

Proposed Pipeline in State Forest 39 Warren Road, Pemberton

Targeted Threatened Flora and Fauna Survey Report



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Final Report

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Author (s): Bianca Theyer
Reviewer (s): K. Kinnear
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Bio Diverse Solutions
29 Hercules Crescent
Albany WA 6330
08 9842 1575
www.biodiversesolutions.com.au
ABN 48 138 824 272

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1. Introduction and scope

Justin Omodei (“the client”) commissioned Bio Diverse Solutions as Environmental Consultants to undertake a Targeted Threatened Flora and Fauna Survey along a proposed pipeline in State Forest 39 Warren Road within Pemberton. The scope of works included:

- Desktop assessment including all publicly available database searches and Parks and Wildlife database searches;
- Undertake site survey within the current proposed pipeline footprint with additional buffers (14m along pipeline to allow for 4m clearing for construction and an additional 10m buffer and 30m near the sump area to again to allow for clearing during construction) for the presence of threatened fauna and flora;
- GPS any individual threatened species if identified; and
- Prepare a report detailing findings and provide recommendations.

Site assessment was undertaken by Zoologist Karlene Bain and Conservation and Wildlife Biologist Bianca Theyer (Bio Diverse Solutions) on the 15th of December 2017.

1.1. Site location and Development Proposal

The “Subject Site” is defined as the pipeline and sump footprint within State Forest 39 Warren Road within the municipality of Pemberton. The “survey area” is defined as the subject site and the additional 14m and 30m buffers. It is proposed that to install the pipeline 4m of vegetation will need to be cleared, therefore in addition to the standard 10m buffer an additional 4m has been included in case contingency measures where needed. A 30m buffer was included around the sump area. Refer to Figure 1 below. Once installed the majority of vegetation will grow back, with some management required to maintain the pipeline. The subject site is approximately 300m long (pipeline) and 310m² in size (sump area). Refer to Appendix A – Proposed Pipeline Plan.



Figure 1: Subject Site Locality

2. Flora and Vegetation Values

2.1. Remnant Vegetation

The subject site lies within the Warren IBRA bioregion. Hearn et al. (2002) describes the Warren IBRA region as “Dissected undulating country of the Leeuwin Complex, Southern Perth Basin (Blackwood Plateau), South-West intrusions of the Yilgarn Craton and western parts of the Albany Orogen with loamy soils supporting Karri forest, laterites supporting Jarrah-Marri forest, leached sandy soils in depressions and plains supporting low Jarrah woodlands and paperbark/sedge swamps, and Holocene marine dunes with *Agonis flexuosa* and *Banksia* woodlands and heaths.”

The vegetation has been mapped on a broad scale by J.S. Beard (Shepherd *et al* 2002) in the 1970’s, where a system was devised for state-wide mapping and vegetation classification based on geographic, geological, soil, climate structure, life form and vegetation characteristics (Sandiford and Barrett 2010). Vegetation units were regarded as associations and were grouped into Vegetation Systems representing a particular pattern of association distribution within a given area. A GIS search of J.S. Beards (DEC, 2005) vegetation classification places the subject site within one System and Vegetation Association (Source DEC Pre-European Vegetation GIS dataset, 2005):

- **System Association Name:** Nornalup
- **Vegetation Association Number:** 1144
- **Vegetation Description:** Tall forest; Karri & Marri (*Corymbia calophylla*).

2.2. Broad vegetation types within the survey area

2.2.1. Karri and Marri Forest

This vegetation type occurs in the proposed sump area, within the eastern portion of the subject site. Common species identified included an overstorey canopy of *Eucalyptus diversicolor*, *Agonis flexuosa*, *Callistachys lanceolata* and *Corymbia calophylla*. Common midstorey species included *Lepidosperma effusum*, *Lasiopetalum floribundum*, *Banksia grandis*, *Chorilaena quercifolia*, *Trymalium odoratissimum* subsp. *trifidum*, *Taxandria linearifolia*, *Bossiaea linophylla*, *Tremandra stelligera*. Understorey species identified were *Anigozanthos flavidus*, *Adiantum aethiopicum*, *Clematis pubescens*, *Lindsaea linearis*, *Hovea elliptica*, *Macrozamia riedlei*, *Gahnia decomposita*, *Pteridium esculentum* subsp. *esculentum*, **Solanum nigrum*, *Opercularia hispidula*, **Plantago lanceolata*, **Hypochaeris* sp. The vegetation has been classified as “Excellent - Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species” (Keighery, 1994).

Refer to Figure 2 over the page for images of this vegetation type. Refer to Figure 5 for vegetation complex mapping.



Figure 2: Karri and Marri Forest

2.2.2. *Trymalium* thicket

This vegetation type occurs along the majority of the proposed pipeline area, on the eastern side of Gloucester Road. Overstorey species consist of the occasional *E. diversicolor* and *C. calophylla* and very densely vegetated areas of *Trymalium odoratissimum* subsp. *trifidum* with very few mid or understorey species present. There are areas where the thicket opens up and there are mid and understorey species present. The section of vegetation adjacent to Gloucester Road also contains more diversity and a higher proportion of introduced species. Midstorey species identified were *Acacia urophylla*, *Acacia pulchella*, *Bossiaea aquifolium*, *Bossiaea linophylla*, *Leucopogon verticillatus*, *Hibbertia cuneiformis*, *Leucopogon* sp. and *Acacia myrtifolia*. Understorey species identified were *Astroloma* sp., *Leucopogon propinquus*, *Patersonia* sp., *Scaevola striata*, *Scaevola microphylla*, *Stackhousia monogyna*, *Hovea elliptica*, *Macrozamia riedlei*, *Prasophyllum* sp., *Stylidium adnatum*, *Tremandra stelligera*, *Comesperma virgatum*, *Gahnia trifida*, *Pteridium esculentum* subsp. *esculentum* and *Opercularia hispidula*. Introduced species present are **Rubus ulmifolius*, *Hypochaeris* sp., *Briza maxima*, **Senecio* sp., **Sonchus* sp., **Conyza* sp., **Lavandula* sp., **Plantago lanceolata*, **Carduus pycnocephalus*, **Centaureum erythraea* and **Pelargonium capitatum*. There is a large Black berry (*R. ulmifolius*) infestation located on the edge of the roadside and spreads into the adjacent vegetation for approximately 10m. The vegetation appears to have been previously cleared, and there is a high proportion of introduced species present. The vegetation has been classified as “Good - Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate to it” (Keighery, 1994). Refer to Figure 3 for images of this vegetation type.



Figure 3: Trymalium thicket

2.2.3. Karri / Marri / Sheoak Forest

This vegetation type is situated on the western side of Gloucester Road. The species composition is very similar to the Karri / Marri Forest to the west. Overstorey species consists of *E. diversifolia*, *C. calophylla* and *Allocasuarina decussata*. The midstorey consisted of *Tremandra stelligera*, *Trymalium odoratissimum* subsp. *Trifidum*, *Lasiopetalum floribundum*, *Bossiaea aquifolium*, *Banksia grandis* and *Leucopogon australis*. The understorey contains *Pteridium esculentum* subsp. *Esculentum*, *Opercularia hispidula*, *Hardenbergia comptoniana*, *Lepidosperma effusum*, *Plantago lanceolata*, *Gahnia decomposita*, * *Rubus ulmifolius*, * *Ehrharta calycina* and * *Acaena novae-zelandiae*. There are several introduced species present in this vegetation complex due to its proximity to Warren Road, and the agricultural practices adjacent. There is a small infestation of Blackberry beginning to form along the firebreak edge. Although there are several weeds species situated along the firebreak

edge, the native vegetation has been classified as “Very good - Vegetation structure altered, obvious signs of disturbance” (Keighery, 1994). Refer to Figure 4 below for images of this vegetation type.



Figure 4: Karri / Marri / Sheoak Forest

2.3. Threatened Flora

Desktop inventory of potential flora species likely to occur within 15 km of the survey area was undertaken using the following databases and applicable reports:

- DPaW’s Nature Map Database Search (combined data from DPaW, Western Australian Museum and Birds Australia) (DPaW 2007-);
- Protected matters search tool (DoE 2017); and
- Parks and Wildlife Threatened Flora database searches.

The full species list compiled from all available data (Appendix B) is based on observations from a broader area than the survey area and is likely to include species that are vagrants or would not occur in the actual survey area due to a lack of suitable habitat or poor ecological connectivity. The databases also often included very old records and in some cases the species in question may have become locally or regionally extinct.

A targeted survey was undertaken for the 19-species identified on the 15th December 2017. Where species were out of their flowering period a risk assessment was undertaken factoring site / habitat suitability, this is presented in Table 1.

Table 1: Potential threatened flora located within 15km of the survey area.

Family	Species	Status (WA)	Habitat	Flowering period	Potentially Suitable Habitat Present	Survey Outcome / Comment
Apiaceae	<i>Eryngium</i> sp. Lake Muir (E. Wittwer 2293)	P2	Black peaty silty soils. Winter-wet swamps.	Jan	N	Species not found. No suitable habitat within the survey area.
Cyperaceae	<i>Schoenus benthamii</i>	P3	White, grey sand, sandy clay. Winter-wet flats, swamps.	Oct to Nov	N	Species not found. No suitable habitat within the survey area.
Cyperaceae	<i>Carex tereticaulis</i>	P3	Black peaty sand.	Sep to Oct	N	Species not found. No suitable habitat within the survey area.
Cyperaceae	<i>Schoenus natans</i>	P4	Winter-wet depressions.	Oct	Y	Species not found. No suitable habitat within the survey area.

Table 1 cont.

Family	Species	Status (WA)	Habitat	Flowering period	Potentially Suitable Habitat Present	Survey Outcome / Comment
Dilleniaceae	<i>Hibbertia hamata</i>	P3	Granite. Inland outcrops.	Oct to Dec	N	Species not found. No suitable habitat within the survey area. Species has only previously been found in the Esperance district.
Elaeocarpaceae	<i>Tetratheca exasperata</i>	P3	White-grey sand, sandy loam with gravel, orange-brown gravelly loam.	Sep to Oct	N	Species not found. No suitable habitat within the survey area.
Ericaceae	<i>Sphenotoma drummondii</i>	DRF	Stony or shallow soils over granite or quartzite. Steep rocky slopes, crevices of rocks.	Sep to Dec	N	Species not found. No suitable habitat within the survey area.
Fabaceae	<i>Kennedia glabrata</i>	DRF	Soil pockets, sandy soils. Granite outcrops.	Aug to Nov	N	Species not found. No suitable habitat within the survey area.
Malvaceae	<i>Thomasia brachystachys</i>	P1	Littered, organic brown soil. High, open or dense forests.		Y	Species not found. Suitable habitat is present throughout the survey area. Genus readily identifiable outside of flowering period.
Malvaceae	<i>Commersonia apella</i>	DRF	Found near the banks of streams or rivers, growing in humic, greyish-brown, clayey-sand, in open jarrah-wandoo woodland, karri-marri forest and coastal Eucalyptus angulosa,	Oct, Nov or Dec	Y	Species not found. Genus not identified in survey area.
Myrtaceae	<i>Darwinia</i> sp. Mt Ragged (S. Barrett 663)	P2	Brown loamy sand, quartzite, granite. Outcrops, steep ridges, rocky slopes.	Jul or Dec	N	Species not found. No outcrops, steep ridges or rocky slopes within the survey area. Species previously found in the Esperance.
Orchidaceae	<i>Caladenia christineae</i>	DRF	Sand, clayey loam, laterite. Margins of winter-wet flats, swamps, & freshwater lakes.	Sep to Nov	N	Species not found. No suitable habitat within the survey area.
Orchidaceae	<i>Caladenia winfieldii</i>	DRF	Grey-black sand, sandy loam. Winter-wet depressions, swamps.	Oct to Nov	Y	Species not found. No suitable habitat within the survey area.
Orchidaceae	<i>Drakaea micrantha</i>	DRF	White-grey sand.	Sep to Oct	N	Species not found. No suitable habitat within the survey area.

Table 1 cont.

Family	Species	Status (WA)	Habitat	Flowering period	Potentially Suitable Habitat Present	Survey Outcome / Comment
Parmeliaceae	<i>Xanthoparmelia xanthomelanoides</i>	P2			N	Species not found. No suitable habitat within the survey area. No lichen like species identified within the survey area.
Placynthiaceae	<i>Placynthium nigrum</i>	P3	Growing in wet exposed positions on peaty soil. Wetland plain, bare to littered grey sand;		N	Species not found. No suitable habitat within the survey area.
Poaceae	<i>Deyeuxia inaequalis</i>	P1	Loam.		Y	Species not found. No suitable habitat within the survey area.
Proteaceae	<i>Persoonia scabra</i>	P3	White sand or sandy loam.	Nov to Dec or Jan	N	Species not found. No suitable habitat within the survey area. Species has only previously been found in the Esperance and Great Southern districts.
Scrophulariaceae	<i>Eremophila calcicola</i>	P2	found south of Balladonia in the Mallee biogeographic region where it grows in sandy, calcareous soil in open woodland.	May to Oct	N	Species not found. No suitable soils within the survey area. Species has only previously been found in the Esperance district.

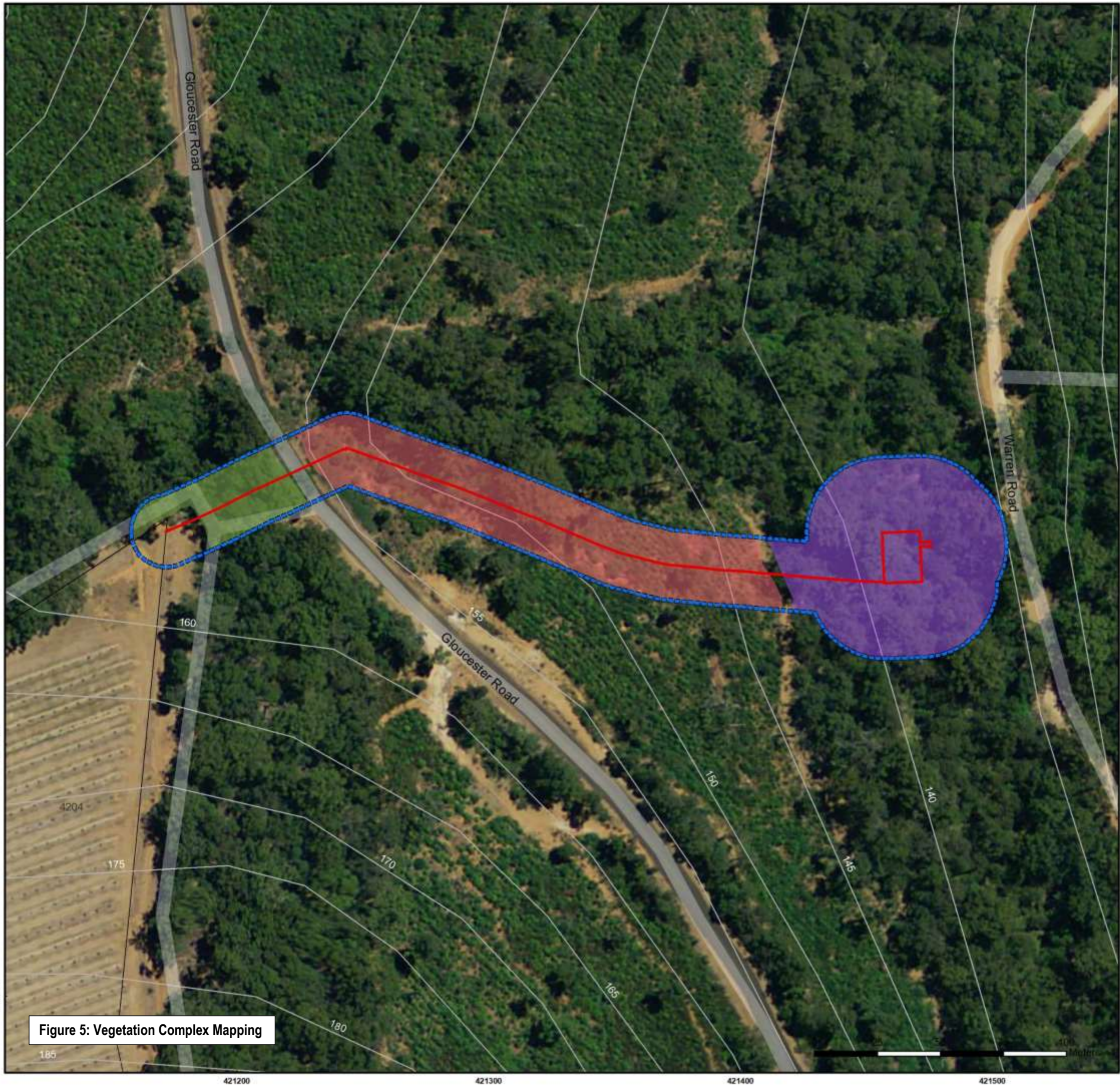


Figure 5: Vegetation Complex Mapping



29 Hercules Crescent
 Albany, WA 6330
 Australia
 Tel: 08 9842 1575
 Fax: 08 9842 1575



Overview Map Scale 1:100,000

Legend

- Subject Site
- Buffer
- Cadastre
- 5m Contours
- Vegetation Complexes**
- Karri / Marri / Sheoak Forest
- Karri and Marri Forest
- Trymalium thicket



Scale
 1:1,500 @ A3
 GDA MGA 94 Zone 50

Data Sources
 Aerial Imagery: SLIP Virtual Mosaic WMS Service, Landgate 2016
 Cadastre and Contours: Landgate 2016
 Overview Map: World Topographic map service, ESRI 2012

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Vegetation Complexes

STATUS	FILE	DATE
FINAL	MSC0173	19/12/2017

3. Fauna

3.1. Desktop Assessment

Desktop inventory of potential fauna species likely to occur within 20 km of the survey area was undertaken using the following databases and applicable reports:

- DPaW's Nature Map Database Search (combined data from DPaW, Western Australian Museum and Birds Australia) (DPaW 2007-);
- Protected matters search tool (DoE 2017); and
- Parks and Wildlife Threatened Flora database searches.

The list compiled from this data (Appendix B) is based on observations from a broader area than the survey area and is likely to include species that are vagrants or would not occur in the actual survey area due to a lack of suitable habitat or poor ecological connectivity. The databases also often included very old records and in some cases the species in question may have become locally or regionally extinct.

3.2. Field Methodology

Field survey work was carried out by Karlene Bain an experienced Zoologist and Bianca Theyer a Conservation and Wildlife Biologist from Bio Diverse Solutions on the 15th December 2017. Vegetation units observed during the site survey were used to define broad fauna habitat types across the site (See Section 2). The aim of the targeted fauna survey was to determine the likelihood of threatened species utilising the area and the significance of the habitat to them.

A targeted survey for the 42-species identified on the 15th December 2017. A summary of survey outcomes are presented in Table 2. Refer to section 3.3 for assessment results.

The conclusions presented are based upon opportunistic field data collected over a limited period of time and are indicative of the environmental condition of the site at the time. Some fauna species are reported as potentially occurring within the study area based on the presence of suitable habitat (quality and extent) within the study area or immediately adjacent. With respect to opportunistic observations, the possibility exists that certain species may not have been detected during field investigations due to seasonal inactivity during the field survey, species present within micro habitats not surveyed, cryptic species able to avoid detection and transient wide-ranging species not present during the survey period.

Table 2: Potential threatened fauna within 20km of the survey area.

Species	Common Name	Status (WA)	Survey Outcome / Comment
<i>Actitis hypoleucos</i>	Common Sandpiper	IA	Species / evidence of species not detected. No suitable habitat on site.
<i>Apus pacificus</i>	Fork-tailed swift	IA	Species / evidence of species not detected.
<i>Ardea ibis</i>	Cattle Egret	IA	Species / evidence of species not detected. No suitable habitat on site.
<i>Ardea modesta</i>	Eastern great egret	IA	Species / evidence of species not detected. No suitable habitat on site.
<i>Austromerope poultoni</i>	An earwigfly	P2	Species / evidence of species not detected.
<i>Bettongia penicillata ogilbyi</i>	Woylie	CR	Species / evidence of species not detected.
<i>Botaurus poiciloptilus</i>	Australasian bittern	EN	Species / evidence of species not detected. No suitable habitat on site.
<i>Cacatua pastinator pastinator</i>	Muir's corella	CD	Species / evidence of species not detected.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	IA	Species / evidence of species not detected.
<i>Calidris ferruginea</i>	Curlew Sandpiper	VU & IA	Species / evidence of species not detected. No suitable habitat on site.
<i>Calidris melanotos</i>	Pectoral Sandpiper	IA	Species / evidence of species not detected. No suitable habitat on site.

Table 2 cont.

Species	Common Name	Status (WA)	Survey Outcome / Comment
<i>Calyptorhynchus banksii naso</i>	Forest red-tailed black cockatoo	VU	Species / evidence of species not detected. No significant feeding signs detected. Not roosting trees detected. Multiple potential hollow bearing trees. One individual was heard flying over the survey site.
<i>Calyptorhynchus baudinii</i>	Baudin's Cockatoo	EN	Species / evidence of species not found. No significant feeding signs detected. Not roosting trees detected. Multiple potential hollow bearing trees.
<i>Calyptorhynchus latirostris</i>	Carnaby's Cockatoo	EN	Species / evidence of species not detected. No significant feeding signs detected. Not roosting trees detected. Multiple potential hollow bearing trees.
<i>Dasyurus geoffroii</i>	Chuditch	VU	Species / evidence of species not detected. No suitable habitat on site.
<i>Falco peregrinus</i>	Peregrine falcon	OS	Species / evidence of species not detected.
<i>Galaxiella munda</i>	Mud minnow, western dwarf galaxias	VU	Species / evidence of species not detected. No suitable habitat on site.
<i>Galaxiella nigrostriata</i>	Black-stripe minnow, black-striped dwarf galaxias	EN	Species / evidence of species not detected. No suitable habitat on site.
<i>Geotria australis</i>	Pouched lamprey	P1	Species / evidence of species not detected. No suitable habitat on site.
<i>Helicarion castanea</i>	A helicarionid land snail	EX	Species / evidence of species not detected.
<i>Hydromys chrysogaster</i>	Water Rat	P4	Species / evidence of species not detected.
<i>Isoodon obesulus fusciventer</i>	Quenda, southern brown bandicoot	P4	Evidence of species (fresh diggings) detected along the southern extent of the survey area.
<i>Ixobrychus flavicollis australis</i>	Black bittern (southwest subpop.)	P1	Species / evidence of species not detected. No suitable habitat on site.
<i>Lepidogalaxias salamandroides</i>	Salamander fish	EN	Species / evidence of species not detected. No suitable habitat on site.
<i>Macropus eugenii derbianus</i>	Tammar Wallaby	P4	Species / evidence of species not detected. No suitable habitat on site.
<i>Macropus irma</i>	Western brush wallaby	P4	Species / evidence of species not detected.
<i>Macrotis lagotis</i>	Bilby, dalgyte, ninu	VU	Species / evidence of species not detected. No suitable habitat on site.
<i>Merops ornatus</i>	Rainbow Bee-eater	IA	Species / evidence of species not detected.
<i>Motacilla cinerea</i>	Grey Wagtail	IA	Species / evidence of species not detected.
<i>Myrmecobius fasciatus</i>	Numbat	EN	Species / evidence of species not detected.
<i>Nannatherina balstoni</i>	Balston's Pygmy Perch	VU	Species / evidence of species not detected. No suitable habitat on site.
<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	CR	Species / evidence of species not detected.
<i>Occirhenea georgiana</i>	Rhytidid land snail, Albany carnivorous snail	EX	Species / evidence of species not detected.
<i>Oxyura australis</i>	Blue-billed duck	P4	Species / evidence of species not detected. No suitable habitat on site.
<i>Pandion haliaetus</i>	Osprey	IA	Species / evidence of species not detected.

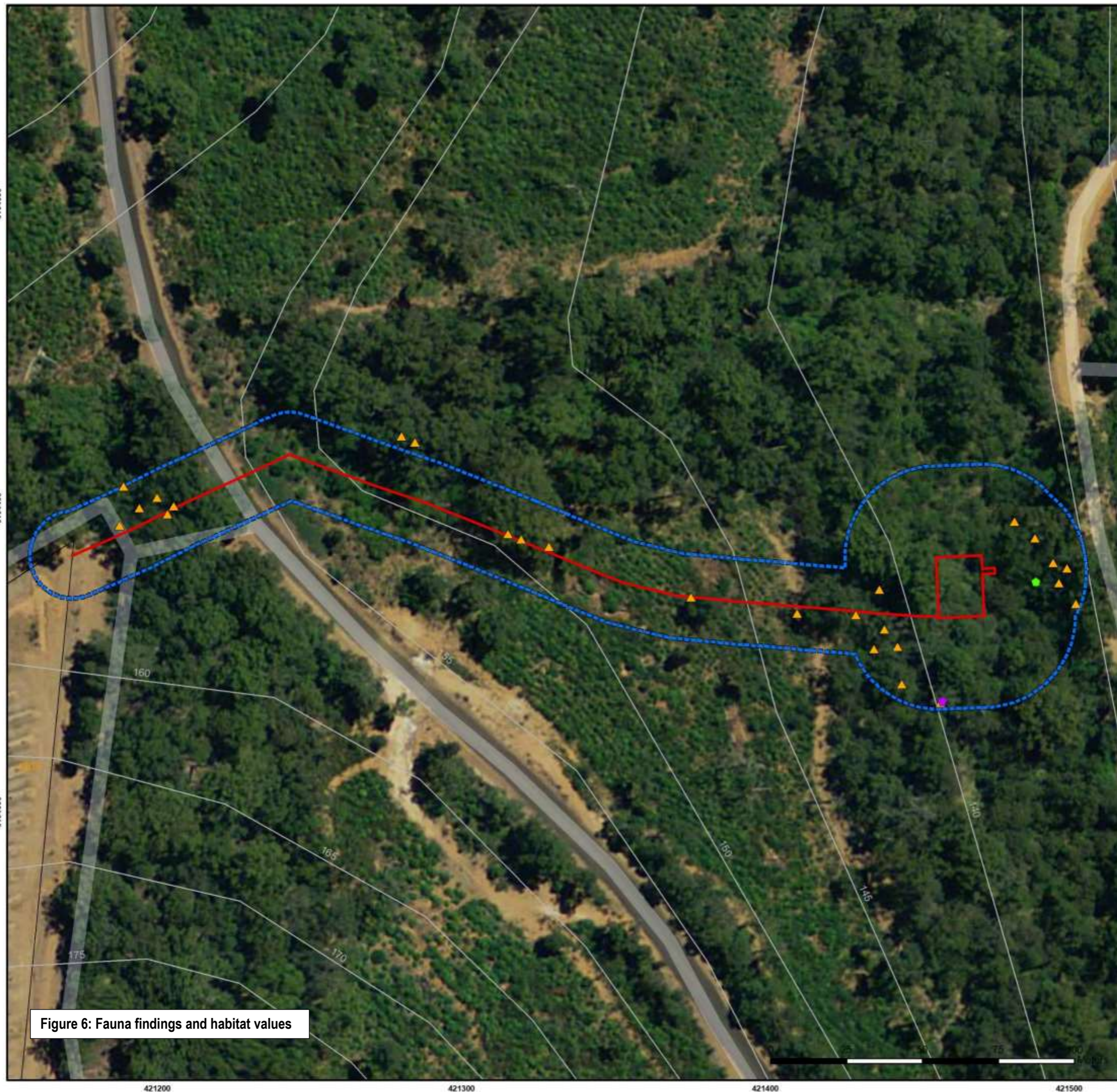
Table 2 cont.

Species	Common Name	Status (WA)	Survey Outcome / Comment
<i>Phascogale tapoatafa wambenger</i>	South-western brush-tailed phascogale, wambenger	CD	Species / evidence of species not detected. No hollows observed within potential habitat trees.
<i>Pseudocheirus occidentalis</i>	Western ringtail possum,	CR	Species / evidence of species not detected. No dreys or hollows detected.
<i>Setonix brachyurus</i>	Quokka	VU	Old runnels (>6months) detected in the survey area. No other signs detected.
<i>Spicospina flammocaerulea</i>	Sunset frog	VU	Species / evidence of species not detected. No suitable habitat on site.
<i>Tringa nebularia</i>	Common greenshank, greenshank	IA	Species / evidence of species not detected. No suitable habitat on site.
<i>Tyto novaehollandiae novaehollandiae</i>	Masked owl (southwest)	P3	Species / evidence of species not detected
<i>Westralunio carteri</i>	Carter's freshwater mussel	VU	Species / evidence of species not detected. No suitable habitat on site.

3.3. Fauna Habitat Assessment Results

A description of the broadly defined fauna habitats within the study area (based on vegetation units) is given in Section 2. The approximate extent of each identified unit is shown in the Vegetation Complexes Map. Overall there was no significant evidence of threatened species utilisation throughout the survey area. There were 26 individual *E. diversicolor*, *C. calophylla* and *A. flexuosa* trees with >500mm DBH. These trees have potential habitat value for *P. occidentalis*, *P. tapoatafa wambenger*, *C. banksii naso*, *C. baudinii* and *C. latirostris*. Refer to Figure 6 and Table 3.

Although there were tree scratchings detected on multiple habitat trees there were no dreys observed, indicating that the area is utilised by *Trichosurus vulpecula* (Common Brushtail Possum) and not *P. occidentalis* (Western Ringtail Possum). There is potential habitat for *P. tapoatafa wambenger* (South-western brush-tailed phascogale) however no hollows were observed, it is therefore unlikely the area is utilised by this species. Several old *S. brachyurus* (Quokka) runnels were detected within the survey area, but there were no other signs of recent utilisation (tracks or fresh scats). Two *I. obesulus fusciventer* (Quenda) diggings were detected along the southern boundary of the survey area. There were no signs of significant feeding or roosting activities in trees for *C. banksii naso*, *C. baudinii* or *C. latirostris*.



29 Hercules Crescent
Albany, WA 6330
Australia
Tel: 08 9842 1575
Fax: 08 9842 1575



Overview Map Scale 1:100,000

Legend

- Subject Site
- - - Buffer
- Cadastre
- 5m Contours
- ▲ Significant Trees
- Fauna activity**
- ◆ Fresh Quenda diggings
- ◆ Quokka Runnell >6months old



Scale
1:1,250 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: SLIP Virtual Mosaic WMS Service, Landgate 2016
Cadastre and Contours: Landgate 2016
Overview Map: World Topographic map service, ESRI 2012

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Fauna findings and habitat values

STATUS	FILE	DATE
FINAL	MSC0173	20/12/2017



a) Fresh Quenda digging



b) Old Quokka runnel



c) Old Quokka runnel



d) Possum scratchings on a Marri tree

Figure 7: Examples of fauna activity found during the targeted survey

Table 3: Significant habitat trees located within the survey area

ID	Northing	Easting	Species	DBH (mm)	Hollows (Y/N)	Potential habitat value
A1	421194.137600956	6194399.94001611	<i>A. decussata</i>	595mm	N	Y
Af1	421482.093722184	6194395.519839	<i>A. flexuosa</i>	852mm	N	Y
K1	421280.423141599	6194423.60638105	<i>E. diversicolor</i>	661mm	N	Y
K2	421437.615690028	6194373.14269239	<i>E. diversicolor</i>	1222mm	N	Y
K3	421445.074738899	6194342.10936561	<i>E. diversicolor</i>	730mm	N	Y
K4	421457.690661063	6194335.93953506	<i>E. diversicolor</i>	543mm	N	Y
K5	421502.260780243	6194368.44625421	<i>E. diversicolor</i>	874mm	N	Y
K6	421496.735558857	6194375.35278094	<i>E. diversicolor</i>	1228mm	N	Y
K7	421488.81607487	6194390.08670464	<i>E. diversicolor</i>	595mm	N	Y
K8	421199.939083411	6194403.43932299	<i>E. diversicolor</i>	894mm	N	Y
K9	421205.464304797	6194400.58462527	<i>E. diversicolor</i>	799mm	N	Y
K10	421203.438390289	6194397.9141016	<i>E. diversicolor</i>	673mm	N	Y
K11	421188.888640639	6194407.12280391	<i>E. diversicolor</i>	621mm	N	Y
K12	421187.691509339	6194394.23062068	<i>E. diversicolor</i>	935mm	N	Y
M1	421499.406082526	6194380.14130615	<i>E. diversicolor</i>	985mm	N	Y
M2	421284.843318708	6194421.58046654	<i>C. calophylla</i>	903mm	N	Y
M3	421315.416210376	6194391.46800999	<i>C. calophylla</i>	1017mm	N	Y
M4	421319.836387485	6194389.71835655	<i>C. calophylla</i>	723mm	N	Y
M5	421328.953002772	6194387.32409395	<i>C. calophylla</i>	1122mm	N	Y
M6	421375.733210506	6194370.65634277	<i>C. calophylla</i>	867mm	N	Y
M7	421429.880380087	6194364.76277329	<i>C. calophylla</i>	707mm	N	Y
M8	421439.273256443	6194360.06633511	<i>C. calophylla</i>	604mm	N	Y
M9	421443.693433552	6194354.35693968	<i>C. calophylla</i>	1070mm	N	Y
M10	421435.866036589	6194353.62024349	<i>C. calophylla</i>	502mm	N	Y
M11	421494.801731372	6194381.98304661	<i>C. calophylla</i>	727mm	N	Y
M12	421410.63419226	6194365.31529543	<i>C. calophylla</i>	1247mm	N	Y

6. Conclusions and Recommendations

6.1. Threatened Flora

The scope for this threatened flora survey was to provide the client with information on any potential threatened flora species present within the survey area (including buffers). As some of the threatened species were not in their flowering period a risk assessment was carried out on the likelihood of the species presence. Most of the species were deemed unlikely to occur in the area due to unsuitable habitat (e.g. soil types, vegetation density etc). Of the 6 DRF and 13 Priority species potentially occurring in the area none were identified. Bio Diverse Solutions also recommends weed control be undertaken to deal with the blackberry infestations on either side of Gloucester Road to stop the spread into adjacent native vegetation.

6.2. Threatened Fauna

The scope for the targeted threatened fauna survey was to provide the client with information on any threatened species utilising the survey area. The potential species list contains species that are unlikely to be present due to habitat in-suitability (refer to Table 3). There is old evidence of *S. brachyurus* (Quokka) utilisation in the form of runnels, as well as fresh diggings from *I. obesulus fusciventer* (Quenda). The lack of diggings and runnels indicates the area is not being widely utilised by either of these species. However, any animal within the area is likely to move out during the clearing process and will likely return once the vegetation grows back. There are multiple habitat trees (DBH >500mm) situated throughout the survey area. Although no evidence of threatened species utilisation was observed these trees are potential habitat for multiple threatened species. All trees with DBH>500mm should be retained throughout the survey area. The client indicated on site that significant trees will be retained.

7. References

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8. Appendices

Appendix A –Proposed Pipeline

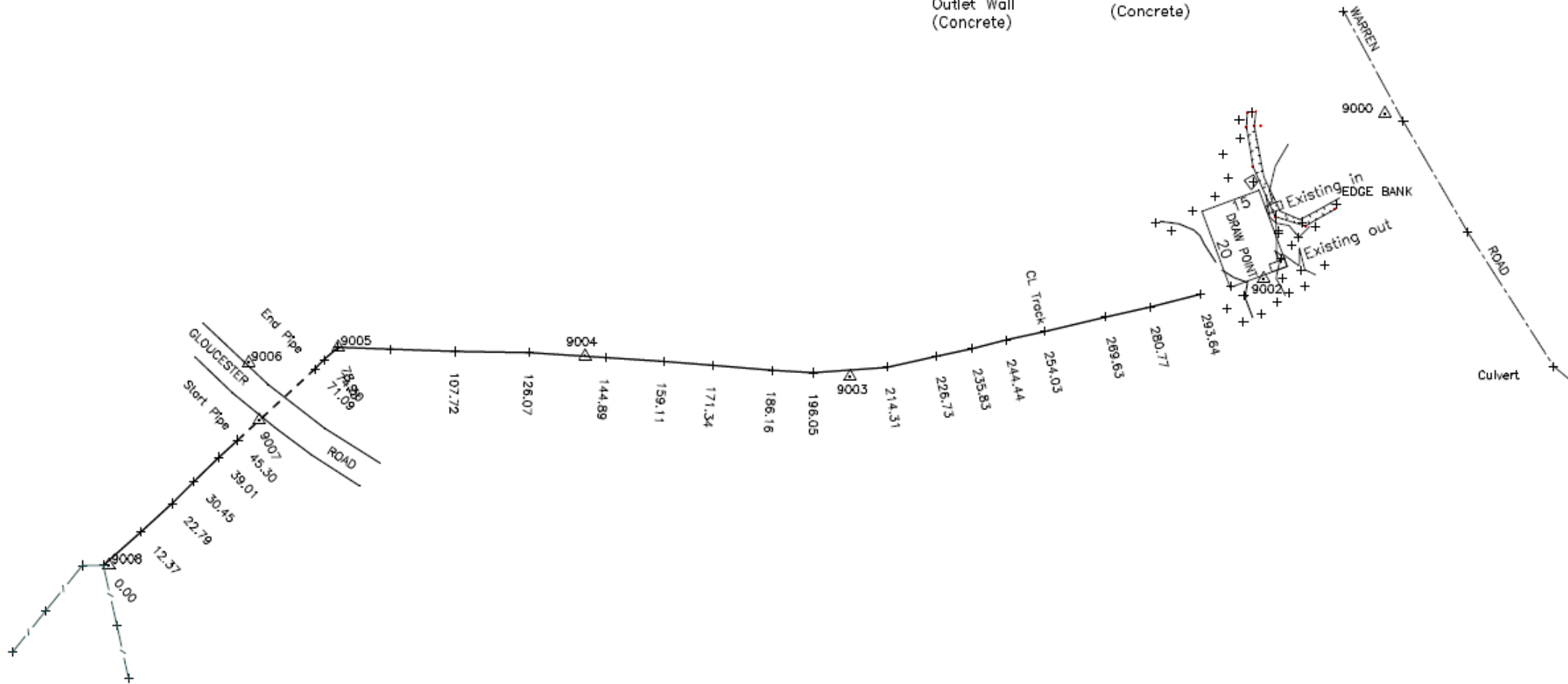
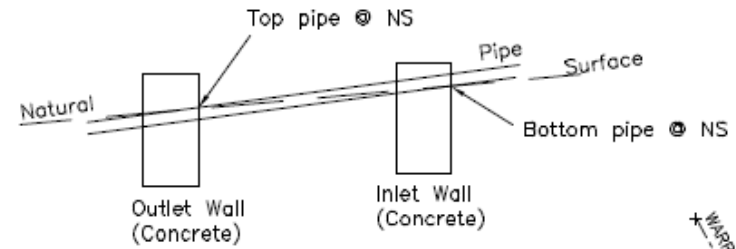
Appendix B – Database Searches

Appendix A

Proposed Pipeline

PROPOSED DRAW POINT & BYPASS

Not to Scale



Justin Omodei

Project: PLAN SHOWING PROPOSED SUMP SITE and PIPELINE IN STATE FOREST 36 WARREN ROAD, PEMBERTON

Scale	Scale 1:1000 (A3)
Date	1-OCT-17
Surveyed	J. TOWIE
Datum	Hor: Assumed Ver: ADOPTED
Drawing No	J Omodei 220917

J. H. TOWIE. (Licensed Surveyor 629)
 P.O. Box 435, Manjimup WA.
 jhtowie@bordnet.com.au
 Ph 08 9772 4242

Appendix B

Database Searches

Potential flora species occurring within 15 km of survey area.

Generated from Nature Map (DPaW 2007-)

	Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
1	3207	Acacia alata (Winged Wattle)			
2	15429	Acacia alata var. alata			
3	18285	Acacia baileyana	Y		
4	3247	Acacia browniana			
5	11731	Acacia browniana var. browniana			
6	11377	Acacia browniana var. obscura			
7	3282	Acacia cyclops (Coastal Wattle)			
8	17858	Acacia dealbata	Y		
9	19920	Acacia dealbata subsp. dealbata	Y		
10	16975	Acacia decurrens	Y		
11	3307	Acacia divergens			
12	18287	Acacia elata	Y		
13	3331	Acacia extensa (Wiry Wattle)			
14	3347	Acacia gilbertii			
15	3363	Acacia hastulata			
16	16165	Acacia insolita subsp. insolita			
17	18217	Acacia iteaphylla	Y		
18	3410	Acacia lateriticola			
19	3424	Acacia littorea			
20	17861	Acacia longifolia	Y		
21	17958	Acacia mearnsii	Y		
22	10955	Acacia melanoxylon	Y		
23	3453	Acacia myrtifolia			
24	3484	Acacia pentadenia (Karri Wattle)			
25	35624	Acacia pentadenia subsp. pentadenia			
26	17860	Acacia podalyriifolia	Y		
27	3502	Acacia pulchella (Prickly Moses)			
28	15482	Acacia pulchella var. goadbyi			
29	15483	Acacia pulchella var. pulchella			
30	3527	Acacia saligna (Orange Wattle, Kudjong)			
31	30034	Acacia saligna subsp. pruinescens			
32	30036	Acacia saligna subsp. stolonifera			
33	3530	Acacia scalpelliformis			
34	3557	Acacia stenoptera (Narrow Winged Wattle)			
35	3564	Acacia subcaerulea			

36	3582	Acacia triptycha			
37	3591	Acacia urophylla			
38	3184	Acaena echinata (Sheep's Burr)			
39	3185	Acaena novae-zelandiae	Y		
40	7812	Achillea millefolium (Yarrow, Milfoil)	Y		
41	10824	Acidonia microcarpa			
42	44007	Actinotus repens		P3	
43	1790	Adenanthos meisneri			
44	1791	Adenanthos obovatus (Basket Flower)			
45	28281	Adenanthos sp. Whicher Range (G.J. Keighery 9736)			
46	25	Adiantum aethiopicum (Common Maidenhair)			
47	5316	Agonis flexuosa (Peppermint, Wonil)			
48	17202	Agonis flexuosa var. flexuosa			
49	19789	Agonis theiformis			
50	182	Agrostis stolonifera (Creeping Bent)	Y		
51	23474	Agrostocrinum hirsutum			
52	184	Aira caryophyllea (Silvery Hairgrass)	Y		
53	185	Aira cupaniana (Silvery Hairgrass)	Y		
54	187	Aira praecox (Early Hairgrass)	Y		
55	1374	Allium ampeloprasum	Y		
56	1378	Allium triquetrum (Three-cornered Garlic)	Y		
57	1724	Allocasuarina decussata (Karri She-oak)			
58	2648	Alternanthera denticulata (Lesser Joyweed)			
59	2652	Alternanthera nodiflora (Common Joyweed)			
60	2655	Amaranthus albus (Tumbleweed)	Y		
61	2668	Amaranthus powellii (Powell's Amaranth)	Y		
62	4585	Amperea ericoides			
63	13101	Amperea simulans			
64	194	Amphipogon amphipogonoides			
65	198	Amphipogon laguroides			
66	20184	Amphipogon laguroides subsp. laguroides			
67	1058	Anarthria gracilis			
68	1060	Anarthria laevis			
69	1062	Anarthria prolifera			
70	1063	Anarthria scabra			
71	14455	Andersonia annelsii		T	

72	6306	Andersonia caerulea (Foxtails)			
73	6320	Andersonia simplex (Spiked Andersonia)			
74	6321	Andersonia sprengelioides			
75	1407	Anigozanthos flavidus (Tall Kangaroo Paw)			
76	1411	Anigozanthos manglesii (Mangles Kangaroo Paw, Kurulbrang)			
77	4908	Anoda cristata (Anoda Weed)	Y		Y
78	17455	Anredera cordifolia	Y		
79	38501	Anthosachne scabra			
80	202	Anthoxanthum odoratum (Sweet Vernal Grass)	Y		
81	3688	Aotus gracillima			
82	3689	Aotus intermedia			
83	18127	Aotus sp. Scott River (K.F. Kenneally 2371)			
84	3186	Aphanes arvensis (Parsley Piert)	Y		
85	1117	Aphelia cyperoides			
86	6211	Apium prostratum (Sea Celery)			
87	32314	Archidium rehmannii			
88	7838	Arctotheca calendula (Cape Weed, African Marigold)	Y		
89	11542	Arrhenatherum elatius var. bulbosum (Onion Twitch)	Y		
90	226	Arundo donax (Giant Reed)	Y		
91	8779	Asparagus asparagoides (Bridal Creeper)	Y		
92	1201	Asparagus officinalis (Asparagus)	Y		
93	61	Asplenium aethiopicum (Forked Spleenwort)			
94	62	Asplenium flabellifolium (Necklace Fern)			
95	20127	Astartea glomerulosa (Early Astartea)			
96	20249	Astartea leptophylla (River-bank Astartea)			
97	20283	Astartea scoparia (Common Astartea)			
98	42801	Astartea zephyra			
99	7850	Asteridea nivea			
100	7851	Asteridea pulverulenta (Common Bristle Daisy)			
101	6323	Astroloma ciliatum (Candle Cranberry)			
102	6325	Astroloma drummondii			
103	6334	Astroloma pallidum (Kick Bush)			
104	17233	Austrostipa campylachne			
105	17242	Austrostipa juncifolia			
106	233	Avena barbata (Bearded Oat)	Y		

107	235	<i>Avena sativa</i> (Common Oat)	Y		
108	20013	<i>Axonopus fissifolius</i>	Y		
109	36441	<i>Babingtonia camphorosmae</i> (Camphor Myrtle)			
110	32525	<i>Banksia formosa</i> (Showy Dryandra)			
111	1822	<i>Banksia ilicifolia</i> (Holly-leaved Banksia)			
112	1830	<i>Banksia littoralis</i> (Swamp Banksia, Pungura)			
113	1844	<i>Banksia quercifolia</i> (Oak-leaved Banksia)			
114	1848	<i>Banksia seminuda</i> (River Banksia)			
115	32012	<i>Banksia</i> sp. Boyup Brook (L.W. Sage LWS 2366)		P1	
116	32315	<i>Barbula calycina</i>			
117	32319	<i>Barbula luteola</i>			
118	15037	<i>Bartsia trixago</i>	Y		
119	743	<i>Baumea juncea</i> (Bare Twigrush)			
120	744	<i>Baumea laxa</i>			
121	745	<i>Baumea preissii</i>			
122	748	<i>Baumea vaginalis</i> (Sheath Twigrush)			
123	5392	<i>Beaufortia sparsa</i> (Swamp Bottlebrush)			
124	3157	<i>Billardiera floribunda</i> (White-flowered Billardiera)			
125	25798	<i>Billardiera fusiformis</i> (Australian Bluebell)			
126	3159	<i>Billardiera laxiflora</i>			
127	3165	<i>Billardiera variifolia</i>			
128	4413	<i>Boronia crenulata</i> (Aniseed Boronia)			
129	17653	<i>Boronia crenulata</i> subsp. <i>pubescens</i>			
130	11503	<i>Boronia crenulata</i> var. <i>crenulata</i>			
131	4415	<i>Boronia defoliata</i>			
132	4422	<i>Boronia gracilipes</i> (Karri Boronia)			
133	4428	<i>Boronia megastigma</i> (Scented Boronia)			
134	4429	<i>Boronia molloyae</i> (Tall Boronia)			
135	4430	<i>Boronia nematophylla</i>			
136	4441	<i>Boronia spathulata</i> (Boronia)			
137	4442	<i>Boronia stricta</i>			
138	20392	<i>Boronia tenuior</i>			
139	3704	<i>Bossiaea aquifolium</i> (Water Bush, Nedik)			
140	14397	<i>Bossiaea aquifolium</i> subsp. <i>laidlawiana</i>			

141	3713	Bossiaea linophylla			
142	3714	Bossiaea ornata (Broad Leaved Brown Pea)			
143	14291	Bossiaea praetermissa			
144	3718	Bossiaea rufa			
145	6341	Brachyloma preissii (Globe Heath)			
146	7878	Brachyscome iberidifolia			
147	2996	Brassica nigra (Black Mustard)	Y		
148	3000	Brassica tournefortii (Mediterranean Turnip)	Y		
149	244	Briza maxima (Blowfly Grass)	Y		
150	245	Briza minor (Shivery Grass)	Y		
151	249	Bromus diandrus (Great Brome)	Y		
152	250	Bromus hordeaceus (Soft Brome)	Y		
153	32330	Bryum argenteum			
154	29705	Buddleja davidii	Y		
155	12770	Burchardia congesta			
156	1384	Burchardia monantha			
157	1385	Burchardia multiflora (Dwarf Burchardia)			
158	1276	Caesia micrantha (Pale Grass Lily)			
159	1277	Caesia occidentalis			
160		Caesia sp.			
161	15332	Caladenia attingens subsp. attingens			
162	15335	Caladenia brownii			
163	13617	Caladenia christineae		T	
164	18504	Caladenia erythrochila		P2	
165	1590	Caladenia ferruginea (Rusty Spider Orchid)			
166	1592	Caladenia flava (Cowslip Orchid)			
167	15350	Caladenia flava subsp. sylvestris			
168	15351	Caladenia gardneri			
169	15353	Caladenia heberleana			
170	1603	Caladenia longiclavata (Clubbed Spider Orchid)			
171	1604	Caladenia macrostylis (Leaping Spider Orchid)			
172	15371	Caladenia nana subsp. nana			
173	15372	Caladenia nana subsp. unita			
174	18033	Caladenia pholcoidea subsp. pholcoidea			
175	1612	Caladenia radiata (Ray Spider Orchid)			
176		Caladenia sp.			
177	44899	Caladenia straminichila			

178	13864	<i>Caladenia winfieldii</i>		T	
179	10861	<i>Callistachys lanceolata</i> (Wonnich)			
180	4717	<i>Callitriche stagnalis</i> (Common Starwort)	Y		
181	29651	<i>Callitris rhomboidea</i>	Y		Y
182	5415	<i>Calothamnus lateralis</i>			
183	5430	<i>Calothamnus schaueri</i>			
184	5458	<i>Calytrix flavescens</i> (Summer Starflower)			
185	5474	<i>Calytrix pulchella</i>		P3	
186	5482	<i>Calytrix tenuiramea</i>			
187	32334	<i>Campylopus australis</i>			
188	32461	<i>Campylopus bicolor</i> var. <i>bicolor</i>			
189	32336	<i>Campylopus clavatus</i>			
190	32338	<i>Campylopus introflexus</i>	Y		
191	3005	<i>Cardamine hirsuta</i> (Common Bittercress)	Y		
192	7909	<i>Carduus pycnocephalus</i> (Slender Thistle)	Y		
193	7910	<i>Carduus tenuiflorus</i> (Slender Thistle, Winged Slender Thistle, Sheep Thistle)	Y		
194	753	<i>Carex appressa</i> (Tall Sedge)			
195	754	<i>Carex divisa</i> (Divided Sedge)	Y		
196	755	<i>Carex fascicularis</i> (Tassel Sedge)			
197	759	<i>Carex tereticaulis</i>		P3	
198	2951	<i>Cassytha flava</i> (Dodder Laurel)			
199	2954	<i>Cassytha micrantha</i>			
200	2957	<i>Cassytha racemosa</i> (Dodder Laurel)			
201	11799	<i>Cassytha racemosa</i> forma <i>racemosa</i>			
202	7916	<i>Centaurea melitensis</i> (Maltese Cockspur, Malta Thistle)	Y		
203	6539	<i>Centaurium erythraea</i> (Common Centaury)	Y		
204	6542	<i>Centaurium tenuiflorum</i>	Y		
205	6214	<i>Centella asiatica</i>			
206	7918	<i>Centipeda cunninghamii</i> (Common Sneezewood, Gukwonderuk, Old Man Weed)			
207	1121	<i>Centrolepis aristata</i> (Pointed Centrolepis)			
208	1133	<i>Centrolepis pilosa</i>			
209	1134	<i>Centrolepis polygyna</i> (Wiry Centrolepis)			
210	3148	<i>Cephalotus follicularis</i> (Albany Pitcher Plant)			
211	2889	<i>Cerastium glomeratum</i> (Mouse Ear Chickweed)	Y		
212	32462	<i>Ceratodon purpureus</i> subsp. <i>convolutus</i>			

213		<i>Chaetophyllopsis whiteleggei</i>			
214	18156	<i>Chamaecytisus palmensis</i> (Tagasaste)	Y		
215	1280	<i>Chamaescilla corymbosa</i> (Blue Squill)			
216	11299	<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>			
217	36040	<i>Chamelaucium</i> sp. Mt Frankland (A.S. George 11117)		P3	
218	1513	<i>Chasmanthe floribunda</i> (African Cornflag)	Y		
219	2483	<i>Chenopodium album</i> (Fat Hen)	Y		
220	2494	<i>Chenopodium murale</i> (Nettle-leaf Goosefoot)	Y		
221		<i>Chiloscyphus semiteres</i>			
222		<i>Chiloscyphus semiteres</i> var. <i>semiteres</i>			
223	17689	<i>Chordifex laxus</i>			
224	2335	<i>Choretrum lateriflorum</i> (Dwarf Sour Bush)			
225	4448	<i>Chorilaena quercifolia</i> (Chorilaena)			
226	763	<i>Chorizandra enodis</i> (Black Bristlerush)			
227	3754	<i>Chorizema diversifolium</i>			
228	12765	<i>Chorizema nanum</i>			
229	13107	<i>Chorizema retrorsum</i>			
230	3761	<i>Chorizema rhombeum</i>			
231	7937	<i>Cirsium vulgare</i> (Spear Thistle, Scotch Thistle)	Y		
232	2929	<i>Clematis pubescens</i> (Common Clematis)			
233	4550	<i>Comesperma calymega</i> (Blue-spike Milkwort)			
234	4551	<i>Comesperma ciliatum</i>			
235	4552	<i>Comesperma confertum</i>			
236	4554	<i>Comesperma flavum</i>			
237	4564	<i>Comesperma virgatum</i> (Milkwort)			
238	40871	<i>Commersonia apella</i>		T	
239	40863	<i>Commersonia corylifolia</i> (Hazel-leaved Rulingia)			
240	1418	<i>Conostylis aculeata</i> (Prickly Conostylis)			
241	11826	<i>Conostylis aculeata</i> subsp. <i>aculeata</i>			
242	1453	<i>Conostylis serrulata</i>			
243	11597	<i>Conostylis setigera</i> subsp. <i>setigera</i>			
244	7939	<i>Conyza bonariensis</i> (Flaxleaf Fleabane)	Y		
245	7941	<i>Conyza parva</i>	Y		
246	20074	<i>Conyza sumatrensis</i>	Y		

247	277	Cortaderia selloana (Pampas Grass)	Y		
248	12945	Corybas recurvus			
249	17104	Corymbia calophylla (Marri)			
250	6352	Cosmelia rubra (Spindle Heath)			
251	18319	Cotoneaster glaucophyllus	Y		
252	18320	Cotoneaster pannosus	Y		
253	11349	Crassula decumbens var. decumbens			
254	33036	Crassula multicava	Y		Y
255	7952	Crepis capillaris (Smooth Hawksbeard)	Y		
256	1514	Crocasmia x crocosmiiflora	Y		
257	4451	Crocea angustifolia (Crocea)			
258	11306	Crocea angustifolia var. angustifolia			
259	17729	Crocea angustifolia var. platyphylla			
260	14791	Cryptandra arbutiflora var. pygmaea		P3	
261	1627	Cryptostylis ovata (Slipper Orchid)			
262	13732	Cuscuta campestris (Golden dodder)	Y		
263	51	Cyathea cooperi	Y		
264	768	Cyathochaeta avenacea			
265	40660	Cycnogeton huegelii			
266	283	Cynodon dactylon (Couch)	Y		
267	285	Cynosurus echinatus (Rough Dogstail)	Y		
268	776	Cyperus brevifolius (Kyllinga Weed)	Y		
269	783	Cyperus congestus (Dense Flat-sedge)	Y		
270	10916	Cyrtostylis huegelii			
271	10964	Cyrtostylis robusta			
272	287	Dactylis glomerata (Cocksfoot)	Y		
273	7420	Dampiera alata (Winged-stem Dampiera)			
274	7444	Dampiera hederacea (Karri Dampiera)			
275	7452	Dampiera leptoclada (Slender-shooted Dampiera)			
276	7454	Dampiera linearis (Common Dampiera)			
277	7484	Dampiera trigona (Angled-stem Dampiera)			
278	5533	Darwinia vestita (Pom-pom Darwinia)			
279	1218	Dasypogon bromeliifolius (Pineapple Bush)			
280	1219	Dasypogon hookeri (Pineapple Bush)			

281	6964	<i>Datura stramonium</i> (Common Thornapple)	Y		
282	6218	<i>Daucus glochidiatus</i> (Australian Carrot)			
283	3799	<i>Daviesia cordata</i> (Bookleaf)			
284	15505	<i>Daviesia incrassata</i> subsp. <i>incrassata</i>			
285	10894	<i>Delairea odorata</i> (Ivy Groundsel, Cape Ivy)	Y		
286	17691	<i>Desmocladius fasciculatus</i>			
287	16595	<i>Desmocladius flexuosus</i>			
288	298	<i>Deyeuxia inaequalis</i>		P1	
289	299	<i>Deyeuxia quadriseta</i> (Reed Bentgrass)			
290	1259	<i>Dianella revoluta</i> (Blueberry Lily)			
291	7487	<i>Diaspasis filifolia</i> (Thread-leaved Diaspasis)			
292	306	<i>Dichelachne crinita</i> (Longhair Plumegrass)			
293	307	<i>Dichelachne micrantha</i> (Shorthair Plumegrass)			
294	32344	<i>Dicranoloma diaphanoneuron</i>			
295	32345	<i>Didymodon australasiae</i>			
296	32346	<i>Didymodon torquatus</i>			
297	320	<i>Digitaria sanguinalis</i> (Crab Grass)	Y		
298	3867	<i>Dipogon lignosus</i> (Dolichos Pea)	Y		
299	19649	<i>Disa bracteata</i>	Y		
300	32347	<i>Ditrichum difficile</i>			
301	7961	<i>Dittrichia graveolens</i> (Stinkwort)	Y		
302	42230	<i>Diuris insignis</i>			
303	4782	<i>Dodonaea viscosa</i> (Sticky Hopbush)			
304	17338	<i>Dodonaea viscosa</i> subsp. <i>viscosa</i>	Y		
305	1640	<i>Drakaea glyptodon</i> (King-in-his-carriage)			
306	11156	<i>Drakaea livida</i>			
307	1642	<i>Drakaea thynniphila</i>			
308	13211	<i>Drosera erythrorhiza</i> subsp. <i>collina</i>			
309	3100	<i>Drosera hamiltonii</i> (Rosy Sundew)			
310	3102	<i>Drosera huegelii</i> (Bold Sundew)			
311	13216	<i>Drosera menziesii</i> subsp. <i>penicillaris</i>			
312	11768	<i>Drosera neesii</i> subsp. <i>neesii</i>			
313	3118	<i>Drosera pallida</i> (Pale Rainbow)			
314	3122	<i>Drosera platypoda</i> (Fan-leaved Sundew)			

315	3124	<i>Drosera pulchella</i> (Pretty Sundew)			
316	3131	<i>Drosera stolonifera</i> (Leafy Sundew)			
317	33500	<i>Dysphania ambrosioides</i> (Mexican Tea)	Y		
318	33480	<i>Dysphania pumilio</i> (Clammy Goosefoot)			
319	32351	<i>Eccremidium pulchellum</i>			
320	11105	<i>Echinochloa crus-galli</i>	Y		
321	340	<i>Echinopogon ovatus</i> (Hedgehog Grass)			
322	6681	<i>Echium plantagineum</i> (Paterson's Curse)	Y		
323	347	<i>Ehrharta calycina</i> (Perennial Veldt Grass)	Y		
324	349	<i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
325		<i>Ehrharta</i> sp.			
326	353	<i>Eleusine indica</i> (Crowsfoot Grass)	Y		
327	1643	<i>Elythranthera brunonis</i> (Purple Enamel Orchid)			
328	1067	<i>Empodisma gracillimum</i>			
329	32354	<i>Entosthodon productus</i>			
330	32356	<i>Entosthodon subnudus</i>			
331	1645	<i>Epiblema grandiflorum</i> (Babe-in-a-cradle)			
332	6131	<i>Epilobium billardioreanum</i> (Glabrous Willow Herb)			
333	11570	<i>Epilobium billardioreanum</i> subsp. <i>billardioreanum</i> (Smooth Willow Herb)			
334	11992	<i>Epilobium billardioreanum</i> subsp. <i>intermedium</i>			
335	6133	<i>Epilobium hirtigerum</i> (Hairy Willow Herb)			
336	373	<i>Eragrostis brownii</i> (Brown's Lovegrass)			
337	376	<i>Eragrostis curvula</i> (African Lovegrass)	Y		
338	3149	<i>Eremosyne pectinata</i>			
339	18263	<i>Erica baccans</i>	Y		
340	18301	<i>Eriobotrya japonica</i>	Y		
341	1646	<i>Eriochilus dilatatus</i> (White Bunny Orchid)			
342	15411	<i>Eriochilus dilatatus</i> subsp. <i>magnus</i>			
343	15412	<i>Eriochilus dilatatus</i> subsp. <i>multiflorus</i>			
344	15413	<i>Eriochilus dilatatus</i> subsp. <i>undulatus</i>			
345	13866	<i>Eriochilus pulchellus</i>			
346	15415	<i>Eriochilus scaber</i> subsp. <i>scaber</i>			

347	4332	<i>Erodium botrys</i> (Long Storksbill)	Y		
348	4333	<i>Erodium cicutarium</i> (Common Storksbill)	Y		
349	6219	<i>Eryngium pinnatifidum</i> (Blue Devils)			
350	2962	<i>Eschscholzia californica</i>	Y		
351	5605	<i>Eucalyptus cornuta</i> (Yate, Yeid)			
352	5615	<i>Eucalyptus decipiens</i> (Limestone Marlock, Moit)			
353	5625	<i>Eucalyptus diversicolor</i> (Karri)			
354	18216	<i>Eucalyptus globulus</i>	Y		
355	13547	<i>Eucalyptus marginata</i> subsp. <i>marginata</i> (Jarrah)			
356	5709	<i>Eucalyptus megacarpa</i> (Bullich, Pulidj)			
357	5739	<i>Eucalyptus patens</i> (Swan River Blackbutt, Dwuda)			
358	5763	<i>Eucalyptus rudis</i> (Flooded Gum, Kulurda)			
359	19088	<i>Euchiton collinus</i>			
360	15137	<i>Euchiton sphaericus</i>			
361	4626	<i>Euphorbia drummondii</i> (Caustic Weed, Piwi)			
362	29940	<i>Euphorbia maculata</i>	Y		
363	4638	<i>Euphorbia peplus</i> (Petty Spurge)	Y		
364	4648	<i>Euphorbia terracina</i> (Geraldton Carnation Weed)	Y		
365	20214	<i>Eutaxia myrtifolia</i>			
366	3879	<i>Eutaxia parvifolia</i>			
367	834	<i>Evandra aristata</i>			
368	2411	<i>Fagopyrum esculentum</i>	Y		
369	430	<i>Festuca arundinacea</i> (Tall Fescue)	Y		
370	433	<i>Festuca rubra</i> (Red Fescue)	Y		
371	20216	<i>Ficinia nodosa</i> (Knotted Club Rush)			
372	32368	<i>Fissidens taylorii</i>			
373	32469	<i>Fissidens taylorii</i> var. <i>taylorii</i>			
374	32369	<i>Fissidens tenellus</i>			
375	6221	<i>Foeniculum vulgare</i> (Fennel)	Y		
376		<i>Fossombronina intestinalis</i>			
377	40241	<i>Fraxinus angustifolia</i>	Y		
378	18392	<i>Freesia alba</i> x <i>leichtlinii</i>	Y		
379		<i>Frullania falciloba</i>			
380		<i>Frullania latogaleata</i>			
381		<i>Frullania probosciphora</i>			
382	2969	<i>Fumaria capreolata</i> (Whiteflower Fumitory)	Y		

383	2971	Fumaria muralis (Wall Fumitory)	Y		
384	31532	Fumaria muralis subsp. muralis	Y		
385	32370	Funaria hygrometrica			
386	902	Gahnia decomposita			
387	7323	Galium murale (Small Goosegrass)	Y		
388	20247	Gamochoaeta calviceps	Y		
389	12932	Gastrodia lacista			
390	3891	Gastrolobium bilobum (Heart Leaf Poison)			
391	19190	Gastrolobium cuneatum			
392	20473	Gastrolobium ebracteolatum			
393	14202	Gastrolobium glabratum			
394	20502	Gastrolobium melanopetalum			
395	3924	Gastrolobium spinosum (Prickly Poison)			
396		Gelidium asperum			Y
397	32374	Gemmabryum cheelii			
398	36920	Gemmabryum coronatum			Y
399	32376	Gemmabryum dichotomum			
400	32379	Gemmabryum inaequale			
401	32380	Gemmabryum pachythemum			
402	32383	Gemmabryum sullivanii			
403	18143	Genista monspessulana	Y		
404	4337	Geranium dissectum (Cutleaf Cranesbill)	Y		
405	4339	Geranium molle (Dove's Foot Cranesbill)	Y		
406	4340	Geranium retrorsum			
407	1518	Gladiolus angustus (Long Tubed Painted Lady)	Y		
408	18298	Gladiolus carneus	Y		
409	1524	Gladiolus undulatus (Wild Gladiolus)	Y		
410	10909	Gompholobium confertum			
411	3951	Gompholobium marginatum			
412	3953	Gompholobium ovatum			
413	3954	Gompholobium polymorphum			
414	3955	Gompholobium preissii			
415	11083	Gompholobium scabrum			
416	3957	Gompholobium tomentosum (Hairy Yellow Pea)			
417	6146	Gonocarpus benthamii			
418	16746	Gonocarpus benthamii subsp. benthamii			
419	7505	Goodenia eatoniana			
420	7508	Goodenia filiformis (Thread-leaved Goodenia)			
421	7538	Goodenia pulchella			

422	13165	Goodenia pusilla			
423	7558	Goodenia triodiophila			
424	17787	Goodia medicaginea			
425	7394	Grammatotheca bergiana	Y		
426	37500	Grammatotheca bergiana var. bergiana	Y		
427	14282	Gratiola pubescens			
428	13085	Grevillea centristigma			
429	15990	Grevillea pulchella subsp. ascendens			
430	2080	Grevillea quercifolia (Oak-leaf Grevillea)			
431		Grevillea sp.			
432	2112	Grevillea trifida			
433	32390	Gymnostomum calcareum			
434		Haemodorum sp.			
435	1475	Haemodorum spicatum (Mardja)			
436	2128	Hakea amplexicaulis (Prickly Hakea)			
437	2169	Hakea lasiantha (Woolly Flowered Hakea)			
438	2170	Hakea lasianthoides			
439	2175	Hakea lissocarpha (Honey Bush)			
440	2191	Hakea oleifolia (Dungyn)			
441	2216	Hakea varia (Variable-leaved Hakea)			
442	6183	Haloragodendron racemosum (Shrubby Raspwort)			
443	3961	Hardenbergia comptoniana (Native Wisteria)			
444	32391	Hedwigia ciliata			
445	439	Hemarthria uncinata (Matgrass)			
446	6856	Hemigenia incana (Silky Hemigenia)			
447	41142	Hesperocypris lusitanica	Y		
448	5109	Hibbertia amplexicaulis			
449	5114	Hibbertia commutata			
450	5117	Hibbertia cuneiformis (Cutleaf Hibbertia)			
451	5118	Hibbertia cunninghamii			
452	5132	Hibbertia grossulariifolia			
453	5136	Hibbertia inclusa			
454	5137	Hibbertia inconspicua			
455	5154	Hibbertia perfoliata			
456	5162	Hibbertia racemosa (Stalked Guinea Flower)			
457	5169	Hibbertia serrata (Serrate Leaved Guinea Flower)			
458	5170	Hibbertia silvestris			

459		Hibbertia sp.			
460	5172	Hibbertia stellaris (Orange Stars)			
461	5173	Hibbertia subvaginata			
462	19688	Hibbertia trichocalyx			
463	13758	Histiopteris incisa			
464	444	Holcus lanatus (Yorkshire Fog)	Y		
465	5816	Homalospermum firmum			
466	449	Hordeum leporinum (Barley Grass)	Y		
467	3964	Hovea chorizemifolia (Holly-leaved Hovea)			
468	3965	Hovea elliptica (Tree Hovea)			
469	12741	Hyalosperma cotula			
470	16758	Hyalosperma simplex subsp. graniticola			
471	16759	Hyalosperma simplex subsp. simplex			
472	5216	Hybanthus calycinus (Wild Violet)			
473	5218	Hybanthus debilissimus			
474	12007	Hybanthus floribundus subsp. floribundus			
475	6226	Hydrocotyle callicarpa (Small Pennywort)			
476	6231	Hydrocotyle hirta (Hairy Pennywort)			
477	6240	Hydrocotyle scutellifera			
478	26962	Hymenocladia dactyloides			
479	5180	Hypericum gramineum (Small St John's Wort)			
480	5181	Hypericum japonicum (Matted St John's Wort)			
481	5182	Hypericum perforatum (St John's Wort)	Y		
482	32394	Hypnum cupressiforme			
483	5818	Hypocalymma cordifolium			
484	5819	Hypocalymma ericifolium			
485	5825	Hypocalymma robustum (Swan River Myrtle)			
486	5827	Hypocalymma strictum			
487	8086	Hypochaeris glabra (Smooth Catsear)	Y		
488	9352	Hypochaeris radicata (Flat Weed, Cats-ear)	Y		
489	1070	Hypolaena exsulca			
490	11062	Hypolepis rugosula	Y		
491	32396	Ischyrodon lepturus			
492	910	Isolepis cernua (Nodding Club-rush)			
493	20199	Isolepis cernua var. cernua			
494	912	Isolepis cyperoides			

495	913	Isolepis fluitans (Floating Club Rush)			
496	917	Isolepis marginata (Coarse Club-rush)			
497	2237	Isopogon sphaerocephalus (Drumstick Isopogon)			
498	7396	Isotoma hypocrateriformis (Woodbridge Poison)			
499	3992	Isotropis cuneifolia (Granny Bonnets)			
500	19700	Isotropis cuneifolia subsp. cuneifolia			
501	1532	Ixia maculata (Yellow Ixia)	Y		
502	8092	Ixiolaena viscosa (Sticky Ixiolaena)			
503		Jamesoniella colorata			
504	1295	Johnsonia acaulis			
505	1297	Johnsonia lupulina (Hooded Lily)			
506	8328	Juncus amabilis			
507	1177	Juncus articulatus (Jointed Rush)	Y		
508	1178	Juncus bufonius (Toad Rush)	Y		
509	1180	Juncus capitatus (Capitate Rush)	Y		
510	8329	Juncus gregiflorus			
511	1184	Juncus holoschoenus (Jointleaf Rush)			
512	1186	Juncus microcephalus	Y		
513	1188	Juncus pallidus (Pale Rush)			
514	1189	Juncus pauciflorus (Loose Flower Rush)			
515	1190	Juncus planifolius (Broadleaf Rush)			
516	4036	Kennedia carinata			
517	4037	Kennedia coccinea (Coral Vine)			
518	4039	Kennedia glabrata (Northcliffe Kennedia)		T	
519	4044	Kennedia prostrata (Scarlet Runner)			
520	1221	Kingia australis (Kingia, Pulonok)			
521	17508	Kunzea micrantha subsp. oligandra			
522	5841	Kunzea recurva			
523	5844	Kunzea sulphurea			
524	20019	Lachnagrostis filiformis			
525	8096	Lactuca serriola (Prickly Lettuce)	Y		
526	18585	Lagenophora huegelii			
527	17004	Lasiopetalum cordifolium subsp. cordifolium			
528	5033	Lasiopetalum floribundum (Free Flowering Lasiopetalum)			

529	17040	Lathyrus latifolius (Perennial Pea)	Y		
530	4047	Lathyrus tingitanus (Tangier Pea)	Y		
531	4049	Latrobea diosmifolia			
532	26999	Laurencia clavata			
533	6879	Lavandula stoechas (Italian Lavender)	Y		
534	38323	Lavandula stoechas subsp. stoechas	Y		
535	3018	Lepidium africanum (Rubble Peppergrass)	Y		
536	3021	Lepidium bonariense (Peppergrass)	Y		
537	932	Lepidosperma effusum (Spreading Sword-sedge)			
538	933	Lepidosperma gladiatum (Coast Sword-sedge, Kerbin)			
539	934	Lepidosperma gracile (Slender Sword Sedge)			
540	936	Lepidosperma leptostachyum			
541	938	Lepidosperma persecans			
542	940	Lepidosperma pubisquamum			
543		Lepidosperma sp.			
544	945	Lepidosperma squamatum			
545	948	Lepidosperma tetraquetrum			
546	8100	Leptinella drummondii		P3	
547	46382	Leptocarpus roycei			
548	1082	Leptocarpus tenax (Slender Twine Rush)			
549	15418	Leptoceras menziesii			
550	2342	Leptomeria cunninghamii			
551	17703	Leptomeria ellytes			
552	2353	Leptomeria scrobiculata			
553	2355	Leptomeria squarrosa			
554		Leptospermum continentale			
555	5847	Leptospermum erubescens (Roadside Teatree)			
556	5850	Leptospermum laevigatum (Coast Teatree)	Y		
557	29871	Leptospermum rotundifolium	Y		Y
558	19821	Lessertia frutescens	Y		
559		Lethocolea pansa			
560	1493	Leucojum aestivum (Snowflake)	Y		
561	6360	Leucopogon australis (Spiked Beard-heath)			
562	6367	Leucopogon capitellatus			
563	44201	Leucopogon decrescens			
564	6387	Leucopogon distans			
565	6402	Leucopogon hirsutus			

566	33380	Leucopogon interstans			
567	41260	Leucopogon microcarpus			
568	40941	Leucopogon obovatus subsp. revolutus			
569	6425	Leucopogon oxycedrus			
570	6428	Leucopogon pendulus			
571	6435	Leucopogon polystachyus			
572	6436	Leucopogon propinquus			
573	6440	Leucopogon racemulosus			
574	34718	Leucopogon sp. Southern Forests (B.G. Hammersley 1000)			
575	6454	Leucopogon verticillatus (Tassel Flower)			
576	7670	Levenhookia dubia (Hairy Stylewort)			
577	7674	Levenhookia preissii (Preiss's Stylewort)			
578	7676	Levenhookia pusilla (Midget Stylewort)			
579	31894	Ligustrum ovalifolium	Y		
580	59	Lindsaea linearis (Screw Fern)			
581	4363	Linum trigynum (French Flax)	Y		
582	36180	Liparophyllum latifolium			
583	36179	Liparophyllum violifolium			
584	9289	Lobelia anceps (Angled Lobelia)			
585	7402	Lobelia gibbosa (Tall Lobelia)			
586	7406	Lobelia rhombifolia (Tufted Lobelia)			
587	3048	Lobularia maritima (Sweet Alyssum)	Y		
588	6515	Logania vaginalis (White Spray)			
589	476	Lolium perenne (Perennial Ryegrass)	Y		
590	478	Lolium rigidum (Wimmera Ryegrass)	Y		
591	11766	Lolium temulentum forma arvense	Y		
592	1222	Lomandra brittanii			
593	1223	Lomandra caespitosa (Tufted Mat Rush)			
594	1225	Lomandra drummondii			
595	1228	Lomandra hermaphrodita			
596	1229	Lomandra integra			
597	1234	Lomandra nigricans			
598	1238	Lomandra pauciflora			
599	1239	Lomandra preissii			
600	1240	Lomandra purpurea (Purple Mat Rush)			
601	1243	Lomandra sericea (Silky Mat Rush)			

602		Lomandra sp.			
603	4059	Lotus angustissimus (Narrowleaf Trefoil)	Y		
604	8564	Lotus subbiflorus	Y		
605	4063	Lotus uliginosus (Greater Lotus)	Y		
606	1092	Loxocarya cinerea			
607	4066	Lupinus cosentinii	Y		
608	4067	Lupinus luteus (Yellow Lupin)	Y		
609	18049	Lyginia imberbis			
610	36375	Lysimachia arvensis (Pimpernel)	Y		
611	34736	Lysinema pentapetalum			
612	5281	Lythrum hyssopifolia (Lesser Loosestrife)	Y		
613	32401	Macromitrium archeri			
614	85	Macrozamia riedlei (Zamia, Djiridji)			
615	4961	Malva parviflora (Marshmallow)	Y		
616		Marchantia berteroana			
617	25822	Marianthus sylvaticus			
618	4072	Medicago arabica (Spotted Medic)	Y		
619	4079	Medicago polymorpha (Burr Medic)	Y		
620	34676	Meionectes brownii (Swamp Raspwort)			
621	5900	Melaleuca cuticularis (Saltwater Paperbark)			
622	5921	Melaleuca incana (Grey Honeymyrtle)			
623	13273	Melaleuca incana subsp. incana			
624	5938	Melaleuca microphylla			
625	5952	Melaleuca preissiana (Moonah)			
626	5959	Melaleuca raphiophylla (Swamp Paperbark)			
627	5980	Melaleuca thymoides			
628	5987	Melaleuca viminea (Mohan)			
629	4785	Melianthus major	Y		
630	6882	Mentha aquatica	Y		Y
631	6883	Mentha pulegium (Pennyroyal)	Y		
632	6884	Mentha spicata (Spearmint)	Y		
633	6885	Mentha suaveolens (Apple Mint)	Y		
634	15994	Mentha x piperita var. citrata	Y		
635	19728	Mentha x piperita var. piperita	Y		
636		Metzgeria furcata			
637	485	Microlaena stipoides (Weeping Grass)			

638	11747	Microlaena stipoides var. stipoides			
639	1657	Microtis alba (White Mignonette Orchid)			
640	8814	Microtis brownii			
641	8106	Millotia tenuifolia (Soft Millotia)			
642	4090	Mirbelia dilatata (Holly-leaved Mirbelia)			
643	4963	Modiola caroliniana	Y		
644	7410	Monopsis debilis	Y		
645	37440	Monopsis debilis var. depressa	Y		
646	4666	Monotaxis occidentalis			
647	19179	Moraea flaccida (One-leaf Cape Tulip)	Y		
648	7292	Myoporum oppositifolium (Twin-leaf Myoporum)			
649	6189	Myriophyllum crispatum			
650	6195	Myriophyllum limnophilum			
651	1494	Narcissus pseudonarcissus	Y		
652	44496	Narcissus tazetta subsp. italicus	Y		
653	6464	Needhamiella pumilio			
654	6139	Oenothera glazioviana (Evening Primrose)	Y		
655	6142	Oenothera stricta (Common Evening Primrose)	Y		
656	6503	Olea europaea (Olive)	Y		
657	8127	Olearia axillaris (Coastal Daisybush)			
658	8130	Olearia cassiniaie			
659	8143	Olearia paucidentata (Autumn Scrub Daisy)			
660	7348	Opercularia hispidula (Hispid Stinkweed)			
661	7354	Opercularia volubilis (Twining Stinkweed)			
662	36177	Ornduffia albiflora			
663	36181	Ornduffia parnassifolia			
664	4113	Ornithopus compressus (Yellow Serradella)	Y		
665	4114	Ornithopus pinnatus (Slender Serradella)	Y		
666	7122	Orobanche minor (Lesser Broomrape)	Y		
667	32406	Orthodontium lineare			
668	1539	Orthrosanthus multiflorus (Morning Iris)			
669	1540	Orthrosanthus polystachyus (Many Spike Orthrosanthus)			
670	4349	Oxalis corniculata (Yellow Wood Sorrel)	Y		
671	18331	Oxalis debilis var. corymbosa (Pink Shamrock)	Y		
672	30375	Oxalis exilis			

673	4352	<i>Oxalis glabra</i>	Y		
674	4354	<i>Oxalis incarnata</i>	Y		
675	4356	<i>Oxalis pes-caprae</i> (Soursob)	Y		
676	4358	<i>Oxalis purpurea</i> (Largeflower Wood Sorrel)	Y		
677	4359	<i>Oxalis violacea</i> (Violet Wood Sorrel)	Y		
678	507	<i>Panicum miliaceum</i> (Millet Panic)	Y		
679	1667	<i>Paracaleana nigrita</i> (Flying Duck Orchid)			
680	17114	<i>Paraserianthes lophantha</i> subsp. <i>lophantha</i>			
681	7089	<i>Parentucellia latifolia</i> (Common Bartsia)	Y		
682	7090	<i>Parentucellia viscosa</i> (Sticky Bartsia)	Y		
683	527	<i>Paspalum dilatatum</i>	Y		
684	533	<i>Paspalum vaginatum</i> (Salt Water Couch)			
685	1550	<i>Patersonia occidentalis</i> (Purple Flag, Koma)			
686	30471	<i>Patersonia occidentalis</i> var. <i>angustifolia</i>			
687	30472	<i>Patersonia occidentalis</i> var. <i>occidentalis</i>			
688	1551	<i>Patersonia pygmaea</i> (Pygmy Patersonia)			
689	1553	<i>Patersonia umbrosa</i> (Yellow Flags)			
690	11550	<i>Patersonia umbrosa</i> var. <i>xanthina</i> (Yellow Flags)			
691	43762	<i>Pauridia occidentalis</i> var. <i>quadriloba</i>			
692	4342	<i>Pelargonium australe</i> (Wild Geranium)			
693	4346	<i>Pelargonium littorale</i>			
694	6246	<i>Pentapeltis silvatica</i> (Southern Pentapeltis)			
695	13911	<i>Persicaria decipiens</i>			
696	11020	<i>Persicaria hydropiper</i>			
697	11052	<i>Persicaria prostrata</i>			
698	2267	<i>Persoonia longifolia</i> (Snottygobble)			
699	2293	<i>Petrophile diversifolia</i>			
700	2306	<i>Petrophile rigida</i>			
701	19825	<i>Petrorhagia dubia</i>	Y		
702		<i>Phaeoceros laevis</i>			
703	548	<i>Phalaris aquatica</i> (Phalaris)	Y		
704	550	<i>Phalaris canariensis</i> (Canary Grass)	Y		
705	32411	<i>Philonotis tenuis</i>			
706	18532	<i>Philothea nodiflora</i> subsp. <i>lasiocalyx</i>			

707	1478	<i>Phlebocarya ciliata</i>			
708	16825	<i>Phyllangium divergens</i>			
709	16177	<i>Phyllangium paradoxum</i>			
710	4675	<i>Phyllanthus calycinus</i> (False Boronia)			
711	4	<i>Phylloglossum drummondii</i> (Pigmy Clubmoss)			
712	5231	<i>Pimelea angustifolia</i> (Narrow-leaved Pimelea)			
713	11928	<i>Pimelea ciliata</i> subsp. <i>ciliata</i>			
714	5239	<i>Pimelea clavata</i>			
715	5240	<i>Pimelea cracens</i>			
716	5249	<i>Pimelea hispida</i> (Bristly Pimelea)			
717	11402	<i>Pimelea imbricata</i> var. <i>piligera</i>			
718	5264	<i>Pimelea spectabilis</i> (Bunjong)			
719	5269	<i>Pimelea sylvestris</i>			
720	19058	<i>Pinus canariensis</i>	Y		Y
721	43550	<i>Pinus patula</i>	Y		Y
722	87	<i>Pinus pinaster</i> (Pinaster Pine)	Y		
723	88	<i>Pinus radiata</i> (Radiata Pine)	Y		
724	42260	<i>Pithocarpa ramosa</i>			
725	16322	<i>Pittosporum undulatum</i>	Y		
726	7303	<i>Plantago lanceolata</i> (Ribwort Plantain)	Y		
727	7304	<i>Plantago major</i> (Greater Plantain)	Y		
728	17681	<i>Platychora applanata</i>			
729	6253	<i>Platysace filiformis</i>			
730	6258	<i>Platysace pendula</i>			
731	6259	<i>Platysace tenuissima</i>			
732	4524	<i>Platytheca galioides</i>			
733	32413	<i>Pleuridium ecklonii</i>			
734	32414	<i>Pleuridium nervosum</i>			
735	32478	<i>Pleuridium nervosum</i> var. <i>nervosum</i>			
736	575	<i>Poa homomalla</i>			
737	578	<i>Poa porphyroclados</i>			
738	579	<i>Poa pratensis</i> (Kentucky Bluegrass)	Y		
739	86	<i>Podocarpus drouynianus</i> (Wild Plum, Kula)			
740	8175	<i>Podolepis gracilis</i> (Slender Podolepis)			
741	2905	<i>Polycarpon tetraphyllum</i> (Fourleaf Allseed)	Y		
742	8395	<i>Polygala myrtifolia</i> (Myrtleleaf Milkwort)	Y		
743	4578	<i>Polygala virgata</i>	Y		
744	2416	<i>Polygonum arenastrum</i> (Sand Wireweed)	Y		

745	2419	<i>Polygonum aviculare</i> (Wireweed)	Y		
746	582	<i>Polyogon monspeliensis</i> (Annual Beardgrass)	Y		
747	4690	<i>Poranthera huegelii</i>			
748	4691	<i>Poranthera microphylla</i> (Small Poranthera)			
749	110	<i>Potamogeton drummondii</i>			
750	111	<i>Potamogeton ochreatus</i> (Blunt Pondweed)			
751	15424	<i>Praecoxanthus aphyllus</i>			
752	1668	<i>Prasophyllum brownii</i>			
753	1672	<i>Prasophyllum fimbria</i> (Fringed Leek Orchid)			
754	1673	<i>Prasophyllum gibbosum</i> (Humped Leek Orchid)			
755	1677	<i>Prasophyllum macrostachyum</i> (Laughing Leek Orchid)			
756	1681	<i>Prasophyllum regium</i> (King Leek Orchid)			
757	6927	<i>Prunella vulgaris</i> (Self Heal)	Y		
758	17211	<i>Prunus cerasifera</i>	Y		
759	46201	<i>Prunus persica</i>	Y		
760	36219	<i>Pseudocrossidium</i> <i>hornschuchianum</i>			
761	4155	<i>Psoralea pinnata</i> (African Scurfpea)	Y		
762	41651	<i>Pteridium esculentum</i> subsp. <i>esculentum</i>			
763	44526	<i>Pterostylis karri</i>			
764	1693	<i>Pterostylis recurva</i> (Jug Orchid)			
765	18655	<i>Pterostylis</i> sp. crinkled leaf (G.J. Keighery 13426)			
766	1698	<i>Pterostylis vittata</i> (Banded Greenhood)			
767	32416	<i>Ptychomitrium australe</i>			
768	4177	<i>Pultenaea ochreatea</i>			
769	4179	<i>Pultenaea pinifolia</i>		P3	
770	4181	<i>Pultenaea reticulata</i>			
771	16368	<i>Pyrorchis forrestii</i>			
772	16367	<i>Pyrorchis nigricans</i> (Red beaks, Elephants ears)			
773	32419	<i>Racomitrium crispulum</i>			
774	32420	<i>Racopilum cuspidigerum</i>			
775	32480	<i>Racopilum cuspidigerum</i> var. <i>convolutaceum</i>			
776	2932	<i>Ranunculus colonorum</i> (Common Buttercup)			
777	3061	<i>Raphanus raphanistrum</i> (Wild Radish)	Y		
778	3085	<i>Reseda luteola</i> (Wild Mingnonette)	Y		
779	18547	<i>Rhadinothamnus anceps</i>			

780	2578	Rhagodia baccata (Berry Saltbush)			
781	32422	Rhaphidorrhynchium amoenum			
782	13312	Rhodanthe pyrethrum			
783	32423	Rhynchosstegium tenuifolium			
784		Riccardia bipinnatifida			
785		Riccardia graeffei			
786	17020	Robinia pseudoacacia	Y		
787	1556	Romulea rosea (Guildford Grass)	Y		
788	11544	Romulea rosea var. australis (Guildford Grass)	Y		
789	3066	Rorippa nasturtium-aquaticum (Watercress)	Y		
790	32424	Rosulabryum albolimbatum			
791	44608	Rosulabryum billardieri			
792	32426	Rosulabryum campylothecium			
793	32427	Rosulabryum capillare			
794	32428	Rosulabryum subtomentosum			
795	32429	Rosulabryum torquescens			
796	20506	Rubus anglocandicans	Y		
797	20496	Rubus laudatus	Y		
798	20495	Rubus loganobaccus	Y		
799	3191	Rubus ulmifolius (Blackberry)	Y		
800	23990	Rubus ulmifolius var. ulmifolius	Y		
801	2432	Rumex conglomeratus (Clustered Dock)	Y		
802	17994	Rumex obtusifolius subsp. obtusifolius	Y		
803	40425	Rytidosperma caespitosum			
804	40430	Rytidosperma pilosum			
805	40427	Rytidosperma setaceum			
806	2907	Sagina procumbens (Spreading Pearlwort)	Y		
807	3192	Sanguisorba minor (Sheep's Burnet)	Y		
808	7598	Scaevola auriculata			
809	7602	Scaevola calliptera			
810	7624	Scaevola microphylla (Small-leaved Scaevola)			
811	7646	Scaevola striata (Royal Robe)			
812	13175	Scaevola striata var. striata			
813	41660	Schenkia australis			
814	968	Schoenoplectus pungens (Sharpleaf Rush)			
815	986	Schoenus efoliatus			
816	1003	Schoenus natans (Floating Bog-rush)		P4	
817	32433	Sematophyllum homomallum			

818	32483	<i>Sematophyllum subhumile</i> var. <i>contiguum</i>			
819	8203	<i>Senecio diaschides</i>			
820	13554	<i>Senecio glastifolius</i>	Y		
821	8206	<i>Senecio glomeratus</i> (Cluster-headed Fireweed)			
822	8208	<i>Senecio hispidulus</i> (Hispid Fireweed)			
823	8215	<i>Senecio minimus</i> (Toothed Fireweed)			
824	20663	<i>Senecio multicaulis</i> subsp. <i>multicaulis</i>			
825	8217	<i>Senecio quadridentatus</i>			
826	8218	<i>Senecio ramosissimus</i> (Auricled Groundsel)			
827	8219	<i>Senecio squarrosus</i> (Squarrose Fireweed)			
828	8220	<i>Senecio vulgaris</i> (Common Groundsel)	Y		
829	17808	<i>Sequoia sempervirens</i>	Y		Y
830	608	<i>Setaria italica</i> (Italian Millet)	Y		
831	19453	<i>Setaria parviflora</i>	Y		
832	613	<i>Setaria verticillata</i> (Whorled Pigeon Grass)	Y		
833	7362	<i>Sherardia arvensis</i> (Field Madder)	Y		
834	4980	<i>Sida hookeriana</i>			
835	8223	<i>Sigesbeckia orientalis</i> (Indian Weed)	Y		
836	11803	<i>Silene gallica</i> var. <i>quinquevulnera</i>	Y		
837	8224	<i>Siloxerus filifolius</i>			
838	8225	<i>Siloxerus humifusus</i> (Procumbent Siloxerus)			
839	8227	<i>Silybum marianum</i> (Variegated Thistle)	Y		
840	7017	<i>Solanum laciniatum</i> (Kangaroo Apple)	Y		
841	7020	<i>Solanum linnaeanum</i> (Apple of Sodom)	Y		
842	7022	<i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
843	10920	<i>Soliva sessilis</i> (Jo-jo, Onehunga Weed)	Y		
844	8230	<i>Sonchus asper</i> (Rough Sowthistle)	Y		
845	9367	<i>Sonchus hydrophilus</i> (Native Sowthistle)			
846	8231	<i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
847	617	<i>Sorghum halepense</i> (Johnson Grass)	Y		
848	1312	<i>Sowerbaea laxiflora</i> (Purple Tassels)			
849	1558	<i>Sparaxis bulbifera</i>	Y		

850	2912	Spergula arvensis (Corn Spurry)	Y		
851	4200	Sphaerolobium alatum			
852	17551	Sphaerolobium drummondii			
853	4207	Sphaerolobium medium			
854	4211	Sphaerolobium vimineum (Leafless Globe Pea)			
855	31952	Sphenotoma gracilis (Swamp Paper-heath)			
856	14917	Sporadanthus rivularis			
857	8710	Sporobolus africanus (Parramatta Grass)	Y		
858	635	Sporobolus virginicus (Marine Couch)			
859	6930	Stachys arvensis (Staggerweed)	Y		
860	9069	Stackhousia huegelii			
861	4733	Stackhousia monogyna			
862	2918	Stellaria media (Chickweed)	Y		
863	636	Stenotaphrum secundatum (Buffalo Grass)	Y		
864	39881	Stylidium acuminatum subsp. meridionale			
865	7678	Stylidium adnatum (Common Beaked Triggerplant)			
866	7681	Stylidium affine (Queen Triggerplant)			
867	7684	Stylidium amoenum (Lovely Triggerplant)			
868	17669	Stylidium amoenum var. caulescens			
869	30278	Stylidium androsaceum			
870	39880	Stylidium angustifolium subsp. glaucifolium			
871	7695	Stylidium caespitosum (Fly-away Triggerplant)			
872	7702	Stylidium ciliatum (Golden Triggerplant)			
873	7708	Stylidium crassifolium (Thick-leaved Triggerplant)			
874	7725	Stylidium fasciculatum (Pale Beaked Triggerplant)			
875	7734	Stylidium guttatum (Dotted Triggerplant)			
876	25851	Stylidium nymphaeum			
877	7774	Stylidium piliferum (Common Butterfly Triggerplant)			
878	7785	Stylidium repens (Matted Triggerplant)			
879	7787	Stylidium rhynchocarpum (Black-beaked Triggerplant)			
880	7791	Stylidium roseonatum		P3	
881	7796	Stylidium scandens (Climbing Triggerplant)			
882	7798	Stylidium schoenoides (Cow Kicks)			

883		<i>Stylidium</i> sp.			
884	1260	<i>Stypandra glauca</i> (Blind Grass)			
885		<i>Symphogyna podophylla</i>			
886	25902	<i>Symphotrichum squamatum</i> (Bushy Starwort)	Y		
887	15529	<i>Synaphea floribunda</i>			
888	2323	<i>Synaphea gracillima</i>			
889	12911	<i>Synaphea obtusata</i>			
890	32437	<i>Syntrichia antarctica</i>			
891	32439	<i>Syntrichia papillosa</i>			
892	20105	<i>Taxandria conspicua</i> subsp. <i>conspicua</i>			
893	20115	<i>Taxandria juniperina</i>			
894	20135	<i>Taxandria linearifolia</i>			
895	20133	<i>Taxandria parviceps</i>			
896	1034	<i>Tetralia capillaris</i> (Hair Sedge)			
897	1036	<i>Tetralia octandra</i>			
898	35579	<i>Tetralia</i> sp. Jarrah Forest (R. Davis 7391)			
899	667	<i>Tetrarrhena laevis</i> (Forest Ricegrass)			
900	4526	<i>Tetralia affinis</i>			
901	4533	<i>Tetralia filiformis</i>			
902	4536	<i>Tetralia hispidissima</i>			
903	4544	<i>Tetralia setigera</i>			
904	10856	<i>Thelymitra benthamiana</i> (Leopard Orchid)			
905	1705	<i>Thelymitra crinita</i> (Blue Lady Orchid)			
906	11143	<i>Thelymitra graminea</i>			
907	11053	<i>Thelymitra macrophylla</i>			
908	20730	<i>Thelymitra paludosa</i>			
909		<i>Thelymitra</i> sp.			
910	1716	<i>Thelymitra tigrina</i> (Tiger Orchid)			
911	20731	<i>Thelymitra vulgaris</i>			
912	5076	<i>Thomasia brachystachys</i>		P1	
913	5080	<i>Thomasia foliosa</i>			
914	5084	<i>Thomasia grandiflora</i> (Large Flowered <i>Thomasia</i>)			
915	5092	<i>Thomasia pauciflora</i> (Few Flowered <i>Thomasia</i>)			
916	5094	<i>Thomasia purpurea</i>			
917	17391	<i>Thomasia</i> sp. Big Brook (M. Koch 2373)			
918	33488	<i>Thomasia</i> sp. Vasse (C. Wilkins & K. Shepherd CW 581)			
919	6065	<i>Thryptomene saxicola</i> (Rock <i>Thryptomene</i>)			
920		<i>Thuidiopsis furfurosa</i>			

921		<i>Thuidiopsis sparsa</i>			
922	32442	<i>Thuidium sparsum</i>			
923	32486	<i>Thuidium sparsum</i> var. <i>hastatum</i>			
924	1338	<i>Thysanotus manglesianus</i> (Fringed Lily)			
925	1339	<i>Thysanotus multiflorus</i> (Many-flowered Fringe Lily)			
926	32444	<i>Tortula atrovirens</i>			
927	32445	<i>Tortula muralis</i>			
928	6264	<i>Trachymene anisocarpa</i> (Native Parsnip)			
929	19045	<i>Trachymene grandis</i>			
930	6280	<i>Trachymene pilosa</i> (Native Parsnip)			
931	8250	<i>Tragopogon porrifolius</i>	Y		
932	4547	<i>Tremandra diffusa</i>			
933	4548	<i>Tremandra stelligera</i>			
934	19135	<i>Tribolium obliterum</i>	Y		Y
935	1481	<i>Tribonanthes australis</i>			
936	32449	<i>Trichostomum brachydontium</i>			
937	1362	<i>Tricoryne humilis</i>			
938	43207	<i>Tricostularia exsul</i>			
939	4292	<i>Trifolium campestre</i> (Hop Clover)	Y		
940	17763	<i>Trifolium campestre</i> var. <i>campestre</i> (Hop Clover)	Y		
941	4295	<i>Trifolium dubium</i> (Suckling Clover)	Y		
942	4307	<i>Trifolium repens</i> (White Clover)	Y		
943	19970	<i>Trifolium resupinatum</i> var. <i>majus</i>	Y		
944	4313	<i>Trifolium subterraneum</i> (Subterranean Clover)	Y		
945	4314	<i>Trifolium suffocatum</i> (Suffocated Clover)	Y		
946	18587	<i>Triglochin nana</i>			
947	151	<i>Triglochin striata</i>			
948	34965	<i>Trihaloragis hexandra</i> subsp. <i>serrata</i>			
949	4737	<i>Tripterococcus brunonis</i> (Winged Stackhousia)			
950	4360	<i>Tropaeolum majus</i> (Garden Nasturtium)	Y		
951	13479	<i>Trymalium ledifolium</i> var. <i>rosmarinifolium</i>			
952	33418	<i>Trymalium odoratissimum</i> subsp. <i>odoratissimum</i>			
953	33438	<i>Trymalium odoratissimum</i> subsp. <i>trifidum</i>			
954	1767	<i>Urtica urens</i> (Small Nettle)	Y		
955	7150	<i>Utricularia simplex</i> (Bluecoats)			

956	2920	Vaccaria hispanica (Cow Soapwort)	Y		
957	7662	Velleia macrophylla (Large-leaved Velleia)			
958	7665	Velleia trinervis			
959	8257	Vellereophyton dealbatum (White Cudweed)	Y		
960	7107	Verbascum virgatum (Twiggy Mullein)	Y		
961	36096	Verbena incompta (Purple-top Verbena)	Y		
962	6740	Verbena rigida (Veined Verbena)	Y		
963	7108	Veronica arvensis (Wall Speedwell)	Y		
964	7109	Veronica calycina (Cup Speedwell)			
965	7110	Veronica distans			
966	7111	Veronica persica (Creeping Speedwell)	Y		
967	7112	Veronica plebeia (Creeping Speedwell)			
968	15432	Verticordia densiflora var. densiflora			
969	6084	Verticordia habrantha (Hidden Featherflower)			
970	6110	Verticordia plumosa (Plumed Featherflower)			
971	4319	Vicia benghalensis (Purple Vetch)	Y		
972	4322	Vicia sativa (Common Vetch)	Y		
973	4325	Viminaria juncea (Swishbush, Koweda)			
974	6575	Vinca major (Blue Periwinkle)	Y		
975	722	Vulpia bromoides (Squirrel Tail Fescue)	Y		
976	724	Vulpia myuros (Rat's Tail Fescue)	Y		
977	7385	Wahlenbergia communis (Native Bluebell)			
978	37540	Wahlenbergia littorica subsp. littorica			
979		Wahlenbergia sp.			
980	13103	Watsonia borbonica	Y		
981	1567	Watsonia meriana (Bulbil Watsonia)	Y		
982	18108	Watsonia meriana var. bulbifera	Y		
983	18118	Watsonia meriana var. meriana	Y		
984	32455	Weissia controversa			
985	32456	Weissia rutilans			
986	12072	Wurmbea dioica subsp. alba			
987	1403	Wurmbea tenella (Eight Nancy)			
988	1253	Xanthorrhoea gracilis (Graceful Grass Tree, Mimidi)			

989	1256	Xanthorrhoea preissii (Grass tree, Palga)			
990		Xanthorrhoea sp.			
991	6283	Xanthosia atkinsoniana			
992	6284	Xanthosia candida			
993	6289	Xanthosia huegelii			
994	19330	Xanthosia tasmanica			
995	7113	Zaluzianskya divaricata (Spreading Night Phlox)	Y		
996	1049	Zantedeschia aethiopica (Arum Lily)	Y		
997	32457	Zygodon intermedius			
998	36218	Zygodon menziesii			
999	32458	Zygodon minutus			

Potential fauna species occurring within 20 km of survey area.

Generated from Nature Map (DPaW 2007-)

	Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
1		??			
2	24260	<i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
3	24261	<i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
4	24262	<i>Acanthiza inornata</i> (Western Thornbill)			
5	24560	<i>Acanthorhynchus superciliosus</i> (Western Spinebill)			
6		<i>Acariformes</i> sp.			
7	25535	<i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
8	24281	<i>Accipiter cirrocephalus</i> subsp. <i>cirrocephalus</i> (Collared Sparrowhawk)			
9	25536	<i>Accipiter fasciatus</i> (Brown Goshawk)			
10	42368	<i>Acritoscincus trilineatus</i> (Western Three-lined Skink)			
11	25755	<i>Acrocephalus australis</i> (Australian Reed Warbler)			
12	25544	<i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
13		<i>Aeshnidae</i> sp.			
14		<i>Akamptogonus novarae</i>			
15		<i>Allothereua maculata</i>			
16		<i>Allotrochosina karri</i>			
17		<i>Alotanypus dalyupensis</i>			
18		<i>Ambicodamus marae</i>			
19	24310	<i>Anas castanea</i> (Chestnut Teal)			
20	24312	<i>Anas gracilis</i> (Grey Teal)			
21	24315	<i>Anas rhynchotis</i> (Australasian Shoveler)			
22	24316	<i>Anas superciliosa</i> (Pacific Black Duck)			
23		<i>Ancylidae</i> sp.			
24	47414	<i>Anhinga novaehollandiae</i> (Australasian Darter)			
25		<i>Anisops</i> sp.			
26	24088	<i>Antechinus flavipes</i> subsp. <i>leucogaster</i> (Yellow-footed Antechinus, Mardo)			
27	24561	<i>Anthochaera carunculata</i> (Red Wattlebird)			
28	24562	<i>Anthochaera lunulata</i> (Western Little Wattlebird)			
29	24599	<i>Anthus australis</i> subsp. <i>australis</i> (Australian Pipit)			
30		<i>Apsectrotanypus</i> nr <i>maculosa</i>			
31	24285	<i>Aquila audax</i> (Wedge-tailed Eagle)			
32		<i>Arachnura higginsii</i>			
33		<i>Archaeosynthemis occidentalis</i>			
34		<i>Archaeosynthemis spiniger</i>			

35		<i>Archiargiolestes pusillus</i>			
36		<i>Archichauliodes</i> sp.			
37	25558	<i>Ardea ibis</i> (Cattle Egret)		IA	
38	41324	<i>Ardea modesta</i> (great egret, white egret)		IA	
39		<i>Arkys walckenaeri</i>			
40		<i>Arrenuridae</i> sp.			
41	25566	<i>Artamus cinereus</i> (Black-faced Woodswallow)			
42	24353	<i>Artamus cyanopterus</i> (Dusky Woodswallow)			
43		<i>Artoria cingulipes</i>			
44		<i>Artoria flavimana</i>			
45		<i>Artoria flavimanus</i>			
46		<i>Artoria schizocoides</i>			
47		<i>Artoriopsis expolita</i>			
48		<i>Artoriopsis joergi</i>			
49		<i>Asadipus kunderang</i>			
50		<i>Athericidae</i> sp.			
51		<i>Atriplectides dubius</i>			
52		<i>Atriplectididae</i> sp.			
53		<i>Aturidae</i> sp.			
54		<i>Australomimetes tasmaniensis</i>			
55		<i>Australotiphys barmutai</i>			
56		<i>Austroaeschna anacantha</i>			
57		<i>Austrocorduliidae</i> sp.			
58		<i>Austrogomphus</i> (<i>Zephyrogomphus</i>) <i>lateralis</i>			
59		<i>Austrolestes aridus</i>			
60	33972	<i>Austromerope poultoni</i> (earwigfly (southwest), scorpionfly)		P2	
61		<i>Austrosynthemis cyanitincta</i>			
62	24318	<i>Aythya australis</i> (Hardhead)			
63		<i>Backobourkia brounii</i>			
64		<i>Badumna microps</i>			
65		<i>Baetidae</i> sp.			
66		<i>Baiami brockmani</i>			Y
67		<i>Baiami tegenarioides</i>			
68		<i>Barnardius zonarius</i>			
69	25452	<i>Bettongia penicillata</i> (Woylie, Brush-tailed Bettong)		T	
70	24162	<i>Bettongia penicillata</i> subsp. <i>ogilbyi</i> (Woylie, Brush-tailed Bettong)		T	
71		<i>Bibulmena kadjina</i>			
72	24319	<i>Biziura lobata</i> (Musk Duck)			
73		<i>Bostockia porosa</i>			
74		<i>Botryocladus bibulmun</i>			
75		<i>Botryocladus freemani</i>			

76	24359	Burhinus grallarius (Bush Stone-curlew)			
77	25714	Cacatua pastinator (Western Long-billed Corella)			
78	24724	Cacatua pastinator subsp. pastinator (Muir's Corella, Muir's Corella (Western Corella SW WA))		S	
79	25598	Cacomantis flabelliformis (Fan-tailed Cuckoo)			
80	42307	Cacomantis pallidus (Pallid Cuckoo)			
81		Caenidae sp.			
82		Calymmachernes angulatus			
83	25717	Calyptorhynchus banksii (Red-tailed Black-Cockatoo)			
84	24731	Calyptorhynchus banksii subsp. naso (Forest Red-tailed Black-Cockatoo)		T	
85	24733	Calyptorhynchus baudinii (Baudin's Cockatoo (long-billed black-cockatoo), Baudin's Cockatoo)		T	
86	24734	Calyptorhynchus latirostris (Carnaby's Cockatoo (short-billed black-cockatoo), Carnaby's Cockatoo)		T	
87	48400	Calyptorhynchus sp. (white-tailed black cockatoo)		T	
88	25454	Canis lupus (Dog, Dingo)	Y		
89		Ceinidae sp.			
90		Ceratopogonidae sp.			
91	24086	Cercartetus concinnus (Western Pygmy-possum, Mundarda)			
92		Cercophonius granulatus			
93		Cercophonius sulcatus			
94	24186	Chalinolobus gouldii (Gould's Wattled Bat)			
95	24187	Chalinolobus morio (Chocolate Wattled Bat)			
96		Chasmocephalon pemberton			Y
97		Chenistonia villosa			
98	24321	Chenonetta jubata (Australian Wood Duck, Wood Duck)			
99	33939	Cherax cainii (Marron)			
100		Cherax preissii			
101		Chironomidae sp.			
102		Chironominae sp.			
103		Chironomus aff. alternans (V24) (CB)			
104		Chironomus occidentalis			
105		Chironomus tepperi			
106	24980	Christinus marmoratus (Marbled Gecko)			
107	24288	Circus approximans (Swamp Harrier)			
108		Cladocera (unident.)			
109		Cladopelma curtivalva			

11 0		<i>Clynotis albobarbatus</i>			
11 1		<i>Coenagrionidae</i> sp.			
11 2	25675	<i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
11 3	24613	<i>Colluricincla harmonica</i> subsp. <i>rufiventris</i> (Grey Shrike-thrush)			
11 4	24399	<i>Columba livia</i> (Domestic Pigeon)	Y		
11 5		<i>Condocerus aptus</i>			
11 6		<i>Conicochernes crassus</i>			
11 7		<i>Copelatus</i> sp.			
11 8		<i>Copepoda</i> sp.			
11 9	25568	<i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
12 0		<i>Corduliidae</i> sp.			
12 1		<i>Corixidae</i> sp.			
12 2		<i>Cormocephalus hartmeyer</i>			
12 3	25592	<i>Corvus coronoides</i> (Australian Raven)			
12 4		<i>Corydalidae</i> sp.			
12 5	24671	<i>Coturnix pectoralis</i> (Stubble Quail)			
12 6	25701	<i>Coturnix ypsilophora</i> (Brown Quail)			
12 7	25595	<i>Cracticus tibicen</i> (Australian Magpie)			
12 8	24422	<i>Cracticus tibicen</i> subsp. <i>dorsalis</i> (White-backed Magpie)			
12 9	25596	<i>Cracticus torquatus</i> (Grey Butcherbird)			
13 0		<i>Cricotopus 'parbicinctus'</i>			
13 1	25398	<i>Crinia georgiana</i> (Quacking Frog)			
13 2	25399	<i>Crinia glauerti</i> (Clicking Frog)			
13 3	25401	<i>Crinia pseudinsignifera</i> (Bleating Froglet)			
13 4	25402	<i>Crinia subinsignifera</i> (South Coast Froglet)			
13 5	25049	<i>Ctenotus labillardieri</i>			
13 6		<i>Culicidae</i> sp.			
13 7		<i>Curculionidae</i> sp.			
13 8		<i>Cyclopoida</i> sp.			

13		<i>Cyclosa trilobata</i>			
14	24322	<i>Cygnus atratus</i> (Black Swan)			
14	30901	<i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
14	25673	<i>Daphoenositta chrysoptera</i> (Varied Sittella)			
14	24606	<i>Daphoenositta chrysoptera</i> subsp. <i>pileata</i> (Varied Sittella, Black-capped Sittella)			
14	24092	<i>Dasyurus geoffroyi</i> (Chuditch, Western Quoll)		T	
14		<i>Demadiana cerula</i>			
14		<i>Demicryptochironomus</i> sp.			
14		<i>Dicrotendipes</i> sp. A (V47) (SAP)			
14		<i>Dingupa glauerti</i>			Y
14	24939	<i>Diplodactylus polyophthalmus</i>			
15		<i>Dolichopodidae</i> sp.			
15	24470	<i>Dromaius novaehollandiae</i> (Emu)			
15		<i>Dugesidae</i> sp.			
15		<i>Dytiscidae</i> sp.			
15	25251	<i>Echiopsis curta</i> (Bardick)			
15		<i>Ecnomidae</i> sp.			
15		<i>Edelia vittata</i>			
15	25096	<i>Egernia kingii</i> (King's Skink)			
15	25100	<i>Egernia napoleonis</i>			
15		<i>Egretta novaehollandiae</i>			
16		<i>Elanus axillaris</i>			
16	25250	<i>Elapognathus coronatus</i> (Crowned Snake)			
16	47937	<i>Elsayornis melanops</i> (Black-fronted Dotterel)			
16		<i>Emertonella maga</i>			
16		<i>Empididae</i> sp.			
16		<i>Enchytraeidae</i> sp.			
16		<i>Eolophus roseicapillus</i>			
16	24651	<i>Eopsaltria australis</i> subsp. <i>griseogularis</i> (Western Yellow Robin)			

16 8	24652	<i>Eopsaltria georgiana</i> (White-breasted Robin)			
16 9		<i>Ephydriidae</i> sp.			
17 0	24567	<i>Epthianura albifrons</i> (White-fronted Chat)			
17 1		<i>Eriophora biapicata</i>			
17 2	24043	<i>Eubalaena australis</i> (Southern Right Whale)		T	
17 3	25621	<i>Falco berigora</i> (Brown Falcon)			
17 4	25622	<i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
17 5	25623	<i>Falco longipennis</i> (Australian Hobby)			
17 6	24474	<i>Falco longipennis</i> subsp. <i>longipennis</i> (Australian Hobby)			
17 7	25624	<i>Falco peregrinus</i> (Peregrine Falcon)		S	
17 8	24475	<i>Falco peregrinus</i> subsp. <i>macropus</i> (Australian Peregrine Falcon)		S	
17 9	25677	<i>Falcunculus frontatus</i> (Crested Shrike-tit)			
18 0	25727	<i>Fulica atra</i> (Eurasian Coot)			
18 1	24688	<i>Fulmarus glacialis</i> (Southern Fulmar)			
18 2	34028	<i>Galaxias occidentalis</i> (Western Minnow)			
18 3	34026	<i>Galaxiella munda</i> (mud minnow, western dwarf galaxias)		T	
18 4	34027	<i>Galaxiella nigrostriata</i> (Black-stripe Minnow, black-striped dwarf galaxias)		T	
18 5		<i>Galaxiella</i> sp.			
18 6	25729	<i>Gallinula tenebrosa</i> (Dusky Moorhen)			
18 7	24763	<i>Gallinula tenebrosa</i> subsp. <i>tenebrosa</i> (Dusky Moorhen)			
18 8	25730	<i>Gallirallus philippensis</i> (Buff-banded Rail)			
18 9	25404	<i>Geocrinia leai</i> (Ticking Frog)			
19 0	25406	<i>Geocrinia rosea</i> (Roseate Frog)			
19 1		<i>Geocrinia</i> sp.			
19 2	34030	<i>Geotria australis</i> (Pouched Lamprey)		P1	
19 3		<i>Geotria</i> sp.			Y
19 4	25530	<i>Gerygone fusca</i> (Western Gerygone)			
19 5		<i>Girella tephraeops</i>			
19 6		<i>Glossiphoniidae</i> sp.			

19 7		Gomphidae sp.			
19 8		Gordiidae sp.			
19 9	24443	Grallina cyanoleuca (Magpie-lark)			
20 0		Gripopterygidae sp.			
20 1		Guntheria platalea			Y
20 2		Gymnapistes marmoratus			
20 3		Gymnometriocnemus sp. 1 (=V44 = ortho sp. C & R)			
20 4		Gyrinidae sp.			
20 5		Haemaphysalis longicornis			Y
20 6	24293	Haliaeetus leucogaster (White-bellied Sea-Eagle)			
20 7	24295	Haliastur sphenurus (Whistling Kite)			
20 8		Haliphus gibbus			
20 9		Haliphus sp.			
21 0	24296	Hamirostra isura (Square-tailed Kite)			
21 1		Harrisius sp.			
21 2		Harrisius sp. A (SAP)			
21 3		Harrisius sp. B (SFM)			
21 4		Hebrididae sp.			
21 5	25410	Heleioporus eyrei (Moaning Frog)			
21 6	34115	Helicarion castanea (a helicarionid land snail)		X	
21 7		Helyethira simplex			
21 8		Helochares tenuistriatus			
21 9		Hemicordulia australiae			
22 0		Hemicordulia tau			
22 1		Hemicorduliidae sp.			
22 2	30919	Hemiergis gracilipes			
22 3	25117	Hemiergis peronii subsp. peronii			
22 4		Henicops dentatus			
22 5	47965	Hieraaetus morphnoides (Little Eagle)			

22 6	24491	Hirundo neoxena (Welcome Swallow)			
22 7		Holoplatys fusca			
22 8		Holoplatys pemberton			
22 9		Hydraenidae sp.			
23 0		Hydrobiosella sp. AV16			
23 1		Hydrobiosidae sp.			
23 2		Hydrodromidae sp.			
23 3	24215	Hydromys chrysogaster (Water-rat, Rakali)		P4	
23 4		Hydrophilidae sp.			
23 5		Hydropsychidae sp.			
23 6		Hydroptilidae sp.			
23 7		Hydryphantidae sp.			
23 8		Hyriidae sp.			
23 9		Ischnura aurora aurora			
24 0	24153	Isodon obesulus subsp. fusciventer (Quenda, Southern Brown Bandicoot)		P4	
24 1		Isopeda leishmanni			
24 2	25562	Ixobrychus flavicollis (Black Bittern)			
24 3	24347	Ixobrychus flavicollis subsp. australis (black bittern (southwest), Australian Black Bittern)		P1	
24 4		Karriella treenensis			
24 5		Karripurcellia harveyi			Y
24 6		Karripurcellia peckorum			Y
24 7		Karripurcellia sierwaldae			Y
24 8		Lagynochthonius australicus			
24 9		Lampona brevipes			
25 0		Lampona cylindrata			
25 1		Lamponina brevipes			Y
25 2		Lathrocordulia metallica			
25 3		Latrodectus hasseltii			
25 4		Lectrides parilis			

25 5	47983	Lepidogalaxias salamandroides (Salamanderfish)		T	
25 6		Lepidoptera (non-pyralid)			
25 7		Leptoc Genus A sp. AV1			
25 8		Leptoceridae sp.			
25 9		Leptoperla australica			
26 0		Leptophlebiid genus S sp. AV1			
26 1		Leptophlebiidae sp.			
26 2	25154	Lerista microtis subsp. microtis			
26 3		Lestidae sp.			
26 4	25661	Lichmera indistincta (Brown Honeyeater)			
26 5		Limbodessus inornatus			
26 6		Limbodessus shuckhardi			
26 7		Limnesiidae sp.			
26 8	25415	Limnodynastes dorsalis (Western Banjo Frog)			
26 9	41416	Liopholis pulchra subsp. pulchra (South-western Rock Skink, Spectacled Rock Skink)			
27 0	42413	Lissolepis luctuosa (Western Swamp Skink)			
27 1	25378	Litoria adelaidensis (Slender Tree Frog)			
27 2	25388	Litoria moorei (Motorbike Frog)			
27 3		Lophoictinia isura			
27 4		Lumbriculidae sp.			
27 5	24131	Macropus eugenii subsp. derbianus (Tamar Wallaby (WA subsp))		P4	
27 6	24133	Macropus irma (Western Brush Wallaby)		P4	
27 7	24168	Macrotis lagotis (Bilby, Dalgyte)		T	
27 8	25650	Malurus elegans (Red-winged Fairy-wren)			
27 9	24544	Malurus lamberti subsp. assimilis (Variegated Fairy-wren)			
28 0	25654	Malurus splendens (Splendid Fairy-wren)			
28 1		Maratus pavonis			
28 2		Megaloptera sp.			
28 3	25758	Megalurus gramineus (Little Grassbird)			

28 4		Megapodagrionidae sp.			
28 5		Megaporus solidus			
28 6	25663	Melithreptus brevirostris (Brown-headed Honeyeater)			
28 7	24587	Melithreptus chloropsis (Western White-naped Honeyeater)			
28 8	24076	Mesoplodon bowdoini (Andrew's Beaked Whale)			
28 9	24081	Mesoplodon mirus (True's Beaked Whale)			
29 0	25419	Metacrinia nichollsi (Forest Toadlet)			
29 1		Microcarbo melanoleucos			
29 2	25693	Microeca fascinans (Jacky Winter)			
29 3		Micronecta sp.			
29 4		Microvelia (Pacifcovelia) oceanica			
29 5		Microvelia sp.			
29 6		Miniargiolestes minimus			
29 7		Missulena granulosa			
29 8		Missulena hoggi			
29 9		Missulena torbayensis			
30 0		Mituliodon tarantulinus			
30 1	24223	Mus musculus (House Mouse)	Y		
30 2		Myandra bicincta			
30 3	25610	Myiagra inquieta (Restless Flycatcher)			
30 4	24146	Myrmecobius fasciatus (Numbat, Walpurti)		T	
30 5		Naididae sp.			
30 6		Nannoperca vittata			
30 7		Nanometa gentilis			
30 8		Neboissophlebia occidentalis			
30 9		Necterosoma darwini			
31 0		Necterosoma regulare			
31 1		Necterosoma sp.			
31 2		Nematoda sp.			

31 3		Nemertini sp.			
31 4	24738	Neophema elegans (Elegant Parrot)			
31 5		Newmanoperla exigua			
31 6		Newmanoperla sp.			
31 7	25252	Notechis scutatus (Tiger Snake)			
31 8		Notoperata sp. AV4 (SFM)			
31 9		Notoperata tenax			
32 0		Nousia sp. AV16			
32 1		Nunciella aspera			
32 2	25564	Nycticorax caledonicus (Rufous Night Heron)			
32 3	24194	Nyctophilus geoffroyi (Lesser Long-eared Bat)			
32 4	24195	Nyctophilus gouldi (Gould's Long-eared Bat)			
32 5		Nyungara bunni			
32 6	34116	Occirhenea georgiana (rhytidid land snail, Albany carnivorous snail)		X	Y
32 7		Ocrisiona leucocomis			
32 8	24407	Ocyphaps lophotes (Crested Pigeon)			
32 9		Oecetis sp.			
33 0		Offadens soror (ex genus 1 WA sp. 1)			
33 1		Oligochaeta sp.			
33 2		Oniscidae sp.			
33 3		Opisthopora sp.			
33 4		Oratemnus curtus			
33 5		Oribatida sp.			
33 6		Orthoclaadiinae SO3 sp. A (SAP)			
33 7		Orthoclaadiinae sp.			
33 8		Ostracoda (unident.)			
33 9		Oxidae sp.			
34 0	24328	Oxyura australis (Blue-billed Duck)		P4	
34 1	25680	Pachycephala rufiventris (Rufous Whistler)			

34					
2		Palaemonidae sp.			
34					
3		Pandion cristatus			
34					
4		Parachironomus sp. 1 (VSCL35) (SAP)			
34					
5		Paracladopelma M1 [SFM]			
34					
6		Paracymus sp.			
34					
7		Parakiefferiella sp. S1			
34					
8		Paralimnophyes pullulus (V42)			
34					
9		Paramerina levidensis			
35					
0		Paramerina sp.			Y
35					
1		Parastacidae sp.			
35					
2	25681	Pardalotus punctatus (Spotted Pardalote)			
35					
3	24625	Pardalotus punctatus subsp. punctatus (Spotted Pardalote)			
35					
4	24626	Pardalotus punctatus subsp. xanthopyge (Yellow-rumped Pardalote)			
35					
5	25682	Pardalotus striatus (Striated Pardalote)			
35					
6	24648	Pelecanus conspicillatus (Australian Pelican)			
35					
7		Pentaneurini genus V20			
35					
8		Perthiidae sp.			
35					
9	48060	Petrochelidon ariel (Fairy Martin)			
36					
0	48061	Petrochelidon nigricans (Tree Martin)			
36					
1	48066	Petroica boodang (Scarlet Robin)			
36					
2	24659	Petroica goodenovii (Red-capped Robin)			
36					
3	25697	Phalacrocorax carbo (Great Cormorant)			
36					
4	24667	Phalacrocorax sulcirostris (Little Black Cormorant)			
36					
5	25699	Phalacrocorax varius (Pied Cormorant)			
36					
6	24409	Phaps chalcoptera (Common Bronzewing)			
36					
7	25587	Phaps elegans (Brush Bronzewing)			
36					
8	48070	Phascogale tapoatafa subsp. wambenger (South-western Brush-tailed Phascogale, Wambenger)		T	
36					
9		Phreatoicidae sp.			
37					
0		Phreodrilidae sp.			

37 1	48071	Phylidonyris niger (White-cheeked Honeyeater)			
37 2	24596	Phylidonyris novaehollandiae (New Holland Honeyeater)			
37 3		Piona cumberlandensis			
37 4		Pionidae sp.			
37 5		Planorbidae sp.			
37 6	24841	Platalea flavipes (Yellow-billed Spoonbill)			
37 7	25720	Platycercus icterotis (Western Rosella)			
37 8	24745	Platycercus icterotis subsp. icterotis (Western Rosella)			
37 9	25721	Platycercus zonarius (Australian Ringneck, Ring-necked Parrot)			
38 0		Platynectes decempunctatus var polygrammus			
38 1		Platynectes sp.			
38 2	25703	Podargus strigoides (Tawny Frogmouth)			
38 3	24679	Podargus strigoides subsp. brachypterus (Tawny Frogmouth)			
38 4	25704	Podiceps cristatus (Great Crested Grebe)			
38 5	24681	Poliocephalus poliocephalus (Hoary-headed Grebe)			
38 6		Polycentropodidae sp.			
38 7		Polypedilum nr. convexum (SAP)			
38 8		Polypedilum watsoni			
38 9	24683	Pomatostomus superciliosus (White-browed Babbler)			
39 0	25731	Porphyrio porphyrio (Purple Swamphen)			
39 1	24767	Porphyrio porphyrio subsp. bellus (Purple Swamphen)			
39 2	24769	Porzana fluminea (Australian Spotted Crane)			
39 3	25732	Porzana pusilla (Baillon's Crane)			
39 4	24771	Porzana tabuensis (Spotless Crane)			
39 5		Prionosternum nitidiceps			
39 6		Prionosternum scutatatum			
39 7		Procladius DEC sp. P1 (formerly P.paludicola P1 no U-claws)			
39 8		Procladius paludicola			
39 9		Procordulia affinis			

40 0	24166	<i>Pseudocheirus occidentalis</i> (Western Ringtail Possum, ngwayir)		T	
40 1		<i>Pseudogobius olorum</i>			
40 2	25259	<i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)			
40 3	25433	<i>Pseudophryne guentheri</i> (Crawling Toadlet)			
40 4	24063	<i>Pseudorca crassidens</i> (False Killer Whale)			
40 5		<i>Pseudotyrannochthonius giganteus</i>			
40 6		Psychodidae sp.			
40 7		<i>Purpureicephalus spurius</i>			
40 8		Pyralidae sp.			
40 9	24243	<i>Rattus fuscipes</i> (Western Bush Rat)			
41 0	24245	<i>Rattus rattus</i> (Black Rat)	Y		
41 1		<i>Raveniella peckorum</i>			
41 2		<i>Rhantus simulans</i>			Y
41 3		<i>Rhantus</i> sp.			
41 4		<i>Rheotanytarsus juliae</i>			
41 5		<i>Rheotanytarsus</i> sp. (SFM)			
41 6		<i>Rheotanytarsus trivittatus</i>			
41 7		<i>Rheotanytarsus underwoodi</i>			
41 8	30818	<i>Rhinoplocephalus bicolor</i> (Square-nosed Snake)			
41 9	48096	<i>Rhipidura albiscapa</i> (Grey Fantail)			
42 0	25614	<i>Rhipidura leucophrys</i> (Willie Wagtail)			
42 1		<i>Riekoperla occidentalis</i>			
42 2		Riethia v4			
42 3		Riethia v5			
42 4		<i>Salmo gairdneri</i>			
42 5		<i>Salmo trutta</i>			
42 6		Scirtidae sp.			
42 7	25534	<i>Sericornis frontalis</i> (White-browed Scrubwren)			
42 8	24145	<i>Setonix brachyurus</i> (Quokka)		T	

42 9		Sigara sp.			
43 0		Simuliidae sp.			
43 1		Skusella/"V12 ex-WA" (Cranston)			
43 2		Smicrophylax australis			
43 3	30948	Smicronis brevirostris (Weebill)			
43 4	24111	Sminthopsis gilberti (Gilbert's Dunnart)			
43 5		Sminthopsis murina			
43 6	25435	Spicospina flammocaerulea (Sunset Frog)		T	
43 7		Spinicrus porongorupensis			
43 8	24645	Stagonopleura oculata (Red-eared Firetail)			
43 9		Staphylinidae sp.			
44 0		Stempellina sp. 1 (SFM)			
44 1		Sternopriscus marginatus			
44 2		Sternopriscus minimus			
44 3		Sternopriscus sp.			
44 4		Stictocladus occidentalis			
44 5		Storosa tetrica			
44 6	25597	Strepera versicolor (Grey Currawong)			
44 7	25590	Streptopelia senegalensis (Laughing Turtle-Dove)	Y		
44 8		Synthemistidae sp.			
44 9		Tabanidae sp.			
45 0	25705	Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)			
45 1	24207	Tachyglossus aculeatus (Short-beaked Echidna)			
45 2	24331	Tadorna tadornoides (Australian Shelduck, Mountain Duck)			
45 3		Tandanus bostocki			
45 4		Tanypodinae sp.			
45 5		Tanytarsus aff edwardi			
45 6		Tanytarsus b1			
45 7		Tanytarsus fuscithorax/semibarbitarsus			

45					
8		Tanytarsus nr K5			
45					
9		Tanytarsus palmatus			
46					
0		Tanytarsus sp.			
46					
1		Tanytarsus sp. E (SAP)			
46					
2		Tanytarsus sp. F (SAP)			
46					
3		Tanytarsus sp. I (SAP)			
46					
4	24167	Tarsipes rostratus (Honey Possum, Noolbenger)			
46					
5		Taschorema pallescens			
46					
6		Tasmanocoenis tillyardi			
46					
7		Tasmanoonops australis			Y
46					
8		Telephlebiidae sp.			
46					
9		Temnocephalidea sp.			
47					
0		Thienemanniella sp. (V19) (SAP)			
47					
1	24845	Threskiornis spinicollis (Straw-necked Ibis)			
47					
2		Thryptaturus abnormis			Y
47					
3		Tipulidae sp.			
47					
4	25549	Todiramphus sanctus (Sacred Kingfisher)			
47					
5	24309	Todiramphus sanctus subsp. sanctus (Sacred Kingfisher)			
47					
6		Trachycosmus sculptilis			
47					
7		Trachytrema castaneum			
47					
8	24158	Trichosurus vulpecula subsp. vulpecula (Common Brushtail Possum)			
47					
9		Triplectides australis			
48					
0		Triplectides sp. AV1 (SFM)			
48					
1		Triplectides sp. AV21 (SFM)			
48					
2		Trombidioidea sp.			
48					
3	48147	Turnix varius (Painted Button-quail)			
48					
4	24852	Tyto alba subsp. delicatula (Barn Owl)			
48					
5	24855	Tyto novaehollandiae subsp. novaehollandiae (Masked Owl (southwest))		P3	
48					
6		Unionicolidae sp.			

48 7		Veliidae sp.			
48 8		Venator immansueta			
48 9		Venatrix pullastra			
49 0	24206	Vespadelus regulus (Southern Forest Bat)			
49 1	24040	Vulpes vulpes (Red Fox)	Y		
49 2	34113	Westralunio carteri (Carter's Freshwater Mussel)		T	
49 3		Zephyrarchaea janineae			
49 4	25765	Zosterops lateralis (Grey-breasted White-eye, Silvereye)			
49 5		Zygoptera sp.			



CONSERVATION CODES

For Western Australian Flora and Fauna

Specially protected fauna or flora¹ are species² which have been adequately searched for and are deemed to be, in the wild, either rare, at risk of extinction, or otherwise in need of special protection, and have been gazetted as such.

Categories of specially protected fauna and flora are:

T Threatened species

Published as Specially Protected under the *Wildlife Conservation Act 1950*, and listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.

Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EN Endangered species

Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

VU Vulnerable species

Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EX Presumed extinct species

Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

IA Migratory birds protected under an international agreement

Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.

CD Conservation dependent fauna

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.

OS Other specially protected fauna

Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

P Priority species

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

1 Priority 1: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

2 Priority 2: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

3 Priority 3: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

4 Priority 4: Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

¹ The definition of flora includes algae, fungi and lichens

² Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).



EPBC Act Protected Matters Report

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

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

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

Report created: 29/11/17 17:27:59

[Summary](#)

[Details](#)

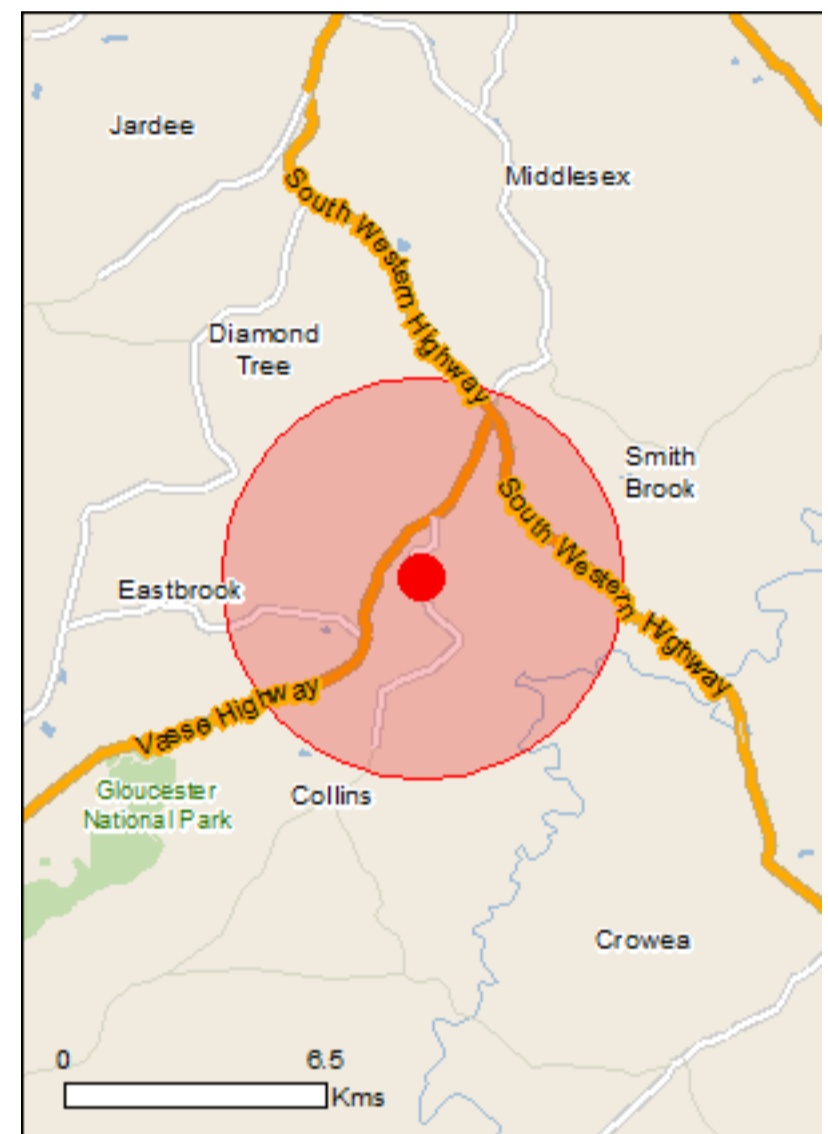
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

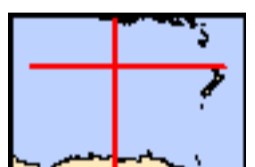
[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	13
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	12
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	4
Regional Forest Agreements:	1
Invasive Species:	22
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769]	Vulnerable	Breeding known to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Fish		
Nannatherina balstoni Balston's Pygmy Perch [66698]	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]	Vulnerable	Species or species habitat likely to occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat likely to occur within area
Plants		
Caladenia winfieldii Majestic Spider-orchid [64504]	Endangered	Species or species habitat may occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Sphenotoma drummondii Mountain Paper-heath [21160]	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
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Migratory Terrestrial Species

Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
---	--	--

Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
--	--	--

Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
--	--	--

Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
---	-----------------------	--

Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
--	--	--

Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
---	-----------------------	--

Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
---	--	--

Other Matters Protected by the EPBC Act

Listed Marine Species [\[Resource Information \]](#)

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

Name	Threatened	Type of Presence
------	------------	------------------

Birds

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat 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]		Species or species habitat likely to occur within area
--	--	--

Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
--	--	--

Name	Threatened	Type of Presence
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
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 may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Eastbrook	WA
Sir James Mitchell	WA
Smith Brook	WA
Unnamed WA43056	WA

Regional Forest Agreements	[Resource Information]
----------------------------	--

Note that all areas with completed RFAs have been included.

Name	State
South West WA RFA	Western Australia

Invasive Species	[Resource Information]
------------------	--

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

Name	Status	Type of Presence
Birds		
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may 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
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding		Species or species

Name	Status	Type of Presence
Pine [20780]		habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-34.38882 116.14548

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.