



APPENDIX A

Level 1 flora and vegetation assessment of local roads

MEMORANDUM

To:	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 roads		

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 raphiophylla* 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 Cc¹ – *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;

- CcEr³ – Open paddocks with remnant *Corymbia calophylla* and *Eucalyptus rudis* subsp. *rudis* over pasture species (introduced) dominated by **Cenchrus clandestinus*. Vegetation condition was degraded.
- Et³ – *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.
- BaBm² – *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 *Desmocladius 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 raphiophylla* 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 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: BaBm²; BaBm³; Et³ 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 Mucchea Road South.

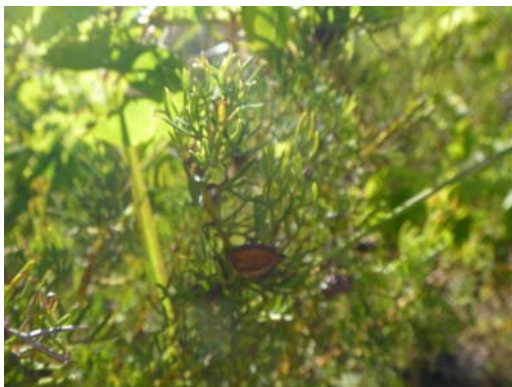


Plate 3 *Grevillea curviloba* subsp. *incurva* with seed pods



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).

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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 raphiophylla

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*

Philothea 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

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

LEGEND


-  Survey area
-  Project area

Vegetation Association

-  CcMpMr
-  CI
-  CI(Road)
-  MpAI

Vegetation Condition (Keighury, 1994)

-  Degraded
-  Completely Degraded

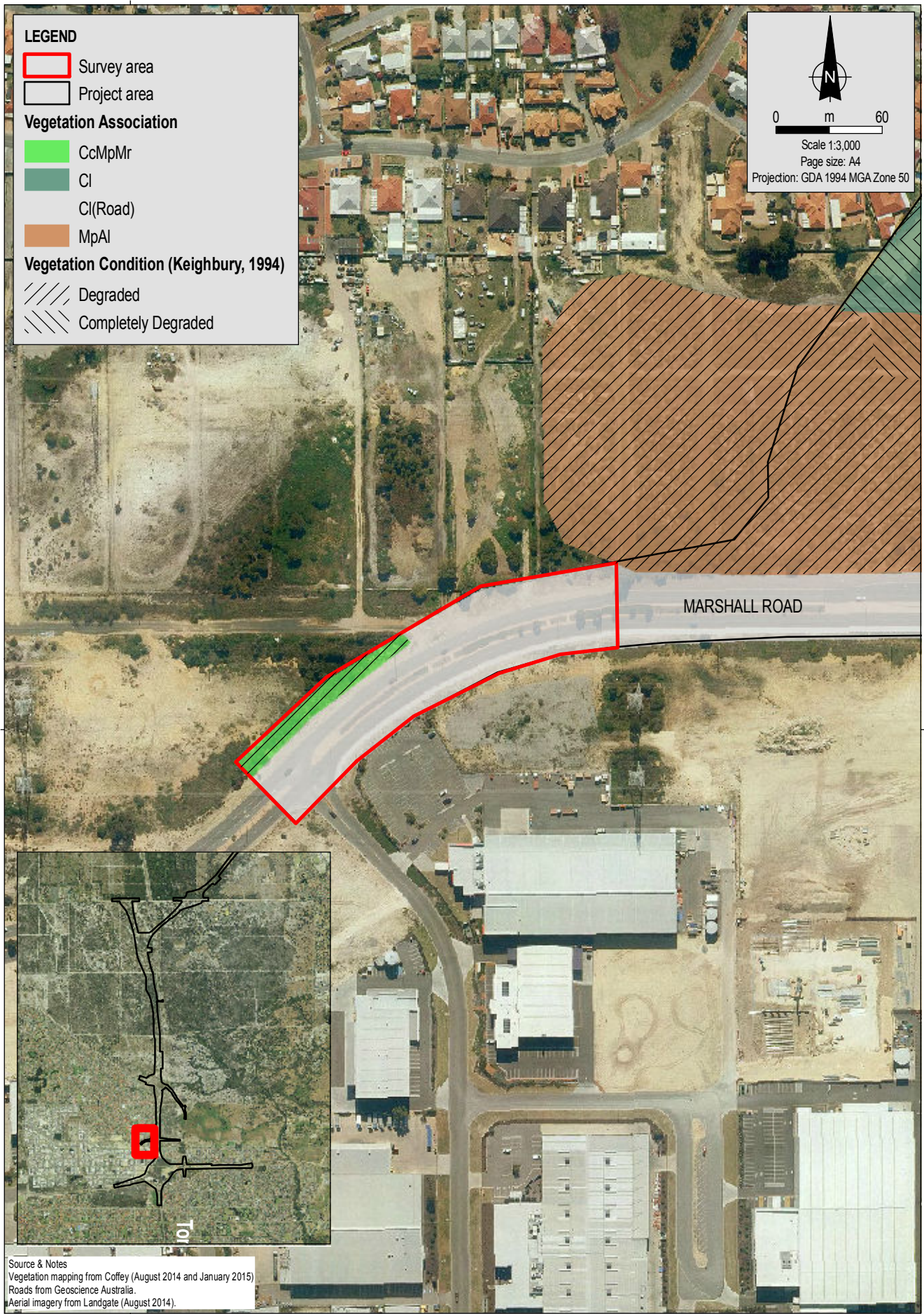


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MARSHALL ROAD

Source & Notes
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 Aerial imagery from Landgate (August 2014).

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NorthLinkWA

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Main Roads WA
Local Roads Vegetation Survey



Site 1
Additional vegetation mapping

Figure No:
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LEGEND

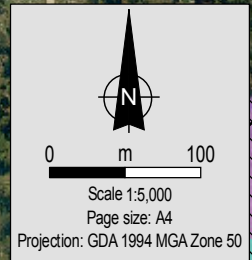
-  Survey area
-  Project area

Vegetation Association

-  Cc¹
-  Cl(Road)
-  Mp⁵
-  Pp

Vegetation Condition (Keighury, 1994)

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-  Completely Degraded



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GNANGARA ROAD

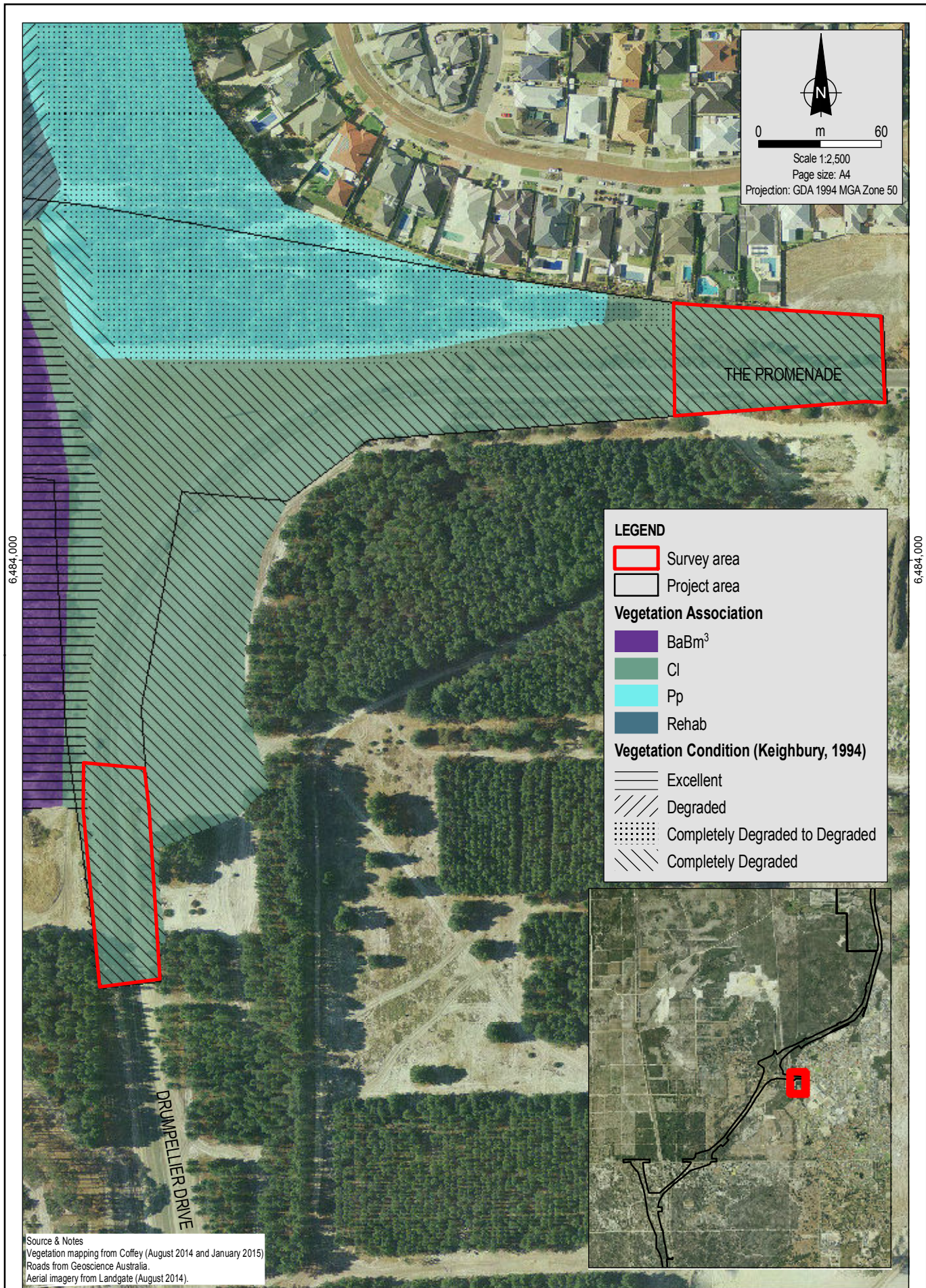
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
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






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



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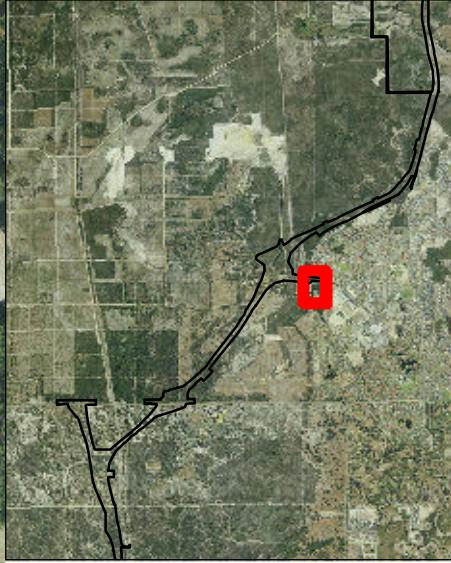
 Survey area
 Project area

Vegetation Association

 BaBm³
 Cl
 Pp
 Rehab

Vegetation Condition (Keighury, 1994)

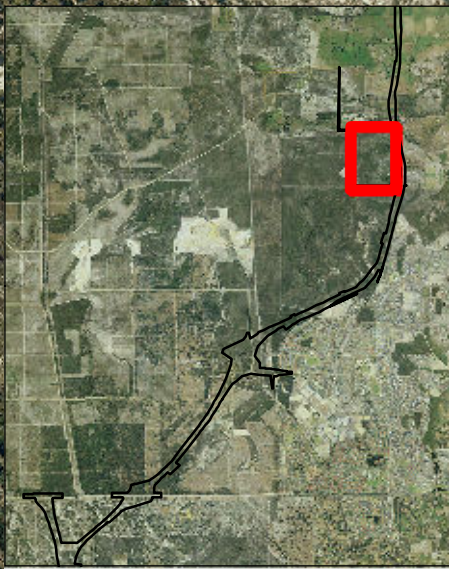
 Excellent
 Degraded
 Completely Degraded to Degraded
 Completely Degraded



Source & Notes
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 Roads from Geoscience Australia.
 Aerial imagery from Landgate (August 2014).

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LEGEND

- Survey area
- Project area

Vegetation Association

- BaBm²
- BaBm³
- Et³

Vegetation Condition (Keighbury, 1994)

- Excellent
- Good

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
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





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
LEGEND

-  Survey area
-  Project area

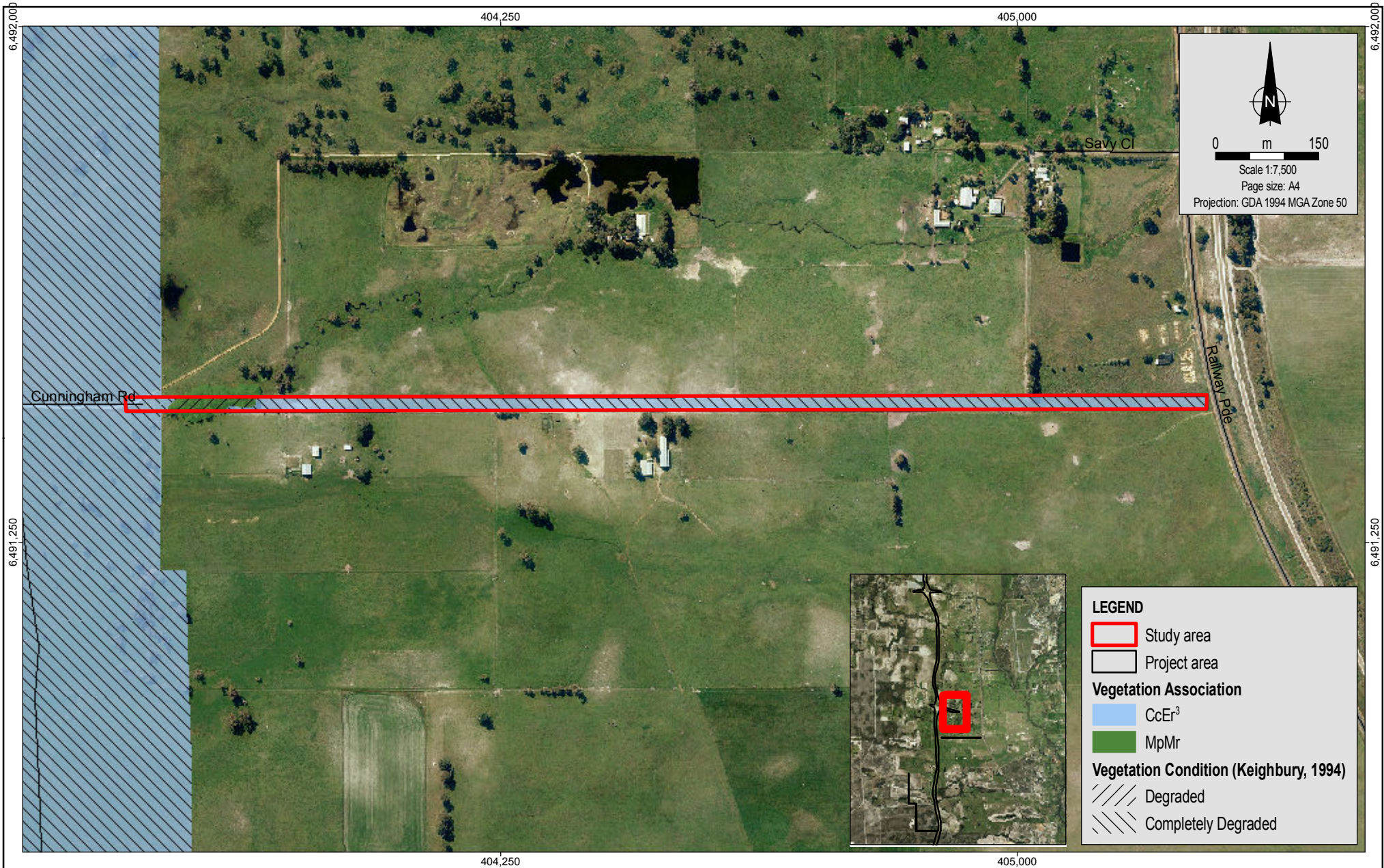
Vegetation Association


-  CcEr³
-  Cl(Road)
-  Et³

Vegetation Condition (Keighbury, 1994)







-  Good
-  Degraded

Source & Notes
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LEGEND

-  Study area
-  Project area
- Vegetation Association**
-  CcEr³
-  MpMr
- Vegetation Condition (Keighury, 1994)**
-  Degraded
-  Completely Degraded

Source & Notes
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Main Roads WA
 Local Roads Vegetation Survey

Site 5
 Additional vegetation mapping

Figure No:
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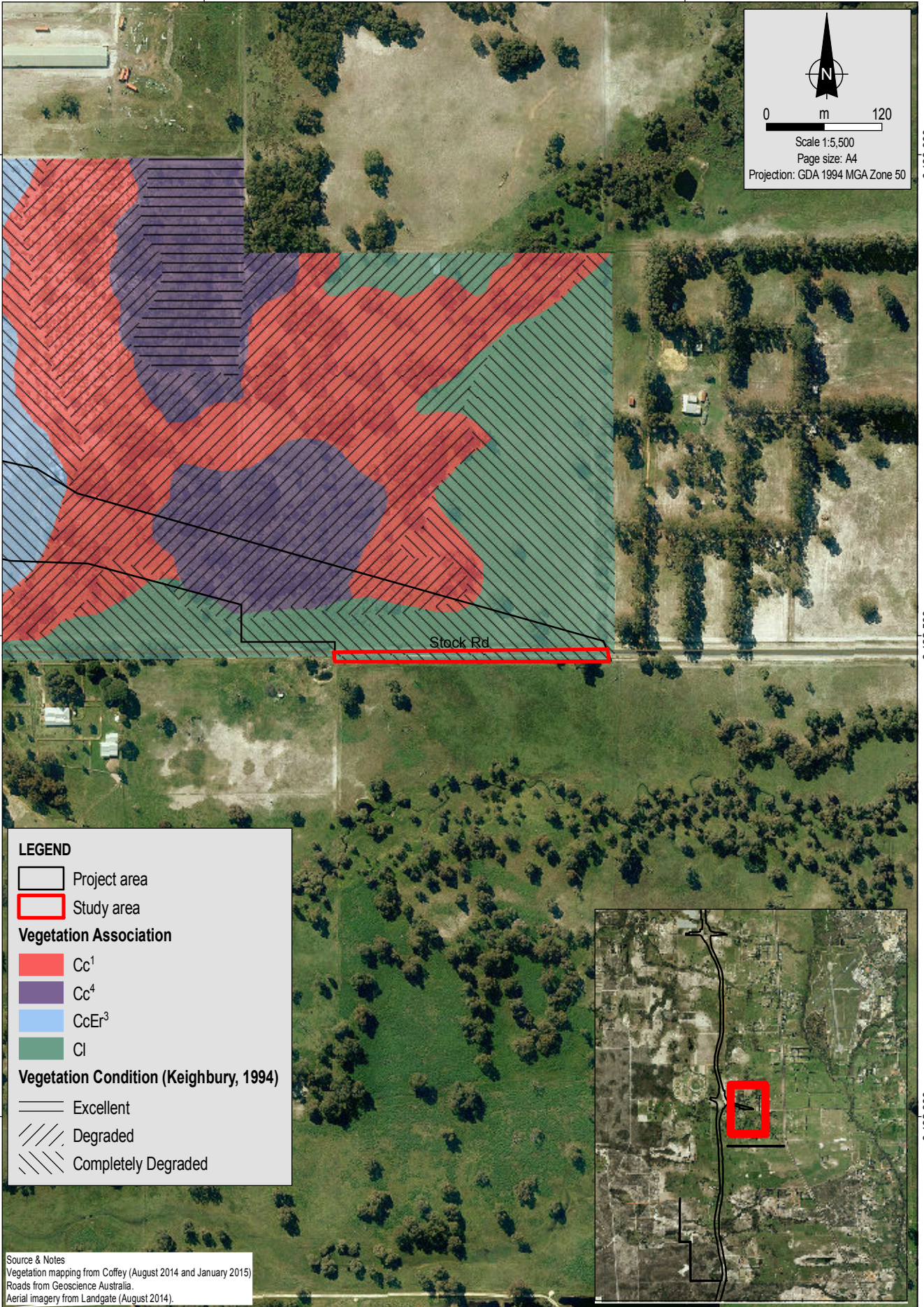
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

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





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


LEGEND

-  Project area
-  Study area

Vegetation Association

-  Cc¹
-  Cc⁴
-  CcEr³
-  Cl

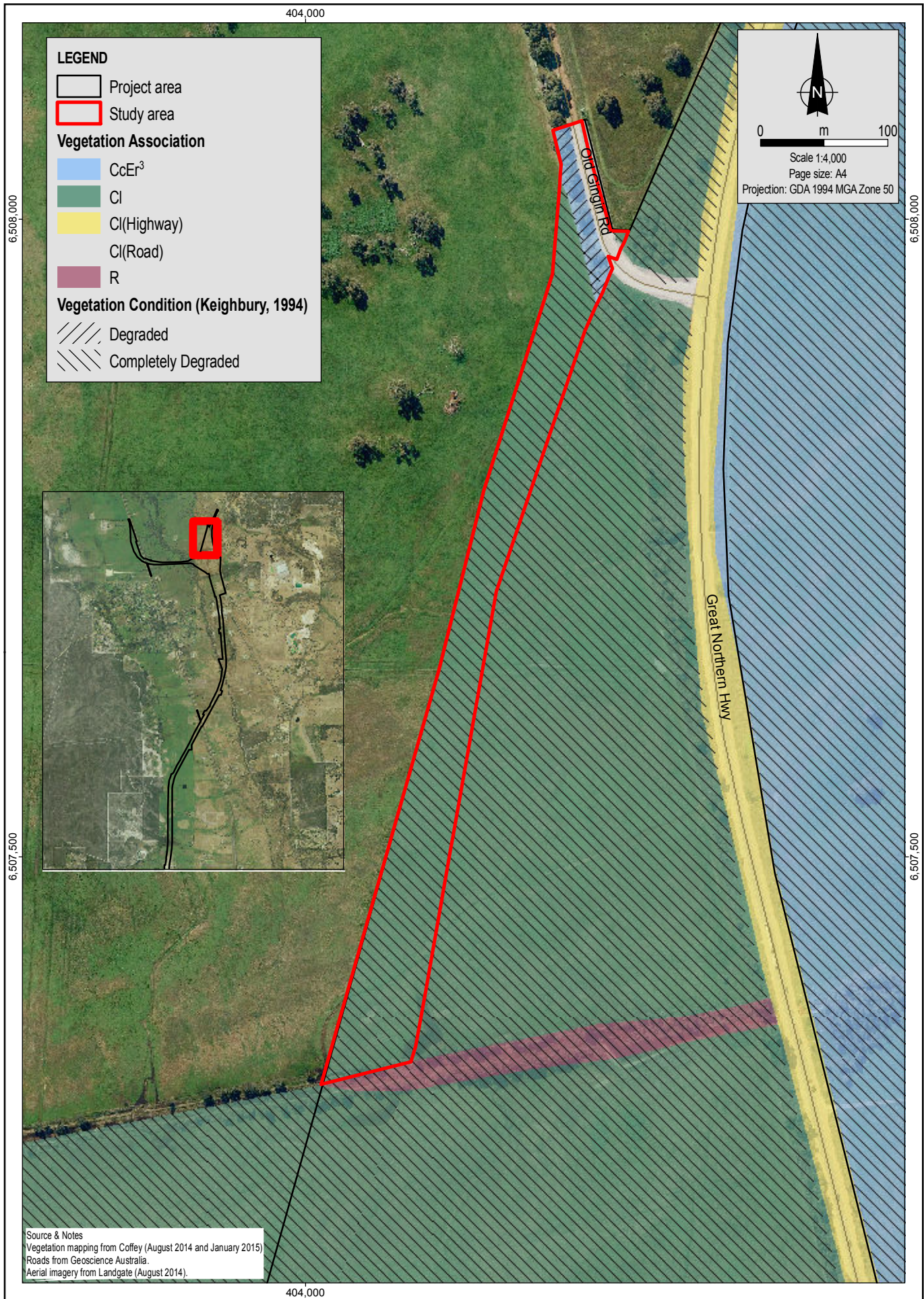
Vegetation Condition (Keighury, 1994)

-  Excellent
-  Degraded
-  Completely Degraded

Source & Notes
 Vegetation mapping from Coffey (August 2014 and January 2015)
 Roads from Geoscience Australia.
 Aerial imagery from Landgate (August 2014).

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LEGEND

Project area

Study area

Vegetation Association

- CcEr³
- Cl
- Cl(Highway)
- Cl(Road)
- R

Vegetation Condition (Keighbury, 1994)

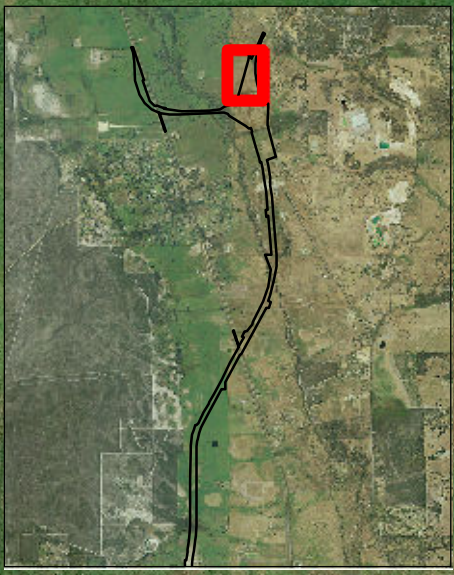
- Degraded
- Completely Degraded

North arrow

Scale 1:4,000

Page size: A4

Projection: GDA 1994 MGA Zone 50



Source & Notes
 Vegetation mapping from Coffey (August 2014 and January 2015)
 Roads from Geoscience Australia.
 Aerial imagery from Landgate (August 2014).

402,500

6,507,500

6,507,000

6,506,500

6,507,500

6,507,000

6,506,500



Scale 1:5,000
 Page size: A4
 Projection: GDA 1994 MGA Zone 50

LEGEND

- *Grevillea curviloba* subsp. *incurva* (T)
- Project area

Source & Notes
 Roads from Geoscience Australia.
 Aerial imagery from Landgate (August 2014).

402,500



Plate 1 Cunningham Road site (Site 5)



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



APPENDIX B

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



APPENDIX C

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.

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

www.dpaw.wa.gov.au

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 [Listing of species and ecological communities](http://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities) webpage at

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

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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

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ABBREVIATIONS USED IN THREATENED AND PRIORITY FLORA DATABASE

VESTING

AAP	Aboriginal Planning Authority
AGR	Chief Executive, Dep. of Agriculture
ALT	Aboriginal Land Trust
APB	Agricultural Protection Board of WA
BGP	Botanical Gardens & Parks Authority
BSA	Boy Scouts Association
CC	Conservation Commission – NPNCA - LFC
CGT	Crown Grant in Trust
COM	Commonwealth of Australia
CRO	Crown Freehold-Govt Ownership
CRW	Crown
DAG	Dep. of Agriculture
DOW	Dep. of Water
DPI	Dep. of Planning
EXD	Exec Direc CALM
FES	Fire and Emergency Services Aust.
HOW	Dep. of Housing/State Housing Commission
ILD	Industrial Lands Develop. Auth
LAC	LandCorp
LGA	Shire/LGA
MAG	Minister for Agriculture
MCB	Metropolitan Cemeteries Board
MED	Ministry of Education
MHE	Minister for Health
MIN	Minister for Mines
MPL	Ministry for Planning
MPR	Minister for Prisons
MRD	Main Roads WA
MTR	Minister for Transport
MWA	Minister for Water Resources
MWO	Minister for Works
NAT	Natural Trust of Australia WA
NON	Not Vested
PLB	Pastoral Lands Board
PRI	Private/Freehold
RAI	Public Transport Authority
REL	Religious Organisation
SPC	State Planning Commission
SYN	Synergy (ex Western Power)
SWA	State of Western Australia
TEL	Telstra
UNK	Unknown
WAT	Water Corporation
WEL	Minister Community Welfare
WRC	Water & Rivers Commission
XPL	Ex-Pastoral Lease

PURPOSES

ABR	Aboriginal Reserve
ACC	Access Track
AER	Aerodrome
AIR	Airport
ARS	Agricultural Research Station
BAP	Baptist Union of WA
CAM	Camping
CAR	Caravan park
CEM	Cemetery
CFA	Conservation of Fauna
CFF	Conservation Of Flora & Fauna
CFL	Conservation of Flora
CHU	Church
CMN	Communications
COM	Common
CON	Conservation Park
CPK	Car Park
CRM	Conservation & Resource Management
DEF	Defence
DRA	Drain

EDE	Educational Endowment
EDU	Educational purposes UWA
ENE	Enjoyment of Natural Environ.
EPL	Ex-pastoral Lease (Sect 33(2) CALM Act)
EPS	Explosives
EXC	Excepted from sale
EXL	Exploration Lease
EXP	Experimental Farm
FIR	Firing Range
FOR	State Forest
FP	Foreshore Purposes
GE	General Lease
GHA	Grain Handling
GOL	Golf
GRA	Gravel Pit
GVT	Government Requirements
HAR	Harbour Purposes
HEP	Heritage Purposes
HER	Heritage trail
HOS	Hospital
KEN	Kennels
LGA	LGA/Shire Requirements
LPR	Landscape Protection
MIN	Mining lease
MUN	Municipal Purposes
NPK	National Park
NRE	Nature Reserve
OTH	Other
PAR	Parkland (& Recreation)
PAS	Pastoral lease
PCR	Proposed for Conservation
PFF	Protection of Flora & Fauna
PFL	Protection of Flora
PIC	Picnic ground
PLA	Plantation
PMC	Protection of Meteorite Crater
POS	Public Open Space
PPA	Public parkland
PRS	Prison site
PUR	Purchase Lease
PUT	Public Utility
QUA	Quarry
RAC	Racecourse
RAD	Radio Station
REC	Recreation
REH	Rehabilitation/Re-establish Native Plants
RRE	Railway Reserve
RUB	Rubbish
SAL	Saleyards
SAN	Sand
SCH	School-site
SET	Settlers requirements
SHO	Showgrounds
SNN	Sanitary
SOI	Soil Conservation
STO	Stopping place
STK	Stock Route
TIM	Timber
TOU	Tourism
TOW	Town-site
TRA	Training Ground
TRI	Trig station
UCL	Unallocated Crown Land
UNK	Unknown
VER	Road Verge
VPF	Vermin Proof Fence
WAT	Water
WLS	Wildlife Sanctuary
WOO	Firewood

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 Nearest Named Place 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:

<u>Name</u>	<u>Description</u>
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



APPENDIX D

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	¹ Endemic To Query Area
1.	15466 <i>Acacia applanata</i>			
2.	3231 <i>Acacia auronitens</i>			Y
3.	3323 <i>Acacia ericifolia</i>			Y
4.	3374 <i>Acacia huegelii</i>			
5.	3409 <i>Acacia lasiocarpa</i> (Panjang)			
6.	3502 <i>Acacia pulchella</i> (Prickly Moses)			
7.	15481 <i>Acacia pulchella</i> var. <i>glaberrima</i>			
8.	3527 <i>Acacia saligna</i> (Orange Wattle, Kudjong)			
9.	3541 <i>Acacia sessilis</i>			
10.	3557 <i>Acacia stenoptera</i> (Narrow Winged Wattle)			
11.	3602 <i>Acacia willdenowiana</i> (Grass Wattle)			
12.	6203 <i>Actinotus glomeratus</i>			
13.	6205 <i>Actinotus leucocephalus</i> (Flannel Flower)			
14.	1775 <i>Adenanthos cygnorum</i> (Common Woollybush)			
15.	184 <i>Aira caryophyllea</i> (Silvery Hairgrass)	Y		
16.	185 <i>Aira cupaniana</i> (Silvery Hairgrass)	Y		
17.	187 <i>Aira praecox</i> (Early Hairgrass)	Y		
18.	1056 <i>Alexgeorgea nitens</i>			
19.	1728 <i>Allocasuarina fraseriana</i> (Sheoak, Kondil)			
20.	1732 <i>Allocasuarina humilis</i> (Dwarf Sheoak)			
21.	2652 <i>Alternanthera nodiflora</i> (Common Joyweed)			
22.	4585 <i>Amperea ericoides</i>			
23.	194 <i>Amphipogon amphipogonoides</i>			
24.	200 <i>Amphipogon turbinatus</i>			
25.	1060 <i>Anarthria laevis</i>			
26.	6311 <i>Andersonia heterophylla</i>			
27.	6314 <i>Andersonia lehmanniana</i>			
28.	7833 <i>Angianthus preissianus</i>			
29.	1409 <i>Anigozanthos humilis</i> (Catspaw)			
30.	1411 <i>Anigozanthos manglesii</i> (Mangles Kangaroo Paw, Kurulbrang)			
31.	1416 <i>Anigozanthos viridis</i> (Green Kangaroo Paw, Kurulbardang)			
32.	3688 <i>Aotus gracillima</i>			
33.	3692 <i>Aotus procumbens</i>			
34.	1117 <i>Aphelia cyperoides</i>			
35.	7838 <i>Arctotheca calendula</i> (Cape Weed)	Y		
36.	207 <i>Aristida contorta</i> (Bunched Kerosene Grass)			
37.	1264 <i>Arnocrinum preissii</i>			
38.	6334 <i>Astroloma pallidum</i> (Kick Bush)			
39.	6339 <i>Astroloma xerophyllum</i>			
40.	234 <i>Avena fatua</i> (Wild Oat)	Y		
41.	1800 <i>Banksia attenuata</i> (Slender Banksia, Piara)			
42.	1819 <i>Banksia grandis</i> (Bull Banksia, Pulgarla)			
43.	1822 <i>Banksia ilicifolia</i> (Holly-leaved Banksia)			
44.	1834 <i>Banksia menziesii</i> (Firewood Banksia)			
45.	741 <i>Baumea articulata</i> (Jointed Rush)			
46.	743 <i>Baumea juncea</i> (Bare Twigrush)			
47.	5382 <i>Beaufortia elegans</i>			
48.	5390 <i>Beaufortia purpurea</i>			Y
49.	1417 <i>Blancoa canescens</i> (Winter Bell)			Y
50.	4437 <i>Boronia purdieana</i> (Winter Boronia)			
51.	4438 <i>Boronia ramosa</i>			
52.	1272 <i>Borya scirpoidea</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
53.	1273 <i>Borya sphaerocephala</i> (Pincushions)			
54.	3710 <i>Bossiaea eriocarpa</i> (Common Brown Pea)			
55.	7867 <i>Brachyscome bellidioides</i>			
56.	7878 <i>Brachyscome iberidifolia</i>			
57.	244 <i>Briza maxima</i> (Blowfly Grass)	Y		
58.	245 <i>Briza minor</i> (Shivery Grass)	Y		
59.	249 <i>Bromus diandrus</i> (Great Brome)	Y		
60.	1383 <i>Burchardia bairdiae</i>			
61.	1385 <i>Burchardia multiflora</i> (Dwarf Burchardia)			
62.	1276 <i>Caesia micrantha</i> (Pale Grass Lily)			
63.	1277 <i>Caesia occidentalis</i>			
64.	1586 <i>Caladenia discoidea</i> (Dancing Orchid)			
65.	1592 <i>Caladenia flava</i> (Cowslip Orchid)			
66.	1602 <i>Caladenia longicauda</i> (Common White Spider Orchid)			
67.	15503 <i>Caladenia paludosa</i>			
68.	2846 <i>Calandrinia calyptata</i> (Pink Purslane)			
69.	1213 <i>Calectasia cyanea</i> (Blue Tinsel Lily)		T	
70.	5429 <i>Calothamnus sanguineus</i> (Silky-leaved Blood flower, Pindak)			
71.	5439 <i>Calytrix angulata</i> (Yellow Starflower)			
72.	5458 <i>Calytrix flavescens</i> (Summer Starflower)			
73.	5460 <i>Calytrix fraseri</i> (Pink Summer Calytrix)			
74.	5476 <i>Calytrix sapphirina</i>			
75.	5485 <i>Calytrix variabilis</i>			Y
76.	2951 <i>Cassytha flava</i> (Dodder Laurel)			
77.	2952 <i>Cassytha glabella</i> (Tangled Dodder Laurel)			
78.	2954 <i>Cassytha micrantha</i>			
79.	2957 <i>Cassytha racemosa</i> (Dodder Laurel)			
80.	760 <i>Caustis dioica</i>			
81.	6539 <i>Centaurium erythraea</i> (Common Centaury)	Y		
82.	1120 <i>Centrolepis alepyroides</i>			
83.	1121 <i>Centrolepis aristata</i> (Pointed Centrolepis)			
84.	13122 <i>Centrolepis cephaliformis</i> subsp. <i>cephaliformis</i>			
85.	1125 <i>Centrolepis drummondiana</i>			
86.	1131 <i>Centrolepis inconspicua</i>			Y
87.	1132 <i>Centrolepis mutica</i>			
88.	1133 <i>Centrolepis pilosa</i>			
89.	2889 <i>Cerastium glomeratum</i> (Mouse Ear Chickweed)	Y		
90.	1280 <i>Chamaescilla corymbosa</i> (Blue Squill)			
91.	8788 <i>Chamaescilla versicolor</i>			
92.	2491 <i>Chenopodium macrospermum</i>	Y		
93.	763 <i>Chorizandra enodis</i> (Black Bristlerush)			
94.	3753 <i>Chorizema dicksonii</i> (Yellow-eyed Flame Pea)			Y
95.	6543 <i>Cicendia filiformis</i> (Slender Cicendia)	Y		
96.	4550 <i>Comesperma calymega</i> (Blue-spike Milkwort)			
97.	1857 <i>Conospermum acerosum</i> (Needle-leaved Smokebush)			
98.	1876 <i>Conospermum incurvum</i> (Plume Smokebush)			
99.	1882 <i>Conospermum stoechadis</i> (Common Smokebush)			
100.	6347 <i>Conostephium minus</i> (Pink-tipped Pearl flower)			
101.	6348 <i>Conostephium pendulum</i> (Pearl Flower)			
102.	6349 <i>Conostephium preissii</i>			
103.	1418 <i>Conostylis aculeata</i> (Prickly Conostylis)			
104.	1423 <i>Conostylis aurea</i> (Golden Conostylis)			
105.	1429 <i>Conostylis caricina</i>			
106.	1436 <i>Conostylis juncea</i>			
107.	1454 <i>Conostylis setigera</i> (Bristly Cottonhead)			
108.	7945 <i>Cotula coronopifolia</i> (Waterbuttons)	Y		
109.	7946 <i>Cotula cotuloides</i> (Smooth Cotula)			
110.	3137 <i>Crassula colorata</i> (Dense Stonecrop)			
111.	3142 <i>Crassula natans</i>	Y		
112.	4792 <i>Cryptandra arbutiflora</i> (Waxy Cryptandra)			
113.	4809 <i>Cryptandra pungens</i>			
114.	768 <i>Cyathochaeta avenacea</i>			
115.	769 <i>Cyathochaeta clandestina</i>			
116.	283 <i>Cynodon dactylon</i> (Couch)	Y		
117.	792 <i>Cyperus eragrostis</i> (Umbrella Sedge)	Y		Y
118.	806 <i>Cyperus polystachyos</i> (Bunchy Sedge)	Y		Y
119.	815 <i>Cyperus tenellus</i> (Tiny Flatsedge)	Y		
120.	7428 <i>Dampiera coronata</i> (Wedge-leaved Dampiera)			Y
121.	7454 <i>Dampiera linearis</i> (Common Dampiera)			
122.	1218 <i>Dasypogon bromeliifolius</i> (Pineapple Bush)			

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123.	6218 <i>Daucus glochidiatus</i> (Australian Carrot)			
124.	3793 <i>Daviesia angulata</i>			
125.	3805 <i>Daviesia decurrens</i> (Prickly Bitter-pea)			
126.	3807 <i>Daviesia divaricata</i> (Marno)			
127.	3815 <i>Daviesia horrida</i> (Prickly Bitter-pea)			Y
128.	3824 <i>Daviesia nudiflora</i>			
129.	3832 <i>Daviesia physodes</i>			
130.	3833 <i>Daviesia podophylla</i>			
131.	3835 <i>Daviesia preissii</i>			
132.	3845 <i>Daviesia triflora</i>			
133.	1259 <i>Dianella revoluta</i> (Blueberry Lily)			
134.	1287 <i>Dichopogon capillipes</i>			
135.	1289 <i>Dichopogon preissii</i>			
136.	7961 <i>Dittrichia graveolens</i> (Stinkwort)	Y		
137.	1634 <i>Diuris laxiflora</i> (Bee Orchid)			
138.	1635 <i>Diuris longifolia</i> (Common Donkey Orchid)			
139.	3095 <i>Drosera erythrorhiza</i> (Red Ink Sundew)			
140.	3097 <i>Drosera gigantea</i> (Giant Sundew)			
141.	3098 <i>Drosera glanduligera</i> (Pimpernel Sundew)			
142.	3101 <i>Drosera heterophylla</i> (Swamp Rainbow)			
143.	3105 <i>Drosera leucoblasta</i> (Wheel Sundew)			
144.	3106 <i>Drosera macrantha</i> (Bridal Rainbow)			
145.	3109 <i>Drosera menziesii</i> (Pink Rainbow)			
146.	11853 <i>Drosera menziesii</i> subsp. <i>menziesii</i>			
147.	13216 <i>Drosera menziesii</i> subsp. <i>penicillaris</i>			
148.	3113 <i>Drosera neesii</i> (Jewel Rainbow)			
149.	13188 <i>Drosera paleacea</i> subsp. <i>paleacea</i>			
150.	3118 <i>Drosera pallida</i> (Pale Rainbow)			
151.	3123 <i>Drosera platystigma</i> (Black-eyed Sundew)			
152.	3124 <i>Drosera pulchella</i> (Pretty Sundew)			
153.	3125 <i>Drosera pycnoblata</i> (Pearly Sundew)			Y
154.	8911 <i>Drosera rosulata</i>			
155.	3131 <i>Drosera stolonifera</i> (Leafy Sundew)			
156.	347 <i>Ehrharta calycina</i> (Perennial Veldt Grass)	Y		
157.	349 <i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
158.	822 <i>Eleocharis acuta</i> (Common Spikerush)			Y
159.	6131 <i>Epilobium billardioreanum</i> (Glabrous Willow Herb)			
160.	13950 <i>Eremaea asterocarpa</i> subsp. <i>asterocarpa</i>			
161.	5542 <i>Eremaea purpurea</i>			Y
162.	1646 <i>Eriochilus dilatatus</i> (White Bunny Orchid)			
163.	15446 <i>Eryngium pinnatifidum</i> subsp. <i>pinnatifidum</i>			
164.	5659 <i>Eucalyptus gomphocephala</i> (Tuart, Duart)			
165.	5708 <i>Eucalyptus marginata</i> (Jarrah, Djara)			
166.	5763 <i>Eucalyptus rudis</i> (Flooded Gum, Kulurda)			
167.	5790 <i>Eucalyptus todtiana</i> (Coastal Blackbutt)			
168.	5797 <i>Eucalyptus wandoo</i> (Wandoo, Wondou)			
169.	3872 <i>Euchilopsis linearis</i> (Swamp Pea)			
170.	4638 <i>Euphorbia peplus</i> (Petty Spurge)	Y		
171.	3880 <i>Eutaxia virgata</i>			
172.	1520 <i>Gladiolus caryophyllaceus</i> (Wild Gladiolus)	Y		
173.	3945 <i>Gompholobium aristatum</i>			
174.	10909 <i>Gompholobium confertum</i>			
175.	3951 <i>Gompholobium marginatum</i>			
176.	3955 <i>Gompholobium preissii</i>			
177.	3957 <i>Gompholobium tomentosum</i> (Hairy Yellow Pea)			
178.	6161 <i>Gonocarpus pithyoides</i>			
179.	12551 <i>Goodenia micrantha</i>			
180.	7538 <i>Goodenia pulchella</i>			
181.	14106 <i>Grevillea althoferorum</i>			Y
182.	1964 <i>Grevillea bipinnatifida</i> (Fuchsia Grevillea)			
183.	2066 <i>Grevillea pilulifera</i> (Woolly-flowered Grevillea)			
184.	1464 <i>Haemodorum brevisepalum</i>			Y
185.	1468 <i>Haemodorum laxum</i>			
186.	1469 <i>Haemodorum loratum</i>		P3	
187.	1472 <i>Haemodorum simplex</i>			
188.	1475 <i>Haemodorum spicatum</i> (Mardja)			
189.	2136 <i>Hakea candolleana</i>			
190.	2158 <i>Hakea erinacea</i> (Hedge-hog Hakea)			Y
191.	2166 <i>Hakea incrassata</i> (Marble Hakea)			
192.	2175 <i>Hakea lissocarpha</i> (Honey Bush)			

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193.	2185 <i>Hakea myrtoidea</i> (Myrtle Hakea)			Y
194.	2197 <i>Hakea prostrata</i> (Harsh Hakea)			
195.	2203 <i>Hakea ruscifolia</i> (Candle Hakea)			
196.	2212 <i>Hakea sulcata</i> (Furrowed Hakea)			
197.	2214 <i>Hakea trifurcata</i> (Two-leaf Hakea)			
198.	2215 <i>Hakea undulata</i> (Wavy-leaved Hakea)			Y
199.	2216 <i>Hakea varia</i> (Variable-leaved Hakea)			
200.	3961 <i>Hardenbergia comptoniana</i> (Native Wisteria)			
201.	1068 <i>Harperia lateriflora</i>			
202.	3016 <i>Heliophila pusilla</i>	Y		
203.	6839 <i>Hemiandra pungens</i> (Snakebush)			
204.	1293 <i>Hensmania turbinata</i>			
205.	1526 <i>Hesperantha falcata</i>	Y		Y
206.	5108 <i>Hibbertia acerosa</i> (Needle Leaved Guinea Flower)			
207.	5112 <i>Hibbertia aurea</i>			
208.	5114 <i>Hibbertia commutata</i>			
209.	5116 <i>Hibbertia crassifolia</i>			
210.	5134 <i>Hibbertia huegelii</i>			
211.	5135 <i>Hibbertia hypericoides</i> (Yellow Buttercups)			
212.	5153 <i>Hibbertia pachyrrhiza</i>			Y
213.	5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
214.	5172 <i>Hibbertia stellaris</i> (Orange Stars)			
215.	5173 <i>Hibbertia subvaginata</i>			
216.	6222 <i>Homalosciadium homalocarum</i>			
217.	3966 <i>Hovea pungens</i> (Devil's Pins, Puyenak)			
218.	12907 <i>Hovea trisperma</i> var. <i>grandiflora</i>			
219.	12859 <i>Hovea trisperma</i> var. <i>trisperma</i>			
220.	12741 <i>Hyalosperma cotula</i>			
221.	5216 <i>Hybanthus calycinus</i> (Wild Violet)			
222.	6223 <i>Hydrocotyle alata</i>			
223.	6226 <i>Hydrocotyle callicarpa</i> (Small Pennywort)			
224.	6229 <i>Hydrocotyle diantha</i>			
225.	6236 <i>Hydrocotyle pilifera</i>			
226.	5817 <i>Hypocalymma angustifolium</i> (White Myrtle, Kudjid)			
227.	5825 <i>Hypocalymma robustum</i> (Swan River Myrtle)			
228.	8086 <i>Hypochaeris glabra</i> (Smooth Catsear)	Y		
229.	1070 <i>Hypolaena exsulca</i>			
230.	910 <i>Isolepis cernua</i> (Nodding Club-rush)			
231.	912 <i>Isolepis cyperoides</i>			Y
232.	14540 <i>Isolepis hystrix</i>	Y		Y
233.	917 <i>Isolepis marginata</i> (Coarse Club-rush)	Y		
234.	919 <i>Isolepis oldfieldiana</i>			
235.	921 <i>Isolepis producta</i>			
236.	924 <i>Isolepis stellata</i> (Star Club-rush)			
237.	2221 <i>Isopogon asper</i>			
238.	2228 <i>Isopogon drummondii</i>		P3	
239.	3992 <i>Isotropis cuneifolia</i> (Granny Bonnets)			
240.	3997 <i>Jacksonia alata</i>			Y
241.	4005 <i>Jacksonia condensata</i>			Y
242.	4010 <i>Jacksonia floribunda</i> (Holly Pea)			
243.	4012 <i>Jacksonia furcellata</i> (Grey Stinkwood)			
244.	4027 <i>Jacksonia sericea</i> (Waldjumi)		P4	
245.	4029 <i>Jacksonia sternbergiana</i> (Stinkwood, Kapur)			
246.	1298 <i>Johnsonia pubescens</i> (Pipe Lily)			
247.	1178 <i>Juncus bufonius</i> (Toad Rush)	Y		
248.	1180 <i>Juncus capitatus</i> (Capitate Rush)	Y		
249.	1184 <i>Juncus holoschoenus</i> (Jointleaf Rush)			
250.	1188 <i>Juncus pallidus</i> (Pale Rush)			
251.	4044 <i>Kennedia prostrata</i> (Scarlet Runner)			
252.	1221 <i>Kingia australis</i> (Kingia, Pulonok)			
253.	5832 <i>Kunzea ericifolia</i> (Spearwood, Pondil)			
254.	5841 <i>Kunzea recurva</i>			
255.	1370 <i>Lachenalia reflexa</i>	Y		
256.	2249 <i>Lambertia multiflora</i> (Many-flowered Honeysuckle)			
257.	1303 <i>Laxmannia grandiflora</i>			Y
258.	1307 <i>Laxmannia ramosa</i> (Branching Lily)			
259.	11464 <i>Laxmannia sessiliflora</i> subsp. <i>australis</i>			
260.	1309 <i>Laxmannia squarrosa</i>			
261.	7568 <i>Lechenaultia biloba</i> (Blue Leschenaultia)			
262.	7574 <i>Lechenaultia floribunda</i> (Free-flowering Leschenaultia)			

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263.	1051 <i>Lemna disperma</i> (Duckweed)			
264.	8099 <i>Leontodon saxatilis</i> (Hairy Hawkbit)	Y		Y
265.	1075 <i>Lepidobolus preissianus</i>			
266.	925 <i>Lepidosperma angustatum</i>			
267.	936 <i>Lepidosperma leptostachyum</i>			
268.	937 <i>Lepidosperma longitudinale</i> (Pithy Sword-sedge)			
269.	944 <i>Lepidosperma scabrum</i>			
270.	1653 <i>Leporella fimbriata</i> (Hare Orchid)			
271.	2344 <i>Leptomeria empetriformis</i>			
272.	5857 <i>Leptospermum spinescens</i>			
273.	1088 <i>Lepyrodia macra</i> (Large Scale Rush)			
274.	6374 <i>Leucopogon conostephioides</i>			
275.	6400 <i>Leucopogon gracillimus</i>			
276.	6410 <i>Leucopogon leptanthus</i>			Y
277.	6420 <i>Leucopogon oldfieldii</i>			Y
278.	6425 <i>Leucopogon oxycedrus</i>			
279.	6427 <i>Leucopogon parviflorus</i> (Coast Beard-heath)			
280.	6434 <i>Leucopogon polymorphus</i>			
281.	6436 <i>Leucopogon propinquus</i>			
282.	6444 <i>Leucopogon sprengelioides</i>			
283.	7676 <i>Levenhookia pusilla</i> (Midget Stylewort)			
284.	7677 <i>Levenhookia stipitata</i> (Common Stylewort)			
285.	4363 <i>Linum trigynum</i> (French Flax)	Y		Y
286.	7408 <i>Lobelia tenuior</i> (Slender Lobelia)			
287.	6506 <i>Logania campanulata</i> (Bell-flowered Logania)			
288.	478 <i>Lolium rigidum</i> (Wimmera Ryegrass)	Y		
289.	1223 <i>Lomandra caespitosa</i> (Tufted Mat Rush)			
290.	1228 <i>Lomandra hermaphrodita</i>			
291.	1232 <i>Lomandra micrantha</i> (Small-flower Mat-rush)			
292.	1234 <i>Lomandra nigricans</i>			
293.	1236 <i>Lomandra odora</i> (Tiered Matrush)			
294.	1239 <i>Lomandra preissii</i>			
295.	1243 <i>Lomandra sericea</i> (Silky Mat Rush)			
296.	1245 <i>Lomandra spartea</i>			
297.	1246 <i>Lomandra suaveolens</i>			
298.	4059 <i>Lotus angustissimus</i> (Narrowleaf Trefoil)	Y		
299.	1097 <i>Lyginia barbata</i>			
300.	1656 <i>Lyperanthus serratus</i> (Rattle Beak Orchid)			
301.	6456 <i>Lysinema ciliatum</i> (Curry Flower)			
302.	2838 <i>Macarthuria apetala</i>			Y
303.	2839 <i>Macarthuria australis</i>			
304.	85 <i>Macrozamia riedlei</i> (<i>Zamia</i> , Djiridji)			
305.	5880 <i>Melaleuca bracteosa</i>			Y
306.	5926 <i>Melaleuca lateritia</i> (Robin Redbreast Bush)			
307.	5952 <i>Melaleuca preissiana</i> (Moonah)			
308.	5959 <i>Melaleuca raphiophylla</i> (Swamp Paperbark)			
309.	5961 <i>Melaleuca scabra</i> (Rough Honeymyrtle, Wurru Bush)			
310.	5964 <i>Melaleuca seriata</i>			
311.	5978 <i>Melaleuca teretifolia</i> (Banbar)			
312.	5983 <i>Melaleuca trichophylla</i>			Y
313.	5984 <i>Melaleuca uncinata</i> (Broom Bush, Kwidjard)			
314.	5987 <i>Melaleuca viminea</i> (Mohan)			
315.	4085 <i>Melilotus indicus</i>	Y		
316.	955 <i>Mesomelaena pseudostygia</i>			
317.	957 <i>Mesomelaena tetragona</i> (Semaphore Sedge)			
318.	485 <i>Microlaena stipoides</i> (Weeping Grass)			
319.	15419 <i>Microtis media</i> subsp. <i>media</i>			
320.	8106 <i>Millotia tenuifolia</i> (Soft Millotia)			
321.	7410 <i>Monopsis debilis</i>	Y		
322.	4662 <i>Monotaxis grandiflora</i> (Diamond of the Desert)			
323.	492 <i>Neurachne alopecuroidea</i> (Foxtail Mulga Grass)			
324.	2401 <i>Nuytsia floribunda</i> (Christmas Tree, Mudja)			
325.	8133 <i>Olearia elaeophila</i>			
326.	7122 <i>Orobanche minor</i> (Lesser Broomrape)	Y		
327.	4355 <i>Oxalis perennans</i>			
328.	7089 <i>Parentucellia latifolia</i> (Common Bartsia)	Y		
329.	7090 <i>Parentucellia viscosa</i> (Sticky Bartsia)	Y		
330.	1546 <i>Patersonia juncea</i> (Rush Leaved Patersonia)			
331.	1550 <i>Patersonia occidentalis</i> (Purple Flag, Koma)			
332.	4343 <i>Pelargonium capitatum</i> (Rose Pelargonium)	Y		

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333.	6006 <i>Pericalymma ellipticum</i> (Swamp Teatree)			
334.	2273 <i>Persoonia saccata</i> (Snottygobble)			
335.	2299 <i>Petrophile linearis</i> (Pixie Mops)			
336.	2301 <i>Petrophile macrostachya</i>			
337.	2308 <i>Petrophile seminuda</i>			
338.	2310 <i>Petrophile shuttleworthiana</i>			Y
339.	1173 <i>Philydrella pygmaea</i> (Butterfly Flowers)			
340.	1478 <i>Phlebocarya ciliata</i>			
341.	1479 <i>Phlebocarya filifolia</i>			
342.	4675 <i>Phyllanthus calycinus</i> (False Boronia)			
343.	11404 <i>Pimelea imbricata</i> var. <i>major</i>			
344.	11402 <i>Pimelea imbricata</i> var. <i>piligera</i>			
345.	5254 <i>Pimelea leucantha</i>			Y
346.	8165 <i>Pithocarpa pulchella</i> (Beautiful Pithocarpa)			Y
347.	4524 <i>Platytheca galioides</i>			
348.	571 <i>Poa annua</i> (Winter Grass)	Y		
349.	573 <i>Poa drummondiana</i> (Knotted Poa)			
350.	8175 <i>Podolepis gracilis</i> (Slender Podolepis)			
351.	8177 <i>Podolepis lessonii</i>			
352.	8182 <i>Podotheca angustifolia</i> (Sticky Longheads)			
353.	8183 <i>Podotheca chrysantha</i> (Yellow Podotheca)			
354.	8188 <i>Pogonolepis stricta</i>			
355.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
356.	583 <i>Polypogon tenellus</i>			
357.	4689 <i>Poranthera ericoides</i> (Heath Poranthera)			Y
358.	4691 <i>Poranthera microphylla</i> (Small Poranthera)			
359.	2884 <i>Portulaca oleracea</i> (Purslane, Wakati)			Y
360.	1686 <i>Pterostylis barbata</i> (Bird Orchid)			
361.	1693 <i>Pterostylis recurva</i> (Jug Orchid)			
362.	12217 <i>Pterostylis sanguinea</i>			
363.	1698 <i>Pterostylis vittata</i> (Banded Greenhood)			
364.	2716 <i>Ptilotus declinatus</i> (Curved Mulla Mulla)			Y
365.	2718 <i>Ptilotus drummondii</i> (Narrowleaf Mulla Mulla)			
366.	2742 <i>Ptilotus manglesii</i> (Pom Poms, Mulamula)			
367.	2751 <i>Ptilotus polystachyus</i> (Prince of Wales Feather)			
368.	2763 <i>Ptilotus stirlingii</i> (Stirling's Mulla Mulla)			
369.	4172 <i>Pultenaea ericifolia</i>			Y
370.	4181 <i>Pultenaea reticulata</i>			
371.	8195 <i>Quinetia urvillei</i>			
372.	11927 <i>Ranunculus sessiliflorus</i> var. <i>sessiliflorus</i>			
373.	6012 <i>Regelia ciliata</i>			
374.	6014 <i>Regelia inops</i>			Y
375.	1556 <i>Romulea rosea</i> (Guildford Grass)	Y		
376.	11544 <i>Romulea rosea</i> var. <i>australis</i> (Guildford Grass)	Y		
377.	2433 <i>Rumex crispus</i> (Curled Dock)	Y		
378.	6483 <i>Samolus junceus</i>			
379.	7603 <i>Scaevola canescens</i> (Grey Scaevola)			
380.	7613 <i>Scaevola glandulifera</i> (Viscid Hand-flower)			
381.	7619 <i>Scaevola lanceolata</i>			
382.	7634 <i>Scaevola phlebotepala</i> (Velvet Fanflower)			
383.	13182 <i>Scaevola repens</i> var. <i>repens</i>			
384.	6263 <i>Schoenolaena juncea</i>			
385.	975 <i>Schoenus bifidus</i>			
386.	978 <i>Schoenus brevisetis</i>			
387.	979 <i>Schoenus caespititius</i>			
388.	982 <i>Schoenus clandestinus</i>			
389.	984 <i>Schoenus curvifolius</i>			
390.	985 <i>Schoenus discifer</i>			
391.	987 <i>Schoenus elegans</i>			
392.	992 <i>Schoenus grandiflorus</i> (Large Flowered Bogrush)			
393.	994 <i>Schoenus humilis</i>			
394.	1002 <i>Schoenus nanus</i> (Tiny Bog Rush)			
395.	1006 <i>Schoenus odontocarpus</i>			
396.	1011 <i>Schoenus rigens</i>			
397.	1017 <i>Schoenus subbulbosus</i>			
398.	1019 <i>Schoenus subflavus</i> (Yellow Bog-rush)			
399.	1023 <i>Schoenus tenellus</i>			
400.	1026 <i>Schoenus unispiculatus</i>			
401.	6033 <i>Scholtzia involucreta</i> (Spiked Scholtzia)			
402.	6 <i>Selaginella gracillima</i> (Tiny Clubmoss)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
403.	2909 <i>Silene gallica</i> (French Catchfly)	Y		
404.	8225 <i>Siloxerus humifusus</i> (Procumbent Siloxerus)			
405.	6988 <i>Solanum americanum</i> (Glossy Nightshade)	Y		
406.	7022 <i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
407.	8230 <i>Sonchus asper</i> (Rough Sowthistle)	Y		
408.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
409.	1312 <i>Sowerbaea laxiflora</i> (Purple Tassels)			
410.	1558 <i>Sparaxis bulbifera</i>	Y		
411.	4211 <i>Sphaerolobium vimineum</i> (Leafless Globe Pea)			
412.	4713 <i>Stachystemon axillaris</i> (Leafy Stachystemon)			Y
413.	2918 <i>Stellaria media</i> (Chickweed)	Y		
414.	19403 <i>Stenopetalum gracile</i>			Y
415.	2316 <i>Stirlingia latifolia</i> (Blueboy)			
416.	7681 <i>Stylidium affine</i> (Queen Triggerplant)			Y
417.	7692 <i>Stylidium breviscapum</i> (Boomerang Triggerplant)			Y
418.	7693 <i>Stylidium brunonianum</i> (Pink Fountain Triggerplant)			
419.	7694 <i>Stylidium bulbiferum</i> (Circus Triggerplant)			
420.	7696 <i>Stylidium calcaratum</i> (Book Triggerplant)			
421.	7709 <i>Stylidium crossocephalum</i> (Posy Triggerplant)			
422.	7713 <i>Stylidium dichotomum</i> (Pins-and-needles)			
423.	7716 <i>Stylidium diuroides</i> (Donkey Triggerplant)			
424.	7719 <i>Stylidium ecome</i> (Foot Triggerplant)			
425.	7734 <i>Stylidium guttatum</i> (Dotted Triggerplant)			
426.	7745 <i>Stylidium junceum</i> (Reed Triggerplant)			
427.	7756 <i>Stylidium longitubum</i> (Jumping Jacks)		P3	
428.	7773 <i>Stylidium petiolare</i> (Horn Triggerplant)			
429.	7774 <i>Stylidium piliferum</i> (Common Butterfly Triggerplant)			
430.	7785 <i>Stylidium repens</i> (Matted Triggerplant)			
431.	7798 <i>Stylidium schoenoides</i> (Cow Kicks)			
432.	1260 <i>Stypandra glauca</i> (Blind Grass)			
433.	2321 <i>Synaphea acutiloba</i> (Granite Synaphea)			
434.	2329 <i>Synaphea spinulosa</i>			
435.	1036 <i>Tetralix octandra</i>			
436.	1701 <i>Thelymitra antennifera</i> (Vanilla Orchid)			
437.	1702 <i>Thelymitra campanulata</i> (Shirt Orchid)			
438.	1703 <i>Thelymitra canaliculata</i> (Blue Sun Orchid)			
439.	1705 <i>Thelymitra crinita</i> (Blue Lady Orchid)			
440.	1707 <i>Thelymitra flexuosa</i> (Twisted Sun Orchid)			
441.	1318 <i>Thysanotus arbuscula</i>			
442.	1319 <i>Thysanotus arenarius</i>			
443.	1338 <i>Thysanotus manglesianus</i> (Fringed Lily)			
444.	1343 <i>Thysanotus patersonii</i>			
445.	1351 <i>Thysanotus sparteus</i>			
446.	1357 <i>Thysanotus thyrsoideus</i>			
447.	1358 <i>Thysanotus triandrus</i>			
448.	6280 <i>Trachymene pilosa</i> (Native Parsnip)			
449.	1481 <i>Tribonanthes australis</i>			
450.	1482 <i>Tribonanthes brachypetala</i>			
451.	1483 <i>Tribonanthes longipetala</i>			
452.	8251 <i>Trichocline spathulata</i> (Native Gerbera)			
453.	1361 <i>Tricoryne elatior</i> (Yellow Autumn Lily)			
454.	1362 <i>Tricoryne humilis</i>			
455.	1363 <i>Tricoryne tenella</i>			
456.	4289 <i>Trifolium angustifolium</i> (Narrowleaf Clover)	Y		
457.	4291 <i>Trifolium arvense</i> (Hare's Foot Clover)	Y		
458.	4292 <i>Trifolium campestre</i> (Hop Clover)	Y		
459.	4313 <i>Trifolium subterraneum</i> (Subterranean Clover)	Y		
460.	147 <i>Triglochin mucronata</i>			
461.	150 <i>Triglochin stowardii</i>			
462.	4737 <i>Tripterococcus brunonis</i> (Winged Stackhousia)			
463.	1139 <i>Trithuria bibracteata</i>			
464.	8255 <i>Ursinia anthemoides</i> (Ursinia)	Y		
465.	7131 <i>Utricularia dichotoma</i> (Fairy Aprons)			Y
466.	8257 <i>Vellereophyton dealbatum</i> (White Cudweed)	Y		
467.	7666 <i>Verreauxia reinwardtii</i> (Common Verreauxia)			
468.	6076 <i>Verticordia densiflora</i> (Compacted Featherflower)			
469.	6088 <i>Verticordia huegellii</i> (Variegated Featherflower)			
470.	6101 <i>Verticordia nitens</i> (Morrison Featherflower, Kodjeningara)			
471.	6103 <i>Verticordia ovalifolia</i>			Y
472.	6110 <i>Verticordia plumosa</i> (Plumed Featherflower)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
473.	4322 <i>Vicia sativa</i> (Common Vetch)	Y		
474.	4325 <i>Viminaria juncea</i> (Swishbush, Koweda)			
475.	722 <i>Vulpia bromoides</i> (Squirrel Tail Fescue)	Y		
476.	724 <i>Vulpia myuros</i> (Rat's Tail Fescue)	Y		
477.	7384 <i>Wahlenbergia capensis</i> (Cape Bluebell)	Y		
478.	7389 <i>Wahlenbergia preissii</i>			
479.	8282 <i>Waitzia suaveolens</i> (Fragrant Waitzia)			
480.	12072 <i>Wurmbea dioica</i> subsp. <i>alba</i>			
481.	1252 <i>Xanthorrhoea drummondii</i>			
482.	1253 <i>Xanthorrhoea gracilis</i> (Graceful Grass Tree, Mimidi)			
483.	1256 <i>Xanthorrhoea preissii</i> (Grass tree, Palga)			
484.	6284 <i>Xanthosia candida</i>			
485.	6289 <i>Xanthosia huegelii</i>			

Conservation Codes

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

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



APPENDIX E

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

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

[Summary](#)

[Details](#)

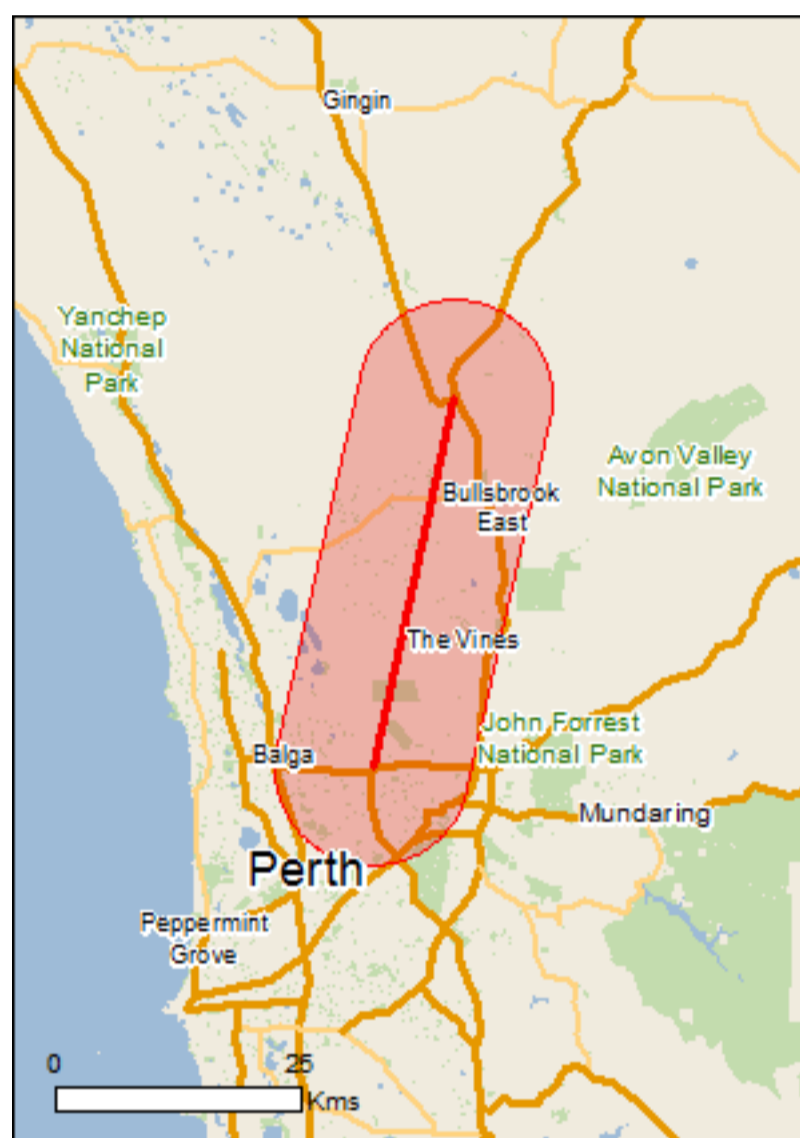
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

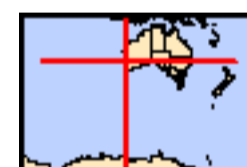
[Acknowledgements](#)



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[Coordinates](#)

[Buffer: 10.0Km](#)



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	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 [heritage values](#) of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place 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 [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	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

[[Resource Information](#)]

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

Name	Status	Type of Presence
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 Forest Red-tailed Black-Cockatoo [67034]	Vulnerable	Species or species habitat may occur within area
Calyptorhynchus baudinii 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

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]	Critically Endangered	Extinct within area
Mammals		
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]	Vulnerable	Species or species habitat likely to occur within area
Andersonia gracilis 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 Muceha 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
Drakaea elastica Glossy-leaved 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

Caretta caretta Loggerhead Turtle [1763]	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
Dermochelys coriacea 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

[[Resource Information](#)]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within

Name	Threatened	Type of Presence area
Diomedea dabbenena 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]	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
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]		Species or species habitat may occur within area
Natator depressus 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 - AP11OBSTRUCTION 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 - RAAF CAVERSHAM Defence - VACANT LAND - BULLSBROOK AP102

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Natural		
Muehea / 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 - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Apus pacificus 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
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within area
Diomedea dabbenena 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
Haliaeetus leucogaster 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) Painted Snipe [889]	Endangered*	Species or species habitat likely to 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
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species

Name	Threatened	Type of Presence
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	habitat known to occur within area 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 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
Daylesford House	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
Mandalay	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 Bristle 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
Wienschl 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	WA	Registered
Building	WA	Registered
Chateau Guildford	WA	Registered
Courthouse and Gaol (former)	WA	Registered
Crossland House (former)	WA	Registered
Fairholme	WA	Registered
Fairholme Servants Quarters	WA	Registered
Foothills School	WA	Registered
Garden Hill (former)	WA	Registered
Garrick Theatre	WA	Registered
Graveyard of All Saints Anglican Church	WA	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
House	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
Liverpool Arms Hotel (former)	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
Tranby House	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
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.

Name	State
South West WA RFA	Western Australia

Invasive Species [\[Resource Information \]](#)

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species

Name	Status	Type of Presence
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
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 Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus declinatus Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908]		Species or species habitat likely to occur within area
Asparagus plumosus 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]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
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 reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

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		<u>[Resource Information]</u>
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.



APPENDIX F

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 Coffey 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.