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Jandakot Eastern Link
Environmental Assessment Report

Prepared For:	City of Canning 1317 Albany Highway Cannington WA 6107
Report Number:	AP2019-351
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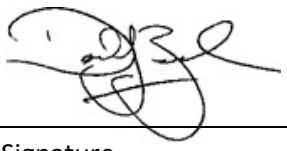
Reviewed by:	Paul Zuvela Manager - EIA		9 September 2022
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1 INTRODUCTION

1.1 BACKGROUND

The City of Canning commissioned Aurora Environmental to prepare an environmental report for the proposed Jandakot Eastern Link (JEL) Road and planned upgrades to sections of Johnston and Acourt Roads. Collectively, these road projects are referred to as the 'project area' in this report. The project area is located within the suburb of Canning Vale, within the City of Canning (Figure 1).

The JEL will be a dual carriage road connecting Ranford Road to the future Canning Vale District Sports Facility (CVDSF) (Figure 2) and will provide secondary access to the Jandakot Airport via Johnston and Orion Roads. The eastern extent of the JEL provides access for the future Ranford Road train station and bus interchange, a component of the State Government's Thornlie-Cockburn Link (TCL) METRONET Project which has been approved by the Western Australian Minister for the Environment (Ministerial Statement No. 1114) and is under construction.

1.2 PURPOSE AND SCOPE

This Environmental Assessment Report summarises the environmental attributes and values within and adjacent to the project area. The purpose of this report is to:

- Identify the environmental values of the project area and adjacent land;
- Assess the potential direct and indirect environmental impacts that may arise from the construction of the project;
- Recommend environmental management measures to avoid, minimise and mitigate environmental impacts associated with the project; and
- Discuss the potential environmental approvals required.

In preparing this report, Aurora Environmental has completed the following scope:

- Reviewed existing environmental studies;
- Reviewed desktop information regarding conservation significant flora, vegetation and fauna that may be found in the local area (including searches of Department of Biodiversity, Conservation and Attractions' (DBCA) NatureMap and the Department of Agriculture, Water and Environment's (DAWE) Protected Matters Search Tool);
- Conducted a targeted threatened flora survey of the project area including a 200m buffer;
- Assessed and mapped vegetation condition in the project area (inclusive of the 200m buffer where possible);
- Assessed and mapped the presence and extent of vegetation consistent with the description of Banksia Woodlands of the Swan Coastal Plain ecological community (Banksia Woodlands TEC) within the project area (inclusive of the 200m buffer);
- Reviewed site landform, geology and topography;
- Evaluated the presence of surface water features such as wetlands;
- Reviewed acid sulfate soils (ASS) risk mapping;

- Reviewed the Department Water and Environmental Regulation's (DWER) Contaminated Sites on-line database and historical aerial photos to identify potentially contaminating activities;
- Searched the DWER's Water Information Reporting tool for available groundwater information; and
- Searched the Department of Planning, Lands and Heritage's (DPLH's) Aboriginal Heritage Inquiry System (AHIS) for previously recorded Aboriginal heritage sites.

1.3 PROPONENT

Table A provides the details of the proponent.

TABLE A: PROPONENT CONTACT DETAILS

CONTACT DETAILS	
Name	City of Canning
Australian Business Number (ABN)	80 227 965 466
Postal Address	Locked Bag 80 WELSHPOOL WA 6986
Proponent Contact	Jenni Andrews Senior Environmental Advisor 1300 422 664

2 PROPOSAL OVERVIEW

2.1 BACKGROUND

The JEL alignment was the subject of a minor amendment (No. 1312/57 Jandakot Airport Eastern Link Road) to the Metropolitan Region Scheme (MRS) to rezone 6.14 ha of land (including 4 ha of Bush Forever Site 388 Jandakot Airport) from 'Rural' and 'Public Purposes' to 'Other Regional Road' reservation. The MRS amendment was approved (with modification) by the Minister for Planning and came into effect in July 2017.

The amendment was referred to the Environmental Protection Authority (EPA) who advised that the Amendment should not be assessed under Part IV of Division 3 of the *Environmental Protection Act 1986* as the "potential impacts from this amendment can be adequately managed to meet the EPA's objectives through the implementation of *State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region*." The EPA noted two environmental factors relevant to the amendment:

- Flora and vegetation – impacts to Bush Forever Site 388; and
- Inland waters – impacts to a Conservation Category Wetland (CCW).

The proposed construction of the unmade sections of Johnston and Acourt Roads (Figure 2) was not assessed by the EPA as part of the Amendment. However, the impacts related to this aspect of the project have been included in this assessment report.

2.2 JUSTIFICATION

The construction of the JEL is important as it will:

- Serve as an access road to the future CVDSF (Lots 166 and 167 Clifton Road) from Ranford Road.
- Provide secondary access to the Jandakot Airport, the busiest general aviation airport in Australia.
- Maintain access to the Canning Vale Waste Disposal Facility.
- Provide a secondary transport route to residential development further south of the project area.

In addition to the above, the eastern extent of the JEL provides access to the future Ranford Road train station and bus interchange that is being constructed as part of the State Government's TCL METRONET project.

The upgrade to Johnston and Acourt Roads will provide improved access to the future CVDSF as shown in Figure 2.

2.3 PROPOSAL DESCRIPTION

The City of Canning proposes to construct the JEL Road and upgrade Johnston and Acourt Roads, as shown in Figure 2. The JEL will be constructed as a dual carriage road, whilst Johnston and Acourt Roads will be single carriage way roads within a 20m wide road reserve.

The design of the JEL includes two 3.5 m traffic lanes and a 1.5 m cycle lane in each direction. The road design will also include a nominal 6 m wide median which widens to 9 m for double right turn movements where applicable and 2.5 m shared path along the northern verge (AECOM, 2013).

The JEL will be designed to cater for vehicles up to a B-Double with designed maximum speed of 70 kph (posted speed 60 kph).

The design will include the following intersections (AECOM, 2013):

- JEL / Ranford Road intersection – signalised with 70° approach angles for left turns with pockets under signal control, all movements allowed.
- JEL / Bus Station – Park & Ride facility intersection – unsignalised intersection with left and right turn pockets into the facility and left and right turn lanes out of the facility.
- JEL / Orion Road / CVDSF access / Johnston Road intersection – dual lane roundabout, all movements allowed.
- JEL / Waste Facility Access intersection – unsignalised intersection with left and right turn pockets into the facility and left and right turn lanes out of the facility.

The proposed road reservation width is nominally 41.5m to 45m but varies significantly due to the widening for turn pockets at the intersections, and to allow for earthworks, initial drainage basin and shared path requirements (AECOM, 2013).

The construction of the JEL is anticipated to require the importation of clean fill. However, a small portion of the JEL will occur in cut.

The design of the JEL incorporates a vegetated central swale to maintain outflow to predevelopment levels. Excess runoff from the swale will be detained in vegetated storage basins which provide primary treatment of stormwater and ensure surface runoff discharged to the environment via infiltration or surface runoff is not contaminated (Calibre Consulting, 2016).

Culverts will be used to distribute runoff between the northern side and southern sides of the JEL to maintain natural surface flows and to prevent surface water ponding against the road embankment (Calibre Consulting, 2016).

Construction is already underway of the portion within the TCL development envelope, as this section is required to access the Ranford Road Station. The TCL development envelope accounts for 1.11 ha of the JEL footprint. The impacts of this are not included in this environmental assessment report as the State and Commonwealth environmental approvals for the TCL Proposal (inclusive of this section of the JEL) have already been obtained and construction is well advanced. The significant residual environmental impacts arising from the construction of the TCL proposal has been offset by the Public Transport Authority (PTA).

The balance of the JEL Project Area (including the upgrade to Johnston and Acourt Roads) covers a total area of 9.12 ha. This includes 4.69 ha of cleared land and 4.43 ha vegetation in variable condition ranging from Completely Degraded to Excellent.

The JEL Project Area intersects 2.72 ha of Bush Forever Site 388. This includes 1.11 ha of cleared land and direct impacts to 1.61 ha of native vegetation in variable condition.

Table B summarises the breakdown of areas between the JEL Project area and the approved TCL development envelope.

TABLE B: PROJECT AREA WITHIN/OUTSIDE THE THORNLIE-COCKBURN LINK DEVELOPMENT ENVELOPE

VEGETATED/CLEARED		TOTAL AREA (ha)	JEL PROJECT AREA[1] (ha)	WITHIN TCL DEVELOPMENT ENVELOPE (ha)
Cleared		4.73	4.69	0.04
Vegetated		5.50	4.43	1.07
TOTAL AREA		**10.23**	**9.12**	**1.11**
Bush Forever Site 388	Cleared	1.15	1.11	0.04
	Vegetated	2.68	1.61	1.07
TOTAL AREA BUSH FOREVER SITE 388		**3.83**	**2.72**	**1.11**

1. *The JEL Project Area includes 0.15 ha of vegetated land within the Jandakot Airport.*

2.4 OUTCOMES AND BENEFITS

2.4.1 Environmental Benefits

The project area is identified as part of a green network in the *Central Sub-Regional Planning Framework* (DPLH, 2018) and the JEL will ensure the portion of Bush Forever Site 388 land to the southeast will remain protected (WAPC, 2016).

The alignment of the JEL was chosen as it mostly impacts the periphery of a disturbed area of Bush Forever Site 388, minimising the impact to native vegetation and wetlands.

Another benefit is the provision of a clear demarcation between the waste disposal facility and a portion of Bush Forever Site 388. This will protect the north-eastern extent of Bush Forever Site 388 including the unaffected areas of Conservation Category Wetland (CCW) UFI 16111 from further development encroachment. There is an opportunity to revegetate degraded areas formerly used for access to the Waste Transfer Station and to rehabilitate degraded areas near the intersection of Ranford Road and Livingstone Drive.

2.4.2 Social and Economic Benefits

The project will provide a direct connection to Jandakot Airport and the future CVDSF. Currently there are limited road connections through Jandakot Airport, with only one access road linking to Berrigan Drive and Karel Avenue. The additional eastern access via JEL is paramount at a busy airport facility as an essential alternative in the case of an emergency and in terms of transport efficiency into and out of the airport (AECOM, 2013).

The preferred alignment of the JEL was selected as it impacts the existing access and an operational area of the waste disposal facility, with no impacts on residential or private business properties. It also provides reduced construction costs compared to the other options, with minimal constructability issues, new structures or impact on utility services (AECOM, 2013).

3 ENVIRONMENTAL INVESTIGATIONS

Table C lists the technical studies completed within the project area or close to the project area. These reports were reviewed and used to define the environmental attributes of the project area and its surrounds.

TABLE C: ENVIRONMENTAL INVESTIGATIONS

REPORT TITLE	AUTHOR	PURPOSE
Jandakot Eastern Link Road Flora and Vegetation Assessment, 12 November 2019.	PGV Environmental	A targeted survey (PGV Environmental, 2019) for conservation significant flora and mapping of vegetation condition and mapping of the extent *Banksia* Woodlands of the Swan Coastal Plain ecological community within the project area inclusive of a 200 m buffer (Appendix 1).
Canning Vale District Sports Facility Detailed Flora and Vegetation Survey 9 February 2022, Version 2.	PGV Environmental	A detailed flora and vegetation survey including a targeted survey for conservation significant flora on Lots 166 and 167 Clifton Road, Canning Vale.
2020 Botanical Monitoring: Arrowgrass Reserve, Caladenia Wetland Reserve, Clifton Buffer and reserve, Queens Park Regional Open Space and Ranford Bushland	Natural Areas Holdings	Reporting provide the results from the 2020 monitoring of several conservation reserves/areas managed by the City of Canning.
Ranford Road Bushland Flora and Fauna Report, V2 Final, 8 March 2016.	Natural Area Consulting Management Services	Natural Area undertook a level 2 spring flora assessment and a level 2 fauna survey within Ranford Road Bushland, with fauna survey activities also undertaken in Caladenia Grove Wetland Reserve (east of Ranford Road). The survey provides baseline data of flora and fauna present within both sites.
Hydrological Assessment of Jandakot Eastern Link Road Final Report, February 2016.	Calibre Consulting	Calibre Consulting Services completed a hydrological assessment of the JEL alignment to provide information on the potential impacts to the existing hydrological regime at the project area.
Jandakot Eastern Link Road Environmental Impact Assessment, Phase 2 Report, October 2015.	Astron	This report presents the results of the phase one autumn/winter 2015 survey for flora, vegetation, fauna habitat and wetlands and phase two spring 2015 survey for flora and vegetation and an environmental impact assessment for the proposed alignment of the JEL.
Jandakot Airport Eastern Link Road, Road Alignment Selection and	AECOM Australia Pty Ltd	The purpose of this study was to select a preferred alignment and define the road reservation requirements for the future Eastern Link Road between Jandakot Airport and Ranford Road. The

REPORT TITLE	AUTHOR	PURPOSE
Reservation Study, 10 December 2013.		scope included assessing road alignment options, consulting with community and key stakeholders and preparing road concept design and land requirement plans.
Canning Vale Sports Masterplan Flora and Vegetation Survey, January 2013.	Natural Area Consulting	A level 1 Flora and Vegetation survey for the proposed Canning Vale Sporting Precinct (Lots 166 and 167 Clifton Road) was undertaken to assist the decision making processes associated with the development of a Master Plan for the proposed sporting precinct 121 ha site.
Ethnographic and archaeological Site Identification Survey Report, Jandakot Airport Master Plan 2008.	Australian Interaction Consultants	Australian Interaction Consultants were engaged to undertake an Ethnographic and Archaeological Site Identification Survey of the Jandakot Airport Master Plan Project Development Area.
Jandakot Airport Master Plan, 2014.	Jandakot Airport Holdings Pty Ltd	Outlines the strategic direction for the efficient and economic development of Australia's busiest general aviation airport. The Jandakot Airport Environment Strategy is also incorporated into Master Plan 2014 as required by the *Airports Act 1996*.
Metropolitan Region Scheme Amendment 1312/57 (Minor Amendment) Jandakot Airport Eastern Link Road, Amendment Report, October 2016.	Western Australian Planning Commission (WAPC)	The purpose of this amendment was to rezone approximately 6.14 ha of land (including 4 ha of Bush Forever Site 388) from Rural and Public Purposes to Other Regional Road reservation in the MRS.
Metropolitan Region Scheme Amendment 1312/57 (Minor Amendment) Jandakot Airport Eastern Link Road, Report on Submissions, July 2017.	WAPC	This report summarises the background to minor MRS amendment 1312/57 and examines the various submissions made on it.
Notice of Environmental Assessment, August 2016.	EPA	Appendix A of Metropolitan Region Scheme Amendment 1312/57 (Minor Amendment) Jandakot Airport Eastern Link Road Amendment Report (WAPC, 2016)
Conservation Significant and Short-Range Endemic invertebrate desktop habitat assessment for Thornlie-Cockburn Link Proposal, Perth, Western Australia, June 2019.	Invertebrate Solutions	This report provides information about the suitable habitats for SRE invertebrates within the TCL development envelope and immediately adjacent area, and an assessment of the SRE and conservation significant species that are likely to be present within the development envelope.

REPORT TITLE	AUTHOR	PURPOSE
Thornlie–Cockburn Link Project Flora and Fauna Survey. Unpublished report prepared for Public Transport Authority, May 2019.	GHD	This report describes the flora, vegetation and fauna values of the survey area including a desktop review and results of field surveys: • Detailed flora and vegetation surveys conducted between 6 to 8 September 2017, 6 October 2017, 14 February 2018, 1 March 2018 and 11 October 2018. • Targeted surveys conducted on 6 October 2017, 19 September to 11 October 2018 and 12 December 2018. • Level 1 fauna survey conducted from 6 to 8 September 2017 and 14 February 2018. • Targeted Black Cockatoo assessment conducted between 6 to 8 September 2017 and on 14 February 2018. • Dampland vegetation assessment of Geomorphic Wetlands of the Swan Coastal Plain conducted on 14 February 2018. • The survey area follows the proposed TCL alignment and covers 157.9 ha.
Additional Targeted Flora Survey – Memorandum to the Public Transport Authority, 14 May 2019.	GHD	This report provides a likelihood of occurrence assessment for conservation significant flora potentially present in the vicinity of the TCL proposal and a summary of the results from field surveys targeted for conservation significant flora.
Lots 302, 303 and 500 Ranford Road, Canning Vale Preliminary Site Investigation. Unpublished report prepared for the Public Transport Authority, September 2018.	GHD	This report describes the work undertaken on the former landfill located at the proposed site for the Ranford Road Station: • Preliminary Site Investigation including desktop assessment, site inspection and preliminary conceptual site model. • Sampling and analysis plan for a limited investigation. • Soil sampling and results from four test pits. • Installation of four groundwater monitoring wells and four ground gas monitoring wells. • Groundwater sampling and results from four groundwater monitoring wells. • Landfill gas monitoring and results from four ground gas monitoring wells.
Ranford Road Metronet Sampling and Analysis Plan for Detailed Site Investigation. Unpublished report prepared for Public	GHD	This report was prepared to address data gaps from the Preliminary Site Investigation (GHD, 2016) and guide field investigations during the Detailed Site Investigation of Lots 302, 303 and 500 Ranford Road, Canning Vale.

REPORT TITLE	AUTHOR	PURPOSE
Transport Authority, October 2017.		
Detailed Site Investigation: Ranford Road Metronet [Interim Draft], July 2018.	GHD	The objective of this DSI report relating to Part Lots 302, 303 and 500 Ranford Road, Canning Vale is to determine the nature and extent of contamination in potentially impacted media (i.e. soil, groundwater and ground gas) in order to: • Develop an understanding of risks with respect to contamination under various development scenarios. • Develop a sufficient level of understanding of landfill gas and vapour risk to inform the design of potential gas risk mitigation measures (and/or other management requirements with respect to soil and groundwater).
Metronet Ranford Road Contamination status and remediation options letter report, September 2018.	GHD	This letter report provides a summary of: • The contamination status of the Ranford Road site; • The findings of investigations conducted on the site; • Contamination risks to human health and ecological receptors from the development and operation of a new station at the site; • Options for the management of identified risks during construction and operation of the new station; • The likely process to be followed in accordance with the Contaminated Sites Guidelines to achieve a reclassification of the developed portion of the site with respect to the *Contaminated Sites Act 2003*.
Thornlie to Cockburn Link Wetland Assessment 2018	PGV Environmental	This report provides a detailed study of the wetlands in the TCL proposal area to assist the environmental impact assessment of the TCL proposal.
Preliminary Site Investigation Thornlie Cockburn Link, June 2018.	Golder Associates Pty Ltd	The objectives of this investigation were to prepare a Conceptual Site Model (CSM) and provide recommendations for further investigations to assess the contamination status of the Rail reserve from the Canning River (near the Thornlie Station) to the Kwinana Freeway.
PTA Metronet – Thornlie to Cockburn Link: Preliminary Acid Sulfate Soil Investigation, March 2018.	Golder Associates Pty Ltd	This report was prepared to document the ASS Investigation along the Thornlie-Cockburn Link. The investigation comprised a desktop assessment of currently available information and a site inspection. The investigation findings have been used to provide a preliminary assessment and the likelihood of proposed works disturbing Potential ASS (PASS) or

REPORT TITLE	AUTHOR	PURPOSE
		Actual ASS (AASS), if present, and the risks to the environment from that disturbance. The report also provides recommendations for further intrusive ASS investigations.
PTA Metronet – Thornlie Cockburn Link Groundwater Desktop Study and Conceptual Sampling and Analysis Quality Plan, June 2018.	Golder Associates Pty Ltd	The purpose of the desktop groundwater investigation was to inform the presence of existing groundwater users that could potentially be affected by groundwater abstraction at the site. The SAQP details the works required to assess the contamination status of the Proposal area but excluding the Ranford Road site (which has been investigated separately) and provides recommendations for management options when excavating and re-working soil, and disposal options for excavated soil and abstracted groundwater.
Groundwater Level Monitoring Information, Metronet – Thornlie to Cockburn Link, March 2019.	Golder Associates Pty Ltd	A technical memorandum presenting details relating to groundwater monitoring wells installed as part of the geotechnical and environmental site investigations undertaken for the TCL proposal.
Thornlie to Cockburn Link *Phytophthora* Dieback occurrence assessment Version 1.0, October 2018.	Glevan Consulting	The purpose of this report is to provide an assessment of the presence of *Phytophthora* Dieback in the TCL dieback survey area and to map areas of infestation.
Aboriginal Heritage Site of Significance Review at the proposed Canning Vale Sports Complex, City of Canning, Western Australia, September 2021.	Dortch Cuthbert	An Aboriginal Site Identification survey directed at assessment of DPLH Place ID 4310 and Place ID 4311. The objective was to determine whether these heritage places still existed (given previous disturbance), determine the extent of any surviving heritage material, and consult Noongar Traditional Owners about management of these places.
Aboriginal Heritage Survey, September 2017	R O'Connor	This report describes the aboriginal heritage survey. The survey methodology undertaken was: • Examination of existing aboriginal heritage sites database. • Consultation with Whadjuk representatives nominated by SWALSC after consideration of the Activity Notice. • Inspection of areas of proposed works by nominated Whadjuk representatives.
Addendum to report on Thornlie-Cockburn Link, Aboriginal Heritage Survey, October 2017	R O'Connor	A second inspection as requested by Whadjuk representatives was undertaken on 4 October 2017 of the proposed Nicholson Road Station site and the northern bank of the Canning River. This addendum report details the methodology, execution and results

REPORT TITLE	AUTHOR	PURPOSE
		of that additional consultative process and Aboriginal heritage survey.
Jandakot Airport Conservation Management Plan, 3 June 2019.	Jandakot Airport Holdings Pty Ltd	This Plan was prepared to aid in protecting the areas designated in the Jandakot Airport Master Plan as Conservation Precincts. The Plan summarises the existing environment within Jandakot Airport, outlines the associated issues and the measurable management actions that can be implemented in both the short and long term.

Jandakot Airport Dieback Management Plan, Conservation Management Plan Appendix C, Version 10, 3 June 2019.	Jandakot Airport Holdings Pty Ltd	Four dieback infestations comprising a total of 22.7 ha have been identified and mapped at Jandakot Airport. This report:
		• Identifies areas of high conservation value and those that are vulnerable to the spread of the disease; and
		• Outlines the management measures required to be undertaken to minimise the spread of Dieback identified at the Airport site including:
		  • Treatment methods;
		  • Prevention and containment methods;
		  • Research and Industry consultation;
		  • Monitoring and Contingency requirements;
		  • Communication and reporting requirements.

Jandakot Airport Weed Management Plan, Conservation Management Plan Appendix B, 3 June 2019.	Jandakot Airport Holdings Pty Ltd	This report provides guidance for weed management at Jandakot Airport informed by various sources including consultants, weed contractors and resources provided by the DBCA. The plan is consistent with the Jandakot Airport Master Plan 2014.
Jandakot Airport Integrated Conservation and Translocation Research Program for *Caladenia huegelii* – Key Findings, Conservation Management Plan Appendix E, 22 June 2016.	Jandakot Airport Holdings Pty Ltd	This report provides a summary of the key findings arising from the Botanic Gardens and Parks Authority Research coordinated by Professor Kingsley Dixon and funded by Jandakot Airport Holdings as required by EPBC 2009/4796 condition 6e (vi) and detailed within the Jandakot Airport Offset Plan.

4 ENVIRONMENTAL CONTEXT

4.1 CLIMATE

The project area is within Nyoongar country which spans from Leeman in the northwest to beyond Cape Arid in the southeast, in the southwest of Australia. The project area's climate is characterised by six seasons as summarised below:

- Birak: December-January, characterised by dry and hot conditions.
- Bunuru: February to March, the hottest part of the year.
- Djeran: April to May, when cooler weather starts to prevail, although continued dry conditions usually.
- Makuru: June to July, identified as the coldest and wettest season of the year with more frequent storms.
- Djilba: August to September, characterised by a mixture of wet days with increasing number of clear, cold nights and pleasant warm days.
- Kambarang: October to November, characterised by longer dry periods than the previous season.

Rainfall and temperature data for Canning Vale has been sourced from the Bureau of Meteorology's (BOM) Station 9172 (Jandakot Aero) which is 2.0 km from the project area (Data range 1972 – 2022). Table D summarises climate data for the Jandakot Aero Station (BOM, 2022), confirming that December to March is the warmest period of the year and the driest months. The coolest and wettest period corresponds with the months of May to October. The mean total annual rainfall for Jandakot Aero is 818.4 mm for the period 1972 to 2022. There has been a marked decline in rainfall received over the last 30 to 40 years, with a noticeable shift to a drier climate across the south-west of Western Australia (CSIRO, 2009).

TABLE D: CLIMATE DATA

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean Rainfall (mm)												
	15.5	18.1	16.9	41.3	105.3	151.2	174.1	127.3	83.3	47.1	27.8	10.3
Mean Temperature (°C)												
Max.	31.5	31.5	29.6	25.8	22.0	19.1	18.0	18.7	20.2	22.9	26.4	29.3
Min.	16.9	17.1	15.6	12.5	9.3	7.5	7.1	7.3	8.3	9.9	12.7	14.9

4.2 TOPOGRAPHY

The topography across the project area is gently undulating with an elevation of approximately 26 to 30 m Australian Height Datum (AHD).

4.3 GEOMORPHOLOGY, GEOLOGY AND SOILS

The project area is located within the Swan Coastal Plain (SCP). The SCP is generally a flat, low-lying belt approximately 23 km wide in the south and 34 km wide in the north. It comprises a series of distinct landforms, aligning roughly parallel to the coast. These units consist of three dunal formations (Quindalup Dunes, Spearwood Dunes and Bassendean Dunes) of aeolian origin, followed by an alluvial zone known as the Pinjarra Plain, which consists of a clayey alluvium that has been transported by rivers and streams from the adjacent Darling Scarp.

The western part of the project area is mapped within the Bassendean Dune System. The Bassendean Dune System consists of very low relief, leached, grey siliceous Pleistocene sand dunes, intervening sandy and clayey swamps and gently undulating plains. These occur immediately west of, and partly overlie, the Pinjarra Plain. These soils are very leached, infertile and mildly acidic (DPIRD, 2019).

The eastern part of the project area is mapped in the Pinjarra Plain which extends from the eastern side of the Bassendean Dunes to the western edge of the Darling Scarp, which joins the Ridge Hill Shelf and forms the denuded slope of the Darling Fault (Beard, 1990). The Pinjarra Plain System consists of a broad low relief plain west of the foothills, comprising predominantly Pleistocene fluvial sediments and some Holocene alluvium associated with major current drainage systems (DPIRD, 2019). The major soils are naturally poorly drained, and many swamps occur.

Jordan (1986) maps most of the project area as Unit S8 - Sand belonging to the Bassendean Sand geological unit (Qpb). Unit S8 is described as white-pale grey at surface, yellow at depth, fine to medium-grained, moderately sorted, sub-angular to sub-rounded, minor heavy minerals of eolian origin. Jordan (1986) also identifies the project area as a mineral resource i.e. suitable for sand mining. Bassendean Sands are typically very permeable and well drained. However, they have a low capacity to bind nutrients and therefore are susceptible to leaching phosphorus.

4.4 ACID SULFATE SOILS

ASS is the name commonly given to naturally occurring soils and sediment containing iron sulfide materials. In their natural state, ASS are generally present in waterlogged anoxic conditions and do not present any risk to the environment. When oxidised, ASS produce sulfuric acid, which can present risks to the environment, infrastructure and human health.

ASS risk mapping shows the project area as being ‘Class 2 – moderate to low risk of ASS occurring within 3 m of the natural soil surface’ but high to moderate risk of ASS beyond 3 m of the natural soil surface.

Bassendean Sand units (such as those present within the project area) are considered by the DWER as a potentially problematic acid generating substrate due to the presence of extremely small crystals of pyrite which are highly reactive when exposed to oxygen. There has been evidence to show that dewatering or other disturbances of Bassendean Sands can result in the acidification of the shallow groundwater aquifer and the subsequent mobilisation of iron, aluminium and other metals into the groundwater system and/or the surrounding environment (DER, 2015). Research suggests that the primary source of this acidification is the variably cemented iron and/or organic rich sands commonly referred to as ‘coffee rock’ (DER, 2015). These sands may be shallow (B horizon) but may also form deeper within profiles (particularly in areas mapped as Class 2 risk).

4.5 FLORA AND VEGETATION

4.5.1 Regional Context

The project area lies within the Swan Coastal Plain Interim Biogeographic Regionalisation for Australia (IBRA) region and the Swan Coastal Plain Perth (SWA02) subregion (DoEE, 2016a). The Perth subregion is composed of colluvial and aeolian sands, alluvial river flats, coastal limestone. Vegetation in the subregion includes Heath and/or Tuart woodlands on limestone, *Banksia* and Jarrah-*Banksia* woodlands on Quaternary marine dunes of various ages, Marri on colluvial and alluvials. A complex series of seasonal wetlands occurs in the Perth subregion (Mitchell *et al.*, 2002).

Pre-European mapping indicates that vegetation in the project area comprises Beard Vegetation Association 1001 which is described as Medium very sparse woodland comprising Jarrah with low woodland of *Banksia* and *Casuarina*.

At a finer scale, vegetation complex mapping undertaken by Heddle *et al*. (1980) for the Swan Coastal Plain indicates that the project area occurs within the Bassendean Complex – Central and South. This vegetation complex ranges from woodland of *Eucalyptus marginata – Allocasuarina fraseriana - Banksia* spp. to low woodland of *Melaleuca* spp. and sedgeland on moister sites.

4.5.2 Vegetation Types

The project area is comprised of a mostly altered landscape of flat plains with seasonally wet areas and small scattered areas of remnant bushland (GHD, 2019b).

Astron (2015) undertook a vegetation and flora survey for the JEL road alignment. Two vegetation associations were recorded by Astron in the 2.62 ha of remnant vegetation surveyed within the JEL alignment (this excludes vegetation in the Johnston and Acourt Road reserves), including:

- Banksia Woodlands - Low Woodland of *Banksia menziesii, B. attenuata* and *B. ilicifolia* over an Open Shrubland of *Xanthorrhoea preissii* over an Open Sedgeland of *Dasypogon bromeliifolius* and *Lyginia barbata/imberbis* on grey sand; and
- Palusplain Damplands - Closed heath of *Melaleuca* species, *Pericalymma ellipticum* with occasional *Melaleuca preissiana* or *Kunzea* species over an Open Sedgeland of *Dasypogon bromeliifolius, Lyginia imberbis/barbata* on grey sand.

Natural Area Consulting (2016) completed a vegetation and flora survey of the Ranford Road Bushland, through which the JEL road alignment traverses. This provides information about the biological values of the area to be impacted by the JEL Project and the surrounding areas. Nine vegetation types were identified within the survey area (three of which occur in the JEL alignment), with most the survey area being Banksia Woodlands.

Natural Area Consulting (2013) completed a vegetation and flora survey of Lots 166 and 167 Clifton Road, Canning Vale. A portion of this site is to be developed for a future district sports facility. The survey includes a description of the biological values on Lots 166 and 167. Three vegetation types were identified within the survey area. Two vegetation types are adjacent to the eastern side of the Johnston and Acourt Road reserves and include *Banksia* woodland and *Banksia ilicifolia* woodland. A more recent detailed flora and vegetation survey was completed by PGV (2022) on Lots 166 and 167

Clifton Road. The PGV (2022) assessment included assessments for the potential presence of threatened orchid species.

GHD (2019b) completed a detailed vegetation and flora assessment for the TCL proposal. The GHD survey area only covers part of the project area, mainly the eastern extent of the JEL, but extended over a great area to assess the ecological values within an area that may be impacted by the TCL Proposal. Four vegetation types were mapped by GHD within a portion of the project area. These were:

- One dryland community:
  - VT01 (*Banksia menziesii* and *B. attenuata* woodland);
- Two dampland communities:
  - VT02 (*Regelia inops Hypocalymma angustifolium* shrubland); and
  - VT02a (*Banksia* spp. isolated trees *Regelia inops Hypocalymma angustifolium* shrubland).

The remaining vegetation type VT06 has been highly modified and comprises scattered native flora over a weedy understorey or cleared areas. It varies between a dryland and dampland community and is in a varied state of degradation due to previous modifications to the landscape (GHD, 2019b). Of the remnant native vegetation communities, *Banksia menziesii and B. attenuata* woodland (VT01) was the dominant vegetation type within the project area.

PGV Environmental (2019) undertook a targeted flora survey and a high-level review of vegetation types within the JEL alignment and unmade sections of Johnston and Acourt Roads with a 200m buffer (Appendix 1). They observed a range of vegetation types within the project area including dryland and wetland types (Figure 3). The vegetation types were consistent with those previously mapped and described by Astron (2015), Natural Area Consulting (2016) and GHD (2019b). At a broad level, the vegetation types were grouped into the following categories:

- Wetland vegetation – heath and shrubland areas lower in the landscape that contain species adapted to wetter environments. The wetland vegetation types ranged from Heath and Shrubland vegetation types to those containing Paperbark trees, predominantly *Melaleuca preissiana* trees. The wetland types did not contain vegetation that is representative of the Banksia Woodlands of the Swan Coastal Plain TEC.
- Dryland vegetation – upland vegetation communities which included areas of *Banksia* woodlands or areas that have been cleared but are exhibiting signs of regeneration. The dryland vegetation types were broadly described as a *Banksia* Low Woodland with Jarrah and Sheoak also present. *Banksia attenuata* and *B. menziesii* were the most common Banksia species. Spearwood (*Kunzea glabrescens*) was a common mid-shrub species to 3m (PGV Environmental, 2019). Typical understorey species included *Xanthorrhoea preissii, Hibbertia hypericoides, Lyginia barbata, Scholtzia involucrata, Phlebocarya ciliata, Hibbertia subvaginata* and *Eremaea pauciflora* on lower-lying areas transitional between dryland and wetland areas, while *B. ilicifolia* was a common tree with *B. attenuata*. The regenerating areas on the future CVDSF site contain a sparse cover of Woolly Bush (*Adenanthos cygnorum*), Spearwood (*Kunzea glabrescens*) and introduced Victorian Teatree (*Leptospermum laevigatum*) with Veldtgrass abundant.

- Transitional vegetation – intermediate areas between dryland and wetland vegetation types with these areas containing *Banksia ilicifolia, B. attenuata, Hypocalymma angustifolium and Regelia ciliata*.

The areas of each vegetation type as mapped by PGV Environmental (2019) within the project area are summarised in Table E below and mapped in Figure 3.

TABLE E: VEGETATION TYPES WITHIN THE PROJECT AREA

VEGETATION TYPE	WITHIN JEL PROJECT AREA (ha)	WITHIN TCL DEVELOPMENT ENVELOPE (ha)	TOTAL (ha)
Dryland	2.19	0.55	2.74
Transitional	0.19	-	0.19
Wetland	1.03	0.52	1.55
Regeneration	0.86*	-	0.86*
Not assessed	0.15#	-	0.15
Sub-total	***4.43***	***1.07***	***5.50***
Cleared	4.69	0.04	4.73
TOTAL	**9.12**	**1.11**	**10.23**

* includes 0.45 ha mapped as Completely Degraded.

A small area within the Jandakot Airport landholding is within the project area and was not able to be assessed to due site access issues.

4.5.3 Vegetation Condition

PGV Environmental (2019) assessed the condition of the vegetation within the survey area according to the system devised by Keighery, described in Bush Forever (Government of Western Australia, 2000) and summarised in Table F below.

TABLE F: VEGETATION CONDITION RATING SCALE

VEGETATION CONDITION	DESCRIPTION
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.

TABLE F: VEGETATION CONDITION RATING SCALE

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

Areas of remnant native vegetation ranged from Very Good condition to Degraded (Figure 4). Areas of regeneration were rated as Completely Degraded as very little natural structure was evident in these areas due to clearing. Some areas containing abundant weeds and sparse native vegetation trees or understorey were rated as Degraded (PGV Environmental, 2019).

The condition of each of the vegetation types as mapped by PGV Environmental (2019) within the project area is summarised in Table G and mapped in Figure 4.

TABLE G: VEGETATION TYPES AND CONDITION

VEGETATION TYPE	VEGETATION CONDITION	JEL PROJECT AREA (ha)	TCL DEVELOPMENT ENVELOPE (ha)	TOTAL AREA (ha)
Dryland	Degraded	0.96	-	0.96
	Good	0.54	0.08	0.62
	Very Good	0.12	0.42	0.54
	Excellent	0.57	0.05	0.62
Transitional	Good	0.19	-	0.19
Wetland	Degraded	0.01	-	0.01
	Good	0.95	-	0.95
	Very Good	0.07	-	0.07
	Excellent	0.01	0.52	0.53
Regeneration	Completely Degraded	0.45	-	0.45
	Degraded	0.25	-	0.25
	Good	0.16	-	0.16
Not assessed	Very Good	0.15	-	0.15
Cleared		4.69	0.04	4.73
	TOTAL	**9.12**	**1.11**	**10.23**

4.5.4 Conservation Significant Vegetation Communities

The EPBC Act Protected Matters Search Tool (PMST) identifies two Commonwealth listed threatened ecological communities (TECs) that may occur within 2 km of the project area). The TECs listed are:

- Banksia Woodlands of the Swan Coastal Plain ecological community – Endangered; and
- Tuart *(Eucalyptus gomphocephala)* Woodlands and Forests of the Swan Coastal Plain ecological community – Critically Endangered.

The survey by GHD (2019b) for the TCL proposal identified one Commonwealth listed conservation significant ecological community and one State listed priority ecological community (PEC) occurring within the JEL road alignment:

- Banksia woodlands of the Swan Coastal Plain TEC – a Commonwealth listed TEC;
- Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c) – a state listed PEC and a sub-community of the Commonwealth listed Banksia woodlands TEC.

Banksia woodlands of the Swan Coastal Plain TEC

The Banksia Woodlands of the Swan Coastal Plain TEC (Banksia Woodlands TEC) is restricted to the Swan IBRA bioregion and immediately adjacent areas, including the Dandaragan Plateau, from Jurien Bay in the north, to Dunsborough in the south, and northwest on the Whicher and Darling escarpments. It typically occurs on well drained, low nutrient soils on sandplain landforms, particularly deep Bassendean and Spearwood sands and occasionally on Quindalup sands (DoEE, 2016a).

PGV Environmental (2019) assessed the vegetation in the project area against the Banksia Woodland TEC criteria contained in the *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community* (Conservation Advice) (DoEE, 2016b). Two vegetation types were found to meet the criteria for the Banksia Woodland TEC; these being Dryland vegetation type and Transitional vegetation type (Figure 3 – areas mapped as Veg-D and Veg-T). Based on the PGV Environmental (2019) mapping, there is 2.93 ha of Banksia Woodland TEC within the entire project area, with 2.38 ha in the JEL Project Area and 0.55 ha within the TCL Development Envelope. The Wetland and Regeneration vegetation types do not meet the requirements of the Banksia Woodland TEC criteria due to the absence of the key Banksia species.

Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c)

Astron (2015) analysed the full suite of flora taxa they recorded in the JEL alignment against the Swan Coastal Plain data set to determine whether the *Banksia* woodlands within the alignment are PECs. They concluded the broad structural dominants of the *Banksia* woodland vegetation association is consistent with PECs known from the local area (FCT 21c - Low lying *Banksia attenuata* woodlands or shrublands or SCP 22 - *Banksia Ilicifolia* woodlands) but due to the degradation in most areas and the resultant lack of floristic diversity, the results of the data analysis may have been confounded. However, given that GHD (2019b) ascertained that areas of *Banksia* woodland within the TCL development envelope at the Ranford Road station site were representative of FCT 21c, it is likely that the *Banksia* woodlands in the JEL Project Area are representative of this floristic community type. These areas are shown in Figure 3 Dryland vegetation (Veg-D) and Transitional vegetation (Veg-T) as mapped by PGV Environmental (2019). There is 2.93 ha of vegetation representative of this PEC within

the total project area, with 2.38 ha in the JEL Project Area and 0.55 ha within the TCL development envelope.

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

The Tuart Woodlands and Forests of the Swan Coastal Plain (Tuart) TEC (listed under the EPBC Act) has not been recorded during any of the vegetation surveys conducted over all or part of the project area, or adjacent to the project area.

4.5.5 Flora

Searches of the NatureMap database and the PMST provided a list of threatened and priority flora species that have previously been identified or may occur within the search area which included a 2 km buffer of the project area. Table H provides a likelihood of occurrence assessment for conservation significant flora within the project area.

TABLE H: CONSERVATION SIGNIFICANT FLORA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
Andersonia gracilis Slender Andersonia	-	Endangered	Species or species habitat may occur within area	**Not recorded – unlikely** Slender Andersonia occurs in white/grey sand, sandy clay, gravelly loam in winter-wet areas, near swamps. Suitable habitat is present in and adjacent to the JEL Project Area. Multiple surveys conducted across the JEL Project Area over several years have not recorded the species. This species is not cryptic, and the surveys have been undertaken during the reported flowering period. Therefore, this species is unlikely to be present.
Caladenia huegelii Grand Spider Orchid	Rare or likely to become extinct	Endangered	Species or species habitat known to occur within area	**Not recorded – possible** The Grand Spider Orchid prefers sand or clay loam soils. It generally does not survive in disturbed areas. Suitable habitat is present in and adjacent to the JEL Project Area. Multiple populations of the species are known in nearby bushland including Jandakot Airport Bushland, Ken Hurst Park, west of Ken Hurst Park and in

TABLE H: CONSERVATION SIGNIFICANT FLORA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
				Caladenia Grove Wetland Reserve. Multiple surveys conducted across the impacted area over several years have not recorded the species. 'Critical habitat' for the Grand Spider Orchid include areas where populations are known to occur as well as adjacent areas of suitable habitat. In addition, indirect impacts to nearby populations need to be considered.
Diuris drummondii Tall Donkey Orchid	-	Vulnerable	Species or species habitat known to occur within area	**Not recorded - unlikely** The Tall Donkey Orchid grows in low-lying depressions, swamps that are moist year round. Habitats that are wet year-round are not present in or near the JEL survey area. Multiple surveys across the JEL Project Area have not recorded this species.
Diuris micrantha Dwarf Bee Orchid	-	Vulnerable	Species or species habitat likely to occur within area	**Not recorded – unlikely** The Dwarf Bee-orchid is found in small populations, on brown loamy clay in winter wet swamps in shallow water. It is known from seven populations east of Kwinana and south towards Frankland. It is unlikely that the species is present in the JEL Project Area as there is a lack of suitable habitat. Multiple surveys have not recorded this species in the project area.
Diuris purdiei Purdie's Donkey Orchid	Rare or likely to become extinct	Endangered	Species or species habitat known to occur within area	**Not recorded - unlikely** Purdie's Donkey Orchid occurs in grey-black sand. It grows in areas subject to winter inundation, and amongst native sedges and dense heath with scattered emergent *Melaleuca*

TABLE H: CONSERVATION SIGNIFICANT FLORA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
				preissiana, Eucalyptus calophylla, E. marginata and *Nuytsia floribunda* (DoEE, 2018). Potentially suitable habitat is present in and adjacent to the JEL survey area. However, multiple targeted searches for this species were undertaken throughout the JEL Project Area during the reported flowering period and did not record this species.
Drakaea elastica Glossy-leaved Hammer Orchid	Rare or likely to become extinct	Endangered	Species or species habitat known to occur within area	**Not recorded – unlikely** The Glossy-leafed Hammer Orchid prefers low-lying situations adjoining winter-wet swamps. It occurs on bare patches of white or grey sand in low-lying situations. There are two records less than 1 km south of the JEL survey area (GHD, 2019b). One of these records no longer exists due to clearing for housing, the other is within the Jandakot airport (GHD, 2019b). Some habitat suitable for the species is present in and adjacent to the JEL Project Area. However, multiple targeted surveys for the species during the reported flowering period have not recorded its presence. Therefore it is considered unlikely that the species is present.
Drakaea micrantha Dwarf Hammer Orchid	-	Vulnerable	Species or species habitat known to occur within area	**Not recorded – unlikely** The Dwarf Hammer-orchid is known from 32 small, scattered populations from Perth to Albany, with secure populations in Frankland National Park.

TABLE H: CONSERVATION SIGNIFICANT FLORA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
				It is usually found on cleared firebreaks or open sandy patches that have been disturbed, where competition from other plants has been removed (Brown *et al.*, 1998; Hearn *et al.*, 2006). The species is found on infertile grey sands in Jarrah *(Eucalyptus marginata)* and Common Sheoak *(Allocasuarina fraseriana)* woodland or forest associated with *Banksia* species (DoEE, 2018). Some suitable habitat for the species is present in and adjacent to the JEL Project Area. However, multiple targeted searches for the species during the reported flowering period have not recorded its presence. Therefore it is considered unlikely that the species is present.
Dodonaea hackettiana Hackett's Hopbush	Priority 4	-	-	**Recorded** Hackett's Hopbush was previously recorded by GHD (2013) and Natural Area Consulting (2016) near the Ranford Road Waste Transfer Station. This location was revisited during the GHD (2019a, 2019b) 2017 and 2018 field surveys, but no individuals of *D. hackettiana* were observed. PGV Environmental (2018) recorded five individuals of this species at the Ranford Road site during their wetland assessment for the TCL proposal. The location of these plants is shown on

TABLE H: CONSERVATION SIGNIFICANT FLORA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
				Figure 3 and is within the TCL development envelope.
Lepidosperma rostratum Beaked Lepidosperma	-	Endangered	Species or species habitat likely to occur within area	**Not recorded – unlikely** Beaked Lepidosperma is found in peaty sand, clay. The species has been recorded in the Brixton Street Wetlands and elsewhere in the Kenwick / Cannington localities on clayey soils. Similar habitat is not present in the JEL survey area.
Synaphea sp Fairbridge Farm Selena's Synaphea	-	Critically Endangered	Species or species habitat may occur within area	**Not recorded – unlikely** The species is found near winter wet flats in low woodland with weed grasses on sandy soils with lateritic pebbles. This species is known from five subpopulations south of Perth from Serpentine to Dardanup. No soils with lateritic pebbles are present in the JEL survey area. Multiple targeted searches for the species during the reported flowering period have not recorded its presence. Therefore it is considered unlikely that the species is present.
Styphelia filifolia	Priority 3	-	-	**Not recorded – possible** Grows on sandy soils of the coastal plain, usually in *Banksia* or Jarrah woodland and in low-lying situations (Hislop and Puente-Lelievre, 2017). Suitable habitat exists in the project area and the species has been recorded in Ken Hurst Park (GHD, 2019b).
Thelymitra dedmaniarum	-	Endangered	Species or species habitat may occur within area	**Not recorded - unlikely** Cinnamon sun orchid is known from two locations in the

TABLE H: CONSERVATION SIGNIFICANT FLORA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
Cinnamon Sun Orchid				Gidgegannup area. It is confined to open wandoo woodland on red-brown sandy loam associated with dolerite and granite outcropping (DEC, 2012). No suitable habitat is within the JEL survey area.
Tripterococcus sp. *Brachylobus*	Priority 4	-	-	**Not recorded – possible** Suitable habitat (*Banksia* woodland) exists within the project area (GHD, 2019b).

Astron (2015) recorded 66 vascular flora species within the JEL road alignment representing 51 genera and 27 families. Asteraceae, Fabaceae, Myrtaceae and Orchidaceae were the most species rich families with seven species recorded for each. No threatened flora were recorded within the JEL alignment by Astron (2015).

Natural Area Consulting (2016) undertook a flora survey of the Ranford Road Bushland Reserve which covers the JEL alignment. They recorded 150 flora species including 102 native species and 48 introduced species. One Priority 4 Species *Dodonaea hackettiana* was recorded in the northeast corner of the survey area, which is not within the JEL road alignment and Natural Area Consulting noted it is not considered to be naturally occurring in the area, as its described habitat is coastal areas situated on sand and outcropping limestone (DPaW, 2015).

On-site assessments of the proposed CVDSF site (Lots 166 and 167 Clifton Road, Canning Vale) by Natural Area Consulting (2013) identified a 188 flora species within the survey area from 48 families. This included 122 native species and 56 weed species. No threatened or priority listed flora species were found during the November survey (Natural Area Consulting, 2013).

PGV Environmental (2018) recorded five individuals of *Dodonaea hackettiana* at the Ranford Road site during their wetland assessment for the TCL proposal. The location of these plants within the TCL Development Envelope is shown on Figure 3.

GHD (2019b) recorded 187 flora taxa representing 52 families and 140 genera from the TCL proposal survey area (significantly larger than the JEL Project Area). This total included 119 native taxa and 68 introduced. One threatened flora species *Caladenia huegelii* (Grand Spider Orchid) was recorded in Caladenia Grove Reserve (east of Ranford Road). This species has also been recorded at the Jandakot Airport site, Ken Hurst Park and Bush Forever Site 245 (between Karel Avenue and Ken Hurst Park).

Drakaea elastica (Glossy-leafed Hammer Orchid) was reportedly recorded on the Jandakot Airport site in 2003 but is considered by the Jandakot Airport environmental officer to be a misidentification as it has not been recorded in several surveys since that time (PGV Environmental, 2019).

The surveys conducted by PGV Environmental (2019 and 2022) did not record any threatened species. Previous flora surveys have not recorded any Threatened flora species in the project area.

4.5.6 Declared Weeds

Thirteen weed species were recorded by Astron within the JEL alignment during their 2015 survey. No weeds listed as Declared Pests under the *Biosecurity and Management Act 2007* (WA) (BAM Act) or Weeds of National Significance (WONS) were recorded, however *Echium plantagineum* (Paterson's curse) listed as Declared (C3) under the BAM Act was observed growing just outside of Astron's survey area.

Natural Area Consulting (2016) recorded one WONS within the Ranford Road Bushland – Bridal Creeper *(Asparagus asparagoides)*. This flora species is also a Declared Pest under the BAM Act. The location of this occurrence of Bridal Creeper was not recorded in the Natural Area Consulting report therefore it cannot be determined if it was within the JEL Project Area.

On Lots 166 and 167 Clifton Road, Natural Area Consulting (2013) identified two WONS: Bridal creeper (*Asparagus asparagoides*) and Tamarisk (*Tamarix aphylla*). Neither species dominated within the area where they were observed (Natural Area Consulting, 2013). Paterson's Curse (*Echium plantagineum*) is listed as a Declared Plant with a P1 rating under the *Agriculture and Related Resources Protection Act 1976* meaning that the introduction of the plant into or movement of the plant within an area is prohibited (Natural Area Consulting, 2013).

GHD (2019b) did not record any Declared Pests or WONS within the eastern portion of the JEL alignment. The nearest Declared Pest identified by GHD was located near the intersection of Ranford Road and the railway reserve, north of the JEL alignment.

4.6 DIEBACK

The pathogen *Phytophthora cinnamomi* (referred to as 'dieback') is a microscopic water mould that acts as an agent of environmental disease found in vulnerable areas of Western Australia (areas that receive more than 400 mm rainfall per annum). *Phytophthora* dieback is the common name for the observable disease resulting from the interaction between the pathogen (*P. cinnamomi*) and the vegetation host (susceptible plant species within vulnerable areas). It behaves largely as a necrotrophic pathogen causing damage to the host plant's root tissues because of infection and invasion (Glevan, 2018).

Four dieback infestations comprising a total of 22.7 ha have been identified and mapped at Jandakot Airport, mostly associated with *Melaleuca preissiana* / dampland areas. As shown in red in Plate 1, a large, infested area abuts the western side of the Johnston Road reserve (JAH, 2019).

PLATE 1: DIEBACK OCCURRENCE MAP JANDAKOT AIRPORT

(Source: JAH, 2019)

Glevan Consulting (2018) assessed the TCL study area and confirmed the presence of *Phytophthora* dieback based on symptoms and disease signatures displayed in susceptible vegetation. Mapping by Glevan Consulting (2018) indicates the presence of dieback infestation within the eastern portion of the JEL road alignment (Plate 2). This infestation is associated with a water-gaining site. Glevan Consulting also reports an infested area on the opposite side of Ranford Road at the northern boundary of Caladenia Grove (Glevan Consulting, 2018).

PLATE 2: DIEBACK OCCURRENCE THORNLIE-COCKBURN LINK, PART MAP 2

(Source: Glevan, 2018)

Large areas of Ken Hurst Park, located northwest of the JEL Project Area, are also known to be dieback infested (Plate 3). The infested sections are all associated with water-gaining sites and there is no evidence that the disease has been spread beyond these high-moisture areas (Waters, 2014).

PLATE 3: INTERPRETATION OF EXTENT OF DIEBACK INFESTATION IN KEN HURST PARK 2002-2013

(Source: Waters, 2014)

Whilst the entire project area has not been assessed for the presence of dieback, the pathogen has been confirmed within adjacent low-lying, water gaining sites and is therefore likely to be present those parts of the JEL Project Area that have not been assessed. Therefore, it is recommended that the project area should be treated as if it is infested and appropriate hygiene measures should be implemented during clearing and construction works to ensure that the pathogen is not spread outside of the project area.

4.7 TERRESTRIAL FAUNA

Astron (2015) conducted a limited fauna survey of the JEL alignment which included an assessment of black cockatoo foraging, roosting and nesting habitat. Astron found the habitat in the alignment to be unsuitable for breeding and roosting by black cockatoos due to the absence of large trees, especially large hollow-bearing trees. Astron (2015) reported the alignment is within 6 km of seven confirmed night roost sites for Carnaby's Black Cockatoo. The occupancy of night roosts by Carnaby's cockatoo has been potentially linked with the amount of feeding habitat within a 6 km radius. The Banksia woodlands within the alignment provide foraging habitat for Carnaby's cockatoo and to a lesser extent, Baudin's cockatoos. Foraging evidence attributed to Carnaby's cockatoo has been recorded in and adjacent to JEL Project Area. Baudin's cockatoo has been observed within Canning Vale and in proximity to Ranford Road Bushland (GHD, 2013). However, the JEL Project Area is at the extremity of the species distribution. Baudin's cockatoo is generally found further east and south (Johnstone et al., 2011). It is noted that the PMST search tool did not list Baudin's cockatoo as a potential species within 1 km of the JEL Project Area. If a larger buffer was used, then the species is likely to be listed as a potential species.

The forest red-tailed black cockatoo has also been observed in the vicinity of the JEL Project Area. The species preferentially feeds on marri and jarrah fruits. Astron (2015) refer to the absence of Jarrah and Marri trees within the JEL alignment, implying that the habitat present is not suitable for forest

red-tailed black cockatoos. Natural Area Consulting (2016) also did not record Jarrah or Marri within the JEL alignment. However, some areas of Marri were recorded elsewhere within Ranford Road bushland. These areas will not be impacted by the construction of the JEL Project.

Natural Area Consulting (2016) undertook a fauna survey (including trapping) of Ranford Road Bushland (which includes the JEL alignment and areas to the north and south of the alignment) and the Caladenia Grove Wetland Reserve (east of Ranford Road). During the survey they recorded the following species within the Ranford Road Bushland Reserve:

- Seven mammal species, including four introduced species of which two are declared pests, and one Priority species (Quenda);
- 19 bird species including two introduced species and two conservation significant species (forest red-tailed black cockatoo and the rainbow bee-eater);
- 12 reptile species, all native species;
- Two frog species, both native species; and
- 57 invertebrate species.

Quenda were also recorded by Natural Area Consulting (2013) in bushland on Lots 166 and 167 Clifton Road, the location of the future CVDSF. Evidence of Carnaby's cockatoo foraging in the form of chewed Banksia flowers was also observed in the project area by Natural Area Consulting (2013).

The fauna survey for the TCL proposal recorded 66 species (native and introduced) comprising 45 birds, 11 reptiles, seven mammals and three frogs within the survey area (GHD, 2019b). The survey area was significantly larger than the JEL Project Area, extending from Beckenham (in the east) to Cockburn Central (in the west). Therefore, all species recorded by GHD (2019b) may not be present in the JEL Project Area. Three species of conservation significance were recorded: Carnaby's cockatoo (*Calyptorhynchus latirostris*) listed as Endangered under EPBC Act and BC Act, forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) listed as Vulnerable under EPBC Act and BC Act and the Southern Brown Bandicoot (*Isoodon obesulus* subsp*. fusciventer*) listed as Priority 4 by DBCA. Baudin's cockatoo was not recorded, but there was a historic record of the species occurring in the Canning Vale area.

The City of Canning estimate up to 250 Western Grey Kangaroos inhabit Lot 500 Ranford Road and individual specimens of Western Brush Wallaby (*Notamacropus Irma*) and Honey Possum (*Tarsipes rostratus*) have been observed in the project area. The Western Brush Wallaby is listed as a Priority 4 species by DBCA. It has been recorded in most habitats on the adjacent Jandakot Airport land within the conservation areas with densities between 0.24 and 0.3 wallabies per hectare (JAH, 2016). It is likely that the Western Brush Wallaby moves between bushland on airport managed lands, Ken Hurst Park and bushland on Lot 500 Ranford Road. Similarly, Southern Brown Bandicoots were also captured in all habitats within the Jandakot Airport site (JAH, 2016) and have been observed on Lot 500 Ranford Road, within Lots 166 and 167 Clifton Road and Ken Hurst Park.

Invertebrate Solutions (2019) completed a desktop Short-Range Endemic (SRE) Habitat Assessment for the TCL proposal. The vegetation types mapped by GHD (2019a) for the TCL proposal were used to determine SRE habitat suitability. Three of the vegetation types that occurred within the JEL alignment

(VT01, VT02 and VT02a) were determined by Invertebrate Solutions to have a 'moderate' SRE habitat suitability. VT06 was assessed as having no suitability for SREs.

Invertebrate Solutions determined within the TCL development envelope ten SRE/conservation significant invertebrate species have the potential for habitat to be present, and four had no habitat present based upon desktop resources only. Of the ten species with habitat present, three species have a High likelihood of occurrence, four have Moderate likelihood of occurrence and three have a Low likelihood of occurrence within the development envelope.

4.7.1 Habitat Types

GHD (2019b) recorded four fauna habitat types as well as cleared areas within the eastern portion of the JEL alignment that intersects with the TCL development envelope. The habitat types in this location include:

- *Banksia* woodland;
- Ephemeral low shrubland;
- Open *Banksia* woodland over low shrubland; and
- Mixed tall woodland/clumped trees.

All habitat types are represented at a local and regional scale in reserves, regional parks and conservation parks (GHD, 2019b).

Natural Area Consulting (2016) did not report any habitat type description but recorded nine vegetation types within the Ranford Road Bushland, with the dominant vegetation type being *Banksia* woodland. Astron (2015) also did not report on the habitat types present in the JEL alignment but recorded two native vegetation associations (*Banksia* woodland and Dampland habitat). The vegetation types broadly translate (albeit at a finer scale) to those habitat types mapped by GHD (2019b), i.e. the key habitat types include *Banksia* woodland and Dampland / Shrubland.

4.7.2 Habitat Quality

Natural Area Consulting (2016) reported that Ranford Road Bushland, through which the JEL road alignment traverses, contains good quality fauna habitat. They observed numerous bird nests in the tree canopy, thick leaf litter for insects and reptiles and dense Sedgeland for small mammals such as the Quenda. Areas of bare ground provide habitat for burrowing species such as the rainbow bee-eater, which was observed entering and leaving a nesting burrow in the north-west of the Ranford Road Bushland. The JEL alignment has been positioned to avoid the best areas of habitat where possible, by utilising cleared and degraded areas.

Natural Area Consulting (2016) concluded that the high diversity of fauna species captured and observed within the Ranford Road Bushland indicates healthy populations, a healthy ecosystem and habitat for local native fauna species.

GHD (2019b) recorded patches of vegetation in good to excellent condition for fauna, and in particular for black cockatoos.

4.7.3 Conservation Significant Fauna

Searches of the NatureMap database and the PMST provided a list of conservation significant fauna species that have previously been identified or may occur within the search area which included a 2km buffer of the project area. The likelihood of these species occurring within the project area has been assessed and is summarised in Table I.

TABLE I: CONSERVATION SIGNIFICANT FAUNA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
BIRDS				
Botaurus poiciloptilus Australasian Bittern	-	Endangered	Species or species habitat likely to occur within area	**Not recorded – unlikely** The Australasian Bittern prefers densely vegetated freshwater wetlands and, rarely, in estuaries or tidal wetlands. In the southwest of WA, the Bittern is found in beds of tall rush mixed with or near short fine sedge or open pools. It also occurs around swamps, lakes, pools, rivers and channels fringed with *Lignum muehlenbeckia*, canegrass (*Eragrostis* spp.) or other dense vegetation. It occasionally ventures into areas of open water or onto banks (DoEE, 2018). There is little suitable habitat within the JEL survey area for this species. Most observations of the species occur within lakes and wetland (with open waters) where dense vegetation is present.
Calidris ferruginea Curlew Sandpiper	-	Critically Endangered	Species or species habitat may occur within area	**Not recorded – unlikely** Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons and around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and

TABLE I: CONSERVATION SIGNIFICANT FAUNA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
				permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. There is no suitable habitat within the JEL Project Area.
Calyptorhynchus banksii naso Forest red-tailed black cockatoo	Rare or likely to become extinct	Vulnerable	Species or species habitat known to occur within area	**Present outside of the project area** Forest red-tailed black cockatoo feed on Marri, Jarrah, Blackbutt, Karri, Sheoak and Snotty gobble. They also forage on some garden eucalypts and berries of introduced White Cedar (Cape Lilac). The species preferred habitat is not present in the JEL alignment; however it was recorded by Natural Area Consulting (2016) in the Ranford Road Bushland.
Calyptorhynchus latirostris Carnaby's cockatoo	Rare or likely to become extinct	Endangered	Species or species habitat known to occur within area	**Present in the project area** Carnaby's cockatoo will forage on a wide range of plant species, including *Eucalyptus* spp., *Corymbia* spp., *Allocasuarina* spp., *Banksia* spp. and other proteaceous trees and shrubs as well as many introduced plant species. Evidence of foraging by Carnaby's cockatoo has been observed within the JEL alignment by GHD (2019b) and Astron (2015). Suitable foraging habitat is present in and adjacent to the JEL alignment. However, there is no suitable breeding or roosting habitat in the JEL Project Area.
Leipoa ocellata Malleefowl	-	Vulnerable	Species or species habitat	**Not recorded - unlikely**

TABLE I: CONSERVATION SIGNIFICANT FAUNA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
			likely to occur within area	The Malleefowl generally occurs in semi-arid areas of WA, from Carnarvon to south east of the Eyre Bird Observatory (south-east WA). It occupies shrublands and low woodlands that are dominated by mallee vegetation, as well as native pine (*Callitris* spp.) woodlands, *Acacia* shrublands, Broombush (*Melaleuca uncinata*) vegetation or coastal heathlands. Few records are present on the Swan Coastal Plain and are historical observations. This species is considered locally extinct.
Numenius madagascariensis Eastern Curlew	-	Critically Endangered	Species or species habitat may occur within area	**Not recorded - unlikely** The Eastern Curlew is most associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass (Marchant and Higgins, 1993). No habitat is present. This species appears to have a coastal and coastal lakes preference. The lower reach of the Swan River is the closest recorded.

TABLE I: CONSERVATION SIGNIFICANT FAUNA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
Rostratula australis Australian Painted Snipe	-	Endangered		**Not recorded - unlikely** The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. Australian Painted Snipe breeding habitat requirements may be quite specific: shallow wetlands with areas of bare wet mud and both upper and canopy cover nearby. The species rarely occurs in the south-western of Western Australia (Marchant and Higgins, 1993; Garnett and Crowley, 2000). The wetlands in the JEL Project Area do not provide suitable habitat for this species.
MAMMALS				
Dasyurus geoffroii Chuditch	-	Vulnerable	Species or species habitat likely to occur within area	**Not recorded - unlikely** The Chuditch inhabits eucalypt forest (especially Jarrah, *Eucalyptus marginata*), dry woodland and mallee shrublands. In Jarrah forest, Chuditch populations occur in both moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest. Most diurnal resting sites in sclerophyll forest consist of hollow logs or earth burrows (Van Dyck and Strahan, 2008). The species can travel large distances, has a large home range and is sparsely populated through a large portion of its range. This species requires large areas of connected habitat to persist, the habitat in the

TABLE I: CONSERVATION SIGNIFICANT FAUNA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
				survey area would not be suitable for this species. An individual record from 2016 was recorded in the City of Melville. This is a suburban environment and the specimen was likely transported to the region by vehicle (GHD, 2019b). This is not typical for this species in this region and the species is unlikely to persist in such environments (GHD, 2019b).
Isoodon fusciventer Quenda	Priority 4	-	-	**Present in the project area** Quenda were recorded by Natural Area Consulting (2016) in the Ranford Road Bushland during their fauna survey, and in the Ranford Road Station site close to the JEL alignment by GHD (2019b).
Notamacropus irma Western Brush Wallaby	Priority 4	-	-	**Not recorded - possible** The Western Brush Wallaby's optimum habitat is open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets. Suitable habitat exists within the project area and this species has been recorded at Jandakot Airport and Bush Forever Site 388 (Government of Western Australia, 2000), however it is heavily impacted by predation from foxes (GHD, 2019b) which were recorded in the area (Natural Area Consulting, 2016).
Pseudocheirus occidentalis Western Ringtail Possum	-	Critically Endangered	Species or species habitat may occur within area	**Not recorded - unlikely** The Western Ringtail Possum occurs in and near coastal Peppermint Tree (*Agonis flexuosa*) forest and Tuart

TABLE I: CONSERVATION SIGNIFICANT FAUNA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
				(*Eucalyptus gomphocephala*) dominated forest with a Peppermint Tree understorey from Bunbury to Albany, with an isolated population south of Mandurah. It also occurs in Jarrah (*Eucalyptus marginata*) forest and Jarrah-Marri (*Corymbia calophylla*) forest associated with Peppermint Tree (Van Dyck and Strahan, 2008). There is no suitable habitat in the JEL Project Area, and the species is not known to occur near this location.
REPTILES				
Lerista lineata Perth Slider, Lined Skink	Priority 3	-	-	**Not recorded – possible** Suitable habitat is present within the project area and this species has been recorded recently in close in Ken Hurst Park and around the Jandakot Airport site.
Neelaps calonotos Black-striped Snake	Priority 3	-	-	**Not recorded – possible** There is suitable habitat for this species within the project area. Larger patches of remnant vegetation comprising *Banksia* woodland provide the most suitable habitat for this species (GHD, 2019b).
ARACHNIDS				
Idiosoma sigillatum Swan Coastal Plain shield-backed trapdoor spider	Priority 3	-	-	**Not recorded – unlikely** Burrows of this spider usually occur in *Banksia* woodland and heathland on sandy soils (Rix *et al.*, 2018). The species was recorded in Jandakot southwest of Acourt Road in 1988 (ALA, 2019). Many of the records of these species within the Metropolitan area are dated and the species is

TABLE I: CONSERVATION SIGNIFICANT FAUNA LIKELIHOOD OF OCCURRENCE ASSESSMENT

SPECIES	BC ACT STATUS	EPBC ACT STATUS	PMST COMMENT	LIKELIHOOD ASSESSMENT
				unlikely to occur through much of its historical distribution in urban areas due to habitat clearing for urban development (Rix *et al.,* 2018).

In addition to the fauna listed in Table I, Natural Area Consulting (2016) observed rainbow bee-eaters (*Merops ornatus*) in Ranford Road Bushland, which are listed as a Migratory marine species under the EPBC Act. This species was observed at the western end of the Ranford Road bushland leaving a nesting burrow (Natural Area Consulting, 2016). Given the sandy soils within the JEL Project Area, it is possible that the rainbow bee-eater may utilise the project area for breeding.

The DAWE do not have any conservation advice for the rainbow bee-eater and it is noted that the IUCN status for the species is 'Listed as Least Concern'.

4.8 HYDROLOGY

4.8.1 Regional

The project area is located within the Swan–Avon Lower Swan unproclaimed surface water catchment and the Bannister Creek sub-catchment area. The project area does not include any areas mapped as a floodway or flood fringe.

4.8.2 Local

Calibre Consulting (2015) undertook a hydrological assessment of the JEL. They delineated six surface water catchments across the study area, however the majority of the JEL falls within one catchment. Calibre Consulting found that due to the topography of the area, the catchments were self-contained in low flow events and flow north-east in high flow events, towards the Canning River.

4.8.3 Geomorphic Wetlands

Wetlands shown in the Geomorphic Wetlands of the Swan Coastal Plain dataset within or adjacent to the project area are summarised in Table J.

TABLE J: GEOMORPHIC WETLANDS WITHIN THE PROJECT AREA

UFI	MANAGEMENT CATEGORY	WETLAND TYPE	TOTAL AREA OF WETLAND (ha)	JEL PROJECT AREA (ha)	JEL PROJECT AREA EXCL. TCL (ha)	TCL PORTION (ha)
16109	Conservation	Dampland	1.74	0.44	-	0.44
16111	Conservation	Dampland	9.45	0.65	0.05	0.60
16115	Conservation	-	8.22	0.01	0.01	-
			TOTAL	**1.10**	**0.06**	**1.04**

PGV Environmental (2019) mapped 1.52 ha of wetland vegetation within the entire JEL Project Area (Figure 3). This includes the wetland vegetation within the TCL development envelope as well as areas along Johnston Road which are not currently mapped as being associated with a wetland in the DBCA Geomorphic Wetlands of the Swan Coastal Plain dataset. It is likely these areas would have been associated with Resource Enhancement Wetland (REW) UFI 16117 (within Jandakot Airport lands). The isolated portion of wetland vegetation in Johnston Road reserve and on Lot 166 Clifton Road has since been isolated by historic clearing within the road reserve.

In addition to the wetlands listed in Table J, there are an additional three wetlands within 200 m of the project area (Table K).

TABLE K: ADDITIONAL GEOMORPHIC WETLANDS WITHIN 200 METRES OF THE PROJECT AREA

UFI	MANAGEMENT CATEGORY	WETLAND TYPE	COMMENT
6912	Conservation	Dampland	0.63 ha within buffer area. This basin wetland is east of the TCL development envelope and is approximately 185 m from the JEL.
16114	Conservation	Dampland	3.86 ha within buffer area. This basin wetland is located entirely on land managed by Jandakot Airport Holdings. It abuts CCW UFI 16115 and REW UFI 16117. It is approximately 60 m west of the JEL Project Area.
16117	Resource Enhancement	Dampland	12.38 ha within buffer area. This wetland is also located entirely on land managed by Jandakot Airport Holdings. It abuts CCW UFI 16114. The eastern boundary of this wetland is less than 10 m from the JEL Project Area.

4.9 HYDROGEOLOGY

4.9.1 Groundwater

The project area is located within the Jandakot and Perth proclaimed groundwater areas and within the subareas of Jandakot Confined, City of Canning and City of Melville.

The Jandakot Mound, a superficial (unconfined) aquifer, provides some of Perth's drinking water supply and is partially located within the southern portion of the project area. It is the main hydrogeological feature in the area (Golder, 2018b). The deep (partially confined) Leederville and deep (mostly confined) Yarragadee aquifers underlie the Jandakot Mound, separated by a confining layer of Kardinya shale (DoW, 2017). Groundwater levels across the Jandakot Mound have generally declined over the last 40 years (DoW, 2017). The historical maximum groundwater level on the Jandakot Mound is approximately 28 m AHD.

The superficial aquifer is hosted by Bassendean Sands and groundwater generally flows from the Jandakot Mound north west towards the Swan/Canning Rivers, and north east towards the Canning River.

According to the Perth Groundwater Map, the depth to groundwater across the project area varies from approximately 3 to 7m below ground level (DWER, 2019) with the groundwater salinity listed as <250 mg/L (fresh).

4.9.1.1 Site Specific Groundwater Data

Groundwater bores listed on the DWER's Water Information Network (WIN) database within/adjacent to the project area are shown in Plate 4.

Only two bores located close to the project area have recent (within last 10 years) water level data recorded – WIN ID 61610255 is north east of the project area and 61610254 is west of the project area (Plate 4). The water levels recorded for these two bores are shown in Plates 5 and 6. The water levels recorded for bore 61610255 varied from 21.27 (10/5/11) to 24.21 m AHD (8/9/86), and for bore 61610254 from 21.93 (14/6/07) to 24.5 m AHD (30/9/92).

PLATE 4: WIN BORES IN THE JEL PROJECT AREA

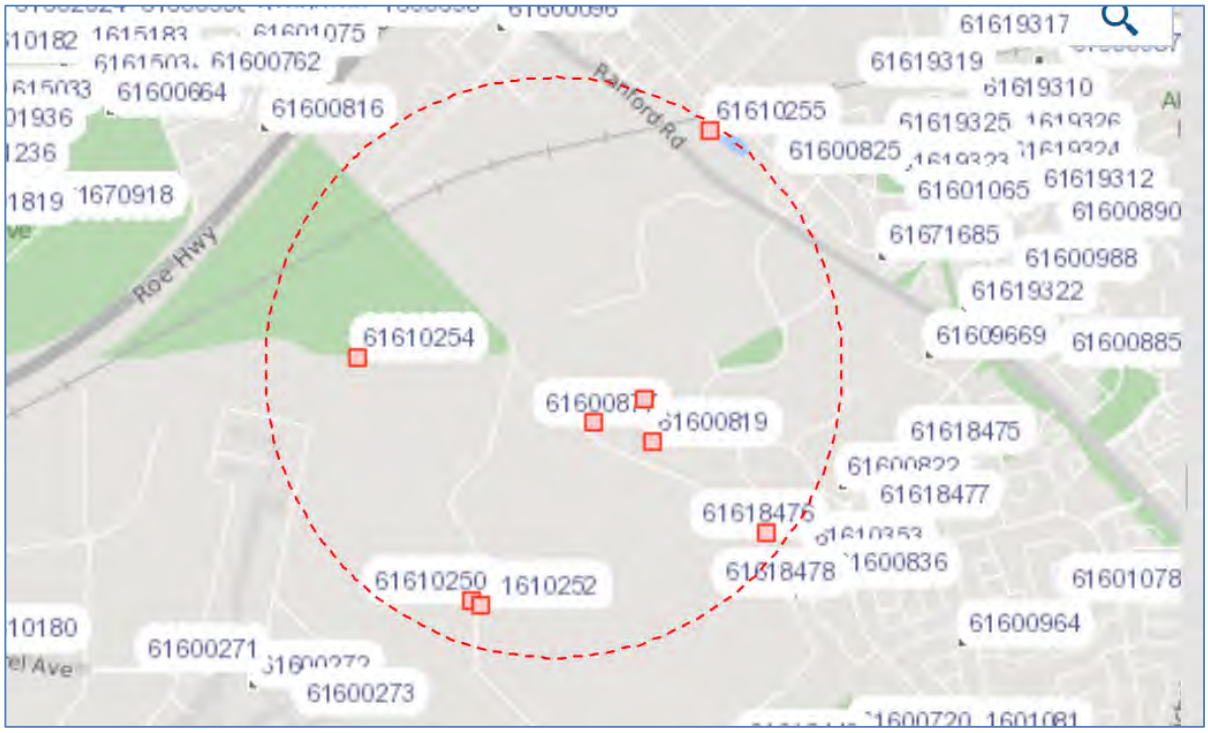


PLATE 5: WATER LEVELS RECORDED IN WIN BORE 61610255

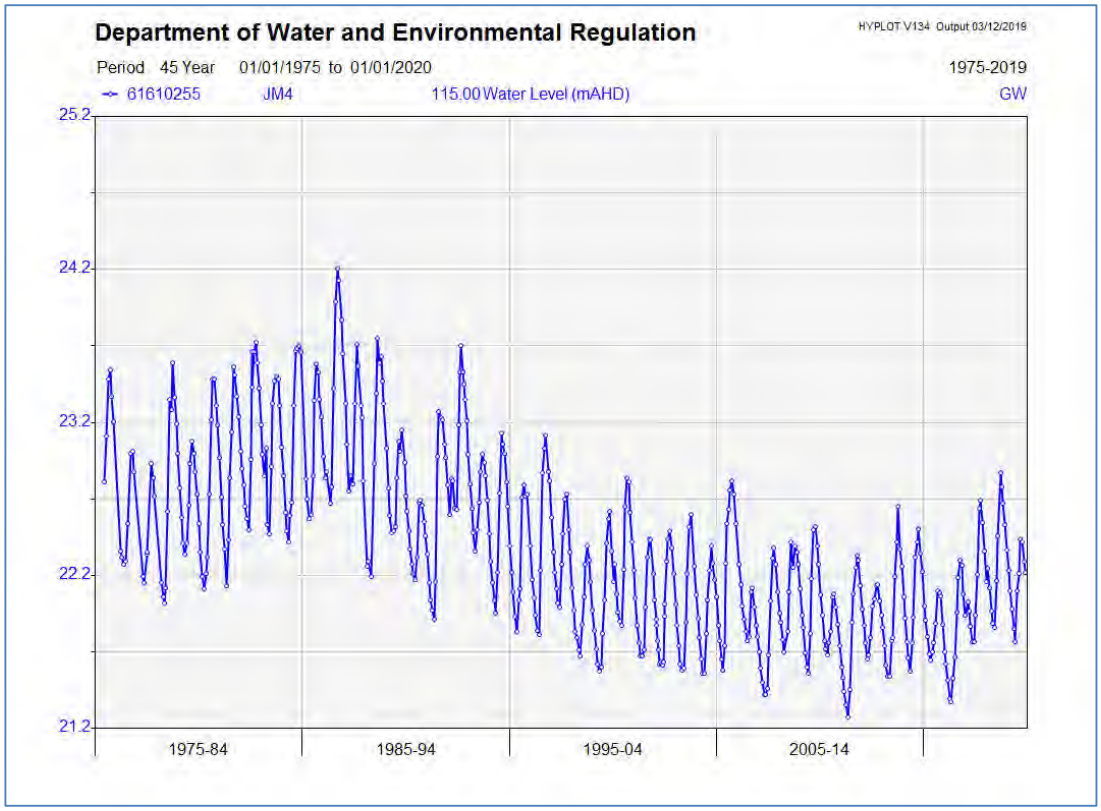
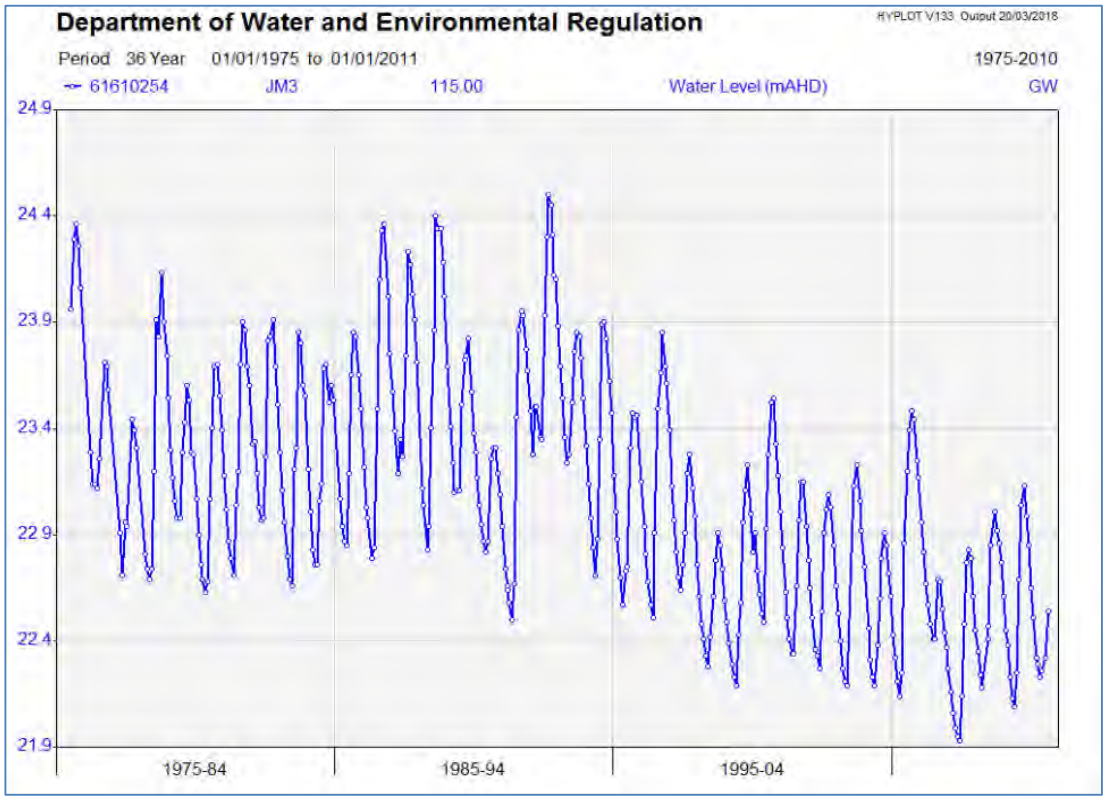


PLATE 6: WATER LEVELS RECORDED IN WIN BORE 61610254



Golder Associates (2019) conducted groundwater level monitoring for the TCL proposal in summer between November 2018 and February 2019. Several of their bores were close to the JEL Project Area within the Ranford Road Station site. Due to the time of year that sampling was conducted, the recorded groundwater levels are not representative of maximum groundwater levels. The data collected from bores close to the JEL Project Area is presented in Table L.

TABLE L: SITE SPECIFIC GROUNDWATER LEVELS AND ELEVATION

DATA SOURCE	BORE ID	GROUNDWATER LEVELS (m BGL)	GROUNDWATER ELEVATION (m AHD)
Golder Associates (2019)	GW14	4.86	22.24
	GW13	9.07 to 9.15	21.91 to 21.99
	TCL-BH032	11.28	21.41
	TCL-BH013	5.16	22.15

GHD conducted groundwater monitoring in the vicinity of the JEL alignment for the Ranford Road Former Landfill Facility (GHD, 2014). The results of groundwater level monitoring from February and October 2014 are presented in Table M. The locations of the bores are shown in Appendix 2.

TABLE M: GHD SITE SPECIFIC GROUNDWATER LEVELS AND ELEVATION

DATA SOURCE	BORE ID	TOC (m AHD)	GROUNDWATER ELEVATION (m AHD) FEBRUARY 2014	GROUNDWATER DEPTH (m BELOW TOC) FEBRUARY 2014	GROUNDWATER ELEVATION (m AHD) OCTOBER 2014
GHD (2014)	RR01	27.20	22.66	3.65	23.55
	RR02	25.77	22.39	2.51	23.26
	RR05	32.42	21.83	4.60	27.82
	RR07	30.30	21.83	7.84	22.46
	RR08	33.23	21.65	10.87	22.36

Appendix 2 shows groundwater depth and groundwater levels derived from GHD's (2014) monitoring. Most of the area has a groundwater depth that is more than 1.2 m from the surface. Appendix 2 also shows regional historical maximum groundwater levels derived from the Perth Groundwater Atlas (now Perth Groundwater Map).

4.9.2 Public Drinking Water Source Protection Areas / Underground Water Pollution Control Areas

The southern portion of the project area is within the Jandakot Underground Water Pollution Control Area (UWPCA). The southern half of Johnston Road is within a Priority 1 area and Acourt Road is within a Priority 2 area.

The *State Planning Policy 2.3 Jandakot Groundwater Protection* (WAPC, 2017) defines Priority areas within the UWPCA as:

- Priority one (P1) area – This is the highest level of protection and normally will apply to land owned by the State, with low intensity and low-risk land use such as forestry. Use of this land for protection of the public water supply outweighs virtually all other considerations and the

object is to ensure that there is no degradation of water resources in these areas (i.e. risk avoidance/prevention).

- Priority two (P2) area – Normally includes private rural with few buildings, with low-risk, low-intensity land use. These areas have a high priority for public water supply use. The management objective is to ensure there is no increased risk of pollution to the water source (i.e. risk minimisation). Restricted development may take place under specific guidelines.
- Priority three (P3) area – Generally includes areas where water-supply needs co-exist with other land uses such as housing, commercial sites and light industry. Management controls rather than land use restrictions dominate the water management and protection policy for these areas. The areas are defined to minimise the risk of pollution to the water source (i.e. risk management).

The *State Planning Policy 2.3 Jandakot Groundwater Protection* (WAPC, 2017) defines wellhead protection zones (WHPZ) as areas regulated to address contamination of public drinking water abstraction bores. WHPZ have a radius of 500 m in P1 areas, and 300 m in P2 and P3 areas. The southern half of Johnston Road and Acourt Road are within the WHPZ of the Jandakot Mound production bores.

4.10 CONTAMINATION RISK

4.10.1 Contaminated Sites

A search of DWER's Contaminated Sites Database revealed there are six registered sites within a 2 km radius of the project area. A summary of the registered sites is presented in Table N. The location of these sites is shown in Appendix 3.

TABLE N: REGISTERED CONTAMINATED SITES WITHIN A 2KM RADIUS OF THE PROJECT AREA

PARCEL ID	ADDRESS	SITE CLASSIFICATION	NATURE AND EXTENT OF CONTAMINATION	PROXIMITY TO PROJECT AREA
27530	85 Bannister Road, Canning Vale	Remediated for Restricted Use	Dioxins and hydrocarbons (such as from diesel or oil) were detected in soak wells. Hydrocarbons, heavy metals and ammonia are present in groundwater.	North of project area, between Bannister Rd and Roe Hwy
17112	275 Bannister Road, Canning Vale	Remediated for Restricted Use	Nickel is present in groundwater within the western portion of the site. Fragments of asbestos containing material (ACM) are present in surface soils across the site.	North of project area, between Bannister Rd and Roe Hwy
70075	265 Bannister Road, Canning Vale	Remediated for Restricted Use	Nickel is present in groundwater within the western portion of the site. Fragments of ACM are present in surface soils across the site.	North of project area, between Bannister Rd and Roe Hwy, corner of Ranford Rd

PARCEL ID	ADDRESS	SITE CLASSIFICATION	NATURE AND EXTENT OF CONTAMINATION	PROXIMITY TO PROJECT AREA
565	Lot 287 on Plan 37377, Canning Vale	Remediated for Restricted Use	No soil contamination remains at the site. Groundwater directly beneath the former refuelling station at the site has a slightly elevated lead concentration.	Adjacent to Acourt Road on south side
59860	2 Dundee Street, Leeming (John Connell Reserve)	Contaminated – Remediation Required	ACM and hydrocarbons (such as from diesel or oil) are present in soils at the site. Nutrients and iron are present in groundwater beneath the site.	North west of project area, north of Roe Hwy
563	1 Johnston Road, Jandakot	Remediated for Restricted Use	No soil contamination remains at the Site. Groundwater directly beneath the former refuelling station at the Site has a slightly elevated lead concentration.	South of project area - adjacent to Parcel 565

The DWER's Contaminated Sites Database does not provide details of sites that are listed as 'Possibly contaminated – investigation required'. A detailed summary of records (DSR) provided to GHD (2018a) by the PTA as part of their investigations for the TCL proposal states that Lot 500 Ranford Road is classified as 'Possibly contaminated – investigation required'. The DWER's reasoning for this classification is that "there are grounds to indicate possible contamination of the site, and since a suitable investigation of soil, groundwater and landfill gas to determine the risk to human health, the environment or any environmental value has not been carried out, further works are required to determine the contamination status of the site".

GHD (2018b) undertook a detailed site investigation for an area of land directly north of the eastern portion of the JEL alignment as part of the TCL proposal. A former landfill occupied a substantial part of their study area and was confirmed to present a constraint to development with respect to sources of contamination.

The area GHD (2018b) maps as 'landfill waste footprint' within their survey area extends to within approximately 100m of the northern border of the JEL alignment. GHD's investigation area did not extend to the western extent of the JEL alignment. However, a review of historical aerial photographs has identified that landfilling may have occurred within (or close to) the western extent of the JEL alignment.

4.10.2 Land Use

The Bush Forever portion of the project area runs through a section of bushland that is administered as part of the City of Canning Recycling and Waste Disposal Facility. Most of the alignment is native vegetation with a portion at the western end cleared with some partial regeneration.

The Johnston Road reserve contains a portion of sealed road at the southern end and an unsealed limestone track at the northern end that provides access to the Canning Gun Club. The Acourt Road reserve contains a limestone track that ends at a fence at the northern tip of the future CVDSF site.

4.10.2.1 Historic Land Use

The oldest historical aerial photograph available shows that the project area was completely vegetated in 1953. Acourt and Johnston Roads were constructed as unsealed roads between 1977 and 1979 and the waste transfer station was constructed prior to 1983. The western part of the JEL alignment that runs through Bush Forever Site 388 was cleared prior to 2000. The eastern portion of that clearing has partially regenerated to the present condition.

4.10.2.2 Surrounding Land Use

Land use adjacent to the proposed road works includes:

- The Recycling and Waste Disposal Facility, which is completely cleared;
- The future CVDSF site which is mostly cleared but contains some native vegetation as well as regrowth areas. The site was historically used for sand extraction from the mid-1970s to mid-2000s;
- Jandakot Airport bushland west of Johnston Road; and
- Special Rural properties west of Johnston Road.

4.11 ENVIRONMENTALLY SENSITIVE AREAS

Environmentally Sensitive Areas (ESAs) are specified areas or a class of areas declared by the Minister for the Environment under Section 51B of the EP Act. ESAs are associated with areas containing significant environmental values such as threatened ecological communities, conservation significant flora and conservation category wetlands (CCWs).

The majority of Lot 500 and areas west of Johnston Road (Jandakot Airport) are mapped as ESAs (Australian Government, 2019). The mapping is likely to be attributed with the presence of CCWs, Bush Forever areas and threatened flora.

4.11.1 Bush Forever

Bush Forever Site 388 extends west and south of the project area and also includes areas of the Banksia Woodland TEC. Bush Forever Site 388 covers a total area of 410.9 ha.

4.11.2 Significant Wetlands

Three CCWs are mapped within the JEL alignment and the Johnston/Acourt Road project area: UFIs 16109, 16111 and 16115 (refer Table J and Figure 5). Only 0.06 ha of CCW are within the JEL Project Area with the remaining 1.04 ha of the directly impacted CCWs being within the TCL development envelope (Figure 5).

CCWs are wetlands which support a high level of attributes and functions and are the highest priority wetlands. The DBCA manages CCWs with the objective of preserving and protecting the existing conservation values of the wetlands through various mechanisms such as reservation in national parks or protection under Environmental Protection Policies. The DBCA considers development or clearing of a CCW to be inappropriate (DBCA, 2019a).

4.11.3 Threatened Flora

No threatened flora species have been recorded within the JEL Project Area. The Priority 4 species *Dodonaea hackettiana* was previously recorded in the eastern portion of Ranford Road Bushland near the Ranford Road Waste Transfer Station by GHD (2013) and Natural Area Consulting (2016). Flora surveys by GHD in 2017 and 2018 did not record this species, however PGV Environmental (2018) recorded five individual plants during their wetland assessment for the TCL proposal. The location of these plants is shown on Figure 3. The *Dodonaea hackettiana* specimens are within the TCL development envelope.

Vegetation within the project area may provide habitat for the Grand Spider Orchid *Caladenia huegelii*. Multiple populations of the species are known in nearby bushland including Jandakot Airport Bushland, Ken Hurst Park, west of Ken Hurst Park and in Caladenia Grove Wetland Reserve.

4.12 ABORIGINAL HERITAGE

Culturally Sensitive

Culturally Sensitive

Culturally Sensitive

Culturally Sensitive

Culturally Sensitive

Culturally Sensitive

[1] Location coordinates available in AHIS report (Appendix 3).

5 ENVIRONMENTAL ASSESSMENT

Aurora Environmental has reviewed the EPA's Environmental Factors to identify those factors relevant to the construction of the JEL Project. The relevant factors identified include the following:

- Flora and Vegetation;
- Terrestrial Fauna;
- Inland Waters;
- Terrestrial Environmental Quality; and
- Social Surroundings.

In addition, the above factors, Commonwealth listed Matters of National Environmental Significance (MNES) that are regarded to be relevant to the project area include the following:

- *Banksia* Woodlands of the Swan Coastal Plain ecological community (Banksia TEC);
- Carnaby's cockatoo and Baudin's cockatoo; and
- *Caladenia huegelii*.

The forest red-tailed black cockatoo has been excluded from the above list for the following reasons:

- There is no suitable habitat in the alignment for the forest red-tailed black cockatoo; and
- The observation of forest red-tailed black cockatoo in Ranford Road Bushland by Natural Area Consulting (2016) is outside of the JEL alignment.

5.1 FLORA AND VEGETATION

5.1.1 Potential Impacts

The potential impacts to flora and vegetation arising from the JEL Project can be split into direct and indirect impacts. These include the following:

Direct Impact

- Clearing of native vegetation resulting in:
    - Permanent loss of native vegetation;
    - Permanent loss of TEC (EPBC listed) / PEC (State listed);
    - Permanent loss of habitat suitable for threatened flora; and
    - Permanent loss of vegetation in Bush Forever Site 388.

Indirect Impacts

- Unauthorised clearing or entry into surrounding areas.
- Potential spread of weeds and pathogens.
- Deposition of dust on surrounding vegetation.

- Changes in hydrological regimes.
- Increased risk of fire during construction.

5.1.2 Assessment of Impacts

5.1.2.1 Direct Impacts to Vegetation in the Project Area

The JEL Project Area (the portion excluding the TCL development envelope) covers 9.12 ha which is comprised of 4.69 ha cleared land, 3.98 ha of vegetation in a Degraded or better condition and 0.45 ha of vegetation rated as Completely Degraded. A breakdown by vegetation type and condition is provided in Table G in Section 4.5.3.

5.1.2.2 Impacts to Vegetation at a Regional and Local Government Scale

The impact of the JEL Project at a local government and regional scale, has been assessed against the mapped vegetation complexes and associations as summarised in Tables P and Q.

TABLE P: IMPACT OF THE JEL PROJECT ON REMAINING BEARD VEGETATION ASSOCIATION (DBCA, 2019B)

VEGETATION ASSOCIATION	SCALE	PRE-EUROPEAN EXTENT (ha)	CURRENT EXTENT (ha)	EXTENT AFTER JEL (ha)	REMAINING BEFORE JEL (%)	REMAINING AFTER JEL (%)
1001	WA	57,410.23	12,660.76	12,656.33	22.05	22.04
	SWA IBRA bioregion	57,410.23	12,660.76	12,656.33	22.05	22.04
	Perth IBRA sub-region	57,410.23	12,660.76	12,656.33	22.05	22.04
	City of Canning	5,022.43	150.36	147.20	2.99	2.93
	City of Cockburn	7,324.60	330.15	328.88	4.51	4.49

TABLE Q: IMPACT OF THE JEL PROJECT ON REMAINING VEGETATION COMPLEX

VEGETATION COMPLEX	SCALE	PRE-EUROPEAN EXTENT (HA)	CURRENT EXTENT (HA)	EXTENT AFTER JEL (HA)	REMAINING BEFORE JEL (%)	REMAINING AFTER JEL (%)
Bassendean Complex – Central and South	Total	87,476.25	23,533.09	23,528.66	26.902	26.897
	Central/South East – Peel Sub-regions	54,331.95	11,820.36	11,815.93	21.756	21.748
	City of Canning	3,815.04	207.95	204.79	5.45	5.37

TABLE P: IMPACT OF THE JEL PROJECT ON REMAINING BEARD VEGETATION ASSOCIATION (DBCA, 2019B)

VEGETATION ASSOCIATION	SCALE	PRE-EUROPEAN EXTENT (ha)	CURRENT EXTENT (ha)	EXTENT AFTER JEL (ha)	REMAINING BEFORE JEL (%)	REMAINING AFTER JEL (%)
	City of Cockburn	6,809.66	1,765.89	1,764.62	25.93	25.91

The JEL Project will not significantly reduce the regional or local extent of Vegetation Association 1001 or the Bassendean Complex – Central and South.

5.1.2.3 Direct Impacts to Threatened and Priority Ecological Communities

Areas mapped by PGV Environmental (2019) as Dryland (Veg-D) and Transitional (Veg-T) vegetation types are representative of the Commonwealth listed Banksia Woodlands TEC and likely representative the State-listed PEC – FCT 21c.

Construction of the JEL will require clearing 2.38 ha of vegetation that represents the Banksia Woodlands TEC and the State listed PEC. The loss per condition rating of the TEC/PEC attributable to the JEL Project is:

- Excellent – 0.57 ha;
- Very Good – 0.12 ha;
- Good – 0.73 ha; and
- Degraded – 0.96 ha.

Commonwealth-listed TEC

The conservation advice for the Banksia Woodlands TEC (DoEE, 2016b) reports that there is an estimated 253,540.6 ha of Banksia Woodlands TEC in the Perth (SWA02) IBRA sub-region. The loss of 2.38 ha resulting from the project represents approximately 0.0009% of the ecological community's estimated remaining extent. This level of reduction in the extent of the TEC is not significant in the context of the overall distribution of the ecological community.

At a local level there is 144.65 ha of mapped vegetation consistent with the TEC within two Bush Forever sites (388 and 245) directly adjacent to the project area. The area of vegetation within these sites is approximately:

- 40 ha within Ken Hurst Park (Bush Forever Site 245) (Waters, 2014);
- 16.65 ha south of the JEL alignment within Bush Forever Site 388 (Natural Area Consulting, 2016); and
- 88 ha within the Jandakot Airport Bush Forever Site 388 based on February 2018 aerial photography and mapping of vegetation communities.

At this local level, the loss of 2.38 ha resulting from the project represents approximately 1.64% of the ecological community's estimated extent within the adjacent Bush Forever Sites. The local analysis

only includes the Bush Forever sites immediately adjacent to the JEL. A broader analysis to include Bush Forever sites within 5 km indicates that there is 2,709.47 ha of vegetation mapped as Beard Association 1001 (likely to be representative of the Banksia TEC) remaining, of which 1,820.91 ha is within Bush Forever. The loss of 2.38 ha resulting from the Proposal represents approximately 0.09% at this scale.

Based on the available information it is not possible to quantify the cumulative loss of the TEC due to significant knowledge gaps, or datasets that are not available to the public for review. The suspended strategic assessment of the Perth and Peel regions identified that approximately 9,836 ha of vegetation in the Perth and Peel regions intersects with the proposed classes of action (i.e. urban, industrial, rural-residential and basic raw materials) and therefore may be cleared over the next 30 years. This includes vegetation communities that are not representative of the Banksia TEC. The clearance of 2.38 ha of the TEC for the JEL Project represents an extremely small contribution to the cumulative loss of this ecological community in the Perth Metropolitan region.

The impacted vegetation is contiguous with other areas of TEC, i.e. a component of a larger patch. An analysis completed for the TCL Proposal (Aurora Environmental, 2019) identified several patches. The vegetation on Lot 500 Ranford Road was identified as a single patch (Patch 3) in the analysis. This patch was regarded as a separate patch to the vegetation in Caladenia Grove Reserve due to the separation of more than 50 m created by Ranford Road. Patch 2 included vegetation within Ken Hurst Park and extended west towards the Kwinana Freeway. This patch is not contiguous with the vegetation on Lot 500 Ranford Road. Similarly, the vegetation within the Jandakot Airport site is separated from vegetation on Lot 500 by 30 m or more. The vegetation along the eastern side of Johnston and Acourt Road Reserves is less than 30 m from the Jandakot Airport bushland, so potentially could be included within that patch.

The vegetation in the vicinity of the project area is already highly fragmented. The JEL Project will not lead to any further fragmentation of TEC patches. Critical habitat includes all patches that meet the diagnostic characteristics and condition thresholds for the TEC, plus buffer zones. The TEC in the project area meets the definition of critical habitat.

An assessment of significance against the significant impact criteria was undertaken by Aurora Environmental. Based on the significance assessment, it is concluded that the loss of up to 2.38 ha may constitute a significant impact on the basis that the JEL Project will contribute to a direct reduction in the area of the ecological community and potentially indirectly adjacent areas of the ecological community.

State-listed PEC

The DBCA's Threatened and Priority Ecological Community Database shows there is 318,015.03 ha of this PEC in the Swan Coastal Plain IBRA region, with approximately 29.5% in conservation areas (DBCA Legislated Lands and Waters, and Bush Forever Sites) (Aurora Environmental, 2019). There is one known occurrence of the PEC near the JEL Project Area. This is associated with bushland on Jandakot Airport lands. The occurrences of this PEC identified within the JEL Project Area are not currently captured in the DBCA data.

The loss of 2.38 ha of vegetation that represents FCT 21c equates to 0.0007% of the mapped extent of this PEC. This level of impact is not regarded as significant at a local or regional scale given the very

small area of vegetation to be cleared for the JEL Project. The implementation of the JEL Project will not alter the conservation status of this PEC.

5.1.2.4 Direct Impacts to Bush Forever Site 388

The JEL Project will directly impact 2.72 ha of Bush Forever Site 388. Of the impacted portion, 1.11 ha is cleared (Completely Degraded) and the vegetation condition of the remaining 1.61 ha was rated as follows:

- 0.58 ha Excellent;
- 0.15 ha Very Good;
- 0.26 ha Good; and
- 0.62 ha Degraded.

The above includes 0.15 ha of vegetation (rated as Very Good) on Commonwealth land within the Jandakot Airport site.

5.1.2.5 Direct Impacts to Conservation Significant Flora

Thorough targeted surveys have not recorded any threatened flora within the JEL survey area. Access to the bushland on land managed by Jandakot Airport Holdings was not granted. Therefore, it cannot be confirmed whether threatened flora on the Jandakot Airport site occur close to the Project Area. However, the Jandakot Airport Conservation Management Plan (JAH, 2016) notes that most of the *Caladenia huegelii* (Grand Spider Orchid) specimens recorded on the airport land occur in the northern section of the airport and south of the rail corridor within Precinct 1A. Few specimens have been recorded in Precinct 1B which is west of Johnston Road. The closest occurrence is approximately 45-50 m west of Johnston Road (roughly in line with the northern extent of the gun club).

Construction of the JEL Project will not directly impact any known locations of threatened flora. However, the project will clear vegetation that is suitable habitat for *Caladenia huegelii* (Banksia woodland mapped as Dryland vegetation by PGV Environmental, 2019). There is 21.79 ha of potentially suitable habitat for *Caladenia huegelii* recorded by PGV Environmental (2019) in the survey area. A total of 2.19 ha of potentially suitable habitat occurs in the JEL Project Area. This includes vegetation in:

- Degraded condition (0.96 ha);
- Good condition (0.54 ha);
- Very Good condition (0.12 ha); and
- Excellent condition (0.57 ha).

Critical habitat for the survival of this species is defined as *the current known occupancy and areas of similar habitat surrounding known populations* (DEC, 2009). The habitat in the JEL Project Area is regarded to be critical habitat due to its proximity to known locations of *Caladenia huegelii* (Caladenia Grove Reserve, Jandakot bushland and Ken Hurst Park).

5.1.2.6 Direct Impacts to Wetland Vegetation

The DBCA's Geomorphic Wetlands of the Swan Coastal Plain dataset maps two CCWs within the JEL Project Area. The direct impact to 0.06 ha of CCW is minor and comprises 0.05 ha of clearing of CCW UFI 16111 and 0.01 ha of CCW UFI 16115. The impacted area of CCW UFI 16115 is mapped as Cleared and rated as Completely Degraded (PGV Environmental, 2019).

PGV Environmental (2019) identified wetland vegetation within and adjacent to the Johnston Road reserve. This vegetation is not associated with any wetlands mapped in the DBCA dataset. This wetland vegetation is east of Resource Enhancement Wetland UFI 16117 but separated by the cleared road reserve. Another area of wetland vegetation is also mapped within the Johnston Road reserve near the commencement of Acourt Road. The JEL Project will directly impact 1.02 ha of this wetland vegetation, including 0.95 ha rated as Good condition and 0.07 ha rated as Very Good condition.

5.1.2.7 Indirect Impacts

The JEL Project has the potential to indirectly impact surrounding areas of native vegetation (including wetlands). The potential indirect impacts include:

- Unauthorised clearing or entry into surrounding areas causing loss or degradation of native vegetation including significant ecological communities (Banksia Woodlands TEC/PEC), significant flora (such as *Caladenia huegelii*) or its supporting habitat and Bush Forever areas.
- Potential spread of weeds and pathogens such as dieback into surrounding areas leading to degradation of vegetation including significant ecological communities, significant flora or its supporting habitat and Bush Forever areas.
- Deposition of dust on surrounding vegetation during construction causing loss or degradation of vegetation including significant ecological communities, significant flora or its supporting habitat and Bush Forever areas.
- Modification to local hydrology via dewatering during construction leading to lower groundwater levels, increased infiltration of runoff leading higher groundwater levels or disruption to surface flows impacting wetland vegetation.
- Increased risk of fire to adjacent bushland areas associated with construction works.

Unauthorised Clearing Outside or Entry into Surrounding Areas

It is not possible to quantify the impacts associated with unauthorised clearing or uncontrolled access beyond the project footprint. Such impacts are managed through the implementation of strategies to eliminate or reduce the risk of occurrence, such as fencing and demarcation prior to the commencement of clearing activities. Potential failure of these strategies could have important consequences for significant vegetation and flora close to the project footprint. The investigations completed have adequately defined and identified high value environmental assets near the project footprint. The interface between the project footprint and these areas require management during construction. In summary, the significant values near the JEL include:

- Bush Forever Site 388 (Jandakot Airport);
- Conservation significant wetlands (CCW UFI 16111, CCW UFI 16115 and REW UFI 16117);

- Vegetation representative of a Commonwealth listed TEC (Banksia Woodlands) and representative of a Stated listed Priority 3 PEC; and
- Conservation significant flora (*Caladenia huegelii*) or critical habitat for threatened flora.

With controls in place during construction of the JEL Project, the impact of unauthorised clearing or breaches of the development envelope are considered negligible.

Introduction or Spread of Weeds and Pathogens

Weeds

The construction of JEL has the potential to result in the introduction and spread of existing weeds. Remnant native bushland is resilient to most non-invasive weeds; however, the presence of significant environmental weeds is of greater concern due to the invasiveness of these weeds. Significant weeds are those WONS, declared pests under Section 22 of the BAM Act and Prohibited weeds under Section 12 of the BAM Act.

During construction and maintenance activities, weeds and their seeds or vegetative material can be transported to, and within the project area through poor hygiene practices. The interface between the project footprint and adjacent remnant native vegetation poses the greatest risk of weed invasion.

Once weeds are established, they can be difficult to remove due to their invasiveness, competitiveness and ability to spread across the landscape. The presence of significant weeds directly impacts the integrity of intact native vegetation and can increase the likelihood of additional impacts, including fires, vegetation degradation, vermin and economic returns.

Areas that have the greatest potential to be impacted by the spread of weeds include:

- Bushland on Lot 500 Ranford Road to the south of the JEL; and
- Bush Forever Site 388 (Jandakot Airport) – west of Johnston Road.

The spread of weeds from the project footprint associated with works for the JEL are likely to be contained to the immediate interface but may spread into the bushland over time. With mitigation during construction, the impact of weeds spreading into adjacent bushland areas is considered low.

Dieback

Phytophthora Dieback can have a catastrophic effect on native vegetation communities (particularly Banksia communities) by causing plant deaths in susceptible species resulting in changes to vegetation structure and composition.

Dieback has been confirmed within portions of the JEL Project Area and in adjacent areas, such as Jandakot Airport bushland. The pathogen has been recorded in low-lying areas (such as wetlands) and some small pockets of vegetation remain dieback free.

Additional infestations have the potential to cause significant degradation of areas of Banksia woodland TECs and PECs. The susceptibility of *Caladenia huegelii* to dieback is not known. However, it is noted that *Caladenia huegelii* specimens occur within areas mapped as infested at Caladenia Grove Reserve.

Dieback is spread through the movement of water and soil within the landscape via wet soil adhering to vehicle tyres/tracks, earthmoving equipment, importation of infested soils/mulch/plants or poorly managed stormwater runoff.

The movement of soil, mulch and material into and within the JEL Project Area has the potential to introduce or spread dieback to adjacent dieback free areas. This is particularly pertinent when machinery and vehicles have been operating within dieback infested areas without appropriate management. It is also pertinent for movement within the project area footprint across dieback category boundaries. Whilst the consequences of dieback can be significant for Banksia woodland communities, the impacts can be avoided through mitigation measures during construction.

Dust Deposition on Vegetation

Construction projects involving earth moving can, under certain conditions, cause fugitive dust emissions. Without any mitigation, dust can migrate from the construction area and settle onto nearby native vegetation. Dust that has settled on plant leaves can block the stomata and prevent the uptake of sunlight necessary for photosynthesis as well as increase the leaf temperature making the plant more susceptible to drought conditions. Accumulated dust on leaf surfaces and cuticles can also lead to abrasion causing damage to the plant. Prolonged dusty conditions may lead to eventual death of flora, and in extreme cases, reduce the extent of vegetation communities.

The impact on surrounding vegetation from dust emissions is expected to be low given the short duration of construction. Furthermore, the implementation of mitigation measures during construction will further reduce risks associated with dust generation.

Changes in Hydrological Regimes

Modelling by Calibre Consulting (2016) predicted that adjacent wetlands and vegetation will not be impacted by changes to surface water or groundwater conditions resulting from the JEL Project. The modelling demonstrated that groundwater levels in the superficial aquifer will not be significantly affected. A minor increase in groundwater levels post-construction is expected due to an increase in localised recharge due to the infiltration of surface runoff and reduced evapo-transpiration. The predicted change in groundwater level is within normal seasonal variation that native vegetation has adapted to.

The current engineering design for the JEL Project anticipates that most of the road will be constructed in fill, meaning that dewatering is not anticipated during construction. The requirement for dewatering will be re-evaluated once design has been further progressed. If the final design requires dewatering, relevant approvals via the DWER will be sought and management practices (such as infiltration of dewatering effluent (subject to water quality controls)) will be implemented. Any dewatering for the construction of the JEL (if required) would be of limited duration and spatial extent. Therefore, any impacts to groundwater levels would be short-lived with groundwater levels quickly returning to pre-disturbance levels.

The design of the JEL Project remains sensitive to overland flow paths. The design is such that surface flows will be maintained at pre-development levels by using drainage infrastructure such as culverts (Calibre Consulting, 2016). This will allow for the distribution of surface run-off either side of the road where required.

Fire Risk

Native vegetation on the Swan Coastal Plain has adapted to fire as part of the natural ecology. Altered fire regimes (including arson, poorly managed burn-offs) can lead to the degradation of vegetation by lowering recruitment of native species, alterations to structure and an increase in weed occurrence and density.

The risk of fire may increase within and adjacent to the project area during construction as a result of certain activities such as the incorrect disposal of cigarette butts, poor handling and storage of flammable fuels, from 'hot work' activities or hot vehicle exhausts igniting dry grasses. It is not possible to quantify the impact to adjacent native vegetation from fire. However, the risk of fire can be readily managed during construction so that there is an extremely low probability of a fire starting as a result of construction of the JEL.

Values of Adjacent Bushland

Quantifying indirect impacts is not possible as there are many factors which can influence the extent and duration of the impact. To provide context about the values in the surrounding area at risk of being indirectly impacted by the construction of the JEL, an analysis of the vegetation within 200m of the project area was conducted. The analysis excludes potential values present in bushland west of Johnston Road i.e. within Jandakot Airport lands as this area was not accessible during the 2019 survey. The key values adjacent to the JEL Project Area include the following:

- Banksia Woodlands / Priority 3 PEC – 25.46 ha of vegetation consistent with the description of Banksia Woodlands TEC and a state-listed Priority 3 PEC is present within 200 m. The extent of the TEC is considerably more than this, as it is present on the Jandakot Airport land (west of the project area), in Ken Hurst Park and on land west of Ken Hurst Park adjacent to the rail reserve and Roe Highway (north-west of the project area) and in Caladenia Grove Reserve (east of Ranford Road).
- *Caladenia huegelii* / *C. huegelii* habitat – The closest recorded locations of *Caladenia huegelii* to the JEL Project Area is an historic record in bushland on Jandakot Airport and was approximately 45-50 m west of the Johnston Road reserve. Within 200 m of the JEL Project Area, there is 21.79 ha of potential *Caladenia huegelii* habitat.
- A total of 17.21 ha mapped as wetland within 200 m of the JEL Project Area. This includes five CCWs (UFI 6912, 16109, 16111,16114 and 16115) and two REWs (UFI 16110 and 16117).

5.1.3 Recommended Mitigation and Management

The proposed mitigation and management measures are outlined below:

- A CEMP will be prepared for the road construction project. Specific measures relevant to the management of flora and vegetation will be included in the CEMP and may include:
    - Provision of coordinates for clearing extents to the contractor;
    - Plan for site access, wash down areas (if required), parking areas, drainage and fencing;
    - In field demarcation of clearing extents;

- Requirement to conduct regular inspections of clearing boundaries and document the clearing activities undertaken;
- Weed and pathogen hygiene management measures to prevent the introduction and spread of weeds and dieback;
- Dust suppression measures to reduce dust emissions;
- Procedures to manage risk of causing fire during construction;
- Requirement to restrict vehicles and equipment to the construction footprint;
- Requirement for regular inspections of waste management; and
- Conducting a vegetation monitoring plan to detect changes in the health of significant vegetation immediately adjacent to the project area. The aim is to detect changes attributable to the construction of the JEL.

- The implementation of an offsets program to compensate the loss of residual significant impacts associated with the construction of the JEL.

5.1.4 Predicted Outcome

5.1.4.1 Significant Residual Impacts

With the implementation of the mitigation measures outlined in Section 5.1.3, the City of Canning is confident that all indirect impacts can be managed so that adverse impacts on surrounding vegetation and flora can be avoided. However, the construction of the JEL Project will result in the permanent loss of:

- 4.43 ha of native vegetation with 3.98 ha in a Degraded condition or better, including:
  - 2.38 ha of Banksia Woodlands TEC which is also representative of Priority 3 PEC – Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c).
  - 2.19 ha potential *Caladenia huegelii* habitat in a Degraded condition or better.
- 2.72 ha of Bush Forever Site 388, of which:
  - 1.11 ha is cleared; and
  - 1.61 ha is vegetated in a Degraded condition or better.
- 0.06 ha of CCWs as mapped in the DBCA Geomorphic Wetlands of the Swan Coastal Plain dataset including:
  - 0.05 ha of CCW UFI 16111 rated Excellent condition; and
  - 0.01 ha of CCW UFI 16115 rated as Completely Degraded/Cleared.
- 1.02 ha of wetland vegetation not associated with any wetlands mapped in the DBCA Geomorphic Wetlands of the Swan Coastal Plain dataset, comprised of 0.95 ha in Good condition and 0.07 ha in Very Good condition.

5.1.4.2 Offsets

The City of Canning and the Department of Planning, Lands and Heritage will provide an offset to compensate the loss of the identified vegetation values.

5.2 TERRESTRIAL FAUNA

5.2.1 Potential Impacts

The potential impacts to terrestrial fauna arising from the JEL Project can be split into direct and indirect impacts. These include the following:

Direct Impact

- Clearing of fauna habitat and habitat fragmentation; and
- Injury / mortality of fauna during construction or due to vehicle strike post-construction.

Indirect Impacts

- Habitat degradation via indirect impacts such as unauthorised clearing/entry to surrounding areas, spread of weeds and dieback, dust deposition, changes to local hydrology or increased fire risk during construction.

5.2.2 Assessment of Impacts

5.2.2.1 Loss of Fauna Habitat

The portion of the JEL Project Area outside of the TCL development envelope includes 4.43 ha of habitat. This comprises:

- 2.19 ha of Dryland vegetation;
- 0.19 ha of Transitional vegetation;
- 1.04 ha of Wetland vegetation;
- 0.86 ha of Regenerating vegetation; and
- 0.15 ha of vegetation that was unable to be assessed due to access issues.

The area of regeneration is regarded as having low habitat value due to historic disturbance which has depleted the habitat structure and diversity. All other areas are regarded to be high quality habitat.

5.2.2.2 Loss of Native Fauna

Clearing for the construction of the JEL may result in the death or injury of native fauna that remain within the project area. While the risk of this occurring is regarded as high, the potential impacts to native fauna have been reduced by avoiding areas of better-quality habitat and maximising the extent of the JEL Project in cleared or degraded areas.

It is not possible to predict the number of individuals or species that may be killed or injured during clearing for the JEL Project. However, less mobile species (such as reptiles) are more vulnerable than species which are able move away quickly (e.g. some mammals and avifauna). Natural Area Consulting

(2016) recorded the following species within the Ranford Road Bushland Reserve, which includes the JEL alignment and areas to the north and south of the alignment:

- Three native mammal species, including one Priority species (Quenda);
- 17 native bird species including two conservation significant species (forest red-tailed black cockatoo and the rainbow bee-eater);
- 12 native reptile species;
- Two native frog species; and
- 57 invertebrate species.

In addition to the above, the City of Canning estimates up to 250 Western Grey Kangaroos inhabit Lot 500 Ranford Road and at least one wallaby has been sighted in Ranford Road bushland. Kangaroos and wallabies are highly mobile species that move between bushland and cleared areas adjacent to the JEL Project Area.

There is an increased risk of fauna injury and death arising from vehicle strikes once the JEL has been constructed and becomes operational with regular vehicle movements. The species most at risk of collision are those that are more mobile, such as kangaroos, wallabies and Quenda. It is not possible to predict the scale of the impact to these species from vehicle strike during the operational stage of the project. Research into mitigation measures to reduce fauna mortality on road projects (Gilhooly, Whittington and St Clair, 2019) has demonstrated that the risk of collisions can be effectively mitigated with exclusion fencing and crossing structures. This is generally true for larger mammals and possibly less so for ground dwelling reptiles or avifauna.

5.2.2.3 Conservation Significant Fauna Species

The predicted impacts to conservation significant fauna from the loss of habitat for the construction of the JEL Project is discussed below.

Carnaby's Cockatoo

The JEL Project Area is within the modelled feeding distribution range for Carnaby's cockatoo. Previous fauna studies (such as Astron, 2016) conducted within the Project Area have observed evidence of foraging by Carnaby's cockatoo.

Clearing for the JEL Project will result in the loss of 2.38 ha of foraging habitat (areas mapped as Dryland and Transitional vegetation types).

No potential breeding trees have been recorded in the JEL Project Area and therefore the project area does not contain any breeding or roosting habitat values. There are seven confirmed and one unconfirmed Carnaby's cockatoo roost areas, with closest located approximately 2.5 km from the project area (Astron, 2015). There is one confirmed breeding location for the species within 5 km of the project area (DPaW, 2015).

The impacted habitat is consistent with the definition of critical habitat for the species due to its proximity to known roost locations and one breeding location. Table 3 of the Black Cockatoo Referral Guidelines (DSEWPaC, 2012) indicate that the clearing of more than 1 ha of quality foraging habitat is regarded as high risk of having a significant impact on the species.

Baudin's Cockatoo

The JEL Project Area is outside of the modelled distribution for Baudin's cockatoo. However, GHD (2013) reported a sighting of the species in Canning Vale within or near the bushland on Lot 500 Ranford Road.

Clearing for the JEL Project will result in the loss of 2.38 ha of foraging habitat (comprised of Dryland and Transitional vegetation types).

No breeding or roosting habitat will be impacted by the JEL Project.

Forest Red-tailed Black Cockatoo

Approximately 90% of the forest red-tailed black cockatoo diet is comprised of Marri seed and the fruits from Jarrah. The species has been observed within Lot 500 Ranford Road. However, the impacted habitat within the JEL Project Area does not contain any Marri or Jarrah (Astron, 2016) and therefore does not contain suitable foraging habitat for the species.

Rainbow Bee-eater

Natural Area Consulting (2016) observed rainbow bee-eaters (*Merops ornatus*) in Ranford Road Bushland, which are listed as a Migratory marine species under the EPBC Act. This species was observed at the western end of the Ranford Road bushland leaving a nesting burrow (Natural Area Consulting, 2016).

The species has an extensive geographic distribution throughout Australia, with it being recorded across much of mainland Australia. In Australia, the breeding season extends from August to January (Boland 2004a; Higgins 1999). Vegetation clearing and the construction of the JEL is not regarded a significant threat to this species, given its abundance and wide geographic distribution. Impacts to the species can be avoided by timing the required clearing to avoid breeding season for the species.

Quenda (Priority 4)

Evidence of Quenda has been recorded within the bushland on Lot 500 Ranford Road on multiple occasions by different consultants. The species prefers habitat with a thick understorey which provides cover from potential predators. Quenda could be found in all areas of the habitat within the JEL. Therefore, clearing for the JEL Project may result in the loss of up to 4.43 ha of habitat. A total of 0.45 ha was rated as Completely Degraded and is unlikely to have sufficient cover to offer refuge for Quenda.

5.2.2.4 Indirect Impacts

The JEL Project has the potential to indirectly impact surrounding areas of fauna habitat. Certain activities and design decisions can lead to degradation of habitat values in adjacent bushland areas. Many of these indirect impacts are like those described in Section 5.1.2.7 and include:

- Unauthorised clearing or entry into surroundings areas causing loss or degradation of fauna habitat;
- Potential spread of weeds and pathogens such as dieback into surrounding bushland leading to degradation of habitat values;
- Modification to local hydrology potentially causing degradation of fauna habitat; and

- Deposition of dust on surrounding vegetation during construction causing loss or degradation of habitat.

Most of the above impacts can be readily managed through implementation of strategies during construction. Further details in relation to specific management strategies are provided in Section 5.2.3.

Discussion of the above impacts is not replicated here to avoid duplication, as the analysis of these impacts is the same as outlined in Section 5.1.2.7.

5.2.3 Recommended Mitigation and Management

The avoidance, mitigation and management measures considered during the development of the JEL Project are outlined below:

- The JEL has been located within Lot 500 to avoid areas which contain high quality foraging habitat south of the alignment.
- A CEMP will be prepared for the road construction project. Specific measures relevant to the management of fauna will be included in the CEMP and may include:
    - Provision of coordinates for clearing extents to the contractor;
    - Plan for site access, wash down areas (if required), parking areas, drainage and fencing;
    - In field demarcation of clearing extents;
    - Requirement to conduct regular inspections of clearing boundaries and document the clearing activities undertaken;
    - Inclusion of fauna management requirements in site induction training;
    - Implementation of a fauna trapping and relocation program prior to clearing activities in accordance with a DBCA licence;
    - If it is not possible to time clearing activities to avoid the breeding season of rainbow bee-eaters (August to January), a thorough site inspection for this species will be conducted prior to the commencement of clearing activities. If evidence of rainbow bee-eater breeding is discovered in the construction area, the breeding location can be demarcated in the field and excluded from site clearing and construction activities until breeding has ceased and monitoring to ensure that fledglings have left the burrow;
    - Employ a fauna spotter/handler to be present during site clearing;
    - Weed and pathogen hygiene management measures to prevent the introduction and spread of weeds and dieback;
    - Dust suppression measures to reduce dust emissions;
    - Procedures to manage risk of causing fire during construction;
    - Requirement to restrict vehicles and equipment to the construction footprint;
    - Requirement for regular inspections of waste management; and

- Conducting a vegetation monitoring plan to detect changes in the health of significant vegetation immediately adjacent to the project area. The aim is to detect changes attributable to the construction of the JEL.

- Undertake clearing of the project area outside of the breeding season (November – January) for Rainbow Bee-eater.
- Undertake an inspection of the project area no less than three days prior to clearing commencing to determine if there are any nesting Rainbow Bee-eaters. If the species is nesting within the project area, the area being used is to be quarantined from clearing and construction until the species has permanently left the nest.
- Preparation of a Kangaroo Management Plan to address displacement and safety issues associated with vehicle strikes; and
- The implementation of an offsets program to compensate the loss of residual significant impacts associated with the construction of the JEL.

5.2.4 Predicted Outcome

5.2.4.1 Significant Residual Impacts

With the implementation of the mitigation measures outlined in Section 5.2.3, the City of Canning is confident that all indirect impacts can be managed so that adverse impacts on surrounding fauna habitat can be avoided. However, the implementation of the JEL Project will result in the loss of 4.43 ha of habitat. This includes habitat for the following species:

- 2.38 ha of foraging habitat for Carnaby's cockatoo;
- 2.38 ha of foraging habitat for Baudin's cockatoo;
- 4.43 ha of habitat for Rainbow Bee-eater; and
- Up to 4.43 ha of habitat for Quenda.

5.2.4.2 Offsets

The City of Canning and the Department of Planning, Lands and Heritage will provide an offset to compensate the loss of fauna habitat.

5.3 TERRESTRIAL ENVIRONMENTAL QUALITY

Terrestrial environmental quality refers the chemical, physical, biological and aesthetic characteristics of soils. Consideration of this factor is important to protect the quality of land and soils so that environmental values are not adversely impacted.

Ecosystem health values that are supported by soils include biodiversity, water quality, and seed banks (EPA, 2016). Soils within the project area are important as they support biodiversity (vegetation) and maintain drinking water quality (within the Jandakot Mound UWPCA).

5.3.1 Potential Impacts

The potential impacts to terrestrial environmental quality from the implementation of the JEL Project include:

- Changes to soil quality through loss of soil organic matter;
- Disturbance of ASS due to excavation of soils or by lowering the groundwater level in the superficial aquifer;
- Disturbance of existing contaminated or potentially contaminated soils during excavation or dewatering; and
- Contamination of soils during construction.

5.3.2 Assessment of Impacts

5.3.2.1 Changes to Soil Quality

Clearing native vegetation can have detrimental effects on the quality of soil, including a loss of soil organic matter and reduced fertility of the soil. The loss of this function within the project area is not regarded a significant impact as the affected areas will ultimately be used as a road and not support a native ecosystem. Therefore, the quality of the soil in the project area in terms of suitability for plant growth is not critical.

5.3.2.2 Acid Sulfate Soils

Disturbance of ASS may cause acidification of soils and release of metals to groundwater. This can affect in situ soils that support vegetation or potentially contaminate groundwater resources which may be used for potable supply.

ASS Risk mapping for the project are indicates there is a moderate to low risk of ASS within 3 m of the natural soil surface but a high to moderate risk beyond 3 m of the natural surface level. Based on the anticipated design for the JEL, the disturbance of ASS during excavation or dewatering is regarded as extremely low risk due to:

- The road mostly being constructed in fill i.e. above the natural surface level; and
- Groundwater is at a depth that is not likely to require dewatering.

Pending the final design of the JEL and Johnston/Acourt Road project, the excavation and dewatering requirements will be re-evaluated. Should there be a risk of disturbing ASS, a site assessment will be conducted and if necessary, an ASS and Dewatering management plan will be prepared. If necessary, a dewatering licence will be obtained prior to the commencement of construction.

5.3.2.3 Disturbance of Existing Potential Contamination

Aurora Environmental is not aware of any site-specific contamination investigations for the JEL Project. A detailed summary of records for Lot 500 Ranford Road indicates that this site is classified as 'Possibly contaminated – investigation required' (Aurora Environmental, 2019). The reasoning for this classification is the possible contamination associated with historic landfilling that occurred in this area. Therefore, further work is likely to be required to determine if the JEL Project Area contains

locations that may have been impacted by historic uses on Lot 500. A review of historical aerial photographs indicates that some activity may have taken place at the western end of the JEL within Lot 500 Ranford Road. Therefore, further investigation is warranted. The presence of contamination can be managed as part of the earthworks for the JEL Project. It is important that appropriate management strategies are implemented to ensure the protection of human health (primarily of the workers associated with the construction) and the environment. Site investigations and management will need to be completed in accordance with the requirements of the *Contaminated Sites Act 2003*.

5.3.2.4 Contamination during Construction

The risk of soil or groundwater contamination during construction is regarded as low, particularly with the implementation of control measures (Refer to Section 5.3.3). Risk activities include the inappropriate storage of chemicals/fuels leading to leaks or spills of dangerous goods, or potential hydrocarbon contamination associated with refuelling, leaks from machinery/vehicles or spills during maintenance of equipment. These risks will need to be managed by the contractor undertaking construction. However, it is recommended that the storage of stockpile materials, vehicle/equipment refuelling and maintenance or storage of dangerous goods do not occur within the areas mapped as UWPCA and WHPZs, or within 50 m of significant wetlands (i.e. CCWs and REWs).

5.3.3 Recommended Mitigation and Management

The avoidance, mitigation and management measures considered during the development of the JEL Project are outlined below:

- Conduct a review of the final design of the JEL and Johnston/Acourt Road to assess dewatering requirements and the potential risk of disturbing ASS during construction. An ASS and Dewatering Management Plan may be prepared and implemented if dewatering is required.
- Assess the JEL Project Area to determine the presence/absence of contamination associated with historic uses. If contamination is present, undertake site investigations and remediation in accordance with the *Contaminated Sites Act 2003.*
- Prepare a CEMP for the JEL Project. Specific measures relevant to the management of terrestrial environmental quality may include:
    - Remove illegally dumped material in the project area prior to the commencement of vegetation clearing activities;
    - Manage any contaminated, or suspected contaminated material or soil disturbed during construction activities and report in compliance with the *Contaminated Sites Act 2003*;
    - Prepare an ‘unexpected finds’ protocol, to be implemented if contaminated sites are identified;
    - No dangerous goods will be stored within the UWPCA and therefore contamination from spills or leaks into the Jandakot Mound water source will be avoided;
    - Restrict vehicles and equipment to the construction footprint; and
    - Undertake regular inspections of waste management.

5.3.4 Predicted Outcome

5.3.4.1 Significant Residual Impacts

Through the implementation of the CEMP it is expected there will be no residual impacts on terrestrial environmental quality as a result of the JEL Project.

5.3.4.2 Offsets

No significant residual impacts are expected; therefore, no offsets are proposed for this environmental factor.

5.4 INLAND WATERS

5.4.1 Potential Impacts

The potential impacts to surface water and groundwater resources in and adjacent to the project area can be split into the following direct and indirect impacts:

Direct Impacts

- Construction activities within the UWPCA and Wellhead Protection Zones (WHPZs) may cause pollution and affect quality of groundwater in drinking water source areas;
- Altered water quality due to disturbance of ASS or contaminated soil/groundwater; and
- Changes to local hydrology.

Indirect Impacts

The potential indirect impacts that are associated with the JEL Project include:

- Decline in wetland vegetation in areas adjacent to the project area due to changes in local hydrology or the spread of weeds/dieback.

5.4.2 Assessment of Impacts

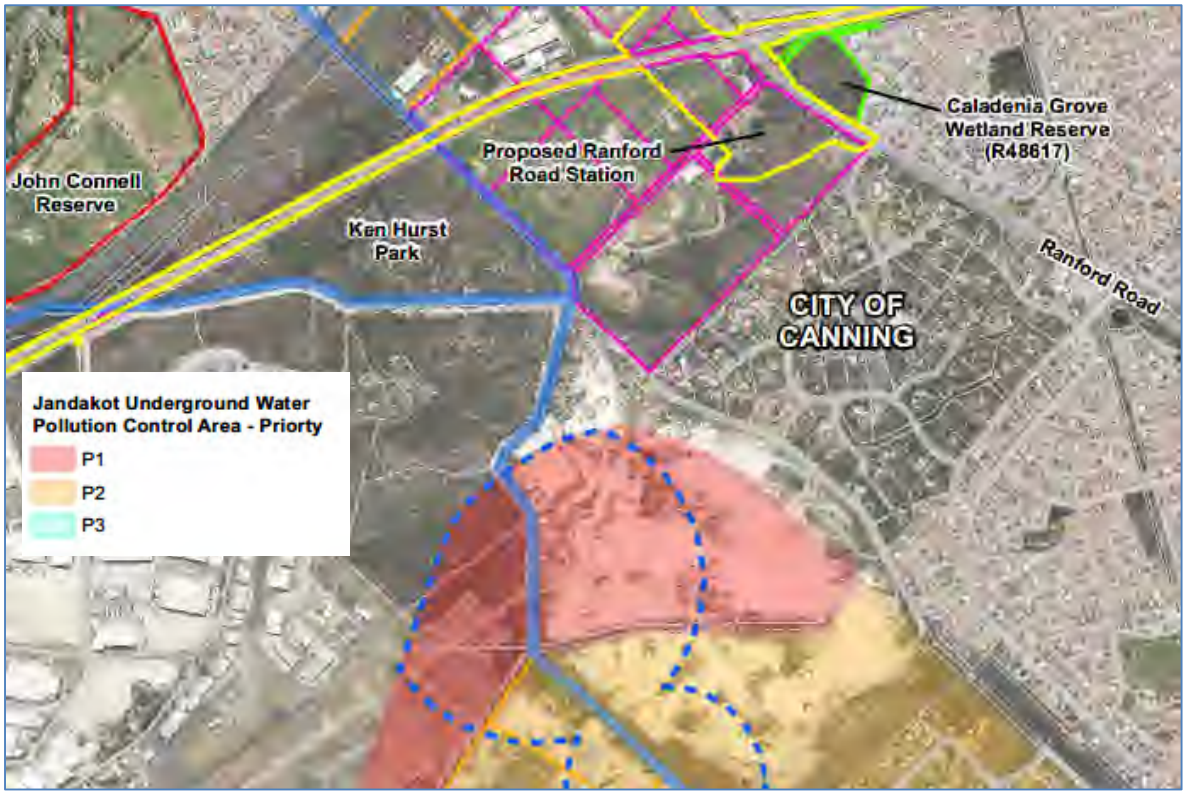
5.4.2.1 Construction in UWPCA/WHPZ

The southern section of the Johnston and Acourt Road upgrades are within areas mapped as Priority 1 and Priority 2 UWPCAs (Plate 7). Johnston and Acourt Roads traverse the wellhead protection zone for the Water Corporation's production bores which abstract water from the Superficial aquifer for potable supply (Plate 7).

Without adequate management, construction activities and the storage of materials may impact the quality of groundwater which is used as a source for public drinking water. Depending on the proximity and the nature of construction, the Water Corporation may consider not using some abstraction bores during the construction period.

The risk to groundwater quality will be considered prior to construction and the management of this risk will be outlined in the CEMP. It is recommended that the City of Canning consult with the Water Corporation and potentially DWER to ensure that appropriate protection measures are identified. However, with correct management measures, spills or leaks represent a small risk of impacting groundwater.

PLATE 7: JANDAKOT UNDERGROUND WATER POLLUTION CONTROL AREAS



5.4.2.2 Disturbance of ASS / Contaminated Soil and Groundwater

The risk of disturbing ASS or contaminated soil and groundwater has been addressed in Sections 5.3.2.2 and 5.3.2.3. The likelihood of disturbing ASS is low due to:

- The ASS risk class is mapped as low to moderate risk within 3 m of the natural surface level;
- The road is mostly being constructed in fill i.e. above the natural surface level; and
- Groundwater is generally more than 1.2m below ground level and therefore is not likely to require dewatering.

Lot 500 Ranford Road is classified as 'Potentially Contaminated – Investigation Required' due to historic landfilling activities conducted in this locality. There is a risk of contamination being present in the soil or groundwater beneath the project area. A preliminary site investigation is recommended to be completed to confirm the presence or absence of contamination within the project area. All contamination investigations and management are to be completed in accordance with DWER guidelines and the requirements of the *Contaminated Sites Act 2003.*

5.4.2.3 Changes to Local Hydrology

Groundwater

An analysis undertaken by Calibre Consulting (2016) indicated there will be no significant hydrological changes as a result of the JEL road construction. Calibre Consulting (2016) estimated a 6.8% increase

in groundwater recharge associated with the infiltration of the additional surface runoff from road surfaces and reduced evapotranspiration due to the removal of deep-rooted vegetation. This is equivalent to a 31 mm rise in groundwater levels, which is well within normal seasonal fluctuations of groundwater levels and therefore is not regarded as a significant impact.

As indicated in previous sections, it is not anticipated that dewatering will be needed. However, if dewatering is needed, it would only be of short duration and in limited locations. This will be reviewed once the final design for the JEL Project has been completed.

Construction water requirements or the potential source for construction water has not yet been determined. Without knowing the source for construction water and the quantities required, it is not possible to consider the impacts on the superficial aquifer. However, it is expected that construction water requirements will be minimal due to the small scale of the JEL Project. Sourcing water for construction once the project design has been advanced further. If necessary, an application to abstract groundwater will be submitted.

Surface Water

Using LiDAR data, Calibre Consulting (2016) identified existing surface water catchments within the project area. Due to topography, all catchments are self-contained in low flow events and flow north-east towards the Canning River in high flow events. However, there are no defined waterways within the project area.

Six surface water catchments were delineated, with most of the JEL being located within one catchment. Using the rational method with a run-off coefficient of 0.15, pre-development and post-development flows were estimated (Calibre Consulting, 2016).

Calibre Consulting (2016) conducted modelling for the post-development scenario using run-off coefficients of 0.76 and 0.95 for the 5-year and 100-year events. The modelling was used to inform the preliminary drainage design which incorporates the use of a vegetated central swale along with two storage basins to maintain an outflow close to pre-development conditions. The centre swale utilises 0.3 m high bunds at 30 m intervals to detain flows and allow for primary treatment, ensuring surface runoff entering the groundwater or wetland/s is not contaminated. Outflows from the storage basins will be comparable with pre-development conditions. One basin will be on the northern side and the second basin on the southern side. Culverts will balance water in between the two basins to ensure that the road embankment does not cause surface water ponding or reduce flows to wetlands on the southern side of the JEL (Calibre Consulting, 2016). The drainage plans are provided in Appendix 4.

Wetlands

An analysis of the Geomorphic Wetlands of the Swan Coastal Plain dataset indicates that the JEL Project will directly impact 0.06 ha of two CCWs (UFIs 16111 and 16115). Of the impacted wetlands, 0.01 ha of Wetland UFI 16115 is Completely Degraded and occurs on the outer margin of the wetland. This small loss is not considered a significant impact as:

- Wetland UFI 16115 covers 8.22 ha of which 0.01 ha represents 0.12% of the wetland's extent;
- No wetland vegetation within UFI 16115 will be directly impacted by the JEL; and
- The loss of the 0.01 ha will not alter the values, attributes or functions of Wetland UFI 16115.

In terms of indirect impacts to wetlands, there are up to six wetlands (five CCWs and one REW) within 200 m of the JEL Project Area. As discussed above, no significant impacts to groundwater or surface water regime in the project area is anticipated as a result of constructing the JEL. The drainage design aims to preserve pre-development conditions via the capture, treatment and infiltration of runoff. Surface water will be distributed between north and south of the JEL, ensuring that overland flows are maintained accordingly. It is predicted that there will be no impacts to groundwater levels as dewatering is unlikely to be required. If dewatering is needed, it will be for minimal duration and would be localised with the aquifer quickly recovering. The modelling by Calibre Consulting (2016) predicted that groundwater levels may rise by up to 31 mm, mainly attributed to a reduction in evapotranspiration. This level of increase is easily within the range of normal seasonal variation in groundwater levels.

Indirect impacts to wetland vegetation reflect the same indirect impacts to flora and vegetation addressed in Section 5.1.2.7. Implementing the measures outlined in Section 5.1.3 will mitigate risks to wetland vegetation decline during construction of the JEL Project.

Construction of the JEL will involve clearing of native vegetation, grubbing of roots, topsoil stripping and earthworks including placement and compaction of fill material and subgrade material. Under certain weather conditions exposed soil may erode and flow into wetlands or adjacent vegetation. These risks are manageable by implementing conventional erosion and sedimentation controls during construction.

5.4.3 Recommended Mitigation and Management

The avoidance, mitigation and management measures considered during the development of the JEL Project are outlined below:

- City of Canning to consult with the Water Corporation and DWER prior to the commencement of construction to review risks to groundwater quality in the UWPCA, and to identify appropriate management measures to be implemented during the construction of the JEL Project.
- Undertake a PSI to determine the potential presence of soil or groundwater contamination attributable to historic activities that have been conducted within the project area.
- Review the final detailed design drawings to ascertain the potential for disturbance of ASS material via dewatering or excavation. If there is a risk of disturbing potential ASS material, then conduct an ASS investigation and if necessary, prepare a Dewatering and ASS Management Plan.
- Assess construction water requirements, identify potential sources for construction water and obtain approvals to abstract construction water (if required).
- Implemented WSUD principles in the drainage design.
- Prepare a CEMP for the JEL Project. Specific measures relevant to the management of inland waters include:
    - No fuel storage tanks, or chemicals/dangerous good storage will be sited within 50 m of the wetlands in the project area, the UWPCA or the well head protection zones;
    - Chemical storage areas (if required) will be bunded to ensure that pollutants are not washed into adjacent areas during rainfall events;

- Uncontrolled release of chemicals (leak or spill) will be attended to immediately via the use of onsite spill kits. The incident will be reported to Supervisors, who will engage the services of a licensed controlled waste contractor. They will be contacted immediately to further clean up the spill and prevent its spread offsite, or if already offsite, further from the project area. Any contaminated soil or water will be removed from the project area and appropriately disposed of. Clean up materials (e.g. absorbent materials) used in the spill response will be disposed of appropriately to landfill; and
- Restriction of activities that are prohibited (e.g. abstraction, discharge) within the UWPCA and WHPZs:
    - Ground level / underground chemical storage tanks (equal to or greater than 250 L) are prohibited in P1 and P2 areas of an UWPCA;
    - Elevated chemical storage tanks (equal to or greater than 250 L capacity) are prohibited in P1 and P2 WHPZs of an UWPCA (DoW, 2016).

5.4.4 Predicted Outcome

5.4.4.1 Significant Residual Impacts

Through the implementation of the CEMP and detailed drainage design, no significant residual impacts are expected.

5.4.4.2 Offsets

No significant residual impacts on Inland Waters are expected and therefore no offsets are proposed for this factor.

5.5 SOCIAL SURROUNDINGS

5.5.1 Potential Impacts

The potential impacts for the Social Surroundings Factor that may arise from the implementation of the JEL Project include:

- Disturbance/damage to known and unknown Aboriginal heritage site/s;
- Generation of noise and dust emissions during construction potentially impacting site workers, nearby residences and surrounding vegetation (dust impacts).

5.5.2 Assessment of Impacts

5.5.2.2 Noise and Dust Emissions

Construction of the JEL and associated roads has the potential to generate noise and dust emissions which could adversely impact adjacent receptors.

Noise

For site workers, the main adverse effects of hazardous noise are permanent noise-induced hearing loss, tinnitus (ringing in the ears) and interference with clearly hearing instructions or audible warning signals. There is also growing evidence to show that long term exposure to noise may contribute to stress and cardiovascular diseases (AS 2436-2010).

Noise can cause problems in the community including interference with communication, disturbance of work, leisure activities and sleep, annoyance and effects on mental and physical health (AS 2436-2010).

Noise will be generated during construction of the JEL, Johnston and Acourt Roads, but will be temporary and localised. Works will generally be undertaken between 7 am and 7 pm, although out of hours work may be required on occasion. All out of hours work will require a Noise Management Plan and approval from the City of Canning.

Dust

During construction dust may arise from cleared land, stockpiles, construction activities and vehicle movements. Dust may accumulate on adjacent native vegetation, where it can impact the plants physiological function by blocking and damaging stomata therefore rendering the plant unable to photosynthesise. Dust can also be a health hazard, causing respiratory problems and reducing visibility for nearby traffic.

Dust emissions during construction have the potential to cause nuisance to adjacent landholders and impact local amenity. The potential for dust generation is temporary during construction and mainly associated with site clearing and earthworks. With adequate controls in place and having regard to the temporary nature of the construction program, the long-term effects from dust are expected to be insignificant.

5.5.3 Recommended Mitigation and Management

The avoidance, mitigation and management measures considered during the development of the JEL Project are outlined below:

Culturally Sensitive

Culturally Sensitive

-
-
-
- Culturally Sensitive

Culturally Sensitive

5.5.4 Predicted Outcome

5.5.4.1 Significant Residual Impacts

Through the implementation of the CEMP and an Aboriginal Heritage Management Protocol, no significant residual impacts are expected.

5.5.4.2 Offsets

No significant residual impacts on Social Surroundings are expected and therefore no offsets are proposed for this factor.

5.6 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The EPBC Act is administered by the DAWE and provides a legal framework for the protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places (referred to as MNES). Specifically, the EPBC Act protects the following MNES:

- World heritage places
- National heritage places
- Wetlands of international importance
- Listed threatened species and ecological communities

- Migratory species
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions
- A water resource, in relation to coal seam gas development and large coal mining development

The Protected Matters Search Tool (PMST) identifies multiple MNES as potentially relevant to the JEL Project area (inclusive of a 1 km buffer). A copy of the PMST results is provided as Appendix 5. The MNES identified in the PMST search includes:

- One wetland of international importance;
- Two TECs;
- 19 threatened species; and
- 9 listed migratory species.

5.6.1 Likelihood of Occurrence

The likelihood of each MNES being present within or adjacent to the JEL Project area is addressed in Table R. Migratory species have been excluded from this analysis as they occupy a large range and are unlikely to solely rely upon the small JEL Project Area and therefore will not be significantly impacted by the project.

TABLE R: MNES LIKELIHOOD OF OCCURRENCE ASSESSMENT

TYPE	MNES	EPBC LISTING	LIKELIHOOD ASSESSMENT
Wetland of International Importance	Forrestdale and Thomsons Lakes	Ramsar	**Not applicable** The JEL Project Area is approximately 7-8 km from these Lakes.
Threatened Ecological Communities	Banksia Woodlands of the SCP ecological community	Endangered	**Present in the project area** TEC occurs within and adjacent to the JEL Project Area.
	Tuart Woodlands and Forests of the SCP ecological community	Critically Endangered	**Not present** Multiple vegetation surveys have been conducted across the project area. This ecological community has not been recorded in or adjacent to the project area.
Threatened Species - Fauna	Australasian Bittern *Botaurus poiciloptilus*	Endangered	**Not recorded – unlikely** The Australasian Bittern prefers densely vegetated freshwater wetlands and, rarely, in estuaries or tidal wetlands. In the southwest of WA, the Bittern is found in beds of tall rush mixed with or near short fine sedge or open pools. It also occurs around swamps, lakes, pools, rivers and channels

TABLE R: MNES LIKELIHOOD OF OCCURRENCE ASSESSMENT

TYPE	MNES	EPBC LISTING	LIKELIHOOD ASSESSMENT
			fringed with *Lignum muehlenbeckia*, canegrass (*Eragrostis* spp.) or other dense vegetation. It occasionally ventures into areas of open water or onto banks (DEE 2018). There are no areas of suitable habitat within the JEL Project Area for this species. Most observations of the species occur within lakes and wetland (with open waters) where dense vegetation is present.
	Curlew Sandpiper *Calidris ferruginea*	Critically Endangered	**Not recorded – unlikely** Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons and around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. There is no suitable habitat within the JEL Project Area.
	Forest red-tailed black cockatoo *Calyptorhynchus banksii naso*	Vulnerable	**Present, but outside of the project area** Forest red-tailed black cockatoo feed on Marri, Jarrah, Blackbutt, Karri, Sheoak and Snotty gobble. They also forage on some garden eucalypts and berries of introduced White Cedar (Cape Lilac). The species preferred habitat is not present in the JEL Project Area. However, the species was recorded by Natural Area Consulting (2016) within the broader area of Ranford Road Bushland.
	Carnaby's cockatoo *Calyptorhynchus latirostris*	Endangered	**Present in the project area** Carnaby's cockatoo forages on a wide range of plant species, including *Eucalyptus* spp., *Corymbia* spp., *Allocasuarina* spp., *Banksia* spp. and other proteaceous trees and shrubs as well as many introduced plant species. Evidence of foraging by Carnaby's cockatoo has been observed within the JEL Project Area by GHD (2019b) and Astron (2015). Suitable foraging habitat is present in and adjacent to the JEL Project Area. No suitable breeding or roosting habitat was recorded in the project area.

TABLE R: MNES LIKELIHOOD OF OCCURRENCE ASSESSMENT

TYPE	MNES	EPBC LISTING	LIKELIHOOD ASSESSMENT
	Malleefowl *Leipoa ocellata*	Vulnerable	**Not recorded – unlikely** The Malleefowl generally occurs in semi-arid areas of WA, from Carnarvon to south east of the Eyre Bird Observatory (south-east WA). It occupies shrublands and low woodlands that are dominated by mallee vegetation, as well as native pine (*Callitris spp*.) woodlands, Acacia shrublands, Broombush (*Melaleuca uncinata*) vegetation or coastal heathlands. Few records are present on the Swan Coastal Plain and are historical observations. This species is considered locally extinct.
	Eastern Curlew *Numenius madagascariensis*	Critically Endangered	**Not recorded – unlikely** The Eastern Curlew is most associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass (Marchant and Higgins 1993). No suitable habitat is present in the project area.
	Australian Painted Snipe *Rostratula australis*	Endangered	**Not recorded – unlikely** The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. Australian Painted Snipe breeding habitat requirements may be quite specific: shallow wetlands with areas of bare wet mud and both upper and canopy cover nearby. The species rarely occurs in the south-western of Western Australia (Marchant and Higgins 1993; Garnett and Crowley 2000). The wetlands in or adjacent to the project area do not provide suitable habitat for this species.
	Chuditch, Western Quoll *Dasyurus geoffroii*	Vulnerable	**Not recorded – unlikely** The Chuditch inhabits eucalypt forest (especially Jarrah, *Eucalyptus marginata*), dry woodland and mallee shrublands. In Jarrah forest, Chuditch populations occur in both moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest. Most diurnal resting sites in sclerophyll forest consist of hollow logs or earth burrows (Van Dyck and Strahan, 2008). The species

TABLE R: MNES LIKELIHOOD OF OCCURRENCE ASSESSMENT

TYPE	MNES	EPBC LISTING	LIKELIHOOD ASSESSMENT
			can travel large distances, has a large home range and is sparsely populated through a large portion of its range. This species requires large areas of connected habitat to persist, the habitat in the project area is not suitable for this species. A single record from 2016 was recorded in the City of Melville (one deceased specimen) and was likely transported to the region by vehicle (GHD, 2019).
	Western Ringtail Possum *Pseudocheirus occidentalis*	Critically Endangered	**Not recorded – unlikely** The Western Ringtail Possum occurs in and near coastal Peppermint Tree (*Agonis flexuosa*) forest and Tuart (*Eucalyptus gomphocephala*) dominated forest with a Peppermint Tree understorey from Bunbury to Albany, with an isolated population south of Mandurah. It also occurs in Jarrah (*Eucalyptus marginata*) forest and Jarrah-Marri (*Corymbia calophylla*) forest associated with Peppermint Tree (Van Dyck and Strahan 2008). There is no suitable habitat in the project area, and the species is not known to occur near this location.
Threatened Species - Flora	Slender Andersonia *Andersonia gracilis*	Endangered	**Not recorded – unlikely** Slender Andersonia occurs in white/grey sand, sandy clay, gravelly loam in winter-wet areas, near swamps. Suitable habitat is present in and adjacent to the JEL Project Area. Multiple surveys conducted across the JEL Project Area over several years have not recorded the species. This species is not cryptic, and the surveys have been undertaken during the reported flowering period. Therefore, this species is unlikely to be present.
	Grand Spider Orchid *Caladenia huegelii*	Endangered	**Not recorded – possible** The Grand Spider Orchid prefers sand or clay loam soils. It generally does not survive in disturbed areas. Suitable habitat is present in and adjacent to the JEL Project Area. Multiple populations of the species are known in nearby bushland including Jandakot Airport Bushland, Ken Hurst Park, west of Ken Hurst Park and in Caladenia Grove Wetland Reserve. Multiple surveys conducted across the

TABLE R: MNES LIKELIHOOD OF OCCURRENCE ASSESSMENT

TYPE	MNES	EPBC LISTING	LIKELIHOOD ASSESSMENT
			impacted area over several years have not recorded the species. 'Critical habitat' for the Grand Spider Orchid include areas where populations are known to occur as well as adjacent areas of suitable habitat. In addition, indirect impacts to nearby populations need to be considered.
	Tall Donkey Orchid *Diuris drummondii*	Vulnerable	**Not recorded – unlikely** The Tall Donkey Orchid grows in low-lying depressions, swamps that are moist year round. Habitats that are wet year-round are not present in or near the JEL survey area. Multiple surveys did not record this species in the project area.
	Dwarf Bee-orchid *Diuris micrantha*	Vulnerable	**Not recorded – unlikely** The Dwarf Bee-orchid is found in small populations, on brown loamy clay in winter wet swamps in shallow water. It is known from seven populations east of Kwinana and south towards Frankland. It is unlikely that the species is present in JEL Project Area as there is a lack of suitable habitat. Multiple surveys did not record this species in the project area.
	Purdie's Donkey Orchid *Diuris purdiei*	Endangered	**Not recorded – unlikely** Purdie's Donkey Orchid occurs in grey-black sand. It grows in areas subject to winter inundation, and amongst native sedges and dense heath with scattered emergent *Melaleuca preissiana, Eucalyptus calophylla, E. marginata* and *Nuytsia floribunda* (DEE 2018). Potentially suitable habitat is present in and adjacent to the JEL survey area. However, multiple targeted searches for this species were undertaken during the reported flowering period and did not record this species.
	Glossy-leafed Hammer Orchid *Drakaea elastica*	Endangered	**Not recorded – unlikely** The Glossy-leafed Hammer Orchid prefers low-lying situations adjoining winter-wet swamps. It occurs on bare patches of white or grey sand in low-lying situations.

TABLE R: MNES LIKELIHOOD OF OCCURRENCE ASSESSMENT

TYPE	MNES	EPBC LISTING	LIKELIHOOD ASSESSMENT
			There are two records less than 1 km south of the JEL survey area (GHD, 2019). One of these records no longer exists due to clearing for housing, the other is within the Jandakot airport (GHD, 2019). Some habitat suitable for the species is present in and adjacent to the project area. However, multiple targeted surveys for the species during the reported flowering period have not recorded its presence. Therefore, it is considered unlikely that the species is present.
	Dwarf Hammer Orchid *Drakaea micrantha*	Vulnerable	**Not recorded – unlikely** The Dwarf Hammer-orchid is known from 32 small, scattered populations from Perth to Albany, with secure populations in Frankland National Park. It is usually found on cleared firebreaks or open sandy patches that have been disturbed, where competition from other plants has been removed (Brown et al. 1998; Hearn et al. 2006). The species is found on infertile grey sands in Jarrah (*Eucalyptus marginata*) and Common Sheoak (*Allocasuarina fraseriana*) woodland or forest associated with *Banksia* species (DEE, 2018). Some suitable habitat for the species is present in and adjacent to the JEL Project Area. However, multiple targeted searches for the species during the reported flowering period have not recorded its presence. Therefore it is considered unlikely that the species is present.
	Beaked Lepidosperma *Lepidosperma rostratum*	Endangered	**Not recorded - unlikely** Beaked Lepidosperma is found in peaty sand, clay. The species has been recorded in the Brixton Street Wetlands and elsewhere in the Kenwick/Cannington localities on clayey soils. Similar habitat is not present in the project area.
	Selena's Synaphea *Synaphea sp. Fairbridge Farm*	Critically Endangered	**Not recorded – unlikely** The species is found near winter wet flats in low woodland with weed grasses on sandy soils with lateritic pebbles. This species is known from five sub-populations south of Perth from Serpentine to Dardanup.

TABLE R: MNES LIKELIHOOD OF OCCURRENCE ASSESSMENT

TYPE	MNES	EPBC LISTING	LIKELIHOOD ASSESSMENT
			No soils with lateritic pebbles are present in the project area. Multiple targeted searches for the species during the reported flowering period have not recorded its presence. Therefore, it is considered unlikely that the species is present.
	Cinnamon Sun Orchid *Thelymitra dedmaniarum*	Endangered	**Not recorded - unlikely** Cinnamon sun orchid is known from two locations in the Gidgegannup area. It is confined to open wandoo woodland on red-brown sandy loam associated with dolerite and granite outcropping (DEC, 2012). No suitable habitat is within the project area.

Based upon the likelihood assessment in Table R, the MNES regarded potentially relevant for the JEL Project includes the following:

- Banksia Woodlands of the Swan Coastal Plain ecological community – confirmed occurrence within and adjacent to the project area.
- *Caladenia huegelii* and its supporting habitat – no individual specimens in the project area or close to the project area, but there is supporting habitat present in and adjacent to the project area.
- Carnaby's cockatoo – direct evidence of this species occurring within the project area; foraging habitat is present in and adjacent to the project area.
- Baudin's cockatoo – historical evidence of this species occurring within Ranford Road Bushland; foraging habitat is present in and adjacent to the project area.
- Forest red-tailed black cockatoo – evidence of this species occurring near the project area; foraging habitat is present outside of the project area.

Sections 4.5, 4.7, 5.1 and 5.2 address the potential impacts to the above MNES that may arise from the construction of the JEL Project. The assessment is also summarised in the following sections.

5.6.2 Banksia Woodlands of the Swan Coastal Plain Ecological Community

The Banksia Woodlands TEC is described in the EPBC Act Approved Conservation Advice (incorporating listing advice) (TSSC 2016) as:

> *A Woodland associated with the Swan Coastal Plain of southwest Western Australia. A key diagnostic feature is a prominent tree layer of Banksia, with scattered eucalypts and other tree species often present among or emerging above the Banksia canopy. The understorey is a species rich mix of sclerophyllous shrubs, graminoids and forbs. The ecological community is characterised by a high endemism and considerable localised variation in species composition across its range.*

The vegetation in the project area was assessed against the Banksia Woodland TEC criteria contained in the *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community* (Conservation Advice) (DoEE, 2016b). Two vegetation types were found to meet the criteria for the Banksia Woodland TEC; these being Dryland vegetation type and Transitional vegetation type (Figure 3 – areas mapped as Veg-D and Veg-T) (PGV Environmental, 2019). The Wetland and Regeneration vegetation types did not meet the requirements of the Banksia Woodland TEC criteria due to the absence of key Banksia species.

5.6.2.1 Potential Impacts

An assessment of the spatial extent of the Banksia woodlands of the Swan Coastal Plain ecological community in the JEL Project Area and adjacent areas has been provided in Section 5.1.2.3. The JEL Project will result in the direct loss of 2.38 ha of Banksia Woodland of the SCP ecological community. The loss per condition rating of the TEC attributable to the JEL Project is:

- Excellent – 0.57 ha;
- Very Good – 0.12;
- Good – 0.73 ha; and
- Degraded – 0.96 ha.

The direct and indirect impacts have been addressed in Section 5.2.3.1 and 5.1.2.7. Up to 2.38 ha may be directly impacted by the JEL Project. Accurately quantifying the indirect impacts is not possible however, the locations where the management of indirect impacts are relevant for the construction of the JEL includes:

- Bushland on Lot 500 Ranford Road which is a part of Bush Forever Site 388, directly abutting the proposed alignment (Figure 6);
- Bushland within Bush Forever Site 245 (Ken Hurst Park), directly west of the JEL Project Area (Figure 6); and
- Bushland within Jandakot Airport which is included within the boundaries of Bush Forever Site 388, directly west of the project area (Figure 6).

5.6.2.2 Proposed Management and Mitigation

The proposed mitigation and management measures are outlined in Section 5.1.3. A site selection study was conducted to evaluate several potential locations for the JEL. The multi-criteria analysis included environmental considerations in the evaluation of each option.

The City has reduced the direct impact to this TEC by locating the JEL along the northern extent of the bushland on Lot 500 Ranford Road with a greater proportion of the impacted vegetation being of poorer quality than if the alignment were further south. The proposed position of the JEL also minimises fragmentation of the vegetation.

To manage construction impacts, a CEMP will be prepared and will be refined prior to construction commencing. Specific management measures include:

- Provision of coordinates for clearing extents to the contractor;

- In field demarcation of clearing extents;
- Requirement to conduct regular inspections of clearing boundaries and document the clearing activities undertaken;
- Weed and pathogen hygiene management measures to prevent the introduction and spread of weeds and dieback;
- Dust suppression measures to reduce dust emissions;
- Procedures to manage risk of causing fire during construction;
- Requirement to restrict vehicles and equipment to the construction footprint;
- Requirement for regular inspections of waste management; and
- Conducting a vegetation monitoring plan to detect changes in the health of significant vegetation immediately adjacent to the project area. The aim is to detect changes attributable to the construction of the JEL.

The risk of adverse impacts to the TEC resulting from changes in local hydrology is considered negligible. Hydrological studies for the JEL Project have demonstrated:

- That dewatering is not likely to be needed as there is adequate separation to maximum groundwater levels and the proposed road will be constructed in fill (i.e. above natural ground level);
- Post-construction surface water catchments flows will be balanced by using culverts to distribute surface water north and south of the JEL road comparable to pre-development levels; and
- There will be minimal impact to post-construction groundwater levels.

Following detailed design of the JEL, the City of Canning will update the hydrological modelling to ensure minimal impact to local hydrological conditions.

5.6.2.3 Significance of Impacts

The conservation advice for the Banksia Woodlands TEC (DoEE, 2016) reports that there is an estimated 253,540.6 ha of Banksia woodlands TEC in the Perth (SWA02) IBRA sub-region. The loss of 2.38 ha represents approximately 0.00069% of the ecological community's estimated remaining extent. This reduction in the extent of the TEC is not significant in the context of the overall distribution of the ecological community.

Within 200 m of the JEL alignment there is 25.46 ha of the TEC. However, this is only a small proportion of the TEC extent in the area surrounding the JEL Project Area. For example, at a local level there is 144.65 ha of mapped vegetation consistent with the TEC within Bush Forever Sites 388 and 245:

- 40 ha within Ken Hurst Park (Bush Forever Site No. 245) (Waters, 2014);
- 16.65 ha south of the proposed JEL within Bush Forever Site No. 388 (NACMS, 2016); and

- 88 ha within the Jandakot Airport Bush Forever Site (No. 388) based on February 2018 aerial photography and mapping of vegetation communities[2].

The loss of 2.38 ha represents approximately 1.64% of the ecological community's estimated extent at a local level. This analysis only includes the Bush Forever sites immediately adjacent to the JEL Project Area. A broader analysis to include Bush Forever sites within 5km indicates that there is a total of 2,709.47 ha of vegetation mapped as Beard Association 1001 (likely to be representative of the Banksia TEC) remaining, of which 1,820.91 ha is within Bush Forever. The loss of 2.38 ha resulting from the JEL represents approximately 0.09% at this scale.

It is not possible to quantify the cumulative loss of the Banksia TEC on the Swan Coastal Plain due to significant knowledge gaps, or datasets that are not available to the public. The suspended strategic assessment of the Perth and Peel regions identified that approximately 9,836 ha of vegetation in the Perth and Peel regions intersects with the proposed classes of action (i.e. urban, industrial, rural-residential and basic raw materials) and therefore may be cleared over the next 30 years. This area includes vegetation communities that are not representative of the Banksia TEC. The loss of 2.38 ha of TEC for the JEL Project represents an extremely small contribution to the cumulative loss of this ecological community in the Perth Metropolitan region.

Significance Assessment

The Significant Impact Guidelines (DoE, 2013) states that a significant impact is an impact which is important, notable or of consequence while having regards to its context or intensity.

The direct impact to the TEC from the JEL Project is 2.38 ha. The impacted vegetation is contiguous with other areas of TEC, i.e. a component of a larger patch. An assessment of the significance of the impact using the DoE (2013) significant impact criteria is presented in Table S.

TABLE S: SIGNIFICANCE ASSESSMENT FOR BANKSIA WOODLANDS OF THE SWAN COASTAL PLAIN ECOLOGICAL COMMUNITY

SIGNIFICANT IMPACT CRITERIA	DESCRIPTION OF PROPOSED ACTION IN RELATION TO SIGNIFICANT IMPACT CRITERIA	LIKELIHOOD (KNOWN, LIKELY, POSSIBLE, UNLIKELY)
Reduce the extent of an ecological community	2.38 ha of the TEC may be cleared, comprising: • 0.57 ha in Excellent condition • 0.12 ha in Very Good condition • 0.73 ha in Good condition • 0.96 ha in Degraded condition.	Known
Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	The vegetation in the vicinity of the JEL alignment envelope is already highly fragmented. Construction of the JEL will not further fragment existing TEC patches.	Unlikely

[2] H1, H2 and J1 presented on Figure 7 of Jandakot Airport, Environment Strategy (JAH, 2009).

TABLE S: SIGNIFICANCE ASSESSMENT FOR BANKSIA WOODLANDS OF THE SWAN COASTAL PLAIN ECOLOGICAL COMMUNITY

SIGNIFICANT IMPACT CRITERIA	DESCRIPTION OF PROPOSED ACTION IN RELATION TO SIGNIFICANT IMPACT CRITERIA	LIKELIHOOD (KNOWN, LIKELY, POSSIBLE, UNLIKELY)
Adversely affect habitat critical to the survival of an ecological community	Critical habitat includes all patches that meet the diagnostic characteristics and condition thresholds for the TEC, plus buffer zones. The TEC in the JEL meets the definition of critical habitat.	Known
Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns	The JEL Proposal will modify the environment where the TEC is within the alignment. The cleared areas will be used for a road and associated infrastructure.	Known
Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting	The construction of the JEL will clear 2.38 ha of the TEC resulting in a permanent loss of the ecological community. This is regarded a substantial change in species composition for the affected portion.	Known
Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: • assisting invasive species, that are harmful to the listed ecological community, to become established, or • causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community	Construction of the JEL could spread weeds and dieback into adjacent areas of the TEC. However, these impacts can be managed through conventional construction mitigation measures.	Possible
Interfere with the recovery of an ecological community	Clearing of 2.38 ha contradicts the first principle of recovery for the ecological community which is to protect existing patches of the ecological community.	Likely

Based on the significance assessment, it is concluded that the loss of up to 2.38 ha may be a significant impact on the basis that the JEL Proposal will contribute to a reduction in the extent of the ecological community and potentially indirectly impact adjacent areas of the ecological community. The City of Canning and the Department of Planning, Lands and Heritage will provide an offset to compensate the loss of the 2.38 ha of Banksia woodland TEC.

5.6.3 Caladenia huegelii

Caladenia huegelii (the Giant Spider Orchid or King Spider Orchid) is listed as Endangered under the EPBC Act. It is a slender orchid with a flower stem that usually grows to 30-70cm tall, but can be grow up to 1 m. It is generally found as a solitary plant, and rarely growing in loose clumps (Hopper and Brown (2001) cited in DEC, 2009).

Caladenia huegelii occurs in areas of mixed woodland of *Eucalyptus marginata* (Jarrah), *Banksia attenuata* (Candlestick Banksia), *B. ilicifolia* (Holly Banksia) and *B. menziesii* (Firewood Banksia) with scattered *Allocasuarina fraseriana* (Sheoak) and *Corymbia calophylla* (Marri) over dense shrubs of *Stirlingia latifolia* (Blueboy), *Hypocalymma robustum* (Swan River Myrtle), *Hibbertia hypericoides* (Yellow Buttercups), *H. subvaginata* (Buttercups), *Xanthorrhoea preissii* (Balga), *Adenanthos cuneatus* (Coastal Jugflower) and *Conostylis* species. Throughout its range the species tends to favour areas of thick undergrowth. Soil is usually deep grey-white sand associated with the Bassendean sand-dune system (DEC, 2009). The preferred soil conditions are variable and range from wet to moist to dry.

Caladenia huegelii is found on the Swan Coastal Plain within 20 km of the coast, from just north of Perth to the Busselton area over 250 km (DEC, 2009). It is estimated that the species occurs in 33 populations which are highly fragmented due to urban and rural development.

One of the most significant populations of the species in the Perth metropolitan region is in the vicinity of the Roe Highway road reserve and nearby areas around Jandakot, where there may be collectively up to 800 plants (DEC, 2009). A compilation of records from DBCA, Western Australian Herbarium and various surveys indicate numerous records of *Caladenia huegelii* are close to the JEL Project Area (Aurora Environmental, 2019). Data from 2005 estimated there are 632 plants in Ken Hurst Park. Extensive surveys of Jandakot Airport bushland in 2001, 2006-2009 identified multiple locations of the species with a total population of approximately 223 individuals. Most of these were located south of Leeming Road.

Caladenia Grove Reserve is a small reserve bound by Ranford Road on its south-western boundary, the freight rail reserve along the northern boundary and urban development to the east. The species (15 plants) has been recorded in this reserve on multiple locations.

Multiple surveys in the JEL alignment and surrounding areas have been conducted by various consultants since 2015 (e.g. PGV Environmental, 2019 and 2022; Natural Area Consulting, 2016; Astron, 2015). The species has never been recorded during these surveys.

5.6.3.1 Potential Impacts

The potential impacts to flora and vegetation, including conservation significant flora species such as *Caladenia huegelii* have been outlined in Section 5.1.1. The key threats to the survival of *Caladenia huegelii* include:

- Permanent loss of habitat;
- Degradation of surrounding habitat caused by:
    - Introduction or spread of weeds or pathogens
    - Deposition of dust;
    - Changes to local hydrology;

- Frequent fire.

Thorough targeted surveys have not recorded any threatened flora within the JEL survey area. Access to the land managed by Jandakot Airport Holdings was not granted for the 2019 survey. Therefore, the presence or absence of threatened flora on the Jandakot Airport site close to the JEL Project Area could not be determined. However, the Jandakot Airport Conservation Management Plan (JAH, 2016) notes that most of the *Caladenia huegelii* (Grand Spider Orchid) specimens recorded occur in the northern section of the airport site, south of the freight rail corridor. Few specimens were recorded in the eastern portion of the airport land (i.e. west of Johnston Road). The closest recorded occurrence is approximately 45-50 m west of Johnston Road (roughly in line with the northern extent of the gun club on Lot 166 Clifton Road).

Construction of the JEL Project will not directly impact any known locations of threatened flora. However, the project will clear vegetation that may be suitable habitat for *Caladenia huegelii* (i.e. Banksia woodland). There is 21.79 ha of potentially suitable habitat for *Caladenia huegelii* in the JEL survey area (PGV Environmental, 2019). Constructing the JEL will remove 2.19 ha of potentially suitable *Caladenia huegelii* habitat. This includes vegetation in:

- Degraded condition (0.96 ha);
- Good condition (0.54 ha);
- Very Good condition (0.12 ha); and
- Excellent condition (0.57 ha).

Critical habitat for the survival of this species is defined as *the current known occupancy and areas of similar habitat surrounding known populations* (DEC, 2009). The habitat in the JEL Project Area may be regarded critical habitat due to its proximity to known locations of *Caladenia huegelii* (Caladenia Grove Reserve, Jandakot bushland and Ken Hurst Park).

The direct and indirect impacts have been addressed in Section 5.1.2.5 and 5.1.2.7. Up to 2.19 ha may be directly impacted by the JEL Project. Accurately quantifying the indirect impacts is not possible however, the locations where the management of indirect impacts are relevant for the construction of the JEL includes:

- Bushland on Lot 500 Ranford Road which is a part of Bush Forever Site 388, directly abutting the proposed alignment (Figure 6);
- Bushland within Bush Forever Site 245 (Ken Hurst Park), directly west of the JEL Project Area (Figure 6); and
- Bushland within Jandakot Airport which is included within the boundaries of Bush Forever Site 388, directly west of the project area (Figure 6).

5.6.3.2 Proposed Management and Mitigation

The proposed mitigation and management measures are outlined in Section 5.1.3. A site selection study was conducted to evaluate several potential locations for the JEL. The multi-criteria analysis included environmental considerations in the evaluation of each option.

The City has reduced the direct impact to potential *Caladenia huegelii* habitat by locating the JEL along the northern extent of the bushland on Lot 500 Ranford Road with a greater proportion of the impacted vegetation being of poorer quality than if the alignment were further south. The proposed position of the JEL also minimises fragmentation of the vegetation.

To manage construction impacts, a CEMP will be prepared and will be refined prior to construction commencing. Specific management measures include:

- Provision of coordinates for clearing extents to the contractor;
- In field demarcation of clearing extents;
- Requirement to conduct regular inspections of clearing boundaries and document the clearing activities undertaken;
- Weed and pathogen hygiene management measures to prevent the introduction and spread of weeds and dieback;
- Dust suppression measures to reduce dust emissions;
- Procedures to manage risk of causing fire during construction;
- Requirement to restrict vehicles and equipment to the construction footprint;
- Requirement for regular inspections of waste management; and
- Conducting a vegetation monitoring plan to detect changes in the health of significant vegetation immediately adjacent to the project area. The aim is to detect changes attributable to the construction of the JEL.

The risk of adverse impacts to *Caladenia huegelii* or its supporting habitat from changes in local hydrology is considered negligible. Hydrological studies for the JEL Project have demonstrated:

- That dewatering is not likely to be needed as there is adequate separation to maximum groundwater levels and the proposed road will be constructed in fill (i.e. above natural ground level);
- Post-construction surface water catchments flows will be balanced by using culverts to distribute surface water north and south of the JEL road comparable to pre-development levels; and
- There will be minimal impact to post-construction groundwater levels.

Following detailed design of the JEL, the City of Canning will update the hydrological modelling to ensure minimal impact to local hydrological conditions.

5.6.3.3 Significance of Impacts

DEC (2009) reports that *Caladenia huegelii* is known from 33 extant populations, with surveys recording 1,614 mature plants. Most of these populations are very small and occur in disjunct remnants of natural vegetation comprised of Banksia/Jarrah Woodland from just north of Perth to the Busselton area on the Swan Coastal Plain (DEC, 2009). Habitat critical to the survival of the species includes the area of occupancy of important populations; areas of similar habitat surrounding important populations (i.e. Jarrah/Banksia woodland on Bassendean sands), as these areas provide

potential habitat for natural range extension and are necessary to support viable populations of the associated mycorrhizal fungus and pollinating wasp species crucial to the orchid's survival, and to allow pollinators to move between populations; and additional occurrences of similar habitat that may contain important populations of the species or be suitable sites for future translocations or other recovery actions intended to create important populations.

The construction of the JEL will not directly impact any known populations of *Caladenia huegelii* but will impact a small area of Banksia/Jarrah woodland which may be regarded as critical habitat. The actual extent of critical habitat in the species range has not been mapped and therefore, it is difficult to put the proposed clearing into context.

The Significant Impact Guidelines (DoE, 2013) states that a significant impact is an impact which is important, notable or of consequence while having regards to its context or intensity. An assessment of significance for *Caladenia huegelii* against the significant impact criteria is presented in Table T.

TABLE T: SIGNIFICANCE ASSESSMENT FOR *CALADENIA HUEGELII*

SIGNIFICANT IMPACT CRITERIA	DESCRIPTION OF PROPOSED ACTION IN RELATION TO SIGNIFICANT IMPACT CRITERIA	LIKELIHOOD (KNOWN, LIKELY, POSSIBLE, UNLIKELY)
Lead to a long-term decrease in the size of a population.	No known populations of *Caladenia huegelii* will be impacted by the JEL. There is potential for indirect impacts to adversely affect individual plants that have been recorded close to the project area. However, mitigation and management measures have been developed to manage the risks of indirectly impacting these populations.	Possible
Reduce the area of occupancy of the species.	Up to 2.19 ha of potentially suitable habitat may be cleared for the JEL. *Caladenia huegelii* has not been recorded in the project area.	Possible
Fragment an existing population into two or more populations.	Clearing for the JEL will not fragment any populations.	Unlikely
Adversely affect habitat critical to the survival of an ecological community	Critical habitat for the survival of this species is defined as *the current known occupancy and areas of similar habitat surrounding known populations* (DEC, 2009). The areas to be impacted by the JEL may be regarded as critical habitat.	Possible
Disrupt the breeding cycle of a population.	*Caladenia huegelii* has a low rate of pollination success and is reliant upon an external pollinator and the presence of certain mycorrhiza in the soil. The importance and role of supporting habitat is not well understood. However, areas of potentially suitable habitat near known populations is considered critical habitat as these areas may support the pollinating wasp or be suitable for population dispersal.	Possible

TABLE T: SIGNIFICANCE ASSESSMENT FOR *CALADENIA HUEGELII*

SIGNIFICANT IMPACT CRITERIA	DESCRIPTION OF PROPOSED ACTION IN RELATION TO SIGNIFICANT IMPACT CRITERIA	LIKELIHOOD (KNOWN, LIKELY, POSSIBLE, UNLIKELY)
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Construction of the JEL result in a small reduction in the availability of supporting habitat. However, indirect impacts if not managed appropriately could impact adjacent areas of habitat that support known populations.	Possible
Result in invasive species that are harmful to endangered species becoming established in the species habitat.	Construction of the JEL has the potential to introduce or spread invasive weed species into areas that support known populations. However, mitigation and management measures during construction can limit the risk of this occurring.	Possible
Introduce disease that may cause the species to decline	Construction of the JEL has the potential to introduce or spread dieback into areas that support known populations. Parts of the JEL alignment, or areas adjacent to the alignment have confirmed presence of dieback. However, not all the alignment has been mapped, or is interpretable due to the absence of sufficient indicator species. However, given the proximity of these areas to known infestations, it is probable that dieback impacts most (or all) of the JEL Project Area. *Caladenia huegelii* does not appear to be impacted by dieback directly as individuals have been recorded in dieback infested areas (e.g. Caladenia Grove Reserve). However, the potential changes to vegetation structure caused by dieback could be detrimental to the long-term survival of the species at these locations. An assessment of dieback for the entire JEL Project will be completed by the City of Canning prior to construction of the JEL. The results of the assessment will be considered in the preparation of a CEMP.	Unlikely (on the basis that dieback pathogen is already present)
Interfere with the recovery of the species	The JEL traverses an area that is regarded as perhaps one the most significant locations for the protection of *Caladenia huegelii*. The potential indirect impacts associated with the JEL could interfere with the recovery of the species via loss of potentially suitable habitat, introduction of invasive weed species or hydrological changes.	Possible

The JEL will not directly impact any *Caladenia huegelii* specimens. The species has not been recorded in the project area. Up to 2.19 ha of potentially suitable habitat will be cleared.

Inappropriate construction practices could indirectly impact nearby populations of the species. To manage this risk, a CEMP will be prepared for the project. The CEMP will address the procedures to avoid adverse indirect impacts on nearby areas of vegetation. With appropriate controls in place,

indirect impacts can be managed such that there will not be any significant residual impacts on *Caladenia huegelii*.

5.6.4 Black Cockatoos

The JEL Project Area is within the modelled feeding distribution range for Carnaby's cockatoo and within the modelled distribution for forest red-tailed black cockatoo, but not the modelled distribution for Baudin's cockatoo.

Fauna studies conducted for the JEL and the TCL Proposals confirmed the project area contains foraging habitat for Carnaby's cockatoo and Baudin's cockatoo. The project area does not contain suitable foraging habitat for the forest red-tailed black cockatoo. There is no suitable breeding or roosting habitat in the project area.

5.6.4.1 Potential Impacts

An assessment of the extent of the black cockatoo foraging habitat has been provided in Section 5.2.2.3. The calculated direct impacts from the JEL on black cockatoo habitat include:

- Clearing 2.38 ha foraging habitat suitable for Carnaby's cockatoo and Baudin's cockatoo.
- This foraging habitat is comprised of:
    - 2.19 ha of Dryland vegetation (*Banksia attenuata* and *B. menziesii* dominated woodland) mapped as Degraded (0.96 ha), Good (0.54 ha) Very Good (0.12 ha) and Excellent condition (0.57 ha).
    - 0.19 ha of Transitional vegetation (*Banksia ilicifolia* and *B. attenuata* present) all of which was mapped as Good condition.

Indirect impacts on black cockatoo habitat (or vegetation more broadly) is described in Sections 5.1.2.7 and 5.2.2.4. Quantifying the indirect impacts is not possible. However, within 200 m of the JEL, there is 25.46 ha of Banksia woodlands which provide foraging resources for black cockatoos. However, there is considerably more habitat beyond the 200m buffer on Jandakot Airport land, in Ken Hurst Park, west of Ken Hurst Park and east of Ranford Road (e.g. Caladenia Grove Reserve).

Although indirect impacts may occur during or following construction of the JEL, these can be mitigated through design and construction management strategies.

5.6.4.2 Proposed Management and Mitigation

The avoidance, mitigation and management measures considered during the development of the JEL Project are outlined below:

- The JEL has been positioned in Lot 500 to avoid areas south of the proposed alignment which contain high quality foraging habitat.
- A CEMP will be prepared for the road construction project. Specific measures relevant to the management of fauna will be included in the CEMP and may include:
    - Provision of coordinates for clearing extents to the contractor;
    - Plan for site access, wash down areas (if required), parking areas, drainage and fencing;

- In field demarcation of clearing extents;
- Requirement to conduct regular inspections of clearing boundaries and document the clearing activities undertaken;
- Inclusion of fauna management requirements in site induction training;
- Employ a fauna spotter/handler to be present during site clearing;
- Weed and pathogen hygiene management measures to prevent the introduction and spread of weeds and dieback;
- Dust suppression measures to reduce dust emissions;
- Procedures to manage risk of causing fire during construction; and
- Requirement to restrict vehicles and equipment to the construction footprint.

5.6.4.3 Significance of Impacts

An assessment of the significance of the predicted habitat impacts for Carnaby's cockatoo, forest red-tailed black cockatoo and Baudin's cockatoo is provided in Table U.

TABLE U: SIGNIFICANCE ASSESSMENT FOR CARNABY'S, FOREST RED-TAILED AND BAUDIN'S BLACK COCKATOO

SIGNIFICANT IMPACT CRITERIA	DESCRIPTION OF PROPOSED ACTION IN RELATION TO SIGNIFICANT IMPACT CRITERIA	LIKELIHOOD (KNOWN, LIKELY, POSSIBLE, UNLIKELY)
Lead to a long-term decrease in the size of a population.	The Proposal is unlikely to result in a long-term decrease in the size of the population for the three species. The loss of 2.38 ha of foraging habitat is not sufficient foraging resources to sustain many individual birds for any length of time. It also represents an extremely small quantity of available foraging resources close to the JEL.	Unlikely
Reduce the area of occupancy of the species.	The Proposal will not reduce the area of occupancy for any of the species.	Unlikely
Fragment an existing population into two or more populations.	The three species are nomadic within their range and have strong dispersal capabilities. The JEL will not fragment any population of the three species.	Unlikely
Adversely affect habitat critical to the survival of the species.	The JEL will clear 2.38 ha of foraging habitat for Carnaby's cockatoo and Baudin's cockatoo. No breeding or roosting habitat will be impacted. The Recovery Plan for Carnaby's cockatoo identifies the following habitat as being critical to the survival of the species: • Eucalypt woodlands that provide nest hollows for breeding, together with nearby foraging, roosting and watering points.	Known

TABLE U: SIGNIFICANCE ASSESSMENT FOR CARNABY'S, FOREST RED-TAILED AND BAUDIN'S BLACK COCKATOO

SIGNIFICANT IMPACT CRITERIA	DESCRIPTION OF PROPOSED ACTION IN RELATION TO SIGNIFICANT IMPACT CRITERIA	LIKELIHOOD (KNOWN, LIKELY, POSSIBLE, UNLIKELY)
	• Woodlands sites known to have supported breeding in the past. • Vegetation that provides food resources as well as the site for nearby watering and night roosting. The Recovery Plan for the forest red-tailed black cockatoo and Baudin's cockatoo defines critical habitat for the species as all Marri, Karri and Jarrah forests, woodlands and remnants in the south-west of Western Australia receiving more than 600 mm of annual average rainfall.	
Disrupt the breeding cycle of a population.	The JEL Project Area does not contain any suitable or potential breeding habitat and is not within the modelled breeding range for the three species.	Unlikely
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The loss of 2.38 ha of foraging resources will not lead to a decline in the Black Cockatoo species. This area provides limited feeding resources and would not be adequate to sustain many individuals for any length of time.	Unlikely
Result in invasive species that are harmful to endangered species becoming established in the species habitat.	The JEL will not introduce an invasive species that may be harmful to Black Cockatoos.	Unlikely
Introduce disease that may cause the species to decline.	The project area is most likely uninterpretable or infested with *Phytophthora* dieback. Dieback infested areas are known directly adjacent to the JEL Project Area. The JEL therefore is unlikely to introduce dieback but could spread the pathogen. The spread of dieback can be managed through the implementation of hygiene procedures during construction. Any residual impacts are not likely to cause a decline of Black Cockatoos.	Unlikely
Interfere with the recovery of a species.	Although the Proposal will clear black cockatoo foraging habitat, the small loss of 2.38 ha is minimal in the context of the available foraging resources adjacent to the project area. As such, the recovery of the species is not expected to be interfered with.	Unlikely

Inappropriate construction activities have the potential to indirectly impact nearby habitat. To manage this risk, a CEMP will be prepared and implemented. The CEMP will address the procedures to avoid adverse indirect impacts on nearby areas of habitat.

6 OFFSETS

6.1 MRS AMENDMENT 1312/57

In its review of MRS Amendment 1312/57 the EPA considered the following environmental factors as being of relevance:

- Flora and vegetation, and
- Inland waters environmental quality.

As the amendment impacted areas of vegetation within a Bush Forever area, the EPA considered that these impacts should be dealt with appropriately under State Planning Policy 2.8. The additional impacts to wetlands were regarded by the EPA as being minor given the area is already intersected by the waste transfer station access road.

The EPA was supportive of rehabilitating the existing waste transfer station access road when the road is decommissioned.

The WAPC report for MRS Amendment 1312/57 indicates 2.1 ha of the road reservations of Govan and Lothian Roads, which intersect Lot 500 Ranford Road, will be closed, and included in Bush Forever site 388 as part of an offset for the portion of vegetation being removed (WAPC, 2016).

6.2 SIGNIFICANT RESIDUAL IMPACTS

6.2.1 Definition

The EPA (Government of WA, 2014) define significant residual impacts as:

> *"…those [impacts] that affect rare and endangered plants and animals (such as declared rare flora and threatened species that are protected by statute), areas within the formal conservation reserve system, important environmental systems and species that are protected under international agreements (such as Ramsar listed wetlands) and areas that are already defined as being critically impacted in a cumulative context. Impacts may also be significant if, for example, they could cause plants or animals to become rare or endangered, or they affect vegetation which provides important ecological functions."*

6.2.2 Relevant Significant Residual Environmental Impacts

Based on the assessment of the environmental values within the Project Area, the following significant residual environmental impacts have been identified:

- Permanent loss of 2.38 ha of native vegetation that is representative of Banksia woodlands of the Swan Coastal Plain ecological community. This vegetation is also representative of Low-lying *Banksia attenuata* woodlands or shrublands (FCT 21c), a State-listed Priority 3 PEC.
- Permanent loss of 2.19 ha of supporting habitat for *Caladenia huegelii* (noting that no specimens have been recorded within or adjacent to the Project Area).
- Permanent loss of 1.61 ha of native vegetation within Bush Forever site 388.
- Permanent loss of 1.08 ha of wetlands/wetland vegetation.

- Permanent loss of 2.38 ha of Carnaby's cockatoo foraging habitat.
- Permanent loss of 2.38 ha of Baudin's cockatoo foraging habitat.

6.2.3 Quantum of Impact

The quantum of impact for each significant residual environmental impact is summarised in Table V.

TABLE V: SIGNIFICANT RESIDUAL ENVIRONMENTAL IMPACTS

ENVIRONMENTAL VALUE	QUANTUM OF IMPACT
Banksia Woodlands of the Swan Coastal Plain ecological community / Low-lying *Banksia attenuata* woodlands or shrublands (FCT 21c)	2.38 ha of vegetation comprising: • Excellent – 0.57 ha; • Very Good – 0.12 ha; • Good – 0.73 ha; and • Degraded – 0.96 ha.
Supporting habitat for the threatened species *Caladenia huegelii*	2.19 ha of potentially suitable habitat comprising: • Excellent – 0.57 ha; • Very Good – 0.12 ha; • Good – 0.54 ha; and • Degraded – 0.96 ha.
Black cockatoo (Carnaby's and Baudin's) foraging habitat	2.38 ha of high value foraging habitat (Banksia woodland)
Bush Forever	1.61 ha of native vegetation comprising: • 1.43 ha Dryland vegetation type. • 0.03 ha wetland vegetation type. • 0.15 ha (not accessible). The split according to vegetation condition is: • Excellent – 0.58 ha • Very Good – 0.15 ha • Good – 0.26 ha • Degraded – 0.62 ha 1.11 ha of cleared land within Bush Forever Site 388 is also within the Project Area. However, this is not regarded as a significant residual impact.
Wetlands / wetland vegetation	CCW UFI 16111 – 0.05 ha CCW UFI 16115 – 0.01 ha 1.02 ha of wetland vegetation type not associated with a wetland mapped in the DBCA Geomorphic Wetlands of the Swan Coastal Plain dataset, comprising: • Very Good – 0.07 ha • Good – 0.95 ha

6.3 ENVIRONMENTAL OFFSET PROPOSAL

The environmental offset proposal for the JEL Project comprises two planned actions: closure of the Govan and Lothian Road reserves and transfer of this to Bush Forever Site 388, and on-ground revegetation/rehabilitation of areas within Bush Forever Site 388. In addition to these measures, an advanced offset has also been provided by the WAPC involving the revegetation of approximately 7 ha of degraded land at Harrisdale Swamp (Bush Forever Site 253). Further details of these offsets are provided in the following sections.

6.3.1 Govan and Lothian Road Reserve Closure

The closure of the Govan and Lothian Road reserves (the offset area) and inclusion of this land within Bush Forever Site 388 will add 2.13 ha of native vegetation to Bush Forever Site 388. Closing the road reservation will remove the risk of clearing for future road construction.

Lothian Road reserve was outside of the PGV Environmental (2019) survey area and therefore the vegetation type and condition were not assessed for a portion of the offset area. However, Natural Area Holdings Pty Ltd (NAH) (2021) have conducted botanical monitoring within the City of Canning's high value conservation reserves. This assessment included the Ranford Road Bushland portion of Bush Forever Site 388. The environmental values within the Lothian/Govan Road reserves are described below.

Environmental Values within Offset Area

Four vegetation types (Figure 7) were mapped within the offset area by NAH (2021):

- 0.50 ha of Open *Melaleuca preissiana* Woodland over mixed shrubland and mixed sedges (MpOW):
    - Very Good – 0.47 ha.
    - No vegetation condition assigned – 0.03 ha
- 0.64 ha of *Hypocalymma angustifolium* and mixed shrubland over mixed understorey (HaS).
    - Excellent – 0.12 ha.
    - Very Good – 0.44 ha.
    - Good – 0.06 ha.
    - No vegetation condition assigned – 0.02 ha.
- 0.30 ha of Low *Banksia* woodland over *Xanthorrhoea brunonis* and *Dasypogon bromeliifolius* (BaBmLW).
    - Very Good – 0.27 ha.
    - Good – 0.02 ha.
    - No vegetation condition assigned – 0.01 ha.
- 0.47 ha of *Banksia attenuata* and *Allocasuarina fraseriana* woodland over *Hibbertia hypericoides, Patersonia occidentalis* and *Desmocladus flexuosus* (BaAfW).

  - Very Good – 0.23 ha
  - Good – 0.17 ha.
  - No vegetation condition assigned – 0.06 ha.
- A total of 0.23 ha within the offset area was not assigned a vegetation type by NAH (2021):
  - Very Good – 0.03 ha.
  - Good – 0.03 ha.
  - No vegetation condition assigned – 0.16 ha.

The two Banksia dominated vegetation types (0.76 ha) which align with the Dryland vegetation type mapped by PGV (2019) possess the following values:

- Representative of the Banksia Woodlands of the Swan Coastal Plain ecological community;
- Likely representative of the Priority 3 PEC – FCT21c Low-lying *Banksia attenuata* woodlands or shrublands;
- Supporting *Caladenia huegelii* habitat, although no occurrences of this species have been recorded within the offset area; and
- High value foraging habitat for black cockatoos including Carnaby's Baudin's and forest red-tailed black cockatoo.

The vegetation types MpOW and HaS cover a total area of 1.14 ha and align with the Wetland vegetation type mapped by PGV (2019) and are representative of wetland areas.

An additional area of 0.23 ha was not assigned a vegetation type.

6.3.2 Lot 500 Ranford Road Bushland Management and Revegetation

Following construction of the JEL, two areas of existing road infrastructure which provided access to the Waste Transfer Station will be decommissioned and revegetated using locally native species (Plate 8). An additional area of degraded land near the intersection of Ranford Road and Livingstone Drive has also been identified for revegetation/rehabilitation.

The revegetation areas are estimated as approximately 1.80 ha. The former road areas are completely cleared. The 1.35 ha near Ranford Road/Livingstone Road intersection comprises cleared land and areas mapped as Degraded and Good condition.

The City of Canning will commit to the preparation and implementation of a revegetation plan for these areas. The Plan will outline the management measures to be completed to revegetate these areas to achieve a stable vegetation community that is comparable to a vegetation condition rated as Good using the Keighery vegetation condition rating scale within five to seven years. The revegetation program will involve:

- Decommissioning and appropriate disposal of road infrastructure.
- Deep ripping to break up compacted soil.
- Initial weed control program.

- Planting of endemic species using tube stock and/or direct seeding.
- Temporary fencing to reduce grazing pressures on seedlings.
- Monitoring of revegetation establishment.
- On-going weed control.
- Infill planting as required in order to achieve target vegetation condition.

As a contingency, the City of Canning will continue management of the revegetation area until the target vegetation condition has been achieved.

PLATE 8: LOT 500 RANFORD ROAD REVEGETATION/REHABILITATION AREAS

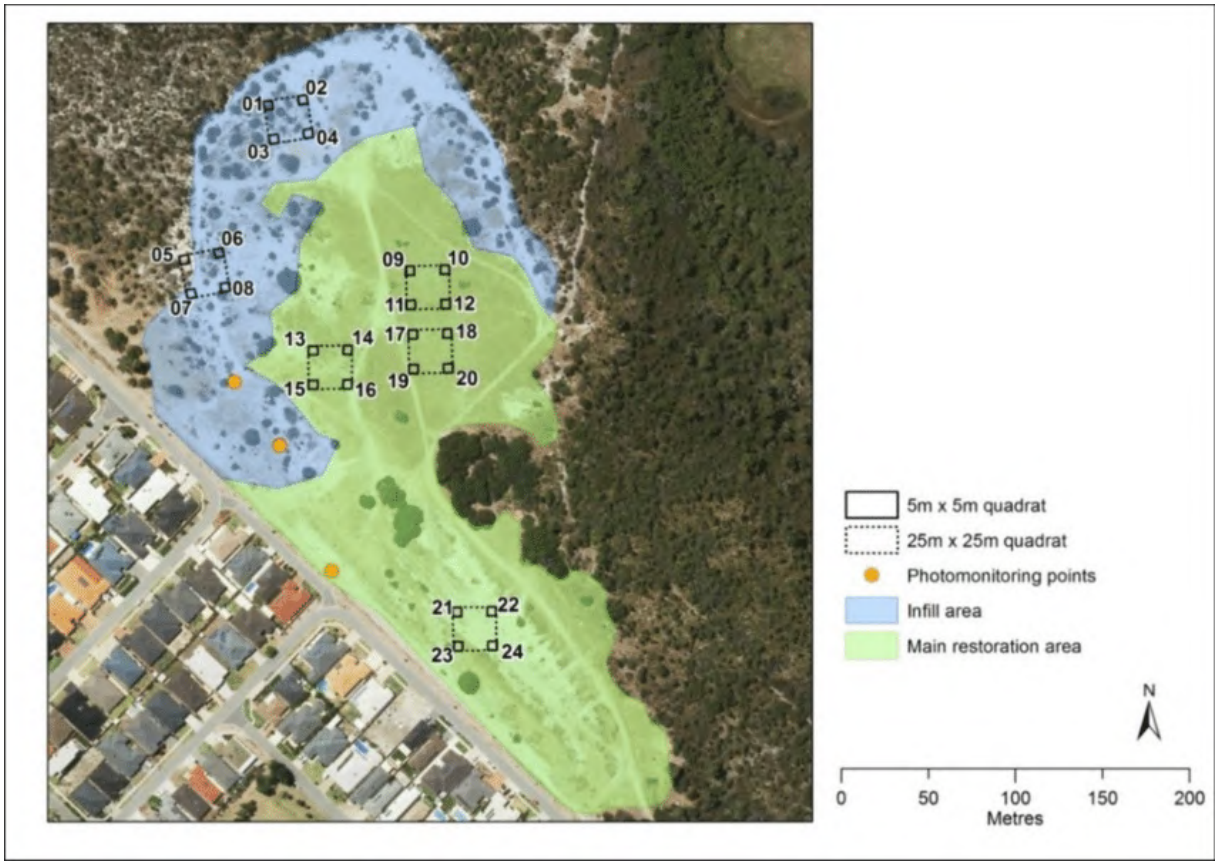
6.3.3 Harrisdale Swamp Revegetation

Funds provided by the WAPC/DPLH in 2017 have been used to provide an offset for the JEL Project. The offset involves the restoration of a former sand quarry at the south-western boundary of Harrisdale Swamp, Bush Forever Site 253, approximately 4.5 km south-east of the JEL Project Area. Bush Forever Site 253 is approximately 110 ha, with 53 ha managed by the DBCA Regional Parks Unit, 48 ha managed by the DPLH and the remaining area under private ownership (Brundrett *et al.*, 2017).

The restoration has been managed by the DBCA as part of the Banksia Woodland Restoration Project (BWRP). The objective of the BWRP is to create new Banksia woodlands and repair existing woodlands in the Perth metropolitan area within the conservation estate, recognising the value of these woodlands to Carnaby's cockatoo and *Caladenia huegelii*. The BWRP commenced in 2011.

The Harrisdale Swamp restoration commenced in 2017/2018 and has involved the restoration of 7 ha of degraded land (Plate 9).

PLATE 9: HARRISDALE SWAMP (BUSH FOREVER SITE 253) RESTORATION AREA



Source: Brundrett *et al.* (2017)

The restoration project has involved:

- Recontouring the former quarry edges.
- Topsoil harvesting from Jandakot Airport following clearing of native vegetation.
- Top dressing the area using the salvaged topsoil.
- Monitoring of seedling recruitment in areas where topsoil has been spread by DBCA staff and volunteers.
- Planting and direct seeding in April 2018 using a mix of endemic species to supplement the natural seed store within the topsoil.
- Fencing, establishment of walk trails through the swamp area.
- Removal of all rubbish.
- On-going monitoring of the restoration area including the establishment of 24 monitoring plots to capture baseline data.

The baseline survey in July 2017 (which took place two months following topsoil spreading), to the follow-up survey in December 2017, the frequency of native plants increased from 19% to 100% in the completely degraded area, and from 75% to 100% in the infill area (Brundrett, *et al.*, 2017). Majority of the new plants germinated from the topsoil seed bank (Brundrett, *et al.*, 2017). The average species

richness from across the site increased from 26 species in winter to 75 species in winter (Brundrett, *et al.*, 2017). Wisolith *et al.* (2018) reported that weed frequency was 100%, i.e., weed species were found in all quadrats and that weed cover increased over the time between the baseline and the December 2017 survey. This result was expected due to the establishment of annual weed species and limited opportunities for weed control.

On-going vegetation surveys are planned to track the restoration progress and to guide weed management. The area is being managed by the DBCA.

6.4 JUSTIFICATION OF OFFSETS

6.4.1 Western Australian Offsets Policy Principles

The Western Australian Offset Policy (Government of WA, 2011) is underpinned by various principles for the use of environmental offsets as outlined below:

Environmental offsets will only be considered after avoidance and mitigation options have been pursued.

A site selection study was conducted to evaluate several potential locations for the JEL. The study included a multi-criteria analysis which considered environmental constraints in the evaluation of each option. The preferred option minimises impacts to conservation significant environmental values. The integration of access to the Waste Transfer Facility and the Ranford Road station (under construction) with the JEL has reduced clearing requirements by eliminating duplication of road infrastructure.

Locating the JEL along the northern most extent of the bushland on Lot 500 Ranford Road preserves the southern section of bushland as a consolidated area of native vegetation in a broadly rectangular shape. In addition, the removal of Lothian and Govan Road reserves will avoid fragmenting the bushland.

On-site mitigation will include revegetating areas previously used for road access to the waste transfer facility and revegetating/rehabilitating a degraded area of land within Lot 500 Ranford Road.

Environmental offsets are not appropriate for all proposals.

The environmental offsets for the JEL are being provided for the identified significant residual environmental impacts. In its review of the previous MRS amendment for the JEL, the EPA supported the closure of Lothian and Govan Road reserves and inclusion of this bushland in Bush Forever Site 388 as an appropriate offset to compensate for significant residual impacts of the JEL Project.

Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.

The closure of Lothian and Govan Road reserves and transfer of this bushland into Bush Forever Site 388 is a cost-effective method of compensating the significant residual impacts of the JEL Project. The transfer will incur minimal cost as the road reserves are Crown land and therefore will not involve any acquisition costs. Transferring this land to Bush Forever Site 388 and the removal of the road reservation will improve its conservation tenure, ensuring the protection of the environmental values contained in this area. The values within the road reserve area are proportionate and commensurate with the environmental values being impacted.

The revegetation of degraded areas within Bush Forever Site 388 (refer to Plate 8) is also considered a cost-effective mitigation measure. No land acquisition costs are involved as the land is already under the management authority of the City of Canning. The costs associated with this component are related to revegetation activities.

The restoration of a portion of Bush Forever Site 253 (Harrisdale Swamp and Adjacent Bushland) is also cost effective, as no land purchase is required. The money has been spent by the State Government as part of this offset is targeted at on-ground actions as a component of this direct offset.

Environmental offsets will be based on sound environmental information and knowledge.

The significant residual impacts have been determined from reliable data collected by various consultants. The advanced offset of revegetation at Harrisdale Swamp has been coordinated by the DBCA. Revegetation at Lot 500 Ranford Road will be completed by the City of Canning with advice from revegetation specialists.

Environmental offsets will be applied within a framework of adaptive management.

The City of Canning manages the bushland within Lot 500 Ranford Road (a portion of Bush Forever Site 388) and the bushland within the Govan and Lothian Road reserves. The City will continue to manage Lot 500 Ranford Road as part of its reserves management regime which includes periodic monitoring of vegetation condition across the City's high value environmental assets. The City uses the data from the monitoring to guide site management within its reserves. Management actions are adjusted accordingly to ensure relevant issues are managed within a cost-effective manner.

The restoration of Harrisdale Swamp is being conducted within an adaptive framework. Monitoring has been conducted to inform site-based actions in a responsive manner.

Environmental offsets will be focussed on longer-term strategic outcomes.

The closure of the road reserves represents a long-term strategic outcome that will ensure the preservation of high value bushland within Bush Forever Site 388. The classification of this land as Bush Forever will provide added security, reducing the risk of clearing. Revegetation within Bush Forever Site 388 (within Lot 500 Ranford Road) will improve the condition of degraded areas and enhance the site's environmental values.

The restoration of Harrisdale Swamp will provide long-term environmental value through the provision of additional habitat as well as the enhancement and protection of existing bushland at this site. The restoration will result in additional habitat being created.

6.4.2 Application of the WA Environmental Offsets Guidelines to the Proposed Offsets

This section summarises how each offset is relevant and proportionate to the significance of the environmental values being impacted through appropriate consideration of the Western Australia Environmental Offsets Guidelines (Government of Western Australia, 2014).

Proximity to the area of impact

The proposed offsets are very close to the impact site. The vegetation within the Lothian and Govan Road reserves and the revegetation areas within Lot 500 are contiguous with the bushland being impacted for the JEL.

The restoration area within Bush Forever Site 253 is approximately 4.5 km south-east of the impact area.

It provides better condition / less disturbance compared with the impacted environmental value.

Overall, the vegetation within the Lothian and Govan Road reserves is in better condition than the vegetation that will be cleared for the JEL. For example, the vegetation within the road reserves (as assessed by NAH (2021)) includes 1.56 ha of vegetation rated as Very Good (1.22 ha) and Excellent (0.12). In comparison, the JEL will impact 0.73 ha of vegetation rated as Very Good (0.15 ha) and Excellent (0.58 ha).

Bush Forever Site 253 Harrisdale Swamp and Adjacent Bushland, is a 98.4 ha site in which the vegetation was assessed as being Pristine to Very Good (>60%), Good to Degraded (<40%) (Trudgen, 1990). The JEL offset includes the restoration of approximately seven hectares of land within Bush Forever Site 253 that was historically mined for sand. Mining of the seven hectares resulted in the complete removal of native vegetation. Scattered native species have naturally germinated, in part, but the area was mostly bare sand or dominated by weeds and therefore assessed as Completely Degraded condition prior to restoration activities commencing. Over time the restoration area will improve, enhancing the environmental values at the site, provide additional habitat and reduce the spread of weeds into adjacent areas of bushland.

It contains habitat structure as similar as possible to undisturbed example of vegetation type to be impacted.

The vegetation/habitat within the road reserves of Lothian and Govan Roads is contiguous with the bushland on Lot 500 Ranford Road and the JEL Project Area. The vegetation types are the same and the vegetation condition is comparable or better than the vegetation being impacted. The areas identified for revegetation within Lot 500 Ranford Road will be returned to vegetation communities similar to those areas being impacted.

Prior to sand mining taking place in Bush Forever Site 253, Banksia woodland was present within the area being restored. Trudgen's (1990) mapping of vegetation structural units in Bush Forever Site 253 found the uplands are dominated by *Banksia attenuata* and *B. menziesii* Low Woodland to Low Open Forest with scattered *Allocasuarina fraseriana, Eucalyptus marginata* and *Nuytsia floribunda; Banksia menziesii, B. ilicifolia* and *E. marginata* Low Open Forest; *Banksia ilicifolia, B. attenuata* and *M. preissiana* Low Open Forest. The topsoil used in the restoration at Bush Forever Site 253 was transferred from Banksia woodland, following clearing conducted at Jandakot Airport. These vegetation types are comparable with the *Banksia* woodland proposed to be cleared for the JEL Project.

Has a better area to perimeter ratio than the impact site.

Implementation of the proposed offset at Lot 500 Ranford Road will ensure the retained vegetation south of the JEL will be protected and managed as a consolidated area of native vegetation, in broadly a rectangular shape. Revegetation of the identified locations within Lot 500 Ranford will enhance the overall environmental values of the site by improving degraded areas through weed control and planting of native species. Over time the revegetation areas will become established and with on-going weed management improve the resilience of the bushland on Lot 500.

The restoration of the 7.0 ha degraded area at Bush Forever Site 253 will improve the resilience of remaining areas of native vegetation by replacing weeds with endemic species. Over time the native vegetation will become established and reduce the

Contains additional Rare or Otherwise Significant Species and Threatened Species or Community Compared with the Impact Site

The Lothian and Govan Road reserves contain vegetation that is comparable with the impact area. The values of the vegetation within the road reserves includes the following values:

- Representative of the Banksia Woodlands of the Swan Coastal Plain ecological community.
- Likely representative of the Priority 3 PEC – FCT21c Low-lying *Banksia attenuata* woodlands or shrublands.
- Supporting *Caladenia huegelii* habitat, although no occurrences of this species have been recorded within the offset area.
- High value black cockatoo foraging habitat.
- Wetlands and wetland vegetation.

Harrisdale Swamp is approximately 100 hectares of parkland managed by the DBCA as part of the Jandakot Regional Park. This Bush Forever site contains areas of Banksia woodlands, conservation significant wetlands, supports threatened flora such as *Caladenia huegelii* and contains habitat for multiple conservation significant fauna species (such as Carnaby's cockatoo, Baudin's cockatoo and forest red-tailed black cockatoo).

Contiguous with an existing conservation area.

Both offsets are within Bush Forever areas that are owned by the City of Canning and the WAPC. The offset areas are being managed for conservation by the City of Canning (Lot 500 Ranford Road) and the DBCA (Harrisdale Swamp as part of the Jandakot Regional Park.

Enhances biological corridors or ecological linkages between conservation areas.

The bushland within Lot 500 forms a part of an ecological linkage connecting Caladenia Grove Reserve to Ken Hurst Park and bushland within the Jandakot Airport site. These areas form an ecological corridor to the south-east, connecting with bushland within the Jandakot Regional Park, including Bush Forever Site 253.

It includes actions to address threatening processes.

Key threatening processes to Banksia Woodlands of the Swan Coastal Plain ecological community, black cockatoo species, *Caladenia huegelii* and conservation significant wetlands include:

- Clearing of native vegetation;
- Habitat degradation / loss of food resources;
- Inappropriate fire regimes;
- Weed invasion and introduction/spread of pathogens; and
- Feral/pest animals.

The two offsets provided for the JEL address key threatening processes as follows:

- Conservation of significant vegetation/habitat: the extinguishment of the Lothian and Govan Road reserves will remove the threat of clearing for the construction of these roads. The vegetation within these areas will be added to Bush Forever Site 388 and managed for conservation.
- The two offset areas are being managed for conservation. Management actions include:
    - Fencing to prevent unmanaged access preventing illegal waste disposal, introduction and spread of weeds and other pathogens.
    - Removal of rubbish.
    - Feral animal control.
    - Installation of signage to identify that the site contains high conservation values.
    - Weed control as required, targeting invasive weeds that have the potential for high ecological impact.
    - Revegetation to create additional habitat and enhance local environmental values.
    - Maintenance of firebreaks and emergency vehicles access at each site to assist with bush fire response.
    - Monitoring vegetation condition to inform adaptive management at the site, ensuring appropriate responses to threatening processes as required.

Offsets Must be Focussed on Long-term Strategic Outcomes

Both offset locations are within secure tenure and within the ownership of the City of Canning and the WAPC. The inclusion of the two offset areas within Bush Forever provides long-term protection of the environmental values at these locations.

The closure of the Lothian and Govan Road reserves will transfer the affected land to Bush Forever Site 388 within Lot 500. The City of Canning will continue to manage this portion of Bush Forever Site 388 for conservation.

The restoration area at Harrisdale Swamp is located on Lot 2010 on Deposited Plan 419569, which is owned by the WAPC and is identified as a part of Bush Forever Site 253. The land is being managed by the DBCA for conservation as part of the Jandakot Regional Park.

6.4.3 Consistency of the Offsets with the Principles in the Commonwealth Environmental Offsets Policy

The Commonwealth Environmental Offsets Policy (Australian Government, 2012) outlines the Australian Government's approach to the use of environmental offsets under the EPBC Act. The Policy is based upon eight core principles, which are discussed below.

1. Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by the proposed action.

The offsets will improve the viability of bushland within Bush Forever Sites 388 and 253. This will be achieved through the closure of the Lothian and Govan Road Reserves and amalgamation of these areas within Bush Forever Site 388. The additional+ areas of native vegetation will be managed by the City of Canning as a part of the overall reserve management for Lot 500. The native vegetation within Lot 500 will be enhanced through the revegetation and rehabilitation of degraded areas, including areas of existing roads which will be decommissioned. The closure of Lothian and Govan Road reserves and inclusion of these areas within Bush Forever Site 388 will provide security for areas containing Banksia Woodlands of the Swan Coastal Plain ecological community, black cockatoo foraging habitat and supporting habitat for *Caladenia huegelii*. The City's Local Biodiversity Strategy sets out a strategic plan for the management of local biodiversity assets within the municipality. The Strategy includes the aims of improving the protection of biodiversity within the City, appropriately managing local natural areas and increasing the viability and resilience of natural areas. In accordance with the Strategy, the City of Canning will prepare and implement a management plan for reserve, to guide on-ground activities for the protection and enhancement of the environmental values at Lot 500.

The advanced offset within Bush Forever Site 253 has created new habitat/vegetation, providing additional areas of Banksia Woodlands of the Swan Coastal Plain ecological community, black cockatoo foraging habitat and supporting habitat for *Caladenia huegelii.* The advanced offset involving weed control and revegetation reduces the threat of weed invasion at the site.

2. Be built around direct offsets but may include other compensatory measures.

Direct offsets involving on-ground action such as revegetation, management (weed control, fencing and monitoring) and changes to tenure to improve conservation security have been developed for the JEL Project.

3. Be in proportion to the level of statutory protection that applies to the protected matter.

The offsets for the JEL Project provide habitat / vegetation types that are comparable with the impact area and of equal conservation significance.

4. Be of size and scale proportionate to the residual impacts on the protected matter.

The offsets for the JEL Project will achieve a net environmental gain. The Project will impact 3.98 ha of native vegetation rated as Degraded or better condition. The impact to MNES include:

- 2.38 ha of Banksia woodlands of the Swan Coastal Plain ecological community and black cockatoo foraging habitat;
- 2.38 ha of black cockatoo (Carnaby's and Baudin's) foraging habitat; and
- 2.19 ha of supporting habitat for *Caladenia huegelii.*

The offsets for the JEL Project will achieve a net environmental gain by:

- Creating approximately 7.0 ha of new Banksia woodland / black cockatoo foraging habitat / supporting habitat for *Caladenia huegelii*.

- Transferring 2.13 ha of native vegetation into Bush Forever Site 388, with this area being managed for conservation by the City of Canning with the remainder of the bushland within Lot 500 Ranford Road. The area to be transferred includes 0.76 ha of Banksia woodland / black cockatoo foraging habitat / supporting habitat for *Caladenia huegelii*.
- Revegetating / rehabilitating up to 1.80 ha within Lot 500 Ranford Road including vegetation that will provide / enhance Banksia woodland / black cockatoo foraging habitat / supporting habitat for *Caladenia huegelii.*

5. Effectively account for and manage the risks of the offset not succeeding.

The City of Canning is committed to achieving successful outcomes for on-ground actions described in this report. The City's Local Biodiversity Strategy provides a strategic plan for biodiversity conservation within its jurisdiction for the next 20 years with the aim of improving the protection of biodiversity within the City, appropriately managing local natural areas and increasing the viability and resilience of natural areas. In accordance with the Strategy, the City of Canning is committed to the preparation and implementation of a management plan for the reserve. The management plan will guide on-ground activities for the protection and enhancement of the environmental values at Lot 500. The management plan will adopt an adaptive management approach enabling actions to be modified in response to changing conditions so that the overall aims and objectives are met.

6. Be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs.

The City is not legislated to manage the bushland on Lot 500 Ranford Road. Management is currently ad hoc, and there are no plans to undertake revegetation/rehabilitation works in the areas identified in this report. The revegetation/rehabilitation and management of the bushland on Lot 500 will be additional to the City's standard management of the site.

The WAPC committed funding to the rehabilitation of the 7 ha area in Bush Forever Site 253 (Harrisdale Swamp) as an offset for the JEL Project. The provision of these funds is not legislated or required under any other schemes or programs. Revegetation and rehabilitation is outside of the WAPC's core business.

7. Be efficient, effective, timely, transparent, scientifically robust and reasonable.

The offsets for the JEL Project are efficient, effective, timely, transparent, scientifically robust and reasonable.

Closing Lothian and Govan Road reserves will result in a positive environmental outcome by reducing the risk of loss from clearing and improving the security of this vegetation by including this land within Bush Forever Site 388. The City will manage this additional area of native vegetation for conservation purposes along with the bushland on Lot 500 Ranford Road. The cost associated with the protection of the vegetation within the Govan and Lothian Road reserves is minimal as no acquisition costs are involved and management costs will be absorbed by the City from its reserves management budget.

The revegetation of 7 ha within Bush Forever Site 253 (Harrisdale Swamp) was funded by the WAPC as an advanced offset for the JEL Project. The funds have been used to salvage and transfer topsoil at the site under the supervision of the DBCA utilising in-house expertise. This revegetation method is considered a cost-effective method of re-establishing Banksia woodland communities where

conditions permit. No land acquisition costs were involved as the revegetation program was undertaken on Crown land. The DBCA is responsible for on-going site management and monitoring. Providing an advanced offset reduces the lag between the time of clearing and time until there is an ecological benefit.

Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.

Funding for reserve management is provided within the City of Canning's annual budgets which are subject to Council approval and available for public review. The City's finances are independently audited, providing confidence that funds are utilised for the intended purpose. The outcomes from management of the City's conservation reserves are periodically measured via vegetation health monitoring. The results from monitoring of vegetation health are used to detect changes, enabling the City to follow an adaptive management approach.

The DBCA has published monitoring reports for public review, outlining the work completed within Bush Forever Site 253 and describing the results from the revegetation. The information collected has guided on-ground management.

6.5 STAKEHOLDER RESPONSIBILITY

6.5.1 Lothian and Govan Road Closure

The City of Canning will be responsible for the closure of the road reserves for Lothian and Govan Roads. Where a road dedicated for public use is proposed to be closed, it may be closed at the request of Local Government under section 58 of the *Land Administration Act 1997* (LAA). The City of Canning will need to allow 35 days after the publication in a newspaper for objections and must consider any objection before requesting closure.

In accordance with Regulation 9 of the *Land Administration Regulations 1998*, when submitting a request to the Minister for Lands to close the roads, the City of Canning will need to provide:

- Written confirmation that Council has resolved to close the road.
- Plans showing the location of the road and the proposed future disposition of the land comprising the land after it has been closed.
- Copies of any submissions received following the public advertising process along with the local government's response to the submissions.
- Any relevant information for the Minister's consideration of the closure request.
- Written confirmation that the City has complied with sections 58(2) and (3) of the LAA.

6.5.2 Lot 500 Ranford Road Revegetation, Rehabilitation and Management

The City of Canning will be responsible for the preparation of a bushland management plan that outlines actions to be implemented for the protection and enhancement of native vegetation within Lot 500 Ranford Road. The management plan will be based on the principles of adaptive management and will address:

- Details for the revegetation and rehabilitation of the degraded areas identified in Section 6.3.2.

- Identification of completion criteria to be met for revegetation/rehabilitation activities.
- Access management including the installation of fencing and signage where required.
- Weed management.
- Monitoring, evaluation and reporting.
- Contingency actions if progress monitoring shows the completion criteria will not be met.

The bushland on Lot 500 Ranford Road will be managed on an on-going basis by the City for the purposes of conservation as part of its reserves management.

6.5.3 Bush Forever Site 253

The Banksia woodland restoration within Bush Forever Site 253 has already been funded by the WAPC. Site preparation, topsoil transfer, monitoring and on-going management has been managed by the DBCA.

7 ENVIRONMENTAL APPROVALS

Project environmental approvals can be split into State and Commonwealth approvals.

7.1 STATE APPROVALS

7.1.1 Part IV *Environmental Protection Act 1986*

7.1.1.1 Section 48

The MRS amendment for the JEL alignment was previously referred to the EPA, under Section 48 of the EP Act. The EPA identified two environmental issues relevant to the amendment:

- Flora and vegetation – impacts to Bush Forever Site 388; and
- Inland waters – impacts to a Conservation Category Wetland.

The proposed construction of the unmade sections of Johnston and Acourt Roads (Figure 2) was not assessed by the EPA as part of the JEL MRS amendment, as these are already gazetted road reserves and therefore an amendment to the MRS was not needed.

The EPA advised the amendment did not warrant formal assessment as the "potential impacts from this amendment can be adequately managed to meet the EPA's objectives through the implementation of *State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region*."

A small change to the JEL alignment has been made since the EPA considered the original MRS amendment. The change to the project footprint may require a minor amendment to the MRS. The minor amendment does not raise any new environmental issues, nor does it significantly increase the potential environmental impacts associated with the project. Therefore, it is unlikely that the amendment would be assessed by the EPA.

7.1.1.2 Section 38

Referral to the EPA under Section 38 of the EP Act can be undertaken where a proposal has the potential to have a significant environmental impact. Referral under Section 38 of the EP Act can be made by:

- A proponent;
- A decision-making authority (DMA); or
- A third party.

Given the EPA's assessment of the MRS amendment, it is Aurora Environmental's view that the proposed clearing does not have a significant level of environmental impact to warrant referral to the EPA and would be considered a very low risk of being assessed by the EPA if it were referred.

7.1.2 Part V *Environmental Protection Act 1986*

Under Section 51C the EP Act, clearing of native vegetation requires a permit from DWER, unless the clearing is for an exempt purpose. As there are no applicable exemptions 6 and the proposal involves clearing within designated environmentally sensitive areas, a clearing permit will be required for the project.

Where a clearing permit is required, the DWER will assessed the proposed clearing against its 'Ten Clearing Principles'. Aurora Environmental has assessed the proposed clearing against the Clearing Principles, the results are summarised in Table W.

TABLE W: ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

PRINCIPLE	IS PROJECT AT VARIANCE WITH THE PRINCIPLE?	COMMENT
Principle (a) – Native vegetation should not be cleared if it comprises a high level of biological diversity.	The project is unlikely to be at variance with this Principle.	Approximately 56% (5.14 ha) of the project area is cleared or was rated as Completely Degraded. Of the remaining 3.98 ha, the native vegetation was rated Degraded (1.22 ha or 13%), Good (1.84 ha or 20%), Very Good (0.34 ha or 4%) and Excellent (0.58 ha or 6%). The floristic diversity of *Banksia* woodlands is primarily associated with the understorey, with around 15 native trees included in the overstorey. Keighery and Keighery (2016) report an average of 50 plant taxa being recorded within 100 m^2 sample plots of *Banksia* Woodlands in the Perth area. In comparison, Astron (2015) recorded an average of 15 native flora species (average of 19.83 including weed species) in their six 10 m x 10 m (100 m^2) quadrats within the JEL road alignment and described the floristic diversity as severely impacted in most areas. Given the low species richness within the project area, it is unlikely that the impacted area contains higher biodiversity value than other vegetation within the local or regional area.
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.	The project may be at variance with this Principle.	Evidence of foraging by Carnaby's cockatoo has been observed in the project area. Areas mapped as dryland and transitional vegetation contain a mix of *Banksia* species along with other plant species known to provide foraging resources for Carnaby's cockatoo. The JEL Project Area has 2.38 ha of foraging habitat (excluding the TCL development envelope). Astron (2015) recorded a mix of low, medium and high-quality foraging habitat. No potential breeding trees are in the JEL Project Area and therefore the project area does not contain any breeding or roosting habitat values. Within the PGV Environmental (2019) survey area, there is 25.46 ha of foraging habitat. However, there is much more foraging habitat in surrounding areas of vegetation which also contain *Banksia* woodland.

TABLE W: ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

PRINCIPLE	IS PROJECT AT VARIANCE WITH THE PRINCIPLE?	COMMENT
		The forest red-tailed black cockatoo's preferred habitat is not present in the JEL Project Area. However, the species was recorded by Natural Area Consulting (2016) in the greater Ranford Road Bushland. Natural Area Consulting (2016) recorded the following native species within the greater Ranford Road bushland: five mammals, 17 birds, 12 reptiles, two amphibians and 65 invertebrate species The project area may also provide habitat for priority fauna species Quenda and Western Brush Wallaby, which have been recorded in close proximity to the project area in Ranford Road Bushland and Jandakot Airport respectively.
Principle (c) – Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	The project may be at variance with this Principle.	No threatened flora has been recorded during the multiple surveys conducted in Ranford Road Bushland. 2.19 ha of vegetation within the project area may be regarded as critical habitat for the threatened flora species *Caladenia huegelii.* Whilst this vegetation does not contain any *Caladenia huegelii* specimens, it may provide habitat for supporting processes such as the thynnid wasp responsible for the pollination of *Caladenia huegelii*.
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.	The project may be at variance with this Principle.	No State-listed TECs have been recorded within the project area. 2.38 ha of the Federally listed *Banksia* Woodland TEC has been recorded within the JEL Project Area. The vegetation associated with the TEC is also likely to be representative of the State-listed Priority 3 PEC Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c).
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.	The project is unlikely to be at variance with this Principle.	The impact of the JEL Project at a local government and regional scale, has been assessed against the mapped vegetation complexes and associations. The clearing of 4.43 ha of vegetation within the project area will not significantly reduce the extent of vegetation Association 1001 or the Bassendean Complex – Central and South at a local or regional scale.
Principle (f) – Native vegetation should not be cleared if it is growing in, or in association	The project is at variance with this Principle.	The JEL will impact 0.06 ha of mapped CCW (UFIs 16111 and 16115). Wetland vegetation not associated with any mapped wetland in the DBCA dataset was recorded within and adjacent to the Johnston Road

TABLE W: ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

PRINCIPLE	IS PROJECT AT VARIANCE WITH THE PRINCIPLE?	COMMENT
with, an environment associated with a watercourse or wetland.		reserve. The JEL Project will impact directly impact this 1.02 ha of this wetland vegetation. The JEL Project is also adjacent to CCW UFI 16111, and close to CCWs UFI 16114 and UFI 6912 (Figure 5).
Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	The project is unlikely to be at variance with this Principle.	The main land degradation risk associated with the soil types identified within the project area is wind erosion. The project includes the clearing of an additional 4.43 ha of vegetation. The soils on site are generally sandy and would be mobile when vegetation cover is removed, if left unstabilised. The construction of the road, drainage and landscaping will stabilise the land and eliminate the risk of erosion. A CEMP will be prepared and implemented, addressing how erosion risks will be managed during construction. The CEMP will include dust suppression measures on unsealed roads and access tracks, cleared areas and at locations and times of high dust risk. Daily visual monitoring of airborne dust will also be undertaken. On completion there will be negligible risk of land degradation attributable to the project.
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 project is at variance with this Principle.	An ESA (ID 3458) covers the majority of Lot 500 and areas directly west of Johnston Road and is associated with CCWs and Bush Forever Sites 388 and 245. Impacts to these areas will be minimised through the implementation of a CEMP during construction. The CEMP will include: • weed and pathogen hygiene management measures to prevent the introduction and spread of weeds and dieback; • dust suppression measures to reduce dust emissions; • procedures to manage risk of causing fire; • vegetation monitoring to detect changes in the health of significant vegetation immediately adjacent to the project area.
Principle (i) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in	The project is unlikely to be at variance with this Principle.	Groundwater is generally between 3 m and 7 m below the surface of the project area, with the salinity being between <250 mg/L (fresh). No dewatering or

TABLE W: ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

PRINCIPLE	IS PROJECT AT VARIANCE WITH THE PRINCIPLE?	COMMENT
the quality of surface or underground water.		interference with the groundwater is expected during the construction of the roads. A CEMP will be implemented to manage any risks associated with groundwater during the clearing of vegetation and construction of the roads, including restriction of certain activities/storage within the UWPCA and WHPZ, storage of chemicals and dangerous goods onsite and spill response procedures. The proposed clearing for the JEL Project is unlikely to result in the deterioration of groundwater quality.
Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.	The project is unlikely to be at variance with this Principle.	The project includes the clearing of an additional 4.43 ha of vegetation. The proposed clearing comprises leached Bassendean sands, which are generally considered to have high infiltration rates and therefore a low risk of waterlogging. The drainage design for the JEL will maintain outflows comparable to pre-development rates and balance water flow between the northern and southern sides of the JEL so there will not be a significant change in surface water hydrology (volume or flow path) (Calibre Consulting, 2016).

7.2 COMMONWEALTH APPROVALS

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides the DAWE the authority to assess an action that may have the potential to significantly impact on a matter of national environmental significance (MNES).

A referral under the EPBC Act is required where an action has, will have or is likely to have a significant impact upon one or MNES. A significant impact is defined as an impact which is important, notable, or of consequence, having regard to its context or intensity (DoE, 2013).

The EPBC Act applies to 'actions' which:

- have a 'significant impact' on 'matters of national environmental significance';
- are undertaken by Commonwealth government agencies and have a significant impact on the environment anywhere in the world; or
- are undertaken by any person and have a significant impact on Commonwealth land (even if the activity is not actually carried out on the Commonwealth land).

If a project fits one of these descriptions, it will be required to be referred to the DAWE. If the project is not consistent with any of the above descriptions, the environmental impact assessment provisions of the EPBC Act will not apply and there is no need to obtain the approval of the Commonwealth Minister for the Environment (EDO, 2012).

Aurora Environmental has reviewed various flora, vegetation and fauna investigations conducted for the JEL Project and other local projects. The JEL will directly impact the following:

- 2.38 ha of Banksia Woodlands of the Swan Coastal Plain ecological community;
- 2.19 ha of supporting *Caladenia huegelii* habitat (the species has not been recorded in the JEL Project Area despite there being multiple surveys); and
- 2.38 ha of Carnaby's cockatoo and Baudin's cockatoo foraging habitat.

The JEL Project has been designed to avoid areas of quality vegetation and to minimise clearing where possible. This has been achieved by positioning the alignment as close to the waste transfer station where it encroaches along the northern edge of the vegetated portion of Lot 500. Approximately 70% of the project footprint (excluding the TCL development envelope) is within existing cleared areas or contains vegetation rated Degraded or Completely Degraded.

Given the JEL will directly impact supporting *Caladenia huegelii* habitat and is in an area regarded as a significant location for the species, a referral is recommended. The direct impact to black cockatoo foraging habitat is minimal in the context of the available habitat close to the project area. However, impacting more than 1 ha of quality foraging habitat is classified as high-risk of having a significant impact according to the Commonwealth's black cockatoo Referral guidelines. Therefore, it is recommended a referral is submitted to the DAWE for the JEL Project.

7.3 ACCREDITED ASSESSMENTS

The DWER clearing permit assessment process has been accredited by the Commonwealth DAWE (DER, 2014). This means that matters protected by the EPBC Act can be assessed through the state-based clearing application process as an accredited assessment. To utilise the accredited state based application process the following must be met:

- An EPBC referral must be submitted before the clearing application; and
- The DAWE must determine that the proposal is a controlled action – i.e. has the potential to have a significant impact on a matter protected by the EPBC Act.

If the proposal is deemed 'not a controlled action' then no further approvals under the EPBC Act will be required, and the DWER clearing assessment process can run as per normal procedures. However, if the proposal is deemed a controlled action (i.e. requires assessment under the EPBC Act) then the DWER clearing permit assessment process can run, considering those matters protected under the EPBC Act.

8 SUMMARY

Aurora Environmental has completed an environmental assessment of the JEL Project Area including the JEL alignment, Johnston and Acourt Roads in Canning Vale. The project will result in the direct loss of 4.43 ha of native vegetation, of which 3.98 ha is in Degraded or better condition.

The residual impacts of the project have been identified as:

- The loss of 2.38 ha of Banksia Woodlands TEC and black cockatoo (Carnaby's and Baudin's) foraging habitat;
- Loss of 1.61 ha of vegetation in Bush Forever areas (in addition to 1.11 ha of cleared land within Bush Forever areas);
- The loss of 1.08 ha of wetland vegetation including direct impacts to 0.06 ha of CCW UFI 16111 and 16115, and 1.02 ha of wetland vegetation not associated with any wetlands shown in the DBCA Geomorphic Wetlands of the Swan Coastal Plain dataset. The 1.02 ha area includes 0.95 ha assessed as Good condition and 0.07 ha in Very Good condition.
- Loss of 2.19 ha of supporting habitat for the threatened species *Caladenia huegelii.*

Given the significance of the impacts relating to MNES, Aurora Environmental recommends the submission of a referral to the DAWE under the EPBC Act, prior to lodging an Application for a Clearing Permit to the DWER to address the clearing of native vegetation within the project area.

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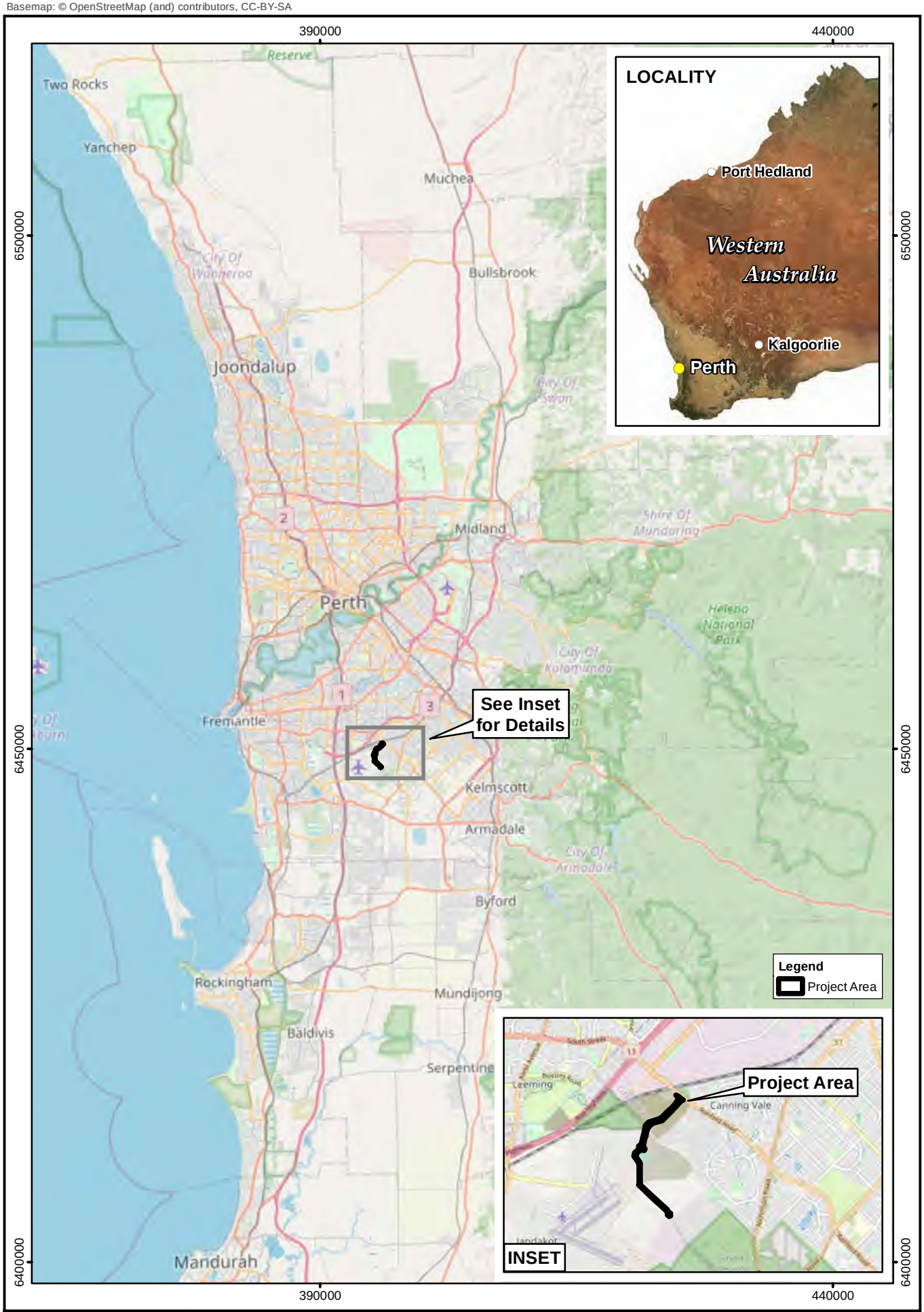
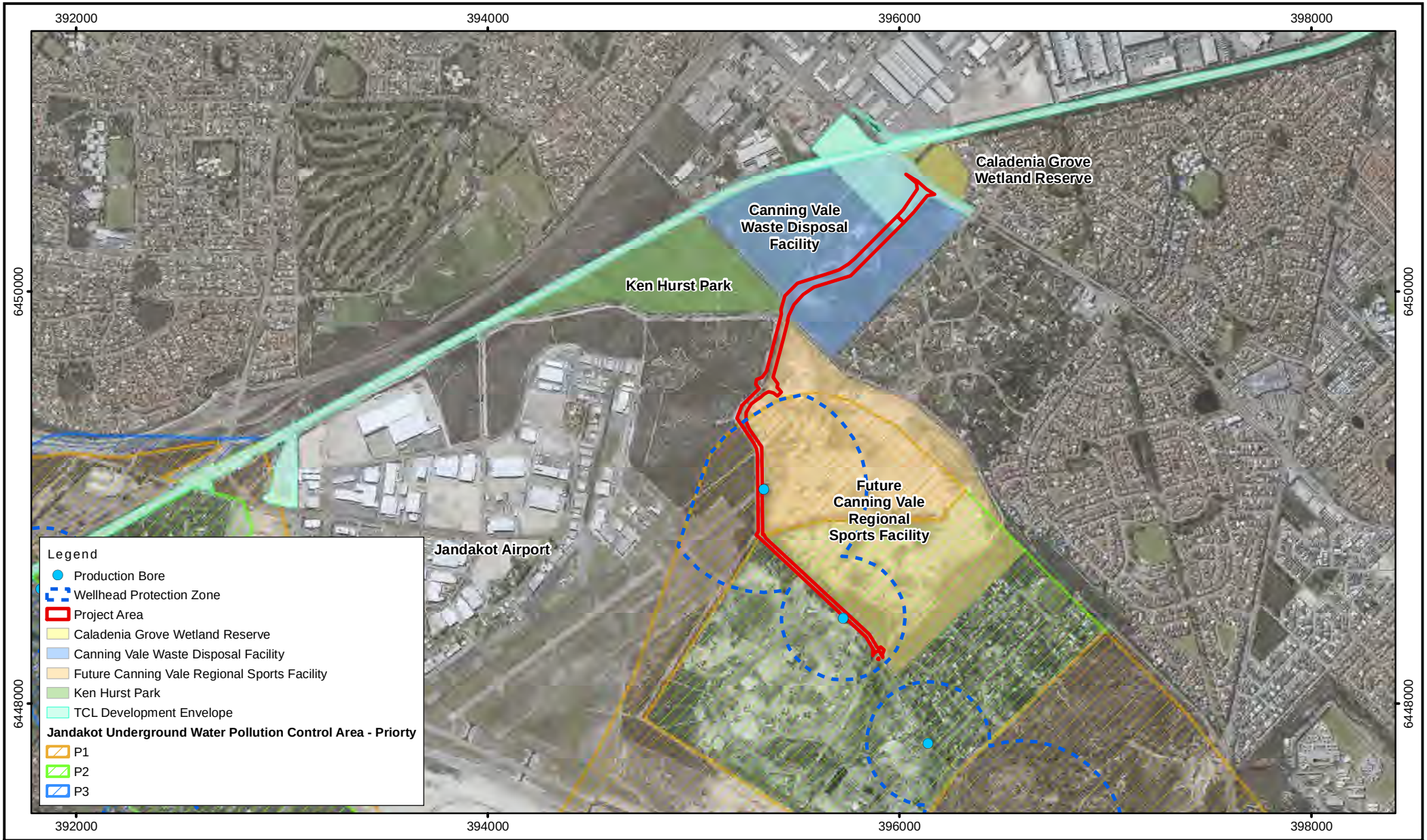
FIGURES



N 0 5 10 km Scale: 1:500,000 MGA94 (Zone 50)	Aurora	Jandakot Eastern Link (JEL) Road Project **Regional Location**
CAD Ref: a2751_F005_01	Author: P. Zuvela / AU Ref: CCA2019-007	
Date: Dec 2021 / Rev: A / A4	Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Figure: **1**



Imagery: Landgate (Aug 2019)

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Date: December 2021 | Rev: A | A4

Aurora

Author: P. Zuvela | AU Ref: CCA2019-007

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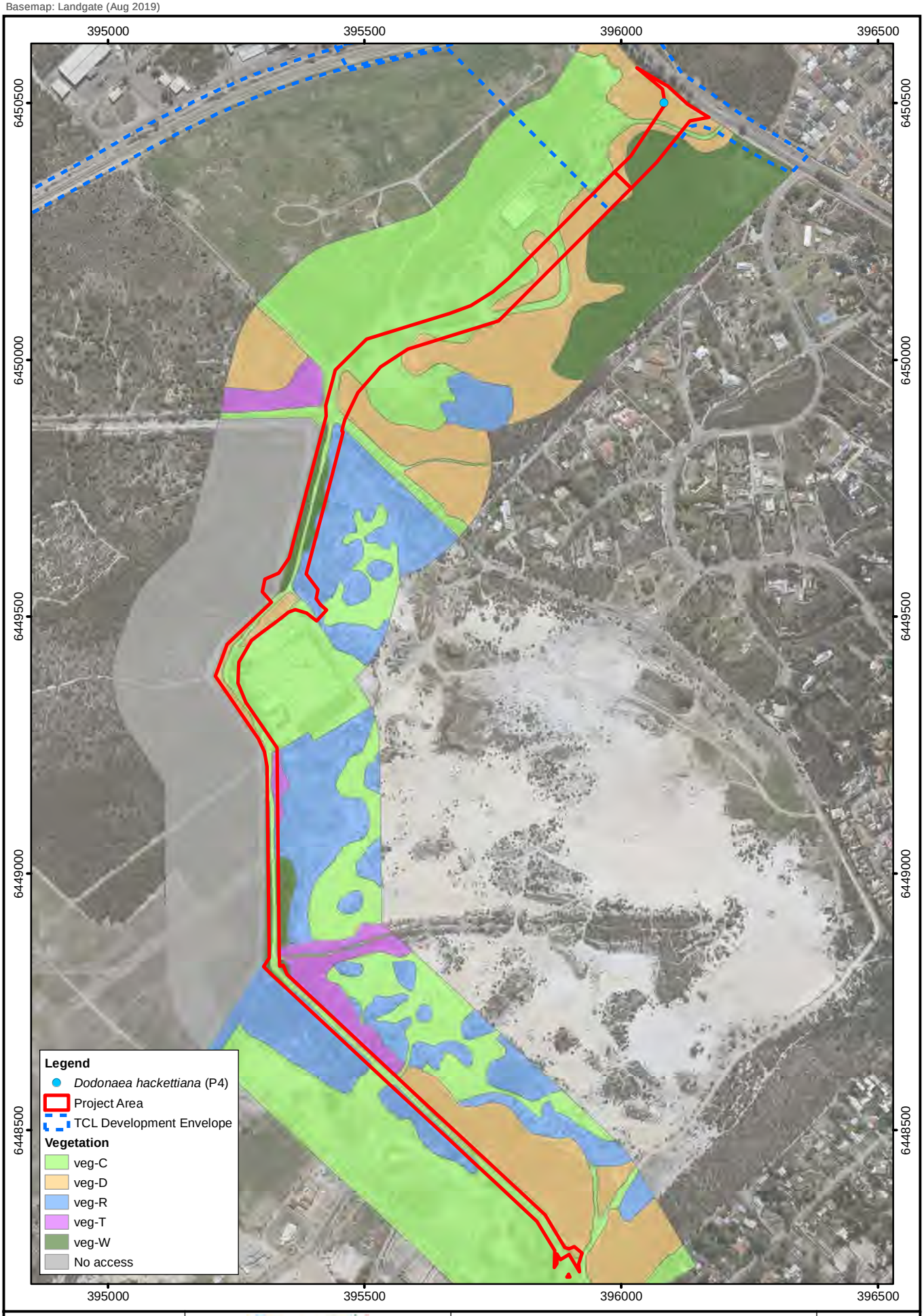
Jandakot Eastern Link (JEL) Road project

Site and Surrounding Land Use

Figure: **2**

Basemap: Landgate (Aug 2019)



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Author: P. Zuvela | AU Ref: CCA2019-007

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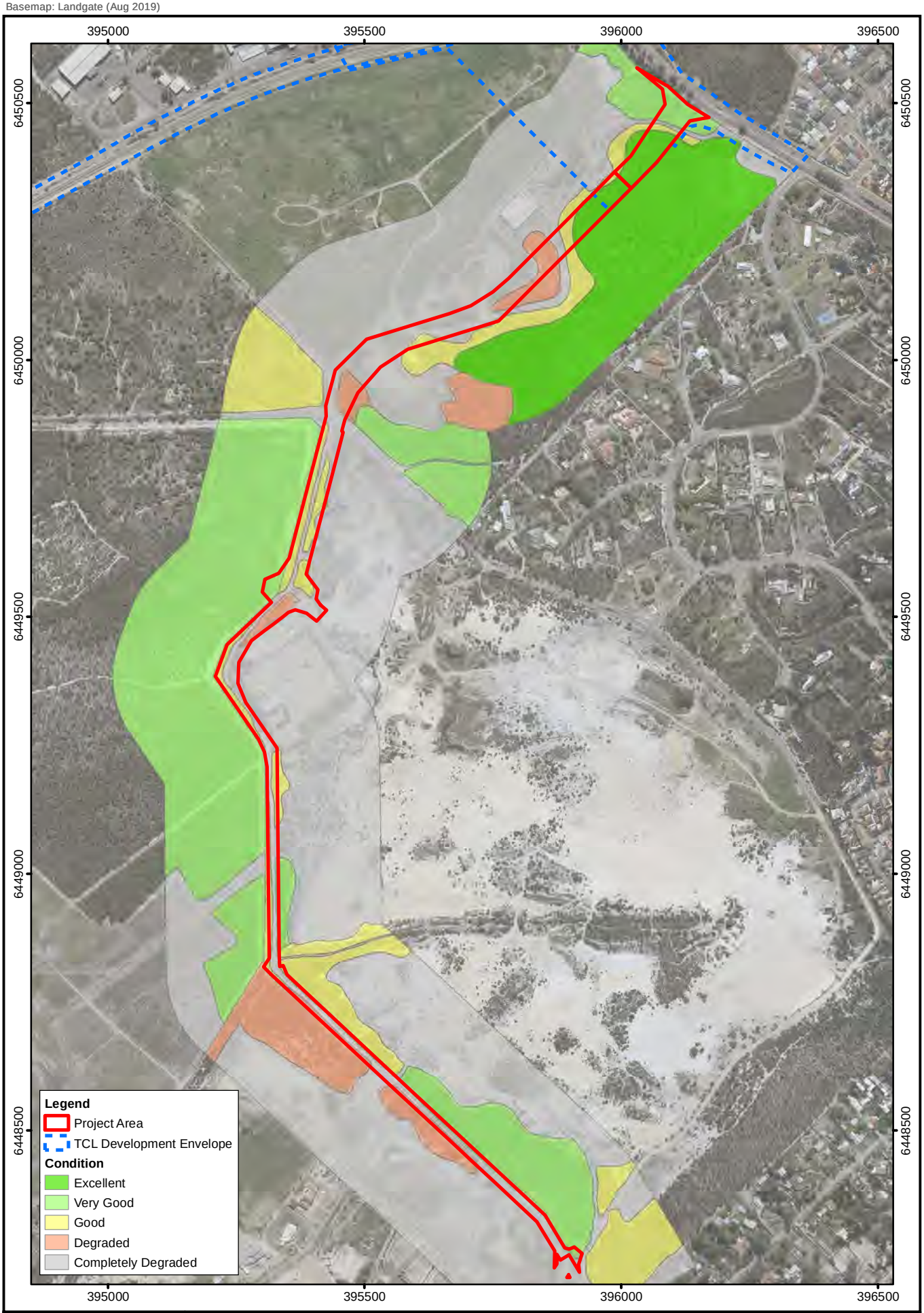
Jandakot Eastern Link (JEL) Road project

Vegetation Types

Figure: **3**

Basemap: Landgate (Aug 2019)



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Date: Dec 2021 | Rev: A | A4

Author: P. Zuvela | AU Ref: CCA2019-007

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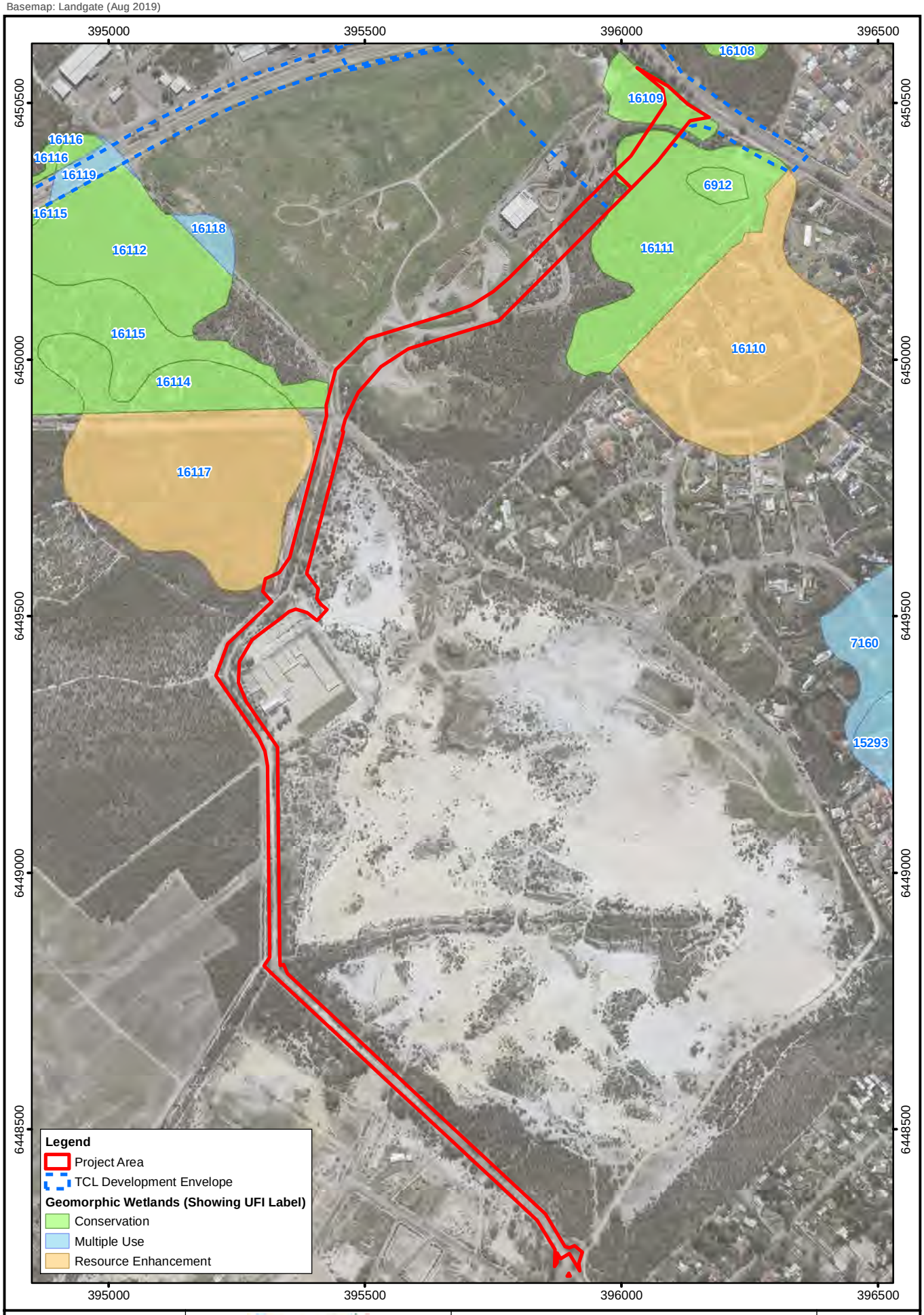
Jandakot Eastern Link (JEL) Road project

Vegetation Condition

Figure: **4**

Basemap: Landgate (Aug 2019)



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Date: Dec 2021 | Rev: A | A4

Author: P. Zuvela | AU Ref: CCA2019-007

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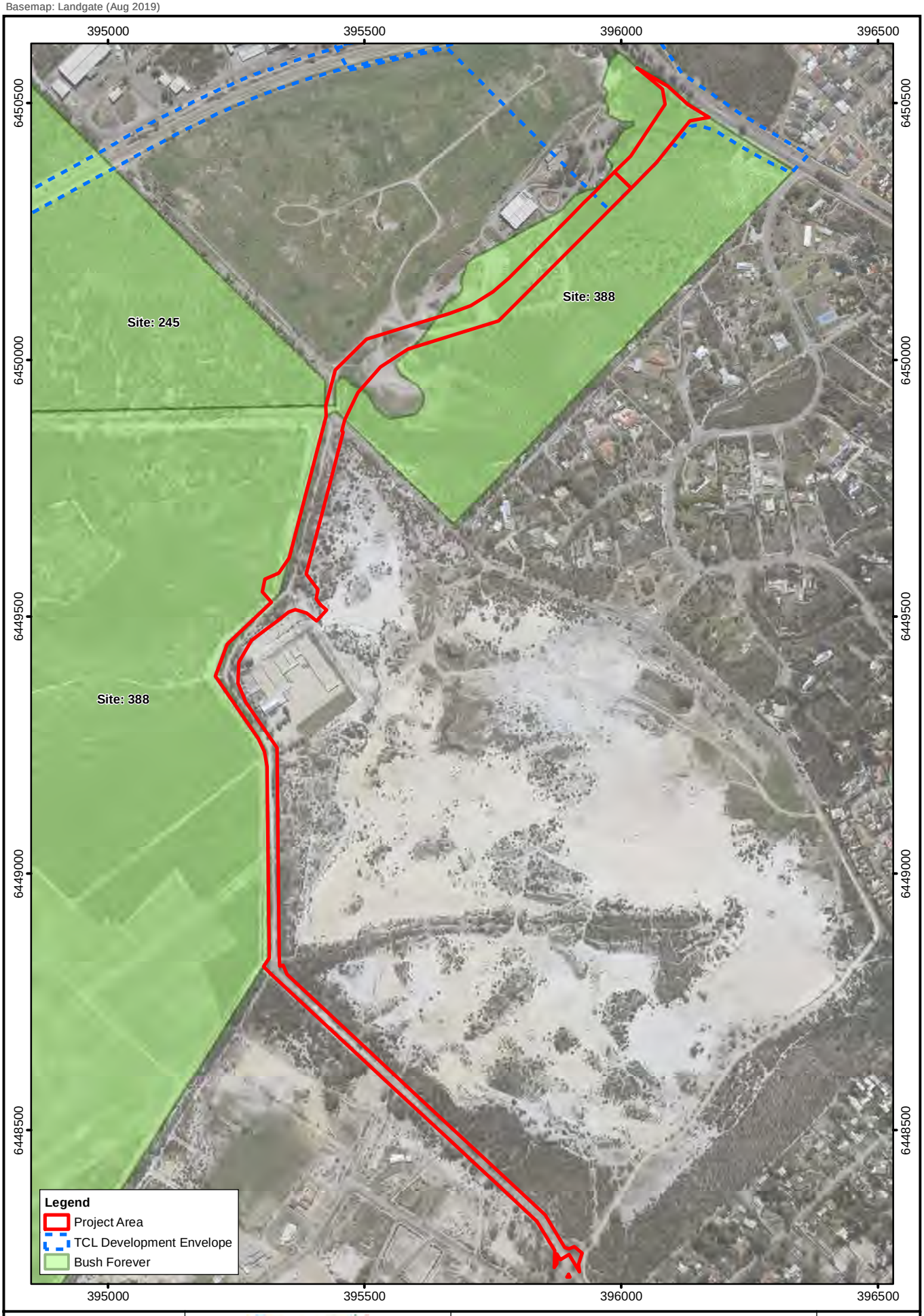
Jandakot Eastern Link (JEL) Road project

Geomorphic Wetlands

Figure: **5**

Basemap: Landgate (Aug 2019)



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Date: Dec 2021 | Rev: A | A4

Author: P. Zuvela | AU Ref: CCA2019-007

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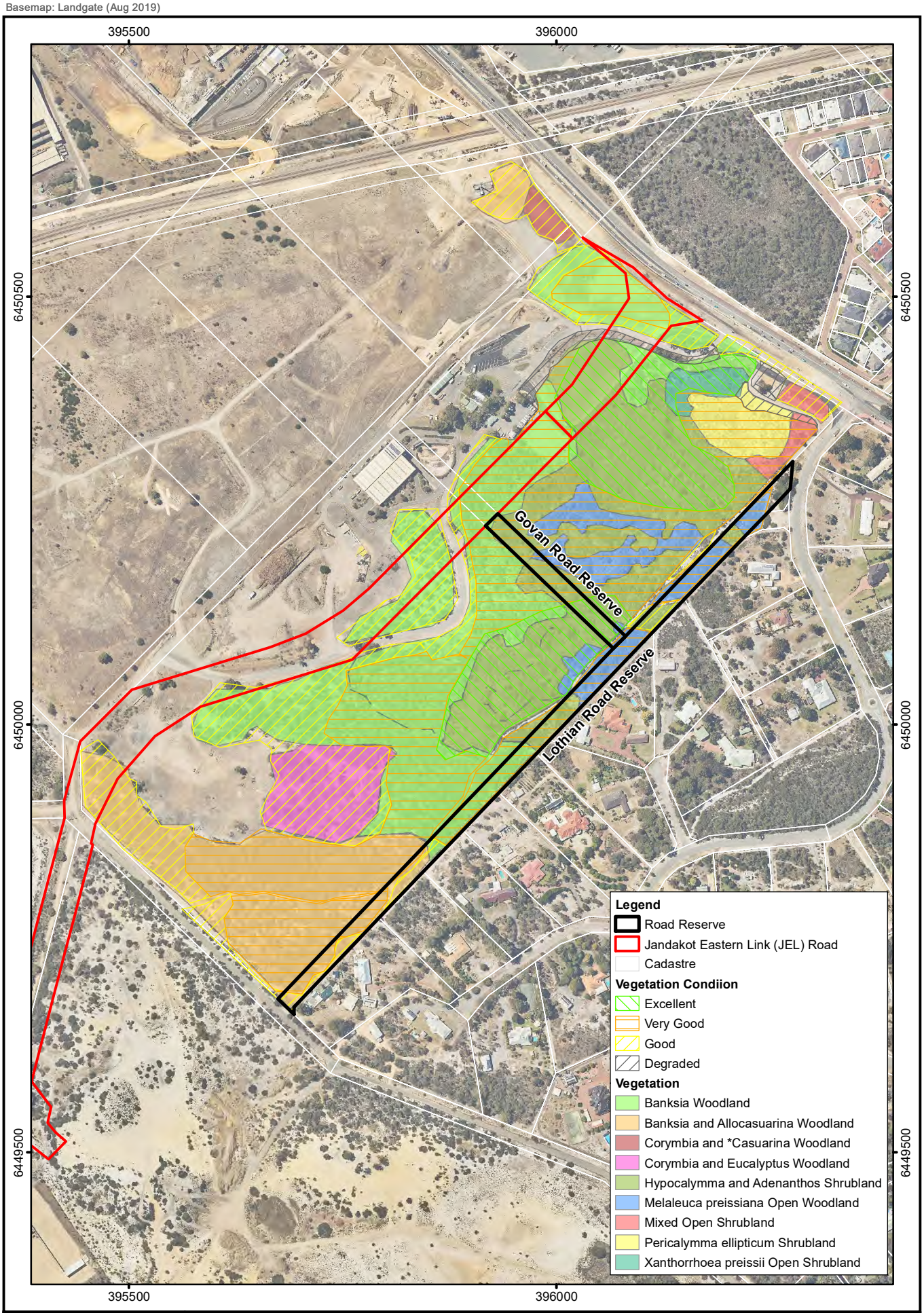
Jandakot Eastern Link (JEL) Road project

Bush Forever

Figure: **6**

Basemap: Landgate (Aug 2019)



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Scale: 1:6,000
MGA94 (Zone 50)

CAD Ref: a2751_F006_01

Date: Apr 2022 | Rev: A | A4

Aurora environmental
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Author: P. Zuvela | AU Ref: CCA2019-007

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Offset - Lothian and Govan Roads Closure

Vegetation and Condition Mapping

Figure: **7**

APPENDIX 1

Jandakot Eastern Link Road Flora and Vegetation Assessment (PGV, 2019)

JANDAKOT EASTERN LINK ROAD

FLORA AND VEGETATION ASSESSMENT

Prepared for:	Aurora Environmental
Report Date:	18 December 2019
Version:	1
Report No.	2019-482

pgv ENVIRONMENTAL

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1 INTRODUCTION

1.1 Background

The City of Canning is proposing to construct the Jandakot Eastern Link (JEL) dual carriage road which will provide access to the future Canning Vale District Sports Facility as well as a secondary access to the Jandakot Airport industrial and commercial centre (Figure 1).

The City is also considering the upgrade of unmade road reserves including Johnston and Acourt Roads, located on the western end of the future District Sports Facility.

Construction of the JEL and upgrade of Johnston and Acourt Roads will require clearing native vegetation, including a portion of Bush Forever Site 388 (Jandakot Airport Bushland).

PGV Environmental was commissioned by Aurora Environmental to undertake a Flora and Vegetation Survey of the JEL and the unmade sections of Johnston and Acourt Roads inclusive of a 200m buffer (the site) (Figure 2).

1.2 Scope of Works

The Flora and Vegetation assessment includes the following:

- A review of the previous studies within the area;
- Desktop search and review of the Department of Biodiversity, Conservation and Attractions (DBCA) Declared Rare and Priority Flora database and Threatened Ecological Communities database as well as Naturemap;
- A search of the Commonwealth Government's Protected Matters Search Tool to identify species potentially occurring within the area that are protected under the *Environment Protection and Biodiversity Conservation* (EPBC) *Act 1999*;
- A Threatened flora survey;
- Assessment and mapping of any vegetation considered to be representative of the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community; and
- A map of the current vegetation condition within the survey area.

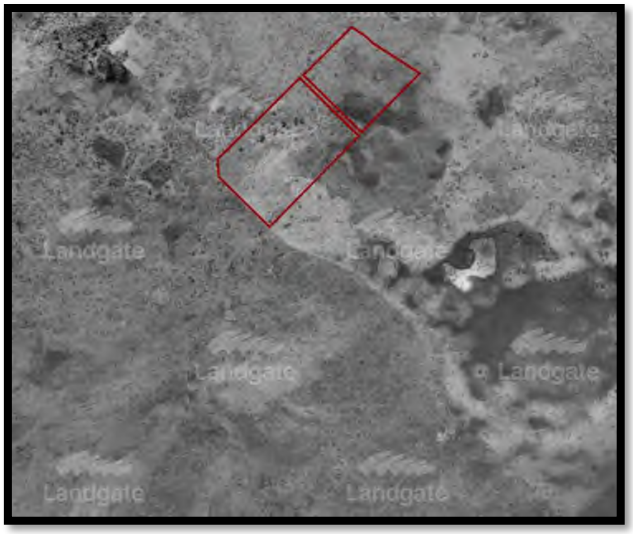
2 EXISTING ENVIRONMENT

2.1 Land Use

2.1.1 Historical Land Use

Historical photographs shows that the site was vegetated in 1953 (the oldest historical aerial photograph available) (Plate 1).

Plate 1: Aerial Photograph from 1953 (Landgate, 2019)



Acourt and Johnston were constructed as unsealed roads between 1977 and 1979 and the waste transfer station was constructed prior to 1983. The western part of the Jandakot Eastern Link the runs through Bush Forever Site 388 was cleared prior to 2000 (Plate 2). The eastern portion of that clearing has partially regenerated to the present condition.

Plate 2: Aerial Photograph from 2000 (Landgate, 2019)

2.1.2 Current Land Use

The Bush Forever portion of the site runs through a section of bushland that is administered as part of the City of Canning Recycling and Waste Disposal Facility. Most of the alignment is native vegetation with a portion at the western end cleared with partial regeneration.

The Johnston Road reserve contains a portion of sealed road at the southern end and an unsealed limestone track at the northern end that provides access to the Canning Gun Club. The Acourt Road reserve contains a limestone track that ends at a fence at the northern tip of the proposed District Sports Facility site.

Land use adjacent to the proposed road works included the Recycling and Waste Disposal Facility, which is completely cleared, the future District Sports Facility site which is mostly cleared but contains some native vegetation as well as regrowth areas, Jandakot Airport bushland and Special Rural properties west of Johnston Road.

2.2 Topography

The site is gently undulating with an elevation of approximately 26 to 30m Australian Height Datum (AHD) (Figure 2).

2.3 Geology and Soils

The western part of the site is mapped as part of the Bassendean System, the oldest of the three dune systems on the Swan Coastal Plain (Bolland, 1998). The Bassendean System consists of very low relief, leached, grey siliceous Pleistocene sand dunes, intervening sandy and clayey swamps and gently undulating plains. These occur immediately west of, and partly overlie, the Pinjarra Plain. These soils are very leached, infertile and mildly acidic (DPIRD, 2019).

The eastern part of the site is mapped in the Pinjarra Plain which extends from the eastern side of the Bassendean Dunes to the western edge of the Darling Scarp, which joins the Ridge Hill Shelf and forms the denuded slope of the Darling Fault (Beard, 1990). The Pinjarra Plain System consists of a broad low relief plain west of the foothills, comprising predominantly Pleistocene fluvial sediments and some Holocene alluvium associated with major current drainage systems (DPIRD, 2019). The major soils are naturally poorly drained and many swamps occur.

The soils mapped on the site are:

- Bassendean B1 Phase (212Bs_B1) which are extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands sometimes with a pale yellow B horizon or a weak iron-organic hardpan at depths generally greater than 2m;
- Bassendean B2 Phase (212Bs_B2) which occur on flat to very gently undulating sandplain with well to moderately well drained deep bleached grey sands with a pale yellow B horizon or a weak iron-organic hardpan 1-2m;
- Bassendean B4 Phase (212Bs_B4) which are located on broad poorly drained sandplain with deep grey siliceous sands or bleached sands, underlain at depths generally greater than 1.5m by clay or less frequently a strong iron-organic hardpan;

- Pinjarra Sp1 Phase (213Pj_Sp1) which are peaty sand soils that are grey to black, fine to medium-grained, moderately sorted quartz sand, slightly peaty, of lacustrine origin; and
- Pinjarra Phase S10 (213Pj_S10) which is described as very gently undulating plain with imperfectly drained mottled yellow duplex soils with sand to sandy loam topsoil (DPIRD, 2019).

2.4 Hydrology

Groundwater is at approximately 22 to 24mAHD which is between 2 and 8m below ground level (DWER, 2019). There are four dampland wetlands mapped on the site. Conservation Category Dampland (Unique Feature Identifier (UFI) 16111) and a small part of Resource Enhancement UFI 16110 is mapped on the Bush Forever portion of the site. Conservation Category UFI 16115 and Resource Enhancement UFI 16117 are partially located on Johnson Road.

3 METHODOLOGY

3.1 Desktop Studies

A search of the DBCA Threatened Flora Databases: the WA Herbarium database (WAHerb and the Threatened (Declared Rare) and Priority Flora Species List (TFPL)) (Appendix 1) and Naturemap (DBCA, 2019) (Appendix 2) identified Conservation Significant species that have been recorded within a 10km radius of the site. A search of the EPBC Act Protected Matters Search Tool (DoEE, 2019) (Appendix 3) identified species that are listed as Endangered, Threatened or Priority under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and could potentially have habitat within a 5km radius of the site.

3.2 Previous Studies

Previous flora and vegetation surveys that have been undertaken on parts of the site or in the immediate surrounding area are outlined below:

- The Jandakot Airport site in 2007, 2008, 2009, 2010 and 2016 (Jandakot Airport, 2019);
- Thornlie rail extension including the area to the south of the waste transfer station GHD, 2013);
- Canning Vale Sports Masterplan Flora and Vegetation Survey adjacent to but not including the Johnston and Acourt Road reserves (NAC 2013);
- The Jandakot Eastern Link Phase 2, including the portion through the Bush Forever site in this current survey but only in the proposed JEL road reserve (Astron, 2015);
- Ranford Road Bushland, which includes the portion of the JEL through the Bush Forever site as well as the surrounding vegetation (NAC, 2016);
- Thornlie-Cockburn Rail line, including the eastern end of the Ranford Road Bushland that contains the JEL proposed road (GHD, 2019); and
- Thornlie-Cockburn Rail line, including the eastern end of the Ranford Road Bushland that contains the JEL proposed road (PGV Environmental, 2018).

The results of the surveys were reviewed to identify any species of conservation significance that have been recorded within the site or nearby.

3.3 Field Studies

The Threatened Flora Survey was undertaken in accordance with the *Survey Guidelines for Australia's Threatened Orchids Guidelines for Detecting Orchids Listed as 'Threatened' under the Environment Protection and Biodiversity Conservation Act 1999* (DoE, 2013) and a targeted survey under the Technical Guidance *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016). The survey effort is the highest required and therefore captures survey techniques for all targeted species.

During the targeted Threatened flora survey the vegetation types were recorded as well as the vegetation condition.

The survey area included the proposed JEL and Johnston and Acourt Road upgrades as well as 200m either side of the road alignments, where access was permitted.

The entire site was surveyed on 27 and 30 September 2019 by Dr Paul van der Moezel, an experienced botanist with over 30 years of experience. The area of bushland was traversed on foot along parallel transects 20m apart. The coverage was very high due to the open nature of most of the bushland. The wetland areas containing *Regelia ciliata* were more difficult to survey in straight lines so the areas were surveyed using the meander technique. The time spent on site was fourteen hours across two days.

3.4 Survey Conditions

3.4.1 Constraints

The conditions that the survey was undertaken in are presented in Table 1 in order to assess the adequacy of the survey. In summary, there were no constraints to the survey.

Table 1: Statement of Botanical Survey Conditions

Issue	Constraints (Y/N)*	Comment
Competency/experience of the consultant conducting the survey	No	Dr Paul van der Moezel has extensive botanical survey experience in the Perth Metropolitan Region.
Proportion of the flora identified^	No	The timing of the survey in late September was optimal to record most of the native species.
Sources of information (historic/recent or new data)	No	The flora of the area is well documented.
Proportion of the task achieved and further work that may need to be undertaken	No	No follow-up survey required as no Threatened Flora expected to occur in other seasons.
Timing/weather/season/cycle	No	The spring survey was optimal for most flora species.
Disturbances (Fire)	No	The fire age of the vegetation was >5 years.
Intensity of survey (e.g. In retrospect was the intensity adequate)	No	Approximately 14 hours spent walking the site. Access was fairly easy through most of the site apart from the dense wetland vegetation. Site coverage was therefore considered good.
Completeness (e.g. was relevant area fully surveyed)	No	
Resources (e.g. degree of expertise available for plant identification)	No	Experienced botanist had knowledge of the Threatened flora species being targeted in the survey.
Remoteness and/or access problems	No	Easily accessible site in the Perth Metropolitan Region.
Availability of contextual (e.g. bioregional) information for the study area.	No	Bush Forever documentation provides some contextual information.

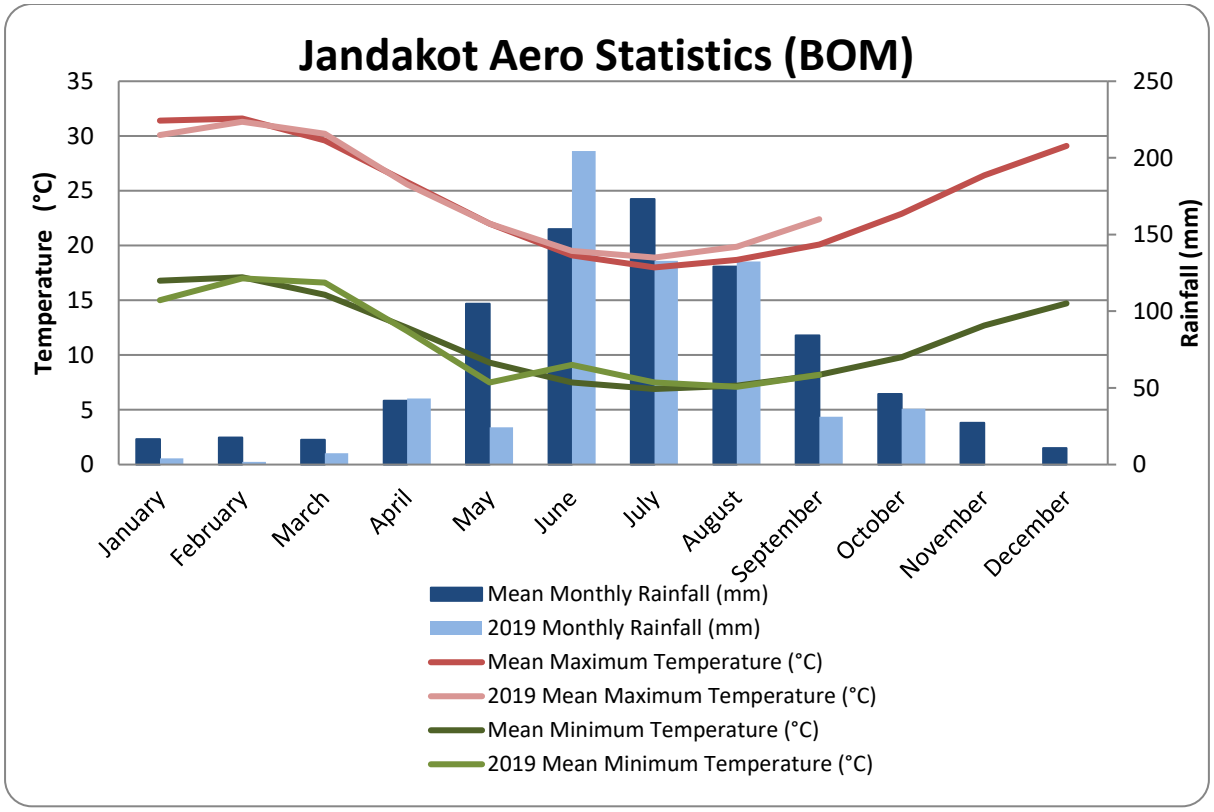
*Constraints have been rated as Significant, Moderate or No constraints
^Fungi and nonvascular flora (e.g. algae, mosses and liverworts) were not specifically surveyed for during the survey.

3.4.2 Seasonal Conditions

Climate statistics from the Bureau of Meteorology (BOM, 2016) can be used to compare seasonal conditions for surveys (Graph 1). The statistics have been collected from the Jandakot Aero weather station (BOM Site Number 009172) which has been collecting data from 1972.

The graph shows there was greater than average rainfall in June 2019, lower in July, on average in August 2019 had lower than average in September. The maximum temperature in September 2019 was higher than the average (Graph 1). In summary, the weather pattern in 2019 is highly unlikely to have made any significant impact on flowering of Threatened species and therefore no impact on the survey results.

Graph 1: Mean climate statistics compared to 2019.



4 RESULTS

4.1 Desktop Studies

4.1.1 Flora Database Searches

The results from the DBCA databases (Appendix 1), Naturemap Database (Appendix 2) (DBCA, 2019) and the Protected Matters Search Tool (Appendix 3) (DoEE, 2019) searches are shown in Table 2.

Table 2: Threatened Flora Identified in Database Searches

Species	Common Name	Conservation Status in WA	Status Under EPBC Act
Austrostipa jacobsiana		Schedule 1	Critically Endangered
Caladenia huegelii	King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid	Schedule 1	Endangered
Calectasia cyanea	Blue Tinsel Lily	Schedule 1	Critically Endangered
Drakaea elastica	Glossy-leafed Hammer Orchid	Schedule 1	Endangered
Grevillea thelemanniana	Spider Net Grevillea	Schedule 1	Critically Endangered
Ptilotus pyramidatus	Pyramid Mulla-mulla	Schedule 1	Critically Endangered
Synaphea sp. Fairbridge Farm (D Papenfus 696)	Selena's Synaphea	Schedule 1	Critically Endangered
Thelymitra dedmaniarum	Cinnamon Sun-orchid	Schedule 1	Endangered
Diuris purdiei	Purdie's Donkey-orchid	Schedule 2	Endangered
Drakaea micrantha	Dwarf Hammer-orchid	Schedule 2	Vulnerable
Eremophila glabra subsp. *chlorella*		Schedule 2	Endangered
Grevillea curviloba subsp. *incurva*	Narrow curved-leaf Grevillea	Schedule 2	Endangered
Lepidosperma rostratum	Beaked Lepidosperma	Schedule 2	Endangered
Macarthuria keigheryi	Keighery's Macarthuria	Schedule 2	Endangered
Andersonia gracilis	Slender Andersonia	Schedule 3	Endangered
Diuris drummondii	Tall Donkey Orchid	Schedule 3	Vulnerable
Diuris micrantha	Dwarf Bee-orchid	Schedule 3	Vulnerable
Eleocharis keigheryi	Keighery's Eleocharis	Schedule 3	Vulnerable
Tetraria australiensis	Southern Tetraria	Schedule 3	Vulnerable

Table 3 lists the likelihood that any of the conservation significant species identified in the database searches could occur on the site based on the soil types and vegetation condition.

Table 3: Likelihood of Identified Threatened Flora Species Occurring on the Site

Scientific Name	Common Name	Habitat*	Likelihood to occur on the site
Austrostipa jacobsiana		*Austrostipa jacobsiana* occurs on a roadside in Southern River and in a small reserve near Bunbury. It is found on dry white/grey sand, well drained (Western Australian Herbarium, 2003).	Possible
Caladenia huegelii	King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid	The Grand Spider-orchid prefers sand or clay loam. This species generally does not survive in disturbed areas.	Possible – recorded in close proximity
Calectasia cyanea	Blue Tinsel Lily	The Blue Tinsel Lily prefers white, grey or yellow sand or gravel.	Possible
Drakaea elastica	Glossy-leafed Hammer Orchid	The Glossy-leafed Hammer Orchid prefers low-lying situations adjoining winter-wet swamps. This species does not survive in disturbed areas.	Possible
Grevillea thelemanniana	Spider Net Grevillea	Spider Net Grevillea is recorded from the edge of a seasonal clay based open depression, on slightly deeper sandier soils in moist grey-brown sandy loam over clay (Western Australian Herbarium, 2012).	Possible
Ptilotus pyramidatus	Pyramid Mulla-mulla	The Pyramid Mulla-mulla occurs on seasonally inundated flat (floodplain) at an elevation of about 6.5 m above sea level.	Unlikely – only recorded from the Brixton Street Wetlands
Synaphea sp. Fairbridge Farm (D Papenfus 696)	Selena's Synaphea	Selena's Synaphea occurs in sandy with lateritic pebbles near winter-wet flats, in low woodland with weedy grasses.	Highly Unlikely – not lateritic habitat
Thelymitra dedmaniarum	Cinnamon Sun-orchid	Cinnamon sun orchid is known from only two locations in the Gidgegannup area. It is confined to open wandoo woodland on red-brown sandy loam associated with dolerite and granite outcropping (DEC, 2012).	Highly Unlikely – no lateritic or dolerite habitat
Diuris purdiei	Purdie's Donkey-orchid	Purdie's Donkey Orchid occurs in grey-black sand in moist winter-wet swamps.	Possible
Drakaea micrantha	Dwarf Hammer-orchid	Dwarf Hammer-orchid occurs in grey sands over dark, grey to blackish, sandy clay-loam substrates in winter wet depressions or swamps.	Possible
Eremophila glabra subsp. *chlorella*		*Eremophila glabra* subsp. *chlorella* occurs in sandy clay in winter-wet depressions.	Possible

Scientific Name	Common Name	Habitat*	Likelihood to occur on the site
Grevillea curviloba subsp. *incurva*	Narrow curved-leaf Grevillea	Narrow curved-leaf Grevillea prefers sand, sandy loam in winter-wet heath.	Possible
Lepidosperma rostratum	Beaked Lepidosperma	Beaked Lepidosperma is found in peaty sand, clay.	Possible
Macarthuria keigheryi	Keighery's Macarthuria	Keighery's Macarthuria prefers white or grey sand.	Possible
Andersonia gracilis	Slender Andersonia	Slender Andersonia occurs in white/grey sand, sandy clay, gravelly loam in winter-wet areas, near swamps.	Possible
Diuris drummondii	Tall Donkey Orchid	The Tall Donkey Orchid grows in low-lying depressions, swamps that are moist year round.	Unlikely – prefers wetter habitats than occur on the site
Diuris micrantha	Dwarf Bee-orchid	The Dwarf Bee-orchid is usually found on cleared firebreaks or open sandy patches that have been disturbed with in Jarrah Banksia woodland or thickets of Spearwood (*Kunzea ericifolia/glabrescens*) (Williams *et al.,* 2001).	Possible
Eleocharis keigheryi	Keighery's Eleocharis	Keighery's Eleocharis occurs in clay, sandy loam and is emergent in freshwater: creeks, claypans.	Possible
Tetraria australiensis	Southern Tetraria	Southern Tetraria occurs in grey sand over clay; also described as yellow and sandy or clayey lateritic soils favouring winter-wet swampy depressions, drainage lines or rises surrounding swamps.	Possible

* sourced from Florabase as well as the PaWS database searches unless otherwise denoted

A total of 15 Threatened species identified in the database searches could possibly occur on the site and were targeted in the survey.

The timing of the survey with respect to the targeted Threatened flora species is shown in Table 4. The timing was in the flowering season for most of the species identified in the database searches and those that were outside of the flowering period would still be recognisable. Therefore, the timing of the survey was appropriate.

Table 4: Flowering Period and Recognisability.

Species Name	Common Name	Conservation Status in WA	Flowering Period*	Recognisability
Austrostipa jacobsiana		Schedule 1	Oct-Nov	Surveyed at start of flowering period and recognisable in Sep
Caladenia huegelii	King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid	Schedule 1	Sept-Oct	Surveyed in flowering period
Calectasia cyanea	Blue Tinsel Lily	Schedule 1	Jun-Oct	Surveyed in flowering period
Drakaea elastica	Glossy-leafed Hammer Orchid	Schedule 1	Oct-Nov	Leaf recognisable from Jul/Aug
Grevillea thelemanniana	Spider Net Grevillea	Schedule 1	May-Nov	Surveyed in flowering period
Diuris purdiei	Purdie's Donkey-orchid	Schedule 2	Sept-Oct	Surveyed in flowering period
Drakaea micrantha	Dwarf Hammer-orchid	Schedule 2	Sept-Oct	Surveyed in flowering period
Eremophila glabra subsp. *chlorella*		Schedule 2	Jul-Nov	Surveyed in flowering period
Grevillea curviloba subsp. *incurva*	Narrow curved-leaf Grevillea	Schedule 2	Aug-Sep	Surveyed in flowering period
Lepidosperma rostratum	Beaked Lepidosperma	Schedule 2	May-June	Surveyed outside of flowering period but identifiable when not flowering by curcular, deeply ribbed stems
Macarthuria keigheryi	Keighery's Macarthuria	Schedule 2	Sep-Dec	Surveyed in flowering period
Andersonia gracilis	Slender Andersonia	Schedule 3	Sep-Nov	Surveyed in flowering period
Diuris micrantha	Dwarf Bee-orchid	Schedule 3	Sep-Oct	Surveyed in flowering period
Eleocharis keigheryi	Keighery's Eleocharis	Schedule 3	Aug-Nov	Surveyed in flowering period
Tetraria australiensis	Southern Tetraria	Schedule 3	Nov-Dec	Recognisable outside of flowering

*Flowering from (DBCA, 2018)

4.1.2 TEC/PEC Database Searches

A search of DBCA's Threatened Ecological Communities (TEC) database was conducted within a radius of 5km around the site (50-0919EC) (Appendix 4). An additional TEC was identified in the Protected Matters Search Tool Report (Appendix 3). The communities identified in the database searches are outlined in Table 5.

Table 5: TEC and PECs identified in database searches within 5km of the site

Number	Description	Conservation Status in WA	Status under the EPBC Act
SCP10a	Shrublands on dry clay flats (floristic community type 10a as originally described in Gibson *et al*. (1994))	Endangered	Critically Endangered
SCP08	Herb rich shrublands in clay pans (floristic community type 8 as originally described in Gibson *et al*. (1994))	Vulnerable	Critically Endangered
Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered
SCP21c	Low lying *Banksia attenuata* woodlands or shrublands	Priority 3	Endangered as part of the Banksia WL SCP
SCP22	*Banksia ilicifolia* woodlands	Priority 3	Endangered as part of the Banksia WL SCP
Tuart WL SCP	Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community	Priority 3	Critically Endangered
Coastal Saltmarsh	Subtropical and Temperate Coastal Saltmarsh	Priority 3	Vulnerable

4.1.3 Previous Studies

Previous flora surveys have not recorded any Threatened flora species in the survey area. Only the Priority species, *Dodonaea hackettiana* (Hackett's Hopbush), has been recorded at the eastern end of the Ranford Road Bushland.

Caladenia huegelii (Grand Spider Orchid) has been recorded in nearby Ken Hurst Park and Caladenia Grove Wetland Reserve (east of Ranford Road) as well as on the Jandakot Airport site.

Drakaea elastica (Glossy-leafed Hammer Orchid) was recorded on the Jandakot Airport site in 2003 but is considered by the Jandakot Airport environmental officer to be a misidentification as it has not been recorded in several surveys since that time.

4.2 Flora Species

The targeted search did not identify any Threatened species in the survey area. Areas with vegetation in Good or better condition may contain habitat for the identified species.

4.3 Vegetation

4.3.1 Vegetation Types

A range of vegetation types were observed on the site including dryland and wetland types. Observation from the field are included in Appendix 5.

The wetland vegetation types ranged from Heath and Shrubland vegetation types to those containing Paperbark trees, predominantly *Melaleuca preissiana* trees (Plates 3 and 4).

The wetland vegetation types do not contain vegetation that is representative of the Banksia Woodlands of the Swan Coastal Plain TEC. They are included in this section for reference only, to demonstrate the range of vegetation types within the survey area.

Plate 3: Typical wetland Heath vegetation

Plate 4: Typical wetland with Paperbark trees

The dryland vegetation types included areas that were regenerating on previously cleared parts of the site and remnant native vegetation.

The regenerating areas on the future Sports Park site contain a sparse cover of Woolly Bush (*Adenanthos cygnorum*), Spearwood (*Kunzea glabrescens*) and introduced Victorian Teatree (*Leptospermum laevigatum*) with Veldtgrass (*Ehrharta calycina*) abundant.

Plate 5: Regenerating part of the future Sports Park site

The remnant vegetation on dryland areas is broadly described as a Banksia Low Woodland with Jarrah and Sheoak also present. *Banksia attenuata* and *B. menziesii* were the most common Banksia species (Plate 6). Spearwood (*Kunzea glabrescens*) was a common mid-shrub species to 3m.

Typical understorey species included *Xanthorrhoea preissii, Hibbertia hypericoides, Lyginia barbata, Scholtzia involucrata, Phlebocarya ciliata, Hibbertia subvaginata* and *Eremaea pauciflora.*

On lower-lying areas transitional between dryland and wetland areas while *B. ilicifolia* was a common tree with *B. attenuata* (Plate 7). The understorey species in the transitional areas included both dryland and wetland species such as *Hypocalymma angustifolium* and *Regelia ciliata.*

Plate 6: *Banksia attenuata/B. menziesii* Low Woodland

Plate 7: *Banksia ilicifolia* over *Hypocalymma angustifolium* on low-lying transitional land

4.3.2 Vegetation Condition

The condition of the vegetation was assessed according to the system devised by Keighery and described in Bush Forever (Government of Western Australia, 2000) (Table 6).

Table 6: Vegetation Condition Rating Scale.

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Source: Government of Western Australia, 2000.

Areas of remnant native vegetation ranged from Very Good condition to Degraded (Figure 3). Areas of regeneration were rated as Completely Degraded. Some areas containing abundant weeds and sparse native vegetation trees or understorey were rated as Degraded.

4.3.3 Banksia Woodlands of the Swan Coastal Plain TEC

The Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community (Banksia Woodland TEC) is listed as an Endangered TEC under the EPBC Act. The *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community* (Conservation Advice) (DoEE, 2016) describes the Banksia Woodland TEC as follows:

> *The ecological community is a woodland associated with the Swan Coastal Plain of southwest Western Australia. A key diagnostic feature is a prominent tree layer of Banksia, with scattered eucalypts and other tree species often present among or emerging above the Banksia canopy. The understorey is a species rich mix of sclerophyllous shrubs, graminoids and forbs. The ecological community is characterised by a high endemism and considerable localised variation in species composition across its range*.

Table 7 assesses the vegetation types on the site against the Banksia Woodland TEC criteria contained in the Conservation Advice. In summary, the dryland vegetation and transitional dryland/wetland areas contain Banksia woodlands that are considered to meet the requirements of the Banksia Woodland TEC. The areas considered to contain the Banksia Woodland TEC are shown in Figure 4. The wetland and areas of regeneration do not meet the requirements of the Banksia Woodland TEC due to the absence of the key Banksia species.

Table 7: Assessment of the Banksia Woodland of the Swan Coastal Plain TEC.

Feature	Characteristic	Vegetation Type		
		Dryland and Transitional Vegetation Types	**Wetland Vegetation Types**	**Regeneration Areas**
Banksia Species	The patch must include at least one of the following diagnostic species: • *Banksia attenuata* (Candlestick Banksia) • *Banksia menziesii* (Firewood Banksia) • *Banksia prionotes* (Acorn Banksia) • *Banksia ilicifolia* (Holly-Leaved Banksia).	All areas contain *Banksia attenuata, B. menziesii* and often *B. ilicifolia*	Do not contain any of the required Banksia species	Do not contain any of the required Banksia species, or if present are in very low numbers.
Vegetation Structure	• A distinctive upper sclerophyllous layer of low trees (occasionally large shrubs more than 2 m tall), typically dominated or co-dominated[3] by one or more of the *Banksia* species (*B. attenuata, B. menziesii, B. ilicifolia, B. prionotes*); • An emergent tree layer of medium or tall (>10 m) height *Eucalyptus* or *Allocasuarina* (Sheoak) species may sometimes be present above the *Banksia* canopy. • An understorey that is often highly species-rich consists of: – A layer of sclerophyllous shrubs of various heights; and, – A herbaceous ground layer of cord rushes, sedges and perennial and ephemeral forbs, that sometimes includes grasses. The development of a ground layer may vary depending on the density of the shrub layer and disturbance history.	• Banksia trees form a distinctive layer. • Jarrah and Sheoak often present but rarely dominating the tree canopy. • Understorey of shrubs, sedges, herbs, mostly in very good condition with numerous species.	N/A because of first response	N/A because of first response

Feature	Characteristic	Vegetation Type		
		Dryland and Transitional Vegetation Types	**Wetland Vegetation Types**	**Regeneration Areas**
Vegetation Condition	An area of Banksia woodland needs to be at least in Good condition to be considered the TEC.	Large areas in Good and Very Good condition.	N/A because of first response	N/A because of first response
Patch Size	The Banksia woodland TEC needs to meet a minimum 'patch' size depending on its condition to qualify as the TEC, as follows: • 'Pristine' – no minimum patch size • 'Excellent' – 0.5ha • 'Very Good' – 1ha • 'Good' – 2ha	Area of patch greater than 2ha when considered alone and together with adjoining Banksia woodland on the Jandakot Airport site. Above the minimum patch size for the TEC.	N/A because of first response	N/A because of first response
Conclusion		Meets the requirement of the Banksia Woodland TEC	Does not meet the requirements for the TEC as Banksia trees from the required species.	Does not meet the requirements for the TEC as Banksia trees from the required species are absent, or if present, only in very low numbers.

5 SUMMARY AND CONCLUSIONS

The targeted Flora and Vegetation survey found the following:

- A total of 15 Threatened flora species were identified (from literature review and database searches) as potentially occurring on the site;
- No Threatened flora were recorded on the site previously and none were recorded on the site in this survey;
- Areas on the site that are in Good or better condition may contain habitat for Threatened flora;
- The site contains a range of native vegetation types in wetland, dryland and transitional soil types. The wetland vegetation includes Heath and Paperbark woodland vegetation types. The dryland vegetation consists mostly of *Banksia attenuata/B. menziesii* Low Woodland with Jarrah and Sheoak also common. The transitional vegetation contains *Banksia attenuata/B. ilicifolia* Low Woodland over heathland vegetation with a mix of dryland and wetland shrub species. Areas regenerating from past clearing contain Woolly Bush, Victorian Teatree (introduced species) and Spearwood with an abundance of grassy weeds;
- The native vegetation is in mostly Very Good and Good condition with areas of Degraded vegetation where weed species are more common;
- the dryland vegetation and transitional dryland/wetland areas containing Banksia woodlands are considered to meet the requirements of the Banksia Woodland TEC. The wetland and areas of regeneration do not meet the requirements of the Banksia Woodland TEC due to the absence of the key Banksia species.

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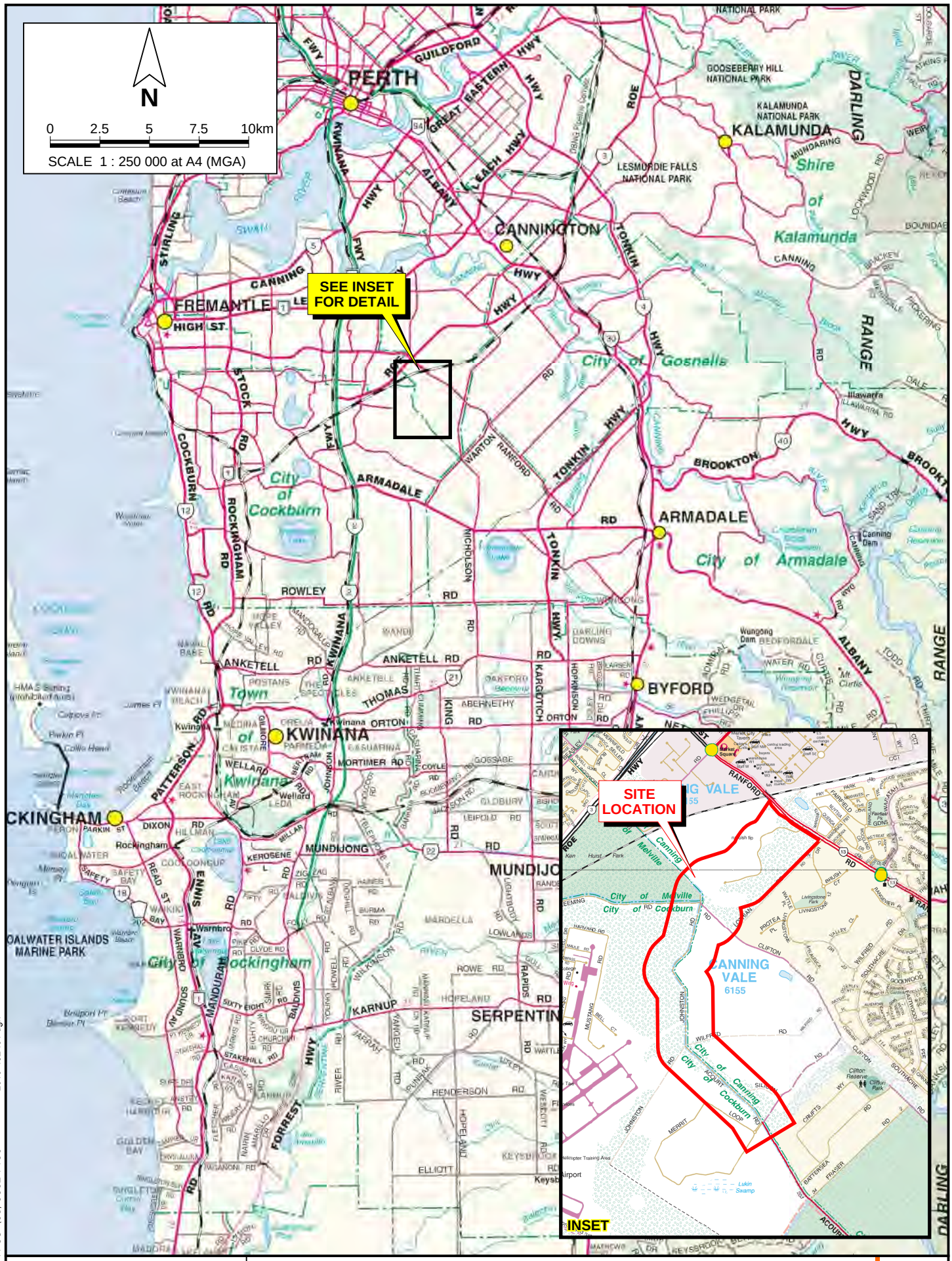
FIGURES



PINPOINT CARTOGRAPHICS (08) 9562 7136 2019-482-f01.dgn

pgv ENVIRONMENTAL

Aurora Environmental
FLORA AND VEGETATION ASSESSMENT
JANDAKOT EASTERN LINK ROAD

Drawn: J. Cabot	Date: 15 Nov 2019
Job: 10375 Rpt: 2019-482	Revision: A

SITE LOCATION

Figure 1

PINPOINT CARTOGRAPHICS (08) 9562 7136 2019-482-f02.dgn

CADASTRAL SOURCE: Landgate, October 2019.
AERIAL PHOTOGRAPH SOURCE: NearMap, flown October 2019.

pgv ENVIRONMENTAL

Aurora Environmental
FLORA AND VEGETATION ASSESSMENT
JANDAKOT EASTERN LINK ROAD

Drawn: J. Cabot | Date: 15 Nov 2019

Job: 10375 Rpt: 2019-482 | Revision: A

SITE BOUNDARY AND TOPOGRAPHY

Figure 2

PINPOINT CARTOGRAPHICS (08) 9562 7136 2019-482-f03.dgn

395 000mE

396 000mE

6 450 000mN

6 449 000mN

6 448 000mN

RANFORD ROAD

LEEMING ROAD

LOTHIAN ROAD

CLIFTON ROAD

WILFRED ROAD

JOHNSTON ROAD

ACOURT

LOOP

MERRIT ROAD

N

0 50 100 150 200 250m

SCALE 1 : 7 500 at A3 (MGA)

Legend

- Site Boundary
- Cadastral Boundary
- Easement Boundary
- MRS Jandakot Eastern Access Road
- Field Location

Vegetation Condition

- E Excellent
- VG Very Good
- G Good
- D Degraded
- CD Completely Degraded

Vegetation Condition
(SOURCE: Bush Forever, Govt. of W.A., 2000)

P - Pristine
Pristine or nearly so, no obvious signs of disturbance.

Ex - Excellent
Vegetation structure intact, disturbance affecting individual species and weeds are non aggressive species.

VG - Very Good
Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.

G - Good
Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.

D - Degraded
Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.

CD - Completely Degraded
The structure of the vegetation is no longer intact and the areas is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora composing weed or crop species with isolated native trees or shrubs.

Cl - Cleared
No native vegetation remaining.

CADASTRAL SOURCE: Landgate, October 2019.
AERIAL PHOTOGRAPH SOURCE: NearMap, flown October 2019.

pgv ENVIRONMENTAL

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JANDAKOT EASTERN LINK ROAD

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Job: 10375 Rpt: 2019-482 | Revision: A

VEGETATION CONDITION

Figure 3

PINPOINT CARTOGRAPHICS (08) 9562 7136 2019-482-f04.dgn

N

0 50 100 150 200 250m

SCALE 1 : 7 500 at A3 (MGA)

Legend

- Site Boundary
- Cadastral Boundary
- Easement Boundary
- MRS Jandakot Eastern Access Road
- No Access
- Field Location

Vegetation Types

- D Dryland
- T Transitional
- W Wetland
- R Regeneration
- C Cleared
- Banskia Woodland TEC

395 000mE

396 000mE

6 450 000mN

6 449 000mN

6 448 000mN

RANFORD ROAD

LEEMING ROAD

LOTHIAN ROAD

CLIFTON ROAD

WILFRED ROAD

JOHNSTON ROAD

ACOURT

LOOP

MERRIT

CADASTRAL SOURCE: Landgate, October 2019.
AERIAL PHOTOGRAPH SOURCE: NearMap, flown October 2019.

pgv ENVIRONMENTAL

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JANDAKOT EASTERN LINK ROAD

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Job: 10375 Rpt: 2019-482 | Revision: A

VEGETATION TYPES

Figure 4

APPENDIX 1

DBCA Flora Database Search

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
702	4099451	3237	Acacia benthamii	2	Shrub 1.7 m tall.	On a very low sand drift (a few feet thick over clay). Dull, pale yellowish brown clayey sand.	Vininaria juncea low open woodland to low woodland over Acacia benthamii shrubland to open heath over Baeckea camphorosmae low open heath over Cyathochaete avenacea, Dryandra nivea, Mesomelaena tetragon sedgeland/herbland. Allocasuarina humilis, Paterson				AUTO	3	9/12/1994
2641	190705	14932	Acacia lasiocarpa var. bracteolata long peduncle variant (G.J. Keighery 5026)	1		Black sandy swampy area.	Jarrah.				AUTO	3	26/08/1957
5574	2241749	18195	Amanita carneiphylla	3			Under Eucalyptus marginata.			Murdoch Universi Forest	MAN	0	7/05/1989
5575	5031559	18195	Amanita carneiphylla	3							MAN	0	12/04/1992
5576	2241927	18195	Amanita carneiphylla	3			Under Eucalyptus marginata, P. pinaster.			Murdoch Universi Forest	MAN	0	7/05/1989
5577	1007181	18195	Amanita carneiphylla	3		In deep yellow/white sand. Flat firebreak.	Banksia woodland with Eucalyptus marginata, Pinus pinaster.				MAN	3	/05/1988
5580	7587422	18195	Amanita carneiphylla	3	Mode of Life: unknown.		Eucalyptus marginata.				TOPO	3	7/05/1989
5581	7587414	18195	Amanita carneiphylla	3	Mode of Life: unknown.		Eucalyptus marginata.				TOPO	3	7/05/1989
5582	7587392	18195	Amanita carneiphylla	3	Mode of Life: unknown.		Eucalyptus marginata.				TOPO	3	7/05/1989
5583	7587406	18195	Amanita carneiphylla	3	Mode of Life: unknown.		Eucalyptus marginata.				TOPO	3	7/05/1989
5584	8793530	18195	Amanita carneiphylla	3	Pileus 52-77 mm diameter, 6-10 mm thick, white, convex becoming plane, margin appendiculate, surface dry; context white bruising pale pink. Universal veil on pileus white, as large conical warts over the whole disc, adnate. Lamellae very pale rose (7A2),	Sand.	Degraded native bush. Nearby woody plants: Eucalyptus marginata.	collection.			GPS	1	8/05/2016
5585	8351279	18195	Amanita carneiphylla	3	Single basidiome.	In sand.	Degraded native vegetation with Pinus pinaster.				GPS	1	14/05/2005
5586	2224445	18195	Amanita carneiphylla	3	Pink gills, pale cream to pure white.	In heavy sand.	With Eucalyptus marginata and Pinus pinaster.		VTMH 2 Sporepri t.		MAN	0	7/05/1989

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5588	8320993	18195	Amanita carneiphylla	3	Pileus 50-83 mm diameter, white, convex when young applanate when mature, margin appendiculate when young, no smell, context white. Universal veil on the pileus: as large, soft white warts, adnate. Lamaellae: clay pink, close, margin is very slightly fim	Emerging from deep sandy soil.	With nearby degraded native vegetation and introduced Eucalypts.		Microscopic character details housed with specimen.	Environmentally Sensitive	UNK	3	3/05/1992
5589	8320918	18195	Amanita carneiphylla	3	Pileus 50-115 mm diameter, white, convex when young applanate when mature, margin appendiculate when young, no smell, context to 10 mm thick, white. Universal veil on the pileus: as large, white warts, mainly in the centre. Lamaellae: adnate, pale rose p	Sandy soil. Emerging from deep sand.	With nearby degraded native vegetation and introduced Eucalypts.	collection, gregarious and scattered.			UNK	3	29/04/1990
5594	5505909	18195	Amanita carneiphylla	3	Characterised by 1. pale pink gills, 2. long, ventricose, radicating white stem, with pendulous white striate superior annulus, 3. white cap with white, flat and sometimes conical warts, 4. sits mainly below the surface and can usually be seen only as a		Eucalyptus marginata.				AUTO	3	3/06/1995
5595	7698828	18195	Amanita carneiphylla	3	Characterised Features: (i) Pastel pink (near 8A2 to 9A2) gills which dull (near 9B2) but remain pink in old age; (ii) finely striate pendulous persistent superior annulus; (iv) multiple belts of membranous tissue on lower stem; (iv) fleshy solid pale pi	Barley emerging at maturity from white/grey sand.	Davesia sp., Eucalyptus marginata and Banksia sp. Pinus plantation on other side.		Field name: Pink-gilled Amanita.		GPS	1	25/05/2006
5596	8320942	18195	Amanita carneiphylla	3	Immature, only a few spores seen: [20/1] ex lamella mean 12.0 x 5.6 um, Q=2.14, range (9.5-) 11-13 x 5-6 (-6.5) um, Q: (1.73-) 1.83-2.60. Marginal cells: up to 50 um long x 15 um wide, clavate, ovoid, pyriform, colourless, thin walled. Clamps abundant. H	Emerging from deep sand.	Degraded native vegetation, species of plants nearby: Eucalyptus marginata, Pinus pinaster.				UNK	2	11/06/1989

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5597	8320950	18195	Amanita carneiphylla	3	Spores [15/1] ex lamella, mean 11.1 x 5.6, Q=2.00, range: (9-) 10-12 (-12.5) x 5-6 (-6.5), Q: (1.8-) 1.82-2.20 (-2.40). Clamps abundant. Habit: single basidiome.		Degraded native vegetation, species of plants nearby: Eucalyptus marginata.		Badly chewed by insects.	Environmentally Sensitive	UNK	2	25/04/1989
5598	8320969	18195	Amanita carneiphylla	3	Immature, no spores seen, clamp abundant. The universal veil on the pileus is composed of both inflated cells in short chains and filamentous hyphae. These hyphae and cells have a more or less anticlinal orientation, but there is also a lot of interweavi	Emerging from deep sand.	Degraded native vegetation, species of plants nearby: Eucalyptus marginata. Pinus pinaster.				UNK	2	4/06/1988
5600	8587043	45013	Amanita drummondii	3		In sandy soil.	Wet eucalpt woodland, nearby Corymbia calophylla.		GenBank KF803241.		GPS	1	29/06/2011
5607	8725683	45013	Amanita drummondii	3	Pileus 50 mm diameter, hazel in centre, paler towards the margin (5-6D4), 4 mm thick, striate margin (6/25), surface slightly tacky when moist, no smell. Universal veil on pileus a pale vinaceous buff (5B3) submembranous, adnate, patch in the centre. Lam	Eucalypt woodland.	Nearby woody plants: Eucalyptus marginata, Jacksonia furcellata.	single specimen.			GPS	1	6/06/2015
5611	8587167	43543	Amanita fibrillopes	3		In soil under [E.] rudis.	Eucalyptus rudis woodland.	several, one collected.			GPS	1	8/07/2014
5615	8347395	43543	Amanita fibrillopes	3		In soil under Marri.	Marri/paperbark woodland.				GPS	1	28/05/2010
5617	8347379	43543	Amanita fibrillopes	3		In leaf litter, in sandy soil.	Eucalypt/paperbark woodland, nearby Corymbia calophylla and Melaleuca preissiana.				GPS	1	18/05/2008
5618	8347387	43543	Amanita fibrillopes	3		In leaf litter, in sandy soil.	Eucalypt/paperbark woodland, nearby Corymbia calophylla and Melaleuca preissiana.				GPS	1	18/05/2008
5626	8353158	43543	Amanita fibrillopes	3	Large collection of all ages.		Eucalypt/paperbark woodland with Banksia ilicifolia and B. attenuate; nearby trees and other woody plants: Corymbia callophylla and Melaleuca preissiana.				GPS	1	18/05/2008

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5635	9004629	43543	Amanita fibrillopes	3	Pileus 76 mm diameter, white with very pale pink flush, plane with decurved margin, margin not striate, slightly appendiculate. Universal veil on pileus as small straight sided warts over whole of the disc, adnate, floccose, white. Lamellae white, free,		Degraded eucalypt woodland with Corymbia calophylla.	one.		Environmentally Sensitive	GPS	1	9/07/2017
5679	8942064	48332	Amanita preissii	3	Pileus 50-60 mm diameter, white, plane with decurved margin, dry, margin not striate, appendiculate. Universal veil on pileus as a thin, floccose layer over whole of disc, ivory white (B), adnate. Lamellae ivory white (B), adnexed, 6 mm broad, margin con		Jarrah/marri/banksia woodland. Eucalyptus marginata, Hibbertia hypericoides.	two.			GPS	1	18/06/2017
5680	7616538	48332	Amanita preissii	3	Mode of Life: unknown.		Eucalyptus marginata.				UNK	3	7/05/1989
5681	3096718	48332	Amanita preissii	3							MAN	0	5/05/1990
5682	8774811	48332	Amanita preissii	3	Pileus to 40-65 mm diameter, white, convex when young becoming plane, smooth, slightly viscid, margin appendiculate when young. Universal veil on pileus of small thin patches in centre of disc, ivory white (B). Lamellae ivory white (B), adnexed. Stipe 75		Eucalypt plantation. Nearby woody plants: Eucalyptus marginata.	collection.			GPS	1	13/06/2004
5684	3097110	48332	Amanita preissii	3							MAN	0	24/05/1992
5687	8774803	48332	Amanita preissii	3	Pileus 25-75 mm diameter, Ivory white (B), plane, smooth, slightly viscid, margin appendiculate with remains of partial veil that age saffron. Universal veil on pileus of small to large warts in centre of disc, initially white, aging saffron. Lamellae iv		Eucalypt plantation. Nearby woody plants: Eucalyptus spp.	collection.	ITS sequence Genbank JX398317 nuLSU no yet deposited .		GPS	1	18/06/1995

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5689	8774781	48332	Amanita preissii	3	Pileus to 74 mm diameter, Ivory white (B), convex when young becoming plane, smooth, viscid when moist, margin appendiculate. Universal veil on pileus of small thin patches in centre of disc, initially ivory white (B), aging saffron. Lamellae ivory white		Eucalypt plantation. Nearby woody plants: Eucalyptus spp.	collection.	ITS sequence Genbank JX398318 nuLSU, BTUB, EF not yet deposited.		GPS	1	2/07/1995
5696	2224518	48332	Amanita preissii	3		In deep sandy soil.	Under Eucalyptus marginata and Pinus pinaster.		Sporeprint. The collection date is incorrect. It should be 7 May 1989. E.M. Davison 24/05/207.		MAN	0	7/05/1989
5698	8793549	45014	Amanita quenda	1	Pileus 40, 50 mm diameter, 4 mm thick, pale vinaceous buff (pale 5B2) white at margin, convex becoming plane, margin not appendiculate, surface slightly tacky, context white. Universal veil on pileus white, as small straight sided warts mainly in the cen	Sand.	Moist eucalypt wetland. Nearby woody plants: Kunzea ericifolia.	two.			GPS	1	8/05/2016
5699	8587116	45014	Amanita quenda	1		In sandy soil.	Paperbark/Eucalyptus rudis/Kunzea peaty swamp.		ABRS5. GenBank KP137063		GPS	1	27/07/2011
5701	8587078	45014	Amanita quenda	1		Amongst Kunzea bushes.	Kunzea, Eucalyptus rudis woodland.				GPS	1	9/06/2012
5702	8587051	45014	Amanita quenda	1		At base of Astartea bushes.	Paperbark/Eucalhyptus rudis/Astartea peaty swamp.				GPS	1	9/06/2012
5703	8587035	45014	Amanita quenda	1		In sandy soil.	Kunzea bush.	3 collected.			GPS	1	26/06/2011
5704	8587124	45014	Amanita quenda	1		In sandy soil.	Kunzea bush.	single specimen.			GPS	1	27/07/2011

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5705	8793433	43542	Amanita wadjukiorum	3	Pileus 45, 60 mm diameter, clay buff, plane, surface viscid when moist. UV on pileus smoke grey, breaking up into thin small patches, adnate. Lamellae white, adnexed, to 6 mm broad, lamellulae truncate and attenuate, frequent. Stipe total length 85, 105	Sandy soil.	Small plantation of exotic and local eucalypts. Nearby woody plants: eucalypts.	two.		Environmentally Sensitive	GPS	1	18/06/1995
5706	8942137	43542	Amanita wadjukiorum	3	Pileus 90 mm diameter, milky coffee (5D4-6D4), plane with depressed centre and upturned margin, dry, margin not striate, appendiculate. Universal veil on pileus as large straight sided warts in centre of disc, vinaceous buff (6B2), adnate. Lamellae cream		Jarrah/marri/banksia woodland. Eucalyptus marginata, Corymbia calophylla.	one.			GPS	1	18/06/2017
5707	8403996	43542	Amanita wadjukiorum	3		In litter.	Introduced E. grandis ?				GPS	1	7/09/2012
5708	8403902	43542	Amanita wadjukiorum	3		In litter.	Introduced E. grandis ?				GPS	1	7/09/2012
5709	8403945	43542	Amanita wadjukiorum	3		In leaf litter.	Under Allocasuarina fraseriana.				GPS	1	4/08/2002
5710	8774307	43542	Amanita wadjukiorum	3					This specimen was previously databased as PERTH 03097099.		MAN	0	25/04/1990
5711	8403899	43542	Amanita wadjukiorum	3		In sand covered with wood chips.	Nearby Corymbia calophylla and C. citriodora.				GPS	1	21/07/2012
5712	8403961	43542	Amanita wadjukiorum	3		In sand covered with wood chips.	Nearby Corymbia calophylla and C. citriodora.				GPS	1	11/08/2008
5713	8403953	43542	Amanita wadjukiorum	3		In sand covered with wood chips.	Nearby Corymbia calophylla and C. citriodora.				GPS	1	8/07/2008
5715	8403929	43542	Amanita wadjukiorum	3		In soil.	Remnant vegetation.				GPS	1	5/07/2003

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5718	8690510	43542	Amanita wadjukiorum	3	Pileus 67 mm diameter, 7 mm thick, snuff brown (6E5-6), margin appendiculate, surface dry, no smell, context white, grey beneath the centre of the pileus. Universal veil on pileus milky coffee/clay buff (6D3), as small thin patches over the central half	Degraded native vegetation.	Nearby woody plants: Corymbia calophylla.	single specimen.		Environmentally Sensitive	GPS	1	28/06/2015
5721	8690553	43542	Amanita wadjukiorum	3	Pileus 82 mm diameter, 6 mm thick, vinaceous buff (5B2), paler at margin, margin appendiculate, surface dry, mushroom smell, context white. Universal veil on the pileus pale smoke grey/vinaceous buff (5C2), crustose, breaking into flat patches and a few	Degraded native vegetation.	Nearby woody plants: Jacksonia furcellata, Corymbia citriodora, Melaleuca.	single specimen.			GPS	1	26/07/2015
5722	8725675	43542	Amanita wadjukiorum	3	Pileus 61-87 mm diameter, pale vinaceous buff 5-6B2, appendiculate margin, surface slightly tacky when moist. Universal veil on pileus smoke grey to pale drab 5C-D2, initially crustose developing as soft, conical warts mainly in the centre. Lamellae ivor		Degraded native vegetation. Nearby woody plants: Eucalyptus marginata, Banksia attenuata, Xanthorrhoea preissii.	collection.			GPS	1	1/06/2015
5729	8403910	43542	Amanita wadjukiorum	3		In woodchips near Eucalypts.	Degraded native vegation.				GPS	1	14/08/2012
5730	3096815	46333	Amanita wadulawitu	2							MAN	0	17/04/1990
5731	3096742	46333	Amanita wadulawitu	2							MAN	0	5/04/1992
5732	3096890	46333	Amanita wadulawitu	2							MAN	0	5/05/1991
5733	3096688	46333	Amanita wadulawitu	2							MAN	0	29/04/1990
5734	3096882	46333	Amanita wadulawitu	2							MAN	0	5/05/1990
5735	3096874	46333	Amanita wadulawitu	2							MAN	0	14/04/1991

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5736	8615853	46333	Amanita wadulawitu	2	Cap: 77 mm in diameter, planar, white, margin smooth, cap surface has tiny pointed warts over most of it, these are grey probably stained from the sandy soil. Gills: Convex, adnate, 3 sets of lamellulae, cream, margin smooth (x 10 lens). Stipe: Robust, 2	Growing in sand.		3 fruiting bodies.	When cut the flesh had areas of grey bruising.	Environmentally Sensitive	UNK	2	20/05/2005
5737	8615845	46333	Amanita wadulawitu	2	Cap: 91 & 71 mm in diameter, white but stained and encrusted with soil, almost entirely covered with tiny flat white warts, margin smooth, not noticeably appendiculate. Caps are planar, gills are upraised. Gills: Creamy white, adnexed pulling free, 3 set	Growing in sand.	Under Eucalyptus marginata.	two fruiting bodies found.			UNK	2	14/05/2005
5738	8615810	46333	Amanita wadulawitu	2	Cap: 85, 60 & 36 mm in diameter, white to cream in colour but heavily stained with soil, margin not striate nor appreciably appendiculate, densely covered with tiny pointed warts at the cap centres interspersed with scattered flat white scraps these are	Growing in sand.	Near mixed eucalypts.	three fruiting bodies.			UNK	2	14/05/2005
5739	8615837	46333	Amanita wadulawitu	2	Cap: 59 mm in diameter, planar, incurved margin, dirty white scraps of UV all over cap but most densely packed at the centre. Gills: Adnate pulling free, 3 sets of lamellulae, margin fimbriate (x 10 lens). Stipe: Almost all of length was beneath the leve	Growing in sand.		single fruiting body.			UNK	3	20/05/2005
5741	8616132	46333	Amanita wadulawitu	2	Macroscopic characters: Pileus: 90 mm, white, plane, margin appendiculate, non-sulcate, surface slightly viscid, context white, 14 mm thick in centre, slight mustard smell. Universal veil on pileus: white, friable covering the whole pileus, adnate. Lamel	In deep sand.	Near Corymbia calophylla.				UNK	2	13/05/2007

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5743	8616043	46333	Amanita wadulawitu	2	Macroscopic characters: Pileus: 47-105 mm, white, 9-16 mm thick in centre, plane becoming slightly depressed with age, margin slightly appendiculate, non-sulcate, context white becoming pale vinaceous buff (5B2) in centre in old specimens after cutting,	In deep sand.	Under Corymbia calophylla.			Environmentally Sensitive	UNK	2	3/05/2008
5744	8725624	46333	Amanita wadulawitu	2	Pileus 50-80 mm diameter, white, appendiculate margin, covered with white, felty universal veil which is breaking into small patches. Lamellae white, adnate, crowded. Stipe total length 120-140 mm, to 25 mm thick, white, with a superior, soft descendant,	Degraded native vegetation.	Nearby woody plants: Eucalyptus spp.	collection.			TOPO	3	8/06/1995
5745	3096661	46333	Amanita wadulawitu	2							MAN	0	22/04/1990
5746	3096785	46333	Amanita wadulawitu	2							MAN	0	17/05/1992
5747	7551657	46333	Amanita wadulawitu	2	(i) fusoid, turnip-like stem with large, adhering apical, striate annulus; (ii) overall white to cream colours; (iii) occuring deeply buried in the sand. Pileus: to 70mm diameter; flat-convex with incurved, thick margin, finally expanding to become sligh	Deeply buried in sand.	Eucalyptus marginata.				TOPO	3	3/06/1995
5748	3096750	46333	Amanita wadulawitu	2							MAN	0	10/05/1992
5749	3096912	46333	Amanita wadulawitu	2							MAN	0	12/04/1992
5750	3096793	46333	Amanita wadulawitu	2							MAN	0	12/05/1991
5751	3096807	46333	Amanita wadulawitu	2							MAN	0	29/03/1992

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
5752	8615861	46333	Amanita wadulawitu	2	Cap: 69, 65 & 42 mm in diameter, slightly upturned, margin not striate nor appreciably appendiculate, caps white, there are tiny pointed warts densely packed at the cap centres, towards the margins there are sparsely scattered flat white scraps. Gills: W	Growing in sand.	Near mixed eucalypts.	three fruiting bodies.		Environmentally Sensitive	UNK	2	14/05/2005
5753	3096920	46333	Amanita wadulawitu	2							MAN	0	8/04/1990
6050	1691236	6309	Andersonia gracilis	T	Flowers pale purple.	Winter wet area.					AUTO	3	/10/1991
6054	1764195	6309	Andersonia gracilis	T							AUTO	3	22/10/1921
6055	1764217	6309	Andersonia gracilis	T		White sand.					AUTO	3	4/11/1982
6057	1764187	6309	Andersonia gracilis	T							AUTO	3	/10/1902
6058	1764209	6309	Andersonia gracilis	T							AUTO	3	//1963
6441	4864905	7831	Angianthus micropodioides	3	Tiny grey hairy annual.	Sand in winter wet habitat.	Assoc. vegn: Low open shrubland (Aplin 79) with emergent Nuytsia floribunda over Eremaea pauciflora, Hypocalymma angustifolium over Dasypogon bromeliifolius, Samolus junceus, Cynodon dactylon, etc.		Abundance: common in relatively small area.		MAN	0	5/01/1994
6464	9020209	7831	Angianthus micropodioides	3	Small, erect annual. Aspect grey-green. Florets yellow.	Subsaline flats. Seasonally wet, grey clay-loam.	Open Casuarina obesa woodland. With Melaleuca rhaphiophylla, M. viminea & Sarcocornia sp.	locally common in pockets.			GPS	1	21/11/2015
6991	993719	141	Aponogeton hexatepalus	4	Small aquatic plant with floating leaves and emergent flower spikes.	In shallow pools to c. l0 cm depth.	Surrounded by thick scrub to 1.5 m of Melaleuca lateritia and Melaleuca sp. burnt previous summer, with Hydrocotyle lemnoides, Wurmbea dioica.				MAN	3	14/08/1987

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
6995	7410654	141	Aponogeton hexatepalus	4		Brown clay. Seasonally inundated area on clay loam.	Heath dominated by Melaleuca lateritia over mixed species including Meeboldina cana, Chorizandra enodis and Astartea affinis ms, (consistent with TEC SCP08 CALM vulnerable), Astartea affinis, Melaleuca cana, Cassytha racemosa, Schoenolaena juncea.			Environmentally Sensitive	GPS	1	18/08/2004
6996	5610176	141	Aponogeton hexatepalus	4	Bulbous/tuberous perennial herb.	In very wet (flooded in winter) muddy clay.	Melaleuca lateritia swamp.	common.			MAN	0	19/10/1981
6998	8016240	141	Aponogeton hexatepalus	4	Aquatic, floating, perennial, rhizomatous herb. Flowers green-white.	Plain. Grey sand. Seasonal wetland.	Melaleuca rhaphiophylla.	50 plants over 3 sq m.			GPS	1	20/05/2007
6999	6969496	141	Aponogeton hexatepalus	4	Tuberous aquatic herb. Flowers white; plants in bud, flower and fruit.	Shallow water filled claypans. Grey brown clay.	Melaleuca laterita open low shrubland over sedges (Chorizandra, Meeboldinia and Chaetanthus).	several hundred plants.			GPS	1	25/07/2004
7625	6600840	38481	Austrostipa jacobsiana	T	Perennial grass clump. height: 110 cm and width: 20 cm at base of clump. Lemma lobes, most florets shed.	Soil surface: leaf litter. Colour: grey. Type: sandy clay, hard set. Landform: sand plain. Geology: granite. Collected from east side of road verge next to cleared farmland.	Remnant bushland. Species: Eucalyptus calophylla, Acacia sp., Xanthorrhoea sp., Eragrostis curvula, Paspalum dilatatum, Avena sp.	about 100 plants in two groups of about 50, on each side of the road.	Only known Austrostipa juncifolia in Perth region.		MAN	3	29/12/2003
7626	7770111	38481	Austrostipa jacobsiana	T	Erect, perennial, caespitose grass. 1.2 m high x 0.15 m wide. Flowers green. Reproductive method: seeds.	Roadside on coastal plain. Dry white/grey sand, well drained.	Xanthorrhoea and Acacia shrubs with Eragrostis curvula dominant grass.	21-50 plants.	Population structure: adult, 50% fruiting. Other alien species: many (4 of more).		GPS	1	14/11/2003
7627	6534252	38481	Austrostipa jacobsiana	T	Tufted rhizomatous herb.						TOPO	2	10/12/1995
7628	8790450	38481	Austrostipa jacobsiana	T	High dehisced fruit, moderate mature fruit.	Plain. Grey sand.	Open Corymbia woodland. Associated species: Corymbia calophylla, Hakea sp., Poaceae sp., Viminaria juncea, Xanthorrhoea sp.	>100 plants.			GPS	1	22/10/2015

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7629	8816492	38481	Austrostipa jacobsiana	T	Clumping, perennial grass. 0.6 m (in spike to 1.1.m) x to 0.5 m wide.	Low Open Plain to Dampland. Flat. Grey sandy clay.	Remaining vegetation on road verge is Corymbia calophylla trees over Xanthorrhoea preissii, Viminaria juncea and Jacksonia sternbergiana over occasional Phyllanthus calycinus, Tricoryne elatior, Lepidosperma longitudinale and Mesomelaena tetragona. Assoc	113 mature plants on north and south sides of the road verge.	The site is extensively cleared for rural and urban development. Evidence of herbicide spraying and slashing of the road verges.	Environmentally Sensitive	GPS	1	30/01/2014
7630	8816506	38481	Austrostipa jacobsiana	T	Clumping, perennial grass. 0.6 m (in spike to 1.1.m) x to 0.5 m wide.	Low Open Plain to Dampland. Flat. Grey sandy clay.	Remaining vegetation on road verge is Corymbia calophylla trees over Xanthorrhoea preissii, Viminaria juncea and Jacksonia sternbergiana over occasional Phyllanthus calycinus, Tricoryne elatior, Lepidosperma longitudinale and Mesomelaena tetragona. Assoc	113 mature plants on north and south sides of the road verge.	The site is extensively cleared for rural and urban development. Evidence of herbicide spraying and slashing of the road verges.	Environmentally Sensitive	GPS	1	30/01/2014
7750	3378454	45402	Babingtonia urbana	3	Low very straggly bush. 40 cm. Flowers white suffused pink.					Environmentally Sensitive	AUTO	3	24/02/1978
7751	3378365	45402	Babingtonia urbana	3							AUTO	3	16/02/1901
7752	3378403	45402	Babingtonia urbana	3							AUTO	3	24/01/1900
7754	3377938	45402	Babingtonia urbana	3							AUTO	3	15/03/1900

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
7755	3378438	45402	Babingtonia urbana	3							AUTO	3	8/03/1902
7756	3378357	45402	Babingtonia urbana	3							AUTO	3	25/02/1903
7758	3378411	45402	Babingtonia urbana	3		Swamp.					AUTO	3	2/03/1948
7759	3378381	45402	Babingtonia urbana	3							AUTO	3	21/02/1899
7760	3377946	45402	Babingtonia urbana	3		Swamp.					AUTO	3	2/03/1948
7766	8619107	45402	Babingtonia urbana	3							AUTO	3	02/02/1899
10856	7095570	48689	Bolboschoenus fluviatilis	1	Perennial sedge, 60 cm - 1.6 m. Inflorescence rather shyly produced. Probably reproducing asexually - viable fruit appears not to be produced.	Edge of watercourse. In standing water or wet mud throughout year.	Edge of flooded gum woodland. With Eucalyptus rudis, Melaleuca rhaphiophylla. Understorey largely displaced by weeds.	locally common here and elsewhere along parts of Canning foreshore.			GPS	1	1/12/2004
11223	950017	4444	Boronia tenuis	4	Perennial herb 30 cm. Flowers pink.		In marri - wandoo association.				MAN	3	25/08/1967
11979	1488120	3178	Byblis gigantea	3							AUTO	3	/12/1928
11980	1488635	3178	Byblis gigantea	3							AUTO	3	21/11/1966
11981	1487639	3178	Byblis gigantea	3							AUTO	3	24/08/1957
11983	1488619	3178	Byblis gigantea	3							AUTO	3	14/12/1898
11985	1488104	3178	Byblis gigantea	3							AUTO	3	12/11/1898
11991	1488651	3178	Byblis gigantea	3	Flowers deep pink.	On sandy flat.	With Rushes, Stackhousia, Verticordia.				AUTO	3	29/02/1960
11992	1488155	3178	Byblis gigantea	3	Erect viscid plant 30 cm; flowers blue.	On sandy clay.					AUTO	3	17/11/1977
11993	3415015	3178	Byblis gigantea	3	Perennial soft shrub, from rootstock. In flower, flowers pink-purple, anthers yellow.	Winter wet, grey sandy clay over clay.	Melaleuca teretifolia open shrubland.		Abundance: scattered in area.		MAN	0	29/12/1992

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11995	1487655	3178	Byblis gigantea	3	A sticky plant up to 60 cm tall, with several stout erect stems rising from a hard rootstock, renewing annually. Flowers purplish to lilac coloured.	On seasonally inundated area which is dry in summer.	Very open and consists of shrubs and herbs less than 1 m high.		Abundance: common.	s	AUTO	3	13/01/1977
11996	6276563	3178	Byblis gigantea	3							MAN	4	28/09/1969
12002	6439845	3178	Byblis gigantea	3	Insectivous plant. Flowers purple through to various shades of pink.	Growing in black sandy soil.					MAN	2	31/12/1991
12003	6439853	3178	Byblis gigantea	3	Insectivous plant. Flowers purple through to various shades of pink.	Growing in black sandy soil.					MAN	2	11/11/1991
12303	4647882	1596	Caladenia huegelii	T	Geophyte c. 65 cm high.	Coastal plain, grey sand.	Open Banksia woodland - Open sedge dominated areas. Anigozanthus manglesii, Hibbertia spp., Stirlingia latifolia, Conostylis spp., Eucalyptus calophylla.		Abundance: 1 seen.		MAN	0	3/10/1996
12306	908622	1596	Caladenia huegelii	T	To 80 cm tall, one with two flowers, no odour.	In grey sand on gently undulating terrain.	Low woodland - low forest over scrub and heath; Banksia attenuata, B. menziesii, B. ilicifolia, Allocasuarina fraseriana, Eucalyptus todtiana, E. marginata over Adenanthos.		Abundance: four plants in full flower.		MAN	3	9/09/1985
12307	908630	1596	Caladenia huegelii	T		Gently undulating sandplain.	Low woodland over low heath; Banksia, Casuarina, Eucalyptus marginata over Xanthorrhoea.		Abundance: 1 plant in first flower.		MAN	3	9/09/1985
12309	256463	1596	Caladenia huegelii	T		On sandy rises in gently undulating terrain.	Eucalyptus marginata - Banksia woodland. Burnt previous summer.	Scattered.	Abundance: Scattered.		MAN	3	26/09/1983
12310	255955	1596	Caladenia huegelii	T		Sand.	Open low woodland, heath; Eucalyptus marginata, Casuarina fraseriana, Banksia attenuata, B. ilicifolia over heath of Melaleuca.	2 plants.	Abundance: 2 plants.		MAN	3	21/09/1983
12314	256021	1596	Caladenia huegelii	T		In sandy soil.	Jarrah - Banksia woodland.				MAN	3	7/09/1958

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12315	256013	1596	Caladenia huegelii	T		In sand.	Open low woodland, heath; Eucalyptus marginata, Casuarina fraseriana, Banksia attenuata, B. ilicifolia over heath of Melaleuca.			Environmentally Sensitive		3	21/09/1983
12317	327476	1596	Caladenia huegelii	T		On sandy rises in gently undulating terrain.	Eucalyptus marginata - Banksia woodland. Burnt previous summer.	scattered.				3	26/09/1983
12319	4421213	1596	Caladenia huegelii	T	Up to 60 cm high.	Coastal plain. Grey sand.	Closed Banksia woodland. Banksia sp., Stirlingia latifolia, Hibbertia spp., Hypocalymma robustum, Conostephium pendulum		Abundance: 23 plants flowering. Plants found only in 'depression' ca 50 m x 75 m.			1	20/09/1996
12320	4421205	1596	Caladenia huegelii	T	Up to 60 cm high.	Coastal plain. Grey sand.	Closed Banksia woodland. Banksia sp., Stirlingia latifolia, Hibbertia spp., Hypocalymma robustum, Conostephium pendulum		Abundance: 23 plants flowering. Plants found only in 'depression' ca 50 m x 75 m.	Environmentally Sensitive	GPS	1	20/09/1996
12325	6752624	1596	Caladenia huegelii	T	Ca 30 cm tall. Linear hairy leaf 15 cm x 1 cm.	Grey sand.	Low open woodland of Melaleuca preissiana over Low Open Shrubland of Melaleuca thymoides over Dasypogon sp. and Desmocladus sp. herbland on lower slopes.	2 mature plants, one dead over 2 sq m.	Condition of population: healthy.		GPS	1	30/10/2003
12327	6069800	1596	Caladenia huegelii	T	Perianth greenish yellow with pale red markings; labellum white at base; maroon in upper half; fringe greenish yellow.						MAN	3	3/10/1979
12329	7501080	1596	Caladenia huegelii	T		Deep grey sand soil.	Banksia attenuata, B. menzesii, Allocasuarina fraseriana woodland over low shrubs and annuals.	35+ plants.			TOPO	3	2/10/1991

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
12330	7439938	1596	Caladenia huegelii	T		Private land. Flat. White / grey sand.		452 mature plants.	Healthy population but at risk from disturbance given location and proximity to sand.	Environmentally Sensitive	GPS	1	21/10/2004
12333	255971	1596	Caladenia huegelii	T	Perianth pale cream; labellum apex deep maroon.	Sand.	Low woodland of Banksia attenuata, B. menziesii with some Casuarina fraserana and Eucalyptus marginata.				MAN	3	7/09/1977
13790	7091575	759	Carex tereticaulis	3	Tufted sedge to 60 cm, width 60 cm.	Riparian zone. Seasonally wet brown loam.	Flooded gum woodland. Eucalyptus rudis, Melaleuca rhaphiophylla, Rubus sp., Schinus terebinthifolius.	occasional.	Understory largely displaced by weeds.		GPS	1	29/10/2004
14804	1015486	4560	Comesperma rhadinocarpum	3		White sand.					MAN	3	4/11/1982
16019	8528535	16245	Cyathochaeta teretifolia	3	Tufted rhizomatous herb, 1 - 2 m high x 1 - 2 m wide. In fruit, about 20% flowered last year.	Flow line in swamp with black peaty sand.	Melaleuca preissiana low forest over Cyathochaeta teretifolia tall sedgeland.	locally abundant.			UNK	2	2/07/2008
16045	6534163	16245	Cyathochaeta teretifolia	3							MAN	3	10/12/1995
16420	8298815	7485	Dampiera triloba	3	Shrub.	Coastal plain. Damp peaty sand.					UNK	2	26/10/2010
16432	8755434	7485	Dampiera triloba	3	Erect spreading branched herb to 30 cm tall. Leaves clustered. Plants flowering at the time of collection. Purple.	Dark brown/black peaty soils.	Low woodland to open forest of Eucalyptus rudis, Banksia attenuata and Melaleuca preissiana. Low open shrubland of Taxandria linearifolia, Gastrolobium ebracteolatum and Pteridium. Closed sedgeland of Baumea sp.	1 mature plant.	Project: 3516.		GPS	1	8/10/2015

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16433	9023828	7485	Dampiera triloba	3	Compact, prostrate, perennial herb, 40 cm high x 1 m wide. Blue flowers.	Wetland. Reserve. Grey loam.	Tall trees with Melaleuca preissiana and Corymbia calophylla and sedges.	21 - 50 plants.	Population structure: 50% flowering.	Environmentally Sensitive	MAN	3	2/11/2008
18284	720739	3863	Dillwynia dillwynioides	3	Small shrub with orange flowers and dark green leaves.	Grey sand 15 m from shore.					MAN	0	16/10/1974
18424	9011854	10796	Diuris drummondii	T		Burnt swamp.					MAN	4	30/11/1980
18425	9012524	10796	Diuris drummondii	T							MAN	4	1/11/1959
18455	229377	1637	Diuris purdiei	T							MAN	3	/10/1902
18460	1004875	1637	Diuris purdiei	T							MAN	3	7/10/1900
18467	8891648	1637	Diuris purdiei	T							MAN	3	21/09/1984
18468	8891664	1637	Diuris purdiei	T							MAN	3	/09/1923
18476	8891567	1637	Diuris purdiei	T							MAN	3	/09/1902
18477	8891303	1637	Diuris purdiei	T							MAN	3	7/10/1900
18478	8891559	1637	Diuris purdiei	T	Flowers yellow, with brown markings outside.	In burnt swamp.					MAN	3	24/09/1969
18551	1157663	4763	Dodonaea hackettiana	4	Shrub 2.5 m high. Fruit red/green.	Grey sand.					MAN	3	20/12/1980
18552	1157566	4763	Dodonaea hackettiana	4							MAN	3	11/11/1981
18553	1157655	4763	Dodonaea hackettiana	4					2159/62/2. Abundance: large population, dominant shrub. (Within population 3262-3267).		MAN	3	/09/1962
18555	1157132	4763	Dodonaea hackettiana	4	Erect shrub, 2 m high, variable age structure.	Disturbed area, in sandy paddock.	Eucalyptus marginata open forest, with grasses, Carpobrotus sp.				MAN	3	5/12/1978

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18556	1157124	4763	Dodonaea hackettiana	4	Erect shrub, 1 m high, variable age structure.	Disturbed area, in sandy paddock.	Eucalyptus marginata open forest, with grasses, Carpobrotus sp.		Abundance: large population, dominant shrub. (Within population 3262-3267).		MAN	3	5/12/1978
18571	9094156	4763	Dodonaea hackettiana	4	Shrub 2 m high.	Grey sand.	Banksia menziesii, B. attenuata, B. ilicifolia low open forest over Dodonaea hackettiana, Xanthorrhoea preissii over Dasypogon bromeliifolius open sedgeland. Associated species: Leptospermum erubescens.	10 within a 100 square metres.			GPS	1	12/10/2015
18652	231797	13635	Drakaea micrantha	T		Alongside winter wet swamp in sand.	Growing in Casuarina and Banksia woodland with Eucalyptus marginata and E. calophylla.	five plants, only two in flower.			TOPO	3	/09/1982
18828	670111	3115	Drosera occidentalis	4							MAN	3	/10/1961
18832	670081	3115	Drosera occidentalis	4	Petals white. ? annual, minute rosette with stem apex below soil level. 1 - 3 inflorescences per plant.						MAN	3	26/10/1974
18838	6332951	3115	Drosera occidentalis	4	Pygmy. Herb perennial. Less than 3 mm high. Red leaves, white flowers.	In swampy flats, appears as a rash in the sand. White/black sand over yellow clay.	Associated with sedgeland. Grows with Drosera gigantea and Drosera menziesii. Swamp - Leptocarpus (?).	abundant.			MAN	4	1/10/1994
19655	2404834	17150	Eremophila glabra subsp. chlorella	T							AUTO	3	13/07/1910
19656	2404842	17150	Eremophila glabra subsp. chlorella	T		Damp flat.					MAN	4	24/07/1901
19657	2403854	17150	Eremophila glabra subsp. chlorella	T	Low shrub 1 m. Flowers greenish-yellow. Leaves soft, green, lanceolate.	Swamp.					AUTO	3	9/06/1972

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19658	5119960	17150	Eremophila glabra subsp. chlorella	T	Erect open shrub 50 cm high x 40 cm wide. Flowers green.	Grey brown sandy clay, swamp.	Shrubland.		Abundance: occasional.		MAN	0	3/10/1996
19662	7782055	17150	Eremophila glabra subsp. chlorella	T	Shrub with erect to spreading form. To about 80 cm height and to about 1 m wide. Flowers green.	Moist grey clay on flat.	Low Woodland over Low Open Shrubland over very Low Open Sedgeland. Casuarina obesa, Viminaria juncea, Melaleuca lateritia, Verticordia sp. and Chorizandra enodis.	10 plants.	Plants occur on tec known as 'shrubland and woodland on Muchea limestone'.		GPS	1	27/06/2007
19666	8767815	17150	Eremophila glabra subsp. chlorella	T		Seasonally inundated area on clay loam.	Heath dominated by Melaleuca lateritia over mixed species including Meeboldina cana, Chorizandra enodis and Astartea affinis. Weeds in area.				GPS	1	19/03/2009
29492	1939041	2107	Grevillea thelemanniana	T							AUTO	3	/10/1904
29493	1845586	2107	Grevillea thelemanniana	T							MAN	3	/08/1902
29494	1938983	2107	Grevillea thelemanniana	T							AUTO	3	23/08/1901
29496	1938940	2107	Grevillea thelemanniana	T							AUTO	3	23/08/1910
29500	1938959	2107	Grevillea thelemanniana	T	Shrub 2-3 ft high with red flowers, worked by honeybees.	In damp sandy area.	With scrub of Banksia, Hakea, Grevillea, Leptospermum spp., etc.				AUTO	3	31/07/1953
29503	1938975	2107	Grevillea thelemanniana	T	Shrub 2 ft high with red flowers.	In sandy, swampy soil.					AUTO	3	/08/1936
29506	1938967	2107	Grevillea thelemanniana	T	Low shrub 2 ft with red flowers.	Sandy swamp.					AUTO	3	19/08/1948
29511	1035762	2107	Grevillea thelemanniana	T					At right is jouvenile foliage.		MAN	3	/09/1966
29519	1109154	2107	Grevillea thelemanniana	T							MAN	3	17/08/1898

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29521	1938932	2107	Grevillea thelemanniana	T	Diffuse, flowers rose pink and red.	On sandy sub-swampy flats.					AUTO	3	3/08/1928
29522	1109170	2107	Grevillea thelemanniana	T							MAN	3	13/06/1899
30458	1045113	6178	Haloragis scoparia	1							MAN	3	26/12/1901
31953	4055772	6233	Hydrocotyle lemnoides	4	Floating in pools.	In pools c. 30-40 cm deep.					MAN	0	19/09/1985
31959	1048120	6233	Hydrocotyle lemnoides	4	Small aquatic plant with floating leaves, flowers purple.	In shallow pools to ca 10 cm depth.	Surrounded by thick scrub to 1.5 m of Melaleuca lateritia and Melaleuca sp., burnt previous summer. With Aponogeton hexatepalus, Wurmbea dioica.				MAN	3	14/08/1987
31960	1048155	6233	Hydrocotyle lemnoides	4	Floating annual aquatic, flowers purple.	Wet muddy clay pan.	Melaleuca lateritia scrub.				MAN	3	21/10/1981
32030	6609953	11074	Hydrocotyle striata	1							MAN	3	8/10/1970
33041	1595636	20462	Jacksonia gracillima	3	Decumbent shrub, ascending branches to 50 cm, plant to 1.5 m across. Flowers yellow-red, in full flower.	Sand dune. Grey sand over white sand.	Banksia attenuata/B. Menziesii low woodland.		Abundance: common in area.		MAN	0	9/11/1990
33042	1595644	20462	Jacksonia gracillima	3	Prostrate or decumbent shrub, branches ascending to 50 cm x 1.5 m wide. Flowers orange-red. In flower.	Winter wet flats, peaty sand over clay.	Kunzea recurva shrubland.		Abundance: common in area.		MAN	0	9/11/1990
33050	5206472	20462	Jacksonia gracillima	3	Spreading, compact shrub 100 cm high x 100 cm wide. Standard orange with darker band near base, wings orange, keel darker orange. Buds very angular.	Swan Coastal plain, winter wet Bassendean Sands. Littered, grey, peaty, loamy sand.	Open Low Woodland B over Dense Heath B over Low Sedges (Muir 1977). With Melaleuca preissiana, Pericalymma elliptica, Melaleuca seriata.	locally common.			GPS	1	15/11/1998
33055	6533345	20462	Jacksonia gracillima	3	Low spreading semi-prostrate shrub, buds and flowers, flowers orange.	Flat ground, grey and brown sand over ?sand, well drained.	Low Forest A, Associated species: Allocasuarina fraseriana, Banksia menziesii.				GPS	1	25/10/1994
33056	6836445	20462	Jacksonia gracillima	3	Low spreading shrub to 30 cm x 120 cm. Standard yellow-orange with red band close to base and yellow eye; wings yellow-orange in distal half, red basally, keel red.	Coastal plain, low flat. Dry, but in area of high water table. Grey sand.	Open heath over dense herbs. Kunzea glabrescens, Melaleuca thymoides, Dasypogon bromeliifolius, Phlebocarya ciliata.	occasional.			GPS	1	12/11/2003

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33059	8642176	20462	Jacksonia gracillima	3	Shrub.		Melaleuca preissiana and Nuytsia floribunda open woodland over Kunzea glabrescens tall shrubland over Astartea scoparia, Regelia ciliata and Jacksonia gracillima open heath.			Environmentally Sensitive	GPS	1	24/11/2011
33060	8642214	20462	Jacksonia gracillima	3	Shrub.		Melaleuca preissiana low woodland over Astartea scoparia and Xanthorrhoea preissii open shrubland, over Hypocalymma angustifolium, Euchilopsis linearis and Adenanthos obovatus low shrubland over Cyathochaeta avenacea and Lepidosperma squamatum open sedge				GPS	1	3/10/2011
33061	8642222	20462	Jacksonia gracillima	3	Shrub to 0.5 m.	Flat of grey sand.	Melaleuca preissiana low open woodland over Regelia ciliata, Acacia pulchella and Kunzea ericifolia open heath over Meeboldina scariosa and Lepidosperma sp. open sedgeland over Phlebocarya filifolia very open herbland.				GPS	1	3/10/2011
33065	9137343	20462	Jacksonia gracillima	3	Low spreading shrub, 40 cm high x 1 m wide.	Low lying sand dune. Peaty grey sand with leaf litter. Fire >10 years.	Low open forest of Allocasuarina fraseriana. Associated species: Melaleuca preissiana, Xanthorrhoea preissii, X. brunonis, Kunzea glabrescens, Dasypogon bromeliifolius, Phlebocarya ciliata, Schoenus efoliatus.	1 plant seen.			GPS	1	26/10/2017
33068	6836305	20462	Jacksonia gracillima	3	Low sprawling shrub usually 40 cm high x 80 cm wide (occasionally 70 cm high x 100 cm). Standard orange with darker orange band close to base, then with basal yellow eye; wings red in basal half then orange distally; keel red.	Coastal plain. Dry, grey sand. Edge of seasonal wetland.	Banksia woodland over dense heath 2-3 m. Banksia menziesii, B. attenuata, Melaleuca thymoides, Kunzea glabrescens.	locally common.			GPS	1	20/10/2003
33070	8415331	20462	Jacksonia gracillima	3	Decumbent perennial to 0.3 m high x 1.4 m diam.	Flat, well-drained but adjacent to winter-wet swamp; pale grey sand.	Banksia woodland.	infrequent.			GPS	1	14/11/2010

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33198	2171422	4027	Jacksonia sericea	4	Prostrate shrub.	Grey sand over limestone.	Shrubland and woodland.		Abundance: abundant	Environmentally Sensitive	MAN	0	21/01/1990
33230	8755353	4027	Jacksonia sericea	4	Low spreading shrub, silvery sericeus, in bud at the time of collection.	Grey, white sandy loam.	Low woodland to open forest of Banksia attenuata and Melaleuca preissiana. Banksia menziesii also common in the site.	1 mature plant.	Project: 3515.		GPS	1	28/10/2015
33326	8398615	19272	Johnsonia pubescens subsp. cygnorum	2	Herb to .23 m	Remnant pine plantation - vacant block (Open forest of Pinus pinaster)	Open forest of Pinus pinaster over scattered low trees of Nuytsia floribunda and Banksia menziesii, over scattered low shrubs of Jacksonia furcellata and Lechenaultia floribunda over open grassland of Ehrharta calycina with very open herbs of Dampiera li	2 plants			GPS	0	2/10/2012
33382	8873712	4035	Kennedia beckxiana	4	Vigorous climbing shrub with twining stems climbing up a Melaleuca preissiana tree to a height of about 4 m. Glabrous leaves divided into 3 leaflets. Inflorescence stalked with obvious amplexicaule bract. Showy orange-red flowers, most still in bud but s	Poorly drained flat at edge of lake. Black loamy sand. Litter cover 20%, depth <1 cm. Moss cover 50%. Bare ground cover 20%.	Melaleuca preissiana Low Woodland, over an Open Tall Shrubland of Acacia longifolia and Kunzea glabrescens, over an Open Shrubland of Solanum nigrum, Climbers of Kennedia beckxiana and Fumaria sp., a Fernland of Pteridium esculentum, an Open Grassland of	Two plants present.	Plant is to be removed as it is invading native bushland where it is not a local native.		GPS	1	19/08/2016
36390	8988226	7674	Levenhookia preissii	1	Erect, compact, annual herb, branched 3 times. 100 mm high x 45 mm wide. Flowers pink.	Wetland. Reserve. Dry grey sand.	Tall shrubland. Associated species: Hypocalymma angustifolium, Melaleuca seriata and Regelia ciliata.	one plant only.	Population structure: 100% flowering.		GPS	1	17/12/2011
36391	2768739	7674	Levenhookia preissii	1							AUTO	3	/10/1898
36394	2768755	7674	Levenhookia preissii	1							AUTO	3	14/12/1898

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36797	4896408	17106	Macarthuria keigheryi	T	Small shrub ca 30 cm high x ca 30 cm wide. White flowers.	Low sand dune. Grey Bassendean sand over ?clay.	Southern River vegetation with Banksia attenuata, B. menziesii, Eremaea pauciflora, Melaleuca seriata, Patersonia occidentalis, Alexgeorgea nitens. Bush shows signs of frequent burns but still has small patches in very good condition.	rare.			AUTO	3	10/10/1996
38164	282235	33742	Microtis quadrata	4		In black peaty soil.	Under paperbarks.				AUTO	3	11/11/1960
39027	2245531	36200	Ornduffia submersa	4	Leaves elliptic, dying back.	Brown clay, winter wet depression. Dry claypan.	With herbs surrounded by Melaleuca hamulosa low scrub A over Pericalymma ellipticum, Regelia ciliata low heath C.				MAN	0	25/10/1990
39045	7684118	36200	Ornduffia submersa	4		On plain, grey sandy clay.	Open heath of Melaleuca viminea subsp. viminea, Calothamnus hirsutus, Verticordia densiflora and Chaetanthus aristatus. Associated species Actinostrobus pyramidalis, Schoenus rigens, Regelia ciliata, Pericalymma ellipticum, Lyginia imberbis.		Healthy population.		JNK	2	22/09/2004
40145	1084135	11557	Phlebocarya pilosissima subsp. pilosissima	3		Sand ridge.	In Banksia woodland.				MAN	2	23/05/1978
41522	321346	11615	Ptilotus sericostachyus subsp. roseus	1							AUTO	3	10/02/1906
42851	1083767	974	Schoenus benthamii	3							MAN	3	21/10/1911
42854	4523210	974	Schoenus benthamii	3	Female plant.	Sandy clay.					AUTO	3	3/08/1968
42859	2256916	974	Schoenus benthamii	3		White sand.					AUTO	3	4/11/1982
42860	2256924	974	Schoenus benthamii	3							AUTO	3	29/10/1902

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42863	6533337	974	Schoenus benthamii	3	Perennial sedge, flowers brown.						GPS	1	29/11/1994
42865	1083368	974	Schoenus benthamii	3							MAN	3	/10/1902
42867	1278223	980	Schoenus capillifolius	3	Annual herb.	Wet muddy clay, open clay pan edge.	By Melaleuca lateritia.	common in area.			AUTO	3	21/10/1981
42870	7325649	980	Schoenus capillifolius	3	Annual aquatic herb. In flower.	In very shallow water of drying claypan. Grey clay.	Melaleuca lateritia low open shrubland over herbs.	very common in herbfields in opening between shrubs.			GPS	1	30/10/2005
42971	7514263	1003	Schoenus natans	4	Fine aquatic sedge, in full flower.	Flooded claypan.	Emergent Casuarina obesa over Chorizandra enodis, Meeboldina sp., Samolus sp.	Very common.	Dominan in deeper areas of wetland.		GPS	0	4/10/2004
42998	4930193	1003	Schoenus natans	4		Black-brown mud in standing water to c. 40 cm.	With Typha sp., sedges, Triglochin spp. and some other aquatics in Melaleuca rhaphiophylla swamp-woodland.	uncommon.	This specimen is housed with PERTH 08650829		MAN	0	3/10/1996
43007	8017042	1008	Schoenus pennisetis	3	Tiny perennial, to ca 8 cm tall. Forms a low mat.	Seasonally waterlogged sandy plain. Grey acid sands.	With heathy vegetation.				UNK	3	7/09/2007
43018	6532721	1008	Schoenus pennisetis	3	Upright annual herb, no nuts found but perianth segments present.	Sumpland, black-brown clay.	Melaleuca rhaphiophylla Low Forest B.	scattered.			GPS	1	24/08/1995
43037	7693982	1008	Schoenus pennisetis	3	Very fine delicate tufted sedge to 0.06 m; small brown flower heads.						GPS	1	30/08/2007

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43044	1049518	1008	Schoenus pennisetis	3	Green to more or less reddish annual, more or less erect tufts 7 - 12 cm high; spikelets black or pruplish-black.	Swampy heath on sand.	Heath.		Abundance: common on cleared patch.	Environmentally Sensitive	MAN	3	22/08/1947
44575	6550193	19704	Stenanthemum sublineare	2	Very low erect shrub, 7 cm high x 15 cm wide. Plants multistemmed at ground level - apparently lignotuberous. Flowers very insignificant, greeny cream.	Bassendean dunes. Littered dry surface. Grey sand.	Banksia woodland over mixed heath and herbs. Characteristic species: Banksia menziesii, B. attenuata, Acacia pulchella and Melaleuca thymoides.	1 plant seen.			GPS	1	15/10/2003
44608	6239218	18564	Stylidium aceratum	3		Swamps.					MAN	3	/09/1955
44609	2957604	18564	Stylidium aceratum	3							AUTO	3	17/10/1949
44616	1631063	18564	Stylidium aceratum	3	Annual herb, flowers pink with deep pink markings around throat-yellow.	Flat low drainage line, white sandy clay over clay.	Melaleuca (M. uncinata, M. incana, M. sp.) low open shrubland.		Abundance: abundant.		MAN	0	9/11/1990
45282	2694255	7756	Stylidium longitubum	4	Corollas rose, violet bands at bases of corolla lobes, throat yellow to white.		With Villarsia, Centrolepis aristata, Stylidium calcaratum, S. utricularioides.	only one individual.	This very rare but distinctive species has apparently not been collected since about 1900. It is endemic to the Swan region near Perth.	Environmentally Sensitive	TOPO	3	17/11/1967
45286	3172805	7756	Stylidium longitubum	4	Ephemeral herb, flowers pink.						AUTO	3	22/11/1973
45295	4052609	7756	Stylidium longitubum	4	Erect annual herb, flowers pink, with distinct red line across near throat.	Winter wet flats. Grey sandy clay over clay.	Melaleuca vininea tall shrubland.		Abundance: abundant in area.		MAN	0	30/11/1991
45471	2857693	25800	Stylidium paludicola	3	Flowers pink.	Shady places in swampy ground.					AUTO	3	/08/1919
45473	2857642	25800	Stylidium paludicola	3		Swamp.	Under Melaleuca preissii.				AUTO	3	/11/1979

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
45478	6239404	25800	Stylidium paludicola	3		In swampy area.				Environmentally Sensitive	MAN	3	/11/1965
45480	5620856	25800	Stylidium paludicola	3	Upright herb 60-75 cm high x 5 cm wide. Pink trigger plant. Linear basal leaves in tufts 20-60 mm. One stem or stolon with rosette of leaves 35 cm up stem.	Dry swamp, sand. Fire previous summer.	Paperbark swamp. Melaleuca preissiana, sedges.	2-3 plants.			MAN	0	21/11/1999
45491	9137335	25800	Stylidium paludicola	3	Herbaceous perennial.	Dampland basin. Grey, peaty, moist sand. Fire >10 years.	Low open forest of Melaleuca preissiana. Associated species: Astartea scoparia, Acacia pulchella, Aotus gracilis, Adenanthos obovatus, Xanthorrhoea brunonis, Hypocalymma angustifolium, Euchilopsis linearis, Burchardia bairdiae, Actinotus glomeratum, Scho	occasional.			GPS	1	26/10/2017
46176	5572320	48297	Styphelia filifolia	3	Erect shrub, 60 cm high x 40 cm wide. Flowers white, spreading - pendulous. Plant single stemmed at ground level.	Coastal plain, winter damp. Dry, litter soil surface.	Open Low Woodland B over Dense Thicket (Muir 1977) with Melaleuca preissiana, Regelia ciliata and Pericalymma ellipticum.	occasional.			GPS	1	5/04/1999
46177	5791057	48297	Styphelia filifolia	3	Erect shrub, to 60 cm high x 60 cm wide. Flowers white, pendulous.	Coastal plain. Dry, littered, grey sand.	Banksia woodland with Banksia attenuata, B. menziesii, B. ilicifolia, Stirlingia latifolia, Bossiaea eriocarpa.	scattered.	Confined to lowest ground with B. ilicifolia.		GPS	1	6/05/2001
46183	5256925	48297	Styphelia filifolia	3	Erect open shrub, 70 cm high x 50 cm wide. Flowers cream.	Swan coastal plain (Bassendean Sands). Littered grey sand.	Low Woodland A over Low Woodland B over Scrub (Muir 1977). Corymbia calophylla, Banksia attenuata, Adenanthos cygnorum, Kunzea glabrescens, Leucopogon conostephioides, L. oxycedrus flowering in the area.				GPS	1	3/05/1998
46186	6443044	48297	Styphelia filifolia	3	Erect shrub to 60 cm high and 60 cm wide. Flowers white, strictly pendulous.	Sandy rise. Dry littered. Grey sand.	Banksia woodland. B. attenuata, B. menziesii, Allocasuarina humilis, Stirlingia latifolia.	scattered.			GPS	2	21/04/2002
46188	6851886	48297	Styphelia filifolia	3	Open shrub to 70 cm high x 50 cm wide. Plants fruiting.	Coastal plain. Littered, dry, grey sand.	Banksia woodland over mixed heath. Banksia menziesii, B. attenuata, Acacia pulchella, Melaleuca thymoides.	occasional.			GPS	1	15/10/2003

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
46198	6395686	48297	Styphelia filifolia	3	Upright shrub 70 cm high and 50 cm wide. Masses of white tubular flowers in upper axils.	Hill slope; grey sand.	Banksia woodland, B. menziesii, Adenanthos cygnorum.	4 plants over large area.		Environmentally Sensitive	AN	2	25/04/2002
46207	5306493	48297	Styphelia filifolia	3	Open shrub, 60 cm high x 60 cm wide. Flowers white.	Coastal plain. Littered grey sand.	Open Woodland over Low Forest B over Low Heath C over Herb (Muir, 1977). Eucalyptus marginata, Banksia attenuata, Banksia menziesii, Scholtzia involucrata, Phlebocarya ciliata.	occasional.			PS	1	21/03/1999
46937	8186111	18590	Synaphea sp. Fairbridge Farm (D. Papenfus 696)	T					Herbarium specimen made from fresh material collected by UWA Botany Dept. technical officer for the second year unit Land Plan diversity practical exam. No collection information available and area not revisited to relocate	Environmentally Sensitive	TOPO	3	10/10/2004
47737	1163736	1033	Tetraria australiensis	T							MAN	3	17/12/1898
48261	279188	1717	Thelymitra variegata	2		In yellow sand.	With Banksia attenuata, Casuarina fraseri, Hibbertia hypericoides, etc.				AUTO	3	16/08/1959
49103	1053566	1334	Thysanotus glaucus	4	Leaves glaucous, flowers deep purple, very thickly fringed, stamens 3, 1 larger.	On disturbed sandy soil.					MAN	3	29/02/1960
49106	1053981	1334	Thysanotus glaucus	4	Leaves glaucous, flowers deep purple, very thickly fringed. Stamens 3, 1 larger.	On disturbed sandy soil.					MAN	3	29/02/1960

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
49180	8730350	13783	Thysanotus sp. Badgingarra (E.A. Griffin 2511)	2							GPS	1	28/12/2014
49768	2170175	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4	Multi-stemmed herb to 60 cm. Flowers with long pedicels in paniculate inflorescences.	Moist sandy flat.	On edge of regenerating Regelia ciliata heath B.				MAN	0	11/12/1990
49769	2161613	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4	Glabrous herb to 50 cm high.	Low lying grey sand. Along edge of tracks.	Low scrub B and Dense Low Heath C with scattered Melaleuca preissiana. In cleared or open patches amongst heath.				MAN	0	18/12/1990
49770	2521296	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4	Slender erect multi-stemmed shrub to 40 cm. Flowers orange-yellow, in full flower.	Winter wet flats, peaty sand over clay.	Hypocalymma angustifolium low heath.	scattered groups of 5-15 plants.			MAN	3	21/02/1992
49772	5678749	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4	Open spreading shrub 60 cm high x 60 cm wide. Flowers yellow. Plant leafless at flowering.	Coastal plain (winter damp). Bare white sand.	Low Heath C (Muir, 77). Hypocalymma angustifolium, Euchilopsis linearis, Dasypogon bromeliifolius.	one only seen.			GPS	1	21/03/1999
49781	2170183	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4	Perennial herb with terete to linear leaves. Inflorescences paniculate.	Flat, grey-brown clayey sand.	Mixed low heath C with emergent Melaleuca preissiana, with Pericalymma ellipticum, Adenanthos obovatus and Hypocalumma angustifolium.	occasional.			MAN	0	18/12/1990
49782	2170159	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4	Herb to 60 cm high. Usually with c. 6 flowering spikes but as many as 15 counted.	Grey sand, low lying.	Regenerating heath with scattered Melaleuca preissiana with Nuytsia floribunda.	several 100 plants.			MAN	0	18/12/1990
49783	2170167	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4	Erect perennial herb, glabrous. Leaves scattered. Flowers pedicellate, in branched inflorescences.	Grey sand, flat.	Melaleuca preissiana open low woodland A with Adenanthos obovata, Periclaymma ellipticum, Hypocalymma angustifolium and Hakea varia.	2 plants recorded.	See. N. Casson Coll.9/6 989		MAN	0	18/12/1990
49784	1114409	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4	Perennial herb; flowers dull yellow.	On sandy flat.	In low heath - sedgeland.				MAN	0	24/11/1980

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
51012	2166690	14714	Verticordia lindleyi subsp. lindleyi	4	Erect dwarf shrub with pink/purple flowers.	White grey loamy sand on seasonally wet flat ground.	In heath with Pericalymma elipticum, Banksia telmatiaea, sedges.		Abundance: 12 plants		MAN	0	11/05/1990
51019	1057243	14714	Verticordia lindleyi subsp. lindleyi	4							MAN	3	26/12/1901
51022	2166682	14714	Verticordia lindleyi subsp. lindleyi	4	Upright dwarf shrub to 75 cm, flowers pink/purple.	Grey sand on swampy flat, winter wet.	Shrubland with emergent paperbarks, Melaleuca sp., Actinostrobis pyramidalis, Pericalymma elipticum.		Abundance: Abundant		MAN	0	13/03/1990
51029	1056743	14714	Verticordia lindleyi subsp. lindleyi	4							MAN	3	3/01/1900
51030	1057227	14714	Verticordia lindleyi subsp. lindleyi	4	Erect shrub 10""-15"".	Boggy flat.					MAN	3	6/12/1924
51035	2166704	14714	Verticordia lindleyi subsp. lindleyi	4	Erect dwarf shrub with pink/purple flowers.	Grey sand, flat terrain.	Heathland with Pericalymma elipticum, Beaufortia squarrosa, Dasypogon sp., Regelia inops, Melaleuca preissiana.		Abundance: 40 plants		MAN	0	11/05/1990
51037	4055500	14714	Verticordia lindleyi subsp. lindleyi	4	Erect shrub to 50 cm. Flowers pink, in flower.	Winter wet flats, grey sand over clay.	Banksia / Calothamnus low open heath.		Abundance: uncommon and scattered		MAN	0	30/11/1991
51051	7410670	14714	Verticordia lindleyi subsp. lindleyi	4		Road verge.	Woodland of Corymbia calophylla ove open low heath to low shrubland of mixed species including Xanthorrhoea preissii.		Reproductive state: flowering. Potential threat from mining. Fire history not known. Population healthy.		GPS	1	8/01/2003

FID	Sheet	NameID	Taxon	Cons_Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Geo_Method	Precision	Date
51061	8016232	14714	Verticordia lindleyi subsp. lindleyi	4	Perennial shrub 0.5 m high.	Plain. Grey sand. Poor drainage.	Melaleuca rhaphiophylla, Mel. preissiana.			Environmentally Sensitive	GPS	1	20/09/2005
51067	8642168	14714	Verticordia lindleyi subsp. lindleyi	4	Shrub to 0.75 m.		Melaleuca preissiana and Nuytsia floribunda open woodland over Kunzea glabrescens tall shrubland over Astartea scoparia, Regelia ciliata and Jacksonia gracillima open heath.				GPS	1	24/11/2011

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
1895	94378	18195	Amanita carneiphylla	3		1				SWAN COASTAL	PRI	EDE		3/06/1995 0:00	ESTMT	20			20			N	
1900	94379	48332	Amanita preissii	3		1				SWAN COASTAL	PRI	EDE		3/06/1995 0:00	ESTMT	20			20			N	
2232	89363	7831	Angianthus micropodioides	3		4				SWAN COASTAL	LGA	UNKNOWN		5/01/1994 0:00		0			0			N	
2497	84407	141	Aponogeton hexatepalus	4		30				SWAN COASTAL	PRI			18/08/2004 0:00		0			0			N	
2500	84410	141	Aponogeton hexatepalus	4		33				SWAN COASTAL	PRI			25/07/2004 0:00	UNKNOWN	200			200			N	
2670	108822	38481	Austrostipa jacobsiana	T	CR	1	A			SWAN COASTAL	LGA	VER		30/01/2014 0:00	ACT_CLMP	113	0	0	0	CLUMPS	190	N	HEALTHY
2671	108824	38481	Austrostipa jacobsiana	T	CR	1	B			SWAN COASTAL	PRI			30/01/2014 0:00	ACT_CLMP	3	0	0	0	CLUMPS		N	HEALTHY
4135	86234	3178	Byblis gigantea	3		3				SWAN COASTAL	LGA	VER		31/12/1991 0:00		0			0			N	
4582	84930	1596	Caladenia huegelii	T	CR	1		X		SWAN COASTAL	PRI			9/09/2004 0:00	ESTMT	0		0	0			N	
4583	97266	1596	Caladenia huegelii	T	CR	2	A	X		SWAN COASTAL	PRI			15/10/1997 0:00	ACT_IND	0			0			N	

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
4584	97267	1596	Caladenia huegelii	T	CR	2	B	X		SWAN COASTAL	PRI			15/10/1997 0:00	ACT_IND	0			0			N	
4585	97268	1596	Caladenia huegelii	T	CR	2	C	X		SWAN COASTAL	PRI			9/09/2004 0:00		0			0			N	
4586	84939	1596	Caladenia huegelii	T	CR	3		X		SWAN COASTAL	PRI			1/01/2004 0:00		0			0			N	
4587	84943	1596	Caladenia huegelii	T	CR	4		X		SWAN COASTAL	LGA	OTH		22/09/2004 0:00		0			0			N	
4588	84953	1596	Caladenia huegelii	T	CR	6	A			SWAN COASTAL	PRI			24/09/2012 0:00	ACT_IND	214			0	PLANTS	18528	Y	HEALTHY
4589	108283	1596	Caladenia huegelii	T	CR	6	B			SWAN COASTAL	PRI			24/09/2012 0:00	ACT_IND	62			0	PLANTS	18525	Y	HEALTHY
4590	108284	1596	Caladenia huegelii	T	CR	6	C			SWAN COASTAL	MRD	VER		24/09/2012 0:00	ACT_IND	19			0	PLANTS	18525	Y	HEALTHY

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
4591	108285	1596	Caladenia huegelii	T	CR	6	D		Environmentally Sensitive	SWAN COASTAL	PRI	NRE		1/10/2013 0:00	ESTMT	100			0	PLANTS		N	HEALTHY
4592	84969	1596	Caladenia huegelii	T	CR	8				SWAN COASTAL	MPR	PRS		13/10/2004 0:00		0			0			N	
4594	84931	1596	Caladenia huegelii	T	CR	11		X		SWAN COASTAL	LGA	VER		15/10/1997 0:00	ACT_IND	0		0	0			N	
4597	97259	1596	Caladenia huegelii	T	CR	16	A	X		SWAN COASTAL	LGA	VER		15/10/1997 0:00		0			0			N	
4598	97260	1596	Caladenia huegelii	T	CR	16	B	X		SWAN COASTAL	PRI			15/10/1997 0:00		0			0			N	
4599	84934	1596	Caladenia huegelii	T	CR	18				SWAN COASTAL	LGA	REC		1/10/2012 0:00	ACT_IND	35			0	PLANTS		Y	HEALTHY
4600	97262	1596	Caladenia huegelii	T	CR	19	A			SWAN COASTAL	LGA	KEN		12/10/2004 0:00		0			0			N	
4601	97263	1596	Caladenia huegelii	T	CR	19	B	X		SWAN COASTAL	PRI			15/10/1997 0:00	ACT_IND	0			0			N	

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
4602	97264	1596	Caladenia huegelii	T	CR	19	C	X		SWAN COASTAL	PRI			15/10/1997 0:00	ACT_IND	0		0	0			N	
4603	114929	1596	Caladenia huegelii	T	CR	19	D			SWAN COASTAL	PRI			9/09/2015 0:00	ACT_IND	1			0	PLANTS		Y	HEALTHY
4604	97270	1596	Caladenia huegelii	T	CR	21	A			SWAN COASTAL	LGA	CON		11/10/2004 0:00		0			0			N	
4605	97271	1596	Caladenia huegelii	T	CR	21	B			SWAN COASTAL	LGA	RUB		2/10/1998 0:00		4			4			Y	
4607	84936	1596	Caladenia huegelii	T	CR	23				SWAN COASTAL	CRO	CON		10/09/2004 0:00		0			0			N	
4610	97273	1596	Caladenia huegelii	T	CR	28	A	X		SWAN COASTAL	MTR	CPK		19/03/2005 0:00		0			0			N	
4611	97274	1596	Caladenia huegelii	T	CR	28	B			SWAN COASTAL	PRI			1/10/2006 0:00		0			2			Y	
4619	97281	1596	Caladenia huegelii	T	CR	37	A			SWAN COASTAL	PRI			8/10/2004 0:00	ACT_IND	0			0			N	

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
4620	97282	1596	Caladenia huegelii	T	CR	37	B			SWAN COASTAL	LGA	VER		8/10/2004 0:00	ACT_IND	0			0			N	
4624	84944	1596	Caladenia huegelii	T	CR	41		X		SWAN COASTAL	MRD	VER		23/10/2006 0:00		0			0			N	
4625	97288	1596	Caladenia huegelii	T	CR	42	A			SWAN COASTAL	SPC	GVT		23/09/2011 0:00	ACT_IND	447			0	PLANTS	112380	Y	HEALTHY
4626	97289	1596	Caladenia huegelii	T	CR	42	B			SWAN COASTAL	PRI			2/10/2013 0:00	ACT_IND	15			0	PLANTS	262	Y	HEALTHY
4627	97290	1596	Caladenia huegelii	T	CR	42	C			SWAN COASTAL	PRI			9/10/2004 0:00		5			5			Y	
4628	97291	1596	Caladenia huegelii	T	CR	42	D			SWAN COASTAL	LGA	VER		23/09/2011 0:00		0			0			N	
4629	106241	1596	Caladenia huegelii	T	CR	42	E			SWAN COASTAL	PRI			14/10/2005 0:00	ACT_IND	0			0			Y	MODERATE

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
4630	106242	1596	Caladenia huegelii	T	CR	42	F		Environmentally Sensitive	SWAN COASTAL	PRI			14/10/2005 0:00	ACT_IND	0			0			Y	MODERATE
4631	84945	1596	Caladenia huegelii	T	CR	44				SWAN COASTAL	CC	CFF		11/10/2005 0:00	ACT_IND	14			14			Y	
4635	84946	1596	Caladenia huegelii	T	CR	48		X		SWAN COASTAL	PRI			2/02/2005 0:00		0			0			N	
4639	84950	1596	Caladenia huegelii	T	CR	55				SWAN COASTAL	MRD	VER		17/09/2008 0:00	ACT_IND	1			1			Y	
4640	97297	1596	Caladenia huegelii	T	CR	56	A			SWAN COASTAL	COM	AIR		24/09/2004 0:00		0			0			N	
4641	97298	1596	Caladenia huegelii	T	CR	56	B			SWAN COASTAL	COM	AIR		24/09/2004 0:00		4			4			Y	

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
4642	97299	1596	Caladenia huegelii	T	CR	56	C		Environmentally Sensitive	SWAN COASTAL	COM	AIR		5/10/2011 0:00	ESTMT	54			0	PLANTS	38200	Y	
4643	97300	1596	Caladenia huegelii	T	CR	56	D			SWAN COASTAL	COM	AIR		29/09/2005 0:00	ACT_IND	2			2			Y	
4644	97301	1596	Caladenia huegelii	T	CR	56	E			SWAN COASTAL	COM	AIR		29/09/2005 0:00	ACT_IND	6			6			Y	
4645	97302	1596	Caladenia huegelii	T	CR	56	F			SWAN COASTAL	COM	AIR		29/09/2005 0:00	ACT_IND	3			3			Y	
4646	97304	1596	Caladenia huegelii	T	CR	56	H			SWAN COASTAL	COM	AIR		28/09/2005 0:00		0			1			Y	
4647	84951	1596	Caladenia huegelii	T	CR	57				SWAN COASTAL	LGA	GOL		25/09/2008 0:00		0			0			N	
4648	84952	1596	Caladenia huegelii	T	CR	58				SWAN COASTAL	LGA	REC		7/10/2004 0:00		1			1			Y	

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
4659	84954	1596	Caladenia huegelii	T	CR	61				WAN COASTAL	PRI			5/10/2005 0:00		1			1			Y	
4660	84955	1596	Caladenia huegelii	T	CR	62				WAN COASTAL	LGA	REC		27/09/2013 0:00	ACT_IND	12			0	PLANTS	514	Y	HEALTHY
4662	84957	1596	Caladenia huegelii	T	CR	64		U		WAN COASTAL	PRI			30/09/1994 0:00	ESTMT	0			1			N	
4665	84960	1596	Caladenia huegelii	T	CR	67				WAN COASTAL	NON	GVT		10/10/2011 0:00	ACT_IND	13			0	PLANTS	2890	Y	HEALTHY
4671	84964	1596	Caladenia huegelii	T	CR	72				WAN COASTAL	PRI			19/09/2007 0:00	ACT_IND	1			1			Y	
4677	106001	1596	Caladenia huegelii	T	CR	77				WAN COASTAL	LGA	REC		28/09/2011 0:00	ACT_IND	5	1		0	PLANTS		Y	HEALTHY
4680	109378	1596	Caladenia huegelii	T	CR	79				WAN COASTAL	PRI			9/09/2014 0:00	ACT_IND	1			0	PLANTS			HEALTHY

Environmentally Sensitive

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
4685	114889	1596	Caladenia huegelii	T	CR	84			Environmentally Sensitive	SWAN COASTAL	PRI			26/09/2012 0:00		0			0			Y	HEALTHY
5258	84459	759	Carex tereticaulis	3		9				SWAN COASTAL	LGA			29/10/2004 0:00		0			0			N	
7194	97354	1637	Diuris purdiei	T	EN	1	A	X		SWAN COASTAL	PRI			1/10/1990 0:00	ESTMT	640			640			N	
7195	97355	1637	Diuris purdiei	T	EN	1	B	X		SWAN COASTAL	PRI			15/10/1988 0:00	ESTMT	300			300			Y	
7196	97356	1637	Diuris purdiei	T	EN	1	C	X		SWAN COASTAL	PRI			7/07/1988 0:00	ESTMT	0			30			N	
7197	97357	1637	Diuris purdiei	T	EN	1	D	X		SWAN COASTAL	PRI			7/07/1988 0:00	ESTMT	0			600			N	
7198	97358	1637	Diuris purdiei	T	EN	1	E	X		SWAN COASTAL	PRI			15/10/1986 0:00	ESTMT	0			20			N	
7199	97359	1637	Diuris purdiei	T	EN	1	F	X		SWAN COASTAL	LGA	VER		15/10/1986 0:00	ESTMT	0			350			N	
7200	97360	1637	Diuris purdiei	T	EN	1	G	X		SWAN COASTAL	PRI			18/10/1984 0:00	ESTMT	0			15			N	
7201	97361	1637	Diuris purdiei	T	EN	1	H	X		SWAN COASTAL	LGA	VER		18/10/1984 0:00	ESTMT	0			5			N	
7202	97362	1637	Diuris purdiei	T	EN	1	I	X		SWAN COASTAL	PRI			19/04/1984 0:00		0			0			N	
7203	97363	1637	Diuris purdiei	T	EN	1	J	X		SWAN COASTAL	PRI			19/04/1984 0:00		0			0			N	
7205	85051	1637	Diuris purdiei	T	EN	3				SWAN COASTAL	PRI			15/10/2002 0:00	ESTMT	0			0			N	

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
7209	85053	1637	Diuris purdiei	T	EN	6				SWAN COASTAL	PRI			14/01/2004 0:00		0			0			Y	
7216	85041	1637	Diuris purdiei	T	EN	11				SWAN COASTAL	PRI			17/10/1984 0:00		0			0			Y	
7240	99183	4763	Dodonaea hackettiana	4		4	A			SWAN COASTAL	PRI			15/10/1980 0:00		0			0			N	
7241	99184	4763	Dodonaea hackettiana	4		4	B			SWAN COASTAL	LGA	VER		15/10/1980 0:00		0			0			N	
7242	99185	4763	Dodonaea hackettiana	4		4	C			SWAN COASTAL	NON	OTH		15/10/1980 0:00		0			0			N	
7251	87266	4763	Dodonaea hackettiana	4		6				SWAN COASTAL	PRI			11/11/1981 0:00		0			0			N	
7342	85058	1639	Drakaea elastica	T	CR	10		X		SWAN COASTAL	LGA	REC	VER	22/07/2010 0:00	ACT_IND	0			0	PLANTS		N	
7345	85059	1639	Drakaea elastica	T	CR	12		X		SWAN COASTAL	PRI			28/07/2005 0:00		0			0			N	
7374	85072	1639	Drakaea elastica	T	CR	29				SWAN COASTAL	COM	AIR		27/09/2005 0:00	ACT_IND	4			4			N	

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
7414	91317	13635	Drakaea micrantha	T	EN	1		X		SWAN COASTAL	PRI			12/08/1988 0:00	ESTMT	2			2			N	
7432	91320	13635	Drakaea micrantha	T	EN	15				SWAN COASTAL	PRI			14/11/2002 0:00		0			0			N	
7502	90842	3115	Drosera occidentalis	4		8				SWAN COASTAL	PRI			19/10/1989 0:00	ESTMT	0			####			N	
7751	103622	17150	Eremophila glabra subsp. chlorella	T	EN	1	A			SWAN COASTAL	PRI			22/11/2011 0:00	ACT_IND	3	18		0	PLANTS	10	Y	HEALTHY
7752	103623	17150	Eremophila glabra subsp. chlorella	T	EN	1	B			SWAN COASTAL	PRI			22/11/2011 0:00	ACT_IND	1	2		0	PLANTS	1	N	HEALTHY
7753	106721	17150	Eremophila glabra subsp. chlorella	T	EN	1	C			SWAN COASTAL	PRI			22/11/2011 0:00	ACT_IND	2			0	PLANTS		Y	HEALTHY
11982	86880	4027	Jacksonia sericea	4		8				SWAN COASTAL	LGA		REC	13/11/1990 0:00	ESTMT	1300			1300			N	
11986	98909	4027	Jacksonia sericea	4		11	A			SWAN COASTAL	PRI			9/11/1990 0:00		0			0			N	
11987	98910	4027	Jacksonia sericea	4		11	B			SWAN COASTAL	PRI			9/11/1990 0:00		0			0			N	

Environmentally Sensitive

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
13927	96770	36200	Ornduffia submersa	4		1				SWAN COASTAL	PRI			27/09/1989 0:00	ACT_IND	25			25			N	
15159	84508	974	Schoenus benthamii	3		5				SWAN COASTAL	PRI			29/11/1994 0:00		0			0			N	
15174	84514	980	Schoenus capillifolius	3		11				SWAN COASTAL	UNKNOWN			30/10/2005 0:00		0			0			N	
15203	84537	1008	Schoenus pennisetis	3		8				SWAN COASTAL	UNKNOWN	UNKNOWN		24/08/1995 0:00		0			0			N	
15665	89292	7756	Stylidium longitubum	4		10				SWAN COASTAL	NON	GVT		30/11/1991 0:00		0			0			N	
16639	93718	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4		9				SWAN COASTAL	PRI			11/12/1990 0:00	ACT_IND	80			80			Y	
16640	103512	44444	Tripterococcus sp. Brachylobus (A.S. George	4		10	A			SWAN COASTAL	PRI			18/12/1990 0:00		0			0			Y	
16641	103513	44444	Tripterococcus sp. Brachylobus (A.S. George	4		10	B			SWAN COASTAL	PRI			18/12/1990 0:00	ESTMT	0			500			Y	
16642	103515	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4		11	A			SWAN COASTAL	PRI			18/12/1990 0:00	ACT_IND	2			2			Y	
16643	103516	44444	Tripterococcus sp. Brachylobus (A.S. George	4		11	B			SWAN COASTAL	PRI			18/12/1990 0:00	ACT_IND	0			16			Y	
16644	93724	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4		12				SWAN COASTAL	PRI			18/12/1990 0:00	ACT_IND	0			2			Y	
16645	93725	44444	Tripterococcus sp. Brachylobus (A.S. George	4		13				SWAN COASTAL	NON	GVT		21/02/1992 0:00	ESTMT	10			10			N	

FID	PopId	Nameid	Taxon	ConsStatus	WARank	PopNumber	SubPopCode	PopStatus	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCoun	JuvenileCo	SeedlingCo	LiveTotal	PlantTypeC	AreaOccupi	inFlower	Population
16647	93727	44444	Tripterococcus sp. Brachylobus (A.S. George 14234)	4		15			Environmentally Sensitive	SWAN COASTAL	PRI			21/03/1999 0:00		0			1			N	
17003	92653	14714	Verticordia lindleyi subsp. lindleyi	4		12				SWAN COASTAL	SPC	PAR	REC	13/03/1990 0:00	ESTMT	100			100			N	
17007	92657	14714	Verticordia lindleyi subsp. lindleyi	4		16				SWAN COASTAL	PRI			11/05/1990 0:00	ESTMT	12			12			N	
17008	92658	14714	Verticordia lindleyi subsp. lindleyi	4		17		X		SWAN COASTAL	PRI			2/08/2012 0:00		0			0			N	
17010	92660	14714	Verticordia lindleyi subsp. lindleyi	4		19				SWAN COASTAL	PRI			30/11/1991 0:00		0			0			N	
17013	92664	14714	Verticordia lindleyi subsp. lindleyi	4		22				SWAN COASTAL	LGA	REC		15/06/1991 0:00		0			0			N	

APPENDIX 2

Naturemap Report

NatureMap
Mapping Western Australia's biodiversity

NatureMap Species Report

Created By Guest user on 07/11/2019

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 115° 53' 38" E,32° 05' 02" S
Buffer 10km
Group By Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	2168	126548
Other specially protected fauna	3	66
Priority 1	8	17
Priority 2	10	39
Priority 3	39	460
Priority 4	25	1015
Protected under international agreement	29	2225
Rare or likely to become extinct	34	3281
TOTAL	**2316**	**133651**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Rare or likely to become extinct					
1.	6309	*Andersonia gracilis*		T	
2.	24506	*Anous tenuirostris subsp. melanops (Australian Lesser Noddy)*		T	
3.	38481	*Austrostipa jacobsiana*		T	
4.	24345	*Botaurus poiciloptilus (Australasian Bittern)*		T	
5.	1596	*Caladenia huegelii (Grand Spider Orchid)*		T	
6.	1213	*Calectasia cyanea (Blue Tinsel Lily)*		T	
7.	24784	*Calidris ferruginea (Curlew Sandpiper)*		T	
8.	24790	*Calidris tenuirostris (Great Knot)*		T	
9.	24731	*Calyptorhynchus banksii subsp. naso (Forest Red-tailed Black Cockatoo)*		T	
10.	24733	*Calyptorhynchus baudinii (Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo)*		T	
11.	24734	*Calyptorhynchus latirostris (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)*		T	
12.	48400	*Calyptorhynchus sp. (white-tailed black cockatoo)*		T	
13.	25575	*Charadrius leschenaultii (Greater Sand Plover)*		T	
14.	24092	*Dasyurus geoffroii (Chuditch, Western Quoll)*		T	
15.	10796	*Diuris drummondii (Tall Donkey Orchid)*		T	
16.	1637	*Diuris purdiei (Purdie's Donkey Orchid)*		T	
17.	1639	*Drakaea elastica (Glossy-leaved Hammer Orchid)*		T	
18.	13635	*Drakaea micrantha*		T	
19.	17605	*Eleocharis keigheryi*		T	
20.	17150	*Eremophila glabra subsp. chlorella*		T	
21.	2107	*Grevillea thelemanniana (Spider Net Grevillea)*		T	
22.	33983	*Leioproctus douglasiellus (a short-tongued bee)*		T	
23.	942	*Lepidosperma rostratum*		T	
24.	17106	*Macarthuria keigheryi*		T	
25.	24146	*Myrmecobius fasciatus (Numbat, Walpurti)*		T	
26.	33984	*Neopasiphae simplicior (a short-tongued bee)*		T	
27.	24798	*Numenius madagascariensis (Eastern Curlew)*		T	
28.	2753	*Ptilotus pyramidatus*		T	Y
29.	48237	*Rostratula australis (Australian Painted Snipe)*		T	
30.	24145	*Setonix brachyurus (Quokka)*		T	
31.	48595	*Sternula nereis subsp. nereis (Fairy Tern)*		T	
32.	18590	*Synaphea sp. Fairbridge Farm (D. Papenfus 696)*		T	
33.	1033	*Tetraria australiensis*		T	
34.	34113	*Westralunio carteri (Carter's Freshwater Mussel)*		T	
Protected under international agreement					
35.	41323	*Actitis hypoleucos (Common Sandpiper)*		IA	
36.	25554	*Apus pacificus (Fork-tailed Swift, Pacific Swift)*		IA	

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
37.	25736	*Arenaria interpres (Ruddy Turnstone)*		IA	
38.	24779	*Calidris acuminata (Sharp-tailed Sandpiper)*		IA	
39.	25738	*Calidris canutus (Red Knot, knot)*		IA	
40.	24786	*Calidris melanotos (Pectoral Sandpiper)*		IA	
41.	24788	*Calidris ruficollis (Red-necked Stint)*		IA	
42.	24789	*Calidris subminuta (Long-toed Stint)*		IA	
43.	25574	*Charadrius dubius (Little Ringed Plover)*		IA	
44.	41332	*Chlidonias leucopterus (White-winged Black Tern, white-winged tern)*		IA	
45.	24791	*Gallinago hardwickii (Latham's Snipe, Japanese snipe)*		IA	
46.	24793	*Gallinago stenura (Pin-tailed Snipe)*		IA	
47.	47954	*Gelochelidon nilotica (Gull-billed Tern)*		IA	
48.	48587	*Hydroprogne caspia (Caspian Tern)*		IA	
49.	30932	*Limosa lapponica (Bar-tailed Godwit)*		IA	
50.	25741	*Limosa limosa (Black-tailed Godwit)*		IA	
51.	24797	*Limosa limosa subsp. melanuroides (Black-tailed Godwit)*		IA	
52.	25742	*Numenius phaeopus (Whimbrel)*		IA	
53.	48591	*Pandion cristatus (Osprey, Eastern Osprey)*		IA	
54.	24802	*Philomachus pugnax (Ruff, reeve)*		IA	
55.	24843	*Plegadis falcinellus (Glossy Ibis)*		IA	
56.	24382	*Pluvialis fulva (Pacific Golden Plover)*		IA	
57.	24383	*Pluvialis squatarola (Grey Plover)*		IA	
58.	24516	*Stercorarius longicaudus (long-tailed jaeger, long-tailed skua)*		IA	
59.	48597	*Thalasseus bergii (Crested Tern)*		IA	
60.	24806	*Tringa glareola (Wood Sandpiper)*		IA	
61.	24808	*Tringa nebularia (Common Greenshank, greenshank)*		IA	
62.	24809	*Tringa stagnatilis (Marsh Sandpiper, little greenshank)*		IA	
63.	41351	*Xenus cinereus (Terek Sandpiper)*		IA	
Other specially protected fauna					
64.	25624	*Falco peregrinus (Peregrine Falcon)*		S	
65.	24475	*Falco peregrinus subsp. macropus (Australian Peregrine Falcon)*		S	
66.	48070	*Phascogale tapoatafa subsp. wambenger (South-western Brush-tailed Phascogale, Wambenger)*		S	
Priority 1					
67.	14932	*Acacia lasiocarpa var. bracteolata long peduncle variant (G.J. Keighery 5026)*		P1	
68.	45014	*Amanita quenda*		P1	Y
69.	48689	*Bolboschoenus fluviatilis*		P1	
70.	6178	*Haloragis scoparia*		P1	
71.	11074	*Hydrocotyle striata*		P1	
72.	11615	*Ptilotus sericostachyus subsp. roseus*		P1	
73.	16280	*Schoenus sp. Beaufort (G.J. Keighery 6291)*		P1	
74.	33994	*Throscodectes xiphos (Stylet Bush Cricket, Stylet Throsco (Jandakot))*		P1	Y
Priority 2					
75.	3237	*Acacia benthamii*		P2	
76.	46333	*Amanita wadulawitu (Long-spored Lepidella)*		P2	
77.	14663	*Comesperma griffinii*		P2	
78.	19272	*Johnsonia pubescens subsp. cygnorum*		P2	
79.	19241	*Lepyrodia curvescens*		P2	
80.	42022	*Poranthera moorokatta*		P2	
81.	999	*Schoenus loliaceus*		P2	
82.	19704	*Stenanthemum sublineare*		P2	
83.	1717	*Thelymitra variegata (Queen of Sheba)*		P2	
84.	13783	*Thysanotus sp. Badgingarra (E.A. Griffin 2511)*		P2	
Priority 3					
85.	3373	*Acacia horridula*		P3	
86.	25242	*Acanthophis antarcticus (Southern Death Adder)*		P3	
87.	18195	*Amanita carneiphylla*		P3	
88.	45013	*Amanita drummondii*		P3	
89.	43543	*Amanita fibrillopes*		P3	
90.	48332	*Amanita preissii (Cinnamon-ring Lepidella)*		P3	
91.	43542	*Amanita wadjukiorum*		P3	
92.	7831	*Angianthus micropodioides*		P3	
93.	45402	*Babingtonia urbana (Coastal Plain Babingtonia)*		P3	
94.	3178	*Byblis gigantea (Rainbow Plant)*		P3	
95.	759	*Carex tereticaulis*		P3	
96.	19338	*Chamaescilla gibsonii*		P3	
97.	4560	*Comesperma rhadinocarpum (Slender-fruited Comesperma)*		P3	
98.	41641	*Ctenotus ora (Coastal Plains Skink)*		P3	
99.	16245	*Cyathochaeta teretifolia*		P3	

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
100.	7485	*Dampiera triloba*		P3	
101.	3863	*Dillwynia dillwynioides*		P3	
102.	41801	*Eryngium pinnatifidum subsp. Palustre (G.J. Keighery 13459)*		P3	
103.	41810	*Eryngium sp. Subdecumbens (G.J. Keighery 5390)*		P3	
104.	1469	*Haemodorum loratum*		P3	
105.	11461	*Hibbertia spicata subsp. leptotheca*		P3	
106.	48935	*Idiosoma sigillatum (Swan Coastal Plain shield-backed trapdoor spider)*		P3	
107.	16317	*Isotropis cuneifolia subsp. glabra*		P3	
108.	20462	*Jacksonia gracillima*		P3	
109.	33982	*Leioproctus contrarius (a short-tongued bee)*		P3	
110.	25147	*Lerista lineata (Perth Slider, Lined Skink)*		P3	
111.	33638	*Meionectes tenuifolia*		P3	
112.	6193	*Myriophyllum echinatum*		P3	
113.	25249	*Neelaps calonotos (Black-striped Snake, black-striped burrowing snake)*		P3	
114.	11557	*Phlebocarya pilosissima subsp. pilosissima*		P3	
115.	974	*Schoenus benthamii*		P3	
116.	980	*Schoenus capillifolius*		P3	
117.	1008	*Schoenus pennisetis*		P3	
118.	17731	*Schoenus sp. Waroona (G.J. Keighery 12235)*		P3	
119.	18564	*Stylidium aceratum*		P3	
120.	25800	*Stylidium paludicola*		P3	
121.	7771	*Stylidium periscelianthum (Pantaloon Triggerplant)*		P3	
122.	48297	*Styphelia filifolia*		P3	
123.	1317	*Thysanotus anceps*		P3	
Priority 4					
124.	14131	*Acacia oncinophylla subsp. patulifolia*		P4	
125.	141	*Aponogeton hexatepalus (Stalked Water Ribbons)*		P4	
126.	4444	*Boronia tenuis (Blue Boronia)*		P4	
127.	25035	*Ctenotus delli (Dell's skink, Darling Range southwest Ctenotus)*		P4	
128.	4763	*Dodonaea hackettiana (Hackett's Hopbush)*		P4	
129.	3115	*Drosera occidentalis (Western Sundew)*		P4	
130.	6233	*Hydrocotyle lemnoides (Aquatic Pennywort)*		P4	
131.	24215	*Hydromys chrysogaster (Water-rat, Rakali)*		P4	
132.	48588	*Isoodon fusciventer (Quenda, southwestern brown bandicoot)*		P4	
133.	47975	*Ixobrychus dubius (Australian Little Bittern)*		P4	
134.	4027	*Jacksonia sericea (Waldjumi)*		P4	
135.	4035	*Kennedia beckxiana (Cape Arid Kennedia)*		P4	
136.	33742	*Microtis quadrata*		P4	
137.	48022	*Notamacropus irma (Western Brush Wallaby)*		P4	
138.	36200	*Ornduffia submersa*		P4	
139.	24328	*Oxyura australis (Blue-billed Duck)*		P4	
140.	24663	*Phaethon rubricauda (Red-tailed Tropicbird)*		P4	
141.	1003	*Schoenus natans (Floating Bog-rush)*		P4	
142.	7756	*Stylidium longitubum (Jumping Jacks)*		P4	
143.	33992	*Synemon gratiosa (Graceful Sunmoth)*		P4	
144.	48135	*Thinornis rubricollis (Hooded Plover, Hooded Dotterel)*		P4	
145.	1334	*Thysanotus glaucus*		P4	
146.	24803	*Tringa brevipes (Grey-tailed Tattler)*		P4	
147.	44444	*Tripterococcus sp. Brachylobus (A.S. George 14234)*		P4	
148.	14714	*Verticordia lindleyi subsp. lindleyi*		P4	
Non-conservation taxon					
149.		*?Adenanthos obovatus*			Y
150.		*?Amphipogon turbinatus*			Y
151.		*?Anigozanthos humilis*			
152.		*?Arnocrinum preissii*			
153.		*?Asparagus asparagoides*			Y
154.		*?Astroloma pallidum*			Y
155.		*?Austrostipa compressa*			
156.		*?Boronia ramosa*			Y
157.		*?Briza maxima*			Y
158.		*?Burchardia congesta*			
159.		*?Caesia sp.*			Y
160.		*?Caladenia discoidea*			Y
161.		*?Calandrinia sp.*			Y
162.		*?Calytrix angulata*			Y
163.		*?Calytrix flavescens*			Y
164.		*?Calytrix sp.*			Y
165.		*?Chamaescilla corymbosa*			Y
166.		*?Cirsium vulgare*			Y

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
167.		*?Conostylis aculeata*			Y
168.		*?Conostylis juncea*			Y
169.		*?Conostylis sp.*			Y
170.		*?Conyza bonariensis*			Y
171.		*?Dampiera linearis*			Y
172.		*?Dasypogon bromeliifolius*			Y
173.		*?Desmocladus flexuosus*			Y
174.		*?Diuris corymbosa/magnifica*			Y
175.		*?Ehrharta calycina*			Y
176.		*?Epilobium hirtigerum*			Y
177.		*?Epilobium sp.*			Y
178.		*?Eremaea pauciflora*			Y
179.		*?Euchiton sphaericus*			Y
180.		*?Gonocarpus pithyoides*			Y
181.		*?Haemodorum spicatum*			Y
182.		*?Hemiandra sp.*			Y
183.		*?Hibbertia subvaginata*			Y
184.		*?Hovea trisperma var. trisperma*			
185.		*?Hypocalymma angustifolia*			Y
186.		*?Isolepis marginata*			Y
187.		*?Jacksonia furcellata*			Y
188.		*?Kennedia prostrata*			Y
189.		*?Kunzea glabrescens*			
190.		*?Lactuca serriola*			Y
191.		*?Lepidosperma sp.*			Y
192.		*?Lepidosperma squamatum*			Y
193.		*?Lepidosperma squamatum s.l.*			
194.		*?Leptomeria empetriformis*			Y
195.		*?Leucopogon conostephioides*			Y
196.		*?Lomandra caespitosa*			
197.		*?Lomandra sericea*			Y
198.		*?Lomandra sp.*			Y
199.		*?Lomandra suaveolens*			Y
200.		*?Lotus subbiflorus*			
201.		*?Lysimachia arvensis*			
202.		*?Melaleuca thymoides*			Y
203.		*?Microlaena stipoides*			
204.		*?Microtis media*			Y
205.		*?Monoculus monstrosus*			Y
206.		*?Opercularia vaginata*			Y
207.		*?Pelargonium capitatum*			Y
208.		*?Petrophile linearis*			Y
209.		*?Petrorhagia dubia*			Y
210.		*?Philotheca spicata*			Y
211.		*?Phlebocarya ciliata*			
212.		*?Phlebocarya filifolia*			Y
213.		*?Phlebocarya sp.*			Y
214.		*?Podotheca sp.*			Y
215.		*?Pterostylis sanguinea*			
216.		*?Rhodanthe citrina*			Y
217.		*?Romulea rosea*			Y
218.		*?Rytidosperma occidentalis*			
219.		*?Rytidosperma sp.*			Y
220.		*?Schoenus curvifolius*			Y
221.		*?Scholtzia involucrata*			Y
222.		*?Solanum nigrum*			Y
223.		*?Sowerbaea laxiflora*			
224.		*?Stylidium repens*			Y
225.		*?Stylidium schoenoides*			Y
226.		*?Symphyotrichum squamatum*			Y
227.		*?Thysanotus manglesianus/patersonii complex*			Y
228.		*?Trachymene pilosa*			Y
229.		*?Urospermum picroides*			Y
230.		*?Vulpia sp.*			Y
231.		*?Wahlenbergia capensis*			Y
232.		*?Wahlenbergia preissii*			Y
233.		*?Wahlenbergia sp.*			Y
234.		*?Xanthorrhoea brunonis*			Y
235.		*?Zantedeschia aethiopica*			Y
236.	19708	*Abutilon grandifolium*	Y		

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
237.		*Acacia ?longifolia*			Y
238.		*Acacia ?pulchella*			Y
239.	3207	*Acacia alata (Winged Wattle)*			
240.	15466	*Acacia applanata*			
241.	3282	*Acacia cyclops (Coastal Wattle)*			
242.	3294	*Acacia dentifera*			
243.	3307	*Acacia divergens*			
244.	11926	*Acacia drewiana subsp. drewiana*			
245.	3374	*Acacia huegelii*			
246.	3383	*Acacia incurva*			
247.	3409	*Acacia lasiocarpa (Panjang)*			
248.	11611	*Acacia lasiocarpa var. lasiocarpa*			
249.	17861	*Acacia longifolia*	Y		
250.	17464	*Acacia longifolia subsp. longifolia*	Y		
251.	17860	*Acacia podalyriifolia*	Y		
252.	3502	*Acacia pulchella (Prickly Moses)*			
253.		*Acacia pulchella ?var glaberrima*			Y
254.	15481	*Acacia pulchella var. glaberrima*			
255.	15483	*Acacia pulchella var. pulchella*			
256.	3527	*Acacia saligna (Orange Wattle, Kudjong)*			
257.	30033	*Acacia saligna subsp. lindleyi*			
258.	30032	*Acacia saligna subsp. saligna*			
259.	3541	*Acacia sessilis*			
260.		*Acacia sp.*			
261.	3557	*Acacia stenoptera (Narrow Winged Wattle)*			
262.	3574	*Acacia teretifolia*			
263.	3581	*Acacia trigonophylla*			
264.	3602	*Acacia willdenowiana (Grass Wattle)*			
265.	24559	*Acanthagenys rufogularis (Spiny-cheeked Honeyeater)*			
266.	24260	*Acanthiza apicalis (Broad-tailed Thornbill, Inland Thornbill)*			
267.	24261	*Acanthiza chrysorrhoa (Yellow-rumped Thornbill)*			
268.	24262	*Acanthiza inornata (Western Thornbill)*			
269.	1205	*Acanthocarpus canaliculatus*			
270.	1208	*Acanthocarpus preissii*			
271.	24560	*Acanthorhynchus superciliosus (Western Spinebill)*			
272.	7811	*Acanthospermum hispidum (Starburr)*	Y		
273.	25535	*Accipiter cirrocephalus (Collared Sparrowhawk)*			
274.	24281	*Accipiter cirrocephalus subsp. cirrocephalus (Collared Sparrowhawk)*			
275.	25536	*Accipiter fasciatus (Brown Goshawk)*			
276.	24283	*Accipiter fasciatus subsp. didimus (Brown Goshawk)*			
277.	24282	*Accipiter fasciatus subsp. fasciatus (Brown Goshawk)*			
278.		*Acentrogobius bifrenatus*			
279.		*Acercella falcipes*			
280.	42368	*Acritoscincus trilineatus (Western Three-lined Skink)*			
281.	25755	*Acrocephalus australis (Australian Reed Warbler)*			
282.	24831	*Acrocephalus australis subsp. gouldi (Australian Reed Warbler)*			
283.	6205	*Actinotus leucocephalus (Flannel Flower)*			
284.	1775	*Adenanthos cygnorum (Common Woollybush)*			
285.	11837	*Adenanthos cygnorum subsp. cygnorum (Common Woollybush)*			
286.	1791	*Adenanthos obovatus (Basket Flower)*			
287.	25544	*Aegotheles cristatus (Australian Owlet-nightjar)*			
288.		*Afurcagobius suppositus*			
289.		*Agaricus sp.*			
290.	18306	*Ageratina adenophora (Crofton Weed)*	Y		
291.	17202	*Agonis flexuosa var. flexuosa*			
292.	23474	*Agrostocrinum hirsutum*			
293.	1261	*Agrostocrinum scabrum (Blue Grass Lily)*			
294.	23501	*Agrostocrinum scabrum subsp. scabrum*			
295.	184	*Aira caryophyllea (Silvery Hairgrass)*	Y		
296.		*Aira caryophyllea/cupaniana group*			
297.	185	*Aira cupaniana (Silvery Hairgrass)*	Y		
298.	187	*Aira praecox (Early Hairgrass)*	Y		
299.		*Aira/Pentameris sp.*			Y
300.	48513	*Aizoon pubescens*	Y		
301.		*Akamptogonus novarae*			
302.		*Aldrichetta forsteri*			
303.	1056	*Alexgeorgea nitens*			
304.	1728	*Allocasuarina fraseriana (Sheoak, Kondil)*			
305.	1732	*Allocasuarina humilis (Dwarf Sheoak)*			
306.		*Allothereua maculata*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
307.	2648	*Alternanthera denticulata (Lesser Joyweed)*			
308.	2652	*Alternanthera nodiflora (Common Joyweed)*			
309.	48626	*Althenia australis*			
310.	48620	*Althenia preissii*			
311.		*Amanita basiorubra*			
312.	38754	*Amanita conicobulbosa*			
313.	48320	*Amanita eucalypti*			
314.	38755	*Amanita ochroterrea*			
315.	38756	*Amanita umbrinella*			
316.	38757	*Amanita xanthocephala*			
317.	2655	*Amaranthus albus (Tumbleweed)*	Y		
318.	25840	*Amaranthus blitum*	Y		
319.	2656	*Amaranthus caudatus (Love Lies Bleeding)*	Y		
320.	2671	*Amaranthus viridis (Green Amaranth)*	Y		
321.		*Amblyomma albolimbatum*			
322.	7821	*Ambrosia psilostachya (Perennial Ragweed)*	Y		
323.	13380	*Amphibromus nervosus*			
324.	197	*Amphipogon debilis*			
325.	20184	*Amphipogon laguroides subsp. laguroides*			
326.	199	*Amphipogon strictus (Greybeard Grass)*			
327.	200	*Amphipogon turbinatus*			
328.	2375	*Amyema linophylla*			
329.	13267	*Amyema linophylla subsp. linophylla*			
330.	2383	*Amyema preissii (Wireleaf Mistletoe)*			
331.		*Aname mainae*			
332.		*Aname tepperi*			
333.	1058	*Anarthria gracilis*			
334.	24310	*Anas castanea (Chestnut Teal)*			
335.	24312	*Anas gracilis (Grey Teal)*			
336.	24313	*Anas platyrhynchos (Mallard)*			
337.		*Anas platyrhynchos subsp. domesticus*			
338.	24315	*Anas rhynchotis (Australasian Shoveler)*			
339.	24316	*Anas superciliosa (Pacific Black Duck)*			
340.		*Ancylidae sp.*			
341.	6300	*Andersonia aristata (Rice Flower)*			
342.	6312	*Andersonia involucrata*			
343.	6314	*Andersonia lehmanniana*			
344.	7833	*Angianthus preissianus*			
345.	47414	*Anhinga novaehollandiae (Australasian Darter)*			
346.		*Anigozanthos ?humilis*			Y
347.	11470	*Anigozanthos bicolor subsp. bicolor*			
348.	1409	*Anigozanthos humilis (Catspaw)*			
349.	11434	*Anigozanthos humilis subsp. humilis*			
350.	1411	*Anigozanthos manglesii (Mangles Kangaroo Paw, Kurulbrang)*			
351.	11261	*Anigozanthos manglesii subsp. manglesii*			
352.		*Anigozanthos sp.*			
353.	11566	*Anigozanthos viridis subsp. viridis*			
354.	44629	*Anilios australis*			
355.	17455	*Anredera cordifolia*	Y		
356.		*Anser anser*			
357.	11725	*Anthocercis ilicifolia subsp. ilicifolia*			
358.	24561	*Anthochaera carunculata (Red Wattlebird)*			
359.	24562	*Anthochaera lunulata (Western Little Wattlebird)*			
360.	12724	*Anthotium junciforme*			
361.	202	*Anthoxanthum odoratum (Sweet Vernal Grass)*	Y		
362.	24599	*Anthus australis subsp. australis (Australian Pipit)*			
363.	3686	*Aotus cordifolia*			
364.	3688	*Aotus gracillima*			
365.	3692	*Aotus procumbens*			
366.	3186	*Aphanes arvensis (Parsley Piert)*	Y		
367.	1117	*Aphelia cyperoides*			
368.	1118	*Aphelia drummondii*			
369.	43548	*Aphelia sp. Albany (B.G. Briggs 596)*			
370.	6210	*Apium annuum*			
371.	12040	*Apium prostratum subsp. prostratum var. prostratum (Sea Celery)*			
372.	17845	*Apodasmia ceramophila*			
373.		*Apogon rueppellii*			
374.	24990	*Aprasia pulchella (Granite Worm-lizard)*			
375.	24991	*Aprasia repens (Sand-plain Worm-lizard)*			
376.	24285	*Aquila audax (Wedge-tailed Eagle)*			

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377.		*Arachnura higginsi*			
378.		*Araneus cyphoxis*			
379.		*Araneus eburneiventris*			
380.		*Araneus senicaudatus*			
381.	17355	*Araujia sericifera*	Y		
382.	7838	*Arctotheca calendula (Cape Weed, African Marigold)*	Y		
383.	38963	*Arcyria affinis*			Y
384.	38964	*Arcyria cinerea*			
385.	38965	*Arcyria denudata*			
386.	38966	*Arcyria ferruginea*			
387.	38967	*Arcyria incarnata*			
388.	38968	*Arcyria insignis*			
389.	44709	*Arcyria major*			Y
390.	38970	*Arcyria obvelata*			
391.	38973	*Arcyria pomiformis*			
392.	38974	*Arcyria stipata*			Y
393.	25557	*Ardea garzetta (Little Egret)*			
394.	24337	*Ardea garzetta subsp. nigripes (Little Egret)*			
395.	25558	*Ardea ibis (Cattle Egret)*			
396.	25559	*Ardea intermedia (Intermediate Egret)*			
397.	41324	*Ardea modesta (great egret, white egret)*			
398.	24340	*Ardea novaehollandiae (White-faced Heron)*			
399.	24341	*Ardea pacifica (White-necked Heron)*			
400.	25560	*Ardea sacra (Eastern Reef Egret, Eastern Reef Heron)*			
401.		*Arenigobius bifrenatus*			
402.	28293	*Argyranthemum frutescens subsp. foeniculaceum*	Y		
403.		*Argyrosomus japonicus*			
404.	207	*Aristida contorta (Bunched Kerosene Grass)*			
405.		*Arkys walckenaeri*			
406.		*Armillaria luteobubalina*			
407.	1264	*Arnocrinum preissii*			
408.	25566	*Artamus cinereus (Black-faced Woodswallow)*			
409.	24352	*Artamus cinereus subsp. melanops (Black-faced Woodswallow)*			
410.	24353	*Artamus cyanopterus (Dusky Woodswallow)*			
411.	24356	*Artamus personatus (Masked Woodswallow)*			
412.		*Artoria flavimana*			
413.		*Artoria linnaei*			
414.		*Artoria taeniifera*			
415.		*Artoriopsis eccentrica*			
416.		*Artoriopsis expolita*			
417.		*Artoriopsis joergi*			
418.	20752	*Asparagus aethiopicus*	Y		
419.	8779	*Asparagus asparagoides (Bridal Creeper)*	Y		
420.	1201	*Asparagus officinalis (Asparagus)*	Y		
421.	1364	*Asphodelus fistulosus (Onion Weed)*	Y		
422.		*Astartea aff. fascicularis sthcst*			
423.	20350	*Astartea affinis (West-coast Astartea)*			
424.	20249	*Astartea leptophylla (River-bank Astartea)*			
425.	20283	*Astartea scoparia (Common Astartea)*			
426.		*Asteraceae sp.*			
427.	7851	*Asteridea pulverulenta (Common Bristle Daisy)*			
428.	6323	*Astroloma ciliatum (Candle Cranberry)*			
429.	6330	*Astroloma macrocalyx (Swan Berry)*			
430.	6334	*Astroloma pallidum (Kick Bush)*			
431.	6337	*Astroloma stomarrhena (Red Swamp Cranberry)*			
432.	6339	*Astroloma xerophyllum*			
433.		*Atherinomorus vaigiensis*			
434.		*Atherinosoma wallacei*			
435.	2462	*Atriplex hypoleuca*			
436.	2471	*Atriplex prostrata (Hastate Orache)*	Y		
437.		*Aurecocrypta lugubris*			
438.		*Austracantha minax*			
439.	47713	*Austronomus australis (White-striped Free-tailed Bat)*			
440.		*Austrostipa ?compressa*			Y
441.	17234	*Austrostipa compressa*			
442.	17237	*Austrostipa elegantissima*			
443.	17240	*Austrostipa flavescens*			
444.	17241	*Austrostipa hemipogon*			
445.	17245	*Austrostipa mollis*			
446.	17253	*Austrostipa semibarbata*			

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447.		*Austrostipa sp.*			
448.	37421	*Austrostipa sp. Marchagee (B.R. Maslin 1407)*			
449.	17257	*Austrostipa variabilis*			
450.	231	*Avellinia michelii*	Y		
451.	233	*Avena barbata (Bearded Oat)*	Y		
452.	24318	*Aythya australis (Hardhead)*			
453.	17737	*Azolla pinnata*			
454.	42902	*Azolla rubra*			
455.	18279	*Babiana angustifolia*	Y		
456.	36441	*Babingtonia camphorosmae (Camphor Myrtle)*			
457.		*Backobourkia heroine*			
458.	16346	*Bacopa monnieri*	Y		
459.		*Badhamia affinis*			Y
460.	38975	*Badhamia capsulifera*			Y
461.	38976	*Badhamia foliicola*			
462.	38977	*Badhamia goniospora*			Y
463.	44065	*Badhamia macrocarpa*			Y
464.	38978	*Badhamia panicea*			
465.	38979	*Badhamia utricularis*			
466.		*Badumna insignis*			
467.		*Ballarra longipalpus*			
468.		*Banksia ?menziesii*			Y
469.	32682	*Banksia armata var. armata*			
470.	1800	*Banksia attenuata (Slender Banksia, Piara)*			
471.	32580	*Banksia dallanneyi subsp. dallanneyi var. dallanneyi*			
472.	1819	*Banksia grandis (Bull Banksia, Pulgarla)*			
473.	1822	*Banksia ilicifolia (Holly-leaved Banksia)*			
474.		*Banksia ilicifolia/menziesii*			Y
475.	1830	*Banksia littoralis (Swamp Banksia, Pungura)*			
476.	1834	*Banksia menziesii (Firewood Banksia)*			
477.		*Banksia sp.*			
478.	1852	*Banksia telmatiaea (Swamp Fox Banksia)*			
479.	32315	*Barbula calycina*			
480.		*Barnardius zonarius*			
481.	38765	*Battarrea stevenii*			
482.	740	*Baumea arthrophylla*			
483.	741	*Baumea articulata (Jointed Rush)*			
484.	743	*Baumea juncea (Bare Twigrush)*			
485.	744	*Baumea laxa*			
486.	745	*Baumea preissii*			
487.	748	*Baumea vaginalis (Sheath Twigrush)*			
488.	5382	*Beaufortia elegans (Elegant Beaufortia)*			
489.	5393	*Beaufortia squarrosa (Sand Beaufortia, Sand Bottlebrush, Puno)*			
490.	7046	*Bellardia trixago (Bellardia)*	Y		
491.	48868	*Bellardia viscosa*	Y		
492.	7855	*Bidens pilosa (Cobbler's Pegs)*	Y		
493.	25788	*Billardiera fraseri (Elegant Pronaya)*			
494.	25798	*Billardiera fusiformis (Australian Bluebell)*			
495.	24319	*Biziura lobata (Musk Duck)*			
496.	1417	*Blancoa canescens (Winter Bell)*			
497.	38848	*Bolbitius titubans*			
498.	749	*Bolboschoenus caldwellii (Marsh Club-rush)*			
499.		*Boletus sp.*			
500.	11503	*Boronia crenulata subsp. crenulata var. crenulata*			
501.	16636	*Boronia crenulata subsp. viminea*			
502.	4414	*Boronia cymosa (Granite Boronia)*			
503.	4417	*Boronia dichotoma*			
504.	4420	*Boronia fastigiata (Bushy Boronia)*			
505.	4438	*Boronia ramosa*			
506.	11381	*Boronia ramosa subsp. anethifolia*			
507.	1272	*Borya scirpoidea*			
508.	1273	*Borya sphaerocephala (Pincushions)*			
509.	24251	*Bos taurus (European Cattle)*	Y		
510.	3710	*Bossiaea eriocarpa (Common Brown Pea)*			
511.	6341	*Brachyloma preissii (Globe Heath)*			
512.	8661	*Brachypodium distachyon (False Brome)*	Y		
513.	7867	*Brachyscome bellidioides*			
514.	7878	*Brachyscome iberidifolia*			
515.	42380	*Brachyurophis fasciolatus subsp. fasciolatus (Narrow-banded Shovel-nosed Snake)*			
516.	42381	*Brachyurophis semifasciatus (Southern Shovel-nosed Snake)*			

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517.	3000	*Brassica tournefortii (Mediterranean Turnip)*	Y		
518.	2995	*Brassica x napus*	Y		
519.	244	*Briza maxima (Blowfly Grass)*	Y		
520.	245	*Briza minor (Shivery Grass)*	Y		
521.		*Briza sp.*			
522.	248	*Bromus catharticus (Prairie Grass)*	Y		
523.	249	*Bromus diandrus (Great Brome)*	Y		
524.	250	*Bromus hordeaceus (Soft Brome)*	Y		
525.	32330	*Bryum argenteum*			
526.	27598	*Buellia dissa*			
527.	27615	*Buellia subdisciformis*			
528.	1366	*Bulbine semibarbata (Leek Lily)*			
529.	1383	*Burchardia bairdiae*			
530.	12770	*Burchardia congesta*			
531.	1385	*Burchardia multiflora (Dwarf Burchardia)*			
532.		*Byssomerulius corium*			
533.	25713	*Cacatua galerita (Sulphur-crested Cockatoo)*			
534.	25714	*Cacatua pastinator (Western Long-billed Corella)*			
535.	25715	*Cacatua roseicapilla (Galah)*			
536.	25716	*Cacatua sanguinea (Little Corella)*			
537.	24729	*Cacatua tenuirostris (Eastern Long-billed Corella)*	Y		
538.	25598	*Cacomantis flabelliformis (Fan-tailed Cuckoo)*			
539.	24427	*Cacomantis flabelliformis subsp. flabelliformis (Fan-tailed Cuckoo)*			
540.	42307	*Cacomantis pallidus (Pallid Cuckoo)*			
541.		*Caenidae sp.*			
542.	1276	*Caesia micrantha (Pale Grass Lily)*			
543.	1277	*Caesia occidentalis*			
544.		*Caesia sp.*			
545.	3002	*Cakile maritima (Sea Rocket)*	Y		
546.		*Caladenia ?arenicola*			Y
547.		*Caladenia ?discoidea*			Y
548.		*Caladenia ?flava*			
549.		*Caladenia ?longicauda subsp. calcigena*			Y
550.	15330	*Caladenia arenicola*			
551.	11136	*Caladenia denticulata*			
552.	1586	*Caladenia discoidea (Dancing Orchid)*			
553.	1590	*Caladenia ferruginea (Rusty Spider Orchid)*			
554.	1592	*Caladenia flava (Cowslip Orchid)*			
555.	15348	*Caladenia flava subsp. flava*			
556.	15502	*Caladenia footeana*			
557.	15352	*Caladenia georgei*			
558.	1599	*Caladenia latifolia (Pink Fairy Orchid)*			
559.	15361	*Caladenia longicauda subsp. calcigena*			
560.	15365	*Caladenia longicauda subsp. longicauda*			
561.	1605	*Caladenia marginata (White Fairy Orchid)*			
562.	15371	*Caladenia nana subsp. nana*			
563.	17760	*Caladenia nobilis*			
564.	17589	*Caladenia occidentalis*			
565.	15503	*Caladenia paludosa*			
566.	15377	*Caladenia reptans subsp. reptans*			
567.		*Caladenia sp.*			
568.	18019	*Caladenia vulgata*			
569.	15398	*Caladenia xantha*			
570.	2848	*Calandrinia corrigioloides (Strap Purslane)*			
571.	2854	*Calandrinia granulifera (Pygmy Purslane)*			
572.	2856	*Calandrinia liniflora (Parakeelya)*			
573.		*Calandrinia sp.*			
574.	16365	*Calandrinia sp. Kenwick (G.J. Keighery 10905)*			
575.	44722	*Calceolaria tripartita*	Y		Y
576.	1214	*Calectasia grandiflora (Blue Tinsel Lily)*			
577.	19309	*Calectasia narragara*			
578.	24787	*Calidris minuta (Little Stint)*			
579.		*Calidris sp.*			
580.	4717	*Callitriche stagnalis (Common Starwort)*	Y		
581.	36520	*Callitris acuminata (Dwarf Cypress)*			
582.	36600	*Callitris pyramidalis (Swamp Cypress)*			
583.		*Calocera guepinioides*			
584.	38981	*Calomyxa metallica*			
585.	5411	*Calothamnus hirsutus*			
586.	5415	*Calothamnus lateralis*			

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587.	5426	*Calothamnus quadrifidus (One-sided Bottlebrush, Kwowdjard)*			
588.	5429	*Calothamnus sanguineus (Silky-leaved Blood flower, Pindak)*			
589.	5433	*Calothamnus validus (Barrens Clawflower)*			
590.	16492	*Calycopeplus paucifolius*			
591.	25717	*Calyptorhynchus banksii (Red-tailed Black-Cockatoo)*			
592.		*Calytrix ?angulata*			Y
593.	5439	*Calytrix angulata (Yellow Starflower)*			
594.		*Calytrix angulata/flavescens*			Y
595.	5441	*Calytrix aurea*			
596.	5458	*Calytrix flavescens (Summer Starflower)*			
597.	5460	*Calytrix fraseri (Pink Summer Calytrix)*			
598.		*Calytrix leschenaultii/fraseri*			Y
599.		*Calytrix sp.*			
600.	38767	*Campanella gregaria*			
601.	32338	*Campylopus introflexus*	Y		
602.		*Carassius auratus*			
603.	49010	*Cardamine occulta*	Y		
604.	17318	*Cardiospermum grandiflorum*	Y		
605.	7909	*Carduus pycnocephalus (Slender Thistle)*	Y		
606.	754	*Carex divisa (Divided Sedge)*	Y		
607.	755	*Carex fascicularis (Tassel Sedge)*			
608.	2794	*Carpobrotus aequilaterus (Angular Pigface)*	Y		
609.	2795	*Carpobrotus edulis (Hottentot Fig)*	Y		
610.	1162	*Cartonema philydroides*			
611.	11351	*Cassytha aurea var. hirta*			
612.	2951	*Cassytha flava (Dodder Laurel)*			
613.	2952	*Cassytha glabella (Tangled Dodder Laurel)*			
614.	2957	*Cassytha racemosa (Dodder Laurel)*			
615.	11242	*Cassytha racemosa forma pilosa*			
616.	11799	*Cassytha racemosa forma racemosa*			
617.		*Cassytha sp. scps*			
618.	18321	*Casuarina glauca*	Y		
619.	1742	*Casuarina obesa (Swamp Sheoak, Kuli)*			
620.	41564	*Cenchrus clandestinus (Kikuyu Grass)*	Y		
621.	259	*Cenchrus echinatus (Burrgrass)*	Y		
622.	41566	*Cenchrus longisetus (Feathertop)*	Y		
623.	41567	*Cenchrus macrourus (African Feather Grass)*	Y		
624.	41563	*Cenchrus purpureus (Elephant Grass)*	Y		
625.	7915	*Centaurea calcitrapa (Star Thistle)*	Y		
626.	7916	*Centaurea melitensis (Maltese Cockspur, Malta Thistle)*	Y		
627.	7917	*Centaurea solstitialis (St Barnaby's Thistle, Yellow Star Thistle)*	Y		
628.	6539	*Centaurium erythraea (Common Centaury)*	Y		
629.	6542	*Centaurium tenuiflorum*	Y		
630.	6214	*Centella asiatica*			
631.	7918	*Centipeda cunninghamii (Common Sneezewood, Gukwonderuk, Old Man Weed)*			
632.	26587	*Centroceras clavulatum*			
633.	1121	*Centrolepis aristata (Pointed Centrolepis)*			
634.	1125	*Centrolepis drummondiana*			
635.	1129	*Centrolepis glabra (Smooth Centrolepis)*			
636.	1131	*Centrolepis inconspicua*			
637.	1132	*Centrolepis mutica*			
638.	1134	*Centrolepis polygyna (Wiry Centrolepis)*			
639.	2889	*Cerastium glomeratum (Mouse Ear Chickweed)*	Y		
640.	38982	*Ceratiomyxa fruticulosa*			
641.		*Ceratopogonidae sp.*			
642.		*Cercophonius sulcatus*			
643.		*Ceryerda cursitans*			
644.	17685	*Chaetanthus aristatus*			
645.	26611	*Chaetomorpha linum*			
646.	24186	*Chalinolobus gouldii (Gould's Wattled Bat)*			
647.	24187	*Chalinolobus morio (Chocolate Wattled Bat)*			
648.	18156	*Chamaecytisus palmensis (Tagasaste)*	Y		
649.	1280	*Chamaescilla corymbosa (Blue Squill)*			
650.	11299	*Chamaescilla corymbosa var. corymbosa*			
651.	5498	*Chamelaucium uncinatum (Geraldton Wax)*			
652.	26619	*Champia stipitata*			
653.	24377	*Charadrius ruficapillus (Red-capped Plover)*			
654.	1513	*Chasmanthe floribunda (African Cornflag)*	Y		
655.		*Cheilodactylus gibbosus*			
656.	3169	*Cheiranthera preissiana*			

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657.	43380	*Chelodina colliei (South-western Snake-necked Turtle)*			
658.	24321	*Chenonetta jubata (Australian Wood Duck, Wood Duck)*			
659.	2483	*Chenopodium album (Fat Hen)*	Y		
660.	2490	*Chenopodium glaucum (Glaucous Goosefoot)*	Y		
661.	2491	*Chenopodium macrospermum*	Y		
662.	47909	*Cheramoeca leucosterna (White-backed Swallow)*			
663.	33939	*Cherax cainii (Marron)*			
664.		*Cherax destructor*			
665.		*Cherax preissii*			
666.		*Cherax quinquecarinatus*			
667.		*Cherax sp.*			
668.		*Chiloscyphus semiteres var. semiteres*			
669.		*Chironominae sp.*			
670.	267	*Chloris gayana (Rhodes Grass)*	Y		
671.	7925	*Chondrilla juncea (Skeleton Weed)*	Y		
672.	17706	*Chordifex sinuosus*			
673.	763	*Chorizandra enodis (Black Bristlerush)*			
674.	764	*Chorizandra multiarticulata*			
675.	8971	*Chorizema cordatum*			
676.	24980	*Christinus marmoratus (Marbled Gecko)*			
677.		*Chroicocephalus novaehollandiae*			
678.	11900	*Chrysanthemoides monilifera subsp. monilifera*	Y		
679.	24431	*Chrysococcyx basalis (Horsfield's Bronze Cuckoo)*			
680.	25601	*Chrysococcyx lucidus (Shining Bronze Cuckoo)*			
681.	24432	*Chrysococcyx lucidus subsp. plagosus (Shining Bronze Cuckoo)*			
682.	27662	*Chrysothrix candelaris*			
683.	7933	*Chthonocephalus pseudevax (Woolly Groundheads)*			
684.	6543	*Cicendia filiformis (Slender Cicendia)*	Y		
685.	18303	*Cinnamomum camphora*	Y		
686.	24288	*Circus approximans (Swamp Harrier)*			
687.	24289	*Circus assimilis (Spotted Harrier)*			
688.	19891	*Cirsium arvense var. arvense*	Y		
689.	7937	*Cirsium vulgare (Spear Thistle, Scotch Thistle)*	Y		
690.	48838	*Citrullus amarus*	Y		
691.	27663	*Cladia aggregata*			
692.	27668	*Cladia schizopora*			
693.	28208	*Cladonia cervicornis subsp. verticillata*			
694.	30377	*Cladonia sulcata var. sulcata*			
695.	27697	*Cladonia tessellata*			
696.	26653	*Cladophora laetevirens*			
697.	24774	*Cladorhynchus leucocephalus (Banded Stilt)*			
698.	38983	*Clastoderma debaryanum*			
699.		*Clynotis albobarbatus*			
700.		*Cnidoglanis macrocephalus*			
701.		*Coenagrionidae sp.*			
702.	38984	*Collaria arcyrionema*			
703.	25675	*Colluricincla harmonica (Grey Shrike-thrush)*			
704.	32999	*Colocasia esculenta var. esculenta*	Y		
705.	24399	*Columba livia (Domestic Pigeon)*	Y		
706.		*Colus pusillus*			
707.	38986	*Comatricha elegans*			
708.	38988	*Comatricha laxa*			
709.	38990	*Comatricha nigra*			
710.	38991	*Comatricha pulchella*			
711.	38994	*Comatricha tenerrima*			
712.	4550	*Comesperma calymega (Blue-spike Milkwort)*			
713.	4551	*Comesperma ciliatum*			
714.	4554	*Comesperma flavum*			
715.	4559	*Comesperma polygaloides (Small Milkwort)*			
716.		*Comesperma sp. Brix1R (possibly virigatum)*			Y
717.	4564	*Comesperma virgatum (Milkwort)*			
718.	31595	*Commelina benghalensis*	Y		
719.	48634	*Commersonia corniculata*			
720.	1858	*Conospermum amoenum (Blue Smokebush)*			
721.	15516	*Conospermum canaliculatum subsp. canaliculatum*			
722.	1875	*Conospermum huegelii (Slender Smokebush)*			
723.	1885	*Conospermum triplinervium (Tree Smokebush)*			
724.	6347	*Conostephium minus (Pink-tipped Pearl flower)*			
725.	6348	*Conostephium pendulum (Pearl Flower)*			
726.	6349	*Conostephium preissii*			

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727.		*Conostylis ?juncea*			Y
728.	1418	*Conostylis aculeata (Prickly Conostylis)*			
729.	11826	*Conostylis aculeata subsp. aculeata*			
730.	11513	*Conostylis aculeata subsp. cygnorum*			
731.	1423	*Conostylis aurea (Golden Conostylis)*			
732.	1427	*Conostylis candicans (Grey Cottonhead)*			
733.	11438	*Conostylis candicans subsp. candicans*			
734.	11695	*Conostylis festucacea subsp. festucacea*			
735.	1436	*Conostylis juncea*			
736.	1453	*Conostylis serrulata*			
737.	1454	*Conostylis setigera (Bristly Cottonhead)*			
738.	11597	*Conostylis setigera subsp. setigera*			
739.	1455	*Conostylis setosa (White Cottonhead)*			
740.		*Conostylis sp.*			
741.	5502	*Conothamnus trinervis*			
742.		*Conyza ?bonariensis*			
743.	7939	*Conyza bonariensis (Flaxleaf Fleabane)*	Y		
744.	7941	*Conyza parva*	Y		
745.		*Conyza sp.*			
746.		*Conyza sp. Brix1R*			Y
747.		*Conyza sp. Brix4*			Y
748.	20074	*Conyza sumatrensis*	Y		
749.		*Coprinus comatus*			
750.	25568	*Coracina novaehollandiae (Black-faced Cuckoo-shrike)*			
751.	24362	*Coracina novaehollandiae subsp. novaehollandiae (Black-faced Cuckoo-shrike)*			
752.		*Corixidae sp.*			
753.		*Cormocephalus aurantiipes*			
754.		*Cormocephalus novaehollandiae*			
755.		*Cormocephalus rubriceps*			
756.	2891	*Corrigiola litoralis (Strapwort)*	Y		
757.	48259	*Cortaderia selloana subsp. selloana*	Y		
758.	38774	*Cortinarius archeri*			
759.	38776	*Cortinarius phalarus*			
760.		*Cortinarius sublargus*			
761.	24416	*Corvus bennetti (Little Crow)*			
762.	25592	*Corvus coronoides (Australian Raven)*			
763.	24417	*Corvus coronoides subsp. perplexus (Australian Raven)*			
764.	17104	*Corymbia calophylla (Marri)*			
765.	1285	*Corynotheca micrantha (Sand Lily)*			
766.	7943	*Cotula australis (Common Cotula)*			
767.	7944	*Cotula bipinnata (Ferny Cotula)*	Y		
768.	7945	*Cotula coronopifolia (Waterbuttons)*	Y		
769.	7946	*Cotula cotuloides (Smooth Cotula)*			
770.	7947	*Cotula turbinata (Funnel Weed)*	Y		
771.	24671	*Coturnix pectoralis (Stubble Quail)*			
772.	25701	*Coturnix ypsilophora (Brown Quail)*			
773.	24673	*Coturnix ypsilophora subsp. australis (Brown Quail)*			
774.	24420	*Cracticus nigrogularis (Pied Butcherbird)*			
775.	25595	*Cracticus tibicen (Australian Magpie)*			
776.	24422	*Cracticus tibicen subsp. dorsalis (White-backed Magpie)*			
777.	24423	*Cracticus tibicen subsp. tibicen (Black-backed Magpie)*			
778.	25596	*Cracticus torquatus (Grey Butcherbird)*			
779.	24424	*Cracticus torquatus subsp. torquatus (Grey Butcherbird)*			
780.		*Crassula ?colorata*			Y
781.	3136	*Crassula alata*	Y		
782.	3137	*Crassula colorata (Dense Stonecrop)*			
783.	11709	*Crassula colorata var. acuminata*			
784.	11563	*Crassula colorata var. colorata*			
785.	3138	*Crassula decumbens (Rufous Stonecrop)*			
786.	3139	*Crassula exserta*			
787.	3140	*Crassula glomerata*	Y		
788.	3142	*Crassula natans*	Y		
789.	15706	*Crassula natans var. minus*	Y		
790.	3146	*Crassula thunbergiana*	Y		
791.	38997	*Craterium leucocephalum*			
792.	38998	*Craterium minutum*			
793.		*Craterocephalus mugiloides*			
794.	38780	*Crepidotus eucalyptorum*			
795.	29054	*Crepis foetida subsp. foetida (Stinking Hawksbeard)*	Y		
796.	39000	*Cribraria aurantiaca*			Y

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797.	39001	*Cribraria cancellata*			
798.	39002	*Cribraria microcarpa*			
799.	39003	*Cribraria minutissima*			
800.	39006	*Cribraria tenella*			
801.	25398	*Crinia georgiana (Quacking Frog)*			
802.	25399	*Crinia glauerti (Clicking Frog)*			
803.	25400	*Crinia insignifera (Squelching Froglet)*			
804.	25401	*Crinia pseudinsignifera (Bleating Froglet)*			
805.	13527	*Croninia kingiana*			
806.		*Crustulina bicruciata*			
807.	13470	*Cryptandra arbutiflora var. arbutiflora*			
808.	4809	*Cryptandra pungens*			
809.	4810	*Cryptandra scoparia*			
810.	30893	*Cryptoblepharus buchananii*			
811.	25020	*Cryptoblepharus plagiocephalus*			
812.		*Cryptoerithus quobba*			
813.	1627	*Cryptostylis ovata (Slipper Orchid)*			
814.	30899	*Ctenophorus adelaidensis (Southern Heath Dragon, Western Heath Dragon)*			
815.	25027	*Ctenotus australis*			
816.	25039	*Ctenotus fallens*			
817.	25040	*Ctenotus gemmula (Jewelled South-west Ctenotus (Swan Coastal Plain subpop P3), skink)*			
818.	25047	*Ctenotus impar*			
819.	25049	*Ctenotus labillardieri*			
820.	6663	*Cuscuta epithymum (Lesser Dodder, Greater Dodder)*	Y		
821.	11021	*Cuscuta planiflora*	Y		
822.	15114	*Cyanicula gemmata*			
823.	15404	*Cyanicula sericea*			
824.	51	*Cyathea cooperi*	Y		
825.	768	*Cyathochaeta avenacea*			
826.		*Cyclosa trilobata*			
827.	40660	*Cycnogeton huegelii*			
828.	40661	*Cycnogeton lineare*			
829.	24322	*Cygnus atratus (Black Swan)*			
830.	24323	*Cygnus olor (Mute Swan)*	Y		
831.	283	*Cynodon dactylon (Couch)*	Y		
832.	776	*Cyperus brevifolius (Kyllinga Weed)*	Y		
833.	783	*Cyperus congestus (Dense Flat-sedge)*	Y		
834.	792	*Cyperus eragrostis (Umbrella Sedge)*	Y		
835.	794	*Cyperus gymnocaulos (Spiny Flat-sedge)*			
836.	18318	*Cyperus involucratus*	Y		
837.	801	*Cyperus laevigatus*	Y		
838.	18198	*Cyperus papyrus*	Y		
839.	806	*Cyperus polystachyos (Bunchy Sedge)*			
840.	815	*Cyperus tenellus (Tiny Flatsedge)*	Y		
841.	816	*Cyperus tenuiflorus (Scaly Sedge)*	Y		
842.	14537	*Cyperus vorsteri*	Y		
843.		*Cyrtophora parnasia*			
844.	10916	*Cyrtostylis huegelii*			
845.	10942	*Cyrtostylis tenuissima*			
846.	17692	*Cytogonidium leptocarpoides*			
847.	30901	*Dacelo novaeguineae (Laughing Kookaburra)*	Y		
848.		*Dactylopus dactylopus*			
849.	7451	*Dampiera lavandulacea*			
850.	7454	*Dampiera linearis (Common Dampiera)*			
851.	7462	*Dampiera pedunculata*			
852.	7484	*Dampiera trigona (Angled-stem Dampiera)*			
853.		*Daphnia carinata*			
854.	25673	*Daphoenositta chrysoptera (Varied Sittella)*			
855.	24606	*Daphoenositta chrysoptera subsp. pileata (Varied Sittella, Black-capped Sitella)*			
856.	5508	*Darwinia citriodora (Lemon-scented Darwinia)*			
857.	1218	*Dasypogon bromeliifolius (Pineapple Bush)*			
858.	6218	*Daucus glochidiatus (Australian Carrot)*			
859.	15656	*Daviesia brachyphylla*			
860.	19747	*Daviesia decurrens subsp. decurrens*			
861.	3807	*Daviesia divaricata (Marno)*			
862.	18560	*Daviesia divaricata subsp. divaricata*			
863.	3815	*Daviesia horrida (Prickly Bitter-pea)*			
864.	16585	*Daviesia nudiflora subsp. nudiflora*			
865.	3832	*Daviesia physodes*			

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866.	3845	*Daviesia triflora*			
867.	25766	*Delma fraseri (Fraser's Legless Lizard)*			
868.	24999	*Delma grayii*			
869.	25468	*Demansia psammophis (Yellow-faced Whipsnake)*			
870.	25296	*Demansia psammophis subsp. reticulata (Yellow-faced Whipsnake)*			
871.	24324	*Dendrocygna arcuata (Wandering Whistling Duck, Chestnut Whistling Duck)*			
872.		*Dermocybe clelandii*			
873.	15831	*Desmocladus castaneus*			
874.	17691	*Desmocladus fasciculatus*			
875.	16595	*Desmocladus flexuosus*			
876.	46362	*Desmocladus lateriflorus*			
877.	299	*Deyeuxia quadriseta (Reed Bentgrass)*			
878.	39008	*Diachea leucopodia*			
879.	1259	*Dianella revoluta (Blueberry Lily)*			
880.	11636	*Dianella revoluta var. divaricata*			
881.	25607	*Dicaeum hirundinaceum (Mistletoebird)*			
882.	306	*Dichelachne crinita (Longhair Plumegrass)*			
883.	6616	*Dichondra repens (Kidney Weed)*			
884.	1287	*Dichopogon capillipes*			
885.	1289	*Dichopogon preissii*			
886.	32344	*Dicranoloma diaphanoneuron*			
887.	44064	*Dictydiaethalium plumbeum*			Y
888.	39011	*Diderma asteroides*			
889.	39013	*Diderma crustaceum*			Y
890.	39014	*Diderma effusum*			Y
891.	39015	*Diderma hemisphaericum*			Y
892.	48606	*Diderma rufostriatum*			Y
893.	39017	*Didymium anellus*			Y
894.	39018	*Didymium bahiense*			
895.	39020	*Didymium difforme*			
896.	39022	*Didymium megalosporum*			
897.		*Didymium minus*			Y
898.	39023	*Didymium perforatum*			Y
899.	39024	*Didymium serpula*			
900.	39025	*Didymium squamulosum*			
901.	39026	*Didymium verrucosporum*			Y
902.	32345	*Didymodon australasiae*			
903.	17838	*Dielsia stenostachya*			
904.	17736	*Digitaria aequiglumis*	Y		
905.	311	*Digitaria ciliaris (Summer Grass)*	Y		
906.	321	*Digitaria violascens*	Y		
907.		*Dingosa serrata*			
908.		*Dinocambala ingens*			
909.	48378	*Diplachne fusca subsp. fusca*			
910.	44654	*Diplodactylus lateroides (Speckled Stone Gecko)*			
911.	24939	*Diplodactylus polyophthalmus*			
912.	18589	*Diplopeltis huegelii subsp. lehmannii*			
913.	19649	*Disa bracteata*	Y		
914.	7055	*Dischisma capitatum (Woolly-headed Dischisma)*	Y		
915.	7961	*Dittrichia graveolens (Stinkwort)*	Y		
916.		*Diuris ?magnifica*			Y
917.	12943	*Diuris brumalis*			
918.	11049	*Diuris corymbosa*			
919.		*Diuris corymbosa/magnifica*			
920.	42231	*Diuris decrementa*			
921.	1634	*Diuris laxiflora (Bee Orchid)*			
922.	12939	*Diuris magnifica*			
923.	4754	*Dodonaea aptera (Coast Hop-bush)*			
924.	1640	*Drakaea glyptodon (King-in-his-carriage)*			
925.		*Drosera ?paleacea*			Y
926.		*Drosera ?porrecta*			Y
927.		*Drosera ?sp. "climbing"*			Y
928.	3091	*Drosera bulbigena (Midget Sundew)*			
929.	48751	*Drosera drummondii*			
930.	3095	*Drosera erythrorhiza (Red Ink Sundew)*			
931.	3097	*Drosera gigantea (Giant Sundew)*			
932.	3098	*Drosera glanduligera (Pimpernel Sundew)*			
933.	13195	*Drosera helodes*			
934.	3101	*Drosera heterophylla (Swamp Rainbow)*			
935.	3105	*Drosera leucoblasta (Wheel Sundew)*			

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936.	3106	*Drosera macrantha (Bridal Rainbow)*			
937.	3109	*Drosera menziesii (Pink Rainbow)*			
938.	48710	*Drosera micrantha*			
939.	48709	*Drosera minutiflora*			
940.	3113	*Drosera neesii (Jewel Rainbow)*			
941.	3114	*Drosera nitidula (Shining Sundew)*			
942.	3118	*Drosera pallida (Pale Rainbow)*			
943.	29178	*Drosera porrecta*			
944.	3128	*Drosera ramellosa (Branched Sundew)*			
945.	8911	*Drosera rosulata*			
946.		*Drosera sp.*			
947.		*Drosera sp. "climbing"*			
948.	49090	*Drosera sp. Branched styles (S.C. Coffey 193)*			
949.	3131	*Drosera stolonifera (Leafy Sundew)*			
950.	3133	*Drosera subhirtella (Sunny Rainbow)*			
951.	13205	*Drosera tubaestylis*			
952.	3135	*Drosera zonaria (Painted Sundew)*			
953.	33500	*Dysphania ambrosioides (Mexican Tea)*	Y		
954.	2501	*Dysphania glomulifera*			
955.	11368	*Dysphania glomulifera subsp. glomulifera*			
956.		*Dytiscidae sp.*			
957.	11105	*Echinochloa crus-galli*	Y		
958.	329	*Echinochloa crus-pavonis (South American Barnyard Grass)*	Y		
959.	337	*Echinochloa pyramidalis (Antelope Grass)*	Y		
960.	39029	*Echinostelium minutum*			
961.	6681	*Echium plantagineum (Paterson's Curse)*	Y		
962.	8450	*Eclipta prostrata*	Y		
963.	25096	*Egernia kingii (King's Skink)*			
964.	25100	*Egernia napoleonis*			
965.		*Egretta garzetta*			
966.		*Egretta novaehollandiae*			
967.	346	*Ehrharta brevifolia (Annual Veldt Grass)*	Y		
968.	347	*Ehrharta calycina (Perennial Veldt Grass)*	Y		
969.	349	*Ehrharta longiflora (Annual Veldt Grass)*	Y		
970.		*Ehrharta sp.*			
971.	42241	*Elaeomyxa reticulospora*			Y
972.		*Elanus axillaris*			
973.	25540	*Elanus caeruleus (Black-shouldered Kite)*			
974.	24290	*Elanus caeruleus subsp. axillaris (Australian Black-shouldered Kite)*			
975.	25250	*Elapognathus coronatus (Crowned Snake)*			
976.	5187	*Elatine gratioloides (Waterwort)*			
977.	822	*Eleocharis acuta (Common Spikerush)*			
978.	352	*Eleusine coracan (Indian Millet)*	Y		
979.	353	*Eleusine indica (Crowsfoot Grass)*	Y		
980.	47937	*Elseyornis melanops (Black-fronted Dotterel)*			
981.	1643	*Elythranthera brunonis (Purple Enamel Orchid)*			
982.	1644	*Elythranthera emarginata (Pink Enamel Orchid)*			
983.	39030	*Enerthenema papillatum*			
984.		*Eodelena convexa*			
985.		*Eodelena lapidicola*			
986.		*Eolophus roseicapillus*			
987.	24651	*Eopsaltria australis subsp. griseogularis (Western Yellow Robin)*			
988.	1645	*Epiblema grandiflorum (Babe-in-a-cradle)*			
989.	6132	*Epilobium ciliatum*	Y		
990.	6133	*Epilobium hirtigerum (Hairy Willow Herb)*			
991.	14289	*Epilobium tetragonum subsp. tetragonum*	Y		
992.	24567	*Epthianura albifrons (White-fronted Chat)*			
993.	374	*Eragrostis cilianensis (Stinkgrass)*	Y		
994.	376	*Eragrostis curvula (African Lovegrass)*	Y		
995.	379	*Eragrostis elongata (Clustered Lovegrass)*			
996.	17610	*Eragrostis tenuifolia*	Y		
997.	13949	*Eremaea asterocarpa*			
998.	13950	*Eremaea asterocarpa subsp. asterocarpa*			
999.	14097	*Eremaea asterocarpa subsp. brachyclada*			
1000.	5541	*Eremaea pauciflora*			
1001.	14104	*Eremaea pauciflora var. pauciflora*			
1002.	18301	*Eriobotrya japonica*	Y		
1003.	1646	*Eriochilus dilatatus (White Bunny Orchid)*			
1004.	15410	*Eriochilus dilatatus subsp. dilatatus*			
1005.	15412	*Eriochilus dilatatus subsp. multiflorus*			

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1006.	15414	*Eriochilus helonomos*			
1007.	15415	*Eriochilus scaber subsp. scaber*			
1008.	10802	*Eriochilus tenuis*			
1009.		*Eriophora biapicata*			
1010.	4332	*Erodium botrys (Long Storksbill)*	Y		
1011.	4335	*Erodium cygnorum (Blue Heronsbill)*			
1012.	6219	*Eryngium pinnatifidum (Blue Devils)*			
1013.	15446	*Eryngium pinnatifidum subsp. pinnatifidum*			
1014.		*Erythracarus decoris*			
1015.	48633	*Erythrina crista-galli*	Y		Y
1016.	18299	*Erythrina x sykesii*	Y		
1017.	24379	*Erythrogonys cinctus (Red-kneed Dotterel)*			
1018.		*Ethmostigmus rubripes*			
1019.		*Eucalyptus ?camaldulensis x robusta*			Y
1020.		*Eucalyptus ?rudis*			Y
1021.	17359	*Eucalyptus botryoides*	Y		
1022.	5580	*Eucalyptus camaldulensis (River Gum, Yabalinyba)*			
1023.	35345	*Eucalyptus camaldulensis subsp. obtusa (Blunt-budded River Red Gum)*			
1024.	5615	*Eucalyptus decipiens (Limestone Marlock, Moit)*			
1025.	5659	*Eucalyptus gomphocephala (Tuart, Duart)*			
1026.	48440	*Eucalyptus grandis*	Y		
1027.	5708	*Eucalyptus marginata (Jarrah, Djara)*			
1028.	13547	*Eucalyptus marginata subsp. marginata (Jarrah)*			
1029.	5739	*Eucalyptus patens (Swan River Blackbutt, Dwuda)*			
1030.	5763	*Eucalyptus rudis (Flooded Gum, Kulurda)*			
1031.	13511	*Eucalyptus rudis subsp. rudis*			
1032.		*Eucalyptus sp.*			
1033.	5790	*Eucalyptus todtiana (Coastal Blackbutt)*			
1034.	3872	*Euchilopsis linearis (Swamp Pea)*			
1035.	15137	*Euchiton sphaericus*			
1036.	4627	*Euphorbia helioscopia (Sun Spurge)*	Y		
1037.	29940	*Euphorbia maculata*	Y		
1038.	4638	*Euphorbia peplus (Petty Spurge)*	Y		
1039.	34757	*Euphorbia prostrata*	Y		
1040.	4648	*Euphorbia terracina (Geraldton Carnation Weed)*	Y		
1041.	24368	*Eurostopodus argus (Spotted Nightjar)*			
1042.	25591	*Eurystomus orientalis (Dollarbird)*			
1043.		*Eurytion incisunguis*			Y
1044.	3880	*Eutaxia virgata*			
1045.	835	*Evandra pauciflora*			
1046.	10765	*Exocarpos sparteus (Broom Ballart, Djuk)*			
1047.	25621	*Falco berigora (Brown Falcon)*			
1048.	24471	*Falco berigora subsp. berigora (Brown Falcon)*			
1049.	25622	*Falco cenchroides (Australian Kestrel, Nankeen Kestrel)*			
1050.	24472	*Falco cenchroides subsp. cenchroides (Australian Kestrel, Nankeen Kestrel)*			
1051.	25623	*Falco longipennis (Australian Hobby)*			
1052.	24041	*Felis catus (Cat)*	Y		
1053.	1515	*Ferraria crispa (Black Flag)*	Y		
1054.	430	*Festuca arundinacea (Tall Fescue)*	Y		
1055.	20216	*Ficinia nodosa (Knotted Club Rush)*			
1056.	1747	*Ficus carica (Common Fig)*	Y		
1057.	894	*Fimbristylis velata*			
1058.	27748	*Flavoparmelia rutidota*			
1059.	27751	*Flavoparmelia soredians*			
1060.	6221	*Foeniculum vulgare (Fennel)*	Y		
1061.	18392	*Freesia alba x leichtlinii*	Y		
1062.	25727	*Fulica atra (Eurasian Coot)*			
1063.	24761	*Fulica atra subsp. australis (Eurasian Coot)*			
1064.	39033	*Fuligo septica*			
1065.		*Fumaria ?capreolata*			Y
1066.	8365	*Fumaria bastardii*	Y		
1067.	2969	*Fumaria capreolata (Whiteflower Fumitory)*	Y		
1068.	31532	*Fumaria muralis subsp. muralis*	Y		
1069.		*Fumaria sp.*			
1070.	30916	*Funambulus pennanti (Indian Palm Squirrel)*	Y		
1071.	907	*Gahnia trifida (Coast Saw-sedge)*			
1072.		*Galaxias maculatus*			
1073.	34028	*Galaxias occidentalis (Western Minnow)*			
1074.	7976	*Galinsoga parviflora (Potato Weed)*	Y		
1075.	7323	*Galium murale (Small Goosegrass)*	Y		

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1076.	25729	*Gallinula tenebrosa (Dusky Moorhen)*			
1077.	24763	*Gallinula tenebrosa subsp. tenebrosa (Dusky Moorhen)*			
1078.	25730	*Gallirallus philippensis (Buff-banded Rail)*			
1079.	24765	*Gallirallus philippensis subsp. mellori (Buff-banded Rail)*			
1080.		*Gallus gallus*			
1081.	20247	*Gamochaeta calviceps*	Y		
1082.	20346	*Gamochaeta coarctata*	Y		
1083.	19195	*Gamochaeta pensylvanica*	Y		
1084.	20475	*Gastrolobium capitatum*			
1085.	20473	*Gastrolobium ebracteolatum*			
1086.	20483	*Gastrolobium linearifolium*			
1087.	42314	*Gavicalis virescens (Singing Honeyeater)*			
1088.	16311	*Gazania linearis*	Y		
1089.		*Gea theridioides*			
1090.		*Geastrum fornicatum*			
1091.		*Geastrum sp.*			
1092.	24959	*Gehyra variegata*			
1093.	26849	*Gelidium pusillum*			
1094.	32376	*Gemmabryum dichotomum*			
1095.		*Geogarypus taylori*			
1096.	4339	*Geranium molle (Dove's Foot Cranesbill)*	Y		
1097.	25530	*Gerygone fusca (Western Gerygone)*			
1098.	24271	*Gerygone fusca subsp. fusca (Western Gerygone)*			
1099.	1518	*Gladiolus angustus (Long Tubed Painted Lady)*	Y		
1100.	1520	*Gladiolus caryophyllaceus (Wild Gladiolus)*	Y		
1101.	1524	*Gladiolus undulatus (Wild Gladiolus)*	Y		
1102.	46135	*Glebionis coronaria (Summer Chrysanthemum)*	Y		
1103.	7061	*Glossostigma drummondii (Mudmat)*			
1104.	17043	*Glyceria declinata*	Y		
1105.	47962	*Glyciphila melanops (Tawny-crowned Honeyeater)*			
1106.	12624	*Gnephosis angianthoides*			
1107.	7991	*Gnephosis drummondii*			
1108.	8002	*Gnephosis tenuissima*			
1109.		*Gnephosis tenuissima - drummondii complex*			
1110.	6587	*Gomphocarpus fruticosus (Narrowleaf Cottonbush)*	Y		
1111.	3945	*Gompholobium aristatum*			
1112.	10909	*Gompholobium confertum*			
1113.	3951	*Gompholobium marginatum*			
1114.	3956	*Gompholobium shuttleworthii*			
1115.	3957	*Gompholobium tomentosum (Hairy Yellow Pea)*			
1116.	6149	*Gonocarpus cordiger*			
1117.	6159	*Gonocarpus nodulosus*			
1118.	6160	*Gonocarpus paniculatus*			
1119.	6161	*Gonocarpus pithyoides*			
1120.	29362	*Goodenia coerulea*			
1121.	12551	*Goodenia micrantha*			
1122.	7538	*Goodenia pulchella*			
1123.	19286	*Goodenia pulchella subsp. Coastal Plain A (M. Hislop 634)*			
1124.	19284	*Goodenia pulchella subsp. Coastal Plain B (L.W. Sage 2336)*			
1125.	7546	*Goodenia scapigera (White Goodenia)*			
1126.	24443	*Grallina cyanoleuca (Magpie-lark)*			
1127.	37500	*Grammatotheca bergiana var. bergiana*	Y		
1128.	14282	*Gratiola pubescens*			
1129.	1964	*Grevillea bipinnatifida (Fuchsia Grevillea)*			
1130.	19628	*Grevillea bipinnatifida subsp. bipinnatifida*			
1131.	1982	*Grevillea crithmifolia*			
1132.	2032	*Grevillea leucopteris (White Plume Grevillea)*			
1133.	15839	*Grevillea preissii subsp. preissii*			
1134.		*Grevillea robusta*			Y
1135.		*Gymnapistes marmoratus*			
1136.		*Gymnopilus allantopus*			
1137.	38789	*Gymnopilus junonius*			
1138.		*Gymnopilus purpuratus*			
1139.		*Gyrinidae sp.*			
1140.	24487	*Haematopus longirostris (Pied Oystercatcher)*			
1141.		*Haemodorum ?spicatum*			Y
1142.	1464	*Haemodorum brevisepalum*			
1143.	1468	*Haemodorum laxum*			
1144.	1470	*Haemodorum paniculatum (Mardja)*			
1145.	1472	*Haemodorum simplex*			

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1146.		*Haemodorum sp.*			
1147.	1474	*Haemodorum sparsiflorum*			
1148.	1475	*Haemodorum spicatum (Mardja)*			
1149.	2128	*Hakea amplexicaulis (Prickly Hakea)*			
1150.	2136	*Hakea candolleana*			
1151.	2137	*Hakea ceratophylla (Horned Leaf Hakea)*			
1152.	2158	*Hakea erinacea (Hedge-hog Hakea)*			
1153.	2166	*Hakea incrassata (Marble Hakea)*			
1154.	2175	*Hakea lissocarpha (Honey Bush)*			
1155.	2179	*Hakea marginata*			
1156.	2185	*Hakea myrtoides (Myrtle Hakea)*			
1157.	2197	*Hakea prostrata (Harsh Hakea)*			
1158.	31793	*Hakea sp. Eastern coastal plain (G.J. Keighery 8014)*			
1159.	2212	*Hakea sulcata (Furrowed Hakea)*			
1160.	2214	*Hakea trifurcata (Two-leaf Hakea)*			
1161.	2215	*Hakea undulata (Wavy-leaved Hakea)*			
1162.	2216	*Hakea varia (Variable-leaved Hakea)*			
1163.	24293	*Haliaeetus leucogaster (White-bellied Sea-Eagle)*			
1164.	24295	*Haliastur sphenurus (Whistling Kite)*			
1165.	3961	*Hardenbergia comptoniana (Native Wisteria)*			
1166.	25410	*Heleioporus eyrei (Moaning Frog)*			
1167.	25412	*Heleioporus psammophilus (Sand Frog)*			
1168.	8010	*Helianthus tuberosus (Jerusalem Artichoke)*	Y		
1169.	3016	*Heliophila pusilla*	Y		
1170.	6710	*Heliotropium europaeum (Common Heliotrope)*	Y		
1171.		*Hemiandra ?sp. Jurien*			Y
1172.	16933	*Hemiandra glabra*			
1173.	6838	*Hemiandra linearis (Speckled Snakebush)*			
1174.	6839	*Hemiandra pungens (Snakebush)*			
1175.	38320	*Hemiandra sp. Jurien (B.J. Conn & M.E. Tozer BJC 3885)*			
1176.	25115	*Hemiergis initialis subsp. initialis*			
1177.	25119	*Hemiergis quadrilineata*			
1178.	41042	*Hemiphora uncinata*			
1179.		*Henicops dentatus*			
1180.	1293	*Hensmania turbinata*			
1181.	1526	*Hesperantha falcata*	Y		
1182.		*Hexagonia vesparia*			
1183.	5112	*Hibbertia aurea*			
1184.	5114	*Hibbertia commutata*			
1185.	5117	*Hibbertia cuneiformis (Cutleaf Hibbertia)*			
1186.	19778	*Hibbertia glomerata subsp. darlingensis*			
1187.	5134	*Hibbertia huegelii*			
1188.		*Hibbertia huegelii complex*			Y
1189.	5135	*Hibbertia hypericoides (Yellow Buttercups)*			
1190.	45534	*Hibbertia hypericoides subsp. hypericoides*			
1191.	5148	*Hibbertia mylnei*			
1192.	5162	*Hibbertia racemosa (Stalked Guinea Flower)*			
1193.		*Hibbertia racemosa/subvaginata*			Y
1194.	43280	*Hibbertia sericosepala*			
1195.	5172	*Hibbertia stellaris (Orange Stars)*			
1196.	48381	*Hibbertia striata*			
1197.	5173	*Hibbertia subvaginata*			
1198.	5176	*Hibbertia vaginata*			
1199.	47965	*Hieraaetus morphnoides (Little Eagle)*			
1200.	25734	*Himantopus himantopus (Black-winged Stilt)*			
1201.	24775	*Himantopus himantopus subsp. leucocephalus (Black-winged Stilt)*			
1202.	24491	*Hirundo neoxena (Welcome Swallow)*			
1203.		*Hogna crispipes*			
1204.	38793	*Hohenbuehelia bingarra*			
1205.		*Holconia westralia*			
1206.	444	*Holcus lanatus (Yorkshire Fog)*	Y		
1207.	445	*Holcus setiger (Annual Fog)*	Y		
1208.	9051	*Homalanthus novo-guineensis*			
1209.	6222	*Homalosciadium homalocarpum*			
1210.	448	*Hordeum glaucum (Northern Barley Grass)*	Y		
1211.	449	*Hordeum leporinum (Barley Grass)*	Y		
1212.	450	*Hordeum marinum*	Y		
1213.	3966	*Hovea pungens (Devil's Pins, Puyenak)*			
1214.	3968	*Hovea trisperma (Common Hovea)*			
1215.	12859	*Hovea trisperma var. trisperma*			

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1216.	12741	*Hyalosperma cotula*			
1217.	5216	*Hybanthus calycinus (Wild Violet)*			
1218.	166	*Hydrilla verticillata (Water Thyme)*			
1219.	6223	*Hydrocotyle alata*			
1220.	6226	*Hydrocotyle callicarpa (Small Pennywort)*			
1221.	6229	*Hydrocotyle diantha*			
1222.	6238	*Hydrocotyle ranunculoides*	Y		Y
1223.	6240	*Hydrocotyle scutellifera*			
1224.		*Hydrophilidae sp.*			
1225.		*Hydropsychidae sp.*			
1226.		*Hydroptilidae sp.*			
1227.	38795	*Hygrocybe conica*			
1228.	452	*Hyparrhenia hirta (Tambookie Grass)*	Y		
1229.	26972	*Hypnea spinella*			
1230.	5817	*Hypocalymma angustifolium (White Myrtle, Kudjid)*			
1231.	35070	*Hypocalymma angustifolium subsp. Swan Coastal Plain (G.J. Keighery 16777)*			
1232.	5825	*Hypocalymma robustum (Swan River Myrtle)*			
1233.	8086	*Hypochaeris glabra (Smooth Catsear)*	Y		
1234.	9352	*Hypochaeris radicata (Flat Weed, Cats-ear)*	Y		
1235.	44718	*Hypocrea gelatinosa*			
1236.	1070	*Hypolaena exsulca*			
1237.	17841	*Hypolaena pubescens*			
1238.		*Hyporhamphus regularis*			
1239.		*Idiommata blackwalli*			
1240.		*Idiosoma hirsutum*			
1241.	48521	*Inocybe froudistii*			
1242.	48549	*Inocybe subferruginea*			
1243.	38799	*Inocybe violaceocaulis*			
1244.	6620	*Ipomoea cairica (Coast Morning Glory)*	Y		
1245.	6630	*Ipomoea indica (Morning Glory)*	Y		
1246.	11	*Isoetes drummondii (Quillwort)*			
1247.	910	*Isolepis cernua (Nodding Club-rush)*			
1248.	20199	*Isolepis cernua var. cernua*			
1249.	20200	*Isolepis cernua var. setiformis*			
1250.	912	*Isolepis cyperoides*			
1251.	914	*Isolepis hookeriana (Bristle Club Rush)*			
1252.	14540	*Isolepis hystrix*	Y		
1253.	917	*Isolepis marginata (Coarse Club-rush)*			
1254.	919	*Isolepis oldfieldiana*			
1255.	921	*Isolepis producta*			
1256.	10831	*Isolepis prolifera (Budding Club-rush)*	Y		
1257.	924	*Isolepis stellata (Star Club-rush)*			
1258.		*Isopeda leishmanni*			
1259.	2221	*Isopogon asper*			
1260.	2229	*Isopogon dubius (Pincushion Coneflower)*			
1261.	2237	*Isopogon sphaerocephalus (Drumstick Isopogon)*			
1262.	7396	*Isotoma hypocrateriformis (Woodbridge Poison)*			
1263.	7398	*Isotoma pusilla (Small Isotome)*			
1264.	7399	*Isotoma scapigera (Long-scaped Isotome)*			
1265.	19700	*Isotropis cuneifolia subsp. cuneifolia*			
1266.	1533	*Ixia paniculata*	Y		
1267.	8092	*Ixiolaena viscosa (Sticky Ixiolaena)*			
1268.		*Ixodes australiensis*			
1269.	3998	*Jacksonia angulata*			
1270.	4012	*Jacksonia furcellata (Grey Stinkwood)*			
1271.	4018	*Jacksonia lehmannii*			
1272.	4029	*Jacksonia sternbergiana (Stinkwood, Kapur)*			
1273.	19632	*Johnsonia pubescens subsp. pubescens*			
1274.	20454	*Juncus acutus subsp. acutus*	Y		
1275.	1177	*Juncus articulatus (Jointed Rush)*	Y		
1276.	1178	*Juncus bufonius (Toad Rush)*	Y		
1277.	1180	*Juncus capitatus (Capitate Rush)*	Y		
1278.	1185	*Juncus kraussii (Sea Rush)*			
1279.	11922	*Juncus kraussii subsp. australiensis*			
1280.	1186	*Juncus microcephalus*	Y		
1281.	1188	*Juncus pallidus (Pale Rush)*			
1282.	1189	*Juncus pauciflorus (Loose Flower Rush)*			
1283.	1190	*Juncus planifolius (Broadleaf Rush)*			
1284.	1196	*Juncus usitatus (Common Rush)*	Y		
1285.		*Kangarosa ludwigi*			

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1286.		*Kangarosa properipes*			
1287.	4044	*Kennedia prostrata (Scarlet Runner)*			
1288.	12008	*Kickxia elatine subsp. crinita*	Y		
1289.	7068	*Kickxia spuria (Roundleaf Toadflax)*	Y		
1290.	1221	*Kingia australis (Kingia, Pulonok)*			
1291.	15498	*Kunzea glabrescens (Spearwood)*			
1292.	5835	*Kunzea micrantha*			
1293.	17461	*Kunzea micrantha subsp. micrantha*			
1294.	17785	*Kunzea micrantha subsp. petiolata*			
1295.		*Laccaria lateritia*			
1296.	48837	*Laccocephalum mylittae*			
1297.	13562	*Lachenalia aloides*	Y		
1298.	1370	*Lachenalia reflexa*	Y		
1299.	19954	*Lachnagrostis aemula*			
1300.	20019	*Lachnagrostis filiformis*			
1301.	19955	*Lachnagrostis plebeia*			
1302.	6777	*Lachnostachys albicans*			
1303.	38803	*Lachnum virgineum*			
1304.	38804	*Lactarius eucalypti*			
1305.	8095	*Lactuca saligna (Wild Lettuce, Willow-leaf Lettuce)*	Y		
1306.	8096	*Lactuca serriola (Prickly Lettuce)*	Y		
1307.	29046	*Lactuca serriola forma serriola*	Y		
1308.	18585	*Lagenophora huegelii*			
1309.	14646	*Lagunaria patersonia*	Y		
1310.	467	*Lagurus ovatus (Hare's Tail Grass)*	Y		
1311.	24367	*Lalage tricolor (White-winged Triller)*			
1312.	2249	*Lambertia multiflora (Many-flowered Honeysuckle)*			
1313.	14083	*Lambertia multiflora var. darlingensis*			
1314.		*Lampona brevipes*			
1315.		*Lampona cylindrata*			
1316.	39037	*Lamproderma scintillans*			
1317.	28342	*Landoltia punctata (Thin Duckweed)*			
1318.	6733	*Lantana camara (Common Lantana)*	Y		
1319.	25637	*Larus novaehollandiae (Silver Gull)*			
1320.	24511	*Larus novaehollandiae subsp. novaehollandiae (Silver Gull)*			
1321.	25638	*Larus pacificus (Pacific Gull)*			
1322.	4052	*Latrobea tenella*			
1323.		*Latrodectus hasseltii*			
1324.	6879	*Lavandula stoechas (Italian Lavender)*	Y		
1325.	4959	*Lawrencia squamata*			
1326.	1307	*Laxmannia ramosa (Branching Lily)*			
1327.	11911	*Laxmannia ramosa subsp. ramosa*			
1328.	11464	*Laxmannia sessiliflora subsp. australis*			
1329.		*Laxmannia sp.*			
1330.	1309	*Laxmannia squarrosa*			
1331.	27805	*Lecanora flavopallida*			
1332.		*Lecanora sp.*			
1333.	7568	*Lechenaultia biloba (Blue Leschenaultia)*			
1334.	7572	*Lechenaultia expansa*			
1335.	7574	*Lechenaultia floribunda (Free-flowering Leschenaultia)*			
1336.	1051	*Lemna disperma (Duckweed)*			
1337.	38805	*Lentinellus pulvinulus*			
1338.	39038	*Leocarpus fragilis*			
1339.	6880	*Leonotis leonurus (Lion's Ear)*	Y		
1340.	44490	*Leontodon rhagadioloides*	Y		
1341.	8099	*Leontodon saxatilis (Hairy Hawkbit)*	Y		
1342.	1075	*Lepidobolus preissianus*			
1343.		*Lepidosperma ?sp. Brixton Street broad inflorescence*			Y
1344.		*Lepidosperma ?sp. Darling Scarp*			Y
1345.		*Lepidosperma aff. Brixton Street*			Y
1346.	925	*Lepidosperma angustatum*			
1347.	933	*Lepidosperma gladiatum (Coast Sword-sedge, Kerbin)*			
1348.	937	*Lepidosperma longitudinale (Pithy Sword-sedge)*			
1349.	45753	*Lepidosperma oldhamii (Oldham's Sword Sedge)*			
1350.	940	*Lepidosperma pubisquameum*			
1351.		*Lepidosperma pubisquameum "flat form"*			
1352.	41649	*Lepidosperma rigidulum*			
1353.	944	*Lepidosperma scabrum*			
1354.		*Lepidosperma sp.*			
1355.		*Lepidosperma sp. Brixton Street*			Y

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1356.		*Lepidosperma sp. Brixton Street broad inflorescence*			
1357.		*Lepidosperma sp. Brixton Street narrow inflorescence*			
1358.		*Lepidosperma sp. Darling Scarp*			Y
1359.	29150	*Lepidosperma sp. Margaret River (B.J. Lepschi 1841)*			
1360.		*Lepidosperma sp. inland scabrum*			Y
1361.		*Lepidosperma sp. terete*			Y
1362.	945	*Lepidosperma squamatum*			
1363.		*Lepidosperma squamatum s.l.*			
1364.	1653	*Leporella fimbriata (Hare Orchid)*			
1365.	1077	*Leptocarpus canus (Hoary Twine-rush)*			
1366.	1078	*Leptocarpus coangustatus*			
1367.	46375	*Leptocarpus decipiens*			
1368.	46380	*Leptocarpus kraussii*			
1369.	19833	*Leptocarpus laxus*			
1370.	46382	*Leptocarpus roycei*			
1371.	1080	*Leptocarpus scariosus*			
1372.	46383	*Leptocarpus tephrinus*			
1373.	15418	*Leptoceras menziesii*			
1374.		*Leptoceridae sp.*			
1375.	27838	*Leptogium azureum*			
1376.	27840	*Leptogium menziesii*			
1377.	2344	*Leptomeria empetriformis*			
1378.	2350	*Leptomeria pauciflora (Sparse-flowered Currant Bush)*			
1379.	5847	*Leptospermum erubescens (Roadside Teatree)*			
1380.	5850	*Leptospermum laevigatum (Coast Teatree)*	Y		
1381.	1085	*Lepyrodia glauca*			
1382.	1088	*Lepyrodia macra (Large Scale Rush)*			
1383.	1090	*Lepyrodia muirii*			
1384.	25131	*Lerista distinguenda*			
1385.	25133	*Lerista elegans*			
1386.		*Leucauge dromedaria*			Y
1387.	6360	*Leucopogon australis (Spiked Beard-heath)*			
1388.	6374	*Leucopogon conostephioides*			
1389.	6425	*Leucopogon oxycedrus*			
1390.	6427	*Leucopogon parviflorus (Coast Beard-heath)*			
1391.	6434	*Leucopogon polymorphus*			
1392.	6436	*Leucopogon propinquus*			
1393.	6439	*Leucopogon pulchellus (Beard-heath)*			
1394.	6440	*Leucopogon racemulosus*			
1395.	40803	*Leucopogon squarrosus subsp. squarrosus*			
1396.	6447	*Leucopogon strictus*			
1397.	6451	*Leucopogon tenuis*			
1398.		*Levenhookia ?pusilla*			Y
1399.	7674	*Levenhookia preissii (Preiss's Stylewort)*			
1400.	7676	*Levenhookia pusilla (Midget Stylewort)*			
1401.		*Levenhookia pusilla/stipitata*			
1402.	7677	*Levenhookia stipitata (Common Stylewort)*			
1403.	25005	*Lialis burtonis*			
1404.		*Libellulidae sp.*			
1405.	39039	*Licea biforis*			
1406.	39041	*Licea kleistobolus*			
1407.	39042	*Licea minima*			
1408.	39046	*Licea rufocuprea*			Y
1409.	31280	*Lichenomphalia chromacea*			
1410.	25661	*Lichmera indistincta (Brown Honeyeater)*			
1411.	24582	*Lichmera indistincta subsp. indistincta (Brown Honeyeater)*			
1412.	38808	*Limacella pitereka*			
1413.	48640	*Limnobium laevigatum*	Y		Y
1414.	25415	*Limnodynastes dorsalis (Western Banjo Frog)*			
1415.	7075	*Linaria maroccana*	Y		
1416.	4363	*Linum trigynum (French Flax)*	Y		
1417.	36160	*Liparophyllum capitatum*			
1418.	36179	*Liparophyllum violifolium*			
1419.	25378	*Litoria adelaidensis (Slender Tree Frog)*			
1420.	25388	*Litoria moorei (Motorbike Frog)*			
1421.	9289	*Lobelia anceps (Angled Lobelia)*			
1422.	7402	*Lobelia gibbosa (Tall Lobelia)*			
1423.	7406	*Lobelia rhombifolia (Tufted Lobelia)*			
1424.	7407	*Lobelia rhytidosperma (Wrinkled-seeded Lobelia)*			
1425.	7408	*Lobelia tenuior (Slender Lobelia)*			

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1426.	6515	*Logania vaginalis (White Spray)*			
1427.	475	*Lolium multiflorum (Italian Ryegrass)*	Y		
1428.	10957	*Lolium perenne x rigidum*	Y		
1429.	478	*Lolium rigidum (Wimmera Ryegrass)*	Y		
1430.		*Lolium sp.*			
1431.		*Lolium sp. (annual)*			
1432.	11384	*Lolium temulentum forma temulentum*	Y		
1433.	11073	*Lolium x hybridum*	Y		
1434.		*Lomandra ?caespitosa*			
1435.		*Lomandra ?hermaphrodita*			Y
1436.		*Lomandra ?nigricans*			Y
1437.		*Lomandra ?preissii*			
1438.		*Lomandra ?suaveolens*			Y
1439.	1223	*Lomandra caespitosa (Tufted Mat Rush)*			
1440.		*Lomandra caespitosa/suaveolens*			Y
1441.	1228	*Lomandra hermaphrodita*			
1442.	1232	*Lomandra micrantha (Small-flower Mat-rush)*			
1443.	14542	*Lomandra micrantha subsp. micrantha*			
1444.	1234	*Lomandra nigricans*			
1445.	1236	*Lomandra odora (Tiered Matrush)*			
1446.	1239	*Lomandra preissii*			
1447.	1243	*Lomandra sericea (Silky Mat Rush)*			
1448.		*Lomandra sp.*			
1449.	1246	*Lomandra suaveolens*			
1450.	25683	*Lonchura castaneothorax (Chestnut-breasted Mannikin)*			
1451.		*Longepi woodman*			
1452.		*Lophoictinia isura*			
1453.	4059	*Lotus angustissimus (Narrowleaf Trefoil)*	Y		
1454.	8564	*Lotus subbiflorus*	Y		
1455.	4063	*Lotus uliginosus (Greater Lotus)*	Y		
1456.	4065	*Lupinus angustifolius (Narrowleaf Lupin)*	Y		
1457.	4066	*Lupinus cosentinii*	Y		
1458.	4067	*Lupinus luteus (Yellow Lupin)*	Y		
1459.	1198	*Luzula meridionalis (Field Woodrush)*			
1460.	39048	*Lycogala epidendrum*			
1461.		*Lycosa gilberta*			
1462.	1097	*Lyginia barbata*			
1463.		*Lyginia barbata/imberbis*			
1464.	18049	*Lyginia imberbis*			
1465.	1656	*Lyperanthus serratus (Rattle Beak Orchid)*			
1466.	2396	*Lysiana casuarinae*			
1467.	36375	*Lysimachia arvensis (Pimpernel)*	Y		
1468.	36373	*Lysimachia minima*	Y		
1469.	6456	*Lysinema ciliatum (Curry Flower)*			
1470.	6458	*Lysinema elegans*			
1471.	34736	*Lysinema pentapetalum*			
1472.	5281	*Lythrum hyssopifolia (Lesser Loosestrife)*	Y		
1473.	2838	*Macarthuria apetala*			
1474.	2839	*Macarthuria australis*			
1475.	24132	*Macropus fuliginosus (Western Grey Kangaroo)*			
1476.	18119	*Macrozamia fraseri*			
1477.	85	*Macrozamia riedlei (Zamia, Djiridji)*			
1478.	24326	*Malacorhynchus membranaceus (Pink-eared Duck)*			
1479.	25651	*Malurus lamberti (Variegated Fairy-wren)*			
1480.	25654	*Malurus splendens (Splendid Fairy-wren)*			
1481.	24583	*Manorina flavigula (Yellow-throated Miner)*			
1482.		*Maratus pavonis*			
1483.		*Marchantia berteroana*			
1484.	4075	*Medicago littoralis (Strand Medic)*	Y		
1485.	4077	*Medicago minima (Small Burr Medic)*	Y		
1486.	4079	*Medicago polymorpha (Burr Medic)*	Y		
1487.	4080	*Medicago sativa (Alfalfa)*	Y		
1488.	25758	*Megalurus gramineus (Little Grassbird)*			
1489.	20639	*Megathyrsus maximus var. maximus*	Y		
1490.	34676	*Meionectes brownii (Swamp Raspwort)*			
1491.		*Melaleuca ?thymoides*			Y
1492.	37580	*Melaleuca acutifolia*			
1493.	5881	*Melaleuca brevifolia*			
1494.	5900	*Melaleuca cuticularis (Saltwater Paperbark)*			
1495.	5920	*Melaleuca huegelii (Chenille Honeymyrtle)*			

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1496.	5921	*Melaleuca incana (Grey Honeymyrtle)*			
1497.	13273	*Melaleuca incana subsp. incana*			
1498.	5922	*Melaleuca lanceolata (Rottnest Teatree, Moonah)*			
1499.	5926	*Melaleuca lateritia (Robin Redbreast Bush)*			
1500.	5932	*Melaleuca leucadendra*			
1501.	19969	*Melaleuca linariifolia*	Y		
1502.	5942	*Melaleuca nervosa (Fibrebark)*			
1503.	20297	*Melaleuca osullivanii*			
1504.	18394	*Melaleuca parviceps*			
1505.	5946	*Melaleuca pauciflora*			
1506.	5952	*Melaleuca preissiana (Moonah)*			
1507.	5959	*Melaleuca rhaphiophylla (Swamp Paperbark)*			
1508.	5964	*Melaleuca seriata*			
1509.	18598	*Melaleuca systena*			
1510.	5978	*Melaleuca teretifolia (Banbar)*			
1511.	5980	*Melaleuca thymoides*			
1512.	5983	*Melaleuca trichophylla*			
1513.	5984	*Melaleuca uncinata (Broom Bush, Kwidjard)*			
1514.	5987	*Melaleuca viminea (Mohan)*			
1515.	13280	*Melaleuca viminea subsp. viminea*			
1516.	47997	*Melanodryas cucullata (Hooded Robin)*			
1517.	4516	*Melia azedarach (White Cedar)*			
1518.	4085	*Melilotus indicus*	Y		
1519.	14985	*Melinis repens*	Y		
1520.	25663	*Melithreptus brevirostris (Brown-headed Honeyeater)*			
1521.	24587	*Melithreptus chloropsis (Western White-naped Honeyeater)*			
1522.	24736	*Melopsittacus undulatus (Budgerigar)*			
1523.	25184	*Menetia greyii*			
1524.	3050	*Menkea australis (Fairy Spectacles)*			
1525.	6884	*Mentha spicata (Spearmint)*	Y		
1526.	15994	*Mentha x piperita var. citrata*	Y		
1527.	24598	*Merops ornatus (Rainbow Bee-eater)*			
1528.	953	*Mesomelaena graciliceps*			
1529.	955	*Mesomelaena pseudostygia*			
1530.	957	*Mesomelaena tetragona (Semaphore Sedge)*			
1531.		*Microcarbo melanoleucos*			
1532.	25693	*Microeca fascinans (Jacky Winter)*			
1533.	485	*Microlaena stipoides (Weeping Grass)*			
1534.	1658	*Microtis atrata (Swamp Mignonette Orchid)*			
1535.	8814	*Microtis brownii*			
1536.	31713	*Microtis cupularis*			
1537.	10954	*Microtis media (Tall Mignonette Orchid)*			
1538.	15419	*Microtis media subsp. media*			
1539.	8106	*Millotia tenuifolia (Soft Millotia)*			
1540.	14344	*Millotia tenuifolia var. tenuifolia (Soft Millotia)*			
1541.	25542	*Milvus migrans (Black Kite)*			
1542.	16693	*Minuartia mediterranea*	Y		
1543.	4100	*Mirbelia spinosa*			
1544.		*Missulena granulosa*			
1545.		*Missulena occatoria*			
1546.		*Mituliodon tarantulinus*			
1547.		*Mitzoruga insularis*			
1548.	4963	*Modiola caroliniana*	Y		
1549.	7378	*Momordica balsamina (Balsam Apple)*	Y		
1550.	29418	*Monoculus monstrosus*	Y		
1551.	7410	*Monopsis debilis*	Y		
1552.	37440	*Monopsis debilis var. depressa*	Y		
1553.	19585	*Monotaxis grandiflora var. grandiflora*			
1554.	4666	*Monotaxis occidentalis*			
1555.	19179	*Moraea flaccida (One-leaf Cape Tulip)*	Y		
1556.	19178	*Moraea lewisiae*	Y		
1557.	19438	*Moraea ochroleuca*	Y		
1558.	1536	*Moraea vegeta*	Y		
1559.	25191	*Morethia lineoocellata*			
1560.	25192	*Morethia obscura*			
1561.	2412	*Muehlenbeckia adpressa (Climbing Lignum)*			
1562.		*Mugil cephalus*			
1563.	24223	*Mus musculus (House Mouse)*	Y		
1564.	20774	*Musa acuminata*	Y		
1565.	24042	*Mustela putorius (European Polecat, Ferret)*	Y		

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1566.		*Mycena carmeliana*			
1567.	38811	*Mycena clarkeana*			
1568.	38812	*Mycena kuurkacea*			
1569.		*Mycena nargan*			
1570.	38813	*Mycena subgalericulata*			
1571.	25610	*Myiagra inquieta (Restless Flycatcher)*			
1572.	25420	*Myobatrachus gouldii (Turtle Frog)*			
1573.	7291	*Myoporum insulare (Blueberry Tree, boobialla)*			
1574.	14187	*Myriocephalus occidentalis*			
1575.	6185	*Myriophyllum aquaticum (Brazilian Water Milfoil)*	Y		
1576.	6189	*Myriophyllum crispatum*			
1577.	6199	*Myriophyllum tillaeoides*			
1578.		*Myrtaceae sp.*			Y
1579.		*Nannoperca vittata*			
1580.	6464	*Needhamiella pumilio*			
1581.	25248	*Neelaps bimaculatus (Black-naped Snake)*			
1582.	24738	*Neophema elegans (Elegant Parrot)*			
1583.		*Nephila edulis*			
1584.	492	*Neurachne alopecuroidea (Foxtail Mulga Grass)*			
1585.		*Nicodamus mainae*			
1586.	6974	*Nicotiana glauca (Tree Tobacco)*	Y		
1587.	6978	*Nicotiana rotundifolia (Round-leaved Tobacco)*			
1588.		*Nidula emodensis*			
1589.	25747	*Ninox connivens (Barking Owl)*			
1590.	25252	*Notechis scutatus (Tiger Snake)*			
1591.	1381	*Nothoscordum gracile*	Y		
1592.		*Notiasemus glauerti*			
1593.		*Notonectidae sp.*			
1594.	2401	*Nuytsia floribunda (Christmas Tree, Mudja)*			
1595.	25564	*Nycticorax caledonicus (Rufous Night Heron)*			
1596.	24194	*Nyctophilus geoffroyi (Lesser Long-eared Bat)*			
1597.	41424	*Nyctophilus major (Greater Long-eared Bat)*			
1598.	2923	*Nymphaea odorata (Fragrant Waterlily)*	Y		
1599.	24742	*Nymphicus hollandicus (Cockatiel)*			
1600.		*Ocrisiona leucocomis*			
1601.	24407	*Ocyphaps lophotes (Crested Pigeon)*			
1602.	6138	*Oenothera drummondii (Beach Evening Primrose)*	Y		
1603.	16390	*Oenothera drummondii subsp. drummondii*	Y		
1604.	6139	*Oenothera glazioviana (Evening Primrose)*	Y		
1605.	14293	*Oenothera indecora subsp. bonariensis*	Y		
1606.	20052	*Oenothera jamesii*	Y		
1607.	16347	*Oenothera laciniata*	Y		
1608.	6140	*Oenothera mollissima*	Y		
1609.	6141	*Oenothera speciosa (White Evening Primrose)*	Y		
1610.	6142	*Oenothera stricta (Common Evening Primrose)*	Y		
1611.	14292	*Oenothera stricta subsp. stricta*	Y		
1612.	8127	*Olearia axillaris (Coastal Daisybush)*			
1613.		*Oligochaeta sp.*			
1614.	39054	*Oligonema schweinitzii*			
1615.		*Ommatoiulus moreleti*			
1616.		*Ommatoiulus moreletii*			
1617.	38816	*Omphalotus nidiformis*			
1618.	18255	*Opercularia vaginata (Dog Weed)*			
1619.	17	*Ophioglossum lusitanicum (Adders Tongue)*			
1620.		*Ophisurus serpens*			
1621.		*Orchidaceae sp.*			Y
1622.		*Orectolobus ornatus*			
1623.	36177	*Ornduffia albiflora*			
1624.	4113	*Ornithopus compressus (Yellow Serradella)*	Y		
1625.	7122	*Orobanche minor (Lesser Broomrape)*	Y		
1626.		*Orthocladiinae sp.*			
1627.	24085	*Oryctolagus cuniculus (Rabbit)*	Y		
1628.	17756	*Osteospermum ecklonis*	Y		
1629.	168	*Ottelia ovalifolia (Swamp Lily)*			
1630.	14531	*Ottelia ovalifolia subsp. ovalifolia*			
1631.	4349	*Oxalis corniculata (Yellow Wood Sorrel)*	Y		
1632.	4352	*Oxalis glabra*	Y		
1633.	4356	*Oxalis pes-caprae (Soursob)*	Y		
1634.	4358	*Oxalis purpurea (Largeflower Wood Sorrel)*	Y		
1635.	25680	*Pachycephala rufiventris (Rufous Whistler)*			

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1636.	24624	*Pachycephala rufiventris subsp. rufiventris (Rufous Whistler)*			
1637.	24693	*Pachyptila desolata (Antarctic Prion)*			
1638.		*Palaemonidae sp.*			
1639.	507	*Panicum miliaceum (Millet Panic)*	Y		
1640.		*Papillogobius punctatus*			
1641.	23500	*Paracaleana hortiorum*			
1642.	39056	*Paradiacheopsis fimbriata*			
1643.		*Paralamyctes cammooensis*			Y
1644.	17114	*Paraserianthes lophantha subsp. lophantha*			
1645.		*Parastacidae sp.*			
1646.	25253	*Parasuta gouldii*			
1647.	25255	*Parasuta nigriceps*			
1648.	25681	*Pardalotus punctatus (Spotted Pardalote)*			
1649.	25682	*Pardalotus striatus (Striated Pardalote)*			
1650.	7089	*Parentucellia latifolia (Common Bartsia)*	Y		
1651.	34481	*Parthenocissus quinquefolia*	Y		
1652.	527	*Paspalum dilatatum*	Y		
1653.	528	*Paspalum distichum (Water Couch)*	Y		
1654.	532	*Paspalum urvillei (Vasey Grass)*	Y		
1655.	1550	*Patersonia occidentalis (Purple Flag, Koma)*			
1656.	30471	*Patersonia occidentalis var. angustifolia*			
1657.	30472	*Patersonia occidentalis var. occidentalis*			
1658.	43760	*Pauridia occidentalis*			
1659.	43761	*Pauridia occidentalis var. occidentalis*			
1660.		*Pediana occidentalis*			
1661.		*Pelargonium ?littorale*			Y
1662.	4343	*Pelargonium capitatum (Rose Pelargonium)*	Y		
1663.	4345	*Pelargonium havlasae*			
1664.	4346	*Pelargonium littorale*			
1665.		*Pelates sexlineatus*			
1666.	24648	*Pelecanus conspicillatus (Australian Pelican)*			
1667.	27121	*Penicillus nodulosus*			
1668.	40424	*Pentameris airoides subsp. airoides*	Y		
1669.	40422	*Pentameris pallida*	Y		
1670.	6006	*Pericalymma ellipticum (Swamp Teatree)*			
1671.	16477	*Pericalymma ellipticum var. ellipticum*			
1672.	16478	*Pericalymma ellipticum var. floridum*			
1673.	39057	*Perichaena corticalis*			
1674.	39058	*Perichaena depressa*			
1675.	39059	*Perichaena vermicularis*			
1676.	13911	*Persicaria decipiens*			
1677.	11020	*Persicaria hydropiper*			
1678.	16983	*Persicaria maculosa*	Y		
1679.	11052	*Persicaria prostrata*			
1680.	2262	*Persoonia elliptica (Spreading Snottygobble)*			
1681.	2273	*Persoonia saccata (Snottygobble)*			
1682.	27947	*Pertusaria gibberosa*			
1683.	48060	*Petrochelidon ariel (Fairy Martin)*			
1684.	48061	*Petrochelidon nigricans (Tree Martin)*			
1685.	48066	*Petroica boodang (Scarlet Robin)*			
1686.	24659	*Petroica goodenovii (Red-capped Robin)*			
1687.	20391	*Petrophile juncifolia*			
1688.	2299	*Petrophile linearis (Pixie Mops)*			
1689.	2308	*Petrophile seminuda*			
1690.	19825	*Petrorhagia dubia*	Y		
1691.	49073	*Peziza austrogeaster*			
1692.		*Peziza sp.*			
1693.	48853	*Phaeotrametes decipiens*			
1694.	25697	*Phalacrocorax carbo (Great Cormorant)*			
1695.	24665	*Phalacrocorax fuscescens (Black-faced Cormorant)*			
1696.	25698	*Phalacrocorax melanoleucos (Little Pied Cormorant)*			
1697.	24666	*Phalacrocorax melanoleucos subsp. melanoleucos (Little Pied Cormorant)*			
1698.	24667	*Phalacrocorax sulcirostris (Little Black Cormorant)*			
1699.	25699	*Phalacrocorax varius (Pied Cormorant)*			
1700.	551	*Phalaris minor (Lesser Canary Grass)*	Y		
1701.		*Phalloceros harpagos*			Y
1702.	24409	*Phaps chalcoptera (Common Bronzewing)*			
1703.	25587	*Phaps elegans (Brush Bronzewing)*			
1704.	20460	*Pheladenia deformis*			
1705.		*Phellinus gilvus*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
1706.		*Phenasteron longiconductor*			
1707.	18529	*Philotheca spicata (Pepper and Salt)*			
1708.	1172	*Philydrella drummondii*			
1709.	14306	*Philydrella pygmaea subsp. pygmaea*			
1710.	1478	*Phlebocarya ciliata*			
1711.	1479	*Phlebocarya filifolia*			
1712.		*Phlebocarya sp.*			
1713.		*Pholcus phalangioides*			
1714.		*Pholiota communis*			
1715.		*Phryganoporus candidus*			
1716.	48071	*Phylidonyris niger (White-cheeked Honeyeater)*			
1717.	24596	*Phylidonyris novaehollandiae (New Holland Honeyeater)*			
1718.	16825	*Phyllangium divergens*			
1719.	16177	*Phyllangium paradoxum*			
1720.	4675	*Phyllanthus calycinus (False Boronia)*			
1721.	4	*Phylloglossum drummondii (Pigmy Clubmoss)*			
1722.	4141	*Phyllota gracilis*			
1723.	39060	*Physarum album*			
1724.	39061	*Physarum bitectum*			
1725.	39062	*Physarum bivalve*			Y
1726.	39063	*Physarum cinereum*			
1727.	39064	*Physarum citrinum*			Y
1728.	39065	*Physarum compressum*			
1729.	39069	*Physarum famintzinii*			Y
1730.	39072	*Physarum melleum*			
1731.	44062	*Physarum polycephalum*			
1732.	39074	*Physarum pusillum*			
1733.	39076	*Physarum sessile*			Y
1734.	39078	*Physarum vernum*			
1735.	39079	*Physarum viride*			
1736.		*Physidae sp.*			
1737.	2793	*Phytolacca octandra (Red Ink Plant)*	Y		
1738.		*Phytophthora cinnamomi*			
1739.	49071	*Picipes badius*			
1740.	78	*Pilularia novae-hollandiae (Austral Pillwort)*			
1741.	5231	*Pimelea angustifolia (Narrow-leaved Pimelea)*			
1742.	5243	*Pimelea ferruginea*			
1743.	11404	*Pimelea imbricata var. major*			
1744.	11402	*Pimelea imbricata var. piligera*			
1745.	5252	*Pimelea lanata*			
1746.	5254	*Pimelea leucantha*			
1747.	18117	*Pimelea rosea subsp. rosea*			
1748.	12041	*Pimelea suaveolens subsp. suaveolens*			
1749.	5268	*Pimelea sulphurea (Yellow Banjine)*			
1750.		*Pinkfloydia harveii*			
1751.		*Piona cumberlandensis*			
1752.		*Pisolithus sp.*			
1753.	42281	*Pithocarpa cordata*			
1754.	8165	*Pithocarpa pulchella (Beautiful Pithocarpa)*			
1755.	18353	*Pithocarpa pulchella var. pulchella*			
1756.		*Planorbidae sp.*			
1757.	7303	*Plantago lanceolata (Ribwort Plantain)*	Y		
1758.	7304	*Plantago major (Greater Plantain)*	Y		
1759.	24841	*Platalea flavipes (Yellow-billed Spoonbill)*			
1760.	24842	*Platalea regia (Royal Spoonbill)*			
1761.	25720	*Platycercus icterotis (Western Rosella)*			
1762.	24745	*Platycercus icterotis subsp. icterotis (Western Rosella)*			
1763.	24747	*Platycercus spurius (Red-capped Parrot)*			
1764.	25721	*Platycercus zonarius (Australian Ringneck, Ring-necked Parrot)*			
1765.	24750	*Platycercus zonarius subsp. semitorquatus (Twenty-eight Parrot)*			
1766.	24751	*Platycercus zonarius subsp. zonarius (Port Lincoln Parrot)*			
1767.	6249	*Platysace compressa (Tapeworm Plant)*			
1768.	6253	*Platysace filiformis*			
1769.	4524	*Platytheca galioides*			
1770.	25509	*Pletholax gracilis (Keeled Legless Lizard)*			
1771.	25007	*Pletholax gracilis subsp. gracilis (Keeled Legless Lizard)*			
1772.	32413	*Pleuridium ecklonii*			
1773.	38823	*Pleuroflammula praestans*			
1774.	38825	*Pluteus pauperculus*			
1775.	571	*Poa annua (Winter Grass)*	Y		

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1776.	578	*Poa porphyroclados*			
1777.		*Poaceae sp.*			
1778.	25703	*Podargus strigoides (Tawny Frogmouth)*			
1779.	24679	*Podargus strigoides subsp. brachypterus (Tawny Frogmouth)*			
1780.	25704	*Podiceps cristatus (Great Crested Grebe)*			
1781.	8173	*Podolepis capillaris (Wiry Podolepis)*			
1782.	8175	*Podolepis gracilis (Slender Podolepis)*			
1783.	8179	*Podolepis nutans (Nodding Podolepis)*			
1784.		*Podotheca ?chrysantha*			Y
1785.		*Podotheca ?gnaphalioides*			
1786.	8182	*Podotheca angustifolia (Sticky Longheads)*			
1787.		*Podotheca angustifolia/gnaphalioides*			Y
1788.	8183	*Podotheca chrysantha (Yellow Podotheca)*			
1789.	8184	*Podotheca gnaphalioides (Golden Long-heads)*			
1790.		*Podotheca sp.*			
1791.		*Podykipus collinus*			
1792.	25510	*Pogona minor (Dwarf Bearded Dragon)*			
1793.	24907	*Pogona minor subsp. minor (Dwarf Bearded Dragon)*			
1794.	8188	*Pogonolepis stricta*			
1795.	24681	*Poliocephalus poliocephalus (Hoary-headed Grebe)*			
1796.		*Poltys laciniosus*			
1797.	2905	*Polycarpon tetraphyllum (Fourleaf Allseed)*	Y		
1798.	8395	*Polygala myrtifolia (Myrtleleaf Milkwort)*	Y		
1799.		*Polygonarea repanda*			Y
1800.	2416	*Polygonum arenastrum (Sand Wireweed)*	Y		
1801.	2419	*Polygonum aviculare (Wireweed)*	Y		
1802.	582	*Polypogon monspeliensis (Annual Beardgrass)*	Y		
1803.	583	*Polypogon tenellus*			
1804.		*Polypompholyx tenella scps*			
1805.	25722	*Polytelis anthopeplus (Regent Parrot)*			
1806.	4691	*Poranthera microphylla (Small Poranthera)*			
1807.		*Poranthera microphylla/moorokatta*			
1808.		*Poronia erici*			
1809.	44729	*Porostereum crassum*			
1810.	25731	*Porphyrio porphyrio (Purple Swamphen)*			
1811.	24767	*Porphyrio porphyrio subsp. bellus (Purple Swamphen)*			
1812.	24769	*Porzana fluminea (Australian Spotted Crake)*			
1813.	25732	*Porzana pusilla (Baillon's Crake)*			
1814.	24770	*Porzana pusilla subsp. palustris (Baillon's Crake)*			
1815.	24771	*Porzana tabuensis (Spotless Crake)*			
1816.	109	*Potamogeton crispus (Curly Pondweed)*			
1817.	1670	*Prasophyllum drummondii (Swamp Leek Orchid)*			
1818.	1671	*Prasophyllum elatum (Tall Leek Orchid)*			
1819.	1672	*Prasophyllum fimbria (Fringed Leek Orchid)*			
1820.	1673	*Prasophyllum gibbosum (Humped Leek Orchid)*			
1821.	1674	*Prasophyllum giganteum (Bronze Leek Orchid)*			
1822.	16688	*Prasophyllum gracile*			
1823.	1676	*Prasophyllum hians (Yawning Leek Orchid)*			
1824.	1677	*Prasophyllum macrostachyum (Laughing Leek Orchid)*			
1825.	1680	*Prasophyllum parvifolium (Autumn Leek Orchid)*			
1826.	10853	*Prasophyllum plumiforme*			
1827.	1681	*Prasophyllum regium (King Leek Orchid)*			
1828.		*Priolepis nuchifasciata*			
1829.		*Prionosternum scutatum*			
1830.		*Psathyrella candolleana*			
1831.	25261	*Pseudechis australis (Mulga Snake)*			
1832.	8189	*Pseudognaphalium luteoalbum (Jersey Cudweed)*			
1833.	25511	*Pseudonaja affinis (Dugite)*			
1834.	25259	*Pseudonaja affinis subsp. affinis (Dugite)*			
1835.	25433	*Pseudophryne guentheri (Crawling Toadlet)*			
1836.	48085	*Psittacula krameri (Indian Ringnecked Parrot, Rose-ringed Parakeet)*	Y		
1837.	41651	*Pteridium esculentum subsp. esculentum*			
1838.	24702	*Pterodroma brevirostris (Kerguelen Petrel)*			
1839.	25710	*Pterodroma macroptera (Great-winged Petrel)*			
1840.	24173	*Pteropus scapulatus (Little Red Flying-fox)*			
1841.		*Pterostylis ?sanguinea*			Y
1842.		*Pterostylis aff. nana*			
1843.		*Pterostylis aff. nana ?short sepal*			Y
1844.	15426	*Pterostylis aspera*			
1845.	48675	*Pterostylis atrosanguinea*			

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1846.	1686	*Pterostylis barbata (Bird Orchid)*			
1847.	17267	*Pterostylis brevisepala*			
1848.	1687	*Pterostylis dilatata*			
1849.	48677	*Pterostylis ectypha*			
1850.	44527	*Pterostylis erubescens*			
1851.	44723	*Pterostylis glebosa*			
1852.		*Pterostylis nana "short sepal"*			Y
1853.	48674	*Pterostylis orbiculata*			
1854.	11118	*Pterostylis pyramidalis (Snail Orchid)*			
1855.	1693	*Pterostylis recurva (Jug Orchid)*			
1856.	12217	*Pterostylis sanguinea*			
1857.		*Pterostylis sp.*			
1858.	18655	*Pterostylis sp. crinkled leaf (G.J. Keighery 13426)*			
1859.	1698	*Pterostylis vittata (Banded Greenhood)*			
1860.	2716	*Ptilotus declinatus (Curved Mulla Mulla)*			
1861.	2718	*Ptilotus drummondii (Narrowleaf Mulla Mulla)*			
1862.	11260	*Ptilotus drummondii var. drummondii (Pussytail)*			
1863.	2720	*Ptilotus esquamatus*			
1864.	2742	*Ptilotus manglesii (Pom Poms, Mulamula)*			
1865.	2751	*Ptilotus polystachyus (Prince of Wales Feather)*			
1866.	40841	*Ptilotus stirlingii subsp. stirlingii*			
1867.	24711	*Puffinus assimilis subsp. assimilis (Little Shearwater)*			
1868.	4177	*Pultenaea ochreata*			
1869.	4181	*Pultenaea reticulata*			
1870.	42344	*Purnella albifrons (White-fronted Honeyeater)*			
1871.		*Purpureicephalus spurius*			
1872.	48835	*Pycnoporus coccineus*			
1873.	48833	*Pycnoporus sanguineus*			
1874.	25008	*Pygopus lepidopodus (Common Scaly Foot)*			
1875.	16367	*Pyrorchis nigricans (Red beaks, Elephants ears)*			
1876.	48803	*Pyxine sorediata*			
1877.	8195	*Quinetia urvillei*			
1878.	28031	*Ramalina inflata*			
1879.	28224	*Ramalina inflata subsp. australis*			
1880.	2933	*Ranunculus muricatus (Sharp Buttercup)*	Y		
1881.	11927	*Ranunculus sessiliflorus var. sessiliflorus*			
1882.	3061	*Raphanus raphanistrum (Wild Radish)*	Y		
1883.	24243	*Rattus fuscipes (Western Bush Rat)*			
1884.	24244	*Rattus norvegicus (Brown Rat)*	Y		
1885.	24245	*Rattus rattus (Black Rat)*	Y		
1886.		*Raveniella cirrata*			
1887.		*Raveniella peckorum*			
1888.	24776	*Recurvirostra novaehollandiae (Red-necked Avocet)*			
1889.	6012	*Regelia ciliata*			
1890.	6014	*Regelia inops*			
1891.	38832	*Resupinatus cinerascens*			
1892.	19183	*Retama raetam*	Y		
1893.	39080	*Reticularia intermedia*			
1894.	39081	*Reticularia lycoperdon*			
1895.	39082	*Reticularia olivacea*			Y
1896.	4822	*Rhamnus alaternus (Buckthorn)*	Y		
1897.	48096	*Rhipidura albiscapa (Grey Fantail)*			
1898.	25614	*Rhipidura leucophrys (Willie Wagtail)*			
1899.	24454	*Rhipidura leucophrys subsp. leucophrys (Willie Wagtail)*			
1900.	13300	*Rhodanthe citrina*			
1901.	13312	*Rhodanthe pyrethrum*			
1902.	4705	*Ricinus communis (Castor Oil Plant)*	Y		
1903.	17020	*Robinia pseudoacacia*	Y		
1904.	45434	*Roldana petasitis*	Y		
1905.	1554	*Romulea flava*	Y		
1906.	14485	*Romulea flava var. minor*	Y		
1907.	1556	*Romulea rosea (Guildford Grass)*	Y		
1908.	11544	*Romulea rosea var. australis (Guildford Grass)*	Y		
1909.	14924	*Romulea rosea var. communis*	Y		
1910.	3066	*Rorippa nasturtium-aquaticum (Watercress)*	Y		
1911.	10970	*Rostraria cristata*	Y		
1912.	32424	*Rosulabryum albolimbatum*			
1913.	44608	*Rosulabryum billarderii*			
1914.	32429	*Rosulabryum torquescens*			
1915.	20496	*Rubus laudatus*	Y		

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1916.	2429	*Rumex acetosella (Sorrel)*	Y		
1917.	2432	*Rumex conglomeratus (Clustered Dock)*	Y		
1918.	2433	*Rumex crispus (Curled Dock)*	Y		
1919.	116	*Ruppia polycarpa*			
1920.		*Ruppia sp.*			
1921.	40431	*Rytidosperma acerosum*			
1922.	40425	*Rytidosperma caespitosum*			
1923.	40426	*Rytidosperma occidentale*			
1924.	2906	*Sagina apetala (Annual Pearlwort)*	Y		
1925.	2907	*Sagina procumbens (Spreading Pearlwort)*	Y		
1926.	17591	*Sagittaria platyphylla*	Y		
1927.	48430	*Salicornia quinqueflora*			
1928.	48431	*Salicornia quinqueflora subsp. quinqueflora (Beaded Glasswort)*			
1929.	79	*Salvinia molesta (Salvinia)*	Y		
1930.	6483	*Samolus junceus*			
1931.	6484	*Samolus repens (Creeping Brookweed)*			
1932.	11647	*Samolus repens var. repens*			
1933.	7368	*Scabiosa atropurpurea (Purple Pincushion)*	Y		
1934.	7603	*Scaevola canescens (Grey Scaevola)*			
1935.	7613	*Scaevola glandulifera (Viscid Hand-flower)*			
1936.	7619	*Scaevola lanceolata (Long-leaved Scaevola)*			
1937.	13182	*Scaevola repens var. repens*			
1938.	48834	*Schinus terebinthifolia*	Y		
1939.		*Schizophyllum commune*			
1940.	6263	*Schoenolaena juncea*			
1941.	48356	*Schoenoplectus tabernaemontani*			
1942.	971	*Schoenus andrewsii*			
1943.	973	*Schoenus asperocarpus (Poison Sedge)*			
1944.	975	*Schoenus bifidus*			
1945.	978	*Schoenus brevisetis*			
1946.	979	*Schoenus caespititius*			
1947.	982	*Schoenus clandestinus*			
1948.	983	*Schoenus cruentus*			
1949.	984	*Schoenus curvifolius*			
1950.	985	*Schoenus discifer*			
1951.	986	*Schoenus efoliatus*			
1952.	987	*Schoenus elegans*			
1953.	991	*Schoenus grammatophyllus*			
1954.	992	*Schoenus grandiflorus (Large Flowered Bogrush)*			
1955.	1002	*Schoenus nanus (Tiny Bog Rush)*			
1956.	1006	*Schoenus odontocarpus*			
1957.	17614	*Schoenus plumosus*			
1958.	1011	*Schoenus rigens*			
1959.	1013	*Schoenus sculptus (Gimlet Bog-rush)*			
1960.	1017	*Schoenus subbulbosus*			
1961.	1018	*Schoenus subfascicularis*			
1962.	16251	*Schoenus subflavus subsp. long leaves (K.L. Wilson 2865)*			
1963.	1023	*Schoenus tenellus*			
1964.	1026	*Schoenus unispiculatus*			
1965.	17409	*Schoenus variicellae*			
1966.	6033	*Scholtzia involucrata (Spiked Scholtzia)*			
1967.	6034	*Scholtzia laxiflora*			
1968.		*Scleroderma cepa*			
1969.		*Scolopendra laeta*			
1970.		*Scomberoides lysan*			
1971.	6	*Selaginella gracillima (Tiny Clubmoss)*			
1972.	32433	*Sematophyllum homomallum*			
1973.	25878	*Senecio condylus*			
1974.	8203	*Senecio diaschides*			
1975.		*Senecio diaschides/glomeratus*			Y
1976.	20663	*Senecio multicaulis subsp. multicaulis*			
1977.	8220	*Senecio vulgaris (Common Groundsel)*	Y		
1978.	25534	*Sericornis frontalis (White-browed Scrubwren)*			
1979.		*Servaea melaina*			
1980.	609	*Setaria palmifolia (Palm Grass)*	Y		
1981.	19453	*Setaria parviflora*	Y		
1982.	611	*Setaria sphacelata (South African Pigeon Grass)*	Y		
1983.	4980	*Sida hookeriana*			
1984.		*Silene armeria*			Y
1985.	2909	*Silene gallica (French Catchfly)*	Y		

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1986.	15972	*Silene gallica var. gallica*	Y		
1987.	11803	*Silene gallica var. quinquevulnera*	Y		
1988.		*Sillago burrus*			
1989.	8224	*Siloxerus filifolius*			
1990.	8225	*Siloxerus humifusus (Procumbent Siloxerus)*			
1991.	14583	*Siloxerus multiflorus*			
1992.		*Simaetha tenuior*			
1993.	25266	*Simoselaps bertholdi (Jan's Banded Snake)*			
1994.		*Simuliidae sp.*			
1995.	28060	*Siphula coriacea*			
1996.	48862	*Sisyrinchium rosulatum*	Y		
1997.		*Smeringopus natalensis*			
1998.	30948	*Smicrornis brevirostris (Weebill)*			
1999.		*Sminthopsis murina*			
2000.		*Solaenodolichopus pruvoti*			
2001.	6988	*Solanum americanum (Glossy Nightshade)*	Y		
2002.	7020	*Solanum linnaeanum (Apple of Sodom)*	Y		
2003.	7022	*Solanum nigrum (Black Berry Nightshade)*	Y		
2004.	7037	*Solanum symonii*			
2005.	45036	*Solidago chilensis*	Y		
2006.	10920	*Soliva sessilis (Jo-jo, Onehunga Weed)*	Y		
2007.	8230	*Sonchus asper (Rough Sowthistle)*	Y		
2008.	8231	*Sonchus oleraceus (Common Sowthistle)*	Y		
2009.	616	*Sorghum bicolor (Grain Sorghum)*	Y		
2010.	1312	*Sowerbaea laxiflora (Purple Tassels)*			
2011.	1558	*Sparaxis bulbifera*	Y		
2012.	1560	*Sparaxis pillansii (Harlequin Flower)*	Y		
2013.	2912	*Spergula arvensis (Corn Spurry)*	Y		
2014.	8900	*Spergularia marina*			
2015.	2915	*Spergularia rubra (Sand Spurry)*	Y		
2016.		*Sphaerobolus stellatus*			
2017.	20302	*Sphaerolobium hygrophilum*			
2018.	4205	*Sphaerolobium linophyllum*			
2019.	4211	*Sphaerolobium vimineum (Leafless Globe Pea)*			
2020.	8710	*Sporobolus africanus (Parramatta Grass)*	Y		
2021.	635	*Sporobolus virginicus (Marine Couch)*			
2022.	4828	*Spyridium globulosum (Basket Bush)*			
2023.	6930	*Stachys arvensis (Staggerweed)*	Y		
2024.	9069	*Stackhousia huegelii*			
2025.		*Steatoda capensis*			
2026.		*Steatoda grossa*			
2027.	2918	*Stellaria media (Chickweed)*	Y		
2028.	39083	*Stemonitis fusca*			
2029.	39087	*Stemonitis splendens*			
2030.	39088	*Stemonitis virginiensis*			
2031.	39089	*Stemonitopsis amoena*			
2032.	39090	*Stemonitopsis gracilis*			
2033.	40882	*Stemonitopsis hyperopta*			
2034.	19403	*Stenopetalum gracile*			
2035.	24522	*Sterna bergii (Crested Tern)*			
2036.	24525	*Sterna fuscata subsp. nubilosa (Sooty Tern)*			
2037.	24528	*Sterna hybrida subsp. javanica (Whiskered Tern)*			
2038.	48594	*Sternula nereis (Fairy Tern)*			
2039.	24329	*Stictonetta naevosa (Freckled Duck)*			
2040.	2316	*Stirlingia latifolia (Blueboy)*			
2041.	2317	*Stirlingia simplex*			
2042.	25597	*Strepera versicolor (Grey Currawong)*			
2043.	25589	*Streptopelia chinensis (Spotted Turtle-Dove)*	Y		
2044.	25590	*Streptopelia senegalensis (Laughing Turtle-Dove)*	Y		
2045.	30950	*Streptopelia senegalensis subsp. senegalensis (Laughing Turtle-Dove)*	Y		
2046.	27318	*Struvea plumosa*			
2047.	44492	*Stuckenia pectinata*			
2048.		*Stylidium ?araeophyllum*			Y
2049.	7684	*Stylidium amoenum (Lovely Triggerplant)*			
2050.	30278	*Stylidium androsaceum*			
2051.	25831	*Stylidium araeophyllum (Stilt Walker)*			
2052.		*Stylidium araeophyllum/neurophyllum*			
2053.	7693	*Stylidium brunonianum (Pink Fountain Triggerplant)*			
2054.	7696	*Stylidium calcaratum (Book Triggerplant)*			
2055.	7699	*Stylidium carnosum (Fleshy-leaved Triggerplant)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
2056.	7712	*Stylidium despectum (Dwarf Triggerplant)*			
2057.	7713	*Stylidium dichotomum (Pins-and-needles)*			
2058.	7716	*Stylidium diuroides (Donkey Triggerplant)*			
2059.	11808	*Stylidium diuroides subsp. diuroides*			
2060.	7717	*Stylidium divaricatum (Daddy-long-legs)*			
2061.	7721	*Stylidium emarginatum (Biddy-four-legs)*			
2062.	7734	*Stylidium guttatum (Dotted Triggerplant)*			
2063.	7742	*Stylidium inundatum (Hundreds and Thousands)*			
2064.	25829	*Stylidium neurophyllum (Coastal Plain Triggerplant)*			
2065.	7768	*Stylidium obtusatum (Pinafore Triggerplant)*			
2066.	7772	*Stylidium perpusillum (Tiny Triggerplant)*			
2067.	7773	*Stylidium petiolare (Horn Triggerplant)*			
2068.	7774	*Stylidium piliferum (Common Butterfly Triggerplant)*			
2069.	7777	*Stylidium preissii (Lizard Triggerplant)*			
2070.	7781	*Stylidium pubigerum (Yellow Butterfly Triggerplant)*			
2071.	7782	*Stylidium pulchellum (Thumbelina Triggerplant)*			
2072.	7785	*Stylidium repens (Matted Triggerplant)*			
2073.	20521	*Stylidium rigidulum*			
2074.		*Stylidium roseo-alatum*			
2075.	7790	*Stylidium roseoalatum (Pink-wing Triggerplant)*			
2076.	25806	*Stylidium scariosum*			
2077.	7798	*Stylidium schoenoides (Cow Kicks)*			
2078.		*Stylidium sp.*			
2079.	45594	*Stylidium tenue subsp. majusculum (Showy Fountain Triggerplant)*			
2080.	23511	*Stylidium thesioides (Delicate Triggerplant)*			
2081.	7806	*Stylidium utricularioides (Pink Fan Triggerplant)*			
2082.	1260	*Stypandra glauca (Blind Grass)*			
2083.	6476	*Styphelia tenuiflora (Common Pinheath)*			
2084.	2639	*Suaeda australis (Seablite)*			
2085.		*Supunna funerea*			
2086.		*Supunna picta*			
2087.		*Sutorectus tentaculatus*			
2088.	25902	*Symphyotrichum squamatum (Bushy Starwort)*	Y		
2089.	2321	*Synaphea acutiloba (Granite Synaphea)*			
2090.	2323	*Synaphea gracillima*			
2091.	2324	*Synaphea petiolaris (Synaphea)*			
2092.	16864	*Synaphea petiolaris subsp. petiolaris*			
2093.	2329	*Synaphea spinulosa*			
2094.	15532	*Synaphea spinulosa subsp. spinulosa*			
2095.		*Synothele michaelseni*			
2096.		*Synothele rastelloides*			
2097.		*Tabanidae sp.*			
2098.	25705	*Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)*			
2099.	24682	*Tachybaptus novaehollandiae subsp. novaehollandiae (Australasian Grebe, Black-throated Grebe)*			
2100.	24207	*Tachyglossus aculeatus (Short-beaked Echidna)*			
2101.	25552	*Tadorna radjah (Radjah Shelduck)*			
2102.	24331	*Tadorna tadornoides (Australian Shelduck, Mountain Duck)*			
2103.	20024	*Tagetes erecta (Marigold)*	Y		
2104.	37360	*Tamarix ramosissima*	Y		
2105.		*Tamopsis darlingtoniana*			
2106.		*Tamopsis perthensis*			
2107.		*Tanypodinae sp.*			
2108.	38843	*Tapinella panuoides*			
2109.	45613	*Taraxacum khatoonae*	Y		
2110.	24167	*Tarsipes rostratus (Honey Possum, Noolbenger)*			
2111.		*Tasmanicosa leuckartii*			
2112.	20135	*Taxandria linearifolia*			
2113.	32440	*Tayloria octoblepharum*			
2114.	31718	*Tecticornia lepidosperma*			
2115.	28065	*Teloschistes chrysophthalmus*			
2116.	4251	*Templetonia drummondii*			
2117.	4256	*Templetonia retusa (Cockies Tongues)*			
2118.		*Tetragnatha demissa*			
2119.		*Tetragnatha nitens*			
2120.	13551	*Tetragonia nigrescens*	Y		Y
2121.	2824	*Tetragonia tetragonoides (New Zealand Spinach)*			
2122.	1036	*Tetraria octandra*			
2123.	48342	*Tetratheca hirsuta subsp. hirsuta*			
2124.	48341	*Tetratheca hirsuta subsp. viminea*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
2125.		*Thelymitra ?graminea*			Y
2126.	1701	*Thelymitra antennifera (Vanilla Orchid)*			
2127.	10856	*Thelymitra benthamiana (Leopard Orchid)*			
2128.		*Thelymitra benthamiana/crinita/fuscolutea*			Y
2129.	1702	*Thelymitra campanulata (Shirt Orchid)*			
2130.	1705	*Thelymitra crinita (Blue Lady Orchid)*			
2131.	1707	*Thelymitra flexuosa (Twisted Sun Orchid)*			
2132.	11143	*Thelymitra graminea*			
2133.	1710	*Thelymitra mucida (Plum Orchid)*			
2134.		*Thelymitra sp.*			
2135.	1715	*Thelymitra spiralis (Curlylocks)*			
2136.	1716	*Thelymitra tigrina (Tiger Orchid)*			
2137.	1718	*Thelymitra villosa (Custard Orchid)*			
2138.	20731	*Thelymitra vulgaris*			
2139.	5084	*Thomasia grandiflora (Large Flowered Thomasia)*			
2140.	5087	*Thomasia macrocarpa (Large Fruited Thomasia)*			
2141.	48136	*Threskiornis moluccus (Australian White Ibis)*			
2142.	24845	*Threskiornis spinicollis (Straw-necked Ibis)*			
2143.	28071	*Thysanothecium scutellatum*			
2144.		*Thysanotus ?arbuscula*			Y
2145.		*Thysanotus ?manglesianus/patersonii complex*			Y
2146.		*Thysanotus ?thyrsoideus*			
2147.	1318	*Thysanotus arbuscula*			
2148.	1319	*Thysanotus arenarius*			
2149.	1320	*Thysanotus asper (Hairy Fringe Lily)*			
2150.	1338	*Thysanotus manglesianus (Fringed Lily)*			
2151.		*Thysanotus manglesianus/patersonii complex*			
2152.	1339	*Thysanotus multiflorus (Many-flowered Fringe Lily)*			
2153.	1343	*Thysanotus patersonii*			
2154.		*Thysanotus sp.*			
2155.	46055	*Thysanotus sp. Coastal plain (N.H. Brittan 66/63)*			
2156.	1351	*Thysanotus sparteus*			
2157.	1354	*Thysanotus tenellus*			
2158.	1357	*Thysanotus thyrsoideus*			
2159.	1358	*Thysanotus triandrus*			
2160.	25203	*Tiliqua occipitalis (Western Bluetongue)*			
2161.	25519	*Tiliqua rugosa*			
2162.	25204	*Tiliqua rugosa subsp. aspera*			
2163.	25207	*Tiliqua rugosa subsp. rugosa*			
2164.	45838	*Tilletia ehrhartae*			
2165.		*Tinytrema yarra*			
2166.	25549	*Todiramphus sanctus (Sacred Kingfisher)*			
2167.	24309	*Todiramphus sanctus subsp. sanctus (Sacred Kingfisher)*			
2168.		*Torquigener pleurogramma*			
2169.	19041	*Trachymene coerulea subsp. coerulea*			
2170.	6280	*Trachymene pilosa (Native Parsnip)*			
2171.	31694	*Tradescantia fluminensis*	Y		Y
2172.		*Tremella mesenterica*			
2173.	17684	*Tremulina tremula*			
2174.	11112	*Tribolium uniolae*	Y		
2175.	1481	*Tribonanthes australis (Southern Tiurndin)*			
2176.	1482	*Tribonanthes brachypetala (Nodding Tiurndin)*			
2177.	1483	*Tribonanthes longipetala (Branching Tiurndin)*			
2178.	8798	*Tribonanthes uniflora (Woolly Tiurndin)*			
2179.	8799	*Tribonanthes variabilis (Hairy-stigma Tiurndin)*			
2180.	1485	*Tribonanthes violacea (Violet Tiurndin)*			
2181.	48141	*Tribonyx ventralis (Black-tailed Native-hen)*			
2182.	4383	*Tribulus terrestris (Caltrop)*	Y		
2183.	39094	*Trichia affinis*			
2184.	39095	*Trichia botrytis*			
2185.	39096	*Trichia contorta*			
2186.	39097	*Trichia decipiens*			
2187.	39099	*Trichia munda*			
2188.	39100	*Trichia persimilis*			
2189.	39101	*Trichia varia*			
2190.	39102	*Trichia verrucosa*			
2191.	8251	*Trichocline spathulata (Native Gerbera)*			
2192.	25723	*Trichoglossus haematodus (Rainbow Lorikeet)*			
2193.	24755	*Trichoglossus haematodus subsp. moluccanus (Rainbow Lorikeet)*	Y		
2194.	25521	*Trichosurus vulpecula (Common Brushtail Possum)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
2195.	24158	*Trichosurus vulpecula subsp. vulpecula (Common Brushtail Possum)*			
2196.	1361	*Tricoryne elatior (Yellow Autumn Lily)*			
2197.	1362	*Tricoryne humilis*			
2198.	1363	*Tricoryne tenella*			
2199.	1038	*Tricostularia neesii*			
2200.		*Trifolium ?campestre*			Y
2201.		*Trifolium ?campestre/dubium*			Y
2202.	4289	*Trifolium angustifolium (Narrowleaf Clover)*	Y		
2203.	17145	*Trifolium angustifolium var. angustifolium*	Y		
2204.	4291	*Trifolium arvense (Hare's Foot Clover)*	Y		
2205.	17542	*Trifolium arvense var. arvense*	Y		
2206.	4292	*Trifolium campestre (Hop Clover)*	Y		
2207.	17763	*Trifolium campestre var. campestre (Hop Clover)*	Y		
2208.		*Trifolium campestre/dubium*			
2209.	4295	*Trifolium dubium (Suckling Clover)*	Y		
2210.	4297	*Trifolium glomeratum (Cluster Clover)*	Y		
2211.	4298	*Trifolium hirtum (Rose Clover)*	Y		
2212.	14738	*Trifolium resupinatum var. resupinatum*	Y		
2213.	4309	*Trifolium scabrum (Rough Clover)*	Y		
2214.		*Trifolium sp.*			
2215.	4314	*Trifolium suffocatum (Suffocated Clover)*	Y		
2216.	15509	*Trifolium tomentosum var. tomentosum*	Y		
2217.	33676	*Triglochin calcitrapa*			
2218.	146	*Triglochin minutissima*			
2219.	147	*Triglochin mucronata*			
2220.	148	*Triglochin muelleri*			
2221.	18587	*Triglochin nana*			
2222.		*Triglochin sp. scps*			
2223.		*Triglochin sp.Brixton 04 (possibly T. mullerii)*			Y
2224.	150	*Triglochin stowardii*			
2225.	151	*Triglochin striata*			
2226.	4737	*Tripterococcus brunonis (Winged Stackhousia)*			
2227.	1139	*Trithuria bibracteata*			
2228.	1141	*Trithuria submersa*			
2229.	38401	*Tritonia gladiolaris (Lined Tritonia)*	Y		
2230.	4360	*Tropaeolum majus (Garden Nasturtium)*	Y		
2231.		*Tubaria rufofulva*			
2232.	39103	*Tubifera ferruginosa*			
2233.	48147	*Turnix varius (Painted Button-quail)*			
2234.	24069	*Tursiops truncatus (Bottlenose Dolphin)*			
2235.	98	*Typha domingensis (Bulrush, Djandjid)*			
2236.	99	*Typha orientalis (Bulrush, Cumbungi)*			
2237.	24852	*Tyto alba subsp. delicatula (Barn Owl)*			
2238.	35260	*Ulva compressa*			
2239.	24983	*Underwoodisaurus milii (Barking Gecko)*			
2240.		*Urocampus carinirostris*			
2241.		*Urochilus sanguineus*			
2242.		*Urodacus novaehollandiae*			
2243.	8254	*Urospermum picroides (False Hawkbit)*	Y		
2244.	8255	*Ursinia anthemoides (Ursinia)*	Y		
2245.	38388	*Ursinia anthemoides subsp. anthemoides*	Y		
2246.	12493	*Utricularia gibba*			
2247.	7138	*Utricularia inaequalis*			
2248.	7145	*Utricularia menziesii (Redcoats)*			
2249.	7148	*Utricularia multifida*			
2250.	7153	*Utricularia tenella*			
2251.	7157	*Utricularia violacea (Violet Bladderwort)*			
2252.	33537	*Vallisneria australis*	Y		
2253.	25577	*Vanellus miles (Masked Lapwing)*			
2254.	24386	*Vanellus tricolor (Banded Lapwing)*			
2255.	25218	*Varanus gouldii (Bungarra or Sand Monitor)*			
2256.	25225	*Varanus rosenbergi (Heath Monitor)*			
2257.	25526	*Varanus tristis (Racehorse Monitor)*			
2258.	7665	*Velleia trinervis*			
2259.		*Venator immansueta*			
2260.		*Venatrix pullastra*			
2261.	7108	*Veronica arvensis (Wall Speedwell)*	Y		
2262.	6070	*Verticordia acerosa*			
2263.	15431	*Verticordia acerosa var. acerosa*			
2264.	12388	*Verticordia acerosa var. preissii*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
2265.	6076	*Verticordia densiflora (Compacted Featherflower)*			
2266.	15432	*Verticordia densiflora var. densiflora*			
2267.	6077	*Verticordia drummondii (Drummond's Featherflower)*			
2268.	6088	*Verticordia huegelii (Variegated Featherflower)*			
2269.	15433	*Verticordia huegelii var. huegelii*			
2270.	15434	*Verticordia insignis subsp. insignis*			
2271.	6107	*Verticordia pennigera*			
2272.	12449	*Verticordia plumosa var. brachyphylla*			
2273.	24206	*Vespadelus regulus (Southern Forest Bat)*			
2274.	4319	*Vicia benghalensis (Purple Vetch)*	Y		
2275.	4320	*Vicia hirsuta (Hairy Vetch)*	Y		
2276.	4322	*Vicia sativa (Common Vetch)*	Y		
2277.	17285	*Vicia sativa subsp. cordata*	Y		
2278.	11474	*Vicia sativa subsp. nigra*	Y		
2279.	12070	*Vicia sativa subsp. sativa*	Y		
2280.	29491	*Vicia tetrasperma*	Y		Y
2281.	4325	*Viminaria juncea (Swishbush, Koweda)*			
2282.	24040	*Vulpes vulpes (Red Fox)*	Y		
2283.	722	*Vulpia bromoides (Squirrel Tail Fescue)*	Y		
2284.	724	*Vulpia myuros (Rat's Tail Fescue)*	Y		
2285.	12052	*Vulpia myuros forma megalura*	Y		
2286.		*Vulpia sp.*			
2287.		*Wahlenbergia ?capensis*			Y
2288.		*Wahlenbergia ?preissii*			Y
2289.	7384	*Wahlenbergia capensis (Cape Bluebell)*	Y		
2290.	7389	*Wahlenbergia preissii*			
2291.		*Wahlenbergia sp.*			
2292.	8282	*Waitzia suaveolens (Fragrant Waitzia)*			
2293.	13103	*Watsonia borbonica*	Y		
2294.	1566	*Watsonia marginata*	Y		
2295.	1567	*Watsonia meriana (Bulbil Watsonia)*	Y		
2296.	18108	*Watsonia meriana var. bulbillifera*	Y		
2297.	18118	*Watsonia meriana var. meriana*	Y		
2298.	1569	*Watsonia versfeldii*	Y		
2299.	39104	*Willkommlangea reticulata*			
2300.	6658	*Wilsonia backhousei (Narrow-leaf Wilsonia)*			
2301.	1394	*Wurmbea dioica (Early Nancy)*			
2302.		*Wurmbea dioica subsp. aff. alba (gjk 12803)*			
2303.	12072	*Wurmbea dioica subsp. alba*			
2304.	8287	*Xanthium spinosum (Bathurst Burr, Common Cockleburr, Spiny Cockleburr, Spiny Clotburr)*	Y		
2305.	1251	*Xanthorrhoea brunonis*			
2306.	14544	*Xanthorrhoea brunonis subsp. brunonis*			
2307.	14545	*Xanthorrhoea brunonis subsp. semibarbata*			
2308.	1256	*Xanthorrhoea preissii (Grass tree, Palga)*			
2309.		*Xanthorrhoea sp.*			
2310.	6289	*Xanthosia huegelii*			
2311.	2331	*Xylomelum occidentale (Woody Pear, Djandin)*			
2312.		*Zachria flavicoma*			
2313.	7113	*Zaluzianskya divaricata (Spreading Night Phlox)*	Y		
2314.	1049	*Zantedeschia aethiopica (Arum Lily)*	Y		
2315.		*Zebraplatys fractivittata*			
2316.	25765	*Zosterops lateralis (Grey-breasted White-eye, Silvereye)*			

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 wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

APPENDIX 3

Protected Matters Search Tool Report

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

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

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 07/11/19 17:56:11

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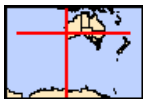
Coordinates
Buffer: 5.0Km



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:	2
Listed Threatened Species:	26
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	17
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:	None
Regional Forest Agreements:	None
Invasive Species:	40
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Forrestdale and thomsons lakes	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
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 likely to 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	Roosting 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
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe	Endangered	Species or species

Name	Status	Type of Presence
[77037]		habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat may occur within area
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat known to occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat known to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat known to occur within area
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat known to occur within area
Eremophila glabra subsp. chlorella [84927]	Endangered	Species or species habitat may occur within area
Grevillea curviloba subsp. incurva Narrow curved-leaf Grevillea [64909]	Endangered	Species or species habitat may occur within area
Lepidosperma rostratum Beaked Lepidosperma [14152]	Endangered	Species or species habitat likely to occur within area
Macarthuria keigheryi Keighery's Macarthuria [64930]	Endangered	Species or species habitat likely to occur within area
Synaphea sp. Fairbridge Farm (D. Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area
Thelymitra dedmaniarum Cinnamon Sun Orchid [65105]	Endangered	Species or species habitat may 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		

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

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

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

Name
Commonwealth Land -

Listed Marine Species [Resource Information]

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

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species

Name	Threatened	Type of Presence
		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 likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to 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 habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	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

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		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		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
Funambulus pennantii Northern Palm Squirrel, Five-striped Palm Squirrel [129]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		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
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to 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
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		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

Name	Status	Type of Presence
		within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Nationally Important Wetlands [Resource Information]

Name	State
Gibbs Road Swamp System	WA

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

Environmentally Sensitive

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact Us page.

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APPENDIX 4

TEC/PEC Database Search

OCC_UNIQUE	COM_ID	COM_NAME	STATE_CATG	COMM_CATG	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID	ORIG_FID
652	SCP10a	Shrublands on dry clay flats (floristic community type 10a as originally described in Gibson et al. (1994))	Endangered	Critically Endangered	3	NICHOLSON01	gosn11	500	No	1084	871
656	SCP08	Herb rich shrublands in clay pans (floristic community type 8 as originally described in Gibson et al. (1994))	Vulnerable	Critically Endangered	1	NICHOLSON02		500	No	1083	870
657	SCP08	Herb rich shrublands in clay pans (floristic community type 8 as originally described in Gibson et al. (1994))	Vulnerable	Critically Endangered	3	GOSN10	PM08	500	No	1222	981
3780	Wooded waterbird wetlands	Wooded wetlands which support colonial waterbird nesting areas	Priority 2		1	Booragoon		2000	No	102648	3015
3185	SCP21c	Low lying Banksia attenuata woodlands or shrublands	Priority 3	Endangered	1	BAS31		200	No	0	524
3186	SCP21c	Low lying Banksia attenuata woodlands or shrublands	Priority 3	Endangered	1	BAS32		200	No	0	525
4999	SCP21c	Low lying Banksia attenuata woodlands or shrublands	Priority 3	Endangered	1	jand05		500	No	0	987
2967	SCP22	Banksia ilicifolia woodlands	Priority 3	Endangered	1	BIW1		200	No	0	538
2980	SCP22	Banksia ilicifolia woodlands	Priority 3	Endangered	1	BIW14		200	No	0	543
2991	SCP22	Banksia ilicifolia woodlands	Priority 3	Endangered	1	BIW25		200	No	0	549
4998	SCP22	Banksia ilicifolia woodlands	Priority 3	Endangered	1	jand03		500	No	0	986
110804	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05086		200	No	107803	20086
110806	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05088		200	No	107805	20088
110816	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05098		200	No	107815	20098
110818	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05100		200	No	107817	20100
110822	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05104		200	No	107821	20104
110823	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05105		200	No	107822	20105
110824	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05106		200	No	107823	20106

OCC_UNIQUE	COM_ID	COM_NAME	STATE_CATG	COMM_CATG	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID	ORIG_FID
110825	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05107		200	No	107824	20107
110826	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05108		200	No	107825	20108
110827	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05109		200	No	107826	20109
110830	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05112		200	No	107829	20111
110831	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05113		200	No	107830	20112
110832	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05114		200	No	107831	20113
110833	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05115		200	No	107832	20114
110846	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05128		200	No	107845	20127
110849	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05131		200	No	107848	20130
110851	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05133		200	No	107850	20132
110852	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05134		200	No	107851	20133
110853	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05135		200	No	107852	20134
110854	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05136		200	No	107853	20135
110855	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05137		200	No	107854	20136
110856	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05138		200	No	107855	20137
110857	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05139		200	No	107856	20138
110864	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05146		200	No	107863	20145
110865	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05147		200	No	107864	20146
110866	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05148		200	No	107865	20147

OCC_UNIQUE	COM_ID	COM_NAME	STATE_CATG	COMM_CATG	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID	ORIG_FID
110869	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05151		200	No	107868	20150
110870	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05152		200	No	107869	20151
110875	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05157		200	No	107874	20156
110876	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05158		200	No	107875	20157
110877	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05159		200	No	107876	20158
110878	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05160		200	No	107877	20159
110879	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05161		200	No	107878	20160
110882	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05164		200	No	107881	20163
110884	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05166		200	No	107883	20165
110885	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05167		200	No	107884	20166
110892	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05174		200	No	107891	20173
110893	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05175		200	No	107892	20174
110896	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05178		200	No	107895	20177
110945	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05227		200	No	107944	20226
110946	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05228		200	No	107945	20227
110947	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05229		200	No	107946	20228
110949	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05231		200	No	107948	20230
110950	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05232		200	No	107949	20231
110953	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05235		200	No	107952	20234

OCC_UNIQUE	COM_ID	COM_NAME	STATE_CATG	COMM_CATG	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID	ORIG_FID
110959	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05241		200	No	107958	20240
110966	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05248		200	No	107965	20247
110968	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05250		200	No	107967	20249
110969	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05251		200	No	107968	20250
110970	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05252		200	No	107969	20251
110971	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05253		200	No	107970	20252
110972	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05254		200	No	107971	20253
110973	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05255		200	No	107972	20254
110974	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05256		200	No	107973	20255
110975	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05257		200	No	107974	20256
110976	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05258		200	No	107975	20257
110977	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05259		200	No	107976	20258
110978	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05260		200	No	107977	20259
110979	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05261		200	No	107978	20260
110988	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05270		200	No	107987	20269
110989	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05271		200	No	107988	20270
110990	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05272		200	No	107989	20271
110991	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05273		200	No	107990	20272
110992	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05274		200	No	107991	20273

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110993	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05275		200	No	107992	20274
110994	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05276		200	No	107993	20275
110995	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05277		200	No	107994	20276
110996	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05278		200	No	107995	20277
110997	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05279		200	No	107996	20278
110998	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05280		200	No	107997	20279
110999	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05281		200	No	107998	20280
111000	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05282		200	No	107999	20281
111001	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05283		200	No	108000	20282
111002	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05284		200	No	108001	20283
111003	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05285		200	No	108002	20284
111004	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05286		200	No	108003	20285
111005	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05287		200	No	108004	20286
111006	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05288		200	No	108005	20287
111007	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05289		200	No	108006	20288
111008	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05290		200	No	108007	20289
111009	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05291		200	No	108008	20290
111010	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05292		200	No	108009	20291
111011	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05293		200	No	108010	20292

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111012	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05294		200	No	108011	20293
111013	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05295		200	No	108012	20294
111014	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05296		200	No	108013	20295
111015	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05297		200	No	108014	20296
111016	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05298		200	No	108015	20297
111017	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05299		200	No	108016	20298
111018	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05300		200	No	108017	20299
111019	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05301		200	No	108018	20300
111021	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05303		200	No	108020	20302
111022	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05304		200	No	108021	20303
111023	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05305		200	No	108022	20304
111024	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05306		200	No	108023	20305
111025	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05307		200	No	108024	20306
111026	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05308		200	No	108025	20307
111027	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05309		200	No	108026	20308
111028	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05310		200	No	108027	20309
111029	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05311		200	No	108028	20310
111030	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05312		200	No	108029	20311
111031	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05313		200	No	108030	20312

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111032	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05314		200	No	108031	20313
111033	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05315		200	No	108032	20314
111034	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05316		200	No	108033	20315
111035	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05317		200	No	108034	20316
111036	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05318		200	No	108035	20317
111037	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05319		200	No	108036	20318
111038	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05320		200	No	108037	20319
111039	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05321		200	No	108038	20320
111040	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05322		200	No	108039	20321
111041	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05323		200	No	108040	20322
111047	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05329		200	No	108046	20328
111048	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05330		200	No	108047	20329
111049	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05331		200	No	108048	20330
111050	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05332		200	No	108049	20331
111051	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05333		200	No	108050	20332
111052	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05334		200	No	108051	20333
111053	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05335		200	No	108052	20334
111054	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05336		200	No	108053	20335
111055	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05337		200	No	108054	20336

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111056	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05338		200	No	108055	20337
111057	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05339		200	No	108056	20338
111058	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05340		200	No	108057	20339
111059	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05341		200	No	108058	20340
111060	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05342		200	No	108059	20341
111061	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05343		200	No	108060	20342
111062	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05344		200	No	108061	20343
111063	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05345		200	No	108062	20344
111064	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05346		200	No	108063	20345
111065	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05347		200	No	108064	20346
111066	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05348		200	No	108065	20347
111067	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05349		200	No	108066	20348
111068	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05350		200	No	108067	20349
111069	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05351		200	No	108068	20350
111070	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05352		200	No	108069	20351
111071	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05353		200	No	108070	20352
111072	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05354		200	No	108071	20353
111073	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05355		200	No	108072	20354
111074	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05356		200	No	108073	20355

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111075	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05357		200	No	108074	20356
111076	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05358		200	No	108075	20357
111077	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05359		200	No	108076	20358
111078	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05360		200	No	108077	20359
111079	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05361		200	No	108078	20360
111080	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05362		200	No	108079	20361
111081	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05363		200	No	108080	20362
111082	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05364		200	No	108081	20363
111083	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05365		200	No	108082	20364
111084	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05366		200	No	108083	20365
111085	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05367		200	No	108084	20366
111086	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05368		200	No	108085	20367
111087	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05369		200	No	108086	20368
111088	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05370		200	No	108087	20369
111089	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05371		200	No	108088	20370
111090	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05372		200	No	108089	20371
111091	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05373		200	No	108090	20372
111092	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05374		200	No	108091	20373
111103	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05385		200	No	108102	20384

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111104	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05386		200	No	108103	20385
111105	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05387		200	No	108104	20386
111106	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05388		200	No	108105	20387
111107	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05389		200	No	108106	20388
111108	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05390		200	No	108107	20389
111109	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05391		200	No	108108	20390
111110	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05392		200	No	108109	20391
111111	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05393		200	No	108110	20392
111112	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05394		200	No	108111	20393
111113	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05395		200	No	108112	20394
111114	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05396		200	No	108113	20395
111115	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05397		200	No	108114	20396
111116	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05398		200	No	108115	20397
111119	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05401		200	No	108118	20400
111120	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05402		200	No	108119	20401
111125	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05407		200	No	108124	20406
111126	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05408		200	No	108125	20407
111127	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05409		200	No	108126	20408
111128	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05410		200	No	108127	20409

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111129	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05411		200	No	108128	20410
111138	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05420		200	No	108137	20419
111139	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05421		200	No	108138	20420
111152	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05434		200	No	108151	20433
111153	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05435		200	No	108152	20434
111154	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05436		200	No	108153	20435
111155	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05437		200	No	108154	20436
111156	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05438		200	No	108155	20437
111157	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05439		200	No	108156	20438
111158	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05440		200	No	108157	20439
111159	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05441		200	No	108158	20440
111160	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05442		200	No	108159	20441
111161	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05443		200	No	108160	20442
111162	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05444		200	No	108161	20443
111163	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05445		200	No	108162	20444
111164	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05446		200	No	108163	20445
111165	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05447		200	No	108164	20446
111166	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05448		200	No	108165	20447
111167	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05449		200	No	108166	20448

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111168	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05450		200	No	108167	20449
111169	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05451		200	No	108168	20450
111170	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05452		200	No	108169	20451
111171	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05453		200	No	108170	20452
111172	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05454		200	No	108171	20453
111173	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05455		200	No	108172	20454
111174	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05456		200	No	108173	20455
111175	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05457		200	No	108174	20456
111177	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05459		200	No	108176	20458
111178	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05460		200	No	108177	20459
111179	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05461		200	No	108178	20460
111180	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05462		200	No	108179	20461
111181	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05463		200	No	108180	20462
111182	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05464		200	No	108181	20463
111183	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05465		200	No	108182	20464
111184	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05466		200	No	108183	20465
111185	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05467		200	No	108184	20466
111186	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05468		200	No	108185	20467
111187	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05469		200	No	108186	20468

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111188	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05470		200	No	108187	20469
111189	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05471		200	No	108188	20470
111190	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05472		200	No	108189	20471
111193	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05475		200	No	108192	20474
111194	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05476		200	No	108193	20475
111195	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05477		200	No	108194	20476
111196	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05478		200	No	108195	20477
111197	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05479		200	No	108196	20478
111198	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05480		200	No	108197	20479
111199	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05481		200	No	108198	20480
111200	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05482		200	No	108199	20481
111201	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05483		200	No	108200	20482
111202	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05484		200	No	108201	20483
111203	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05485		200	No	108202	20484
111204	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05486		200	No	108203	20485
111205	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05487		200	No	108204	20486
111206	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05488		200	No	108205	20487
111207	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05489		200	No	108206	20488
111208	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05490		200	No	108207	20489

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111209	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05491		200	No	108208	20490
111210	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05492		200	No	108209	20491
111214	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05496		200	No	108213	20495
111219	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05501		200	No	108218	20500
111220	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05502		200	No	108219	20501
111221	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05503		200	No	108220	20502
111222	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05504		200	No	108221	20503
111223	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05505		200	No	108222	20504
111224	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05506		200	No	108223	20505
111225	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05507		200	No	108224	20506
111293	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05575		200	No	108292	20574
111314	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05596		200	No	108313	20595
111315	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05597		200	No	108314	20596
111316	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05598		200	No	108315	20597
111334	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05616		200	No	108333	20615
111335	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05617		200	No	108334	20616
111336	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05618		200	No	108335	20617
111337	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05619		200	No	108336	20618
111338	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05620		200	No	108337	20619

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111339	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05621		200	No	108338	20620
111340	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05622		200	No	108339	20621
111341	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05623		200	No	108340	20622
111342	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05624		200	No	108341	20623
111343	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05625		200	No	108342	20624
111344	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05626		200	No	108343	20625
111345	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05627		200	No	108344	20626
111346	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05628		200	No	108345	20627
111347	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05629		200	No	108346	20628
111348	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05630		200	No	108347	20629
111349	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05631		200	No	108348	20630
111350	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05632		200	No	108349	20631
111351	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05633		200	No	108350	20632
111352	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05634		200	No	108351	20633
111353	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05635		200	No	108352	20634
111354	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05636		200	No	108353	20635
111355	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05637		200	No	108354	20636
111356	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05638		200	No	108355	20637
111357	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05639		200	No	108356	20638

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111358	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05640		200	No	108357	20639
111359	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05641		200	No	108358	20640
111360	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05642		200	No	108359	20641
111361	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05643		200	No	108360	20642
111362	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05644		200	No	108361	20643
111363	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05645		200	No	108362	20644
111364	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05646		200	No	108363	20645
111365	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05647		200	No	108364	20646
111366	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05648		200	No	108365	20647
111367	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05649		200	No	108366	20648
111368	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05650		200	No	108367	20649
111369	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05651		200	No	108368	20650
111370	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05652		200	No	108369	20651
111371	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05653		200	No	108370	20652
111372	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05654		200	No	108371	20653
111373	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05655		200	No	108372	20654
111374	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05656		200	No	108373	20655
111375	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05657		200	No	108374	20656
111376	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05658		200	No	108375	20657

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111377	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05659		200	No	108376	20658
111378	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05660		200	No	108377	20659
111379	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05661		200	No	108378	20660
111380	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05662		200	No	108379	20661
111381	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05663		200	No	108380	20662
111382	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05664		200	No	108381	20663
111383	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05665		200	No	108382	20664
111384	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05666		200	No	108383	20665
111385	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05667		200	No	108384	20666
111386	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05668		200	No	108385	20667
111387	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05669		200	No	108386	20668
111388	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05670		200	No	108387	20669
111389	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05671		200	No	108388	20670
111390	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05672		200	No	108389	20671
111391	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05673		200	No	108390	20672
111392	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05674		200	No	108391	20673
111393	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05675		200	No	108392	20674
111394	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05676		200	No	108393	20675
111395	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05677		200	No	108394	20676

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111396	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05678		200	No	108395	20677
111397	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05679		200	No	108396	20678
111398	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05680		200	No	108397	20679
111399	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05681		200	No	108398	20680
111400	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05682		200	No	108399	20681
111401	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05683		200	No	108400	20682
111402	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05684		200	No	108401	20683
111403	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05685		200	No	108402	20684
111406	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05688		200	No	108405	20687
111407	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05689		200	No	108406	20688
111408	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05690		200	No	108407	20689
111409	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05691		200	No	108408	20690
111410	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05692		200	No	108409	20691
111411	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05693		200	No	108410	20692
111412	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05694		200	No	108411	20693
111413	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05695		200	No	108412	20694
111414	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05696		200	No	108413	20695
111415	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05697		200	No	108414	20696
111416	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05698		200	No	108415	20697

OCC_UNIQUE	COM_ID	COM_NAME	STATE_CATG	COMM_CATG	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID	ORIG_FID
111417	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05699		200	No	108416	20698
111418	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05700		200	No	108417	20699
111419	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05701		200	No	108418	20700
111420	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05702		200	No	108419	20701
111421	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05703		200	No	108420	20702
111422	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05704		200	No	108421	20703
111423	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05705		200	No	108422	20704
111424	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05706		200	No	108423	20705
111425	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05707		200	No	108424	20706
111426	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05708		200	No	108425	20707
111427	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05709		200	No	108426	20708
111520	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld05802		200	No	108519	20801
111876	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06158		200	No	108875	21157
111878	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06160		200	No	108877	21159
112226	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06508		200	No	109225	21507
112227	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06509		200	No	109226	21508
112228	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06510		200	No	109227	21509
112310	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06592		200	No	109309	21591
112444	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06726		200	No	109443	21725

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112456	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06738		200	No	109455	21737
112457	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06739		200	No	109456	21738
112458	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06740		200	No	109457	21739
112459	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06741		200	No	109458	21740
112460	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06742		200	No	109459	21741
112461	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06743		200	No	109460	21742
112462	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06744		200	No	109461	21743
112463	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06745		200	No	109462	21744
112464	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06746		200	No	109463	21745
112465	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06747		200	No	109464	21746
112466	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06748		200	No	109465	21747
112467	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06749		200	No	109466	21748
112468	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06750		200	No	109467	21749
112469	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06751		200	No	109468	21750
112470	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06752		200	No	109469	21751
112473	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06755		200	No	109472	21754
112474	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06756		200	No	109473	21755
112475	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06757		200	No	109474	21756
112476	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06758		200	No	109475	21757

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112477	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06759		200	No	109476	21758
112478	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06760		200	No	109477	21759
112479	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06761		200	No	109478	21760
112480	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06762		200	No	109479	21761
112501	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06783		200	No	109500	21782
112502	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06784		200	No	109501	21783
112503	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06785		200	No	109502	21784
112504	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06786		200	No	109503	21785
112505	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06787		200	No	109504	21786
112506	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06788		200	No	109505	21787
112507	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06789		200	No	109506	21788
112508	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06790		200	No	109507	21789
112509	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06791		200	No	109508	21790
112510	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06792		200	No	109509	21791
112511	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06793		200	No	109510	21792
112512	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06794		200	No	109511	21793
112539	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06821		200	No	109538	21820
112559	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06841		200	No	109558	21840
112609	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06891		200	No	109608	21890

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112610	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06892		200	No	109609	21891
112611	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06893		200	No	109610	21892
112612	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06894		200	No	109611	21893
112613	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06895		200	No	109612	21894
112622	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06904		200	No	109621	21903
112623	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06905		200	No	109622	21904
112624	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06906		200	No	109623	21905
112625	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06907		200	No	109624	21906
112626	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06908		200	No	109625	21907
112627	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06909		200	No	109626	21908
112628	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06910		200	No	109627	21909
112629	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06911		200	No	109628	21910
112661	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06943		200	No	109660	21942
112662	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06944		200	No	109661	21943
112663	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06945		200	No	109662	21944
112664	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06946		200	No	109663	21945
112671	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06953		200	No	109670	21952
112676	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06958		200	No	109675	21957
112677	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06959		200	No	109676	21958

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112678	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06960		200	No	109677	21959
112679	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06961		200	No	109678	21960
112680	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06962		200	No	109679	21961
112681	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06963		200	No	109680	21962
112682	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06964		200	No	109681	21963
112683	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06965		200	No	109682	21964
112684	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06966		200	No	109683	21965
112685	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06967		200	No	109684	21966
112686	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06968		200	No	109685	21967
112687	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06969		200	No	109686	21968
112688	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06970		200	No	109687	21969
112689	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06971		200	No	109688	21970
112690	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06972		200	No	109689	21971
112691	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06973		200	No	109690	21972
112692	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06974		200	No	109691	21973
112693	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06975		200	No	109692	21974
112694	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06976		200	No	109693	21975
112695	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06977		200	No	109694	21976
112696	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06978		200	No	109695	21977

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112697	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06979		200	No	109696	21978
112698	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06980		200	No	109697	21979
112699	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06981		200	No	109698	21980
112700	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06982		200	No	109699	21981
112701	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06983		200	No	109700	21982
112702	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06984		200	No	109701	21983
112703	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06985		200	No	109702	21984
112704	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06986		200	No	109703	21985
112705	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06987		200	No	109704	21986
112706	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06988		200	No	109705	21987
112707	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06989		200	No	109706	21988
112708	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06990		200	No	109707	21989
112709	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06991		200	No	109708	21990
112710	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06992		200	No	109709	21991
112711	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06993		200	No	109710	21992
112712	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06994		200	No	109711	21993
112716	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06998		200	No	109715	21997
112717	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld06999		200	No	109716	21998
112718	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07000		200	No	109717	21999

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112719	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07001		200	No	109718	22000
112720	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07002		200	No	109719	22001
112721	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07003		200	No	109720	22002
112729	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07011		200	No	109728	22010
112730	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07012		200	No	109729	22011
112731	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07013		200	No	109730	22012
112732	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07014		200	No	109731	22013
112739	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07021		200	No	109738	22020
112771	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07053		200	No	109770	22052
112772	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07054		200	No	109771	22053
112773	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07055		200	No	109772	22054
112774	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07056		200	No	109773	22055
112775	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07057		200	No	109774	22056
112776	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07058		200	No	109775	22057
112777	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07059		200	No	109776	22058
112778	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07060		200	No	109777	22059
112825	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07107		200	No	109824	22106
112827	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07109		200	No	109826	22108
112828	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07110		200	No	109827	22109

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112829	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07111		200	No	109828	22110
112830	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07112		200	No	109829	22111
112831	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07113		200	No	109830	22112
112837	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07119		200	No	109836	22118
112838	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07120		200	No	109837	22119
112839	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07121		200	No	109838	22120
112840	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07122		200	No	109839	22121
112842	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07124		200	No	109841	22123
112919	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07201		200	No	109918	22200
112920	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07202		200	No	109919	22201
112921	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07203		200	No	109920	22202
112922	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07204		200	No	109921	22203
112923	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07205		200	No	109922	22204
112932	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07214		200	No	109931	22213
112988	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07270		200	No	109987	22269
113009	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07291		200	No	110008	22290
113010	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07292		200	No	110009	22291
113011	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07293		200	No	110010	22292
113012	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07294		200	No	110011	22293

OCC_UNIQUE	COM_ID	COM_NAME	STATE_CATG	COMM_CATG	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID	ORIG_FID
113013	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07295		200	No	110012	22294
113014	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07296		200	No	110013	22295
113031	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07313		200	No	110030	22311
113049	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07331		200	No	110048	22328
113057	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07339		200	No	110056	22336
113058	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07340		200	No	110057	22337
113059	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07341		200	No	110058	22338
113125	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07407		200	No	110124	22404
113126	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07408		200	No	110125	22405
113127	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07409		200	No	110126	22406
113128	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07410		200	No	110127	22407
113129	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07411		200	No	110128	22408
113130	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07412		200	No	110129	22409
113131	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07413		200	No	110130	22410
113132	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07414		200	No	110131	22411
113133	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07415		200	No	110132	22412
113178	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07460		200	No	110177	22457
113187	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07469		200	No	110186	22466
113188	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07470		200	No	110187	22467

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113189	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07471		200	No	110188	22468
113200	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07482		200	No	110199	22479
113201	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07483		200	No	110200	22480
113202	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07484		200	No	110201	22481
113203	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07485		200	No	110202	22482
113204	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld07486		200	No	110203	22483
120985	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15267		200	No	117984	30259
120986	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15268		200	No	117985	30260
120987	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15269		200	No	117986	30261
121003	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15285		200	No	118002	30277
121004	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15286		200	No	118003	30278
121015	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15297		200	No	118014	30289
121016	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15298		200	No	118015	30290
121020	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15302		200	No	118019	30294
121024	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15306		200	No	118023	30298
121025	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15307		200	No	118024	30299
121026	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15308		200	No	118025	30300
121027	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15309		200	No	118026	30301
121028	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15310		200	No	118027	30302

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121043	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15325		200	No	118042	30317
121044	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15326		200	No	118043	30318
121045	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15327		200	No	118044	30319
121046	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15328		200	No	118045	30320
121047	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15329		200	No	118046	30321
121048	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15330		200	No	118047	30322
121049	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15331		200	No	118048	30323
121050	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15332		200	No	118049	30324
121051	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15333		200	No	118050	30325
121052	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15334		200	No	118051	30326
121060	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15342		200	No	118059	30334
121061	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15343		200	No	118060	30335
121062	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15344		200	No	118061	30336
121063	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15345		200	No	118062	30337
121064	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15346		200	No	118063	30338
121065	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15347		200	No	118064	30339
121066	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15348		200	No	118065	30340
121067	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15349		200	No	118066	30341
121068	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15350		200	No	118067	30342

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121069	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15351		200	No	118068	30343
121070	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15352		200	No	118069	30344
121071	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15353		200	No	118070	30345
121072	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15354		200	No	118071	30346
121073	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15355		200	No	118072	30347
121074	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15356		200	No	118073	30348
121075	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15357		200	No	118074	30349
121076	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15358		200	No	118075	30350
121077	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15359		200	No	118076	30351
121078	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15360		200	No	118077	30352
121079	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15361		200	No	118078	30353
121080	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15362		200	No	118079	30354
121081	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15363		200	No	118080	30355
121082	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15364		200	No	118081	30356
121083	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15365		200	No	118082	30357
121084	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15366		200	No	118083	30358
121085	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15367		200	No	118084	30359
121086	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15368		200	No	118085	30360
121145	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15427		200	No	118144	30419

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121150	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15432		200	No	118149	30424
121169	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15451		200	No	118168	30443
121174	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15456		200	No	118173	30448
121175	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15457		200	No	118174	30449
121192	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15474		200	No	118191	30466
121193	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15475		200	No	118192	30467
121194	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15476		200	No	118193	30468
121195	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15477		200	No	118194	30469
121204	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15486		200	No	118203	30478
121205	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15487		200	No	118204	30479
121206	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15488		200	No	118205	30480
121207	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15489		200	No	118206	30481
121209	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15491		200	No	118208	30483
121210	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15492		200	No	118209	30484
121239	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15521		200	No	118238	30513
121242	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15524		200	No	118241	30516
121245	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15527		200	No	118244	30519
121250	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15532		200	No	118249	30524
121251	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15533		200	No	118250	30525

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121252	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15534		200	No	118251	30526
121253	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15535		200	No	118252	30527
121254	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15536		200	No	118253	30528
121255	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15537		200	No	118254	30529
121256	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15538		200	No	118255	30530
121257	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15539		200	No	118256	30531
121258	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15540		200	No	118257	30532
121259	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15541		200	No	118258	30533
121260	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15542		200	No	118259	30534
121262	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15544		200	No	118261	30536
121291	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15573		200	No	118290	30565
121292	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15574		200	No	118291	30566
121298	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15580		200	No	118297	30572
121299	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15581		200	No	118298	30573
121300	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15582		200	No	118299	30574
121310	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15592		200	No	118309	30584
121311	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15593		200	No	118310	30585
121312	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15594		200	No	118311	30586
121320	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15602		200	No	118319	30594

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121321	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15603		200	No	118320	30595
121325	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15607		200	No	118324	30599
121326	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15608		200	No	118325	30600
121338	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15620		200	No	118337	30612
121345	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15627		200	No	118344	30619
121346	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15628		200	No	118345	30620
121347	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15629		200	No	118346	30621
121348	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15630		200	No	118347	30622
121349	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15631		200	No	118348	30623
121350	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15632		200	No	118349	30624
121351	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15633		200	No	118350	30625
121352	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15634		200	No	118351	30626
121353	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15635		200	No	118352	30627
121354	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15636		200	No	118353	30628
121355	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15637		200	No	118354	30629
121356	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15638		200	No	118355	30630
121357	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15639		200	No	118356	30631
121358	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15640		200	No	118357	30632
121359	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15641		200	No	118358	30633

OCC_UNIQUE	COM_ID	COM_NAME	STATE_CATG	COMM_CATG	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID	ORIG_FID
121360	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15642		200	No	118359	30634
121361	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15643		200	No	118360	30635
121362	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15644		200	No	118361	30636
121363	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15645		200	No	118362	30637
121364	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15646		200	No	118363	30638
121365	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15647		200	No	118364	30639
121366	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15648		200	No	118365	30640
121367	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15649		200	No	118366	30641
121378	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15660		200	No	118377	30652
121379	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15661		200	No	118378	30653
121380	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15662		200	No	118379	30654
121381	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15663		200	No	118380	30655
121388	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15670		200	No	118387	30662
121389	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15671		200	No	118388	30663
121390	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15672		200	No	118389	30664
121392	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15674		200	No	118391	30666
121393	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15675		200	No	118392	30667
121394	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15676		200	No	118393	30668
121401	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15683		200	No	118400	30675

OCC_UNIQUE	COM_ID	COM_NAME	STATE_CATG	COMM_CATG	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID	ORIG_FID
121404	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15686		200	No	118403	30678
121408	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15690		200	No	118407	30682
121409	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15691		200	No	118408	30683
121544	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15826		200	No	118543	30818
121549	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15831		200	No	118548	30823
121550	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15832		200	No	118549	30824
121553	Banksia WL SCP	Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Endangered	1	BanksiaWld15835		200	No	118552	30827
5624	Coastal Saltmarsh	Subtropical and Temperate Coastal Saltmarsh	Priority 3	Vulnerable	1	OzEst68		500	No	3306	2894
5626	Coastal Saltmarsh	Subtropical and Temperate Coastal Saltmarsh	Priority 3	Vulnerable	1	OzEst70		500	No	3308	2896

APPENDIX 5

Field Observations

Location	Vegetation Description	Field Notes	Photograph
Ranford Road Bushland			
1 Environmentally Sensitive	Low Heath with *Melaleuca sp, Pericalymma ellipticum, Hypocalymma angustifolium, Phlebocarya ciliata, Dasypogon bromeliifolius* and patches of *Hypolaena exsulca*	Vegetation in Excellent Condition Evidence of a number of kangaroos on the site Not Banksia Woodland TEC	
2 Environmentally Sensitive	Low Open Woodland of *Banksia attenuata/ Banksia ilicifolia* to 4m over *Kunzea glabrescens* to 3m over *Phlebocarya ciliata/ Melaleuca sp/ Dasypogon bromeliifolius / Lyginia barbata/ Pericalymma ellipticum/ Hibbertia subvaginata*	Vegetation in Very Good Condition Abundant evidence of kangaroos such as scat Banksia Woodland TEC	
3 Environmentally Sensitive	*Hypocalymma angustifolia/ Melaleuca sp./ Dasypogon bromeliifolius / Pericalymma ellipticum/ Phlebocarya ciliata/ Lyginia barbata* with scattered *Xanthorrhoea preissii/ Melaleuca preissiana*	Vegetation in Very Good Condition Abundant evidence of kangaroos such as scat Weeds present: *Briza maxima, Hypochaeris glabra, Brassica tournefortii, Ursinia anthemoides, Lysimachia arvensis, Arctotheca calendula.* Not Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
4 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii* to 4m with scattered *Allocasuarina fraseriana* and *Banksia ilicifolia* over *Xanthorrhoea preissii/ Xanthorrhoea brunonis/ Dasypogon bromeliifolius / Lyginia barbata/ Hibbertia subvaginata/ Dasypogon bromeliifolius*	Vegetation in Very Good condition with Good condition vegetation to the north. Northern area quite weedy: *Hypochaeris glabra, Fumaria capreolata, Ursinia anthemoides, Lysimachia arvensis, Arctotheca calendula* Evidence of grazing by kangaroos, *Caladenia flava* flowering Banksia Woodland TEC	
5 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii/ Allocasuarina fraseriana* with *Adenanthos cygnorum* over sand and weeds with occasional *Lyginia barbata/ Scholtzia involucrata/ Melaleuca thymoides* and *Xanthorrhoea preissii*	Vegetation in Degraded condition Weed species: *Briza maxima, Brassica tournefortii, Lysimachia arvensis, Vulpia myuros, Lotus subbiflorus, Ehrharta longiflora* Banksia Woodland TEC	
6 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii/ Allocasuarina fraseriana/ Eucalyptus todtiana* with scattered *Dasypogon bromeliifolius / Xanthorrhoea preissii/ Lyginia barbata*	Vegetation in Degraded condition Weed species: *Geranium molle, Oxalis pes-caprae, Fumaria capreolata, Asparagus asparagoides* (Declared Weed)*, Euphorbia peplus* Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
7 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii* with scattered *Banksia ilicifolia* over *Xanthorrhoea preissii/ Xanthorrhoea brunonis/ Dasypogon bromeliifolius / Scholtzia involucrata/ Hibbertia subvaginata/ Lyginia barbata*	Vegetation in Very Good condition Banksia Woodland TEC	
8 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii* with scattered *Banksia ilicifolia* over *Xanthorrhoea preissii/ Xanthorrhoea brunonis/ Patersonia occidentalis/ Melaleuca thymoides/ Scholtzia involucrata/ Hibbertia subvaginata/Beaufortia sp*	Vegetation in Very Good condition *Thelymitra* and *Pterostylis* sp. (both with no flowers) present Banksia Woodland TEC	
9 Environmentally Sensitive	Scattered *Corymbia calophylla/ Eucalyptus todtiana* over *Kunzea glabrescens* over weeds	Vegetation in Degraded condition – potentially regrowth Weeds include: *Fumaria capreolata, Lysimachia arvensis, Euphorbia peplus, Arctotheca calendula* Not Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
10 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii/ Banksia ilicifolia/ Allocasuarina fraseriana* over *Melaleuca thymoides* over *Xanthorrhoea preissii/ Xanthorrhoea brunonis/ Dasypogon bromeliifolius / Hibbertia subvaginata*	Vegetation is in Very Good Condition Very few ephemerals *Caladenia flava* present Weed species: *Euphorbia peplus* Banksia Woodland TEC	
11 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii/ Allocasuarina fraseriana* with scattered *Eucalyptus marginata* over *Xanthorrhoea preissii/ Hibbertia subvaginata/ Lyginia barbata/ Patersonia occidentalis*	Vegetation is in Very Good Condition Evidence of Kangaroo activity Orchid: *Caladenia flava* recorded Banksia Woodland TEC	
12 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii/ Banksia ilicifolia* with scattered *Allocasuarina fraseriana* over *Xanthorrhoea preissii/ Xanthorrhoea brunonis* over weeds	Vegetation in Degraded condition Weed species: *Briza maxima, Fumaria capreolata, Arctotheca calendula, Ehrharta longiflora, Zantedeschia aethiopica* (Declared Weed) Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
13 Environmentally Sensitive	Closed shrubland of *Regelia ciliata* to 2m mixed with *Hypocalymma angustifolium/ Dasypogon bromeliifolius / Phlebocarya ciliata* with scattered *Melaleuca preissiana* over *Lyginia barbata/ Conostylis juncea* and scattered *Hibbertia subvaginata/ Adenanthos obovata.*	Vegetation in Excellent condition Weed species: *Hypochaeris glabra, Ursinia anthemoides* Not Banksia Woodland TEC	
14 Environmentally Sensitive	Open woodland of *Melaleuca preissiana* to 3-4m over *Regelia ciliata* over weeds with *Hypolaena exsulca / Patersonia occidentalis/ Hibbertia subvaginata/ Adenanthos obovata/ Dasypogon bromeliifolius / Phlebocarya ciliata*	Vegetation in Very Good condition Weed species: *Arctotheca calendula, Ursinia anthemoides, Hypochaeris glabra, Lysimachia arvensis* Not Banksia Woodland TEC	
15 Environmentally Sensitive	Shrubland of *Regelia ciliata/ Hypocalymma angustifolium* with *Adenanthos obovata/ Dasypogon bromeliifolius / Phlebocarya ciliata*	Vegetation Condition is Very Good Not Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
Accourt Road			
16 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii* over *Kunzea glabrescens* over *Xanthorrhoea preissii* over *Scholtzia involucrata*	Vegetation Condition is Good Weed species: *Arctotheca calendula, Ursinia anthemoides, Hypochaeris glabra, Briza maxima, Freesia alba × leichtlinii* Banksia Woodland TEC	
17 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii* over *Regelia ciliata* over *Scholtzia involucrata/ Patersonia occidentalis/ Hibbertia subvaginata*	Vegetation in Very Good condition Orchids present: *Caladenia flava, Pterostylis vittata* Banksia Woodland TEC	
18 Environmentally Sensitive	East side of road reserve - Shrubland of *Adenanthos cygnorum* with some *Allocasuarina humilis/ Desmocladus flexuosus/ Eremaea pauciflora/ Daviesia triflora* and scattered *Banksia attenuata*	Vegetation in Degraded condition – possibly regrowth *Orchid : Caladenia flava* recorded Not Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
19 Environmentally Sensitive	Scattered *Banksia attenuata*	Area in private property Vegetation in Completely Degraded condition Mostly planted and Woody weeds – *Acacia iteaphylla* Not Banksia Woodland TEC	
20 Environmentally Sensitive	*Eucalyptus marginata* with *Allocasuarina fraseriana* and scattered *Banksia attenuata/ Banksia menziesii* over *Xanthorrhoea preissii/ Hibbertia subvaginata/ Hibbertia hypericoides*	Vegetation in Very Good condition Maybe not enough Banksia to qualify as the Banksia Woodland TEC	
21 Environmentally Sensitive	Open woodland of *Banksia attenuata/ Banksia menziesii/ Allocasuarina fraseriana* over *Hibbertia hypericoides/ Lyginia barbata* with scattered *Allocasuarina humilis*	Vegetation is in Very Good condition *Chamelaucium uncinatum* on other side of road Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
22 Environmentally Sensitive	Planted Tuart *Eucalyptus gomphocephala* over *Adenanthos cygnorum* with *Melaleuca pentagona/ Acacia baileyana* with scattered native *Banksia attenuata* and *Daviesia physodes*	The vegetation is in Completely Degraded condition Further to the east is planted *Casuarina cunninghamii/ Kunzea glabrescens* over weeds Not Banksia Woodland TEC	
23 Environmentally Sensitive	Sparse *Banksia* with *Acacia saligna/ Adenanthos cygnorum* over *Eremaea pauciflora/ Stirlingia latifolia* with weeds	The vegetation is in Degraded condition Not Banksia Woodland TEC	
24 Environmentally Sensitive	Strip of native vegetation Scrub of *Adenanthos cygnor*um over *Regelia ciliata* The remainder is Planted Eucalypts with tall *Melaleuca pentagona*	Area in private property The vegetation close to the firebreak is in Degraded condition, the remainder is in Completely Degraded condition Not Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
25 Environmentally Sensitive	Small stand of *Melaleuca preissiana* on western side of the road and *Acacia saligna* on the eastern side	The vegetation is Completely Degraded Weeds species: *Avena fatua, Arctotheca calendula* Not Banksia Woodland TEC	
26 Environmentally Sensitive	Open woodland of *Banksia ilicifolia/ Banksia menziesii* over *Adenanthos cygnorum/ Kunzea glabrescens* over *Hypocalymma angustifolium* over *Dasypogon bromeliifolius / Phlebocarya ciliata/ Regelia ciliata*	The vegetation is in Good to Very Good condition The western side of the road is the same with the addition of *Banksia attenuata* Banksia Woodland TEC	
Johnson Road			
27 Environmentally Sensitive	Dense Shrubland of *Melaleuca preissiana* to 5m over *Adenanthos cygnorum* To the west is *Adenanthos cygnorum* over *Cenchrus setaceus*	The vegetation is in Good condition Weed species: *Asparagus asparagoides* (Declared Weed) The vegetation to the west is in Degraded condition Not Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
28 Environmentally Sensitive	Shrubland of *Leptospermum laevigatum* and *Chamelaucium uncinatum* with scattered *Banksia attenuata/ Allocasuarina fraseriana* To the north is *Chamelaucium uncinatum* over *Adenanthos cygnorum* over weeds with scattered *Banksia ilicifolia/ Banksia attenuata*	The vegetation on both sides is Completely Degraded Weed species: *Ehrharta calycina* Not Banksia Woodland TEC	
29 Environmentally Sensitive	Shrubland of *Chamelaucium uncinatum* over *Adenanthos cygnorum*	The vegetation on both sides is Completely Degraded Weed species: *Pelargonium capitatum, Lagurus ovatus Hypochaeris glabra, Avena fatua, Watsonia meriana* Not Banksia Woodland TEC	
30 Environmentally Sensitive	Open Woodland of *Banksia attenuata/ Banksia menziesii/ Banksia ilicifolia* over *Regelia ciliata / Xanthorrhoea preissii/ Xanthorrhoea brunonis* over *Dasypogon bromeliifolius / Phlebocarya ciliata* To the east is *Kunzea glabrescens* with scattered *Banksia attenuata/ Chamelaucium uncinatum* over *Scholtzia* sp.	The vegetation is in Very Good condition with the area to the east Completely Degraded To the east weed species *Cortaderia selloana* Vegetation in Jandakot Airport site is Very Good Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
31 Environmentally Sensitive	Open woodland of *Allocasuarina fraseriana/ Eucalyptus todtiana/ Banksia attenuata/ Banksia menziesii* over *Kunzea glabrescens/ Adenanthos cygnorum*	The vegetation condition is Degraded to the east and Very Good to the west Orchid: *Diuris corymbosa* present Banksia Woodland TEC	
32 Environmentally Sensitive	Shrubland of *Adenanthos cygnorum* with scattered *Allocasuarina fraseriana/ Kunzea glabrescens*	The vegetation is Completely Degraded Not Banksia Woodland TEC	
33 Environmentally Sensitive	North: *Allocasuarina fraseriana* and *Leptospermum laevigatum* South: *Eucalyptus marginata/ Allocasuarina fraseriana/ Banksia ilicifolia* over *Regelia ciliata* East: *Adenanthos cygnorum/ Kunzea glabrescens* over *Conostylis candicans*	The vegetation is all in Completely Degraded condition East weed species: *Ehrharta calycina* Not Banksia Woodland TEC	

Location	Vegetation Description	Field Notes	Photograph
34 Environmentally Sensitive	Shrubland of *Adenanthos cygnorum/ Kunzea glabrescens* over weeds with scattered *Eucalyptus todtiana/ Xanthorrhoea preissii*	The vegetation is in Completely Degraded condition Not Banksia Woodland TEC	
35 Environmentally Sensitive	North to west: *Melaleuca preissiana* over *Xanthorrhoea preissii/ Xanthorrhoea brunonis* over *Dasypogon bromeliifolius* East: *Adenanthos cygnorum/ Kunzea glabrescens/ Leptospermum laevigatum* over weeds	North to west the vegetation is in Very Good condition East is in Completely Degraded condition Not Banksia Woodland TEC	
36 Environmentally Sensitive	Open Woodland of *Banksia attenuata/ Banksia menziesii/ Eucalyptus todtiana/ Melaleuca preissiana* over *Kunzea glabrescens/ Xanthorrhoea preissii/ Hypocalymma angustifolium/ Eremaea pauciflora/ Phlebocarya ciliata*	The vegetation is in Good condition Banksia Woodland TEC	

APPENDIX 2

Groundwater Depth Map (GHD, 2014)

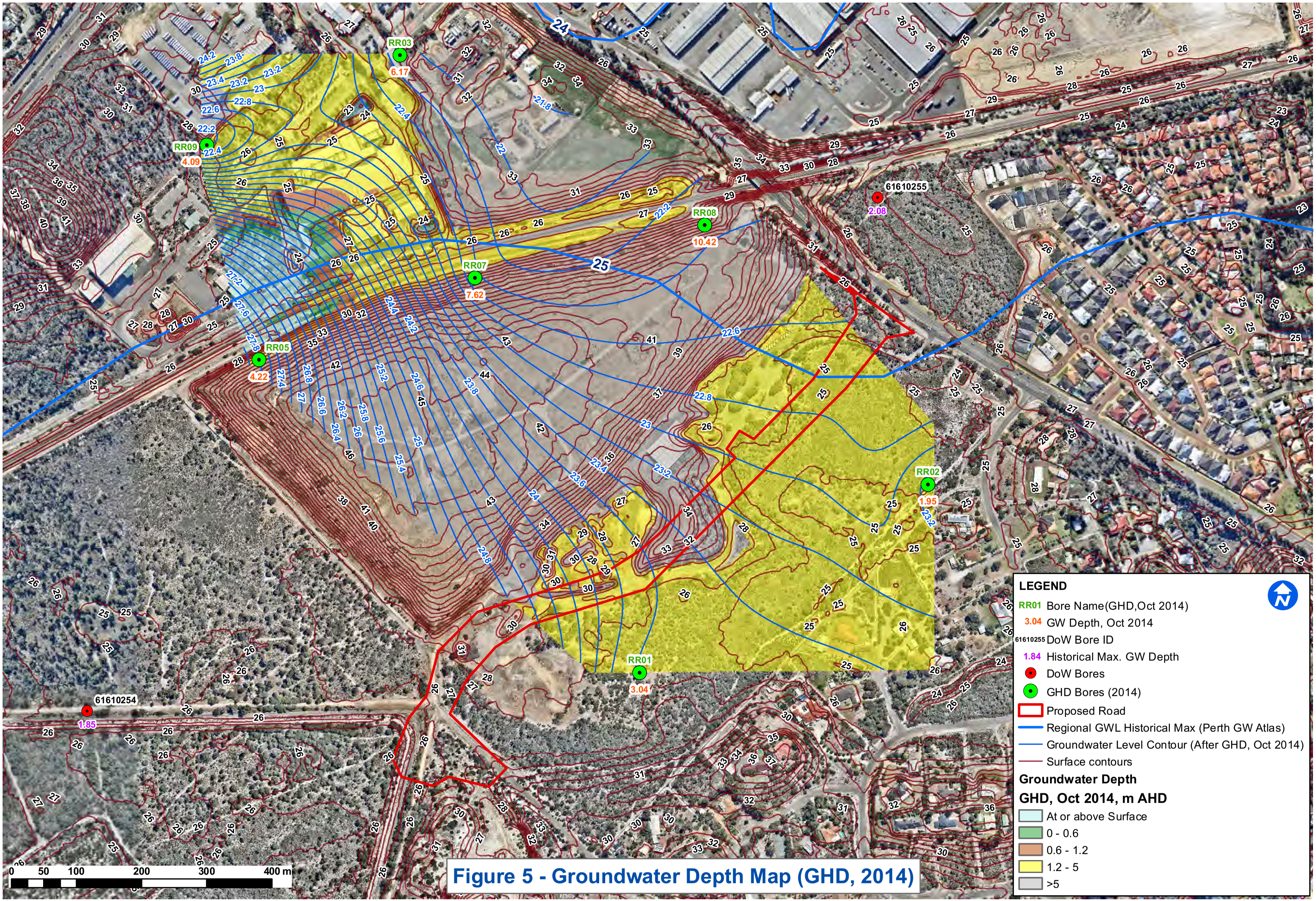
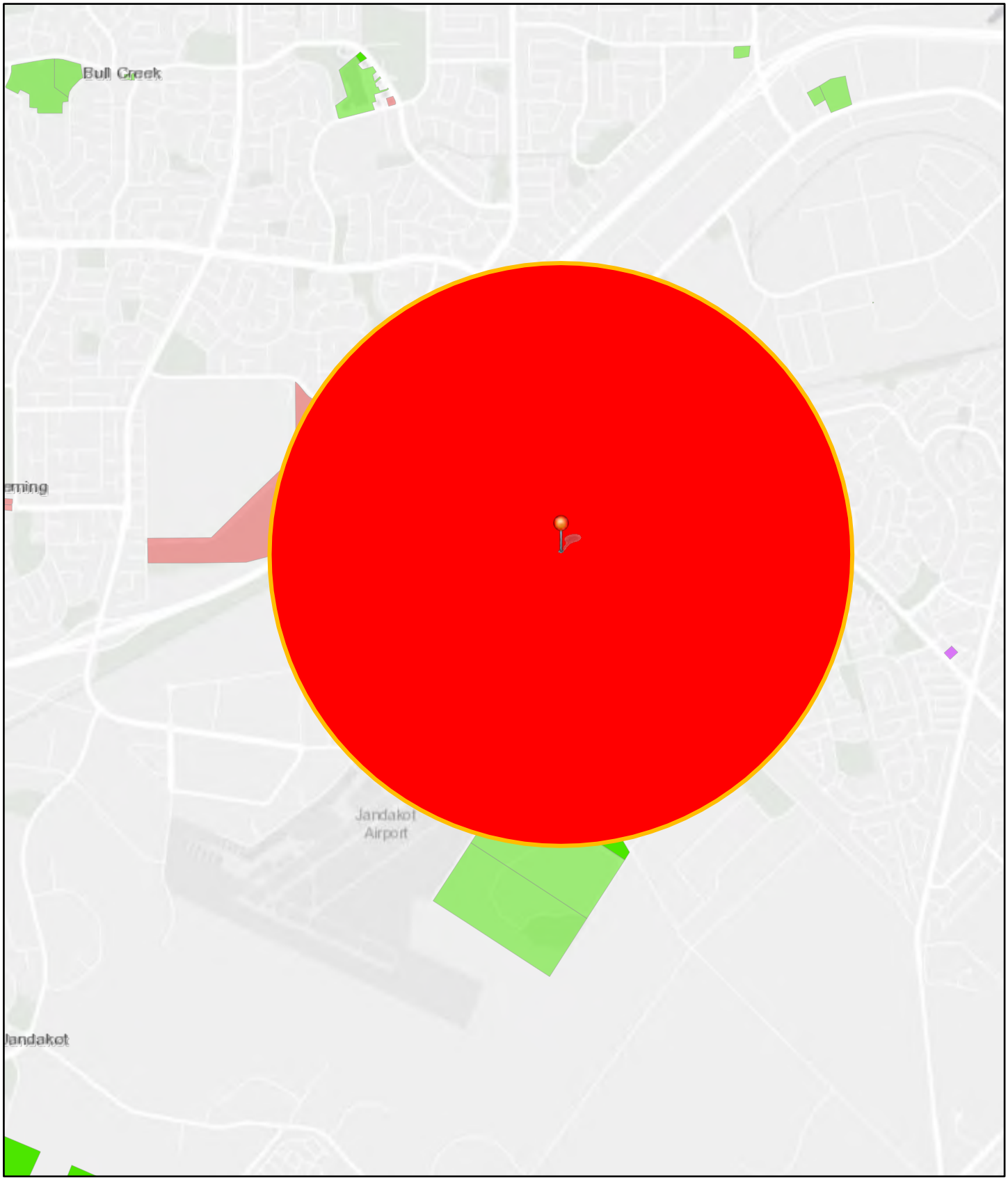


Figure 5 - Groundwater Depth Map (GHD, 2014)

APPENDIX 3

Contaminated Sites Map

Registered Contaminated Sites



17/12/2019, 11:32:08

1:36,112

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Contaminated Sites Database

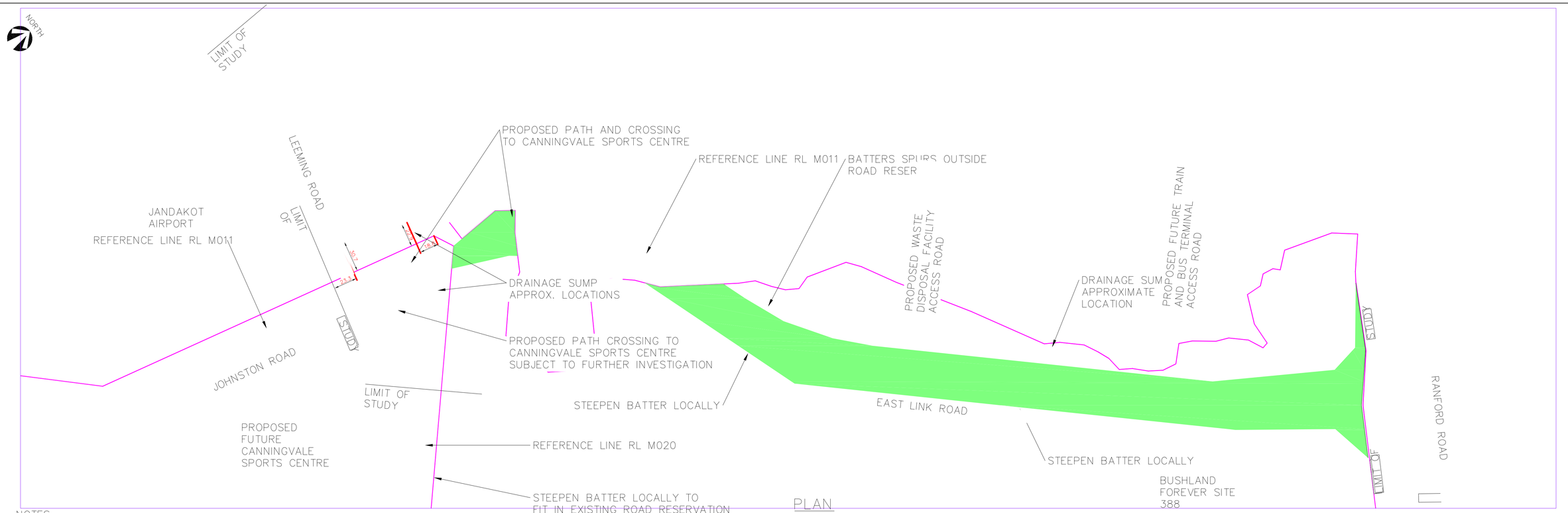
- Contaminated - remediation required
- Contaminated - restricted use
- Remediated for restricted use

User

Esri, HERE | Esri, HERE |

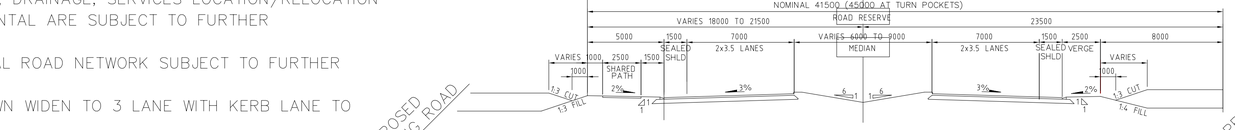
APPENDIX 4

Drainage Plans

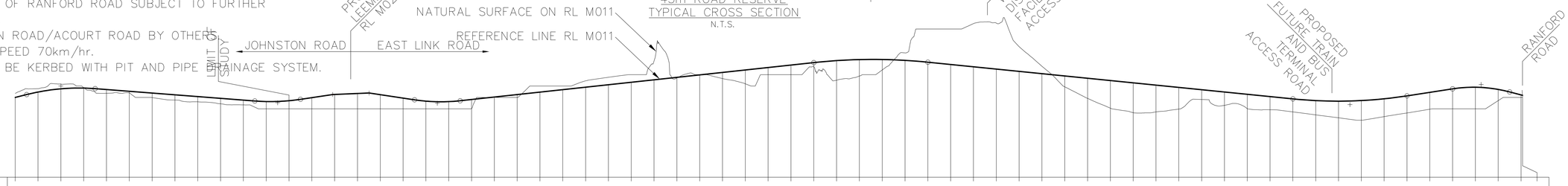


PLAN
SCALE 1:2000

NOTES:
1. THIS PLAN REPRESENTS AN INITIAL PLANNING CONCEPT WITH INDICATIVE EARTHWORKS AND LAND PROTECTION BOUNDARIES.
2. INTERSECTION DESIGN, DRAINAGE, SERVICES LOCATION/RELOCATION AND ENVIRONMENTAL ARE SUBJECT TO FURTHER INVESTIGATIONS.
3. CONNECTION TO LOCAL ROAD NETWORK SUBJECT TO FURTHER INVESTIGATION.
4. RANFORD ROAD SHOWN WIDEN TO 3 LANE WITH KERB LANE TO BE BUS ONLY.
5. WIDENING OF RANFORD ROAD SUBJECT TO FURTHER INVESTIGATION.
6. JOHNSTON ROAD/ACOURT ROAD BY OTHERS.
7. DESIGN SPEED 70km/hr.
8. ROAD TO BE KERBED WITH PIT AND PIPE DRAINAGE SYSTEM.



45m ROAD RESERVE
TYPICAL CROSS SECTION
N.T.S.



DATUM R.L.20.000

CHAINAGE ON RL M011	EXISTING LEVEL ON RL M011	PROPOSED LEVEL ON RL M011
100.000	27.342	27.000
120.000	27.769	27.473
140.000	28.162	27.755
160.000	27.863	27.818
180.000	27.355	27.691
200.000	27.401	27.537
220.000	26.985	27.382
240.000	26.772	27.228
260.000	26.614	27.073
280.000	26.443	26.919
300.000	26.344	26.764
320.000	26.000	26.638
340.000	26.000	26.711
360.000	26.000	26.982
380.000	26.000	27.263
400.000	26.000	27.343
420.000	26.000	27.238
440.000	26.000	26.939
460.000	26.000	26.672
480.000	26.000	26.631
500.000	26.000	26.815
520.000	27.000	27.031
540.000	27.000	27.247
560.000	28.000	27.463
580.000	28.000	27.679
600.000	28.453	27.895
620.000	28.768	28.111
640.000	29.000	28.327
660.000	30.203	28.543
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800.000	29.695	30.055
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980.000	31.456	29.286
1000.000	29.727	29.085
1020.000	27.929	28.884
1040.000	26.915	28.683
1060.000	26.057	28.481
1080.000	25.660	28.280
1100.000	25.726	28.079
1120.000	25.977	27.878
1140.000	26.819	27.676
1160.000	26.300	27.475
1180.000	26.006	27.274
1200.000	25.917	27.072
1220.000	25.728	26.871
1240.000	25.468	26.721
1260.000	25.208	26.672
1280.000	25.000	26.725
1300.000	25.315	26.880
1320.000	25.635	27.137
1340.000	25.962	27.444
1360.000	26.000	27.752
1380.000	26.000	27.893
1400.000	26.722	27.701
1420.000	27.000	27.218
1421.272	27.000	27.184

HORIZONTAL: CURVE RAD 260 | CURVE RAD −300 | CURVE RAD −1200

VERTICAL: 2.5% 60L.V.C. V.P.I. ELEV 28.0 | −0.772% | 40L.V.C. V.P.I. ELEV 28.1 | 1.5% | 0.4% V.P.I. ELEV 27.7 | −1.495% | 40L.V.C. V.P.I. ELEV 27.4 | 1.08% | 100L.V.C. V.P.I. ELEV 30.6 | −1.006% | 100L.V.C. V.P.I. ELEV 26.4 | 1.538% | 50L.V.C. | −2.625% V.P.I. ELEV 28.1

EASTERN LINK ROAD PROFILE M011
SCALE 1:200 VERT 1:2000 HORIZ

LEGEND:
- EXISTING CADASTRAL BOUNDARY
- EXISTING WATER
- EXISTING OVERHEAD POWER LINE
- EXISTING UNDERGROUND POWER LINE
- EXISTING GRAVITY SEWER
- EXISTING OPTUS
- EXISTING TELSTRA OPTIC FIBRE
- EXISTING AMCOM
- DESIGN REFERENCE LINE
- PROPOSED LAND REQUIREMENT BOUNDARY
- BUS LANE ONLY (FUTURE RANFORD ROAD WIDENING. SUBJECT TO FURTHER INVESTIGATION)
- BUSHFOREVER WITHIN ROAD RESERVE

HORIZONTAL 1:2000 0 20 40 60 80 100 120 140 160 180 200
VERTICAL 1:200 0 2 4 6 8 10 12 14 16 18 20

DETAILS SHOWN ON THIS PLAN ARE PRELIMINARY ONLY. STAGE CONSTRUCTION AND ULTIMATE DEVELOPMENT MAY DIFFER FROM DETAILS SHOWN.

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BASE INFORMATION SUPPLIED BY WESTERN AUSTRALIAN LAND INFORMATION AUTHORITY LI 430-2009-6
DATE OF AERIAL PHOTOGRAPHY - 2013

AMENDMENTS
REVISED AS PER CLIENT COMMENTS

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DESIGNED : K.GRENDA		CHECKED :	
DRAWN : K.WILLIAMS		APPROVED :	
FILENAME			
FILE REF :			

NORTH AS ABOVE

SHEET SIZE A1

JANDAKOT AIRPORT – EAST LINK ROAD
PLAN AND PROFILE
CHA 100 TO CHA 1420

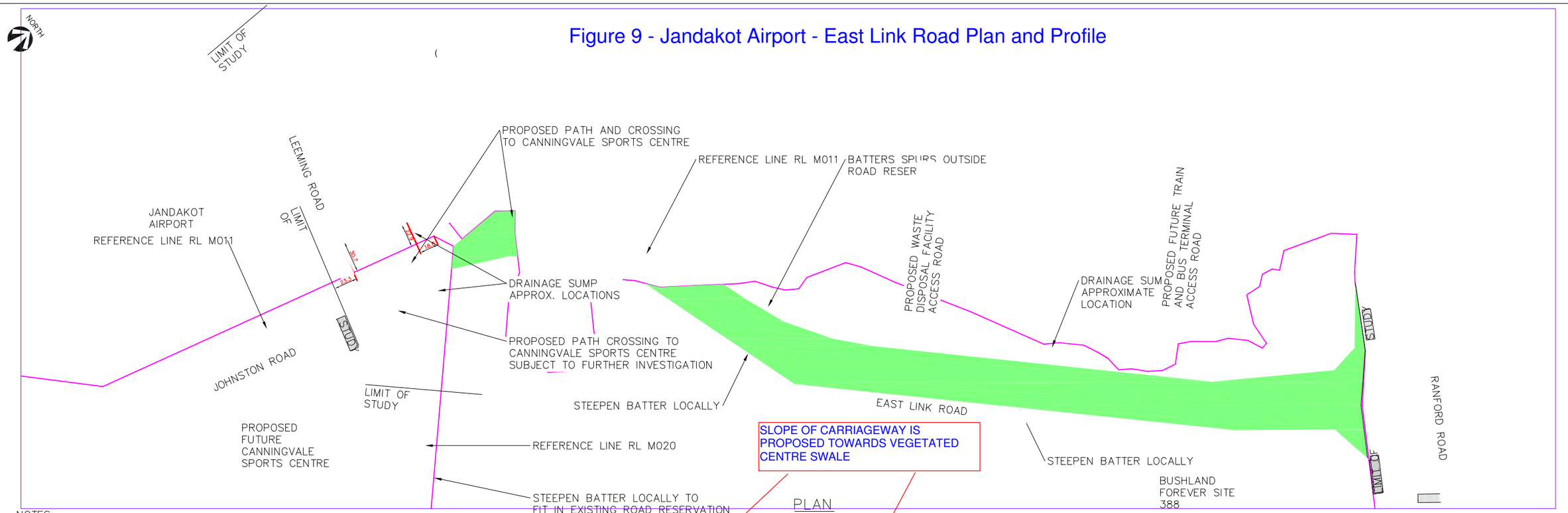
LOCAL AUTHORITY: CITY OF CANNING (114); CITY OF MELVILLE (119); CITY OF COCKBURN (103)

INFRASTRUCTURE AND LAND USE COORDINATION

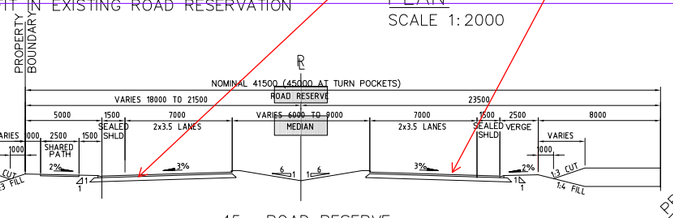
PLAN No.

1.7305/2

Figure 9 - Jandakot Airport - East Link Road Plan and Profile



PLAN
SCALE 1:2000



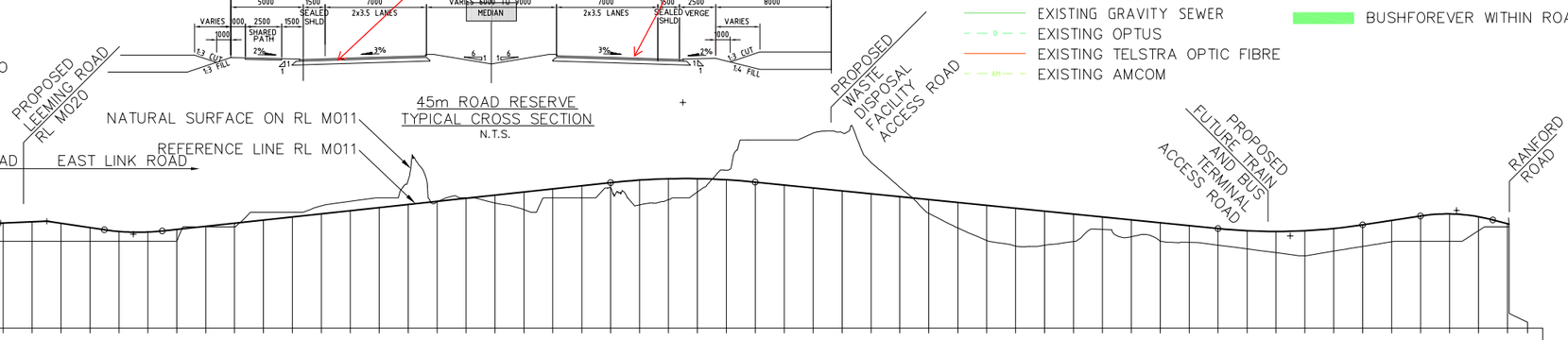
45m ROAD RESERVE
TYPICAL CROSS SECTION
N.T.S.

LEGEND:

- EXISTING CADASTRAL BOUNDARY
- EXISTING WATER
- EXISTING OVERHEAD POWER LINE
- EXISTING UNDERGROUND POWER LINE
- EXISTING GRAVITY SEWER
- EXISTING OPTUS
- EXISTING TELSTRA OPTIC FIBRE
- EXISTING AMCOM
- DESIGN REFERENCE LINE
- PROPOSED LAND REQUIREMENT BOUNDARY
- BUS LANE ONLY (FUTURE RANFORD ROAD WIDENING. SUBJECT TO FURTHER INVESTIGATION)
- BUSHFOREVER WITHIN ROAD RESERVE

NOTES:

1. THIS PLAN REPRESENTS AN INITIAL PLANNING CONCEPT WITH INDICATIVE EARTHWORKS AND LAND PROTECTION BOUNDARIES.
2. INTERSECTION DESIGN, DRAINAGE, SERVICES LOCATION/RELOCATION AND ENVIRONMENTAL ARE SUBJECT TO FURTHER INVESTIGATIONS.
3. CONNECTION TO LOCAL ROAD NETWORK SUBJECT TO FURTHER INVESTIGATION.
4. RANFORD ROAD SHOWN WIDEN TO 3 LANE WITH KERB LANE TO BE BUS ONLY.
5. WIDENING OF RANFORD ROAD SUBJECT TO FURTHER INVESTIGATION.
6. JOHNSTON ROAD/ACOURT ROAD BY OTHERS.
7. DESIGN SPEED 70km/hr.
8. ROAD TO BE KERBED WITH PIT AND PIPE DRAINAGE SYSTEM.



DATUM R.L.20.000

CHAINAGE ON RL M011	EXISTING LEVEL ON RL M011	PROPOSED LEVEL ON RL M011
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120.000	27.769	27.473
140.000	28.162	27.755
160.000	27.863	27.818
180.000	27.355	27.691
200.000	27.401	27.537
220.000	26.985	27.382
240.000	26.772	27.228
260.000	26.614	27.073
280.000	26.443	26.919
300.000	26.344	26.764
320.000	26.000	26.638
340.000	26.000	26.711
360.000	26.000	26.982
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1421.272	27.000	27.184

HORIZONTAL: CURVE RAD 260 | CURVE RAD −300 | CURVE RAD −1200

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EASTERN LINK ROAD PROFILE M011
SCALE 1:200 VERT 1:2000 HORIZ

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gdo94.jpg

BASE INFORMATION SUPPLIED BY WESTERN AUSTRALIAN LAND INFORMATION AUTHORITY LI 430-2009-6
DATE OF AERIAL PHOTOGRAPHY - 2013

AMENDMENTS
REVISED AS PER CLIENT COMMENTS

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DESIGNED : K.GRENDA		CHECKED :	
DRAWN : K.WILLIAMS		APPROVED :	
FILENAME			
FILE REF :			

NORTH AS ABOVE

SHEET SIZE A1

JANDAKOT AIRPORT – EAST LINK ROAD
PLAN AND PROFILE
CHA 100 TO CHA 1420

LOCAL AUTHORITY: CITY OF CANNING (114); CITY OF MELVILLE (119); CITY OF COCKBURN (103)

INFRASTRUCTURE AND LAND USE COORDINATION

PLAN No. 1.7305/2

HORIZONTAL 1:2000 0 20 40 20 0 20 40 60 80 100 120 140 160 180 200 VERTICAL 1:200

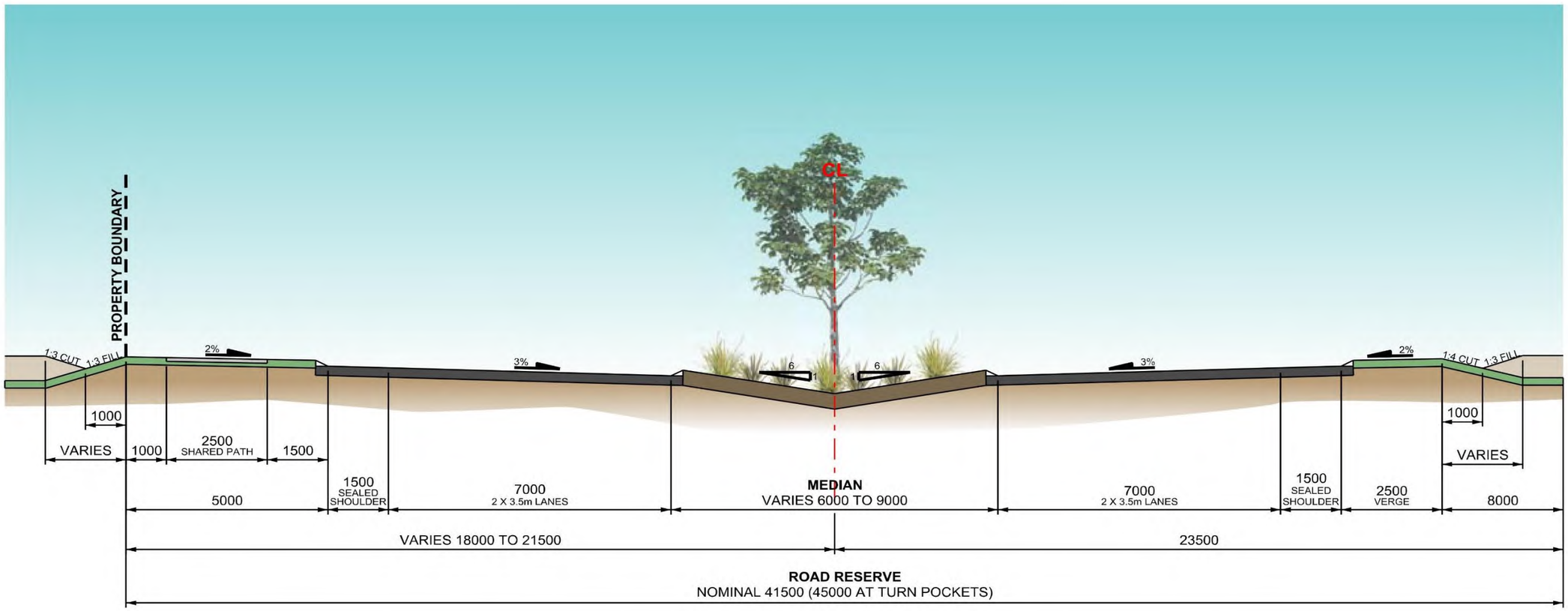


Figure 10- Indicative Cross-Section of Proposed Road Subject to Detailed Design

APPENDIX 5

Protected Matters Search Results

Australian Government
Department of the Environment and Energy

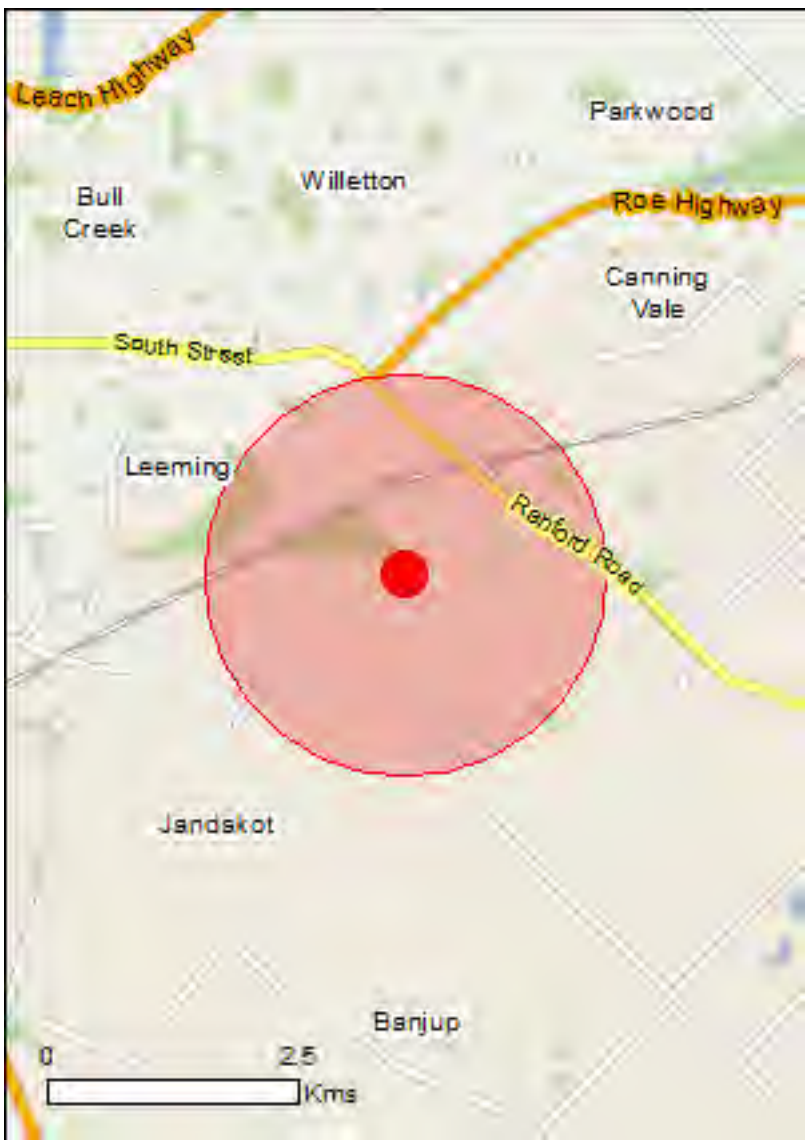
EPBC Act Protected Matters Report

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.

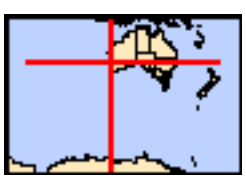
Report created: 19/11/19 13:01:59



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates

Buffer: 2.0Km



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:	2
Listed Threatened Species:	19
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	38
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Forrestdale and thomsons lakes	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
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 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 latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat known to occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat known to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat known to occur within area
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat known to occur within area
Lepidosperma rostratum Beaked Lepidosperma [14152]	Endangered	Species or species habitat likely to occur within area
Synaphea sp. Fairbridge Farm (D. Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat may occur within area
Thelymitra dedmaniarum Cinnamon Sun Orchid [65105]	Endangered	Species or species habitat may 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 may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area

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

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

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

Name
Commonwealth Land -

Listed Marine Species [Resource Information]

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

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may 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 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 habitat may occur within area

Name	Threatened	Type of Presence
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	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

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		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		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
Funambulus pennantii Northern Palm Squirrel, Five-striped Palm Squirrel [129]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		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
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within

Name	Status	Type of Presence
		area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to 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
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		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
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		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

Environmentally Sensitive

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact Us page.

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