# Level 1 flora and vegetation assessment of local roads

### **MFMORANDUM**

То:	Dominic Boyle	Company:	Main Roads Western Australia (MRWA)	
From:	Lucy Dadour	Company:	Coffey	
Date:	27 March 2015	Document No.:	NLWA-03-EN-ME-0012	
Subject:	Perth–Darwin National Highway – Level 1 flora and vegetation assessment of local road			

### 1 INTRODUCTION

Main Roads Western Australia (MRWA) has extended the clearing boundaries of the NorthLink WA Project (hereafter referred to as 'the project') to include sections of local roads that will have normal traffic flows and directions interrupted by the project. An investigation of the native vegetation in the additional areas not mapped by previous studies for flora and vegetation assessment (Coffey, 2015) is required for the Public Environmental Review (PER) of the project.

The review of the revised clearing boundaries identified seven areas not previously mapped:

- Hepburn Avenue and Marshall Road (Site 1) (Figure 1).
- South and North of Gnangara Road (Site 2) (Figure 2).
- Drumpellier Avenue in Ellenbrook (Site 4) (Figure 4).
- Maralla Road and Helden Road (Site 5) (Figure 5).
- Cunningham Road (Site 6) (Figure 6).
- South of Stock Road West (Site 7) (Figure 7).
- Old Gingin Road and paddocks near Muchea (Site 8) (Figure 8).

### 2 METHODS

A Level 1 site investigation was conducted on 21 January 2015 to identify the flora and vegetation values within the study area. The site investigation was consistent with the Environmental Protection Authority's (WA) Guidance for the Assessment of Environmental Factors No. 51 for Flora and Vegetation surveys (EPA, 2004). The results of this investigation are summarised below.

### 2.1 Flora and vegetation

Relevés were established and sampled using a central point marked with a Global Positioning System (GPS) and an approximate radius is sampled around this point (approximately 20 m for this survey). Relevés were used for the purpose of recording vegetation structure, species composition and dominance. A preliminary species inventory was collected during the Level 1 site investigation.

Sections of the study area that retained remnant native vegetation in good or better condition were traversed on foot to:

- Identify additional taxa not recorded in the sampling points;
- Identify and define populations of threatened and priority taxa listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), *Wildlife Conservation Act 1950* (WC Act) and by Department of Parks and Wildlife (DPAW);
- Identify and define the extent of threatened and priority ecological communities listed under the EPBC Act and by DPAW;
- Weeds of national significance (WONS) listed under the EPBC Act;
- Declared Pests listed under Section 22 of the Biosecurity and Agricultural Management Act 2007 (BAM Act); and
- Environmental weeds with a ranking of "Very High" or "High" under DPAW's Weed Prioritisation Process for the Swan region (Swan Coastal Plain).

Vegetation associations described from the study area were mapped in accordance with previous mapping for the project (Coffey, 2015) to ensure consistency between the vegetation associations.

The condition of the vegetation identified within the study area was described based on the condition rating scale developed by Keighery (1994) and published in the Bush Forever Strategy (Government of Western Australia, 2000), as illustrated in Figures 1 to 7.

### 2.2 Limitations

The field survey component of the assessment was conducted by Lucy Dadour an experienced ecologist. The timing of the survey (summer) was not optimal for flora and vegetation surveys on the Swan Coastal Plain. The timing limited the likelihood of recording threatened and priority species and the survey was restricted to searches for perennial species. However, the timing is not considered to be a limiting factor for the identification of the dominant vegetation structure and vegetation associations.

### 3 RESULTS

### 3.1 Flora and Vegetation

A preliminary species inventory is located in Attachment A.

### Site 1 - Marshall Road

The vegetation of Site 1 consists predominantly of cleared area (vegetation association unit code CI) and a small portion of degraded vegetation of CcMpMr – *Corymbia calophylla* isolated clumps of mid trees over *Melaleuca preissiana* and *Melaleuca rhaphiophylla* isolated clumps of low trees over *Acacia saligna* isolated clumps of tall shrubs over grassland dominated by introduced grasses (Figure 1).

### Site 2 - South and North of Gnangara Road

Site 2 South of Gnangara Road comprises Cc<sup>1</sup> – *Corymbia calophylla* isolated clumps of mid trees with occasional *Eucalyptus marginata* subsp. *thalassica* mid trees over *Xanthorrhoea preissii* sparse mid shrubland over \**Ehrharta calycina* and \**Briza maxima* sparse low grassland, classified as degraded (Figure 2).

Site 2 north of Gnangara Road was dominated by \*Pinus pinaster plantation (Pp²) classified as completely degraded (Figure 2).

### Site 3 - Drumpellier Avenue in Ellenbrook

Site 3 occurs in two parts east and south along Drumpellier Avenue. Both areas are classified as completely degraded cleared areas, consisting of paddocks, infrastructure corridors (i.e. Roads and Highways) and building envelopes (i.e. residential housing, industry etc.)(Figure 3).

### Site 4 - Maralla Road and Halden Road

Site 4 was dominated by Banksia woodlands in the southern portion and open paddock with remnant native trees and roads in the northern most section (Figure 4A & 4B) (Plate 1). Four vegetation types have been identified in this site;

- CcEr<sup>3</sup> Open paddocks with remnant Corymbia calophylla and Eucalyptus rudis subsp. rudis over pasture species (introduced) dominated by \*Cenchrus clandestinus. Vegetation condition was degraded.
- Et<sup>3</sup> Eucalyptus todtiana sparse mid mallee trees over Banksia attenuata, Banksia menziesii and Banksia ilicifolia sparse low woodland over Adenanthos cygnorum subsp. cygnorum and Jacksonia furcellata sparse tall shrubland. Vegetation condition was Good.
- BaBm<sup>2</sup> Banksia attenuata and Banksia menziesii low woodland to sparse low woodland over Calytrix fraseri (Ellenbrook Form), Verticordia nitens and Beaufortia elegans sparse mid shrubland over Alexgeorgea nitens and Desmocladus flexuosus sparse low rushland. Vegetation condition was Very Good.
- BaBm³ Banksia attenuata, Banksia menziesii low woodland over Eremaea pauciflora var. pauciflora, Scholtzia aff. involucrata, Hibbertia hypericoides open to sparse low shrubland over Patersonia occidentalis subsp. occidentalis sparse mid herbland. Vegetation condition was Very Good.

### Site 5 - Cunningham Road

The flora and vegetation within the Cunningham road site (Site 5) consisted predominantly of cleared pastoral land (vegetation association unit code Cl, vegetation condition; completely degraded). A small section to the west of the site was MpMr; *Melaleuca preissiana* and *Melaleuca rhaphiophylla* low woodland over \**Zantedeschia aethiopica* and \**Typha orientalis* open mid herbland. The vegetation condition was degraded (Figure 5) (Plate 2).

### Site 6 - South of Stock Road West

Site 6 consisted of a small narrow strip of completely degraded cleared areas, consisting of paddocks, infrastructure corridors (i.e. Roads and Highways) (vegetation association unit Cl) (Figure 6).

### Site 7 - Old Gingin Road and paddocks near Muchea

A large proportion of Site 7 was dominated by completely degraded cleared areas, consisting of paddocks infrastructure corridors (i.e. Roads and Highways) and building envelopes (i.e. residential housing, industry etc.) (Vegetation association unit Cl). Vegetation along Old Gingin road was CcEr3; Open paddocks with remnant *Corymbia calophylla* and *Eucalyptus rudis* subsp. *rudis* over pasture species (introduced) and vegetation condition was degraded (Figure 7).

### 3.2 Threatened and Priority Ecological Communities

The timing of this survey was considered a limitation for surveying TECs and PECs, with the absence of annual species making it is difficult to compare sites to Gibson *et al* (1994). However, DPAW have listed *'Banksia dominated woodlands on the Swan Coastal Plain'* as a Priority 3 (P3) ecological community. Based on the description provided by DPAW, it is assumed that the vegetation associations that are dominated by

Banksia attenuata and Banksia menziesii represent the P3 PEC. As a result, the following vegetation associations present represent the PEC: BaBm<sup>2</sup>; BaBm<sup>3</sup>; Et<sup>3</sup> all occurring in Site 4 (Figure 4A & 4B). It is considered likely that Site 4 contains a PEC due to the close proximity (less than 1 km away) of PECs SCP21c and SCP23b Gibson *et al* (1994) previously being recorded in the area (Coffey, 2015).

### 3.3 Native Taxa of Significance

No Threatened species listed under the EPBC Act and/or gazetted as Threatened under the *Wildlife Conservation Act 1950* (WC Act) were recorded in the study area. No priority listed species recognised by DPAW (2015), were recorded.

One known population of *Grevillea curviloba* subsp. *incurva* listed as Threatened under the WC Act was recorded 60 m from the boundary of the project area along Brand Highway (Figure 8) (Plate 3 & 4). This known location is indicated by DRF (Declared Rare Flora) markers. This population of *Grevillea curviloba* subsp. *incurva* was covered in grape vine (*Vitis* sp.) (Plate 4). The vegetation located along the verge of the Brand Highway and the adjacent rail reserve, is considered to be critical habitat (Phillimore and English, 2000) due to the link it provides between the known populations along the Brand Highway and Muchea Road South.



Plate 3 Grevillea curviloba subsp. incurva with seed pods



Plate 4 Grevillea curviloba subsp. incurva (note the grape vine)

The likelihood of a threatened or priority species occurring in Sites 1 to 3 and 5 to 7 is considered unlikely due to the degraded to completely degraded condition of the vegetation (Keighery 1994). The likelihood of threatened or priority species occurring in Site 4 is considered possible as most of the vegetation was rated as good to very good condition. The timing of the survey was considered below optimal as many annual species were not present. A survey in spring would help determine the presence of threatened and priority flora.

### 3.4 Introduced Taxa

No additional weed species were recorded in the study area. None of the weed species identified from the study area are considered to be WONS (Commonwealth of Australia, 2012).

One species, Arum Lily (\*Zantedeschia aethiopica), recorded from Site 5 (Figure 5), is listed as a Declared Pest under Section 22 of the BAM Act. Arum Lily is categorised as C3 declared pest for the whole of state.

### 4 RECOMMENDATIONS

It is recommended that due to the timing of this survey, additional surveys in the spring or optimal flowering periods are undertaken for the purpose of identifying TECs and PECs, and Threatened and Priority flora, focusing on annual species in Site 4 (Maralla Road and Halden Road).

### References

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Phillimore, R. and English, V. 2000. Narrow Curved-leaf Grevillea (*Grevillea curviloba* subsp. *incurva*) Interim Recovery Plan No. 67, 2000–2003. June. Department of Conservation and Land Management, Wanneroo, Western Australia.

### **Attachments**

- A Vascular Plant Taxa Recorded
- B Figures 1–8
- C Plates 1 & 2

# VASCULAR PLANT TAXA RECORDED

### 42 Zamiaceae

Macrozamia riedlei

### 44 Pinaceae

- \* Pinus pinaster
- \* Pinus radiata

### 82 Araceae

\* Zantedeschia aethiopica

### 124 Iridaceae

\* Gladiolus caryophyllaceus Patersonia occidentalis var. occidentalis

### 126 Xanthorrhoeaceae

Xanthorrhoea preissii

### 128 Asparagaceae

Lomandra hermaphrodita

Lomandra micrantha

Lomandra nigricans

Sowerbaea laxiflora

Thysanotus multiflorus

Thysanotus sp.

Thysanotus thyrsoideus

### 130 Hemerocallidaceae

Arnocrinum preissii

Caesia micrantha

Corynotheca micrantha

Corynotheca micrantha var. elongata

Dianella revoluta var. divaricata

Hensmania turbinata

### 138 Haemodoraceae

Phlebocarya ciliata

### 147 Dasypogonaceae

Calectasia narragara Dasypogon bromeliifolius

### 155 Juncaceae

Juncus pallidus

### 156 Cyperaceae

Baumea juncea

Lepidosperma sp.

Mesomelaena pseudostygia

Schoenus sp.

Tetraria capillaris

### 157 Anarthriaceae

Lyginia barbata Lyginia imberbis

### 159 Restionaceae

Alexgeorgea nitens Desmocladus flexuosus

### 163 Poaceae

- \* Briza maxima
- \* Briza minor
- \* Eragrostis curvula Poaceae sp.

### 175 Proteaceae

Adenanthos cygnorum subsp. cygnorum

Adenanthos obovatus

Banksia attenuata

Banksia dallanneyi var. dallanneyi

Banksia ilicifolia

Banksia menziesii

Grevillea curviloba subsp. incurva (Threatened)

Petrophile linearis

Stirlingia latifolia

Synaphea spinulosa subsp. spinulosa

### 181 Dilleniaceae

Hibbertia hypericoides Hibbertia racemosa

Hibbertia subvaginata

### 201 Fabaceae

Acacia pulchella var. glaberrima

Acacia pulchella var. pulchella

Acacia saligna

Bossiaea eriocarpa

Daviesia divaricata subsp. divaricata

Daviesia physodes

Daviesia triflora

Hovea pungens

Hovea trisperma var. trisperma

Isotropis cuneifolia subsp. cuneifolia

Jacksonia floribunda

Jacksonia furcellata

Jacksonia sternbergiana

### 208 Rhamnaceae

Cryptandra nutans

### 217 Casuarinaceae

Allocasuarina fraseriana Allocasuarina humilis

### 234 Elaeocarpaceae

Platytheca galioides

### 242 Euphorbiaceae

Amperea simulans

- \* Euphorbia terracina Monotaxis occidentalis
- \* Ricinus communis

### 261 Violaceae

Hybanthus calycinus

### 281 Myrtaceae

Beaufortia elegans

Beaufortia squarrosa

Calytrix angulata

Calytrix flavescens

Calytrix fraseri

Corymbia calophylla

Eremaea pauciflora var. pauciflora

Eucalyptus marginata subsp. thalassica

Eucalyptus rudis subsp. rudis

Eucalyptus todtiana

Hypocalymma angustifolium

Hypocalymma robustum

Kunzea glabrescens

Melaleuca amydra

Melaleuca preissiana

Melaleuca rhaphiophylla

Melaleuca seriata

Melaleuca sp.

Pericalymma ellipticum var. ellipticum

Regelia ciliata

Regelia inops

Scholtzia aff. involucrata EAG 5500

Taxandria linearifolia

Verticordia nitens

### 300 Rutaceae

Boronia ramosa subsp. anethifolia Philotheca spicata

### 339 Loranthaceae

Nuytsia floribund

### 403 Ericaceae

Astroloma xerophyllum Brachyloma preissii subsp. obtusifolium Leucopogon squarrosus

### 458 Goodeniaceae

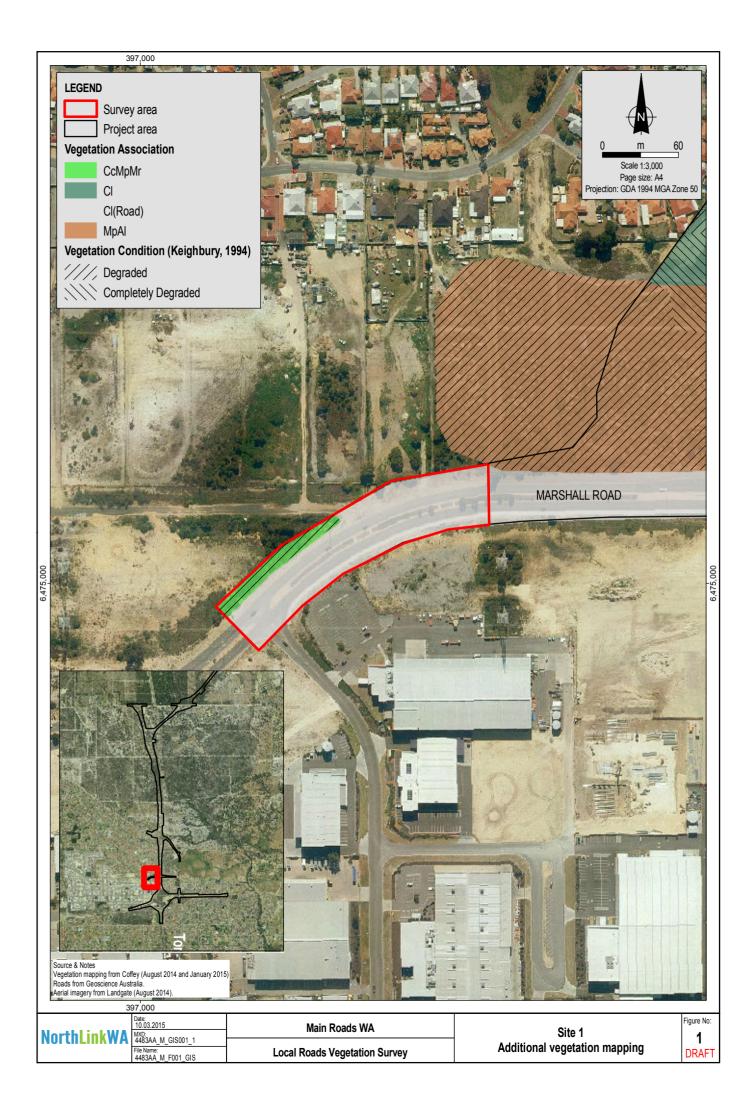
Dampiera linearis Goodenia pulchella Goodenia pulchella subsp. Coastal Plain A (M. Hislop 634) Lechenaultia floribunda Scaevola repens var. repens

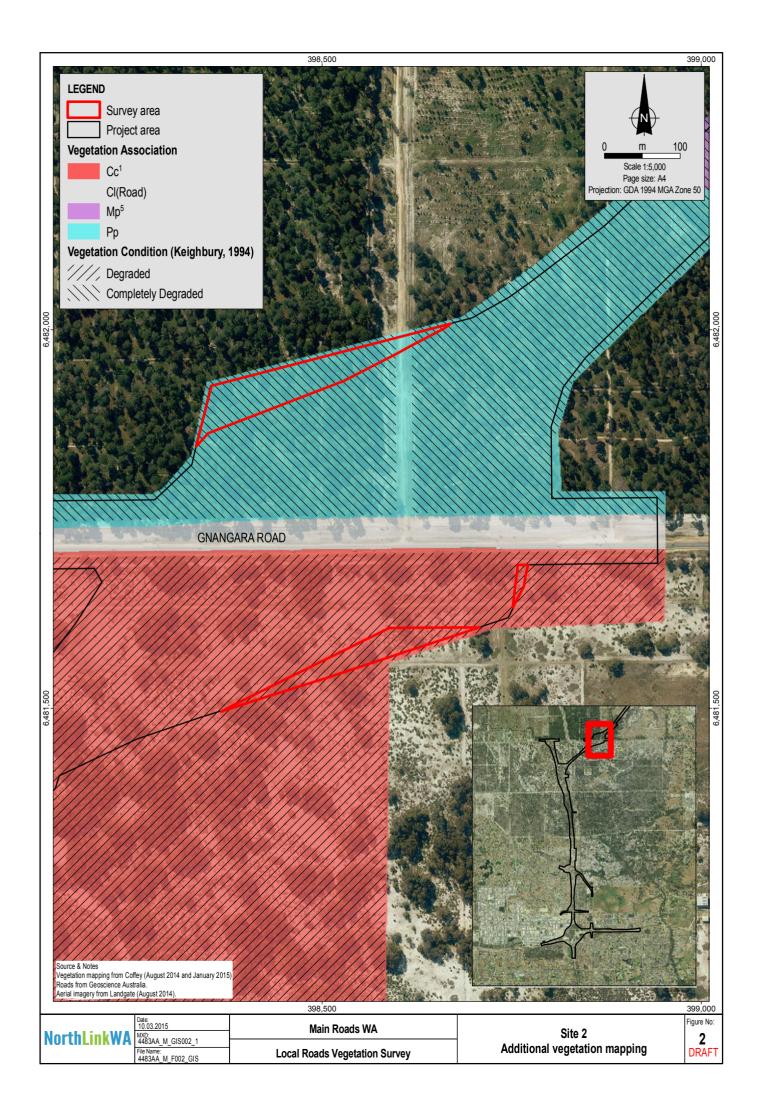
### 460 Asteraceae

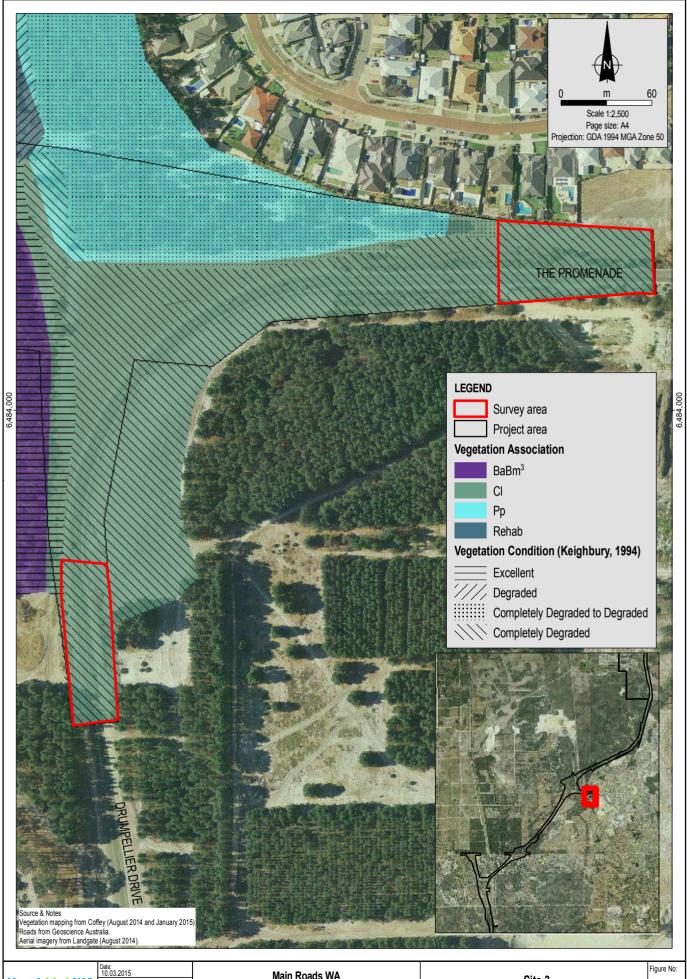
\* Hypochaeris glabra

### 474 Apiaceae

Xanthosia huegelii







**NorthLinkWA** 

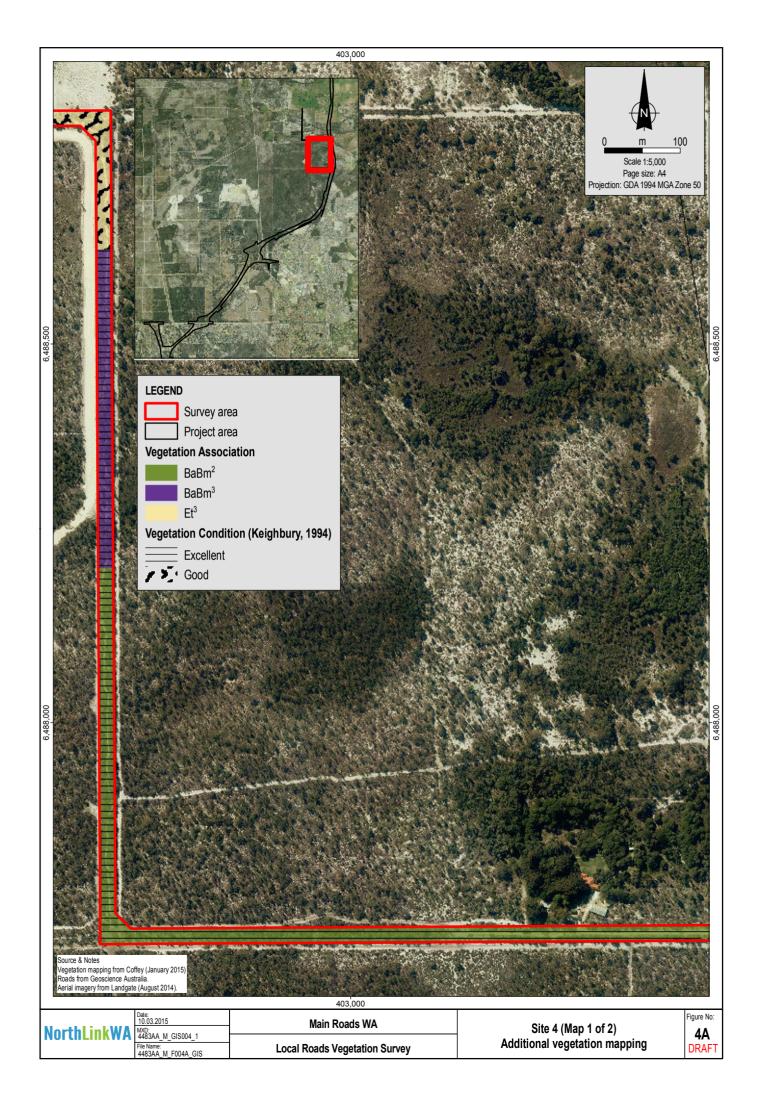
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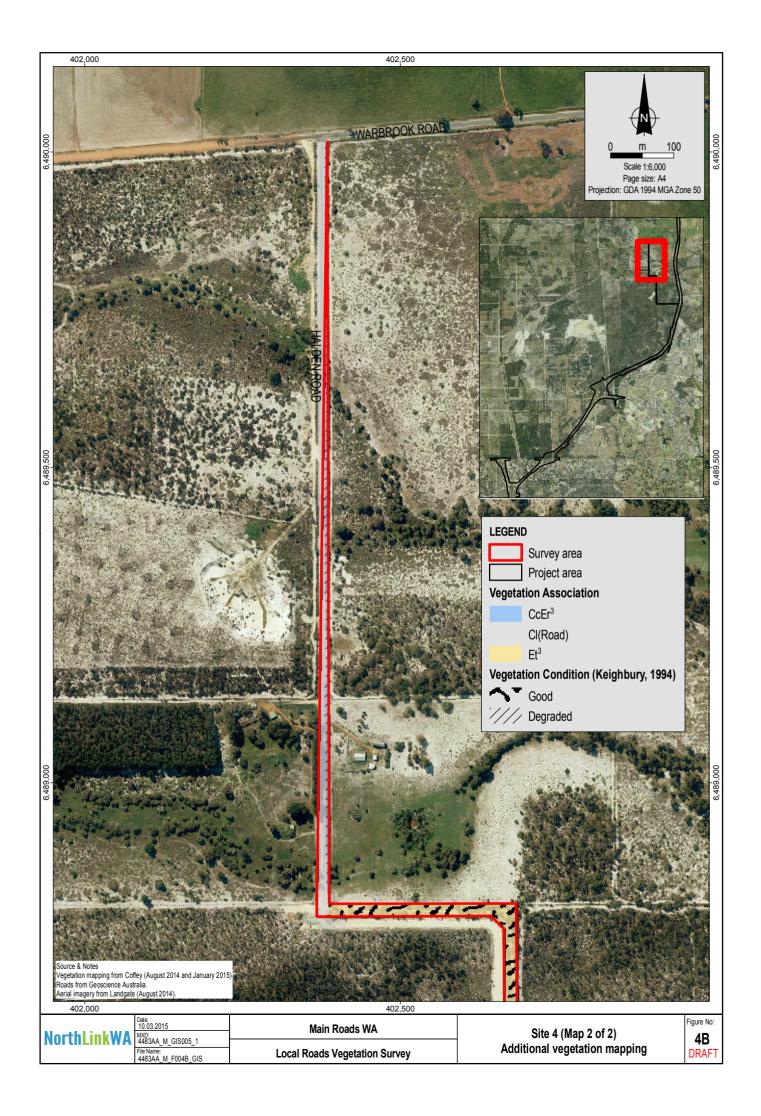
Main Roads WA

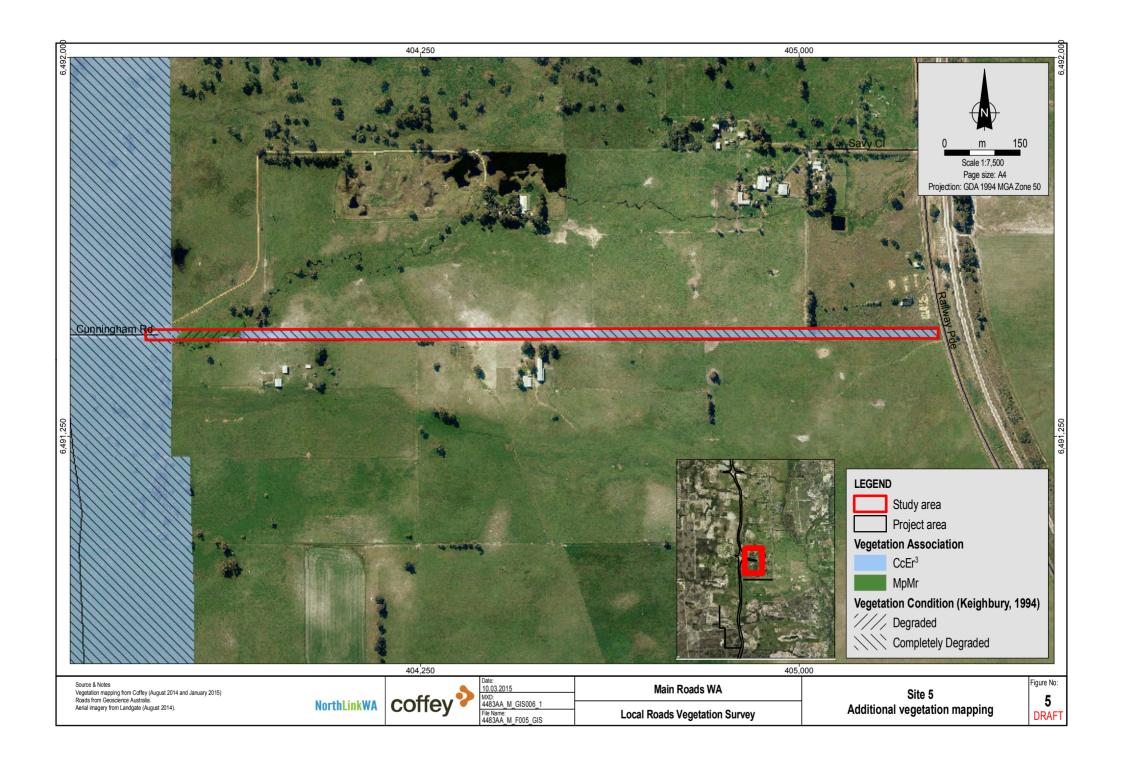
Local Roads Vegetation Survey

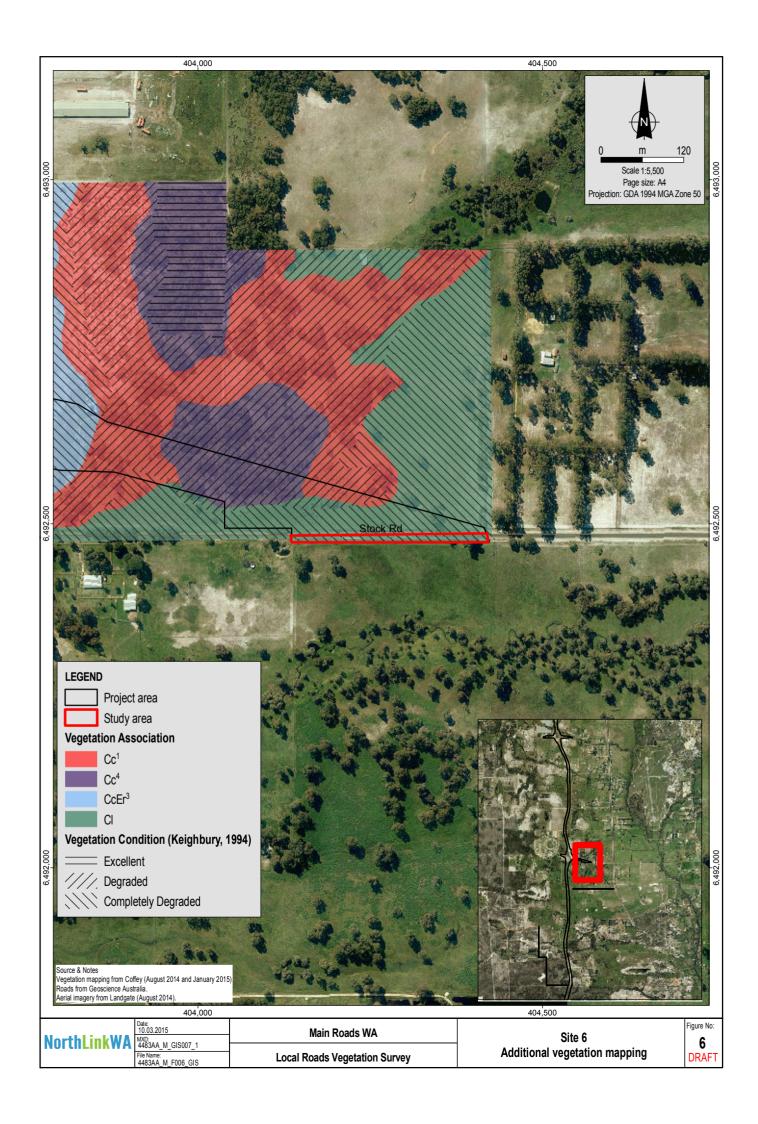
Site 3
Additional vegetation mapping

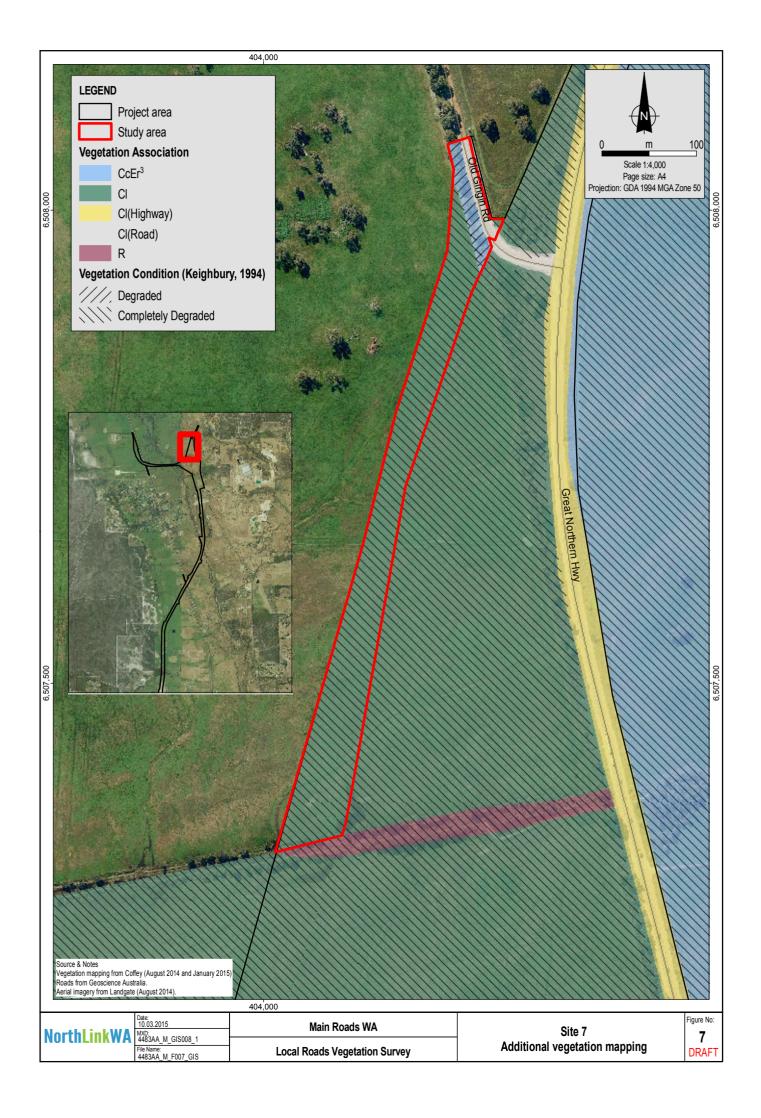
**3** DRAFT











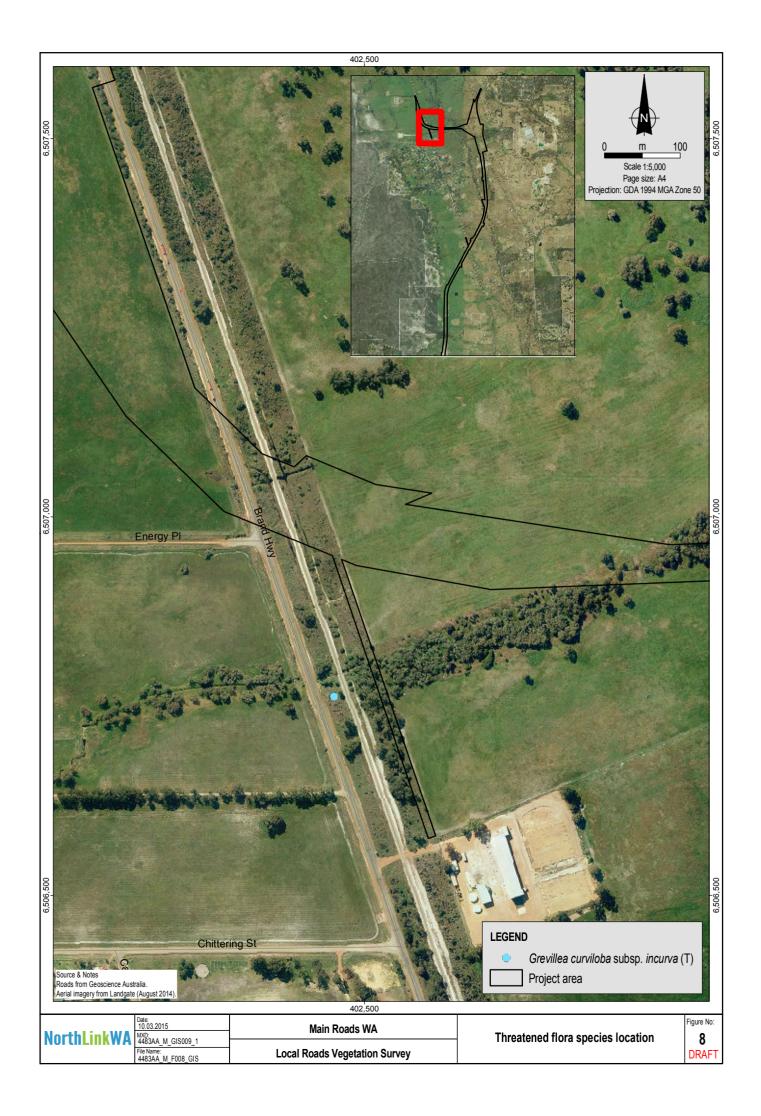






Plate 1 Cunningham Road site (Site 5)

Plate 2 Vegetation of Maralla Road and Halden Road (Site 4)

Geomorphic wetlands located within and in close proximity to the project area

# **Geomorphic Wetlands Located Within and In Close Proximity to the Perth–Darwin National Highway**

Unique feature identifier	Wetland type	Management category	Consanguineous suite	Location (inside/outside)
8416	Palusplain	Conservation category	Bennett Brook	Inside
8429	Sumpland	Conservation category	Bennett Brook	Inside
8773	Palusplain	Conservation category	Ellenbrook	Inside
8792	Dampland	Conservation category	Jandakot	Inside
8800	Sumpland	Conservation category	Muchea	Inside
8914	Palusplain	Conservation category	Ellenbrook	Inside
15028	Sumpland	Conservation category	Jandakot	Inside
15033	Sumpland	Conservation category	Jandakot	Inside
15260	Palusplain	Conservation category	Bennett Brook	Inside
8541	Dampland	Resource enhancement	Jandakot	Inside
8554	Sumpland	Resource enhancement	Jandakot	Inside
8779	Sumpland	Resource enhancement	Muchea	Inside
8783	Sumpland	Resource enhancement	Ellenbrook	Inside
15752	Palusplain	Resource enhancement	Bennett Brook	Inside
15757	Sumpland	Resource enhancement	Jandakot	Inside
8254	Dampland	Multiple use	Bennett Brook	Inside
8411	Dampland	Multiple use	Bennett Brook	Inside
8438	Dampland	Multiple use	Bennett Brook	Inside
8447	Dampland	Multiple use	Jandakot	Inside
8449	Dampland	Multiple use	Jandakot	Inside
8464	Sumpland	Multiple use	Jandakot	Inside
8730	Dampland	Multiple use	Jandakot	Inside
8784	Floodplain	Multiple use	Ellenbrook	Inside
8785	Floodplain	Multiple use	Ellenbrook	Inside
8936	Sumpland	Multiple use	Muchea	Inside
13096	Sumpland	Multiple use	Jandakot	Inside
15029	Palusplain	Multiple use	Bennett Brook	Inside
15030	Sumpland	Multiple use	Jandakot	Inside
15175	Palusplain	Multiple use	Bennett Brook	Inside
15200	Sumpland	Multiple use	Jandakot	Inside
15732	Palusplain	Multiple use	Muchea/Ellenbrook	Inside

Department of Parks and Wildlife
Threatened and Priority Database
Search Results



Your Ref: PO 1681
Our Ref: 11-0714FL
Enquiries: Myrto Robert
Phone: (08) 9218 8760

Fax: (08)

Email: flora.data@dpaw.wa.gov.au

Coffey Environments PO Box 4223 Victoria Park WA 6979

Attention: Michelle Holliday

Dear Michelle Holliday,

### REQUEST FOR THREATENED AND PRIORITY FLORA INFORMATION

I refer to your request of 03 July 2014 for Threatened (Declared Rare) and Priority Flora information in the Swan Valley Bypass area. The search was conducted within the area of the polygon you submitted.

A search was undertaken for this area of (1) the Department's *Threatened (Declared Rare) and Priority Flora* database (for results, *if any*, see "TPFL" – coordinates are GDA94), (2) the *Western Australian Herbarium Specimen* database for priority species opportunistically collected in the area of interest (for results, *if any*, see "WAHERB"- coordinates are GDA94 – see condition number 9 in the attached 'Conditions in Respect of Supply' and (3), the Department's *Threatened and Priority Flora List* [this list is searched using 'place names'. This list, which may also be used as a species target list, contains species that are declared rare (Conservation Code R or X for those presumed to be extinct), poorly known (Conservation Codes 1, 2 or 3), or require monitoring (Conservation Code 4) – for results, *if any*, see "TP List"]. The results are attached electronically to this email.

Attached also are the conditions under which this information has been supplied. Your attention is specifically drawn to the seventh point, which refers to the requirement to undertake field investigations for the accurate determination of Threatened and Priority flora occurrence at a site. The information supplied should be regarded as an indication only of the Threatened and Priority flora that may be present and may be used as a target list in any surveys undertaken.

The information provided does not preclude you from obtaining and complying with, where necessary, land clearing approvals from other agencies.

An invoice for \$300 (plus GST) to supply this information will be forwarded.

It would be appreciated if any populations of Threatened and Priority flora you encounter in the area could be reported to this Department to ensure their ongoing management.

If you require any further details, or wish to discuss Threatened and Priority flora management, please contact Dr Ken Atkins, Manager, Species and Communities Branch, on (08) 9334 0455.

Yours faithfully

Miss Myrto Robert

A/THREATENED FLORA DATABASE OFFICER for the Director General

7 July 2014

### DEPARTMENT OF PARKS AND WILDLIFE

### THREATENED (DECLARED RARE) AND PRIORITY FLORA INFORMATION

### CONDITIONS IN RESPECT OF SUPPLY OF INFORMATION

- 1. All requests for data to be made in writing to the Director General, Department of Parks and Wildlife, Attention: Threatened Flora Database Officer, Species and Communities Branch.
- 2. The data supplied may not be supplied to other organisations, nor be used for any purpose other than for the project for which they have been provided, without the prior written consent of the Director General, Department of Parks and Wildlife.
- 3. Specific locality information for Threatened and Priority Flora is regarded as confidential, and should be treated as such by receiving organisations. Specific locality information may not be used in public reports without the written permission of the Director General, Department of Parks and Wildlife. Publicly available reports may only show generalised locations or, where necessary, show specific locations without identifying species. Species and Communities Branch is to be contacted for guidance on the presentation of Threatened and Priority Flora information.
- 4. Note that the Department of Parks and Wildlife respects the privacy of private landowners who may have Threatened and Priority Flora on their property. Threatened and Priority Flora locations identified in the data as being on private property should be treated in confidence, and contact with property owners made through the Department of Parks and Wildlife.
- 5. Receiving organisations should note that while every effort has been made to prevent errors and omissions in the data provided, they may be present. The Department of Parks and Wildlife accepts no responsibility for this.
- 6. Receiving organisations must also recognise that the database is subject to continual updating and amendment, and such considerations should be taken into account by the user.
- 7. It should be noted that the supplied data do not necessarily represent a comprehensive listing of the Threatened and Priority Flora of the area in question. Its comprehensiveness is dependant on the amount of survey carried out within the specified area. The receiving organisation should employ a botanist, if required, to undertake a survey of the area under consideration.
- 8. Acknowledgment of the Department of Parks and Wildlife as source of the data is to be made in any published material. The unique reference number that is given upon the request for information should be quoted when referencing the data. Copies of all such publications are to be forwarded to the Department of Parks and Wildlife, Attention: The Manager, Species and Communities Branch.
- 9. The development of the PERTH Herbarium database was not originally intended for electronic mapping (eg. GIS ArcView). The latitude and longitude coordinates for each entry are not verified prior to being databased. It is only in recent times that collections have been submitted with GPS coordinates. Therefore, be aware when using this data in ArcView that some records may not plot to the locality description given with each collection.

### DECLARED RARE AND PRIORITY FLORA LIST

### **CONSERVATION CODES**

for Western Australian taxa

T: Threatened Flora (Declared Rare Flora - Extant )
Schedule 1 under the Wildlife Conservation Act 1950 Rare Flora Notice

Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such. The assessment of the conservation status of these species is based on their national extent.

X: Presumed Extinct Flora (Declared Rare Flora – Extinct)
Schedule 2 under the Wildlife Conservation Act 1950 Rare Flora Notice

Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such.

Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using IUCN Red List criteria:

**CR:** Critically Endangered – considered to be facing an extremely high risk of extinction in the wild.

**EN:** Endangered – considered to be facing a very high risk of extinction in the wild.

**VU: Vulnerable** – considered to be facing a high risk of extinction in the wild.

A list of the current rankings can be downloaded from DPAW's <u>Listing of species and ecological communities</u> webpage at

http://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities

Species that have not yet been adequately surveyed to be listed under Schedule 1 or 2 are added to the Priority Flora and Priority Fauna 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 list for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Conservation Dependent species are placed in Priority 5.

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 One: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, 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 Two: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, 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 Three: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. 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 Four: 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 do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
- (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

### 5: Priority Five: Conservation Dependent species

Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Recommendations for additions, deletions or changes to the Declared Rare and Priority Flora List should be forwarded to the Flora Administration Officer or Senior Botanist Species and Communities Branch, DEC.

**Species and Communities Branch** 

17 Dick Perry Ave, Technology Park, Kensington
Phone: (08) 9334 0455 Fax: (08) 9334 0278
Locked Bag 104, Bentley Delivery Centre, Bentley, Western Australia 6983

### ABBREVIATIONS USED IN THREATENED AND PRIORITY FLORA DATABASE

VESTI	NC.	EDE	Educational Endowment
AAP	Aboriginal Planning Authority	EDU	Educational purposes UWA
AGR	Chief Executive, Dep. of Agriculture	ENE	Enjoyment of Natural Environ.
ALT	Aboriginal Land Trust	EPL	Ex-pastoral Lease (Sect 33(2) CALM Act)
APB	Agricultural Protection Board of WA	EPS	Explosives
BGP	Botanical Gardens & Parks Authority	EXC	Excepted from sale
BSA	Boy Scouts Association	EXL	Exploration Lease
CC	Conservation Commission – NPNCA - LFC	EXP	Experimental Farm
CGT	Crown Grant in Trust	FIR	Firing Range
COM	Commonwealth of Australia	FOR	State Forest
CRO	Crown Freehold-Govt Ownership	FP	Foreshore Purposes
CRW	Crown	GE	General Lease
DAG	Dep. of Agriculture	GHA	Grain Handling
DOW	Dep. of Water	GOL	Golf
DPI	Dep. of Planning	GRA	Gravel Pit
EXD	Exec Direc CALM	GVT	Government Requirements
FES	Fire and Emergency Services Aust.	HAR	Harbour Purposes
HOW	Dep. of Housing/State Housing Commission	HEP	Heritage Purposes
ILD	Industrial Lands Develop. Auth	HER	Heritage trail
LAC	LandCorp	HOS	Hospital
LGA	Shire/LGA	KEN	Kennels
MAG	Minister for Agriculture	LGA	LGA/Shire Requirements
MCB	Metropolitan Cemeteries Board	LPR	Landscape Protection
MED	Ministry of Education	MIN	Mining lease
MHE	Minister for Health	MUN	Municipal Purposes
MIN	Minister for Mines	NPK	National Park
MPL	Ministry for Planning	NRE	Nature Reserve
MPR	Minister for Prisons	OTH	Other
MRD	Main Roads WA	PAR	Parkland (& Recreation)
MTR	Minister for Transport	PAS	Pastoral lease
MWA	Minister for Water Resources	PCR	Proposed for Conservation
MWO	Minister for Works	PFF	Protection of Flora & Fauna
NAT	Natural Trust of Australia WA	PFL	Protection of Flora
NON	Not Vested	PIC	Picnic ground
PLB	Pastoral Lands Board	PLA	Plantation
PRI	Private/Freehold	PMC	Protection of Meteorite Crater
RAI	Public Transport Authority	POS	Public Open Space
REL	Religious Organisation	PPA	Public parkland
SPC	State Planning Commission	PRS	Prison site
SYN	Synergy (ex Western Power)	PUR	Purchase Lease
SWA	State of Western Australia	PUT	Public Utility
TEL	Telstra	QUA	Quarry
UNK	Unknown	RAC	Racecourse
WAT	Water Corporation	RAD	Radio Station
WEL	Minister Community Welfare	REC	Recreation
WRC	Water & Rivers Commission	REH	Rehabilitation/Re-establish Native Plants
XPL	Ex-Pastoral Lease	RRE	Railway Reserve
		RUB	Rubbish
PURPO	OSES	SAL	Saleyards
ABR	Aboriginal Reserve	SAN	Sand
ACC	Access Track	SCH	School-site
AER	Aerodrome	SET	Settlers requirements
AIR	Airport	SHO	Showgrounds
ARS	Agricultural Research Station	SNN	Sanitary
BAP	Baptist Union of WA	SOI	Soil Conservation
CAM	Camping	STO	Stopping place
CAR	Caravan park	STK	Stock Route
CEM	Cemetery	TIM	Timber
CFA	Conservation of Fauna	TOU	Tourism
CFF	Conservation Of Flora & Fauna	TOW	Town-site
CFL	Conservation of Flora	TRA	Training Ground
CHU	Church	TRI	Trig station
CMN	Communications	UCL	Unallocated Crown Land
COM	Common	UNK	Unknown
CON	Conservation Park	VER	Road Verge
CPK	Car Park	VPF	Vermin Proof Fence
CRM	Conservation & Resource Management	WAT WLS	Water Wildlife Senetuery
DEF	Defence	WOO	Wildlife Sanctuary Firewood
DRA	Drain	***************************************	1 HCWUUU

### ABBREVIATIONS USED IN THE WESTERN AUSTRALIAN HERBARIUM DATABASE

Geocode Method - The method that was used to record the latitude and longitude.

**Auto** - Indicates that the coordinate data in the record was created automatically (i.e. by software), usually by creating a coordinate from information provided in the <u>Nearest Named Place</u> or Locality textual description fields.

**GAP** - Acronym for "Generalised Arbitrary Point" as used in HISPID. GAP indicates that the coordinate data was obtained manually from the Nearest Named Place or Locality textual description fields.

**GPS** - Acronym for "Global Positioning System". GPS indicates that the coordinate data in the record was obtained from a GPS unit by the collector of the specimen.

**MAN -** Shorthand for manual. MAN indicates that the coordinate data was created by hand using some method not allowed for by one of the other manual Geocode Method values, in particular, TOPO, GAP, or GPS.

**TOPO -** Shorthand for topographic map. TOPO indicates that the coordinate data was obtained by plotting textual locality details against a topographic map.

None - Indicates that no coordinate data has been supplied by the collector.

**Unknown** - Indicates that there is no known method for determining the coordinate data. Should be used if the collector provided no indication of how they sampled the specimen's coordinate data.

### **PREC** (Precision) - precision ratings for coordinates.

**Precision 1**: Absolutely precise (to nearest 100m or nearest second) and must be GPS determined. For example 35°26'42"S 123°40'26"E

**Precision 2**: Falling within a diameter of 3km (ca 2 minutes) or if no GPS mentioned in collecting notes. (The location must be able to be pinpointed on a 1:250 000 map, a spot locality. For example 35°26'42"S 123°40'26"E

**Precision 3**: Falling within a diameter of 10km (ca 7 minutes) or for degrees and minutes, where seconds have not been given. For example 35°26′\_"S 123°40′\_"E

Precision 4: Falling within a diameter of ca 50km (30 minutes). For example 35°26'\_"S 123°40'\_"E

**Precision 5**: Where a location is a prescribed large geographical area within a state or only the state is given. Diameter is greater than 50km. For example 35°\_'\_"S 123°\_'\_"E

Precision 6: used when localities are New Holland, Eastern Australia or Not given. Fields will be left blank.





### DEPARTMENT OF ENVIRONMENT AND CONSERVATION

## THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES INFORMATION

### CONDITIONS IN RESPECT OF SUPPLY OF INFORMATION

- 1. All requests for data are to be made in writing to the Director General, Department of Environment and Conservation Attention: Species and Communities Branch
- 2. The data supplied may not be supplied to other organisations, nor be used for any purpose other than for the project for which they have been provided, without the prior written consent of the data custodian (Val English), Species and Communities Branch.
- 3. Specific locality information for threatened and priority ecological communities (TECs/PECs) is regarded as confidential, and should be treated as such by receiving organisations. Specific locality information for TECs/PECs may not be used in public reports without the written permission of the Director General, Department of Environment and Conservation. Publicly available reports may only show generalised locations (ie buffer locations). The TEC database manager is to be contacted for guidance on the presentation of TEC/PEC information.
- 4. Note that the Department of Environment and Conservation respects the privacy of private landowners who may have threatened and priority ecological communities on their property. Locations of TECs/PECs identified in the data as being on private property should be treated in confidence, and contact with property owners made through the Department of Environment and Conservation.
- 5. Receiving organisations should note that while every effort has been made to prevent errors and omissions in the data provided, they may be present. The Department of Environment and Conservation accepts no responsibility for this.
- 6. Receiving organisations must also recognise that the Threatened Ecological Communities database is subject to continual updating and amendment, and such considerations should be taken into account by the user.
- 7. It should be noted that the supplied data do not necessarily represent a comprehensive listing of the threatened and priority ecological communities of the area in question. Its comprehensiveness is dependant on the amount of survey carried out within the specified area. Private property has been relatively little surveyed. The receiving organisation should employ a consultant, if there is any likelihood of the presence of any threatened or priority ecological community, to undertake a survey of the area under consideration.
- 8. Acknowledgment of the Department of Environment and Conservation as source of the data is to be made in any published material. Copies of all such publications are to be forwarded to the Department of Environment and Conservation, Attention: Manager, Species and Communities Branch.

# Threatened and Priority Ecological Community buffers in WA

UNDER NO CIRCUMSTANCES IS THIS DATA TO BE PROVIDED TO ANY THIRD PARTIES, for more details see conditions for the supply of this information.

### **Citation**

Title: Threatened and Priority Ecological Community buffers in WA

**Custodian:** Department of Environment & Conservation

### **Description**

**Abstract:** Ecological communities throughout WA that are

"Presumed Totally Destroyed", "Critically Endangered", "Endangered", "Vulnerable", "Priority 1-5", "Lower Risk"

and "Not evaluated". Communities are based on various life-forms including plants, invertebrates and

micro-organisms.

### **Geographical Bounding Box**

North: -14.788854 South: -35.005719 East: 128.870214 West: 113.765525

### **Data Currency and Status**

Beginning Date: 1/1/94
Ending Date: current

Maintenance/Update: As requested

### **Access**

Stored Data

**ESRI** shapefile

Format: Coordinate

GCS\_GDA\_1994

System:

Access
Constraints:

Digital data is only available with written permission of the custodian. In addition, some occurrence data eg. location of sites

on private land, is password restricted.

### **Data Quality**

Positional Accuracy:

Point location data within occurrences usually from GPS fix, usually within 100 metres. Some digitized from hard copy.

Attribute Accuracy:

Not documented.

Logical Consistency:

Not documented.

Completeness: Information on specific communities was obtained from regional,

subregional or specific habitat surveys of floristic communities, invertebrate communities, wetland assemblages and communities

of micro-organisms.

### **Attributes List:**

### Name Description

BDY_ID	Associated boundary polygon unique identifier
OCC_UNIQUE	Unique occurrence identifier
COM_ID	Shortened community name identifier
COM_NAME	Community name
CT_DESC	State listed Category of Threat
S_ID_COUNT	Number of Site IDs within a buffer
FIRST_S_ID	First site identifier
LAST_S_ID	Last site identifier
BUFFER	Buffer radius from site ID or boundary in metres

### **General Information:**

Priority Ecological Communities

- There are 284 known PECs and subtypes , 271 (~95%) of these on the TEC/PEC database
- The location of priority communities is good, but not complete across the state
- There is a formal list of PECs at

http://www.dec.wa.gov.au/content/view/849/2017/

Many PECs are awaiting endorsement as TECs

buffers

- The buffer radius around each occurrence of a TEC or PEC is included to help ensure that developments with potential to impact groundwater or surface water are picked up.
- For wetland TEC or PECs we seek to include an area within the buffer zone that is intended to help protect groundwater and surface water. The area required to protect different types of wetlands from a variety of hydrological impacts will, of course, differ.

- For upland TEC or PECs that are believed not to be groundwater dependent, the buffer area radius encompasses the TEC or PEC site location recorded in the TEC database, and extends at least to the furthest point in the occurrence. This is to ensure that the 'buffer' area encompasses at least the entire TEC or PEC. This means that some linear occurrences may need a larger buffer radius to encompass the entire occurrence.
- Occurrences with a buffer distance of 0 are no longer extant.

### **Contact Information**

Contact Organisation: Department of Environment & Conservation

Contact Position: TEC Database Administrator - Species and Communities Branch

Mail Address: Locked Bag 104, Bentley Delivery Centre

**Suburb/Locality:** Kensington

Country/State: WA
Postcode: 6983

Telephone: (08) 9334 0116 Fax: (08) 9334 0300

Email: communities.data@dec.wa.gov.au

### **Metadata Information**

Metadata Date: current

# Department of Parks and Wildlife NatureMap Search Results



# **NatureMap Species Report**

# Created By Clinton Van Den Bergh on 11/11/2014

Current Names Only Yes

Core Datasets Only Yes

Data Source Swan Coastal Plain Survey

Method 'By Circle'

Centre 115°58' 54" E,31°43' 31" S

Buffer 20km

	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
1.	15466	Acacia applanata			
2.	3231	Acacia auronitens			Υ
3.	3323	Acacia ericifolia			Υ
4.	3374	Acacia huegelii			
5.	3409	Acacia lasiocarpa (Panjang)			
6.	3502	Acacia pulchella (Prickly Moses)			
7.	15481	Acacia pulchella var. glaberrima			
8.	3527	Acacia saligna (Orange Wattle, Kudjong)			
9.	3541	Acacia sessilis			
10.	3557	Acacia stenoptera (Narrow Winged Wattle)			
11.	3602	Acacia willdenowiana (Grass Wattle)			
12.		Actinotus glomeratus			
13.		Actinotus leucocephalus (Flannel Flower)			
14.		Adenanthos cygnorum (Common Woollybush)			
15.		Aira caryophyllea (Silvery Hairgrass)	Υ		
16.		Aira cupaniana (Silvery Hairgrass)	Υ		
17.		Aira praecox (Early Hairgrass)	Υ		
18.		Alexgeorgea nitens			
19.		Allocasuarina fraseriana (Sheoak, Kondil)			
20.		Allocasuarina humilis (Dwarf Sheoak)			
21.		Alternanthera nodiflora (Common Joyweed)			
22.		Amperea ericoides			
23.		Amphipogon amphipogonoides			
24.		Amphipogon turbinatus			
25.		Anarthria laevis			
26.		Andersonia heterophylla			
27.		Andersonia lehmanniana			
28.		Angianthus preissianus			
29.		Anigozanthos humilis (Catspaw)			
30. 31.		Anigozanthos manglesii (Mangles Kangaroo Paw, Kurulbrang)  Anigozanthos viridis (Green Kangaroo Paw, Kurulbardang)			
32.		Antus gracillima			
33.		Aotus procumbens			
34.		Aphelia cyperoides			
35.		Arctotheca calendula (Cape Weed)	Υ		
36.		Aristida contorta (Bunched Kerosene Grass)	•		
37.		Arnocrinum preissii			
38.		Astroloma pallidum (Kick Bush)			
39.		Astroloma xerophyllum			
40.		Avena fatua (Wild Oat)	Υ		
41.		Banksia attenuata (Slender Banksia, Piara)			
42.		Banksia grandis (Bull Banksia, Pulgarla)			
43.		Banksia ilicifolia (Holly-leaved Banksia)			
44.		Banksia menziesii (Firewood Banksia)			
45.		Baumea articulata (Jointed Rush)			
46.		Baumea juncea (Bare Twigrush)			
47.		Beaufortia elegans			
48.	5390	Beaufortia purpurea			Υ
49.		Blancoa canescens (Winter Bell)			Υ
50.		Boronia purdieana (Winter Boronia)			
51.	4438	Boronia ramosa			
52.	1272	Borya scirpoidea			
				(FUND)	**********

NatureMap is a collaborative project of the Department of Environment and Conservation, Western Australia, and the Western Australian Museum.







	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
53.	1273	Borya sphaerocephala (Pincushions)			
54.		Bossiaea eriocarpa (Common Brown Pea)			
55.		Brachyscome bellidioides			
56.		Brachyscome iberidifolia	V		
57. 58.		Briza maxima (Blowfly Grass)	Y		
58. 59.		Briza minor (Shivery Grass) Bromus diandrus (Great Brome)	Y		
60.		Burchardia bairdiae	,		
61.		Burchardia multiflora (Dwarf Burchardia)			
62.		Caesia micrantha (Pale Grass Lily)			
63.	1277	Caesia occidentalis			
64.	1586	Caladenia discoidea (Dancing Orchid)			
65.	1592	Caladenia flava (Cowslip Orchid)			
66.	1602	Caladenia longicauda (Common White Spider Orchid)			
67.	15503	Caladenia paludosa			
68.		Calandrinia calyptrata (Pink Purslane)			
69.		Calectasia cyanea (Blue Tinsel Lily)		T	
70.		Calothamnus sanguineus (Silky-leaved Blood flower, Pindak)			
71.		Calytrix angulata (Yellow Starflower)			
72.		Calytrix flavescens (Summer Starflower)			
73.		Calytrix fraseri (Pink Summer Calytrix)			
74. 75.		Calytrix sapphirina Calytrix variabilis			Υ
76.		Cassytha flava (Dodder Laurel)			
77.		Cassytha glabella (Tangled Dodder Laurel)			
78.		Cassytha micrantha			
79.		Cassytha racemosa (Dodder Laurel)			
80.		Caustis dioica			
81.	6539	Centaurium erythraea (Common Centaury)	Υ		
82.	1120	Centrolepis alepyroides			
83.	1121	Centrolepis aristata (Pointed Centrolepis)			
84.	13122	Centrolepis cephaloformis subsp. cephaloformis			
85.	1125	Centrolepis drummondiana			
86.	1131	Centrolepis inconspicua			Υ
87.		Centrolepis mutica			
88.		Centrolepis pilosa			
89.		Cerastium glomeratum (Mouse Ear Chickweed)	Υ		
90.		Chamaescilla corymbosa (Blue Squill)			
91.		Chanascilla versicolor	V		
92. 93.		Chenopodium macrospermum Chorizandra enodis (Black Bristlerush)	Υ		
94.		Chorizema dicksonii (Yellow-eyed Flame Pea)			Υ
95.		Cicendia filiformis (Slender Cicendia)	Υ		'
96.		Comesperma calymega (Blue-spike Milkwort)	,		
97.		Conospermum acerosum (Needle-leaved Smokebush)			
98.		Conospermum incurvum (Plume Smokebush)			
99.	1882	Conospermum stoechadis (Common Smokebush)			
100.	6347	Conostephium minus (Pink-tipped Pearl flower)			
101.	6348	Conostephium pendulum (Pearl Flower)			
102.	6349	Conostephium preissii			
103.		Conostylis aculeata (Prickly Conostylis)			
104.		Conostylis aurea (Golden Conostylis)			
105.		Conostylis caricina			
106.		Conostylis juncea			
107. 108.		Conostylis setigera (Bristly Cottonhead)  Cotula coronopifolia (Waterbuttons)	Υ		
109.		Cotula cotuloides (Smooth Cotula)	•		
110.		Crassula colorata (Dense Stonecrop)			
111.		Crassula natans	Υ		
112.		Cryptandra arbutiflora (Waxy Cryptandra)			
113.		Cryptandra pungens			
114.		Cyathochaeta avenacea			
115.		Cyathochaeta clandestina			
116.		Cynodon dactylon (Couch)	Υ		
117.	792	Cyperus eragrostis (Umbrella Sedge)	Υ		Υ
118.	806	Cyperus polystachyos (Bunchy Sedge)	Υ		Υ
119.	815	Cyperus tenellus (Tiny Flatsedge)	Υ		
120.	7428	Dampiera coronata (Wedge-leaved Dampiera)			Υ
121.		Dampiera linearis (Common Dampiera)			
122.	1218	Dasypogon bromeliifolius (Pineapple Bush)			
				Departmen	tof







	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
123.	6218	Daucus glochidiatus (Australian Carrot)			Alou
124.	3793	Daviesia angulata			
125.		Daviesia decurrens (Prickly Bitter-pea)			
126.		Daviesia divaricata (Marno)			
127.		Daviesia horrida (Prickly Bitter-pea)			Υ
128.		Daviesia nudiflora			
129. 130.		Daviesia podentylla			
131.		Daviesia podophylla Daviesia preissii			
132.		Daviesia triflora			
133.		Dianella revoluta (Blueberry Lily)			
134.		Dichopogon capillipes			
135.		Dichopogon preissii			
136.	7961	Dittrichia graveolens (Stinkwort)	Υ		
137.	1634	Diuris laxiflora (Bee Orchid)			
138.	1635	Diuris Iongifolia (Common Donkey Orchid)			
139.	3095	Drosera erythrorhiza (Red Ink Sundew)			
140.	3097	Drosera gigantea (Giant Sundew)			
141.	3098	Drosera glanduligera (Pimpernel Sundew)			
142.		Drosera heterophylla (Swamp Rainbow)			
143.	3105	Drosera leucoblasta (Wheel Sundew)			
144.		Drosera macrantha (Bridal Rainbow)			
145.		Drosera menziesii (Pink Rainbow)			
146.		Drosera menziesii subsp. menziesii			
147.		Drosera menziesii subsp. penicillaris			
148.		Drosera neesii (Jewel Rainbow)			
149.		Drosera pallade (Pala Painhau)			
150. 151.		Drosera pallida (Pale Rainbow) Drosera platystigma (Black-eyed Sundew)			
151.		Drosera pilatystigina (Black-eyed Sundew)  Drosera pulchella (Pretty Sundew)			
153.		Drosera punchena (Pretty Sundew)  Drosera pycnoblasta (Pearly Sundew)			Υ
154.		Drosera rosulata			
155.		Drosera stolonifera (Leafy Sundew)			
156.		Ehrharta calycina (Perennial Veldt Grass)	Υ		
157.		Ehrharta longiflora (Annual Veldt Grass)	Y		
158.		Eleocharis acuta (Common Spikerush)			Υ
159.		Epilobium billardiereanum (Glabrous Willow Herb)			
160.	13950	Eremaea asterocarpa subsp. asterocarpa			
161.	5542	Eremaea purpurea			Υ
162.	1646	Eriochilus dilatatus (White Bunny Orchid)			
163.	15446	Eryngium pinnatifidum subsp. pinnatifidum			
164.	5659	Eucalyptus gomphocephala (Tuart, Duart)			
165.		Eucalyptus marginata (Jarrah, Djara)			
166.		Eucalyptus rudis (Flooded Gum, Kulurda)			
167.		Eucalyptus todtiana (Coastal Blackbutt)			
168.		Eucalyptus wandoo (Wandoo, Wondu)			
169.		Euchilopsis linearis (Swamp Pea)			
170.		Euphorbia peplus (Petty Spurge)	Y		
171. 172.		Eutaxia virgata  Gladiolus cancephyllocous (Wild Gladiolus)	V		
		Gladiolus caryophyllaceus (Wild Gladiolus)	Y		
173. 174.		Gompholobium aristatum Gompholobium confertum			
175.		Gompholobium marginatum			
176.		Gompholobium preissii			
177.		Gompholobium tomentosum (Hairy Yellow Pea)			
178.		Gonocarpus pithyoides			
179.		Goodenia micrantha			
180.		Goodenia pulchella			
181.		Grevillea althoferorum			Υ
182.	1964	Grevillea bipinnatifida (Fuchsia Grevillea)			
183.	2066	Grevillea pilulifera (Woolly-flowered Grevillea)			
184.	1464	Haemodorum brevisepalum			Υ
	1468	Haemodorum laxum			
185.		Haemodorum Ioratum		P3	
185. 186.		naemodorum loratum		1.5	
	1469	Haemodorum simplex		13	
186.	1469 1472			13	
186. 187. 188. 189.	1469 1472 1475 2136	Haemodorum simplex Haemodorum spicatum (Mardja) Hakea candolleana		13	
186. 187. 188. 189.	1469 1472 1475 2136 2158	Haemodorum simplex Haemodorum spicatum (Mardja) Hakea candolleana Hakea erinacea (Hedge-hog Hakea)		13	Y
186. 187. 188. 189.	1469 1472 1475 2136 2158 2166	Haemodorum simplex Haemodorum spicatum (Mardja) Hakea candolleana		, ,	Υ







1915		Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
150.   223   Alesta naturalità (Carridor Halista)   150.   221   Alesta naturalità (Transchi Halista)   150.   222   223	193.	2185	Hakea myrtoides (Myrtle Hakea)			
1971	194.	2197	Hakea prostrata (Harsh Hakea)			
1971						
1986			•			
1996.   2216   Foliato investigation street (from 1997 to 1998)   1998			, ,			
2001						Υ
2011						
202.   3-16   Pricio Note   purposes   Grande Sculpt						
2016				Υ		
2006.   15:06   Filipotentia foliosita   V   V   V   V   V   V   V   V   V			• •			
2005	204.	1293	Hensmania turbinata			
200.   511.   Histories consisted	205.	1526	Hesperantha falcata	Υ		Υ
2018	206.	5108	Hibbertia acerosa (Needle Leaved Guinea Flower)			
200.     5116   Fébbothe consisted						
211.						
211.   \$13.8						
212.			-			
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240. 3997 Jacksonia alata Y 241. 4005 Jacksonia tondensata Y 242. 4010 Jacksonia floribunda (Holly Pea) 243. 4012 Jacksonia furcellata (Grey Stinkwood) 244. 4027 Jacksonia sericea (Waldjumi) P4 245. 4029 Jacksonia sternbergiana (Stinkwood, Kapur) 246. 1298 Johnsonia pubescens (Pipe Lily) 247. 1178 Juncus bulonius (Toad Rush) Y 248. 1180 Juncus capitatus (Capitate Rush) Y 249. 1184 Juncus holoschoenus (Jointleaf Rush) 250. 1188 Juncus pallidus (Pale Rush) 251. 4044 Kennedia prostrata (Scarlet Runner) 252. 1221 Kingia australis (Kingia, Pulonok) 253. 5832 Kunzea ericifolia (Spearwood, Pondil) 254. 5841 Kunzea recurva 255. 1370 Lachenalia reflexa Y 256. 2249 Lambertia multiflora (Many-flowered Honeysuckle) 257. 1303 Laxmannia ramosa (Branching Lily) 259. 11464 Laxmannia sessilillora subsp. australis 260. 1309 Laxmannia squarrosa 261. 7568 Lechenaultia biloba (Blue Leschenaultia)					P3	
241.       4005       Jacksonia funibunda (Holly Pea)         242.       4010       Jacksonia furcellata (Grey Stinkwood)         243.       4012       Jacksonia sericea (Waldjumi)       P4         244.       4027       Jacksonia sericea (Waldjumi)       P4         245.       4029       Jacksonia sternbergiana (Stinkwood, Kapur)       P4         246.       1298       Johnsonia pubescens (Pipe Lily)       Y         247.       1178       Juncus bufonius (Toad Rush)       Y         248.       1180       Juncus capitatus (Capitate Rush)       Y         249.       1184       Juncus pallidus (Pale Rush)       Y         250.       1188       Juncus pallidus (Pale Rush)       Y         251.       4044       Kennedia prostrata (Scarlet Runner)       Y         252.       1221       Kingia australis (Kingia, Pulonok)         253.       5832       Kunzea ericifolia (Spearwood, Pondil)         254.       5841       Kunzea recurva         255.       1370       Lachenalia reflexa       Y         256.       2249       Lambertia multiflora (Many-flowered Honeysuckle)         257.       1303       Laxmannia grandiflora       Y         258.       1307			• •			
242.       4010 Jacksonia floribunda (Holly Pea)         243.       4012 Jacksonia furcellata (Grey Stinkwood)         244.       4027 Jacksonia sericea (Waldjumi)       P4         245.       4029 Jacksonia sternbergiana (Stinkwood, Kapur)         246.       1298 Johnsonia pubescens (Pipe Lily)         247.       1178 Juncus bufonius (Toad Rush)       Y         248.       1180 Juncus capitatus (Capitate Rush)       Y         249.       1184 Juncus boloschoenus (Jointleaf Rush)       Y         250.       1188 Juncus pallidus (Pale Rush)       Y         251.       4044 Kennedia prostrata (Scarlet Runner)       Y         252.       1221 Kingia australis (Kingia, Pulonok)       Y         253.       5832 Kunzea ericitolia (Speanwood, Pondil)       Y         254.       5841 Kunzea recurva       Y         255.       1370 Lachenalia reflexa       Y         256.       2249 Lambertia multiflora (Many-flowered Honeysuckle)       Y         257.       1303 Laxmannia grandiflora       Y         258.       1307 Laxmannia sessififlora subsp. australis         260.       1309 Laxmannia squarrosa         261.       7568 Lechenaultia floribunda (Free-flowering Leschenaultia)	240.	3997	Jacksonia alata			Υ
243.       4012       Jacksonia furcellata (Grey Stinkwood)         244.       4027       Jacksonia sericea (Waldjumi)       P4         245.       4029       Jacksonia sternbergiana (Stinkwood, Kapur)         246.       1298       Johnsonia pubescens (Pipe Lily)         247.       1178       Juncus bufonius (Toad Rush)       Y         248.       1180       Juncus capitatus (Capitate Rush)       Y         249.       1184       Juncus holoschoenus (Jointleaf Rush)       Y         250.       1188       Juncus pallidus (Pale Rush)       Y         251.       4044       Kennedia prostrata (Scarlet Runner)       252.       1221       Kingia australis (Kingia, Pulonok)         253.       5832       Kurzea ericifolia (Spearwood, Pondill)       Y       254.       5841       Kunzea recurva       Y         255.       1370       Lachenalia reflexa       Y       Y         256.       2249       Lambertia multiflora (Many-flowered Honeysuckle)       Y         257.       1303       Laxmannia grandiflora       Y         258.       1307       Laxmannia ramosa (Branching Lily)         259.       11464       Laxmannia squarrosa         261.       7568       Lechenaultia biloba (Blue Les	241.	4005	Jacksonia condensata			Υ
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245.       4029 Jacksonia sternbergiana (Stinkwood, Kapur)         246.       1298 Johnsonia pubescens (Pipe Lily)         247.       1178 Juncus bufonius (Toad Rush)       Y         248.       1180 Juncus capitatus (Capitate Rush)       Y         249.       1184 Juncus holoschoenus (Jointleaf Rush)       Y         250.       1183 Juncus pallidus (Pale Rush)       Y         251.       4044 Kennedia prostrata (Scarlet Runner)       Y         252.       1221 Kingia australis (Kingia, Pulonok)       Y         253.       5832 Kunzea ericifolia (Spearwood, Pondil)       Y         254.       5841 Kunzea recurva       Y         255.       1370 Lachenalia reflexa       Y         256.       2249 Lambertia multiflora (Many-flowered Honeysuckle)       Y         257.       1303 Laxmannia grandiflora       Y         258.       1307 Laxmannia ramosa (Branching Lily)         259.       11464 Laxmannia sessiliflora subsp. australis         260.       1309 Laxmannia squarrosa         261.       7568 Lechenaultia biloba (Blue Leschenaultia)         262.       7574 Lechenaultia floribunda (Free-flowering Leschenaultia)			, , ,			
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247.       1178       Juncus bulonius (Toad Rush)       Y         248.       1180       Juncus capitatus (Capitate Rush)       Y         249.       1184       Juncus holoschoenus (Jointleaf Rush)         250.       1188       Juncus pallidus (Pale Rush)         251.       4044       Kennedia prostrata (Scarlet Runner)         252.       1221       Kingia australis (Kingia, Pulonok)         253.       5832       Kunzea ericifolia (Spearwood, Pondil)         254.       5841       Kunzea recurva         255.       1370       Lachenalia reflexa       Y         256.       2249       Lambertia multiflora (Many-flowered Honeysuckle)         257.       1303       Laxmannia grandiflora       Y         258.       1307       Laxmannia ramosa (Branching Lily)         259.       11464       Laxmannia sessififlora subsp. australis         260.       1309       Laxmannia squarrosa         261.       7568       Lechenaultia biloba (Blue Leschenaultia)         262.       7574       Lechenaultia floribunda (Free-flowering Leschenaultia)						
248.       1180 Juncus capitatus (Capitate Rush)       Y         249.       1184 Juncus holoschoenus (Jointleaf Rush)         250.       1188 Juncus pallidus (Pale Rush)         251.       4044 Kennedia prostrata (Scarlet Runner)         252.       1221 Kingia australis (Kingia, Pulonok)         253.       5832 Kunzea ericifolia (Spearwood, Pondil)         254.       5841 Kunzea recurva         255.       1370 Lachenalia reflexa         256.       2249 Lambertia multiflora (Many-flowered Honeysuckle)         257.       1303 Laxmannia grandiflora         258.       1307 Laxmannia ramosa (Branching Lily)         259.       11464 Laxmannia sessiliflora subsp. australis         260.       1309 Laxmannia squarrosa         261.       7568 Lechenaultia biloba (Blue Leschenaultia)         262.       7574 Lechenaultia floribunda (Free-flowering Leschenaultia)				Y		
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254.       5841       Kunzea recurva         255.       1370       Lachenalia reflexa       Y         256.       2249       Lambertia multiflora (Many-flowered Honeysuckle)         257.       1303       Laxmannia grandiflora       Y         258.       1307       Laxmannia ramosa (Branching Lily)         259.       11464       Laxmannia sessiliflora subsp. australis         260.       1309       Laxmannia squarrosa         261.       7568       Lechenaultia biloba (Blue Leschenaultia)         262.       7574       Lechenaultia floribunda (Free-flowering Leschenaultia)	252.	1221	Kingia australis (Kingia, Pulonok)			
255.       1370       Lachenalia reflexa       Y         256.       2249       Lambertia multiflora (Many-flowered Honeysuckle)         257.       1303       Laxmannia grandiflora       Y         258.       1307       Laxmannia ramosa (Branching Lily)         259.       11464       Laxmannia sessiliflora subsp. australis         260.       1309       Laxmannia squarrosa         261.       7568       Lechenaultia biloba (Blue Leschenaultia)         262.       7574       Lechenaultia floribunda (Free-flowering Leschenaultia)						
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261. 7568 Lechenaultia biloba (Blue Leschenaultia) 262. 7574 Lechenaultia floribunda (Free-flowering Leschenaultia)			·			
262. 7574 Lechenaultia floribunda (Free-flowering Leschenaultia)			·			
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24.1   10.1   Learns despense (Exchange)   Y		Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
205.   1975   Captiological and appropriate	263.	1051	Lemna disperma (Duckweed)			
286. 605 Centrologoum anguentation 287. 197. Expertisement implications from Final Storic readings 288. 697. Learn Supposition from Storic St		8099	Leontodon saxatilis (Hairy Hawkbit)	Υ		Υ
267.   Sol.   Leadingweine Resolution (Free Print)						
2011						
298.   944   Laptocoperum scribbon   Para Ortolo						
271.   1453   Lagonomica protection						
271.   234.   Legionomies ampsensorma     272.   1088.   Legionomies ampsensorma     273.   1088.   Legionomies ampsensorma     274.   1088.   Legionomies ampsensorma     275.   6400.   Legionopom gradialimus     276.   6401.   Legionopom gradialimus     277.   6400.   Legionopom gradialimus     277.   6400.   Legionopom gradialimus     278.   6401.   Legionopom gradialimus     279.   6402.   Legionopom gradialimus     279.   6402.   Legionopom gradialimus     279.   6402.   Legionopom gradialimus     289.   6402.   Legionopom gradialimus     289.   6402.   Legionopom gradialimus     289.   6404.   Legionopom gradialimus     280.   7470.   Legionopom						
27.1.   Start   Compressionment appearances						
276.         6470         Learnopopor positificas           276.         6410         Learnopopor positificas         Y           277.         6402         Learnopopor positificas         Y           277.         6402         Learnopopor positificas         Y           278.         6402         Learnopopor perimbura (Costa Risora Assath)           281.         6401         Learnopopor perimpuras           282.         4641         Learnopopor perimpuras           286.         7777         Learnopopor perimpuras           286.         7787         Learnopopor perimpuras           286.         7787         Learnopopor perimpuras           286.         7787         Learnopopor perimpuras           287.         7608         Learnopopor perimpuras           288.         7787         Learnopopor perimpuras         Y           289.         778         Learnopopor perimpuras         Y           280.         770         Learnopopor perimpuras         Y           281.         777         Learnopopor perimpuras         Y           282.         774         Learnopopor perimpuras         Y           283.         775         Learnopopor perimpuras         Y <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
275.   6400   Lecengopany productions   Y	273.	1088	Lepyrodia macra (Large Scale Rush)			
270.   6410   Lencepopon (withwish   Y	274.	6374	Leucopogon conostephioides			
277.   6401	275.	6400	Leucopogon gracillimus			
278. 642 Leucopoun parelliture (Cinest Beaste Insent) 280. 654 Leucopoun parelliture (Cinest Beaste Insent) 281. 654 Leucopoun parelliture (Cinest Beaste Insent) 282. 654 Leucopoun parelliture (Cinest Beaste Insent) 283. 654 Leucopoun parelliture (Cinest Beaste Insent) 284. 777 Leurothouka diplates (Cimmon Sylvarory) 285. 465 Leurothouka diplates (Cimmon Sylvarory) 286. 764 Leurothouka diplates (Cimmon Sylvarory) 287. 478 Leurothouka diplates (Cimmon Sylvarory) 287. 479 Leurothouka diplates (Cimmon Sylvarory) 288. 479 Leurothouka diplates (Cimmon Sylvarory) 289. 479 Leurothouka diplates (Cimmon Sylvarory) 280. 1201 Leurothouka diplates (Cimmon Sylvarory) 280. 1212 Leurothouka diplates (Cimmon Sylvarory) 280. 1221 Leurothouka diplates (Cimmon Sylvarory) 280. 1222 Leurothouka diplates (Cimmon Sylvarory) 280. 1231 Leurothouka diplates (Cimmon Sylvarory) 280. 1232 Leurothouka diplates (Cimmon Sylvarory) 280. 1232 Leurothouka diplates (Cimmon Sylvarory) 280. 1234 Leurothouka diplates (Cimmon Sylvarory) 281. 1232 Leurothouka diplates (Cimmon Sylvarory) 282. 1244 Leurothouka diplates (Cimmon Sylvarory) 283. 1245 Leurothouka diplates (Cimmon Sylvarory) 284. 1259 Leurothouka diplates (Cimmon Sylvarory) 285. 1261 Leurothouka diplates (Cimmon Sylvarory) 286. 1262 Leurothouka diplates (Cimmon Sylvarory) 287. 1264 Leurothouka diplates (Cimmon Sylvarory) 288. 1265 Leurothouka diplates (Cimmon Sylvarory) 289. 1265 Leurothouka diplates (Cimmon Sylvarory) 280. 1265 Leurothouka diplates (C	276.	6410	Leucopogon leptanthus			Υ
270.   6427   Lacespropue partitions (Costs Beard health)		6420	Leucopogon oldfieldii			Υ
281.   644   Eucopogno propriorgius						
261.   6436   Autoropogny propagayas						
202.   1044   Luncropognia sproragiolisches						
283. 1767 L. Areundrooks pastial (Author) Sylvenort) 284. 1767 L. Areundrooks pastials (Charmon Sylvenort) 285. 4863. Linum Enginum (Femer Plack) 286. 4863. Linum Enginum (Femer Plack) 287. 6556. Lingvinic campramisties (Bull-Houseant Lagranic) 287. 6556. Lingvinic campramisties (Bull-Houseant Lagranic) 288. 1473. Lunan Enginum (Kommon Pyregrass) 289. 1223. Lamandro cascipitina, Turbart Mart Fluorin) 280. 1223. Lamandro micranitria (Farlant Mart Fluorin) 280. 1224. Lunandro micranitria (Farlant Mart Fluorin) 280. 1225. Lunandro micranitria (Farlant Mart Fluorin) 280. 1225. Lunandro micranitria (Farlant Mart Fluorin) 280. 1226. Lunandro micranitria (Farlant Mart Fluorin) 280. 1226. Lunandro successo (Bull Mart Fluorin) 280. 1226. Mart Lunantro successo (Bull Mart Lunantro Successo (Bull Mart Lunantro Hart Fluorin) 280. 1226. Mart Lunantro successo (Bull Mart Lunantro Hart Fluorin) 280. 1226. Mart Luna						
284.         TRT7 Leventhooks stiplates (Common Sylewoot)           285.         458. S. Limins rigidary (Femor Pass)         Y           286.         1489. Licholis fronthir (Shinote Lobelis)           287.         1489. Licholis rigidary (Wommon Pyrginss)         Y           288.         1223. Licamardia microarilis (Ginde River)         Y           289.         1223. Licamardia microarilis (Ginde River)         Y           280.         1228. Licamardia microarilis (Ginde River)         Y           281.         1228. Licamardia microarilis (Ginde River)           282.         1228. Licamardia microarilis (Ginde River)           283.         1228. Licamardia microarilis (Ginde River)           284.         1228. Licamardia microarilis (Ginde River)           285.         1243. Licamardia microarilis (Ginde River)           286.         1245. Licamardia microarilis (Ginde River)           287.         1246. Licamardia microarilis (Ginde River)           288.         1699. Licosa singuistamic (Harmonical Trafoil)         Y           289.         1607. Lippinis bathase         Y           300.         1686. Lippinis activates         Y           301.         6486. Lippinis activates         Y           302.         2838. Mocroaritura activates (Marcoarilis activates)						
285.   4495   Librar Intigrytans (Primork Flau)   Y   Y   Y   Y   Y   Y   School and user (Shardin Cobala)						
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309.       5961       Melaleuca scabra (Rough Honeymyrtle, Wurru Bush)         310.       5964       Melaleuca seraita         311.       5978       Melaleuca teretifolia (Banbar)         312.       5983       Melaleuca trichophylla       Y         313.       5984       Melaleuca uncinata (Broom Bush, Kwidjard)         314.       5987       Melaleuca wiminea (Mohan)         315.       4085       Melilotus indicus       Y         316.       955       Mesomelaena pseudostygia         317.       957       Mesomelaena tetragona (Semaphore Sedge)         318.       485       Microlis media subsp. media         320.       8106       Millotia tenulifolia (Soft Millotia)         321.       7410       Monopasis debilis       Y         322.       4662       Monotaxis grandiflora (Diamond of the Desert)       Y         323.       492       Neurachne alopecuroidea (Foxtail Mulga Grass)         324.       2401       Nuytsia floribunda (Christmas Tree, Mudja)         325.       8133       Olearie elaeophila         326.       7122       Orobanche minor (Lesser Broomrape)       Y         329.       7089       Parentucellia viscosa (Sticky Bartsia)       Y         33			, , ,			
310.       5964 Melaleuca seriata         311.       5978 Melaleuca trichophylla       Y         312.       5983 Melaleuca trichophylla       Y         313.       5984 Melaleuca uncinata (Broom Bush, Kwidjard)       Y         314.       5987 Melaleuca viminea (Mohan)       Y         315.       4085 Melilotus indicus       Y         316.       955 Mesomelaena pseudostygia       Y         317.       957 Mesomelaena tetragona (Semaphore Sedge)       Y         318.       485 Microlaena stipoides (Weeping Grass)       Y         319.       15419 Microtis media subsp. media       Y         320.       8106 Millotia tenuifolia (Soft Millotia)       Y         321.       7410 Monopsis debilis       Y         322.       4662 Monotaxis grandiflora (Diamond of the Desert)       Y         323.       492 Neurachne alopecuroidea (Foxtail Mulga Grass)         324.       2401 Nuytsia floribunda (Christmas Tree, Mudja)         325.       8133 Olearia elaeophila         326.       7122 Orobanche minor (Lesser Broomrape)       Y         327.       4355 Oxalis perennans         328.       7089 Parentucellia latifolia (Common Bartsia)       Y         330.       1546 Patersonia juncea (Rush Leaved Patersonia) </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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314.       5987 Melaleuca viminea (Mohan)         315.       4085 Melilotus indicus       Y         316.       955 Mesomelaena pseudostygia         317.       957 Mesomelaena tetragona (Semaphore Sedge)         318.       485 Microlaena stipoides (Weeping Grass)         319.       15419 Microtis media subsp. media         320.       8106 Millotia tenuifolia (Soft Millotia)         321.       7410 Monopsis debilis       Y         322.       4662 Monotaxis grandiflora (Diamond of the Desert)         323.       492 Neurachne alopecuroidea (Foxtall Mulga Grass)         324.       2401 Nuysisa floribunda (Christmas Tree, Mudja)         325.       8133 Olearia elaeophilia         326.       7122 Orobanche minor (Lesser Broomrape)       Y         327.       4355 Oxalis perennans         328.       7089 Parentucellia latifolia (Common Bartsia)       Y         329.       7090 Parentucellia viscosa (Sticky Bartsia)       Y         330.       1546 Patersonia juncea (Rush Leaved Patersonia)         331.       1550 Patersonia occidentalis (Purple Flag, Koma)         332.       4343 Pelargonium capitatum (Rose Pelargonium)       Y						
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321. 7410 Monopsis debilis Y  322. 4662 Monotaxis grandiflora (Diamond of the Desert)  323. 492 Neurachne alopecuroidea (Foxtail Mulga Grass)  324. 2401 Nuytsia floribunda (Christmas Tree, Mudja)  325. 8133 Olearia elaeophila  326. 7122 Orobanche minor (Lesser Broomrape) Y  327. 4355 Oxalis perennans  328. 7089 Parentucellia latifolia (Common Bartsia) Y  329. 7090 Parentucellia viscosa (Sticky Bartsia) Y  330. 1546 Patersonia juncea (Rush Leaved Patersonia)  331. 1550 Patersonia occidentalis (Purple Flag, Koma)  332. 4343 Pelargonium capitatum (Rose Pelargonium) Y						
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325.       8133       Olearia elaeophila         326.       7122       Orobanche minor (Lesser Broomrape)       Y         327.       4355       Oxalis perennans         328.       7089       Parentucellia latifolia (Common Bartsia)       Y         329.       7090       Parentucellia viscosa (Sticky Bartsia)       Y         330.       1546       Patersonia juncea (Rush Leaved Patersonia)         331.       1550       Patersonia occidentalis (Purple Flag, Koma)         332.       4343       Pelargonium capitatum (Rose Pelargonium)       Y						
326. 7122 Orobanche minor (Lesser Broomrape)  327. 4355 Oxalis perennans  328. 7089 Parentucellia latifolia (Common Bartsia)  329. 7090 Parentucellia viscosa (Sticky Bartsia)  330. 1546 Patersonia juncea (Rush Leaved Patersonia)  331. 1550 Patersonia occidentalis (Purple Flag, Koma)  332. 4343 Pelargonium capitatum (Rose Pelargonium)						
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331. 1550 Patersonia occidentalis (Purple Flag, Koma) 332. 4343 Pelargonium capitatum (Rose Pelargonium) Y				,		
332. 4343 Pelargonium capitatum (Rose Pelargonium) Y						
				Υ		







	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
333.	6006	Pericalymma ellipticum (Swamp Teatree)			
334.	2273	Persoonia saccata (Snottygobble)			
335.		Petrophile linearis (Pixie Mops)			
336.		Petrophile macrostachya			
337.		Petrophile seminuda			V
338. 339.		Petrophile shuttleworthiana Philydrella pygmaea (Butterfly Flowers)			Y
340.		Phlebocarya ciliata			
341.		Phlebocarya filifolia			
342.		Phyllanthus calycinus (False Boronia)			
343.		Pimelea imbricata var. major			
344.		Pimelea imbricata var. piligera			
345.	5254	Pimelea leucantha			Υ
346.	8165	Pithocarpa pulchella (Beautiful Pithocarpa)			Υ
347.	4524	Platytheca galioides			
348.	571	Poa annua (Winter Grass)	Υ		
349.		Poa drummondiana (Knotted Poa)			
350.		Podolepis gracilis (Slender Podolepis)			
351.		Podolepis lessonii			
352.		Podotheca angustifolia (Sticky Longheads)			
353.		Podotheca chrysantha (Yellow Podotheca)			
354.		Pogonolepis stricta	.,		
355.		Polypogon monspeliensis (Annual Beardgrass)	Y		
356.		Polypogon tenellus			V
357. 358.		Poranthera ericoides (Heath Poranthera)			Y
359.		Poranthera microphylla (Small Poranthera)  Portulaca oleracea (Purslane, Wakati)			Υ
360.		Pterostylis barbata (Bird Orchid)			
361.		Pterostylis recurva (Jug Orchid)			
362.		Pterostylis sanguinea			
363.		Pterostylis vittata (Banded Greenhood)			
364.		Ptilotus declinatus (Curved Mulla Mulla)			Υ
365.		Ptilotus drummondii (Narrowleaf Mulla)			-
366.		Ptilotus manglesii (Pom Poms, Mulamula)			
367.	2751	Ptilotus polystachyus (Prince of Wales Feather)			
368.	2763	Ptilotus stirlingii (Stirling's Mulla Mulla)			
369.	4172	Pultenaea ericifolia			Υ
370.	4181	Pultenaea reticulata			
371.	8195	Quinetia urvillei			
372.	11927	Ranunculus sessiliflorus var. sessiliflorus			
373.	6012	Regelia ciliata			
374.		Regelia inops			Y
375.		Romulea rosea (Guildford Grass)	Υ		
376.		Romulea rosea var. australis (Guildford Grass)	Y		
377.		Rumex crispus (Curled Dock)	Y		
378.		Samolus junceus			
379.		Scaevola canescens (Grey Scaevola)			
380.		Scaevola glandulifera (Viscid Hand-flower)			
381. 382.		Scaevola lanceolata Scaevola phlebopetala (Velvet Fanflower)			
383.		Scaevola repens var. repens			
384.		Schoenolaena juncea			
385.		Schoenus bifidus			
386.		Schoenus brevisetis			
387.		Schoenus caespititius			
388.		Schoenus clandestinus			
389.	984	Schoenus curvifolius			
390.	985	Schoenus discifer			
391.	987	Schoenus elegans			
392.	992	Schoenus grandiflorus (Large Flowered Bogrush)			
393.	994	Schoenus humilis			
394.	1002	Schoenus nanus (Tiny Bog Rush)			
395.	1006	Schoenus odontocarpus			
396.	1011	Schoenus rigens			
397.		Schoenus subbulbosus			
398.		Schoenus subflavus (Yellow Bog-rush)			
399.		Schoenus tenellus			
400.		Schoenus unispiculatus			
401.		Scholtzia involucrata (Spiked Scholtzia)			
402.	б	Selaginella gracillima (Tiny Clubmoss)			
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	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
403.	2909	Silene gallica (French Catchfly)	Υ		
404.	8225	Siloxerus humifusus (Procumbent Siloxerus)			
405.		Solanum americanum (Glossy Nightshade)	Υ		
406.		Solanum nigrum (Black Berry Nightshade)	Y		
407. 408.		Sonchus algregus (Common Southistle)	Y		
408.		Sonchus oleraceus (Common Sowthistle) Sowerbaea laxiflora (Purple Tassels)	Υ		
410.		Sparaxis bulbifera	Υ		
411.		Sphaerolobium vimineum (Leafless Globe Pea)	'		
412.		Stachystemon axillaris (Leafy Stachystemon)			Υ
413.	2918	Stellaria media (Chickweed)	Υ		
414.	19403	Stenopetalum gracile			Υ
415.	2316	Stirlingia latifolia (Blueboy)			
416.	7681	Stylidium affine (Queen Triggerplant)			Υ
417.	7692	Stylidium breviscapum (Boomerang Triggerplant)			Υ
418.		Stylidium brunonianum (Pink Fountain Triggerplant)			
419.		Stylidium bulbiferum (Circus Triggerplant)			
420.		Stylidium calcaratum (Book Triggerplant)			
421. 422.		Stylidium crossocephalum (Posy Triggerplant) Stylidium dichotomum (Pins-and-needles)			
423.		Stylidium diuroides (Donkey Triggerplant)			
424.		Stylidium ecorne (Foot Triggerplant)			
425.		Stylidium guttatum (Dotted Triggerplant)			
426.		Stylidium junceum (Reed Triggerplant)			
427.		Stylidium longitubum (Jumping Jacks)		P3	
428.	7773	Stylidium petiolare (Horn Triggerplant)			
429.	7774	Stylidium piliferum (Common Butterfly Triggerplant)			
430.	7785	Stylidium repens (Matted Triggerplant)			
431.		Stylidium schoenoides (Cow Kicks)			
432.		Stypandra glauca (Blind Grass)			
433.		Synaphea acutiloba (Granite Synaphea)			
434.		Synaphea spinulosa Tetravia automolea			
435. 436.		Tetraria octandra Thelymitra antennifera (Vanilla Orchid)			
437.		Thelymitra campanulata (Shirt Orchid)			
438.		Thelymitra canaliculata (Blue Sun Orchid)			
439.		Thelymitra crinita (Blue Lady Orchid)			
440.		Thelymitra flexuosa (Twisted Sun Orchid)			
441.	1318	Thysanotus arbuscula			
442.	1319	Thysanotus arenarius			
443.	1338	Thysanotus manglesianus (Fringed Lily)			
444.	1343	Thysanotus patersonii			
445.		Thysanotus sparteus			
446.		Thysanotus thyrsoideus			
447.		Thysanotus triandrus  Tracky mana siloso (Notice Perenia)			
448. 449.		Trachymene pilosa (Native Parsnip) Tribonanthes australis			
450.		Tribonanthes brachypetala			
451.		Tribonanthes longipetala			
452.		Trichocline spathulata (Native Gerbera)			
453.		Tricoryne elatior (Yellow Autumn Lily)			
454.	1362	Tricoryne humilis			
455.	1363	Tricoryne tenella			
456.	4289	Trifolium angustifolium (Narrowleaf Clover)	Υ		
457.		Trifolium arvense (Hare's Foot Clover)	Υ		
458.		Trifolium campestre (Hop Clover)	Y		
459.		Trifolium subterraneum (Subterranean Clover)	Υ		
460. 461		Triglochin mucronata  Triglochin stowardii			
461. 462.		Triglochin stowardii Tripterococcus brunonis (Winged Stackhousia)			
463.		Trithuria bibracteata			
464.		Ursinia anthemoides (Ursinia)	Υ		
465.		Utricularia dichotoma (Fairy Aprons)			Υ
466.		Vellereophyton dealbatum (White Cudweed)	Υ		
467.		Verreauxia reinwardtii (Common Verreauxia)			
468.	6076	Verticordia densiflora (Compacted Featherflower)			
469.	6088	Verticordia huegelii (Variegated Featherflower)			
470.		Verticordia nitens (Morrison Featherflower, Kodjeningara)			
471.		Verticordia ovalifolia			Υ
472.	6110	Verticordia plumosa (Plumed Featherflower)		_	
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473.	4322	Vicia sativa (Common Vetch)	Υ		
474.	4325	Viminaria juncea (Swishbush, Koweda)			
475.	722	Vulpia bromoides (Squirrel Tail Fescue)	Υ		
476.	724	Vulpia myuros (Rat's Tail Fescue)	Υ		
477.	7384	Wahlenbergia capensis (Cape Bluebell)	Υ		
478.	7389	Wahlenbergia preissii			
479.	8282	Waitzia suaveolens (Fragrant Waitzia)			
480.	12072	Wurmbea dioica subsp. alba			
481.	1252	Xanthorrhoea drummondii			
482.	1253	Xanthorrhoea gracilis (Graceful Grass Tree, Mimidi)			
483.	1256	Xanthorrhoea preissii (Grass tree, Palga)			
484.	6284	Xanthosia candida			
485.	6289	Xanthosia huegelii			

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



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

Department of the Environment Matters of National Environmental Significance Search Results



# **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 <u>Environment Assessments</u> and the EPBC Act including significance guidelines, forms and application process details.

Report created: 03/07/14 11:34:26

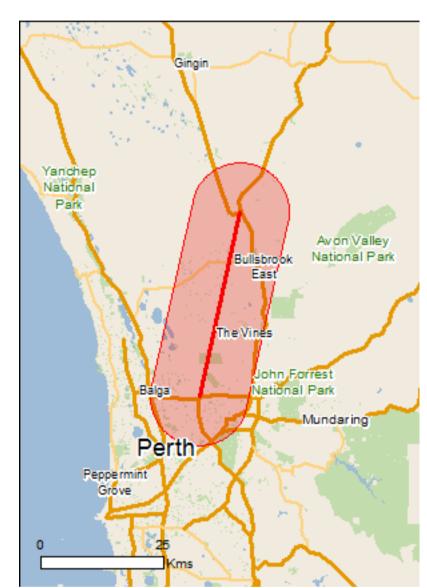
**Summary** 

**Details** 

Matters of NES
Other Matters Protected by the EPBC Act
Extra Information

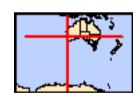
Caveat

<u>Acknowledgements</u>



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

Coordinates
Buffer: 10.0Km



### **Summary**

#### Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	56
Listed Migratory Species:	22

#### 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 <a href="https://example.com/heritage-values">heritage-values</a> of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate.

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.

A <u>permit</u> 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:	18
Commonwealth Heritage Places:	3
Listed Marine Species:	23
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.

Place on the RNE:	108
State and Territory Reserves:	16
Regional Forest Agreements:	1
Invasive Species:	46
Nationally Important Wetlands:	5
Key Ecological Features (Marine)	None

## **Details**

### Matters of National Environmental Significance

Listed Threatened Ecological Communities

		1 1 1 0 0 0 0 11 11 0 11 11 10 11 11
For threatened ecological communities where the district recovery plans, State vegetation maps, remote sensing ecological community distributions are less well known data are used to produce indicative distribution maps.	g imagery and other source	es. Where threatened
Name	Status	Type of Presence
Corymbia calophylla - Xanthorrhoea preissii woodlands and shrublands of the Swan Coastal Plain	Endangered	Community known to occur within area
Assemblages of plants and invertebrate animals of tumulus (organic mound) springs of the Swan Coastal Plain	Endangered	Community known to occur within area
Claypans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area
Shrublands and Woodlands on Muchea Limestone of the Swan Coastal Plain	Endangered	Community known to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Listed Threatened Species		[ Resource Information
Name	Status	Type of Presence
Birds		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Calyptorhynchus banksii naso	Vi de analala	Consider or opening
Forest Red-tailed Black-Cockatoo [67034]	Vulnerable	Species or species habitat may occur within area
Calyptorhynchus baudinii	Mala analala	0
Baudin's Black-Cockatoo, Long-billed Black-Cockatoo [769]	Vulnerable	Species or species habitat likely to occur within area
Calyptorhynchus latirostris		
Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
Diomedea epomophora epomophora Southern Royal Albatross [25996]	Vulnerable	Species or species habitat likely to occur within area

[Resource Information]

Name	Status	Type of Presence
Diomedea epomophora sanfordi Northern Royal Albatross [82331]	Endangered	Species or species habitat likely to occur within area
Diomedea exulans amsterdamensis Amsterdam Albatross [82330]	Endangered	Species or species habitat may occur within area
Diomedea exulans exulans Tristan Albatross [82337]	Endangered	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
Insects		
Leioproctus douglasiellus a short-tongued bee [66756] Mammals	Critically Endangered	Extinct within area
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat may occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby [66647]	Vulnerable	Translocated population known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir [25911]	Vulnerable	Species or species habitat likely to occur within area
Plants		

Name	Status	Type of Presence
Acacia anomala Grass Wattle, Chittering Grass Wattle [8153]  Andersonia gracilis	Vulnerable	Species or species habitat likely to occur within area
Slender Andersonia [14470]	Endangered	Species or species habitat likely to occur within area
Anigozanthos viridis subsp. terraspectans  Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat likely to occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat known to occur within area
Calytrix breviseta subsp. breviseta Swamp Starflower [23879]	Endangered	Species or species habitat may occur within area
Centrolepis caespitosa [6393]	Endangered	Species or species habitat known to occur within area
Chamelaucium sp. Gingin (N.G.Marchant 6) Gingin Wax [64649]	Endangered	Species or species habitat known to occur within area
Conospermum densiflorum subsp. unicephalatum One-headed Smokebush [64871]	Endangered	Species or species habitat may occur within area
Conospermum undulatum Wavy-leaved Smokebush [24435]	Vulnerable	Species or species habitat likely to occur within area
Darwinia foetida Muchea Bell [83190]	Critically Endangered	Species or species habitat known to occur within area
Diuris micrantha  Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat likely to occur within area
<u>Drakaea elastica</u> Glossy-leafed Hammer-orchid, Praying Virgin [16753]	Endangered	Species or species habitat likely to occur within area
Drakaea micrantha  Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat likely to occur within area
Epiblema grandiflorum var. cyaneum Baby Blue Orchid, Blue Babe-in-the-cradle Orchid, Blue Babe-in-a-cradle [67182]	Endangered	Species or species habitat known to occur within area
Eucalyptus balanites Cadda Road Mallee, Cadda Mallee [24264]	Endangered	Species or species habitat may occur within area
Eucalyptus leprophloia Scaly Butt Mallee, Scaly-butt Mallee [56712]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Grevillea althoferorum [64906]	Endangered	Species or species habitat likely to occur within area
Grevillea corrugata a shrub [65445]	Endangered	Species or species habitat likely to occur within area
Grevillea curviloba subsp. curviloba Curved-leaf Grevillea [64908]	Endangered	Species or species habitat known to occur within area
Grevillea curviloba subsp. incurva Narrow curved-leaf Grevillea [64909]	Endangered	Species or species habitat known to occur within area
Hydatella dioica One-sexed Hydatella [4898]	Endangered	Species or species habitat likely to occur within area
Lepidosperma rostratum  Beaked Lepidosperma [14152]	Endangered	Species or species habitat likely to occur within area
Macarthuria keigheryi Keighery's Macarthuria [64930]	Endangered	Species or species habitat likely to occur within area
Thelymitra manginii K.Dixon & Batty ms. [67443]	Endangered	Species or species habitat likely to occur within area
Thelymitra stellata Star Sun-orchid [7060]	Endangered	Species or species habitat known to occur within area
Verticordia plumosa var. pleiobotrya Narrow-petalled Featherflower, Mundijong Featherflower [55803]	Endangered	Species or species habitat known to occur within area
Reptiles		within area
Chalania mudas	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
<u>Dermochelys coriacea</u> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Pseudemydura umbrina Western Swamp Tortoise [1760]	Critically Endangered	Translocated population known to occur within area
Listed Migratory Species  * Species is listed under a different scientific name of Name	on the EPBC Act - Threatene Threatened	[ Resource Information of Species list.  Type of Presence
Migratory Marine Birds	rindatorida	Typo of Froschoo
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<u>Diomedea amsterdamensis</u> Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within

]

Name	Threatened	Type of Presence
		area
<u>Diomedea dabbenena</u> Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable*	Species or species habitat likely to occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered*	Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Species or species habitat likely to occur within area
Migratory Marine Species		
Caretta caretta Loggerhead Turtle [1763]  Chelonia mydas	Endangered	Species or species habitat known to occur within area
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea  Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995] Natator depressus		Species or species habitat may occur within area
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Migratory Wetlands Species		

Name	Threatened	Type of Presence
Ardea alba		
Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

#### Other Matters Protected by the EPBC Act

#### Commonwealth Land [Resource Information]

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

#### Name

Commonwealth Land -

Defence - MUCHEA ARMAMENT RANGE

Defence - PALMER BARRACKS - SOUTH GUILDFORD

Defence - PEARCE - AP110BSTRUCTION BEACON NO.5

Defence - PEARCE - AP15 WATER TREATMENT PLANT

Defence - PEARCE - AP17 WATER SUPPLY TANKS

Defence - PEARCE - AP19 HF RECEIVER STATION BULLSBROOK

Defence - PEARCE - AP2 OBSTRUCTION BEACON NO.2

Defence - PEARCE - AP3 RADAR STATION BULLSBROOK

Defence - PEARCE - AP4 AERIAL FARM

Defence - PEARCE - AP5 OPERATIONS SITE

Defence - PEARCE - AP6 OBSTRUCTION BEACON NO.3

Defence - PEARCE - AP7 OBSTRUCTION BEACON NO.1

Defence - PEARCE - AP8 BORE SITES

Defence - PEARCE - AP9 OBSTRUCTION BEACON NO.4

Defence - PEARCE - RAAF BASE

Defence - PEARCE - RAAF BASE  Defence - RAAF CAVERSHAM  Defence - VACANT LAND - BULLSBROOK AP102		
Commonwealth Heritage Places		[ Resource Information ]
Name	State	Status
Natural		
Muchea / Pearce Air Weapons Range	WA	Indicative Place
Munday Swamp and Surrounding Bushland	WA	Indicative Place
Historic		
Inglewood Post Office	WA	Listed place
Listed Marine Species		[ Resource Information ]
* Species is listed under a different scientific name on	the EPBC Act - Threatene	ed Species list.
Name	Threatened	Type of Presence
Birds		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]  Apus pacificus	Vulnerable	Species or species habitat may occur within area
Fork-tailed Swift [678]		Species or species habitat likely to occur

within area

Name	Threatened	Type of Presence
Ardea alba		
Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat likely to occur within area
<u>Diomedea amsterdamensis</u>		
Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within area
<u>Diomedea dabbenena</u>		
Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto)		
Southern Royal Albatross [1072]	Vulnerable*	Species or species habitat likely to occur within area
Diomedea exulans (sensu lato)		
Wandering Albatross [1073]  Diomedea sanfordi	Vulnerable	Species or species habitat likely to occur within area
	Endangered*	Species or appoins
Northern Royal Albatross [64456]  Haliaeetus leucogaster	Endangered*	Species or species habitat likely to occur within area
White-bellied Sea-Eagle [943]		Species or species
		habitat known to occur within area
Macronectes giganteus		
Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area
Rostratula benghalensis (sensu lato)	<b>F</b> - <b>J</b> - <b>- -</b> - <b>J</b> *	
Painted Snipe [889]  Thalassarche cauta (sensu stricto)	Endangered*	Species or species habitat likely to occur within area
· · · · · · · · · · · · · · · · · · ·	Vulnerable*	Charles ar anadias
Shy Albatross, Tasmanian Shy Albatross [64697]	vuirierable	Species or species habitat may occur within area
Thalassarche impavida Comphell Albertage [64450]	\/lp.oroblo*	Charles ar angeles
Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris  Plack brownd Albetross [66472]	\/ulnoroblo	Chaoina ar anasias
Black-browed Albatross [66472]  Thalassarche steadi	Vulnerable	Species or species habitat may occur within area
White-capped Albatross [64462]	Vulnerable*	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]  Chelonia mydas	Endangered	Species or species habitat known to occur within area
Chelonia mydas  Groop Turtlo [1765]	Vulnorabla	Species or species
Green Turtle [1765]	Vulnerable	Species or species

Name	Threatened	Type of Presence
		habitat known to occur within area
<u>Dermochelys coriacea</u>		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

### **Extra Information**

Places on the RNE		[ Resource Information
Note that not all Indigenous sites may be listed.		
Name	State	Status
Natural		
Bullsbrook Bushland Location 100a	WA	Indicative Place
Bullsbrook Bushland Location 100b	WA	Indicative Place
Bullsbrook Bushland Location 100c	WA	Indicative Place
Bullsbrook Bushland Location 102	WA	Indicative Place
Bullsbrook Bushland Location 103	WA	Indicative Place
Bullsbrook Bushland Location 105	WA	Indicative Place
Bullsbrook Nature Reserves	WA	Indicative Place
Koondoola Open Space	WA	Indicative Place
Midgegooroo and Kalleep Munday Heritage Precincts	WA	Indicative Place
Muchea / Pearce Air Weapons Range	WA	Indicative Place
Pearce Aerodrome & Adjacent Bushland	WA	Indicative Place
Swan River Foreshore, Maylands	WA	Indicative Place
Wanneroo Wetlands Eastern Chain	WA	Indicative Place
Ellen Brook Nature Reserve	WA	Registered
Ellenbrook National Estate Area	WA	Registered
Lake Chandala Area	WA	Registered
Melaleuca Park	WA	Registered
Munday Swamp Bushland	WA	Registered
Munday Swamp and Surrounding Bushland	WA	Registered
Reserve 20091 (1978 Boundary)	WA	Registered
Twin Swamps Reserve	WA	Registered
Walyunga National Park	WA	Registered
Yeal - Gnangara Area	WA	Registered
Indigenous		
Yagans Burial Site	WA	Interim List
Upper Swan Bridge Archaeological Site	WA	Registered
Historic		
Albany Bell Hatchery (former)	WA	Indicative Place
City of Bayswater Administration Centre	WA	Indicative Place
<u>Daylesford House</u>	WA	Indicative Place
Earlsferry House and Grounds	WA	Indicative Place
East Perth Power Station (former)	WA	Indicative Place
Geer / Lyons Memorial Fountain	WA	Indicative Place
Halliday House	WA	Indicative Place
Independent Chapel (former)	WA	Indicative Place
<u>Mandalay</u>	WA	Indicative Place
Masonic Hall	WA	Indicative Place
Maylands Aerodrome (former) Precinct	WA	Indicative Place
Maylands Brickworks Group	WA	Indicative Place
Midland Junction Town Centre Conservation Area	WA	Indicative Place
Midland Railway Workshops	WA	Indicative Place
Oakover Vineyards Garden and River Meadows	WA	Indicative Place

Name	State	Status
Old Bristile Kilns	WA	Indicative Place
Royal West Australian Institute for the Blind Building	WA	Indicative Place
Sandalford Homestead	WA	Indicative Place
Swan Valley Landscape Conservation Area	WA	Indicative Place
Swanleigh Grounds	WA	Indicative Place
Walcott Centre	WA	Indicative Place
Water Supply Office (former)	WA	Indicative Place
Wiinschl Residence and Surrounds	WA	Indicative Place
Albany Bell Castle Buildings	WA	Registered
All Saints Anglican Church	WA	Registered
Barkers Warehouse (former)	WA	Registered
Bebo Moro (former)	WA	Registered
Belhus Estate	WA	Registered
Belvoir Homestead	WA	Registered
Brockman House (former)	WA	Registered
Building  Building	WA	Registered
Building Chatage Cuildford	WA	Registered
Chateau Guildford Courthauga and Cool (former)	WA	Registered
Crossland House (former)	WA WA	Registered
Crossland House (former)	WA	Registered
Fairholme  Fairholme Sorvents Quarters	WA	Registered
Fairholme Servants Quarters Foothills School	WA	Registered Registered
	WA	· ·
Garden Hill (former) Garrick Theatre	WA	Registered
Graveyard of All Saints Anglican Church	WA	Registered Registered
Guildford Conservation Area	WA	Registered
Guildford Grammar School Chapel	WA	Registered
Guildford Historic Town	WA	Registered
Guildford Post Office	WA	Registered
Guildford Tavern	WA	Registered
Haddrills House and Garden	WA	Registered
Houghton Winery Main Buildings	WA	Registered
House	WA	Registered
<u>House</u>	WA	Registered
House and former Bakery	WA	Registered
Johnsons Mill	WA	Registered
Kings House and Shop	WA	Registered
Lieutenant Du Canes House and Stables	WA	Registered
<u>Liverpool Arms Hotel (former)</u>	WA	Registered
Mechanics Institute (former)	WA	Registered
Midland Convent of Mercy	WA	Registered
Midland Courthouse (former)	WA	Registered
Midland Post Office	WA	Registered
Midland Town Hall Complex	WA	Registered
Millendon Homestead	WA	Registered
Moultons Cottage	WA	Registered
Nulsen Haven	WA	Registered
Oakover House Barn and Stables	WA	Registered
Old Houghton House	WA	Registered
Padbury Stores (former)	WA	Registered
Peninsula Hotel (former)	WA	Registered
Pensioners Cottage (former)	WA	Registered
Primary School	WA	Registered
Rainsworth Homestead and Mud Brick Cottage Remains	WA	Registered
Rose and Crown Hotel	WA	Registered
Spring Park Farm Buildings	WA	Registered
St Leonards	WA	Registered
St Marys Anglican Church and Graveyard	WA	Registered
St Matthews Anglican Church	WA	Registered
Strelley Farm Buildings	WA	Registered
Susannah Smithers Grave	WA	Registered
Town Hall and Council Offices (former)	WA	Registered
<u>Tranby House</u>	WA	Registered
Welbourne House	WA	Registered
Wesley Chapel	WA	Registered

Name	State Status
Westrail Railway Buildings	WA Registered
Woodbridge	WA Registered
State and Territory Reserves	[ Resource Information
Name	State
Barracca	WA
	1444

State and Territory Reserves	[ Resource Information ]
Name	State
Barracca	WA
Bullsbrook	WA
Chandala	WA
Ellen Brook	WA
Neaves Road	WA
Twin Swamps	WA
Unnamed WA2336	WA
Unnamed WA44622	WA
Unnamed WA44853	WA
Unnamed WA46564	WA
Unnamed WA46875	WA
Unnamed WA46919	WA
Unnamed WA46920	WA
Unnamed WA49300	WA
Unnamed WA50678	WA
Walyunga	WA

### Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Sturnus vulgaris

Common Starling [389]

Name State

South West WA RFA Western Australia

#### Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387] <u>Anas platyrhynchos</u>		Species or species habitat likely to occur within area
		Species or species
Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis  Furances Caldinals [402]		Craciae er eneciae
European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus		
House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus		
Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis		
Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis		
Laughing Turtle-dove, Laughing Dove [781]		Species or species

habitat likely to occur

Species or species

within area

Name	Status	Type of Presence habitat likely to occur within area
Mammals		within area
Bos taurus		
Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris  Domestic Dog [82654]		Species or species habitat likely to occur within area
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
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Funambulus pennantii Northern Palm Squirrel, Five-striped Palm Squirrel [129]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa		area
Pig [6]  Vulpes vulpes		Species or species habitat likely to occur within area
Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants Apradore condifolio		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643] Asparagus aethiopicus		Species or species habitat likely to occur within area
Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]  Asparagus asparagoides		Species or species habitat likely to occur within area
Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]  Asparagus declinatus		Species or species habitat likely to occur within area
Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908] Asparagus plumosus		Species or species habitat likely to occur within area
Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris  Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]  Eichhornia crassipes		Species or species habitat likely to occur within area
Water Hyacinth, Water Orchid, Nile Lily [13466]  Genista linifolia		Species or species habitat likely to occur within area
Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Lycium ferocissimum		Species or species habitat likely to occur within area
African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Opuntia spp. Prickly Pears [82753]  Pinus radiata		Species or species habitat likely to occur within area
Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]	<u>reichardtii</u>	Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Reptiles		
Hemidactylus frenatus		
Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus		
Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat likely to occur within area

Nationally Important Wetlands	[Resource Information]
Name	State
Chandala Swamp	WA
Ellen Brook Swamps System	WA
Perth Airport Woodland Swamps	WA
RAAF Caversham	WA
Swan-Canning Estuary	WA

#### Coordinates

-31.57526 115.993625,-31.863796 115.918094

#### 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 Heritage and Register of National Estate properties, Wetlands of International 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.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

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.

### 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:

- -Department of Environment, Climate Change and Water, New South Wales
- -Department of Sustainability and Environment, Victoria
- -Department of Primary Industries, Parks, Water and Environment, Tasmania
- -Department of Environment and Natural Resources, South Australia
- -Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
- -Environmental and Resource Management, Queensland
- -Department of Environment and Conservation, Western Australia
- -Department of the Environment, Climate Change, Energy and Water
- -Birds Australia
- -Australian Bird and Bat Banding Scheme
- -Australian National Wildlife Collection
- -Natural history museums of Australia
- -Museum Victoria
- -Australian Museum
- -SA 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, Atherton and Canberra
- -University of New England
- -Ocean Biogeographic Information System
- -Australian Government, Department of Defence
- -State Forests of NSW
- -Geoscience Australia
- -CSIRO
- -Other groups and individuals

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

Please feel free to provide feedback via the Contact Us page.

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Floristic analysis of vegetation site data from the Swan Valley Bypass project area (M.E. Trudgen and E.A. Griffin, 2015)

#### Floristic analysis

of vegetation site data

from the Perth-Darwin National Highway

project area

**Prepared for** 

Coffey Environments Australia Pty Ltd

by

E.A. Griffin
Consultant Botanist
(Numerical analyses, report
writing)

and

M.E. Trudgen Consultant Botanist (Report writing)

**March 2015** 

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#### 1.0 INTRODUCTION

#### 1.1 Purposes of this report

The purposes of this report are to:

- 1. Assign as many as possible of the vegetation recording sites (excluding those located in highly disturbed areas) in the Perth-Darwin National Highway project area to the floristic community types of Gibson *et al* 1994. In particular, the potential that a Threatened Ecological Community (English and Blyth 1997) is represented by the data collected needs to be determined as far as possible given the data available.
- 2. Assess the floristic variation in the vegetation of the Perth-Darwin National Highway project area against data from an appropriate area surrounding it using pattern analysis techniques. Using this analysis make a subregional assessment of the conservation value of the vegetation in the Perth-Darwin National Highway project area.
- 3. Provide a limited (dendrogram only) stand-alone analysis of the Perth-Darwin National Highway data for Cofffey to use for comparison to their vegetation mapping units.

#### 1.2 Locations of the project area and of the site data provided

Administratively, the Perth-Darwin National Highway project area is mainly located in the north east part of the Perth Metropolitan area (see Figure 1 below). However, it passes out of the Perth Metropolitan area with its north end near the Hamlet of Muchea. In the Perth Metropolitan area the project area passes through (or adjacent to) several suburbs, including Ellenbrook.

Biogeographically, the Perth-Darwin National Highway project area lies on the eastern part of the Swan Coastal Plain. It crosses part of a large area of the Bassendean Dune System that lies north of the Swan River before entering the Pinjarra Plain on the very eastern side of the Swan Coastal Plain.

The locations of the sites where vegetation data had been recorded provided by Coffey Australia PTY Ltd ("Coffey") are shown on Figure 2.