted within the project area. Approximately 0.61 ha of suitable breeding habitat is present within the Project Area as shown in Figure 5.

2.6.4 Roosting Habitat

No evidence of Black Cockatoo roosting was observed within the Survey Area.

2.7 Environmentally Sensitive Areas and Conservation Significance

Environmentally Sensitive Areas (ESAs) are declared to prevent degradation of important environmental values such as Threatened flora, Threatened Ecological Communities (TECs) or significant wetlands. Environmentally Sensitive Areas (ESAs) are identified and protected under the Environmental Protection (Environmentally Sensitive Areas) Notice 2005. Under the Notice, it is an offence to kill or destroy vegetation within an ESA. Exemptions contained in the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 for low impact land clearing do not apply in ESAs and a clearing permit is required. The site is within 400 m of a residential dwelling, which represents a sensitive land use. The EPA recommends a minimum separation distance of 300 m (depending on the size of the operation) between a quarry operation and a sensitive land use (Environmental Protection Authority, 2005).

No Environmentally Sensitive Areas (ESAs) are identified across the clearing permit area. The closest ESA area is located approximately 1.9 km southwest of the site (Department of Water and Environmental Regulation, 2018).

The clearing permit area is not mapped within any Regional Parks or DBCA Managed Lands, however, the land adjacent to the southeast of the site is identified as the Boyanup State Forest (Department of Biodiversity Conservation and Attractions, 2017). The clearing permit area is not mapped within any Bush Forever Sites (Department of Planning, 2014).

3 Environmental Management Measures

To minimise the risk of impact from the activities associated with the proposed clearing, the following environmental management measures will be implemented:

- Induction of all contractors and/ or internal personnel undertaking the clearing in accordance with MCS's internal procedures. GPS coordinates of clearing permit project footprint to be supplied to contractor.
- Prior to clearing and earthworks commencing within the clearing permit area, the area will be clearly outlined (by barrier tape or star pickets) to ensure that no over clearing occurs beyond the permitted area.
- Prior to clearing activities, areas of native vegetation to be retained will be clearly demarcated by star pickets, coloured tape or bunting and all personnel should be made aware of the requirement to protect native vegetation in these areas.
- The contractor will develop an appropriate Environmental Management Plan to ensure that all environmental risks are minimised, and the plan will be audited periodically for suitability and compliance.

4 Assessment against the Ten Clearing Principles

The proposed clearing of 0.61 ha of native vegetation has been assessed against the Ten Clearing Principles as defined in DER's Guide to Assessment: Clearing of Native Vegetation under the EP Act, taking into account the current extent and condition of the native vegetation on the site. This assessment is presented in Table 3.

Table 3: Assessment Against the Ten Clearing Principles

Principle	Assessment	Outcome
Principle (a) – Native vegetation should not be cleared if it comprises a high level of biological diversity	<p>The application is to clear 0.61 ha of native vegetation to facilitate the construction of a basalt quarry at 864 Cain Road, Elgin (the site).</p> <p>The desktop assessment carried out within a 10 km radius of the survey area identified 111 conservation significant species as potentially occurring within the Survey Area. A likelihood of occurrence assessment was undertaken and determined 10 species as having high likelihood of occurrence, 19 species as having a medium likelihood of occurrence, 67 species as having a low likelihood of occurrence and 15 species as having undeterminable likelihood of occurrence due to the lack of publicly available information about these Priority species. Of the species identified as having a high likelihood of occurrence, one species (<i>Davesia elongata</i>) was classed as Threatened. Five species, <i>Boronia capitata</i> subsp. <i>gracilis</i>, <i>Caustis</i> sp. Boyanup, <i>Cyathochaeta teretifolia</i>, <i>Schoenus pennisetis</i>, and <i>Stylidium paludicola</i>, were classed as Priority 3. Four species were classed as Priority 4: <i>Acacia flagelliformis</i>, <i>Acacia semitrullata</i>, <i>Caladenia speciosa</i>, and <i>Franklandia triaristata</i>.</p> <p>The desktop assessment identified 13 Threatened and Priority Ecological Communities as potentially occurring within the 20 km buffer. DBCA mapping of listed TECs and PECs identified 2 as potentially occurring within the survey area:</p> <ul style="list-style-type: none"> • Banksia dominated Woodlands of the Swan Coastal Plain (IBRA region (Priority 3 [DBCA], Endangered [EPBC Act])) • Whicher Scarp Jarrah woodland of deep coloured sands (Priority 3 [DBCA], Endangered [EPBC Act]). 	The proposed clearing of 0.61 ha of native vegetation is not likely to be at variance to this principle.

Principle	Assessment	Outcome
	<p>A field survey undertaken in October 2019 identified a total of 32 taxa from 21 genera across 8 families. No Threatened flora species pursuant to the EPBC Act and/or gazetted as Threatened/Declared Rare Flora pursuant to the BC Act were recorded during the survey. No Priority species, as listed by DBCA, were recorded during the survey.</p> <p>Four vegetation types were recorded in the survey area, one of which was recorded in the area under application for a Native Vegetation Clearing Permit. This vegetation type is nominated as Cc: <i>Corymbia calophylla</i> woodland over open grassland weed species. The 0.61 ha of this vegetation type in the area under application is considered 'Completely Degraded'. This vegetation type is not considered to be representative of any TECs or PECs pursuant to the EPBC Act or the Biodiversity Regulations 2018.</p> <p>360 Environmental completed a Black Cockatoo Habitat Assessment as part of the Biological Survey. Within the area under application, 30 <i>C. calophylla</i> trees of suitable DBH (>500 mm) were recorded. One tree was considered to have a hollow suitable for Black Cockatoo breeding, however, it was utilised by bees and no signs of use by Black Cockatoos were recorded.</p> <p>The site is adjacent to the Boyanup State Forest, managed by DBCA. It is considered that the proposed clearing of 0.61 ha contains low diversity, especially in comparison to the adjacent State Forest.</p> <p>Based on the above, the proposed clearing of 0.61 ha does not comprise a high level of biodiversity.</p>	
Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia	<p>One vegetation type is present within the area under application, Cc, <i>Corymbia calophylla</i> woodlands. <i>C. calophylla</i> is considered to be potential foraging and breeding habitat for Black Cockatoos. 360 Environmental completed a Black Cockatoo Habitat Assessment as part of the Biological Survey. Within the area under application, 30 <i>C. calophylla</i> trees of suitable DBH were recorded. One tree was considered to have a hollow suitable for Black Cockatoo breeding, however, it was utilised by bees and no signs of use by Black Cockatoos were recorded.</p> <p>The fauna likelihood assessment identified 32 conservation significant fauna species as having a high likelihood of occurring within a 10 km radius. Four</p>	The Proposal is not likely to be at variance to this principle.

Principle	Assessment	Outcome
	<p>fauna species of conservation significance were recorded within or directly surrounding the survey area. The species are:</p> <ul style="list-style-type: none"> • Forest Red Tailed Black Cockatoo - <i>Calyptorhynchus banksii naso</i> (VU) • Baudin's Black Cockatoo - <i>Calyptorhynchus baudinii</i> (EN) • Carnaby's Black Cockatoo - <i>Calyptorhynchus latirostris</i> (EN) • Quenda - <i>Isoodon fusciventer</i> (P4) <p>Whilst the Black Cockatoo and Quenda have been recorded in the survey area, they are unlikely to rely to any great extent on the small amount of vegetation to be cleared, particularly given it's degraded nature and the large tracts of intact vegetation adjacent to the site within the Boyanup State Forest. The site is not considered necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia and therefore the proposed clearing is not likely to be at variance to this principle.</p>	
Principle (c) – Native vegetation should not be cleared if it includes or is necessary for the continued existence of rare flora	<p>The desktop assessment identified 111 conservation significant species as potentially occurring within the Survey Area. A likelihood of occurrence assessment was undertaken and determined 10 species as having high likelihood of occurrence, based on the habitat type and known distribution.</p> <p>However, following the Biological Survey completed by 360 Environmental, it was determined that the clearing permit area is unlikely to support any of these species of significant flora, due to the degraded nature of the site.</p> <p>The proposed clearing of 0.61 ha is within existing parkland cleared paddocks currently utilised for agricultural purposes. Additionally, the site is adjacent to the Boyanup State Forest, which is likely to contain significantly better quality vegetation than the proposed clearing area which is considered 'Completely Degraded'.</p> <p>The Biological Survey conducted by 360 Environmental concluded that no Threatened species pursuant to the EPBC Act and/or gazetted as Declared Rare Flora pursuant to the BC Act were recorded. Therefore, it was determined that the clearing permit area is unlikely to support rare flora due to the conditions of the site.</p>	The Proposal is not likely to be at variance with this Principle.

Principle	Assessment	Outcome
Principle (d) – Native vegetation should not be cleared if it comprises the whole or a part of or is necessary for the maintenance of a Threatened Ecological Community (TEC).	<p>The Protected Matters Search Tool (PMST) identified the potential presence of two threatened Ecological Communities (TEC) as potentially occurring within a 10 km radius of the survey area. These included:</p> <ul style="list-style-type: none"> • Banksia Woodlands of the Swan Coastal Plain ecological community • Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain ecological community. <p>The field surveys concluded there were no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) within the proposed clearing area.</p>	The Proposal is not likely to be at variance with this Principle.
Principle (e) – Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared	<p>The site is within one vegetation unit mapped by Shepherd et al. (2001) and Beard (1981), Pinjarra 1136. Table 1 outlines the total remaining extent of this vegetation unit within the State, Bioregion and Subregion. Of the pre-European extent, approximately 6.95% of Pinjarra 1136 remains in Western Australia.</p> <p>The National Objectives and Targets for Biodiversity Conservation 2001-2005 include a target to have clearing controls in place that prevent the clearance of ecological communities with a pre-European extent below 30% (Commonwealth of Australia 2001).</p> <p>Whilst there is less than 30% of the pre-European extent remaining in Western Australia, the area proposed to be cleared is 0.61 ha, of 704.73 ha remaining in the Shire of Capel. This represents a reduction of less than 0.1% in the total vegetation type within the Shire of Capel.</p>	The proposed clearing is at variance with this principle. However, due to the nature and scale of the proposal, and the quality of the vegetation to be cleared, the clearing of 0.61 ha is not likely to significantly impact the conservation values of Pinjarra 1136 vegetation type in the local vicinity, and wider IBRA region.
Principle (f) – Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	<p>The clearing footprint overlaps with one wetland mapped from DBCA's database of desktop mapping of geomorphic wetlands. This is a Multiple Use Wetland (MUW) which exists across the entire area surveyed in the Biological Survey, with the exception of the Resource Enhancement Wetland located in the south east corner of the area surveyed. The area of MUW to be cleared is 0.61 ha and consists of cleared paddocks utilised for agricultural purposes and the 0.61 ha of native vegetation (<i>Corymbia calophylla</i> over pasture grasses/weeds). A Resource Enhancement Wetland (REW) exists to the south east of the proposed clearing area, approximately 50 m from the closest extent</p>	The proposed clearing is at variance to this principle as the site is mapped as a Multiple Use Wetland on the DBCA database of geomorphic wetlands. However, the 0.61 ha of <i>C. calophylla</i> vegetation within the 12.94 ha footprint of the proposed works, is not considered representative of vegetation growing in, or in association with, and environment associated with a watercourse

Principle	Assessment	Outcome
	of the proposed project footprint. The REW wetland was dry during the Biological Survey which was undertaken in October 2019. Although the 0.61 ha of native vegetation proposed to be cleared is mapped as a MUW, it is not considered representative of such as the vegetation is <i>C. calophylla</i> over grass/weeds, and as such, the proposal will not remove vegetation growing in, or in association with, an environment associated with a watercourse or wetland.	or wetland and the significance of the impact is considered to be low.
Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation	<p>The (then) Department of Environment Regulation (DER) defined land degradation as including the following.</p> <ul style="list-style-type: none"> • The clearing of vegetation • Decline in vegetation condition (including the spread of weeds) • Soil erosion and soil acidity (caused by wind and water erosion due to vegetation clearing) • Salinity • Waterlogging/ flooding. <p>The proposal includes a minimal amount of vegetation to be cleared (0.61 ha). The vegetation condition to be cleared is on 'Completely Degraded' condition. Due to the small nature and scale of the proposed clearing, it is considered unlikely that this proposal would cause appreciable land degradation.</p>	The proposed clearing is not likely to be at variance to this principle, as it is not likely to cause additional land degradation.
Principle (h) – Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area	The site is not located within any Environmentally Sensitive Areas. Boyanup State Forest, which is an A class reserve of over 15,00 ha and is managed by DBCA, exists approximately 350 m to the south east of the site and is unlikely to be impacted by the proposed clearing of 0.61 ha of native vegetation. The nearest ESA is located over 1.9 km from the proposed clearing. It is not likely that the proposal would have an impact on the conservation value of the State Forest through the spread of weeds or dieback as traffic to and from the proposed site will be via existing roads and travelling away from the conservation area. It is considered that the proposed clearing would not be at variance to this principle.	The proposed clearing is not at variance to this principle.
Principle (i) – Native vegetation should not be cleared if the clearing	The site (including the clearing permit area) is not mapped within any Public Drinking Water Source Areas, with the nearest drinking water supply, the	The proposed clearing is not likely to be at variance with this Principle.

Principle	Assessment	Outcome
of the vegetation is likely to cause deterioration in the quality of surface or underground water	Capel Water Reserve, located 9 km to the north west. Given the small and degraded clearing area, lack of surface water features and the considerable distance from nearby protected water areas, it is unlikely the clearing would cause deterioration in the quality of surface or underground water.	
Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding	<p>Hydrography mapping suggests there are no known watercourses or surface water features within the proposed project footprint, with the exception of the MUW (Department of Biodiversity Conservation and Attractions, 2019b). The 100 Year ARI floodplain and flood fringe mapping did not identify the site as being within a flood risk area (Department of Water, 2015). Stormwater and surface water management measures will be applied to reduce the impact of runoff.</p> <p>Given the small nature and scale of the proposed clearing, the disturbance is unlikely to be at variance with this principle.</p>	The proposed clearing is not likely to be at variance with this Principle.

5 Limitations

This report is produced strictly in accordance with the scope of services set out in the contract or otherwise agreed in accordance with the contract. 360 Environmental makes no representations or warranties in relation to the nature and quality of soil and water other than the visual observation and analytical data in this report.

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It is important to recognise that site conditions, including the extent and concentration of contaminants, can change with time. This is particularly relevant if this report, including the data, opinions, conclusions and recommendations it contains, are to be used a considerable time after it was prepared. In these circumstances, further investigation of the site may be necessary.

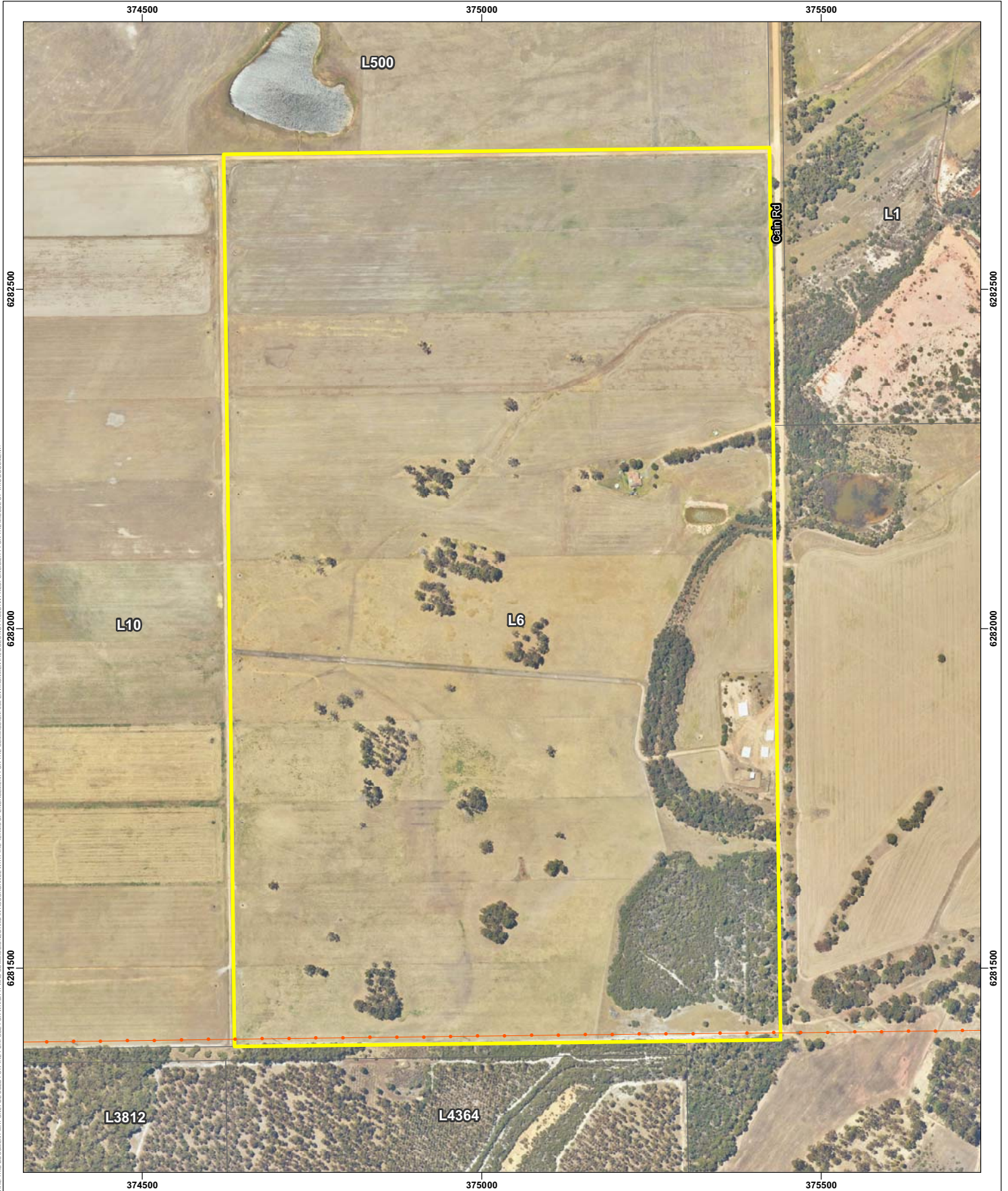
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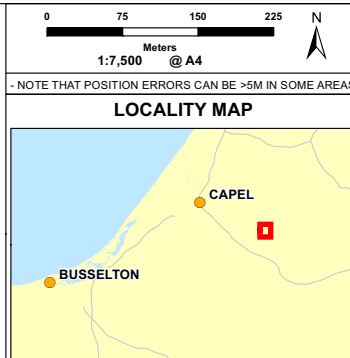
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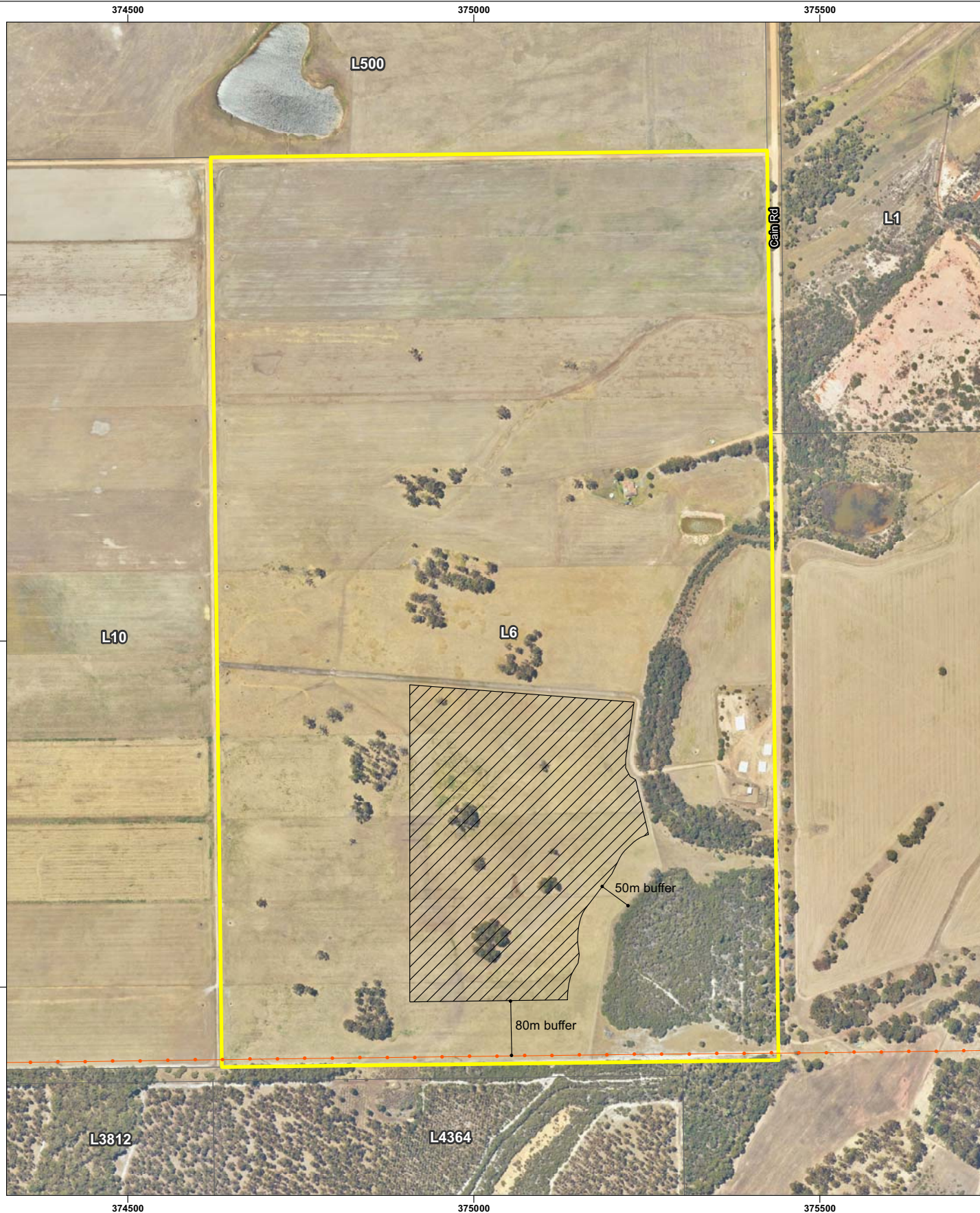
Legend

- Site Boundary
- Lot Boundaries
- Power Line



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PROJECT ID 3237		DATE 20/04/2020	
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Figure 1 Site Location			

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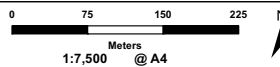


Legend

- Site Boundary
- Lot Boundaries
- Indicative Site Layout (12.94 ha)
- Power Line

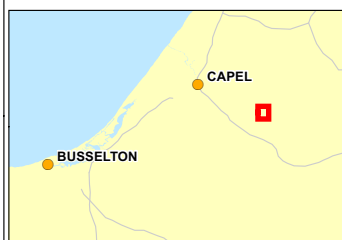
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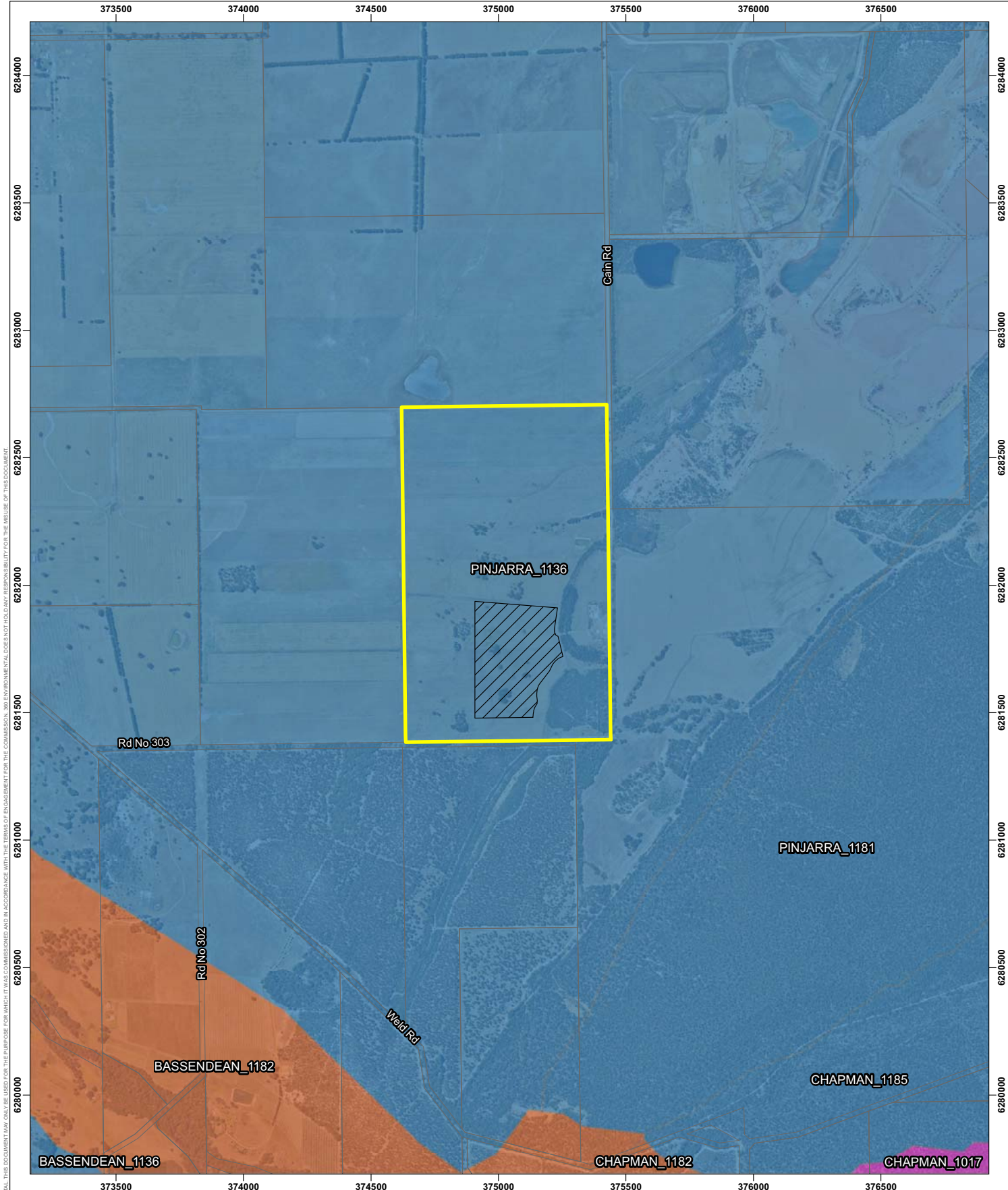
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GDA 1994 MGA Zone 50

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Figure 2 Site Layout



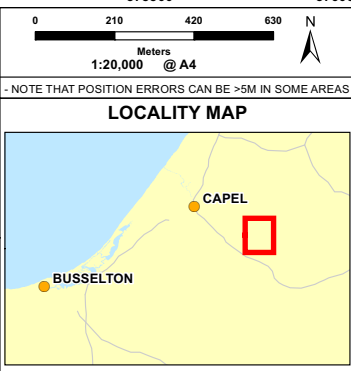
Legend

- Site Boundary
- Lot Boundaries
- Indicative Site Layout (12.94 ha)

Vegetation Associations

- Low forest, woodland or low woodland with scattered trees
- Thicket with medium open woodland, low woodland or scattered l
- Woodland southwest

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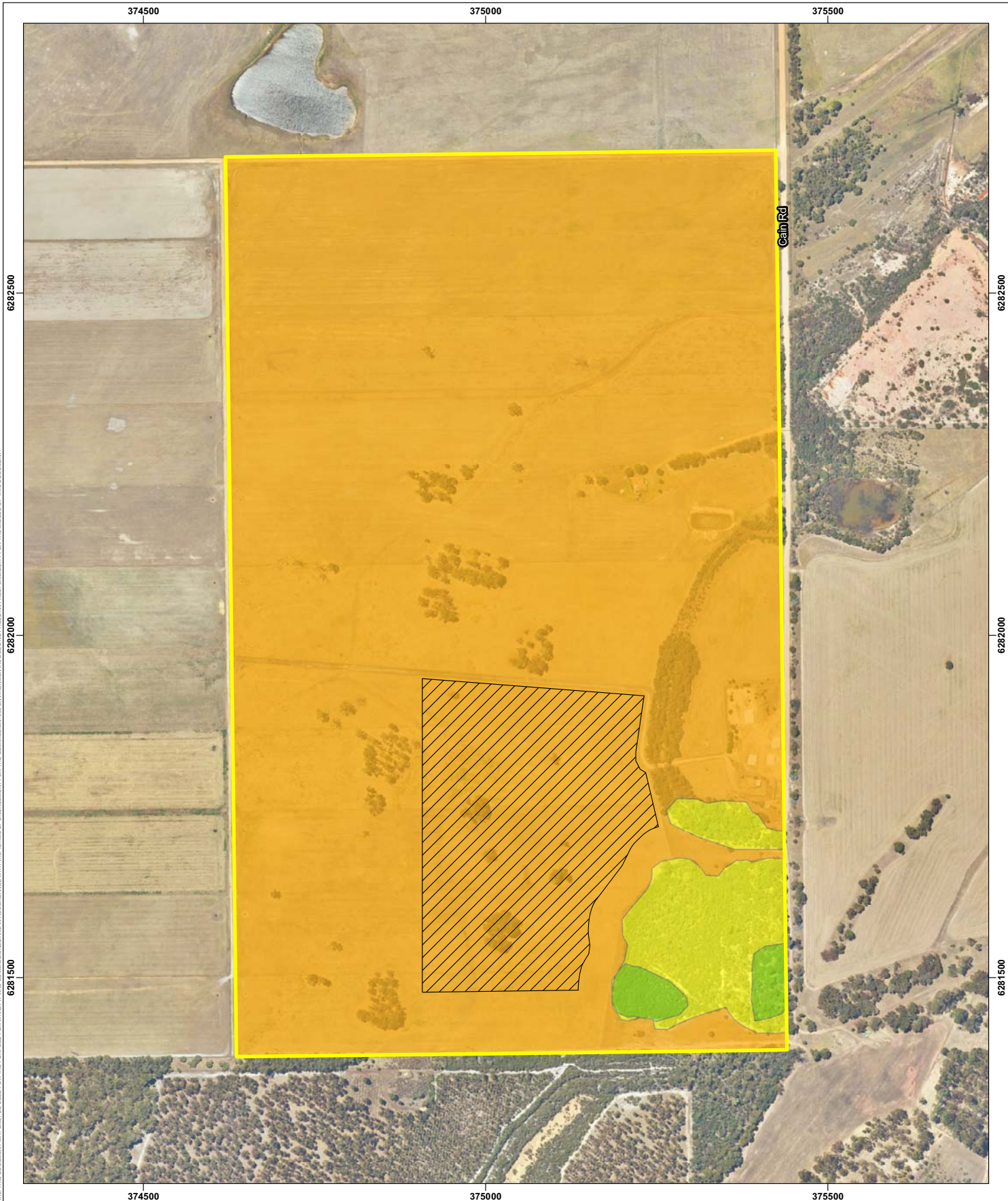
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Figure 3
Vegetation Associations

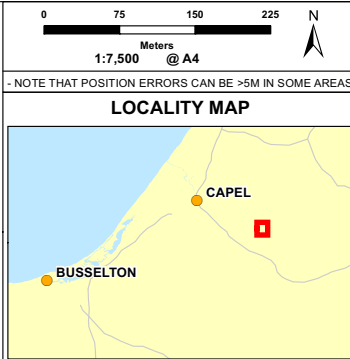
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Legend

- Site Boundary
- Lot Boundaries
- Indicative Site Layout (12.94 ha)
- Vegetation Condition**
- Completely Degraded
- Degraded
- Good

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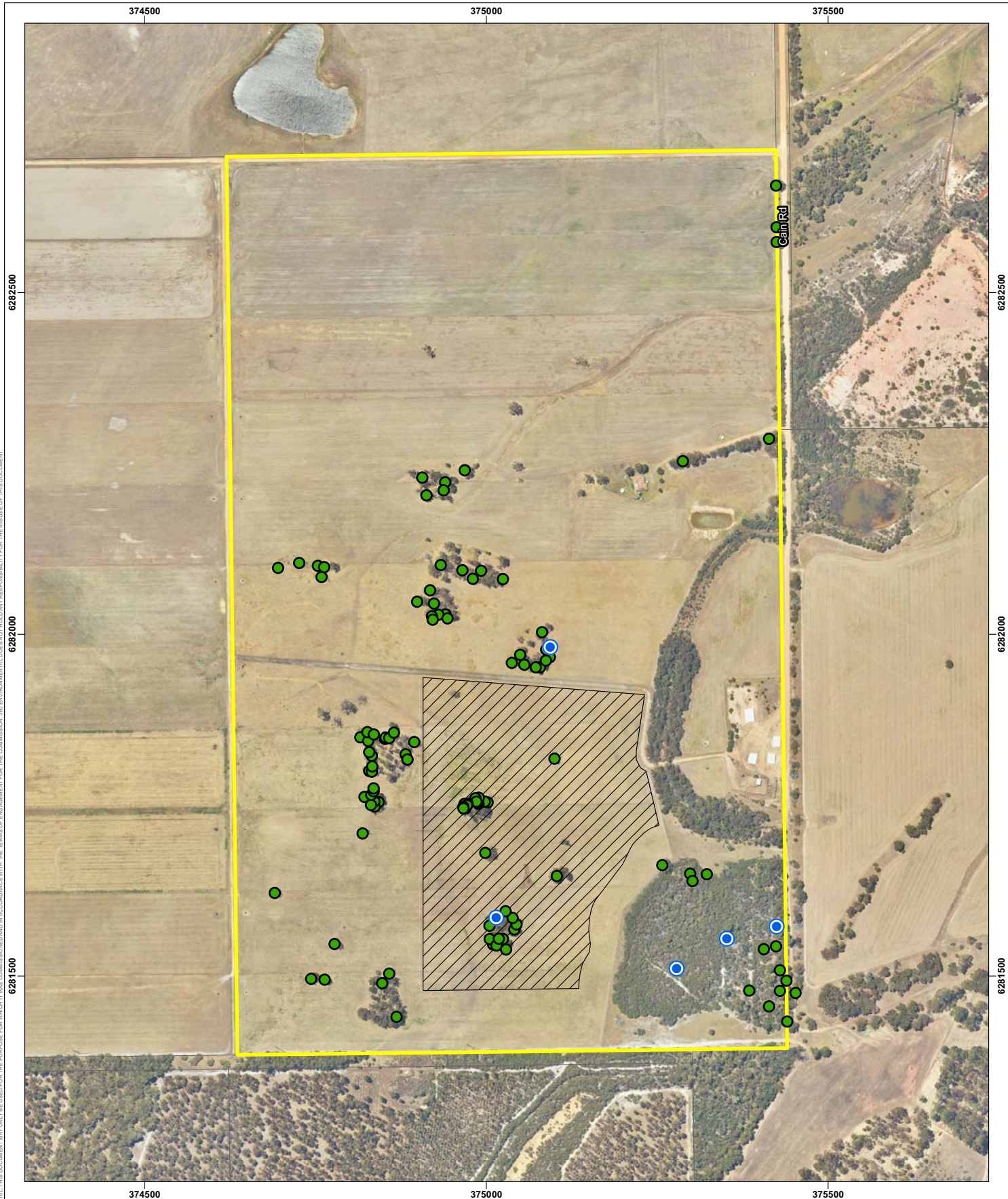
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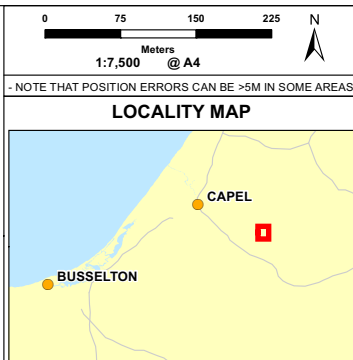
Figure 4
Vegetation Condition



Legend

- Site Boundary
- Lot Boundaries
- Indicative Site Layout (12.94 ha)
- Potential Trees with Hollows Suitable for Breeding
- Suitable Trees - No Hollows

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Clearing Permit Application

Figure 5
Black Cockatoo Habitat

Appendices

Appendix A

Biological Survey



864 Cain Rd Elgin

Biological Survey

Prepared for

Mobile Concreting Solutions

February 2020

● people ● planet ● professional

Document Reference	Revision	Prepared by	Reviewed by	Admin Review	Submitted to Client	
					Copies	Date
3534AA	Rev0	S. Hummerston	F. Jones	N. Lindroos	-	29/11/19
3534AA	Rev1	360 Environmental	MCS	-	1 electronic copy (email)	04/12/19
3534AA	Rev2	360 Environmental	MCS	-	1 electronic copy (email)	26/02/20

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Executive Summary

Mobile Concreting Solutions commissioned 360 Environmental Pty Ltd to undertake a biological survey to support permitting for the development of a quarry in Elgin, Western Australia. The biological survey included a reconnaissance flora and vegetation survey, a Level 1 fauna survey and a habitat assessment for Black Cockatoo and Western Ringtail Possum. The Survey Area is located at 864 Cain Road, Elgin, approximately 8.6 km Southeast of Capel townsite in Western Australia.

The site contains a mix of pasture, wetland, remnant vegetation and paddock trees.

Flora and Vegetation

A desktop assessment was carried out prior to the field survey and identified 111 conservation significant species occurring within 10 km of the Survey Area (Table 5). A likelihood of occurrence assessment was undertaken and determined 10 species as having a high likelihood of occurrence, 19 species as having a medium likelihood of occurrence, 67 species as having a low likelihood of occurrence and 15 species having an undeterminable likelihood of occurrence due to the lack of publicly available information about these Priority species.

The reconnaissance flora and vegetation survey recorded the floristic composition and vegetation types from eight relevés across the Survey Area. Additional mapping notes were also made as the site was traversed on foot. The survey recorded a total of 32 taxa from 21 genera across 8 families.

No Threatened flora species pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or gazetted as Threatened/Declared Rare Flora pursuant to the *Biodiversity Conservation Act 2016* (BC Act) were recorded during the survey.

A total of four vegetation types were recorded and mapped within the Survey Area:

- Ke: *Kunzea ericifolia* shrubland (3.67 ha)
- Cc: *Corymbia calophylla* woodland (7.96 ha)
- Espp.Mspp.: planted riparian vegetation including mixed *Eucalypt* and *Melaleuca* species (3.12 ha)
- Espp.: Planted dryland vegetation dominated by *Eucalypt* species (2.06 ha).

Vegetation condition within the Survey Area was predominantly in completely degraded condition. The vegetation did range from Good to Completely Degraded consisting of:

- Good: 1.16 ha, 0.54%
- Degraded: 5.11 ha, 2.40%
- Completely Degraded: 206.38 ha, 97.05%

11 introduced flora species were recorded during the survey. Some of these species were intentionally introduced through historic revegetation efforts, two species (Wheat and Rye Grass) are escaped from nearby cultivation. No introduced species within the Survey Area are

listed as Weeds of National Significance by the Department of Energy and Environment (2018) or listed as Declared Pest Plants under the *Biosecurity and Agriculture Management Act 2007*.

Vertebrate Fauna

A total of 32 conservation significant vertebrate fauna species from 18 families were retrieved from the database searches including:

- 24 bird species
- 10 mammal species
- No reptile species
- No amphibian species.

The field survey recorded 28 terrestrial vertebrate fauna species, comprised of 23 birds and 5 mammals. Signs of foraging were recorded for two species of threatened Black Cockatoo species (*Calyptorhynchus banksii-naso* and *Calyptorhynchus latirostris*). Calls were recorded from the Survey Area for two threatened Black Cockatoo species (*Calyptorhynchus banksii-naso* and *Calyptorhynchus baudinii*). Diggings likely to have been made by Quenda (*Isoodon fusciventer* – P4) were also recorded within the Survey Area.

Throughout the survey, six fauna habitat types were identified as:

- Wetland
- Planted riparian vegetation
- Native tree stands
- Planted vegetation
- Remnant woodland
- Cleared.

A likelihood of occurrence assessment was conducted (see Table 3) for criteria. The results of the likelihood of occurrence assessment determined that:

- Four fauna species of conservation significance were recorded within the Survey Area:
 - Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii-naso*) - Vulnerable
 - Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) - Endangered
 - Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) - Endangered
 - Quenda, Southwestern Brown Bandicoot (*Isoodon fusciventer*) – Priority 4
- Four conservation significant fauna species are considered to have a medium likelihood of occurrence within the Survey Area. This includes the following species:
 - Masked Owl (Southwest) (*Tyto novaehollandiae novaehollandiae*) – Priority 3
 - Chuditch (*Dasyurus geoffroii fortis*) – Vulnerable
 - Western Brush Wallaby (*Notamacropus irma*) – Priority 4

- Wambenger Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) – Conservation Dependant
- The remaining 24 conservation significant species are considered to have a low likelihood of occurrence.

No evidence of Western Ringtail possum occupancy (e.g. dreys and scats) were recorded on site. No suitable habitat for this species was recorded within the Survey Area. Only one *Agonis flexuosa* tree was recorded near the eastern boundary of the Survey Area, which is the most important foraging resource for this species.

152 Black Cockatoo habitat trees with a DBH >500 mm were recorded across the Survey Area. Within these trees 14 Black Cockatoo suitable hollows were also recorded. Due to the presence of large, hollow bearing trees, combined with evidence of use, sightings and recorded calls of Black Cockatoo species during the survey, it is considered that any disturbance to Black Cockatoo habitat within the Survey Area is likely to impact these species. EPBC Act requirements should be considered if Black Cockatoo habitat is proposed to be disturbed.

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1 Introduction

1.1 The Project

Mobile Concreting Solutions Pty Ltd commissioned 360 Environmental Pty Ltd (360 Environmental) to undertake a biological survey and assessment to support permitting for the development of a quarry in Elgin, Western Australia. The biological survey included a Reconnaissance Flora and Vegetation survey, a Level 1 fauna survey and a Black Cockatoo Habitat Assessment for Black Cockatoo and a targeted Western Ringtail Possum survey. The survey was undertaken over a defined area located at 864 Cain Road, Elgin approximately 8.6 kilometres (km) south-east of Capel townsite in Western Australia (herein referred to as the Survey Area).

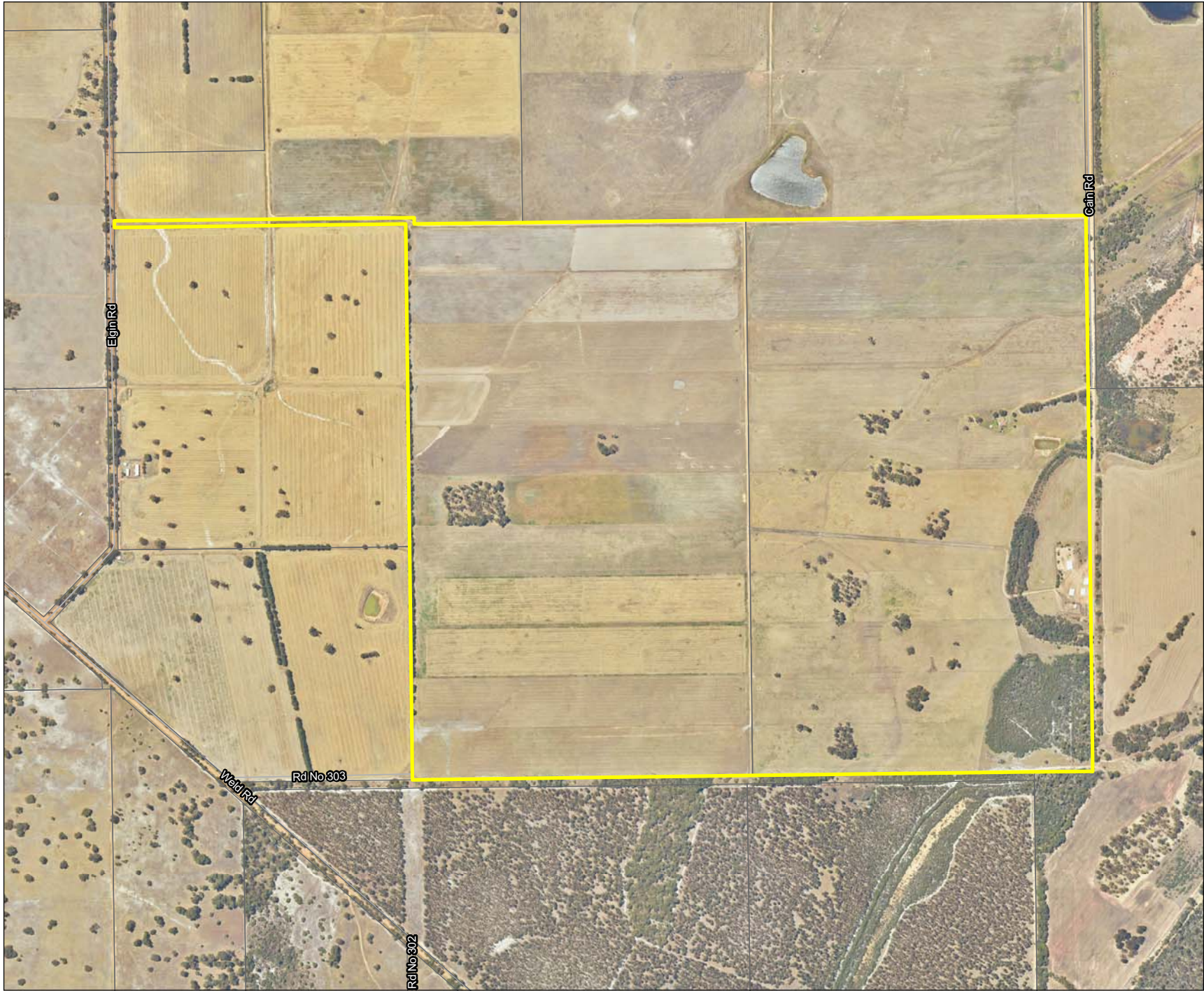
The Survey Area comprised Lots 6 and 10 Cain Road and cover approximately 207.55 ha (Figure 1).

1.2 Objectives and Scope

The purpose of the survey was to delineate key flora and terrestrial vertebrate fauna values within the Survey Area and identify potential environmental sensitivities that may impact the Project.

The scope of works includes:

- Desktop Assessment
- Field Survey
- Post Survey Debrief Email
- Biological Report
- GIS Spatial Data.

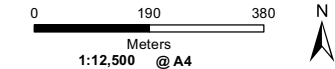


Legend

- Site Boundary
- Lot Boundaries
- Local Road

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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LOCALITY MAP



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Mobile Concreting Solutions Pty Ltd, 864 Cain Rd Elgin

Biological Survey

Figure 1 Survey Area

2 Background

2.1 Protection of Flora, Vegetation and Fauna

Western Australian flora and fauna is protected formally and informally by legislative and non-legislative measures, which are as follows:

Legislative measures:

- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
- WA *Biodiversity Conservation Act 2016*
- WA *Environmental Protection Act 1986*
- WA *Biosecurity and Agriculture Management Act 2007* (BAM Act).

Non-legislative measures:

- WA Department of Biodiversity Conservation and Attractions (DBCA) Priority lists for fauna, flora and ecological communities
- Weeds of National Significance (WoNS) and
- Recognition of locally significant populations by DBCA.

2.2 Biophysical Environment

2.2.1 Climate

The closest long-term Bureau of Meteorology (BoM) weather station with a complete dataset is Bunbury (Station 9965), located approximately 29 km north northwest of the Survey Area.

The long-term mean minimum temperature for Bunbury ranges from 6.4°C (August) to 15.3°C (February) (1995 to 2019) (Figure 2) and the long-term mean maximum temperature ranges from 17.9°C (July) to 29.9°C (February) (1995 to 2019) (Bureau of Meteorology, 2019).

The Bunbury weather station recorded 527.6 mm of rainfall in the 12 months prior to the survey (October 2018 to September 2019), which is 198.5 mm below the long-term average of 726.1 mm (Bureau of Meteorology, 2019). In the three months prior to the survey (July 2019 to September 2019), 278.2 mm of rainfall was recorded, which is 61.6 mm below the long-term average of 339.8 mm for the same time period (1995 to 2019) (Bureau of Meteorology, 2019).

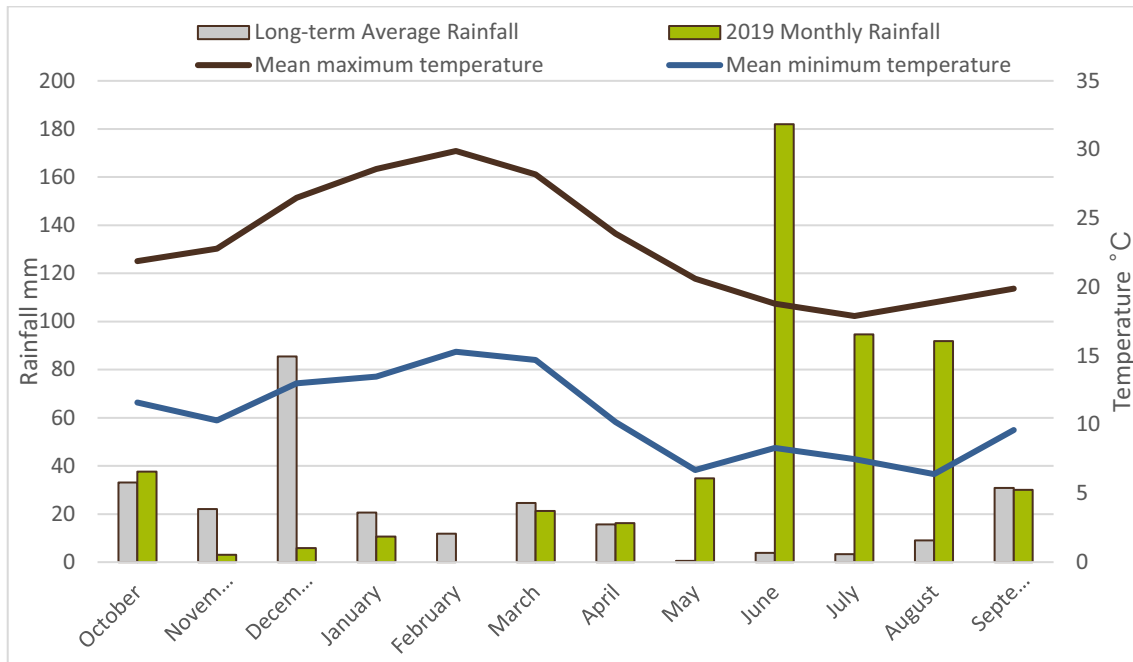


Figure 2: Long term and Monthly Total Rainfall, Maximum and Minimum temperatures for Bunbury (9965) (Bureau of Meteorology, 2019)

2.2.2 Interim Biogeographic Regionalisation of Australia

The Interim Biogeographic Regionalisation of Australia (IBRA) divides Australia into 89 bioregions based on major biological, geographical and geological attributes. These bioregions are subdivided into 419 subregions as part of a refinement of the IBRA framework (Department of the Environment and Energy, 2016). The Survey Area occurs within the Swan Coastal Plain bioregion and the Perth (SWA2) subregion.

The Perth Subregion is characterised by colluvial and aeolian sands, alluvial river flats and coastal limestone. Heath and/or Tuart woodlands on limestone, Banksia and Jarrah-Banksia woodlands on Quaternary marine dunes of various ages, Marri on colluvial and alluvial soils (Mitchell, Williams and Desmond, 2002) Soil Landscapes and Land Systems

Soil landscapes and land system mapping of Western Australia describes broad soil and landscape characteristics from regional to local scales, and has been captured at scales ranging from 1:20,000 to 1:250,000 (Department of Agriculture and Food WA, 2012). The Survey Area occurs within two land systems (Figure 3) and are described below:

- Forrestfield System:** Undulating foot slopes of the Darling and Whicher Scarps comprising duplex sandy gravels, pale deep sands and grey deep sandy duplexes. Woodland of *Eucalyptus marginata*, *Corymbia calophylla* and *Eucalyptus wandoo* and some *Banksia grandis*
- Pinjarra System:** Poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes Jarrah, marri, wandoo, paperbark, sheoaks and *Eucalyptus rudis* (Department of Agriculture and Food WA, 2012).

2.2.3 Hydrology and Wetlands

Although an area of planted riparian vegetation was recorded within the Survey Area, this appears to be local drainage only. A resource enhancement sumpland exists in the south east corner of the Survey Area (Department of Water and Environmental Regulation, 2016). The closest watercourse to the Survey Area is Capel River, located approximately 1.2km southwest of the Survey Area.

2.3 Biological Environment

2.3.1 Broad Vegetation Types

Mapping of pre-European broad vegetation within Western Australia was completed on a broad scale (1:1,000,000) by Beard (1981). These vegetation types were later re-assessed by Shepherd *et al.* (2002) with some larger vegetation units divided into smaller units. Together, this pre-European database contains a total of 819 vegetation types within Western Australia.

One broad vegetation type is mapped over the Survey Area (Figure 4). This vegetation type is described below and its representation at a local, regional and state level is shown in Table 1. It has been widely cleared within the State, Bioregion and at more site-specific scales.

- **Pinjarra 1136:** Woodland Southwest; *Eucalyptus marginata*, *Corymbia calophylla* and *Eucalyptus wandoo*.

Table 1: Broad Vegetation Types within the State, Regional and Local Representation (Department of Biodiversity Conservation and Attractions, 2019a)

Vegetation Type	Pre-European Extent (ha)	Current Extent (ha)	Remaining (%)	Current Extent Managed in DBCA Lands (%)
Representation across Western Australia				
Pinjarra 1136	48,124.57	3,345.51	6.95	3.85
Representation across the Swan Coastal Plain Bioregion				
Pinjarra 1136	48,118.01	3,341.18	6.94	3.86
Representation across the Perth Subregion (SWA2)				
Pinjarra 1136	48118.01	3341.18	6.94	3.86
Representation across the Shire of Capel				
Pinjarra 1136	9,178.08	704.73	7.68	6.6

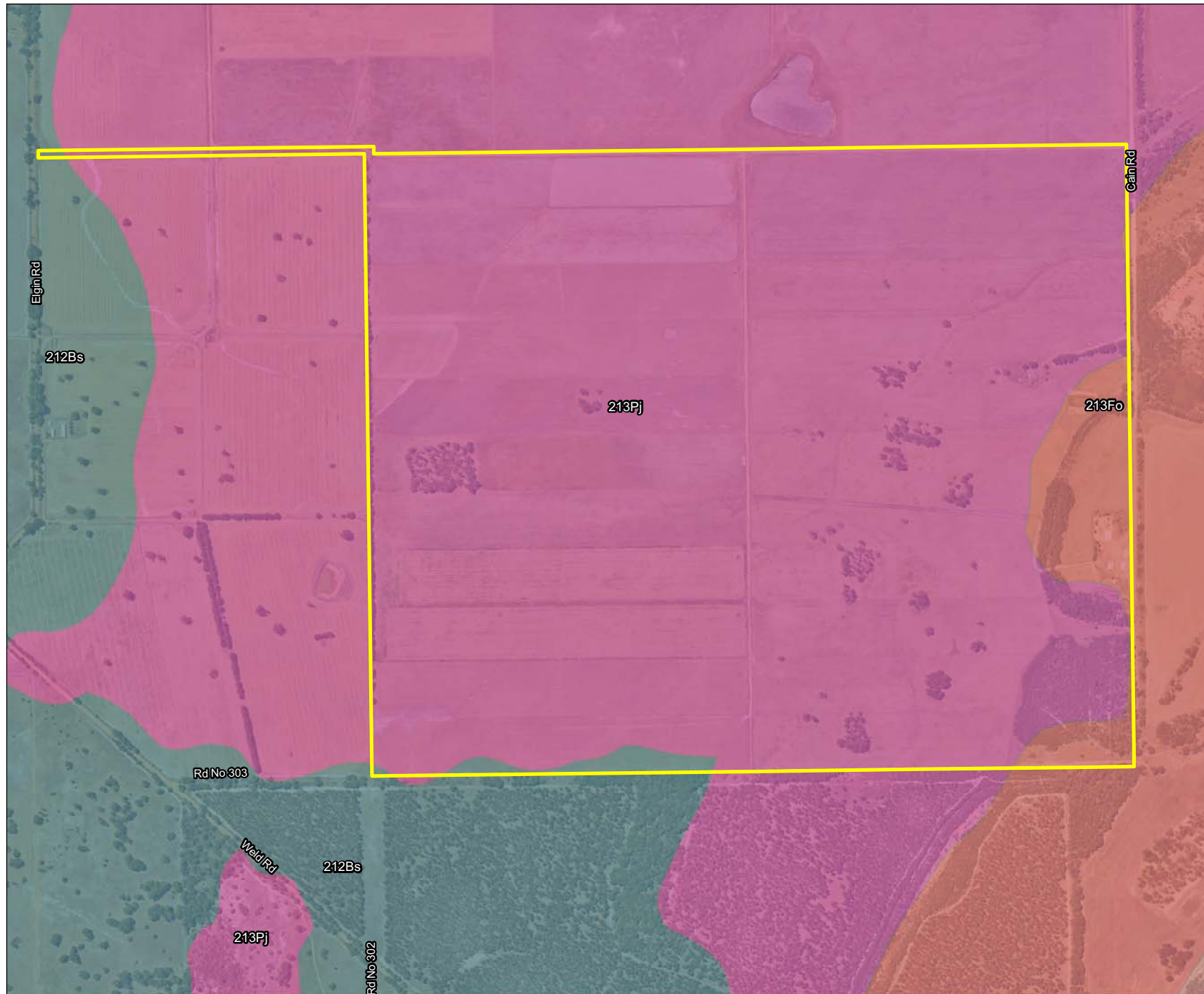
2.3.2 Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESAs) are declared to prevent degradation of important environmental values such as Threatened flora, TECs or significant wetlands. Exemptions contained in the Environmental Protection (Clearing of Native vegetation) Regulations 2004 for low impact land clearing do not apply in ESAs and a clearing permit is required.

The entire Survey Area is not located within a mapped ESA. The nearest mapped ESA is approximately 1.3 km south of the Survey Area, associated with a section of the Capel River mapped as a Conservation Category Wetland (CCW).

2.3.3 Conservation Areas

The Survey Area is not identified within any Conservation Area; the closest is the Boyanup State Forest, located adjacent to the south east section of the Survey Area and is vested under the Conservation Commission of Western Australia (Department of Biodiversity Conservation and Attractions, 2017).



Legend

Site Boundary

Soil Land System

212Bs: Swan Coastal Plain from Busselton to Jurien. Sand dunes and sandplains with pale deep sand, semi-wet and wet soil. Banksia-paperbark woodlands and mixed heaths.

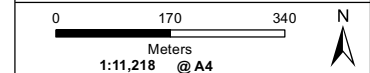
213Fo: Undulating foot slopes of the Darling and Whicher Scarps. Duplex sandy gravels, pale deep sands and grey deep sandy duplexes. Woodland of *E.marginata*, *calophylla* and wandoo and some *B.grandis*.

213Pj: Swan Coastal Plain from Perth to Capel. Poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes Jarrah, marri, wandoo, paperbark sheoaks and rudis.

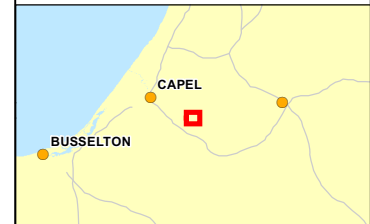
214Ws: Low scarp and raised platform, on the northern edge of the Donnybrook Sunkland. Sandy gravel and pale deep sands, loamy gravel and non-saline wet soils. Jarrah-marri forest and woodland.

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
 - LOCALITY MAP SOURCED LANDGATE 2017
 - OTHER DATA SOURCED LANDGATE 2018
 - AERIAL PHOTOGRAPHY SOURCED LANDGATE 2018
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LOCALITY MAP



PROJECT ID	DATE
3534	03/12/2019

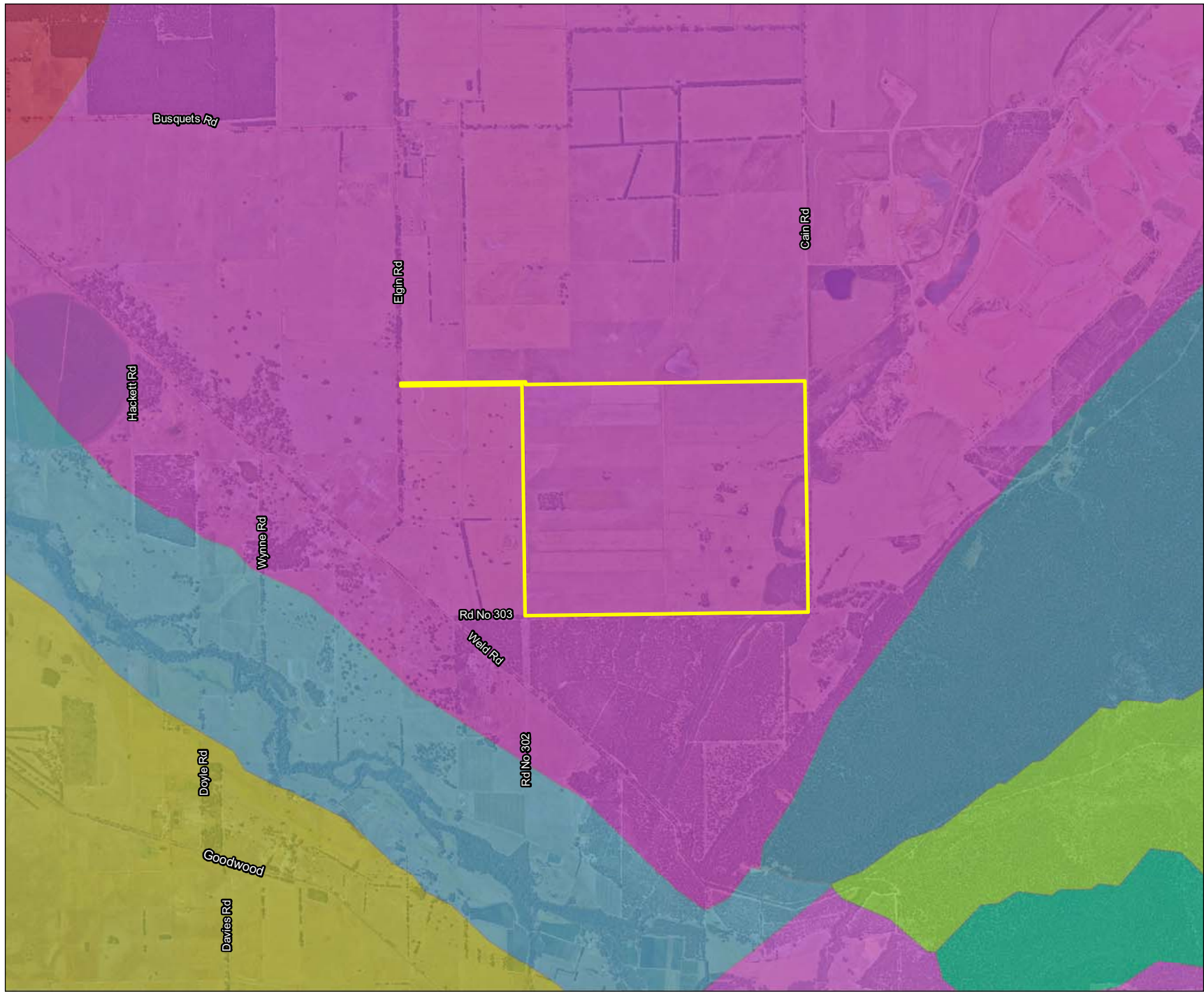
HORIZONTAL DATUM AND PROJECTION	
GDA 1994 MGA Zone 50	

CREATED	CHECKED	APPROVED	REVISION
LF	SH	SH	0

Mobile Concreting Solutions Pty Ltd, 864 Cain Rd Elgin

Biological Survey

**Figure 3
Soil and Land System**



Legend

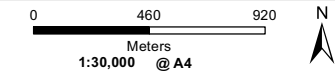
Site Boundary

Pre-European Vegetation

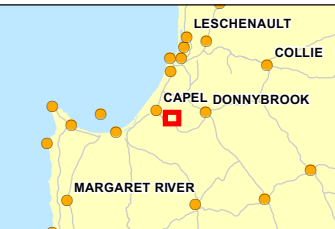
- BASSENDEAN_1000
- BASSENDEAN_1136
- BASSENDEAN_1182
- CHAPMAN_1017
- CHAPMAN_1182
- CHAPMAN_1185
- PINJARRA_1136
- PINJARRA_1181

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
 - LOCALITY MAP SOURCED LANDGATE 2017
 - OTHER DATA SOURCED LANDGATE 2018
 - AERIAL PHOTOGRAPHY SOURCED LANDGATE 2018
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LOCALITY MAP



PROJECT ID	DATE
3534	03/12/2019

HORIZONTAL DATUM AND PROJECTION	
GDA 1994 MGA Zone 50	

CREATED	CHECKED	APPROVED	REVISION
LF	SH	SH	0

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Biological Survey

**Figure 4
Broad Vegetation Types**

3 Methods

3.1 Requirements for Flora and Fauna Surveys

This survey has been carried out as per the EPA requirements for environmental surveying and reporting of flora and fauna surveys in Western Australia where relevant, and as documented in:

Western Australia

- Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (Environmental Protection Authority, 2016a)
- Technical Guidance – Sampling Methods for Terrestrial Vertebrate Fauna (Environmental Protection Authority, 2016b)
- Technical Guidance – Terrestrial Fauna Surveys (Environmental Protection Authority, 2016c).

Federal

- Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999 (Department of the Environment, 2013)
- Survey Guidelines for Australia's threatened mammals (Department of Sustainability Environment Water Population and Communities, 2011)
- Survey guidelines for Australia's threatened birds Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999 (Department of the Environment Water Heritage and the Arts, 2010)
- EPBC Act Referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo, Baudin's cockatoo and Forest red-tailed black cockatoo (Department of Sustainability Environment Water Population and Communities, 2012a).

3.2 Desktop Assessment

3.2.1 Database Searches

Database searches were undertaken to identify potential conservation significant flora and fauna taxa and Ecological Communities within or surrounding the Survey Area. Database search particulars are outlined in Table 2. The search buffer requested in DBCA searches was 20 km. Due to the high number of returned records, a buffer of 10 km was used for the Naturemap and Protected Matters Search Tool (PMST) queries and to determine the likelihood of occurrence table for flora species.

Priority Ecological Communities (PEC) and Threatened Ecological Communities (TEC) within the Swan Coastal Plain bioregion were examined to determine if any corresponded with the Survey Area (Appendix A). In addition, an EPBC Protected Matters Search (PMST) was undertaken to

identify the potential for Matters of National Environmental Significance (MNES) to occur within or surrounding the Survey Area (Department of the Environment and Energy, 2019).

Table 2: Database Searches of the Survey Area

Database Name	Date Received	Search Target	Search Area
Threatened and Priority Ecological Communities database (Department of Biodiversity Conservation and Attractions, 2019d)	30 October 2019	Listed TECs and PECs	20 km search buffer of the Survey Area
DBCAs Threatened and Priority Flora Species List (TPFLlist) (Department of Biodiversity Conservation and Attractions, 2019f)	10 October 2019	Threatened Priority Flora	20 km search buffer of the Survey Area
Western Australian Herbarium flora (Department of Biodiversity Conservation and Attractions, 2019g)	10 October 2019		20 km search buffer of the Survey Area
DBCAs Threatened and Priority Fauna List (Department of Biodiversity Conservation and Attractions, 2019e)	8 November 2019	Threatened Priority Fauna	10 km search buffer of the Survey Area
NatureMap (Department of Biodiversity Conservation and Attractions, 2019c)	31 October 2019	Threatened Priority Flora and Fauna	10 km search buffer of the Survey Area
Protected Matters Search Tool (Department of the Environment and Energy, 2019)	31 October 2019		10 km search buffer of the Survey Area

3.2.2 Likelihood of Occurrence

Conservation significant flora and fauna species identified from the desktop assessment were further examined to determine a likelihood of occurrence post field survey. The assessment was completed based on the likelihood of occurrence criteria presented in Table 3. Only species either recorded within the Survey Area or considered as having a high or medium likelihood of occurrence will be discussed in detail. Species classified as having a low likelihood of occurrence based on the above criteria will not be discussed unless a justification for this classification is required.

Table 3: Likelihood of Occurrence Criteria

Likelihood	Flora	Fauna
Recorded	Flora and fauna species recorded within the Survey Area during the field survey.	
High	Previously recorded within Survey Area or within 10 km and suitable habitat potentially occurs in the Survey Area	Preferred habitat is present in the Survey Area and known species distribution has been recorded on more than one occasion within 20 km of the Survey Area in the last 15 years
Medium	Previously recorded within 10 to 20 km of the Survey Area and/or suitable habitat potentially occurs in the Survey Area	The species has been recorded on more than one occasion within 20 km of the Survey Area in the last 15 years, but limited appropriate habitat occurs in the Survey Area; or the High Likelihood of Occurrence criteria has not been

Likelihood	Flora	Fauna
		met, however the species is known from the general area and has good dispersal abilities; or Preferred habitat for the species occurs in the Survey Area but the species has not been recorded within 20 km in the last 15 years
Low	No suitable habitat appears to be present in the Survey Area or records are greater than 20 km from the Survey Area	No suitable habitat is present within the Survey Area or outside the species known distribution; or the species is known from the general area but has poor dispersal abilities

3.2.3 Literature Review

A literature review was undertaken to identify any previously completed surveys within the general region. This includes reviewing all publicly available reports to assist with understanding any key biological findings nearby.

3.3 Flora and Vegetation

3.3.1 Field Survey

A reconnaissance flora and vegetation survey was undertaken by experienced Biologist Shenaye Hummerston (Flora Licence FB62000125) on 10 October 2019. The field survey included an assessment of eight relevés, mapping notes, vegetation condition notes, opportunistic flora collections, observations and a targeted Threatened and Priority flora search.

For each relevé, the following data was recorded:

- Site code – a unique identifier allocated to each relevé
- Date and recorder – a record of the date of relevé sample and a list of the personnel involved in sampling the relevé
- Location – GPS coordinates (MGA94) measured from the centre of the relevé
- Landform and soil description – a description of the relevé habitat
- Additional site descriptors – location information that might be useful in vegetation classification including, slope, aspect, litter cover, bare ground cover and fire history
- Species list – a comprehensive vascular flora species list
- Foliar cover – the estimated total percentage foliar cover for each species recorded
- Height – the average height (in metres) of each species recorded
- Vegetation condition – assessed according to the vegetation condition scale (Environmental Protection Authority, 2016a)
- Photographs – a photograph of each relevé was taken.

3.3.2 Flora of Conservation Significance

The Survey Area was traversed on foot and opportunistic collections were made to identify flora of conservation significance which were listed in the Desktop Assessment.

Specimens were collected for identification and lodgement at the Western Australian Herbarium (WAH).

3.3.3 Taxonomy and Nomenclature

Where field identification of plant taxa was not possible, specimens were collected systematically for later identification using resources of the WAH. Taxonomy was completed by Shenaye Hummerston.

The finalised species list was checked against FloraBase (Department of Biodiversity Conservation and Attractions, 2019b) to determine the species' conservation status and known distribution. Introduced species were compared against the BAM Act Declared Plants list the WONS list to determine their status (Department of Environment and Energy, 2018; Department of Primary Industries and Regional Development, 2018).

3.4 Vertebrate Fauna

3.4.1 Field Survey

A level 1 vertebrate fauna survey was undertaken on the 10 October 2019 by qualified Biologist Shenaye Hummerston, coincident with the flora and vegetation survey. The purpose of the field survey was to verify the accuracy of the desktop assessment and to further delineate and characterise the fauna assemblages and fauna habitat in the Survey Area. The field survey consisted primarily of fauna habitat assessments, opportunistic fauna observations and targeted Black Cockatoo and Western Ringtail Possum searches.

3.4.2 Fauna Habitat Assessment

Vegetation types and distinctive landforms were used to identify the broad faunal habitats in the Survey Area. These fauna habitats were then assessed for their potential to support species of conservation significance and the quality of habitat they provide to a wider suite of fauna.

Habitat assessment was undertaken in conjunction with vegetation type assessment during this survey. Mapping notes, observations and photos were taken throughout the survey. Habitat features such as rocky outcrops, tree hollows, waterways and wetlands were recorded specifically, where they were present.

3.4.3 Opportunistic Observation

Fauna were opportunistically observed and recorded within the Survey Area, which involved targeted searches of habitats that potentially support fauna of conservation significance as well as systematic searches which included looking through leaf litter, overturning rocks, looking under decorticated bark and searches for scats, tracks, burrows and other traces of animals. If conservation significant species were located, the coordinates were geospatially recorded with the Fulcrum mobile application providing accurate GPS locations for each record.

In addition, opportunistic records of fauna species encountered while travelling throughout the Survey Area were documented. Opportunistic data comprises records of fauna species by location and coordinates were taken using the Fulcrum mobile application.

3.4.4 Taxonomy

Where there was doubt on species names identified in the desktop assessment (through subsequent name changes or taxonomic reviews), an effort was made to determine the current scientific name for each taxon. Taxonomy and nomenclature in this report follows the WA Museum checklist 2019 (Western Australian Museum, 2019) (where relevant).

3.4.5 Targeted Black Cockatoo Searches

The Black Cockatoo Habitat Assessment involved traversing the Survey Area by foot. The survey was conducted in accordance with the Department of Sustainability Environment Water Population and Communities (currently DEE) 2012 EPBC Act referral guidelines for three threatened Black Cockatoo species: Carnaby's Cockatoo (Endangered) *Calyptorhynchus latirostris* Baudin's Cockatoo (Vulnerable) *Calyptorhynchus baudinii* Forest Red-tailed Black Cockatoo (Vulnerable) *Calyptorhynchus banksii naso*.

3.4.5.1 Breeding Habitat

Any trees meeting each of the following criteria for potential breeding were recorded with a mobile GPS Fulcrum application:

- Native trees (e.g. Jarrah, Tuart, Marri, Wandoo and Salmon Gum)
- Diameter at Breast Height (DBH @ 1.3 m) ≥ 500 mm (≥ 300 mm for Wandoo and Salmon Gum) regardless of the presence or absence of hollows
- All hollows observed within trees were recorded and categorised as follows:
 - Hollows - Total number of hollows observed within the tree, or 'no' if none are observed and
 - Hollows > 12 cm diameter - Number hollows within the tree that are observed to contain an opening diameter > 12 cm, which has the potential of being utilised by Black Cockatoo species (Department of Environment Conservation, 2010; Saunders, Mawson and Dawson, 2014). This also included recording any evidence of chewing around the hollow opening.

All hollow observations were taken from ground level only.

Trees with multiple stems, swellings or forking/branching at breast height were measured dependent on the form to ensure accurate measurement. When this occurred, the diameter was measured just above or below breast height to gain a more accurate measurement of diameter and only the largest forking branch was recorded if this occurred below breast height.

3.4.5.2 Foraging Habitat

The Black Cockatoo assessment involved assessing the habitat for tree and shrub species known to be important dietary items e.g. Marri and *Banksia* spp. as outlined within the referral and revised draft referral guidelines. It also included looking for:

- Evidence of feeding (chewed cones, seed and nut material)
- Opportunistic observations of Black Cockatoos foraging or utilising the Survey Area.

3.4.5.3 Roosting Habitat

While undertaking the assessment any evidence of roosting or areas identified as having high roosting potential were identified, recorded and mapped.

3.4.6 Targeted Western Ringtail Possum Searches

The Western Ringtail Possum Habitat Assessment involved traversing the Survey Area by foot. Possible habitat areas were thoroughly searched for signs of use such as scats and dreys. The assessment included determination of likely habitat and forage areas suitable for this species.

4 Results

4.1 Limitations

Limitations and constraints of the flora, vegetation and fauna survey are detailed below in Table 4.

Table 4: Limitations and Constraints Associate with the Survey

Variable	Degree of Limitation	Potential Constraints on Survey Outcomes
Availability of Data	Not a limitation	All data required to complete the scope of works including regional and local contextual information was available.
Access and Survey Intensity	Not a limitation	The Survey Area was able to be accessed by vehicle and on foot.
Experience	Not a limitation	The biological was undertaken by experienced Biologist Shenaye Hummerston. Shenaye has 7 years' experience conducting surveys of similar scope in Southwest Australia.
Timing, weather, season	Minor limitation	The survey was undertaken during the recommended primary survey period for the region (Spring) as per the EPA Technical Guidance. Rainfall in the 3 months preceding the survey was 61.6mm lower than the long-term average, however due to the degraded condition of the site this is considered only a minor limitation.
Life forms sampled	Not a limitation	The Survey Area was traversed by vehicle and on foot, with all remnant vegetation surveyed on foot. All dominant flora species were recorded within the vegetation units, with detailed sampling occurring within representative relevés. In addition, flora was also sampled opportunistically during the survey. Of the 32 flora taxa collected only 2 species (6%), were unable to be identified to species level due to the absence of identifiable features such as fruit and flowers.
Completeness	Not a limitation	The survey was considered complete for a reconnaissance flora and vegetation survey, all vegetation types were surveyed and delineated within the Survey Area. The Survey Area was sufficiently covered on foot and all fauna species encountered or evidence of fauna activity was recorded throughout the survey.

4.2 Literature Review

The following reports were reviewed as part of the Literature Review.

Report of a Level 1 Flora and Vegetation survey at the Capel Dry Plant, Capel (Ecoedge, 2015)

Ecoedge was commissioned by Iluka Resources Limited to undertake a reconnaissance flora and vegetation survey of remnant vegetation at the Capel Dry Plant to assist with potential future clearing permit applications. The Survey Area included remnant vegetation of Nature Reserve 3249. The key findings included:

- Three species of Priority flora were found within Crown Reserve 3249; *Stylidium paludicola* (P3), *Caladenia speciosa* (P4) and *Acacia semitrullata* (P4)
- Two species of Declared Pest Plants, also classified as Weeds of National Significance were recorded on site (**Asparagus asparagoides*, **Zantedeschia aethiopica*).

Flora and Vegetation Survey Report (Lundstrom Environmental Consultants Pty Ltd, 2019)

Lundstrom Environmental Consultants were commissioned by B&J Catalano Pty Ltd to undertake a detailed flora and vegetation survey at Lot 227 Elgin Road, Elgin to inform the approvals process for the expansion of a sand extraction site. The key findings include:

- No threatened or Priority flora were located during the survey, despite targeted searches being undertaken
- One vegetation type *Banksia attenuata* - *Eucalyptus marginata* open woodland with *Banksia ilicifolia* over *Xylomelum occidentale* – *Kunzea glabrescens* tall open shrubland over tussock grasses of **Briza maxima* and **Ehrharta longiflora* was recorded in Completely Degraded condition across the Survey Area.

Fauna Assessment Capel Dry Plant (Harewood, 2018)

Greg Harewood was commissioned by Iluka Resources Limited to undertake a level 1 fauna survey, a Black Cockatoo Habitat Assessment and a targeted survey for Western Ringtail Possums. The key findings include:

- The habitat value was described as Poor due to a high level of historic disturbance
- 55 Black Cockatoo habitat trees were recorded
- No Black Cockatoo roost sites were recorded
- Evidence of Forest Red-tailed Black Cockatoo's (*Calyptorhynchus banksii-naso*) – Vulnerable and Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) – Endangered were recorded during the survey
- 13 Western Ringtail Possum dreys were recorded during the survey
- Eight Western Ringtail Possums were identified during nocturnal searches of the Survey Area, with the occupancy of the area estimated at 10 animals.

4.3 Flora and Vegetation

4.3.1 Desktop Assessment

The desktop assessment identified 111 conservation significant species occurring within 20 km of the Survey Area. This included:

- 32 Threatened species
- 11 Priority 1 species
- 15 Priority 2 species
- 34 Priority 3 species
- 19 Priority 4 species.

A full inventory of all conservation significant species identified in the Desktop Assessment is provided in Appendix A and their locations are mapped in Figure 5.

The desktop assessment identified 13 Threatened and Priority Ecological Communities were identified to occur within 20 km of the Survey Area (Department of Biodiversity Conservation and Attractions, 2019d; Department of the Environment and Energy, 2019). Of these, two are identified to intersect with the Survey Area and are shown in Figure 6.

- Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region [Priority 3 (DBCA), Endangered (EPBC Act)]
- Southern wet shrublands, Swan Coastal Plain – Floristic Community Type 2 [Priority 3 (DBCA), Endangered (EPBC Act)]
- Herb rich saline shrublands in clay pans – Floristic Community Type 7 [Priority 3 (DBCA), Endangered (EPBC Act)]
- Shrublands on dry clay flats Floristic Community Type 10a [Priority 3 (DBCA), Endangered (EPBC Act)]
- Shrublands on southern Swan Coastal Plain Ironstones (Busselton area) - Floristic Community Type 10b [Priority 3 (DBCA), Endangered (EPBC Act)]
- *Eucalyptus haematoxylon* - *E. marginata* woodlands on Whicher foothills [Priority 3 (DBCA), Endangered (EPBC Act)]
- *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain - Floristic Community Type 1b [Priority 3 (DBCA), Endangered (EPBC Act)]
- Southern *Banksia attenuata* woodlands [Priority 3 (DBCA), Endangered (EPBC Act)]
- *Corymbia calophylla* - *Kingia australis* woodlands on heavy soils, Swan Coastal Plain - Floristic Community Type 3a [Priority 3 (DBCA), Endangered (EPBC Act)]
- Central Whicher Scarp Mountain Marri woodland [Priority 3 (DBCA), Endangered (EPBC Act)]
- West Whicher Scarp *Banksia attenuata* woodland (Swan Coastal Plain centred woodlands of grey/white sands community B2) [Priority 3 (DBCA), Endangered (EPBC Act)]
- Whicher Scarp Jarrah woodland of deep coloured sands [Priority 3 (DBCA), Endangered (EPBC Act)]
- Swan Coastal Plain Paluslope Wetlands sands [Priority 3 (DBCA), Endangered (EPBC Act)].

4.3.2 Likelihood of Occurrence

The conservation significant species identified in the Desktop Assessment were reviewed for their likelihood of occurrence within the Survey Area based on the criteria outlined in Table 3. Of the 111 species identified in the desktop assessment, no species were recorded within the Survey Area, 10 species are considered to have a high likelihood of occurrence, 19 are considered to have a medium likelihood of occurrence, 67 are considered to have a low

likelihood of occurrence and the likelihood of 15 species is unknown due to a lack of publicly available information. The likelihood assessment is displayed in Table 5.

No Threatened or Priority flora species were identified in the Survey Area.

Conservation significant flora species identified as having a high likelihood of occurrence in suitable parts of the Survey Area include:

- *Daviesia elongata* (T, VU)
- *Boronia capitata* subsp. *gracilis* (P3)
- *Caustis* sp. Boyanup (P3)
- *Cyathochaeta teretifolia* (P3)
- *Schoenus pennisetis* (P3)
- *Stylidium paludicola* (P3)
- *Acacia flagelliformis* (P4)
- *Acacia semitrullata* (P4)
- *Caladenia speciosa* (P4)
- *Franklandia triaristata* (P4).

Conservation significant flora identified as having a medium likelihood of occurrence in the Survey Area include:

- *Banksia mimica* (T, EN)
- *Banksia squarrosa* subsp. *argillacea* (T, VU)
- *Caladenia huegelii* (T, EN)
- *Diuris drummondii* (T, VU)
- *Drakaea elastica* (T, EN)
- *Synaphea* sp. Pinjarra Plain (T, EN)
- *Verticordia densiflora* var. *pedunculata* (T, EN)
- *Verticordia plumosa* var. *vassensis* (T, EN)
- *Amperea micrantha* (P2)
- *Thelymitra variegata* (P2)
- *Boronia tetragona* (P3)
- *Chordifex gracilior* (P3)
- *Grevillea bronwenae* (P3)
- *Isopogon formosus* subsp. *dasylepis* (P3)
- *Loxocarya magna* (P3)
- *Synaphea hians* (P3)
- *Synaphea petiolaris* subsp. *simplex* (P3)

- *Verticordia attenuata* (P3)
- *Pultenaea skinneri* (P4).

The remaining 82 species were considered to have a low likelihood of occurrence or there is insufficient available information to determine likelihood in the Survey Area

Appendix x: Assessment of the Likely Occurrence of DRF and Priority Flora (as per DBCA and EPBC Database Searches) in the Survey Area

Closest record to Survey Area based on DBCA 2019. High = Suitable habitat present and records less than 5 km from the Survey Area, Medium = Suitable habitat present and records between 5 km and 10 km from the Survey Area, and Low = No suitable habitat present and/or records greater than 10 km from the Survey Area. CR = Listed as Critically Endangered under the EPBC Act, EN = Listed as Endangered under the EPBC Act, VU = Listed as Vulnerable under the EPBC Act, T = Threatened under BC Act, P1 - P4 = rare and poorly known flora BC Act. Likelihood of Occurrence: based on knowledge of habitat within the Survey Area and knowledge gained from the survey effort during ground truthing.

Species	Conservation Status		NatureMap	Source		Distance to Nearest Record (km)	Flowering Period	Preferred Habitat	Habitat occurs within the Survey Area	Likelihood of Occurrence
	DBCA	EPBC		PMST	DBCA					
<i>Andersonia gracilis</i>	T	EN		X			Sep to Nov	White/grey sand, sandy clay, gravelly loam. Winter-wet areas, near swamps.	Yes	
<i>Bankisia mimica</i>	T	EN	X		X		Dec or Jan to Feb	White or grey sand over laterite, sandy loam	Yes	
<i>Bankisia nivea</i> subsp. <i>uliginosa</i>	T	EN	X	X	X		Aug to Sep	Sandy clay, gravel	No	Low
<i>Bankisia squarrosa</i> subsp. <i>argillacea</i>	T	VU	X	X	X		Jun to Nov	White/grey sand, gravelly clay or loam. Winter-wet flats, clay flats.	Yes	
<i>Brachyscias verecundus</i>	T	CR		X	X		-	In a moss sward. On a granite outcrop.	No	Low
<i>Caladenia busselliana</i>	T	EN		X	X		Sep to Oct	Sandy loam. Winter-wet swamps.	Yes	
<i>Caladenia hoffmanii</i>	T	EN		X			Aug to Oct	Clay, loam, laterite, granite. Rocky outcrops and hillsides, ridges, swamps and gullies.	Yes	
<i>Caladenia huegelii</i>	T	EN	X	X	X		Sep to Oct	Grey or brown sand, clay loam.	Yes	
<i>Caladenia procera</i>	T	CR		X		X	Sep to Oct	Rich clay loam. Alluvial loamy flats, jarrah/marri/peppermint woodland, dense heath, sedges	Yes	
<i>Calectasia cyanea</i>	T	CR	X				Jun to Oct	White, grey or yellow sand, gravel.	Yes	
<i>Chamaelium</i> sp. S coastal plain	T	VU	X	X	X		-	swamp margins, open Dryandra shrubland in winter-wet sandy clay sites on a coastal plain, low woodlands of <i>Eucalyptus rudis</i> , <i>Melaleuca rhiphiophylla</i> , <i>Astarea fascicularis</i> , or <i>Proteaceae</i> heaths.	No	Low
<i>Darwinia whitherensis</i>	T	EN	X	X	X		Oct - Dec	winter-wet areas of shrubland on shallow red clay over ironstone under a tall shrubland of <i>Dryandra squarrosa</i>	No	Low
<i>Daviesia elongata</i>	T	VU	X	X	X		Sep or Dec or Jan to Feb	Sand, laterite.	Yes	
<i>Diuris drummondii</i>	T	VU	X	X	X		Nov to Dec or Jan	Low-lying depressions, swamps	Yes	
<i>Diuris micrantha</i>		VU		X			Sep to Oct	Brown loamy clay. Winter-wet swamps, in shallow water	No	Low
<i>Drakaea elastica</i>	T	EN	X	X	X		Oct to Nov	White or grey sand. Low-lying situations adjoining winter-wet swamps.	Yes	
<i>Drakaea micrantha</i>		VU		X			Sep to Oct	White-grey sand.	Yes	
<i>Eleocharis keigheryi</i>	T	VU	X	X	X		Aug to Nov	Clay, sandy loam. Emergent in freshwater: creeks, claypans	No	Low
<i>Gastrolobium modestum</i>	T	VU	X	X	X		Sep to Nov	Shallow red clay-loam or grey sand, ironstone. Gullies and edges of flats	No	Low
<i>Gastrolobium papilio</i>	T	EN			X		Oct to Dec	Sandy clay over ironstone and laterite. Flat plains	No	
<i>Grevillea elongata</i>	T	VU		X			Oct	Gravelly clay, sandy clay, sand. Road verges, swamps, creek banks	Yes	
<i>Grevillea maccutcheonii</i>	T	EN		X	X		Mar or May or Dec	Shallow soils over laterite, clay. Seasonally inundated sites.	No	Low
<i>Lambertia echinata</i> subsp. <i>occidentalis</i>	T	EN		X	X		Feb or Apr or Dec	White sandy soils over laterite, orange/brown-red clay over ironstone. Flats to foothills, winter-wet sites	No	Low
<i>Petrophile laticola</i>	T	EN		X	X		Nov	Red laterite clay. Winter-wet flats	No	Low
<i>Sphenotoma drummondii</i>	T	EN		X			Sep to Dec	Stony or shallow soils over granite or quartzite. Steep rocky slopes, crevices of rocks.	No	Low
<i>Synaphea</i> sp. Fairbridge Farm	T	CR	X	X			Oct	Sandy with lateritic pebbles. Near winter-wet flats, in low woodland with weedy grasses	Yes	
<i>Synaphea</i> sp. Piriarra Plain	T	EN	X		X		Sep to Nov	Grey sandy loam or clay, grey-brown clayey sand, brown clayey loam, laterite. Flats, seasonally wet areas, railroad reserves often with wet depressions or drains	Yes	
<i>Synaphea</i> sp. Serpentine	T	CR			X	X	-	-	-	-
<i>Synaphea stenoloba</i>	T	EN	X	X	X		Aug to Oct	Sandy or sandy clay soils. Winter-wet flats, granite	Yes	
<i>Tetraria australiensis</i>	T	VU			X		Nov to Dec	grey sand over clay, winter-wet swampy depressions, drainage lines or rises surrounding swamps. Open forest, or Mann (Corymba calophylla) woodland.	Yes	
<i>Verticordia densiflora</i> var. <i>pedunculata</i>	T	EN	X	X	X		Dec or Jan	Grey/yellow sand, sandy loam. Winter-wet low-lying areas.	Yes	
<i>Verticordia plumosa</i> var. <i>vassensis</i>	T	EN	X	X	X		Sep to Dec or Jan to Feb	White/grey sand. Winter-wet flats.	Yes	
<i>Andersonia ferricola</i>	P1	-	X		X		Oct	White sand or red-brown loam over ironstone. Seasonally wet flats.	No	Low
<i>Bolbochaenus medianus</i>	P1	-	X		X		-	Mud. In water and on river banks.	No	Low
<i>Boronia humifusa</i>	P1		X		X		Jun or Sep	Gravelly clay loam over laterite. Jarrah-marri open forest.	No	Low
<i>Dillwynia</i> sp. Capel	P1		X		X		Sep to Oct	Littered grey loamy sand, rocky soils. Valleys, rangelands.	No	Low
<i>Loxocarya striata</i> subsp. <i>impressa</i>	P1				X		-	Winter wet flats, red clay over ironstone in <i>Hakea varia</i> open heath.	No	Low
<i>Orientera venetiae</i>	P1		X		X		-	-	-	-
<i>Stylidium ferricola</i>	P1		X		X		-	-	-	-
<i>Stylidium nitidum</i>	P1		X		X		-	-	-	-
<i>Synaphea odocoileops</i>	P1		X		X		Aug to Oct	Brown-orange loam & sandy clay, granite. Swamps, winter-wet areas.	No	Low
<i>Synaphea</i> sp. Argyle	P1		X		X		-	-	-	-
<i>Synaphea</i> sp. Redgate Road	P1		X		X		-	Grey clay, litter. Winter-wet areas, wet areas along road verges and ditches.	No	Low
<i>Acacia bathurstensis</i>	P2				X		Aug to Sep	Sand. Typically on limestone breakaways	No	Low
<i>Acrostichum whitherianus</i>	P2				X		Dec or Jan to Mar	White sand pockets over laterite	No	
<i>Amperea micrantha</i>	P2		X		X		Oct to Nov	Sandy soils	Yes	
<i>Calytrix retorsifolia</i>	P2				X		-	Flat areas, sandy clay over ironstone or laterite, clay loam or sand.		
<i>Gastrolobium whitherense</i>	P2				X		Oct	Red-grey sandy clay over quartzite. Steep westerly slopes		
<i>Leptomeria furva</i>	P2				X		Aug to Oct	Grey or black peaty sand. Winter-wet flats	Yes	
<i>Leucopogon</i> sp. Bussellton	P2		X		X		-	-	-	-
<i>Montia australasica</i>	P2				X		-	Aquatic habitats, sand over clay in <i>Melaleuca rhiphiophylla</i> wetlands.	No	Low
<i>Platytheca anasima</i>	P2		X		X		-	-	-	-
<i>Sphaerostylis latifolia</i>	P2				X		Aug to Nov	Sandy soils. Winter-wet depressions	Yes	
<i>Stenanthemum sublineare</i>	P2		X				Oct to Dec	Littered white sand. Coastal plain.	Yes	
<i>Stylidium acuminatum</i> subsp. <i>acuminatum</i>	P2		X		X		-	-	-	-
<i>Stylidium squameosum</i>	P2				X		-	-	-	-
<i>Thelymitra variagata</i>	P2		X		X		Jun to Sep	Sandy clay, sand, laterite.	Yes	
<i>Thysanotus</i> sp. Badgingarra	P2				X		Dec	Grey sand with laterite gravel	No	Low
<i>Adelphacme minima</i>	P3		X		X		-	-	-	-
<i>Angianthus drummondii</i>	P3		X		X		Oct to Dec	Grey or brown clay soils, ironstone. Seasonally wet flats.	No	Low
<i>Blennospora doliformis</i>	P3		X		X		Oct to Nov	Grey or red clay soils over ironstone. Seasonally-wet flats.	No	Low
<i>Boronia anceps</i>	P3		X		X		Sep to Dec or Jan	White sand, gravelly laterite. Seasonally swampy heaths.	No	Low

Low

Medium

High

recorded

1
1

<i>Boronia capitata</i> subsp. <i>gracilis</i>	P3		X		X		Jun to Nov	White/grey or black sand. Winter-wet swamps, hillslopes.	Yes	
<i>Boronia tetragona</i>	P3		X		X		Oct to Dec	Black/white sand, laterite, brown sandy loam. Winter-wet flats, swamps, open woodland.	Yes	
<i>Caulisia</i> sp. <i>Boyanup</i>	P3		X		X		-	White or grey sand.	Yes	
<i>Chamaecilla gibsonii</i>	P3		X		X		Sep	Clay to sandy clay. Winter-wet flats, shallow water-filled claypans.	No	Low
<i>Chordiflex gracilior</i>	P3		X		X		Sep to Dec.	Peaty sand. Swamps.	Yes	
<i>Corybates abditus</i>	P3				X		Oct to Nov	Black peaty soils. Winter-wet swamps.	Yes	
<i>Cynathochloa tenerifolia</i>	P3		X		X		-	Grey sand, sandy clay. Swamps, creek edges	Yes	
<i>Dampiera heterophylla</i>	P3				X		Sep to Oct	Sandy soils. Swampy areas.	Yes	
<i>Eryngium</i> sp. <i>Ferox</i>	P3				X		-	Grey clay in winter wet flats	No	Low
<i>Eryngium</i> sp. <i>Subdecumbens</i>	P3				X		-	-	unknown	unknown
<i>Grevillea brachystylis</i> subsp. <i>brachystylis</i>	P3				X		Aug to Nov	Black sand, sandy clay. Swampy situations	No	Low
<i>Grevillea bronwenae</i>	P3		X		X		Jun to Dec	Grey sand over laterite, lateritic loam. Hillslopes.	Yes	
<i>Hakea oldfieldii</i>	P3				X		Aug to Oct	Red clay or sand over laterite. Seasonally wet flats.	No	Low
<i>Isopogon formosus</i> subsp. <i>dasylepis</i>	P3		X		X		Jun to Dec	Sand, sandy clay, gravelly sandy soils over laterite. Often swampy areas.	Yes	
<i>Jacksonia gracillima</i>	P3		X		X		-	-	-	-
<i>Lasiopetalum laxiflorum</i>	P3				X		Oct or Nov	Dry slopes, white sand over laterite	No	Low
<i>Lasiopetalum membranaceum</i>	P3				X		Sep to Dec	Sand over limestone	No	Low
<i>Lomandra whichei</i> subsp. <i>whichei</i>	P3				X		-	-	unknown	unknown
<i>Lowocarya magna</i>	P3		X		X		Sep or Nov	Sand, loam, clay, ironstone. Seasonally inundated or damp habitats	Yes	
<i>Meionectes tenuifolia</i>	P3		X		X		-	-	-	-
<i>Myriophyllum echinatum</i>	P3		X		X		Nov	Clay. Winter-wet flats.	No	Low
<i>Pultenaea pinifolia</i>	P3		X		X		Oct to Nov	Loam or clay. Floodplains, swampy areas.	No	Low
<i>Schoenus berthamii</i>	P3				X		Oct to Nov	White, grey sand, sandy clay. Winter-wet flats, swamps.	Yes	
<i>Schoenus pennisiensis</i>	P3		X		X		Aug to Sep	Grey or peaty sand, sandy clay. Swamps, winter-wet depressions.	Yes	
<i>Stylidium paludicola</i>	P3		X		X		Oct to Dec	Peaty sand over clay. Winter wet habitats. Marri and Melaleuca woodland, Melaleuca shrubland.	Yes	
<i>Synaphea hians</i>	P3		X		X		Jul or Sep to Nov	Sandy soils. Rises.	Yes	
<i>Synaphea petiolaris</i> subsp. <i>simplex</i>	P3		X		X		Sep to Oct	Sandy soils. Flats, winter-wet areas.	Yes	
<i>Synaphea polypodioides</i>	P3		X		X		-	Light brown loam, red-brown sandy loam, gravelly, brown sandy clay over laterite. In undulating areas.	No	Low
<i>Tetratheca parvifolia</i>	P3		X		X		Oct	-	-	-
<i>Verticordia attenuata</i>	P3		X		X		Dec or Jan to May	White or grey sand. Winter-wet depressions.	Yes	
<i>Acacia flagelliformis</i>	P4		X		X		May to Sep	Sandy soils. Winter-wet areas	Yes	
<i>Acacia semitrullata</i>	P4		X		X		May to Oct	White/grey sand, sometimes over laterite, clay. Sandplains, swampy areas	Yes	
<i>Aponogeton hexatepalus</i>	P4		X		X		Jul to Oct	Mud. Freshwater: ponds, rivers, claypans	No	Low
<i>Banksia meisneri</i> subsp. <i>ascendens</i>	P4				X		Apr to Sep	White or grey sand. Swampy flats	Yes	
<i>Caladenia speciosa</i>	P4		X		X		Sep to Oct	White, grey or black sand.	Yes	
<i>Calothamnus quadrifidus</i> subsp. <i>teretifolius</i>	P4		X		X		-	-	-	-
<i>Chamaeleucium</i> sp. <i>Youngianum</i>	P4				X		-	-	unknown	unknown
<i>Eucalyptus rudis</i> subsp. <i>cratyantha</i>	P4				X		Jul to Sep	Loam. Flats, hillsides.	Yes	
<i>Franklinia transita</i>	P4		X		X		Aug to Oct	White or grey sand	Yes	
<i>Microtis quadrata</i>	P4				X		-	-	unknown	unknown
<i>Ornduffia submersa</i>	P4				X		-	Aquatic plant	Yes	
<i>Pultenaea skinneri</i>	P4		X		X		Jul to Sep	Sandy or clayey soils. Winter-wet depressions.	Yes	
<i>Schoenus niteans</i>	P4				X		Oct	Winter-wet depressions	Yes	
<i>Stylidium striatum</i>	P4		X				Oct to Nov	Brown clay loam over laterite. Hillslopes, Jarrah/Marri forest, Wandoo woodland.	No	Low
<i>Thysanotus glaucus</i>	P4		X		X		-	-	-	-
<i>Tripterocarpos</i> sp. <i>Brachylobus</i>	P4				X		-	-	unknown	unknown
<i>Triphuria australis</i>	P4				X		-	-	unknown	unknown
<i>Verticordia lehmannii</i>	P4				X		Jan or Apr to Jun or Aug or Dec	Aquatic plant	unknown	unknown
<i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>	P4				X		May or Nov to Dec or Jan	Sandy clay. Winter-wet flats	Yes	
								Sand, sandy clay. Winter-wet depressions	Yes	

4.3.3 Flora

The survey recorded a total of 32 taxa from 21 genera across 8 families. The most dominant families were Myrtaceae (13 species) and Poaceae (seven species). The most dominant genus was *Eucalyptus* (five species). A full species inventory is detailed in Appendix B.

A specimen was collected for all species recorded within the Survey Area that could not be identified in the field. Only two specimens (6%), were unable to be identified confidently to species level. This was mainly due to the specimens being sterile with no flowering material or fruit present.

All recorded flora was common to the Swan Coastal Plain Bioregion and none of the flora represented a population range extension.

4.3.4 Flora of Conservation Significance

The targeted flora survey focused on areas of suitable habitat for species with a medium or high likelihood of occurrence within the Survey Area (Table 5).

No Threatened or Priority flora species pursuant to the EPBC Act and/or gazetted as Threatened/Declared Rare Flora pursuant to the BC Act were recorded during the survey.

4.3.5 Introduced Flora

A total of 12 introduced species were recorded within the Survey Area, representing 37.5% of the total taxa recorded (Table 6). None of these are listed as Declared Pests under the BAM Act 2007 (Department of Primary Industries and Regional Development, 2018) or are listed as Weeds of National Significance by the Department of Environment and Energy (2018).

Table 6: Introduced Flora Species within the Survey Area

Taxa	Common Name	BAM Act	WONS
* <i>Arctotheca calendula</i>	Cape Weed	Permitted – s11	-
* <i>Malva parviflora</i>	Marshmallow	Permitted – s11	-
* <i>Callistemon citrinus</i> (planted)	Bottlebrush	Permitted – s11	-
* <i>Eucalyptus camaldulensis</i> (planted)	Red River Gum	Permitted – s11	-
* <i>Eucalyptus maculata</i> (planted)	Spotted Gum	Permitted – s11	-
* <i>Bromus diandrus</i>	Brome Grass	Permitted – s11	-
* <i>Ehrharta longiflora</i>	Annual Veldt Grass	Permitted – s11	-
* <i>Hordeum leporinum</i>	Barley Grass	Permitted – s11	-
* <i>Lolium rigidum</i>	Rye Grass	Permitted – s11	-
* <i>Pennisetum clandestinum</i>	Kikuyu	Permitted – s11	-
* <i>Trifolium repens</i>	White Clover	Permitted – s11	-
* <i>Triticum aestivum</i>	Wheat	Permitted – s11	-




4.3.6 Vegetation Types


A total of four vegetation types were recorded and mapped within the Survey Area:

- Ke: *Kunzea ericifolia* shrubland (3.67 ha)
- Cc: *Corymbia calophylla* woodland (7.96 ha)
- Espp.Mspp.: planted riparian vegetation including mixed *Eucalypt* and *Melaleuca* species (3.12 ha)
- Espp.: Planted dryland vegetation including mixed *Eucalypt* species (2.06 ha).

The vegetation units are described in Table 7 and mapped in Figure 7. Detailed site sheets for each quadrat are provided in Appendix C.

Table 7: Vegetation Types Occurring within the Survey Area

Broad Floristic Formation	Vegetation Unit		Sites	Photograph
<i>Kunzea ericifolia</i> shrubland	Ke	<i>Kunzea ericifolia</i> shrubland	ELR1 ELR2 ELR4	
<i>Corymbia calophylla</i> remnant woodland	Cc	<i>Corymbia calophylla</i> woodland over * <i>Lolium rigidum</i> open grassland.	ELR8	
planted riparian vegetation	Espp. Mspp	planted riparian vegetation including mixed <i>Eucalypt</i> and <i>Melaleuca</i> species	ELR5 ELR6 ELR7	

Broad Floristic Formation	Vegetation Unit		Sites	Photograph
Planted dryland vegetation	Espp.	Planted dryland vegetation including several introduced <i>Eucalypt</i> species.	-	

4.3.7 Vegetation Condition

Vegetation condition within the Survey Area ranged from Good to Completely Degraded. The majority of the Survey Area was in Completely Degraded vegetation condition (97.05%). The main disturbance to the site has been the historic clearing for agricultural purposes. In summary, condition across the Survey Area consisted of:

- Good: 1.16 ha, 0.54%
- Degraded: 5.11 ha, 2.40%
- Completely Degraded: 206.38 ha, 97.05%

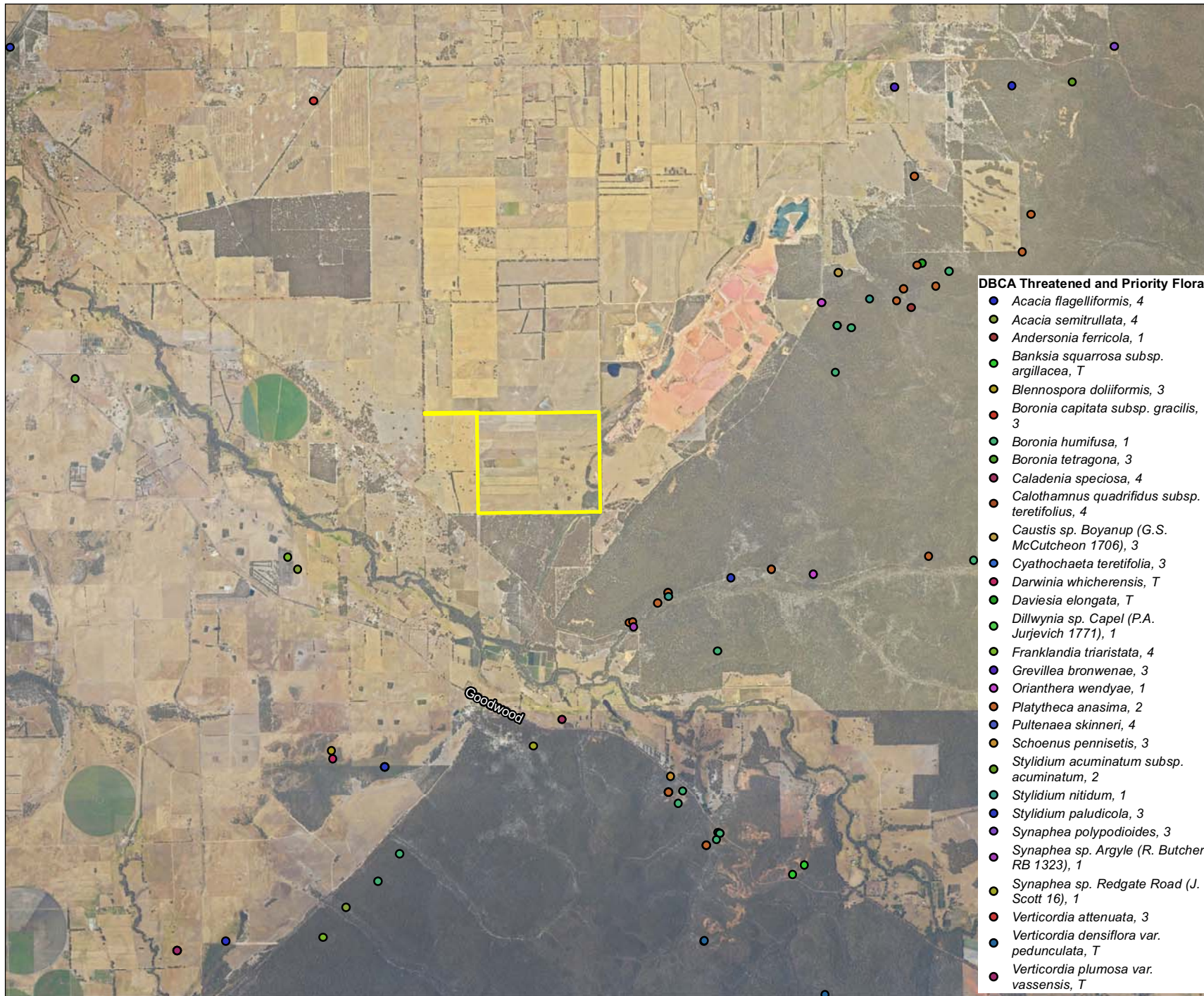
The vegetation condition is mapped in Figure 8.

4.3.8 Threatened and Priority Ecological Communities

No Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) were present within the Survey Area.

4.3.9 Regional Representation

Vegetation mapping units described in the Survey Area were compared with the Beard (1981) and Shepherd et al. (2002) broad vegetation types by examining similarities in vegetation descriptions. Differences exist with the terminology used in the descriptions as they are based on different methods of categorising and characterising vegetation types, and the different spatial scale of the analysis (i.e. region vs. local scale). Vegetation type Cc (*Corymbia calophylla* woodland) is considered to be representative of the Pinjarra 1136 vegetation type. Due to historic land uses of mining and agriculture, this vegetation type now covers only 3.85 % of the Survey Area.



DBCA Threatened and Priority Flora

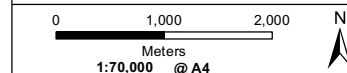
- *Acacia flagelliformis*, 4
- *Acacia semitrullata*, 4
- *Andersonia ferricola*, 1
- *Banksia squarrosa* subsp. *argillacea*, T
- *Blennospora doliiformis*, 3
- *Boronia capitata* subsp. *gracilis*, 3
- *Boronia humifusa*, 1
- *Boronia tetragona*, 3
- *Caladenia speciosa*, 4
- *Calothamnus quadrifidus* subsp. *teretifolius*, 4
- *Caustis* sp. *Boyanup* (G.S. McCutcheon 1706), 3
- *Cyathochaeta teretifolia*, 3
- *Darwinia whicherensis*, T
- *Daviesia elongata*, T
- *Dillwynia* sp. *Capel* (P.A. Jurjevich 1771), 1
- *Franklandia triaristata*, 4
- *Grevillea bronwenae*, 3
- *Orianthera wendyae*, 1
- *Platytheca anasima*, 2
- *Pultenaea skinneri*, 4
- *Schoenus pennisetis*, 3
- *Stylidium acuminatum* subsp. *acuminatum*, 2
- *Stylidium nitidum*, 1
- *Stylidium paludicola*, 3
- *Synaphea polypodioides*, 3
- *Synaphea* sp. *Argyle* (R. Butcher RB 1323), 1
- *Synaphea* sp. *Redgate Road* (J. Scott 16), 1
- *Verticordia attenuata*, 3
- *Verticordia densiflora* var. *pedunculata*, T
- *Verticordia plumosa* var. *vassensis*, T

Legend

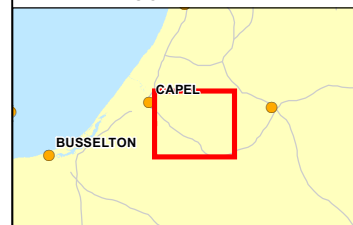
Site Boundary

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2017
- OTHER DATA SOURCED LANDGATE 2018
- AERIAL PHOTOGRAPHY SOURCED LANDGATE 2018
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LOCALITY MAP



PROJECT ID	DATE
3534	03/12/2019

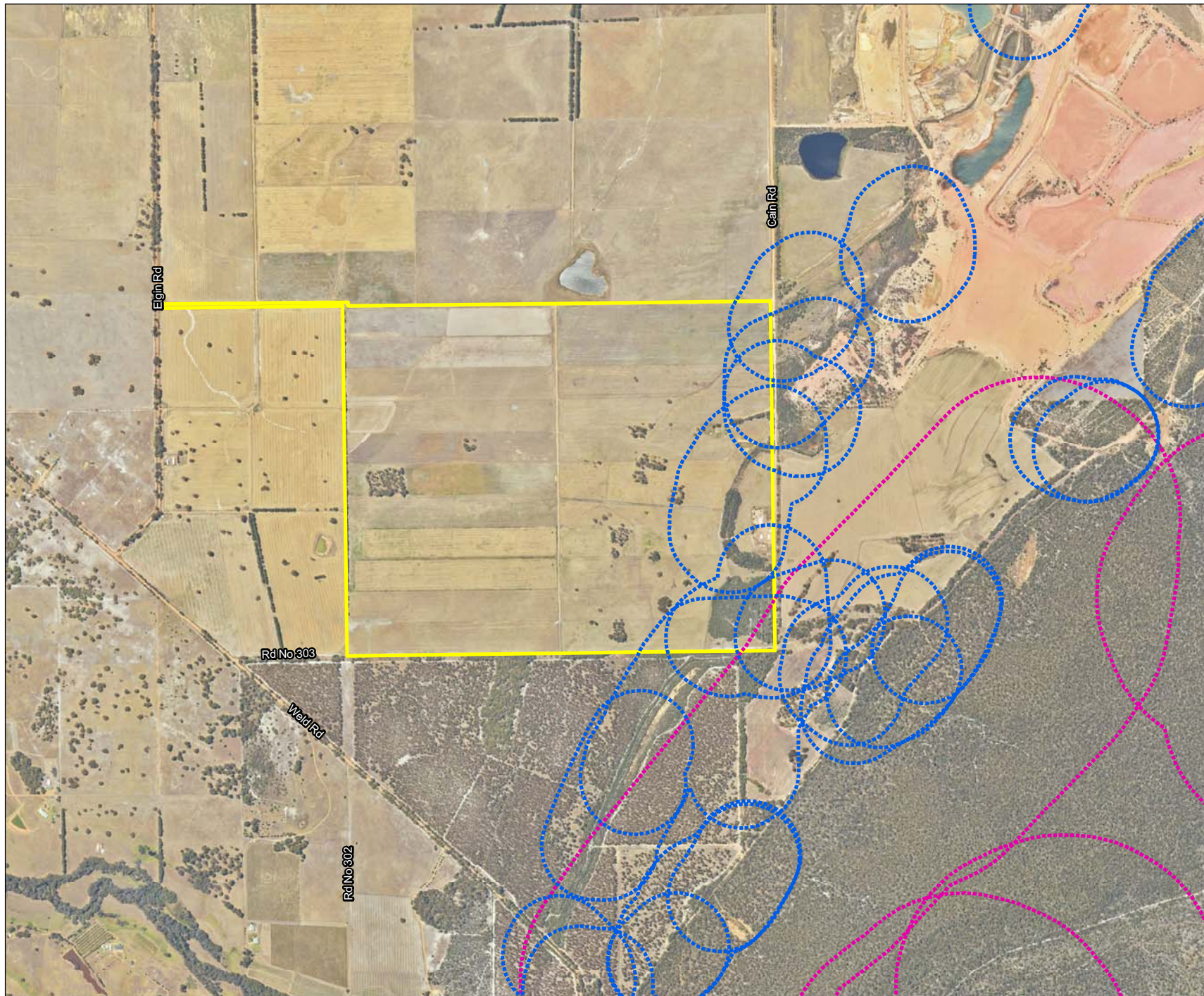
HORIZONTAL DATUM AND PROJECTION	
GDA 1994 MGA Zone 50	

CREATED	CHECKED	APPROVED	REVISION
LF	SH	SH	0

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Biological Survey

Figure 5 DBCA Threatened and Priority Flora Locations

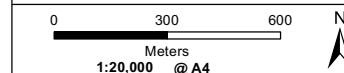


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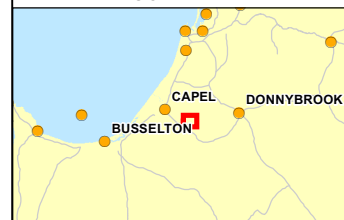
- Survey Area
- DBCA Threatened and Priority Ecological Communities**
 - Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region
 - Whicher Scarp Jarrah woodland of deep coloured sands

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
 - LOCALITY MAP SOURCED LANDGATE 2017
 - OTHER DATA SOURCED LANDGATE 2018
 - AERIAL PHOTOGRAPHY SOURCED LANDGATE 2018
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PROJECT ID	DATE
3534	03/12/2019

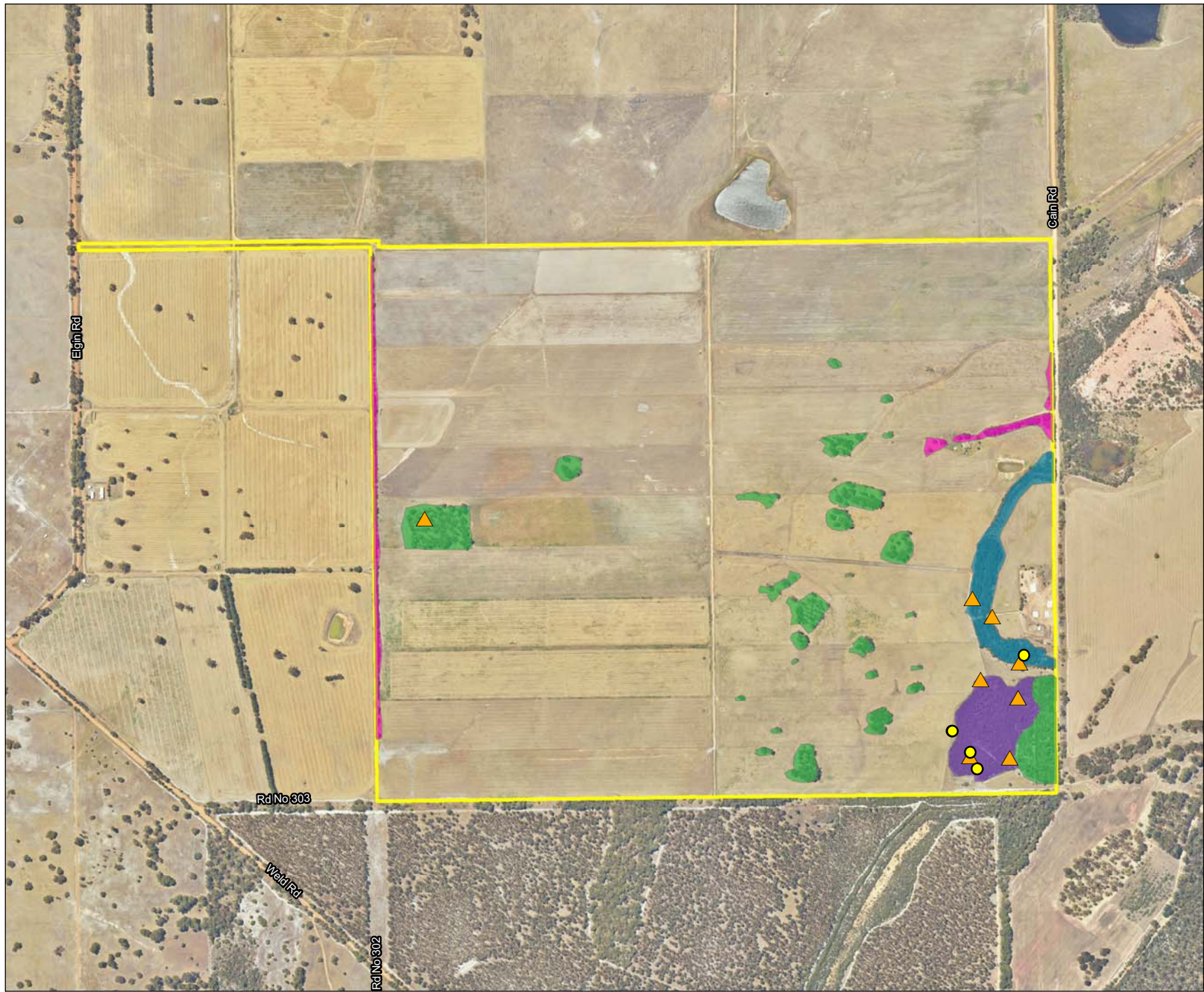
HORIZONTAL DATUM AND PROJECTION	
GDA 1994 MGA Zone 50	

CREATED	CHECKED	APPROVED	REVISION
LF	SH	SH	0

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Figure 6 DBCA Threatened and Priority Ecological Communities

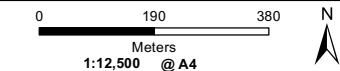


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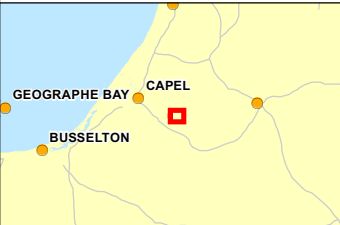
- Survey Area
- Opportunistic Flora Collections
- ▲ Flora Quadrat
- Vegetation Type**
- Cc - *Corymbia calophylla*, woodland
- Espp. Mspp. - planted Dryland Vegetation
- Espp. Mspp. - planted Riparian Vegetation
- Ke - *Kunzea ericifolia* Shrubland

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
 - LOCALITY MAP SOURCED LANDGATE 2017
 - OTHER DATA SOURCED LANDGATE 2018
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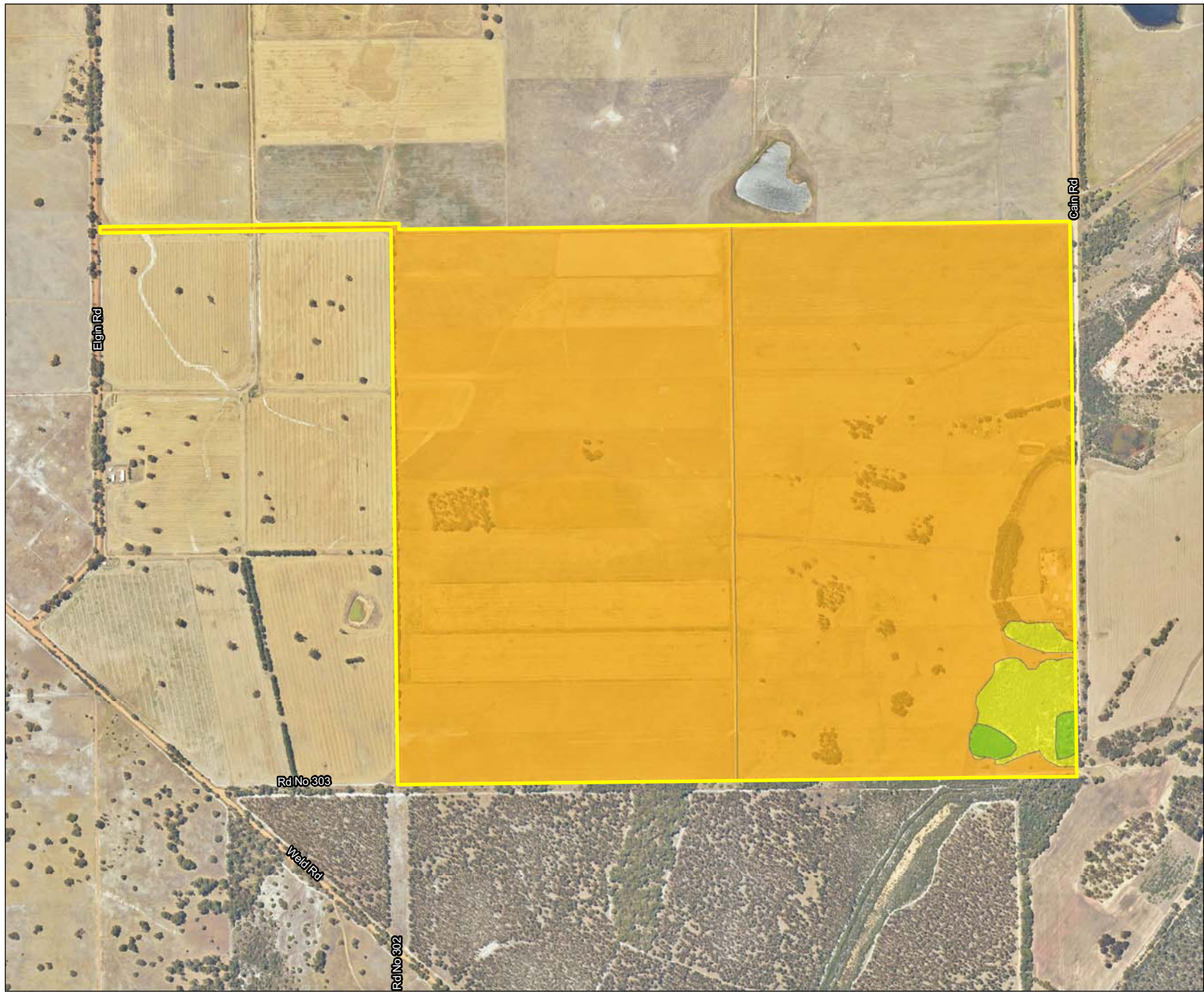
PROJECT ID	DATE
3534	03/12/2019

HORIZONTAL DATUM AND PROJECTION			
GDA 1994 MGA Zone 50			

CREATED	CHECKED	APPROVED	REVISION
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Biological Survey
Figure 7
Vegetation Types



Legend

Survey Area

Vegetation Condition

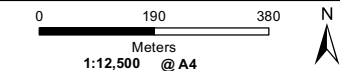
Completely Degraded

Degraded

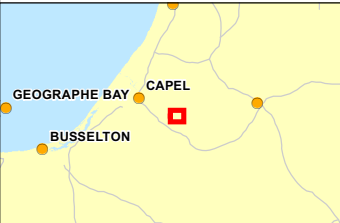
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**Figure 8
Vegetation Condition**

4.4 Vertebrate Fauna Results

4.4.1 Desktop Assessment

A total of 32 conservation significant vertebrate fauna species from 18 families were retrieved from the database searches (Department of Biodiversity Conservation and Attractions, 2019e, 2019c; Department of the Environment and Energy, 2019).

The results of the DBCA fauna database search are displayed in Figure 9 and the results of all database searches are presented in Appendix A.

The following are a summary of the key findings from the fauna database searches:

- 10 mammal species of conservation significance
- 22 bird species of conservation significance
- No reptile or amphibian species of conservation significance have been recorded within 10 km of the Survey Area.

Species listed as Marine only under the EPBC Act, such as the Osprey (*Pandion haliaetus*) and the Hooded Plover (*Thinornis cucullatus*) as well as marine dependent species such as the Subantarctic fur-seal (*Arctocephalus tropicalis*), have been excluded from the likelihood of occurrence list as there is no marine habitat present within the Survey Area.

4.4.2 Field Survey

A total of 28 terrestrial vertebrate fauna species from 21 families were recorded during the field survey, comprised of:

- 23 bird species from 16 families
- Five mammal species from five families, including 2 introduced species.

Three of these species were ducks and were recorded outside of the Survey Area, on standing water along the northern property boundary. A full systematic fauna species list is presented in

Table 8, which lists the total count of species records (providing a rough indication of abundance), and conservation status.

A total of two introduced fauna species were recorded within the Survey Area (rabbit and fox).

Table 8: Fauna Species Recorded During the Field Survey

Family	Scientific Name	Common Name	Conservation Status		Survey Area Count	
			State	Federal	Inside	Outside
Aves						
Acanthizidae	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	-	-	1	-
Accipitridae	<i>Accipiter fasciatus</i>	Brown Gosshawk	-	-	1	-
Anatidae	<i>Anas superciliosa</i>	Pacific Black Duck	-	-	-	25
Anatidae	<i>Tadorna tadornoides</i>	Australian Shelduck	-	-	-	2
Anseriformes	<i>Biziura lobata</i>	Musk duck	-	-	-	1
Ardeidae	<i>Egretta novaehollandiae</i>	White Faced Grey Herron	-	-	1	-
Artamidae	<i>Artamus cyanopterus</i>	Dusky Woodswallow	-	-	2	-
Artamidae	<i>Gymnorhina tibicen</i>	Magpie	-	-	2	-
Cacatuidae	<i>Cacatua roseicapilla</i>	Pink and Grey Galah	-	-	1	-
Cacatuidae	<i>Calyptorhynchus banksii-naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	-	6
Cacatuidae	<i>Calyptorhynchus baudinii</i>	Baudins' Black Cockatoo	EN	EN	12	-
Cacatuidae	<i>Calyptorhynchus latirostris</i>	Carnaby's Black Cockatoo	EN	EN	1	-
Columbidae	<i>Ocyphaps lophotes</i>	Crested pigeon	-	-	1	-
Columbidae	<i>Phaps elegans</i>	Common Bronzewing	-	-	1	-
Corvidae	<i>Corvus coronoides</i>	Australian raven	-	-	1	-
Dicruridae	<i>Grallina cyanoleuca</i>	Mudlark	-	-	1	-
Hirundinidae	<i>Hirundo neoxena</i>	Welcome Swallow	-	-	4	-
Meliphagidae	<i>Anthochaera carunculata</i>	Wattlebird	-	-	1	-
Pachycephalidae	<i>Pachycephala rufiventris</i>	Rufous Whistler	-	-	1	-
Petroicidae	<i>Eopsaltria georgiana</i>	White-Breasted Robin	-	-	1	-
Psittaculidae	<i>Barnardius zonarius</i>	Western Ringneck	-	-	6	-
Rhipiduridae	<i>Rhipidura fuliginosa</i>	Fantail	-	-	1	-
Rhipiduridae	<i>Rhipidura leucophrys</i>	Willie Wagtail	-	-	1	-
Acanthizidae	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	-	-	1	-

Family	Scientific Name	Common Name	Conservation Status		Survey Area Count	
			State	Federal	Inside	Outside
Mammals						
Canidae	<i>*Vulpes vulpes</i>	Fox	-	-	1	-
Leporidae	<i>*Oryctolagus cuniculus</i>	Rabbit	-	-	1	-
Macropodidae	<i>Macropus fuliginosus</i>	Kangaroo	-	-	5	-
Peramelidae	<i>Isoodon fusciventer</i>	Quenda	P4	-	1	-
Tachyglossidae	<i>Tachyglossus aculeatus</i>	Echidna	-	-	1	-

* Introduced species




4.4.3 Fauna Habitat



A total of five fauna habitat types were identified and mapped during the survey (Figure 10; Appendix D). These habitat types and their extent within the Survey Area are presented below in Table 9. A description and photo for each are presented in Table 10.

Table 9: Fauna Habitat Types and Extent within the Survey Area

Fauna Habitat	Extent within Survey Area	
	Area (ha)	%
Wetland	3.67	1.64
Planted riparian	3.12	1.40
Native tree stands	6.21	2.78
Planted vegetation	2.06	0.92
Remnant Woodland	1.74	0.78
Cleared	206.38	92.47
Total Area	223.18	

Table 10: Fauna Habitat Type Descriptions with the Survey Area

Fauna Habitat	Vegetation Type Code	Fauna Habitat Description and Fauna Value	Representative Photo
Wetland	Ke	Wetland area consisting of <i>Kunzea ericifolia</i> shrubland with occasional <i>Acacia pulchella</i> and Orchidaceae sp. or mixed introduced grasses when in degraded condition	
Planted riparian	Espp.Mspp	A drainage area with a small amount of standing water. This area has been fenced and planted with a mixture of local and introduced species including <i>Eucalyptus camaldulensis</i> , <i>Eucalyptus maculata</i> and <i>Melaleuca</i> spp.	
Native tree stands	Cc	Parkland cleared areas of mature trees predominantly <i>Corymbia calophylla</i> but also containing <i>Eucalyptus marginata</i>	

Fauna Habitat	Vegetation Type Code	Fauna Habitat Description and Fauna Value	Representative Photo
Planted vegetation	Espp.	Planted dryland areas typically along fencelines and driveways. Species include local native and introduced species. Overstorey species only	
Remnant woodland	Cc	Remnant intact Marri/Jarrah woodland with some dense understorey and fallen logs	N/A
Completely Degraded	CD	Cleared of native vegetation, containing crops and weed species only.	

4.4.4 Conservation Significant Fauna

Four fauna species of conservation significance were recorded within or directly surrounding the Survey Area. These species are:

- Forest Red Tailed Black Cockatoo - *Calyptorhynchus banksii naso* (VU)
- Baudin's Black Cockatoo - *Calyptorhynchus baudinii* (EN)
- Carnaby's Black Cockatoo - *Calyptorhynchus latirostris* (EN)
- Quenda - *Isodon fusciventer* (P4).

Targeted searches for the Western Ringtail Possum were undertaken by traversing the Survey Area. No evidence of Western Ringtail Possum was recorded.

4.4.4.1 Likelihood of Occurrence

The 32 conservation significant fauna species identified from the desktop assessment were assessed for their likelihood of occurrence after the completion of the field survey (Table 11). The results determined that:

- Four fauna species of conservation significance were recorded within the Survey Area
- No conservation significant fauna species are considered to have a high likelihood of occurrence within the Survey Area
- Four conservation significant fauna species are considered to have a medium likelihood of occurrence within the Survey Area:
 - Masked Owl - *Tyto novaehollandiae novaehollandiae* (P3)
 - Chuditch - *Dasyurus geoffroii fortis* (VU)
 - Western Brush Wallaby - *Notamacropus irma* (VU)
 - Wambenger (Brush tailed Phascogale) - *Phascogale tapoatafa wambenger* (CD)
- The remaining 26 conservation significant species are considered to have a low likelihood of occurrence.

Key: STATE = Wildlife Conservation Act 1950 or Department of Biodiversity, Conservation and Attractions Conservation Code, EPBC = Environmental Protection and Biodiversity Conservation Act 1999, A = Listed in Naturemap Search, B = EPBC Protected Matters Search, C = DBCA Threatened and Priority Fauna Search, # = Number of DBCA Records in Past 15 years

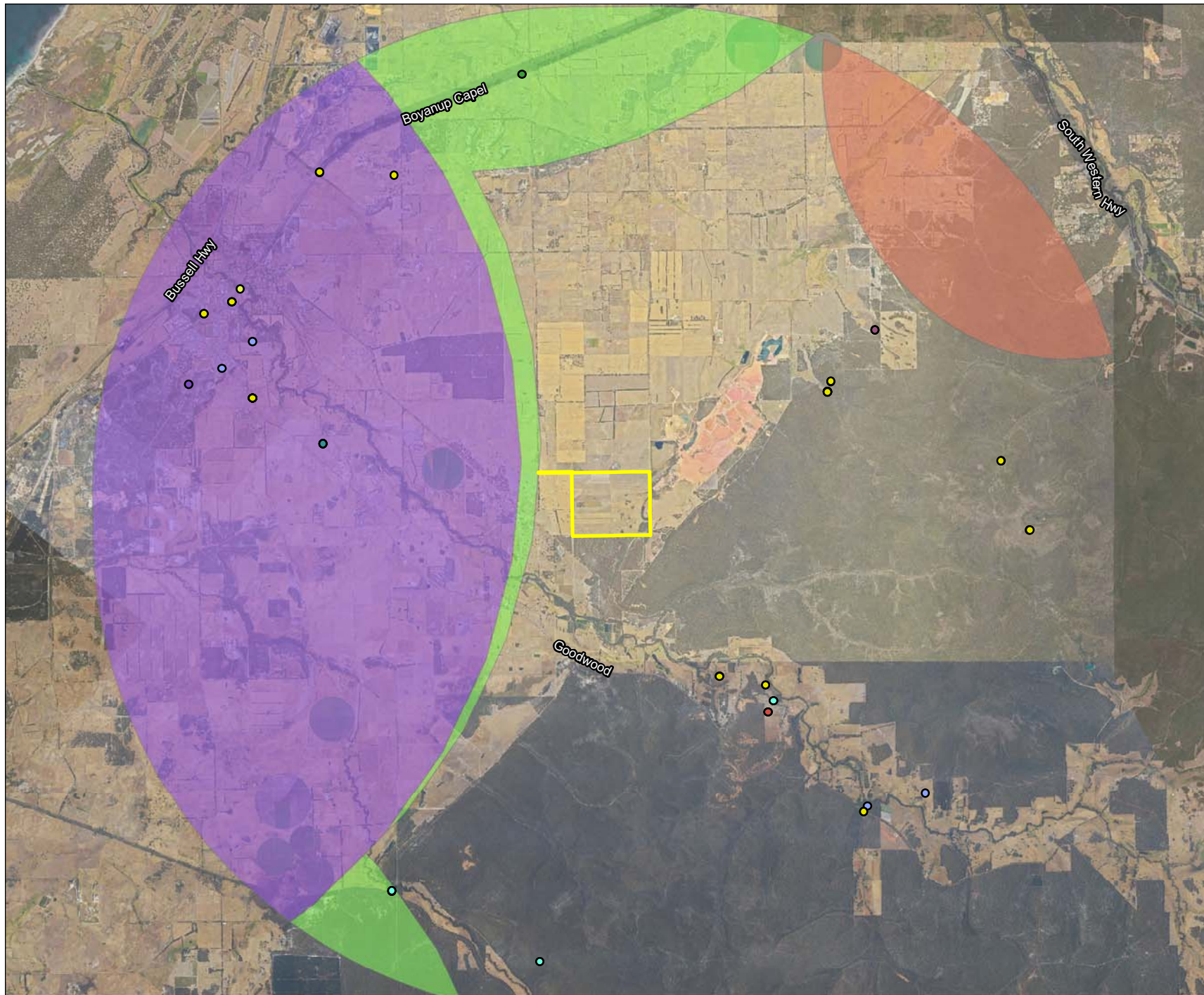
CR = Critically Endangered, EN = Listed as Endangered, VU = Listed as Vulnerable, IA = International Agreement, MI = Listed as Migratory, CD = Conservation dependent fauna, OS = Other specially protected fauna under the WC Act, MA = Listed as Marine under the EBPC Act, P = Listed as Priority by the DBCA.

FAMILY	SCIENTIFIC NAME	COMMON NAME	CONSERVATION CODES STATE	EPBC	A	B	C	#	HABITAT PREFERENCE	LIKELIHOOD OF OCCURRENCE
AVIAN										
Ardeidae	<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	EN	X	X		-	Freshwater wetlands, occasionally estuarine; prefers heavy vegetation - shrubbery, reedbeds, sedges ²	Low
Scolopacidae	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	IA	MI & MA	X			-	Fresh or salt wetlands – muddy edges of lagoons, swaps, lakes, dams, soaks, sewage farms, temporary floodwaters ²	Low
Scolopacidae	<i>Calidris canutus</i>	Red Knot	IA (& VU at subsp. level)	EN, MI & MA		X		-	Restricted to coastal sites with extensive, firm tidal flats ¹	Low
Scolopacidae	<i>Calidris ferruginea</i>	Curlew Sandpiper	VU & IA	CR, MI & MA	X	X		-	Inter-tidal mudflats of estuaries, lagoons, mangrove channels; around lakes, dams, floodwaters, flooded saltbush surrounds of inland lakes ²	Low
Scolopacidae	<i>Calidris ruficollis</i>	Red-necked Stint	IA	MI & MA	X			-	Diverse – tidal and inland on mudflats, salt marshes, beaches, salt fields, temporary floodwaters ²	Low
Cacatuidae	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	X	X	X	3	Tall eucalypt forest, woodland, feeds on seeds of large-fruited eucalypts ¹	Recorded
Cacatuidae	<i>Calyptorhynchus baudinii</i>	Baudin's Cockatoo	EN	EN	X	X	X	4	Forests, farm trees; feed primarily on seed from large woody capsules of marri, a common SW eucalypt; also strips bark from dead trees in search of wood-boring insects ²	Recorded
Cacatuidae	<i>Calyptorhynchus latirostris</i>	Carnaby's Cockatoo	EN	EN	X	X	X	13	Forests, woodlands, heathlands, farms; feeds on banksias hakeas, dryandras - often on ground; also exploits pine plantations ²	Recorded
Falconidae	<i>Falco peregrinus</i>	Peregrine Falcon	OS		X		X	0	Most environments with suitable nest sites: cliff faces preferred, including man-made ones, commonly uses stick nests built by other species ¹	Low
Scolopacidae	<i>Limosa limosa</i>	Black-tailed Godwit	IA	MI & MA	X			-	Shallow inland wetlands and, specially before wet season rains begin, on coast. Prefer sites with muddy substrates ¹	Low
Procellariidae	<i>Macronectes giganteus</i>	Southern Giant Petrel	IA	EN, MI & MA	X			-	Southern oceans, will enter bays and harbours. Routinely ashore to feed and rest ¹	Low
Scolopacidae	<i>Numenius madagascariensis</i>	Far Eastern Curlew (Eastern Curlew)	VU & IA	CR, MI & MA		X		-	Widespread but patchily distributed along coast, most numerous at sites with extensive tidal flats ¹	Low
Anatidae	<i>Oxyura australis</i>	Blue-billed Duck	P4		X		X	0	Breeds in deep permanent, densely vegetated freshwater lakes, swamps and dams; winters on more open waters ²	Low
Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy Ibis	IA	MI & MA	X		X	0	Shallow, fresh water, occasionally estuarine waters or dry grasslands ¹	Low
Charadriidae	<i>Pluvialis squatarola</i>	Grey Plover	IA	MI & MA		X		-	Strictly coastal, restricted to large tidal flat systems ¹	Low
Laridae	<i>Sterna caspia</i>	Caspian Tern	IA	MI & MA	X			-	Occurs in sheltered coastal waters; also uses inland water bodies, including large rivers, fresh to saline lakes, reservoirs and temporary wetlands ¹	Low
Laridae	<i>Sterna nereis nereis</i>	Australian Fairy Tern	VU			X		-	Marine, sheltered coasts, bays, inlets, estuaries, coastal lagoons, ocean beaches. Also near coastal wetlands, including salt ponds, lakes ²	Low
Scolopacidae	<i>Tringa glareola</i>	Wood Sandpiper	IA	MI & MA	X	X		-	Uses freshwater wetlands, especially those with emergent sedges and taller fringing vegetation ¹	Low

¹ = (Menkhorst et al., 2017), ² = (Morcombe, 2003), ³ = (Wilson and Swan, 2017), ⁴ = (Van Dyck and Strahan, 2008)

FAMILY	SCIENTIFIC NAME	COMMON NAME	CONSERVATION CODES STATE	EPBC	A	B	C	#	HABITAT PREFERENCE	LIKELIHOOD OF OCCURRENCE
FAMILY	SCIENTIFIC NAME	COMMON NAME	CONSERVATION CODES STATE	EPBC	A	B	C	#	HABITAT PREFERENCE	LIKELIHOOD OF OCCURRENCE
Scolopacidae	<i>Tringa hypoleucos</i>	Common Sandpiper	IA	MI & MA	X		X	0	Varied coastal and interior wetlands – narrow muddy edges of billabongs, river pools, mangroves, among rocks and snags, reefs or rocky beaches; avoids wide open mudflats. Perches on branches, posts, boats ²	Low
Scolopacidae	<i>Tringa nebularia</i>	Common Greenshank	IA	MI & MA	X	X	X	0	Diverse inland and coastal spots. Away from the coast - uses both permanent and temporary wetlands – billabongs, swamps, lakes, floodplains, sewage farms and salt works ponds, flooded irrigated crops. On the coast – uses sheltered estuaries and bays with extensive mudflats, mangrove swamps, muddy shallows of harbours and lagoons, occasionally rocky tidal ledges. Prefers wet and flooded mud and clay rather than sand ²	Low
Scolopacidae	<i>Tringa stagnatilis</i>	Marsh Sandpiper	IA	MI & MA	X	X		-	Shallow, fresh to brackish inland wetlands ¹	Low
Tytonidae	<i>Tyto novaehollandiae novaehollandiae</i>	Masked Owl (southwest)	P3		X			-	Roosts in tree hollows, foliage or caves. Inhabits a wide variety of forests and woodlands provided there are large old trees with hollows for nesting ¹	Medium
MAMMALIAN										
Potoroidae	<i>Bettongia penicillata ogilbyi</i>	Brush-tailed Bettong, Woylie	CR	EN	X		X	0	Restricted to three small wheatbelt reserves, all characterised by the presence thickets of the plant genus <i>Gastrolobium</i> ⁴	Low
Dasyuridae	<i>Dasyurus geoffroyi fortis</i>	Western Quoll, Chuditch	VU	VU	X	X	X	0	Areas dominated by sclerophyll forest or drier woodland, heath and mallee shrubland ⁴	Medium
Vespertilionidae	<i>Falsistrellus mackenziei</i>	Western Falsistrelle	P4	0	X			-	Most records from mature karri forest but also known from wetter stands of Jarrah and Tuart, and woodland on Swan Coastal Plain. ⁴	Low
Muridae	<i>Hydromys chrysogaster</i>	Water-rat	P4	0	X		X	2	Vicinity of permanent fresh or brackish water bodies ⁴	Low
Peramelidae	<i>Isodon fusciventer</i>	Quenda	P4		X		X	2	Sandy soils with dense heathy vegetation ⁴	Recorded
Macropodidae	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	0	X		X	0	Open forest or woodland, open seasonally wet flats ⁴	Medium
Dasyuridae	<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD	0	X		X	0	Arboreal, forages on mature rough-barked trees, large logs and dead standing trees ⁴	Medium
Pseudocheiridae	<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	CR	CR	X	X	X	122	Agonis forest and woodland, and Tuart forest with an Agonis midstorey ⁴	Low
Muridae	<i>Pseudomys occidentalis</i>	Western Mouse	P4	0	X			-	Now confined to Ravensthorpe, Fitzgerald R. NP and several smaller reserves in the southern wheatbelt or fouth of there	Low
Macropodidae	<i>Setonix brachyurus</i>	Quokka	VU	VU	X	X	X	0	Requires dense wet ground cover in forest or swampy flats ⁴	Low

¹ = (Menkhorst et al., 2017), ² = (Morcombe, 2003), ³ = (Wilson and Swan, 2017), ⁴ = (Van Dyck and Strahan, 2008)



Legend

Survey Area

Fauna Search Carnabys 2010

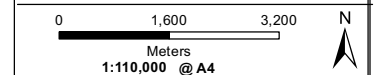
- Breeding Area - Confirmed
- Breeding Area - Possible
- Roost Areas Confirmed - Buffered 6kms

Fauna Search

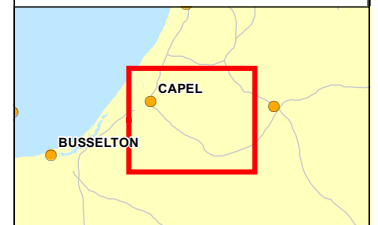
- Baudin's cockatoo, EN
- Carnaby's cockatoo, EN
- Common Sandpiper, IA
- Swan Coastal Plain shield-backed trapdoor spider, P3
- Blue-billed duck, P4
- Forest red-tailed black cockatoo, VU
- Glossy ibis, IA
- Peregrine falcon, OS
- Pouched lamprey, P3
- Quokka, VU
- Western brush wallaby, P4

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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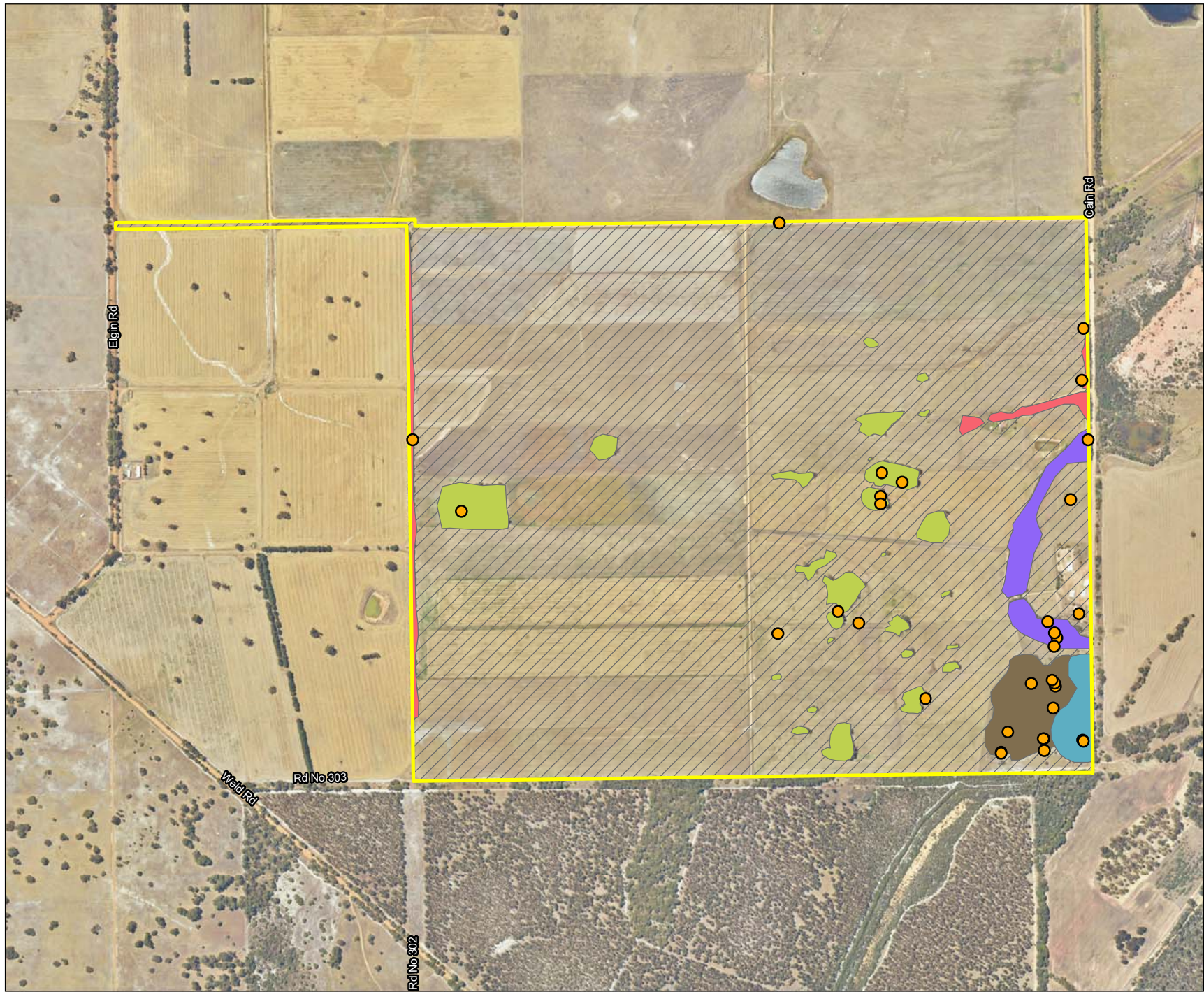
HORIZONTAL DATUM AND PROJECTION GDA 1994 MGA Zone 50			
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Biological Survey

Figure 9 DBCA Threatened and Priority Fauna Locations

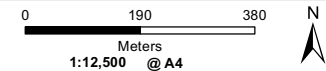


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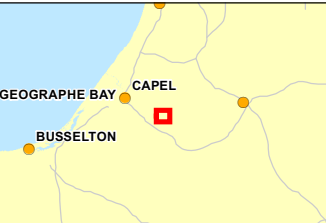
- Survey Area
- Opportunistic Fauna
- Fauna Habitat Type**
 - Native Tree Stands
 - Planted Riparian Vegetation
 - Planted Vegetation
 - Remnant Woodland
 - Wetland
 - Cleared

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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Biological Survey
Figure 10
Fauna Habitat Types

4.5 Black Cockatoo Habitat Assessment

4.5.1 Desktop Assessment

The Survey Area occurs within the modelled distribution of all three Black Cockatoo species (Department of Sustainability Environment Water Population and Communities, 2012a; Department of the Environment and Energy, 2017).

4.5.2 Foraging Habitat

The Black Cockatoo foraging resources within the Survey Area was primarily comprised of Marri (*Corymbia calophylla*) which is considered very high quality foraging habitat for all three Black Cockatoo species. Some Jarrah (*Eucalyptus marginata*) which is commonly utilised for seeds by Forest Red-tailed Black Cockatoos were recorded as well as a few large *Banksia* trees commonly utilised for seeds by Carnaby's Black Cockatoo.

Evidence of Black Cockatoo foraging on Marri nuts was observed on two occasions during the survey. Baudin's Black cockatoo calls were recorded twice during the survey and calls of Forest Red-tailed Black Cockatoos were also recorded once within the Survey Area. Foraging habitat for Black Cockatoos and locations of evidence of foraging, sightings and calls are shown in Figure 11.

4.5.3 Breeding Habitat

The Black Cockatoo habitat assessment identified 152 Black Cockatoo habitat trees with a DBH >500 mm. The trees comprised of Marri (147 trees), Jarrah (2 trees), Tuart (1 tree) and Flooded Gum (2 trees).

Of the 152 potential breeding trees identified within the Survey Area, 24 trees were recorded as having hollows (39 hollows in total). Of these, seven trees contained hollows with an opening diameter greater than 12 cm. In total 14 Black Cockatoo suitable (based on entrance size, internal dimensions were not assessed) hollows were recorded within the Survey Area. 11 of these hollows were recorded in standing dead trees (stags). One hollow in a live Marri tree was noted to be occupied by Pink and Grey Galahs.

Signs of use were recorded for one Marri tree, with chew marks being observed surrounding the entrance to the hollow. No evidence was found to confirm this use was by Black Cockatoos. A photo of this hollow is included in Appendix E. No observations of hollow occupancy by Black Cockatoos were recorded within the Survey Area.

4.5.4 Roosting Habitat

No evidence of Black Cockatoo roosting was observed within the Survey Area.

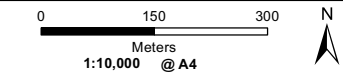


Legend

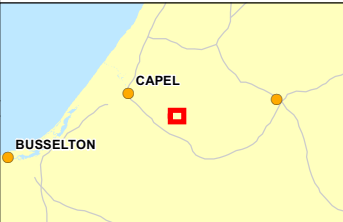
- Survey Area
- Black Cockatoo Evidence
- Foraging Habitat Quality**
- Very High

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
 - LOCALITY MAP SOURCED LANDGATE 2017
 - OTHER DATA SOURCED LANDGATE 2018
 - AERIAL PHOTOGRAPHY SOURCED LANDGATE 2018
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LOCALITY MAP



PROJECT ID	DATE
3534	04/12/2019

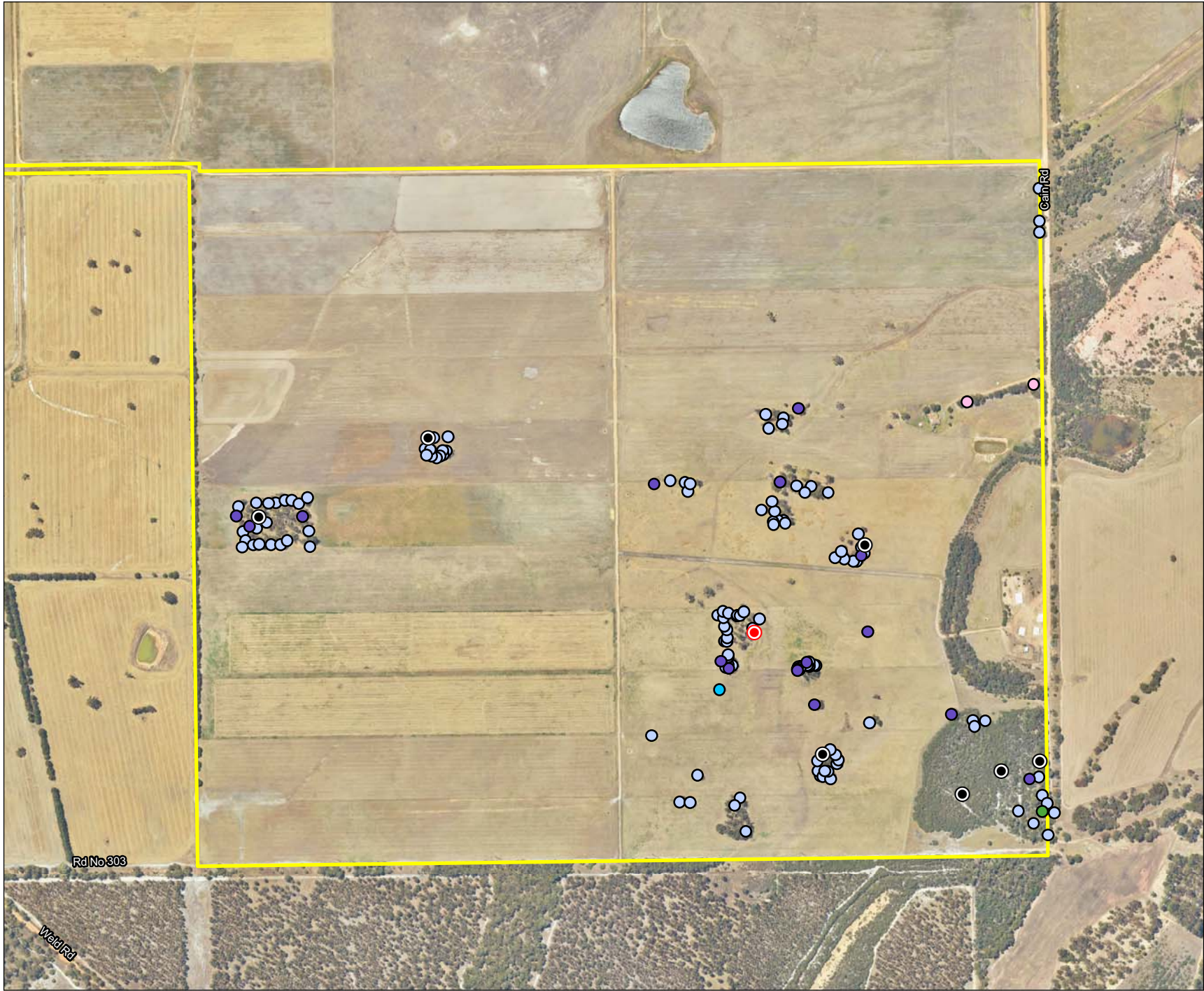
HORIZONTAL DATUM AND PROJECTION	
GDA 1994 MGA Zone 50	

CREATED	CHECKED	APPROVED	REVISION
LF	SH	SH	0

Mobile Concreting Solutions Pty Ltd, 864 Cain Rd Elgin

Biological Survey

Figure 11
Black Cockatoo Foraging Habitat

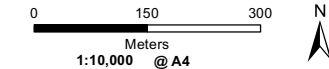


Legend

- Survey Area
- Occupied Trees with Hollows Suitable for Breeding
- Potential Trees with Hollows Suitable for Breeding
- Black Cockatoo Significant Habitat Trees**
 - Tuart (*Eucalyptus gomphocephala*), with hollows
 - Stag, with hollows
 - Marri (*Corymbia calophylla*), with hollows
 - Flooded gum (*Eucalyptus rudis*), no hollows
 - Jarrah (*Eucalyptus marginata*), no hollows
 - Marri (*Corymbia calophylla*), no hollows

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2017
- OTHER DATA SOURCED LANDGATE 2018
- AERIAL PHOTOGRAPHY SOURCED LANDGATE 2018
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LOCALITY MAP



PROJECT ID	DATE
3534	03/12/2019

HORIZONTAL DATUM AND PROJECTION	
GDA 1994 MGA Zone 50	

CREATED	CHECKED	APPROVED	REVISION
LF	SH	SH	0

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Biological Survey
Figure 12 Black Cockatoo Potential Breeding Habitat Trees

5 Discussion

5.1 Flora and Vegetation

5.1.1 Flora

The suite of flora taxa recorded during the survey is considered typical for the respective areas (Beard, 1981) and aligns with the database search results obtained. Despite the below-average rainfall recorded for the 12 months prior to commencing the survey, the floristic diversity was considered within the expected range for the bioregions for the timing of the survey undertaken (with consideration to the vegetation condition recorded within the Survey Area). The total rainfall in the 12 months prior to the survey (October 2018 to September 2019) was 527.6 mm, which is 198.5 mm below to the long-term average of 726.1 mm (Bureau of Meteorology, 2019). In the three months prior to the survey (July 2019 to September 2019), 278.2 mm of rainfall was recorded, which is 61.6 mm below the long-term average of 339.8 mm for the same time period (1995 to 2019) (Bureau of Meteorology, 2019). This below average rainfall may have contributed to the low species diversity recorded during the survey, however the vegetation condition (recorded as largely completely degraded across the site) is likely to be a greater contributor.

5.1.2 Flora of Conservation Significance

Conservation significant flora species identified in the desktop assessment with a medium and high likelihood of occurrence were targeted during the survey.

No Threatened flora species pursuant to the EPBC Act and/or gazetted as Threatened/Declared Rare Flora pursuant to the BC Act were recorded during the survey.

The review of the database searches identified 111 conservation significant flora species as potentially occurring in the vicinity of the Survey Area.

Based on the habitat type present and known distribution, 10 conservation significant flora species were identified as having a high likelihood of occurrence in the Survey Area have a high likelihood of occurrence within suitable parts of the Survey Area, these are as follows:

***Daviesia elongata* (T, VU)**

A spreading or sprawling shrub, *Daviesia elongate* grows to 1 m high, with yellow, orange and red flowers in September, or December, or January to February (Department of Biodiversity Conservation and Attractions, 2019b). It has previously recorded in the Boyanup State Forest which is adjacent to the Survey Area.

***Boronia capitata* subsp. *gracilis* (P3)**

This *Boronia* is described as a small slender shrub (0.3-0.6(-3) m high) with pilosa branches. Its four petalled pink flowers appear June to November. It occurs on white/grey or black sand in winter-wet swamps and on hillslopes (Department of Biodiversity Conservation and Attractions, 2019b). The wetland in the south east section of the Survey Area is considered suitable habitat for this species.

***Caustis* sp. Boyanup (P3)**

A rhizomatous, clumped perennial grass-like sedge growing up to 1 m high. It occurs on white or grey sand (Department of Biodiversity Conservation and Attractions, 2019b). Also previously recorded in the Boyanup State Forest which is adjacent to the Survey Area.

***Cyathochaeta teretifolia* (P3)**

A rhizomatous, clumped and robust perennial, grass-like sedge. It grows to 2 m high and up to 1 m wide with brown flowers (Department of Biodiversity Conservation and Attractions, 2019b). It occurs on grey sand and sandy clay in swamps and along creek edges. The wetland in the south east section of the Survey Area is considered suitable habitat for this species.

***Schoenus pennisetis* (P3)**

A small tufted annual, grass-like sedge 0.05-0.15 m high. With purple-black flowers in August to September (Department of Biodiversity Conservation and Attractions, 2019b). It occurs on grey or peaty sand and sandy clay in swamps or winter-wet depressions. The wetland in the south east section of the Survey Area is also considered suitable habitat for this species.

***Stylidium paludicola* (P3)**

A reed-like perennial herb up to 1 m high. It has tufted leaves which are linear, subulate or narrowly oblanceolate, up to 0.5-4 cm long and 0.5-1.5 mm wide (Department of Biodiversity Conservation and Attractions, 2019b). Leaves have an acute apex with an entire margin. Inflorescence racemose with pink flowers from October to December. It occurs on peaty sand over clay in winter wet habitats, Marri and Melaleuca woodland or Melaleuca shrubland.

***Acacia flagelliformis* (P4)**

This yellow flowering wattle is a rush-like, erect or sprawling shrub 0.3-0.75(-1.6)m high (Department of Biodiversity Conservation and Attractions, 2019b). Flowering occurs May to September. It occurs on sandy soils in winter-wet areas and therefore the wetland in the south east section of the Survey Area is also considered suitable habitat for this species.

***Acacia semitrullata* (P4)**

A slender, erect, pungent shrub, usually growing up to 0.7m high (Department of Biodiversity Conservation and Attractions, 2019b). It has cream-white flowers between May and October. It grows on white/grey sand, sometimes over laterite and clay in sandplains and swampy areas. It has previously been recorded in *Kunzea ericifolia* shrubland and Marri and Jarrah forest and therefore the entire Survey Area is considered suitable habitat for this species.

***Caladenia speciosa* (P4)**

As most orchids, it can be described as a tuberous, perennial herb. It grows to 0.6m high. Its spider orchid style white-pink flowers can be found from September to October. It occurs on white, grey or black sand. It has also previously been recorded from nearby areas of Marri and Jarrah forest and *Kunzea ericifolia* shrubland and therefore the entire Survey Area is considered to be suitable habitat for this species.

***Franklandia triaristata* (P4)**

Commonly called lanoline bush this species is an erect, lignotuberous shrub growing up to 1 m high. It has white-cream-yellow/brown-purple flowers from August to October. It occurs on white or grey sand. Previously recorded in Jarrah/Marri woodland, the suitable habitat within the Survey Area could cover the majority of the site.

Conservation significant flora identified as having a medium likelihood of occurrence in the Survey Area include:

***Banksia mimica* (T, EN)**

Also known as the Summer Honeypot, this prostrate, lignotuberous low shrub grows to 0.4 m high. It has yellow-brown flowers December or January to February. It occurs in white or grey sand over laterite and sandy loam. The nearest record of this Threatened species is 8.5 km from the Survey Area. This was the only record identified through the DBCA database searches.

***Banksia squarrosa subsp. argillacea* (T, VU)**

This erect, open, non-lignotuberous shrub grows to 4 m high. It has yellow flowers from June to November. It is known to occur on white/grey sand, gravelly clay or loam in winter-wet flats or clay flats and therefore the wetland in the south east section of the Survey Area is considered suitable habitat for this species.

***Caladenia huegelii* (T, EN)**

The Grand Spider Orchid is a tuberous, perennial, herb reaching approximately 0.6 m high. Its flowers are green, cream and red and can be found from September to October in grey or brown sand or clay loam. The area immediately outside of the wetland boundary is considered to be suitable habitat for this species.

***Diuris drummondii* (T, VU)**

This Tall Donkey Orchid is usually found in low-lying depressions and swamps. It is a distinctive, tuberous, perennial herb reaching 1.05 m high, with yellow flowers from November to December or January. The wetland in the south east section of the Survey Area is considered possible suitable habitat for this species.

***Drakaea elastica* (T, EN)**

This Glossy Leaved Hammer Orchid is a tuberous, perennial herb only growing 0.12-0.3 m high. Its flowers are red, green and yellow, from October to November. It occurs in white or grey sand in low-lying situations adjoining winter-wet swamps. Therefore, the wetland in the south east section of the Survey Area is considered suitable habitat for this species.

***Synaphea* sp. Pinjarra Plain (T, EN)**

This erect, clumped shrub or sub-shrub grows to 0.8 m high. It has yellow flowers from September to November. Occurring on grey sandy loam or clay, grey-brown clayey sand, brown clayey loam or laterite in flat or seasonally wet areas, this species is most often recorded in railroad reserves often with wet depressions or drains. The nearest record of this species to the Survey Area is 9.7 km away.

***Verticordia densiflora* var. *pedunculata* (T, EN)**

This erect to spreading Feather Flower grows as a shrub to 0.6 m high. It has pink or pink-white flowers in December or January. It occurs on grey/yellow sand or sandy loam on winter-wet low-lying areas. Nearby records indicate the habitat as Marri/Jarrah woodland and therefore much of the Survey Area could be considered suitable habitat for the species, particularly the lower lying north east section, however this area has been previously cleared.

***Verticordia plumosa* var. *vassensis* (T, EN)**

This species grows as a shrub up to 1m high. It has pink feather flowers from September to December or January to February each year. It occurs on white/grey sand in winter-wet flats. The north east corner of the Survey Area and the area immediately adjacent to the wetland boundary in the south east would constitute the most likely habitat areas on this site.

***Amperea micrantha* (P2)**

Low, spreading, bushy perennial, herb, 0.1-0.3 m high. Fl. brown, Oct to Nov. Sandy soils. The single previous nearby record from the DBCA database search shows Jarrah/Banksia woodland as the habitat for this population. Therefore, the area immediately east of the wetland is considered to be suitable habitat for this species.

***Thelymitra variegata* (P2)**

This species is commonly known as the Queen of Sheba. A tuberous, perennial herb approximately 0.1-0.35m high. Its distinctive flowers are orange, red, purple and pink. They can be found from June to September in sandy clay, sand or laterite areas. The sandy nature of the Survey Area and the nearest record of this species just less than 10 km away has given this species a medium rating for likelihood to occur within the Survey Area.

***Boronia tetragona* (P3)**

This perennial herb (0.3-0.7 m high) has sessile, entire leaves with papillate margins. It also has distinctive quadrangular shaped branches. It has pink and red flowers between October and December. It occurs on black/white sand, laterite or brown sandy loam in winter-wet flats, swamps and open woodland and therefore the entire Survey Area is considered suitable habitat for this species.

***Chordifex gracilior* (P3)**

This rhizomatous, erect, perennial herb grows to 0.5m high. It has brown flowers from September to December. It occurs in peaty sand and swamps, therefore the wetland in the south east of the Survey Area is considered to be likely habitat for this species.

***Grevillea bronwenae* (P3)**

This slender, erect shrub grows to 1.6m high. This shrub has red flowers from June to December. It occurs in grey sand over laterite or lateritic loam on Hillslopes. It is possible that this species could occur in the higher areas of remnant Marri woodland in the western side of the Survey Area.

***Isopogon formosus* subsp. *dasylepis* (P3)**

This is a low, bushy or slender, upright, non-lignotuberous shrub, 0.2-2 m high. It has pink-purple/red flowers from June to December. It occurs on sand, sandy clay or gravelly sandy soils over laterite. It is often found in swampy areas, therefore the wetland in the south east of the Survey Area is considered possibly suitable habitat for this species.

***Loxocarya magna* (P3)**

This tangled sedge-like rhizomatous, perennial herb grows to 1.5m high. It flowers in September or November. Occurring on sand, loam, clay or ironstone in seasonally inundated or damp habitats, the wetland in the south east of the Survey Area may be suitable habitat for this species.

***Synaphea hians* (P3)**

This prostrate or decumbent shrub or sub-shrub grows to 0.6 m high and up to 1 m wide. It has yellow flowers in July or September to November. It occurs on sandy soils on rises. Records of this species from 5 – 10 km of the Survey Area indicate that the habitat for this species is Marri/Jarrah woodland, which is similar to the majority of remnant vegetation recorded within the Survey Area.

***Synaphea petiolaris* subsp. *simplex* (P3)**

This tufted shrub grows to 0.6 m high. It has yellow flowers between September and October. It occurs on sandy soils on flats and in winter-wet areas. Therefore, the wetland area in the south east of the Survey Area can be considered suitable habitat. The wet area to the north east of the Survey Area may have originally been considered suitable habitat for this species but is now completely cleared.

***Verticordia attenuata* (P3)**

This feather flower grows as a shrub to 1 m high with pink flowers in December or January or between January and May. It occurs on white or grey sand in winter-wet depressions. Therefore, the area surrounding the wetland in the southeast of the Survey Area may be considered suitable habitat for this species.

***Pultenaea skinneri* (P4)**

Skinner's Pea is a slender shrub, 1-2 m high. It has yellow/orange and red flowers from July to September. It occurs on sandy or clayey soils in winter-wet depressions. The area surrounding the wetland in the south east of the Survey Area may also be considered suitable habitat for this species. The wet area to the north east of the Survey Area may have originally been considered suitable habitat for this species but is now completely cleared.

The remaining 67 species were considered to have a low likelihood of occurrence in the Survey Area.

5.1.3 Introduced Flora

Twelve introduced species were recorded within the Survey Area. None of these species are listed as a Weed of National Significance, or a declared pest plant under the BAM Act.

Several species are considered escapees from adjacent agricultural practices, such as Rye Grass and Wheat. There are several planted areas within the Survey Area. These include the western and eastern boundaries of the Survey Area and the drainage line. Several introduced *Eucalypt* species have been included in these plantings including *Eucalyptus camaldulensis* which has the propensity to act as a weed in this region and can hybridise with local Flooded Gum (*Eucalyptus rudis*).

5.1.4 Vegetation Types

The dominant remnant vegetation type recorded within the Survey Area *Corymbia calophylla* woodland is representative of the broad vegetation type (mapped at a scale of 1:1,000,000) by Beard (1976) - Pinjarra 1136: Woodland Southwest; *Eucalyptus marginata*, *Corymbia calophylla* and *Eucalyptus wandoo*.

5.1.5 Vegetation of Conservation Significance

Thirteen Ecological Communities listed by the State were identified within 20 km radius of the Survey Area. Releve 3 (ELR3) recorded *Banksia* species as dominant. The area of this vegetation however was insignificant across the site, too small an area to even be mapped as a distinct vegetation type and certainly too small to meet the criteria for the Banksia Woodlands of the Swan Coastal Plain Ecological Community. None of the vegetation types identified across the Survey Area are representative of the TECs identified in the desktop assessment due to the absence of suitable habitat required to support the TEC.

5.2 Vertebrate Fauna

5.2.1 Fauna Habitat

All fauna habitats identified in the Survey Area during the field survey are considered to be common throughout the surrounding remnant vegetation areas (bushland surrounding the Survey Area) and also common throughout the overall southwest bioregion and the Perth subregion.

Additionally, the majority of the Survey Area (97%) was recorded to be in Completely Degraded vegetation condition.

The fauna habitats that occur within the Survey Area provide value to common fauna species of the region, providing important refuge, foraging and breeding habitat. The most significant habitat feature of the site is the large number of potential Black Cockatoo breeding trees recorded on site. These trees also provide forage resources for all three threatened Black cockatoo species.

5.2.2 Species Recorded within the Survey Area

Four species of conservation significance were recorded within the Survey Area.

Black cockatoos breed in large hollow-bearing trees, generally in woodlands or forests (Johnstone, Kirkby and Sarti, 2013). The size of the tree can be a useful indication of the hollow-bearing potential of the tree. Trees of suitable DBH are potentially important for maintaining breeding in the long-term, through maintaining the integrity of the habitat and allowing trees to provide future nest hollows. Maintaining the long-term supply of trees of a size to provide suitable nest hollows is particularly important in woodland stands that are known to support Black Cockatoo breeding (Department of Sustainability Environment Water Population and Communities, 2012b).

***Calyptorhynchus banksii naso* – Forest Red Tailed Black Cockatoo (VU)**

The distinctive calls of this species and evidence of foraging within the Survey Area were recorded. The Survey Area does contain both forage habitat and a significant number of potential breeding trees for this species (>500mm DBH).

***Calyptorhynchus baudinii* – Baudin's Black Cockatoo (EN)**

The distinctive calls of this species were also recorded during the survey. The Survey Area contains both forage habitat and a significant number of potential breeding trees (152) for this species (>500mm DBH).

***Calyptorhynchus latirostris* – Carnaby's Black Cockatoo (EN)**

Signs of forage on Marri nuts were recorded for this species within the Survey Area. The Survey Area contains both foraging habitat and a significant number of potential breeding trees (152) for this species (>500mm DBH).

***Isoodon fusciventer* – Quenda (P4)**

Conical diggings likely to have been made by this species were recorded within the wetland in the southeast of Survey Area. The species has a good dispersal ability and therefore has the potential to avoid localised potential disturbance that may occur within the Survey Area. The Survey Area is adjacent to the Dwellingup State Forest which is a large contiguous area of suitable habitat for this species.

5.2.3 Species Considered to have a High Likelihood of Occurrence

No species of conservation significant fauna are considered to have a high likelihood of occurrence within the Survey Area.

5.2.4 Species Considered to have a Medium Likelihood of Occurrence

Four conservation significant fauna species are considered to have a medium likelihood of occurrence within the Survey Area:

Masked Owl (*Tyto novaehollandiae novaehollandiae*) – P3

This species is found in a broad coastal band around most of Australia. This species inhabits forests, woodlands, timbered waterways and open country on the fringe of these areas. They require tall trees with suitable hollows for nesting and roosting and adjacent areas for foraging. The Masked Owl feeds mainly on small mammals such as rodents, rabbits and bandicoots but will also feed on possums, reptiles, birds and insects.

Chuditch (*Dasyurus geoffroii fortis*) – Vulnerable

The Chuditch formally occurred across semi-arid southern Australia, but it is now confined to wet and dry sclerophyll and mallee remnants in the south west of Western Australia. The species dens in burrow or hollow logs, and is a generalist predator eating small vertebrates, large arthropods and carrion (Menkhorst and Knight, 2004).

The Survey Area occurs within the species previous distribution of this species. The Chuditch has demonstrated good dispersal abilities and if dispersing to the southeast of the Survey Area there is extensive, largely intact native vegetation comprising of the suitable habitat within the Boyanup State Forest. However, due to the degraded nature of the site the species is unlikely to be currently residing across the site, and consequently is unlikely to be significantly impacted by disturbance.

Western Brush Wallaby (*Notamacropus irma*) – Vulnerable

The Western Brush Wallaby was not observed during the field survey. The species is described as highly mobile and able to flee (Menkhorst and Knight, 2004) and if dispersing to the east, there is extensive, largely intact native vegetation comprising of the suitable habitat within the Dwellingup State Forest. However, due to the degraded nature of the Survey Area the species is unlikely to be currently residing here, and consequently is unlikely to be significantly impacted by disturbance.

Wambenger (Brush-tailed Phascogale) (*Phascogale tapoatafa wambenger*) - Conservation Dependent

The preferred habitat is described as arboreal, foraging on mature rough-barked trees, large logs and dead standing trees (Van Dyck and Strahan, 2008). Due to the species' high dispersal ability, occurrence of the species within the Survey Area is considered possible. However, any occurrence within the Survey Area is likely to be sporadic due to the boom and bust nature of the species (Van Dyck and Strahan, 2008).

6 Conclusion

Flora and Vegetation

In summary, the following conclusions on the existing flora and vegetation are made:

- No Threatened or Priority flora species pursuant to the EPBC Act and/or gazetted as Threatened/Declared Rare Flora pursuant to the BC Act were recorded during the survey
- 12 introduced species were recorded during the survey, none of which are listed as Weeds of National Significance by the Department of Energy and Environment (2018) or listed as Declared Pests under the BAM Act
- Four vegetation types were mapped within the Survey Area
- No Threatened or Priority ecological communities were identified within the Survey Area.

Vertebrate Fauna

- Four vertebrate fauna species of conservation significance were recorded during the survey:
 - *Calyptorhynchus banksii naso* – Forest Red Tailed Black Cockatoo (VU)
 - *Calyptorhynchus baudinii* – Baudin's Black Cockatoo (EN)
 - *Calyptorhynchus latirostris* – Carnaby's Black Cockatoo (EN)
 - *Isoodon fusciventer* – Quenda (P4)
- Targeted searches for Western Ring-tail Possum found no evidence of occurrence within the Survey Area
- Four species of conservation significance are considered to have a medium likelihood of occurrence within the Survey Area (Chuditch, Wambenger, Western Brush Wallaby & Masked Owl).

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8 Limitations of this Report

This report is produced strictly in accordance with the scope of services set out in the contract or otherwise agreed in accordance with the contract. 360 Environmental makes no representations or warranties in relation to the nature and quality of soil and water other than the visual observation and analytical data in this report.

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Aspects of this report, including the opinions, conclusions and recommendations it contains, are based on the results of the investigation, sampling and testing set out in the contract and otherwise in accordance with normal practices and standards. The investigation, sampling and testing are designed to produce results that represent a reasonable interpretation of the general conditions of the site that is the subject of this report. However, due to the characteristics of the site, including natural variations in site conditions, the results of the investigation, sampling and testing may not accurately represent the actual state of the whole site at all points.

It is important to recognise that site conditions, including the extent and concentration of contaminants, can change with time. This is particularly relevant if this report, including the data, opinions, conclusions and recommendations it contains, are to be used a considerable time after it was prepared. In these circumstances, further investigation of the site may be necessary.

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Appendices

Appendix A

Database Searches

NatureMap Species Report

Created By Guest user on 20/11/2019

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 115° 38' 53" E, 33° 35' 48" S
Buffer 20km
Group By Kingdom

Kingdom	Species	Records
Animalia	431	10470
Chromista	7	7
Fungi	78	314
Plantae	1466	6539
TOTAL	1982	17330

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Animalia				
1.	<i>Acanthaluteres brownii</i>			
2.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
3.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
4.	24262 <i>Acanthiza inornata</i> (Western Thornbill)			
5.	24560 <i>Acanthorhynchus superciliosus</i> (Western Spinebill)			
6.	<i>Acariformes</i> sp.			
7.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
8.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
9.	24282 <i>Accipiter fasciatus</i> subsp. <i>fasciatus</i> (Brown Goshawk)			
10.	25537 <i>Accipiter novaehollandiae</i> (Grey Goshawk)			
11.	42368 <i>Acritoscincus trilineatus</i> (Western Three-lined Skink)			
12.	25755 <i>Acrocephalus australis</i> (Australian Reed Warbler)			
13.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
14.	25544 <i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
15.	24301 <i>Aegotheles cristatus</i> subsp. <i>cristatus</i> (Australian Owlet-nightjar)			
16.	<i>Aeshnidae</i> sp.			
17.	<i>Akamptogonus novarae</i>			
18.	<i>Allothereua maculata</i>			
19.	<i>Amblyomma albolimbatum</i>			
20.	<i>Aname mainae</i>			
21.	<i>Aname tepperi</i>			
22.	24310 <i>Anas castanea</i> (Chestnut Teal)			
23.	24312 <i>Anas gracilis</i> (Grey Teal)			
24.	24313 <i>Anas platyrhynchos</i> (Mallard)			
25.	24315 <i>Anas rhynchotis</i> (Australasian Shoveler)			
26.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
27.	<i>Ancylidae</i> sp.			
28.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
29.	44629 <i>Anilios australis</i>			
30.	<i>Anisops</i> sp.			
31.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
32.	24562 <i>Anthochaera lunulata</i> (Western Little Wattlebird)			
33.	<i>Antichiropus nanus</i>			
34.	<i>Antiporus occidentalis</i>			
35.	<i>Antiporus</i> sp.			
36.	24990 <i>Aprasia pulchella</i> (Granite Worm-lizard)			
37.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
38.	<i>Arachnura higginsii</i>			
39.	<i>Araneus cyphoxis</i>			
40.	<i>Araneus senicaudatus</i>			
41.	24209 <i>Arctocephalus tropicalis</i> (Subantarctic fur-seal)		T	
42.	25559 <i>Ardea intermedia</i> (Intermediate Egret)			
43.	41324 <i>Ardea modesta</i> (great egret, white egret)			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
44.	24341	<i>Ardea pacifica</i> (White-necked Heron)			
45.	24610	<i>Ardeotis australis</i> (Australian Bustard)			
46.		<i>Argiope protensa</i>			
47.		<i>Arkys alticephala</i>			
48.		<i>Arkys walckenaeri</i>			
49.		<i>Arrenuridae</i> sp.			
50.	25566	<i>Artamus cinereus</i> (Black-faced Woodswallow)			
51.	24353	<i>Artamus cyanopterus</i> (Dusky Woodswallow)			
52.		<i>Arctia flavimana</i>			
53.		<i>Athericidae</i> sp.			
54.		<i>Atherinosoma</i> sp.			
55.		<i>Aturidae</i> sp.			
56.		<i>Austracantha minax</i>			
57.		<i>Austrochthonius strigosus</i>			Y
58.	33972	<i>Austromerope poultoni</i> (earwigfly (southwest), scorpionfly)			
59.	24318	<i>Aythya australis</i> (Hardhead)			
60.		<i>Backobourkia brounii</i>			
61.		<i>Badumna insignis</i>			
62.		<i>Baetidae</i> sp.			
63.		<i>Baiami volucripes</i>			
64.		<i>Barnardius zonarius</i>			
65.		<i>Berosus discolor</i>			
66.		<i>Berosus munitipennis</i>			
67.	47873	<i>Bertmainius opimus</i> (western pygmy trapdoor spider)		P3	
68.	24162	<i>Bettongia penicillata</i> subsp. <i>ogilbyi</i> (Woylie, Brush-tailed Bettong)		T	
69.	24319	<i>Biziura lobata</i> (Musk Duck)			
70.	24251	<i>Bos taurus</i> (European Cattle)	Y		
71.		<i>Bostockia porosa</i>			
72.	24345	<i>Botaurus poiciloptilus</i> (Australasian Bittern)		T	
73.		<i>Botryocladus freemani</i>			
74.	25715	<i>Cacatua roseicapilla</i> (Galah)			
75.	25598	<i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
76.	42307	<i>Cacomantis pallidus</i> (Pallid Cuckoo)			
77.		<i>Caenidae</i> sp.			
78.	24779	<i>Calidris acuminata</i> (Sharp-tailed Sandpiper)		IA	
79.	24784	<i>Calidris ferruginea</i> (Curlew Sandpiper)		T	
80.	24788	<i>Calidris ruficollis</i> (Red-necked Stint)		IA	
81.	25717	<i>Calyptorhynchus banksii</i> (Red-tailed Black-Cockatoo)			
82.	24731	<i>Calyptorhynchus banksii</i> subsp. <i>naso</i> (Forest Red-tailed Black Cockatoo)		T	
83.	24733	<i>Calyptorhynchus baudinii</i> (Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo)		T	
84.	24734	<i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
85.	48400	<i>Calyptorhynchus</i> sp. (white-tailed black cockatoo)		T	
86.		<i>Cantheschenia longipinnis</i>			
87.	24072	<i>Caperea marginata</i> (Pygmy Right Whale)			
88.		<i>Carassius auratus</i>			
89.	25335	<i>Caretta caretta</i> (Loggerhead Turtle)		T	
90.		<i>Ceionidae</i> sp.			
91.		<i>Ceratopogonidae</i> sp.			
92.	24086	<i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
93.		<i>Cercophonius sulcatus</i>			
94.	24377	<i>Charadrius ruficapillus</i> (Red-capped Plover)			
95.	25336	<i>Chelonia mydas</i> (Green Turtle)		T	
96.	24321	<i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
97.		<i>Cherax destructor</i>			
98.		<i>Cherax preissii</i>			
99.		<i>Cherax quinquecarinatus</i>			
100.		<i>Chironominae</i> sp.			
101.		<i>Chironomus</i> aff. <i>altmans</i> (V24) (CB)			
102.		<i>Chironomus tepperi</i>			
103.	24980	<i>Christinus marmoratus</i> (Marbled Gecko)			
104.		<i>Chroicocephalus novaehollandiae</i>			
105.	24431	<i>Chrysococcyx basalis</i> (Horsfield's Bronze Cuckoo)			
106.	25601	<i>Chrysococcyx lucidus</i> (Shining Bronze Cuckoo)			
107.	24432	<i>Chrysococcyx lucidus</i> subsp. <i>plagosus</i> (Shining Bronze Cuckoo)			
108.		<i>Chrysomelidae</i> sp.			
109.		<i>Circus aeruginosus</i>			Y
110.	24288	<i>Circus approximans</i> (Swamp Harrier)			
111.	24289	<i>Circus assimilis</i> (Spotted Harrier)			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
112.	24774	<i>Cladorhynchus leucocephalus</i> (Banded Stilt)			
113.		<i>Clynotis severus</i>			
114.		<i>Coenagrionidae</i> sp.			
115.	25675	<i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
116.	24399	<i>Columba livia</i> (Domestic Pigeon)	Y		
117.		<i>Copepoda</i> sp.			
118.	25568	<i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
119.		<i>Corduliidae</i> sp.			
120.		<i>Corixidae</i> sp.			
121.		<i>Cormocephalus hartmeyer</i>			
122.	25592	<i>Corvus coronoides</i> (Australian Raven)			
123.	24417	<i>Corvus coronoides</i> subsp. <i>perplexus</i> (Australian Raven)			
124.		<i>Corynoneura</i> sp. (V49) (SAP)			
125.		<i>Coryphaena hippurus</i>			
126.	24671	<i>Coturnix pectoralis</i> (Stubble Quail)			
127.	24420	<i>Cracticus nigrogularis</i> (Pied Butcherbird)			
128.	25595	<i>Cracticus tibicen</i> (Australian Magpie)			
129.		<i>Cracticus torquatus</i>			
130.	25596	<i>Cracticus torquatus</i> (Grey Butcherbird)			
131.		<i>Cricotopus 'parbicinctus'</i>			
132.	25398	<i>Crinia georgiana</i> (Quacking Frog)			
133.	25399	<i>Crinia glauerti</i> (Clicking Frog)			
134.	25400	<i>Crinia insignifera</i> (Squelching Froglet)			
135.	25401	<i>Crinia pseudinsignifera</i> (Bleating Froglet)			
136.		<i>Cristiceps australis</i>			
137.	30893	<i>Cryptoblepharus buchananii</i>			
138.	25020	<i>Cryptoblepharus plagiocephalus</i>			
139.	25047	<i>Ctenotus impar</i>			
140.	25049	<i>Ctenotus labillardieri</i>			
141.		<i>Culex (Culex) australicus</i>			
142.		<i>Culicidae</i> sp.			
143.		<i>Cyclosa trilobata</i>			
144.	24322	<i>Cygnus atratus</i> (Black Swan)			
145.	30901	<i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
146.	24256	<i>Dama dama</i> (Fallow Deer)	Y		
147.	25673	<i>Daphoenositta chrysoptera</i> (Varied Sittella)			
148.	24092	<i>Dasyurus geoffroyi</i> (Chuditch, Western Quoll)		T	
149.	25607	<i>Dicaeum hirundinaceum</i> (Mistletoebird)			
150.		<i>Dicrotendipes</i> sp. A (V47) (SAP)			
151.	24470	<i>Dromaius novaehollandiae</i> (Emu)			
152.		<i>Dugesidae</i> sp.			
153.		<i>Dytiscidae</i> sp.			
154.		<i>Echeneis naucrates</i>			
155.		<i>Ecnomidae</i> sp.			
156.		<i>Edelia vittata</i>			
157.	25096	<i>Egernia kingii</i> (King's Skink)			
158.	25100	<i>Egernia napoleonis</i>			
159.		<i>Egretta garzetta</i>			
160.		<i>Egretta novaehollandiae</i>			
161.		<i>Elanus axillaris</i>			
162.	25250	<i>Elapognathus coronatus</i> (Crowned Snake)			
163.	47937	<i>Elseymoris melanops</i> (Black-fronted Dotterel)			
164.		<i>Eolophus roseicapillus</i>			
165.	24652	<i>Eopsaltria georgiana</i> (White-breasted Robin)			
166.	24567	<i>Epthianura albifrons</i> (White-fronted Chat)			
167.		<i>Eriophora biapicata</i>			
168.		<i>Eubalichthys cyanoura</i>			
169.	25621	<i>Falco berigora</i> (Brown Falcon)			
170.	25622	<i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
171.	25623	<i>Falco longipennis</i> (Australian Hobby)			
172.	25624	<i>Falco peregrinus</i> (Peregrine Falcon)		S	
173.	24616	<i>Falcunculus frontatus</i> subsp. <i>leucogaster</i> (Western Shrike-tit, Crested Shrike-tit)			
174.	24189	<i>Falsistrellus mackenziei</i> (Western False Pipistrelle, Western Falsistrelle)		P4	
175.	25727	<i>Fulica atra</i> (Eurasian Coot)			
176.	34028	<i>Galaxias occidentalis</i> (Western Minnow)			
177.	25729	<i>Gallinula tenebrosa</i> (Dusky Moorhen)			
178.	25730	<i>Gallirallus philippensis</i> (Buff-banded Rail)			
179.		<i>Gambusia affinis</i>			
180.		<i>Gambusia holbrooki</i>			
181.		<i>Gelastocoridae</i> sp.			

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182.	25404	<i>Geocrinia leai</i> (Ticking Frog)			
183.		<i>Geogarypus taylori</i>			
184.	34030	<i>Geotria australis</i> (Pouched Lamprey)		P3	
185.	25530	<i>Gerygone fusca</i> (Western Gerygone)			
186.	24271	<i>Gerygone fusca</i> subsp. <i>fusca</i> (Western Gerygone)			
187.		<i>Gomphidae</i> sp.			
188.	24443	<i>Grallina cyanoleuca</i> (Magpie-lark)			
189.	24056	<i>Grampus griseus</i> (Risso's Dolphin)			
190.		<i>Gripopterygidae</i> sp.			
191.		<i>Gyrinidae</i> sp.			
192.	24293	<i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)			
193.	24295	<i>Haliastur sphenurus</i> (Whistling Kite)			
194.		<i>Harrisius</i> sp.			
195.		<i>Harrisius</i> sp. B (SFM)			
196.	25410	<i>Heleioporus eyrei</i> (Moaning Frog)			
197.		<i>Helochares tenuistriatus</i>			
198.		<i>Helpis minitabunda</i>			
199.		<i>Hemicorduliidae</i> sp.			
200.	30919	<i>Hemiergis gracilipes</i> (skink)			
201.	25475	<i>Hemiergis peronii</i>			
202.	25118	<i>Hemiergis peronii</i> subsp. <i>tridactyla</i>			
203.	25119	<i>Hemiergis quadrilineata</i>			
204.		<i>Henicops dentatus</i>			
205.	47965	<i>Hieraaetus morphnoides</i> (Little Eagle)			
206.	25734	<i>Himantopus himantopus</i> (Black-winged Stilt)			
207.	24491	<i>Hirundo neoxena</i> (Welcome Swallow)			
208.		<i>Hydraenidae</i> sp.			
209.		<i>Hydrobiosidae</i> sp.			
210.	24215	<i>Hydromys chrysogaster</i> (Water-rat, Rakali)		P4	
211.		<i>Hydrophilidae</i> sp.			
212.	43384	<i>Hydrophis platurus</i> (Yellow-bellied Seasnake)			
213.	48587	<i>Hydroprogne caspia</i> (Caspian Tern)		IA	
214.		<i>Hydroptilidae</i> sp.			
215.		<i>Hyriidae</i> sp.			
216.	48935	<i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)		P3	
217.		<i>Insulodrilus bifidus</i>			
218.	48588	<i>Isodon fusciventer</i> (Quenda, southwestern brown bandicoot)		P4	
219.		<i>Isopoda leishmanni</i>			
220.		<i>Isopedella cana</i>			
221.		<i>Isopedella castanea</i>			
222.		<i>Kiefferulus intertinctus</i>			
223.	24367	<i>Lalage tricolor</i> (White-winged Triller)			
224.		<i>Lampona cylindrata</i>			
225.		<i>Lampona punctigera</i>			
226.		<i>Lancetes lanceolatus</i>			
227.	25638	<i>Larus pacificus</i> (Pacific Gull)			
228.		<i>Latrodectus hasseltii</i>			
229.		<i>Leptoceridae</i> sp.			
230.		<i>Leptoperla australica</i>			
231.		<i>Leptophlebiid</i> genus S sp. AV1			
232.		<i>Leptophlebiidae</i> sp.			
233.	25131	<i>Lerista distinguenda</i>			
234.	25133	<i>Lerista elegans</i>			
235.		<i>Lestidae</i> sp.			
236.	25005	<i>Lialis burtonis</i>			
237.		<i>Libellulidae</i> sp.			
238.	25661	<i>Lichmera indistincta</i> (Brown Honeyeater)			
239.		<i>Limbodessus inornatus</i>			
240.	25415	<i>Limnodynastes dorsalis</i> (Western Banjo Frog)			
241.		<i>Limnophyes vestitus</i> (V41)			
242.		<i>Limnoxenus zelandicus</i>			
243.	25741	<i>Limosa limosa</i> (Black-tailed Godwit)		IA	
244.	42413	<i>Lissolepis luctuosa</i> (Western Swamp Skink)			
245.	25378	<i>Litoria adelaidensis</i> (Slender Tree Frog)			
246.	25388	<i>Litoria moorei</i> (Motorbike Frog)			
247.		<i>Lophoictinia isura</i>			
248.	24690	<i>Macronectes giganteus</i> (Southern Giant Petrel)		IA	
249.	24132	<i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
250.	24326	<i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
251.	25650	<i>Malurus elegans</i> (Red-winged Fairy-wren)			

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252.	25654	<i>Malurus splendens</i> (Splendid Fairy-wren)			
253.		<i>Maratus pavonis</i>			
254.	25758	<i>Megalurus gramineus</i> (Little Grassbird)			
255.		<i>Megapodagrionidae</i> sp.			
256.	25184	<i>Menetia greyii</i>			
257.	24598	<i>Merops ornatus</i> (Rainbow Bee-eater)			
258.	24076	<i>Mesopodion bowdoini</i> (Andrew's Beaked Whale)			
259.	24078	<i>Mesopodion grayi</i> (Gray's Beaked Whale)			
260.	25419	<i>Metacrinia nicholli</i> (Forest Toadlet)			
261.		<i>Meuschenia galii</i>			
262.		<i>Microcarbo melanoleucos</i>			
263.		<i>Micronecta robusta</i>			
264.		<i>Microvelia</i> sp.			
265.		<i>Missulena granulosa</i>			
266.		<i>Missulena hoggi</i>			
267.		<i>Missulena occatoria</i>			
268.		<i>Mituliodon tarantulinus</i>			
269.	25240	<i>Morelia spilota</i> subsp. <i>imbricata</i> (Carpet Python)			
270.	25191	<i>Morethia lineocellata</i>			
271.	25192	<i>Morethia obscura</i>			
272.	24223	<i>Mus musculus</i> (House Mouse)	Y		
273.	25610	<i>Myiagra inquieta</i> (Restless Flycatcher)			
274.		<i>Nannoperca vittata</i>			
275.		<i>Neoniphargidae</i> sp.			
276.	24738	<i>Neophema elegans</i> (Elegant Parrot)			
277.		<i>Newmanoperla exigua</i>			
278.	48022	<i>Notamacropus irma</i> (Western Brush Wallaby)		P4	
279.	25252	<i>Notechis scutatus</i> (Tiger Snake)			
280.		<i>Notonectidae</i> sp.			
281.		<i>Nousia</i> sp. AV16			
282.		<i>Nunciella aspera</i>			
283.	25564	<i>Nycticorax caledonicus</i> (Rufous Night Heron)			
284.	24194	<i>Nyctophilus geoffroyi</i> (Lesser Long-eared Bat)			
285.		<i>Ocrisiona parmelliae</i>			
286.	24407	<i>Ocyphaps lophotes</i> (Crested Pigeon)			
287.		<i>Oligochaeta</i> sp.			
288.		<i>Ommatoiulus moreletii</i>			
289.		<i>Opisthopora</i> sp.			
290.		<i>Oratemnus curtus</i>			
291.		<i>Orthocladinae</i> sp.			
292.	24085	<i>Oryctolagus cuniculus</i> (Rabbit)	Y		
293.		<i>Ostracoda</i> (unident.)			
294.	24328	<i>Oxyura australis</i> (Blue-billed Duck)		P4	
295.	25680	<i>Pachycephala rufiventris</i> (Rufous Whistler)			
296.	24692	<i>Pachyptila belcheri</i> (Slender-billed Prion)			
297.	24693	<i>Pachyptila desolata</i> (Antarctic Prion)			
298.	33989	<i>Pachysaga strobila</i> (Vasse Pachysaga (Busselton-Donnybrook), cricket)		P1	
299.		<i>Palaemonidae</i> sp.			
300.	48591	<i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
301.		<i>Paracymus spenceri</i>			
302.		<i>Parakiefferiella variegatus</i>			
303.		<i>Paralimnophyes pullulus</i> (V42)			
304.		<i>Paramelitidae</i> sp.			
305.		<i>Paramerina levidensis</i>			
306.		<i>Parastacidae</i> sp.			
307.	25255	<i>Parasuta nigriceps</i>			
308.	25681	<i>Pardalotus punctatus</i> (Spotted Pardalote)			
309.	24626	<i>Pardalotus punctatus</i> subsp. <i>xanthopyge</i> (Yellow-rumped Pardalote)			
310.	25682	<i>Pardalotus striatus</i> (Striated Pardalote)			
311.	24648	<i>Pelecanus conspicillatus</i> (Australian Pelican)			
312.		<i>Pentaneurini</i> genus V20			
313.		<i>Perca fluviatilis</i>			
314.		<i>Perthiidae</i> sp.			
315.	48061	<i>Petrochelidon nigricans</i> (Tree Martin)			
316.	48066	<i>Petroica boodang</i> (Scarlet Robin)			
317.	24659	<i>Petroica goodenovii</i> (Red-capped Robin)			
318.	25697	<i>Phalacrocorax carbo</i> (Great Cormorant)			
319.	24667	<i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
320.	25699	<i>Phalacrocorax varius</i> (Pied Cormorant)			
321.	24409	<i>Phaps chalcoptera</i> (Common Bronzewing)			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
322.	25508	<i>Phascogale tapoatafa</i> (Brush-tailed Phascogale)		S	
323.	48070	<i>Phascogale tapoatafa</i> subsp. <i>wambenger</i> (South-western Brush-tailed Phascogale, Wambenger)		S	
324.		<i>Philopotamidae</i> sp.			
325.		<i>Phreatoicidae</i> sp.			
326.		<i>Phreodrilidae</i> sp.			
327.	48071	<i>Phylidonyris niger</i> (White-cheeked Honeyeater)			
328.	24596	<i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			
329.		<i>Planorbidae</i> sp.			
330.	24841	<i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
331.	25720	<i>Platycercus icterotis</i> (Western Rosella)			
332.	24745	<i>Platycercus icterotis</i> subsp. <i>icterotis</i> (Western Rosella)			
333.	24747	<i>Platycercus spurius</i> (Red-capped Parrot)			
334.	25721	<i>Platycercus zonarius</i> (Australian Ringneck, Ring-necked Parrot)			
335.	24750	<i>Platycercus zonarius</i> subsp. <i>semitorquatus</i> (Twenty-eight Parrot)			
336.		<i>Platynectes decempunctatus</i> var <i>polygrammus</i>			
337.		<i>Platynectes</i> sp.			
338.	24843	<i>Plegadis falcinellus</i> (Glossy Ibis)		IA	
339.	24383	<i>Pluvialis squatarola</i> (Grey Plover)		IA	
340.	25703	<i>Podargus strigoides</i> (Tawny Frogmouth)			
341.	24679	<i>Podargus strigoides</i> subsp. <i>brachypterus</i> (Tawny Frogmouth)			
342.	25704	<i>Podiceps cristatus</i> (Great Crested Grebe)			
343.	24907	<i>Pogona minor</i> subsp. <i>minor</i> (Dwarf Bearded Dragon)			
344.	24681	<i>Poliocephalus poliocephalus</i> (Hoary-headed Grebe)			
345.		<i>Polypedilum</i> nr. <i>convexum</i> (SAP)			
346.		<i>Polypedilum watsoni</i>			
347.	25722	<i>Polytelis anthopeplus</i> (Regent Parrot)			
348.	25731	<i>Porphyrio porphyrio</i> (Purple Swamphen)			
349.	24767	<i>Porphyrio porphyrio</i> subsp. <i>bellus</i> (Purple Swamphen)			
350.	24769	<i>Porzana fluminea</i> (Australian Spotted Crane)			
351.	25732	<i>Porzana pusilla</i> (Baillon's Crane)			
352.	24771	<i>Porzana tabuensis</i> (Spotless Crane)			
353.		<i>Protoneuridae</i> sp.			
354.	24166	<i>Pseudocheirus occidentalis</i> (Western Ringtail Possum, ngwayir)		T	
355.		<i>Pseudogobius olorum</i>			
356.	24240	<i>Pseudomys occidentalis</i> (Western Mouse)		P4	
357.	25511	<i>Pseudonaja affinis</i> (Dugite)			
358.	25259	<i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)			
359.	25433	<i>Pseudophryne guentheri</i> (Crawling Toadlet)			
360.	24703	<i>Pterodroma lessonii</i> (White-headed Petrel)			
361.	25710	<i>Pterodroma macroptera</i> (Great-winged Petrel)			
362.		<i>Purpureicephalus spurius</i>			
363.		<i>Pyralidae</i> sp.			
364.	24245	<i>Rattus rattus</i> (Black Rat)	Y		
365.		<i>Raveniella peckorum</i>			
366.	24776	<i>Recurvirostra novaehollandiae</i> (Red-necked Avocet)			
367.		<i>Rhantus suturalis</i>			
368.	48096	<i>Rhipidura albiscapa</i> (Grey Fantail)			
369.	25614	<i>Rhipidura leucophrys</i> (Willie Wagtail)			
370.		<i>Richardsonianidae</i> sp.			
371.		<i>Riethia</i> v5			
372.		<i>Scirtidae</i> sp.			
373.	25534	<i>Sericornis frontalis</i> (White-browed Scrubwren)			
374.	24145	<i>Setonix brachyurus</i> (Quokka)		T	
375.	25266	<i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
376.		<i>Simuliidae</i> sp.			
377.	30948	<i>Smicromis brevirostris</i> (Weebill)			
378.	24645	<i>Stagonopleura oculata</i> (Red-eared Firetail)			
379.		<i>Staphylinidae</i> sp.			
380.		<i>Sternopriscus browni</i>			
381.		<i>Sternopriscus</i> sp.			
382.	24329	<i>Stictonetta naevosa</i> (Freckled Duck)			
383.		<i>Stigmatopora argus</i>			
384.	25655	<i>Stipiturus malachurus</i> (Southern Emu-wren)			
385.	25597	<i>Strepera versicolor</i> (Grey Currawong)			
386.	25590	<i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
387.		<i>Synthemistidae</i> sp.			
388.		<i>Tabanidae</i> sp.			
389.	25705	<i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
390.	24682	<i>Tachybaptus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Australasian Grebe, Black-			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
	<i>throated Grebe</i>			
391.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
392.	<i>Tamopsis distinguenda</i>			
393.	<i>Tamopsis perthensis</i>			
394.	<i>Tanypodinae sp.</i>			
395.	<i>Tanytarsus nr K5</i>			
396.	<i>Tanytarsus palmatus</i>			
397.	24167 <i>Tarsipes rostratus</i> (Honey Possum, Noolbenger)			
398.	<i>Tasmanica leuckartii</i>			
399.	<i>Telephlebiidae sp.</i>			
400.	<i>Temnocephalidea sp.</i>			
401.	<i>Tetragnatha demissa</i>			
402.	48597 <i>Thalasseus bergii</i> (Crested Tern)		IA	
403.	48135 <i>Thinornis rubricollis</i> (Hooded Plover, Hooded Dotterel)		P4	
404.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
405.	<i>Thunnus maccoyii</i>			
406.	25519 <i>Tiliqua rugosa</i>			
407.	25207 <i>Tiliqua rugosa subsp. rugosa</i>			
408.	<i>Tipulidae sp.</i>			
409.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
410.	25521 <i>Trichosurus vulpecula</i> (Common Brushtail Possum)			
411.	24158 <i>Trichosurus vulpecula subsp. vulpecula</i> (Common Brushtail Possum)			
412.	24806 <i>Tringa glareola</i> (Wood Sandpiper)		IA	
413.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
414.	24809 <i>Tringa stagnatilis</i> (Marsh Sandpiper, little greenshank)		IA	
415.	<i>Triplectides sp. AV21 (SFM)</i>			
416.	48147 <i>Turnix varius</i> (Painted Button-quail)			
417.	30954 <i>Tursiops aduncus</i> (Indo-Pacific Bottlenose Dolphin)			
418.	24855 <i>Tyto novaehollandiae subsp. novaehollandiae</i> (Masked Owl (southwest))		P3	
419.	<i>Urodacus novaehollandiae</i>			
420.	<i>Uvarus pictipes</i>			
421.	25577 <i>Vanellus miles</i> (Masked Lapwing)			
422.	24386 <i>Vanellus tricolor</i> (Banded Lapwing)			
423.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
424.	25225 <i>Varanus rosenbergi</i> (Heath Monitor)			
425.	<i>Veliidae sp.</i>			
426.	<i>Venatrix pullastra</i>			
427.	24206 <i>Vespadelus regulus</i> (Southern Forest Bat)			
428.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
429.	34113 <i>Westralunio carteri</i> (Carter's Freshwater Mussel)		T	
430.	<i>Zachria flavicoma</i>			
431.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silveryeye)			

Chromista

432.	26444 <i>Acrosorium ciliolatum</i>			
433.	26586 <i>Caulocystis uvifera</i>			
434.	26662 <i>Cladostephus spongiosus</i>			
435.	26766 <i>Dictyopteris muelleri</i>			
436.	26946 <i>Hormophysa cuneiformis</i>			
437.	27091 <i>Myriodesma serrulatum</i>			
438.	27264 <i>Scaberia agardhii</i>			

Fungi

439.	<i>Agaricus sp.</i>			
440.	38754 <i>Amanita conicobulbosa</i>			
441.	38757 <i>Amanita xanthocephala</i>			
442.	<i>Armillaria luteobubalina</i>			
443.	44000 <i>Austroparmelia chlorolecanorica</i>			
444.	43942 <i>Austroparmelia pruinata</i>			
445.	<i>Boletus sp.</i>			
446.	27597 <i>Buellia disciformis</i>			
447.	34461 <i>Buellia tetrapla</i>			
448.	27618 <i>Calicium glaucellum</i>			
449.	27629 <i>Caloplaca ferruginea</i>			
450.	41653 <i>Caloplaca kaernefeltii</i>			
451.	<i>Caloplaca sp.</i>			
452.	27641 <i>Candelaria concolor</i>			
453.	27642 <i>Candelariella antennaria</i>			
454.	27644 <i>Candelariella xanthostigma</i>			
455.	27645 <i>Candelariella xanthostigmoides</i>			
456.	27662 <i>Chrysothrix candelaris</i>			

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457.	27663	<i>Cladia aggregata</i>			
458.	27668	<i>Cladia schizopora</i>			
459.	27692	<i>Cladonia rigida</i>			
460.	27693	<i>Cladonia scabriuscula</i>			
461.	27697	<i>Cladonia tessellata</i>			
462.	38785	<i>Descomyces angustisporus</i>			
463.	27725	<i>Diploschistes thunbergianus</i>			
464.	27743	<i>Flavoparmelia diffractaica</i>			
465.	27744	<i>Flavoparmelia ferax</i>			
466.	27745	<i>Flavoparmelia haysomii</i>			
467.	27748	<i>Flavoparmelia rutidota</i>			
468.	27751	<i>Flavoparmelia soledians</i>			
469.		<i>Geastrum</i> sp.			
470.	49124	<i>Gyroporus occidentalis</i>			
471.	27778	<i>Heterodermia speciosa</i>			
472.	27787	<i>Hypogymnia subphysodes</i>			
473.	28219	<i>Hypogymnia subphysodes</i> var. <i>subphysodes</i>			
474.	44926	<i>Ileodictyon gracile</i>			
475.	48529	<i>Inocybe isabellina</i>			
476.		<i>Inocybe mixtilis</i>			
477.	45299	<i>Jackelixia elixii</i>			
478.	38800	<i>Labyrinthomyces varius</i>			
479.		<i>Laccaria lateritia</i>			
480.	38807	<i>Leucopaxillus lilacinus</i>			
481.	49002	<i>Macrolepiota gasteroidea</i>			
482.	49003	<i>Macrolepiota turbinata</i>			
483.	47235	<i>Mesophellia labyrinthina</i>			
484.		<i>Mycosphaerella gregaria</i>			
485.	44868	<i>Notoparmelia erumpens</i>			
486.	27890	<i>Pannaria obscura</i>			
487.	27905	<i>Paraporphidia glauca</i>			
488.	44912	<i>Parmotrema cetratum</i>			
489.	27922	<i>Parmotrema chinense</i>			
490.	27923	<i>Parmotrema cooperi</i>			
491.	49073	<i>Peziza austrogeaster</i>			
492.		<i>Pholiota communis</i>			
493.		<i>Phytophthora cinnamomi</i>			
494.	48975	<i>Pisolithus microcarpus</i>			
495.		<i>Pisolithus</i> sp.			
496.	38824	<i>Pleurotus australis</i>			
497.		<i>Psathyrella candolleana</i>			
498.	48835	<i>Pycnoporus coccineus</i>			
499.	28223	<i>Ramalina celastri</i> subsp. <i>ovalis</i>			
500.	48704	<i>Russula longispora</i>			
501.		<i>Scleroderma albidum</i>			
502.		<i>Scleroderma cepa</i>			
503.	28065	<i>Teloschistes chrysophthalmus</i>			
504.	28068	<i>Tephromela atra</i>			
505.		<i>Thelephora terrestris</i>			
506.	28071	<i>Thysanothecium scutellatum</i>			
507.	48858	<i>Trametes muelleri</i>			
508.	38844	<i>Trametes versicolor</i>			
509.	28077	<i>Trapelia coarctata</i>			
510.	38846	<i>Tubaria serrulata</i>			
511.	28086	<i>Usnea dasaea</i>			
512.	28087	<i>Usnea inermis</i>			
513.	28092	<i>Usnea scabrida</i>			
514.		<i>Xanthoparmelia</i> sp.			
515.	44996	<i>Xanthoria coomae</i>			
516.	28194	<i>Xanthoria parietina</i>			

Plantae

517.	15429	<i>Acacia alata</i> var. <i>alata</i>			
518.	15466	<i>Acacia applanata</i>			
519.	3237	<i>Acacia benthamii</i>		P2	
520.	3247	<i>Acacia browniana</i>			
521.	11377	<i>Acacia browniana</i> var. <i>obscura</i>			
522.	3262	<i>Acacia cochlearis</i> (Rigid Wattle)			
523.	3294	<i>Acacia dentifera</i>			
524.	3307	<i>Acacia divergens</i>			
525.	11229	<i>Acacia drummondii</i> subsp. <i>affinis</i>			

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			P3	
526.	11192 <i>Acacia drummondii</i> subsp. <i>elegans</i>			
527.	3331 <i>Acacia extensa</i> (Wiry Wattle)			
528.	3339 <i>Acacia flagelliformis</i>		P4	
529.	3374 <i>Acacia huegelii</i>			
530.	3383 <i>Acacia incurva</i>			
531.	3384 <i>Acacia ingrata</i>			
532.	18217 <i>Acacia iteaphylla</i>	Y		
533.	3410 <i>Acacia lateriticola</i>			
534.	3424 <i>Acacia littorea</i>			
535.	3428 <i>Acacia luteola</i>			
536.	3448 <i>Acacia mooreana</i>			
537.	3453 <i>Acacia myrtifolia</i>			
538.	3454 <i>Acacia nervosa</i> (Rib Wattle)			
539.	3464 <i>Acacia obovata</i>			
540.	3482 <i>Acacia paradoxa</i> (Kangaroo Thorn)	Y		
541.	3496 <i>Acacia preissiana</i>			
542.	3502 <i>Acacia pulchella</i> (Prickly Moses)			
543.	15481 <i>Acacia pulchella</i> var. <i>glaberrima</i>			
544.	15483 <i>Acacia pulchella</i> var. <i>pulchella</i>			
545.	3504 <i>Acacia pycnantha</i> (Golden Wattle)	Y		
546.	3527 <i>Acacia saligna</i> (Orange Wattle, Kudjong)			
547.	30033 <i>Acacia saligna</i> subsp. <i>lindleyi</i>			
548.	30032 <i>Acacia saligna</i> subsp. <i>saligna</i>			
549.	30036 <i>Acacia saligna</i> subsp. <i>stolonifera</i>			
550.	3537 <i>Acacia semitrullata</i>		P4	
551.	48762 <i>Acacia</i> sp. <i>Binningup</i> (G. Cockerton et al. WB 37784)		P1	
552.	3557 <i>Acacia stenoptera</i> (Narrow Winged Wattle)			
553.	3574 <i>Acacia teretifolia</i>			
554.	3576 <i>Acacia tetragonocarpa</i>			
555.	3591 <i>Acacia urophylla</i>			
556.	3593 <i>Acacia varia</i>			
557.	15487 <i>Acacia varia</i> var. <i>varia</i>			
558.	3602 <i>Acacia willdenowiana</i> (Grass Wattle)			
559.	3184 <i>Acaena echinata</i> (Sheep's Burr)			
560.	3185 <i>Acaena novae-zelandiae</i>	Y		
561.	33037 <i>Acaena ovina</i> (Sheep's Burr)			
562.	1208 <i>Acanthocarpus preissii</i>			
563.	5315 <i>Actinodium cunninghamii</i> (Albany Daisy)			
564.	6203 <i>Actinotus glomeratus</i>			
565.	19258 <i>Actinotus whicheranus</i>		P2	
566.	43201 <i>Adelphacme minima</i>		P3	
567.	14970 <i>Adenanthos barbiger</i>			
568.	1790 <i>Adenanthos meisneri</i>			
569.	1791 <i>Adenanthos obovatus</i> (Basket Flower)			
570.	28281 <i>Adenanthos</i> sp. <i>Whicher Range</i> (G.J. Keighery 9736)			
571.	25 <i>Adiantum aethiopicum</i> (Common Maidenhair)			
572.	5316 <i>Agonis flexuosa</i> (Peppermint, Wonil)			
573.	17202 <i>Agonis flexuosa</i> var. <i>flexuosa</i>			
574.	182 <i>Agrostis stolonifera</i> (Creeping Bent)	Y		
575.	23474 <i>Agrostocrinum hirsutum</i>			
576.	1261 <i>Agrostocrinum scabrum</i> (Blue Grass Lily)			
577.	23501 <i>Agrostocrinum scabrum</i> subsp. <i>scabrum</i>			
578.	184 <i>Aira caryophyllea</i> (Silvery Hairgrass)	Y		
579.	185 <i>Aira cupaniana</i> (Silvery Hairgrass)	Y		
580.	1728 <i>Allocasuarina fraseriana</i> (Sheoak, Kondil)			
581.	1732 <i>Allocasuarina humilis</i> (Dwarf Sheoak)			
582.	1739 <i>Allocasuarina thuyoides</i> (Horned Sheoak)			
583.	190 <i>Alopecurus myosuroides</i> (Slender Foxtail)	Y		
584.	2648 <i>Alternanthera denticulata</i> (Lesser Joyweed)			
585.	6565 <i>Alyxia buxifolia</i> (Dysentery Bush)			
586.	2655 <i>Amaranthus albus</i> (Tumbleweed)	Y		
587.	2668 <i>Amaranthus powellii</i> (Powell's Amaranth)	Y		
588.	1489 <i>Amaryllis belladonna</i> (Belladonna Lily)	Y		
589.	6209 <i>Ammi majus</i> (Bishop's Weed)	Y		
590.	4584 <i>Amperea conferta</i>			
591.	4585 <i>Amperea ericoides</i>			
592.	4586 <i>Amperea micrantha</i>		P2	
593.	13101 <i>Amperea simulans</i>			
594.	13380 <i>Amphibromus nervosus</i>			

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595.	194 <i>Amphipogon amphipogonoides</i>			
596.	197 <i>Amphipogon debilis</i>			
597.	20184 <i>Amphipogon laguroides</i> subsp. <i>laguroides</i>			
598.	200 <i>Amphipogon turbinatus</i>			
599.	2380 <i>Amyema miquelii</i> (Stalked Mistletoe)			
600.	1060 <i>Anarthria laevis</i>			
601.	1062 <i>Anarthria prolifera</i>			
602.	1063 <i>Anarthria scabra</i>			
603.	6306 <i>Andersonia caerulea</i> (Foxtails)			
604.	25844 <i>Andersonia caerulea</i> subsp. <i>caerulea</i>			
605.	18102 <i>Andersonia ferricola</i>		P1	
606.	6312 <i>Andersonia involucrata</i>			
607.	6314 <i>Andersonia lehmanniana</i>			
608.	6317 <i>Andersonia micrantha</i>			
609.	<i>Angianthus</i> aff. <i>drummondii</i> "sth small grey" scps (BJK&NG 013)			
610.	7829 <i>Angianthus drummondii</i>		P3	
611.	7833 <i>Angianthus preissianus</i>			
612.	11931 <i>Anigozanthos bicolor</i> subsp. <i>decrescens</i>			
613.	1407 <i>Anigozanthos flavidus</i> (Tall Kangaroo Paw)			
614.	1409 <i>Anigozanthos humilis</i> (Catspaw)			
615.	11434 <i>Anigozanthos humilis</i> subsp. <i>humilis</i>			
616.	1411 <i>Anigozanthos manglesii</i> (Mangles Kangaroo Paw, Kurulbrang)			
617.	11261 <i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>			
618.	1416 <i>Anigozanthos viridis</i> (Green Kangaroo Paw, Kurulbardang)			
619.	11566 <i>Anigozanthos viridis</i> subsp. <i>viridis</i>			
620.	6949 <i>Anthocercis littorea</i> (Yellow Tailflower)			
621.	12724 <i>Anthotium junciforme</i>			
622.	202 <i>Anthoxanthum odoratum</i> (Sweet Vernal Grass)	Y		
623.	19987 <i>Anthriscus caucalis</i>	Y		Y
624.	3686 <i>Aotus cordifolia</i>			
625.	3688 <i>Aotus gracillima</i>			
626.	3692 <i>Aotus procumbens</i>			
627.	1117 <i>Aphelia cyperoides</i>			
628.	1118 <i>Aphelia drummondii</i>			
629.	17845 <i>Apodasmia ceramophila</i>			
630.	141 <i>Aponogeton hexatepalus</i> (Stalked Water Ribbons)		P4	
631.	7838 <i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y		
632.	46393 <i>Arctotheca calendula</i> x <i>populifolia</i>	Y		
633.	210 <i>Aristida holathera</i>			
634.	8779 <i>Asparagus asparagoides</i> (Bridal Creeper)	Y		
635.	<i>Astartea</i> aff. <i>fascicularis</i> sthcs			
636.	20350 <i>Astartea affinis</i> (West-coast Astartea)			
637.	20249 <i>Astartea leptophylla</i> (River-bank Astartea)			
638.	20283 <i>Astartea scoparia</i> (Common Astartea)			
639.	42801 <i>Astartea zephyra</i>			
640.	7851 <i>Asteridea pulverulenta</i> (Common Bristle Daisy)			
641.	6323 <i>Astroloma ciliatum</i> (Candle Cranberry)			
642.	6325 <i>Astroloma drummondii</i>			
643.	6334 <i>Astroloma pallidum</i> (Kick Bush)			
644.	17233 <i>Austrostipa campylachne</i>			
645.	17234 <i>Austrostipa compressa</i>			
646.	17240 <i>Austrostipa flavescens</i>			
647.	17253 <i>Austrostipa semibarbata</i>			
648.	37421 <i>Austrostipa</i> sp. <i>Marchagee</i> (B.R. Maslin 1407)			
649.	233 <i>Avena barbata</i> (Bearded Oat)	Y		
650.	234 <i>Avena fatua</i> (Wild Oat)	Y		
651.	18279 <i>Babiana angustifolia</i>	Y		
652.	36441 <i>Babingtonia camphorosmae</i> (Camphor Myrtle)			
653.	1382 <i>Baeometra uniflora</i>	Y		
654.	1800 <i>Banksia attenuata</i> (Slender Banksia, Piara)			
655.	32678 <i>Banksia bipinnatifida</i> subsp. <i>bipinnatifida</i>			
656.	32676 <i>Banksia biterax</i>			
657.	32580 <i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>dallanneyi</i>			
658.	32616 <i>Banksia dallanneyi</i> subsp. <i>sylvestris</i>			
659.	1819 <i>Banksia grandis</i> (Bull Banksia, Pulgarla)			
660.	1822 <i>Banksia ilicifolia</i> (Holly-leaved Banksia)			
661.	1830 <i>Banksia littoralis</i> (Swamp Banksia, Pungura)			
662.	17107 <i>Banksia meisneri</i> subsp. <i>ascendens</i> (Scott River Banksia)		P4	
663.	32211 <i>Banksia mimica</i> (Summer Honeypot)		T	
664.	32202 <i>Banksia nivea</i> (Honeypot Dryandra, Pudjam)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
665.	32204 <i>Banksia nivea</i> subsp. <i>uliginosa</i>		T	
666.	32080 <i>Banksia sessilis</i> var. <i>sessilis</i>			
667.	12111 <i>Banksia sphaerocarpa</i> var. <i>sphaerocarpa</i> (Fox Banksia)			
668.	32044 <i>Banksia squarrosa</i> (Pingle)			
669.	32046 <i>Banksia squarrosa</i> subsp. <i>argillacea</i>		T	
670.	32315 <i>Barbula calycina</i>			
671.	739 <i>Baumea acuta</i> (Pale Twig-rush)			
672.	740 <i>Baumea arthropophylla</i>			
673.	741 <i>Baumea articulata</i> (Jointed Rush)			
674.	747 <i>Baumea rubiginosa</i>			
675.	748 <i>Baumea vaginalis</i> (Sheath Twigrush)			
676.	5392 <i>Beaufortia sparsa</i> (Swamp Bottlebrush)			
677.	5393 <i>Beaufortia squarrosa</i> (Sand Beaufortia, Sand Bottlebrush, Puno)			
678.	7046 <i>Bellardia trixago</i> (Bellardia)	Y		
679.	48868 <i>Bellardia viscosa</i>	Y		
680.	3157 <i>Billardiera floribunda</i> (White-flowered Billardiera)			
681.	25798 <i>Billardiera fusiformis</i> (Australian Bluebell)			
682.	3165 <i>Billardiera variifolia</i>			
683.	20026 <i>Blennospora doliiformis</i>		P3	
684.	749 <i>Bolboschoenus caldwellii</i> (Marsh Club-rush)			
685.	14535 <i>Bolboschoenus medianus</i>		P1	Y
686.	16313 <i>Boronia anceps</i>		P3	
687.	11612 <i>Boronia capitata</i> subsp. <i>gracilis</i>		P3	
688.	4413 <i>Boronia crenulata</i> (Aniseed Boronia)			
689.	17653 <i>Boronia crenulata</i> subsp. <i>pubescens</i>			
690.	16636 <i>Boronia crenulata</i> subsp. <i>viminea</i>			
691.	4415 <i>Boronia defoliata</i>			
692.	4416 <i>Boronia denticulata</i>			
693.	4417 <i>Boronia dichotoma</i>			
694.	4420 <i>Boronia fastigiata</i> (Bushy Boronia)			
695.	16618 <i>Boronia humifusa</i>		P1	
696.	4426 <i>Boronia juncea</i>			
697.	4428 <i>Boronia megastigma</i> (Scented Boronia)			
698.	4438 <i>Boronia ramosa</i>			
699.	11381 <i>Boronia ramosa</i> subsp. <i>anethifolia</i>			
700.	4441 <i>Boronia spathulata</i> (Boronia)			
701.	4443 <i>Boronia subsessilis</i>			
702.	17804 <i>Boronia tetragona</i>		P3	
703.	1272 <i>Borya scirpoidea</i>			
704.	48782 <i>Bossiaea angustifolia</i>			
705.	3710 <i>Bossiaea eriocarpa</i> (Common Brown Pea)			
706.	3713 <i>Bossiaea linophylla</i>			
707.	3714 <i>Bossiaea ornata</i> (Broad Leaved Brown Pea)			
708.	3717 <i>Bossiaea pulchella</i>			
709.	3718 <i>Bossiaea rufa</i>			
710.	10915 <i>Brachychiton populneus</i> (Kurrajong)	Y		
711.	6341 <i>Brachyloma preissii</i> (Globe Heath)			
712.	18492 <i>Brachyscias verecundus</i>		T	
713.	7867 <i>Brachyscome bellidioides</i>			
714.	7878 <i>Brachyscome iberidifolia</i>			
715.	3000 <i>Brassica tournefortii</i> (Mediterranean Turnip)	Y		
716.	2995 <i>Brassica x napus</i>	Y		
717.	244 <i>Briza maxima</i> (Blowfly Grass)	Y		
718.	245 <i>Briza minor</i> (Shivery Grass)	Y		
719.	247 <i>Bromus arenarius</i> (Sand Brome)			
720.	248 <i>Bromus catharticus</i> (Prairie Grass)	Y		
721.	249 <i>Bromus diandrus</i> (Great Brome)	Y		
722.	250 <i>Bromus hordeaceus</i> (Soft Brome)	Y		
723.	252 <i>Bromus madritensis</i> (Madrid Brome)	Y		
724.	<i>Bryum</i> sp.			
725.	1366 <i>Bulbine semibarbata</i> (Leek Lily)			
726.	12770 <i>Burchardia congesta</i>			
727.	1384 <i>Burchardia monantha</i>			
728.	1385 <i>Burchardia multiflora</i> (Dwarf Burchardia)			
729.	1276 <i>Caesia micrantha</i> (Pale Grass Lily)			
730.	1277 <i>Caesia occidentalis</i>			
731.	3002 <i>Cakile maritima</i> (Sea Rocket)	Y		
732.	15332 <i>Caladenia attingens</i> subsp. <i>attingens</i>			
733.	15335 <i>Caladenia brownii</i>			
734.	13615 <i>Caladenia busselliana</i>		T	

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735.	15579 <i>Caladenia chapmanii</i>			
736.	1581 <i>Caladenia corynephora</i>			
737.	11165 <i>Caladenia falcata</i>			
738.	1592 <i>Caladenia flava</i> (Cowslip Orchid)			
739.	15348 <i>Caladenia flava</i> subsp. <i>flava</i>			
740.	15352 <i>Caladenia georgei</i>			
741.	15354 <i>Caladenia hirta</i> subsp. <i>hirta</i>			
742.	1596 <i>Caladenia huegelii</i> (Grand Spider Orchid)		T	
743.	1599 <i>Caladenia latifolia</i> (Pink Fairy Orchid)			
744.	1601 <i>Caladenia lobata</i> (Butterfly Orchid)			
745.	1602 <i>Caladenia longicauda</i> (Common White Spider Orchid)			
746.	1603 <i>Caladenia longiclavata</i> (Clubbed Spider Orchid)			
747.	15369 <i>Caladenia lorea</i>			
748.	1605 <i>Caladenia marginata</i> (White Fairy Orchid)			
749.	15372 <i>Caladenia nana</i> subsp. <i>unita</i>			
750.	15503 <i>Caladenia paludosa</i>			
751.	18026 <i>Caladenia pendens</i> subsp. <i>pendens</i>			
752.	1610 <i>Caladenia plicata</i> (Crab-lipped Spider Orchid)			
753.	18038 <i>Caladenia procera</i>		T	
754.	15377 <i>Caladenia reptans</i> subsp. <i>reptans</i>			
755.	15379 <i>Caladenia serotina</i>			
756.	13862 <i>Caladenia speciosa</i>		P4	
757.	15382 <i>Caladenia uliginosa</i> subsp. <i>candicans</i>			
758.	15383 <i>Caladenia uliginosa</i> subsp. <i>uliginosa</i>			
759.	2854 <i>Calandrinia granulifera</i> (Pygmy Purslane)			
760.	2856 <i>Calandrinia liniflora</i> (Parakeelya)			
761.	1213 <i>Calectasia cyanea</i> (Blue Tinsel Lily)		T	
762.	19309 <i>Calectasia narragara</i>			
763.	34942 <i>Callitriche brutia</i> subsp. <i>brutia</i>	Y		
764.	4717 <i>Callitriche stagnalis</i> (Common Starwort)	Y		
765.	36520 <i>Callitris acuminata</i> (Dwarf Cypress)			
766.	26534 <i>Callophycus dorsifer</i>			
767.	5415 <i>Calothamnus lateralis</i>			
768.	35163 <i>Calothamnus planifolius</i> var. <i>pallidifolius</i>			
769.	35162 <i>Calothamnus planifolius</i> var. <i>planifolius</i>			
770.	5426 <i>Calothamnus quadrifidus</i> (One-sided Bottlebrush, Kwojdjard)			
771.	35796 <i>Calothamnus quadrifidus</i> subsp. <i>teretifolius</i>		P4	
772.	5429 <i>Calothamnus sanguineus</i> (Silky-leaved Blood flower, Pindak)			
773.	16493 <i>Calycopeplus oligandrus</i>			
774.	5458 <i>Calytrix flavescens</i> (Summer Starflower)			
775.	5460 <i>Calytrix fraseri</i> (Pink Summer Calytrix)			
776.	5465 <i>Calytrix leschenaultii</i>			
777.	48449 <i>Calytrix retrorsifolia</i>		P2	
778.	5483 <i>Calytrix tetragona</i> (Common Fringe-myrtle)			
779.	5485 <i>Calytrix variabilis</i>			
780.	32334 <i>Campylopus australis</i>			
781.	32338 <i>Campylopus introflexus</i>	Y		
782.	3006 <i>Cardamine paucijuga</i>		P2	
783.	7909 <i>Carduus pycnocephalus</i> (Slender Thistle)	Y		
784.	754 <i>Carex divisa</i> (Divided Sedge)	Y		
785.	756 <i>Carex inversa</i> (Knob Sedge)			
786.	758 <i>Carex pumila</i> (Strand Sedge)			
787.	43241 <i>Carex thecata</i>			
788.	7911 <i>Carthamus lanatus</i> (Saffron Thistle)	Y		
789.	1162 <i>Cartonema phylloides</i>			
790.	2951 <i>Cassytha flava</i> (Dodder Laurel)			
791.	2952 <i>Cassytha glabella</i> (Tangled Dodder Laurel)			
792.	2957 <i>Cassytha racemosa</i> (Dodder Laurel)			
793.	11242 <i>Cassytha racemosa</i> forma <i>pilosa</i>			
794.	11799 <i>Cassytha racemosa</i> forma <i>racemosa</i>			
795.	26574 <i>Caulerpa scalpelliformis</i>			
796.	760 <i>Caustis dioica</i>			
797.	13766 <i>Caustis</i> sp. <i>Boyanup</i> (G.S. McCutcheon 1706)		P3	
798.	41564 <i>Cenchrus clandestinus</i> (Kikuyu Grass)	Y		
799.	41566 <i>Cenchrus longisetus</i> (Feathertop)	Y		
800.	41567 <i>Cenchrus macrourus</i> (African Feather Grass)	Y		
801.	7916 <i>Centaurea melitensis</i> (Maltese Cockspur, Malta Thistle)	Y		
802.	6542 <i>Centaureum tenuiflorum</i>	Y		
803.	7918 <i>Centipeda cunninghamii</i> (Common Sneezewood, Gukwonderuk, Old Man Weed)			
804.	7366 <i>Centranthus macrosiphon</i>	Y		

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805.	1120 <i>Centrolepis alepyroides</i>			
806.	1121 <i>Centrolepis aristata</i> (Pointed Centrolepis)			
807.	1123 <i>Centrolepis caespitosa</i>			
808.	1125 <i>Centrolepis drummondiana</i>			
809.	1129 <i>Centrolepis glabra</i> (Smooth Centrolepis)			
810.	1130 <i>Centrolepis humillima</i> (Dwarf Centrolepis)			
811.	1132 <i>Centrolepis mutica</i>			
812.	1134 <i>Centrolepis polygyna</i> (Wiry Centrolepis)			
813.	43666 <i>Centrolepis</i> sp. Capel (G.J. Keighery 15786)			Y
814.	2889 <i>Cerastium glomeratum</i> (Mouse Ear Chickweed)	Y		
815.	17685 <i>Chaetantherus aristatus</i>			
816.	1065 <i>Chaetantherus leptocarpoides</i>			
817.	1280 <i>Chamaescilla corymbosa</i> (Blue Squill)			
818.	19338 <i>Chamaescilla gibsonii</i>		P3	
819.	1217 <i>Chamaexeros serra</i> (Little Fringe-leaf)			
820.	43980 <i>Chamelaucium</i> sp. S coastal plain (R.D.Royce 4872)		T	
821.	35657 <i>Chamelaucium</i> sp. Yoongarillup (G.J. Keighery 3635)		P4	
822.	26616 <i>Champia affinis</i>			
823.	1513 <i>Chasmanthe floribunda</i> (African Cornflag)	Y		
824.	31 <i>Cheilanthes austrotenuifolia</i>			
825.	2490 <i>Chenopodium glaucum</i> (Glaucous Goosefoot)	Y		
826.	2491 <i>Chenopodium macrospermum</i>	Y		
827.	7925 <i>Chondrilla juncea</i> (Skeleton Weed)	Y		
828.	17686 <i>Chordifex gracilior</i>		P3	
829.	17828 <i>Chordifex isomorphus</i>			
830.	17689 <i>Chordifex laxus</i>			
831.	2335 <i>Choretrum lateriflorum</i> (Dwarf Sour Bush)			
832.	763 <i>Chorizandra enodis</i> (Black Bristlerush)			
833.	3751 <i>Chorizema aciculare</i> (Needle-leaved Chorizema)			
834.	13112 <i>Chorizema aciculare</i> subsp. <i>aciculare</i>			
835.	13111 <i>Chorizema aciculare</i> subsp. <i>laxum</i>			
836.	8971 <i>Chorizema cordatum</i>			
837.	3754 <i>Chorizema diversifolium</i>			
838.	3757 <i>Chorizema glycinifolium</i>			
839.	12765 <i>Chorizema nanum</i>			
840.	13107 <i>Chorizema retrorsum</i>			
841.	3761 <i>Chorizema rhombeum</i>			
842.	14586 <i>Chorizema spathulatum</i>			
843.	6543 <i>Cicendia filiformis</i> (Slender Cicendia)	Y		
844.	48391 <i>Cladophora dalmatica</i>			
845.	26655 <i>Cladophora montagneana</i>			
846.	26674 <i>Codium harveyi</i>			
847.	44593 <i>Coleonema pulchellum</i>	Y		
848.	4550 <i>Comesperma calymega</i> (Blue-spike Milkwort)			
849.	4551 <i>Comesperma ciliatum</i>			
850.	4554 <i>Comesperma flavum</i>			
851.	4559 <i>Comesperma polygaloides</i> (Small Milkwort)			
852.	4564 <i>Comesperma virgatum</i> (Milkwort)			
853.	4566 <i>Comesperma volubile</i> (Love Creeper)			
854.	1857 <i>Conospermum acerosum</i> (Needle-leaved Smokebush)			
855.	15607 <i>Conospermum acerosum</i> subsp. <i>acerosum</i>			
856.	1862 <i>Conospermum caeruleum</i> (Blue Brother)			
857.	16875 <i>Conospermum caeruleum</i> subsp. <i>debile</i>			
858.	15609 <i>Conospermum caeruleum</i> subsp. <i>marginatum</i>			
859.	16878 <i>Conospermum caeruleum</i> subsp. <i>spathulatum</i>			
860.	1863 <i>Conospermum capitatum</i>			
861.	16853 <i>Conospermum capitatum</i> subsp. <i>glabratum</i>			
862.	1872 <i>Conospermum flexuosum</i> (Tangled Smokebush)			
863.	16850 <i>Conospermum flexuosum</i> subsp. <i>laevigatum</i>			
864.	1883 <i>Conospermum teretifolium</i> (Spider Smokebush)			
865.	6348 <i>Conostephium pendulum</i> (Pearl Flower)			
866.	1418 <i>Conostylis aculeata</i> (Prickly Conostylis)			
867.	11826 <i>Conostylis aculeata</i> subsp. <i>aculeata</i>			
868.	12109 <i>Conostylis aculeata</i> subsp. <i>preissii</i>			
869.	1427 <i>Conostylis candicans</i> (Grey Cottonhead)			
870.	1438 <i>Conostylis laxiflora</i>			
871.	1453 <i>Conostylis serrulata</i>			
872.	1454 <i>Conostylis setigera</i> (Bristly Cottonhead)			
873.	11597 <i>Conostylis setigera</i> subsp. <i>setigera</i>			
874.	6614 <i>Convolvulus remotus</i>			

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875.	20074	<i>Coryza sumatrensis</i>	Y		
876.	2891	<i>Corrigiola litoralis</i> (Strapwort)	Y		
877.	12935	<i>Corybas abditus</i>		P3	
878.	12945	<i>Corybas recurvus</i>			
879.	17104	<i>Corymbia calophylla</i> (Marri)			
880.	17105	<i>Corymbia haematoxylon</i> (Mountain Marri)			
881.	44791	<i>Corymbia maculata</i>	Y		
882.	1285	<i>Corynotheca micrantha</i> (Sand Lily)			
883.	11883	<i>Corynotheca micrantha</i> var. <i>elongata</i>			
884.	7943	<i>Cotula australis</i> (Common Cotula)			
885.	7944	<i>Cotula bipinnata</i> (Ferny Cotula)	Y		
886.	7945	<i>Cotula coronopifolia</i> (Waterbuttons)	Y		
887.	7947	<i>Cotula turbinata</i> (Funnel Weed)	Y		
888.	13354	<i>Craspedia variabilis</i>			
889.	48979	<i>Crassa secundata</i>			
890.	11221	<i>Crassula alata</i> var. <i>alata</i>	Y		
891.	17701	<i>Crassula closiana</i>			
892.	3137	<i>Crassula colorata</i> (Dense Stonecrop)			
893.	3138	<i>Crassula decumbens</i> (Rufous Stonecrop)			
894.	11349	<i>Crassula decumbens</i> var. <i>decumbens</i>			
895.	3142	<i>Crassula natans</i>	Y		
896.	15706	<i>Crassula natans</i> var. <i>minus</i>	Y		
897.	4451	<i>Crowea angustifolia</i> (Crowea)			
898.	11306	<i>Crowea angustifolia</i> var. <i>angustifolia</i>			
899.	4792	<i>Cryptandra arbutiflora</i> (Waxy Cryptandra)			
900.	13484	<i>Cryptandra arbutiflora</i> var. <i>tubulosa</i>			
901.	1627	<i>Cryptostylis ovata</i> (Slipper Orchid)			
902.	26712	<i>Curdiea obesa</i>			
903.	48914	<i>Cuscuta suaveolens</i>	Y		Y
904.	15404	<i>Cyanicula sericea</i>			
905.	768	<i>Cyathochaeta avenacea</i>			
906.	769	<i>Cyathochaeta clandestina</i>			
907.	17618	<i>Cyathochaeta equitans</i>			
908.	16245	<i>Cyathochaeta teretifolia</i>		P3	
909.	40661	<i>Cycnogeton lineare</i>			
910.	19893	<i>Cynara cardunculus</i> subsp. <i>flavescens</i> (Artichoke Thistle, Wild Artichoke, Cardoon)	Y		
911.	285	<i>Cynosurus echinatus</i> (Rough Dogstail)	Y		
912.	783	<i>Cyperus congestus</i> (Dense Flat-sedge)	Y		
913.	815	<i>Cyperus tenellus</i> (Tiny Flatsedge)	Y		
914.	10916	<i>Cyrtostylis huegelii</i>			
915.	10964	<i>Cyrtostylis robusta</i>			
916.	10942	<i>Cyrtostylis tenuissima</i>			
917.	17692	<i>Cytogonidium leptocarpoides</i>			
918.	287	<i>Dactylis glomerata</i> (Cocksfoot)	Y		
919.	7428	<i>Dampiera coronata</i> (Wedge-leaved Dampiera)			
920.	7446	<i>Dampiera heteroptera</i>		P3	
921.	7454	<i>Dampiera linearis</i> (Common Dampiera)			
922.	7462	<i>Dampiera pedunculata</i>			
923.	7484	<i>Dampiera trigona</i> (Angled-stem Dampiera)			
924.	5519	<i>Darwinia oederoides</i>			
925.	34765	<i>Darwinia whichei</i>		T	
926.	1218	<i>Dasypogon bromeliifolius</i> (Pineapple Bush)			
927.	1219	<i>Dasypogon hookeri</i> (Pineapple Bush)			
928.	6218	<i>Daucus glochidiatus</i> (Australian Carrot)			
929.	3793	<i>Daviesia angulata</i>			
930.	3799	<i>Daviesia cordata</i> (Bookleaf)			
931.	19747	<i>Daviesia decurrens</i> subsp. <i>decurrens</i>			
932.	3807	<i>Daviesia divaricata</i> (Marno)			
933.	18560	<i>Daviesia divaricata</i> subsp. <i>divaricata</i>			
934.	3808	<i>Daviesia elongata</i>		T	
935.	11879	<i>Daviesia hakeoides</i> subsp. <i>hakeoides</i>			
936.	3816	<i>Daviesia incrassata</i>			
937.	15505	<i>Daviesia incrassata</i> subsp. <i>incrassata</i>			
938.	3817	<i>Daviesia inflata</i>			
939.	14892	<i>Daviesia major</i>			
940.	3824	<i>Daviesia nudiflora</i>			
941.	16585	<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>			
942.	3832	<i>Daviesia physodes</i>			
943.	3834	<i>Daviesia polyphylla</i>			
944.	3835	<i>Daviesia preissii</i>			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
945.	3839	<i>Daviesia rhombifolia</i>			
946.	17691	<i>Desmocladius fasciculatus</i>			
947.	16595	<i>Desmocladius flexuosus</i>			
948.	46362	<i>Desmocladius lateriflorus</i>			
949.	299	<i>Deyeuxia quadriseta</i> (Reed Bentgrass)			
950.	1259	<i>Dianella revoluta</i> (Blueberry Lily)			
951.	7487	<i>Diaspasis filifolia</i> (Thread-leaved Diaspasis)			
952.	306	<i>Dichelachne crinita</i> (Longhair Plumegrass)			
953.	6616	<i>Dichondra repens</i> (Kidney Weed)			
954.	1287	<i>Dichopogon capillipes</i>			
955.	1289	<i>Dichopogon preissii</i>			
956.	32346	<i>Didymodon torquatus</i>			
957.	311	<i>Digitaria ciliaris</i> (Summer Grass)	Y		
958.	320	<i>Digitaria sanguinalis</i> (Crab Grass)	Y		
959.	19852	<i>Dillwynia</i> sp. Capel (P.A. Jurjevich 1771)		P1	
960.	3866	<i>Dillwynia uncinata</i> (Silky Parrot Pea)			
961.	4454	<i>Diplolaena dampieri</i> (Southern Diplolaena)			
962.	15268	<i>Diplolaena graniticola</i>			
963.	3867	<i>Dipogon lignosus</i> (Dolichos Pea)	Y		
964.	19649	<i>Disa bracteata</i>	Y		
965.	7054	<i>Dischisma arenarium</i>	Y		
966.	7055	<i>Dischisma capitatum</i> (Woolly-headed Dischisma)	Y		
967.	7961	<i>Dittrichia graveolens</i> (Stinkwort)	Y		
968.	10791	<i>Diuris carinata</i> (Bee Orchid)			
969.	42231	<i>Diuris decremента</i>			
970.	10796	<i>Diuris drummondii</i> (Tall Donkey Orchid)		T	
971.	10938	<i>Diuris filifolia</i> (Cat's Face Orchid)			
972.	44140	<i>Diuris jonesii</i>			
973.	1633	<i>Diuris laevis</i> (Nannygoat Orchid)			
974.	1634	<i>Diuris laxiflora</i> (Bee Orchid)			
975.	1635	<i>Diuris longifolia</i> (Common Donkey Orchid)			
976.	12939	<i>Diuris magnifica</i>			
977.	15436	<i>Diuris porrifolia</i>			
978.	46858	<i>Diuris tinctoria</i>			
979.	4757	<i>Dodonaea ceratocarpa</i>			
980.	1639	<i>Drakaea elastica</i> (Glossy-leaved Hammer Orchid)		T	
981.	1640	<i>Drakaea glyptodon</i> (King-in-his-carriage)			
982.	11156	<i>Drakaea livida</i>			
983.	13635	<i>Drakaea micrantha</i>		T	
984.	3090	<i>Drosera barbigera</i>			
985.	3091	<i>Drosera bulbigena</i> (Midget Sundew)			
986.	3092	<i>Drosera bulbosa</i> (Red-leaved Sundew)			
987.	48751	<i>Drosera drummondii</i>			
988.	3095	<i>Drosera erythrorhiza</i> (Red Ink Sundew)			
989.	48747	<i>Drosera geniculata</i>			
990.	3097	<i>Drosera gigantea</i> (Giant Sundew)			
991.	3098	<i>Drosera glanduligera</i> (Pimpernel Sundew)			
992.	3102	<i>Drosera huegelii</i> (Bold Sundew)			
993.	48691	<i>Drosera huegelii</i> var. <i>huegelii</i>			
994.	48769	<i>Drosera indumenta</i>			
995.	3106	<i>Drosera macrantha</i> (Bridal Rainbow)			
996.	3108	<i>Drosera marchantii</i>			
997.	3109	<i>Drosera menziesii</i> (Pink Rainbow)			
998.	3110	<i>Drosera microphylla</i> (Golden Rainbow)			
999.	3112	<i>Drosera myriantha</i> (Star Rainbow)			
1000.	3113	<i>Drosera neesii</i> (Jewel Rainbow)			
1001.	3114	<i>Drosera nitidula</i> (Shining Sundew)			
1002.	13189	<i>Drosera oreopodium</i>			
1003.	3118	<i>Drosera pallida</i> (Pale Rainbow)			
1004.	8911	<i>Drosera rosulata</i>			
1005.		<i>Drosera</i> sp.			
1006.	49090	<i>Drosera</i> sp. Branched styles (S.C. Coffey 193)			
1007.	3131	<i>Drosera stolonifera</i> (Leafy Sundew)			
1008.	13205	<i>Drosera tubaestylis</i>			
1009.	33500	<i>Dysphania ambrosioides</i> (Mexican Tea)	Y		
1010.	11368	<i>Dysphania glomulifera</i> subsp. <i>glomulifera</i>			
1011.	33517	<i>Dysphania multifida</i> (Scented Goosefoot)	Y		
1012.	33480	<i>Dysphania pumilio</i> (Clammy Goosefoot)			
1013.	11105	<i>Echinochloa crus-galli</i>	Y		
1014.	347	<i>Ehrlharta calycina</i> (Perennial Veldt Grass)	Y		

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1015.	348 <i>Ehrharta erecta</i> (Panic Veldt Grass)	Y		
1016.	349 <i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
1017.	5187 <i>Elatine gratioloides</i> (Waterwort)			
1018.	822 <i>Eleocharis acuta</i> (Common Spikerush)			
1019.	17605 <i>Eleocharis keigheryi</i>		T	
1020.	1643 <i>Elythranthera brunonis</i> (Purple Enamel Orchid)			
1021.	1644 <i>Elythranthera emarginata</i> (Pink Enamel Orchid)			
1022.	6131 <i>Epilobium billardioreanum</i> (Glabrous Willow Herb)			
1023.	11756 <i>Epilobium billardioreanum</i> subsp. <i>cinereum</i> (Variable Willow Herb)			
1024.	11992 <i>Epilobium billardioreanum</i> subsp. <i>intermedium</i>			
1025.	6133 <i>Epilobium hirtigerum</i> (Hairy Willow Herb)			
1026.	373 <i>Eragrostis brownii</i> (Brown's Lovegrass)			
1027.	374 <i>Eragrostis cilianensis</i> (Stinkgrass)	Y		
1028.	379 <i>Eragrostis elongata</i> (Clustered Lovegrass)			
1029.	13950 <i>Eremaea asterocarpa</i> subsp. <i>asterocarpa</i>			
1030.	14104 <i>Eremaea pauciflora</i> var. <i>pauciflora</i>			
1031.	1646 <i>Eriochilus dilatatus</i> (White Bunny Orchid)			
1032.	15410 <i>Eriochilus dilatatus</i> subsp. <i>dilatatus</i>			
1033.	15411 <i>Eriochilus dilatatus</i> subsp. <i>magnus</i>			
1034.	15412 <i>Eriochilus dilatatus</i> subsp. <i>multiflorus</i>			
1035.	4332 <i>Erodium botrys</i> (Long Storksbill)	Y		
1036.	4333 <i>Erodium cicutarium</i> (Common Storksbill)	Y		
1037.	6219 <i>Eryngium pinnatifidum</i> (Blue Devils)			
1038.	15446 <i>Eryngium pinnatifidum</i> subsp. <i>pinnatifidum</i>			
1039.	41803 <i>Eryngium</i> sp. <i>Ferox</i> (G.J. Keighery 16034)		P3	
1040.	41810 <i>Eryngium</i> sp. <i>Subdecumbens</i> (G.J. Keighery 5390)		P3	
1041.	5625 <i>Eucalyptus diversicolor</i> (Karri)			
1042.	18216 <i>Eucalyptus globulus</i>	Y		
1043.	5659 <i>Eucalyptus gomphocephala</i> (Tuart, Duart)			
1044.	5688 <i>Eucalyptus laeliae</i> (Darling Range Ghost Gum)			
1045.	5708 <i>Eucalyptus marginata</i> (Jarrah, Djara)			
1046.	13547 <i>Eucalyptus marginata</i> subsp. <i>marginata</i> (Jarrah)			
1047.	5739 <i>Eucalyptus patens</i> (Swan River Blackbutt, Dwuda)			
1048.	44858 <i>Eucalyptus resinifera</i> subsp. <i>resinifera</i>	Y		Y
1049.	5763 <i>Eucalyptus rudis</i> (Flooded Gum, Kulurda)			
1050.	13512 <i>Eucalyptus rudis</i> subsp. <i>cratyantha</i>		P4	
1051.	13511 <i>Eucalyptus rudis</i> subsp. <i>rudis</i>			
1052.	<i>Eucalyptus</i> sp.			
1053.	3872 <i>Euchilopsis linearis</i> (Swamp Pea)			
1054.	15137 <i>Euchiton sphaericus</i>			
1055.	4636 <i>Euphorbia paralias</i> (Sea Spurge)	Y		
1056.	3876 <i>Eutaxia epacridoides</i>			
1057.	3880 <i>Eutaxia virgata</i>			
1058.	835 <i>Evandra pauciflora</i>			
1059.	10907 <i>Exocarpos odoratus</i> (Scented Ballart)			
1060.	10765 <i>Exocarpos sparteus</i> (Broom Ballart, Djuk)			
1061.	1515 <i>Ferraria crispa</i> (Black Flag)	Y		
1062.	11445 <i>Ferraria crispa</i> subsp. <i>crispa</i>	Y		
1063.	20216 <i>Ficinia nodosa</i> (Knotted Club Rush)			
1064.	1944 <i>Franklandia fucifolia</i> (Lanoline Bush)			
1065.	1945 <i>Franklandia triaristata</i> (Lanoline Bush)		P4	
1066.	18392 <i>Freesia alba</i> x <i>leichtlinii</i>	Y		
1067.	2969 <i>Fumaria capreolata</i> (Whiteflower Fumitory)	Y		
1068.	32370 <i>Funaria hygrometrica</i>			
1069.	900 <i>Gahnia aristata</i>			
1070.	902 <i>Gahnia decomposita</i>			
1071.	7321 <i>Galium divaricatum</i>	Y		
1072.	7323 <i>Galium murale</i> (Small Goosegrass)	Y		
1073.	20247 <i>Gamochoeta calviceps</i>	Y		
1074.	3891 <i>Gastrolobium bilobum</i> (Heart Leaf Poison)			
1075.	20475 <i>Gastrolobium capitatum</i>			
1076.	19190 <i>Gastrolobium cuneatum</i>			
1077.	20473 <i>Gastrolobium ebracteolatum</i>			
1078.	20510 <i>Gastrolobium modestum</i>		T	
1079.	20509 <i>Gastrolobium papilio</i>		T	
1080.	20512 <i>Gastrolobium praemorsum</i>			
1081.	19733 <i>Gastrolobium retusum</i>			
1082.	20474 <i>Gastrolobium whicherense</i>		P2	
1083.	16311 <i>Gazania linearis</i>	Y		
1084.	3936 <i>Genista linifolia</i> (Flaxleaf Broom)	Y		

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1085.	4337 <i>Geranium dissectum</i> (Cutleaf Cranesbill)	Y		
1086.	4339 <i>Geranium molle</i> (Dove's Foot Cranesbill)	Y		
1087.	4340 <i>Geranium retrorsum</i>			
1088.	26854 <i>Gigartina disticha</i>			
1089.	11919 <i>Gladiolus communis</i> subsp. <i>byzantinus</i>	Y		Y
1090.	1523 <i>Gladiolus tristis</i> (Largeflower Gladiolus)	Y		
1091.	1524 <i>Gladiolus undulatus</i> (Wild Gladiolus)	Y		
1092.	33620 <i>Glischrocaryon angustifolium</i>			
1093.	7060 <i>Glossostigma diandrum</i>			
1094.	7061 <i>Glossostigma drummondii</i> (Mudmat)			
1095.	17043 <i>Glyceria declinata</i>	Y		
1096.	437 <i>Glyceria maxima</i> (Water Meadowgrass)	Y		
1097.	7991 <i>Gnephosis drummondii</i>			
1098.	<i>Gnephosis tenuissima</i> - <i>drummondii</i> complex			
1099.	6587 <i>Gomphocarpus fruticosus</i> (Narrowleaf Cottonbush)	Y		
1100.	3948 <i>Gompholobium capitatum</i>			
1101.	10909 <i>Gompholobium confertum</i>			
1102.	19216 <i>Gompholobium cyaninum</i>			
1103.	3950 <i>Gompholobium knightianum</i>			
1104.	3951 <i>Gompholobium marginatum</i>			
1105.	3953 <i>Gompholobium ovatum</i>			
1106.	3954 <i>Gompholobium polymorphum</i>			
1107.	3955 <i>Gompholobium preissii</i>			
1108.	11083 <i>Gompholobium scabrum</i>			
1109.	3956 <i>Gompholobium shuttleworthii</i>			
1110.	3957 <i>Gompholobium tomentosum</i> (Hairy Yellow Pea)			
1111.	6146 <i>Gonocarpus benthamii</i>			
1112.	6159 <i>Gonocarpus nodulosus</i>			
1113.	6160 <i>Gonocarpus paniculatus</i>			
1114.	8614 <i>Goodenia claytoniacea</i>			
1115.	29362 <i>Goodenia coerulea</i>			
1116.	7505 <i>Goodenia eatoniana</i>			
1117.	12551 <i>Goodenia micrantha</i>			
1118.	7538 <i>Goodenia pulchella</i>			
1119.	19286 <i>Goodenia pulchella</i> subsp. <i>Coastal Plain A</i> (M. Hislop 634)			
1120.	19284 <i>Goodenia pulchella</i> subsp. <i>Coastal Plain B</i> (L. W. Sage 2336)			
1121.	19285 <i>Goodenia pulchella</i> subsp. <i>Wheatbelt</i> (L. W. Sage & F. Hort 795)			
1122.	13165 <i>Goodenia pusilla</i>			
1123.	26871 <i>Gracilaria flagelliformis</i>			
1124.	7394 <i>Grammatotheca bergiana</i>	Y		
1125.	37500 <i>Grammatotheca bergiana</i> var. <i>bergiana</i>	Y		
1126.	7063 <i>Gratiola pedunculata</i> (Stalked Brooklime)		P2	
1127.	14282 <i>Gratiola pubescens</i>			
1128.	19628 <i>Grevillea bipinnatifida</i> subsp. <i>bipinnatifida</i>			
1129.	1967 <i>Grevillea brachystylis</i> (Short-styled Grevillea)			
1130.	14011 <i>Grevillea brachystylis</i> subsp. <i>brachystylis</i>		P3	
1131.	12219 <i>Grevillea bronwenae</i>		P3	
1132.	13085 <i>Grevillea centristigma</i>			
1133.	1992 <i>Grevillea diversifolia</i> (Variable-leaved Grevillea)			
1134.	13429 <i>Grevillea diversifolia</i> subsp. <i>diversifolia</i>			
1135.	14526 <i>Grevillea elongata</i>		T	
1136.	17112 <i>Grevillea maccutcheonii</i>		T	Y
1137.	2037 <i>Grevillea manglesioides</i>			
1138.	18436 <i>Grevillea manglesioides</i> subsp. <i>ferricola</i>		P3	
1139.	13427 <i>Grevillea manglesioides</i> subsp. <i>manglesioides</i>			
1140.	2066 <i>Grevillea pilulifera</i> (Woolly-flowered Grevillea)			
1141.	2078 <i>Grevillea pulchella</i> (Beautiful Grevillea)			
1142.	15990 <i>Grevillea pulchella</i> subsp. <i>ascendens</i>			
1143.	2080 <i>Grevillea quercifolia</i> (Oak-leaf Grevillea)			
1144.	2112 <i>Grevillea trifida</i>			
1145.	2119 <i>Grevillea vestita</i>			
1146.	12824 <i>Grevillea vestita</i> subsp. <i>vestita</i>			
1147.	26886 <i>Griffithsia tegea</i>			
1148.	1465 <i>Haemodorum discolor</i>			
1149.	1468 <i>Haemodorum laxum</i>			
1150.	1472 <i>Haemodorum simplex</i>			
1151.	1474 <i>Haemodorum sparsiflorum</i>			
1152.	1475 <i>Haemodorum spicatum</i> (Mardja)			
1153.	438 <i>Hainardia cylindrica</i> (Common Barbrgrass)	Y		
1154.	2128 <i>Hakea amplexicaulis</i> (Prickly Hakea)			

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1155.	2137 <i>Hakea ceratophylla</i> (Horned Leaf Hakea)			
1156.	2152 <i>Hakea cyclocarpa</i> (Ramshorn)			
1157.	45297 <i>Hakea dactyloides</i>	Y		
1158.	2159 <i>Hakea falcata</i>			
1159.	2175 <i>Hakea lissocarpa</i> (Honey Bush)			
1160.	2179 <i>Hakea marginata</i>			
1161.	2190 <i>Hakea oldfieldii</i>		P3	
1162.	2196 <i>Hakea preissii</i> (Needle Tree, Dandjin)			
1163.	2197 <i>Hakea prostrata</i> (Harsh Hakea)			
1164.	2203 <i>Hakea ruscifolia</i> (Candle Hakea)			
1165.	2206 <i>Hakea stenocarpa</i> (Narrow-fruited Hakea)			
1166.	2212 <i>Hakea sulcata</i> (Furrowed Hakea)			
1167.	2216 <i>Hakea varia</i> (Variable-leaved Hakea)			
1168.	47213 <i>Halimeda versatilis</i>			
1169.	3961 <i>Hardenbergia comptoniana</i> (Native Wisteria)			
1170.	12016 <i>Helianthus debilis</i> subsp. <i>cucumerifolius</i>	Y		
1171.	3016 <i>Heliophila pusilla</i>	Y		
1172.	11451 <i>Hemarthria uncinata</i> var. <i>uncinata</i>			
1173.	6839 <i>Hemiantra pungens</i> (Snakebush)			
1174.	6866 <i>Hemigenia pritzelii</i>			
1175.	6867 <i>Hemigenia ramosissima</i>		T	
1176.	41020 <i>Hemiphora bartlingii</i> (Woolly Dragon)			
1177.	5108 <i>Hibbertia acerosa</i> (Needle Leaved Guinea Flower)			
1178.	5109 <i>Hibbertia amplexicaulis</i>			
1179.	5112 <i>Hibbertia aurea</i>			
1180.	5114 <i>Hibbertia commutata</i>			
1181.	5117 <i>Hibbertia cuneiformis</i> (Cutleaf Hibbertia)			
1182.	5118 <i>Hibbertia cunninghamii</i>			
1183.	20051 <i>Hibbertia diamesogenos</i>			
1184.	5125 <i>Hibbertia ferruginea</i>			
1185.	5129 <i>Hibbertia glomerata</i>			
1186.	19778 <i>Hibbertia glomerata</i> subsp. <i>darlingensis</i>			
1187.	19777 <i>Hibbertia glomerata</i> subsp. <i>glomerata</i>			
1188.	5134 <i>Hibbertia huegelii</i>			
1189.	5135 <i>Hibbertia hypericoides</i> (Yellow Buttercups)			
1190.	45534 <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>			
1191.	20032 <i>Hibbertia pulchra</i> var. <i>pulchra</i>			
1192.	5161 <i>Hibbertia quadricolor</i>			
1193.	5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
1194.	5172 <i>Hibbertia stellaris</i> (Orange Stars)			
1195.	5173 <i>Hibbertia subvaginata</i>			
1196.	5176 <i>Hibbertia vaginata</i>			
1197.	1294 <i>Hodgsoniola junciformis</i>			
1198.	444 <i>Holcus lanatus</i> (Yorkshire Fog)	Y		
1199.	6222 <i>Homalosciadium homalocarpum</i>			
1200.	8476 <i>Hordeum hystrix</i> (Mediterranean Region Barley Grass)	Y		
1201.	449 <i>Hordeum leporinum</i> (Barley Grass)	Y		
1202.	450 <i>Hordeum marinum</i>	Y		
1203.	3964 <i>Hovea chorizemifolia</i> (Holly-leaved Hovea)			
1204.	3966 <i>Hovea pungens</i> (Devil's Pins, Puyenak)			
1205.	3967 <i>Hovea stricta</i>			
1206.	3968 <i>Hovea trisperma</i> (Common Hovea)			
1207.	12907 <i>Hovea trisperma</i> var. <i>grandiflora</i>			
1208.	12859 <i>Hovea trisperma</i> var. <i>trisperma</i>			
1209.	43505 <i>Hyacinthoides non-scripta</i>	Y		
1210.	12741 <i>Hyalosperma cotula</i>			
1211.	12717 <i>Hyalosperma pusillum</i>			
1212.	12737 <i>Hyalosperma simplex</i>			
1213.	16759 <i>Hyalosperma simplex</i> subsp. <i>simplex</i>			
1214.	5216 <i>Hybanthus calycinus</i> (Wild Violet)			
1215.	5218 <i>Hybanthus debilissimus</i>			
1216.	5221 <i>Hybanthus floribundus</i>			
1217.	12007 <i>Hybanthus floribundus</i> subsp. <i>floribundus</i>			
1218.	6223 <i>Hydrocotyle alata</i>			
1219.	6226 <i>Hydrocotyle callicarpa</i> (Small Pennywort)			
1220.	6229 <i>Hydrocotyle diantha</i>			
1221.	6232 <i>Hydrocotyle hispidula</i>			
1222.	5817 <i>Hypocalymma angustifolium</i> (White Myrtle, Kudjid)			
1223.	35070 <i>Hypocalymma angustifolium</i> subsp. <i>Swan Coastal Plain</i> (G.J. Keighery 16777)			
1224.	5818 <i>Hypocalymma cordifolium</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1225.	5819 <i>Hypocalymma ericifolium</i>			
1226.	5825 <i>Hypocalymma robustum</i> (Swan River Myrtle)			
1227.	8086 <i>Hypochaeris glabra</i> (Smooth Catsear)	Y		
1228.	9352 <i>Hypochaeris radicata</i> (Flat Weed, Cats-ear)	Y		
1229.	16835 <i>Hypolaena caespitosa</i>			
1230.	1070 <i>Hypolaena exsulca</i>			
1231.	1071 <i>Hypolaena fastigiata</i>			
1232.	17841 <i>Hypolaena pubescens</i>			
1233.	1380 <i>Ipheion uniflorum</i>	Y		
1234.	11 <i>Isoetes drummondii</i> (Quillwort)			
1235.	910 <i>Isolepis cernua</i> (Nodding Club-rush)			
1236.	20199 <i>Isolepis cernua</i> var. <i>cernua</i>			
1237.	20200 <i>Isolepis cernua</i> var. <i>setiformis</i>			
1238.	912 <i>Isolepis cyperoides</i>			
1239.	20198 <i>Isolepis fluitans</i> var. <i>fluitans</i>			
1240.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
1241.	919 <i>Isolepis oldfieldiana</i>			
1242.	921 <i>Isolepis producta</i>			
1243.	924 <i>Isolepis stellata</i> (Star Club-rush)			
1244.	16522 <i>Isopogon formosus</i> subsp. <i>dasylopis</i>		P3	
1245.	45553 <i>Isopogon spathulatus</i>			
1246.	2237 <i>Isopogon sphaerocephalus</i> (Drumstick Isopogon)			
1247.	7396 <i>Isotoma hypocrateriformis</i> (Woodbridge Poison)			
1248.	7398 <i>Isotoma pusilla</i> (Small Isotome)			
1249.	7399 <i>Isotoma scapigera</i> (Long-scaped Isotome)			
1250.	3992 <i>Isotropis cuneifolia</i> (Granny Bonnets)			
1251.	19700 <i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>			
1252.	1532 <i>Ixia maculata</i> (Yellow Ixia)	Y		
1253.	1533 <i>Ixia paniculata</i>	Y		
1254.	1534 <i>Ixia polystachya</i> (Variable Ixia)	Y		
1255.	8092 <i>Ixiolaena viscosa</i> (Sticky Ixiolaena)			
1256.	4012 <i>Jacksonia furcellata</i> (Grey Stinkwood)			
1257.	20462 <i>Jacksonia gracillima</i>		P3	
1258.	4017 <i>Jacksonia horrida</i>			
1259.	4018 <i>Jacksonia lehmannii</i>			
1260.	1295 <i>Johnsonia acaulis</i>			
1261.	1297 <i>Johnsonia lupulina</i> (Hooded Lily)			
1262.	1177 <i>Juncus articulatus</i> (Jointed Rush)	Y		
1263.	1178 <i>Juncus bufonius</i> (Toad Rush)	Y		
1264.	1179 <i>Juncus caespiticius</i> (Grassy Rush)			
1265.	1180 <i>Juncus capitatus</i> (Capitate Rush)	Y		
1266.	1184 <i>Juncus holoschoenus</i> (Jointleaf Rush)			
1267.	20668 <i>Juncus hybridus</i>	Y		
1268.	11922 <i>Juncus kraussii</i> subsp. <i>australiensis</i>			
1269.	1186 <i>Juncus microcephalus</i>	Y		
1270.	1188 <i>Juncus pallidus</i> (Pale Rush)			
1271.	1190 <i>Juncus planifolius</i> (Broadleaf Rush)			
1272.	1195 <i>Juncus subsecundus</i> (Finger Rush)			
1273.	4036 <i>Kennedia carinata</i>			
1274.	4037 <i>Kennedia coccinea</i> (Coral Vine)			
1275.	4044 <i>Kennedia prostrata</i> (Scarlet Runner)			
1276.	7068 <i>Kickxia spuria</i> (Roundleaf Toadflax)	Y		
1277.	1221 <i>Kingia australis</i> (Kingia, Pulonok)			
1278.	5832 <i>Kunzea ericifolia</i> (Spearwood, Pondil)			
1279.	15498 <i>Kunzea glabrescens</i> (Spearwood)			
1280.	5835 <i>Kunzea micrantha</i>			
1281.	17461 <i>Kunzea micrantha</i> subsp. <i>micrantha</i>			
1282.	5841 <i>Kunzea recurva</i>			
1283.	14776 <i>Kunzea rostrata</i>			
1284.	3669 <i>Labichea punctata</i> (Lance-leaved Cassia)			
1285.	13562 <i>Lachenalia aloides</i>	Y		
1286.	20019 <i>Lachnagrostis filiformis</i>			
1287.	19955 <i>Lachnagrostis plebeia</i>			
1288.	18585 <i>Lagenophora huegelii</i>			
1289.	467 <i>Lagurus ovatus</i> (Hare's Tail Grass)	Y		
1290.	17734 <i>Lambertia echinata</i> subsp. <i>occidentalis</i>		T	
1291.	2249 <i>Lambertia multiflora</i> (Many-flowered Honeysuckle)			
1292.	14083 <i>Lambertia multiflora</i> var. <i>darlingensis</i>			
1293.	45084 <i>Lasiopetalum laxiflorum</i>		P3	
1294.	5038 <i>Lasiopetalum membranaceum</i>		P3	

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1295.	48345	<i>Lasiopetalum occidentale</i>			
1296.	4047	<i>Lathyrus tingitanus</i> (Tangier Pea)	Y		
1297.	27001	<i>Laurencia filiformis</i>			
1298.	27009	<i>Laurencia tasmanica</i>			
1299.	6879	<i>Lavandula stoechas</i> (Italian Lavender)	Y		
1300.	38323	<i>Lavandula stoechas</i> subsp. <i>stoechas</i>	Y		
1301.	1304	<i>Laxmannia minor</i>			
1302.	11464	<i>Laxmannia sessiliflora</i> subsp. <i>australis</i>			
1303.	1309	<i>Laxmannia squarrosa</i>			
1304.	7568	<i>Lechenaultia biloba</i> (Blue Leschenaultia)			
1305.	7572	<i>Lechenaultia expansa</i>			
1306.	7574	<i>Lechenaultia floribunda</i> (Free-flowering Leschenaultia)			
1307.	1051	<i>Lemna disperma</i> (Duckweed)			
1308.	6880	<i>Leonotis leonurus</i> (Lion's Ear)	Y		
1309.	925	<i>Lepidosperma angustatum</i>			
1310.	42741	<i>Lepidosperma apricola</i>			
1311.	930	<i>Lepidosperma costale</i>			
1312.	933	<i>Lepidosperma gladiatum</i> (Coast Sword-sedge, Kerbin)			
1313.	937	<i>Lepidosperma longitudinale</i> (Pithy Sword-sedge)			
1314.	940	<i>Lepidosperma pubisquameum</i>			
1315.	941	<i>Lepidosperma resinum</i>			
1316.	944	<i>Lepidosperma scabrum</i>			
1317.		<i>Lepidosperma</i> sp.			
1318.	29150	<i>Lepidosperma</i> sp. Margaret River (B.J. Lepschi 1841)			
1319.	945	<i>Lepidosperma squamatum</i>			
1320.	948	<i>Lepidosperma tetraquetrum</i>			
1321.	1653	<i>Leporella fimbriata</i> (Hare Orchid)			
1322.	1077	<i>Leptocarpus canus</i> (Hoary Twine-rush)			
1323.	1078	<i>Leptocarpus coangustatus</i>			
1324.	46375	<i>Leptocarpus decipiens</i>			
1325.	46376	<i>Leptocarpus denmarkicus</i>			
1326.	46382	<i>Leptocarpus roycei</i>			
1327.	1080	<i>Leptocarpus scariosus</i>			
1328.	46377	<i>Leptocarpus scoparius</i>			
1329.	1082	<i>Leptocarpus tenax</i> (Slender Twine Rush)			
1330.	46383	<i>Leptocarpus tephrius</i>			
1331.	46379	<i>Leptocarpus thysananthus</i>			
1332.	46374	<i>Leptocarpus trisepalus</i>			
1333.	15418	<i>Leptoceras menziesii</i>			
1334.	2342	<i>Leptomeria cunninghamii</i>			
1335.	17703	<i>Leptomeria ellytes</i>			
1336.	17702	<i>Leptomeria furtiva</i>		P2	
1337.	5847	<i>Leptospermum erubescens</i> (Roadside Teatree)			
1338.	5850	<i>Leptospermum laevigatum</i> (Coast Teatree)	Y		
1339.	1085	<i>Lepyrodis glauca</i>			
1340.	1087	<i>Lepyrodis hermaphrodita</i>			
1341.	1088	<i>Lepyrodis macra</i> (Large Scale Rush)			
1342.	1090	<i>Lepyrodis muirii</i>			
1343.	19821	<i>Lessertia frutescens</i>	Y		
1344.	1493	<i>Leucojum aestivum</i> (Snowflake)	Y		
1345.	6360	<i>Leucopogon australis</i> (Spiked Beard-heath)			
1346.	6367	<i>Leucopogon capitellatus</i>			
1347.	6374	<i>Leucopogon conostephioides</i>			
1348.	6375	<i>Leucopogon cordatus</i>			
1349.	44201	<i>Leucopogon decrescens</i>			
1350.	6395	<i>Leucopogon gilbertii</i>			
1351.	6396	<i>Leucopogon glabellus</i>			
1352.	41260	<i>Leucopogon microcarpus</i>			
1353.	6417	<i>Leucopogon obovatus</i>			
1354.	6425	<i>Leucopogon oxycedrus</i>			
1355.	6427	<i>Leucopogon parviflorus</i> (Coast Beard-heath)			
1356.	6428	<i>Leucopogon pendulus</i>			
1357.	6434	<i>Leucopogon polymorphus</i>			
1358.	6436	<i>Leucopogon propinquus</i>			
1359.	6439	<i>Leucopogon pulchellus</i> (Beard-heath)			
1360.	6440	<i>Leucopogon racemulosus</i>			
1361.	6441	<i>Leucopogon reflexus</i> (Heart-leaf Beard-heath)			
1362.	29492	<i>Leucopogon</i> sp. Busselton (D. Cooper 243)		P2	
1363.	19662	<i>Leucopogon</i> sp. Margaret River (J. Scott 207)			
1364.	35559	<i>Leucopogon tenuicaulis</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1365.	6454 <i>Leucopogon verticillatus</i> (Tassel Flower)			
1366.	7673 <i>Levenhookia pauciflora</i> (Deceptive Stylewort)			
1367.	7676 <i>Levenhookia pusilla</i> (Midget Stylewort)			
1368.	49103 <i>Levenhookia</i> sp. <i>Whicher Range</i> (J.A. Wege 2090)			
1369.	7677 <i>Levenhookia stipitata</i> (Common Stylewort)			
1370.	59 <i>Lindsaea linearis</i> (Screw Fern)			
1371.	4362 <i>Linum marginale</i> (Wild Flax)			
1372.	4363 <i>Linum trigynum</i> (French Flax)	Y		
1373.	36179 <i>Liparophyllum violifolium</i>			
1374.	9289 <i>Lobelia anceps</i> (Angled Lobelia)			
1375.	7403 <i>Lobelia heterophylla</i> (Wing-seeded Lobelia)			
1376.	7406 <i>Lobelia rhombifolia</i> (Tufted Lobelia)			
1377.	7407 <i>Lobelia rhytidisperma</i> (Wrinkled-seeded Lobelia)			
1378.	7408 <i>Lobelia tenuior</i> (Slender Lobelia)			
1379.	9356 <i>Logfia gallica</i>	Y		
1380.	476 <i>Lolium perenne</i> (Perennial Ryegrass)	Y		
1381.	478 <i>Lolium rigidum</i> (Wimmera Ryegrass)	Y		
1382.	<i>Lolium</i> sp.			
1383.	1223 <i>Lomandra caespitosa</i> (Tufted Mat Rush)			
1384.	1225 <i>Lomandra drummondii</i>			
1385.	1228 <i>Lomandra hermaphrodita</i>			
1386.	1229 <i>Lomandra integra</i>			
1387.	1232 <i>Lomandra micrantha</i> (Small-flower Mat-rush)			
1388.	1234 <i>Lomandra nigricans</i>			
1389.	1236 <i>Lomandra odora</i> (Tiered Matrush)			
1390.	1238 <i>Lomandra pauciflora</i>			
1391.	1239 <i>Lomandra preissii</i>			
1392.	1240 <i>Lomandra purpurea</i> (Purple Mat Rush)			
1393.	1243 <i>Lomandra sericea</i> (Silky Mat Rush)			
1394.	1244 <i>Lomandra sonderi</i>			
1395.	<i>Lomandra</i> sp.			
1396.	1245 <i>Lomandra sparteae</i>			
1397.	1246 <i>Lomandra suaveolens</i>			
1398.	33298 <i>Lomandra whicherensis</i>		P3	
1399.	7365 <i>Lonicera japonica</i> (Japanese Honeysuckle)	Y		
1400.	4059 <i>Lotus angustissimus</i> (Narrowleaf Trefoil)	Y		
1401.	8564 <i>Lotus subbiflorus</i>	Y		
1402.	1092 <i>Loxocarya cinerea</i>			
1403.	13779 <i>Loxocarya magna</i>		P3	
1404.	37320 <i>Loxocarya striata</i> subsp. <i>implexa</i>		P1	
1405.	4065 <i>Lupinus angustifolius</i> (Narrowleaf Lupin)	Y		
1406.	4066 <i>Lupinus cosentinii</i>	Y		
1407.	4067 <i>Lupinus luteus</i> (Yellow Lupin)	Y		
1408.	1198 <i>Luzula meridionalis</i> (Field Woodrush)			
1409.	1097 <i>Lyginia barbata</i>			
1410.	18049 <i>Lyginia imberbis</i>			
1411.	1656 <i>Lyperanthus serratus</i> (Rattle Beak Orchid)			
1412.	36375 <i>Lysimachia arvensis</i> (Pimpernel)	Y		
1413.	6456 <i>Lysinema ciliatum</i> (Curry Flower)			
1414.	34736 <i>Lysinema pentapetalum</i>			
1415.	5281 <i>Lythrum hyssopifolia</i> (Lesser Loosestrife)	Y		
1416.	2838 <i>Macarthuria apetala</i>			
1417.	85 <i>Macrozamia riedlei</i> (Zamia, Djiridji)			
1418.	36522 <i>Malva pseudolavatera</i>	Y		
1419.	74 <i>Marsilea drummondii</i> (Common Nardoo)			
1420.	<i>Marsilea</i> sp.			
1421.	31237 <i>Mauranthemum paludosum</i>	Y		
1422.	4079 <i>Medicago polymorpha</i> (Burr Medic)	Y		
1423.	33638 <i>Meionectes tenuifolia</i>		P3	
1424.	37580 <i>Melaleuca acutifolia</i>			
1425.	5900 <i>Melaleuca cuticularis</i> (Saltwater Paperbark)			
1426.	5921 <i>Melaleuca incana</i> (Grey Honey myrtle)			
1427.	13273 <i>Melaleuca incana</i> subsp. <i>incana</i>			
1428.	5922 <i>Melaleuca lanceolata</i> (Rottnest Teatree, Moonah)			
1429.	5926 <i>Melaleuca lateritia</i> (Robin Redbreast Bush)			
1430.	20297 <i>Melaleuca osullivanii</i>			
1431.	18394 <i>Melaleuca parviceps</i>			
1432.	5946 <i>Melaleuca pauciflora</i>			
1433.	5952 <i>Melaleuca preissiana</i> (Moonah)			
1434.	5959 <i>Melaleuca raphiophylla</i> (Swamp Paperbark)			

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1435.	5978 <i>Melaleuca teretifolia</i> (Banbar)			
1436.	5980 <i>Melaleuca thymoides</i>			
1437.	5983 <i>Melaleuca trichophylla</i>			
1438.	5984 <i>Melaleuca uncinata</i> (Broom Bush, Kwidjard)			
1439.	5987 <i>Melaleuca viminea</i> (Mohan)			
1440.	13280 <i>Melaleuca viminea</i> subsp. <i>viminea</i>			
1441.	17682 <i>Melanostachya ustulata</i>			
1442.	4085 <i>Melilotus indicus</i>	Y		
1443.	19827 <i>Melilotus sicularis</i>	Y		
1444.	6883 <i>Mentha pulegium</i> (Pennyroyal)	Y		
1445.	953 <i>Mesomelaena graciliceps</i>			
1446.	956 <i>Mesomelaena stygia</i>			
1447.	11473 <i>Mesomelaena stygia</i> subsp. <i>stygia</i>			
1448.	957 <i>Mesomelaena tetragona</i> (Semaphore Sedge)			
1449.	27070 <i>Metamastophora flabellata</i>			
1450.	485 <i>Microlaena stipoides</i> (Weeping Grass)			
1451.	31713 <i>Microtis cupularis</i>			
1452.	10954 <i>Microtis media</i> (Tall Mignonette Orchid)			
1453.	15419 <i>Microtis media</i> subsp. <i>media</i>			
1454.	1660 <i>Microtis orbicularis</i> (Dark Mignonette Orchid)			
1455.	33742 <i>Microtis quadrata</i>		P4	
1456.	8106 <i>Millotia tenuifolia</i> (Soft Millotia)			
1457.	14344 <i>Millotia tenuifolia</i> var. <i>tenuifolia</i> (Soft Millotia)			
1458.	4090 <i>Mirbelia dilatata</i> (Holly-leaved Mirbelia)			
1459.	2894 <i>Moenchia erecta</i> (Erect Chickweed)	Y		
1460.	7410 <i>Monopsis debilis</i>	Y		
1461.	37440 <i>Monopsis debilis</i> var. <i>depressa</i>	Y		
1462.	4662 <i>Monotaxis grandiflora</i> (Diamond of the Desert)			
1463.	4666 <i>Monotaxis occidentalis</i>			
1464.	2874 <i>Montia australasica</i>		P2	
1465.	19179 <i>Moraea flaccida</i> (One-leaf Cape Tulip)	Y		
1466.	19178 <i>Moraea lewisiae</i>	Y		
1467.	19180 <i>Moraea miniata</i> (Two-leaf Cape Tulip)	Y		
1468.	19438 <i>Moraea ochroleuca</i>	Y		
1469.	2412 <i>Muehlenbeckia adpressa</i> (Climbing Lignum)			
1470.	8117 <i>Myriocephalus helichrysoides</i>			
1471.	6189 <i>Myriophyllum crispatum</i>			
1472.	6192 <i>Myriophyllum drummondii</i>			
1473.	6193 <i>Myriophyllum echinatum</i>		P3	
1474.	6199 <i>Myriophyllum tillaeoides</i>			
1475.	1494 <i>Narcissus pseudonarcissus</i>	Y		
1476.	44496 <i>Narcissus tazetta</i> subsp. <i>italicus</i>	Y		
1477.	6464 <i>Needhamiella pumilio</i>			
1478.	492 <i>Neurachne alopecuroides</i> (Foxtail Mulga Grass)			
1479.	2401 <i>Nuytsia floribunda</i> (Christmas Tree, Mudja)			
1480.	6140 <i>Oenothera mollissima</i>	Y		
1481.	2365 <i>Olex benthamiana</i>			
1482.	8127 <i>Olearia axillaris</i> (Coastal Daisybush)			
1483.	8133 <i>Olearia elaeophila</i>			
1484.	8143 <i>Olearia paucidentata</i> (Autumn Scrub Daisy)			
1485.	8150 <i>Olearia strigosa</i> (Bristly Daisy Bush)			
1486.	18254 <i>Opercularia apiciflora</i>			
1487.	7348 <i>Opercularia hispidula</i> (Hispid Stinkweed)			
1488.	18255 <i>Opercularia vaginata</i> (Dog Weed)			
1489.	46316 <i>Orianthera serpyllifolia</i> subsp. <i>angustifolia</i>			
1490.	46256 <i>Orianthera wendyae</i>		P1	
1491.	36177 <i>Ornduffia albiflora</i>			
1492.	36181 <i>Ornduffia parnassifolia</i>			
1493.	36200 <i>Ornduffia submersa</i>		P4	
1494.	1372 <i>Ornithogalum arabicum</i> (Lesser Cape Lily)	Y		
1495.	4113 <i>Ornithopus compressus</i> (Yellow Serradella)	Y		
1496.	4114 <i>Ornithopus pinnatus</i> (Slender Serradella)	Y		
1497.	7122 <i>Orobancha minor</i> (Lesser Broomrape)	Y		
1498.	1537 <i>Orthrosanthus laxus</i> (Morning Iris)			
1499.	11749 <i>Orthrosanthus laxus</i> var. <i>laxus</i> (Morning Iris)			
1500.	27107 <i>Osmundaria prolifera</i>			
1501.	17756 <i>Osteospermum ecklonis</i>	Y		
1502.	168 <i>Ottelia ovalifolia</i> (Swamp Lily)			
1503.	30375 <i>Oxalis exilis</i>			
1504.	4352 <i>Oxalis glabra</i>	Y		

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1505.	4354 <i>Oxalis incarnata</i>	Y		
1506.	4355 <i>Oxalis perennans</i>			
1507.	4356 <i>Oxalis pes-caprae</i> (Soursob)	Y		
1508.	4358 <i>Oxalis purpurea</i> (Largeflower Wood Sorrel)	Y		
1509.	7117 <i>Pandorea pandorana</i>			
1510.	504 <i>Panicum effusum</i> (Hairy Panic Grass)			
1511.	23500 <i>Paracaleana hortorum</i>			
1512.	1667 <i>Paracaleana nigrata</i> (Flying Duck Orchid)			
1513.	20101 <i>Paragonis grandiflora</i>			
1514.	3618 <i>Paraserianthes lophantha</i> (Albizia)			
1515.	17114 <i>Paraserianthes lophantha</i> subsp. <i>lophantha</i>			
1516.	7089 <i>Parentucellia latifolia</i> (Common Bartsia)	Y		
1517.	1762 <i>Parietaria debilis</i> (Pellitory)			
1518.	527 <i>Paspalum dilatatum</i>	Y		
1519.	528 <i>Paspalum distichum</i> (Water Couch)	Y		
1520.	1542 <i>Patersonia babianoides</i>			
1521.	1546 <i>Patersonia juncea</i> (Rush Leaved Patersonia)			
1522.	1550 <i>Patersonia occidentalis</i> (Purple Flag, Koma)			
1523.	30471 <i>Patersonia occidentalis</i> var. <i>angustifolia</i>			
1524.	30472 <i>Patersonia occidentalis</i> var. <i>occidentalis</i>			
1525.	1551 <i>Patersonia pygmaea</i> (Pygmy Patersonia)			
1526.	1553 <i>Patersonia umbrosa</i> (Yellow Flags)			
1527.	11550 <i>Patersonia umbrosa</i> var. <i>xanthina</i> (Yellow Flags)			
1528.	43763 <i>Pauridia glabella</i>			
1529.	43760 <i>Pauridia occidentalis</i>			
1530.	43761 <i>Pauridia occidentalis</i> var. <i>occidentalis</i>			
1531.	43762 <i>Pauridia occidentalis</i> var. <i>quadriloba</i>			
1532.	43782 <i>Pauridia vaginata</i> var. <i>vaginata</i>			
1533.	4343 <i>Pelargonium capitatum</i> (Rose Pelargonium)	Y		
1534.	4346 <i>Pelargonium littorale</i>			
1535.	48991 <i>Pelargonium x hortorum</i>	Y		
1536.	40424 <i>Pentameris airoides</i> subsp. <i>airoides</i>	Y		
1537.	6245 <i>Pentapeltis peltigera</i>			
1538.	6006 <i>Pericalymma ellipticum</i> (Swamp Teatree)			
1539.	16477 <i>Pericalymma ellipticum</i> var. <i>ellipticum</i>			
1540.	16478 <i>Pericalymma ellipticum</i> var. <i>floridum</i>			
1541.	15501 <i>Pericalymma spongiocaule</i>			
1542.	13911 <i>Persicaria decipiens</i>			
1543.	16983 <i>Persicaria maculosa</i>	Y		
1544.	11052 <i>Persicaria prostrata</i>			
1545.	2267 <i>Persoonia longifolia</i> (Snottygobble)			
1546.	2273 <i>Persoonia saccata</i> (Snottygobble)			
1547.	14085 <i>Petrophile latericola</i>		T	Y
1548.	2299 <i>Petrophile linearis</i> (Pixie Mops)			
1549.	2309 <i>Petrophile serruriae</i>			
1550.	17765 <i>Petrophile squamata</i> subsp. <i>squamata</i>			
1551.	2312 <i>Petrophile striata</i>			
1552.	19825 <i>Petrorhagia dubia</i>	Y		
1553.	547 <i>Phalaris angusta</i>	Y		
1554.	548 <i>Phalaris aquatica</i> (Phalaris)	Y		
1555.	20460 <i>Pheladenia deformis</i>			
1556.	18529 <i>Philotheca spicata</i> (Pepper and Salt)			
1557.	1172 <i>Philydrella drummondii</i>			
1558.	1173 <i>Philydrella pygmaea</i> (Butterfly Flowers)			
1559.	14306 <i>Philydrella pygmaea</i> subsp. <i>pygmaea</i>			
1560.	1478 <i>Phlebocarya ciliata</i>			
1561.	1479 <i>Phlebocarya filifolia</i>			
1562.	16177 <i>Phyllangium paradoxum</i>			
1563.	4675 <i>Phyllanthus calycinus</i> (False Boronia)			
1564.	4 <i>Phylloglossum drummondii</i> (Pigmy Clubmoss)			
1565.	6983 <i>Physalis peruviana</i> (Cape Gooseberry)	Y		
1566.	2793 <i>Phytolacca octandra</i> (Red Ink Plant)	Y		
1567.	14371 <i>Picris angustifolia</i>			
1568.	8160 <i>Picris squarrosa</i>			
1569.	2408 <i>Pilostyles hamiltonii</i>			
1570.	78 <i>Piulularia novae-hollandiae</i> (Austral Pillwort)			
1571.	5231 <i>Pimelea angustifolia</i> (Narrow-leaved Pimelea)			
1572.	5232 <i>Pimelea argentea</i> (Silvery Leaved Pimelea)			
1573.	11928 <i>Pimelea ciliata</i> subsp. <i>ciliata</i>			
1574.	5249 <i>Pimelea hispida</i> (Bristly Pimelea)			

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1575.	5251 <i>Pimelea imbricata</i>			
1576.	11404 <i>Pimelea imbricata</i> var. <i>major</i>			
1577.	5252 <i>Pimelea lanata</i>			
1578.	11182 <i>Pimelea lehmanniana</i> subsp. <i>nervosa</i>			
1579.	5259 <i>Pimelea preissii</i>			
1580.	5261 <i>Pimelea rosea</i> (Rose Banjine)			
1581.	18117 <i>Pimelea rosea</i> subsp. <i>rosea</i>			
1582.	12041 <i>Pimelea suaveolens</i> subsp. <i>suaveolens</i>			
1583.	5269 <i>Pimelea sylvestris</i>			
1584.	8163 <i>Pithocarpa corymbulosa</i> (Corymbose Pithocarpa)		P3	
1585.	18352 <i>Pithocarpa pulchella</i> var. <i>melanostigma</i>			
1586.	18353 <i>Pithocarpa pulchella</i> var. <i>pulchella</i>			
1587.	19745 <i>Pittosporum ligustrifolium</i>			
1588.	16322 <i>Pittosporum undulatum</i>	Y		
1589.	7301 <i>Plantago exilis</i>			
1590.	7303 <i>Plantago lanceolata</i> (Ribwort Plantain)	Y		
1591.	6249 <i>Platysace compressa</i> (Tapeworm Plant)			
1592.	6253 <i>Platysace filiformis</i>			
1593.	11160 <i>Platysace haplosciadia</i>			
1594.	6259 <i>Platysace tenuissima</i>			
1595.	33377 <i>Platytheca anasima</i>		P2	Y
1596.	4524 <i>Platytheca galioides</i>			
1597.	27155 <i>Plocamium cartilagineum</i>			
1598.	571 <i>Poa annua</i> (Winter Grass)	Y		
1599.	573 <i>Poa drummondiana</i> (Knotted Poa)			
1600.	86 <i>Podocarpus drouynianus</i> (Wild Plum, Kula)			
1601.	8175 <i>Podolepis gracilis</i> (Slender Podolepis)			
1602.	8177 <i>Podolepis lessonii</i>			
1603.	8182 <i>Podotheca angustifolia</i> (Sticky Longheads)			
1604.	8183 <i>Podotheca chrysantha</i> (Yellow Podotheca)			
1605.	8188 <i>Pogonolepis stricta</i>			
1606.	2416 <i>Polygonum arenastrum</i> (Sand Wireweed)	Y		
1607.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
1608.	583 <i>Polypogon tenellus</i>			
1609.	4690 <i>Poranthera huegelii</i>			
1610.	27184 <i>Porphyra lucasii</i>			
1611.	110 <i>Potamogeton drummondii</i>			
1612.	15424 <i>Praecoxanthus aphyllus</i>			
1613.	1670 <i>Prasophyllum drummondii</i> (Swamp Leek Orchid)			
1614.	1671 <i>Prasophyllum elatum</i> (Tall Leek Orchid)			
1615.	1674 <i>Prasophyllum giganteum</i> (Bronze Leek Orchid)			
1616.	1676 <i>Prasophyllum hians</i> (Yawning Leek Orchid)			
1617.	1677 <i>Prasophyllum macrostachyum</i> (Laughing Leek Orchid)			
1618.	1680 <i>Prasophyllum parvifolium</i> (Autumn Leek Orchid)			
1619.	10853 <i>Prasophyllum plumiforme</i>			
1620.	44084 <i>Prasophyllum</i> sp. <i>early</i> (G. Brockman GBB 1626)			
1621.	17211 <i>Prunus cerasifera</i>	Y		
1622.	46201 <i>Prunus persica</i>	Y		
1623.	8189 <i>Pseudognaphalium luteoalbum</i> (Jersey Cudweed)			
1624.	57 <i>Pteridium esculentum</i> (Bracken)			
1625.	41651 <i>Pteridium esculentum</i> subsp. <i>esculentum</i>			
1626.	45 <i>Pteris vittata</i> (Chinese Brake)			
1627.	<i>Pterostylis</i> aff. <i>nana</i>			
1628.	1685 <i>Pterostylis angusta</i>			
1629.	15426 <i>Pterostylis aspera</i>			
1630.	1686 <i>Pterostylis barbata</i> (Bird Orchid)			
1631.	17267 <i>Pterostylis brevisepala</i>			
1632.	44527 <i>Pterostylis erubescens</i>			
1633.	44723 <i>Pterostylis glebosa</i>			
1634.	11118 <i>Pterostylis pyramidalis</i> (Snail Orchid)			
1635.	1693 <i>Pterostylis recurva</i> (Jug Orchid)			
1636.	1694 <i>Pterostylis rogersii</i> (Curled-tongue Shell Orchid)			
1637.	48683 <i>Pterostylis serotina</i>			
1638.	<i>Pterostylis</i> sp.			
1639.	49034 <i>Pterostylis</i> sp. <i>Bloated snail orchid</i> (W. Jackson BJ 486)			
1640.	18655 <i>Pterostylis</i> sp. <i>crinkled leaf</i> (G.J. Keighery 13426)			
1641.	10998 <i>Pterostylis turfosa</i> (Bird Orchid)			
1642.	1698 <i>Pterostylis vittata</i> (Banded Greenhood)			
1643.	2742 <i>Ptilotus manglesii</i> (Pom Poms, Mulamula)			
1644.	2751 <i>Ptilotus polystachyus</i> (Prince of Wales Feather)			

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1645.	2759 <i>Ptilotus sericostachyus</i>			
1646.	15856 <i>Ptilotus sericostachyus</i> subsp. <i>sericostachyus</i>			
1647.	591 <i>Puccinellia ciliata</i> (<i>Puccinellia</i>)	Y		
1648.	20195 <i>Pultenaea brachytropis</i>			
1649.	4172 <i>Pultenaea ericifolia</i>			
1650.	4177 <i>Pultenaea ochreatea</i>			
1651.	4179 <i>Pultenaea pinifolia</i>		P3	
1652.	4180 <i>Pultenaea radiata</i>			
1653.	4181 <i>Pultenaea reticulata</i>			
1654.	4183 <i>Pultenaea skinneri</i> (<i>Skinner's Pea</i>)		P4	
1655.	23459 <i>Pultenaea</i> sp. <i>southern</i> (<i>L.A. Orthia 39</i>)			
1656.	4187 <i>Pultenaea verruculosa</i>			
1657.	16367 <i>Pyrorchis nigricans</i> (<i>Red beaks, Elephants ears</i>)			
1658.	18391 <i>Pyrus communis</i>	Y		
1659.	8195 <i>Quinetia urvillei</i>			
1660.	32480 <i>Racopilum cuspidigerum</i> var. <i>convolutaceum</i>			
1661.	2932 <i>Ranunculus colonorum</i> (<i>Common Buttercup</i>)			
1662.	2933 <i>Ranunculus muricatus</i> (<i>Sharp Buttercup</i>)	Y		
1663.	2935 <i>Ranunculus pumilio</i> (<i>Smallflower Buttercup</i>)			
1664.	3061 <i>Raphanus raphanistrum</i> (<i>Wild Radish</i>)	Y		
1665.	6012 <i>Regelia ciliata</i>			
1666.	2578 <i>Rhagodia baccata</i> (<i>Berry Saltbush</i>)			
1667.	11341 <i>Rhagodia baccata</i> subsp. <i>baccata</i>			
1668.	13300 <i>Rhodanthe citrina</i>			
1669.	15035 <i>Rhodanthe corymbosa</i>			
1670.	13301 <i>Rhodanthe floribunda</i>			
1671.	13312 <i>Rhodanthe pyrethrum</i>			
1672.	27222 <i>Rhodophyllis volans</i>			
1673.	17273 <i>Richardia brasiliensis</i>	Y		
1674.	13683 <i>Ricinocarpos cyanescens</i>			
1675.	4705 <i>Ricinus communis</i> (<i>Castor Oil Plant</i>)	Y		
1676.	1556 <i>Romulea rosea</i> (<i>Guildford Grass</i>)	Y		
1677.	14924 <i>Romulea rosea</i> var. <i>communis</i>	Y		
1678.	32426 <i>Rosulabryum campylothecium</i>			
1679.	32429 <i>Rosulabryum torquescens</i>			
1680.	2429 <i>Rumex acetosella</i> (<i>Sorrel</i>)	Y		
1681.	11541 <i>Rumex dumosus</i> var. <i>dumosus</i>			
1682.	2440 <i>Rumex pulcher</i> (<i>Fiddle Dock</i>)	Y		
1683.	20171 <i>Rumex pulcher</i> subsp. <i>woodsii</i>	Y		
1684.	40431 <i>Rytidosperma acerosum</i>			
1685.	40425 <i>Rytidosperma caespitosum</i>			
1686.	40426 <i>Rytidosperma occidentale</i>			
1687.	40430 <i>Rytidosperma pilosum</i>			
1688.	40427 <i>Rytidosperma setaceum</i>			
1689.	48430 <i>Salicornia quinqueflora</i>			
1690.	6483 <i>Samolus junceus</i>			
1691.	6484 <i>Samolus repens</i> (<i>Creeping Brookweed</i>)			
1692.	29911 <i>Samolus</i> sp. <i>Clay Flats</i> (<i>G.J. & B.J. Keighery 718</i>)			
1693.	7602 <i>Scaevola calliptera</i>			
1694.	7613 <i>Scaevola glandulifera</i> (<i>Viscid Hand-flower</i>)			
1695.	7619 <i>Scaevola lanceolata</i> (<i>Long-leaved Scaevola</i>)			
1696.	7634 <i>Scaevola phlebopetala</i> (<i>Velvet Fanflower</i>)			
1697.	7646 <i>Scaevola striata</i> (<i>Royal Robe</i>)			
1698.	6263 <i>Schoenolaena juncea</i>			
1699.	973 <i>Schoenus asperocarpus</i> (<i>Poison Sedge</i>)			
1700.	974 <i>Schoenus benthamii</i>		P3	
1701.	975 <i>Schoenus bifidus</i>			
1702.	978 <i>Schoenus brevisetis</i>			
1703.	984 <i>Schoenus curvifolius</i>			
1704.	985 <i>Schoenus discifer</i>			
1705.	986 <i>Schoenus efoliatus</i>			
1706.	987 <i>Schoenus elegans</i>			
1707.	992 <i>Schoenus grandiflorus</i> (<i>Large Flowered Bogrush</i>)			
1708.	999 <i>Schoenus loliaceus</i>		P2	
1709.	1002 <i>Schoenus nanus</i> (<i>Tiny Bog Rush</i>)			
1710.	1003 <i>Schoenus natans</i> (<i>Floating Bog-rush</i>)		P4	
1711.	1006 <i>Schoenus odontocarpus</i>			
1712.	1008 <i>Schoenus pennisetis</i>		P3	
1713.	17614 <i>Schoenus plumosus</i>			
1714.	1011 <i>Schoenus rigens</i>			

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1715.	1013 <i>Schoenus sculptus</i> (Gimlet Bog-rush)			
1716.	1016 <i>Schoenus subbarbatus</i> (Bearded Bog-rush)			
1717.	1017 <i>Schoenus subbulbosus</i>			
1718.	16252 <i>Schoenus subflavus</i> subsp. <i>subflavus</i>			
1719.	1020 <i>Schoenus sublateralis</i>			
1720.	1021 <i>Schoenus subluxus</i>			
1721.	1023 <i>Schoenus tenellus</i>			
1722.	1026 <i>Schoenus unispiculatus</i>			
1723.	17409 <i>Schoenus variicellae</i>			
1724.	6 <i>Selaginella gracillima</i> (Tiny Clubmoss)			
1725.	32433 <i>Sematophyllum homomallum</i>			
1726.	8203 <i>Senecio diaschides</i>			
1727.	20663 <i>Senecio multicaulis</i> subsp. <i>multicaulis</i>			
1728.	8217 <i>Senecio quadridentatus</i>			
1729.	609 <i>Setaria palmifolia</i> (Palm Grass)	Y		
1730.	19453 <i>Setaria parviflora</i>	Y		
1731.	613 <i>Setaria verticillata</i> (Whorled Pigeon Grass)	Y		
1732.	7362 <i>Sherardia arvensis</i> (Field Madder)	Y		
1733.	2909 <i>Silene gallica</i> (French Catchfly)	Y		
1734.	15972 <i>Silene gallica</i> var. <i>gallica</i>	Y		
1735.	11803 <i>Silene gallica</i> var. <i>quinquevulnera</i>	Y		
1736.	8224 <i>Siloxerus filifolius</i>			
1737.	8225 <i>Siloxerus humifusus</i> (Procumbent Siloxerus)			
1738.	8226 <i>Siloxerus pygmaeus</i>			
1739.	3071 <i>Sisymbrium officinale</i> (Hedge Mustard)	Y		
1740.	3072 <i>Sisymbrium orientale</i> (Indian Hedge Mustard)	Y		
1741.	48862 <i>Sisyrinchium rosulatum</i>	Y		
1742.	7013 <i>Solanum hoplopetalum</i> (Thorny Solanum)			
1743.	7022 <i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
1744.	45036 <i>Solidago chilensis</i>	Y		
1745.	10920 <i>Soliva sessilis</i> (Jo-jo, Onehunga Weed)	Y		
1746.	8230 <i>Sonchus asper</i> (Rough Sowthistle)	Y		
1747.	9367 <i>Sonchus hydrophilus</i> (Native Sowthistle)			
1748.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
1749.	617 <i>Sorghum halepense</i> (Johnson Grass)	Y		
1750.	1312 <i>Sowerbaea laxiflora</i> (Purple Tassels)			
1751.	1558 <i>Sparaxis bulbifera</i>	Y		
1752.	1560 <i>Sparaxis pillansii</i> (Harlequin Flower)	Y		
1753.	2912 <i>Spergula arvensis</i> (Corn Spurry)	Y		
1754.	2915 <i>Spergularia rubra</i> (Sand Spurry)	Y		
1755.	17551 <i>Sphaerolobium drummondii</i>			
1756.	4204 <i>Sphaerolobium grandiflorum</i>			
1757.	4205 <i>Sphaerolobium linophyllum</i>			
1758.	4206 <i>Sphaerolobium macranthum</i>			
1759.	4207 <i>Sphaerolobium medium</i>			
1760.	4210 <i>Sphaerolobium scabriusculum</i>			
1761.	4211 <i>Sphaerolobium vimineum</i> (Leafless Globe Pea)			
1762.	31931 <i>Sphenotoma capitata</i>			
1763.	31952 <i>Sphenotoma gracilis</i> (Swamp Paper-heath)			
1764.	625 <i>Spinifex longifolius</i> (Beach Spinifex)			
1765.	45118 <i>Sporobolus schoenoides</i>	Y		
1766.	4828 <i>Spyridium globulosum</i> (Basket Bush)			
1767.	20537 <i>Stachystemon virgatus</i>			
1768.	9069 <i>Stackhousia huegelii</i>			
1769.	4733 <i>Stackhousia monogyna</i>			
1770.	4735 <i>Stackhousia scoparia</i>			
1771.	19704 <i>Stenanthemum sublineare</i>		P2	
1772.	3080 <i>Stenopetalum robustum</i>			
1773.	2316 <i>Stirlingia latifolia</i> (Blueboy)			
1774.	2320 <i>Strangea stenocarpoides</i>			
1775.	44492 <i>Stuckenia pectinata</i>			
1776.	40480 <i>Stylidium acuminatum</i> subsp. <i>acuminatum</i>		P2	
1777.	7684 <i>Stylidium amoenum</i> (Lovely Triggerplant)			
1778.	30278 <i>Stylidium androsaceum</i>			
1779.	39880 <i>Stylidium angustifolium</i> subsp. <i>glaucofolium</i>			
1780.	25831 <i>Stylidium araeophyllum</i> (Stilt Walker)			
1781.	7688 <i>Stylidium barleei</i> (Tooth-leaved Triggerplant)			
1782.	7693 <i>Stylidium brunonianum</i> (Pink Fountain Triggerplant)			
1783.	7694 <i>Stylidium bulbiferum</i> (Circus Triggerplant)			
1784.	7696 <i>Stylidium calcaratum</i> (Book Triggerplant)			

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1785.	7699 <i>Stylidium carnosum</i> (Fleshy-leaved Triggerplant)			
1786.	7702 <i>Stylidium ciliatum</i> (Golden Triggerplant)			
1787.	7708 <i>Stylidium crassifolium</i> (Thick-leaved Triggerplant)			
1788.	7713 <i>Stylidium dichotomum</i> (Pins-and-needles)			
1789.	7717 <i>Stylidium divaricatum</i> (Daddy-long-legs)			
1790.	7718 <i>Stylidium diversifolium</i> (Touch-me-not)			
1791.	7719 <i>Stylidium ecome</i> (Foot Triggerplant)			
1792.	7721 <i>Stylidium emarginatum</i> (Biddy-four-legs)			
1793.	31872 <i>Stylidium ferricola</i>		P1	
1794.	7734 <i>Stylidium guttatum</i> (Dotted Triggerplant)			
1795.	7742 <i>Stylidium inundatum</i> (Hundreds and Thousands)			
1796.	7745 <i>Stylidium junceum</i> (Reed Triggerplant)			
1797.	13083 <i>Stylidium lateriticola</i>			
1798.	7752 <i>Stylidium lineatum</i> (Sunny Triggerplant)			
1799.	7756 <i>Stylidium longitubum</i> (Jumping Jacks)		P4	
1800.	19248 <i>Stylidium megacarpum</i>			
1801.	25829 <i>Stylidium neurophyllum</i> (Coastal Plain Triggerplant)			
1802.	48460 <i>Stylidium nitidum</i>		P1	
1803.	7768 <i>Stylidium obtusatum</i> (Pinafore Triggerplant)			
1804.	25800 <i>Stylidium paludicola</i>		P3	
1805.	7773 <i>Stylidium petiolare</i> (Horn Triggerplant)			
1806.	7774 <i>Stylidium piliferum</i> (Common Butterfly Triggerplant)			
1807.	7782 <i>Stylidium pulchellum</i> (Thumbelina Triggerplant)			
1808.	7785 <i>Stylidium repens</i> (Matted Triggerplant)			
1809.	7796 <i>Stylidium scandens</i> (Climbing Triggerplant)			
1810.	7798 <i>Stylidium schoenoides</i> (Cow Kicks)			
1811.	7799 <i>Stylidium spathulatum</i> (Creamy Triggerplant)			
1812.	7801 <i>Stylidium squamellosum</i> (Maize Trigger Plant)		P2	
1813.	7803 <i>Stylidium striatum</i> (Fan-leaved Triggerplant)		P4	
1814.	23511 <i>Stylidium thesioides</i> (Delicate Triggerplant)			
1815.	7806 <i>Stylidium utricularioides</i> (Pink Fan Triggerplant)			
1816.	7808 <i>Stylidium violaceum</i> (Violet Triggerplant)			
1817.	1260 <i>Stypandra glauca</i> (Blind Grass)			
1818.	49143 <i>Styphelia</i> sp. Nannup (R.D. Royce 3978)			
1819.	6476 <i>Styphelia tenuiflora</i> (Common Pinheath)			
1820.	25902 <i>Symphyotrichum squamatum</i> (Bushy Starwort)	Y		
1821.	15529 <i>Synaphea floribunda</i>			
1822.	2323 <i>Synaphea gracillima</i>			
1823.	16769 <i>Synaphea hians</i>		P3	
1824.	16865 <i>Synaphea odocoileops</i>		P1	
1825.	2324 <i>Synaphea petiolaris</i> (Synaphea)			
1826.	16864 <i>Synaphea petiolaris</i> subsp. <i>petiolaris</i>			
1827.	16862 <i>Synaphea petiolaris</i> subsp. <i>simplex</i>		P3	
1828.	16863 <i>Synaphea petiolaris</i> subsp. <i>triloba</i>			
1829.	2326 <i>Synaphea polymorpha</i> (Albany Synaphea, Pinda)			
1830.	31767 <i>Synaphea polypodioides</i>		P3	
1831.	34416 <i>Synaphea</i> sp. Argyle (R. Butcher RB 1323)		P1	Y
1832.	18590 <i>Synaphea</i> sp. Fairbridge Farm (D. Papenfus 696)		T	
1833.	30751 <i>Synaphea</i> sp. Pinjarra Plain (A.S. George 17182)		T	
1834.	18591 <i>Synaphea</i> sp. Redgate Road (J. Scott 16)		P1	
1835.	28354 <i>Synaphea</i> sp. Serpentine (G.R. Brand 103)		T	
1836.	16749 <i>Synaphea stenoloba</i>		T	
1837.	15535 <i>Synaphea whicherensis</i>			
1838.	32439 <i>Syntrichia papillosa</i>			
1839.	20114 <i>Taxandria fragrans</i>			
1840.	20115 <i>Taxandria juniperina</i>			
1841.	20135 <i>Taxandria linearifolia</i>			
1842.	20133 <i>Taxandria parviceps</i>			
1843.	33319 <i>Tecticornia indica</i> subsp. <i>bidens</i>			
1844.	1033 <i>Tetraria australiensis</i>		T	
1845.	1034 <i>Tetraria capillaris</i> (Hair Sedge)			
1846.	1036 <i>Tetraria octandra</i>			
1847.	35579 <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391)			
1848.	667 <i>Tetrarrhena laevis</i> (Forest Ricegrass)			
1849.	4535 <i>Tetradlea hirsuta</i> (Black Eyed Susan)			
1850.	48341 <i>Tetradlea hirsuta</i> subsp. <i>viminea</i>			
1851.	4538 <i>Tetradlea parvifolia</i>		P3	
1852.	4544 <i>Tetradlea setigera</i>			
1853.	27327 <i>Thamnoclonium dichotomum</i>			
1854.	<i>Thelymitra</i> aff. <i>pauciflora</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1855.	<i>Thelymitra aff. pauciflora scps</i>			
1856.	1701 <i>Thelymitra antennifera</i> (Vanilla Orchid)			
1857.	1702 <i>Thelymitra campanulata</i> (Shirt Orchid)			
1858.	1705 <i>Thelymitra crinita</i> (Blue Lady Orchid)			
1859.	1707 <i>Thelymitra flexuosa</i> (Twisted Sun Orchid)			
1860.	1708 <i>Thelymitra fuscolutea</i> (Chestnut Sun Orchid)			
1861.	11053 <i>Thelymitra macrophylla</i>			
1862.	1710 <i>Thelymitra mucida</i> (Plum Orchid)			
1863.	1717 <i>Thelymitra variegata</i> (Queen of Sheba)		P2	
1864.	20731 <i>Thelymitra vulgaris</i>			
1865.	5084 <i>Thomasia grandiflora</i> (Large Flowered Thomasia)			
1866.	5086 <i>Thomasia macrocalyx</i>			
1867.	5092 <i>Thomasia pauciflora</i> (Few Flowered Thomasia)			
1868.	32486 <i>Thuidium sparsum</i> var. <i>hastatum</i>			
1869.	1319 <i>Thysanotus arenarius</i>			
1870.	1328 <i>Thysanotus dichotomus</i> (Branching Fringe Lily)			
1871.	1334 <i>Thysanotus glaucus</i>		P4	
1872.	1338 <i>Thysanotus manglesianus</i> (Fringed Lily)			
1873.	1339 <i>Thysanotus multiflorus</i> (Many-flowered Fringe Lily)			
1874.	1343 <i>Thysanotus patersonii</i>			
1875.	1344 <i>Thysanotus pauciflorus</i> (Few Flowered Fringe Lily)			
1876.	13783 <i>Thysanotus</i> sp. <i>Badgingarra</i> (E.A. Griffin 2511)		P2	
1877.	1351 <i>Thysanotus sparteus</i>			
1878.	1354 <i>Thysanotus tenellus</i>			
1879.	1357 <i>Thysanotus thyrsoides</i>			
1880.	1358 <i>Thysanotus triandrus</i>			
1881.	8248 <i>Tolpis barbata</i> (Yellow Hawkweed)	Y		
1882.	1368 <i>Trachyandra divaricata</i>	Y		
1883.	19041 <i>Trachymene coerulea</i> subsp. <i>coerulea</i>			
1884.	19045 <i>Trachymene grandis</i>			
1885.	6279 <i>Trachymene ornata</i> (Spongefruit)			
1886.	6280 <i>Trachymene pilosa</i> (Native Parsnip)			
1887.	17684 <i>Tremulina tremula</i>			
1888.	1481 <i>Tribonanthes australis</i> (Southern Tiurmdin)			
1889.	1482 <i>Tribonanthes brachypetala</i> (Nodding Tiurmdin)			
1890.	1483 <i>Tribonanthes longipetala</i> (Branching Tiurmdin)			
1891.	1485 <i>Tribonanthes violacea</i> (Violet Tiurmdin)			
1892.	8251 <i>Trichocline spathulata</i> (Native Gerbera)			
1893.	1361 <i>Tricoryne elatior</i> (Yellow Autumn Lily)			
1894.	1363 <i>Tricoryne tenella</i>			
1895.	1038 <i>Tricostularia neesii</i>			
1896.	4292 <i>Trifolium campestre</i> (Hop Clover)	Y		
1897.	17763 <i>Trifolium campestre</i> var. <i>campestre</i> (Hop Clover)	Y		
1898.	4293 <i>Trifolium cernuum</i> (Drooping Flower Clover)	Y		
1899.	4297 <i>Trifolium glomeratum</i> (Cluster Clover)	Y		
1900.	17758 <i>Trifolium hybridum</i> var. <i>hybridum</i>	Y		
1901.	4302 <i>Trifolium ligusticum</i> (Ligurian Clover)	Y		
1902.	4304 <i>Trifolium ornithopodioides</i> (Birdsfoot Fenugreek)	Y		
1903.	14738 <i>Trifolium resupinatum</i> var. <i>resupinatum</i>	Y		
1904.	4313 <i>Trifolium subterraneum</i> (Subterranean Clover)	Y		
1905.	33676 <i>Triglochin calcitrapa</i>			
1906.	147 <i>Triglochin mucronata</i>			
1907.	148 <i>Triglochin muelleri</i>			
1908.	18587 <i>Triglochin nana</i>			
1909.	151 <i>Triglochin striata</i>			
1910.	152 <i>Triglochin trichophora</i>			
1911.	4737 <i>Tripterococcus brunonis</i> (Winged Stackhousia)			
1912.	44444 <i>Tripterococcus</i> sp. <i>Brachylobus</i> (A.S. George 14234)		P4	
1913.	33019 <i>Trithuria australis</i>		P4	
1914.	1139 <i>Trithuria bibracteata</i>			
1915.	1141 <i>Trithuria submersa</i>			
1916.	1561 <i>Tritonia crocata</i>	Y		
1917.	4842 <i>Trymalium ledifolium</i>			
1918.	11665 <i>Trymalium ledifolium</i> var. <i>ledifolium</i>			
1919.	4317 <i>Ulex europaeus</i> (Gorse)	Y		
1920.	8255 <i>Ursinia anthemoides</i> (Ursinia)	Y		
1921.	38388 <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Y		
1922.	7138 <i>Utricularia inaequalis</i>			
1923.	7145 <i>Utricularia menziesii</i> (Redcoats)			
1924.	7148 <i>Utricularia multifida</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1925.	7153 <i>Utricularia tenella</i>			
1926.	7157 <i>Utricularia violacea</i> (Violet Bladderwort)			
1927.	7665 <i>Velleia trinervis</i>			
1928.	8257 <i>Vellereophyton dealbatum</i> (White Cudweed)	Y		
1929.	11690 <i>Verbascum thapsus</i> subsp. <i>thapsus</i>	Y		
1930.	36096 <i>Verbena incompta</i> (Purple-top Verbena)	Y		
1931.	19511 <i>Verbena officinalis</i>	Y		
1932.	7108 <i>Veronica arvensis</i> (Wall Speedwell)	Y		
1933.	12388 <i>Verticordia acerosa</i> var. <i>preissii</i>			
1934.	12392 <i>Verticordia attenuata</i>		P3	
1935.	6076 <i>Verticordia densiflora</i> (Compacted Featherflower)			
1936.	12411 <i>Verticordia densiflora</i> var. <i>cespitosa</i>			
1937.	15432 <i>Verticordia densiflora</i> var. <i>densiflora</i>			
1938.	12412 <i>Verticordia densiflora</i> var. <i>pedunculata</i>		T	
1939.	6084 <i>Verticordia habrantha</i> (Hidden Featherflower)			
1940.	6093 <i>Verticordia lehmannii</i>		P4	
1941.	14714 <i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>		P4	
1942.	6107 <i>Verticordia pennigera</i>			
1943.	6110 <i>Verticordia plumosa</i> (Plumed Featherflower)			
1944.	12448 <i>Verticordia plumosa</i> var. <i>ananeotes</i>		T	
1945.	16935 <i>Verticordia plumosa</i> var. <i>ananeotes</i> x <i>vassensis</i>			Y
1946.	15618 <i>Verticordia plumosa</i> var. <i>plumosa</i>			
1947.	12453 <i>Verticordia plumosa</i> var. <i>vassensis</i>		T	
1948.	4319 <i>Vicia benghalensis</i> (Purple Vetch)	Y		
1949.	4322 <i>Vicia sativa</i> (Common Vetch)	Y		
1950.	11474 <i>Vicia sativa</i> subsp. <i>nigra</i>	Y		
1951.	4325 <i>Viminaria juncea</i> (Swishbush, Koweda)			
1952.	6575 <i>Vinca major</i> (Blue Periwinkle)	Y		
1953.	722 <i>Vulpia bromoides</i> (Squirrel Tail Fescue)	Y		
1954.	724 <i>Vulpia myuros</i> (Rat's Tail Fescue)	Y		
1955.	33101 <i>Vulpia myuros</i> forma <i>myuros</i>	Y		
1956.	1486 <i>Wachendorfia paniculata</i>	Y		
1957.	7384 <i>Wahlenbergia capensis</i> (Cape Bluebell)	Y		
1958.	7388 <i>Wahlenbergia multicaulis</i>			
1959.	7389 <i>Wahlenbergia preissii</i>			
1960.	13328 <i>Waitzia nitida</i>			
1961.	8282 <i>Waitzia suaveolens</i> (Fragrant Waitzia)			
1962.	13333 <i>Waitzia suaveolens</i> var. <i>suaveolens</i>			
1963.	13103 <i>Watsonia borbonica</i>	Y		
1964.	1566 <i>Watsonia marginata</i>	Y		
1965.	1567 <i>Watsonia meriana</i> (Bulbil Watsonia)	Y		
1966.	1394 <i>Wurmbea dioica</i> (Early Nancy)			
1967.	12072 <i>Wurmbea dioica</i> subsp. <i>alba</i>			
1968.	1401 <i>Wurmbea pygmaea</i>			
1969.	1403 <i>Wurmbea tenella</i> (Eight Nancy)			
1970.	1249 <i>Xanthorrhoea acanthostachya</i>			
1971.	1251 <i>Xanthorrhoea brunonis</i>			
1972.	14544 <i>Xanthorrhoea brunonis</i> subsp. <i>brunonis</i>			
1973.	14545 <i>Xanthorrhoea brunonis</i> subsp. <i>semibarbata</i>			
1974.	1253 <i>Xanthorrhoea gracilis</i> (Graceful Grass Tree, Mimidi)			
1975.	1256 <i>Xanthorrhoea preissii</i> (Grass tree, Palga)			
1976.	6284 <i>Xanthosia candida</i>			
1977.	6285 <i>Xanthosia ciliata</i>			
1978.	6289 <i>Xanthosia huegelii</i>			
1979.	2331 <i>Xylomelum occidentale</i> (Woody Pear, Djandin)			
1980.	15819 <i>Xyris atrovirida</i>			
1981.	1150 <i>Xyris lanata</i>			
1982.	1049 <i>Zantedeschia aethiopica</i> (Arum Lily)	Y		

Conservation Codes

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

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



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: 31/10/19 18:50:11

[Summary](#)

[Details](#)

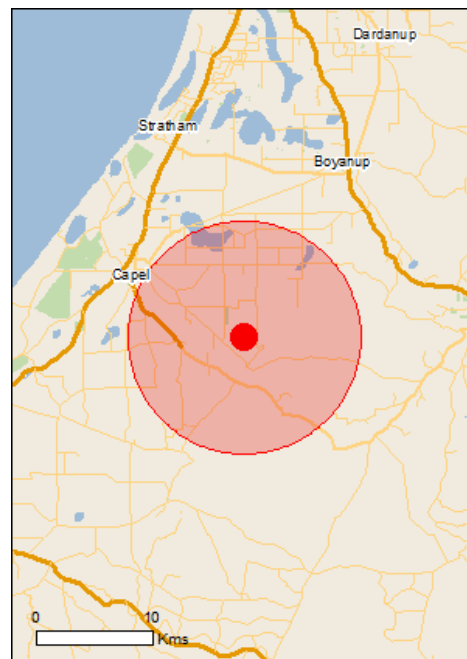
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

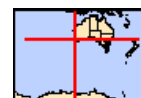
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	38
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	1
Invasive Species:	23
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)		[Resource Information]
Name		Proximity
Vasse-wonnerup system		Within 10km of Ramsar

Listed Threatened Ecological Communities [Resource Information]

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

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

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769]	Endangered	Breeding known to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Fish		
Nannatherina balstoni Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat known to occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat may occur within area
Other		
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
Banksia nivea subsp. uliginosa Swamp Honeypot [82766]	Endangered	Species or species habitat known to occur within area
Banksia squarrosa subsp. argillacea Whicher Range Dryandra [82769]	Vulnerable	Species or species habitat known to occur within area
Brachyscias verecundus Ironstone Brachyscias [81321]	Critically Endangered	Species or species habitat likely to occur within area
Caladenia busselliana Bussell's Spider-orchid [24369]	Endangered	Species or species habitat likely to occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat likely to occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat may occur within area
Chamelaucium sp. S coastal plain (R.D.Royce 4872) Royce's Waxflower [87814]	Vulnerable	Species or species habitat likely to occur within area
Darwinia whicherensis Abba Bell [83193]	Endangered	Species or species habitat likely to occur within area
Daviesia elongata subsp. elongata Long-leaved Daviesia [64883]	Vulnerable	Species or species habitat known to occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Drakaea elastica Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area
Gastrolobium papilio Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species habitat likely to occur within area
Grevillea maccutcheonii McCutcheon's Grevillea [64522]	Endangered	Species or species habitat likely to occur within area
Lambertia echinata subsp. occidentalis Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat likely to occur within area
Petrophile latericola Laterite Petrophile [64532]	Endangered	Species or species habitat likely to occur within area
Sphenotoma drummondii Mountain Paper-heath [21160]	Endangered	Species or species habitat may occur within area
Synaphea sp. Fairbridge Farm (D. Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat known to occur within area
Synaphea sp. Serpentine (G.R. Brand 103) [86879]	Critically Endangered	Species or species habitat may occur within area
Synaphea stenoloba Dwellingup Synaphea [66311]	Endangered	Species or species habitat known to occur within area
Verticordia densiflora var. pedunculata Long-stalked Featherflower [55689]	Endangered	Species or species habitat known to occur within area
Verticordia plumosa var. vassensis Vasse Featherflower [55804]	Endangered	Species or species habitat known to occur within area

Listed Migratory Species [Resource Information]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Calidris canutus Red Knot, Knot [855]	Endangered	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
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]	
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat 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
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species

Name	Threatened	Type of Presence
Motacilla cinerea Grey Wagtail [642]		habitat may occur within area Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Unnamed WA03249	WA

Regional Forest Agreements	[Resource Information]
Note that all areas with completed RFAs have been included.	
Name	State
South West WA RFA	Western Australia

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

Name	Status	Type of Presence
Birds		
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-33.59436 115.64874

Acknowledgements

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

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

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

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

Appendix B

Flora Species List

Family	Species
Asteraceae	* <i>Arctotheca calendula</i>
Fabaceae	<i>Acacia pulchella</i>
	<i>Acacia saligna</i>
	<i>Jacksonia sternburgiana</i>
Juncaceae	<i>Juncus palidus</i>
	<i>Juncus sp</i>
Malvaceae	* <i>Malva parviflora</i>
Myrtaceae	<i>Callistemon citrinus (planted)</i>
	<i>Corymbia calophylla</i>
	<i>Eucalyptus camaldulensis (planted)</i>
	<i>Eucalyptus gomphocephalus</i>
	<i>Eucalyptus maculata (planted)</i>
	<i>Eucalyptus marginata</i>
	<i>Eucalyptus rudis</i>
	<i>Hypocalymma robustum</i>
	<i>Kunzea ericifolia</i>
	<i>Melaleuca lateritia</i>
	<i>Melaleuca preisii</i>
	<i>Melaleuca raphiophylla</i>
	<i>Melaleuca vinimea</i>
Orchidaceae	<i>Caladenia lobata</i>
	<i>Orchidaceae sp.</i>
	<i>Pyrorchis nigricans</i>
Poaceae	* <i>Bromus diandrus</i>
	* <i>Ehrharta longiflora</i>
	* <i>Hordeum leporinum</i>
	* <i>Lolium rigidum</i>
	* <i>Pennisetum clandestinum</i>
	* <i>Trifolium repens</i>
	* <i>Triticum aestivum</i>
Proteaceae	<i>Banksia attenuata</i>
	<i>Banksia ilicifolia</i>

Family	Species
Asteraceae	* <i>Arctotheca calendula</i>
Malvaceae	* <i>Malva parviflora</i>
Myrtaceae	<i>Callistemon citrinus (planted)</i>
	<i>Eucalyptus camaldulensis (planted)</i>
	<i>Eucalyptus maculata (planted)</i>
Poaceae	* <i>Bromus diandrus</i>
	* <i>Ehrharta longiflora</i>
	* <i>Hordeum leporinum</i>
	* <i>Lolium rigidum</i>
	* <i>Pennisetum clandestinum</i>
	* <i>Trifolium repens</i>
	* <i>Triticum aestivum</i>

Appendix C

Flora Site Sheets

FLORA SITE SHEET - 864 Cain Rd Elgin

Project Name 864 Cain Rd Elgin
Site: ELR1 **MGA** 0 **Lat** **Long**

Described by: Shenaye Hummerston
Date: 2019-10-10
Type: Releve 10 x 10
Soil Colour: Brown, Grey
Soil Type: Loam, sand
Habitat: Plain
Vegetation:
Corymbia calophylla woodland over *Kunzea ericifolia*
 shrubland over **Lolium rigidum* grassland



Veg Condition: Degraded
Fire Age: Unknown **Fire Evidence:** 0
Notes
Rock Type 0 **Rock Cover:** 0 % **Outcropping:** 0 %
Total PFC: 90 % **Bareground:** 2 % **Leaf Litter:** 2 % **Logs:** 3 %
Disturbance Type: 0

SPECIES LIST

Name	Height	Cover	Notes
<i>Corymbia calophylla</i>	2000	50	0
<i>Kunzea ericifolia</i>	700	50	0
* <i>Ehrharta longiflora</i>	25	4	0
* <i>Lolium rigidum</i>	16	70	0
* <i>Bromus diandrus</i>	30	5	0
* <i>Pennisetum clandestinum</i>	7	10	0

FLORA SITE SHEET - 864 Cain Rd Elgin

Project Name	864 Cain Rd Elgin				
Site:	ELR2	MGA	0	lat	long
Described by:	Shenaye Hummerston				
Date:	2019-10-10				
Type:	Releve	10 x 10			
Soil Colour:	Brown,Grey				
Soil Type:	Sand, peat				
Habitat:	Wetland				
Vegetation:	<i>Kunzea ericifolia</i> shrubland over <i>Acacia pulchella</i> sparse shrubland over isolated <i>Caladenia lobata</i>				
					
Veg Condition:	Good				
Fire Age:	Unknown				
Notes					
Rock Type	0	Rock Cover:	0 %	Outcropping:	0 %
Total PFC:	70 %	Bareground:	0.5 %	Leaf Litter:	30 %
Disturbance Type:	0	Logs:	0 %		
SPECIES LIST					
Name	Height	Cover	Notes		
<i>Kunzea ericifolia</i>	800	70	0		
<i>Acacia pulchella</i>	160	0.5	0		
<i>Caladenia lobata</i>	10	0.1	0		

FLORA SITE SHEET - 864 Cain Rd Elgin

Project Name 864 Cain Rd Elgin
Site: ELR3 **MGA** 0 **lat** **long**

Described by: Shenaye Hummerston
Date: 2019-10-10
Type: Releve 10 x 10
Soil Colour: Brown
Soil Type: peat
Habitat: Lower slope

Vegetation:

Banksia attenuata woodland over *Kunzea ericifolia*
 open shrubland over sparse shrubland of *Acacia*
pulchella over sparse forbland of *Pyrorchis nigricans*



Veg Condition: Degraded

Fire Age: Unknown

Fire Evidence: 0

Notes

Rock Type 0

Rock Cover: 0 %

Outcropping: 0 %

Total PFC: 70 %

Bareground: 0 %

Leaf Litter: 95 %

Logs: 2 %

Disturbance Type: 0

SPECIES LIST

Name	Height	Cover	Notes
<i>Banksia attenuata</i>	1800	30	0
<i>Banksia ilicifolia</i>	1800	15	0
<i>Kunzea ericifolia</i>	600	20	0
<i>Acacia pulchella</i>	110	1	0
<i>Hypocalymma robustum</i>	40	0.3	0
<i>Jacksonia sternburgiana</i>	45	0.5	0

FLORA SITE SHEET - 864 Cain Rd Elgin

Project Name 864 Cain Rd Elgin
Site: ELR4 MGA 0 0 mE 0 mN

Described by: Shenaye Hummerston
Date: 2019-10-10
Type: Releve 10 x 10
Soil Colour: Brown, Grey
Soil Type: Sand, peat
Habitat: Wetland

Vegetation:
Kunzea ericifolia closed shrubland over isolated
Orchidaceae sp.



Veg Condition: Degraded
Fire Age: Unknown Fire Evidence: 0
Notes
Rock Type 0 Rock Cover: 0 % Outcropping: 0 %
Total PFC: 85 % Bareground: 2 % Leaf Litter: 50 % Logs: 0 %
Disturbance Type: 0

SPECIES LIST			
Name	Height	Cover	Notes
<i>Kunzea ericifolia</i>	800	80	0
<i>Orchidaceae</i> sp.	3	0.5	0

FLORA SITE SHEET - 864 Cain Rd Elgin

Project Name

Site:

864 Cain Rd Elgin

ELR5

MGA

0

0 mE

0 mN

Described by:

Date:

Type:

Soil Colour:

Soil Type:

Habitat:

Vegetation:

Shenaye Hummerston

2019-10-10

Releve10 x 10

Brown

Clay

Drainage line

planted vegetation consisting of *Corymbia calophylla* & *Eucalyptus maculata* woodland over open shrubland of *Acacia pulchella*

Veg Condition:

Fire Age:

Notes

Rock Type

Total PFC:

Disturbance Type:

Degraded

Unknown

0

80 %

0

Fire Evidence:

0

Rock Cover:

0 %

Bareground:

0 %

Outcropping:

0 %

Leaf Litter:


90 %

Logs:

5 %

Species List

Name	Height	Cover	Notes
<i>Corymbia calophylla</i>	1800	15	0
<i>Melaleuca vinimea</i>	220	5	0
<i>Acacia saligna</i>	1000	20	0
<i>*Pennisetum clandestinum</i>	10	3	0
<i>Eucalyptus camaldulensis</i> (planted)	250	3	0
<i>Eucalyptus maculata</i> (planted)	1500	15	0
<i>Melaleuca lateritia</i>	110	4	0



FLORA SITE SHEET - 864 Cain Rd Elgin

Project Name 864 Cain Rd Elgin
Site: ELR6 MGA 0 0 mE 0 mN

Described by: Shenaye Hummerston
Date: 2019-10-10
Type: Releve 10 x 10
Soil Colour: Grey
Soil Type: Clay
Habitat: Drainage line

Vegetation:
planted vegetation consisting of *Eucalyptus camaldulensis* woodland over *Melaleuca raphiophylla* open shrubland over **Lolium rigidum* grassland




Veg Condition: Completely Degraded
Fire Age: Unknown Fire Evidence: 0
Notes
Rock Type 0 Rock Cover: 0 % Outcropping: 0 %
Total PFC: 80 % Bareground: 0 % Leaf Litter: 50 % Logs: 0 %
Disturbance Type: 0

SPECIES LIST

Name	Height	Cover	Notes
<i>Eucalyptus camaldulensis</i> *	1600	40	0
<i>Melaleuca raphiophylla</i>	220	40	0
<i>*Lolium rigidum</i>	30	60	0
<i>*Hordeum leporinum</i>	20	5	0

FLORA SITE SHEET - 864 Cain Rd Elgin

Project Name	864 Cain Rd Elgin				
Site:	ELR7	MGA	0	0 mE	0 mN
Described by:	Shenaye Hummerston				
Date:	2019-10-10				
Type:	Releve	10 x 10			
Soil Colour:	Brown, Grey				
Soil Type:	Clay				
Habitat:	Drainage line				
Vegetation:	<p>planted vegetation consisting of <i>*Eucalyptus camaldulensis</i> open forest over <i>Melaleuca raphiophylla</i> open shrubland over a sparse grassland of <i>*Bromus diandrus</i></p>				
					
Veg Condition:	Completely Degraded				
Fire Age:	Unknown				
Notes		Fire Evidence:	0		
Rock Type	0	Rock Cover:	0 %	Outcropping:	0 %
Total PFC:	90 %	Bareground:	0 %	Leaf Litter:	90 %
Disturbance Type:	0			Logs:	0 %
SPECIES LIST					
Name	Height	Cover	Notes		
<i>Eucalyptus camaldulensis</i> (planted)	1500	80	0		
<i>Melaleuca raphiophylla</i>	6500	40	0		
<i>*Bromus diandrus</i>	30	10	0		
<i>*Ehrharta longiflora</i>	25	4	0		
<i>Juncus</i> sp.	40	1	0		
<i>Callistemon citrinus</i> (planted)	150	3	0		

FLORA SITE SHEET - 864 Cain Rd Elgin

Project Name 864 Cain Rd Elgin
Site: ELR8 **MGA** 0 **0 mE** **0 mN**

Described by: Shenaye Hummerston
Date: 2019-10-10
Type: Releve 10 x 10
Soil Colour: Grey
Soil Type: Clay, sand
Habitat: Ridge

Vegetation:

Corymbia calophylla open forest over **Lolium rigidum* open grassland



Veg Condition: Completely Degraded

Fire Age: Unknown

Fire Evidence: 0

Notes

Rock Type 0

Rock Cover: 0 %

Outcropping: 0 %

Total PFC: 100 %

Bareground: 0 %

Leaf Litter: 2 %

Logs: 0 %

Disturbance Type: 0

SPECIES LIST

Name	Height	Cover	Notes
<i>Corymbia calophylla</i>	2700	55	0
<i>*Triticum aestivum</i>	30	10	0
<i>*Malva parviflora</i>	60	20	0
<i>*Lolium rigidum</i>	40	40	0
<i>*Arctotheca calendula</i>	30	4	0
<i>*Trifolium repens</i>	25	20	0

Appendix D

Black Cockatoo Significant Tree Raw Data

Latitude	Longitude	Taxa	Circumference (m)	DBH (mm)	Approx Height	Hollows	> 12 cm Diameter	Hollows with Bees	Comments	Tree Photo ID	Hollow with signs of use
-33.59749270	115.65557240	Marri (Corymbia calophylla)	2.61	831	20	yes			Small hollow. Tree west of wetland.	1	
-33.59885540	115.65577110	Jarrah (Eucalyptus marginata)	2.50	796	12	yes	3		Unconfirmed sp. Dead	2	
-33.59847280	115.65656900	Tuart (Eucalyptus gomphocephala)	2.20	700	18	yes	2		Dead tree	3	
-33.59761970	115.65627060	Marri (Corymbia calophylla)	2.15	684	22	no				4	
-33.59760990	115.65601060	Marri (Corymbia calophylla)	2.35	748	25	no				5	
-33.59770553	115.65604571	Marri (Corymbia calophylla)	1.75	557	20	no				6	
-33.59606800	115.65389480	Marri (Corymbia calophylla)	3.98	1267	30	yes			Marri Canker		
-33.59663370	115.65283120	Marri (Corymbia calophylla)	2.50	796	32	no			Armallaria		
-33.59662470	115.65278580	Marri (Corymbia calophylla)	3.25	1035	33	no					
-33.59665450	115.65268660	Marri (Corymbia calophylla)	2.60	828	30	no					
-33.59663090	115.65268390	Marri (Corymbia calophylla)	2.85	907	30	no					
-33.59656920	115.65269150	Marri (Corymbia calophylla)	2.70	859	32	no					
-33.59657820	115.65264110	Marri (Corymbia calophylla)	1.75	557	30	yes			Small hollow		
-33.59662250	115.65265420	Marri (Corymbia calophylla)	1.80	573	28	no					
-33.59664760	115.65251670	Marri (Corymbia calophylla)	2.65	844	30	no					
-33.59668341	115.65248139	Marri (Corymbia calophylla)	1.90	605	28	no					
-33.59670743	115.65248374	Marri (Corymbia calophylla)	2.10	668	29	no					
-33.59665129	115.65246630	Marri (Corymbia calophylla)	1.95	621	27	no					
-33.59666721	115.65250821	Marri (Corymbia calophylla)	2.87	914	32	no					
-33.59668983	115.65244887	Marri (Corymbia calophylla)	1.90	605	26	no					
-33.59670994	115.65244786	Marri (Corymbia calophylla)	2.55	812	30	yes			Small hollow		
-33.59730143	115.65278448	Marri (Corymbia calophylla)	3.25	1035	33	yes			Small hollow		
-33.59702049	115.65085564	Marri (Corymbia calophylla)	2.85	907	28	yes			Opening too small, dead tree		
-33.59661220	115.65111440	Marri (Corymbia calophylla)	1.90	605	20	no					
-33.59666960	115.65105200	Marri (Corymbia calophylla)	2.20	700	25	yes			Marri Canker	7	
-33.59660242	115.65104708	Marri (Corymbia calophylla)	1.80	573	20	no			Severely affected by canker	8	
-33.59654210	115.65089285	Marri (Corymbia calophylla)	1.95	621	23	yes			Marri Canker		
-33.59664980	115.65099100	Marri (Corymbia calophylla)	2.20	700	24	no			Marri Canker		
-33.59651500	115.65099780	Marri (Corymbia calophylla)	1.79	570	25	no					
-33.59646697	115.65103568	Marri (Corymbia calophylla)	1.85	589	25	no					
-33.59642870	115.65103540	Marri (Corymbia calophylla)	1.90	605	20	no			Severely affected by canker and armalaria		
-33.59619960	115.65097190	Marri (Corymbia calophylla)	2.10	668	24	no					
-33.59620870	115.65101060	Marri (Corymbia calophylla)	1.85	589	30	no					
-33.59614040	115.65102330	Marri (Corymbia calophylla)	2.50	796	30	no			2 trunks over 500dbh		
-33.59600140	115.65101520	Marri (Corymbia calophylla)	2.42	770	32	no					
-33.59595004	115.65097433	Marri (Corymbia calophylla)	2.60	828	32	no				9	
-33.59575455	115.65084055	Marri (Corymbia calophylla)	2.62	834	27	no			Marri Canker		
-33.59580175	115.65096024	Marri (Corymbia calophylla)	2.35	748	22	no					
-33.59568809	115.65094952	Marri (Corymbia calophylla)	2.56	815	30	no					
-33.59571797	115.65105379	Marri (Corymbia calophylla)	2.26	719	22	no			Dead		
-33.59577750	115.65123000	Marri (Corymbia calophylla)	1.85	589	26	no					
-33.59576280	115.65123680	Marri (Corymbia calophylla)	1.87	595	28	no					
-33.59576910	115.65129360	Marri (Corymbia calophylla)	1.86	592	27	no			Dead	10	
-33.59569814	115.65136760	Marri (Corymbia calophylla)	2.15	684	27	no					
-33.59582381	115.65168880	Marri (Corymbia calophylla)	1.87	595	26	no					
-33.59598460	115.65154890	Marri (Corymbia calophylla)	2.20	700	30	no			Canker girdling main stem		
-33.59605410	115.65157490	Marri (Corymbia calophylla)	1.88	598	28	yes		1			
-33.58854540	115.65750282	Marri (Corymbia calophylla)	2.35	748	19	no					
-33.58909561	115.65750282	Marri (Corymbia calophylla)	1.95	621	26	no					
-33.58928916	115.65750014	Marri (Corymbia calophylla)	1.95	621	22	no					
-33.59188710	115.65734323	Flooded gum (Eucalyptus rudis)	2.35	748	20	no					

Latitude	Longitude	Taxa	Circumference (m)	DBH (mm)	Approx Height	Hollows	> 12 cm Diameter	Hollows with Bees	Comments	Tree Photo ID	Hollow with signs of use
-33.59216499	115.65597765	Flooded gum (Eucalyptus rudis)	2.20	700	22	no					
-33.59486227	115.65368470	Marri (Corymbia calophylla)	2.20	700	26	no					
-33.59473018	115.65384161	Marri (Corymbia calophylla)	1.85	589	25	no					
-33.59477430	115.65377891	Marri (Corymbia calophylla)	1.85	589	26	yes			Small hollow		
-33.59459249	115.65384999	Marri (Corymbia calophylla)	2.30	732	27	yes	1		Occupied by pink and greys		
-33.59462992	115.65378729	Marri (Corymbia calophylla)	2.10	668	27	no					
-33.59439644	115.65372460	Marri (Corymbia calophylla)	2.65	844	30	no					
-33.59485864	115.65361697	Marri (Corymbia calophylla)	2.60	828	28	no					
-33.59482345	115.65343961	Marri (Corymbia calophylla)	2.30	732	26	no			Marri Canker		
-33.59479664	115.65324280	Marri (Corymbia calophylla)	1.96	624	26	no					
-33.59469443	115.65337624	Marri (Corymbia calophylla)	2.13	678	28	no					
-33.59397306	115.65176256	Marri (Corymbia calophylla)	2.82	898	27	no					
-33.59414816	115.65220613	Marri (Corymbia calophylla)	2.20	700	30	no					
-33.59415068	115.65209448	Marri (Corymbia calophylla)	2.35	748	30	no					
-33.59416855	115.65199021	Marri (Corymbia calophylla)	2.25	716	28	no					
-33.59419843	115.65223765	Marri (Corymbia calophylla)	2.30	732	30	no					
-33.59421463	115.65200396	Marri (Corymbia calophylla)	2.15	684	30	no					
-33.59400015	115.65202709	Marri (Corymbia calophylla)	1.95	621	27	no					
-33.59382532	115.65197010	Marri (Corymbia calophylla)	2.20	700	28	no					
-33.59369015	115.65312076	Marri (Corymbia calophylla)	3.10	987	32	no					
-33.59357648	115.65277576	Marri (Corymbia calophylla)	1.86	592	28	no					
-33.59356782	115.65248173	Marri (Corymbia calophylla)	1.85	589	27	no					
-33.59368177	115.65264568	Marri (Corymbia calophylla)	2.13	678	27	no					
-33.59349381	115.65214310	Marri (Corymbia calophylla)	2.35	748	28	yes			Small hollow		
-33.59350450	115.64957630	Marri (Corymbia calophylla)	2.65	844	27	yes			Small hollows dead tree		
-33.59344326	115.64991016	Marri (Corymbia calophylla)	2.86	910	30	no			Dead tree		
-33.59348236	115.65020319	Marri (Corymbia calophylla)	3.10	987	33	no			Dead tree		
-33.59363066	115.65025851	Marri (Corymbia calophylla)	3.34	1063	28	no			Almost dead		
-33.59350275	115.65030478	Marri (Corymbia calophylla)	2.87	914	29	no					
-33.59264508	115.64538393	Marri (Corymbia calophylla)	1.93	614	26	no			Girdled by canker		
-33.59289532	115.64535510	Marri (Corymbia calophylla)	2.12	675	25	no					
-33.59295257	115.64528234	Marri (Corymbia calophylla)	1.95	621	26	no					
-33.59288163	115.64526960	Marri (Corymbia calophylla)	2.10	668	25	no					
-33.59297435	115.64521998	Marri (Corymbia calophylla)	1.85	589	25	no					
-33.59300200	115.64514957	Marri (Corymbia calophylla)	2.45	780	20	no				11	
-33.59266575	115.64497188	Marri (Corymbia calophylla)	2.40	764	27	yes	1		Signs of use		
-33.59266156	115.64508822	Marri (Corymbia calophylla)	2.23	710	26	no					
-33.59297100	115.64504463	Marri (Corymbia calophylla)	3.24	1031	30	no					
-33.59284728	115.64491890	Marri (Corymbia calophylla)	2.56	815	28	no					
-33.59286459	115.64502217	Marri (Corymbia calophylla)	2.15	684	26	no					
-33.59295871	115.64494405	Marri (Corymbia calophylla)	1.95	621	26	no					
-33.59379264	115.64109139	Marri (Corymbia calophylla)	2.55	812	32	no					
-33.59395435	115.64104412	Marri (Corymbia calophylla)	1.90	605	27	yes			Small hollow		
-33.59422273	115.64117488	Marri (Corymbia calophylla)	2.35	748	28	no					
-33.59437633	115.64122852	Marri (Corymbia calophylla)	2.20	700	26	no					
-33.59448832	115.64115677	Marri (Corymbia calophylla)	3.12	993	27	no					
-33.59445006	115.64138241	Marri (Corymbia calophylla)	2.85	907	26	no					
-33.59416771	115.64145986	Marri (Corymbia calophylla)	1.85	589	27	no				12	
-33.59413085	115.64132173	Marri (Corymbia calophylla)	1.95	621	26	yes			Small hollow		
-33.59443805	115.64150780	Marri (Corymbia calophylla)	2.35	748	27	no					
-33.59373623	115.64145651	Marri (Corymbia calophylla)	2.15	684	28	no				13	14

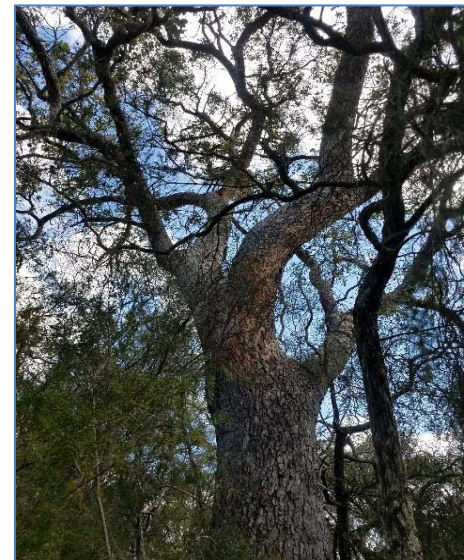
Latitude	Longitude	Taxa	Circumference (m)	DBH (mm)	Approx Height	Hollows	> 12 cm Diameter	Hollows with Bees	Comments	Tree Photo ID	Hollow with signs of use
-33.59397557	115.64150579	Marri (Corymbia calophylla)	1.65	525	30	yes	1		Small tree with big hollow		
-33.59407164	115.64166706	Marri (Corymbia calophylla)	2.05	653	27	no					
-33.59444727	115.64175256	Marri (Corymbia calophylla)	2.50	796	28	no					
-33.59374265	115.64185582	Marri (Corymbia calophylla)	2.56	815	30	no			Marri Canker		
-33.59445341	115.64194500	Marri (Corymbia calophylla)	2.43	773	28	no					
-33.59438304	115.64207945	Marri (Corymbia calophylla)	2.68	853	30	no					
-33.59369517	115.64204492	Marri (Corymbia calophylla)	2.20	700	28	no					
-33.59374824	115.64170796	Marri (Corymbia calophylla)	2.30	732	26	no					
-33.59369936	115.64218037	Marri (Corymbia calophylla)	2.70	859	26	no					
-33.59376304	115.64232454	Marri (Corymbia calophylla)	2.68	853	30	no			Marri Canker		
-33.59449307	115.64254481	Marri (Corymbia calophylla)	2.55	812	27	no					
-33.59422524	115.64252470	Marri (Corymbia calophylla)	2.25	716	26	no					
-33.59365496	115.64250324	Marri (Corymbia calophylla)	1.96	624	22	no					
-33.59397334	115.64239427	Marri (Corymbia calophylla)	2.87	914	28	yes			Small hollow		
-33.59233591	115.65186985	Marri (Corymbia calophylla)	2.45	780	28	no					
-33.59240238	115.65223061	Marri (Corymbia calophylla)	2.68	853	29	no					
-33.59224850	115.65253839	Marri (Corymbia calophylla)	2.76	879	30	yes			Small hollow		
-33.59250963	115.65220211	Marri (Corymbia calophylla)	2.50	796	28	no					
-33.59257191	115.65193020	Marri (Corymbia calophylla)	2.23	710	27	no					
-33.59779300	115.64945790	Marri (Corymbia calophylla)	2.67	850	20	no				15	
-33.59847518	115.65038927	Marri (Corymbia calophylla)	3.20	1019	20	no			Multi-stemmed, affected by canker		
-33.59893261	115.65001175	Marri (Corymbia calophylla)	2.35	748	24	no					
-33.59894462	115.65022498	Marri (Corymbia calophylla)	2.15	684	24	no			Marri Canker		
-33.59850930	115.65288770	Marri (Corymbia calophylla)	2.65	844	28	no			Canker, armilaria and termite damage		
-33.59843890	115.65283760	Marri (Corymbia calophylla)	2.21	703	28	no					
-33.59852540	115.65294320	Marri (Corymbia calophylla)	3.15	1003	20	no			Dead		
-33.59857750	115.65309200	Marri (Corymbia calophylla)	2.10	668	28	no					
-33.59844130	115.65304680	Marri (Corymbia calophylla)	2.15	684	26	no			Girdled bycanker		
-33.59843720	115.65298028	Marri (Corymbia calophylla)	2.23	710	27	no					
-33.59831380	115.65322780	Marri (Corymbia calophylla)	2.65	844	30	no				16	
-33.59825040	115.65326150	Marri (Corymbia calophylla)	2.35	748	26	no			Girdled by canker		
-33.59816470	115.65320160	Marri (Corymbia calophylla)	2.05	653	22	no					
-33.59807304	115.65309092	Marri (Corymbia calophylla)	2.10	668	27	no					
-33.59815660	115.65294010	Marri (Corymbia calophylla)	4.38	1394	27	yes	3		Recently dead		
-33.59817750	115.65294200	Marri (Corymbia calophylla)	1.75	557	26	no					
-33.59826180	115.65283610	Marri (Corymbia calophylla)	2.29	729	28	no					
-33.59887788	115.65124456	Marri (Corymbia calophylla)	2.78	885	25	no					
-33.59900159	115.65113358	Marri (Corymbia calophylla)	1.95	621	27	no					
-33.59944646	115.65135285	Marri (Corymbia calophylla)	2.21	703	27	no					
-33.59761923	115.65390665	Marri (Corymbia calophylla)	2.35	748	26	no					
-33.59831768	115.65735899	Marri (Corymbia calophylla)	2.75	875	25	yes	3		Dead tree		
-33.59858242	115.65734692	Marri (Corymbia calophylla)	2.43	773	27	no					
-33.59861844	115.65715447	Marri (Corymbia calophylla)	2.35	748	26	yes			Small hollow		
-33.59889827	115.65740392	Marri (Corymbia calophylla)	2.35	748	27	no					
-33.59903734	115.65750718	Marri (Corymbia calophylla)	2.65	844	27	no					
-33.59937390	115.65722390	Marri (Corymbia calophylla)	1.87	595	27	no					
-33.59916301	115.65691777	Marri (Corymbia calophylla)	2.12	675	30	no					
-33.59916887	115.65739922	Jarrah (Eucalyptus marginata)	2.21	703	20	no					
-33.59920080	115.65764580	Marri (Corymbia calophylla)	2.35	748	18	no					
-33.59957547	115.65751053	Marri (Corymbia calophylla)	2.32	738	27	no					



Tree Photo ID: 1



Tree Photo ID: 2



Tree Photo ID: 3



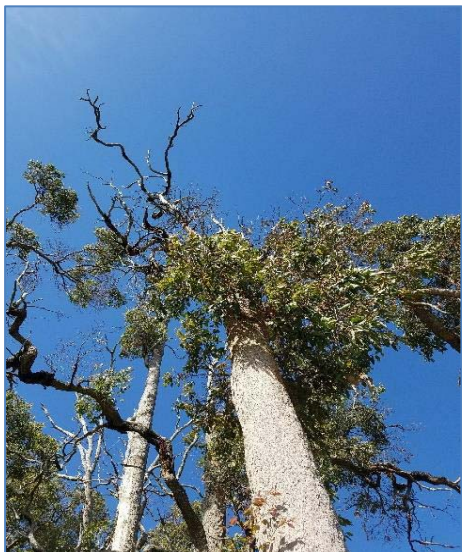
Tree Photo ID: 4



Tree Photo ID: 5



Tree Photo ID: 6



Tree Photo ID: 7



Tree Photo ID: 8



Tree Photo ID: 9



Tree Photo ID: 10



Tree Photo ID: 11



Tree Photo ID: 12



Tree Photo ID: 13



Tree Photo ID: 14



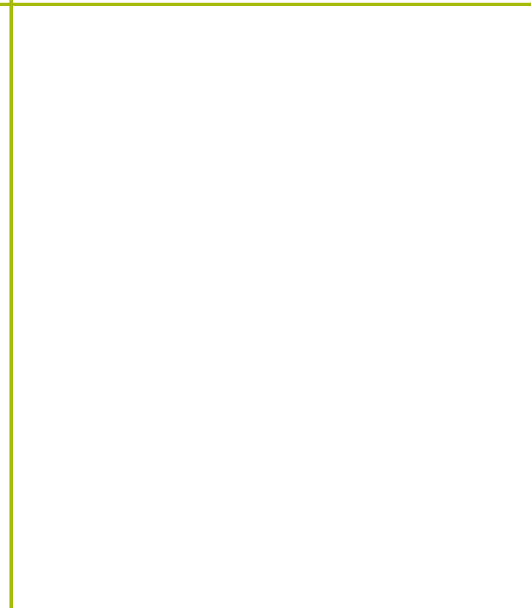
Tree Photo ID: 15



Tree Photo ID: 16



Tree Photo ID: 17



Tree Photo ID: 18



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