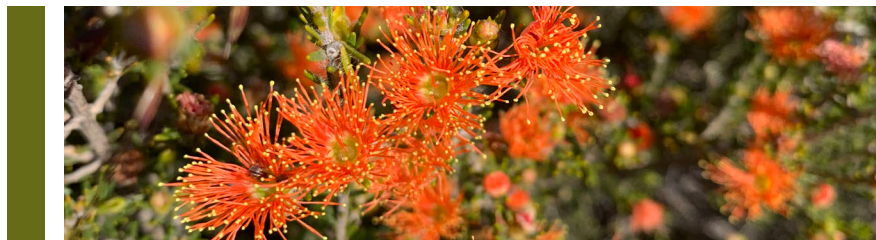




Great Eastern Highway Bypass Interchanges (Roe Highway and Abernethy Road) Biological Survey





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Great Eastern Highway Bypass Biological Survey

Contents

1.0	Summary	11
1.1	Overview of the Project	11
1.2	Vegetation and Flora	11
1.3	Fauna	12
2.0	Introduction	13
2.1	Project Purpose, Background and Location	13
2.2	Scope and Objectives of this Study	13
3.0	Methodology	17
3.1	Definitions of Significant Communities and Species	17
3.2	Desktop Review	18
3.3	Survey Timing and Weather	21
3.4	Vegetation and Flora Field Survey	24
3.5	Fauna Field Survey	29
3.6	Limitations of the Study	32
4.0	Desktop Assessment	35
4.1	IBRA Bioregion and Subregion	35
4.2	Conservation Reserves in the Locality	35
4.3	Geomorphic Wetlands	35
4.4	Surface Geology	38
4.5	Soils	38
4.6	Bush Forever	42
4.7	Regional Vegetation Mapping	42
4.8	Communities of Significance	48
4.9	Significant Species Known from the Locality	51
5.0	Vegetation	53
5.1	Vegetation Types of the Survey Area	53
5.2	Condition of the Vegetation Units	64
5.3	Results of the Floristic Analysis	64
5.4	Significant Vegetation	73
6.0	Flora	81
6.1	Overview	81
6.2	Unresolved Taxa	81
6.3	Sampling Adequacy	81
6.4	Significant Flora	82
6.5	Introduced Flora	86
7.0	Fauna	89
7.1	Fauna Habitats	89
7.2	Fauna Recorded During the Survey	96
7.3	Targeted Black Cockatoo Assessment	101
7.4	Carter's Mussel Targeted Assessment	108
7.5	Significant Fauna	108

8.0	Key Biological Constraints	113
8.1	Matters of National Environmental Significance	113
8.2	Other Features of Significance	113
9.0	References	115

Appendix 1

Framework for Significance Ranking of Communities and Species in WA

Appendix 2

Database Searches

Appendix 3

Fauna Desktop Species List

Appendix 4a

Likelihood of Significant Flora Occurring in the Survey Area

Appendix 4b

Likelihood of Significant Fauna Occurring in the Survey Area

Appendix 5

Field TEC Assessment Results and TEC Patch Assessment Locations

Appendix 6

Vegetation Structural Classification and Condition Ranking

Appendix 7

Vascular Flora Species Recorded During the Current Survey

Appendix 8

Raw Site Data and Photographs

Appendix 9

Vegetation Type Mapping and Sampling Site Locations

Appendix 10

Locations of Significant Flora

Appendix 11

Vegetation Condition Mapping and Introduced Flora Locations

Appendix 12

Selection PATN Inputs and Outputs

Appendix 13

Selected PRIMER Inputs and Outputs

Appendix 14

Black Cockatoo Breeding Habitat Trees

Appendix 15

Black Cockatoo Hollow Inspection Images

Tables

Table 2.1 Breakdown of survey areas and survey effort completed within each area.

13

Table 3.1	Explanation of codes used to identify categories of significance for species.	17
Table 3.2	Ranking system used to assign the likelihood that flora and fauna of significance would occur in the survey area.	19
Table 3.3:	Diagnostic characteristics and condition thresholds to determine the Commonwealth Banksia Woodlands TEC (DotEE 2016).	20
Table 3.4:	Summary of personnel involved in the survey.	21
Table 3.5:	Daily meteorological observations for the Perth Airport weather station #009021.	22
Table 3.6	Motion camera site locations and effort within the Level 2 survey area.	29
Table 3.7:	Categories of hollow suitability for black cockatoo nesting.	30
Table 3.8	Sampling and habitat description locations within the survey area.	31
Table 3.9:	Reference sites visited to assess habitat at known Carter's Freshwater Mussel records.	32
Table 3.10:	Potential constraints and limitations of the current surveys.	32
Table 4.1	Geomorphic Wetlands as described by DBCA 2017.	35
Table 4.2:	Surface geology units as described and mapped by Geological Survey of Western Australia (2001).	38
Table 4.3:	Soil types in the survey area as described and mapped by Northcote et al. (1967).	38
Table 4.4:	Vegetation associations in the survey area as described and mapped by Beard (1981).	42
Table 4.5:	Vegetation complexes in the survey area as described by Heddl et al. (1980).	43
Table 4.6:	Remnant vegetation remaining in the survey area.	44
Table 4.7:	Threatened and Priority Ecological Communities identified during the desktop review and the likelihood that they would occur in the study area.	48
Table 4.8:	Vertebrate species identified from the desktop review.	51
Table 5.1:	Extent of the mapping units within the survey area and contextual area.	54
Table 5.2:	Extent of vegetation condition categories within the survey area and contextual area.	64
Table 5.3:	Floristic community types that occur on the Swan Coastal Plain and have relationships to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC (DotEE 2016).	65
Table 5.4	Summary of floristic community types identified by the current study.	68
Table 5.5	Extent of Commonwealth Listed TECs within the survey areas.	73
Table 5.6	Floristic community types that occur in the survey area and have relationships to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC.	77
Table 6.1:	Native families and genera with the highest species richness in the survey area.	81
Table 6.2:	Recorded species richness compared with predicted species richness using incidence-based estimators (without opportunistic records).	82
Table 7.1:	Fauna habitats identified within the survey area.	90
Table 7.2:	Vertebrate species identified during the Level 1 fauna survey.	98

Table 7.3:	Trees with hollows potentially suitable for breeding by black cockatoos (all in the Level 2 survey area). Still images are presented in Appendix 15.	102
Table 7.4:	Significant fauna potentially occurring in the survey area.	109

Figures

Figure 2.1:	Location of the survey areas, study area and contextual area.	15
Figure 3.1:	Total monthly rainfall for June 2019 to November 2020 from the Bureau of Meteorology Perth Airport weather station compared to the long-term climate-normal (1990-2019) median rainfall for the same months.	23
Figure 3.2:	Flora survey sampling effort.	25
Figure 4.1:	Conservation estate in the locality.	36
Figure 4.2:	Geomorphic wetlands in the locality.	37
Figure 4.3:	Geological units mapped for the study area.	40
Figure 4.4:	Soil units mapped for the study area.	41
Figure 4.5:	Beard's (1981) vegetation associations mapped within the study area.	45
Figure 4.6:	Hedde (1980) vegetation complexes mapped within the study area.	46
Figure 4.7:	Remnant vegetation within the study area (DAFWA 2016).	47
Figure 4.8:	Records of Commonwealth TECs within the study area.	49
Figure 4.9:	Records of State-listed TECs and PECs within the study area.	50
Figure 5.1:	Dendrogram from floristic clustering analysis of sites from the current survey (based on percent cover of all annual and perennial taxa, excluding singletons; coded by vegetation type).	72
Figure 5.2:	NMDS plot based of sites from the current survey (based on percent cover of all annual and perennial taxa, excluding singletons; coded by vegetation type).	72
Figure 5.3:	Commonwealth TEC patch assessment within the survey area and contextual area (numbers indicate patch number; Appendix 5).	75
Figure 5.4:	State TEC and PEC occurrences within the survey area and contextual area.	78
Figure 5.5:	Additional quadrats and associated State TEC and PEC assignments.	79
Figure 6.1:	Species accumulation curve based on actual observations at the sampling sites ($S(\text{obs})$), together with two estimates of species richness (ICE and Chao 2).	82
Figure 6.2:	Locations of significant flora recorded within the survey area and contextual area.	85
Figure 7.1:	Fauna habitats identified within the survey area.	95
Figure 7.2:	Location of motion camera sites and Quenda (<i>Isoodon fusciventer</i>) observations.	97
Figure 7.3:	Black cockatoo breeding habitat trees recorded within the survey area.	105
Figure 7.4:	Black cockatoo foraging records and individual observations recorded within the survey area.	106
Figure 7.5:	Known black cockatoo roosting sites in the vicinity of the study area.	107

Plates

Plate 5.1:	Representative photographs of the L1 vegetation type.	55
Plate 5.2:	Representative photographs of the L2 vegetation type.	56
Plate 5.3:	Representative photographs of the L3 vegetation type.	56
Plate 5.4:	Representative photographs of the L4 vegetation type.	57
Plate 5.5:	Representative photographs of the L5 vegetation type.	58
Plate 5.6:	Representative photographs of the P1 vegetation type.	58
Plate 5.7:	Representative photographs of the P2 vegetation type.	59
Plate 5.8:	Representative photographs of the P3 vegetation type.	60
Plate 5.9:	Representative photographs of the P4 vegetation type.	60
Plate 5.10:	Representative photographs of the P5 vegetation type.	61
Plate 5.11:	Representative photographs of the P6 vegetation type.	61
Plate 5.12:	Representative photographs of the P7 vegetation type.	62
Plate 5.13:	Representative photographs of the P8 vegetation type.	63
Plate 5.14:	Representative photographs of the Banksia Woodlands of the Swan Coastal Plain ecological community TEC.	74
Plate 5.15:	Representative photographs of the Banksia Woodlands of the Swan Coastal Plain ecological community TEC.	74
Plate 5.16:	Representative photographs of the Shrublands and Woodlands of the eastern Swan Coastal Plain TEC.	74
Plate 6.1:	<i>Conospermum undulatum</i>	83
Plate 6.2:	<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i> .	83
Plate 6.3:	<i>Isopogon autumnalis</i> .	84
Plate 6.4:	<i>Hypolaena robusta</i> .	84
Plate 7.1:	Quenda (<i>Isoodon fusciventer</i>) captured on motion camera at site MC03.	96
Plate 7.2:	Suitable tree hollow with chew marks.	101
Plate 7.3:	Carnaby's Black-Cockatoos emerging from Banksia after foraging.	103
Plate 7.4:	Marri nut chewed by Carnaby's Black-Cockatoo.	103
Plate 7.5:	Marri nut chewed by Forest Red-tailed Black-Cockatoo.	103
Plate 7.6:	Pinecone chewed by black cockatoo sp.	103
Plate 7.7:	Turbid and weed-choked section of Helena River within the study area (site GEH06SRE).	108
Plate 7.8:	Turbid and weed-choked section of Helena River within the study area (site GEH01SRE).	108
Plate 7.9:	Reference site GEH13SRE showing clear water (with tannins) and native sedge.	108
Plate 7.10:	Reference site GEH14SRE showing clear water.	108

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1.0 Summary

1.1 Overview of the Project

Main Roads Western Australia proposes to undertake road construction works associated with the intersection of Roe Highway and the Great Eastern Highway Bypass Interchanges within the Cities of Swan and Kalamunda. Biota Environmental Sciences was commissioned to undertake a biological survey of the proposed works area (totalling 360.5 ha), as documented in this report. The survey area was divided into two parts, defined by Main Roads as the 'Reconnaissance (Level 1) survey area' and the 'Detailed (Level 2) survey area', reflecting the type of survey specified.

1.2 Vegetation and Flora

A desktop review and 12-day field survey were conducted by four botanists over a series of visits between early October 2019 and early May 2020. Additional sampling and resampling of selected quadrats was conducted over a 4-day field survey in early November 2020. The detailed vegetation survey included quadrat sampling, mapping of vegetation types and vegetation condition (based on sampling within the survey area, and extrapolation out to a 500 m buffer 'contextual area'). Targeted searches for significant flora were also completed, during which significant weeds (Declared Pests and Weeds of National Significance) were also recorded.

Almost three-quarters of the survey area (276.0 ha, or 76.6%) comprised cleared, modified or otherwise degraded areas. Thirteen intact vegetation types were identified for the remainder of the survey area, some of which were too small to contain replicate quadrats.

A total of six patches of the Commonwealth listed 'Banksia Woodlands of the Swan Coastal Plain ecological community' Threatened Ecological Community (TEC) were mapped as occurring either wholly or partially within the survey area. The extent within the survey area comprised 27.44 ha, or 22.1% of the total extent of this TEC mapped within the broader contextual area. These patches of TEC also correspond to the State-listed Priority Ecological Community of the same name. In addition, one patch of the Commonwealth listed 'Shrublands and Woodlands of the eastern Swan Coastal Plain' TEC, comprising 1.65 ha of the survey area, was mapped. This community also corresponds to a State-listed TEC.

A total of 287 native vascular flora taxa from 142 genera and 53 families were recorded from the survey area.

One species recorded within the survey area, *Conospermum undulatum*, is listed as Vulnerable under the EPBC Act and Threatened under the BC Act, and three individuals were recorded from three locations.

Four State-listed Priority species from natural populations were also recorded:

- *Johnsonia pubescens* subsp. *cygnorum* (Priority 2): 10 individuals recorded from two opportunistic locations and four quadrats within the survey area.
- *Isopogon autumnalis* (Priority 3): 128 individuals recorded from five opportunistic locations and two quadrats during the survey.
- *Hypolaena robusta* (Priority 4): one individual was recorded opportunistically.
- *Verticordia lindleyi* subsp. *lindleyi* (Priority 4): one individual was recorded opportunistically.

A total of 96 introduced species were recorded. These included several significant weed species, such as **Asparagus asparagoides* (Bridal Creeper), **Echium plantagineum* (Paterson's Curse), **Rubus ulmifolius* (Blackberry), **Solanum linnaeanum* (Apple of Sodom) and **Zantedeschia aethiopica* (Arum Lily).

1.3 Fauna

The survey confirmed three significant fauna species from the survey area, all from the Level 2 survey area:

- Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*) – Endangered under both the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the WA *Biodiversity Conservation Act 2016* (BC Act);
- Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable under both the EPBC Act and BC Act; and
- Quenda (*Isodon fusciventer*) – listed at State level as Priority 4.

A total of 1,641 potential black cockatoo breeding habitat trees were recorded, comprising Flooded Gum, Marri, Jarrah, dead stags and Tuart. A total of 19 habitat trees were recorded in the Reconnaissance (Level 1) survey area, none of which contained hollows suitable for breeding. The Detailed (Level 2) survey area contained 1,622 habitat trees, of which four contained hollows potentially suitable for black cockatoo breeding. One of these hollows displayed chew marks around the entrance; a possible sign of recent or current use.

The Level 1 survey area contains 9.1 ha of potential black cockatoo foraging habitat consisting entirely of scattered trees. No evidence of foraging was identified during the field survey.

The Level 2 survey area contains multiple habitats suitable for black cockatoo foraging, including Banksia woodland with scattered Eucalyptus/Marri, Eucalyptus/Marri in road reserve, Scattered Eucalyptus/Marri in cleared areas, and Fabaceous heathland, totalling 88.4 ha. Black cockatoo foraging was recorded from each of these habitat types.

The Level 2 survey area also contains a combined 50.7 ha of Flooded gum over grasslands, Planted Eucalyptus/Marri, and Wetlands/River habitat. These habitats may occasionally be used for foraging, however, no evidence was recorded in this survey.

No evidence of roosting was recorded in either the Level 1 or Level 2 survey areas.

2.0 Introduction

2.1 Project Purpose, Background and Location

Main Roads Western Australia (Main Roads) proposes to undertake various upgrades and road works within the Cities of Swan and Kalamunda, approximately 14 km east of Perth (Figure 2.1). These works include:

- Grade separation at the intersection of Roe Highway and Great Eastern Highway Bypass (GEHB) Interchange (GEHBI) – Roe Highway SLK 37.54;
- Upgrade of GEHB (between Roe Highway and Abernethy Road);
- Upgrade of Roe Highway (between GEHB and Clayton Street) including a duplication of the bridge over the Helena River;
- A Principal Shared Path (PSP) connection south to Kalamunda Road and 300 m north of Clayton Street;
- Stirling Crescent will be changed to terminate in a cul-de-sac;
- Construction of a bridge at Lloyd Street over the Helena River; and
- Upgrade of Abernethy Road (grade separated at GEHB – SLK 12.84).

The information supplied in this biological survey report may be used to inform the environmental assessment and approvals process for the above works, hereafter referred to as 'the project', including the preparation of a Clearing Impact Assessment (CIA) and Vegetation Management Plan (VMP), and may be used in State or Commonwealth referral documentation.

2.2 Scope and Objectives of this Study

Main Roads commissioned Biota Environmental Sciences (Biota) to undertake a biological assessment of the project area, which was divided into two survey areas, as per the consultant brief provided by Main Roads. These two areas were defined as the 'Reconnaissance (or Level 1) survey area' and the 'Detailed (or Level 2) survey area', within the overall 360.5 ha 'survey area'.

The survey area comprised corridors centred on Roe Highway, GEHB, Abernethy Road and Stirling Crescent (Figure 2.1). Vegetation mapping was extended over a 'contextual area' comprising a buffer of 500 m around the survey area. A desktop review was completed for a study area comprising a buffer of 5 km around the survey area. See Table 2.1 below for a breakdown of the components of the survey area and the type of survey effort applied.

Table 2.1 Breakdown of survey areas and survey effort completed within each area.

Area	Flora	Fauna
Level 1 Survey Area (169.9 ha)	<ul style="list-style-type: none"> • Reconnaissance flora survey. • Targeted significant flora searches. • Vegetation mapping. 	<ul style="list-style-type: none"> • Level 1 Fauna Survey. • Targeted Cockatoo assessment.
Level 2 Survey Area (190.6 ha)	<ul style="list-style-type: none"> • Detailed single-phase flora survey. • Targeted significant flora searches. • Vegetation mapping. • Threatened Ecological Community (TEC) assessment and TEC/Priority Ecological Community (PEC) mapping. • Selected resampling 	<ul style="list-style-type: none"> • Level 1 Fauna Survey. • Targeted Cockatoo assessment.
Contextual Area (1,586.9 ha)	<ul style="list-style-type: none"> • Extrapolated vegetation mapping. • Extrapolated TEC/PEC mapping. 	N/A
Study Area (5 km buffer)	<ul style="list-style-type: none"> • Desktop study. 	<ul style="list-style-type: none"> • Desktop study

The approach and methodology of the biological assessment was undertaken in accordance with all relevant legislation and Commonwealth and State policy, including the following:

- *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016a);
- *Environmental Factor Guideline: Flora and Vegetation* (EPA 2016b);
- *Approved Conservation Advice for the Banksia Woodlands of the Swan Coastal Plain ecological community* (DoEE 2016);
- *Technical Guidance – Terrestrial Fauna Surveys* (EPA 2016c);
- *Technical Guidance – Sampling Methods for Terrestrial Vertebrate Fauna* (EPA 2016d);
- *EPBC Act referral guidelines for three Threatened black cockatoo species: Carnaby's cockatoo (Endangered) Calyptorhynchus latirostris, Baudin's cockatoo (Vulnerable) Calyptorhynchus baudinii, Forest red-tailed black cockatoo (Vulnerable) Calyptorhynchus banksii naso* (DSEWPaC 2012a); and
- Main Roads Environment and Heritage Data Standards.

This report documents the methods, results and key findings of the biological surveys conducted in 2019 and 2020 in the survey area. The specific objectives of this study were as follows:

1. Undertake a desktop assessment, including database and literature searches, to consolidate all available existing data relevant to the study area.
2. Undertake a field survey to:
 - describe, photograph and map the dominant vegetation units in the survey area, with extrapolation of the vegetation mapping over a contextual area of 500 m to either side;
 - assess and map vegetation condition through the survey area and contextual area;
 - identify any vegetation units of significance in the survey area, including assessment of potential TECs against relevant Commonwealth conservation advice, and assessment of potential PECs against information published by the State Department of Biodiversity, Conservation and Attractions (DBCA);
 - compile a list of vascular flora species for the survey area;
 - record and photograph flora of significance, including Threatened and Priority species and any other species of interest;
 - record any significant introduced flora species (weeds) occurring in the survey area;
 - undertake selective, low intensity sampling for species of significance;
 - map fauna habitats for the survey area based on the vegetation mapping, with a focus on identifying any that are suitable for significant fauna; and
 - undertake selective, low intensity sampling for fauna species of significance.
3. Collate, present and discuss all data from the 2019 and 2020 surveys, with a particular focus on identifying communities or species of significance.
4. Supply all relevant data to Main Roads in current data standards, submit flora specimens as required to the WA Herbarium, and submit report forms for all Threatened and Priority flora and fauna and any TECs or PECs to the DBCA.

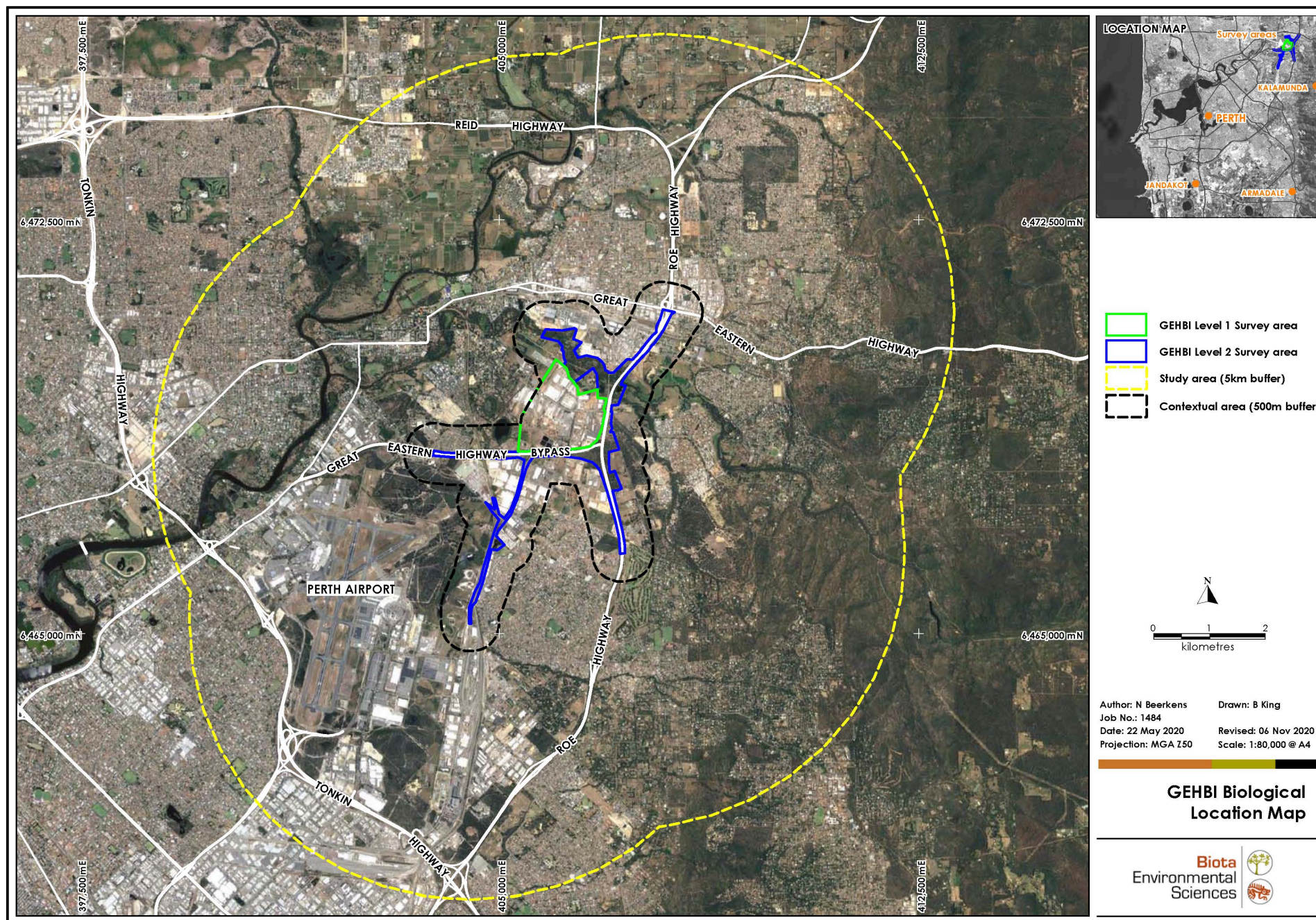


Figure 2.1: Location of the survey areas, study area and contextual area.

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3.0 Methodology

3.1 Definitions of Significant Communities and Species

3.1.1 Communities

In Western Australia, an ecological community that is presumed to be totally destroyed or at risk of becoming totally destroyed may be listed as a TEC by the Minister for the Environment under the BC Act. Communities may also be listed as TECs at the Commonwealth level under the Commonwealth EPBC Act.

Communities with insufficient information available to be considered a TEC, or which are rare but not currently threatened, are placed on the State Priority list and referred to as PECs. Further information regarding the framework for significance ranking of communities in WA is presented in Appendix 1.

3.1.2 Species

Native flora and fauna species that are rare, threatened with extinction, or have high conservation value, are specially protected by law under either or both of the WA BC Act and the Commonwealth EPBC Act. The WA DBCA also maintains a list of Priority species that are considered to be of significance, but which have not been assigned statutory protection under the BC Act.

Appendix 1 details the categories of significance recognised under the above frameworks and Table 3.1 outlines the codes used throughout this report for each category.

Table 3.1 Explanation of codes used to identify categories of significance for species.

Category	Listing		
	EPBC Act	BC Act	DBCA
Critically Endangered	CR	CR	-
Endangered	EN	EN	-
Vulnerable	VU	VU	-
Extinct	-	EX	-
Extinct in the Wild	-	EW	-
Conservation Dependent	CD	-	-
Near Threatened	NT	-	-
Migratory Species	MI	MI	-
Marine Species	M	-	-
Conservation Dependent Fauna	-	CD	-
Other Specially Protected Fauna	-	OS	-
Priority 1	-	-	P1
Priority 2	-	-	P2
Priority 3	-	-	P3
Priority 4	-	-	P4

3.1.3 Environmentally Sensitive Areas

Environmentally sensitive areas (ESAs) are declared by the WA Minister for the Environment under section 51B of the *Environmental Protection Act 1986* (EP Act). ESAs that could potentially be of relevance to the current study would comprise:

- A Bush Forever site;
- a defined wetland and the area within 50 metres of the wetland;
- the area covered by vegetation within 50 metres of Threatened flora; or
- the area covered by a TEC.

3.2 Desktop Review

A desktop review was undertaken to identify species and communities of significance that had already been recorded within the survey area or that were known from the study area (i.e. within 5 km of the survey area).

The review considered results of various database searches, previous biological surveys in the locality, and other relevant regional information, as discussed in the following sections.

3.2.1 Database Searches

The following databases were searched to assist in the determination of the biological features of significance that were potentially relevant to the survey area:

- NatureMap (<https://naturemap.dpaw.wa.gov.au>) is a joint project of the DBCA and the WA Museum (WAM). This database represents the most comprehensive source of information on the distribution of Western Australia's flora and fauna, comprising records from the WA Threatened and Priority Flora and Fauna Databases, the WA Herbarium Specimen Database and the Fauna Survey Returns Database (all managed by the DBCA), the WA Museum Specimen Database, and the BirdLife Australia Atlas of Australian Birds. NatureMap was searched primarily to identify records of significant fauna and flora known from the study area, using a 5 km buffer around a central coordinate for the study area (31°55'03"S, 116°00'52"E).
- The BirdLife Australia Birddata database (<http://www.birddata.birdlife.org.au>) was also searched separately for any additional records of Carnaby's Black-Cockatoos, as this data is uploaded to NatureMap intermittently.
- Specific searches of the DBCA Threatened and Priority Flora and Fauna Database were conducted using a buffer of 10 km around the survey area, and were supplied by Main Roads. Records within a 5 km radius were included in the desktop review.
- The DBCA's database of TECs, PECs and ESAs was also searched to identify significant communities known to occur in the study area.
- The Commonwealth Department of Agriculture, Water and the Environment's (DAWE) Protected Matters Search Tool was searched to identify significant communities and species listed under the PBC Act) that may occur in the locality. The EPBC Act Protected Matters database search used a 5 km buffer around a central coordinate for the survey area (31°55'03"S, 116°00'52"E).
- The DBCA's Nature Map database was searched for fauna records using a 5 km buffer around a central coordinate for the study area (31°55'03"S, 116°00'52"E).
- The Atlas of Living Australia (ALA) database was searched for fauna records using a 5 km buffer around a central coordinate for the study area (31°55'03"S, 116°00'52"E).
- Main Roads and Biota's internal databases of significant species from previous studies in the vicinity (within 5 km) were also searched.

Results from the various database searches are summarised in Appendix 2.

3.2.2 Literature Review

Published and unpublished reports relevant to the survey area were reviewed. These included:

- GEH Bypass Flora and Vegetation Survey (Strategen 2018a);
- Roe Highway Kalamunda Road Upgrade Flora, Vegetation and Fauna Survey (360 Environmental 2018);
- Banksia Woodlands of the Swan Coastal Plain: a nationally-protected ecological community (DoEE 2016);
- Black Cockatoo Habitat Assessment, Roe Highway (Strategen 2018b);
- Vegetation Mapping in the South West of Western Australia and Regional Forest Agreement vegetation complexes (Mattiske and Havel 1998);
- Vegetation complexes of the Darling System, WA, by Heddle et al. (1980);
- The extension of vegetation complex mapping to landform boundaries within the Swan Coastal Plain landform and forested region of south-west Western Australia (Webb et al. 2016) and
- John Beard's vegetation mapping (Beard 1981).

3.2.3 Likelihood Ranking for Significant Species

In order to determine which flora and fauna species of significance have the potential to occur in the survey area, consideration was given to:

- the results of the database and literature searches;
- the known habitat preferences against what is available within the survey area; and
- distributions and last known records for the species.

For each significant flora and fauna species, defined rankings and criteria were subsequently applied as per Table 3.2 (see Appendix 4b for fauna and Appendix 4a for flora). Throughout the remainder of this report, the term "close proximity" has been defined as being within 5 km of the survey area.

Two rankings were conducted:

- an initial assessment was made during the desktop review (Section 4.9; see Appendices 5a and 5b); and
- the assessment was revised based on the findings of the field surveys (see Appendix 4a for flora, and Section 4b for fauna).

Table 3.2 Ranking system used to assign the likelihood that flora and fauna of significance would occur in the survey area.

Rank	Criteria
Recorded	1. The species has been previously recorded in the survey area.
Likely to occur	1. There are existing records of the species within 5 km of the survey area; and <ul style="list-style-type: none"> • the species is strongly linked to a specific habitat, which is present in the survey area; or • the species has more general habitat preferences, and suitable habitat is present.
May occur	1. There are existing records of the species within 5 km of the survey area, however <ul style="list-style-type: none"> • the species is strongly linked to a specific habitat, of which only a small amount is present in the survey area; or • the species has more general habitat preferences, but only some suitable habitat is present. 2. There is suitable habitat in the survey area, but the species is recorded infrequently in the region.

Rank	Criteria
Unlikely to occur	<ol style="list-style-type: none"> 1. The species is linked to a specific habitat, which is absent in the survey area; or 2. Suitable habitat is present, however there are no existing records of the species from within 5 km of the survey area despite reasonable previous search effort in suitable habitat; or 3. There is some suitable habitat in the survey area, however the species is very infrequently recorded in the region.
Would not occur	<ol style="list-style-type: none"> 1. The species is strongly linked to a specific habitat, which is absent from the survey area; and/or 2. The species' range is very restricted and would not include the survey area.

3.2.4 Criteria to Determine the Presence of the Commonwealth Banksia Woodlands TEC

The Commonwealth 'Banksia Woodlands of the Swan Coastal Plain' TEC was listed in September 2016 as a TEC for the Swan Coastal Plain (SCP) under the EPBC Act, and is currently listed as Endangered. DoTEE (2016) provides guidance for determining whether a *Banksia* woodland protected under the EPBC Act is present, which was considered likely for the survey area and therefore required specific survey attention. These criteria are summarised in Table 3.3.

Areas of mapped vegetation within the survey area that were considered to potentially align with the 'Banksia Woodlands of the Swan Coastal Plain' TEC were assessed in the field against the key diagnostic characteristics and condition thresholds, as per the approved conservation advice (DoTEE 2016) and the Main Roads Technical Guidance Factsheet for this TEC (Main Roads 2019).

This assessment was only applied to patches occurring within the survey area; patches situated solely within the contextual area were not assessed using the key diagnostic characteristics and condition thresholds from the approved conservation advice.

A summary of these assessments is provided in Appendix 5, with relevant DBCA TEC/PEC Report Forms for all newly identified occurrences supplied to Main Roads separate to this report.

Table 3.3: Diagnostic characteristics and condition thresholds to determine the Commonwealth Banksia Woodlands TEC (DoTEE 2016).

Diagnostic Characteristics / Condition Thresholds	Criteria
Determination of Floristic Community Type:	<p>Location and physical environment:</p> <ul style="list-style-type: none"> • Occurs in the Swan Coastal Plain IBRA bioregion. <p>Soil and landform:</p> <ul style="list-style-type: none"> • Typically occurs on well-drained, low-nutrient soils on sandplain landforms, particularly deep Bassendean and Spearwood sands and occasionally on Quindalup sands. <p>Structure and composition:</p> <ul style="list-style-type: none"> • The TEC encompasses a number of recognised sub-communities or Floristic Community Types (FCTs). The community in question must be representative of the relevant FCT.
Vegetation condition [^] and minimum patch size threshold:	<ul style="list-style-type: none"> • 'Pristine' – no minimum • 'Excellent' – 0.5 ha or 5,000 m² • 'Very Good' – 1 ha or 10,000 m² • 'Good' – 2 ha or 20,000 m²
Surrounding context:	<p>Relevant criteria to consider:</p> <ul style="list-style-type: none"> • "A patch is a discrete and mostly continuous area of the ecological community. A patch may include small-scale (<30 m) variations, gaps and disturbances, such as tracks, that do not significantly alter the overall functionality of the ecological community. Such breaks are generally included in patch size calculation. The landscape position of the patch, including its position relative to surrounding vegetation also influences how important it is in the broader landscape."

3.3 Survey Timing and Weather

3.3.1 Survey Team

The flora field survey was conducted during multiple visits between October 8 and November 6 in 2019, from May 7 to 8 in 2020, and November 3 to 6 in 2020, by Rebecca Mason, Chloe Flaherty, Ayesha Lapinski and Jason Teuber (all of Biota), and consulting botanist Malcolm Trudgen (Principal Consulting Botanist of M.E. Trudgen and Associates). A total of 35 person-days were spent on the vegetation and flora field component of this study. The Level 1 survey area was surveyed for flora on October 8 2019, while the Level 2 survey area was visited on all days of the flora field survey.

The fauna field survey was conducted during six visits between October 30 and November 8 in 2019, as well as visits on November 23 in 2019, January 21 and May 6 in 2020, by Brandon King, Nathan Beerkens, and Joshua Keen (all of Biota). Fauna survey effort comprised 17 person-days. The Level 1 survey area was surveyed for fauna on October 31 and November 6 and 8 in 2019, while the Level 2 survey area was visited on all days of the fauna field survey.

A summary of the field personnel and their respective roles in the survey is provided in Table 3.4.

Table 3.4: Summary of personnel involved in the survey.

Name	Position	Qualification	Years of Experience	Survey Role
Rebecca Mason	Botanist	BSc (Environmental Restoration & Conservation Biology)	9	Flora project manager; Vegetation mapping; Quadrat sampling; TEC assessment; Rare flora searches
Chloe Flaherty	Senior Botanist	BSc (Natural Resource Management (Hons))	11	Flora quadrat sampling
Ayesha Lapinski	Botanist	GradDip of Science (Botany)	3	Flora quadrat sampling; Rare flora searches
Malcolm Trudgen	Principal Consulting Botanist	BSc (Botany)	40	Flora quadrat sampling; Rare flora searches;
Jason Teuber	Graduate Botanist	BSc (Botany & Agricultural Science)	2	Flora quadrat sampling
Dan Kamien	Principal Zoologist	BSc Hons (Zoology)	>20	Fauna project manager
Brandon King	Graduate Zoologist	BSc Hons. MEnvSc (GIS & Environmental Management)	5	Level 1 fauna and Targeted surveys
Nathan Beerkens	Zoologist	BSc Hons (Conservation & Wildlife Biology)	4	Level 1 fauna and Targeted surveys
Joshua Keen	Zoologist	BSc Hons (Zoology)	4	Level 1 fauna and Targeted surveys
Garth Humphreys	Principal Ecologist / Director	BSc (Botany/Zoology) Hons (Zoology)	30	Quality assurance and final reviews

3.3.2 Daily Weather Observations

Weather observations were taken from the Perth Airport weather station (number 009021), located 2 km south west of the study area. Minimum temperatures ranged from 6.5°C to 16.7°C, while maximum temperatures ranged from 16.7°C to 32.4°C (Table 3.5). Information on how this rainfall compares to the long-term average is provided in Section 3.3.3, with arrows to indicate the months when survey work was completed.

Table 3.5: Daily meteorological observations for the Perth Airport weather station #009021.

Date	Maximum Temperature (°C)	Minimum Temperature (°C)	Rainfall (mm)	Survey Type
08/10/19	31.0	13.1	0	Flora
09/10/19	29.9	10.0	0	Flora
10/10/19	24.1	11.6	0	Flora
11/10/19	21.2	11.1	0	Flora
29/10/19	27.8	13.9	0	Flora
30/10/19	23.4	12.1	0	Flora, Fauna
31/10/19	17.9	11.2	9.0	Fauna
01/11/19	19.5	11.0	0	Flora, Fauna
02/11/19	20.9	10.7	14.4	Fauna*
03/11/19	22.0	10.4	0	Fauna*
04/11/19	27.1	7.2	0	Flora, Fauna*
05/11/19	26.0	6.5	0	Flora, Fauna*
06/11/19	25.7	10.8	0	Flora, Fauna
07/11/19	28.1	14.3	0	Fauna
08/11/19	32.4	14.5	0	Fauna
23/11/19	31.9	14.6	0	Fauna
21/01/20	26.5	16.7	0	Fauna
06/05/20	16.7	11.3	12.6	Fauna
07/05/20	18.0	8.9	6.6	Flora
08/05/20	19.1	11.4	4.6	Flora
03/11/20	23.0	11.4	2.2	Flora
04/11/20	26.0	12.8	0	Flora
05/11/20	31.1	13.0	0	Flora, Fauna
06/11/20	29.2	15.8	0	Flora

* Active motion cameras only; no fauna field staff present.

3.3.3 Climate

The weather leading up to biological surveys is an important factor that influences both the number and type of species recorded from an area, particularly for flora. One of the more notable effects is the increased presence of annual flora species following high rainfall, in addition to a higher likelihood of plants bearing reproductive material (flowers and/or fruit). This typically results in a more complete list of species from the area, along with greater confidence in identifications.

The majority of the survey was undertaken in spring of 2019 and 2020, which is within the recommended season for botanical surveys in the Swan Coastal Plain bioregion (EPA 2016a). In addition, a small portion of the study area was sampled outside the recommended survey timing, in autumn 2020. Arrows displayed on Figure 3.1 indicate months where survey work was completed.

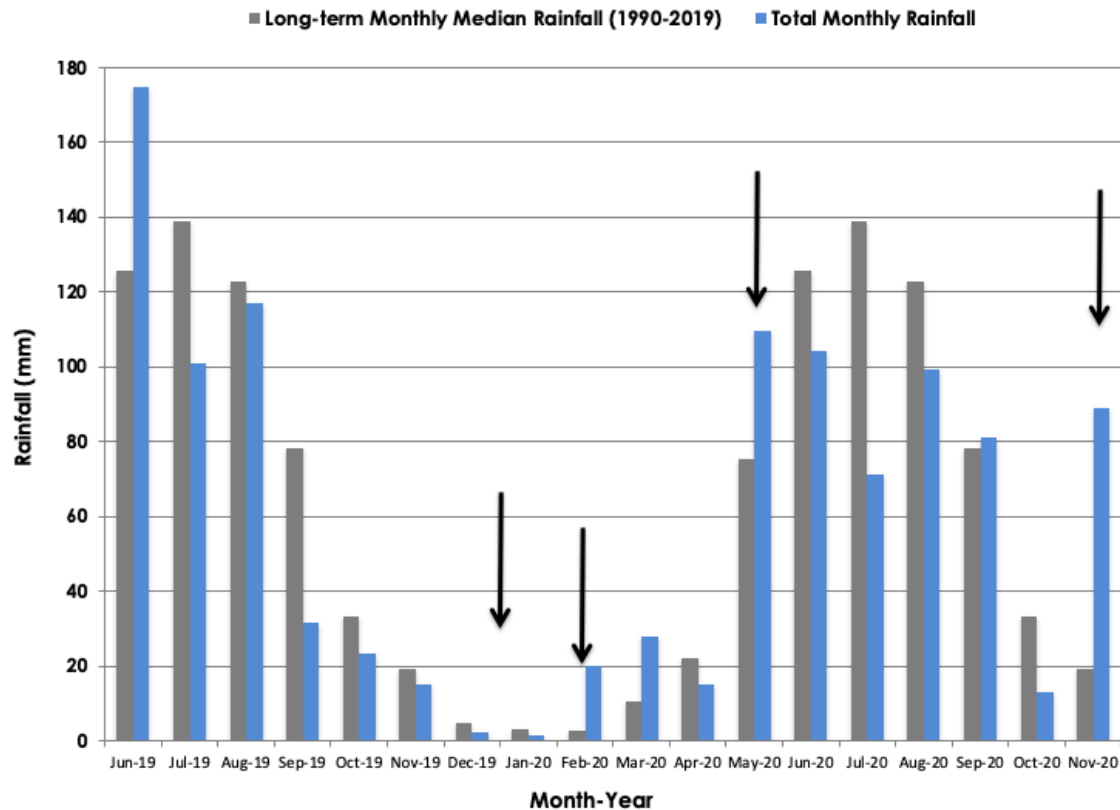


Figure 3.1: Total monthly rainfall for June 2019 to November 2020 from the Bureau of Meteorology Perth Airport weather station compared to the long-term climate-normal (1990-2019) median rainfall for the same months.

Total monthly rainfall data relevant to the study area were sourced from the Perth Airport weather station (Bureau of Meteorology station #9021), located approximately 2 km southwest of the survey area. Data for the 18 months preceding the final portion of the survey (completed in November 2020) were compared to the monthly median rainfall for the years 1990 – 2019 from the same station. A total of 250.0 mm of rainfall was received in the three months prior to the spring 2019 field survey (July – September 2019), which is approximately 30% less than the long-term median for the same period (339.7 mm; 1990 – 2019). The rainfall received over both months of the 2019 spring survey (October and November), 23.4 mm and 15.0 mm respectively, was also lower than the long-term medians for those months (33.1 mm and 19.1 mm). Whilst less rain was received overall compared to the long-term median, the 2019 spring survey timing was still considered adequate for the collection of ephemeral and cryptic perennial flora.

In the three months prior to the autumn 2020 survey, (representing a small portion of the total survey area), 61.4 mm of rainfall was received; almost double the long-term median rainfall for the same period (35.5 mm; 1990 – 2019). The autumn survey was concluded on May 8 2020, by which time 38.2 mm of rain had fallen. Whilst this portion of the survey was conducted outside recommended survey timing for botanical surveys in the Swan Coastal Plain bioregion (EPA 2016a), the autumn timing was still considered adequate, but not optimal, for the collection of annual and perennial flora.

In the three months prior to the spring 2020 survey, 193.6 mm of rainfall was received, which is approximately 20% less than the long-term median for the same period (234 mm; 1990 – 2019). The 2020 spring survey timing was considered optimal for the collection of ephemeral and cryptic perennial flora.

3.4 Vegetation and Flora Field Survey

3.4.1 Floristic Data Collection: Assessment of Quadrats and Relevés

Indicative sampling locations were selected prior to the field survey. The survey area boundary was overlain on aerial imagery supplied by Main Roads, and sampling sites were then selected based on the broad habitats and vegetation types apparent. Once in the field, the actual locations of the sampling sites were adjusted as necessary (e.g. to be placed in the best representative area of the broader vegetation unit).

Sampling sites were established as either:

1. **Quadrats:** bounded floristic sampling sites. The standard for the Swan Coastal Plain bioregion comprises a 10 m x 10 m quadrat. Quadrats were measured using optical squares and measuring tapes, and permanently marked using steel fence droppers at each corner of the quadrat; or
2. **Relevés:** unbounded floristic sampling sites with a similar search area to a quadrat. Relevés were used where the vegetation stand was too small or too narrow to effectively establish a quadrat. The relevés sampled during the current survey were thoroughly surveyed for flora, but were not permanently marked.

A total of 23 quadrats and 15 relevés were assessed during the initial 2019 and May 2020 survey, six of which were resampled in November 2020. An additional eight quadrats were installed in November 2020, totalling 31 quadrats for the complete survey. Quadrats were assigned the prefix 'GBQ', while the relevés were assigned the prefix 'GEHREL'; each prefix was then followed by consecutive numbers. Locations of sampling sites are provided in Figure 3.2 below and Appendix 9. Raw data from the current quadrats and relevés are summarised in Appendix 8.

The following parameters were recorded for each site:

1. digital location using MGA coordinates (GDA94, zone 50K) recorded with a handheld Unistrong tablet with differential GPS capability with accuracy <1.5 m; coordinates were recorded for all four corners of each quadrat, and at least the central point of a relevé;
2. photographs of each site;
3. habitat description;
4. broad description of soil type;
5. fire history (approximate time since last fire, where applicable);
6. all species present and their estimated height and per cent foliar cover;
7. vegetation description based on the height and estimated percent foliar cover of dominant species using the vegetation structural scheme developed by Keighery (Keighery 1994) see Appendix 6); and
8. vegetation condition ranking according to EPA (2016a) (see Appendix 6).

Raw site data are provided in Appendix 8, along with coordinates of each corner point, and colour photographs of the overstorey and understorey.

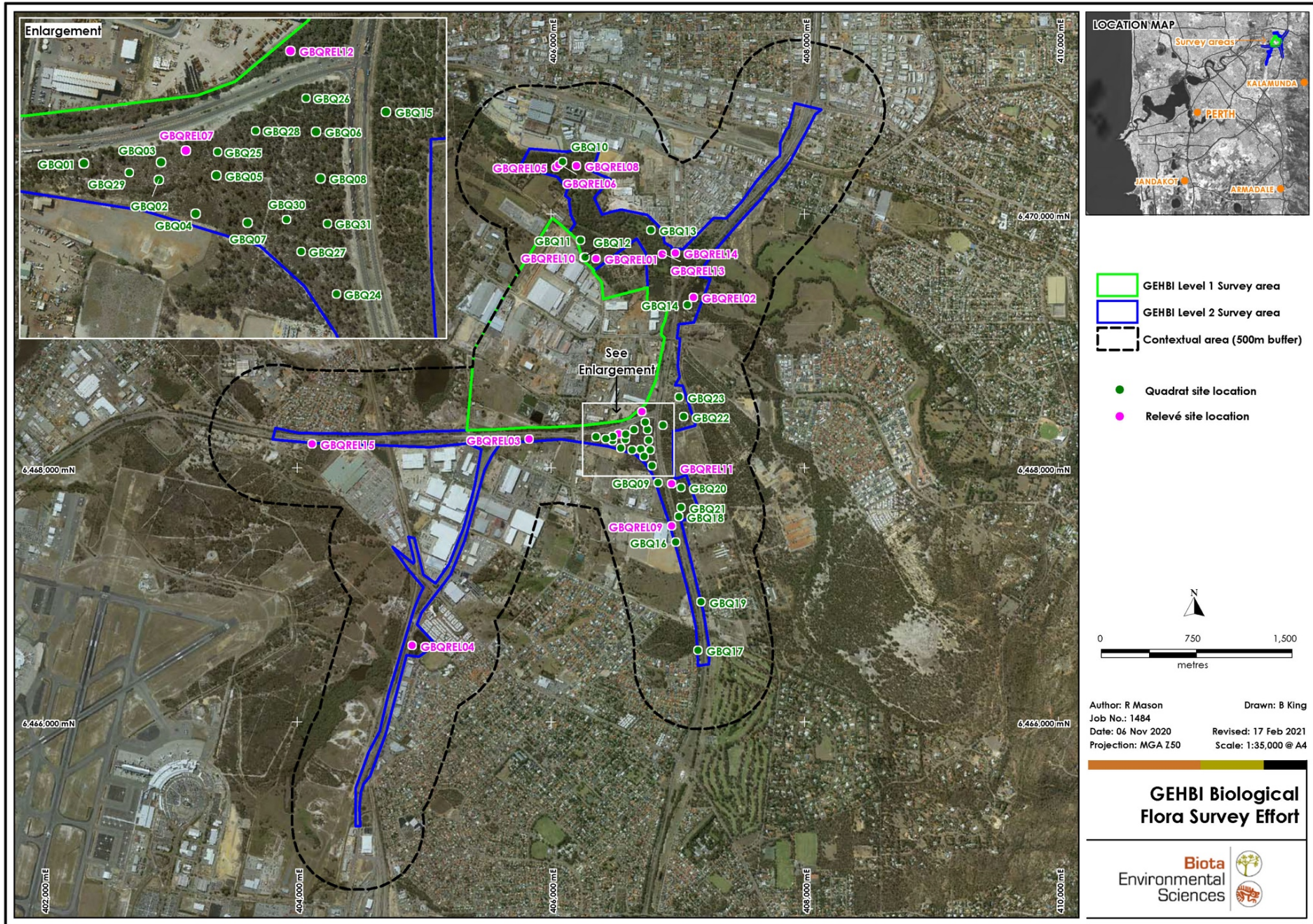


Figure 3.2 Flora survey sampling effort.

3.4.2 Vegetation Type Description and Mapping

Vegetation types in the study area were described at the sub-association level (Level VI as per the National Vegetation Information System¹). The sub-association level includes information about the dominant growth form, height and cover for up to five species in all layers/sub-strata observed.

Field data and aerial imagery supplied by Main Roads were reviewed to determine boundaries of vegetation types, which were then described at the sub-association level (Level VI) as per the NVIS, and mapped to an appropriate scale (generally 1:10,000; with finer-scale mapping at 1:5,000 for TECs/PECs). The occurrence of the vegetation types was extrapolated outside the survey area to mapping within the contextual area.

Vegetation types were mapped by Rebecca Mason using Geographical Information System (GIS) software (QGIS v3.10). The final maps in Appendix 9 were produced by Melissa Robinson (Senior GIS Cartographer) of Biota, using MapInfo Professional GIS v12.

Full descriptions of each vegetation type are presented in Section 5.1. Once the vegetation types were defined, they were compared against the published descriptions of TECs and PECs to determine whether any of the vegetation in the survey area potentially corresponded to listed community types (see Section 5.3.1).

3.4.3 Vegetation Condition Mapping

In addition to spatially mapping the extent of vegetation throughout the study area, an assessment of the condition of the vegetation was also carried out (Appendix 11). Vegetation condition is determined in relation to the (perceived) ability of the vegetation to maintain itself (Keighery 1994). This is commonly interpreted from the visible amount of introduced species compared to native species. However, numerous other factors are also considered in the assessment of condition, including disturbance (e.g. grazing, erosion), degree of alteration to community and habitat structure, and overall site ecology.

The categories of vegetation condition used were consistent with the descriptive and qualitative method developed by Keighery (1994) (see Appendix 6).

3.4.4 Searches for Significant Flora and Weeds

The desktop review identified a subset of significant flora (i.e. Threatened and Priority listed species) from the locality that had either been previously recorded from the survey area, or were considered to have some potential to occur (see Appendix 4a). Targeted systematic searches for these species were then conducted on foot through the entire survey area.

Locations of species of significance or unknown taxa were recorded using a Unistrong tablet with accuracy equivalent to a differential GPS (<1.5 m). The number of individuals and extent of the population were also recorded for each location. DBCA Threatened and Priority Flora Report Forms were completed for all new populations of significant species recorded from the survey area (Appendix 10), and submitted to the DBCA.

Locations of any declared pests (weeds listed under the WA *Biosecurity and Agriculture Management Act 2007*; the BAM Act) or Weeds of National Significance (WoNS) were also recorded during the foot traverses, along with an estimate of their population size. Opportunistic records were also made of other introduced flora species, however no attempt was made to document all such species through the entire survey area.

¹ See the NVIS Information Hierarchy: <http://www.environment.gov.au/land/publications/australian-vegetation-attribute-manual-v6/>

3.4.5 Flora Specimen Identification, Nomenclature and Data Management

Flora species were identified either in the field, or in the office following the field survey. If a species was common and well known to the survey botanists, the identification was confirmed and noted in the field. If the species was difficult to determine without microscopic examination, belonged to a recognised species complex, or was poorly collected or otherwise unusual, a voucher specimen was collected. Specimens were pressed in the field, and then dried for further study and confirmation.

Voucher specimens were identified using flora keys, reference to appropriate publications, use of voucher reference collections and comparisons to the collections held at the WA Herbarium. Biota botanists Ayesha Lapinski and Rebecca Mason identified most specimens, with specimens confirmed by Principal Botanist Michi Maier.

Assistance was also sought from specialist taxonomist Mr Malcolm Trudgen (Principal of M.E. Trudgen & Associates), who was consulted to resolve for a range of more complex plant identifications during the study. A subset of specimens was also submitted to the WA Herbarium for paid identifications, which were completed by Mike Hislop.

All data were entered into a Microsoft Access Vegetation Database structure held internally at Biota. The database structure employed by Biota was developed by Ted Griffin (private consultant) at the request of Malcolm Trudgen (M.E. Trudgen and Associates). Nomenclature and significance rankings used in this report are in accordance with the current listing of WA flora recognised by the WA Herbarium, as listed on FloraBase² at the time of reporting.

A full list of vascular flora species recorded from the study area is presented in Appendix 7.

3.4.6 Analysis of Sampling Adequacy

Plots of species accumulation curves can be used to help assess sampling adequacy. When a survey has sampled an adequate proportion of the floristic assemblage, the curve should plateau and approach asymptote. PRIMER v6 (Clarke and Gorley 2006) was used to calculate smoothed species accumulation curves based on 999 random permutations of the species data. To avoid bias and chance effects, only quadrat data were used and opportunistic records were excluded.

Species accumulation curves alone cannot be reliably used to extrapolate predicted species richness for future biological sampling. In order to estimate predicted total richness for the survey area, the Chao 2 Mean and ICE Mean estimators were calculated using EstimateS (Colwell 2013).

3.4.7 Floristic Analysis to Identify TECs/PECs

Floristic analysis was conducted using PATN v4 to compare all the quadrats from the study area to the same Swan Coastal Plain vegetation data set and the same analysis software utilised by Gibson et al. (1994). The analysis was used to assign an FCT (as defined by Gibson et al. 1994) to each of the vegetation types within the study area, and to assist with determining the presence of significant vegetation, including TECs and PECs.

In keeping with the original floristic analysis completed by Gibson et al. (1994), the following protocols were used for the analysis and applied to the quadrat data set recorded during the current survey:

- Presence/absence data were used.
- All weeds were included.
- Some taxa were combined for the analysis. These were typically those that were considered difficult to accurately differentiate without sufficient flowering material (e.g. the taxa listed in

² <http://florabase.dpaw.wa.gov.au>

Appendix 3 of Gibson et al. 1994), or those that were represented by at species level rather than sub-species level.

- Records of taxa that were only identified to genus level (e.g. *Caladenia* sp.) were excluded, as these could refer to multiple taxa.

A test analysis was run using the Gibson data set, with the clustering analysis technique kept consistent with that used by Gibson et al. (1994):

- Sites were classified into 30 groups using the Bray Curtis (Czekanowski) association measure, followed by an agglomerative hierarchical fusion classification using "flexible unweighted pair-group mean average" (flexible UPGMA). The beta value was set at -0.1.
- Species were classified into 35 groups using the TWOSTEP association measure, followed by flexible UPGMA. The beta value was again set at -0.1.

Once the basic technique had been validated, the data from the quadrats and relevés suspected of being TEC/PEC were combined with the Gibson et al. (1994) data set. It is widely recognised that adding multiple new samples (in this case, quadrats) to a data set can result in considerable reassignment of samples to different groups than those produced through the original hierarchical clustering process. To minimise disruption to the existing floristic groups identified by Gibson et al. (1994), each quadrat was added individually to the data set, and clustering was checked against the original. This process was referred to as Single Site Insertion by Trudgen and Trudgen (2010); we have modified this to Single Sample Insertion (SSI), due to the use of the "single-site insertion" term in the genetics field.

A further analysis, Nearest Neighbour (NNB), was completed in PATN to determine the 20 original Gibson et al. (1994) sites that were most similar to the new quadrats. The NNB analysis determines the most similar sites on the basis of species composition, and forms linkages without imposing clustering. This technique often reveals relationships that may be lost when a clustering technique is used.

Summary outputs from all analyses are provided in Appendix 12. Due to the size of the data set, the input matrix has not been reproduced in this report, however it can be provided on request.

3.4.8 Floristic Analysis to Validate Vegetation Types

To investigate the similarity of quadrats based on their floristic composition, hierarchical clustering analyses were conducted using PRIMER v6 (Clarke and Gorley 2006).

To investigate whether there was floristic support for the vegetation types identified through the field survey, the percent cover data for all 31 quadrats and 15 relevés sampled within the survey area in 2019/2020 were included in the analysis. For this data set:

- Taxa that were only identified to genus level were excluded, as these could refer to multiple taxa.
- Taxa were referred to a single entity where considered appropriate (e.g. *Adenanthos cygnorum* with no subspecies determined was merged with *Adenanthos cygnorum* subsp. *cygnorum*; as were records of *Hibbertia hypericoides* subsp. *hypericoides* and *Hibbertia hypericoides* subsp. *septentrionalis* with *Hibbertia hypericoides*).
- All singleton taxa (those occurring in only one site) were excluded, to reduce 'noise' in the data set.

The analysis was run using percentage cover data. The Bray-Curtis measure of similarity was used to produce a similarity matrix and the group average method cluster analysis was used to determine floristic groups. Statistically different groups were identified through similarity profile analysis (SIMPROF). The similarity percentage test (SIMPER) was used to determine which species contributed most to the similarities between groups. Results were investigated through outputs including a dendrogram of site similarity, and Non-metric Multi-Dimensional Scaling plot (NMDS plots).

3.4.8.1 Comments Regarding the Floristic Analysis

The standard quadrat size for surveys in the Swan Coastal Plain bioregion is 10 m by 10 m, which is the smallest quadrat size in use in WA (20 m² to 50 m² quadrats are used in other regions). The 10 m by 10 m quadrats may not always sample all species characteristic of a community type, particularly if these only occur as scattered individuals through the vegetation. Individual quadrats in a particular vegetation type may therefore lack some key diagnostic species that would normally strongly influence site groupings.

Additionally, the small size of the remnant vegetation and reduced vegetation condition of various areas would have reduced the native species recorded in quadrats during the current survey and increased the number of weed species. These factors are considered to have reduced the strength of the resulting analyses (see Section 5.3 for further discussion).

3.5 Fauna Field Survey

3.5.1 Level 1 Fauna Survey

A Level 1 survey (Desktop study and Reconnaissance survey³) was conducted for the entire survey area (both the Level 1 and Level 2 survey areas), in accordance with EPA Technical Guidance (EPA 2016c) (see Section 3.2). The Reconnaissance survey involved recording all terrestrial fauna observed, as well as assessing the likelihood of occurrence of significant species identified during the desktop study. Most recording was opportunistic, with individual animals, scats, remains, and diggings recorded during targeted searches for black-cockatoos and fauna habitat ground-truthing.

3.5.2 Motion Cameras

Within the Level 2 survey area only, infrared motion cameras ('Reconyx® Hyperfire 2' model) were deployed at four locations considered most likely to record any significant fauna that may occur (Table 3.6). Cameras were baited with universal bait (peanut butter and oats). Site MC03 was decommissioned after one night due to a flooding risk.

Table 3.6 Motion camera site locations and effort within the Level 2 survey area.

Site Name	Latitude	Longitude	Date Opened	Date Closed	Effort (Nights)
MC01	31.917701	116.012845	30/10/2019	08/11/2019	9
MC02	31.904243	116.009358	30/10/2019	08/11/2019	9
MC03	31.897855	116.004225	30/10/2019	31/10/2019	1
MC04	31.904797	116.016858	03/11/2019	08/11/2019	5

3.5.3 Targeted Black Cockatoo Survey

3.5.3.1 Breeding Habitat Assessment

The study area lies within the known breeding distribution of Carnaby's Black-Cockatoo and Forest Red-tailed Black Cockatoo (Johnstone and Storr 1998), and the field assessment aimed to determine whether suitable breeding habitat for either of those species was present. It was considered that Baudin's Black Cockatoo would not breed within the survey area, as their most northern known breeding grounds are over 200 km south, at Lowden (Johnstone and Storr 1998).

The Commonwealth (DSEWPaC 2012a) defines breeding habitat as those species of trees known to support breeding within the range of the species, which either have a suitable nest hollow or

³ Note that while the EPA Technical Guidance terminology for survey type was updated in 2020, the work reported here was undertaken while the EPA (2016c) guidance was still current policy and the framework of that document has therefore been retained here.

are of a suitable DBH to develop a nest hollow (being greater than 50 cm DBH for most Eucalypts, or 30 cm in the case of Wandoo and Salmon Gum).

The aim was to assess, as far as practicable, all potential breeding trees within the survey area. This was achieved throughout the survey area by zoologists walking transects with the aid of predetermined spatial layers on a GPS. Several trees in the Level 1 survey area were inaccessible by foot and were assessed from a distance using binoculars.

All individual trees of species with the potential to form hollows (primarily Flooded Gum, Marri, Jarrah and Tuart) and with sufficient diameter to be considered breeding habitat trees (i.e. DBH >50 cm) were recorded using a GPS accurate to within 1.5 m. The following parameters were recorded:

1. DBH (diameter at breast height; approximately 1.3 m above the ground);
2. tree species;
3. height above the ground of each hollow; and
4. the estimated size of entry of the hollow.

Hollows that met the "Suitable" or "Suitable with Evidence of Use" assessment criteria described in Table 3.7 were considered a potential breeding hollow warranting further investigation using a camera mounted on an extendable pole, as described in Section 3.5.3.2.

Table 3.7: Categories of hollow suitability for black cockatoo nesting.

Category	Characteristics
Not Suitable	Not a hollow, or hollow not suitable for black cockatoo nesting.
Suitable	<ul style="list-style-type: none"> • Entrance greater than 10 cm. • Branch width and depth large enough to support a nesting chamber. • Angle of entrance/egress suitable for black cockatoo. • Entrance is clear of large branches would block access for black cockatoo.
Suitable with Evidence of Use	<p>As for "Suitable" above, but also showing evidence of use that may be from black cockatoos. The following represent the types of use that were searched for:</p> <ul style="list-style-type: none"> • Fresh chews around the rim and inside of the hollow. • Freshly cleared vegetation around the entrance. • Eggs that were similar in appearance to those of black cockatoos.

3.5.3.2 Breeding Hollow Assessment

For observed hollows greater than approximately 10 cm diameter, a follow-up examination was conducted using a video camera mounted on an extendable pole. This allowed for more accurate assessment of hollow suitability and evidence of black cockatoo use.

Prior to filming, the side of the tree was raked with a branch to encourage black cockatoos to emerge, if present. This provides an indication of hollow use and reduced the risk of cockatoo disturbance from the camera. Camera footage was live streamed onto a Unistrong tablet to ensure that usable footage was obtained.

Photographs of each hollow were also taken as a visual reference and to aid future identification of each specific tree. These were also assessed in detail to determine if they represented suitable hollows and/or if they showed any signs of current or previous use by black cockatoos (e.g. chew marks around hollow entrance).

Breeding suitability of hollows examined were assessed against the criteria detailed in Table 3.7.

3.5.3.3 Foraging Habitat Assessment

The study area lies within the known foraging distribution of all of Western Australia's three species of black cockatoo (Johnstone and Storr 1998), and the field assessment aimed to determine whether suitable foraging habitat for any of those species was present. Foraging habitat is defined as areas including plants of species known to support foraging within the range of each cockatoo species. Marri and Jarrah woodlands are particularly important to Baudin's Black-Cockatoo and the Forest Red-tailed Black-Cockatoo, while proteaceous heaths (i.e. shrublands dominated by *Banksia*, *Hakea*

and *Grevillea* species) are also important to Carnaby's Black-Cockatoo (DSEWPaC 2012a), as are introduced pines, particularly on the Swan Coastal Plain (Johnstone and Kirkby 2011).

In defining the quality of black cockatoo foraging habitat, the criteria detailed in both the current referral guideline (DSEWPaC 2012a) and the draft revised referral guideline (DotEE 2017a) were incorporated. These include foraging plant composition and density, the provision of continuity to wider areas of foraging habitat, foraging evidence, proximity to known roosting areas and proximity to known breeding areas.

3.5.3.4 Roosting Habitat Assessment

Roosting habitat is defined as areas within the range of each black cockatoo species which provide black cockatoos with shelter during the heat of the day and safe resting places at night (DotEE 2017a). Black cockatoos favour roost sites within close access to both water and foraging habitat (DSEWPaC 2012a, EPA 2019). Black cockatoos use a variety of vegetation species as roost sites, particularly tall species of *Eucalyptus* and Marri (DSEWPaC 2012a, EPA 2019). Evidence of black cockatoo roosting was searched for opportunistically, and previously-known roost sites were identified from DBCA and Birddata database searches.

3.5.4 Targeted Carter's Mussel Survey

A targeted survey was conducted to determine the presence of the Vulnerable Carters' Freshwater Mussel (*Westralunio carteri*) and to assess the suitability of riverine habitat for this species.

The section of the Helena River intersecting the survey area was traversed by a zoologist on 5 November 2020. The following methodologies were utilised in attempt to search for mussels or evidence of their occurrence:

- visual searches for live mussels, dead shells or mussel tracks in the sediment;
- raking sediment with a triangle dip net at 9 locations for ten minutes at each location along the river (Table 3.8); and
- habitat descriptions and photographs at 12 locations.

Table 3.8 Sampling and habitat description locations within the survey area.

Site Name	Method	Latitude	Longitude	Date
GEH01SRE	Visual, dip net and habitat	-31.9051	116.0157	05/11/2020
GEH02SRE	Visual, dip net and habitat	-31.9049	116.0152	05/11/2020
GEH03SRE	Visual, dip net and habitat	-31.9043	116.0140	05/11/2020
GEH04SRE	Visual, dip net and habitat	-31.9035	116.0134	05/11/2020
GEH05SRE	Visual and habitat*	-31.9026	116.0109	05/11/2020
GEH06SRE	Visual, dip net and habitat	-31.9010	116.0091	05/11/2020
GEH07SRE	Visual and habitat*	-31.9006	116.0082	05/11/2020
GEH08SRE	Visual, dip net and habitat	-31.8997	116.0070	05/11/2020
GEH09SRE	Visual and habitat*	-31.8985	116.0060	05/11/2020
GEH10SRE	Visual, dip net and habitat	-31.9055	116.0165	05/11/2020
GEH11SRE	Visual, dip net and habitat	-31.9057	116.0182	05/11/2020
GEH12SRE	Visual, dip net and habitat	-31.9059	116.0186	05/11/2020

*Indicates sites that could not be sampled using a dip net due to abundance of weeds.

Habitat descriptions were also conducted at two nearby reference locations where Carter's Freshwater Mussel has been recently recorded (Table 3.9). This was done to compare habitat of the survey area with habitat known to contain Carter's Freshwater Mussel populations.

Table 3.9: Reference sites visited to assess habitat at known Carter's Freshwater Mussel records.

Site Name	Location	Distance from Study Area (km)	Latitude	Longitude	Date
GEH13SRE	Helena River-downstream	~2.5 km west of survey area	-31.9033	115.9775	05/11/2020
GEH14SRE	Bennett Brook	~5 km northwest of survey area	-31.8732	115.9576	05/11/2020

3.5.5 Fauna Habitat Mapping

Fauna habitat mapping was primarily based on vegetation units, with consideration of substrate, landform and the ecological niches relevant to significant fauna. Habitat types were assessed in the field using a combination of foot traverses and vehicle traverses along existing roads, complemented by quadrat data, vegetation mapping and aerial imagery.

3.5.6 Nomenclature

Consistent with the EPA Technical Guidance (EPA 2016e), species nomenclature for herpetofauna and mammals follows the standards of the WA Museum fauna taxonomic checklist, which is revised and released every six months or as necessary. Nomenclature for avifauna used here follows Christidis and Boles (2008).

3.6 Limitations of the Study

The results of the field surveys provide an adequate representation of the flora, vegetation and fauna values of the survey area. However, there are limitations to this study that must be considered when reviewing and applying the results detailed in this report. As per the EPA's Technical Guidance for flora and fauna surveys for EIA (EPA 2016a, 2016e), potential constraints and consequent limitations of this survey assessment are summarised in Table 3.10.

Table 3.10: Potential constraints and limitations of the current surveys.

Potential Constraint	Statement of Limitations
1. Availability of contextual information at a regional and local scale	<ul style="list-style-type: none"> • Previous biological surveys have been completed within the locality of the survey area and several unpublished reports, as well as regional data sets, were considered as part of the desktop review. Publicly available databases of rare species and communities information were also searched. The current survey added new data specific to the study area. • Contextual information is therefore not considered to be a limiting factor for this study.
2. Competency/ experience of the team carrying out the survey, including experience in the bioregion surveyed	<ul style="list-style-type: none"> • The field personnel were suitably qualified to identify flora and fauna, and all team members were considered experienced in conducting biological surveys. • There were therefore no limitations due to experience of personnel.
3. Proportion of flora recorded and/or collected, any identification issues	<ul style="list-style-type: none"> • All vascular flora encountered in the current study area were recorded, comprising 287 native taxa from 142 genera and 53 families, and 96 weed species. The majority (95%) the flora specimens collected during the current field survey were of sufficient quality to be fully determined to the lowest relevant taxonomic level. Fungi and non-vascular flora (algae, mosses and liverworts) were not systematically surveyed, which is consistent with the accepted level of effort for a survey of this type and scale. • The proportion of flora recorded was not considered to be a limitation.

Potential Constraint	Statement of Limitations
4. Appropriate area fully surveyed (effort and extent)	<ul style="list-style-type: none"> • The scope of works required a detailed survey for vegetation and flora, together with a targeted survey for significant flora (terms as described in EPA 2016a). A total of 35 person days were spent surveying the flora and vegetation of the survey area. The entire survey area was searched on foot for rare flora. Vegetation mapping was prepared for the survey area and extended over a 500 m corridor to either side. A total of 31 quadrats and 15 relevés were completed in the survey area. Of the 13 vegetation types identified, five did not have replicate sites due to the overall size of the units within the survey area. • The survey area is considered to have been fully surveyed.
5. Access restrictions within the survey area	<ul style="list-style-type: none"> • Access to the survey area was provided incrementally due to delays in accessing certain private properties. These restrictions meant that the surveys were conducted over multiple events in different seasons, rather than consecutive field days. • Access restrictions meant that one potential black cockatoo breeding hollow was examined outside of the recommended window, in May 2020 (the hollow was found to be unsuitable). • Access restrictions within the survey area were considered to be a limitation that impacted on survey timing, however all areas were ultimately accessed.
6. Survey timing, rainfall, season of survey	<ul style="list-style-type: none"> • The majority of the flora and vegetation survey was completed between early October and early November 2019, and November 2020 for the additional survey. This was considered adequate for the recording of annual and cryptic perennial species (see Section 3.3.3). A small sub-section of the survey was completed in May 2020, outside the recommended timing for a Swan Coastal Plain survey (described in EPA 2016a). • Overall, timing of the flora and vegetation survey was not considered a significant limitation for the assessment of the survey area values.
7. Disturbance that may have affected the results of survey such as fire, flood or clearing	<ul style="list-style-type: none"> • Areas of historical clearing and parkland plantings were present in the study area, which influenced the presence of introduced flora in the area. However, introduced flora is common within remnant vegetation on the Swan Coastal Plain and regional data sets (e.g. Gibson et al. 1994) account for this. • Disturbance is not considered to be a limitation to the study.

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4.0 Desktop Assessment

4.1 IBRA Bioregion and Subregion

The survey area lies within the Swan Coastal Plain 2 (SWA02) subregion of the Swan Coastal Plain (SWA) bioregion, as defined by the Interim Biogeographic Regionalisation for Australia (IBRA) (DSEWPac 2012b). The SWA02 subregion is described by Mitchell et al. (2003) as:

“Low lying coastal plain, mainly covered with woodlands. It is dominated by Banksia or Tuart on sandy soils, *Allocasuarina obesa* on outwash plains, and paperbark in swampy areas. In the east, the plain rises to duricrusted Mesozoic sediments dominated by Jarrah woodland. Warm Mediterranean. Three phases of marine sand dune development provide relief. The outwash plains, once dominated by *A. obesa*-marrri woodlands and *Melaleuca* shrublands, are extensive only in the south.”

4.2 Conservation Reserves in the Locality

Within the study area, 11 parcels of land are vested for the purposes of the Conservation of Flora and Fauna (Figure 4.1) comprising:

- Greenmount National Park;
- Gooseberry Hill National Park;
- Kalamunda National Park;
- Beelu National Park;
- Talbot Road Nature Reserve (Class-A);
- R 49079 Hawkesvale Bushland Nature Reserve (Class-A);
- R 48325 Swan River Reserve;
- Four un-named, non-gazetted Nature Reserves; and
- John Forest National Park.

None of these reserves occur within the survey area itself, however Hawkesvale Bushland Nature Reserve abuts the southern section of the survey area. In addition, 24 ha of Crown Freehold land was identified within the study area, with no legal purpose specified.

4.3 Geomorphic Wetlands

Geomorphic Wetland data sets are managed by DBCA to assist in the protection of wetlands in the southwest of Western Australia. Wetlands on the Swan Coastal Plain are evaluated and assigned managed categories to provide guidance on use and protection, with the categories comprising: Conservation, Resource Enhancement and Multiple use (DBCA 2017). Geomorphic wetlands intersected by the contextual area and survey area are outlined in Table 4.1 and shown on Figure 4.2. The ‘multiple use’ management category was most common within the survey and contextual areas.

Table 4.1 Geomorphic Wetlands as described by DBCA 2017.

Management Category	Contextual Area (ha)/%	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)/%
Conservation	77.4 (4.9%)	-	41.3	41.3 (11.5%)
Resource Enhancement	96.5 (6.1%)	2.1	3.9	6.0 (1.7%)
Multiple Use	434.6 (27.4%)	80.6	37.5	118.2 (32.8%)

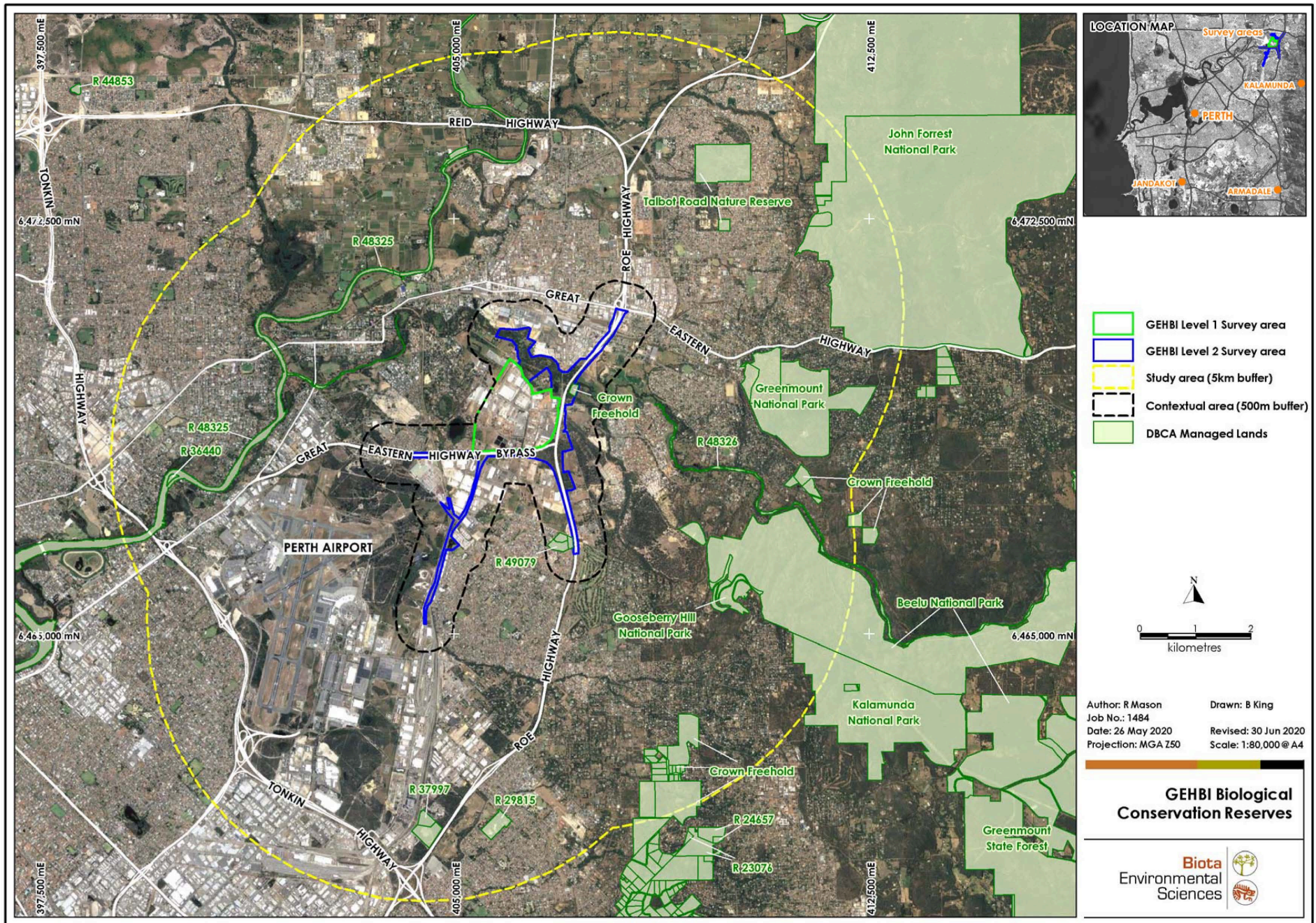


Figure 4.1: Conservation estate in the locality.

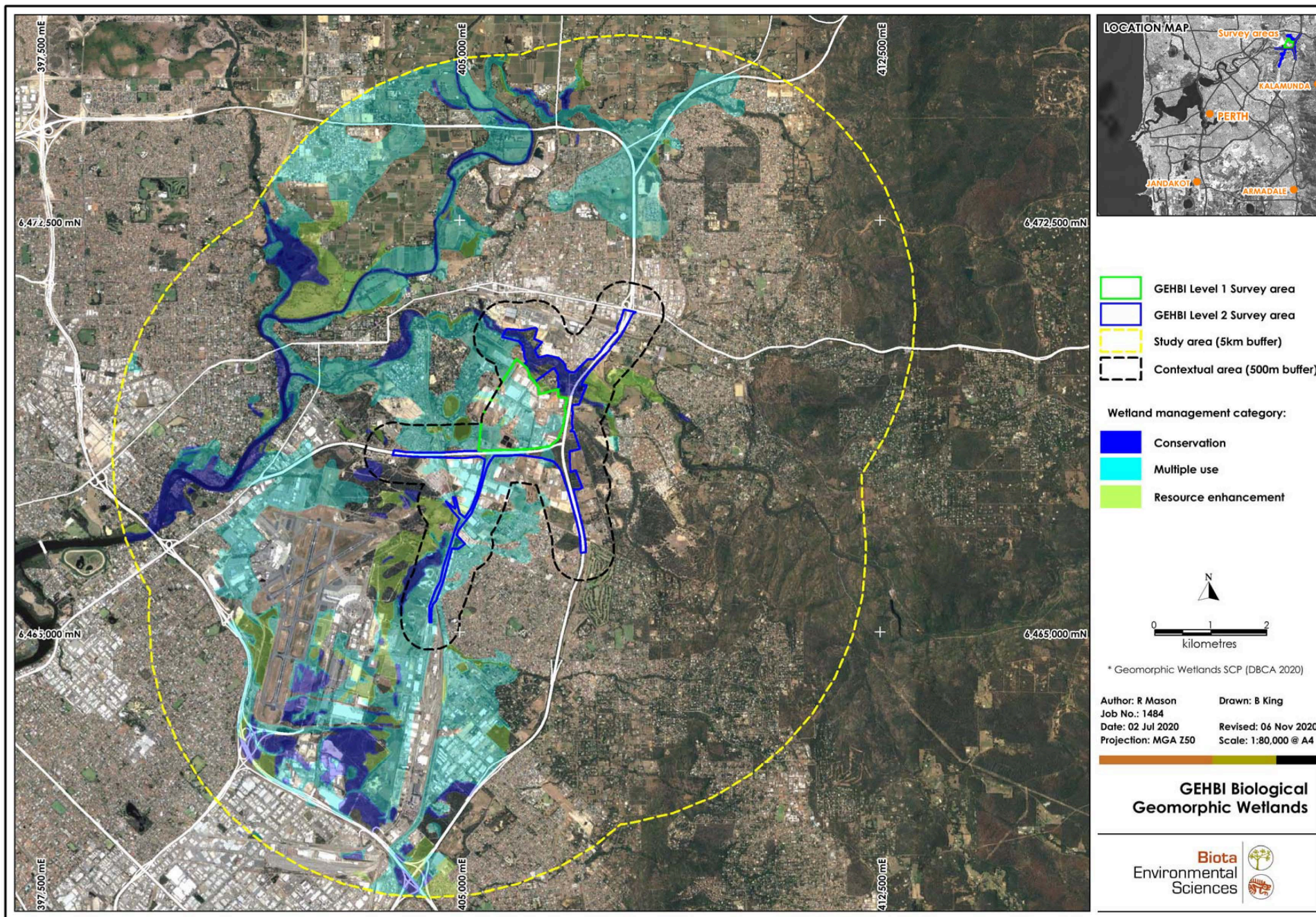


Figure 4.2: Geomorphic wetlands in the locality.

4.4 Surface Geology

Geological units for the locality were mapped at 1:50,000 scale on the Perth (20342) map sheet by Geological Survey of Western Australia (2001) as part of the Geological Survey of WA series. Geological units intersected by the contextual area and survey area are outlined in Table 4.2 and shown on Figure 4.3. Sand (S10) is the most common geological unit within the survey area (62.3% in total); S10 also comprises 43.7% of the contextual area.

Table 4.2: Surface geology units as described and mapped by Geological Survey of Western Australia (2001).

Unit	Description	Contextual Area (ha)/%	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)/%
Cm2	Clay - dark strong brown, hard when dry, soft when moist, variable silt content, no sand, of alluvial origin.	99.0 (6.2%)	0.2	49.7	49.9 (13.8%)
Cps	Peaty clay - dark grey and black with variable sand content of lacustrine origin.	48.6 (3.1%)	7.7	-	7.8 (2.2%)
Mgs1	Pebbly silt - strong brown silt with common, fine to occasionally coarse-grained, sub-rounded laterite quartz, heavily weathered granite pebble, some fine to medium-grained quartz sand, of alluvial origin.	416.0 (26.2%)	7.4	36.0	43.4 (12.0%)
S8	Sand - very light grey at surface, yellow at depth, fine to medium-grained, sub-rounded quartz, moderately well sorted of eolian origin.	312.5 (19.7%)	0.2	31.7	31.8 (8.8%)
S10	Sand - very light grey at surface, yellow at depth, fine to medium-grained, sub-rounded quartz, moderately well sorted of eolian origin.	693.4 (43.7%)	154.3	70.4	224.7 (62.3%)
WATER	Any areas of permanent water.	17.3 (1.1%)	0.1	2.9	2.9 (0.8%)
TOTAL		1,586.9	169.9	190.7	360.5

4.5 Soils

With regards to soil-landscapes, the survey area occurs within the Bassendean Zone of the Swan Province. The Bassendean Zone is described as "Mid-Pleistocene Bassendean sand. Fixed dunes inland from coastal dune zone. Non-calcareous sands, podsolised soils with low-lying wet areas" (Purdie et al. 2004).

Soil units for the locality were mapped at 1:1,000,000 by Northcote et al. (1967) as part of the Atlas of Australian Soils (Table 4.3). Soil units intersected by the contextual area and survey area are shown in Table 4.3 and on Figure 4.4. The majority (94.6%) of the survey area is mapped as leached sands, sometimes with a clay horizon (Cb38); this soil type is widespread in the contextual area.

Table 4.3: Soil types in the survey area as described and mapped by Northcote et al. (1967).

Unit	Description	Contextual Area (ha)/%	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)/%
Cb38	Sandy dunes with intervening sandy and clayey swamp flats: chief soils are leached sands (Uc2.33) and (Uc2.21), sometimes with a clay D horizon below 5 ft, on the dunes and sandy swamps. Associated are various soils in the clayey swamps, such as (Ug6.4) and some (Dy) and (Dg) soils.	1,362.2 (85.8%)	169.9	171.4	341.3 (94.6%)

Unit	Description	Contextual Area (ha)/%	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)/%
Mu11	River terraces: chief soils are neutral red earths (Gn2.15) and neutral yellow earths (Gn2.25) on the higher terrace. Associated are (Um6.11) soils on the lower terrace and some areas of (Dy3.4) soils.	163.5 (10.3%)	-	17.3	17.3 (4.8%)
Sp2	Gently sloping bench or terrace--the Ridge Hill Shelf: chief soils are hard acidic yellow soils (Dy2.61) containing ironstone gravels. Associated are brown sands (Uc4.2) often containing ironstone gravels at depth and forming a western fringe to the bench; and some (Dy3.4) soils on dissected areas. As mapped, areas of units Wd6 and Gb16 may be included.	16.2 (1.0%)	-	-	-
Wd6	Plain: chief soils are sandy acidic yellow mottled soils (Dy5.81), some of which contain ironstone gravel, and in some deeper varieties (18 in. of A horizon) (Uc2.22) soils are now forming. Associated are acid yellow earths (Gn2.24). Other soils include (Dy3.81) containing ironstone gravel; (Dy3.71); low dunes of (Uc2.33) soils; and some swamps with variable soils.	45.0 (2.8%)	-	1.9	1.9 (0.5%)
TOTAL		1,586.9	169.9	190.7	360.5

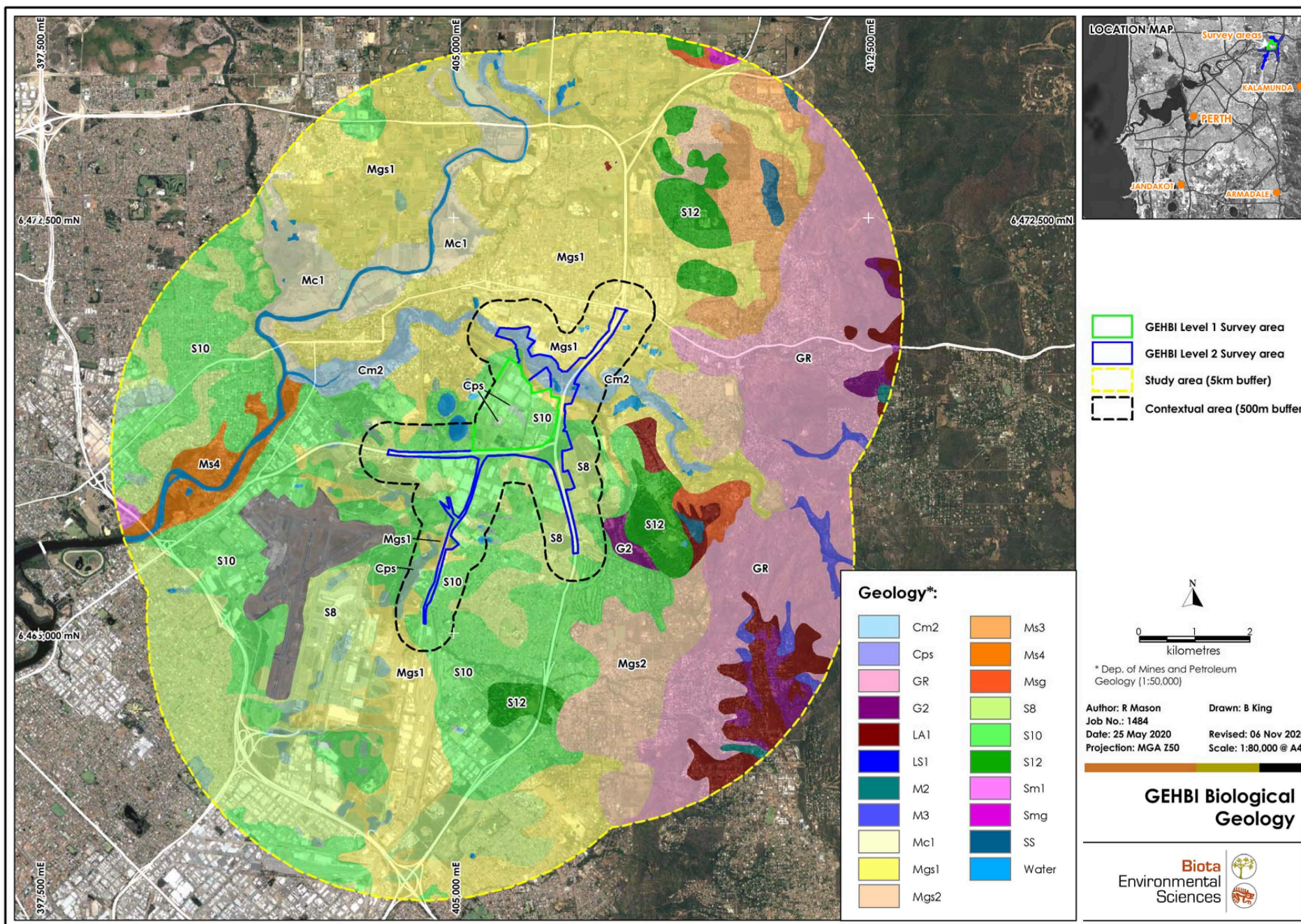


Figure 4.3: Geological units mapped for the study area.

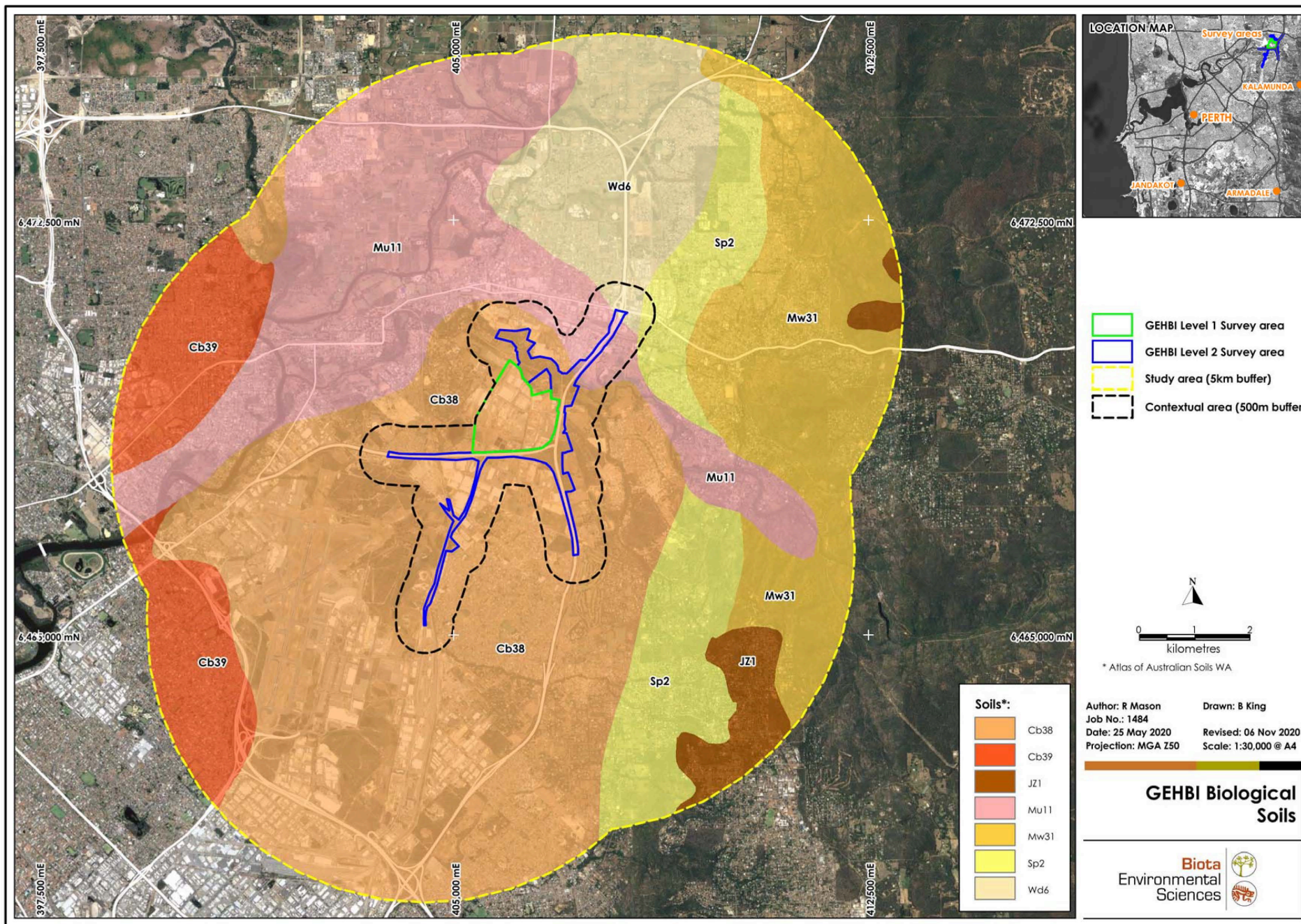


Figure 4.4: Soil units mapped for the study area.

4.6 Bush Forever

Bush Forever is a State government policy and program, which identified 51,200 ha of regionally significant bushland on the Swan Coastal Plain for protection (WA Planning Commission 2000a). Bush Forever areas are protected as ESAs pursuant to the EP Act. One Bush Forever Site was identified as occurring within the survey area; Site 481 'Stirling Crescent Bushland'. Four additional Bush Forever Sites were identified within the contextual area:

- Bush Forever Site 122 (Hawkesvale Nature Reserve);
- Bush Forever Site 213;
- Bush Forever Site 311; and
- Bush Forever Site 386.

None of these sites extend into the survey area.

4.7 Regional Vegetation Mapping

4.7.1 Pre-European Vegetation Mapping of Beard (1981)

John Beard mapped the vegetation of the Swan Coastal Plain at 1:1,000,000 scale (Beard 1981). Based on Beard's mapping, the survey area lies within three vegetation system associations (see Table 4.4 and Figure 4.5). The majority (69.5%) of the survey area was mapped as Bassendean 1001, comprising Medium to very sparse woodland; jarrah, with low woodland; banksia & casuarina. This vegetation system association was also widespread within the contextual area. Given the necessarily broad scale of Beard's mapping (contributing to a State-wide data set), these units are only broadly applicable to the vegetation types occurring on site (see Section 5.1).

Table 4.4: Vegetation associations in the survey area as described and mapped by Beard (1981).

Beard's Vegetation System Association	Description (NVIS Level V)	Contextual Area (ha)/%	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)/%
Bassendean 1001	<p>Beard: Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina</p> <p>NVIS Level V: U⁺ Banksia attenuata, Banksia menziesii, Eucalyptus tottiana</p> <p>NVIS Level V1: U1 Banksia attenuata, Banksia menziesii, Eucalyptus tottiana, Allocasuarina fraseriana, Banksia ilicifolia</p>	803.4 (50.6%)	152.9	97.7	250.6 (69.5%)
Bassendean 1018	<p>Beard: Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree / Low woodland; Casuarina obesa</p> <p>NVIS Level V: U+ Eucalyptus sp., Allocasuarina acutivalvis, Banksia sp., mallee, shrub; M Acacia sp., Allocasuarina sp., Dryandra sp., shrub</p> <p>NVIS Level V1: U1+ Eucalyptus marginata, Corymbia calophylla, Melaleuca sp., Banksia sp., Casuarina obesa</p>	415.6 (26.2%)	16.9	34.1	51.0 (14.1%)

Beard's Vegetation System Association	Description (NVIS Level V)	Contextual Area (ha)/%	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)/%
Pinjarra Plain 1009	Beard: Medium woodland; marri & river gum NVIS Level V: U <i>Corymbia calophylla</i> , <i>Eucalyptus rudis</i> NVIS Level V1: U1 <i>Corymbia calophylla</i> , <i>Eucalyptus rudis</i>	367.9 (23.2%)	-	58.9	58.9 (16.3%)
TOTAL		1,586.9	169.9	190.7	360.5

4.7.2 Vegetation Complex Mapping of Heddle et al. (1980)

The vegetation complexes of the Swan Coastal Plain have been mapped by Heddle et al. (1980) at a scale of 1:250,000. The study area contains five vegetation complexes as outlined by Heddle et al. (1980), four of which occur with the survey and contextual areas (see Table 4.5, Figure 4.6). The majority (79%) of the survey area was mapped as the Southern River complex, comprising open woodlands of *Corymbia calophylla*, *Eucalyptus marginata* and *Banksia* species with fringing woodland of *Eucalyptus rudis* and *Melaleuca raphiophylla*. The Southern River complex is also widely represented in the contextual area.

Table 4.5: Vegetation complexes in the survey area as described by Heddle et al. (1980).

Heddle vegetation complexes	Description	Contextual Area (ha)	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)
Forrestfield Complex	Vegetation ranges from open forest of <i>Corymbia calophylla</i> (Marri) - <i>Eucalyptus wandoo</i> (Wandoo) - <i>Eucalyptus marginata</i> (Jarrah) to open forest of <i>Eucalyptus marginata</i> - <i>Corymbia calophylla</i> - <i>Allocasuarina fraseriana</i> (Sheoak) - <i>Banksia</i> species. Fringing woodland of <i>Eucalyptus rudis</i> (Flooded Gum) in the gullies that dissect this landform.	283.3 (17.3%)	-	38.4	38.4 (10.7%)
Guildford Complex	A mixture of open forest to tall open forest of <i>Corymbia calophylla</i> - <i>Eucalyptus wandoo</i> - <i>Eucalyptus marginata</i> and woodland of <i>Eucalyptus wandoo</i> (with rare occurrences of <i>Eucalyptus lane-poolei</i> (Salmon White Gum)). Minor components include <i>Eucalyptus rudis</i> - <i>Melaleuca raphiophylla</i> (Swamp Paperbark).	196.9 (12.4%)	0.5	24.9	25.4 (7.0%)
Swan Complex	Fringing woodland of <i>Eucalyptus rudis</i> - <i>Melaleuca raphiophylla</i> with localised occurrence of low open forest of <i>Casuarina obesa</i> (Swamp Sheoak) and <i>Melaleuca cuticularis</i> (Saltwater Paperbark).	158.8 (10%)	-	11.8	11.8 (3.3%)
Southern River Complex	Open woodland of <i>Corymbia calophylla</i> - <i>Eucalyptus marginata</i> - <i>Banksia</i> species with fringing woodland of <i>Eucalyptus rudis</i> - <i>Melaleuca raphiophylla</i> along creek beds.	947.9 (59.7%)	169.4	115.6	285.0 (79.0%)
TOTAL		1,586.9	169.9	190.7	360.5

4.7.3 Remaining Remnant Vegetation

The current extent of native vegetation was mapped for WA at a scale of 1:20,000 by the Department of Agriculture (DAFWA 2016). Within the survey area, 14.8% of the area remains as remnant vegetation; within the contextual area 11% is remnant vegetation (see Table 4.6 and Figure 4.7).

Table 4.6: Remnant vegetation remaining in the survey area.

Boundary	Area (ha)		Area (%)
	Total	Remnant Vegetation	
Contextual	1,586.9	174.6	11.0
Level 1 Survey	169.9	0.9	0.5
Level 2 Survey	190.7	52.5	27.6
Total Survey Area	360.6	53.4	14.8

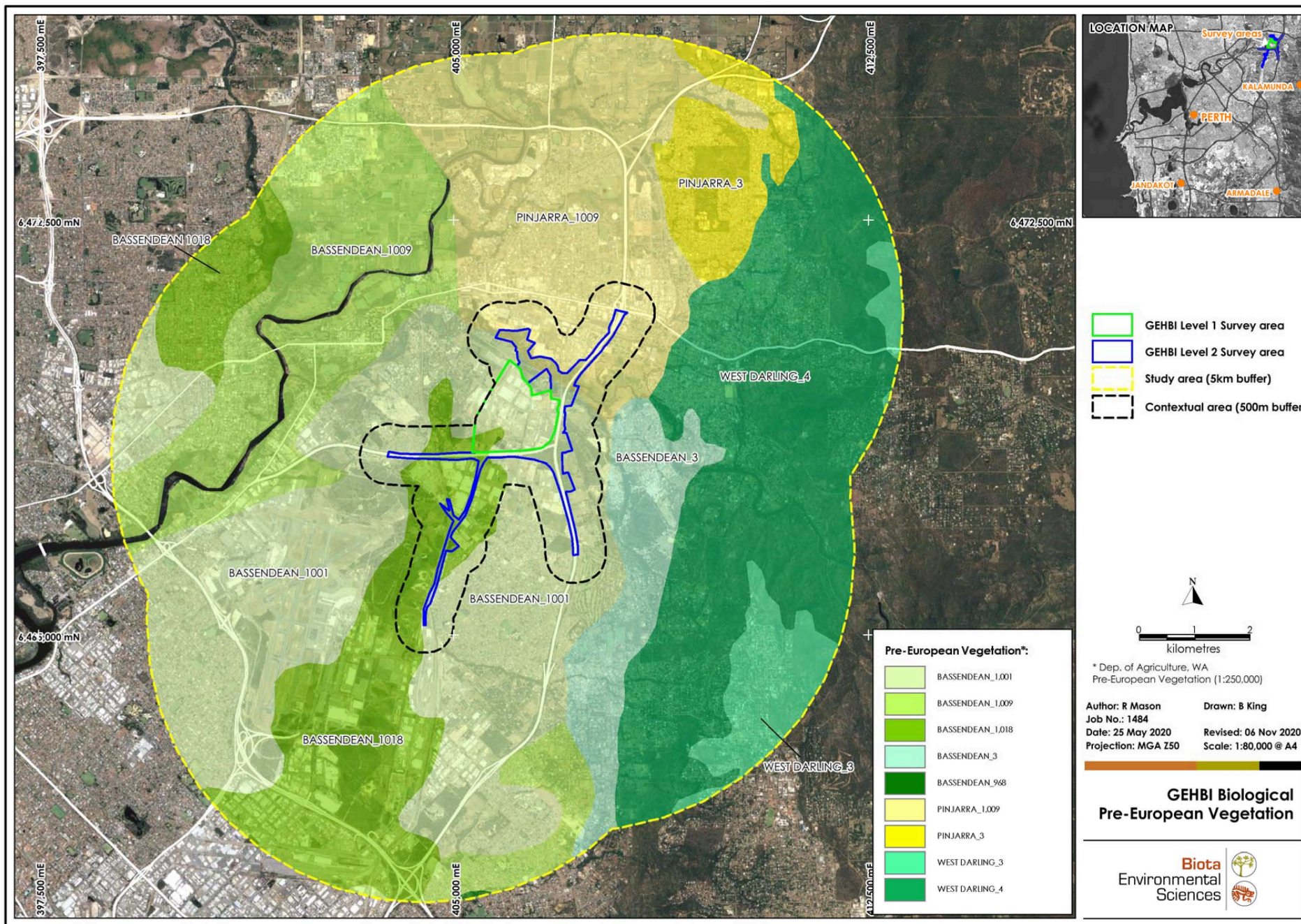


Figure 4.5: Beard's (1981) vegetation associations mapped within the study area.

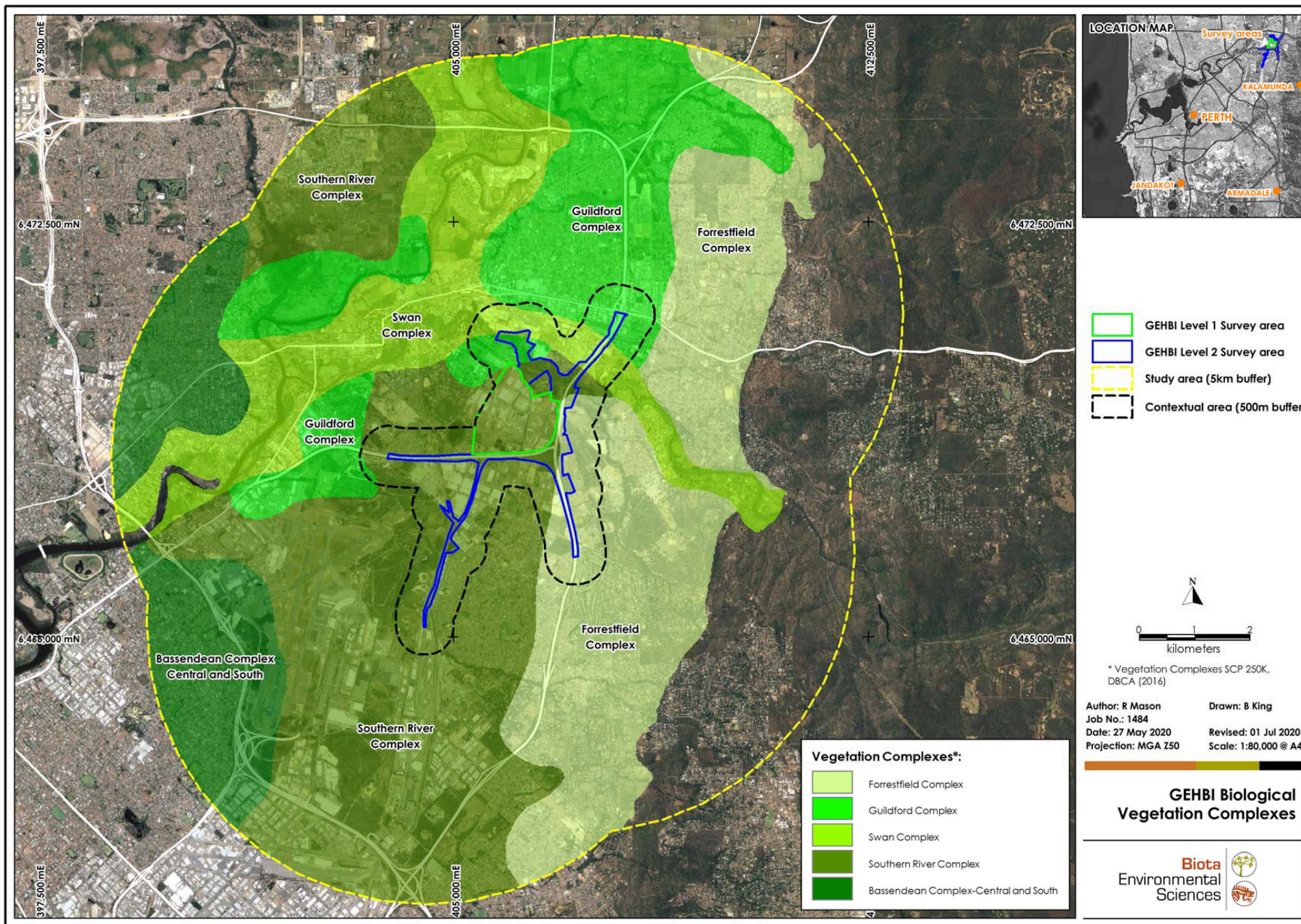


Figure 4.6: Heddle (1980) vegetation complexes mapped within the study area.



Figure 4.7: Remnant vegetation within the study area (DAFWA 2016).

4.8 Communities of Significance

4.8.1 Threatened and Priority Ecological Communities

Communities listed as TECs are of significance at the State level and are protected as ESAs under the EP Act. Twenty-five of the 69 TECs listed in WA are also nationally recognised and listed under the Commonwealth EPBC Act. The description, area, and condition thresholds that apply to any EPBC-listed TEC also apply to any corresponding equivalent State-listed PEC of the same name (DBCA 2021).

PECs are added to the DBCA's PEC list under Priorities 1 (highest priority), 2 and 3. Ecological communities that are: 1) adequately known; 2) rare but not threatened, or meet criteria for Near Threatened; or 3) have been recently removed from the Threatened list, are placed in Priority 4. Conservation dependent ecological communities are placed in Priority 5 (see Appendix 1).

The latest State listing of TECs (DBCA 2018) recognises 23 such communities from the Swan Coastal Plain bioregion. Fifteen of these TECs are listed under the EPBC Act.

Based on database search results, three Commonwealth-listed TECs (Figure 4.8) as well as two State-listed PECs and four State-listed TECs were identified as occurring within the study area (Figure 4.9).

The likelihood that each vegetation community would occur in the study area was then assessed (Table 4.7). The 'Clay pans of the Swan Coastal Plain' and 'Banksia Woodlands of the Swan Coastal Plain' Commonwealth TECs are also both listed as Priority PECs for WA, as Priority 1 and Priority 3 respectively. The 'Shrublands and Woodlands of the eastern Swan Coastal Plain' Commonwealth TEC is listed as Critically Endangered at the State level (as 'Shrublands and woodlands of the eastern side of the Swan Coastal Plain') and Endangered at the Commonwealth level.

Table 4.7: Threatened and Priority Ecological Communities identified during the desktop review and the likelihood that they would occur in the study area.

Community Name EPBC Act (State-level)	Status		Likelihood of Occurrence
	EPBC Act	State-level	
Clay pans of the Swan Coastal Plain (Claypans with mid dense shrublands of <i>Melaleuca lateritia</i> over herbs)	Critically Endangered	Priority 1	May potentially occur: potential suitable habitat.
(Herb rich saline shrublands in clay pans)	-	Vulnerable	Occurs: previously identified within the study area.
Banksia Woodlands of the Swan Coastal Plain (Banksia woodlands of the Swan Coastal Plain)	Endangered	Priority 3	Occurs: previously identified within the study area.
(Banksia attenuata woodland over species rich dense shrublands)	-	Endangered	Occurs: previously identified within the study area.
(Banksia attenuata and/or Eucalyptus marginata woodlands of the eastern side of the Swan Coastal Plain)	-	Endangered	Occurs: previously identified within the study area.
Shrublands and woodlands of the eastern Swan Coastal Plain (Shrublands and woodlands of the eastern side of the Swan Coastal Plain)	Endangered	Critically Endangered	Occurs: previously identified within the study area.

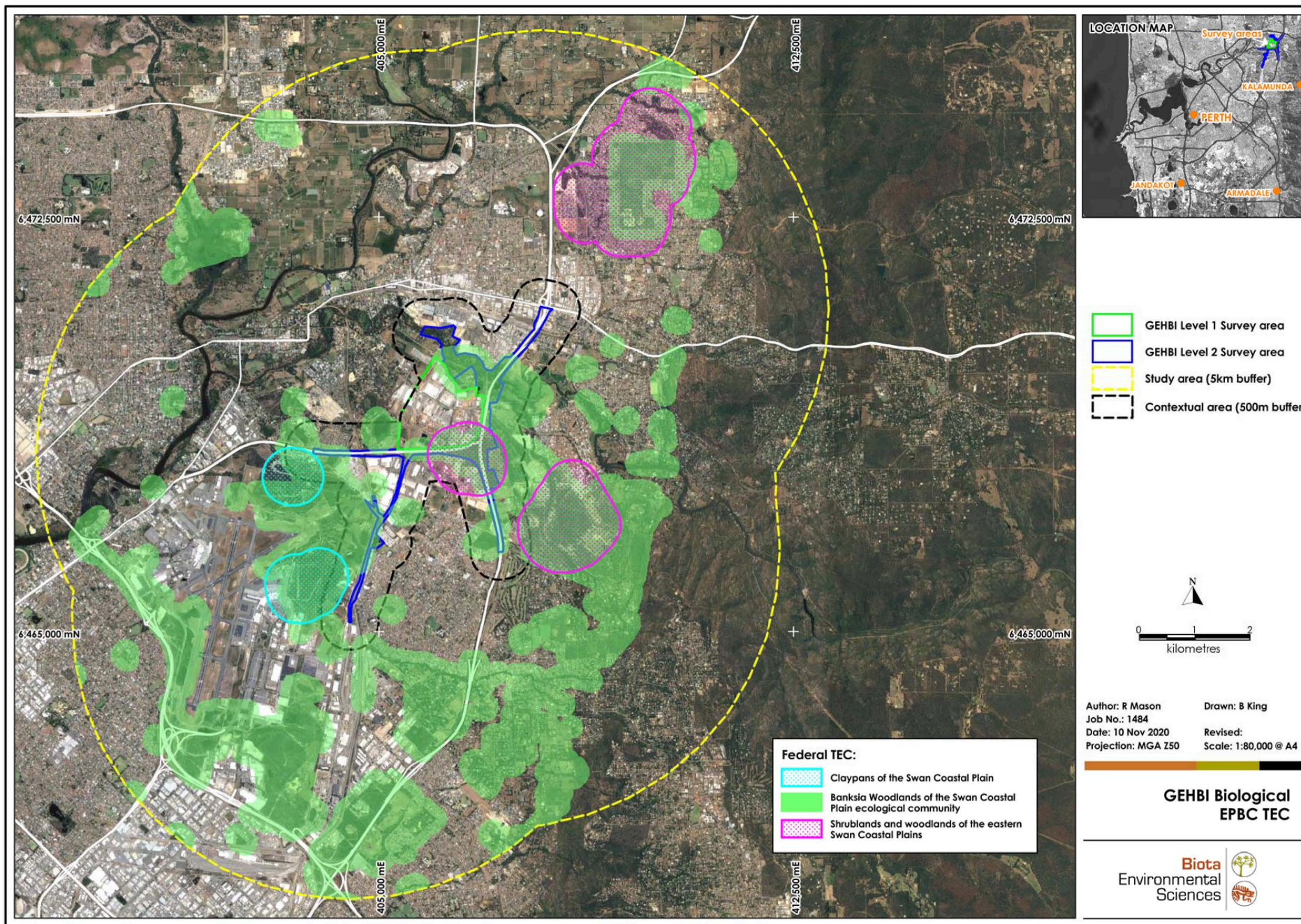


Figure 4.8: Records of Commonwealth TECs within the study area.

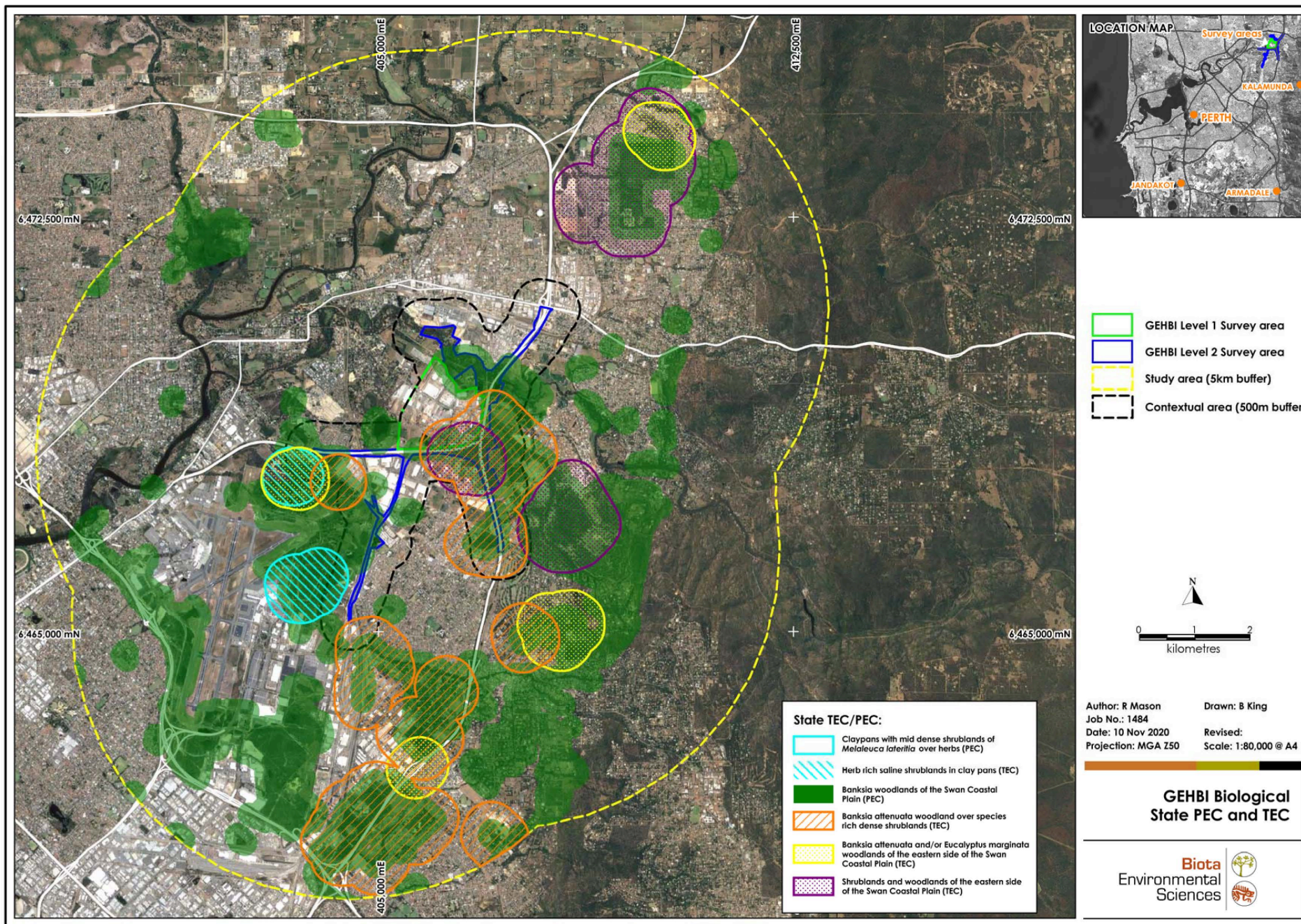


Figure 4.9 Records of State-listed TECs and PECs within the study area.

4.9 Significant Species Known from the Locality

4.9.1 Flora

A total of 24 Threatened flora species and 43 Priority flora species were identified through the desktop review as having been recorded from the study area or having the potential to occur (i.e. within 5 km of the survey area; see Appendix 4a). An assessment of the likelihood of occurrence of each of these species within the survey area was completed, based on the habitats and vegetation types known to be present, as well as the currency of records in close proximity.

Prior to the field survey it was identified that one Threatened species (*Conospermum undulatum*) and three Priority species (*Lepyrodia curvescens* – P2, *Isopogon autumnalis* (previously *Isopogon drummondii*) – P3 and *Schoenus griffinianus* – P4) were recorded previously in the survey area.

It was considered that 30 additional species had some potential to occur in the survey area, three of which were “likely to occur” and another 27 species “may potentially occur” (see Appendix 4a).

4.9.2 Vertebrate Fauna

A total of 280 native vertebrate species and eight introduced mammals were identified as potentially occurring in the locality of the survey area, based on the results of the desktop assessment (Table 4.8; Appendix 3).

Of these, 53 are State and Commonwealth-listed significant fauna species. Nineteen of the 43 significant bird species identified are listed as protected Marine fauna, despite being common and terrestrial-bound species. As such, these 19 species are not considered to be of genuine significance, or relevant to the assessment of the survey area, and are not described further. Appendix 4b presents the likelihood of occurrence of each non-Marine significant species that was determined through the desktop review.

This identified that one mammal, seven bird, and one reptile species of significance had either been recorded or had some potential to occur in the survey area (i.e. were “likely to occur” or “may potentially occur”). The potential occurrence of these species within the survey area was reassessed after taking into account the results of this survey.

Table 4.8: Vertebrate species identified from the desktop review.

Fauna Group	Number of Species
Amphibians	16
Reptiles	59
Avifauna	188
Native Mammals	17
Introduced Mammals	8
Total	288

The desktop study also identified three significant invertebrate species which may potentially occur within the study area. These species are reported in Appendix 4b but are outside of the scope of this survey and are not discussed further.

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5.0 Vegetation

5.1 Vegetation Types of the Survey Area

Vegetation types were mapped for the survey area utilising data from sampling sites and foot traverses, whilst vegetation mapping within the contextual area was based solely on extrapolation of those units identified within the survey area. Thirteen vegetation types were identified and described at the sub-association level within the survey area and contextual area, as discussed in Sections 5.1.1 to 5.1.13 below. Five other units not assessed as vegetation associations in the field were also identified and mapped; these comprised areas of Commercial/Residential Mixed Use, Private Property/Mixed Use, Planted/Revegetated, Cleared, and Bitumen Roads (see Sections 5.1.13 and 5.1.14).

Seven vegetation types were associated with wetlands or damplands within the survey area. Vegetation types P3 (Flooded Gum over Weedy Grasses on Floodplain) and P6 (Flooded Gum over Weedy Understorey on Riverbank) were associated with the Helena River. These vegetation types comprised a combined area of 36.8 ha and were in the north of the survey area. Vegetation type P8 (*Melaleuca* Low Open Forest over Weedy Understorey) and L3 (Marri over *Melaleuca* Low Open Woodland on Clay Pits) represent vegetation surrounding small lakes and clay pits, comprising 6.8 ha. Vegetation types L1 (*Melaleuca* over Sedges), L2 (Swamp Teatree over Sedges) and L4 (Mixed Sedge Dampland) are associated with seasonally damp areas and comprise 1.6 ha of the survey area.

Within the Level 1 survey area, the P1 vegetation type was the only intact vegetation identified, with a total area of 0.1 ha (Table 5.1).

The most widespread intact vegetation types in the Level 2 survey area were P3 (33.3 ha), P1 (19.9 ha) and P7 (12.1 ha). Similarly, in the survey and contextual areas combined, P1 (96.7 ha), P7 (61.9 ha) and P3 (50.0 ha) were the most widespread associations.

Maps showing the distribution of the 13 vegetation types and five other mapping units in the survey area and contextual area are presented in Appendix 9.

Table 5.1: Extent of the mapping units within the survey area and contextual area.

Mapping Unit Code: Description	Contextual Area (ha)	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)
Vegetation Types				
L1: <i>Melaleuca</i> over Sedges	0.5	-	0.5	0.5
L2: Swamp Teatree over Sedges	0.3	-	0.3	0.3
L3: Marri over <i>Melaleuca</i> Low Open Woodland on Clay Pits	4.9	-	4.9	4.9
L4: Mixed Sedge Dampland	0.7	-	0.7	0.7
L5: <i>Jacksonia</i> over <i>Xanthorrhoea</i> with Sedges	0.9	-	0.9	0.9
P1: <i>Allocasuarina</i> and <i>Banksia</i> over <i>Xanthorrhoea</i> with Sedges	96.7	0.1	19.8	19.9
P2: Marri over <i>Kingia australis</i> with Sedges	6.0	-	3.1	3.1
P3: Flooded Gum over Weedy Grasses on Floodplain	50.0	-	33.3	33.3
P4: <i>Eremaea</i> Open Heath	0.4	-	0.4	0.4
P5: Jarrah over <i>Xanthorrhoea</i> with Mixed Shrubs and Herbs	2.9	-	2.9	2.9
P6: Flooded Gum over Weedy Understorey on Riverbank	17.9	-	3.5	3.5
P7: Jarrah and <i>Banksia</i> over <i>Xanthorrhoea</i> with Sedges	61.9	-	12.1	12.1
P8: <i>Melaleuca</i> Low Open Forest over Weedy Understorey	50.6	-	1.9	1.9
Modified Areas				
CR: Commercial/Residential Mixed Use	778.9	134.4	0.5	134.9
PR: Private Property/Mixed Use	189.4	3.0	8.2	11.2
RE: Planted/Revegetated	93.2	2.8	46.0	48.9
Cleared Areas				
CL: Cleared	180.7	21.7	20.3	41.9
RD: Bitumen Roads	50.9	7.8	31.3	39.1
TOTAL	1,586.9	169.9	190.7	360.5

5.1.1 L1: *Melaleuca* over Sedges

Vegetation Code	L1
Vegetation Sub-Association (NVIS Level VI)	U1+ ^ <i>Melaleuca raphiophylla</i> , <i>Melaleuca preissiana</i> \^ <i>Melaleuca</i> \^tree\6\c; M1 ^ <i>Hakea varia</i> , <i>Jacksonia sternbergiana</i> , <i>Viminea juncea</i> \^ <i>Hakea</i> \^shrub\6\r; G1 ^ <i>Lepidosperma striatum</i> , <i>Cyathochaeta avenacea</i> , <i>Lepidosperma longitudinale</i> , <i>Lyginia barbata</i> \^ <i>Lepidosperma</i> \^sedge, rush\3,d; G2 ^ <i>Caesia</i> sp. Wongan, <i>Thysanotus dichotomous</i> \^ <i>Caesia</i> \^forb\2\r
Vegetation Type Description	<i>Melaleuca raphiophylla</i> , (<i>Melaleuca preissiana</i>) low open forest over <i>Hakea varia</i> , <i>Jacksonia sternbergiana</i> , (<i>Viminea juncea</i>) tall open shrubland over <i>Lepidosperma striatum</i> , <i>Cyathochaeta avenacea</i> , <i>Lepidosperma longitudinale</i> , <i>Lyginia barbata</i> , (<i>Lepidosperma oldhamii/calculicola</i> , <i>Lepyrodia muiirii</i> , <i>Patersonia occidentalis</i>) closed sedgeland over <i>Caesia</i> sp. Wongan (K.F. Kenneally 8820), <i>Thysanotus dichotomus</i> very open herbland.
Distribution	This vegetation type (Plate 5.1) occurred in a very specific portion of the study area, in a low lying damp depression, east of Roe Highway and north of Helena Valley Road (see Appendix 9).
Quadrats	GBQ14
Vegetation Condition	Excellent.



Plate 5.1: Representative photographs of the L1 vegetation type.

5.1.2 L2: Swamp Teatree over Sedges

Vegetation Code	L2
Vegetation Sub-Association (NVIS Level VI)	M1 ^ <i>Adenanthos cygnorum</i> \^ <i>Adenanthos</i> \^shrub\4\bc; M2+ ^ <i>Pericalymma ellipticum</i> var. <i>floridum</i> , <i>Verticordia densiflora</i> var. <i>densiflora</i> , <i>Melaleuca seriata</i> \^ <i>Pericalymma</i> \^shrub\3\d; G1 ^ <i>Lyginia imberbis</i> , <i>Hypolaena exsulca</i> \^ <i>Lyginia</i> \^sedge\2\i; G2 ^ <i>Ehrharta calycina</i> , <i>Pentameris airoides</i> subsp. <i>airoides</i> , <i>Vulpia bromoides</i> \^ <i>Ehrharta</i> \^tussock grass\2\r; G1 ^ <i>Ursinia anthemoides</i> \^ <i>Ursinia</i> \^forb\1\bc
Vegetation Type Description	<i>Adenanthos cygnorum</i> scattered tall shrubs over <i>Pericalymma ellipticum</i> var. <i>floridum</i> , <i>Verticordia densiflora</i> var. <i>densiflora</i> , <i>Melaleuca seriata</i> closed heath over <i>Lyginia imberbis</i> , <i>Hypolaena exsulca</i> open sedgeland over * <i>Ehrharta calycina</i> , * <i>Pentameris airoides</i> subsp. <i>airoides</i> , <i>Vulpia bromoides</i> very open grassland over * <i>Ursinia anthemoides</i> scattered herbs.
Distribution	This vegetation type (Plate 5.2) occurred in a very specific portion of the study area; a seasonally damp depression, south-west of the intersection of the Great Eastern Bypass and Roe Highway (see Appendix 9).

Quadrats	GBQ04
Vegetation Condition	Excellent.



Plate 5.2: Representative photographs of the L2 vegetation type.

5.1.3 L3: Marri over *Melaleuca* Low Open Woodland on Clay Pits

Vegetation Code	L3
Vegetation Sub-Association (NVIS Level VI)	U1 ^ <i>Corymbia calophylla</i> \Corymbia\^tree\7\r; U2+ ^ <i>Melaleuca raphiophylla</i> \Melaleuca\^tree\6\c; G1 ^ <i>Bromus diandrus</i> , <i>Briza maxima</i> , <i>Briza minor</i> , <i>Ehrharta calycina</i> , <i>Avena fatua</i> \Bromus\^tussock grass\2\r; G2 ^ <i>Schoenus clandestinus</i> , <i>Juncus articulatus</i> , <i>Juncus capitatus</i> , <i>Isolepis cernua</i> var. <i>setiformis</i> , <i>Cycnogeton huegelii</i> \Schoenus\^sedge, rush\2\c
Vegetation Type Description	<i>Corymbia calophylla</i> open woodland over <i>Melaleuca raphiophylla</i> low open forest over * <i>Bromus diandrus</i> , * <i>Briza maxima</i> , * <i>Briza minor</i> , * <i>Ehrharta calycina</i> , * <i>Avena fatua</i> very open tussock grassland over <i>Schoenus clandestinus</i> , * <i>Juncus articulatus</i> , * <i>Juncus capitatus</i> , <i>Isolepis cernua</i> var. <i>setiformis</i> sedgeland over <i>Cycnogeton huegelii</i> scattered herbs.
Distribution	This vegetation type (Plate 5.3) occurred to the east and west of Military Road, in association with man-made clay pits (see Appendix 9).
Quadrats	GEHREL02
Vegetation Condition	Good to Degraded.



Plate 5.3: Representative photographs of the L3 vegetation type.

5.1.4 L4: Mixed Sedge Dampland

Vegetation Code	L4
Vegetation Sub-Association (NVIS Level VI)	G1+ ^ <i>Bolboschoenus caldwellii</i> , <i>Juncus bufonius</i> , <i>Typha domingensis</i> \^ <i>Bolboschoenus</i> \^sedge,rush\3\c; G2 ^ <i>Isolepis prolifera</i> , <i>Cyperus alterniflorus</i> , <i>Bromus hordeaceus</i> , <i>Lotus subbiflorus</i> \^ <i>Isolepis</i> \^rush, tussock grass, forb\2\r
Vegetation Type Description	<i>Bolboschoenus caldwellii</i> , * <i>Juncus bufonius</i> , <i>Typha domingensis</i> tall sedgeland over <i>Isolepis prolifera</i> , <i>Cyperus alterniflorus</i> very open sedgeland over * <i>Bromus hordeaceus</i> very open grassland over * <i>Lotus subbiflorus</i> very open herbland.
Distribution	This vegetation type (Plate 5.4) occurred only in conjunction with a small low-lying modified area between the Helena River and Stirling Crescent (see Appendix 9).
Quadrats	GEHREL01
Vegetation Condition	Degraded.



Plate 5.4: Representative photographs of the L4 vegetation type.

5.1.5 L5: *Jacksonia* over *Xanthorrhoea* with Sedges

Vegetation Code	L5
Vegetation Sub-Association (NVIS Level VI)	M1 ^ <i>Jacksonia floribunda</i> \^ <i>Jacksonia</i> \^shrub\6\bc; M2 ^ <i>Xanthorrhoea preissii</i> , <i>Melaleuca seriata</i> \^ <i>Xanthorrhoea</i> \^grass-tree, shrub\3\r; G1 ^ <i>Ehrharta calycina</i> , <i>Pentameris pallida</i> \^ <i>Ehrharta</i> \^tussock grass\2\bc; G2 ^ <i>Lyginia barbata</i> , <i>Lyginia imberbis</i> \^ <i>Lyginia</i> \^sedge\2\i; G3+ ^ <i>Alexgeorgea nitens</i> , <i>Dasyopogon bromeliifolius</i> , <i>Ursinia anthemoides</i> \^ <i>Alexgeorgea</i> \^rush, forb\1\c
Vegetation Type Description	<i>Jacksonia floribunda</i> scattered tall shrubs over <i>Xanthorrhoea preissii</i> , <i>Melaleuca seriata</i> open shrubland over * <i>Ehrharta calycina</i> , * <i>Pentameris pallida</i> scattered grasses over <i>Lyginia barbata</i> , (<i>Lyginia imberbis</i>) open sedgeland over <i>Alexgeorgea nitens</i> , (<i>Dasyopogon bromeliifolius</i> , * <i>Ursinia anthemoides</i>) herbland.
Distribution	This vegetation type (Plate 5.5) occurred in one patch, south of the Great Eastern Bypass and east of Stirling Crescent (see Appendix 9).
Quadrats	GBQ02, GBQ29
Vegetation Condition	Good.



Plate 5.5: Representative photographs of the L5 vegetation type.

5.1.6 P1: *Allocasuarina* and *Banksia* over *Xanthorrhoea* with Sedges

Vegetation Code	P1
Vegetation Sub-Association (NVIS Level VI)	U1 ^ <i>Allocasuarina fraseriana</i> \Allocasuarina\^tree\7\r; U2+ ^ <i>Eucalyptus todtiana</i> , <i>Banksia menziesii</i> , <i>Banksia attenuata</i> \Eucalyptus\^tree\7\r; M1 ^ <i>Jacksonia floribunda</i> \Jacksonia\^shrub\4\bc; M2 ^ <i>Xanthorrhoea preissii</i> \Xanthorrhoea\^grass-tree\3\r; M3 ^ <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i> , <i>Bossiaea eriocarpa</i> , <i>Stirlingia latifolia</i> , <i>Scaevola repens</i> var. <i>repens</i> \Hibbertia\^shrub\2\r; G1 ^ <i>Mesomelaena pseudostygia</i> , <i>Lyginia barbata</i> \Mesomelaena\^sedge\2\r; G2 ^ <i>Alexgeorgea nitens</i> \^sedge\1\r
Vegetation Type Description	<i>Allocasuarina fraseriana</i> open woodland over <i>Eucalyptus todtiana</i> , <i>Banksia menziesii</i> (<i>Banksia attenuata</i>) low woodland over <i>Jacksonia floribunda</i> scattered tall shrubs over <i>Xanthorrhoea preissii</i> open shrubland over <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i> , <i>Bossiaea eriocarpa</i> , <i>Stirlingia latifolia</i> , <i>Scaevola repens</i> var. <i>repens</i> low open shrubland over <i>Mesomelaena pseudostygia</i> , <i>Lyginia barbata</i> very open sedgeland over <i>Alexgeorgea nitens</i> very open herbland.
Distribution	This vegetation type (Plate 5.6) occurred throughout the survey and contextual area. Within the survey area, the largest patches surrounded the intersection of Roe Highway and the Great Eastern Bypass. In the contextual area, the largest patch occurred adjacent to Old Midland Road (see Appendix 9).
Quadrats	GBQ01, GBQ06, GBQ08, GBQ15, GBQ19, GBQ23, GBQ24, GBQ26, GBQ28, GBQ31, GEHREL12, GEHREL15
Vegetation Condition	Excellent to Degraded, with the majority considered Very Good.



Plate 5.6: Representative photographs of the P1 vegetation type.

5.1.7 P2: Marri over *Kingia australis* with Sedges

Vegetation Code	P2
Vegetation Sub-Association (NVIS Level VI)	U1 ^ <i>Corymbia calophylla</i> \Corymbia\^tree\6\r; M1 ^ <i>Kingia australis</i> \Kingia\^grass-tree\4\r; M2 ^ <i>Xanthorrhoea preissii</i> \Xanthorrhoea\^grass-tree\3\r; M3+ ^ <i>Verticordia densiflora</i> , <i>Banksia dallanneyi</i> var. <i>dallanneyi</i> , <i>Stirlingia latifolia</i> \Verticordia\^shrub\3\i; G1 ^ <i>Caustis dioica</i> , <i>Mesomelaena pseudostygia</i> , <i>Mesomelaena tetragona</i> , <i>Lyginia imberbis</i> , <i>Patersonia occidentalis</i> var. <i>occidentalis</i> \Caustis\^sedge, forb\3\i; G2 ^ <i>Alexgeorgea nitens</i> , <i>Desmocladius fascicularis</i> \Alexgeorgea\^sedge\1\r
Vegetation Type Description	<i>Corymbia calophylla</i> low open woodland over <i>Kingia australis</i> tall open shrubland over <i>Xanthorrhoea preissii</i> open shrubland over <i>Verticordia densiflora</i> , <i>Banksia dallanneyi</i> var. <i>dallanneyi</i> , <i>Stirlingia latifolia</i> low shrubland over <i>Caustis dioica</i> , <i>Mesomelaena pseudostygia</i> , <i>M. tetragona</i> , <i>Lyginia imberbis</i> , <i>Patersonia occidentalis</i> var. <i>occidentalis</i> open sedgeland over <i>Alexgeorgea nitens</i> , <i>Desmocladius fasciculatus</i> very open herbland.
Distribution	This vegetation type (Plate 5.7) occurred in only one patch within the survey area, situated between patches of P1, near the intersection of Roe Hwy and the Great Eastern Bypass (see Appendix 9).
Quadrats	GBQ05, GBQ07, GBQ25, GBQ27, GBQ30
Vegetation Condition	Excellent to Very Good.



Plate 5.7: Representative photographs of the P2 vegetation type.

5.1.8 P3: Flooded Gum over Weedy Grasses on Floodplain

Vegetation Code	P3
Vegetation Sub-Association (NVIS Level VI)	U1+ ^ <i>Eucalyptus rudis</i> subsp. <i>rudis</i> \Eucalyptus\^tree\7\c; G1 ^ <i>Bromus diandrus</i> , <i>Avena fatua</i> , <i>Ehrharta longiflora</i> \Bromus\^tussock grass\3\c; G2 ^ <i>Fumaria capreolata</i> \Fumaria\^forb\2\c
Vegetation Type Description	<i>Eucalyptus rudis</i> subsp. <i>rudis</i> open forest over * <i>Bromus diandrus</i> , * <i>Avena fatua</i> , * <i>Ehrharta longiflora</i> grassland over * <i>Fumaria capreolata</i> herbland.
Distribution	This vegetation type (Plate 5.8) occurred extensively in the northern part of survey area, surrounding the Helena River (see Appendix 9).
Quadrats	GBQ10, GBQ11, GBQ13, GEHREL08
Vegetation Condition	Degraded.



Plate 5.8: Representative photographs of the P3 vegetation type.

5.1.9 P4: *Eremaea* Open Heath

Vegetation Code	P4
Vegetation Sub-Association (NVIS Level VI)	M1 ^ <i>Jacksonia floribunda</i> \ <i>Jacksonia</i> \^shrub\4\bc; M2+ ^ <i>Eremaea pauciflora</i> \ <i>Eremaea</i> \^shrub\3\c; M3 ^ <i>Astroloma xerophyllum</i> \ <i>Astroloma</i> \^shrub\3\r; G1 ^ <i>Lyginia imberbis</i> \ <i>Lyginia</i> \^sedge\2\r
Vegetation Type Description	<i>Jacksonia floribunda</i> tall shrubs over <i>Eremaea pauciflora</i> open heath over <i>Astroloma xerophyllum</i> low open shrubs over <i>Lyginia imberbis</i> open sedgeland.
Distribution	This vegetation type (Plate 5.9) occurred in one small patch within the survey area, between patches of P1, south-west of the intersection (see Appendix 9).
Quadrats	GBQ03, GEHREL07
Vegetation Condition	Excellent to Very Good.



Plate 5.9: Representative photographs of the P4 vegetation type.

5.1.10 P5: Jarrah over *Xanthorrhoea* with Mixed Shrubs and Herbs

Vegetation Code	P5
Vegetation Sub-Association (NVIS Level VI)	U1+ ^ <i>Eucalyptus marginata</i> subsp. <i>marginata</i> \ <i>Eucalyptus</i> \^tree\7\c; M1 ^ <i>Adenanthos cygnorum</i> , <i>Xanthorrhoea preissii</i> \ <i>Adenanthos</i> \shrub, grass-tree\4\r; M2 ^ <i>Hibbertia hypericoides</i> , <i>Gompholobium tomentosum</i> \ <i>Hibbertia</i> \^shrub\3\bc; G1 ^ <i>Eragrostis curvula</i> , <i>Briza maxima</i> \ <i>Eragrostis</i> \^tussock grass\3\r; G2 ^ <i>Lyginia barbata</i> , <i>Lomandra preissii</i> \^sedge, rush\2\bc; G1 ^ <i>Alexgeorgea nitens</i> \ <i>Alexgeorgea</i> \^sedge\1\i

Vegetation Type Description	<i>Eucalyptus marginata</i> subsp. <i>marginata</i> open forest over <i>Adenanthos cygnorum</i> , <i>Xanthorrhoea preissii</i> tall open shrubland over <i>Hibbertia hypericoides</i> , <i>Gompholobium tomentosum</i> scattered low shrubs over * <i>Eragrostis curvula</i> * <i>Briza maxima</i> very open grassland over <i>Lyginia barbata</i> , <i>Lomandra preissii</i> scattered sedges over <i>Alexgeorgea nitens</i> open herbland.
Distribution	This vegetation type (Plate 5.10) occurred immediately east of Roe Highway, in the southern portion of the study area (see Appendix 9).
Quadrats	GBQ09, GBQ16, GEHREL09
Vegetation Condition	Very Good to Degraded, with the majority considered being Very Good.



Plate 5.10: Representative photographs of the P5 vegetation type.

5.1.11 P6: Flooded Gum over Weedy Understorey on Riverbank

Vegetation Code	P6
Vegetation Sub-Association (NVIS Level VI)	U1+ ^ <i>Eucalyptus rudis</i> subsp. <i>rudis</i> \^ <i>Eucalyptus</i> \^tree\7\c; U2 ^ <i>Melaleuca raphiophylla</i> \^ <i>Melaleuca</i> \^tree\6\r; G1 ^ <i>Ehrharta longiflora</i> , <i>Bromus diandrus</i> \^ <i>Ehrharta</i> \^tussock grass\2\i; G1 ^ <i>Fumaria capreolata</i> , <i>Cycnogeton huegelii</i> \^ <i>Fumaria</i> \^forb, rush\2\i
Vegetation Type Description	<i>Eucalyptus rudis</i> subsp. <i>rudis</i> open forest over <i>Melaleuca raphiophylla</i> low open woodland over * <i>Ehrharta longiflora</i> , * <i>Bromus diandrus</i> open grassland over * <i>Fumaria capreolata</i> , <i>Cycnogeton huegelii</i> open herbland.
Distribution	This vegetation type (Plate 5.11) occurred only along the banks of the Helena River (see Appendix 9).
Quadrats	GEHREL05, GEHREL06, GEHREL13
Vegetation Condition	Degraded.



Plate 5.11: Representative photographs of the P6 vegetation type.

5.1.12 P7: Jarrah and *Banksia* over *Xanthorrhoea* with Sedges

Vegetation Code	P7
Vegetation Sub-Association (NVIS Level VI)	U1+ ^Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana, Banksia menziesii\Eucalyptus\^tree\7\r; M1 ^Xanthorrhoea preissii, Allocasuarina humilis\Xanthorrhoea\^shrub\4\r; G1 ^Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallanneyi\Dasypogon\^shrub\2\r; G2 ^Mesomelaena pseudostygia, Schoenus efoliatus, Alexgeorgea nitens\Mesomelaena\^sedge, rush\2\r
Vegetation Type Description	<i>Eucalyptus marginata</i> subsp. <i>marginata</i> , <i>Banksia attenuata</i> , <i>Allocasuarina fraseriana</i> and <i>Banksia menziesii</i> low open woodland over <i>Xanthorrhoea preissii</i> , <i>Allocasuarina humilis</i> open shrubland over <i>Dasypogon bromeliifolius</i> , <i>Hibbertia hypericoides</i> , <i>Bossiaea eriocarpa</i> , <i>Banksia dallanneyi</i> var. <i>dallanneyi</i> low open shrubland over <i>Mesomelaena pseudostygia</i> , <i>Schoenus efoliatus</i> very open sedgeland over <i>Alexgeorgea nitens</i> scattered herbs.
Distribution	This vegetation type (Plate 5.12) occurred on either side of Roe Highway, south of the intersection, in both the survey and contextual areas (see Appendix 9).
Quadrats	GBQ17, GBQ18, GBQ20, GBQ21, GBQ22, GEHREL11
Vegetation Condition	Excellent to Degraded, with the majority considered Very Good.



Plate 5.12: Representative photographs of the P7 vegetation type.

5.1.13 P8: *Melaleuca* Low Open Forest over Weedy Understorey

Vegetation Code	P8
Vegetation Sub-Association (NVIS Level VI)	U1+ ^Melaleuca raphiophylla, Melaleuca preissiana, Eucalyptus rudis subsp. rudis\Melaleuca\^tree\6\c; G1 ^Ehrharta longiflora, Bromus diandrus\Ehrharta\^tussock grass\2\r; G2 ^Fumaria capreolata, Sonchus oleraceus\Fumaria\^forb\2,c
Vegetation Type Description	<i>Melaleuca raphiophylla</i> , (<i>Melaleuca preissiana</i> , <i>Eucalyptus rudis</i> subsp. <i>rudis</i>) low open forest over <i>Ehrharta longiflora</i> , <i>Bromus diandrus</i> very open grassland over <i>Sonchus oleraceus</i> , <i>Fumaria capreolata</i> herbland.
Distribution	This vegetation type (Plate 5.13) occurred in small patches on the south of the Helena River within the survey area, and was inferred in three patches west of Abernethy Road, within the contextual area (see Appendix 9).
Quadrats	GBQ12, GEHREL10
Vegetation Condition	Excellent to Degraded.



Plate 5.13: Representative photographs of the P8 vegetation type.

5.1.14 Modified Areas

Three distinct categories of areas within both the survey and contextual areas (Appendix 9) were assessed as being modified and disturbed to some extent (Table 5.1). These areas comprised the following:

1. **CR:** Commercial/Residential Mixed Use

These comprised areas utilised for commercial and/or residential infrastructure, totalling 134.9 ha (37.4 %) of the survey area, and extended into the contextual area (778.8 ha).

2. **PR:** Private Property/Mixed Use

Areas of the survey area that constituted private property with mixed land uses, were given the 'PR' category i.e. Hillview Golf Course. Most patches consisted of low density commercial or residential areas with acreage, private buildings, exposed sands and scattered remnant trees, not forming a coherent vegetation type. Private Property/Mixed Use totalled 9.4 ha (2.6%) of the survey area, and extended into the contextual area.

3. **RE:** Planted/Revegetated

A significant portion of the survey area (13.5%, 48.9 ha) comprised planted, revegetated or naturally regenerated patches of vegetation, particularly along roadsides. No coherent vegetation types could be discerned due to the ad-hoc nature of the plantings over consecutive years and the variable species selected, therefore no attempt was made to produce separate mapping units based on dominant species. Two sites, GEHREL03 and GEHREL04, were surveyed in revegetated areas. Planted/Revegetated areas extended into the contextual area.

5.1.15 Cleared Areas

Two distinct categories within both the survey and contextual areas (CL and RD), had been cleared for roads, dual-use paths or firebreaks (see Appendix 9).

1. **CL:** Cleared Areas

A total of 11.6% (41.9 ha) of the survey area was mapped and categorised as 'CL', which represents bare areas of ground that were devoid of native flora at the time of survey, predominantly as a result of historical and/or maintenance land clearing activities.

2. **RD:** Bitumen Roads

Land cleared for construction of roads was categorised as 'RD', and represented 10.7% (39.1 ha) of the survey area, and extended into the contextual area (50.9 ha).

5.2 Condition of the Vegetation Units

The condition of vegetation in the survey area and contextual area is presented in Appendix 11. The vegetation condition assessments were based on the ranking scale of Keighery (1994), which is equivalent to the scale utilised by the EPA (EPA 2016a). The rankings considered the degree of invasion by introduced flora (weeds), impact from historical and ongoing human activity, and the structural integrity of the vegetation (see Appendix 6).

No patches of vegetation within the survey area were considered to have a 'Pristine' condition ranking. Vegetation mapped as Cleared Areas (CL) were automatically assigned the 'Cleared' ranking, and areas of Revegetation (RE) were assigned a condition ranking of 'Degraded'.

Condition of the vegetation on the Level 1 survey area ranged from 'Good' to 'Completely Degraded', which was expected given that very little remnant vegetation remained intact (Table 5.2) due to historical clearing for industrial and commercial purposes, and the prevalence of weed species. Within the Level 2 survey area, vegetation condition ranged from 'Excellent' to 'Completely Degraded', with weed species being a dominant factor (Table 5.2).

Bitumen Roads (RD) and Commercial/Residential Mixed Use (CR) were not assessed for vegetation condition, nor were several areas of Private Property/Mixed use (e.g. Hillview Golf Course and surrounding property) within the contextual area, due to the nature of land use. These areas, in addition to the 'CL' classification, were collectively classified as 'Cleared' for the purposes of vegetation condition mapping, and constitute 59.9% of the total survey area (Table 5.2).

Numerous weed species were encountered across the survey area (see Section 6.5), and the locations recorded represent an underestimate of their extent. Dense patches of herbaceous weed species occurred through the entirety of the survey area along roadsides and cleared areas.

Table 5.2: Extent of vegetation condition categories within the survey area and contextual area.

Condition Ranking	Total Contextual Area (ha)	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Survey Area (ha)
Pristine	-	-	-	-
Excellent	1.1	-	1.1	1.1
Excellent-Very Good	61.8	-	8.6	10.2
Very Good	17.0	-	13.6	13.1
Very Good-Good	84.5	-	2.5	2.5
Good	72.7	1.7	20.7	21.3
Degraded	218.5	3.8	91.1	94.9
Completely Degraded	58.3	0.4	1.0	1.5
Cleared	1,072.8	163.9	52.1	216.0
TOTAL	1,586.8	169.9	190.7	360.5

5.3 Results of the Floristic Analysis

5.3.1 Identification of TECs and PECs

Hierarchical clustering analyses were conducted using PATN v4 (Belbin 2020), to assist with determining which FCTs described by Gibson et al. (1994) were equivalent to the vegetation types in the survey area. No FCTs associated with the Claypans TEC were identified through these analyses. Floristic community types that occur on the Swan Coastal Plain and have relationships to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC are listed in Table 5.3 below.

Table 5.3: Floristic community types that occur on the Swan Coastal Plain and have relationships to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC (DotEE 2016).

Floristic Community Type Name	Floristic Community Type (Gibson et al. 1994)	State Listing
<i>Banksia attenuata</i> woodlands over species rich dense shrublands	FCT 20a	Threatened (Endangered)
Eastern <i>Banksia attenuata</i> and/or <i>Eucalyptus marginata</i> woodlands	FCT 20b	Threatened (Endangered)
Eastern shrublands and woodlands	FCT 20c	Threatened (Critically Endangered)
Central <i>Banksia attenuata</i> - <i>Eucalyptus marginata</i> woodlands	FCT 21a	–
Southern <i>Banksia attenuata</i> woodlands	FCT 21b	Priority 3
Low lying <i>Banksia attenuata</i> woodlands or shrublands	FCT 21c	Priority 3
<i>Banksia ilicifolia</i> woodlands	FCT 22	Priority 3
Central <i>Banksia attenuata</i> - <i>Banksia menziesii</i> woodlands	FCT 23a	–
Northern <i>Banksia attenuata</i> - <i>Banksia menziesii</i> woodlands	FCT 23b	Priority 3
North-eastern <i>Banksia attenuata</i> - <i>Banksia menziesii</i> woodlands	FCT 23c	–
Northern Spearwood shrublands and woodlands	FCT 24	Priority 3
Southern <i>Eucalyptus gomphocephala</i> – <i>Agonis flexuosa</i> woodlands	FCT 25	Priority 3
Spearwood <i>Banksia attenuata</i> or <i>Banksia attenuata</i> - <i>Eucalyptus</i> woodlands	FCT 28	–
<i>Banksia attenuata</i> woodlands over dense low shrublands	FCT S9	–

Analyses utilised the Swan Coastal Plain survey by Gibson et al. (1994) together with the presence/absence data from those quadrats and relevés sampled during the current survey potentially representing a TEC/PEC. The floristic analysis placed these sites within the following FCTs:

- FCT 5 (Mixed Shrub Damplands) – quadrat GBQ04;
- FCT 6 (Weed dominated wetlands on heavy soils) – quadrat GBQ23 and relevé GEHREL15;
- FCT 21c (Low lying *Banksia attenuata* woodlands or shrublands) – quadrat GBQ22;
- FCT 20a (*Banksia attenuata* woodlands over species rich dense shrublands) – quadrats GBQ15, GBQ17, GBQ18, GBQ19, GBQ21 and relevé GEHREL11;
- FCT 20c (Eastern shrublands and woodlands) – quadrat GBQ07, GBQ27, GBQ30;
- FCT23a (Central *Banksia attenuata*-*B. menziesii* woodlands) – quadrats GBQ02, GBQ05, GBQ06, GBQ08, GBQ09, GBQ24, GBQ25, GBQ28, GBQ29, GBQ31 relevé GEHREL12; and
- FCT28 (Spearwood *Banksia attenuata* or *Banksia attenuata* – *Eucalyptus* woodlands) – quadrats GBQ01, GBQ20, GBQ26.

A summary of the determinations of floristic groupings is provided in Table 5.4, with further explanation provided below for those that correspond to FCTs associated with TECs and/or PECs. Quadrats that have been resampled are denoted with an 'R', e.g. 'GBQ04R' (Table 5.4), and analysis applies to both phases of data. Extracts of the dendrograms of the SSI process are provided in Figures 1 to 26 in Appendix 12. A table summarising the data from the 20 most similar sites (NNB analysis) is provided in Table 2 of Appendix 12, along with a list of species that were omitted for the analysis (Table1).

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

The results of the UPGMA classification initially grouped quadrat GBQ22 with the FCT 6 cluster, however the broader secondary grouping of FCT 21c was considered more accurate due to the presence of *Banksia menziesii*, *Thysanotus manglesianus* and *Gompholobium tomentosum* as typical species of FCT 21c. In addition, the most similar site to GBQ22 from the NNB analysis was from the FCT 21c group, further supporting the assignment of GBQ22 to FCT 21c (Table 5.4). This FCT has a relationship to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC and is also listed as a Priority 3 PEC at State level (see Table 5.3).

FCT 20a (*Banksia attenuata* woodlands over species rich dense shrublands)

Five quadrats and one relevé (GBQ15, GBQ17, GBQ18, GBQ19, GBQ21 and GEHREL11) were considered to align with FCT 20a (Table 5.4). GBQ15, GBQ17, GBQ21 and GEHREL11 were most closely grouped with FCT 20a by both the UPGMA classification and the NNB analysis. GBQ18 was most closely grouped with sites from FCT 20a by the UPGMA classification, and when focused on the 20 most similar sites for NNB analysis, sites representing FCT 20a were the most common. Quadrat GBQ19 clustered broadly with sites within the FCT 20 group (a, b and c) under the UPGMA classification, and FCT 20a and FCT 20c were most common from the 20 site NNB analysis. The presence of dominant species from GBQ19, including *Banksia attenuata*, more accurately reflect FCT 20a rather than FCT 20c (Gibson et al. 1994). FCT 20a is related to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC and is also listed as 'Endangered' at State level (see Table 5.3).

FCT 20c (Eastern shrublands and woodlands)

Three quadrats were considered to align with FCT 20c (Table 5.4). Quadrat GBQ07 was most closely grouped with FCT 4 through the UPGMA classification, however it more broadly grouped with FCTs 20b and 20c, which is more appropriate given the high species richness of the site (Table 5.4). Through NNB analysis, the two most similar reference sites were from FCT 20c, as well as this being the most common FCT within the 20 most similar sites, therefore FCT20c was assigned to GBQ07.

After the additional sampling effort in November 2020, Quadrats GBQ27 and GBQ30 were also assigned to FCT 20c:

- Quadrat GBQ27 grouped with FCT 21c through UPGMA, then more broadly with FCTs 20a, 20b and 20c. Six of 20 reference sites most similar to GBQ27 were FCT 20c. That, plus previous mapping by DBCA in the area, supports this FCT assignment.
- GBQ30 was nearest to reference site talb9 (FCT 20c) for NNB analysis, and also grouped with talb9 for UPGMA clustering, supporting the FCT 20c assignment.

FCT20c is related to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC, and is also listed as 'Critically Endangered' at State level (see Table 5.3). In addition, it is listed as the 'Shrublands and Woodlands of the Eastern Swan Coastal Plain' Commonwealth TEC (see Section 4.8.1 and Table 4.7).

FCT 23a (Central *Banksia attenuata*-*B. menziesii* woodlands)

Ten quadrats and one relevé (GBQ02, GBQ05, GBQ06, GBQ08, GBQ09, GBQ24, GBQ25, GBQ28, GBQ29, GBQ31 and GEHREL12) were assessed as representing FCT 23a (Table 5.4). Quadrats GBQ06 and GBQ09 both broadly clustered with FCT 23a in the UPGMA classification, which was also supported by the NNB analysis. The results of the UPGMA classification for three quadrats and one relevé (GBQ02, GBQ05, GBQ08 and GEHREL12) were varied and inconclusive. For these sites, the NNB analysis was relied upon to determine classification of the most appropriate FCT. The most similar sites to GBQ02 and GBQ08 through NNB analysis were from FCT 23a, and sites from FCT 23a were also the most common. The sites most similar to GBQ05 were varied with their FCT classification, however NNB analysis shows that sites from FCT 23a were most common, when focused on the 20 most similar sites. GEHREL12 joined with sites from FCT 20a in the UPGMA classification, but due to the number of weed species contained within this site, FCT 20a was not considered appropriate classification. GEHREL11 was assigned the FCT 23a classification through NNB analysis, where FCT 23a was most common of the first 10 most similar sites.

Additional sampling was undertaken in November 2020 in an effort to confirm the FCT assignment of areas mapped as FCT23a. Alongside PATN analysis, the species listed in 'Remnant Vegetation on the Alluvial Soils of the Eastern Side of the Swan Coastal Plain' (Keighery and Trudgen 1992), plus an additional suite of indicator species including *Jacksonia lehmannii*, *Cristonia biloba* and *Bossiaea eriocarpa* (large leaf form), were used in an attempt to differentiate between FCT 23a and FCT 20a in situ, and in conjunction with site data (Val English, DBCA, pers. comm. 2020). These species were taken into consideration, along with the results of UPGMA clustering and NNB analysis.

The results of UPGMA clustering for GBQ24, GBQ25, GBQ29 and GBQ31 were somewhat inconclusive, but these November 2020 quadrats were most commonly associated with FCT 23a reference sites in the NNB analysis. Quadrat GBQ28 clearly aligned to FCT 23a through both clustering and NNB analyses. It is considered that GBQ24, GBQ25, GBQ28, GBQ29 and GBQ31 most probably align with FCT 23a. FCT 23a has a relationship to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC (see Table 5.3).

FCT28 (Spearwood *Banksia attenuata* or *Banksia attenuata* – *Eucalyptus* woodlands)

Quadrats GBQ01 and GBQ20 were considered to align with FCT 28 (Table 5.4). GBQ01 neatly clustered with all FCT 28 sites through the UPGMA classification and this was supported by the NNB analysis, where the most similar reference site to GBQ01 (and the most common) belonged to FCT 28. Results of the UPGMA classification for GBQ20 were inconclusive, however through NNB analysis, the most similar site was FCT 28, and also the most common when considering the 20 most similar sites.

Further sampling undertaken in November 2020 and subsequent clustering analyses confirmed that GBQ26 aligns with FCT 28, rather than FCT 23 or FCT 20a as predicted during an in-situ visual inspection (Val English, DBCA, pers. comm. 2020). Using UPGMA clustering, GBQ26 paired with reference site KING-1 (FCT 28) and clustered with 27 other reference sites, all of which are from FCT 28. KING-2 (FCT 28) was also the most similar site to GBQ26 using NNB analysis. Both KING-1 and KING-2 are situated approximately 17 km west of GBQ26. Additional indicators including typical species and mean species richness factors from Gibson et al. (1994) were also considered when arriving at this determination. GBQ26 contained *Banksia attenuata*, *Hibbertia hypericoides* subsp. *hypericoides*, *Mesomelaena pseudostygia* and *Trachymene pilosa*, all typical FCT 28 species. The species richness from GBQ26 (51 species), was similar to the mean of FCT 28 sites at 55 species, whereas sites representing FCT 20a and FCT23 typically contained a mean of 67.4 species and 62.8 species respectively (Gibson et al. 1994). FCT 28 has a relationship to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC (see Table 5.3).

Table 5.4 Summary of floristic community types identified by the current study.

Quadrat	FCT from Flexible UPGMA	Comments on the UPGMA Classification	FCTs of the 20 Most Similar sites from NNB Analysis	Comments on the NNB Analysis	Most Probable FCT
GBQ01	28	GBQ01 joined the cluster of 38 sites exclusively within FCT 28.	20a, 20c, 21a, 21c, 23a, 28	Most similar site is from FCT 28 which is also the most common FCT.	FCT 28
GBQ02R	21a, 21b, 21c	GBQ02R joined closest to FCT 21a sites YULE-3, TWIN-7 and TWIN-8, however clustered more broadly with FCT 21c as a result of shared dominant species. Inconclusive.	6, 28, 20a, 20c, 21a, 21c, 23a, 23b	Most similar site is from FCT 23a, which is also the most common FCT. Contains <i>Banksia menziesii</i> , <i>Bossiaea eriocarpa</i> , <i>Dampiera linearis</i> and <i>Leucopogon conostephioides</i> , supporting FCT 23a rather than FCT 21 group.	FCT 23a
GBQ04R	5, 6, 11	GBQ04R grouped closest to sites from FCT 5.	4, 5, 6, 11, 20c, 28	Most similar sites is from FCT 6, however 60% of the 10 nearest sites and 55% of the 20 NNB sites are represented by FCT 5.	FCT 5
GBQ05R	4, 5, 6, 21c	GBQ05R most similar to FCT 4 site FL-1, however clusters broadly with FCTs 5, 6 and 21c. Inconclusive.	3a, 4, 20a, 20b, 20c, 21a, 21c, 22, 23a, 23a	Most similar site is from 3a. Has been previously mapped as 20c. The NNB analysis shows FCT supergroup 23a/23b are the most common. No <i>Banksia</i> species in quadrat but present in surrounds. Surrounding vegetation classified as FCT 23a.	FCT 23a with affinity to FCT 23b
GBQ06	20a, 20c, 21c, 23a, 23b	GBQ06 joined closest to FCT 20a site M53, however clustered more broadly with FCTs 23a and 23b as a result of shared dominant species.	20a, 20c, 21c, 23a, 23b, 28	Most similar site is from FCT 23a, which is also the most common FCT.	FCT 23a
GBQ07R	4, 20a, 20b, 20c, 21c	GBQ07R is most similar to FL-1 (FCT 4), which clustered within FCT 21c sites YULE-3, TWIN-7 and TWIN-8. However, overall, GBQ07 clustered more broadly with FCT 20b and FCT 20c as a result of shared dominant species.	3a, 3b, 4, 20a, 21a, 20c, 21c, 28, 23a	FCT is varied but the most similar site is from FCT 20c, which is also the most common FCT.	FCT 20c
GBQ08R	20a, 3b, 20b 20c	GBQ08R joined closest to FCT 20a site M53, then more broadly with FCTs 20b, 20c and also 3b. Inconclusive.	20a, 20c, 21b, 23a, 28	GBQ08 is most similar to KOON-1 from FCT 20a, however 80% of the 10 nearest sites and 50% of the 20 NNB sites are represented by FCT 23a.	FCT 23a
GBQ09R	20a, 20c, 21c, 23a, 23b	GBQ09R joined closest to FCT 20a site M53, then more broadly with FCTs 23a and 23b, which represented the majority of sites.	20a, 21a, 23a, 23b, 28	GBQ09 is most similar to sites from FCT 23a, with 50% of the 20 NNB sites represented by FCT 23a.	FCT 23a
GBQ15	20a, 20b, 20c, 3b,	GBQ15 grouped closest to sites from FCT 20a.	20a, 20c, 21a, 23a, 28	FCT varied. Most similar sites were from FCT 23a, however dominant shrub layer more similar to FCT 20a.	FCT 20a

Quadrat	FCT from Flexible UPGMA	Comments on the UPGMA Classification	FCTs of the 20 Most Similar sites from NNB Analysis	Comments on the NNB Analysis	Most Probable FCT
GBQ17	20a, 20b, 20c	GBQ17 clustered closest with sites from FCT 20a, however overall groupings are distributed evenly between FCTs 20a, 20b and 20c.	3b, 20a, 20b, 20c, 21a, 23a, 28	Most similar site is from FCT 20a and 50% if the 10 NNB sites are 20a. Of the 20 most similar sites through NNB analysis, FCT 20b is the most common.	FCT 20a: affinity with 20b
GBQ18	20a, 20b, 20c, 21a, 21b, 21c, 22, 23a, 23b, 28	GBQ18 clustered closely with sites from FCT 20a, however more broadly, GQB18 is grouped most commonly with sites from FCT 23b.	20a, 20b, 20c, 21a, 23a, 28	Most similar site is from FCT 20c, however the most common FCT overall is FCT 20a.	FCT 20a
GBQ19	21a, 20a, 20c, 23a, 24, 28	The most similar site to GBQ19 is FL-4 (FCT 21a), however more broadly, 96% of sites occurred in FCTs 20a, b or c.	20a, 20c, 20b, 21a, 23a, 24, 28	Most similar site is from FCT 28, however the most common groupings occurred in sites associated with FCT 20a or 20c. Dominant species most accurately reflect FCT 20a.	FCT 20a
GBQ20	21c, 21a, 21b	GBQ20 joined with Twin-7 and Twin-8 of FCT 21c, however more broadly grouped with FCT 21a sites. Inconclusive.	20a, 20c, 21a, 21c, 24, 28	Most similar site is from FCT 28, which is also the most common FCT.	FCT 28
GBQ21	20a, 20b, 20c	GBQ21 joined closely with sites within FCT 20a.	20a, 20b, 20c, 21a, 23a, 24, 28	Most similar site is from FCT 20a, which is also the most common FCT.	FCT 20a
GBQ22	4, 5, 6, 21c	The most similar sites to GBQ22 were card-11 and card-4 (FCT 6). More broadly, FCTs 4, 5 and 21c were also included in the groupings.	6, 20a, 20c, 21a, 21c, 23a, 24, 28	Most similar site is from FCT 21c, which is also the most common FCT in the 10 NNB analysis. FCT 21a is the most common overall, however not strongly so.	FCT 21c
GBQ23	6	GBQ23 clustered with all FCT 6 sites due to number of weed species.	4, 6, 20c, 21a, 21c, 22, 23a, 23b, 24, 28	Most similar site is from FCT 6.	FCT 6
GBQ24	20a, 20b, 20c, 28, 21c	GBQ24 grouped closest to BULL-10 and BULL-11 (FCT 28). At the next level of clustering, GBQ24 is grouped with sites from FCT 20c, and more broadly with FCT 20a and FCT 20b. Inconclusive.	20a, 21b, 20c, 23a, 23b, 28	The most similar site to GBQ24 is BULL-11 (FCT28), however sites from FCT 23a were the most common (70% of the 10 most similar sites are FCT 23a as well as 45% of the 20 most similar sites).	FCT 23a with affinity to FCT 28.
GBQ25	4, 5, 21c	GBQ25 paired to FCT 4 site FL-1, within a FCT 21c cluster. Inconclusive.	3a, 3b, 4, 20b, 20c, 21c, 23a, 28	FL-1 (FCT 4) is the most similar site to GBQ25. Has been previously mapped as FCT 20c, however only one of the 20 most similar sites represents FCT 20c. FCT 23a is the most common through NNB analysis.	FCT 23a
GBQ26	28	GBQ26 paired with KING-1 (FCT 28) and clustered with 27 other sites exclusively from FCT 28.	20a, 20c, 21a, 21c, 23a, 28	GBQ26 is most similar to KING-2 (FCT28). Sites from FCT 23a were the most common, however not strongly so. When considering UPGMA groupings, strong support for FCT 28 can be found.	FCT 28

Quadrat	FCT from Flexible UPGMA	Comments on the UPGMA Classification	FCTs of the 20 Most Similar sites from NNB Analysis	Comments on the NNB Analysis	Most Probable FCT
GBQ27	20a, 20b, 20c, 21c	GBQ27 paired with YULE-3 (FCT 21c), which clustered within 9 sites from FCT 20c, and more broadly with FCT 20a and 20b.	20c, 21a, 21c, 23c, 28	GBQ27 is most similar to FCT 23a site YULE-1, and FCT 23a is also the most common FCT. However, there is support for FCT 20c when considering UPGMA classification. The area has been previously mapped as such, and 6 of the 20 most similar sites to GBQ27 represent this FCT.	FCT 20c
GBQ28	23a, 23b	GBQ28 is grouped closest to YULE-1 and YULE-2 (FCT 23a) and more broadly to additional sites representing FCT 23a.	21a, 23a, 23b, 28	GBQ28 is most similar to sites from FCT 23a, with 80% of the 10 NNB sites and 55% of the the 20 NNB sites represented by FCT 23a.	FCT 23a
GBQ29	20a, 20b, 20c, 21c	GBQ29 paired to YULE-3 (FCT 21c) and is grouped closest to other sites within FCT 21c. The next closest grouping contained sites from FCT 20c and then more broadly with FCT 20a and FCT 20b. Inconclusive.	20c, 21a, 23a, 23b, 28	GBQ29 is most similar to talb7 (FCT 20c). However the majority of sites (60%) represent the FCT 23a/b supergroup. <i>Banksia menziesii</i> is dominant in the tree layer, supporting the FCT 23a classification, rather than the FCT 20 supergroup, in which this tree species is absent.	FCT 23a
GBQ30	20a, 20b, 20c, 21c	GBQ30 clustered closest to talb08 and talb09 (FCT 20c). Overall GBQ30 grouped with 7 sites from FCT 20a, 9 from FCT 20b and 9 from FCT 20c.	3a, 4, 20c, 21c, 23a	GBQ30 is most similar to talb9 and talb8 (FCT 20c). Whilst FCT 23a is most common of the 20 nearest sites to GBQ30, support can be found for FCT 20c when considering UPGMA clustering.	FCT 20c
GBQ31	20a, 20b, 20c	GBQ31 paired with M53 (FCT 20a), within a FCT 20a cluster. At a broader level of clustering, 9 sites from FCT 20b and 9 sites from 20c are included.	20a, 20b, 21a, 21cb, 21c, 23a, 23b	GBQ31 was most similar to AUSTRAL-1 (FCT21a). Overall, multiple FCTs shared similarity the GBQ31, with FCT supergroup 23(a/b) being dominant, but not strongly so. Due to the 'Degraded' vegetation condition of GBQ31, FCT 20a is not considered an appropriate FCT assignment.	FCT 23a; with affinity to 23b
GEHREL11	20a, 20b, 20c	GEHREL11 clusters closest to sites representing FCT 20a.	20a, 20c, 21a, 23a, 23b, 28	Most similar site is from FCT 20a, which is also the most common FCT.	FCT 20a
GEHREL12	20a, 20b, 20c	GEHREL12 clusters closest to sites representing FCT 20a.	20a, 21a, 21c, 23a, 23b, 24, 28	Most similar site is FCT 24, however when considering the first 10 nearest sites, FCT 23a is the most common; in NNB 20 FCT 23b is most common overall. Due to the level of weed species present, FCT 20a is not considered appropriate.	FCT 23a; with affinity to 23b
GEHREL15	6	GEHREL15 clustered with all FCT6 sites due to number of weed species.	6, 21a, 21c, 23a, 24, 28	Inconclusive.	FCT 6

5.3.2 Validation of Vegetation Types

A separate floristic analysis was completed to validate the vegetation types determined during mapping and used only those sites from the current survey. The dendrogram and NMDS plot are provided below (see Figure 5.1 and Figure 5.2; Appendix 13). Table 1 in Appendix 13 lists taxa that were omitted or treated as other taxa for the purposes of the floristic analysis. Table 2 in Appendix 13 summarises the key species contributing the greatest amount to the similarity of sites in each floristic group based on cover.

There was relatively good congruence between the number of the vegetation types identified on the basis of structure and dominant species and the floristic groups identified through the PRIMER analyses. Based on the analyses of sites from the current survey, and using cover data (unless otherwise specified):

- Of the 18 floristic groups identified, 13 floristic groups contained single sites. This was not unexpected, given the small size of the survey area, limiting opportunities to replicate all vegetation types encountered.
- As all Planted/Revegetation sites were assigned the same vegetation code despite significant variation in species composition, it was expected that there would be little similarity between these sites.
- Sites in vegetation types P3, P6, L3 and P8 occurred in a distinctly separate group to other sites (FGr), where *Eucalyptus rudis* subsp. *rudis* contributed the most towards clustering.
- All *Banksia* Woodland sites, and sites adjacent to *Banksia* woodland formed a distinct group at 10% similarity, based on percentage cover (see Figure 2, Appendix 13). Overlap at 25% is seen in vegetation types P1, P5, and P7, which all contain *Banksia* species.
- The majority of sites in P1 grouped at FGo on the basis of the presence of species such as *Banksia menziesii*, *Alexgeorgea nitens*, *Hibbertia hypericoides* subsp. *hypericoides* and *Adenanthos cygnorum* subsp. *cygnorum*. Two sites grouped at FGb by sharing *Eucalyptus todtiana*, *Banksia menziesii*, *Gompholobium tomentosum* and *Ursinia anthemoides* subsp. *anthemoides* as common dominant species. Two additional P1 sites grouped individually in FGc and FGj due to reduced vegetation condition and species diversity.
- Sites in the P5 vegetation type clustered together into FGc, where *Eucalyptus marginata* subsp. *marginata*, *Xanthorrhoea preissii*, *Alexgeorgea nitens* and *Lyginia barbata* contributed 63.7% to cumulative similarity (see Table 2 in Appendix 13).
- Of the six sites in vegetation type P7, 50% grouped into FGn, where *Banksia menziesii*, *Mesomelaena pseudostygia* and *Xanthorrhoea preissii* were dominant. The remaining three sites were placed in separate floristic groups (FGk, FGl and FGm). The overall similarity of sites mapped as P7 was 25%.
- GBQ03, GEHREL07, which comprise the P4 vegetation type, clustered neatly into FGe, where *Eremaea pauciflora* var. *pauciflora* contributed the most to similarity between sites.
- The sites in P2 vegetation type clustered into three separate floristic groups. One site grouped individually into FGg. GBQ27 and GBQ30 grouped into FGh, where *Caustis dioica* contributed the most toward cumulative similarity. GBQ05R and GBQ25 formed a group at FGi, where *Corymbia calophylla* was the dominant tree species.
- GEHREL01 (L4 vegetation type) and GEHREL04 (Revegetation) were grouped into FGp solely on the basis of the presence and similarity of the weed *Cynodon dactylon*, however they are clearly distinct groups based on the NMDS plot (see Figure 2, Appendix 13).

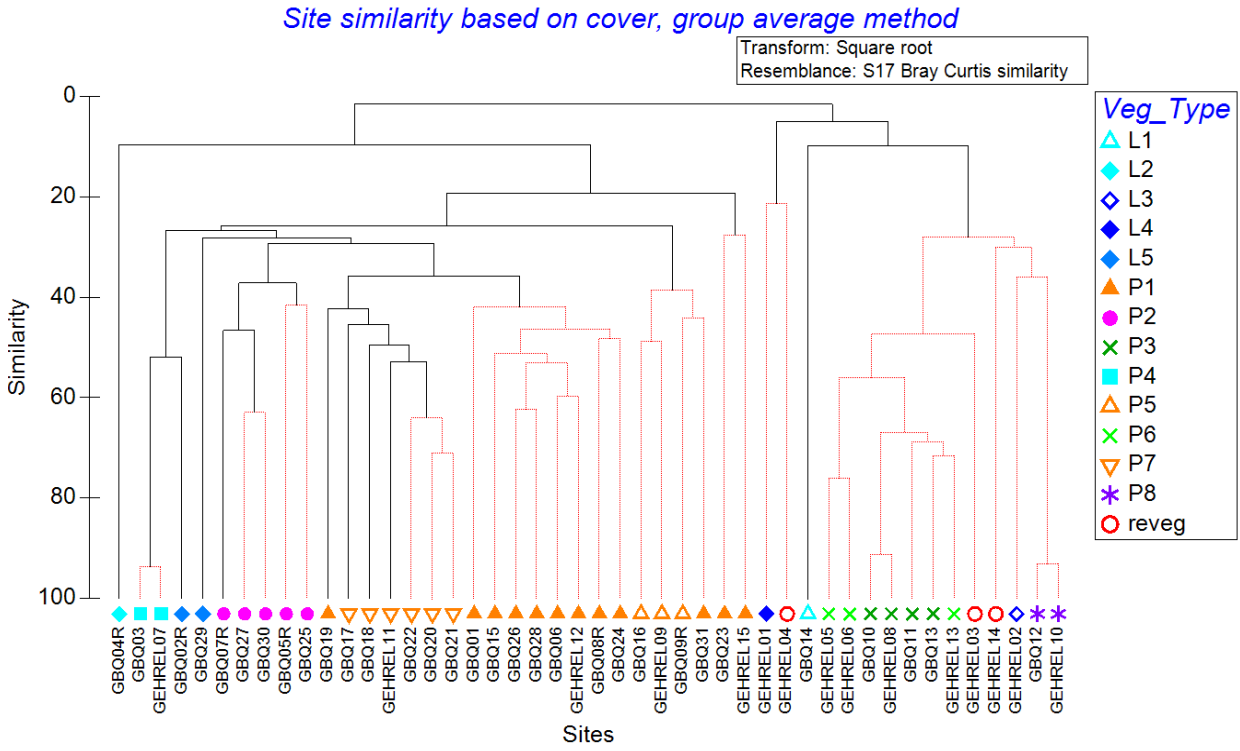


Figure 5.1: Dendrogram from floristic clustering analysis of sites from the current survey (based on percent cover of all annual and perennial taxa, excluding singletons; coded by vegetation type).

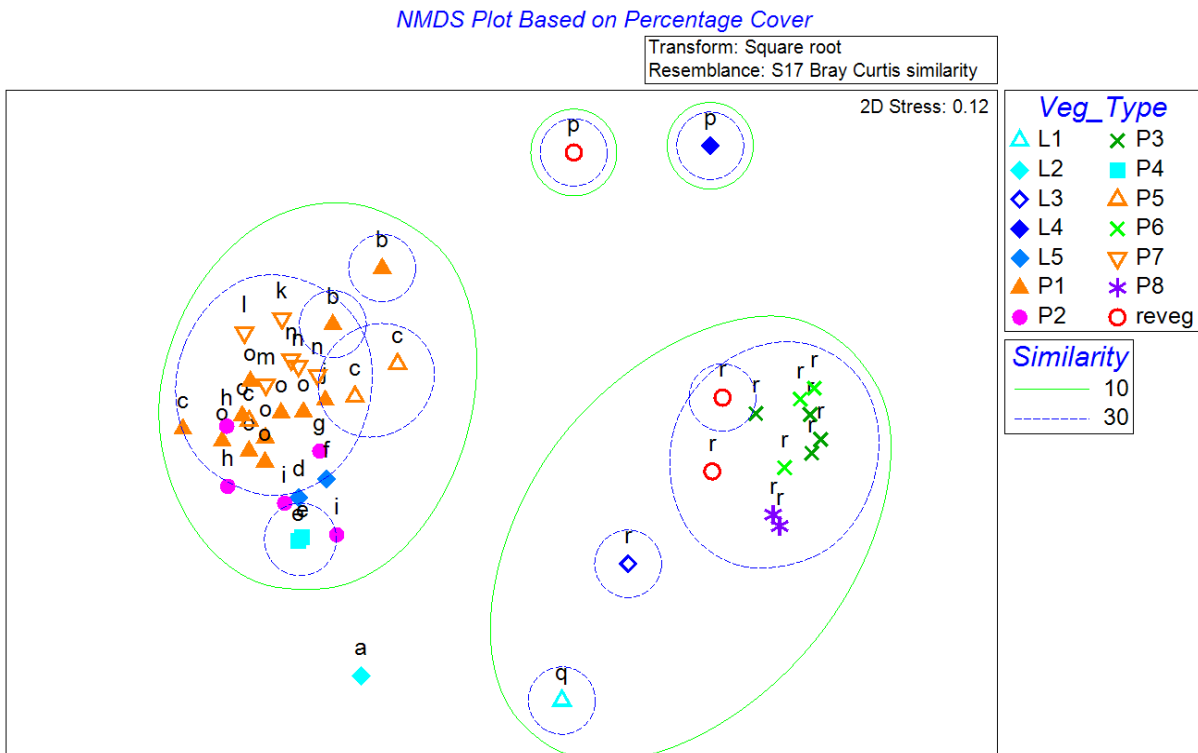


Figure 5.2: NMDS plot based of sites from the current survey (based on percent cover of all annual and perennial taxa, excluding singletons; coded by vegetation type).

5.4 Significant Vegetation

TECs and corresponding PECs were identified within the survey area and contextual area based on the vegetation types described (Section 5.1) the quadrat data (Appendix 8), TEC patch assessments (Appendix 5), and the floristic analysis using PATN (Section 5.3.1). Areas considered to be either a TEC or PEC within the survey area (Figure 5.3 and Figure 5.4) were based on quantitative data, whilst those areas mapped within the contextual area were solely based on extrapolation of vegetation mapping from the aforementioned survey area.

5.4.1 Threatened Ecological Communities

5.4.1.1 Commonwealth Threatened Ecological Communities

Prior to the field survey, two Commonwealth listed TECs were expected to occur within the Level 2 survey area and elsewhere in the immediate vicinity, as previously identified by the DBCA (see Section 4.8.1). The 'Banksia Woodlands of the Swan Coastal Plain' and 'Shrublands and Woodlands of the eastern Swan Coastal Plain' TEC were both confirmed to occur within the Level 2 survey area as a result of 13 independent in situ field patch assessments (see Section 3.2.4, Appendix 5) and subsequent consideration of whether each patch met the criteria for recognition as these TECs (Appendix 5). The 'Shrublands and Woodlands of the eastern Swan Coastal Plain' TEC is not only a component of the 'Banksia woodlands of the Swan Coastal Plain' Commonwealth TEC, but also represents a separate Commonwealth TEC in its own right.

A total of nine remnant vegetation patches of varying size were considered to be representative of the 'Banksia woodlands of the Swan Coastal Plain' TEC; one of these patches should be considered under 'Shrublands and Woodlands of the eastern Swan Coastal Plain' (see Figure 5.3 below for patch mapping and Plate 5.14 to Plate 5.16 for representative photos of these two TECs). A total of six patches occurred either wholly or partially within the survey area, with three additional inferred patches occurring only within the contextual area (see Figure 5.3). The extent of 'Banksia woodlands of the Swan Coastal Plain' TEC within the survey area comprised 27.44 ha, 1.65 ha of which also represented the 'Shrublands and Woodlands of the eastern Swan Coastal Plain' TEC specifically, with a further 96.56 ha located within the broader contextual area, meaning that 22.1% of the local extent occurs within the survey area (see Table 5.5).

Table 5.5 Extent of Commonwealth Listed TECs within the survey areas.

EPBC TEC	Status	Contextual Area Only (ha)	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Extent (ha)
Banksia woodlands of the Swan Coastal Plain ecological community	Endangered	96.56	-	27.44	124.0
Shrublands and Woodlands of the eastern Swan Coastal Plain	Endangered	(1.72)	-	(1.65)	(3.37)



Plate 5.14: Representative photographs of the Banksia Woodlands of the Swan Coastal Plain ecological community TEC.



Plate 5.15: Representative photographs of the Banksia Woodlands of the Swan Coastal Plain ecological community TEC.

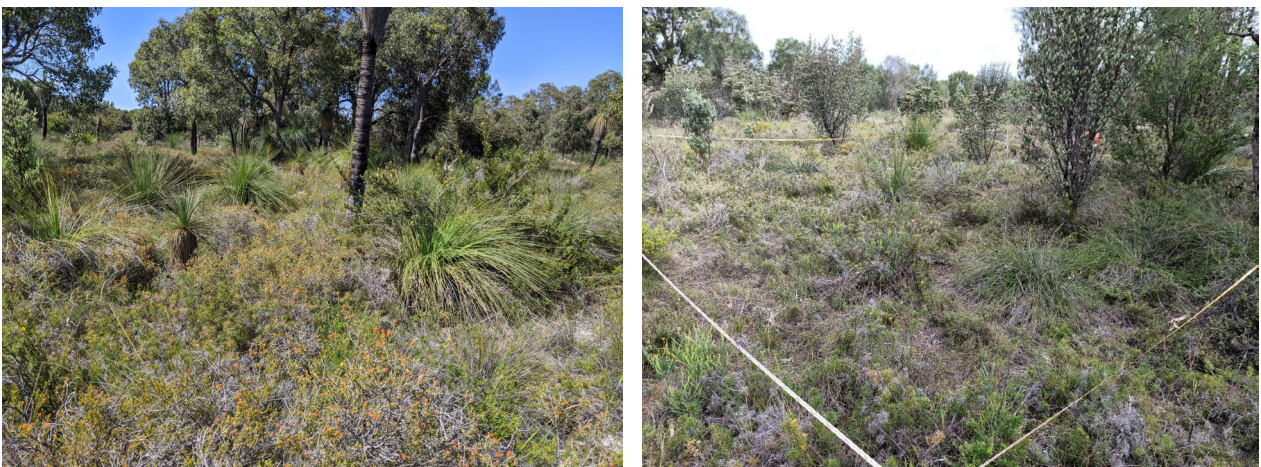


Plate 5.16: Representative photographs of the Shrublands and Woodlands of the eastern Swan Coastal Plain TEC.

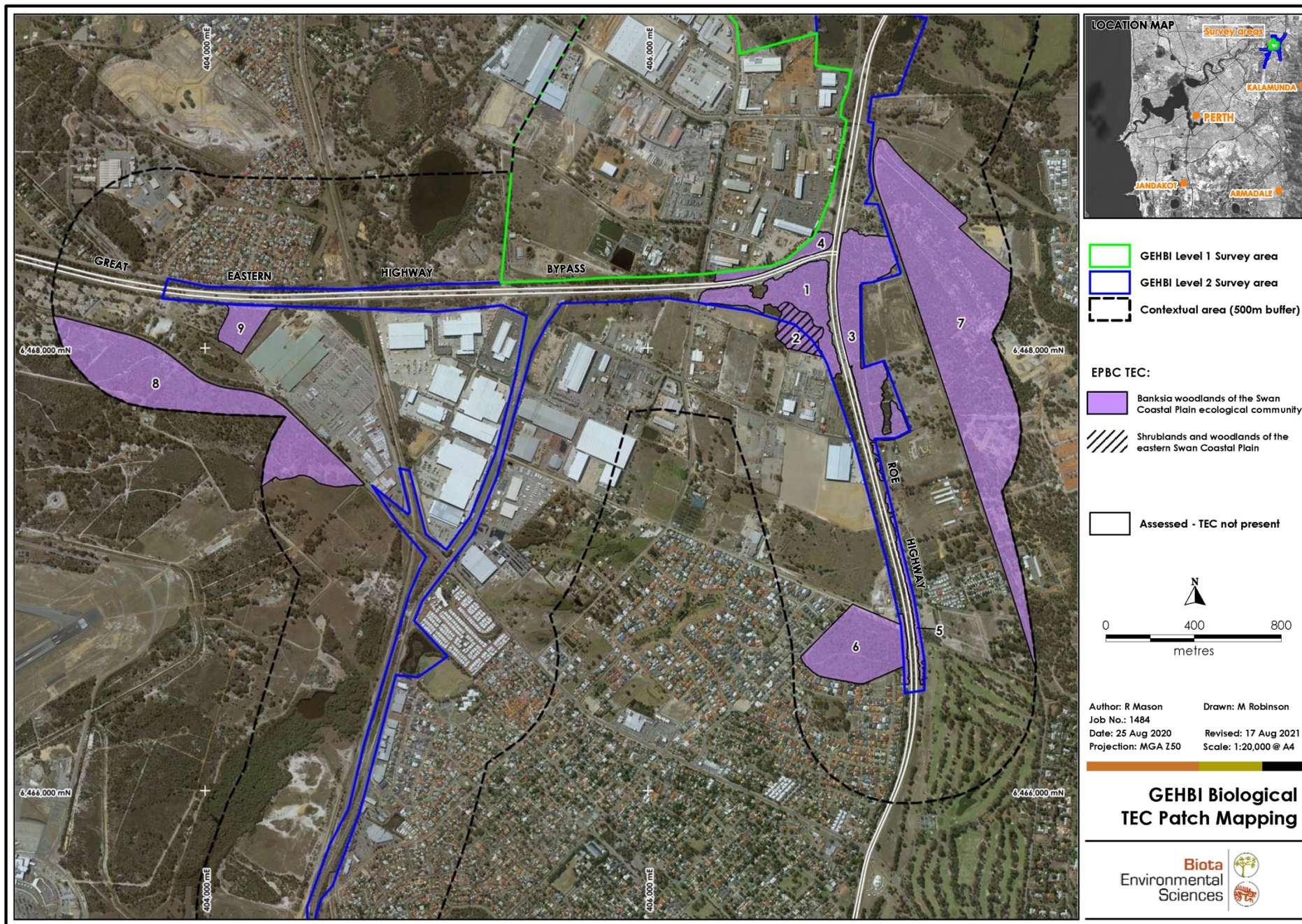


Figure 5.3: Commonwealth TEC patch assessment within the survey area and contextual area (numbers indicate patch number; Appendix 5).

5.4.1.2 State-Listed Threatened Ecological Communities and Priority Ecological Communities

Table 5.6 below provides a breakdown of the individual floristic community types identified within the survey area which have relationships to the 'Banksia woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC. Two of the five FCTs identified are listed as TECs at state level (FCT 20a and FCT 20c). 'Banksia attenuata woodlands over species rich dense shrublands' (FCT 20a) comprised 11.12 ha of the survey area, whilst 1.65 ha of 'Eastern shrublands and woodlands' (FCT 20c) was identified.

The Priority 3 'Banksia woodlands of the Swan Coastal Plain' PEC was identified throughout the survey area (see Appendix 5 and Figure 5.4, Figure 5.5), and the floristic analysis demonstrated support for the presence of the Priority 3 'Low lying Banksia attenuata woodlands or shrublands' PEC (FCT 21c) sub-community, totalling 2.53 ha (Table 5.6).

An additional eight quadrats were installed in November 2020 to refine potential State PEC/TEC boundaries within the portion of Banksia woodlands of the Swan Coastal Plain' PEC surrounding Roe Highway / Great Eastern Highway Bypass intersection. The quadrat locations and corresponding FCT assignments are shown in Figure 5.5.

Three patches of 'Banksia woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC within the contextual area were inferred as 'Banksia attenuata woodlands over species rich dense shrublands' (FCT 20a) based on extrapolated mapping, and are included within the area calculations (Table 5.6, Figure 5.4).

As the 'Banksia woodlands of the Swan Coastal Plain' State-listed PEC is equivalent to the Commonwealth TEC, the patches within the survey area and contextual area that were representative of the PEC similarly comprised 27.44 ha and 96.56 ha respectively (Table 5.6).

Table 5.6 Floristic community types that occur in the survey area and have relationships to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' Commonwealth TEC.

Community Name	Floristic Community Type (Gibson et al. 1994)	PEC Name	State Listing	Contextual Area Only (ha)	Level 1 Survey Area (ha)	Level 2 Survey Area (ha)	Total Extent (ha)
Low lying <i>Banksia attenuata</i> woodlands or shrublands	FCT 21c	Low lying <i>Banksia attenuata</i> woodlands or shrublands ('floristic community type 21c')	Priority 3	0.02	-	2.53	2.55
<i>Banksia attenuata</i> woodlands over species rich dense shrublands	FCT 20a	Banksia woodlands of the Swan Coastal Plain	Threatened (Endangered)	94.82	-	11.12	105.94
Shrublands and woodlands of the eastern side of the Swan Coastal Plain	FCT 20c		Threatened (Critically Endangered)	1.72	-	1.65	3.37
Central <i>Banksia attenuata</i> - <i>Banksia menziesii</i> woodlands	FCT 23a		Priority 3	-	-	8.98	8.98
Spearwood <i>Banksia attenuata</i> or <i>Banksia attenuata</i> - Eucalyptus woodlands	FCT 28		Priority 3	-	-	3.16	3.16
TOTAL				96.56	-	27.44	124.0

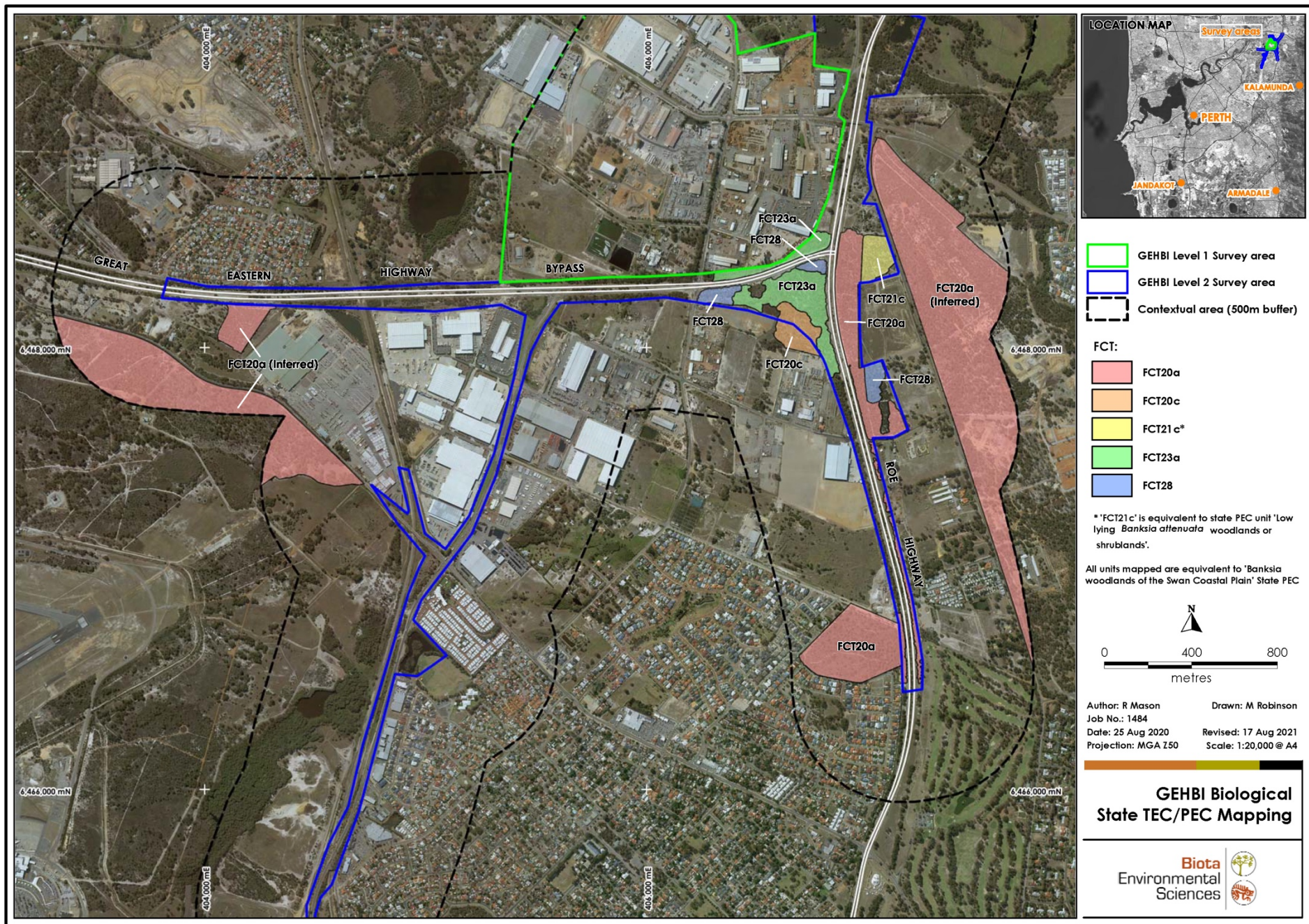


Figure 5.4: State TEC and PEC occurrences within the survey area and contextual area.

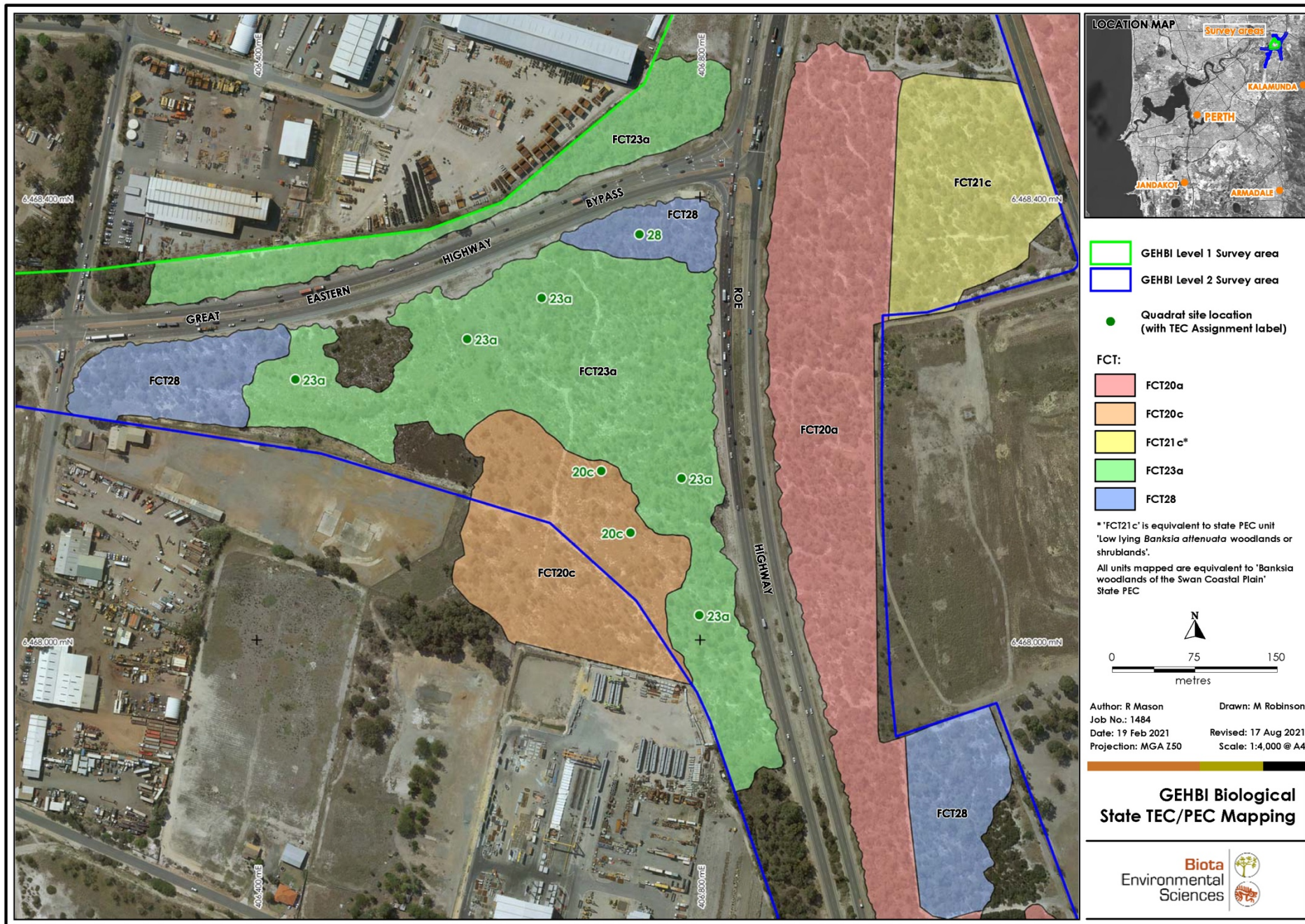


Figure 5.5: Additional quadrats and associated State TEC and PEC assignments.

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6.0 Flora

6.1 Overview

A total of 287 native vascular flora taxa from 145 genera and 53 families were recorded from the survey area (see Appendix 7). In addition, 96 introduced flora species were recorded, as discussed in Section 6.5.

The dominant native plant families and genera recorded from the survey area are typically well represented in species lists from the Swan Coastal Plain (see Table 6.1).

Table 6.1: Native families and genera with the highest species richness in the survey area.

Family	No. of Native Species	Genus	No. of Native Species
Myrtaceae	41	<i>Melaleuca</i>	12
Fabaceae	28	<i>Acacia</i>	7
Proteaceae	25	<i>Lomandra</i>	8
Cyperaceae	26	<i>Haemodorum</i>	6
Asparagaceae	16	<i>Daviesia</i>	6
Haemodoraceae	15	<i>Thysanotus</i>	6
Poaceae	10		

6.2 Unresolved Taxa

Most taxa (95%) were able to be determined with confidence to the lowest level possible within the currently available taxonomic framework. The remaining species generally lacked sufficient material for identification.

Lepidosperma sp. warrants particular comment: specimens were submitted to the WA Herbarium but could not be further determined, as the genus is currently undergoing revision by Dr Russell Barrett. Numerous new entities will be formally described, however the distinguishing characters have not yet been made available (M. Hislop, WA Herbarium, pers. comm. 2020).

6.3 Sampling Adequacy

The species accumulation curve generated from the data from the 52 sampling sites (31 quadrats, six resamples and 15 relevés) surveyed in 2019/2020 (Sobs data) is approaching a plateau, indicating that the sampling of the survey area was relatively thorough (Figure 6.1).

The two estimates of species richness (ICE and Chao2) suggested that the actual number of species present in the sampled area was approximately 467, which would mean that 72% of the total flora (native flora only) was recorded during the site sampling for the current study (Table 6.2). However, when the additional species and weeds that were recorded opportunistically are included, the species recorded from the survey area represent 87% of the total species estimated to occur in the sampling area.

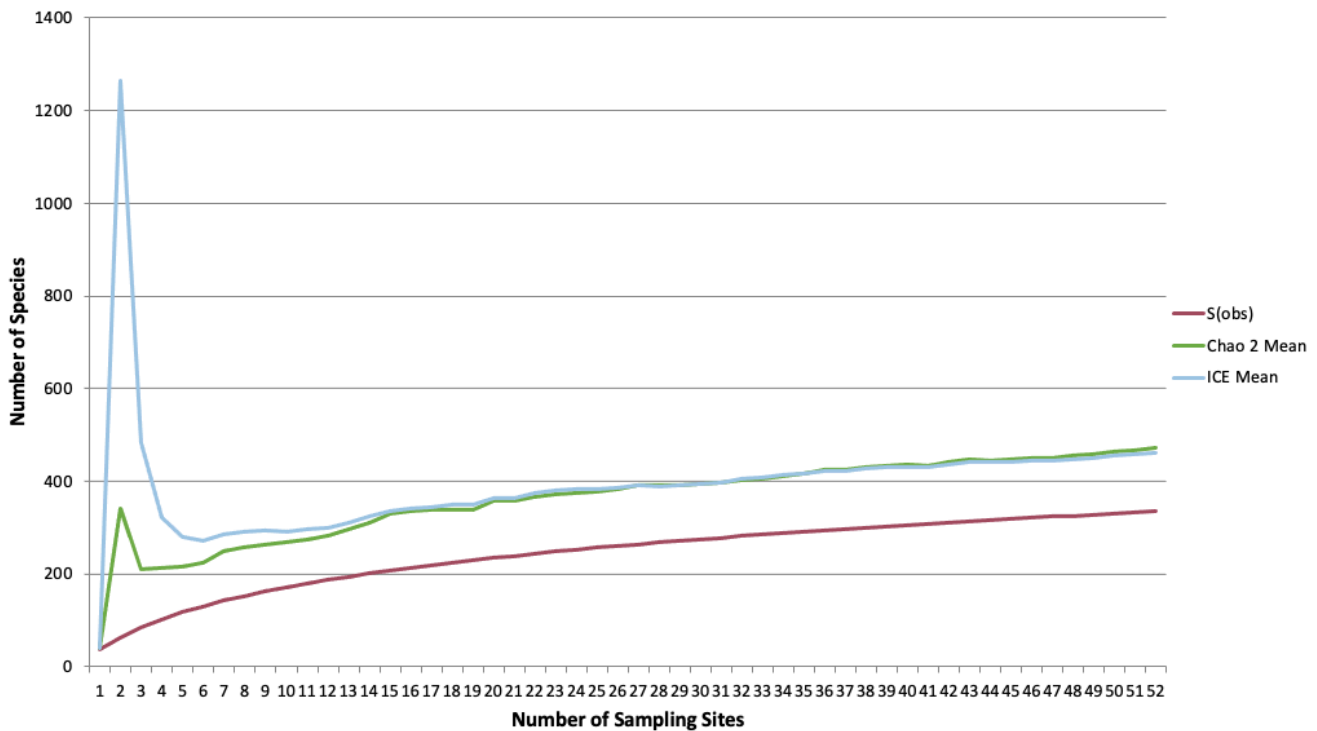


Figure 6.1: Species accumulation curve based on actual observations at the sampling sites ($S(\text{obs})$), together with two estimates of species richness (ICE and Chao 2).

Table 6.2: Recorded species richness compared with predicted species richness using incidence-based estimators (without opportunistic records).

Parameter	Number of Species	Percentage of Estimated Richness Recorded
Number of species recorded	335	N/A
Estimated Number of Species	Chao 2 Mean	71%
	ICE Mean	72%

6.4 Significant Flora

6.4.1 Threatened Flora

One species recorded within the survey area, *Conospermum undulatum*, is listed as both Vulnerable under the EPBC Act and Threatened under the BC Act. The locations of this taxon are presented in Appendix 10 and on Figure 6.2. A brief description of the taxon is provided below.

Conospermum undulatum (Threatened)

Conospermum undulatum is an erect, multi-stemmed shrub to 1.5 m tall with hairless leaves having characteristically wavy margins (Plate 6.1). The woolly flowers have long, white hairs, and are produced in inflorescences held well above the leaves (DEWHA 2009). It is a geographically restricted species recorded in 216 locations within the Jarrah Forest and Swan Coastal Plain IBRA regions, in association with *Banksia* and Jarrah/Marri woodland (WA Herbarium 2020). Prior to the field survey, it was known to occur at five locations within the study area. Three individuals were recorded from two previously known locations in the survey area during the current study: two individuals were recorded from GBQ17, located in vegetation type P7, and one individual was recorded through the targeted survey, adjacent to an existing record (see Appendix 10 and Figure 6.2).



Plate 6.1: *Conospermum undulatum*

Photography by A.D Crawford & K. R. Thiele. Image used with the permission of the WA Herbarium, DBCA (<https://florabase.dpaw.wa.gov.au/help/copyright>). Accessed on Wednesday, 17 June 2020.

6.4.2 Priority Flora

Natural populations of one Priority 2, one Priority 3 and two Priority 4 taxa were identified and counted in the survey area. Detailed location information for each Priority taxon is presented in Appendix 10 and on Figure 6.2 with a brief summary of each taxon and selected photographs provided below. In addition, *Melaleuca viminalis* (Priority 2) was encountered at GEHREL04. As it is a planted species it is not considered a natural Priority species population.

Johnsonia pubescens subsp. *cygnorum*

(Priority 2)

This tufted perennial herb has white to green flowers and strappy leaves, and has been recorded on grey-white sands in *Banksia* woodlands and in seasonally wet sites of the Swan Coastal Plain IBRA region (WA Herbarium 2020). *Johnsonia pubescens* subsp. *cygnorum* has been recorded from 17 locations between Perth and Pinjarra, distributed over a range of 71 km (DBCA 2020). A total of 10 individuals were recorded from four quadrats (GBQ03, GBQ05, GBQ07, GBQ30) and two locations during the survey, in the P2 and P4 vegetation types.



Plate 6.2 *Johnsonia pubescens* subsp. *cygnorum*.

Isopogon autumnalis**(Priority 3)**

Isopogon autumnalis is a multi-stemmed shrub to 1m high, with curved, simple terete leaves and pale yellow flowers (Plate 6.2). It has been recorded from 59 locations between Leeman and Mandurah, distributed over a range of 260 km. 128 individuals were recorded from five locations through the targeted survey and two quadrats during the survey, within the P7 vegetation unit.



Plate 6.3: *Isopogon autumnalis*.

Hypolaena robusta**(Priority 4)**

This species is a rhizomatous, perennial herb growing to approximately 50 cm and is found on white sands (Plate 6.4). The distribution of this species extends across 480 km, from Eneabba to Augusta. During the survey, one individual was recorded from just outside quadrat GBQ06 in the P1 vegetation type.



Hypolaena robusta

Photos: A.D. Crawford

Plate 6.4: *Hypolaena robusta*.

Photography by A.D. Crawford. Image used with the permission of the WA Herbarium, DBCA (<https://florabase.dpaw.wa.gov.au/help/copyright>). Accessed on Wednesday, 17 June 2020.

Verticordia lindleyi* subsp. *lindleyi**(Priority 4)**

Verticordia lindleyi subsp. *lindleyi* is an erect shrub, growing upwards of 75 cm, with pink flowers. It favours winter wet depressions in sandy soils. One individual was recorded opportunistically during the survey from within the L2 vegetation type.

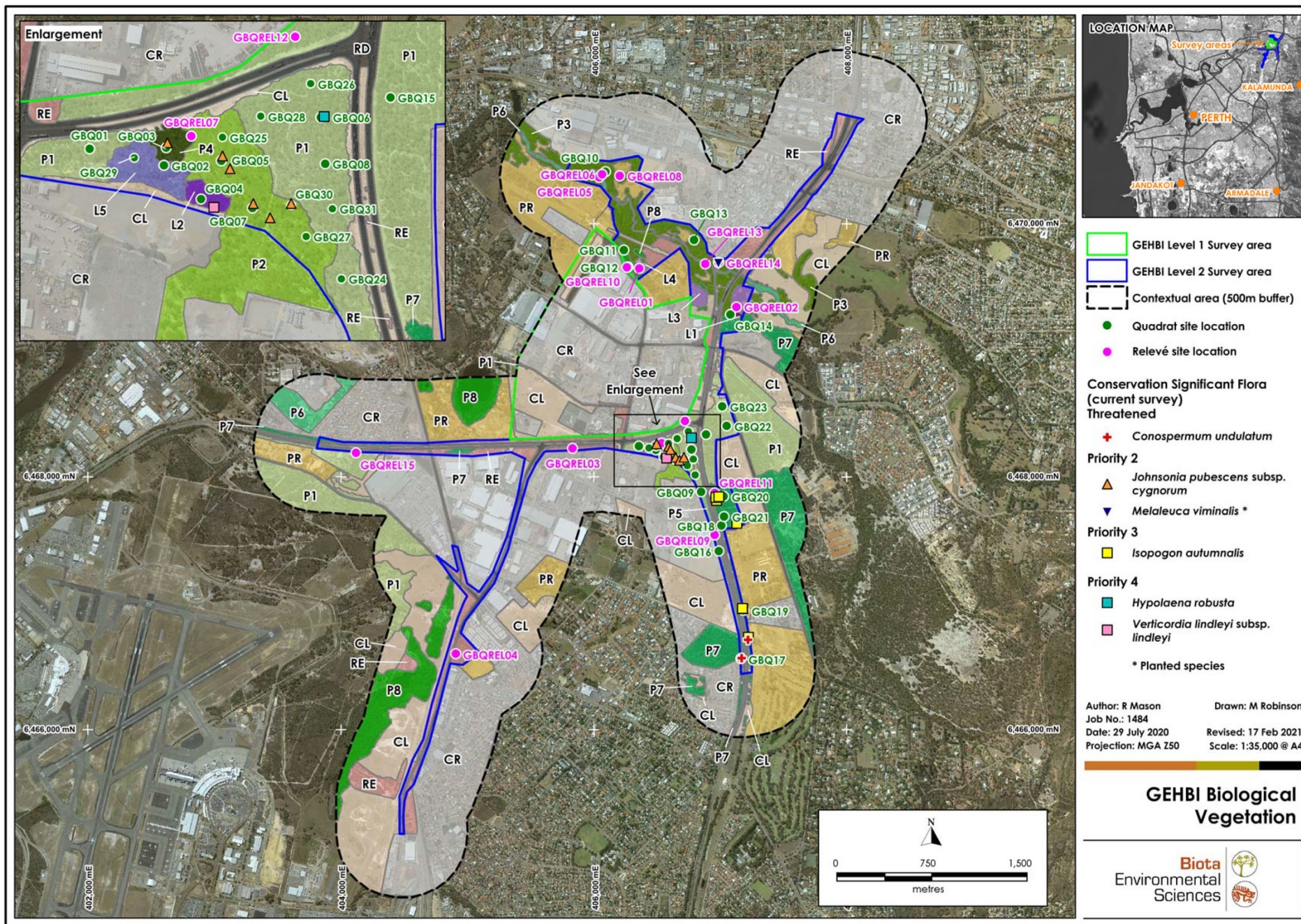


Figure 6.2: Locations of significant flora recorded within the survey area and contextual area.

6.4.3 Potential for Other Significant Flora

Collections of the Priority 2 sedge *Lepyrodia curvescens* and Priority 4 sedge *Schoenus griffinianus* were both recorded previously within a seasonally wet area of the survey area. Despite targeted searches at this location, these species were not recorded during the field survey.

None of the other significant species known to occur in the locality are considered to occur in the survey area; all are perennial species that should have been recorded during the field survey, if present (see Appendix 4a).

6.5 Introduced Flora

Introduced flora were common through the entirety of the survey area, given its landscape setting. A total of 96 species from 76 genera and 35 families were recorded opportunistically or within quadrats and/or relevés. Due to the number of introduced species and their abundance it was not practical to fully map and record numbers of individuals of all introduced species during the field survey. A list of the locations recorded is presented in Appendix 11.

The Department of Parks and Wildlife (now DBCA) Swan Region Species Prioritisation Process rated weed species known from the region against their qualitatively assessed 'Ecological Impact' and 'Invasiveness', whilst taking into account the potential distribution and current distribution (Appendix 11). Whilst a large amount of weed species recorded from the study area had an Ecological Impact ranking of 'Unknown' through this process the majority had an Ecological Impact ranking of 'High' and an Invasiveness ranking of 'Rapid'. A list of all 96 species and their corresponding Ecological Impact and Invasiveness rankings is provided in Appendix 11.

6.5.1 Weeds of National Significance and Declared Pest Plants

Thirty-two species of weeds have been federally declared as WoNS based on their invasiveness, potential for spread, and for environmental, social, and economic impacts (DPaW 2012). To protect agriculture in WA, the Department of Primary Industry and Regional Development (DPIRD) regulates harmful plants under the BAM Act. Plants that are prevented entry into the state or have control or keeping requirements in WA are known as Declared Pests (DPIRD 2020).

Two of the species recorded, **Asparagus asparagoides* (Bridal Creeper) and **Rubus ulmifolius* (Blackberry) are listed as WoNS (Thorp and Lynch 2000)⁴, and Declared Pests under the BAM Act. Additionally, **Echium plantagineum*, **Hydrocotyle ranunculoides* (Robust Pennywort), **Solanum linnaeanum* (Apple of Sodom) and **Zantedeschia aethiopica* (Arum Lily) are listed as Declared Pests and were recorded within the survey area. Further details on each species are provided below.

6.5.1.1 **Asparagus asparagoides* (Bridal Creeper)

**Asparagus asparagoides* is both a WoNS and Declared Pest, and is a herbaceous climbing plant from the family Asparagaceae that is native to Southern Africa. Bridal Creeper has been recorded across the Avon Wheatbelt, Coolgardie, Esperance Plains, Geraldton Sandplains, Jarrah Forest, Mallee, Swan Coastal Plain, and Warren IBRA bioregions (WA Herbarium 2020). The species is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts (DoAWE 2020).

Twelve individuals from nine locations were recorded in the survey area (see Appendix 11).

6.5.1.2 **Echium plantagineum* (Paterson's Curse)

**Echium plantagineum*, a Declared Pest, is a typical weed of roadsides, pastures, vacant lands and disturbed grounds. It has been recorded across 13 IBRA regions throughout WA (WA Herbarium 2020). Paterson's Curse is regarded as a serious environmental weed due to its seed, which can remain dormant for up to six years, and its ability to adapt to a wide range of soils.

1,230 records from nine locations were recorded from the survey area, including GEHREL01 and GEHREL01, where 10% cover was recorded in both (see Appendix 11).

⁴ <http://www.weeds.org.au/WoNS/>

6.5.1.3 **Hydrocotyle ranunculoides* (Robust Pennywort)

Native to South America, **Hydrocotyle ranunculoides* is a Declared Pest, and is an aquatic stoloniferous herb, with an ability to cover large areas of fresh, still water (Hussey et al. 2007). It has been recorded in aquatic areas on the Swan Coastal Plain IBRA region (WA Herbarium 2020).

One record of this species was made in GEHREL04 (see Appendix 11).

6.5.1.4 **Rubus ulmifolius* (Blackberry)

**Rubus ulmifolius* is both a WoNS and Declared Pest, and is a straggling perennial shrub, originating in northern Africa and Europe. Blackberry has been recorded across the Jarrah Forest, Swan Coastal Plain and Warren IBRA bioregions (WA Herbarium 2020). The complex of *Rubus* species are regarded as some of the worst weeds in Australia because of their invasiveness, potential for spread, and economic and environmental impacts (DoAWE 2020).

Seventy individuals were encountered opportunistically from two locations, plus an additional record of 5% cover recorded within GEHREL05 (see Appendix 11).

6.5.1.5 **Solanum linnaeanum* (Apple of Sodom)

Declared Pest **Solanum linnaeanum* is a spreading shrub with stout prickles, originating in southern Africa. It has been recorded across the Avon Wheatbelt, Geraldton Sandplains, Jarrah Forest, Swan Coastal Plain Warren IBRA bioregions (WA Herbarium 2020).

One record of this species was encountered from one opportunistic location during the survey (see Appendix 11).

6.5.1.6 **Zantedeschia aethiopica* (Arum Lily)

**Zantedeschia aethiopica*, a Declared Pest, is a perennial herb typically found in low-lying swampy areas and is native to South Africa. It was introduced for horticultural purposes. Arum Lily has been recorded from Geraldton to Albany, and is toxic to animals (WA Herbarium 2020).

Ten individuals of this species were recorded from five locations within the survey area (see Appendix 11).

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7.0 Fauna


7.1 Fauna Habitats



Approximately 60% of the total survey area (174.2 ha in the Level 1 survey area and 51.4 ha in the Level 2 survey area section) comprised cleared roads, buildings or heavily-degraded agricultural land, with negligible value as fauna habitat.



Seven fauna habitats were identified in the remainder of the survey area using on-ground habitat assessment in combination with the vegetation mapping. These are outlined in Table 7.1 and mapped in Figure 7.1. The Level 1 survey area contained four fauna habitats, whilst the Level 2 survey area contained all seven fauna habitat types.


Table 7.1: Fauna habitats identified within the survey area.

Habitat (Equivalent Vegetation Units)	Extent of Habitat in Survey Area (Proportion of Total Extent in Survey Area)		Photograph
	Level 1 Survey Area	Level 2 Survey Area	
Scattered Eucalyptus/Marri in cleared areas	6.8 ha (3.7%)	9.7 ha (5.1%)	

Habitat (Equivalent Vegetation Units)	Extent of Habitat in Survey Area (Proportion of Total Extent in Survey Area)		Photograph
	Level 1 Survey Area	Level 2 Survey Area	
Eucalyptus/Marri in road reserve	4.8 ha (2.9%)	38.5 ha (20.2%)	

Habitat (Equivalent Vegetation Units)	Extent of Habitat in Survey Area (Proportion of Total Extent in Survey Area)		Photograph
	Level 1 Survey Area	Level 2 Survey Area	
Banksia woodland with scattered Eucalyptus/Marri	0.02 ha (0.01%)	39.0 ha (20.5%)	
Flooded Gum over grasslands	-	36.7 ha (19.2%)	

Habitat (Equivalent Vegetation Units)	Extent of Habitat in Survey Area (Proportion of Total Extent in Survey Area)		Photograph
	Level 1 Survey Area	Level 2 Survey Area	
Wetlands/River	3.0 (1.8%) ¹	13.9 ha (7.3%) ²	
Planted Eucalyptus/Marri	-	3.7 ha (1.9%)	

Habitat (Equivalent Vegetation Units)	Extent of Habitat in Survey Area (Proportion of Total Extent in Survey Area)		Photograph
	Level 1 Survey Area	Level 2 Survey Area	
Fabaceous heathland	-	1.3 ha (0.7%)	

¹ represented in survey area by industrial evaporation ponds

² includes 2.9 ha of open water

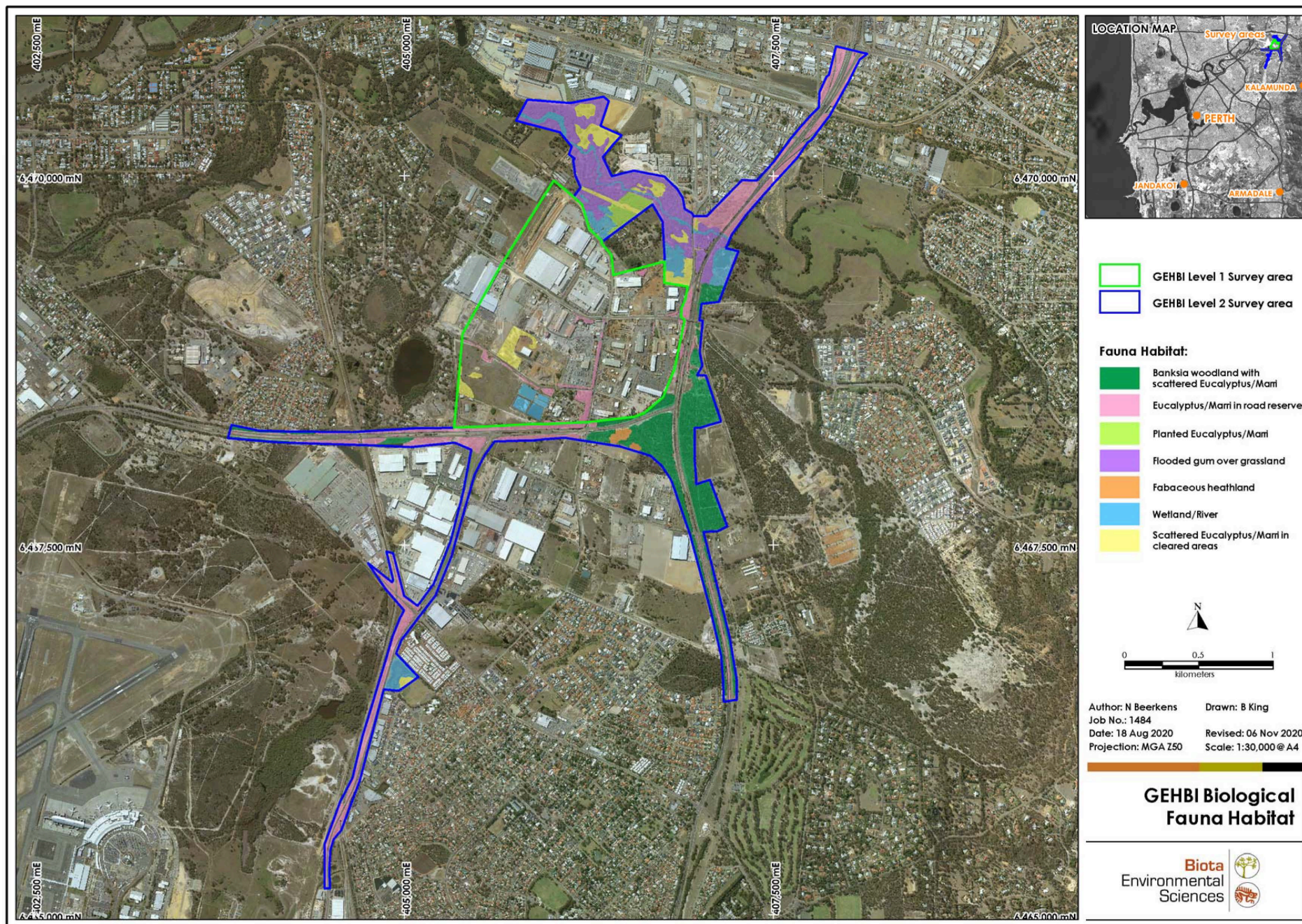


Figure 7.1: Fauna habitats identified within the survey area.

7.2 Fauna Recorded During the Survey

7.2.1 Level 1 Survey Area

The only native fauna observed within the Level 1 survey area were two species of birds: Australian White Ibis (*Threskiornis molucca*) and Willie Wagtail (*Rhipidura leucophrys*). Neither are of significance. European Cattle (*Bos taurus*) were also observed within the survey area, but only inside a fenced paddock (Figure 7.2).

7.2.2 Level 2 Survey Area

A total of 62 species were recorded in the Level 2 survey area. The full assemblage of vertebrate fauna recorded within the study area, including their conservation status and method of observation, is presented in Table 7.2.

Seven mammal species (three native and four introduced) were recorded, through a combination of direct observation, remains, secondary evidence (e.g. diggings) and motion cameras. One mammal species of significance was recorded; the Quenda (*Isoodon fusciventer*; Priority 4). Quenda were recorded throughout the Level 2 survey area, via diggings, motion camera (Plate 7.1) and direct observation (Figure 7.2).



Plate 7.1: Quenda (*Isoodon fusciventer*) captured on motion camera at site MC03.

In total, 49 bird species were recorded opportunistically and via motion camera during the field survey (Table 7.2), including direct observations of the significant Carnaby's Black-Cockatoo and foraging evidence of Forest Red-tailed Black-Cockatoo. These black cockatoo records are discussed further in Section 7.3. No other bird species recorded were of significance.

Five reptile species were recorded from the survey area, through opportunistic sightings and remains (Table 7.2). None were of significance. One amphibian species, the Squelching Froglet (*Crinia insignifera*), was heard within the survey area (Table 7.2). It is not of significance.

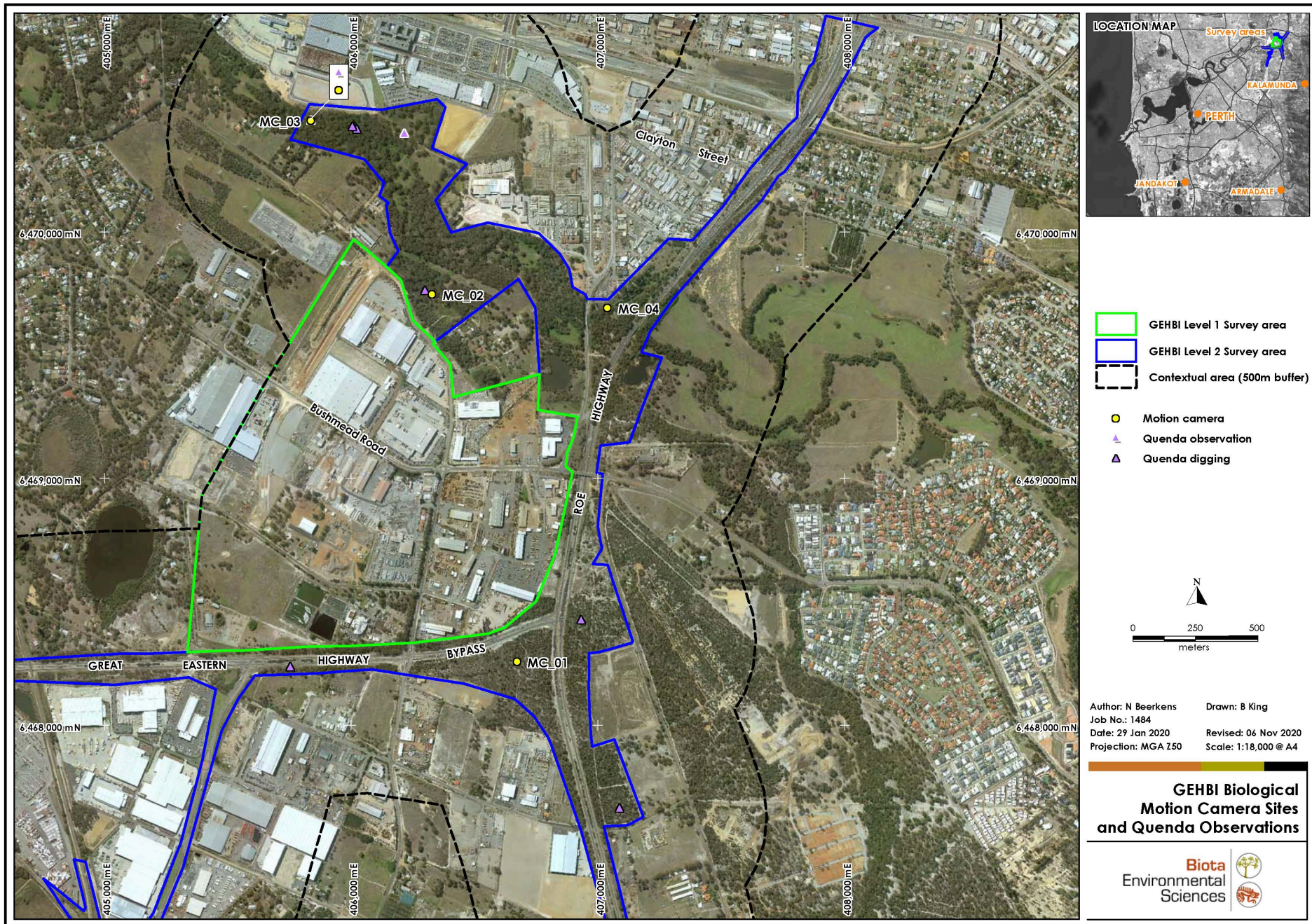


Figure 7.2: Location of motion camera sites and Quenda (*Isodon fusciventer*) observations.

Table 7.2: Vertebrate species identified during the Level 1 fauna survey.

Class	Common Name	Conservation Status		Survey Area		Record Type								
		State	Federal	Level 1	Level 2	Observed	Heard only	Diggings	Remains	Chewed nuts	MC01	MC02	MC03	MC04
Amphibia														
<i>Crinia insignifera</i>	Squelching Froglet				•		•							
Aves														
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill				•	•								
<i>Anas gracilis</i>	Grey Teal				•	•								
<i>Anas superciliosa</i>	Pacific Black Duck				•	•								
<i>Anhinga novaehollandiae</i>	Australasian Darter				•	•								
<i>Anthochaera carunculata</i>	Red Wattlebird				•	•								
<i>Anthochaera lunulata</i>	Western Wattlebird				•	•								
<i>Aquila audax</i>	Wedge-tailed Eagle				•	•								
<i>Ardea alba</i>	Great Egret				•	•								
<i>Aythya australis</i>	Hardhead				•	•								
<i>Barnardius zonarius</i>	Australian Ringneck				•	•			•					
<i>Cacatua sanguinea</i>	Little Corella				•	•								
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	VU	VU		•					•				
<i>Calyptorhynchus latirostris</i>	Carnaby's Black-Cockatoo	EN	EN		•	•				•				
<i>Chenonetta jubata</i>	Australian Wood Duck				•	•								
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike		MA		•	•								
<i>Corvus coronoides</i>	Australian Raven				•	•								
<i>Cracticus tibicen</i>	Australian Magpie				•	•						•		•
<i>Dacelo novaeguineae</i>	Laughing Kookaburra				•	•								
<i>Egretta novaehollandiae</i>	White-faced Heron				•	•								
<i>Eolophus roseicapillus</i>	Galah				•	•								

Class	Common Name	Conservation Status		Survey Area		Record Type								
		State	Federal	Level 1	Level 2	Observed	Heard only	Diggings	Remains	Chewed nuts	MC01	MC02	MC03	MC04
<i>Fulica atra</i>	Eurasian Coot				•	•								
<i>Gallinula tenebrosa</i>	Dusky Moorhen				•	•								
<i>Gavicalis virescens</i>	Singing Honeyeater				•	•								
<i>Grallina cyanoleuca</i>	Magpie-lark		MA		•	•								
<i>Haliastur sphenurus</i>	Whistling Kite				•	•								
<i>Hirundo neoxena</i>	Welcome Swallow		MA		•	•								
<i>Lichmera indistincta</i>	Brown Honeyeater				•	•								
<i>Malurus splendens</i>	Splendid Fairy-wren				•	•								
<i>Nycticorax caledonicus</i>	Nankeen Night-Heron				•	•								
<i>Pachycephala rufiventris</i>	Rufous Whistler				•	•								
<i>Pardalotus striatus</i>	Striated Pardalote				•	•								
<i>Petrochelidon nigricans</i>	Tree Martin		MA		•	•								
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant				•	•								
<i>Phylidonyris niger</i>	White-cheeked Honeyeater				•	•								
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater				•	•								
<i>Platalea flavipes</i>	Yellow-billed Spoonbill				•	•								
<i>Porphyrio porphyrio</i>	Purple Swamphen				•	•								
<i>Purpureicephalus spurius</i>	Red-capped Parrot				•	•								
<i>Rhipidura albiscapa</i>	Grey Fantail				•	•								
<i>Rhipidura leucophrys</i>	Willie Wagtail			•	•	•								
<i>Smicronis brevirostris</i>	Weebill				•	•								
<i>Streptopelia chinensis</i>	Spotted Dove				•	•								

Class	Common Name	Conservation Status		Survey Area		Record Type								
		State	Federal	Level 1	Level 2	Observed	Heard only	Diggings	Remains	Chewed nuts	MC01	MC02	MC03	MC04
<i>Streptopelia senegalensis</i>	Laughing Dove				•	•								
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe				•	•								
<i>Threskiornis molucca</i>	Australian White Ibis			•	•	•								
<i>Threskiornis spinicollis</i>	Straw-necked Ibis		MA		•	•								
<i>Todiramphus sanctus</i>	Sacred Kingfisher		MA		•	•								
<i>Trichoglossus moluccanus</i>	Rainbow Lorikeet				•	•								
<i>Zosterops lateralis</i>	Silvereye		MA		•	•								
Mammalia														
<i>Bos taurus</i>	European Cattle			•		• (1)								
<i>Capra hircus</i>	Goat				•	•					•	•		
<i>Felis catus</i>	Cat				•									•
<i>Isodon fusciventer</i>	Quenda, Southern Brown Bandicoot	P4			•	•		•					•	
<i>Macropus fuliginosus</i>	Western Grey Kangaroo				•	•			•					
<i>Oryctolagus cuniculus</i>	Rabbit				•			•	•					
<i>Trichosurus vulpecula</i>	Common Brushtail Possum				•	•			•					•
<i>Vulpes vulpes</i>	Red Fox				•						•	•		
Reptilia														
<i>Chelodina colliei</i>	Oblong Turtle				•	•								
<i>Cryptoblepharus buchanani</i>	Buchanan's Snake-eyed Skink				•	•								
<i>Pseudonaja affinis</i>	Dugite				•	•								
<i>Tiliqua rugosa</i>	Bobtail, Shingleback				•	•			•					
<i>Varanus gouldii</i>	Sand Goanna, Bungarra				•				•					

(1) Present only within a fenced paddock.

7.3 Targeted Black Cockatoo Assessment

7.3.1 Breeding Habitat

7.3.1.1 Level 1 Survey Area

A total of 19 breeding habitat trees were recorded within the Level 1 survey area (Figure 7.3 and Appendix 14). These included 15 Flooded Gum, three Marri and one Jarrah tree. Based on ground-level assessment, none of the trees contained hollows suitable for black cockatoo breeding.

7.3.1.2 Level 2 Survey Area

A total of 1,622 breeding habitat trees were recorded within the Level 2 survey area (Figure 7.3 and Appendix 14). The majority of recorded habitat trees were Flooded Gum (386), with a much smaller number of Marri (128), Jarrah (101) and Tuart (one). Six trees could not be identified to species, all of which were dead stags.

Based on ground-level assessment, 27 hollows from 21 trees were described as potentially suitable for black cockatoo breeding. However, following camera assessment of these hollows, only four hollows from four trees were deemed suitable for black cockatoo breeding (Table 7.3, Figure 7.3). Still images from camera assessment are presented in Appendix 15.

Of the potentially suitable hollows, one displayed chew marks around its entrance, a potential sign of black cockatoo use (Plate 7.2), one was empty and two displayed signs of occupation by non-target species (a nest of duck eggs, and a Common Brushtail Possum (*Trichosurus vulpecula*)).

Evidence of occupation by a different species does not necessarily discount the possibility that these hollows may be used by black cockatoos in the future.



Plate 7.2: Suitable tree hollow with chew marks.

Table 7.3: Trees with hollows potentially suitable for breeding by black cockatoos (all in the Level 2 survey area). Still images are presented in Appendix 15.

Tree ID	Tree Species	Location		DBH (cm)	Height Category (m)	Signs of Use
		Latitude	Longitude			
Tree 04	Dead	-31.902009	116.008496	87	0-10	Nil.
Tree 10	Flooded Gum	-31.907045	116.016210	184	15-20	Occupied by Common Brushtail Possum (<i>Trichosurus vulpecula</i>). No signs of use by black cockatoos.
Tree 15	Flooded Gum	-31.901506	116.008786	131	15-20	Contains duck eggs. No signs of use by black cockatoos.
Tree 17	Flooded Gum	-31.901886	116.009757	136	15-20	Chewing around hollow.

7.3.2 Foraging Habitat

7.3.2.1 Level 1 Survey Area

Overall, the available foraging habitat within the Level 1 survey area is restricted to scattered trees contained within a total area of 9.1 ha, representing 12.9% of the survey area. This area is comprised of two fauna habitats, defined as Eucalyptus/Marri in road reserve and scattered Eucalypt Marri (Figure 7.1). No evidence of black cockatoo foraging was identified during the field survey. However, given the close proximity of nearby foraging records in the Level 2 survey area, it is possible this area may on occasion be visited for foraging.

7.3.2.2 Level 2 Survey Area

The Level 2 survey area contains multiple habitats suitable for black cockatoo foraging, including Banksia woodland with scattered Eucalyptus/Marri, Eucalyptus/Marri in road reserve, Scattered Eucalyptus/Marri in cleared areas, and Fabaceous heathland, totalling 88.4 ha. Black cockatoo foraging was recorded from each of these habitat types (Figure 7.4).

The Level 2 survey area also contains a combined 50.7 ha of Flooded gum over grasslands, Planted Eucalyptus/Marri, and Wetlands/River habitat. These habitats may occasionally be used for foraging, however, no evidence was recorded in this survey.

Carnaby's Black-Cockatoo were observed directly foraging in *Banksia* trees in the Banksia woodland surrounding the Roe Highway / Great Eastern Highway Bypass intersection (Plate 7.3). Chewed Marri nuts were also a common indicator of black cockatoo foraging, and bite marks indicative of both Carnaby's Black-Cockatoo and Forest Red-tailed Black-Cockatoo were recorded on these (Plate 7.4 and Plate 7.5 respectively). Chewed pinecones were observed in a small section of habitat north of the Helena River and west of Roe Highway, and could not be identified to black cockatoo species level (Plate 7.6). There was no evidence of foraging by Baudin's Black-Cockatoo, however, the survey area is situated at the edge of their known foraging range as identified in (DotEE 2017a), and therefore may not be commonly utilised by the species.



Plate 7.3 Carnaby's Black-Cockatoos emerging from Banksia after foraging.



Plate 7.4 Marri nut chewed by Carnaby's Black-Cockatoo.



Plate 7.5 Marri nut chewed by Forest Red-tailed Black-Cockatoo.



Plate 7.6 Pinecone chewed by black cockatoo sp.

7.3.3 Roosting Habitat

No evidence of black cockatoo roosting was recorded within either the Level 1 or Level 2 survey area. A review of previously recorded black cockatoo roosts revealed roosts scattered widely within the 5 km study area, but none within the survey area or the contextual area (Figure 7.5).

7.3.3.1 Level 1 Survey Area

The only permanent water within the Level 1 survey area are industrial evaporation ponds, and tall trees are scattered within the industrial estate. As such, it is unlikely to represent important roosting habitat.

7.3.3.2 Level 2 Survey Area

The riparian *Eucalyptus* trees present along the banks of the Helena River should be considered as potentially suitable roosting habitat, given their tall heights and proximity to permanent water (DotEE 2017a, EPA 2019).

7.3.4 Individuals

7.3.4.1 Level 1 Survey Area

No black cockatoo individuals were recorded within the Level 1 study area.

7.3.4.2 Level 2 Survey Area

Carnaby's Black-Cockatoo were regularly heard and observed within the *Banksia* woodland habitat at the Roe Highway / Great Eastern Highway Bypass intersection. The largest group totalled 15 individuals, flying low over the woodland. A group of six individuals was observed foraging on *Banksia* spp., and the remaining records consisted of small flocks of one to three individuals flying or sitting in *Banksia* trees.

No Forest Red-tailed Black-Cockatoos or Baudin's Black-Cockatoos were observed.

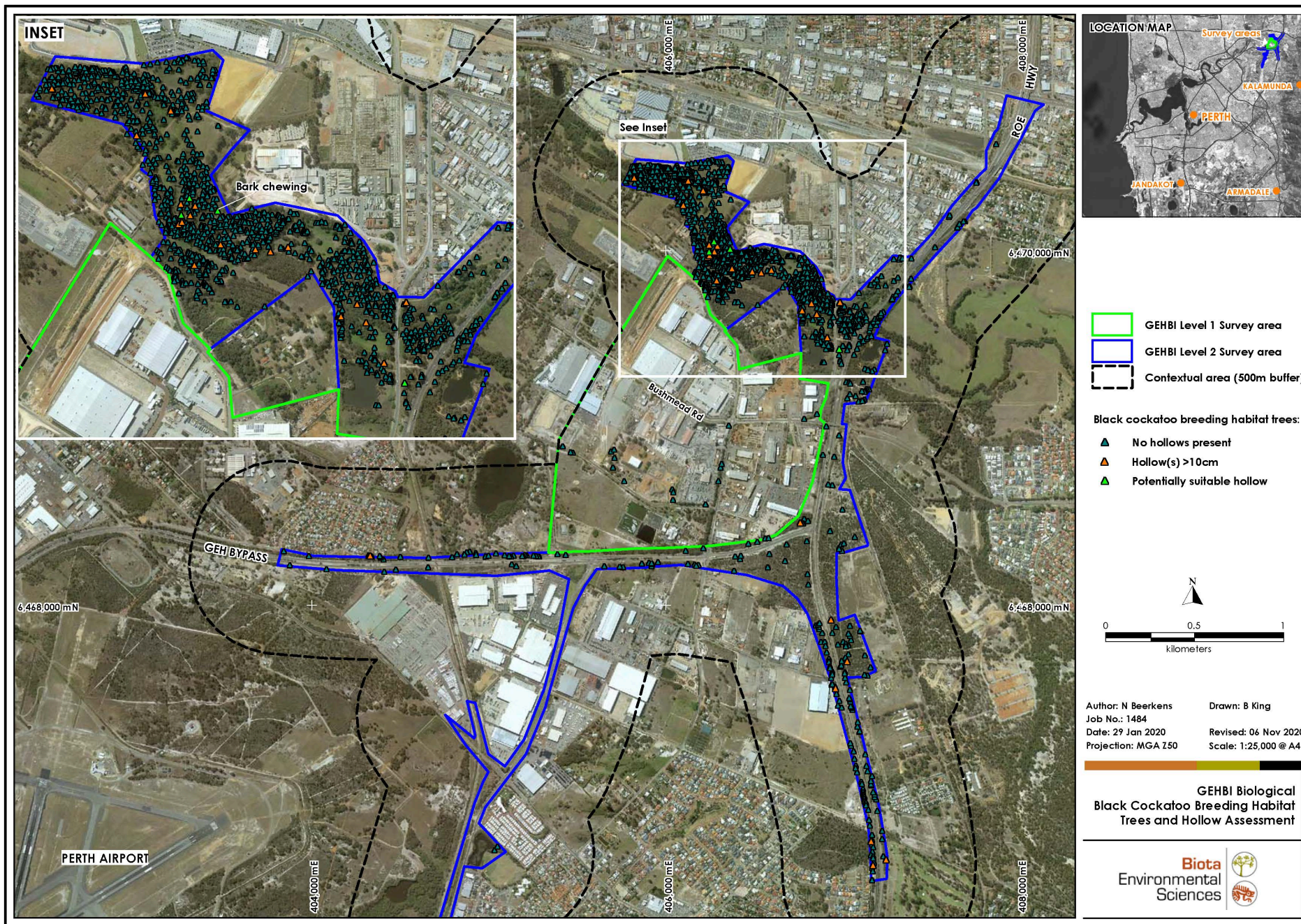


Figure 7.3: Black cockatoo breeding habitat trees recorded within the survey area.

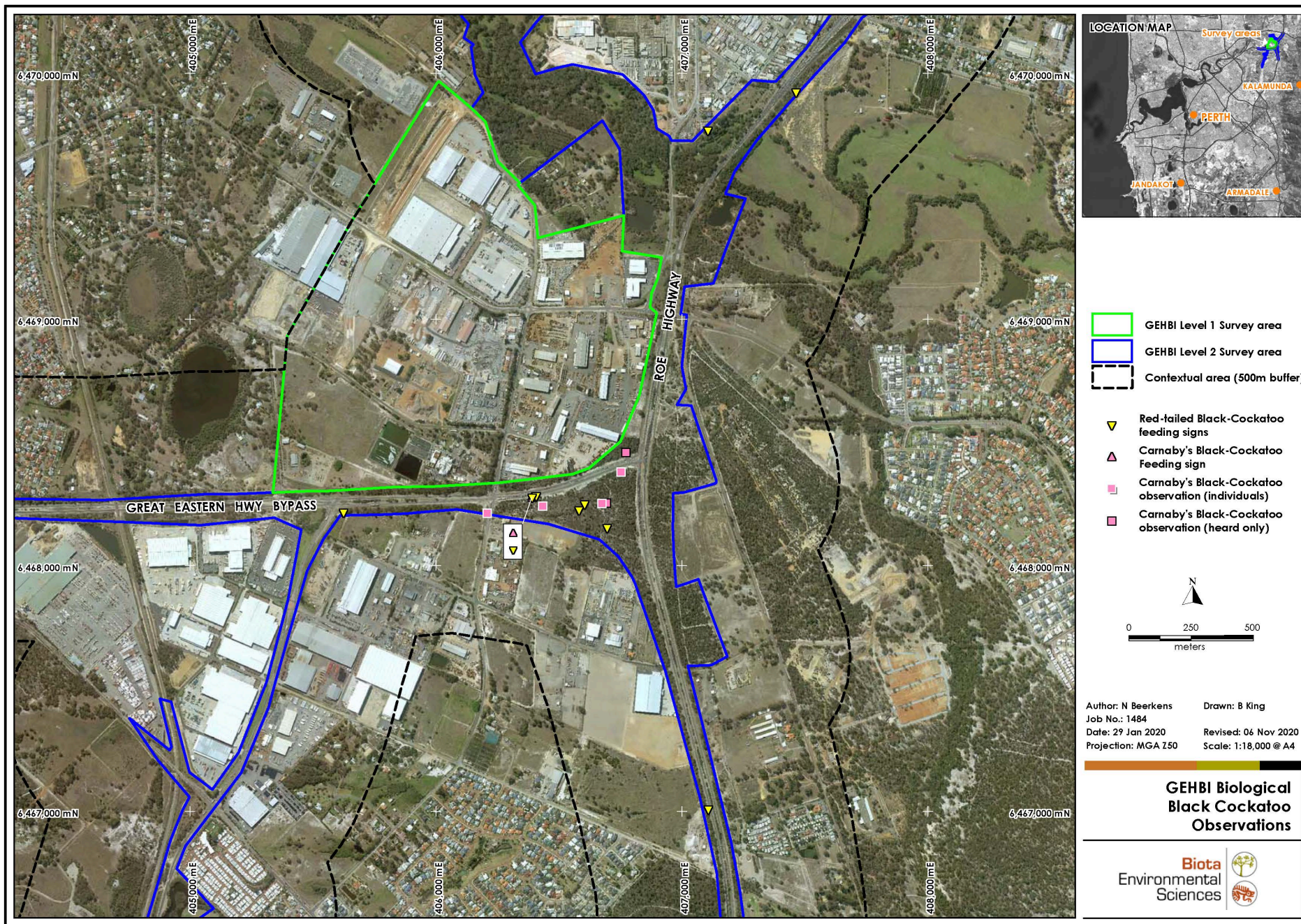


Figure 7.4: Black cockatoo foraging records and individual observations recorded within the survey area.

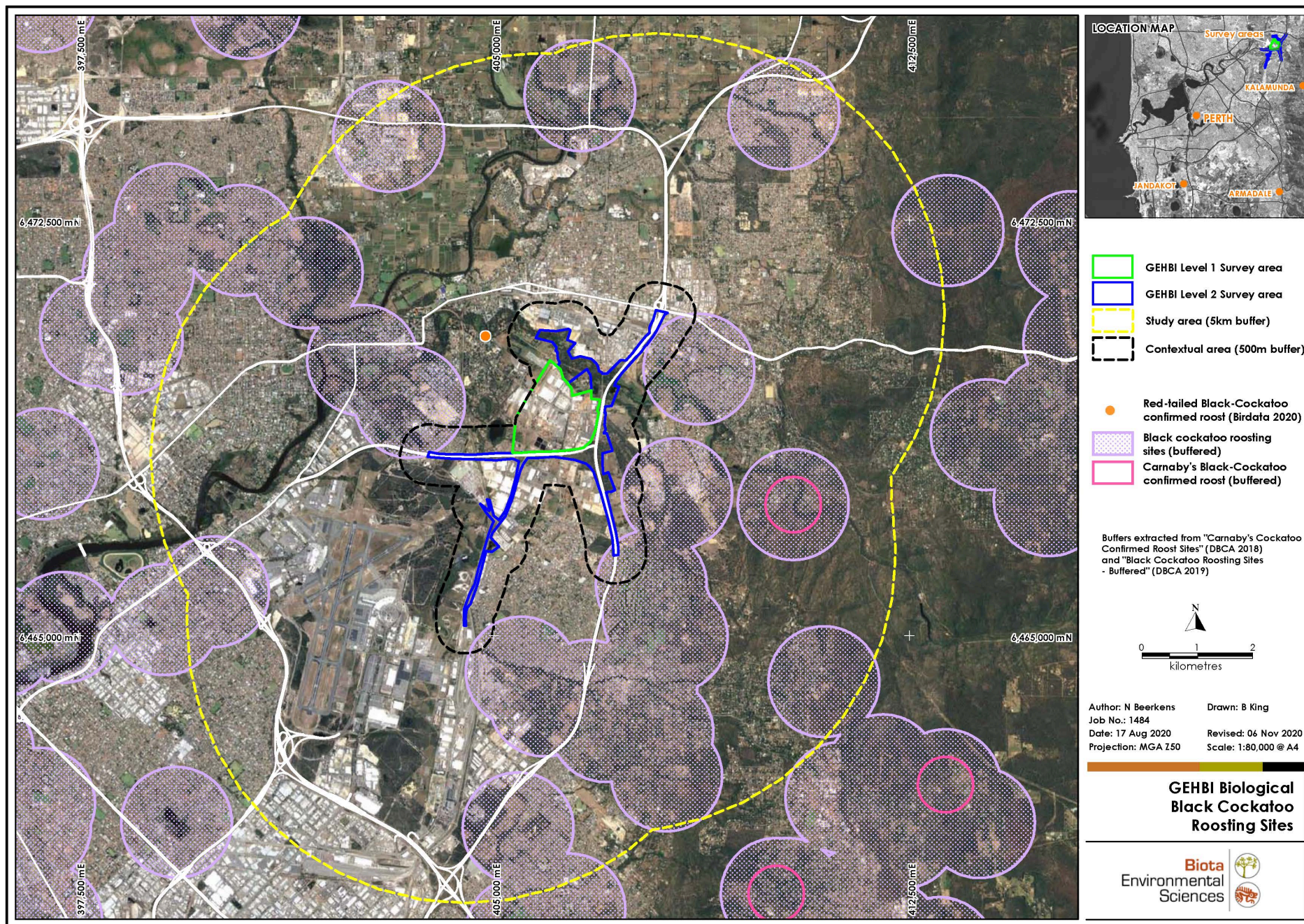


Figure 7.5: Known black cockatoo roosting sites in the vicinity of the study area.

7.4 Carter's Mussel Targeted Assessment

No evidence of Carter's Freshwater Mussel was observed during the field survey. Within the survey area, the Helena River appears degraded, being weed-choked and turbid to the point where the shallow river bed could not be effectively observed (Plate 7.7 and Plate 7.8). In comparison, reference sites in which Carter's Mussel have been recently recorded have clear water and native riparian vegetation (Plate 7.9 and Plate 7.10).

The degraded and turbid nature of the Helena River within the survey area is unlikely to represent optimal habitat for *Westralunio carteri*. Klunzinger et al. (2012) state that sedimentation may be causing localised declines in *W. carteri*, and that the presence of suspended sediment is likely to impede filtration and reduce feeding efficiency. Additionally, in many freshwater systems, elevated turbidity contributes to reduced dissolved oxygen (Butler 2008), with hypoxic conditions potentially causing abortion of brooding embryos or adult mortality (Walker et al. 2013).



Plate 7.7: Turbid and weed-choked section of Helena River within the study area (site GEH06SRE).



Plate 7.8: Turbid and weed-choked section of Helena River within the study area (site GEH01SRE).



Plate 7.9: Reference site GEH13SRE showing clear water (with tannins) and native sedge.



Plate 7.10: Reference site GEH14SRE showing clear water.

7.5 Significant Fauna

One mammal, seven bird, and one reptile species of significance were identified as potentially occurring within the survey area based on the results of the desktop study (see Section 4.9.2). The likelihood of occurrence of these taxa in each of the two parts of the survey area was reassessed following the field survey, taking into consideration the results.

Based on this assessment, one mammal, seven bird, and one reptile taxa have been either recorded or assessed as "Likely to occur" or "May potentially occur" in the Level 2 survey area (see Table 7.4). Eight of these species have some potential to occur in the Level 1 survey area, although only four of these are considered likely, and habitat for all is marginal (Table 7.4). Each species is discussed in the Sections 7.5.1.1 to 7.5.1.9.

Table 7.4: Significant fauna potentially occurring in the survey area.

Taxon	Common Name	Conservation Status	Likelihood of Occurrence	
			Level 1 Survey Area	Level 2 Survey Area
Mammals				
<i>Isoodon fusciventer</i>	Quenda	Priority 4	May occur	Recorded
Birds				
<i>Plegadis falcinellus</i>	Glossy Ibis	Migratory	May occur	May occur
<i>Falco peregrinus</i>	Peregrine Falcon	Specially Protected	Likely to occur (foraging)	Likely to occur
<i>Tringa glareola</i>	Wood Sandpiper	Migratory	May occur	May occur
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	Vulnerable	Likely to occur (foraging)	Recorded
<i>Calyptorhynchus baudinii</i>	Baudin's Black-Cockatoo	Endangered	Likely to occur (foraging)	Likely to occur
<i>Calyptorhynchus latirostris</i>	Carnaby's Black-Cockatoo	Endangered	Likely to occur (foraging)	Recorded
<i>Apus pacificus</i>	Fork-tailed Swift	Migratory	May occur (aerial only)	May occur (aerial only)
Reptiles				
<i>Ctenotus gemmula</i>	Jewelled Sandplain Ctenotus	Priority 3	Unlikely to occur	May occur

7.5.1.1 Quenda (*Isoodon fusciventer*)

Conservation Status: DBCA Priority 4

Distribution and habitat: The Quenda occurs patchily through south-western Australia from just north of Perth to Esperance. It occurs in a variety of habitat types, including forest, woodland, shrubland, and heathland, but preferring areas with denser vegetation. It also favours sandy substrates to allow for digging up food, and often occurs in association with wetland areas (van Dyck and Strahan 2008).

Ecology: The Quenda is a medium-sized ground-dwelling marsupial that is primarily nocturnal, but may be active during the day on occasions. It is territorial and defends a home range. Breeding in this species is opportunistic, but typically begins in winter and peaks in spring, and lasts 6 – 8 months. Nests of ground litter over shallow depressions are constructed next to or under logs, shrubs or debris piles. It feeds on invertebrates, fungi and subterranean plant material (van Dyck and Strahan 2008).

Likelihood of occurrence (Level 1 survey area): May potentially occur. However, there is significantly less habitat in this section compared to the Level 2 study area, and the habitat that does exist is of marginal quality.

Likelihood of occurrence (Level 2 survey area): Recorded during the survey. Suitable fauna habitats existing in the Level 2 survey area includes Banksia woodland with scattered Eucalyptus/Marri, Flooded Gum over grassland and Fabaceous heathland.

7.5.1.2 Glossy Ibis (*Plegadis falcinellus*)

Conservation Status: Migratory – EPBC Act and BC Act.

Distribution and habitat: Widely distributed globally, within Western Australia this species is particularly concentrated in well-watered flatlands of the Kimberley and Swan Coastal Plain (Johnstone and Storr 1998).

Ecology: A non-breeding visitor to the Swan Coastal Plain, where it is generally rare to uncommon, but increasing in abundance (Johnstone and Storr 1998). This species mainly forages on aquatic invertebrates, as well as terrestrial invertebrates and small vertebrates.

Likelihood of occurrence (Level 1 survey area): May potentially occur. Suitable foraging habitat exists, although there is significantly less habitat suitable than in the Level 2 survey area.

Likelihood of occurrence (Level 2 survey area): May potentially occur. Wetland/River fauna habitat present in the Level 2 survey area is considered suitable foraging habitat for this species.

7.5.1.3 Peregrine Falcon (*Falco peregrinus*)

Conservation Status: Specially Protected – BC Act.

Distribution and habitat: This species occurs Australia-wide, and inhabits a wide range of habitats including forest, woodlands, wetlands and open country (Pizzey and Knight 2007).

Ecology: Home ranges are probably defended year-round and are variable in size, though not typically less than 480 ha (Marchant and Higgins 1993). The species typically nests on ledges in cliffs, granite outcrops and quarries, but also in hollow trees and in old nests constructed by other species such as Wedge-tailed Eagles and Ravens (Johnstone and Storr 1998).

Likelihood of occurrence (Level 1 survey area): Likely to occur at least occasionally. There are recent records of the species in close proximity to the survey area and may forage across all fauna habitats within the Level 1 survey area

Likelihood of occurrence (Level 2 survey area): Likely to occur at least occasionally. There are recent records of the species in close proximity to the survey area and may forage across all fauna habitats within the Level 2 survey area

7.5.1.4 Wood Sandpiper (*Tringa glareola*)

Conservation Status: Migratory – EPBC Act and BC Act.

Distribution and habitat: This species breeds in northern European and Africa, and overwinters in Africa, south Asia and Australia, where it is widely distributed, favouring well-watered regions. It inhabits shallow bodies of freshwater such as lagoons, swamps, claypans, river pools, dams, bore overflows and sewage ponds (Johnstone and Storr 1998).

Ecology: A non-breeding winter visitor (Johnstone and Storr 1998). This species forages for aquatic invertebrates in moist or dry mud.

Likelihood of occurrence (Level 1 survey area): May potentially occur. Suitable foraging habitat exists, although there is significantly less habitat than in the Level 2 study area.

Likelihood of occurrence (Level 2 survey area): May potentially occur. Wetland/River fauna habitat present in the Level 2 survey area is considered suitable foraging habitat for this species.

7.5.1.5 Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*)

Conservation Status: Vulnerable – EPBC Act and BC Act.

Distribution and habitat: Forest Red-tailed Black-Cockatoos are restricted to the southwest corner of Western Australia, from Gingin to the Albany area. It occurs primarily in eucalypt forests of the Darling Scarp and far South-west, but in the last 10 years has become more common in suburban Perth.

Ecology: Forest Red-tailed Black-Cockatoos nest in hollows in Jarrah, Marri and Karri trees, with eggs laid in October and November. They feed primarily on seeds of eucalypts, and other species such as *Allocasuarina* (Johnstone and Storr 1998). More recently, they have begun foraging on introduced Cape Lilac (*Melia azedarach*) on the coastal plain near Perth.

Likelihood of occurrence (Level 1 survey area): Likely to occur. Suitable foraging habitat trees exist (Section 7.3.2.1), although there are significantly fewer trees than in the Level 2 survey area.

Likelihood of occurrence (Level 2 survey area): Recorded during this survey. Suitable breeding and foraging habitat exist within the Level 2 survey area (Sections 7.3.1.2 and 7.3.2.2).

7.5.1.6 Baudin's Black-Cockatoo (*Calyptorhynchus baudinii*)

Conservation Status: Endangered – EPBC Act and BC Act.

Distribution and habitat: Baudin's Black-Cockatoo is endemic to the South-west of Western Australia, approximately southwest of the line from Bullsbrook to Bremer Bay in an area generally bounded by the 750 mm isohyet (Department of the Environment 2017). This species inhabits mainly eucalypt forests, especially Jarrah, Marri and Karri. It also occurs less commonly in woodlands of Wandoo, Blackbutt, Flooded Gum and Yate, as well as partially cleared farmlands and urban areas.

Ecology: Baudin's Black-Cockatoo is a long-lived species, with an annual productivity of 0.6 young per pair (Department of the Environment 2017). Breeding takes place from October to January, primarily in the South-west forests. Following breeding, birds leave the nesting areas and family groups merge to form larger foraging flocks (Saunders 1974), which arrive in the Darling plateau from February – March (Johnstone and Kirkby 2008). They shift west onto the southern Swan Coastal Plain in August, before returning south to breed (Johnstone and Kirkby 2008).

The species feeds primarily on Marri, consuming its seeds, flowers, nectar and buds (Johnstone and Kirkby 2008). Birds have also been observed eating the seeds of *Hakea*, *Banksia*, *Allocasuarina*, *Eucalyptus*, *Grevillea*, *Jacaranda*, *Macadamia*, *Quercus*, *Kingia*, *Xanthorrhoea*, kangaroo paw, apples, pears, pecans, persimmons and insects (Department of the Environment 2017).

Likelihood of occurrence (Level 1 survey area): Likely to occur. Suitable foraging habitat exist within the Level 1 survey area (Section 7.3.2.1), although there are significantly fewer trees than in the Level 2 survey area.

Likelihood of occurrence (Level 2 survey area): Likely to occur. Suitable foraging habitat exist within the Level 2 survey area (Section 7.3.2.2).

7.5.1.7 Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*)

Conservation Status: Endangered – EPBC Act and BC Act.

Distribution and habitat: Carnaby's Black-Cockatoo is endemic to the South-west of Western Australia, approximately southwest of the line from Kalbarri to Esperance. This species inhabits mainly Proteaceous shrublands and heaths, and Eucalypt woodlands and forests (Johnstone and Storr 1998). Breeding activity is usually restricted to smooth-barked eucalypts, including Salmon Gum and Wandoo (Johnstone and Storr 1998).

Ecology: Carnaby's Black-Cockatoo is a long-lived species, and breeds annually from four years of age (Saunders 1986). Breeding takes place from July to October, primarily in the Wheatbelt. Following breeding, many individuals disperse towards the coast, and during this time they are common in the Perth metropolitan area. The species feeds primarily on the seeds of hakeas, banksias, grevilleas, eucalypts and introduced pines, as well as insect larvae (Johnstone and Storr 1998).

Likelihood of occurrence (Level 1 survey area): Likely to occur. Suitable foraging habitat trees exist (Section 7.3.2.1), although there are significantly fewer suitable trees than in the Level 2 survey area.

Likelihood of occurrence (Level 2 survey area): Recorded during the current survey. Suitable breeding and foraging habitat exist within the Level 2 survey area (Sections 7.3.1.2 and 7.3.2.2).

7.5.1.8 Fork-tailed Swift (*Apus pacificus*)

Conservation Status: Migratory – EPBC Act and BC Act.

Distribution and habitat: In Western Australia, the species is most common in the Kimberley and in coastal areas elsewhere, but will visit most parts of the state. It is often seen in association with unsettled weather conditions and tropical low pressure systems (Johnstone and Storr 1998), and occurs over all terrestrial habitats (Menkhorst et al. 2017).

Ecology: A non-breeding summer visitor (September to April) to Australia. Swifts are highly specialised aerial insectivores, which very rarely land except when nesting (Menkhorst et al. 2017), and thus are almost entirely aerial in habit while in Australia.

Likelihood of occurrence (Level 1 survey area): May potentially occur. The species is highly mobile and known to occur in the region over all habitat types, so is likely to utilise airspace over the Level 1 survey area on occasion. However, regional records are sparse, so it is likely to occur only rarely, particularly in association with unsettled weather conditions.

Likelihood of occurrence (Level 2 survey area): May potentially occur. The species is highly mobile and known to occur in the region over all habitat types, so is likely to utilise airspace over the Level 2 survey area on occasion. However, regional records are sparse, so it is likely to occur only rarely, particularly in association with unsettled weather conditions.

7.5.1.9 Jewelled Sandplain Ctenotus (*Ctenotus gemmula*)

Conservation Status: DBCA Priority 3

Distribution and habitat: The Jewelled Sandplain Ctenotus is distributed across the south coast and southern hinterland of south-western Western Australia (Cogger 2014). It inhabits pale, heath-supporting sandplains in association with *Banksia* or mallee woodlands (Wilson and Swan 2017).

Ecology: This is a cryptic species, and difficult to identify without a targeted survey. Skinks of the *Ctenotus* genus tend to be generalist predators of invertebrates, although some, particularly desert species, specialise into targeting termites (Wilson and Swan 2017).

Likelihood of occurrence (Level 1 survey area): Unlikely to occur. Suitable habitat does not exist within the Level 1 survey area.

Likelihood of occurrence (Level 2 survey area): May potentially occur. Suitable fauna habitat types defined as *Banksia* woodland with scattered Eucalyptus/Marri and Fabaceous heathland exist in the Level 2 survey area.

8.0 Key Biological Constraints

8.1 Matters of National Environmental Significance

8.1.1 Vegetation

The survey area includes six mapped areas of the Commonwealth listed 'Banksia Woodlands of the Swan Coastal Plain ecological community' TEC. The extent within the survey area comprised 27.44 ha, or 22.1% of the total extent of this TEC mapped within the broader contextual area. Included within this is one mapped area of the Commonwealth listed 'Shrublands and Woodlands of the eastern Swan Coastal Plain', which comprised 1.65 ha of the survey area. The 'Shrublands and Woodlands of the eastern Swan Coastal Plain' TEC is not only a component of the 'Banksia woodlands of the Swan Coastal Plain' Commonwealth TEC, but also represents a separate Commonwealth TEC in its own right.

8.1.2 Flora

One species recorded within the survey area, *Conospermum undulatum*, is listed as Vulnerable under the EPBC Act and Threatened under the BC Act. Three individuals were recorded from two locations in the survey area.

8.1.3 Fauna

The study area contains black cockatoo breeding habitat trees and habitat considered suitable for foraging (DSEWPaC 2012a, EPA 2019). Foraging was evident for both the Forest Red-tailed Black Cockatoo and the Carnaby's Black Cockatoo in the Level 2 survey area. Carnaby's Black-Cockatoo were regularly heard and observed within the Banksia woodland habitat foraging and flying overhead, with the largest group totalling 15 individuals. No evidence of Baudin's Black Cockatoo was observed during the field survey.

Although no evidence of black cockatoo roosting was recorded during the survey, potential roost sites have been previously recorded within 5 km of the survey area. Additionally, four trees containing hollows potentially suitable for breeding were identified.

8.2 Other Features of Significance

8.2.1 Vegetation

Two state-level TECs were identified within the survey area: 'Banksia attenuata woodlands over species rich dense shrublands' (FCT20a) and 'Shrublands and woodlands of the eastern side of the Swan Coastal Plain' (FCT20c) (see Section 5.4.1).

The areas identified as the Commonwealth 'Banksia Woodlands of the Swan Coastal Plain ecological community' TEC (Section 5.4.1) also correspond with the DBCA listed PEC ('Banksia woodlands of the Swan Coastal Plain'). Within this PEC, the 'Low lying *Banksia attenuata* woodlands or shrublands' (FCT21c) sub-community was also identified as a State-listed Priority 3 PEC.

8.2.2 Flora

One species listed as Threatened in WA was recorded. The shrub *Conospermum undulatum* was known to occur within the survey area prior to the field survey, and a total of three individuals were recorded from two previously known locations.

Five DBCA-listed Priority species from natural populations were also recorded:

- *Johnsonia pubescens* subsp. *cygnorum* (Priority 2): 10 individuals recorded from four quadrats and two locations during targeted searches within the survey area.
- *Isopogon autumnalis* (Priority 3): 128 individuals recorded from five locations during targeted searches and two quadrats during the survey.
- *Hypolaena robusta* (Priority 4): one individual was recorded through targeted searching.
- *Verticordia lindleyi* subsp. *lindleyi* (Priority 4): one individual was recorded through targeted searching.

8.2.3 Fauna

One DBCA listed Priority 4 species was confirmed as present during the field survey. The Quenda (*Isoodon fusciventer*) was observed on a motion camera along with signs of diggings in the Level 2 survey area. No other state or DBCA listed species were observed across the survey area.

9.0 References

- 360 Environmental (2018). Roe Highway Kalamunda Road Upgrade Flora, Vegetation and Fauna Survey. Unpublished report prepared for Main Roads WA, January 2018, 360 Environmental.
- Beard, J. S. (1981). Vegetation Survey of Western Australia 1:1,000,000 Vegetation Series. Map Sheet 7 - Swan. University of Western Australia Press, Western Australia.
- Belbin, L. (2020). PATN. Blatant Fabrications. Retrieved from <http://www.patn.com.au>.
- Butler, B. (2008). Report 5: Water quality. Page in G. P. Lukacs and C. M. Finlayson, editors. *A Compendium of Ecological Information on Australia's Northern Tropical Rivers. Sub-project 1 of Australia's Tropical Rivers – an integrated data assessment and analysis (DET18)*.
- Christidis, L., and W. E. Boles (2008). *Systematics and Taxonomy of Australian Birds*. CSIRO Publishing, Melbourne.
- Clarke, K., and R. Gorley (2006). *Primer v6 : User Manual/Tutorial*. PRIMER-E Ltd, Plymouth, UK.
- Cogger, H. (2014). *Reptiles and Amphibians of Australia*, 7th edition. CSIRO Publishing, Collingwood, Victoria.
- Colwell, R. K. (2013). *EstimateS: Statistical Estimation of Species Richness and Shared Species from Samples. Version 9 and earlier. User's Guide and application*. University of Connecticut, USA. Retrieved from <http://purl.oclc.org/estimates>.
- DAFWA (2016). Native Vegetation Current Extent - Western Australia. Department of Agriculture and Food, Western Australia.
- DBCA (2018). List of Threatened Ecological Communities (TECs) endorsed by the Western Australian Minister for Environment. Species and Communities Branch, Department of Biodiversity, Conservation and Attractions, correct as at 28 June 2018.
- DBCA (2020). NatureMap: Mapping Western Australia's biodiversity [WWW Document]. Retrieved from <https://naturemap.dbca.wa.gov.au/>.
- DBCA (2021). Priority Ecological Communities for Western Australia, Version 31. Species and Communities Branch, Department of Biodiversity, Conservation and Attractions, 20 March 2021.
- DEC (2010). Definitions, Categories and Criteria for Threatened and Priority Ecological Communities. Species and Communities Branch, Department of Environment and Conservation, December 2010.
- Department of the Environment (2017). *Calyptorhynchus baudinii* — Baudin's Black-Cockatoo, Long-billed Black-Cockatoo SPRAT Profile [WWW Document]. Retrieved from http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=769.
- DEWHA (2009). Waxy-leaved Smokebush (*Conospermum undulatum*) Recovery Plan. Commonwealth Department of the Environment, Water, Heritage and the Arts.
- DoAWE (2020). Weeds of National Significance: *Asparagus asparagoides* [WWW Document]. Department of Agriculture, Water and the Environment. Retrieved from https://www.environment.gov.au/cgi-bin/biodiversity/invasive/weeds/weeddetails.pl?taxon_id=22473.

- DoEE (2016). *Banksia Woodlands of the Swan Coastal Plain: a nationally-protected ecological community* Commonwealth of Australia 2016. Guide, Department of Environment and Energy, Canberra.
- DoEE (2016). Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community - *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (s 266B). Department of the Environment and Energy, Commonwealth of Australia.
- DoEE (2017a). Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Baudin's Cockatoo (*Calyptorhynchus baudinii*) and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*). Department of the Environment and Energy, Commonwealth of Australia.
- DoEE (2017b). Weeds of National Significance [WWW Document]. Department of the Environment and Energy. Retrieved from <http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html>.
- DPIRD (2020). Declared Plants [WWW Document]. Department of Primary Industries and Regional Development, Agriculture and Food Division. Retrieved from <https://www.agric.wa.gov.au/pests-weeds-diseases/weeds/declared-plants>.
- DSEWPaC (2012a). EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered), *Calyptorhynchus latirostris*; Baudin's cockatoo (vulnerable), *Calyptorhynchus baudinii*; Forest red-tailed black cockatoo (vulnerable), *Calyptorhynchus banksii naso*. Department of Sustainability, Environment, Water, Population and Communities, Commonwealth of Australia.
- DSEWPaC (2012b). Interim Biogeographic Regionalisation for Australia (IBRA), Version 7 (Subregions) - States and Territories. Department of Sustainability, Environment, Water, Population and Communities, Canberra. Retrieved from <http://www.environment.gov.au/topics/land/national-reserve-system/science-maps-and-data/australias-bioregions-ibra>.
- EPA (2016a). *Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment*. Environmental Protection Authority, Western Australia.
- EPA (2016b). *Environmental Factor Guideline: Flora and Vegetation*. Environmental Protection Authority, Western Australia.
- EPA (2016c). *Technical Guidance: Terrestrial Fauna Surveys*. Environmental Protection Authority, Western Australia.
- EPA (2016d). *Technical Guidance: Sampling Methods for Terrestrial Vertebrate Fauna*. Environmental Protection Authority, Western Australia.
- EPA (2016e). *Technical Guidance: Terrestrial Fauna Surveys*. Environmental Protection Authority, Western Australia.
- EPA (2019). EPA Technical Report: Carnaby's Cockatoo in Environmental Impact Assessment in the Perth and Peel Region. Environmental Protection Authority, Western Australia.
- Geological Survey of Western Australia (2001). *Geology of the 1:50,000 mapsheet Perth (20342)*, first edition. Department of Mines and Petroleum, Western Australia.
- Gibson, N., B. Keighery, G. Keighery, A. Burbidge, and M. Lyons (1994). A floristic survey of the southern Swan Coastal Plain. Department of Conservation and Land Management, Western Australia.
- Hedde, E. M., O. W. Loneragan, and J. J. Havel (1980). Vegetation complexes of the Darling System, Western Australia. Pages 37–74 *Atlas of Natural Resources, Darling System*,

- Western Australia. Department of Conservation and Environment, Perth, Western Australia.
- Hussey, B. M. J., G. J. Keighery, R. D. Cousens, J. Dodd, and S. G. Lloyd (2007). *Western Weeds A guide to the weeds of Western Australia*, 2nd edition. The Plant Protection Society of Western Australia (Inc.), Perth.
- Johnstone, R. E., and T. Kirkby (2008). Distribution, status, social organisation, movements and conservation of Baudin's Cockatoo (*Calyptorhynchus baudinii*) in South-west Western Australia. *Records of the Western Australian Museum* 25:107–118.
- Johnstone, R. E., and T. Kirkby (2011). Black Cockatoos on the Swan Coastal Plain. Department of Planning, Western Australia.
- Johnstone, R. E., and G. M. Storr (1998). *Handbook of Western Australian Birds Volume I - Non-Passerines (Emu to Dollarbird)*. Western Australian Museum, Perth.
- Keighery, B. J. (1994). Bushland Plant Survey - A Guide to Plant Community Survey for the Community. Wildflower Society of Western Australia (Inc), Nedlands, Western Australia.
- Keighery, B., and M. E. Trudgen (1992). Remnant Vegetation on the Alluvial Soils of the Eastern Side of the Swan Coastal Plain.
- Klunzinger, M. W., S. J. Beatty, D. L. Morgan, A. M. Pinder, A. J. Lymbery, and Cale, D. J. (2012). Distribution of *Westralunio carteri* iredale 1934 (Bivalvia: Unionoida: Hyriidae) on the south coast of Southwestern Australia, including new records of the species. *Journal of the Royal Society of Western Australia* 95(2):77–81.
- Main Roads (2019). D19#726162 GEHB Interchanges Biological Survey - Consultant Brief.
- Marchant, S., and P. J. Higgins (1993). *Handbook of Australian, New Zealand and Antarctic Birds. Volume 2: Raptors to Lapwings*. Oxford University Press, Melbourne.
- Mattiske, E. M., and J. J. Havel (1998). Vegetation Mapping in the South West of Western Australia and Regional Forest Agreement vegetation complexes. Map sheets for Pemberton, Collie, Pinjarra, Busselton-Margaret River, Mt Barker, and Perth, Western Australia. Scale 1:250,000. Maps and report prepared as part of the Regional Forest Agreement, Western Australia, for the Department of Conservation and Land Management and Environment Australia, Department of Conservation and Land Management, Como, WA.
- Menkhorst, P., D. Rogers, R. Clarke, J. Davies, P. Marsack, and K. Franklin (2017). *The Australian Bird Guide*. CSIRO Publishing.
- Mitchell, D., K. Williams, and A. Desmond (2003). Swan Coastal Plain 2 (SWA2 - Swan Coastal Plain subregion). Pages 606–623 in J. E. May and N. L. McKenzie, editors. *A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions*. Department of Conservation and Land Management, Western Australia.
- Northcote, K. H., E. Bettenay, H. M. Churchward, and W. M. McArthur (1967). Atlas of Australian Soils: Explanatory Data for Sheet 5, Perth-Albany-Esperance area. CSIRO Australia and Melbourne University Press, Melbourne, Victoria.
- Pizzey, G., and F. Knight (2007). *The Field Guide to the Birds of Australia*, 8th edition. Harper Collins Publishers, Sydney.
- Purdie, B. R., P. J. Tille, and N. R. Schoknecht (2004). Soil-landscape mapping in south-Western Australia: an overview of methodology and outputs. Resource Management Technical Report 280, 1-11-2004, Department of Agriculture and Food, Western Australia.
- Saunders, D. A. (1974). Subspeciation in the White-tailed Black Cockatoo, *Calyptorhynchus baudinii*, in Western Australia. *Australian Wildlife Research* 1:55–69.

- Saunders, D. A. (1986). Breeding season, nesting success and nestling growth in Carnaby's Cockatoo, *Calyptorhynchus funereus latirostris*, over 16 years at Coomallo Creek, and a method for assessing the viability of populations in other areas. *Australian Wildlife Research* 13:261–273.
- Strategen (2018a). GEH Bypass Flora and Vegetation Survey. Unpublished report prepared for Main Roads WA, January 2018, Strategen Environmental Consultants.
- Strategen (2018b). Black Cockatoo Habitat Assessment, Roe Highway. Unpublished Report Prepared for Main Roads Western Australia, Strategen Environmental Consultants.
- Thorp, J. R., and R. Lynch (2000). The Determination of Weeds of National Significance. Commonwealth of Australia & National Weeds Strategy Executive Committee.
- Trudgen, M. E., and M. S. Trudgen (2010). A review of two reports relating to the classification of floristic data from the Happy Valley Project survey data with alternative classifications of that data and an assessment of the significant of the vegetation in the Happy Valley mine footprint. Report prepared for the Office of the Environmental Protection Authority, July 2010, M.E. Trudgen and Associates.
- van Dyck, S., and R. Strahan (Eds.) (2008). *The Mammals of Australia*, 3rd edition. Reed New Holland, Sydney.
- WA Herbarium (2020). FloraBase - the Western Australian Flora [WWW Document]. Department of Biodiversity, Conservation and Attractions. Retrieved from <http://florabase.dpaw.wa.gov.au/>.
- WA Planning Commission (2000a). Volume 1 Policies, Principles and Processes Bush Forever. Pages 1–192. Government of Western Australia, Western Australian Planning Commission, Perth.
- WA Planning Commission (2000b). Bush Forever Volume 2: Directory of Bush Forever Sites. Government of Western Australia, Department of Environmental Protection, Perth.
- Walker, K. F., H. A. Jones, and M. W. Klunzinger (2013). Bivalves in a bottleneck: taxonomy, phylogeography and conservation of freshwater mussels (Bivalvia: Unionoida) in Australasia. *Hydrobiologia* 735.
- Webb, A., J. Kinloch, G. Keighery, and G. Pitt (2016). The extension of vegetation complex mapping to landform boundaries within the Swan Coastal Plain landform and forested region of south-west Western Australia. Department of Parks and Wildlife, Bunbury, Western Australia.
- Wilson, S., and G. Swan (2017). *A Complete Guide to Reptiles of Australia*, 5th edition. New Holland.

Appendix 1

Framework for Significance Ranking of Communities and Species in WA



A. Categories for Threatened and Priority Ecological Communities

A1. Categories and Criteria for Threatened Ecological Communities under the BC Act

Division 2

Subdivision 1 — Threatened ecological communities

27. Listing of threatened ecological communities

- (1) The Minister may, by order, list an ecological community as a threatened ecological community in one of the following categories —
 - (a) critically endangered ecological community;
 - (b) endangered ecological community;
 - (c) vulnerable ecological community.
- (2) An ecological community is not eligible for listing as a threatened ecological community if it is a collapsed ecological community.
- (3) When deciding whether or not to list an ecological community as a threatened ecological community or to amend or repeal such a listing, the Minister must have regard only to matters relating to the survival of the ecological community.
- (4) An order made under subsection (1) may describe or identify an ecological community by reference to a map or plan held in the Department.
- (5) Section 258 applies to an order made under subsection (1).

28. Criteria for categorisation as critically endangered ecological community

An ecological community is eligible for listing in the category of critically endangered ecological community at a particular time if, at that time —

- (a) it is facing an extremely high risk of becoming eligible for listing as a collapsed ecological community in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines; and
- (b) listing in that category is otherwise in accordance with the ministerial guidelines.

29. Criteria for categorisation as endangered ecological community

An ecological community is eligible for listing in the category of endangered ecological community at a particular time if, at that time —

- (a) it is not a critically endangered ecological community; and
- (b) it is facing a very high risk of becoming eligible for listing as a collapsed ecological community in the near future, as determined in accordance with criteria set out in the ministerial guidelines; and
- (c) listing in that category is otherwise in accordance with the ministerial guidelines.

30. Criteria for categorisation as vulnerable ecological community

An ecological community is eligible for listing in the category of vulnerable ecological community at a particular time if, at that time —

- (a) it is not a critically endangered ecological community or an endangered ecological community; and
- (b) it is facing a high risk of becoming eligible for listing as a collapsed ecological community in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines; and
- (c) listing in that category is otherwise in accordance with the ministerial guidelines.

Subdivision 2 — Collapsed ecological communities

31. Listing of collapsed ecological communities

- (1) The Minister may, by order, list an ecological community as a collapsed ecological community.
- (2) Section 258 applies to an order made under subsection (1).

32. Criteria for listing as collapsed ecological community

An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time —

- (a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed; or
- (b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover —
 - (i) its species composition or structure; or
 - (ii) its species composition and structure.

33. Rediscovered ecological communities

If a collapsed ecological community is discovered in a state that no longer makes it eligible for listing as a collapsed ecological community, it is to be regarded as a threatened ecological community for the purposes of this Act until —

- (a) it is listed as a threatened ecological community; or
- (b) the Minister declares, by instrument published in the Gazette, that it is not to be so listed.

A2. Categories and Criteria for Priority Ecological Communities (DEC 2010)

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the DBCA Priority Ecological Community Lists under Priorities 1, 2 and 3. These three categories are ranked in order of priority for survey and/or definition of the community, and evaluation of conservation status, so that consideration can be given to their declaration as threatened ecological communities. Ecological Communities that are adequately known, and are rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

Priority One: Poorly-known ecological communities

Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.

Priority Two: Poorly-known ecological communities

Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.

Priority Three: Poorly known ecological communities

- (i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:

- (ii) communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;
- (iii) communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes.

Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.

Priority Four: Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.

- (a) Rare. Ecological communities known from few occurrences 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 communities are usually represented on conservation lands.
- (b) Near Threatened. Ecological communities 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) Ecological communities that have been removed from the list of threatened communities during the past five years.

Priority Five: Conservation Dependent ecological communities

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

B. Categories for Flora and Fauna Species

B1. Western Australian BC Act, and Priority Species Classification

In Western Australia, 'Threatened', 'Extinct' and 'Specially Protected' fauna and flora species are protected under the *Biodiversity Conservation Act 2016* (the BC Act), making it an offence to take or disturb these species without Ministerial approval. The definition of 'take' is broad, and includes killing, injuring, harvesting or capturing fauna, and gathering, cutting, destroying, harvesting or damaging flora.

Such species are classified within a framework of several categories.

Species of the highest significance are designated as Threatened species and are protected under sections 19(1)(a), 19(1)(b) and 19(1)(c) of the BC Act. Species are listed within one of three categories:

- Critically endangered (CR), Endangered (EN), or Vulnerable (V), representing those species listed in Schedules 1 to 3 respectively of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* or the *Wildlife Conservation (Rare Flora) Notice 2018*.

Presumed extinct species are protected under sections 24 and 25 of the BC Act and are listed in one of two categories:

- Extinct (EX), representing those species listed in Schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* or the *Wildlife Conservation (Rare Flora) Notice 2018*; or
- Extinct in the wild (EW); there are currently no listed species under this category.

Specially protected species are protected under section 13(1) of the BC Act, and include species of special conservation interest, migratory species, cetaceans, species subject to international agreement, or species otherwise in need of special protection. Of these:

- Migratory species (MI) are those listed under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*;
- Species of special conservation interest (conservation dependent fauna) (CD) are those listed under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*; and
- Other specially protected fauna (OS) are those listed under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*;

In addition to the species formally designated as protected under the BC Act, the WA Department of Biodiversity, Conservation and Attractions (DBCA) also maintains a list of 'Priority species'.

Species that appear to be rare or threatened, but for which there is insufficient information to properly evaluate their significance, are assigned to one of three Priority categories (Priority 1 to Priority 3), while species that are adequately known but require regular monitoring are assigned to Priority 4.

Note that of the above classifications, only 'Threatened', 'Extinct' and 'Specially Protected' species have statutory standing. The Priority flora and fauna classifications are employed by the WA DBCA to manage and classify their database of species considered potentially rare or at risk, but these categories have no legislative status.

Further explanations of the categories is provided in more detail in the following pages.



CONSERVATION CODES

For Western Australian Flora and Fauna

Threatened, Extinct and Specially Protected fauna or flora¹ are species² which have been adequately searched for and are deemed to be, in the wild, threatened, extinct or in need of special protection, and have been gazetted as such.

The *Wildlife Conservation (Specially Protected Fauna) Notice 2018* and the *Wildlife Conservation (Rare Flora) Notice 2018* have been transitioned under regulations 170, 171 and 172 of the *Biodiversity Conservation Regulations 2018* to be the lists of Threatened, Extinct and Specially Protected species under Part 2 of the *Biodiversity Conservation Act 2016*.

Categories of Threatened, Extinct and Specially Protected fauna and flora are:

T **Threatened species**

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

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

CR **Critically endangered species**

Threatened species considered to be "*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN **Endangered species**

Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU **Vulnerable species**

Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct species

Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.

EX Extinct species

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P Priority species

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

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

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

1 Priority 1: Poorly-known species

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

2 Priority 2: Poorly-known species

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

3 Priority 3: Poorly-known species

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

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

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

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

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

¹ The definition of flora includes algae, fungi and lichens

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

B2. Commonwealth Environment Protection and Biodiversity Conservation Act 1999

Many of the species that are specially protected at State level are also listed as Threatened species at the Federal level, as one of the Matters of National Environmental Significance (MNES) identified under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). These may be classified as 'critically endangered', 'endangered', 'vulnerable' or 'lower risk', consistent with IUCN categories:

1. **Critically Endangered (CR):** a taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future.
2. **Endangered (EN):** a taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future.
3. **Vulnerable (VU):** a taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future.
4. **Lower Risk (LR):** a taxon is Lower Risk when it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:
 - **Conservation Dependent (CD).** Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation program targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.
 - **Near Threatened (NT).** Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.
 - **Least Concern (LC).** Taxa which do not qualify for Conservation Dependent or Near Threatened.

In addition, numerous **Migratory (MI)** species are listed as MNES under the EPBC Act (some of which are also listed as Threatened). Migratory species are those animals that migrate to Australia and its external territories, or pass through or over Australian waters during their annual migrations. The list of migratory species consists of those species listed under the following international conventions:

1. Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention);
2. China-Australia Migratory Bird Agreement (CAMBA);
3. Japan-Australia Migratory Bird Agreement (JAMBA); and,
4. Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Marine (MA) species are also protected under the EPBC Act, and are listed to ensure the long-term conservation of the species. Marine species include all Australian sea snakes, seals, crocodiles, dugongs, marine turtles, seahorses and seabirds that naturally occur in the Commonwealth marine area.

Under the terms of the EPBC Act, an action (e.g. a project or development) is required to be referred to the Australian Government Environment Minister for approval if it has, will have, or is likely to have, a significant impact on an MNES. The term 'action' includes projects and developments subsequent to commencement of the Act, however there are a number of exemptions (e.g. projects in Commonwealth areas). According to Department of the Environment (2013), a 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts.

References:

Department of the Environment (2013). Matters of National Environmental Significance - Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999*. Department of the Environment, Canberra, Australia.

Appendix 2

Database Searches





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: 30/03/20 16:08:04

[Summary](#)

[Details](#)

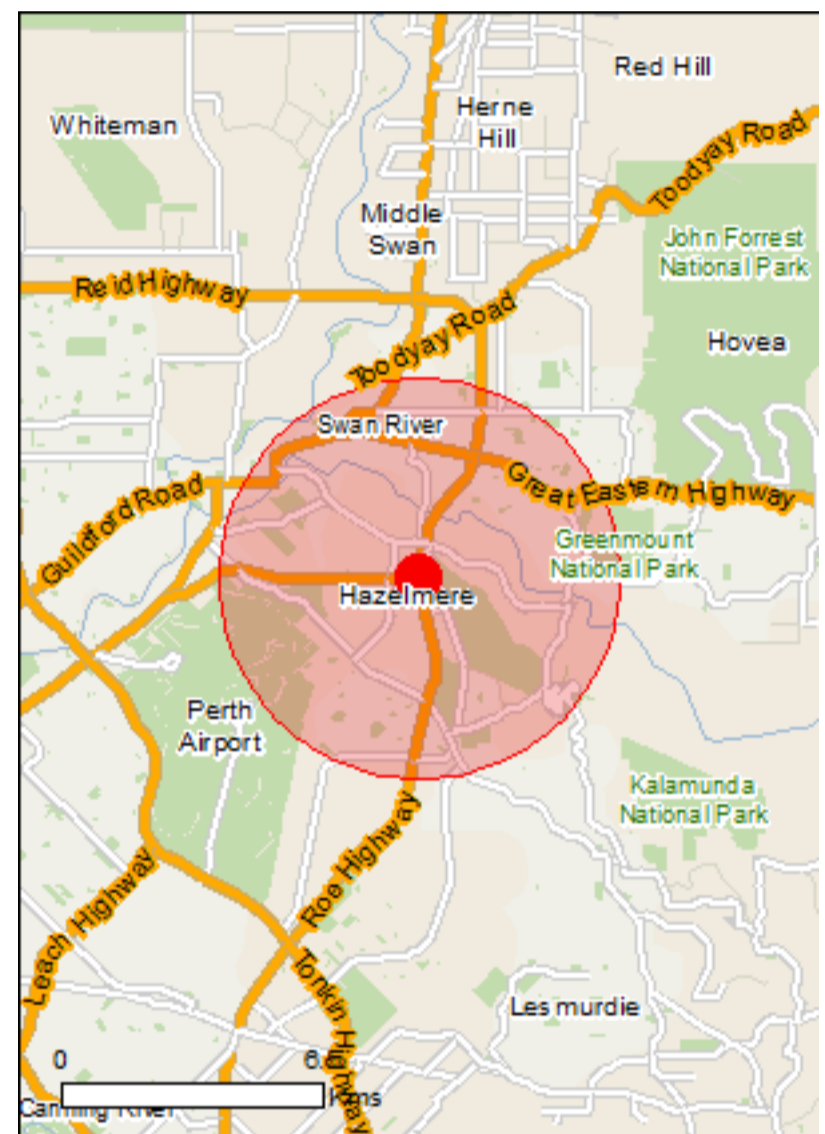
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

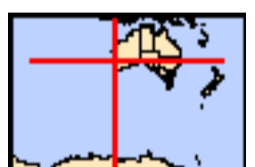
[Acknowledgements](#)



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

[Coordinates](#)

Buffer: 5.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	36
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	4
Commonwealth Heritage Places:	None
Listed Marine Species:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	8
Regional Forest Agreements:	1
Invasive Species:	40
Nationally Important Wetlands:	1
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
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Clay Pans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area
Corymbia calophylla - Kingia australis woodlands on heavy soils of the Swan Coastal Plain	Endangered	Community known to occur within area
Corymbia calophylla - Xanthorrhoea preissii woodlands and shrublands of the Swan Coastal Plain	Endangered	Community known to occur within area
Shrublands and Woodlands of the eastern Swan Coastal Plain	Endangered	Community known to occur within area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community may occur within area

Listed Threatened Species

[\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769]	Endangered	Roosting known to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
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
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 known to occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat likely to occur within area
Other		
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area
Plants		
Acacia anomala Grass Wattle, Chittering Grass Wattle [8153]	Vulnerable	Species or species habitat may occur within area
Acacia aphylla Leafless Rock Wattle [13553]	Vulnerable	Species or species habitat known to occur within area
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat likely to occur within area
Anthocercis gracilis Slender Tailflower [11103]	Vulnerable	Species or species habitat likely to occur within area
Calytrix breviseta subsp. breviseta Swamp Starflower [23879]	Endangered	Species or species habitat may occur within area
Chamelaucium sp. Gingin (N.G.Marchant 6) Gingin Wax [88881]	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 apiculata Scarp Darwinia [8763]	Endangered	Species or species habitat may occur within area
Diplolaena andrewsii [6601]	Endangered	Species or species habitat likely to occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species

Name	Status	Type of Presence
Drakaea elastica Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	habitat likely to occur within area Species or species habitat likely to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat may occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus x balanites Cadda Road Mallee, Cadda Mallee [87816]	Endangered	Species or species habitat may occur within area
Grevillea curviloba subsp. incurva Narrow curved-leaf Grevillea [64909]	Endangered	Species or species habitat may occur within area
Lepidosperma rostratum Beaked Lepidosperma [14152]	Endangered	Species or species habitat likely to occur within area
Macarthuria keigheryi Keighery's Macarthuria [64930]	Endangered	Species or species habitat likely to occur within area
Synaphea sp. Fairbridge Farm (D. Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area
Thelymitra dedmaniarum Cinnamon Sun Orchid [65105]	Endangered	Species or species habitat likely to occur within area
Thelymitra stellata Star Sun-orchid [7060]	Endangered	Species or species habitat known to occur within area

Listed Migratory Species

[[Resource Information](#)]

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

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

Name	Threatened	Type of Presence
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

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

Name
Commonwealth Land - Defence - BUSHMEAD RIFLE RANGE Defence - BUSHMEAD TRAINING AREA Defence - PALMER BARRACKS - SOUTH GUILDFORD

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

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

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur

Name	Threatened	Type of Presence within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Beelu	WA
Gooseberry Hill	WA
Greenmount	WA
Helena River	WA
NTWA Bushland covenant (0074)	WA
Swan River	WA
Unnamed WA45106	WA
Unnamed WA49079	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

Name	Status	Type of Presence
Columba livia		habitat likely to occur within area
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus		
House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus		
Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis		
Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis		
Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris		
Common Starling [389]		Species or species habitat likely to occur within area
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

Name	Status	Type of Presence
habitat likely to occur within area		
Plants		
<p>Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]</p>		Species or species habitat likely to occur within area
<p>Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]</p>		Species or species habitat likely to occur within area
<p>Brachiaria mutica Para Grass [5879]</p>		Species or species habitat may occur within area
<p>Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]</p>		Species or species habitat may occur within area
<p>Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]</p>		Species or species habitat may occur within area
<p>Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]</p>		Species or species habitat likely to occur within area
<p>Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]</p>		Species or species habitat likely to occur within area
<p>Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]</p>		Species or species habitat likely to occur within area
<p>Genista sp. X Genista monspessulana Broom [67538]</p>		Species or species habitat may occur within area
<p>Lantana camara Lantana, Common Lantana, Kamara Lantana, Large- leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]</p>		Species or species habitat likely to occur within area
<p>Lycium ferocissimum African Boxthorn, Boxthorn [19235]</p>		Species or species habitat likely to occur within area
<p>Olea europaea Olive, Common Olive [9160]</p>		Species or species habitat may occur within area
<p>Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]</p>		Species or species habitat may occur within area
<p>Rubus fruticosus aggregate Blackberry, European Blackberry [68406]</p>		Species or species habitat likely to occur within area
<p>Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]</p>		Species or species habitat likely to occur within area
<p>Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]</p>		Species or species habitat likely to occur within area
<p>Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]</p>		Species or species habitat likely to occur within area

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

Nationally Important Wetlands	[Resource Information]
Name	State
Perth Airport Woodland Swamps	WA

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-31.9175 116.01444

Acknowledgements

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

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

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

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

NatureMap Species Report

Created By Guest user on 26/11/2019

Kingdom Plantae
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 116° 00' 34" E, 31° 55' 04" S
Buffer 5km
Group By Family

Family	Species	Records
Acanthaceae	1	1
Alliaceae	1	1
Alstroemeriaceae	1	1
Amaranthaceae	6	22
Amaryllidaceae	1	1
Anarthriaceae	2	6
Apiaceae	16	55
Apocynaceae	2	2
Araceae	1	2
Araliaceae	9	34
Asparagaceae	29	134
Asphodelaceae	1	1
Aspleniaceae	1	1
Asteraceae	64	176
Aytoniaceae	1	1
Bignoniaceae	1	1
Boraginaceae	2	5
Boryaceae	2	12
Brassicaceae	3	4
Byblidaceae	1	3
Campanulaceae	10	38
Caprifoliaceae	2	2
Caryophyllaceae	6	7
Casuarinaceae	4	15
Celastraceae	3	17
Centrolepidaceae	8	23
Chenopodiaceae	3	3
Colchicaceae	6	34
Commelinaceae	1	4
Convolvulaceae	1	3
Crassulaceae	5	11
Cucurbitaceae	1	1
Cyperaceae	57	177
Dasygongonaceae	4	15
Dicranaceae	2	2
Dilleniaceae	17	71
Dioscoreaceae	1	7
Droseraceae	23	90
Elaeocarpaceae	3	7
Ericaceae	23	109
Euphorbiaceae	7	12
Fabaceae	121	448
Gentianaceae	3	10
Geraniaceae	4	5
Goodeniaceae	22	86
Haemodoridaeae	31	152
Haloragaceae	10	31
Hemerocallidaceae	11	74
Hydatellaceae	2	9
Hydrocharitaceae	3	4
Hypericaceae	1	2
Hypoxidaceae	4	5
Iridaceae	23	82
Juncaceae	4	8
Juncaginaceae	6	9
Lamiaceae	8	28
Lauraceae	3	18
Lentibulariaceae	4	8
Linaceae	2	6
Loganiaceae	4	5
Loranthaceae	1	1
Lythraceae	1	2
Macarthuraceae	3	9
Malvaceae	9	39
Marsileaceae	1	1
Menyanthaceae	4	6
Montiaceae	2	3
Myrtaceae	67	200
Olaceae	1	1
Oleaceae	2	2
Onagraceae	2	4
Orchidaceae	69	207
Orobanchaceae	2	4
Oxalidaceae	8	15
Papaveraceae	2	2

Philydraceae	2	4
Phyllanthaceae	4	18
Phytolaccaceae	1	1
Pittosporaceae	6	11
Plantaginaceae	4	6
Poaceae	66	178
Polygalaceae	3	10
Polygonaceae	3	3
Potamogetonaceae	1	4
Pottiaceae	1	1
Primulaceae	3	3
Proteaceae	74	443
Pteridaceae	3	13
Ranunculaceae	1	1
Restionaceae	18	51
Rhamnaceae	7	35
Rosaceae	1	2
Rubiaceae	4	8
Rutaceae	4	20
Salicaceae	2	3
Salviniaceae	1	1
Santalaceae	3	6
Sapindaceae	2	5
Scrophulariaceae	2	3
Selaginellaceae	1	1
Solanaceae	5	5
Stylidiaceae	40	144
Tecophilaeaceae	1	1
Thymelaeaceae	6	19
Typhaceae	1	1
Verbenaceae	1	1
Violaceae	2	5
Xanthorrhoeaceae	7	40
Zamiaceae	1	6
TOTAL	1053	3650

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Acanthaceae				
1.	19716 <i>Thunbergia alata</i>	Y		
Alliaceae				
2.	1377 <i>Allium porum</i> (Leek)	Y		
Alstroemeriaceae				
3.	20755 <i>Alstroemeria psittacina</i>	Y		
Amaranthaceae				
4.	2648 <i>Alternanthera denticulata</i> (Lesser Joyweed)			
5.	2716 <i>Ptilotus declinatus</i> (Curved Mulla Mulla)			
6.	11260 <i>Ptilotus drummondii</i> var. <i>drummondii</i> (Pussytail)			
7.	11797 <i>Ptilotus drummondii</i> var. <i>minor</i>			
8.	2720 <i>Ptilotus esquamatus</i>			
9.	2742 <i>Ptilotus manglesii</i> (Pom Poms, Mulamula)			
Amaryllidaceae				
10.	1495 <i>Narcissus tazetta</i> (Jonquil)	Y		
Anarthriaceae				
11.	1097 <i>Lyginia barbata</i>			
12.	18049 <i>Lyginia imberbis</i>			
Apiaceae				
13.	6205 <i>Actinotus leucocephalus</i> (Flannel Flower)			
14.	6209 <i>Ammi majus</i> (Bishop's Weed)	Y		
15.	12040 <i>Apium prostratum</i> subsp. <i>prostratum</i> var. <i>prostratum</i> (Sea Celery)			
16.	6214 <i>Centella asiatica</i>			
17.	6218 <i>Daucus glochidiatus</i> (Australian Carrot)			
18.	6219 <i>Eryngium pinnatifidum</i> (Blue Devils)			
19.	15446 <i>Eryngium pinnatifidum</i> subsp. <i>pinnatifidum</i>			
20.	41810 <i>Eryngium</i> sp. <i>Subdecumbens</i> (G.J. Keighery 5390)		P3	
21.	6222 <i>Homalosciadium homalocarpum</i>			
22.	6245 <i>Pentapeltis peltigera</i>			
23.	6253 <i>Platysace filiformis</i>			
24.	6255 <i>Platysace juncea</i>			
25.	6263 <i>Schoenolaena juncea</i>			
26.	6284 <i>Xanthosia candida</i>			
27.	6285 <i>Xanthosia ciliata</i>			
28.	6289 <i>Xanthosia huegelii</i>			
Apocynaceae				
29.	6587 <i>Gomphocarpus fruticosus</i> (Narrowleaf Cottonbush)	Y		
30.	6575 <i>Vinca major</i> (Blue Periwinkle)	Y		
Araceae				
31.	1049 <i>Zantedeschia aethiopica</i> (Arum Lily)	Y		
Araliaceae				
32.	6223 <i>Hydrocotyle alata</i>			
33.	6226 <i>Hydrocotyle callicarpa</i> (Small Pennywort)			
34.	6229 <i>Hydrocotyle diantha</i>			
35.	6233 <i>Hydrocotyle lemnoides</i> (Aquatic Pennywort)		P4	
36.	11847 <i>Hydrocotyle pilifera</i> var. <i>pilifera</i>			
37.	11074 <i>Hydrocotyle striata</i>		P1	
38.	6266 <i>Trachymene coerulea</i> (Blue Lace Flower)			
39.	19041 <i>Trachymene coerulea</i> subsp. <i>coerulea</i>			
40.	6280 <i>Trachymene pilosa</i> (Native Parsnip)			
Asparagaceae				
41.	8779 <i>Asparagus asparagoides</i> (Bridal Creeper)	Y		
42.	1287 <i>Dichopogon capillipes</i>			
43.	1289 <i>Dichopogon preissii</i>			
44.	11815 <i>Laxmannia grandiflora</i> subsp. <i>grandiflora</i>			
45.	11911 <i>Laxmannia ramosa</i> subsp. <i>ramosa</i>			
46.	11464 <i>Laxmannia sessiliflora</i> subsp. <i>australis</i>			
47.	1309 <i>Laxmannia squarrosa</i>			
48.	1222 <i>Lomandra brittanii</i>			
49.	1223 <i>Lomandra caespitosa</i> (Tufted Mat Rush)			
50.	1228 <i>Lomandra hermaphrodita</i>			
51.	1232 <i>Lomandra micrantha</i> (Small-flower Mat-rush)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
52.	14542 <i>Lomandra micrantha</i> subsp. <i>micrantha</i>			
53.	1234 <i>Lomandra nigricans</i>			
54.	1236 <i>Lomandra odora</i> (Tiered Matrush)			
55.	1239 <i>Lomandra preissii</i>			
56.	1240 <i>Lomandra purpurea</i> (Purple Mat Rush)			
57.	1243 <i>Lomandra sericea</i> (Silky Mat Rush)			
58.	1245 <i>Lomandra spartea</i>			
59.	1246 <i>Lomandra suaveolens</i>			
60.	1312 <i>Sowerbaea laxiflora</i> (Purple Tassels)			
61.	1318 <i>Thysanotus arbuscula</i>			
62.	1319 <i>Thysanotus arenarius</i>			
63.	1338 <i>Thysanotus manglesianus</i> (Fringed Lily)			
64.	1339 <i>Thysanotus multiflorus</i> (Many-flowered Fringe Lily)			
65.	1350 <i>Thysanotus scaber</i>			
66.	1351 <i>Thysanotus sparteus</i>			
67.	1354 <i>Thysanotus tenellus</i>			
68.	1357 <i>Thysanotus thyrsoides</i>			
69.	1358 <i>Thysanotus triandrus</i>			
Asphodelaceae				
70.	1364 <i>Asphodelus fistulosus</i> (Onion Weed)	Y		
Aspleniaceae				
71.	66 <i>Pleurosorus subglandulosus</i>			
Asteraceae				
72.	7838 <i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y		
73.	7867 <i>Brachyscome bellidioides</i>			
74.	7875 <i>Brachyscome glandulosa</i>			
75.	7878 <i>Brachyscome iberidifolia</i>			
76.	7882 <i>Brachyscome perpussilla</i>			
77.	7902 <i>Calotis erinacea</i> (Tangled Burr-daisy)			
78.	7935 <i>Cichorium intybus</i> (Chicory)	Y		
79.	7937 <i>Cirsium vulgare</i> (Spear Thistle, Scotch Thistle)	Y		
80.	7939 <i>Coryza bonariensis</i> (Flaxleaf Fleabane)	Y		
81.	44528 <i>Coreopsis lanceolata</i> (Common Tickseed, Showy Tickseed, Garden Coreopsis)	Y		
82.	7943 <i>Cotula australis</i> (Common Cotula)			
83.	7945 <i>Cotula coronopifolia</i> (Waterbuttons)	Y		
84.	7946 <i>Cotula cotuloides</i> (Smooth Cotula)			
85.	13354 <i>Craspedia variabilis</i>			
86.	7953 <i>Crepis foetida</i> (Foetid Hawksbeard)	Y		
87.	15137 <i>Euchiton sphaericus</i>			
88.	8002 <i>Gnephosis tenuissima</i>			
89.	8010 <i>Helianthus tuberosus</i> (Jerusalem Artichoke)	Y		
90.	12741 <i>Hyalosperma cotula</i>			
91.	8086 <i>Hypochoeris glabra</i> (Smooth Catsear)	Y		
92.	9352 <i>Hypochoeris radicata</i> (Flat Weed, Cats-ear)	Y		
93.	18585 <i>Lagenophora huegelii</i>			
94.	13284 <i>Lawrencella rosea</i>			
95.	9356 <i>Logfia gallica</i>	Y		
96.	8105 <i>Millotia myosotidifolia</i>			
97.	8106 <i>Millotia tenuifolia</i> (Soft Millotia)			
98.	14344 <i>Millotia tenuifolia</i> var. <i>tenuifolia</i> (Soft Millotia)			
99.	29418 <i>Monoculus monstrosus</i>	Y		
100.	8114 <i>Myriocephalus appendiculatus</i> (White-tip Myriocephalus)			
101.	14187 <i>Myriocephalus occidentalis</i>			
102.	8143 <i>Olearia paucidentata</i> (Autumn Scrub Daisy)			
103.	8163 <i>Pithocarpa corymbulosa</i> (Corymbose Pithocarpa)		P3	
104.	18352 <i>Pithocarpa pulchella</i> var. <i>melanostigma</i>			
105.	45237 <i>Podolepis aristata</i> subsp. <i>aristata</i>			
106.	8175 <i>Podolepis gracilis</i> (Slender Podolepis)			
107.	8177 <i>Podolepis lessonii</i>			
108.	8182 <i>Podotheca angustifolia</i> (Sticky Longheads)			
109.	8183 <i>Podotheca chrysantha</i> (Yellow Podotheca)			
110.	13255 <i>Pterochaeta paniculata</i>			
111.	8195 <i>Quinetia urvillei</i>			
112.	13300 <i>Rhodanthe citrina</i>			
113.	15035 <i>Rhodanthe corymbosa</i>			
114.	13312 <i>Rhodanthe pyrethrum</i>			
115.	13309 <i>Rhodanthe spicata</i>			
116.	8205 <i>Senecio gilbertii</i>			P1
117.	20663 <i>Senecio multicaulis</i> subsp. <i>multicaulis</i>			

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118.	20161 <i>Senecio pinnatifolius</i>			
119.	8224 <i>Siloxerus filifolius</i>			
120.	8225 <i>Siloxerus humifusus</i> (<i>Procumbent Siloxerus</i>)			
121.	14583 <i>Siloxerus multiflorus</i>			
122.	8231 <i>Sonchus oleraceus</i> (<i>Common Sowthistle</i>)	Y		
123.	25902 <i>Symphytotrichum squamatum</i> (<i>Bushy Starwort</i>)	Y		
124.	8248 <i>Tolpis barbata</i> (<i>Yellow Hawkweed</i>)	Y		
125.	8250 <i>Tragopogon porrifolius</i>	Y		
126.	8251 <i>Trichocline spathulata</i> (<i>Native Gerbera</i>)			
127.	8255 <i>Ursinia anthemoides</i> (<i>Ursinia</i>)	Y		
128.	38388 <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Y		
129.	8257 <i>Vellereophyton dealbatum</i> (<i>White Cudweed</i>)	Y		
130.	13328 <i>Waitzia nitida</i>			
131.	8281 <i>Waitzia podolepis</i>			
132.	8282 <i>Waitzia suaveolens</i> (<i>Fragrant Waitzia</i>)			
133.	13333 <i>Waitzia suaveolens</i> var. <i>suaveolens</i>			
134.	8287 <i>Xanthium spinosum</i> (<i>Bathurst Burr</i> , <i>Common Cockleburr</i> , <i>Spiny Cockleburr</i> , <i>Spiny Clotburr</i>)	Y		
135.	44861 <i>Xerochrysum macranthum</i>			
Aytoniaceae				
136.	<i>Asterella drummondii</i>			
Bignoniaceae				
137.	<i>Jacaranda mimosifolia</i>			Y
Boraginaceae				
138.	6681 <i>Echium plantagineum</i> (<i>Paterson's Curse</i>)	Y		
139.	6686 <i>Halgania corymbosa</i>		P3	
Boryaceae				
140.	1272 <i>Borya scirpoidea</i>			
141.	1273 <i>Borya sphaerocephala</i> (<i>Pincushions</i>)			
Brassicaceae				
142.	3016 <i>Heliophila pusilla</i>	Y		
143.	19989 <i>Lepidium didymum</i>	Y		
144.	3061 <i>Raphanus raphanistrum</i> (<i>Wild Radish</i>)	Y		
Byblidaceae				
145.	3178 <i>Byblis gigantea</i> (<i>Rainbow Plant</i>)		P3	
Campanulaceae				
146.	7396 <i>Isotoma hypocrateriformis</i> (<i>Woodbridge Poison</i>)			
147.	7398 <i>Isotoma pusilla</i> (<i>Small Isotome</i>)			
148.	9289 <i>Lobelia anceps</i> (<i>Angled Lobelia</i>)			
149.	7402 <i>Lobelia gibbosa</i> (<i>Tall Lobelia</i>)			
150.	7403 <i>Lobelia heterophylla</i> (<i>Wing-seeded Lobelia</i>)			
151.	7406 <i>Lobelia rhombifolia</i> (<i>Tufted Lobelia</i>)			
152.	7407 <i>Lobelia rhytidosperra</i> (<i>Wrinkled-seeded Lobelia</i>)			
153.	37440 <i>Monopsis debilis</i> var. <i>depressa</i>	Y		
154.	7384 <i>Wahlenbergia capensis</i> (<i>Cape Bluebell</i>)	Y		
155.	7389 <i>Wahlenbergia preissii</i>			
Caprifoliaceae				
156.	7366 <i>Centranthus macrosiphon</i>	Y		
157.	35322 <i>Centranthus ruber</i> subsp. <i>ruber</i>	Y		
Caryophyllaceae				
158.	2889 <i>Cerastium glomeratum</i> (<i>Mouse Ear Chickweed</i>)	Y		
159.	2891 <i>Corrigiola litoralis</i> (<i>Strapwort</i>)	Y		
160.	19825 <i>Petrorhagia dubia</i>	Y		
161.	2905 <i>Polycarpon tetraphyllum</i> (<i>Fourleaf Allseed</i>)	Y		
162.	2909 <i>Silene gallica</i> (<i>French Catchfly</i>)	Y		
163.	15972 <i>Silene gallica</i> var. <i>gallica</i>	Y		
Casuarinaceae				
164.	1732 <i>Allocasuarina humilis</i> (<i>Dwarf Sheoak</i>)			
165.	1734 <i>Allocasuarina microstachya</i>			
166.	1739 <i>Allocasuarina thuyoides</i> (<i>Horned Sheoak</i>)			
167.	1742 <i>Casuarina obesa</i> (<i>Swamp Sheoak</i> , <i>Kuli</i>)			
Celastraceae				
168.	4733 <i>Stackhousia monogyna</i>			
169.	9070 <i>Stackhousia pubescens</i> (<i>Downy Stackhousia</i>)			
170.	4737 <i>Tripterococcus brunonis</i> (<i>Winged Stackhousia</i>)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Centrolepidaceae				
171.	1116 <i>Aphelia brizula</i>			
172.	1117 <i>Aphelia cyperoides</i>			
173.	1118 <i>Aphelia drummondii</i>			
174.	43548 <i>Aphelia</i> sp. Albany (B.G. Briggs 596)			
175.	1120 <i>Centrolepis alepyroides</i>			
176.	1121 <i>Centrolepis aristata</i> (Pointed Centrolepis)			
177.	1125 <i>Centrolepis drummondiana</i>			
178.	1129 <i>Centrolepis glabra</i> (Smooth Centrolepis)			
Chenopodiaceae				
179.	11368 <i>Dysphania glomulifera</i> subsp. <i>glomulifera</i>			
180.	33480 <i>Dysphania pumilio</i> (Clammy Goosefoot)			
181.	2639 <i>Suaeda australis</i> (Seablite)			
Colchicaceae				
182.	1382 <i>Baeometra uniflora</i>	Y		
183.	12770 <i>Burchardia congesta</i>			
184.	1385 <i>Burchardia multiflora</i> (Dwarf Burchardia)			
185.	1394 <i>Wurmbea dioica</i> (Early Nancy)			
186.	12072 <i>Wurmbea dioica</i> subsp. <i>alba</i>			
187.	1401 <i>Wurmbea pygmaea</i>			
Commelinaceae				
188.	1162 <i>Cartonema philydroides</i>			
Convolvulaceae				
189.	6614 <i>Convolvulus remotus</i>			
Crassulaceae				
190.	11709 <i>Crassula colorata</i> var. <i>acuminata</i>			
191.	11563 <i>Crassula colorata</i> var. <i>colorata</i>			
192.	11349 <i>Crassula decumbens</i> var. <i>decumbens</i>			
193.	3139 <i>Crassula exserta</i>			
194.	15706 <i>Crassula natans</i> var. <i>minus</i>	Y		
Cucurbitaceae				
195.	48865 <i>Cucumis myriocarpus</i> subsp. <i>myriocarpus</i>	Y		
Cyperaceae				
196.	744 <i>Baumea laxa</i>			
197.	749 <i>Bolboschoenus caldwellii</i> (Marsh Club-rush)			
198.	48689 <i>Bolboschoenus fluviatilis</i>			P1
199.	753 <i>Carex appressa</i> (Tall Sedge)			
200.	756 <i>Carex inversa</i> (Knob Sedge)			
201.	759 <i>Carex tereticaulis</i>			P3
202.	760 <i>Caustis dioica</i>			
203.	763 <i>Chorizandra enodis</i> (Black Bristlerush)			
204.	764 <i>Chorizandra multiarticulata</i>			
205.	768 <i>Cyathochaeta avenacea</i>			
206.	769 <i>Cyathochaeta clandestina</i>			
207.	17618 <i>Cyathochaeta equitans</i>			
208.	783 <i>Cyperus congestus</i> (Dense Flat-sedge)	Y		
209.	792 <i>Cyperus eragrostis</i> (Umbrella Sedge)	Y		
210.	815 <i>Cyperus tenellus</i> (Tiny Flatsedge)	Y		
211.	894 <i>Fimbristylis velata</i>			
212.	900 <i>Gahnia aristata</i>			
213.	907 <i>Gahnia trifida</i> (Coast Saw-sedge)			
214.	20200 <i>Isolepis cernua</i> var. <i>setiformis</i>			
215.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
216.	42741 <i>Lepidosperma apricola</i>			
217.	41620 <i>Lepidosperma asperatum</i>			
218.	930 <i>Lepidosperma costale</i>			
219.	931 <i>Lepidosperma drummondii</i>			
220.	936 <i>Lepidosperma leptostachyum</i>			
221.	937 <i>Lepidosperma longitudinale</i> (Pithy Sword-sedge)			
222.	939 <i>Lepidosperma pruinosum</i>			
223.	940 <i>Lepidosperma pubisquameum</i>			
224.	944 <i>Lepidosperma scabrum</i>			
225.	<i>Lepidosperma</i> sp.			
226.	29141 <i>Lepidosperma</i> sp. Gosnells (A. Markey 1145)			
227.	945 <i>Lepidosperma squamatum</i>			
228.	947 <i>Lepidosperma tenue</i>			

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229.	955 <i>Mesomelaena pseudostygia</i>			
230.	957 <i>Mesomelaena tetragona</i> (Semaphore Sedge)			
231.	971 <i>Schoenus andrewsii</i>			
232.	975 <i>Schoenus bifidus</i>			
233.	978 <i>Schoenus brevisetis</i>			
234.	979 <i>Schoenus caespititius</i>			
235.	982 <i>Schoenus clandestinus</i>			
236.	991 <i>Schoenus grammatophyllus</i>			
237.	17606 <i>Schoenus griffinianus</i>		P4	
238.	1002 <i>Schoenus nanus</i> (Tiny Bog Rush)			
239.	1007 <i>Schoenus pedicellatus</i>			
240.	17614 <i>Schoenus plumosus</i>			
241.	1011 <i>Schoenus rigens</i>			
242.	1013 <i>Schoenus sculptus</i> (Gimlet Bog-rush)			
243.	18164 <i>Schoenus</i> sp. smooth culms (K.R. Newbey 7823)			
244.	1016 <i>Schoenus subbarbatus</i> (Bearded Bog-rush)			
245.	1017 <i>Schoenus subbulbosus</i>			
246.	1019 <i>Schoenus subflavus</i> (Yellow Bog-rush)			
247.	1020 <i>Schoenus sublateralis</i>			
248.	1026 <i>Schoenus unispiculatus</i>			
249.	17409 <i>Schoenus varicellae</i>			
250.	1034 <i>Tetraria capillaris</i> (Hair Sedge)			
251.	1036 <i>Tetraria octandra</i>			
252.	43207 <i>Tricostularia exsul</i>			

Dasypogonaceae

253.	1213 <i>Calectasia cyanea</i> (Blue Tinsel Lily)		T	
254.	19309 <i>Calectasia narragara</i>			
255.	1218 <i>Dasypogon bromeliifolius</i> (Pineapple Bush)			
256.	1220 <i>Dasypogon obliquifolius</i>			

Dicranaceae

257.	32460 <i>Campylopus acuminatus</i> var. <i>kirkii</i>			
258.	32338 <i>Campylopus introflexus</i>	Y		

Dilleniaceae

259.	5108 <i>Hibbertia acerosa</i> (Needle Leaved Guinea Flower)			
260.	5109 <i>Hibbertia amplexicaulis</i>			
261.	5112 <i>Hibbertia aurea</i>			
262.	5114 <i>Hibbertia commutata</i>			
263.	20051 <i>Hibbertia diamesogenos</i>			
264.	19778 <i>Hibbertia glomerata</i> subsp. <i>darlingensis</i>			
265.	5134 <i>Hibbertia huegelii</i>			
266.	5135 <i>Hibbertia hypericoides</i> (Yellow Buttercups)			
267.	45534 <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>			
268.	5150 <i>Hibbertia nymphaea</i>			
269.	5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
270.	5169 <i>Hibbertia serrata</i> (Serrate Leaved Guinea Flower)			
271.	5171 <i>Hibbertia spicata</i>			
272.	11481 <i>Hibbertia spicata</i> subsp. <i>spicata</i>			
273.	5172 <i>Hibbertia stellaris</i> (Orange Stars)			
274.	48381 <i>Hibbertia striata</i>			
275.	5173 <i>Hibbertia subvaginata</i>			

Dioscoreaceae

276.	1509 <i>Dioscorea hastifolia</i> (Warrine, Waram)			
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Droseraceae

277.	3092 <i>Drosera bulbosa</i> (Red-leaved Sundew)			
278.	13204 <i>Drosera callistos</i>			
279.	48724 <i>Drosera collina</i>			
280.	48751 <i>Drosera drummondii</i>			
281.	3095 <i>Drosera erythrorhiza</i> (Red Ink Sundew)			
282.	3097 <i>Drosera gigantea</i> (Giant Sundew)			
283.	3098 <i>Drosera glanduligera</i> (Pimpernel Sundew)			
284.	3101 <i>Drosera heterophylla</i> (Swamp Rainbow)			
285.	48768 <i>Drosera hirsuta</i>			
286.	3106 <i>Drosera macrantha</i> (Bridal Rainbow)			
287.	3109 <i>Drosera menziesii</i> (Pink Rainbow)			
288.	15710 <i>Drosera miniata</i> (Orange Sundew)			
289.	48709 <i>Drosera minutiflora</i>			
290.	3113 <i>Drosera neesii</i> (Jewel Rainbow)			
291.	3114 <i>Drosera nitidula</i> (Shining Sundew)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
292.	3118 <i>Drosera pallida</i> (Pale Rainbow)			
293.	3123 <i>Drosera platystigma</i> (Black-eyed Sundew)			
294.	29178 <i>Drosera porrecta</i>			
295.	3125 <i>Drosera pycnoblata</i> (Pearly Sundew)			
296.	8911 <i>Drosera rosulata</i>			
297.	49090 <i>Drosera</i> sp. Branched styles (S.C. Coffey 193)			
298.	3131 <i>Drosera stolonifera</i> (Leafy Sundew)			
299.	3135 <i>Drosera zonaria</i> (Painted Sundew)			

Elaeocarpaceae

300.	48342 <i>Tetratheca hirsuta</i> subsp. <i>hirsuta</i>			
301.	48341 <i>Tetratheca hirsuta</i> subsp. <i>viminea</i>			
302.	4537 <i>Tetratheca nuda</i>			

Ericaceae

303.	6300 <i>Andersonia aristata</i> (Rice Flower)			
304.	6311 <i>Andersonia heterophylla</i>			
305.	6314 <i>Andersonia lehmanniana</i>			
306.	11471 <i>Andersonia lehmanniana</i> subsp. <i>lehmanniana</i>			
307.	6323 <i>Astroloma ciliatum</i> (Candle Cranberry)			
308.	6330 <i>Astroloma macrocalyx</i> (Swan Berry)			
309.	6334 <i>Astroloma pallidum</i> (Kick Bush)			
310.	6337 <i>Astroloma stomarrhena</i> (Red Swamp Cranberry)			
311.	6339 <i>Astroloma xerophyllum</i>			
312.	6347 <i>Conostephium minus</i> (Pink-tipped Pearl flower)			
313.	6348 <i>Conostephium pendulum</i> (Pearl Flower)			
314.	6349 <i>Conostephium preissii</i>			
315.	6360 <i>Leucopogon australis</i> (Spiked Beard-heath)			
316.	6374 <i>Leucopogon conostephioides</i>			
317.	6397 <i>Leucopogon glaucifolius</i>			
318.	6400 <i>Leucopogon gracillimus</i>			
319.	6436 <i>Leucopogon propinquus</i>			
320.	6439 <i>Leucopogon pulchellus</i> (Beard-heath)			
321.	6440 <i>Leucopogon racemosus</i>			
322.	28311 <i>Leucopogon</i> sp. Great Southern (R.S. Cowan A 586)			
323.	40803 <i>Leucopogon squarrosus</i> subsp. <i>squarrosus</i>			
324.	34736 <i>Lysinema pentapetalum</i>			
325.	6476 <i>Styphelia tenuiflora</i> (Common Pinheath)			

Euphorbiaceae

326.	4598 <i>Beyeria lechenaultii</i> (Pale Turpentine Bush)			
327.	4626 <i>Euphorbia drummondii</i> (Caustic Weed, Piwi)			
328.	4638 <i>Euphorbia peplus</i> (Petty Spurge)	Y		
329.	4662 <i>Monotaxis grandiflora</i> (Diamond of the Desert)			
330.	19585 <i>Monotaxis grandiflora</i> var. <i>grandiflora</i>			
331.	4666 <i>Monotaxis occidentalis</i>			
332.	4716 <i>Stachystemon vermicularis</i>			

Fabaceae

333.	3220 <i>Acacia aphylla</i> (Leafless Rock Wattle)		T	
334.	15466 <i>Acacia appplanata</i>			
335.	3231 <i>Acacia auronitens</i>			
336.	3233 <i>Acacia barbinervis</i>			
337.	3294 <i>Acacia dentifera</i>			
338.	11229 <i>Acacia drummondii</i> subsp. <i>affinis</i>		P3	
339.	3323 <i>Acacia ericifolia</i>			
340.	3331 <i>Acacia extensa</i> (Wiry Wattle)			
341.	3374 <i>Acacia huegelii</i>			
342.	3382 <i>Acacia incrassata</i>			
343.	11611 <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>			
344.	15721 <i>Acacia lasiocarpa</i> var. <i>sedifolia</i>			
345.	3442 <i>Acacia microbotrya</i> (Manna Wattle, Kalyang)			
346.	3454 <i>Acacia nervosa</i> (Rib Wattle)			
347.	14129 <i>Acacia oncinophylla</i> subsp. <i>oncinophylla</i>		P3	
348.	3482 <i>Acacia paradoxa</i> (Kangaroo Thorn)	Y		
349.	3502 <i>Acacia pulchella</i> (Prickly Moses)			
350.	15481 <i>Acacia pulchella</i> var. <i>glaberrima</i>			
351.	15483 <i>Acacia pulchella</i> var. <i>pulchella</i>			
352.	3504 <i>Acacia pycnantha</i> (Golden Wattle)	Y		
353.	3527 <i>Acacia saligna</i> (Orange Wattle, Kudjong)			
354.	30034 <i>Acacia saligna</i> subsp. <i>pruinescens</i>			
355.	30032 <i>Acacia saligna</i> subsp. <i>saligna</i>			

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356.	3541 <i>Acacia sessilis</i>			
357.	3557 <i>Acacia stenoptera</i> (Narrow Winged Wattle)			
358.	3574 <i>Acacia teretifolia</i>			
359.	3602 <i>Acacia willdenowiana</i> (Grass Wattle)			
360.	3686 <i>Aotus cordifolia</i>			
361.	3688 <i>Aotus gracillima</i>			
362.	48782 <i>Bossiaea angustifolia</i>			
363.	3710 <i>Bossiaea eriocarpa</i> (Common Brown Pea)			
364.	3714 <i>Bossiaea ornata</i> (Broad Leaved Brown Pea)			
365.	18156 <i>Chamaecytisus palmensis</i> (Tagasaste)	Y		
366.	8971 <i>Chorizema cordatum</i>			
367.	3753 <i>Chorizema dicksonii</i> (Yellow-eyed Flame Pea)			
368.	35838 <i>Cristonia biloba</i> subsp. <i>biloba</i>			
369.	17368 <i>Crotalaria agatiflora</i> subsp. <i>agatiflora</i>	Y		
370.	3793 <i>Daviesia angulata</i>			
371.	3799 <i>Daviesia cordata</i> (Bookleaf)			
372.	3805 <i>Daviesia decurrens</i> (Prickly Bitter-pea)			
373.	19747 <i>Daviesia decurrens</i> subsp. <i>decurrens</i>			
374.	3807 <i>Daviesia divaricata</i> (Mamo)			
375.	18560 <i>Daviesia divaricata</i> subsp. <i>divaricata</i>			
376.	11879 <i>Daviesia hakeoides</i> subsp. <i>hakeoides</i>			
377.	3815 <i>Daviesia horrida</i> (Prickly Bitter-pea)			
378.	3824 <i>Daviesia nudiflora</i>			
379.	16585 <i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>			
380.	3831 <i>Daviesia pedunculata</i>			
381.	3832 <i>Daviesia physodes</i>			
382.	3833 <i>Daviesia podophylla</i>			
383.	3834 <i>Daviesia polyphylla</i>			
384.	3835 <i>Daviesia preissii</i>			
385.	3845 <i>Daviesia triflora</i>			
386.	3872 <i>Euchilopsis linearis</i> (Swamp Pea)			
387.	3880 <i>Eutaxia virgata</i>			
388.	3887 <i>Gastrolobium acutum</i>			
389.	3895 <i>Gastrolobium calycinum</i> (York Road Poison)			
390.	20475 <i>Gastrolobium capitatum</i>			
391.	20505 <i>Gastrolobium celsianum</i>			
392.	20513 <i>Gastrolobium dilatatum</i>			
393.	20473 <i>Gastrolobium ebracteolatum</i>			
394.	20483 <i>Gastrolobium linearifolium</i>			
395.	3912 <i>Gastrolobium oxylobioides</i> (Champion Bay Poison)			
396.	3923 <i>Gastrolobium spathulatum</i> (Poison Bush)			
397.	3933 <i>Gastrolobium villosum</i> (Crinkle-leaved Poison)			
398.	3936 <i>Genista linifolia</i> (Flaxleaf Broom)	Y		
399.	3945 <i>Gompholobium aristatum</i>			
400.	10909 <i>Gompholobium confertum</i>			
401.	3950 <i>Gompholobium knightianum</i>			
402.	3951 <i>Gompholobium marginatum</i>			
403.	3954 <i>Gompholobium polymorphum</i>			
404.	3955 <i>Gompholobium preissii</i>			
405.	3956 <i>Gompholobium shuttleworthii</i>			
406.	3957 <i>Gompholobium tomentosum</i> (Hairy Yellow Pea)			
407.	3964 <i>Hovea chorizemifolia</i> (Holly-leaved Hovea)			
408.	3966 <i>Hovea pungens</i> (Devil's Pins, Puyenak)			
409.	3968 <i>Hovea trisperma</i> (Common Hovea)			
410.	12907 <i>Hovea trisperma</i> var. <i>grandiflora</i>			
411.	12859 <i>Hovea trisperma</i> var. <i>trisperma</i>			
412.	3973 <i>Indigofera colutea</i> (Sticky Indigo)			
413.	3992 <i>Isotropis cuneifolia</i> (Granny Bonnets)			
414.	19700 <i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>			
415.	3997 <i>Jacksonia alata</i>			
416.	14783 <i>Jacksonia calcicola</i>			
417.	4010 <i>Jacksonia floribunda</i> (Holly Pea)			
418.	4018 <i>Jacksonia lehmannii</i>			
419.	4025 <i>Jacksonia restioides</i>			
420.	4027 <i>Jacksonia sericea</i> (Waldjumi)		P4	
421.	4029 <i>Jacksonia sternbergiana</i> (Stinkwood, Kapur)			
422.	4037 <i>Kennedia coccinea</i> (Coral Vine)			
423.	4044 <i>Kennedia prostrata</i> (Scarlet Runner)			
424.	4045 <i>Kennedia stirlingii</i> (Bushy Kennedia)			
425.	11289 <i>Labichea lanceolata</i> subsp. <i>lanceolata</i>			

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426.	3669 <i>Labichea punctata</i> (Lance-leaved Cassia)			
427.	4047 <i>Lathyrus tingitanus</i> (Tangier Pea)	Y		
428.	4059 <i>Lotus angustissimus</i> (Narrowleaf Trefoil)	Y		
429.	4063 <i>Lotus uliginosus</i> (Greater Lotus)	Y		
430.	4065 <i>Lupinus angustifolius</i> (Narrowleaf Lupin)	Y		
431.	4066 <i>Lupinus cosentinii</i>	Y		
432.	4067 <i>Lupinus luteus</i> (Yellow Lupin)	Y		
433.	4072 <i>Medicago arabica</i> (Spotted Medic)	Y		
434.	4100 <i>Mirbelia spinosa</i>			
435.	17114 <i>Paraserianthes lophantha</i> subsp. <i>lophantha</i>			
436.	4172 <i>Pultenaea ericifolia</i>			
437.	4205 <i>Sphaerolobium linophyllum</i>			
438.	4206 <i>Sphaerolobium macranthum</i>			
439.	4207 <i>Sphaerolobium medium</i>			
440.	4211 <i>Sphaerolobium vimineum</i> (Leafless Globe Pea)			
441.	4251 <i>Templetonia drummondii</i>			
442.	17145 <i>Trifolium angustifolium</i> var. <i>angustifolium</i>	Y		
443.	4291 <i>Trifolium arvense</i> (Hare's Foot Clover)	Y		
444.	4292 <i>Trifolium campestre</i> (Hop Clover)	Y		
445.	17759 <i>Trifolium fragiferum</i> var. <i>fragiferum</i>	Y		
446.	4297 <i>Trifolium glomeratum</i> (Cluster Clover)	Y		
447.	4298 <i>Trifolium hirtum</i> (Rose Clover)	Y		
448.	17758 <i>Trifolium hybridum</i> var. <i>hybridum</i>	Y		
449.	4303 <i>Trifolium micranthum</i> (Slender Suckling Clover)	Y		
450.	4315 <i>Trifolium tomentosum</i> (Woolly Clover)	Y		
451.	34772 <i>Vachellia karroo</i>	Y		
452.	4319 <i>Vicia benghalensis</i> (Purple Vetch)	Y		
453.	4325 <i>Viminaria juncea</i> (Swishbush, Koweda)			
Gentianaceae				
454.	6539 <i>Centaurium erythraea</i> (Common Centaury)	Y		
455.	6542 <i>Centaurium tenuiflorum</i>	Y		
456.	6543 <i>Cicendia filiformis</i> (Slender Cicendia)	Y		
Geraniaceae				
457.	4332 <i>Erodium botrys</i> (Long Storksbill)	Y		
458.	4335 <i>Erodium cygnorum</i> (Blue Heronsbill)			
459.	4336 <i>Erodium moschatum</i> (Musky Crowfoot)	Y		
460.	4343 <i>Pelargonium capitatum</i> (Rose Pelargonium)	Y		
Goodeniaceae				
461.	12724 <i>Anthotium junciforme</i>			
462.	7420 <i>Dampiera alata</i> (Winged-stem Dampiera)			
463.	7428 <i>Dampiera coronata</i> (Wedge-leaved Dampiera)			
464.	7454 <i>Dampiera linearis</i> (Common Dampiera)			
465.	7462 <i>Dampiera pedunculata</i>			
466.	7484 <i>Dampiera trigona</i> (Angled-stem Dampiera)			
467.	8614 <i>Goodenia claytoniacea</i>			
468.	29362 <i>Goodenia coerulea</i>			
469.	12520 <i>Goodenia fasciculata</i>			
470.	12551 <i>Goodenia micrantha</i>			
471.	19286 <i>Goodenia pulchella</i> subsp. <i>Coastal Plain A</i> (M. Hislop 634)			
472.	7568 <i>Lechenaultia biloba</i> (Blue Leschenaultia)			
473.	7572 <i>Lechenaultia expansa</i>			
474.	7574 <i>Lechenaultia floribunda</i> (Free-flowering Leschenaultia)			
475.	7602 <i>Scaevola calliptera</i>			
476.	7603 <i>Scaevola canescens</i> (Grey Scaevola)			
477.	7613 <i>Scaevola glandulifera</i> (Viscid Hand-flower)			
478.	7635 <i>Scaevola pilosa</i> (Hairy Fan-flower)			
479.	7636 <i>Scaevola platyphylla</i> (Broad-leaved Fanflower)			
480.	12585 <i>Scaevola repens</i>			
481.	13182 <i>Scaevola repens</i> var. <i>repens</i>			
482.	7665 <i>Velleia trinervis</i>			
Haemodoraceae				
483.	11470 <i>Anigozanthos bicolor</i> subsp. <i>bicolor</i>			
484.	1409 <i>Anigozanthos humilis</i> (Catspaw)			
485.	11434 <i>Anigozanthos humilis</i> subsp. <i>humilis</i>			
486.	1411 <i>Anigozanthos manglesii</i> (Mangles Kangaroo Paw, Kurulbrang)			
487.	11261 <i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>			
488.	11566 <i>Anigozanthos viridis</i> subsp. <i>viridis</i>			
489.	1417 <i>Blancoa canescens</i> (Winter Bell)			

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490.	11826 <i>Conostylis aculeata</i> subsp. <i>aculeata</i>			
491.	12109 <i>Conostylis aculeata</i> subsp. <i>preissii</i>			
492.	1420 <i>Conostylis androstemma</i> (Trumpets)			
493.	1423 <i>Conostylis aurea</i> (Golden Conostylis)			
494.	11438 <i>Conostylis candicans</i> subsp. <i>candicans</i>			
495.	12035 <i>Conostylis caricina</i> subsp. <i>caricina</i>			
496.	11695 <i>Conostylis festucaeae</i> subsp. <i>festucaeae</i>			
497.	1436 <i>Conostylis juncea</i>			
498.	1454 <i>Conostylis setigera</i> (Bristly Cottonhead)			
499.	11597 <i>Conostylis setigera</i> subsp. <i>setigera</i>			
500.	1455 <i>Conostylis setosa</i> (White Cottonhead)			
501.	1464 <i>Haemodorum brevisepalum</i>			
502.	1465 <i>Haemodorum discolor</i>			
503.	1468 <i>Haemodorum laxum</i>			
504.	1470 <i>Haemodorum paniculatum</i> (Mardja)			
505.	1472 <i>Haemodorum simplex</i>			
506.	1474 <i>Haemodorum sparsiflorum</i>			
507.	1475 <i>Haemodorum spicatum</i> (Mardja)			
508.	1478 <i>Phlebocarya ciliata</i>			
509.	1479 <i>Phlebocarya filifolia</i>			
510.	1482 <i>Tribonanthes brachypetala</i> (Nodding Tiurmdin)			
511.	1483 <i>Tribonanthes longipetala</i> (Branching Tiurmdin)			
512.	8798 <i>Tribonanthes uniflora</i> (Woolly Tiurmdin)			
513.	1485 <i>Tribonanthes violacea</i> (Violet Tiurmdin)			
Haloragaceae				
514.	6143 <i>Glischrocaryon aureum</i> (Common Popflower)			
515.	6149 <i>Gonocarpus cordiger</i>			
516.	6161 <i>Gonocarpus pithyoides</i>			
517.	34676 <i>Meionectes brownii</i> (Swamp Raspwort)			
518.	33638 <i>Meionectes tenuifolia</i>		P3	
519.	6189 <i>Myriophyllum crispatum</i>			
520.	6192 <i>Myriophyllum drummondii</i>			
521.	6193 <i>Myriophyllum echinatum</i>		P3	
522.	6195 <i>Myriophyllum limnophilum</i>			
523.	35016 <i>Trihaloragis hexandra</i> subsp. <i>integrifolia</i>			
Hemerocallidaceae				
524.	23474 <i>Agrostocrinum hirsutum</i>			
525.	1261 <i>Agrostocrinum scabrum</i> (Blue Grass Lily)			
526.	1264 <i>Arnocrinum preissii</i>			
527.	1276 <i>Caesia micrantha</i> (Pale Grass Lily)			
528.	1277 <i>Caesia occidentalis</i>			
529.	1259 <i>Dianella revoluta</i> (Blueberry Lily)			
530.	11636 <i>Dianella revoluta</i> var. <i>divaricata</i>			
531.	19632 <i>Johnsonia pubescens</i> subsp. <i>pubescens</i>			
532.	1260 <i>Stypandra glauca</i> (Blind Grass)			
533.	1361 <i>Tricoryne elatior</i> (Yellow Autumn Lily)			
534.	1362 <i>Tricoryne humilis</i>			
Hydatellaceae				
535.	1139 <i>Trithuria bibracteata</i>			
536.	32658 <i>Trithuria occidentalis</i> (Swan Hydatella)		T	
Hydrocharitaceae				
537.	159 <i>Egeria densa</i> (Dense Waterweed)	Y		
538.	166 <i>Hydrilla verticillata</i> (Water Thyme)			
539.	168 <i>Ottelia ovalifolia</i> (Swamp Lily)			
Hypericaceae				
540.	5180 <i>Hypericum gramineum</i> (Small St John's Wort)			
Hypoxidaceae				
541.	43765 <i>Pauridia glabella</i> var. <i>glabella</i>			
542.	43760 <i>Pauridia occidentalis</i>			
543.	43761 <i>Pauridia occidentalis</i> var. <i>occidentalis</i>			
544.	43762 <i>Pauridia occidentalis</i> var. <i>quadriloba</i>			
Iridaceae				
545.	18279 <i>Babiana angustifolia</i>	Y		
546.	1513 <i>Chasmanthe floribunda</i> (African Cornflag)	Y		
547.	18392 <i>Freesia alba</i> x <i>leichtlinii</i>	Y		
548.	1518 <i>Gladiolus angustus</i> (Long Tubed Painted Lady)	Y		
549.	1520 <i>Gladiolus caryophyllaceus</i> (Wild Gladiolus)			

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550.	1524 <i>Gladiolus undulatus</i> (Wild Gladiolus)	Y		
551.	20854 <i>Gladiolus watsonius</i>	Y		
552.	1526 <i>Hesperantha falcata</i>	Y		
553.	19179 <i>Moraea flaccida</i> (One-leaf Cape Tulip)	Y		
554.	19180 <i>Moraea miniata</i> (Two-leaf Cape Tulip)	Y		
555.	11442 <i>Orthrosanthus laxus</i> var. <i>gramineus</i> (Grass-leaved Orthrosanthus)			
556.	11749 <i>Orthrosanthus laxus</i> var. <i>laxus</i> (Morning Iris)			
557.	1546 <i>Patersonia juncea</i> (Rush Leaved Patersonia)			
558.	1550 <i>Patersonia occidentalis</i> (Purple Flag, Koma)			
559.	1551 <i>Patersonia pygmaea</i> (Pygmy Patersonia)			
560.	14433 <i>Patersonia rudis</i> subsp. <i>rudis</i>			
561.	1554 <i>Romulea flava</i>	Y		
562.	1556 <i>Romulea rosea</i> (Guildford Grass)	Y		
563.	11544 <i>Romulea rosea</i> var. <i>australis</i> (Guildford Grass)	Y		
564.	1558 <i>Sparaxis bulbifera</i>	Y		
565.	18375 <i>Watsonia knysnana</i>	Y		
566.	1566 <i>Watsonia marginata</i>	Y		
567.	18118 <i>Watsonia meriana</i> var. <i>meriana</i>	Y		
Juncaceae				
568.	1178 <i>Juncus bufonius</i> (Toad Rush)	Y		
569.	1180 <i>Juncus capitatus</i> (Capitate Rush)	Y		
570.	1188 <i>Juncus pallidus</i> (Pale Rush)			
571.	1195 <i>Juncus subsecundus</i> (Finger Rush)			
Juncaginaceae				
572.	40660 <i>Cycnogeton huegelii</i>			
573.	40661 <i>Cycnogeton lineare</i>			
574.	33677 <i>Triglochin centrocarpa</i>			
575.	147 <i>Triglochin mucronata</i>			
576.	18587 <i>Triglochin nana</i>			
577.	151 <i>Triglochin striata</i>			
Lamiaceae				
578.	6836 <i>Hemiandra incana</i>			
579.	6838 <i>Hemiandra linearis</i> (Speckled Snakebush)			
580.	6839 <i>Hemiandra pungens</i> (Snakebush)			
581.	33277 <i>Hemigenia argentea</i>			
582.	6856 <i>Hemigenia incana</i> (Silky Hemigenia)			
583.	29632 <i>Hemigenia parviflora</i>			
584.	41020 <i>Hemiphora bartlingii</i> (Woolly Dragon)			
585.	6930 <i>Stachys arvensis</i> (Staggerweed)	Y		
Lauraceae				
586.	2952 <i>Cassytha glabella</i> (Tangled Dodder Laurel)			
587.	2956 <i>Cassytha pomiformis</i> (Dodder Laurel)			
588.	2957 <i>Cassytha racemosa</i> (Dodder Laurel)			
Lentibulariaceae				
589.	7138 <i>Utricularia inaequalis</i>			
590.	7145 <i>Utricularia menziesii</i> (Redcoats)			
591.	7148 <i>Utricularia multifida</i>			
592.	7157 <i>Utricularia violacea</i> (Violet Bladderwort)			
Linaceae				
593.	4363 <i>Linum trigynum</i> (French Flax)	Y		
594.	4364 <i>Linum usitatissimum</i> (Flax)	Y		
Loganiaceae				
595.	46255 <i>Orianthera campanulata</i>			
596.	46313 <i>Orianthera flaviflora</i>			
597.	16825 <i>Phyllangium divergens</i>			
598.	17366 <i>Phyllangium palustre</i>		P2	
Loranthaceae				
599.	2383 <i>Amyema preissii</i> (Wireleaf Mistletoe)			
Lythraceae				
600.	5281 <i>Lythrum hyssopifolia</i> (Lesser Loosestrife)	Y		
Macarthuriaceae				
601.	2838 <i>Macarthuria apetala</i>			
602.	2839 <i>Macarthuria australis</i>			
603.	17106 <i>Macarthuria keigheryi</i>			

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Malvaceae				
604.	48634 <i>Commersonia corniculata</i>			
605.	5013 <i>Guichenotia micrantha</i> (Small Flowered Guichenotia)			
606.	5025 <i>Lasiopetalum bracteatum</i> (Helena Velvet Bush)		P4	
607.	45081 <i>Lasiopetalum glutinosum</i> subsp. <i>glutinosum</i>		P3	
608.	4961 <i>Malva parviflora</i> (Marshmallow)	Y		
609.	4980 <i>Sida hookeriana</i>			
610.	5080 <i>Thomasia foliosa</i>			
611.	5084 <i>Thomasia grandiflora</i> (Large Flowered Thomasia)			
612.	5087 <i>Thomasia macrocarpa</i> (Large Fruited Thomasia)			
Marsileaceae				
613.	74 <i>Marsilea drummondii</i> (Common Nardoo)			
Menyanthaceae				
614.	36160 <i>Liparophyllum capitatum</i>			
615.	36179 <i>Liparophyllum violifolium</i>			
616.	36177 <i>Ornduffia albiiflora</i>			
617.	36200 <i>Ornduffia submersa</i>		P4	
Montiaceae				
618.	2848 <i>Calandrinia corrigioloides</i> (Strap Purslane)			
619.	16365 <i>Calandrinia</i> sp. <i>Kenwick</i> (G.J. Keighery 10905)			
Myrtaceae				
620.	20350 <i>Astartea affinis</i> (West-coast Astartea)			
621.	20283 <i>Astartea scoparia</i> (Common Astartea)			
622.	36441 <i>Babingtonia camphorosmae</i> (Camphor Myrtle)			
623.	5390 <i>Beaufortia purpurea</i> (Purple Beaufortia)		P3	
624.	5395 <i>Callistemon phoeniceus</i> (Lesser Bottlebrush, Dubarda)			
625.	5396 <i>Calothamnus accedens</i>		P4	
626.	5426 <i>Calothamnus quadrifidus</i> (One-sided Bottlebrush, Kwoodjard)			
627.	35816 <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>			
628.	5429 <i>Calothamnus sanguineus</i> (Silky-leaved Blood flower, Pindak)			
629.	5439 <i>Calytrix angulata</i> (Yellow Starflower)			
630.	5441 <i>Calytrix aurea</i>			
631.	13653 <i>Calytrix breviseta</i> subsp. <i>breviseta</i>		T	
632.	5458 <i>Calytrix flavescens</i> (Summer Starflower)			
633.	5460 <i>Calytrix fraseri</i> (Pink Summer Calytrix)			
634.	5461 <i>Calytrix glutinosa</i>			
635.	5465 <i>Calytrix leschenaultii</i>			
636.	5498 <i>Chamelaucium uncinatum</i> (Geraldton Wax)			
637.	17104 <i>Corymbia calophylla</i> (Marri)			
638.	5508 <i>Darwinia citriodora</i> (Lemon-scented Darwinia)			
639.	5531 <i>Darwinia thymoides</i>			
640.	5540 <i>Eremaea fimbriata</i>			
641.	5541 <i>Eremaea pauciflora</i>			
642.	14104 <i>Eremaea pauciflora</i> var. <i>pauciflora</i>			
643.	5708 <i>Eucalyptus marginata</i> (Jarrah, Djara)			
644.	13547 <i>Eucalyptus marginata</i> subsp. <i>marginata</i> (Jarrah)			
645.	13548 <i>Eucalyptus marginata</i> subsp. <i>thalassica</i> (Blue-leaved Jarrah)			
646.	5739 <i>Eucalyptus patens</i> (Swan River Blackbutt, Dwuda)			
647.	5763 <i>Eucalyptus rudis</i> (Flooded Gum, Kulurda)			
648.	13511 <i>Eucalyptus rudis</i> subsp. <i>rudis</i>			
649.	5790 <i>Eucalyptus todtiana</i> (Coastal Blackbutt)			
650.	5797 <i>Eucalyptus wandoo</i> (Wandoo, Wondou)			
651.	12905 <i>Eucalyptus wandoo</i> subsp. <i>pulverea</i>			
652.	12906 <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>			
653.	5817 <i>Hypocalymma angustifolium</i> (White Myrtle, Kudjid)			
654.	35074 <i>Hypocalymma angustifolium</i> subsp. <i>Dandaragan plateau</i> (S. Patrick 702A)			
655.	35070 <i>Hypocalymma angustifolium</i> subsp. <i>Swan Coastal Plain</i> (G.J. Keighery 16777)			
656.	17461 <i>Kunzea micrantha</i> subsp. <i>micrantha</i>			
657.	17785 <i>Kunzea micrantha</i> subsp. <i>petiolata</i>			
658.	17505 <i>Kunzea praestans</i>			
659.	5847 <i>Leptospermum erubescens</i> (Roadside Teatree)			
660.	5926 <i>Melaleuca lateritia</i> (Robin Redbreast Bush)			
661.	20297 <i>Melaleuca osullivanii</i>			
662.	18394 <i>Melaleuca parviceps</i>			
663.	5952 <i>Melaleuca preissiana</i> (Moonah)			
664.	5958 <i>Melaleuca radula</i> (Graceful Honey Myrtle)			
665.	5959 <i>Melaleuca raphiophylla</i> (Swamp Paperbark)			
666.	5961 <i>Melaleuca scabra</i> (Rough Honey Myrtle, Wurru Bush)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
667.	5964 <i>Melaleuca seriata</i>			
668.	5975 <i>Melaleuca subtrigona</i>			
669.	5978 <i>Melaleuca teretifolia</i> (Banbar)			
670.	5983 <i>Melaleuca trichophylla</i>			
671.	13280 <i>Melaleuca viminea</i> subsp. <i>viminea</i>			
672.	16477 <i>Pericalymma ellipticum</i> var. <i>ellipticum</i>			
673.	16478 <i>Pericalymma ellipticum</i> var. <i>floridum</i>			
674.	6012 <i>Regelia ciliata</i>			
675.	6019 <i>Rinzia communis</i> (Mallee Rinzia)			
676.	6020 <i>Rinzia crassifolia</i> (Darling Range Rinzia)			
677.	15431 <i>Verticordia acerosa</i> var. <i>acerosa</i>			
678.	12388 <i>Verticordia acerosa</i> var. <i>preissii</i>			
679.	15432 <i>Verticordia densiflora</i> var. <i>densiflora</i>			
680.	6077 <i>Verticordia drummondii</i> (Drummond's Featherflower)			
681.	6088 <i>Verticordia huegelii</i> (Variegated Featherflower)			
682.	15433 <i>Verticordia huegelii</i> var. <i>huegelii</i>			
683.	14714 <i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>		P4	
684.	6101 <i>Verticordia nitens</i> (Morrison Featherflower, Kodjeningara)			
685.	6107 <i>Verticordia pennigera</i>			
686.	12449 <i>Verticordia plumosa</i> var. <i>brachyphylla</i>			
Olacaceae				
687.	2367 <i>Olax scalariformis</i>			
Oleaceae				
688.	40241 <i>Fraxinus angustifolia</i>	Y		
689.	11937 <i>Olea europaea</i> subsp. <i>europaea</i>	Y		
Onagraceae				
690.	6133 <i>Epilobium hirtigerum</i> (Hairy Willow Herb)			
691.	20052 <i>Oenothera jamesii</i>	Y		
Orchidaceae				
692.	11136 <i>Caladenia denticulata</i>			
693.	44900 <i>Caladenia denticulata</i> subsp. <i>rubella</i>			
694.	1586 <i>Caladenia discoidea</i> (Dancing Orchid)			
695.	1592 <i>Caladenia flava</i> (Cowslip Orchid)			
696.	15348 <i>Caladenia flava</i> subsp. <i>flava</i>			
697.	15502 <i>Caladenia footeana</i>			
698.	17980 <i>Caladenia hiemalis</i>			
699.	15354 <i>Caladenia hirta</i> subsp. <i>hirta</i>			
700.	1599 <i>Caladenia latifolia</i> (Pink Fairy Orchid)			
701.	15361 <i>Caladenia longicauda</i> subsp. <i>calcigena</i>			
702.	15365 <i>Caladenia longicauda</i> subsp. <i>longicauda</i>			
703.	1604 <i>Caladenia macrostylis</i> (Leaping Spider Orchid)			
704.	15503 <i>Caladenia paludosa</i>			
705.	15377 <i>Caladenia reptans</i> subsp. <i>reptans</i>			
706.	15114 <i>Cyanicula gemmata</i>			
707.	19649 <i>Disa bracteata</i>	Y		
708.	12943 <i>Diuris brumalis</i>			
709.	11049 <i>Diuris corymbosa</i>			
710.	10796 <i>Diuris drummondii</i> (Tall Donkey Orchid)		T	
711.	1634 <i>Diuris laxiflora</i> (Bee Orchid)			
712.	12939 <i>Diuris magnifica</i>			
713.	46859 <i>Diuris ostrina</i>			
714.	15436 <i>Diuris porrifolia</i>			
715.	15406 <i>Drakaea gracilis</i>			
716.	1643 <i>Elythranthera brunonis</i> (Purple Enamel Orchid)			
717.	1644 <i>Elythranthera emarginata</i> (Pink Enamel Orchid)			
718.	1646 <i>Eriochilus dilatatus</i> (White Bunny Orchid)			
719.	15412 <i>Eriochilus dilatatus</i> subsp. <i>multiflorus</i>			
720.	15414 <i>Eriochilus helonomos</i>			
721.	15415 <i>Eriochilus scaber</i> subsp. <i>scaber</i>			
722.	1653 <i>Leporella fimbriata</i> (Hare Orchid)			
723.	15418 <i>Leptoceras menziesii</i>			
724.	1656 <i>Lyperanthus serratus</i> (Rattle Beak Orchid)			
725.	1657 <i>Microtis alba</i> (White Mignonette Orchid)			
726.	34158 <i>Microtis albovidis</i>			
727.	1658 <i>Microtis atrata</i> (Swamp Mignonette Orchid)			
728.	12199 <i>Microtis familiaris</i>			
729.	10954 <i>Microtis media</i> (Tall Mignonette Orchid)			
730.	12761 <i>Microtis media</i> subsp. <i>densiflora</i>			

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731.	15419 <i>Microtis media subsp. media</i>			
732.	23500 <i>Paracaleana hortiorum</i>			
733.	20460 <i>Pheladenia deformis</i>			
734.	1669 <i>Prasophyllum cyphochilum (Pouched Leek Orchid)</i>			
735.	1670 <i>Prasophyllum drummondii (Swamp Leek Orchid)</i>			
736.	1671 <i>Prasophyllum elatum (Tall Leek Orchid)</i>			
737.	1672 <i>Prasophyllum fimbria (Fringed Leek Orchid)</i>			
738.	1674 <i>Prasophyllum giganteum (Bronze Leek Orchid)</i>			
739.	16688 <i>Prasophyllum gracile</i>			
740.	1676 <i>Prasophyllum hians (Yawning Leek Orchid)</i>			
741.	1677 <i>Prasophyllum macrostachyum (Laughing Leek Orchid)</i>			
742.	1680 <i>Prasophyllum parvifolium (Autumn Leek Orchid)</i>			
743.	10853 <i>Prasophyllum plumiforme</i>			
744.	48675 <i>Pterostylis atosanguinea</i>			
745.	1686 <i>Pterostylis barbata (Bird Orchid)</i>			
746.	48484 <i>Pterostylis crebriflora</i>			
747.	11118 <i>Pterostylis pyramidalis (Snail Orchid)</i>			
748.	1693 <i>Pterostylis recurva (Jug Orchid)</i>			
749.	12217 <i>Pterostylis sanguinea</i>			
750.	1698 <i>Pterostylis vittata (Banded Greenhood)</i>			
751.	16367 <i>Pyrorchis nigricans (Red beaks, Elephants ears)</i>			
752.	1700 <i>Spiculaea ciliata (Elbow Orchid)</i>			
753.	1701 <i>Thelymitra antennifera (Vanilla Orchid)</i>			
754.	10856 <i>Thelymitra benthamiana (Leopard Orchid)</i>			
755.	1705 <i>Thelymitra crinita (Blue Lady Orchid)</i>			
756.	1707 <i>Thelymitra flexuosa (Twisted Sun Orchid)</i>			
757.	11053 <i>Thelymitra macrophylla</i>			
758.	20736 <i>Thelymitra maculata</i>			
759.	20729 <i>Thelymitra magnifica (Crystal Brook Star Orchid)</i>		P1	
760.	20731 <i>Thelymitra vulgaris</i>			
Orobanchaceae				
761.	7122 <i>Orobanche minor (Lesser Broomrape)</i>	Y		
762.	7089 <i>Parentucellia latifolia (Common Bartsia)</i>	Y		
Oxalidaceae				
763.	4349 <i>Oxalis corniculata (Yellow Wood Sorrel)</i>	Y		
764.	18331 <i>Oxalis debilis var. corymbosa (Pink Shamrock)</i>	Y		
765.	30375 <i>Oxalis exilis</i>			
766.	4352 <i>Oxalis glabra</i>	Y		
767.	4354 <i>Oxalis incarnata</i>	Y		
768.	4355 <i>Oxalis perennans</i>			
769.	4356 <i>Oxalis pes-caprae (Soursob)</i>	Y		
770.	4358 <i>Oxalis purpurea (Largeflower Wood Sorrel)</i>	Y		
Papaveraceae				
771.	2971 <i>Fumaria muralis (Wall Fumitory)</i>	Y		
772.	31532 <i>Fumaria muralis subsp. muralis</i>	Y		
Philydraceae				
773.	1172 <i>Philydrella drummondii</i>			
774.	1173 <i>Philydrella pygmaea (Butterfly Flowers)</i>			
Phyllanthaceae				
775.	4675 <i>Phyllanthus calycinus (False Boronia)</i>			
776.	4688 <i>Poranthera drummondii</i>			
777.	4690 <i>Poranthera huegelii</i>			
778.	4691 <i>Poranthera microphylla (Small Poranthera)</i>			
Phytolaccaceae				
779.	2793 <i>Phytolacca octandra (Red Ink Plant)</i>	Y		
Pittosporaceae				
780.	25788 <i>Billardiera fraseri (Elegant Pronaya)</i>			
781.	25798 <i>Billardiera fusiformis (Australian Bluebell)</i>			
782.	25796 <i>Billardiera heterophylla (Australian Bluebell)</i>			
783.	19421 <i>Marianthus bicolor (Painted Marianthus)</i>			
784.	17635 <i>Marianthus drummondianus</i>			
785.	17633 <i>Marianthus erubescens</i>			
Plantaginaceae				
786.	4717 <i>Callitriche stagnalis (Common Starwort)</i>	Y		
787.	14282 <i>Gratiola pubescens</i>			
788.	7067 <i>Kickxia elatine (Pointed Toadflax)</i>	Y		Y

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789.	7068 <i>Kickxia spuria</i> (Roundleaf Toadflax)	Y		
Poaceae				
790.	184 <i>Aira caryophyllea</i> (Silvery Hairgrass)	Y		
791.	185 <i>Aira cupaniana</i> (Silvery Hairgrass)	Y		
792.	194 <i>Amphipogon amphipogonoides</i>			
793.	197 <i>Amphipogon debilis</i>			
794.	199 <i>Amphipogon strictus</i> (Greybeard Grass)			
795.	200 <i>Amphipogon turbinatus</i>			
796.	12063 <i>Aristida holathera</i> var. <i>holathera</i>			
797.	222 <i>Aristida ramosa</i> (Purple Wiregrass)	Y		
798.	226 <i>Arundo donax</i> (Giant Reed)	Y		
799.	17233 <i>Austrostipa campylachne</i>			
800.	17234 <i>Austrostipa compressa</i>			
801.	17237 <i>Austrostipa elegantissima</i>			
802.	<i>Austrostipa</i> sp.			
803.	17257 <i>Austrostipa variabilis</i>			
804.	231 <i>Avellinia michelii</i>	Y		
805.	233 <i>Avena barbata</i> (Bearded Oat)	Y		
806.	8661 <i>Brachypodium distachyon</i> (False Brome)	Y		
807.	244 <i>Briza maxima</i> (Blowfly Grass)	Y		
808.	245 <i>Briza minor</i> (Shivery Grass)	Y		
809.	248 <i>Bromus catharticus</i> (Prairie Grass)	Y		
810.	249 <i>Bromus diandrus</i> (Great Brome)	Y		
811.	250 <i>Bromus hordeaceus</i> (Soft Brome)	Y		
812.	252 <i>Bromus madritensis</i> (Madrid Brome)	Y		
813.	41566 <i>Cenchrus longisetus</i> (Feathertop)	Y		
814.	41567 <i>Cenchrus macrourus</i> (African Feather Grass)	Y		
815.	41563 <i>Cenchrus purpureus</i> (Elephant Grass)	Y		
816.	48259 <i>Cortaderia selloana</i> subsp. <i>selloana</i>	Y		
817.	285 <i>Cynosurus echinatus</i> (Rough Dogstail)	Y		
818.	306 <i>Dichelachne crinita</i> (Longhair Plumegrass)			
819.	347 <i>Ehrharta calycina</i> (Perennial Veldt Grass)	Y		
820.	349 <i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
821.	376 <i>Eragrostis curvula</i> (African Lovegrass)	Y		
822.	429 <i>Eustachys distichophylla</i> (Evergreen Chloris)	Y		
823.	430 <i>Festuca arundinacea</i> (Tall Fescue)	Y		
824.	431 <i>Festuca pratensis</i> (Meadow Fescue)	Y		
825.	434 <i>Gastridium phleoides</i> (Nitgrass)	Y		
826.	439 <i>Hemarthria uncinata</i> (Matgrass)			
827.	20019 <i>Lachnagrostis filiformis</i>			
828.	14985 <i>Melinis repens</i>	Y		
829.	485 <i>Microlaena stipoides</i> (Weeping Grass)			
830.	492 <i>Neurachne alopecuroidea</i> (Foxtail Mulga Grass)			
831.	41961 <i>Panicum hillmanii</i>	Y		
832.	527 <i>Paspalum dilatatum</i>	Y		
833.	532 <i>Paspalum urvillei</i> (Vasey Grass)	Y		
834.	40422 <i>Pentameris pallida</i>	Y		
835.	548 <i>Phalaris aquatica</i> (Phalaris)	Y		
836.	571 <i>Poa annua</i> (Winter Grass)	Y		
837.	573 <i>Poa drummondiana</i> (Knotted Poa)			
838.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
839.	40425 <i>Rytidosperma caespitosum</i>			
840.	40426 <i>Rytidosperma occidentale</i>			
841.	40427 <i>Rytidosperma setaceum</i>			
842.	19453 <i>Setaria parviflora</i>	Y		
843.	613 <i>Setaria verticillata</i> (Whorled Pigeon Grass)	Y		
844.	617 <i>Sorghum halepense</i> (Johnson Grass)	Y		
845.	35236 <i>Sorghum x drummondii</i> (Sudan Grass)	Y		
846.	8710 <i>Sporobolus africanus</i> (Parramatta Grass)	Y		
847.	45118 <i>Sporobolus schoenoides</i>	Y		
848.	635 <i>Sporobolus virginicus</i> (Marine Couch)			
849.	636 <i>Stenotaphrum secundatum</i> (Buffalo Grass)	Y		
850.	667 <i>Tetrarrhena laevis</i> (Forest Ricegrass)			
851.	673 <i>Themeda triandra</i>			
852.	722 <i>Vulpia bromoides</i> (Squirrel Tail Fescue)	Y		
853.	724 <i>Vulpia myuros</i> (Rat's Tail Fescue)	Y		
854.	12052 <i>Vulpia myuros</i> forma <i>megalura</i>	Y		
855.	33101 <i>Vulpia myuros</i> forma <i>myuros</i>	Y		

Polygalaceae

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856.	4550 <i>Comesperma calymega</i> (Blue-spike Milkwort)			
857.	4551 <i>Comesperma ciliatum</i>			
858.	4554 <i>Comesperma flavum</i>			
Polygonaceae				
859.	2412 <i>Muehlenbeckia adpressa</i> (Climbing Lignum)			
860.	16984 <i>Persicaria lapathifolia</i>	Y		
861.	16983 <i>Persicaria maculosa</i>	Y		
Potamogetonaceae				
862.	44492 <i>Stuckenia pectinata</i>			
Pottiaceae				
863.	32315 <i>Barbula calycina</i>			
Primulaceae				
864.	36375 <i>Lysimachia arvensis</i> (Pimpernel)	Y		
865.	36373 <i>Lysimachia minima</i>	Y		
866.	6483 <i>Samolus junceus</i>			
Proteaceae				
867.	14970 <i>Adenanthos barbiger</i>			
868.	1775 <i>Adenanthos cygnorum</i> (Common Woollybush)			
869.	1791 <i>Adenanthos obovatus</i> (Basket Flower)			
870.	32682 <i>Banksia armata</i> var. <i>armata</i>			
871.	1800 <i>Banksia attenuata</i> (Slender Banksia, Piara)			
872.	32580 <i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>dallanneyi</i>			
873.	32577 <i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>mellicula</i>			
874.	1819 <i>Banksia grandis</i> (Bull Banksia, Pulgarla)			
875.	1822 <i>Banksia ilicifolia</i> (Holly-leaved Banksia)			
876.	1823 <i>Banksia incana</i>			
877.	1834 <i>Banksia menziesii</i> (Firewood Banksia)			
878.	32202 <i>Banksia nivea</i> (Honeypot Dryandra, Pudjarn)			
879.	32138 <i>Banksia pteridifolia</i> subsp. <i>vernalis</i>		P3	
880.	32080 <i>Banksia sessilis</i> var. <i>sessilis</i>			
881.	1852 <i>Banksia telmatiaea</i> (Swamp Fox Banksia)			
882.	1857 <i>Conospermum acerosum</i> (Needle-leaved Smokebush)			
883.	15607 <i>Conospermum acerosum</i> subsp. <i>acerosum</i>			
884.	15041 <i>Conospermum canaliculatum</i>			
885.	1875 <i>Conospermum huegelii</i> (Slender Smokebush)			
886.	1876 <i>Conospermum incurvum</i> (Plume Smokebush)			
887.	15520 <i>Conospermum stoechadis</i> subsp. <i>sclerophyllum</i>			
888.	15611 <i>Conospermum stoechadis</i> subsp. <i>stoechadis</i> (Common Smokebush)			
889.	13999 <i>Conospermum undulatum</i>		T	
890.	1964 <i>Grevillea bipinnatifida</i> (Fuchsia Grevillea)			
891.	19628 <i>Grevillea bipinnatifida</i> subsp. <i>bipinnatifida</i>			
892.	14409 <i>Grevillea curviloba</i> subsp. <i>incurva</i>		T	
893.	13429 <i>Grevillea diversifolia</i> subsp. <i>diversifolia</i>			
894.	1997 <i>Grevillea endlicheriana</i> (Spindly Grevillea)			
895.	13451 <i>Grevillea manglesii</i> subsp. <i>dissectifolia</i>		P3	
896.	13450 <i>Grevillea manglesii</i> subsp. <i>manglesii</i>			
897.	2066 <i>Grevillea pilulifera</i> (Woolly-flowered Grevillea)			
898.	2101 <i>Grevillea synapheae</i> (Catkin Grevillea)			
899.	2122 <i>Grevillea wilsonii</i> (Native Fuchsia)			
900.	2128 <i>Hakea amplexicaulis</i> (Prickly Hakea)			
901.	2136 <i>Hakea candolleana</i>			
902.	2143 <i>Hakea conchifolia</i> (Shell-leaved Hakea)			
903.	2149 <i>Hakea cristata</i> (Snail Hakea)			
904.	2152 <i>Hakea cyclocarpa</i> (Ramshorn)			
905.	2158 <i>Hakea erinacea</i> (Hedge-hog Hakea)			
906.	2166 <i>Hakea incrassata</i> (Marble Hakea)			
907.	2175 <i>Hakea lissocarpha</i> (Honey Bush)			
908.	2185 <i>Hakea myrtoides</i> (Myrtle Hakea)			
909.	45333 <i>Hakea neospathulata</i>			
910.	2197 <i>Hakea prostrata</i> (Harsh Hakea)			
911.	2203 <i>Hakea ruscifolia</i> (Candle Hakea)			
912.	2206 <i>Hakea stenocarpa</i> (Narrow-fruited Hakea)			
913.	2212 <i>Hakea sulcata</i> (Furrowed Hakea)			
914.	2214 <i>Hakea trifurcata</i> (Two-leaf Hakea)			
915.	2215 <i>Hakea undulata</i> (Wavy-leaved Hakea)			
916.	2216 <i>Hakea varia</i> (Variable-leaved Hakea)			
917.	2221 <i>Isopogon asper</i>			
918.	29775 <i>Isopogon drummondii</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
			P3	
919.	2229 <i>Isopogon dubius</i> (Pincushion Coneflower)			
920.	2249 <i>Lambertia multiflora</i> (Many-flowered Honeysuckle)			
921.	14083 <i>Lambertia multiflora</i> var. <i>darlingensis</i>			
922.	2255 <i>Persoonia angustiflora</i>			
923.	2262 <i>Persoonia elliptica</i> (Spreading Snottygobble)			
924.	2273 <i>Persoonia saccata</i> (Snottygobble)			
925.	2284 <i>Petrophile biloba</i> (Granite Petrophile)			
926.	2299 <i>Petrophile linearis</i> (Pixie Mops)			
927.	2301 <i>Petrophile macrostachya</i>			
928.	2306 <i>Petrophile rigida</i>			
929.	2308 <i>Petrophile seminuda</i>			
930.	20053 <i>Petrophile squamata</i> subsp. <i>northern</i> (J. Monks 40)			
931.	2312 <i>Petrophile striata</i>			
932.	2316 <i>Stirlingia latifolia</i> (Blueboy)			
933.	2317 <i>Stirlingia simplex</i>			
934.	2321 <i>Synaphea acutiloba</i> (Granite Synaphea)			
935.	2323 <i>Synaphea gracillima</i>			
936.	16864 <i>Synaphea petiolaris</i> subsp. <i>petiolaris</i>			
937.	2325 <i>Synaphea pinnata</i> (Helena Synaphea)			
938.	30751 <i>Synaphea</i> sp. <i>Pinjarra Plain</i> (A.S. George 17182)		T	
939.	2329 <i>Synaphea spinulosa</i>			
940.	15532 <i>Synaphea spinulosa</i> subsp. <i>spinulosa</i>			
Pteridaceae				
941.	29 <i>Anogramma leptophylla</i> (Annual Fern)			
942.	31 <i>Cheilanthes austrotenuifolia</i>			
943.	12818 <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>			
Ranunculaceae				
944.	2929 <i>Clematis pubescens</i> (Common Clematis)			
Restionaceae				
945.	1056 <i>Alexgeorgea nitens</i>			
946.	17706 <i>Chordifex sinuosus</i>			
947.	17692 <i>Cytogonidium leptocarpoides</i>			
948.	17663 <i>Desmocladus asper</i>			
949.	17691 <i>Desmocladus fasciculatus</i>			
950.	16595 <i>Desmocladus flexuosus</i>			
951.	17838 <i>Dielsia stenostachya</i>			
952.	1070 <i>Hypolaena exsulca</i>			
953.	1075 <i>Lepidobolus preissianus</i>			
954.	18074 <i>Lepidobolus preissianus</i> subsp. <i>preissianus</i>			
955.	1077 <i>Leptocarpus canus</i> (Hoary Twine-rush)			
956.	1078 <i>Leptocarpus coangustatus</i>			
957.	46375 <i>Leptocarpus decipiens</i>			
958.	46380 <i>Leptocarpus kraussii</i>			
959.	19241 <i>Lepyrodia curvescens</i>		P2	
960.	1088 <i>Lepyrodia macra</i> (Large Scale Rush)			
961.	15562 <i>Lepyrodia riparia</i>			
962.	15835 <i>Loxocarya striata</i>			
Rhamnaceae				
963.	13470 <i>Cryptandra arbutiflora</i> var. <i>arbutiflora</i>			
964.	13484 <i>Cryptandra arbutiflora</i> var. <i>tubulosa</i>			
965.	4804 <i>Cryptandra nutans</i>			
966.	4810 <i>Cryptandra scoparia</i>			
967.	16197 <i>Stenanthemum emarginatum</i>			
968.	13479 <i>Trymalium ledifolium</i> var. <i>rosmarinifolium</i>			
969.	33418 <i>Trymalium odoratissimum</i> subsp. <i>odoratissimum</i>			
Rosaceae				
970.	3184 <i>Acaena echinata</i> (Sheep's Burr)			
Rubiaceae				
971.	7321 <i>Galium divaricatum</i>	Y		
972.	18254 <i>Opercularia apiciflora</i>			
973.	7346 <i>Opercularia echinocephala</i> (Bristly Headed Stink Weed)			
974.	18255 <i>Opercularia vaginata</i> (Dog Weed)			
Rutaceae				
975.	4414 <i>Boronia cymosa</i> (Granite Boronia)			
976.	4432 <i>Boronia ovata</i>			
977.	11381 <i>Boronia ramosa</i> subsp. <i>anethifolia</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
978.	18529 <i>Philotheca spicata</i> (Pepper and Salt)			
Salicaceae				
979.	20063 <i>Salix babylonica</i>	Y		
980.	43840 <i>Salix matsudana</i>	Y		
Salviniaceae				
981.	42902 <i>Azolla rubra</i>			
Santalaceae				
982.	2342 <i>Leptomeria cunninghamii</i>			
983.	2344 <i>Leptomeria empetriformis</i>			
984.	2356 <i>Santalum acuminatum</i> (Quandong, Warnga)			
Sapindaceae				
985.	18589 <i>Diplopeltis huegelii</i> subsp. <i>lehmannii</i>			
986.	4761 <i>Dodonaea ericoides</i>			
Scrophulariaceae				
987.	13405 <i>Phyllopodium cordatum</i>	Y		
988.	7113 <i>Zaluzianskya divaricata</i> (Spreading Night Phlox)	Y		
Selaginellaceae				
989.	6 <i>Selaginella gracillima</i> (Tiny Clubmoss)			
Solanaceae				
990.	6946 <i>Anthocercis gracilis</i> (Slender Tailflower)		T	
991.	6970 <i>Nicandra physalodes</i> (Apple of Peru)	Y		
992.	11114 <i>Solanum giganteum</i>	Y		
993.	7020 <i>Solanum linnaeanum</i> (Apple of Sodom)	Y		
994.	7022 <i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
Stylidiaceae				
995.	7674 <i>Levenhookia preissii</i> (Preiss's Stylewort)			
996.	7676 <i>Levenhookia pusilla</i> (Midget Stylewort)			
997.	7677 <i>Levenhookia stipitata</i> (Common Stylewort)			
998.	7679 <i>Stylidium adpressum</i> (Trigger-on-stilts)			
999.	7681 <i>Stylidium affine</i> (Queen Triggerplant)			
1000.	7684 <i>Stylidium amoenum</i> (Lovely Triggerplant)			
1001.	30278 <i>Stylidium androsaceum</i>			
1002.	30276 <i>Stylidium bicolor</i>			
1003.	48457 <i>Stylidium bindoon</i>			
1004.	7693 <i>Stylidium brunonianum</i> (Pink Fountain Triggerplant)			
1005.	7694 <i>Stylidium bulbiferum</i> (Circus Triggerplant)			
1006.	7696 <i>Stylidium calcaratum</i> (Book Triggerplant)			
1007.	7698 <i>Stylidium caricifolium</i> (Milkmaids)			
1008.	7699 <i>Stylidium carnosum</i> (Fleshy-leaved Triggerplant)			
1009.	7702 <i>Stylidium ciliatum</i> (Golden Triggerplant)			
1010.	7712 <i>Stylidium despectum</i> (Dwarf Triggerplant)			
1011.	7713 <i>Stylidium dichotomum</i> (Pins-and-needles)			
1012.	7716 <i>Stylidium diuroides</i> (Donkey Triggerplant)			
1013.	11808 <i>Stylidium diuroides</i> subsp. <i>diuroides</i>			
1014.	7717 <i>Stylidium divaricatum</i> (Daddy-long-legs)			
1015.	7719 <i>Stylidium ecome</i> (Foot Triggerplant)			
1016.	7734 <i>Stylidium guttatum</i> (Dotted Triggerplant)			
1017.	7736 <i>Stylidium hispidum</i> (White Butterfly Triggerplant)			
1018.	7756 <i>Stylidium longitubum</i> (Jumping Jacks)		P4	
1019.	7768 <i>Stylidium obtusatum</i> (Pinafore Triggerplant)			
1020.	7773 <i>Stylidium petiolare</i> (Horn Triggerplant)			
1021.	7781 <i>Stylidium pubigerum</i> (Yellow Butterfly Triggerplant)			
1022.	7782 <i>Stylidium pulchellum</i> (Thumbelina Triggerplant)			
1023.	7783 <i>Stylidium pycnostachyum</i> (Downy Triggerplant)			
1024.	33106 <i>Stylidium recurvum</i>			
1025.	7785 <i>Stylidium repens</i> (Matted Triggerplant)			
1026.	7790 <i>Stylidium roseoalatum</i> (Pink-wing Triggerplant)			
1027.	25806 <i>Stylidium scariosum</i>			
1028.	7798 <i>Stylidium schoenoides</i> (Cow Kicks)			
1029.	<i>Stylidium</i> sp.			
1030.	7803 <i>Stylidium striatum</i> (Fan-leaved Triggerplant)		P4	
1031.	45594 <i>Stylidium tenue</i> subsp. <i>majusculum</i> (Showy Fountain Triggerplant)			
1032.	23511 <i>Stylidium thesioides</i> (Delicate Triggerplant)			
1033.	7806 <i>Stylidium utricularioides</i> (Pink Fan Triggerplant)			
1034.	40947 <i>Stylidium xanthellum</i>			

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Tecophilaeaceae				
1035.	1487 <i>Cyanella hyacinthoides</i>	Y		
Thymelaeaceae				
1036.	5231 <i>Pimelea angustifolia</i> (Narrow-leaved Pimelea)			
1037.	5232 <i>Pimelea argentea</i> (Silvery Leaved Pimelea)			
1038.	11928 <i>Pimelea ciliata</i> subsp. <i>ciliata</i>			
1039.	11404 <i>Pimelea imbricata</i> var. <i>major</i>			
1040.	11402 <i>Pimelea imbricata</i> var. <i>piligera</i>			
1041.	12041 <i>Pimelea suaveolens</i> subsp. <i>suaveolens</i>			
Typhaceae				
1042.	99 <i>Typha orientalis</i> (Bulrush, Cumbungi)			
Verbenaceae				
1043.	19511 <i>Verbena officinalis</i>	Y		
Violaceae				
1044.	5216 <i>Hybanthus calycinus</i> (Wild Violet)			
1045.	12007 <i>Hybanthus floribundus</i> subsp. <i>floribundus</i>			
Xanthorrhoeaceae				
1046.	1280 <i>Chamaescilla corymbosa</i> (Blue Squill)			
1047.	11299 <i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>			
1048.	8788 <i>Chamaescilla versicolor</i>			
1049.	1249 <i>Xanthorrhoea acanthostachya</i>			
1050.	1252 <i>Xanthorrhoea drummondii</i>			
1051.	1253 <i>Xanthorrhoea gracilis</i> (Graceful Grass Tree, Mimidi)			
1052.	1256 <i>Xanthorrhoea preissii</i> (Grass tree, Palga)			
Zamiaceae				
1053.	85 <i>Macrozamia riedlei</i> (Zamia, Djiridji)			

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.

1484_DesktopFauna

Created By Nathan Beerkens on 29/07/2020

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 116° 00' 52" E, 31° 55' 03" S
Buffer 5km

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
2.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
3.	24262 <i>Acanthiza inornata</i> (Western Thornbill)			
4.	24560 <i>Acanthorhynchus superciliosus</i> (Western Spinebill)			
5.	<i>Acariformes</i> sp.			
6.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
7.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
8.	24283 <i>Accipiter fasciatus</i> subsp. <i>didimus</i> (Brown Goshawk)			
9.	<i>Acentrogobius bifrenatus</i>			
10.	25751 <i>Acridotheres tristis</i> (Common Myna)	Y		
11.	42368 <i>Acritoscincus trilineatus</i> (Western Three-lined Skink)			
12.	<i>Acroaspis olorina</i>			Y
13.	25755 <i>Acrocephalus australis</i> (Australian Reed Warbler)			
14.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
15.	<i>Akamptogonus novarae</i>			
16.	<i>Aldrichetta forsteri</i>			
17.	<i>Allothereua maculata</i>			
18.	<i>Ambicodamus kochi</i>			
19.	<i>Aname mainae</i>			
20.	<i>Aname tepperi</i>			
21.	24310 <i>Anas castanea</i> (Chestnut Teal)			
22.	24312 <i>Anas gracilis</i> (Grey Teal)			
23.	24313 <i>Anas platyrhynchos</i> (Mallard)			
24.	<i>Anas platyrhynchos</i> subsp. <i>domesticus</i>			
25.	24315 <i>Anas rhynchotis</i> (Australasian Shoveler)			
26.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
27.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
28.	24506 <i>Anous tenuirostris</i> subsp. <i>melanops</i> (Australian Lesser Noddy)		T	
29.	<i>Anser anser</i>			
30.	25241 <i>Antaresia stimsoni</i> subsp. <i>stimsoni</i> (Stimson's Python)			
31.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
32.	24562 <i>Anthochaera lunulata</i> (Western Little Wattlebird)			
33.	25670 <i>Anthus australis</i> (Australian Pipit)			
34.	24990 <i>Aprasia pulchella</i> (Granite Worm-lizard)			
35.	24991 <i>Aprasia repens</i> (Sand-plain Worm-lizard)			
36.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
37.	<i>Arachnura higginsi</i>			
38.	<i>Araneus cyphoxis</i>			
39.	<i>Araneus senicaudatus</i>			
40.	25558 <i>Ardea ibis</i> (Cattle Egret)			
41.	25559 <i>Ardea intermedia</i> (Intermediate Egret)			
42.	41324 <i>Ardea modesta</i> (great egret, white egret)			
43.	24340 <i>Ardea novaehollandiae</i> (White-faced Heron)			
44.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
45.	<i>Argiope protensa</i>			
46.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
47.	24353 <i>Artamus cyanopterus</i> (Dusky Woodswallow)			
48.	<i>Artoria flavimana</i>			
49.	<i>Artoria linnaei</i>			
50.	<i>Artoriopsis expolita</i>			
51.	<i>Asadipus kunderang</i>			
52.	<i>Atherinosoma wallacei</i>			

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53.	<i>Austracantha minax</i>			
54.	<i>Australomimetes ovidi</i>			
55.	48574 <i>Australotomurus morbidus</i> (cemetery springtail, Guildford springtail)		P3	
56.	24318 <i>Aythya australis</i> (Hardhead)			
57.	<i>Backobourkia brounii</i>			
58.	<i>Backobourkia heroine</i>			
59.	<i>Baiami volucripes</i>			
60.	<i>Barnardius zonarius</i>			
61.	24319 <i>Biziura lobata</i> (Musk Duck)			
62.	24345 <i>Botaurus poiciloptilus</i> (Australasian Bittern)		T	
63.	42381 <i>Brachyurophis semifasciatus</i> (Southern Shovel-nosed Snake)			
64.	24359 <i>Burhinus grallarius</i> (Bush Stone-curlew)			
65.	25713 <i>Cacatua galerita</i> (Sulphur-crested Cockatoo)			
66.	24721 <i>Cacatua galerita subsp. galerita</i> (Sulphur-crested Cockatoo)	Y		
67.	24722 <i>Cacatua leadbeateri</i> (Major Mitchell's Cockatoo)			
68.	25714 <i>Cacatua pastinator</i> (Western Long-billed Corella)			
69.	24723 <i>Cacatua pastinator subsp. butleri</i> (Butler's Corella)			
70.	24724 <i>Cacatua pastinator subsp. pastinator</i> (Muir's Corella, Muir's Corella (Western Corella SW WA))		S	
71.	25715 <i>Cacatua roseicapilla</i> (Galah)			
72.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
73.	24727 <i>Cacatua sanguinea subsp. westralensis</i> (Little Corella)			
74.	<i>Cacatua sulphurea subsp. galerita</i>			Y
75.	24729 <i>Cacatua tenuirostris</i> (Eastern Long-billed Corella)	Y		
76.	25598 <i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
77.	42307 <i>Cacomantis pallidus</i> (Pallid Cuckoo)			
78.	25717 <i>Calyptorhynchus banksii</i> (Red-tailed Black-Cockatoo)			
79.	24731 <i>Calyptorhynchus banksii subsp. naso</i> (Forest Red-tailed Black Cockatoo)		T	
80.	24733 <i>Calyptorhynchus baudinii</i> (Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo)		T	
81.	24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
82.	48400 <i>Calyptorhynchus sp.</i> (white-tailed black cockatoo)		T	
83.	<i>Carassius auratus</i>			
84.	24480 <i>Carduelis carduelis subsp. britannica</i> (Goldfinch)	Y		
85.	<i>Celaenia excavata</i>			
86.	<i>Ceratopogonidae sp.</i>			
87.	24086 <i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
88.	<i>Cercophonius sulcatus</i>			
89.	<i>Ceryerda cursitans</i>			
90.	24186 <i>Chalinolobus gouldii</i> (Gould's Wattled Bat)			
91.	24187 <i>Chalinolobus morio</i> (Chocolate Wattled Bat)			
92.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
93.	43380 <i>Chelodina colliei</i> (South-western Snake-necked Turtle)			
94.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
95.	47909 <i>Cheramoeca leucosterna</i> (White-backed Swallow)			
96.	24980 <i>Christinus marmoratus</i> (Marbled Gecko)			
97.	<i>Chroicocephalus novaehollandiae</i>			
98.	24431 <i>Chrysococcyx basalis</i> (Horsfield's Bronze Cuckoo)			
99.	24432 <i>Chrysococcyx lucidis subsp. plagosus</i> (Shining Bronze Cuckoo)			
100.	24288 <i>Circus approximans</i> (Swamp Harrier)			
101.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
102.	24399 <i>Columba livia</i> (Domestic Pigeon)	Y		
103.	24361 <i>Coracina maxima</i> (Ground Cuckoo-shrike)			
104.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
105.	<i>Corixidae sp.</i>			
106.	<i>Cormocephalus aurantipes</i>			
107.	<i>Cormocephalus rubriceps</i>			
108.	<i>Cormocephalus strigosus</i>			
109.	25592 <i>Corvus coronoides</i> (Australian Raven)			
110.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
111.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
112.	24422 <i>Cracticus tibicen subsp. dorsalis</i> (White-backed Magpie)			
113.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
114.	24918 <i>Crenadactylus ocellatus subsp. ocellatus</i> (Clawless Gecko)			
115.	25398 <i>Crinia georgiana</i> (Quacking Frog)			
116.	25399 <i>Crinia glauerti</i> (Clicking Frog)			
117.	25400 <i>Crinia insignifera</i> (Squelching Froglet)			
118.	25401 <i>Crinia pseudinsignifera</i> (Bleating Froglet)			
119.	30893 <i>Cryptoblepharus buchananii</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
120.	24883 <i>Ctenophorus ornatus</i> (Ornate Crevice-Drum)			
121.	25027 <i>Ctenopus australis</i>			
122.	25035 <i>Ctenopus delli</i> (Dell's skink, Darling Range southwest Ctenopus)		P4	
123.	25039 <i>Ctenopus fallens</i>			
124.	25047 <i>Ctenopus impar</i>			
125.	25049 <i>Ctenopus labillardieri</i>			
126.	<i>Cyanorhamphus auriceps</i>			Y
127.	24322 <i>Cygnus atratus</i> (Black Swan)			
128.	24323 <i>Cygnus olor</i> (Mute Swan)	Y		
129.	<i>Cyrtophora parnasia</i>			
130.	30901 <i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
131.	30902 <i>Dacelo novaeguineae</i> subsp. <i>novaeguineae</i> (Laughing Kookaburra)	Y		
132.	25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella)			
133.	24606 <i>Daphoenositta chrysoptera</i> subsp. <i>pileata</i> (Varied Sittella, Black-capped Sittella)			
134.	24092 <i>Dasyurus geoffroyi</i> (Chuditch, Western Quoll)		T	
135.	25766 <i>Delma fraseri</i> (Fraser's Legless Lizard)			
136.	24999 <i>Delma grayii</i>			
137.	25296 <i>Demansia psammophis</i> subsp. <i>reticulata</i> (Yellow-faced Whipsnake)			
138.	24325 <i>Dendrocygna eytoni</i> (Plumed Whistling Duck)			
139.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
140.	<i>Dingosa serrata</i>			
141.	<i>Dinocambala ingens</i>			
142.	24929 <i>Diplodactylus granariensis</i> subsp. <i>granariensis</i>			
143.	24939 <i>Diplodactylus polyophthalmus</i>			
144.	24940 <i>Diplodactylus pulcher</i>			
145.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
146.	<i>Dytiscidae</i> sp.			
147.	<i>Egretta garzetta</i>			
148.	<i>Egretta novaehollandiae</i>			
149.	<i>Elanus axillaris</i>			
150.	24290 <i>Elanus caeruleus</i> subsp. <i>axillaris</i> (Australian Black-shouldered Kite)			
151.	25250 <i>Elapognathus coronatus</i> (Crowned Snake)			
152.	47937 <i>Elseymornis melanops</i> (Black-fronted Dotterel)			
153.	<i>Engraulis australis</i>			
154.	<i>Eolophus roseicapillus</i>			
155.	24652 <i>Eopsaltria georgiana</i> (White-breasted Robin)			
156.	24258 <i>Equus caballus</i> (Horse)	Y		
157.	<i>Eriophora biapicata</i>			
158.	<i>Eriophora pustulosa</i>			
159.	24379 <i>Erythronys cinctus</i> (Red-kneed Dotterel)			
160.	<i>Eucyrtops latior</i>			
161.	25621 <i>Falco berigora</i> (Brown Falcon)			
162.	24471 <i>Falco berigora</i> subsp. <i>berigora</i> (Brown Falcon)			
163.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
164.	24472 <i>Falco cenchroides</i> subsp. <i>cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
165.	25623 <i>Falco longipennis</i> (Australian Hobby)			
166.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
167.	<i>Favonigobius</i> sp.			
168.	24041 <i>Felis catus</i> (Cat)	Y		
169.	25727 <i>Fulica atra</i> (Eurasian Coot)			
170.	24761 <i>Fulica atra</i> subsp. <i>australis</i> (Eurasian Coot)			
171.	34028 <i>Galaxias occidentalis</i> (Western Minnow)			
172.	25729 <i>Gallinula tenebrosa</i> (Dusky Moorhen)			
173.	24763 <i>Gallinula tenebrosa</i> subsp. <i>tenebrosa</i> (Dusky Moorhen)			
174.	25730 <i>Gallirallus philippensis</i> (Buff-banded Rail)			
175.	24959 <i>Gehyra variegata</i>			
176.	25404 <i>Geocrinia leai</i> (Ticking Frog)			
177.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			
178.	34030 <i>Geotria australis</i> (Pouched Lamprey)		P3	
179.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
180.	<i>Glossiphoniidae</i> sp.			
181.	47962 <i>Glyciphila melanops</i> (Tawny-crowned Honeyeater)			
182.	<i>Gracula religiosa</i>			
183.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
184.	24293 <i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)			
185.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
186.	24689 <i>Halobaena caerulea</i> (Blue Petrel)			
187.	24296 <i>Hamirostra isura</i> (Square-tailed Kite)			
188.	25408 <i>Heleioporus albopunctatus</i> (Western Spotted Frog)			
189.	25409 <i>Heleioporus barycragus</i> (Hooting Frog)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
190.	25410 <i>Heleioporus eyrei</i> (Moaning Frog)			
191.	25412 <i>Heleioporus psammophilus</i> (Sand Frog)			
192.	<i>Hemicloea</i> sp.			Y
193.	<i>Hemicloea sublimbata</i>			
194.	<i>Hemicorduliidae</i> sp.			
195.	25115 <i>Hemiergis initialis</i> subsp. <i>initialis</i>			
196.	25119 <i>Hemiergis quadrilineata</i>			
197.	47965 <i>Hieraaetus morphnoides</i> (Little Eagle)			
198.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
199.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
200.	<i>Hogna crispipes</i>			
201.	<i>Hogna kuyani</i>			
202.	<i>Holconia westralia</i>			
203.	24215 <i>Hydromys chrysogaster</i> (Water-rat, Rakali)		P4	
204.	<i>Idiomata blackwalli</i>			
205.	48935 <i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)		P3	
206.	<i>Isometroides vescus</i>			
207.	48588 <i>Isoodon fusciventer</i> (Quenda, southwestern brown bandicoot)		P4	
208.	<i>Isopeda leishmanni</i>			
209.	<i>Isopedella cana</i>			
210.	<i>Isopedella tindalei</i>			
211.	24347 <i>Ixobrychus flavicollis</i> subsp. <i>australis</i> (Black Bittern (southwest subpop.), Australian Black Bittern)		P2	
212.	24367 <i>Lalage tricolor</i> (White-winged Triller)			
213.	<i>Lampona cylindrata</i>			
214.	24511 <i>Larus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Silver Gull)			
215.	<i>Latrodectus hasseltii</i>			
216.	<i>Leptoceridae</i> sp.			
217.	25131 <i>Lerista distinguenda</i>			
218.	25133 <i>Lerista elegans</i>			
219.	25165 <i>Lerista praepedita</i>			
220.	25005 <i>Lialis burtonis</i>			
221.	<i>Libellulidae</i> sp.			
222.	25659 <i>Lichenostomus leucotis</i> (White-eared Honeyeater)			
223.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
224.	24582 <i>Lichmera indistincta</i> subsp. <i>indistincta</i> (Brown Honeyeater)			
225.	25415 <i>Limnodynastes dorsalis</i> (Western Banjo Frog)			
226.	25378 <i>Litoria adelaidensis</i> (Slender Tree Frog)			
227.	25388 <i>Litoria moorei</i> (Motorbike Frog)			
228.	<i>Lophoictinia isura</i>			
229.	<i>Lymnaeidae</i> sp.			
230.	24132 <i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
231.	24135 <i>Macropus robustus</i> subsp. <i>erubescens</i> (Euro, Biggada)			
232.	24326 <i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
233.	25650 <i>Malurus elegans</i> (Red-winged Fairy-wren)			
234.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
235.	25654 <i>Malurus splendens</i> (Splendid Fairy-wren)			
236.	24552 <i>Malurus splendens</i> subsp. <i>splendens</i> (Splendid Fairy-wren)			
237.	24583 <i>Manorina flavigula</i> (Yellow-throated Miner)			
238.	<i>Maratus pavonis</i>			
239.	<i>Masasteron mas</i>			
240.	25758 <i>Megalurus gramineus</i> (Little Grassbird)			
241.	25663 <i>Melithreptus brevirostris</i> (Brown-headed Honeyeater)			
242.	25184 <i>Menetia greyii</i>			
243.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
244.	<i>Microcarbo melanoleucos</i>			
245.	<i>Missulena granulosa</i>			
246.	<i>Missulena hoggi</i>			
247.	<i>Missulena occatoria</i>			
248.	25240 <i>Morelia spilota</i> subsp. <i>imbricata</i> (Carpet Python)			
249.	25192 <i>Morethia obscura</i>			
250.	24223 <i>Mus musculus</i> (House Mouse)	Y		
251.	25420 <i>Myobatrachus gouldii</i> (Turtle Frog)			
252.	<i>Nannoperca vittata</i>			
253.	<i>Neatypus obliquus</i>			
254.	25248 <i>Neelaps bimaculatus</i> (Black-naped Snake)			
255.	25686 <i>Neochmia temporalis</i> (Red-browed Finch)	Y		
256.	24738 <i>Neophema elegans</i> (Elegant Parrot)			
257.	<i>Neophema pulchella</i>			
258.	<i>Nephila edulis</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
259.	<i>Nicodamus mainae</i>			
260.	25252 <i>Notechis scutatus</i> (Tiger Snake)			
261.	<i>Novakiella trituberculosa</i>			
262.	25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron)			
263.	24194 <i>Nyctophilus geoffroyi</i> (Lesser Long-eared Bat)			
264.	<i>Occiperipatooides gilesii</i>			
265.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
266.	<i>Oecobius navus</i>			
267.	<i>Oligochaeta</i> sp.			
268.	<i>Ommatoiulus moreleti</i>			
269.	<i>Ommatoiulus moreletii</i>			
270.	<i>Oniscidae</i> sp.			
271.	<i>Orphnaeus breviliabatus</i>			
272.	<i>Orthoclaadiinae</i> sp.			
273.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
274.	<i>Ostearius melanopygius</i>			
275.	34016 <i>Ovis aries</i> (Sheep)			
276.	<i>Oxyopes gracilipes</i>			
277.	<i>Oxyopes punctatus</i>			
278.	24328 <i>Oxyura australis</i> (Blue-billed Duck)		P4	
279.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
280.	24624 <i>Pachycephala rufiventris</i> subsp. <i>rufiventris</i> (Rufous Whistler)			
281.	48591 <i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
282.	25253 <i>Parasuta gouldii</i>			
283.	25681 <i>Pardalotus punctatus</i> (Spotted Pardalote)			
284.	24625 <i>Pardalotus punctatus</i> subsp. <i>punctatus</i> (Spotted Pardalote)			
285.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
286.	<i>Pediana occidentalis</i>			
287.	24648 <i>Pelecanus conspicillatus</i> (Australian Pelican)			
288.	48060 <i>Petrochelidon ariel</i> (Fairy Martin)			
289.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			
290.	48066 <i>Petroica boodang</i> (Scarlet Robin)			
291.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
292.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
293.	25698 <i>Phalacrocorax melanoleucos</i> (Little Pied Cormorant)			
294.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
295.	25699 <i>Phalacrocorax varius</i> (Pied Cormorant)			
296.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
297.	<i>Pholcus phalangioides</i>			
298.	<i>Phryganoporus candidus</i>			
299.	48071 <i>Phylidonyris niger</i> (White-cheeked Honeyeater)			
300.	24596 <i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			
301.	<i>Physidae</i> sp.			
302.	<i>Planorbidae</i> sp.			
303.	24841 <i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
304.	25720 <i>Platycercus icterotis</i> (Western Rosella)			
305.	24747 <i>Platycercus spurius</i> (Red-capped Parrot)			
306.	25721 <i>Platycercus zonarius</i> (Australian Ringneck, Ring-necked Parrot)			
307.	24750 <i>Platycercus zonarius</i> subsp. <i>semitorquatus</i> (Twenty-eight Parrot)			
308.	24843 <i>Plegadis falcinellus</i> (Glossy Ibis)		IA	
309.	25007 <i>Pletholax gracilis</i> subsp. <i>gracilis</i> (Keeled Legless Lizard)			
310.	25703 <i>Podargus strigoides</i> (Tawny Frogmouth)			
311.	24679 <i>Podargus strigoides</i> subsp. <i>brachypterus</i> (Tawny Frogmouth)			
312.	25704 <i>Podiceps cristatus</i> (Great Crested Grebe)			
313.	24680 <i>Podiceps cristatus</i> subsp. <i>australis</i> (Great Crested Grebe)			
314.	25510 <i>Pogona minor</i> (Dwarf Bearded Dragon)			
315.	24907 <i>Pogona minor</i> subsp. <i>minor</i> (Dwarf Bearded Dragon)			
316.	24681 <i>Poliocephalus poliocephalus</i> (Hoary-headed Grebe)			
317.	25731 <i>Porphyrio porphyrio</i> (Purple Swamphen)			
318.	24767 <i>Porphyrio porphyrio</i> subsp. <i>bellus</i> (Purple Swamphen)			
319.	24771 <i>Porzana tabuensis</i> (Spotless Crane)			
320.	25261 <i>Pseudechis australis</i> (Mulga Snake)			
321.	25345 <i>Pseudemadura umbrina</i> (Western Swamp Tortoise, Western Swamp Turtle)		T	
322.	24166 <i>Pseudocheirus occidentalis</i> (Western Ringtail Possum, ngwayir)		T	
323.	25511 <i>Pseudonaja affinis</i> (Dugite)			
324.	25259 <i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)			
325.	42416 <i>Pseudonaja mengdeni</i> (Western Brown Snake)			
326.	25264 <i>Pseudonaja nuchalis</i> (Gwardar, Northern Brown Snake)			
327.	25433 <i>Pseudophryne guentheri</i> (Crawling Toadlet)			
328.	<i>Purpurecephalus spurius</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
329.	25008 <i>Pygopus lepidopodus</i> (Common Scaly Foot)			
330.	24245 <i>Rattus rattus</i> (Black Rat)	Y		
331.	24776 <i>Recurvirostra novaehollandiae</i> (Red-necked Avocet)			
332.	<i>Rhabdosargus sarba</i>			
333.	48096 <i>Rhipidura albiscapa</i> (Grey Fantail)			
334.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
335.	24454 <i>Rhipidura leucophrys</i> subsp. <i>leucophrys</i> (Willie Wagtail)			
336.	<i>Richardsonianidae</i> sp.			
337.	<i>Sandalodes joannae</i>			
338.	<i>Sandalodes superbus</i>			
339.	<i>Scolopendra laeta</i>			
340.	25534 <i>Sericornis frontalis</i> (White-browed Scrubwren)			
341.	<i>Servaea melaina</i>			
342.	<i>Servaea spinibarbis</i>			
343.	25266 <i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
344.	30948 <i>Smicromis brevirostris</i> (Weebill)			
345.	24645 <i>Stagonopleura oculata</i> (Red-eared Firetail)			
346.	24329 <i>Stictonetta naevosa</i> (Freckled Duck)			
347.	<i>Storena formosa</i>			
348.	<i>Storena sinuosa</i>			
349.	25589 <i>Streptopelia chinensis</i> (Spotted Turtle-Dove)	Y		
350.	30951 <i>Streptopelia chinensis</i> subsp. <i>tigrina</i> (Spotted Turtle-Dove)	Y		
351.	25590 <i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
352.	24943 <i>Strophurus spinigerus</i> subsp. <i>inornatus</i>			
353.	24942 <i>Strophurus spinigerus</i> subsp. <i>spinigerus</i>			
354.	<i>Synochele durokoppin</i>			
355.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
356.	24682 <i>Tachybaptus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
357.	24207 <i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			
358.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
359.	<i>Talitridae</i> sp.			
360.	<i>Tamopsis darlingtoniana</i>			
361.	<i>Tamopsis perthensis</i>			
362.	<i>Tanypodinae</i> sp.			
363.	24167 <i>Tarsipes rostratus</i> (Honey Possum, Noolbenger)			
364.	<i>Tasmanicosa leuckartii</i>			
365.	<i>Tetragnatha demissa</i>			
366.	<i>Tetragnatha luteocincta</i>			Y
367.	48597 <i>Thalasseus bergii</i> (Crested Tern)		IA	
368.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
369.	25203 <i>Tiliqua occipitalis</i> (Western Bluetongue)			
370.	25519 <i>Tiliqua rugosa</i>			
371.	25204 <i>Tiliqua rugosa</i> subsp. <i>aspera</i>			
372.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
373.	24309 <i>Todiramphus sanctus</i> subsp. <i>sanctus</i> (Sacred Kingfisher)			
374.	<i>Trachycosmus sculptilis</i>			
375.	<i>Trachypina mundaring</i>			
376.	48141 <i>Tribonyx ventralis</i> (Black-tailed Native-hen)			
377.	25723 <i>Trichoglossus haematodus</i> (Rainbow Lorikeet)			
378.	24754 <i>Trichoglossus haematodus</i> subsp. <i>rubritorquis</i> (Red-collared Lorikeet)			
379.	24158 <i>Trichosurus vulpecula</i> subsp. <i>vulpecula</i> (Common Brushtail Possum)			
380.	24806 <i>Tringa glareola</i> (Wood Sandpiper)		IA	
381.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
382.	48147 <i>Turnix varius</i> (Painted Button-quail)			
383.	24851 <i>Turnix velox</i> (Little Button-quail)			
384.	25762 <i>Tyto alba</i> (Barn Owl)			
385.	24983 <i>Underwoodisaurus millii</i> (Barking Gecko)			
386.	<i>Urodacus armatus</i>			
387.	<i>Urodacus novaehollandiae</i>			
388.	<i>Urodacus planimanus</i>			
389.	25577 <i>Vanellus miles</i> (Masked Lapwing)			
390.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
391.	<i>Varanus</i> sp.			
392.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
393.	<i>Venator immansueta</i>			
394.	<i>Venatrix pullastra</i>			
395.	24206 <i>Vespadelus regulus</i> (Southern Forest Bat)			
396.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
397.	34113 <i>Westralunio carteri</i> (Carter's Freshwater Mussel)		T	

Appendix 3

Fauna Desktop Species List



Table1: Mammals returned from the Fauna Desktop Review.

Family		Conservation Status		Search Directory			
<i>Species</i>	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
Tachyglossidae							
<i>Tachyglossus aculeatus</i>	Short-beaked Echidna			•	•		
Dasyuridae							
<i>Dasyurus geoffroii</i>	Western Quoll, Chuditch	VU	VU	•	•	•	•
<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale, Wambenger	CD			•	•	•
Peramelidae							
<i>Isoodon fusciventer</i>	Quenda, Southern Brown Bandicoot	P4		•	•	•	•
Burramyidae							
<i>Cercartetus concinnus</i>	Western Pygmy-posum, Mundarda			•	•		
Pseudocheiridae							
<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum, Ngwayir	CR	VU	•		•	•
Tarsipedidae							
<i>Tarsipes rostratus</i>	Honey Possum, Noolbenger			•	•		
Phalangeridae							
<i>Trichosurus vulpecula</i>	Common Brushtail Possum			•	•		
Potoroidae							
<i>Bettongia penicillata</i>	Woylie; Brush-tailed Bettong	CR	EN			•	
Macropodidae							
<i>Macropus fuliginosus</i>	Western Grey Kangaroo			•	•		
<i>Osphranter robustus</i>	Euro			•	•		
<i>Setonix brachyurus</i>	Quokka	VU	VU			•	
Muridae							
<i>Hydromys chrysogaster</i>	Rakali, Water-rat	P4		•	•	•	•
<i>Mus musculus</i>	House Mouse			•	•		
<i>Rattus rattus</i>	Black Rat			•	•		
Vespertilionidae							
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat			•	•		
<i>Chalinolobus morio</i>	Chocolate Wattled Bat			•	•		
<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat			•	•		
<i>Vespadelus regulus</i>	Southern Forest-bat			•	•		
Canidae							
<i>Canis familiaris</i>	Dog				•		
<i>Vulpes vulpes</i>	Red Fox			•	•		
Felidae							
<i>Felis catus</i>	Cat			•	•		
Leporidae							
<i>Oryctolagus cuniculus</i>	Rabbit			•	•		
Equidae							
<i>Equus caballus</i>	Horse			•	•		

Family		Conservation Status		Search Directory			
<i>Species</i>	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
Bovidae							
<i>Ovis aries</i>	Sheep			•	•		

P4 = Priority 4, VU = Vulnerable, EN = Endangered, CR = Critically Endangered, CD = Conservation Dependent

Table 2: Birds returned from the Fauna Desktop Review.

Family		Conservation Status		Search Directory			
<i>Species</i>	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
Casuariidae							
<i>Dromaius novaehollandiae</i>	Emu			•	•		
Megapodiidae							
<i>Leipoa ocellata</i>	Malleefowl	VU	VU			•	
Anatidae							
<i>Anas castanea</i>	Chestnut Teal			•	•		
<i>Anas gracilis</i>	Grey Teal			•	•		
<i>Anas platyrhynchos</i>	Mallard				•		
<i>Anas rhynchotis</i>	Australasian Shoveler			•	•		
<i>Anas superciliosa</i>	Pacific Black Duck			•	•		
<i>Aythya australis</i>	Hardhead			•	•		
<i>Biziura lobata</i>	Musk Duck			•	•		
<i>Chenonetta jubata</i>	Australian Wood Duck			•	•		
<i>Cygnus atratus</i>	Black Swan			•	•		
<i>Dendrocygna eytoni</i>	Plumed Whistling-Duck			•	•		
<i>Malacorynchus membranaceus</i>	Pink-eared Duck			•	•		
<i>Oxyura australis</i>	Blue-billed Duck	P4		•	•		•
<i>Tadorna tadornoides</i>	Australian Shelduck			•	•		
<i>Stictonetta naevosa</i>	Freckled Duck			•	•		
Podicipedidae							
<i>Podiceps cristatus</i>	Great Crested Grebe			•	•		
<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe			•			
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe			•	•		
Procellariidae							
<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)		EN / MA			•	
Anhingidae							
<i>Anhinga novaehollandiae</i>	Australasian Darter			•			
Phalacrocoracidae							
<i>Microcarbo melanoleucos</i>	Little Pied Cormorant			•			
<i>Phalacrocorax carbo</i>	Great Cormorant			•			

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant			•			
<i>Phalacrocorax varius</i>	Pied Cormorant			•			
Pelecanidae							
<i>Pelecanus conspicillatus</i>	Australian Pelican		MA	•			
Ardeidae							
<i>Ardea alba</i>	Great Egret				•	•	
<i>Ardea ibis</i>	Cattle Egret			•	•	•	•
<i>Ardea intermedia</i>	Intermediate Egret			•			
<i>Ardea modesta</i>	Eastern Great Egret		MA	•	•		•
<i>Ardea pacifica</i>	White-necked Heron			•	•		
<i>Botaurus poiciptilus</i>	Australasian Bittern	EN	EN	•	•	•	
<i>Egretta garzetta</i>	Little Egret			•	•		
<i>Egretta novaehollandiae</i>	White-faced Heron			•	•		
<i>Egretta sacra</i>	Eastern Reef Egret				•		
<i>Ixobrychus dubius</i>	Australian Little Bittern	P4			•		
<i>Ixobrychus flavicollis</i>	Black Bittern	P2		•	•		
<i>Nycticorax caledonicus</i>	Nankeen Night-Heron			•	•		
Threskiornithidae							
<i>Platalea flavipes</i>	Yellow-billed Spoonbill			•			
<i>Plegadis falcinellus</i>	Glossy Ibis	MI	MI	•	•		
<i>Threskiornis moluccu</i>	Australian White Ibis				•		
<i>Threskiornis spinicollis</i>	Straw-necked Ibis		MA	•	•		
Accipitridae							
<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk			•	•		
<i>Accipiter fasciatus</i>	Brown Goshawk		MA	•	•		
<i>Aquila audax</i>	Wedge-tailed Eagle			•	•		
<i>Circus approximans</i>	Swamp Harrier			•	•		
<i>Elanus axillaris</i>	Black-shouldered Kite			•	•		
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle		MA	•		•	
<i>Haliastur sphenurus</i>	Whistling Kite		MA	•	•		
<i>Hamirostra isura</i>	Black-breasted Buzzard			•	•		
<i>Hieraaetus morphnoides</i>	Little Eagle			•	•		
<i>Lophoictinia isura</i>	Square-tailed Kite			•			
Pandionidae							
<i>Pandion cristatus</i>	Eastern Osprey	MI	MI	•		•	•
Falconidae							
<i>Falco berigora</i>	Brown Falcon			•	•		
<i>Falco cenchroides</i>	Nankeen Kestrel		MA	•	•		
<i>Falco longipennis</i>	Australian Hobby			•	•		

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
<i>Falco peregrinus</i>	Peregrine Falcon	OS		•	•		•
Rallidae							
<i>Fulica atra</i>	Eurasian Coot			•	•		
<i>Gallinula tenebrosa</i>	Dusky Moorhen			•	•		
<i>Gallirallus phillippensis</i>	Buff-Banded Rail			•	•		
<i>Porphyrio porphyrio</i>	Purple Swamphen			•	•		
<i>Porzana fluminea</i>	Australian Spotted Crake				•		
<i>Porzana tabuensis</i>	Spotless Crake		MA	•	•		
<i>Tribonyx ventralis</i>	Black-tailed Native-hen			•	•		
Burhinidae							
<i>Burhinus grallarius</i>	Bush Stone-curlew			•			
Turnicidae							
<i>Turnix varius</i>	Painted Button-quail			•	•		
<i>Turnix velox</i>	Little Button-quail			•			
Scolopacidae							
<i>Actitis hypoleucos</i>	Common Sandpiper	MI	MI / MA	•		•	
<i>Calidris acminata</i>	Sharp-tailed Sandpiper	MI	MI / MA			•	
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR / I MI	CR / MI / MA			•	
<i>Calidris melanotos</i>	Pectoral Sandpiper	MI	MI / MA			•	
<i>Numenius madagascariensis</i>	Eastern Curlew	CR / MI	CR / MI			•	
<i>Tringa gareola</i>	Wood Sandpiper	MI	MI	•			
<i>Tringa nebularia</i>	Common Greenshank	MI	MI	•	•	•	
Recurvirostridae							
<i>Himantopus himantopus</i>	Black-winged Stilt		MA	•			
<i>Recurvirostra novaehollandiae</i>	Red-necked Avocet			•			
Rostratulidae							
<i>Rostratula australis</i>	Australian Painted Snipe	EN	EN / MA			•	
Charadriidae							
<i>Charadrius ruficapillus</i>	Red-capped Plover		MA	•			
<i>Eseyornis melanops</i>	Black-fronted Dotterel			•	•		
<i>Erythronys cinctus</i>	Red-kneed Dotterel			•			
<i>Thinornis rubricollis</i>	Hooded Plover	P4	MA			•	
<i>Vanellus miles</i>	Masked Lapwing			•			
Laridae							
<i>Chlidonias hybrida</i>	Whiskered Tern				•		
<i>Chroicocephalus novaehollandiae</i>	Silver Gull			•			
<i>Sternula nereis nereis</i>	Australian Fairy Tern	VU	VU			•	
<i>Thalasseus bergii</i>	Crested Tern	MI	MI	•			

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCAs Threatened Fauna Database (5km)
Columbidae							
<i>Columba livia</i>	Rock Dove			•	•		
<i>Geopelia cuneata</i>	Diamond Dove			•	•		
<i>Ocyphaps lophotes</i>	Crested Pigeon			•	•		
<i>Phaps chalcoptera</i>	Common Bronzewing			•	•		
<i>Streptopelia chinensis</i>	Spotted Dove			•	•		
<i>Streptopelia senegalensis</i>	Laughing Dove			•	•		
Cacatuidae							
<i>Cacatua pastinator pastinator</i>	Muir's Corella	CD		•			•
<i>Cacatua sanguinea</i>	Little Corella			•	•		
<i>Cacatua tenuirostris</i>	Long-billed Corella			•	•		
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	VU	VU	•	•	•	•
<i>Calyptorhynchus baudinii</i>	Baudins Black-Cockatoo	EN	EN	•	•	•	•
<i>Calyptorhynchus latirostris</i>	Carnaby's Black-Cockatoo	EN	EN	•	•	•	•
<i>Eolophus roseicapillus</i>	Galah			•	•		
<i>Nymphicus hollandicus</i>	Cockatiel				•		
Psittaculidae							
<i>Parvipsitta porphyrocephala</i>	Purple-crowned Lorikeet				•		
<i>Trichoglossus moluccanus</i>	Rainbow Lorikeet			•	•		
Psittacidae							
<i>Barnardius zonarius</i>	Australian Ringneck			•	•		
<i>Melopsittacus undulatus</i>	Budgerigar				•		
<i>Neophema elegans</i>	Elegant Parrot			•	•		
<i>Neophema petrophila</i>	Rock Parrot				•		
<i>Platycercus icterotis</i>	Western Rosella			•	•		
<i>Polytelis anthoepus</i>	Regent Parrot				•		
<i>Purpureicephalus spurius</i>	Red-capped Parrot			•	•		
Cuculidae							
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo			•	•		
<i>Cacomantis pallidus</i>	Pallid Cuckoo		MA	•	•		
<i>Chrysococcyx basalis</i>	Horsfield's Bronze-Cuckoo			•	•		
<i>Chrysococcyx lucidus</i>	Shining Bronze-Cuckoo			•	•		
Strigidae							
<i>Ninox novaezealandiae</i>	Southern Boobook				•		
Tytonidae							
<i>Tyto alba</i>	Barn Owl			•	•		
<i>Tyto javanica</i>	Eastern Barn Owl				•		
<i>Tyto novaehollandiae</i>	Masked Owl				•		

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
Podargidae							
<i>Podargus strigoides</i>	Tawny Frogmouth			•	•		
Apodidae							
<i>Apus pacificus</i>	Fork-tailed Swift	MI	MI		•	•	
Halcyonidae							
<i>Dacelo novaeguineae</i>	Laughing Kookaburra			•	•		
<i>Todiramphus pyrrhopygius</i>	Red-backed Kingfisher				•		
<i>Todiramphus sanctus</i>	Sacred Kingfisher		MA	•	•		
Meropidae							
<i>Merops ornatus</i>	Rainbow Bee-eater		MA	•	•	•	•
Climacteridae							
<i>Climacteris rufa</i>	Rufous Treecreeper				•		
Maluridae							
<i>Malurus assimilis</i>	Purple-backed Fairy-wren				•		
<i>Malurus elegans</i>	Red-winged Fairy-wren			•	•		
<i>Malurus lamberti</i>	Variiegated Fairy-wren			•	•		
<i>Malurus leucopterus</i>	White-winged Fairy-wren				•		
<i>Malurus splendens</i>	Splendid Fairy-wren			•	•		
Pardalotidae							
<i>Pardalotus rubricatus</i>	Red-browed Pardalote			•	•		
<i>Pardalotus striatus</i>	Striated Pardalote			•	•		
Dasyornithidae							
<i>Dasyornis longirostris</i>	Western Bristlebird	CR	CR		•		
Acanthizidae							
<i>Acanthiza apicalis</i>	Inland Thornbill			•	•		
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill			•	•		
<i>Acanthiza inornata</i>	Western Thornbill			•	•		
<i>Gerygone fusca</i>	Western Gerygone			•	•		
<i>Sericornis frontalis</i>	White-browed Scrubwren			•	•		
<i>Smicrornis brevirostris</i>	Weebill			•	•		
Meliphagidae							
<i>Acanthanthorhynchus superciliosus</i>	Western Spinebill			•	•		
<i>Anthochaera carunculata</i>	Red Wattlebird			•	•		
<i>Anthochaera lunulata</i>	Western Wattlebird			•	•		
<i>Gavicalis virescens</i>	Singing Honeyeater				•		
<i>Glyciphilia melanops</i>	Tawny-crowned Honeyeater			•	•		
<i>Lichmera indistincta</i>	Brown Honeyeater			•	•		
<i>Manorina flavigula</i>	Yellow-throated Miner			•	•		
<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater			•	•		

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCAs Threatened Fauna Database (5km)
<i>Melithreptus lunatus</i>	White-naped Honeyeater				•		
<i>Nesoptilotis leucotis</i>	White-eared Honeyeater			•	•		
<i>Phylidonyris niger</i>	White-cheeked Honeyeater			•	•		
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater			•	•		
<i>Ptilotula ornata</i>	Yellow-plumed Honeyeater				•		
Petroicidae							
<i>Eopsaltria griseogularis</i>	Western Yellow Robin				•		
<i>Eopsaltria georgiana</i>	White-breasted Robin			•	•		
<i>Melanodryas cucullata</i>	Hooded Robin				•		
<i>Petroica boodang</i>	Scarlet Robin			•	•		
<i>Petroica goodenovii</i>	Red-capped Robin			•	•		
Neosittidae							
<i>Daphoenositta chrysoptera</i>	Varied Sittella			•	•		
Pachycephalidae							
<i>Colluricincla harmonica</i>	Grey Shrike-thrush			•	•		
<i>Falcunculus frontatus</i>	Crested Shrike-tit				•		
<i>Pachycephala rufiventris</i>	Rufous Whistler			•	•		
<i>Pachycephala occidentalis</i>	Western Whistler				•		
Monarchidae							
<i>Grallina cyanoleuca</i>	Magpie-lark		MA	•	•		
Rhipiduridae							
<i>Rhipidura albiscapa</i>	Grey Fantail			•	•		
<i>Rhipidura leucophrys</i>	Willie Wagtail			•	•		
Campephagidae							
<i>Coracina maxima</i>	Ground Cuckoo-shrike			•	•		
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike		MA	•	•		
<i>Lalage tricolor</i>	White-winged Triller			•	•		
Artamidae							
<i>Artamus cinereus</i>	Black-faced Woodswallow			•	•		
<i>Artamus cyanopterus</i>	Dusky Woodswallow			•	•		
<i>Cracticus nigrogularis</i>	Pied Butcherbird			•	•		
<i>Cracticus tibicen</i>	Australian Magpie			•	•		
<i>Cracticus torquatus</i>	Grey Butcherbird			•	•		
<i>Strepera versicolor</i>	Grey Currawong				•		
Corvidae							
<i>Corvus coronoides</i>	Australian Raven			•	•		
Motacillidae							
<i>Anthus novaeseelandiae</i>	Australasian Pipit			•	•		
<i>Motacilla cinerea</i>	Grey Wagtail					•	

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
Estrildidae							
<i>Neochmia temporalis</i>	Red-browed Finch			•	•		
<i>Stagonopleura oculata</i>	Red-eared Firetail			•	•		
Nectariniidae							
<i>Dicaeum hirundinaceum</i>	Mistletoebird			•	•		
Hirundinidae							
<i>Cheramoeca leucosterna</i>	White-backed Swallow			•	•		
<i>Hirundo neoxena</i>	Welcome Swallow		MA	•	•		
<i>Petrochelidon ariel</i>	Fairy Martin			•	•		
<i>Petrochelidon nigricans</i>	Tree Martin		MA	•	•		
Acrocephalidae							
<i>Acrocephalus australis</i>	Australian Reed-Warbler			•	•		
Locustellidae							
<i>Cincloramphus cruralis</i>	Brown Songlark				•		
<i>Cincloramphus matthewsi</i>	Rufous Songlark				•		
<i>Megalurus gramineus</i>	Little Grassbird			•	•		
Timaliidae							
<i>Zosterops lateralis</i>	Silvereye		MA	•	•		

P2 = Priority 2, P4 = Priority 4, VU = Vulnerable, EN = Endangered, CR = Critically Endangered, MA = Marine, MI = Migratory, CD = Conservation Dependent, OS = Other Specially Protected

Reptiles returned from the Fauna Desktop Review.

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
Chelidae							
<i>Chelodina colliei</i>	Oblong Turtle			•	•		
<i>Pseudemys umbrina</i>	Western Swamp Turtle	CR	CR	•	•		•
Carphodactylidae							
<i>Underwoodisaurus millii</i>	Southern Barking Gecko			•	•		
Diplodactylidae							
<i>Crenadactylus ocellatus</i>	South-western Clawless Gecko			•	•		
<i>Diplodactylus granariensis</i>	Wheatbelt Stone Gecko			•	•		
<i>Diplodactylus lateroides</i>	Speckled Stone Gecko				•		
<i>Diplodactylus polyophthalmus</i>	Spotted Sandplain Gecko			•			
<i>Diplodactylus pulcher</i>	Fine-faced Gecko			•	•		
<i>Diplodactylus vittatus</i>	Wood Gecko				•		
<i>Strophurus spinigerus</i>	Western Spiny-tailed Gecko			•	•		

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
Gekkonidae							
<i>Christinus marmoratus</i>	Marbled Gecko			•	•		
<i>Gehyra variegata</i>	Tree Dtella			•	•		
Pygopodidae							
<i>Aprasia pulchella</i>	Pretty Worm-Lizard			•	•		
<i>Aprasia repens</i>	Sedgeland's Worm-Lizard			•	•		
<i>Delma fraseri</i>	Fraser's Delma			•	•		
<i>Delma grayii</i>	Side-barred Delma			•	•		
<i>Lialis burtonis</i>	Burton's Legless Lizard			•	•		
<i>Pletholax gracilis</i>	Keeled Legless Lizard			•	•		
<i>Pygopus lepidopodus</i>	Common Scaly-foot			•	•		
Agamidae							
<i>Ctenophorus ornatus</i>	Ornate Crevice Dragon			•	•		
<i>Pogona minor</i>	Dwarf Bearded Dragon			•	•		
Scincidae							
<i>Acritoscincus trilineatus</i>	Western Three-lined Skink			•	•		
<i>Cryptoblepharus buchanani</i>	Buchanan's Snake-eyed Skink			•	•		
<i>Ctenotus australis</i>	Western Limestone Ctenotus			•	•		
<i>Ctenotus delli</i>	Darling Range Heath Ctenotus	P4		•			•
<i>Ctenotus fallens</i>	West-coast Laterite Ctenotus			•			
<i>Ctenotus gemmula</i>	Jewelled Sandplain Ctenotus	P3			•		
<i>Ctenotus impar</i>	Odd-striped Ctenotus			•	•		
<i>Ctenotus inornatus</i>	Bar-shouldered Ctenotus				•		
<i>Ctenotus labillardieri</i>	Common South-west Ctenotus			•	•		
<i>Hemiergis initialis</i>	South-western Earless Skink			•	•		
<i>Hemiergis quadrilineata</i>	Two-toed Earless Skink			•	•		
<i>Lerista distinguenda</i>	South-western Orange-tailed Slider			•	•		
<i>Lerista elegans</i>	Elegant Slider			•	•		
<i>Lerista praepedita</i>	Blue-tailed West-coast Slider			•	•		
<i>Menetia greyii</i>	Common Dwarf Skink			•	•		
<i>Morethia obscura</i>	Shrubland Morethia Skink			•	•		
<i>Tiliqua occipitalis</i>	Western Blue-tongue			•	•		
<i>Tiliqua rugosa</i>	Bobtail, Shingleback			•	•		
Varanidae							
<i>Varanus gouldii</i>	Sand Goanna, Bungarra			•	•		
<i>Varanus rosenbergi</i>	Heath Monitor				•		
<i>Varanus tristis</i>	Black-headed Monitor			•	•		
Typhlopidae							
<i>Anilius australis</i>	Southern Blind Snake				•		

Family		Conservation Status		Search Directory			
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR	DBCA Threatened Fauna Database (5km)
<i>Anilius bituberculatus</i>	Prong-snouted Blind Snake				.		
<i>Anilius pinguis</i>	Rotund Blind Snake				.		
<i>Anilius waitii</i>	Beaked Blind Snake				.		
Pythonidae							
<i>Antaresia stimsoni</i>	Stimson's Pthon			.	.		
<i>Morelia spilota</i>	Carpet Python				.		
Elapidae							
<i>Brachyuropsis semifasciatus</i>	Southern Shovel-nosed Snake			.	.		
<i>Demansia psammophis</i>	Yellow-faced Whip-Snake			.	.		
<i>Elapognathus coronatus</i>	Western Crowned Snake			.	.		
<i>Neelaps bimaculatus</i>	Black-naped Snake			.	.		
<i>Notechis scutatus</i>	Tiger Snake			.	.		
<i>Parasuta gouldii</i>	Gould's Hooded Snake			.	.		
<i>Pseudechis australis</i>	Mulga Snake			.	.		
<i>Pseudonaja affinis</i>	Dugite			.	.		
<i>Pseudonaja mengdeni</i>	Western Brown Snake			.	.		
<i>Pseudonaja nuchalis</i>	Gwardar, Northern Brown Snake			.			
<i>Simoselaps bertholdi</i>	Jan's Banded Snake			.	.		

P3 = Priority 3, P4 = Priority 4, CR = Critically Endangered

Amphibians returned from the Fauna Desktop Review.

Family		Conservation Status		Search Directory		
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR
Hylidae						
<i>Litoria adelaidensis</i>	Slender Tree Frog			.	.	
<i>Litoria moorei</i>	Moore's Frog			.	.	
Limnodynastidae						
<i>Heleioporus albopunctatus</i>	Western Spotted Frog			.	.	
<i>Heleioporus barycragus</i>	Western Marsh Frog			.	.	
<i>Heleioporus eyrei</i>	Moaning Frog			.	.	
<i>Heleioporus inornatus</i>	Whooping Frog				.	
<i>Heleioporus psammophilus</i>	Sand Frog			.	.	
<i>Limnodynastes dorsalis</i>	Western Banjo Frog			.	.	
Myobatrachidae						
<i>Crinia georgiana</i>	Quacking Froglet			.	.	
<i>Crinia glauerti</i>	Clicking Froglet			.	.	
<i>Crinia insignifera</i>	Squelching Froglet			.	.	

Family		Conservation Status		Search Directory		
Species	Common Name	State	Commonwealth	NatureMap	ALA	EPBC PMR
<i>Crinia pseudinsignifera</i>	Bleating Froglet			•	•	
<i>Crinia signifera</i>	South-coast Froglet				•	
<i>Geocrinia leai</i>	Ticking Frog			•	•	
<i>Myobatrachus gouldii</i>	Turtle Frog			•	•	
<i>Pseudophryne guentheri</i>	Crawling Toadlet			•	•	

Appendix 4a

Likelihood of Significant Flora Occurring in the Survey Area



Taxon	Habit	Habitat	Database Searches				Likelihood of Occurrence Within the Survey Areas		
			NatureMap	Mainroads Database	WA Herbarium	EPBC PMST	Initial Ranking Based on Desktop Review	Final Ranking Including Results of 2019/2020 Field Survey	
								Level 1 Survey Area	Level 2 Survey Area
Threatened									
<i>Acacia anomala</i>	Slender form, full flower, grasslike shrub to 40 cm.	Slopes, Brown sandy loam.			✓	✓	May potentially occur; some suitable habitat present.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Acacia aphylla</i>	Divaricately branched, spinescent, glaucous shrub, 0.9-2.5 m high.	Sand, loam, clay loam. Granite outcrops, hills.	✓	✓	✓	✓	Likely to occur; some suitable habitat present and records in close proximity.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Andersonia gracilis</i>	Slender erect or open straggly shrub, 0.1-0.5(-1) m high	White/grey sand, sandy clay, gravelly loam. Winter-wet areas, near swamps.				✓	Would not occur, last record from 1901.	Would not occur.	Would not occur.
<i>Anthocercis gracilis</i>	Slender, inconspicuous, intricately branched, short-lived shrub.	Granitic loam, among granite boulders.	✓	✓	✓	✓	May potentially occur; however no suitable habitat present.	Would not occur.	Unlikely to occur.
<i>Calectasia cyanea</i>	Rhizomatous, clump forming, woody perennial, herb, 0.1-0.6 m high, to 0.3 m wide.	White, grey or yellow sand, gravel.	✓				Would not occur; no suitable habitat and no records in close proximity.	Would not occur.	Would not occur.
<i>Calytrix breviseta</i> subsp. <i>breviseta</i>	Flowers purple-blue.	Swampy clay flats.	✓		✓	✓	Unlikely to occur; previous records sit within industrial area	Would not occur.	Unlikely to occur.
<i>Conospermum undulatum</i>	Straggling, multi-stemmed shrub to 1.4 m.	Sandplains - Bassendean Sand.	✓	✓	✓	✓	Recorded.	Would not occur.	Recorded.
<i>Darwinia apiculata</i>	Densely branched shrub, 0.4-0.5 m high.	Lateritic soils.			✓	✓	Unlikely to occur; no particularly suitable habitat and most recent and nearest record from 1982.	Would not occur.	Would not occur.
<i>Diplolaena andrewsii</i>	Erect shrub, 0.5-1 m high, leaves broadly cordate.	Loam, clay. Granite outcrops & hillsides.				✓	Would not occur; no suitable habitat	Would not occur.	Would not occur.
<i>Diuris drummondii</i>	Tuberous, perennial, herb, 0.5-1.05 m high	Low-lying depressions, swamps.	✓			✓	May potentially occur; suitable habitat present; one record in close proximity.	Would not occur.	Unlikely to occur; this orchid was not recorded during the field survey.
<i>Diuris micrantha</i>	Tuberous, perennial, herb, 0.3-0.6 m high.	Brown loamy clay. Winter-wet swamps, in shallow water.				✓	Would not occur; no suitable habitat and no records in close proximity.	Would not occur.	Would not occur.
<i>Diuris purdiei</i>	Tuberous, perennial, herb, 0.15-0.35 m high.	Grey-black sand, moist. Winter-wet swamps.				✓	Would not occur; no suitable habitat and no records in close proximity.	Would not occur.	Would not occur.
<i>Drakaea elastica</i>	Tuberous, perennial, herb, 0.12-0.3 m high.	White or grey sand. Low-lying situations adjoining winter-wet swamps.				✓	Would not occur; no suitable habitat and most recent and nearest record from 1926.	Would not occur.	Would not occur.
<i>Drakaea micrantha</i>	Tuberous, perennial, herb, 0.15-0.3 m high	White-grey sand.				✓	Would not occur; no suitable habitat and no records in close proximity.	Would not occur.	Would not occur.
<i>Eleocharis keigheryi</i>	Rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 m high	Clay, sandy loam. Emergent in freshwater creeks, claypans.				✓	Would not occur; no suitable habitat and no records in close proximity.	Would not occur.	Would not occur.
<i>Eucalyptus ×balanites</i>	(Mallee), to 5 m high, bark rough, flaky.	Sandy soils with lateritic gravel.				✓	Would not occur; no suitable habitat and no records in close proximity.	Would not occur.	Would not occur.
<i>Grevillea curviloba</i> subsp. <i>incurva</i>	Prostrate to erect shrub, 0.1-2.5 m high.	Sand, sandy loam. Winter-wet heath.	✓			✓	Would not occur; no suitable habitat.	Would not occur.	Would not occur.
<i>Lepidosperma rostratum</i>	Rhizomatous, tufted perennial, grass-like or herb (sedge), 0.5 m high.	Peaty sand, clay.				✓	Unlikely to occur; no particularly suitable habitat and no records in close proximity.	Would not occur.	Unlikely to occur.
<i>Macarthuria keigheryi</i>	Perennial herb or shrub.	Flat, grey sand.	✓	✓	✓	✓	Likely to occur; some suitable habitat present and records in close proximity.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Synaphea</i> sp. Fairbridge Farm (D. Papenfus 696)	Dense, clumped shrub, to 0.3 m high, to 0.4 m wide.	Sandy with lateritic pebbles. Near winter-wet flats, in low woodland with weedy grasses.				✓	Would not occur; no suitable habitat and no records in close proximity.	Would not occur.	Would not occur.

<i>Synaphea</i> sp. <i>Pinjarra Plain</i> (A.S. George 17182)	Erect, clumped shrub (sub-shrub), to 0.8 m high.	Clays, clay loams. Flats, seasonally wet areas, railroad reserves often with wet depressions or drains.	✓				May potentially occur; suitable habitat present and one record from 2007 in close proximity.	Would not occur.	Unlikely to occur.
<i>Thelymitra dedmaniarum</i>	Tuberous, perennial, herb, to 0.8 m high.	Granite.				✓	Would not occur; no suitable habitat and no records in close proximity.	Would not occur.	Would not occur.
<i>Thelymitra stellata</i>	Tuberous, perennial, herb, 0.15-0.25 m high.	Sand, gravel, lateritic loam.			✓	✓	Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Trithuria occidentalis</i>	Plant red, growing in tiny tufts.	Muddy spots.	✓		✓		Unlikely to occur; no particularly suitable habitat and most recent records are from 1901	Would not occur.	Unlikely to occur.
Priority 1									
<i>Boronia humifusa</i>	Low-growing, wiry perennial, herb, 0.1-0.2 m high.	Gravelly clay loam over laterite. Jarrah-marri open forest.		✓	✓		Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Hydrocotyle striata</i>	Herb	Clay areas, springs.	✓		✓		Unlikely to occur; no particularly suitable habitat and most recent records are from 1901	Would not occur.	Unlikely to occur.
<i>Senecio gilbertii</i>	Erect, slender perennial, herb, to 1.5 m high.	Peaty sand. Swamps, slopes.	✓		✓		Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Thelymitra magnifica</i>	Perennial, herb.	Stony ridges.	✓	✓	✓		May potentially occur; multiple records in close proximity however no particularly suitable habitat.	Would not occur.	Unlikely to occur.
Priority 2									
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	Tufted perennial, herb, 0.15-0.25 m high.	Grey-white-yellow sand. Flats, seasonally-wet sites.			✓		Likely to occur; suitable habitat present and multiple records within close proximity.	Would not occur.	Recorded.
<i>Lepyrodia curvescens</i>	Dioecious, shortly creeping, tufted rhizomatous, herb, 0.24-0.4 m.	Sand, laterite. Seasonally inundated swampland.	✓		✓		Recorded.	Would not occur.	Unlikely to occur; this rush was not recorded during the field survey despite targeted searches in the area of the historical record
<i>Melaleuca viminalis</i>	Slender erect weeping shrub to 3 m.	Creeklines. Sandy clay.			✓		Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Phyllangium palustre</i>	Erect, succulent annual, herb, 5 cm.	Winter-wet claypans, low-lying seasonal wetlands.	✓		✓		Unlikely to occur; no particularly suitable habitat and most recent record is from 1901.	Would not occur.	Unlikely to occur.
<i>Thelymitra variegata</i>	Tuberous, perennial, herb, 0.1-0.35 m high.	Sandy clay, sand, laterite.			✓		Unlikely to occur; no particularly suitable habitat and most recent records is from 1903.	Would not occur.	Unlikely to occur.
Priority 3									
<i>Acacia drummondii</i> subsp. <i>affinis</i>	Erect, perennial shrub up to 1 m high. Flowers yellow.	Brown gravelly loam	✓	✓	✓		Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Acacia oncinophylla</i> subsp. <i>oncinophylla</i>	Shrub, 0.9-2.5 m high, 'minni-ritchi' bark.	Granitic soils.	✓	✓	✓		Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Asteridea gracilis</i>	Annual, herb, 0.15-0.35 m high.	Sand, clay, gravelly soils.		✓	✓		May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Banksia pteridifolia</i> subsp. <i>vernalis</i>	Prostrate, lignotuberous shrub, to 0.4 m high.	White/grey sand over laterite.	✓		✓		May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Beaufortia purpurea</i>	Erect or spreading shrub, 0.3-1.5 m high.	Lateritic or granitic soils. Rocky slopes.	✓		✓		May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.

<i>Byblis gigantea</i>	Small, branched perennial herb (or sub-shrub), to 0.45 m high.	Sandy-peat swamps. Seasonally wet areas.	✓	✓	✓	May potentially occur; no particularly suitable habitat however recorded within close proximity.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Carex tereticaulis</i>	Monoecious, rhizomatous, tufted perennial, grass-like or herb (sedge), 0.7 m high.	Black peaty sand.	✓		✓	Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Eryngium sp. Subdecumbens</i> (G.J. Keighery 5390)	Perennial herb to 8 cm	Winter inundated claypans. Clay areas.	✓		✓	May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Grevillea manglesii</i> subsp. <i>dissectifolia</i>	Spreading, virgate shrub, 1.5-3(-5) m high, up to 3 m wide.	Gravelly loam, moist. Roadsides.	✓	✓	✓	May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Haemodorum loratum</i>	Bulbaceous, perennial, herb, 0.45-1.2(-2) m high.	Grey or yellow sand, gravel.		✓	✓	May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Halgania corymbosa</i>	Erect shrub, 0.35-1 m high.	Gravelly soils, soils over granite.	✓		✓	May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Isopogon autumnalis</i>	Perennial multi-stemmed shrub to 1 m.	Grey or white sand.	✓		✓	Recorded.	Would not occur.	Recorded.
<i>Lasiopetalum glutinosum</i> subsp. <i>glutinosum</i>	Perennial multi-stemmed shrub to 1 m. Inflorescence axes strongly viscid.	Sandplains, sandy loam.	✓		✓	May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Meionectes tenuifolia</i>	Prostrate aquatic/semiaquatic herb, red/green, trifold and linear leaves.	Swamp edges, damp areas.	✓		✓	Unlikely to occur; some suitable habitat however most recent record dates back to 1930	Would not occur.	Unlikely to occur.
<i>Myriophyllum echinatum</i>	Erect annual, herb, 0.02-0.03 m high.	Winter-wet flats. Clay.	✓		✓	Unlikely to occur; some suitable habitat however most recent record dates back to 1902.	Would not occur.	Unlikely to occur.
<i>Phlebotocarya pilosissima</i> subsp. <i>pilosissima</i>	Shortly rhizomatous, compactly tufted perennial, grass-like or herb, 0.15-0.4 m high.	White or grey sand, lateritic gravel.				Unlikely to occur; some suitable habitat however no records from close proximity.	Would not occur.	Unlikely to occur; this sedge was not recorded during the field survey.
<i>Pithocarpa corymbulosa</i>	Erect to scrambling perennial, herb, 0.5-1 m high.	Gravelly or sandy loam. Amongst granite outcrops.	✓	✓	✓	May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Platysace ramosissima</i>	Perennial, herb, to 0.3 m high.	Sandy soils.		✓	✓	May potentially occur; some suitable habitat; recorded within close proximity.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Schoenus pennisetis</i>	Tufted annual, grass-like or herb (sedge), 0.05-0.15 m high.	Swamps, winter-wet depressions. Grey or peaty sand, sandy clay.		✓	✓	May potentially occur; some suitable habitat recorded within close proximity.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Sporobolus blakei</i>	Tufted perennial, grass-like or herb, 0.45-0.6 m high. Fl. green-purple, Mar or Jun to Jul.	Red sandy clay, loam. Creeks.			✓	May potentially occur; some suitable habitat recorded within close proximity.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Stackhousia sp.</i> Red-blotched corolla (A. Markey 911)	Erect perennial herb 20 cm high	Clayey sand over granite			✓	Unlikely to occur; some suitable habitat however most recent record dates back to 1897.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Thysanotus anceps</i>	Rhizomatous, leafless perennial, herb, to 0.4 m.	White or grey sand, lateritic gravel, laterite.		✓		May potentially occur; some suitable habitat; records within 5 km.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
Priority 4								
<i>Boronia tenuis</i>	Procumbent or erect & slender shrub, 0.1-0.5 m.	Laterite, stony soils, granite.			✓	Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.

<i>Calothamnus accedens</i>	Erect & slender shrub, to 1.8 m high.	Sandy soils over laterite. Road verge.	✓		✓		May potentially occur; some suitable habitat; records within 5 km.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Darwinia pimelioides</i>	Erect shrub, 0.25-0.5(-1) m high.	Loam, sandy loam. Granite outcrops.		✓	✓		May potentially occur; some suitable habitat; records within 5 km.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Hydrocotyle lemnoides</i>	Aquatic, floating annual, herb.	Swamps.	✓		✓		Unlikely to occur; some suitable habitat however most recent record dates back to 1906.	Would not occur.	Unlikely to occur.
<i>Hypolaena robusta</i>	Dioecious rhizomatous, perennial, herb, ca 0.5 m.	White sand. Sandplains.					May potentially occur; suitable habitat present however has not been recorded in proximity of study area to date.	Would not occur.	Recorded.
<i>Jacksonia sericea</i>	Low spreading shrub, to 0.6 m high.	Calcareous & sandy soils.	✓		✓		May potentially occur; some suitable habitat; records within 5 km.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Lasiopetalum bracteatum</i>	Erect, open shrub, 0.4-1.5 m high.	Along drainage lines, creeks, gullies, granite outcrops.	✓		✓		May potentially occur; some suitable habitat; records within 5 km.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey.
<i>Ornduffia submersa</i>	Aquatic, floating herb	Water.	✓		✓		May potentially occur; some suitable habitat; records within 5 km.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Schoenus griffinianus</i>	Small, tufted perennial, grass-like or herb (sedge), to 0.1 m high.	White sand.	✓	✓	✓		Recorded.	Would not occur.	Unlikely to occur; this shrub was not recorded during the field survey, despite targeted searches in the area of the historical record.
<i>Senecio leucoglossus</i>	Erect annual, herb, to 1.3 m high. Fl. white, Aug to Dec.	Gravelly lateritic or granitic soils. Granite outcrops, slopes.			✓		Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Stylidium longitubum</i>	Erect annual (ephemeral), herb, 0.05-0.12 m high. Fl. pink, Oct to Dec.	Sandy clay, clay. Seasonal wetlands.	✓	✓	✓		May potentially occur; some suitable habitat; records within 5 km.	Would not occur.	Unlikely to occur; this herb was not recorded during the field survey.
<i>Stylidium striatum</i>	Rosetted perennial, herb, 0.15-0.55 m high,	Brown clay loam over laterite. Hillslopes. Jarrah/Marri forest, Wandoo woodland.	✓		✓		Unlikely to occur; no particularly suitable habitat.	Would not occur.	Unlikely to occur.
<i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>	Erect shrub, 0.2-0.75 m high.	Sand, sandy clay. Winter-wet depressions.	✓	✓	✓		May potentially occur; records within 5 km.	Would not occur.	Recorded.

Appendix 4b

Likelihood of Significant Fauna Occurring in the Survey Area



Family	Species Name	Common Name	Conservation Status		Nature Map	ALA	EPBC Act PMS	DBCA TFDS	Preferred Habitat	Habitat Available in Survey Area?	Likelihood of Occurrence (Prior to Survey)	Likelihood of Occurrence (Post-survey)
			State	Federal								
REPTILES												
Chelidae	<i>Pseudemys umbrina</i>	Western Swamp Turtle	CR	CR	✓	✓		✓	Seasonally-dry wetlands. Now restricted to only two known natural populations, and several translocated sites, none of which occur within the study area.	-	Would not occur	Would not occur
Scincidae	<i>Ctenotus delli</i>	Darling Range Heath Ctenotus	P4		✓			✓	Darling Range in jarrah and marri woodlands over a shrubby understory on lateritic, sandy and clay soils.	-	Unlikely to occur	Unlikely to occur
	<i>Ctenotus gemmula</i>	Jewelled Sandplain Ctenotus	P3			✓			Pale sand-plains supporting heaths in association with Banksia or mallee woodlands.	✓	May potentially occur	May potentially occur
MAMMALS												
Dasyuridae	<i>Dasyurus geoffroii</i>	Western Quoll, Chuditch	VU	VU	✓	✓	✓	✓	Now primarily restricted to jarrah forest and woodland, with smaller numbers in other eucalypt woodland and mallee.	-	Unlikely to occur	Unlikely to occur
	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale, Wambenger	CD			✓		✓	Uses a range of habitats from mallee to rainforest, but prefers continuous open forest with sparse groundcover.	✓	Unlikely to occur	Unlikely to occur
Potoroidae	<i>Bettongia penicillata ogilbyi</i>	Woylie	CR	CR			✓		Formerly widespread, the Woylie is now restricted to three natural populations in south-western Australia (Dryandra Woodland, Tutanning Nature Reserve and Perup Forest), and several fenced reintroduced populations. The three natural sites are all characterised by thickets of <i>Gastrolobium</i> . The species is considered locally extinct.	-	Would not occur	Would not occur
Peramelidae	<i>Isoodon fusciventer</i>	Quenda, Southern Brown Bandicoot	P4		✓	✓		✓	Variety of forest, woodland, shrubland and heath communities, but prefer areas of denser vegetation, including wetland fringes and heathland.	✓	Likely to occur	Recorded
Pseudocheiridae	<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum, Ngwayir	CR	CR	✓			✓	Woodlands and forests dominated by peppermint, tuart, jarrah and/or marri. The species is considered locally extinct.	-	Would not occur	Would not occur
Macropodidae	<i>Setonix brachyurus</i>	Quokka	VU	VU			✓		Now primarily restricted to Rottnest Island and riparian vegetation in jarrah forests of the Darling Scarp, south of Serpentine. The species is considered locally extinct.	-	Would not occur	Would not occur
Muridae	<i>Hydromys chrysogaster</i>	Rakali, Water-rat	P4		✓	✓		✓	Variety of permanent fresh water bodies, ranging from subalpine streams to lakes, creeks, and farm dams. Also on sheltered coastal beaches, mangroves and offshore islands.	✓	Unlikely to occur	Unlikely to occur
BIRDS												
Megapodidae	<i>Leipoa ocellata</i>	Malleefowl	VU	VU	✓	✓			Dense litter-forming scrubs and thickets of mallee <i>Eucalyptus</i> spp. In Western Australia, they are now restricted to, and uncommon within, the semi-arid zone.	-	Would not occur	Would not occur
Anatidae	<i>Oxyura australis</i>	Blue-billed Duck	P4		✓	✓		✓	Large, deep and open freshwater dams and lakes	Marginal	Unlikely to occur	Unlikely to occur
Procellariidae	<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)		EN / MA			✓		Oceanic; southern and western seas north to 32°S. Breeds on south temperate and subantarctic islands. Would only occur on Australian mainland during a catastrophic "wreck" event.	-	Would not occur	Would not occur
Ardeidae	<i>Botaurus poiciptilus</i>	Australasian Bittern	EN	EN	✓	✓	✓		Tall reedbeds, sedges, rushes, cumbungi, lignum and rice fields, as well as drains in tussocky paddocks, and occasionally saltmarsh and brackish wetlands.	-	Would not occur	Would not occur
	<i>Ixobrychus dubius</i>	Australian Little Bittern	P4			✓			Dense vegetation along the margins of rivers, wetlands, urban lakes and drainage lines	✓	Unlikely to occur	Unlikely to occur

Family	Species Name	Common Name	Conservation Status		Nature Map	ALA	EPBC Act PMS	DBCA TFDS	Preferred Habitat	Habitat Available in Survey Area?	Likelihood of Occurrence (Prior to Survey)	Likelihood of Occurrence (Post-survey)
			State	Federal								
	<i>Ixobrychus flavicollis</i>	Black Bittern (SW population)	P2		✓	✓			Vegetated rivers and streams. South-west population patchy, restricted and not in the vicinity of the study area.	-	Would not occur	Would not occur
Thresklornithidae	<i>Plegadis falcinellus</i>	Glossy Ibis	MI	MI	✓	✓			Well-vegetated wetlands and floodplains, occasionally dry grasslands	Marginal	May potentially occur	May potentially occur
Pandionidae	<i>Pandion cristatus</i>	Eastern Osprey	MI	MI	✓		✓	✓	Coastline and large wetlands	-	Unlikely to occur	Unlikely to occur
Falconidae	<i>Falco peregrinus</i>	Peregrine Falcon	OS		✓	✓		✓	Cliffs, gorges, timbered watercourses, plains, wetlands, open woodlands, buildings	✓	Likely to occur	Likely to occur
Scolopacidae	<i>Actitis hypoleucos</i>	Common Sandpiper	MI	MI			✓		Coastal and inland wetlands	-	Unlikely to occur	Unlikely to occur
	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	MI	MI			✓		Coastal and inland wetlands	-	Unlikely to occur	Unlikely to occur
	<i>Calidris ferruginea</i>	Curlew Sandpiper	CR / MI	CR / MI			✓		Mudflats, saltmarshes, coastal and inland wetlands	-	Unlikely to occur	Unlikely to occur
	<i>Calidris melanotos</i>	Pectoral Sandpiper	MI	MI			✓		Shallow fresh waters	-	Unlikely to occur	Unlikely to occur
	<i>Numenius madagascariensis</i>	Eastern Curlew	CR / MI	CR / MI			✓		Estuaries, tidal mudflats, sandspits, saltmarshes, mangroves, bare grassland near water and occasionally fresh or brackish lakes.	Marginal	Unlikely to occur	Unlikely to occur
	<i>Tringa gareola</i>	Wood Sandpiper	MI	MI	✓				Mudflats, muddy margins of wetlands	Marginal	May potentially occur	May potentially occur
	<i>Tringa nebularia</i>	Common Greenshank	MI	MI	✓	✓	✓		Mudflats, margins of fresh and saline wetlands	-	Unlikely to occur	Unlikely to occur
Rostratulidae	<i>Rostratula australis</i>	Australian Painted Snipe	EN	EN			✓		Distribution of the Australian Painted Snipe generally correlates to areas of wetland throughout Western Australia	Marginal	Unlikely to occur	Unlikely to occur
Charadriidae	<i>Thinornis rubicollis</i>	Hooded Plover	P4				✓		Margins of coastline and inland lakes	-	Unlikely to occur	Unlikely to occur
Laridae	<i>Gelochelidon nilotica</i>	Australian Fairy Tern	VU	VU			✓		Coastal waters, bays, inlets, saline or brackish lakes, saltfields and sewage ponds near the coast	-	Would not occur	Would not occur
	<i>Thalasseus bergii</i>	Crested Tern	MI	MI	✓				Coastlines, salt swamps, lakes, larger rivers	-	Would not occur	Would not occur
Cacatuidae	<i>Cacatua pastinator pastinator</i>	Muir's Corella	CD		✓			✓	Eucalypt woodland and surrounding farmland around Tone Bridge, Rock Gully, Frankland River and Lake Muir	-	Would not occur	Would not occur
	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	VU	VU	✓	✓	✓	✓	Occurs primarily in eucalypt forests of the Darling Scarp and far south-west, but in the last 10 years has become more common in suburban Perth.	✓	Likely to occur	Recorded
	<i>Calyptorhynchus baudinii</i>	Baudins Black-Cockatoo	EN	EN	✓	✓	✓	✓	Inhabits mainly eucalypt forests, especially jarrah, marri and karri. It may be found less frequently in woodlands of wandoo, blackbutt, flooded gum, and yate, as well as partially cleared farmlands and urban areas.	✓	Likely to occur	Likely to occur
	<i>Calyptorhynchus latirostris</i>	Carnaby's Black-Cockatoo	EN	EN	✓	✓	✓	✓	Inhabits mainly proteaceous shrubs and heaths, and eucalypt woodlands and forests	✓	Likely to occur	Recorded
Apodidae	<i>Apus pacificus</i>	Fork-tailed Swift	MI	MI		✓	✓		Thought to be exclusively aerial in Australia	✓	May potentially occur	May potentially occur
Dasyornithidae	<i>Dasyornis longirostris</i>	Western Bristlebird	CR	CR		✓			Now restricted to a few disjointed populations in a narrow coastal strip of southern Western Australia, from Two People's Bay to near East Mount Barren in the eastern Fitzgerald River National Park, where they inhabit floristically-diverse low dense coastal heathland.	-	Would not occur	Would not occur

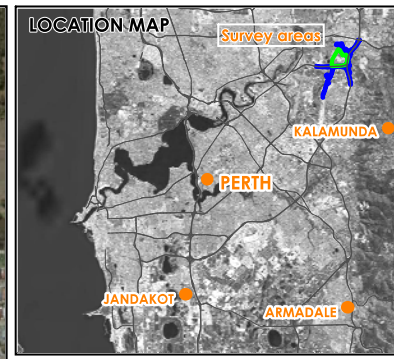
P2 = Priority 2, P3 = Priority 3, P4 = Priority 4, VU = Vulnerable, EN = Endangered, CR = Critically Endangered, MI = Migratory, CD = Conservation Dependant, OS = Other Specially Protected

Appendix 5

Field TEC Assessment Results and TEC Patch Assessment Locations



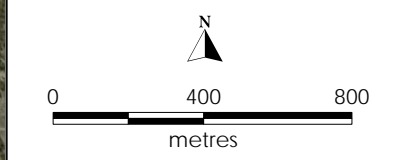
Key Diagnostic Characteristics	GBQ01	GBQ02	GBQ05*	GBQ06	GBQ08	GBQ09	GBQ26	GBQ07*	GBQ27*	GBQ30	GBQ15	GBQ18	GBQ20	GBQ21	GBQ22	GEHRE11	GEHRE12	GBQ19	GBQ17	Contextual (Inferred)	Contextual (Inferred)	Contextual (Inferred)	Contextual (Inferred)	GBQ16	GBQ23	GEHRE09	Map note	
TEC Patch #	1	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	4	5	6	7	7	8	9	10	11	12	13	
1. Location and physical environment: Occurs within the following IBRA region and/or subregions.																												
Swan Coastal Plain IBRA region	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
OR																												
Darling and Whicher scarps of the Jarrah Forest IBRA region																												
2. Soils and Landform																												
Bassendean Sands	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Spearwood Sands																												
Quindalup Sands																												
Ridge Hill Shelf																												
Whicher Scarp																												
Dandaragan Plateau																												
3. Structure: The structure of the ecological community is a low woodland to forest with:																												
3a. A distinctive upper sclerophyllous layer of low trees typically dominated or co-dominated by one or more of the Banksia species identified below;and	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	N	
3b. Emergent trees of medium to tall (>10m) height Eucalyptus or Allocasuarina species may sometimes be present above the Banksia canopy;and	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	
3c. An often highly species-rich understorey that consists of layers of sclerophyllous shrubs and a herbaceous ground layer of cord rushes and sedges.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	
4. Composition																												
4a. The patch must include at least one of the following diagnostic species:	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	N	
<i>Banksia attenuata</i>			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y					
<i>Banksia menziesii</i>	Y	Y		Y	Y		Y	Y			Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y			
<i>Banksia prionotes</i>																												
<i>Banksia ilicifolia</i>																										Y		
4b. If present, emergent tree layer often includes <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> or <i>E. gomphocephala</i> .	Y	N	Y	N	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N
4c. Other trees of medium height that may be present include:	Y	N	Y	Y	Y	N	Y				Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	N	N	
<i>Eucalyptus tottiana</i>	Y			Y						Y	Y						Y	Y			Y	Y	Y		Y			
<i>Nuytsia floribunda</i>			Y					Y																				
<i>Allocasuarina fraseriana</i>	Y				Y		Y		Y	Y	Y	Y	Y	Y	Y						Y	Y	Y	Y				
<i>Callitris arenaria</i>																												
<i>Callitris pyramidalis</i>																												
<i>Xylomelum occidentale</i>																												
4d. Understorey typically contains high to very high diversity of shrub and herb species that often vary from patch to patch	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	
4. Composition Contra-indicators																												
Patches dominated by <i>B. littoralis</i> are NOT part of the Banksia woodlands	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Patches dominated by <i>B. burdettii</i> are NOT part of the Banksia woodlands	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
FCT20c- Eastern shrublands and woodlands corresponds with a separate EPBC listing	N	N	N	N	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
5. Condition Thresholds																												
5a. Must be in 'Good' or better condition	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	
6. Minimum Patch Size																												
Pristine- no minimum patch size limit																												
Excellent- 50m x 100 m	Y																		Y									
Very Good- 100 m x 100 m		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y					



- GEHBI Level 1 Survey area
- GEHBI Level 2 Survey area
- Contextual area (500m buffer)

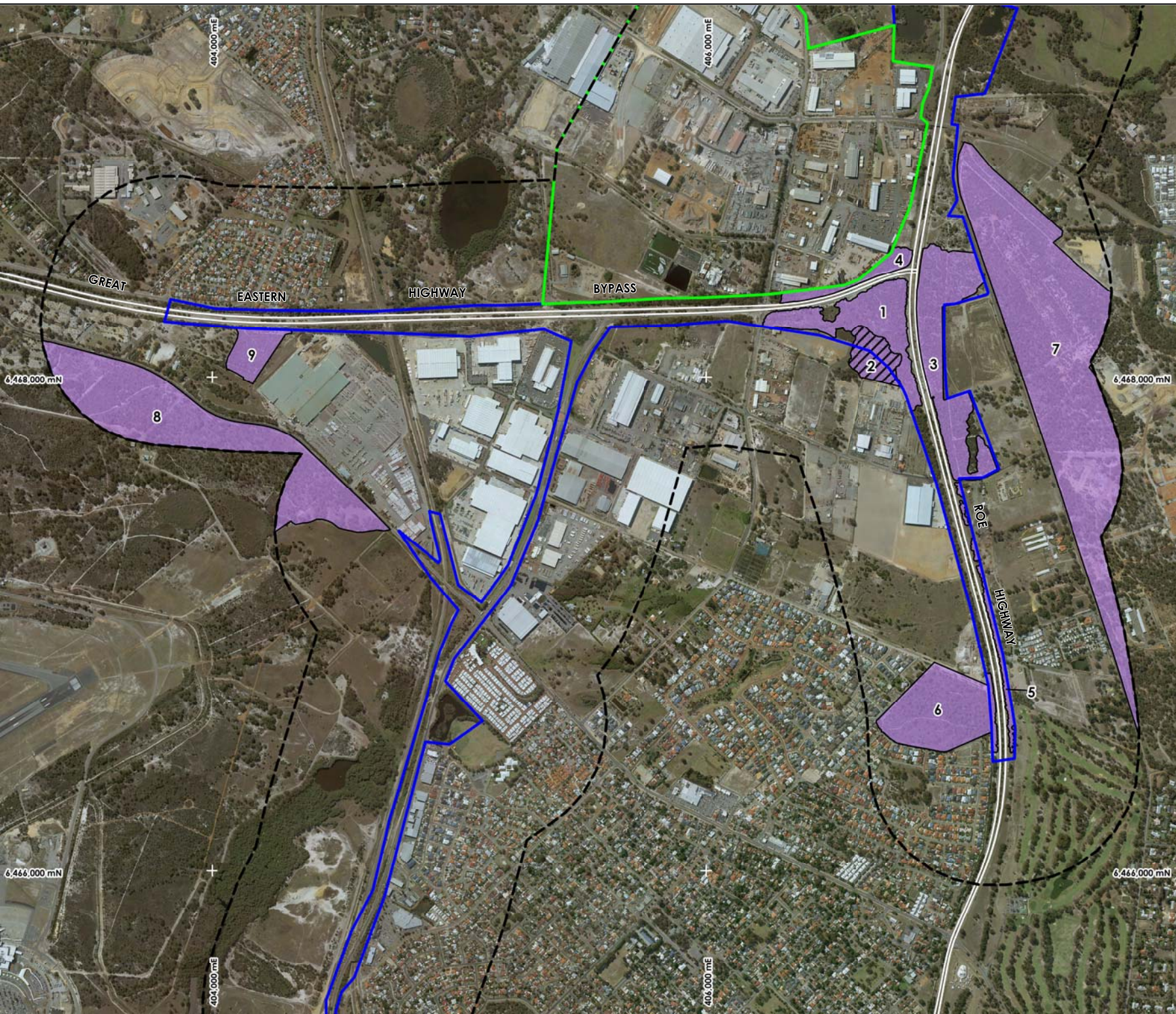
EPBC TEC:

- Banksia woodlands of the Swan Coastal Plain ecological community
- Shrublands and woodlands of the eastern Swan Coastal Plain
- Assessed - TEC not present



Author: R Mason Drawn: M Robinson
 Job No.: 1484
 Date: 25 Aug 2020 Revised: 17 Aug 2021
 Projection: MGA Z50 Scale: 1:20,000 @ A4

**GEHBI Biological
TEC Patch Mapping**





Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia Woodlands of the Swan Coastal Plain ecological community</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>406693</u> Long / Easting: <u>6468253</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 103974

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.	Cause/Agent: e.g. weed type, grazing species, recreation type	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme
 *Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	<small>(on soil surface; e.g. gravel, quartz fields)</small> 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Allocasuarina fraseriana, Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii, Allocasuarina humilis sparse shrubland 3. Hibbertia hypericoides subsp. hypericoides, Bossiaea eriocarpa, Stirlingia latifolia, Scaevola repens var. repens low sparse shrubland 4. Mesomelaena pseudostygia, Lyginia barbata sparse sedgeland
-----------------------------------	--

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Eucalyptus todtiana
Banksia menziesii
Calytrix fraseri
Amphipogon turbinatus
Eremaea pauciflora var. pauciflora

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
----------------------	--	--	--------

Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia woodlands of the Swan Coastal Plain</u>		OBSERVATION DATE: <u>3/11/2020</u>	
New occurrence <input type="checkbox"/> Site ID: _____		CONS STATUS: <u>Priority 3</u>	
OBSERVER/S: <u>Rebecca Mason</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	
EMAIL: <u>bec@biota.net.au</u>			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: Swan Coastal **LGA:** City of Swan Land manager present:

DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input checked="" type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>406693</u>	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: <u>6468253</u>	Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____
Unknown <input type="checkbox"/>	Zone: <u>50</u>	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 103974

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:

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or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Allocasuarina fraseriana, Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii, Allocasuarina humilis sparse shrubland 3. Hibbertia hypericoides subsp. hypericoides, Bossiaea eriocarpa, Stirlingia latifolia, Scaevola repens var. repens low sparse shrubland 4. Mesomelaena pseudostygia, Lyginia barbata sparse sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass
Associated Flora Species:	
Alexgeorgea nitens	
Eucalyptus todtiana	
Banksia menziesii	
Calytrix fraseri	
Amphipogon turbinatus	
Eremaea pauciflora var. pauciflora	
Associated Fauna Species:	
OTHER COMMENTS:	
Recruitment of Banksia seedling present	
ATTACHED:	Map <input type="checkbox"/> Mudmap <input type="checkbox"/> Photo <input type="checkbox"/> GIS data <input checked="" type="checkbox"/> Field notes <input type="checkbox"/>
Other:	Excerpts from Report
COPY SENT TO:	Regional Office <input type="checkbox"/> District Office <input type="checkbox"/> Other:
Submitter of record:	<u>Rebecca Mason</u> Role: <u>Botanist</u>
Signature:	Date submitted: 30/08/2021

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia Woodlands of the Swan Coastal Plain ecological community</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>440668</u> Long / Easting: <u>6468083</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 85820

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.	Cause/Agent: e.g. weed type, grazing species, recreation type	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme
 *Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____%
 Very Good 50%
 Degraded _____%

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. <i>Corymbia calophylla</i> low open woodland; 2. <i>Kingia australis</i> tall sparse shrubland and <i>Xanthorrhoea preissii</i> sparse shrubland; 3. <i>Verticordia densiflora</i> , <i>Banksia dallanneyi</i> var. <i>dallanneyi</i> , <i>Stirlingia latifolia</i> low open shrubland; 4. <i>Caustis dioica</i> , <i>Mesomelaena pseudostygia</i> , <i>M. tetragona</i> , <i>Lyginia imberbis</i> , <i>Patersonia occidentalis</i> var. <i>occidentalis</i> open sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Allocasuarina humilis
Banksia menziesii
Calytrix fraseri
Amphipogon turbinatus
Eremaea pauciflora var. pauciflora
Lambertia multiflora var. darlingensis
Caustis dioica

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:
communities.data@dpaw.wa.gov.au
or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Shrublands and Woodlands of the Eastern Swan Coastal Plain</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>440668</u> Long / Easting: <u>6468083</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 85820

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.	Cause/Agent: e.g. weed type, grazing species, recreation type	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____%
 Very Good 50%
 Degraded _____%



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:

1. *Corymbia calophylla* low open woodland;
2. *Kingia australis* tall sparse shrubland and *Xanthorrhoea preissii* sparse shrubland;
3. *Verticordia densiflora*, *Banksia dallanneyi* var. *dallanneyi*, *Stirlingia latifolia* low open shrubland;
4. *Caustis dioica*, *Mesomelaena pseudostygia*, *M. tetragona*, *Lyginia imberbis*, *Patersonia occidentalis* var. *occidentalis* open sedgeland

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Allocasuarina humilis
Banksia menziesii
Calytrix fraseri
Amphipogon turbinatus
Eremaea pauciflora var. pauciflora
Lambertia multiflora var. darlingensis
Caustis dioica

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:
communities.data@dpaw.wa.gov.au
or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia Woodlands of the Swan Coastal Plain</u>		OBSERVATION DATE: <u>3/11/2020</u>	
New occurrence <input type="checkbox"/> Site ID: _____		CONS STATUS: <u>Priority 3</u>	
OBSERVER/S: <u>Rebecca Mason</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	
EMAIL: <u>bec@biota.net.au</u>			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>		LGA: <u>City of Swan</u>		Land manager present: <input type="checkbox"/>	
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input checked="" type="checkbox"/>		DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/>		GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: <u>440668</u>		No. satellites: _____ Map used: _____	
WGS84 <input type="checkbox"/>		Long / Easting: <u>6468083</u>		Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____	
Unknown <input type="checkbox"/>		Zone: <u>50</u>			

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 85820

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. <i>Corymbia calophylla</i> low open woodland; 2. <i>Kingia australis</i> tall sparse shrubland and <i>Xanthorrhoea preissii</i> sparse shrubland; 3. <i>Verticordia densiflora</i> , <i>Banksia dallanneyi</i> var. <i>dallanneyi</i> , <i>Stirlingia latifolia</i> low open shrubland; 4. <i>Caustis dioica</i> , <i>Mesomelaena pseudostygia</i> , <i>M. tetragona</i> , <i>Lyginia imberbis</i> , <i>Patersonia occidentalis</i> var. <i>occidentalis</i> open sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Allocasuarina humilis
Banksia menziesii
Calytrix fraseri
Amphipogon turbinatus
Eremaea pauciflora var. pauciflora
Lambertia multiflora var. darlingensis
Caustis dioica

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Eastern Shrublands and Woodlands</u>		OBSERVATION DATE: <u>3/11/2020</u>	
New occurrence <input type="checkbox"/> Site ID: _____		CONS STATUS: <u>Threatened-Critically Endangered</u>	
OBSERVER/S: <u>Rebecca Mason</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	
EMAIL: <u>bec@biota.net.au</u>			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>		LGA: <u>City of Swan</u>		Land manager present: <input type="checkbox"/>	
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input checked="" type="checkbox"/>		DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM's <input checked="" type="checkbox"/>		GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: <u>440668</u>		No. satellites: _____ Map used: _____	
WGS84 <input type="checkbox"/>		Long / Easting: <u>6468083</u>		Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____	
Unknown <input type="checkbox"/>		Zone: <u>50</u>			

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 85820

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:

1. *Corymbia calophylla* low open woodland;
2. *Kingia australis* tall sparse shrubland and *Xanthorrhoea preissii* sparse shrubland;
3. *Verticordia densiflora*, *Banksia dallanneyi* var. *dallanneyi*, *Stirlingia latifolia* low open shrubland;
4. *Caustis dioica*, *Mesomelaena pseudostygia*, *M. tetragona*, *Lyginia imberbis*, *Patersonia occidentalis* var. *occidentalis* open sedgeland

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Allocasuarina humilis
Banksia menziesii
Calytrix fraseri
Amphipogon turbinatus
Eremaea pauciflora var. pauciflora
Lambertia multiflora var. darlingensis
Caustis dioica

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Low lying Banksia attenuata woodlands or shrublands ('FCT 21c')</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Priority 3</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>407044</u> Long / Easting: <u>6468414</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 25480

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme
 *Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Allocasuarina fraseriana, Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland;
	2. Xanthorrhoea preissii, Allocasuarina humilis sparse shrubland
	3. Hibbertia hypericoides subsp. hypericoides, Bossiaea eriocarpa, Stirlingia latifolia, Scaevola repens var. repens low sparse shrubland
	4. Mesomelaena pseudostygia, Lyginia barbata sparse sedgeland

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass
Associated Flora Species:	
Alexgeorgea nitens	
Eucalyptus todtiana	
Banksia menziesii	
Calytrix fraseri	
Amphipogon turbinatus	
Eremaea pauciflora var. pauciflora	
Associated Fauna Species:	
OTHER COMMENTS:	
Recruitment of Banksia seedling present	
ATTACHED:	Map <input type="checkbox"/> Mudmap <input type="checkbox"/> Photo <input type="checkbox"/> GIS data <input checked="" type="checkbox"/> Field notes <input type="checkbox"/>
Other:	Excerpts from Report
COPY SENT TO:	Regional Office <input type="checkbox"/> District Office <input type="checkbox"/> Other:
Submitter of record:	<u>Rebecca Mason</u> Role: <u>Botanist</u>
Signature:	Date submitted: 30/08/2021

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia Woodlands of the Swan Coastal Plain ecological community</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>406931</u> Long / Easting: <u>6468069</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 125000

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.	Cause/Agent: e.g. weed type, grazing species, recreation type	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii and Allocasuarina humilis sparse shrubland 3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallannevi low sparse shrubland 4. Mesomelaena pseudostygia, Schoenus efoliatus sparse sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Hemiandra linearis
Schoenus efoliatus
Blanco canescens
Caustis dioica
Stirlingia latifolia

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
----------------------	--	--	--------

Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia woodlands of the Swan Coastal Plain</u>		OBSERVATION DATE: <u>3/11/2020</u>	
New occurrence <input type="checkbox"/> Site ID: _____		CONS STATUS: <u>Priority 3</u>	
OBSERVER/S: <u>Rebecca Mason</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	
EMAIL: <u>bec@biota.net.au</u>			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>		LGA: <u>City of Swan</u>		Land manager present: <input type="checkbox"/>	
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input checked="" type="checkbox"/>		DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/>		GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: <u>406931</u>		No. satellites: _____ Map used: _____	
WGS84 <input type="checkbox"/>		Long / Easting: <u>6468069</u>		Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____	
Unknown <input type="checkbox"/>		Zone: <u>50</u>			

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 125000

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Allocasuarina fraseriana, Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland;
	2. Xanthorrhoea preissii, Allocasuarina humilis sparse shrubland
	3. Hibbertia hypericoides subsp. hypericoides, Bossiaea eriocarpa, Stirlingia latifolia, Scaevola repens var. repens low sparse shrubland
	4. Mesomelaena pseudostygia, Lyginia barbata sparse sedgeland

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Eucalyptus todtiana
Banksia menziesii
Calytrix fraseri
Amphipogon turbinatus
Eremaea pauciflora var. pauciflora

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia attenuata woodlands over species rich dense shrublands ('FCT 20a')</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>406928</u> Long / Easting: <u>6468072</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 81320

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____%
 Very Good 50%
 Degraded _____%



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii and Allocasuarina humilis sparse shrubland 3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallannevi low sparse shrubland 4. Mesomelaena pseudostygia, Schoenus efoliatus sparse sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass
Associated Flora Species:	
Alexgeorgea nitens	
Hemiandra linearis	
Schoenus efoliatus	
Blanco canescens	
Caustis dioica	
Stirlingia latifolia	
Associated Fauna Species:	
OTHER COMMENTS:	
Recruitment of Banksia seedling present	
ATTACHED:	Map <input type="checkbox"/> Mudmap <input type="checkbox"/> Photo <input type="checkbox"/> GIS data <input checked="" type="checkbox"/> Field notes <input type="checkbox"/>
Other:	Excerpts from Report
COPY SENT TO:	Regional Office <input type="checkbox"/> District Office <input type="checkbox"/> Other:
Submitter of record:	<u>Rebecca Mason</u> Role: <u>Botanist</u>
Signature:	Date submitted: 30/08/2021

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia woodlands of the Swan Coastal Plain</u>		OBSERVATION DATE: <u>3/11/2020</u>	
New occurrence <input type="checkbox"/> Site ID: _____		CONS STATUS: <u>Priority 3</u>	
OBSERVER/S: <u>Rebecca Mason</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	
EMAIL: <u>bec@biota.net.au</u>			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>		LGA: <u>City of Swan</u>		Land manager present: <input type="checkbox"/>	
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input checked="" type="checkbox"/>		DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/>		GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: <u>406597</u>		No. satellites: _____ Map used: _____	
WGS84 <input type="checkbox"/>		Long / Easting: <u>6468372</u>		Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____	
Unknown <input type="checkbox"/>		Zone: <u>50</u>			

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 22660

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good _____% Completely Degraded _____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Allocasuarina fraseriana, Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii, Allocasuarina humilis sparse shrubland 3. Hibbertia hypericoides subsp. hypericoides, Bossiaea eriocarpa, Stirlingia latifolia, Scaevola repens var. repens low sparse shrubland 4. Mesomelaena pseudostygia, Lyginia barbata sparse sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass
Associated Flora Species:	
Alexgeorgea nitens	
Eucalyptus todtiana	
Banksia menziesii	
Calytrix fraseri	
Amphipogon turbinatus	
Eremaea pauciflora var. pauciflora	
Associated Fauna Species:	
OTHER COMMENTS:	
Recruitment of Banksia seedling present	
ATTACHED:	Map <input type="checkbox"/> Mudmap <input type="checkbox"/> Photo <input type="checkbox"/> GIS data <input checked="" type="checkbox"/> Field notes <input type="checkbox"/>
Other:	Excerpts from Report
COPY SENT TO:	Regional Office <input type="checkbox"/> District Office <input type="checkbox"/> Other:
Submitter of record:	<u>Rebecca Mason</u> Role: <u>Botanist</u>
Signature:	Date submitted: 30/08/2021

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia Woodlands of the Swan Coastal Plain ecological community</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>406597</u> Long / Easting: <u>6468372</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 22660

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.	Cause/Agent: e.g. weed type, grazing species, recreation type	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:

1. Allocasuarina fraseriana, Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland;
2. Xanthorrhoea preissii, Allocasuarina humilis sparse shrubland
3. Hibbertia hypericoides subsp. hypericoides, Bossiaea eriocarpa, Stirlingia latifolia, Scaevola repens var. repens low sparse shrubland
4. Mesomelaena pseudostygia, Lyginia barbata sparse sedgeland

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Eucalyptus todtiana
Banksia menziesii
Calytrix fraseri
Amphipogon turbinatus
Eremaea pauciflora var. pauciflora

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia Woodlands of the Swan Coastal Plain ecological community</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>407178</u> Long / Easting: <u>6466943</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 16000

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.	Cause/Agent: e.g. weed type, grazing species, recreation type	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme
 *Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii and Allocasuarina humilis sparse shrubland 3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallannevi low sparse shrubland 4. Mesomelaena pseudostygia, Schoenus efoliatus sparse sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Hemiandra linearis
Schoenus efoliatus
Blanco canescens
Caustis dioica
Stirlingia latifolia

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
----------------------	--	--	--------

Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia woodlands of the Swan Coastal Plain</u>		OBSERVATION DATE: <u>3/11/2020</u>	
New occurrence <input type="checkbox"/> Site ID: _____		CONS STATUS: <u>Priority 3</u>	
OBSERVER/S: <u>Rebecca Mason</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	
EMAIL: <u>bec@biota.net.au</u>			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>		LGA: <u>City of Swan</u>		Land manager present: <input type="checkbox"/>	
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input checked="" type="checkbox"/>		DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/>		GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: <u>407178</u>		No. satellites: _____ Map used: _____	
WGS84 <input type="checkbox"/>		Long / Easting: <u>6466943</u>		Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____	
Unknown <input type="checkbox"/>		Zone: <u>50</u>			

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 16000

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii and Allocasuarina humilis sparse shrubland 3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallannevi low sparse shrubland 4. Mesomelaena pseudostygia, Schoenus efoliatus sparse sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Hemiandra linearis
Schoenus efoliatus
Blanco canescens
Caustis dioica
Stirlingia latifolia

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				
COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:		

Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia attenuata woodlands over species rich dense shrublands ('FCT 20a')</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>407178</u> Long / Easting: <u>6466943</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 16000

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii and Allocasuarina humilis sparse shrubland 3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallannevi low sparse shrubland 4. Mesomelaena pseudostygia, Schoenus efoliatus sparse sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Hemiandra linearis
Schoenus efoliatus
Blanco canescens
Caustis dioica
Stirlingia latifolia

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia Woodlands of the Swan Coastal Plain ecological community</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>406980</u> Long / Easting: <u>6466639</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 117840

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme
 *Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50%

 Good ____%

 Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:

1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland;
2. Xanthorrhoea preissii and Allocasuarina humilis sparse shrubland
3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallannevi low sparse shrubland
4. Mesomelaena pseudostygia, Schoenus efoliatus sparse sedgeland

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Hemiandra linearis
Schoenus efoliatus
Blanco canescens
Caustis dioica
Stirlingia latifolia

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>05/05/2021</u>

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia woodlands of the Swan Coastal Plain</u>		OBSERVATION DATE: <u>3/11/2020</u>	
New occurrence <input type="checkbox"/> Site ID: _____		CONS STATUS: <u>Priority 3</u>	
OBSERVER/S: <u>Rebecca Mason</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	
EMAIL: <u>bec@biota.net.au</u>			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>		LGA: <u>City of Swan</u>		Land manager present: <input type="checkbox"/>	
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input checked="" type="checkbox"/>		DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/>		GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: <u>406980</u>		No. satellites: _____ Map used: _____	
WGS84 <input type="checkbox"/>		Long / Easting: <u>6466639</u>		Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____	
Unknown <input type="checkbox"/>		Zone: <u>50</u>			

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 117840

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:

1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland;
2. Xanthorrhoea preissii and Allocasuarina humilis sparse shrubland
3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallannevi low sparse shrubland
4. Mesomelaena pseudostygia, Schoenus foliatus sparse sedgeland

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Hemiandra linearis
Schoenus efoliatus
Blanco canescens
Caustis dioica
Stirlingia latifolia

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

Please return form to:
communities.data@dpaw.wa.gov.au
 or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia attenuata woodlands over species rich dense shrublands ('FCT 20a')</u>	OBSERVATION DATE: <u>3/11/2020</u>
New occurrence <input type="checkbox"/> Site ID: _____	CONS STATUS: <u>Threatened- Endangered</u>
OBSERVER/S: <u>Rebecca Mason</u>	PHONE: <u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>
EMAIL: <u>bec@biota.net.au</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Intersection of Roe Highway and Great Eastern Bypass. Directly south of the Great Eastern Bypass and directly east of Stirling Crescent.

Reserve No: _____

DISTRICT: <u>Swan Coastal</u>	LGA: <u>City of Swan</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input checked="" type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>406980</u> Long / Easting: <u>6466639</u> Zone: <u>50</u>	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): 117840

EFFORT: Time spent surveying (minutes): 0 No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing- complete vegetation clearing	Main Roads WA	unsure%	N	H	S-M
• Human movement	Dumped rubbish	5%	L	L	M-L
• Introduced fauna	Goats	100%	L	L	M-L
• Weed invasion	Ehrharta calycina	50%	L	H	M
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**
 *Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good 50% Degraded _____%



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent 50% Good ____% Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input checked="" type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

Undulating, sandy plain.

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:	1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii low open woodland; 2. Xanthorrhoea preissii and Allocasuarina humilis sparse shrubland 3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallannevi low sparse shrubland 4. Mesomelaena pseudostygia, Schoenus efoliatus sparse sedgeland
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FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:	
Adjacent Landuse:	Great Eastern Highway Bypass

Associated Flora Species:
Alexgeorgea nitens
Hemiandra linearis
Schoenus efoliatus
Blanco canescens
Caustis dioica
Stirlingia latifolia

Associated Fauna Species:

OTHER COMMENTS:
Recruitment of Banksia seedling present

ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input checked="" type="checkbox"/>	Field notes <input type="checkbox"/>
Other:	Excerpts from Report				

COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:
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Submitter of record:	<u>Rebecca Mason</u>	Role:	<u>Botanist</u>
Signature:		Date submitted:	<u>30/08/2021</u>

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Appendix 6

Vegetation Structural Classification and Condition Ranking



Vegetation Structural Classes*

Stratum	Canopy Cover (%)				
	70-100%	30-70%	10-30%	2-10%	<2%
Trees over 30 m	Tall closed forest	Tall open forest	Tall woodland	Tall open woodland	Scattered tall trees
Trees 10-30 m	Closed forest	Open forest	Woodland	Open woodland	Scattered trees
Trees under 10 m	Low closed forest	Low open forest	Low woodland	Low open woodland	Scattered low trees
Tree Mallee	Closed tree mallee	Tree mallee	Open tree mallee	Very open tree mallee	Scattered tree mallee
Shrub Mallee	Closed shrub mallee	Shrub mallee	Open shrub mallee	Very open shrub mallee	Scattered shrub mallee
Shrubs over 2 m	Tall closed scrub	Tall open scrub	Tall shrubland	Tall open shrubland	Scattered tall shrubs
Shrubs 1-2 m	Closed heath	Open heath	Shrubland	Open shrubland	Scattered shrubs
Shrubs under 1 m	Low closed heath	Low open heath	Low shrubland	Low open shrubland	Scattered low shrubs
Hummock grasses	Closed hummock grassland	Hummock grassland	Open hummock grassland	Very open hummock grassland	Scattered hummock grasses
Grasses, Sedges, Herbs	Closed tussock grassland / bunch grassland / sedgeland / herbland	Tussock grassland / bunch grassland / sedgeland / herbland	Open tussock grassland / bunch grassland / sedgeland / herbland	Very open tussock grassland / bunch grassland / sedgeland / herbland	Scattered tussock grasses / bunch grasses / sedges / herbs

- Based on Keighery (1994), adapted from Muir (1977), and Aplin's (1979) modification of the vegetation classification system of Specht (1970):
 - Keighery B.J. (1994). *Bushland Plant Survey: A Guide for Community Surveys*. Wildflower Society of Western Australia, Perth WA;
 - Aplin T.E.H. (1979). The Flora. Chapter 3 In O'Brien, B.J. (ed.) (1979). *Environment and Science*. University of Western Australia Press;
 - Muir B.G. (1977). Biological Survey of the Western Australian Wheatbelt. Part II: Vegetation and habitat of Bendering Reserve. *Records of the Western Australian Museum, Suppl. No. 3*;
 - Specht R.L. (1970). Vegetation. In *The Australian Environment*. 4th edn (Ed. G.W. Leeper). Melbourne.

Keighery (1994) Vegetation Condition Scale (WA Planning Commission 2000b)	Indicative condition measures/thresholds	
	Typical native vegetation composition	Typical weed cover
Pristine No obvious signs of disturbance.	Native plant species diversity fully retained or almost so ¹	Zero or almost no weed cover/abundance
Excellent Vegetation structure intact. Disturbance only affecting individual species. Weeds are non-aggressive species.	High native plant species diversity ¹	Less than 10%
Very Good Vegetation structure altered. Obvious signs of disturbance; e.g. from repeated fires, dieback, logging, grazing. Aggressive weeds present.	Moderate native plant species diversity ¹	5 – 20%
Good Vegetation structure altered but retains basic vegetation structure or ability to regenerate it. Obvious signs of disturbance, e.g. from partial clearing, dieback, logging, grazing. Presence of very aggressive weeds.	Low native plant species Diversity ¹	5 – 50%
Degraded Basic vegetation structure severely impacted by disturbance. Requires intensive management. Disturbance evident such as partial clearing, dieback, logging and grazing. Presence of very aggressive weeds at high density.	Very low native plant species diversity ¹	20 – 70%
Completely Degraded Vegetation structure is no longer intact and the area is completely or almost completely without native flora. Equivalent to 'Parkland Cleared'.	Very low to no native species diversity ¹	Greater than 70%

¹ Relative to expected natural range of diversity for that vegetation unit (e.g. Floristic Community Type), where comparative data exists.

Appendix 7

Vascular Flora Species Recorded During the Current Survey



Family	Species	Status	Level 1 Survey Area	Level 2 Survey Area
Amaranthaceae	<i>Alternanthera denticulata</i>		Y	Y
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced (weed)	Y	Y
Anarthriaceae	<i>Lyginia barbata</i>			Y
Anarthriaceae	<i>Lyginia imberbis</i>			Y
Apiaceae	<i>Apium annuum</i>			Y
Apiaceae	<i>Xanthosia huegelii</i>			Y
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced (weed)	Y	Y
Araceae	* <i>Zantedeschia aethiopica</i>	Introduced (Declared Pest)		Y
Araliaceae	* <i>Hydrocotyle ranunculoides</i>	Introduced (Declared)		Y
Araliaceae	<i>Trachymene pilosa</i>			Y
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS, Declared Pest)		Y
Asparagaceae	<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>			Y
Asparagaceae	<i>Laxmannia sessiliflora</i> subsp. <i>australis</i>			Y
Asparagaceae	<i>Lomandra caespitosa</i>			Y
Asparagaceae	<i>Lomandra hermaphrodita</i>			Y
Asparagaceae	<i>Lomandra integra</i>			Y
Asparagaceae	<i>Lomandra micrantha</i> subsp. <i>micrantha</i>		Y	Y
Asparagaceae	<i>Lomandra nigricans</i>			Y
Asparagaceae	<i>Lomandra preissii</i>			Y
Asparagaceae	<i>Lomandra sericea</i>			Y
Asparagaceae	<i>Lomandra</i> sp.			Y
Asparagaceae	<i>Lomandra suaveolens</i>			Y
Asparagaceae	<i>Thysanotus dichotomus</i>			Y
Asparagaceae	<i>Thysanotus manglesianus</i>			Y
Asparagaceae	<i>Thysanotus patersonii</i>			Y
Asparagaceae	<i>Thysanotus</i> sp.			Y

Asparagaceae	<i>Thysanotus sparteus</i>			Y
Asparagaceae	<i>Thysanotus thyrsoides</i>			Y
Asparagaceae	<i>Thysanotus triandrus</i>			Y
Asteraceae	* <i>Conyza bonariensis</i>	Introduced (weed)	Y	Y
Asteraceae	* <i>Cotula turbinata</i>	Introduced (weed)	Y	Y
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced (weed)		Y
Asteraceae	* <i>Hypochaeris radicata</i>	Introduced (weed)		Y
Asteraceae	* <i>Leontodon rhagadioloides</i>	Introduced (weed)	Y	Y
Asteraceae	* <i>Sonchus asper</i>	Introduced (weed)		Y
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced (weed)		Y
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced (weed)		Y
Asteraceae	<i>Hyalosperma cotula</i>			Y
Asteraceae	<i>Millotia tenuifolia</i>			Y
Asteraceae	<i>Podotheca angustifolia</i>			Y
Asteraceae	<i>Podotheca gnaphalioides</i>			Y
Asteraceae	<i>Pseudognaphalium luteoalbum</i>			Y
Asteraceae	<i>Pterochaeta paniculata</i>			Y
Asteraceae	<i>Quinetia urvillei</i>			Y
Asteraceae	<i>Senecio condylus</i>		Y	Y
Asteraceae	<i>Siloxerus humifusus</i>			Y
Bignoniaceae	* <i>Campsis radicans</i>	Introduced (weed)		Y
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared)	Y	Y
Brassicaceae	* <i>Raphanus raphanistrum</i>	Introduced (weed)	Y	Y
Campanulaceae	* <i>Monopsis debilis</i> var. <i>depressa</i>	Introduced (weed)		Y
Campanulaceae	* <i>Wahlenbergia capensis</i>	Introduced (weed)		Y
Campanulaceae	<i>Isotoma hypocrateriformis</i>			Y
Campanulaceae	<i>Lobelia anceps</i>			Y

Campanulaceae	<i>Lobelia tenuior</i>			Y
Campanulaceae	<i>Wahlenbergia preissii</i>			Y
Caryophyllaceae	* <i>Polycarpon tetraphyllum</i>	Introduced (weed)	Y	Y
Caryophyllaceae	* <i>Sagina apetala</i>	Introduced (weed)	Y	Y
Caryophyllaceae	* <i>Silene gallica</i> var. <i>gallica</i>	Introduced (weed)		Y
Caryophyllaceae	* <i>Stellaria pallida</i>	Introduced (weed)	Y	Y
Casuarinaceae	<i>Allocasuarina fraseriana</i>			Y
Casuarinaceae	<i>Allocasuarina humilis</i>			Y
Casuarinaceae	<i>Casuarina ? equisetifolia</i>			Y
Casuarinaceae	<i>Casuarina obesa</i>			Y
Centrolepidaceae	<i>Aphelia cyperoides</i>			Y
Centrolepidaceae	<i>Centrolepis aristata</i>			Y
Centrolepidaceae	<i>Centrolepis drummondiana</i>			Y
Centrolepidaceae	<i>Centrolepis inconspicua</i>			Y
Centrolepidaceae	<i>Centrolepis</i> sp.			Y
Chenopodiaceae	* <i>Chenopodium album</i>	Introduced (weed)		Y
Colchicaceae	<i>Burchardia congesta</i>		Y	Y
Convolvulaceae	* <i>Ipomoea cairica</i>	Introduced (weed)		Y
Crassulaceae	<i>Crassula colorata</i>			Y
Crassulaceae	<i>Crassula colorata</i> var. <i>colorata</i>			Y
Crassulaceae	<i>Crassula decumbens</i> var. <i>decumbens</i>		Y	Y
Cupressaceae	<i>Callitris arenaria</i>			Y
Cupressaceae	<i>Callitris preissii</i>			Y
Cupressaceae	<i>Callitris pyramidalis</i>			Y
Cyperaceae	* <i>Cyperus tenellus</i>	Introduced (weed)		Y
Cyperaceae	* <i>Isolepis prolifera</i>	Introduced (weed)		Y
Cyperaceae	<i>Baumea rubiginosa</i>			Y

Cyperaceae	<i>Bolboschoenus caldwellii</i>		Y	Y
Cyperaceae	<i>Caustis dioica</i>			Y
Cyperaceae	<i>Chaetospora curvifolia</i>		Y	-
Cyperaceae	<i>Chorizandra enodis</i>			Y
Cyperaceae	<i>Cyathochaeta avenacea</i>			Y
Cyperaceae	<i>Cyperus alterniflorus</i>			Y
Cyperaceae	<i>Gahnia decomposita</i>			Y
Cyperaceae	<i>Isolepis cernua</i> var. <i>setiformis</i>		Y	Y
Cyperaceae	<i>Isolepis cyperoides</i>			Y
Cyperaceae	<i>Isolepis marginata</i>			Y
Cyperaceae	<i>Isolepis</i> sp.			Y
Cyperaceae	<i>Lepidosperma</i> ? <i>pubisquameum</i>			Y
Cyperaceae	<i>Lepidosperma apricola</i>			Y
Cyperaceae	<i>Lepidosperma leptostachyum</i>			Y
Cyperaceae	<i>Lepidosperma longitudinale</i>			Y
Cyperaceae	<i>Lepidosperma oldhamii/calculicola</i>			Y
Cyperaceae	<i>Lepidosperma pubisquameum</i>			Y
Cyperaceae	<i>Lepidosperma</i> sp.			Y
Cyperaceae	<i>Lepidosperma striatum</i>			Y
Cyperaceae	<i>Mesomelaena pseudostygia</i>			Y
Cyperaceae	<i>Mesomelaena tetragona</i>			Y
Cyperaceae	<i>Schoenus asperocarpus</i>			Y
Cyperaceae	<i>Schoenus caespititius</i>			Y
Cyperaceae	<i>Schoenus clandestinus</i>			Y
Cyperaceae	<i>Schoenus efoliatus</i>			Y
Cyperaceae	<i>Schoenus pedicellatus</i>			Y
Cyperaceae	<i>Schoenus rigens</i>			Y

Cyperaceae	<i>Schoenus sculptus</i>			Y
Cyperaceae	<i>Tetraria octandra</i>			Y
Dasypogonaceae	<i>Calectasia narragara</i>			Y
Dasypogonaceae	<i>Dasypogon bromeliifolius</i>			Y
Dasypogonaceae	<i>Dasypogon obliquifolius</i>			Y
Dasypogonaceae	<i>Kingia australis</i>			Y
Dennstaedtiaceae	<i>Pteridium esculentum</i>			Y
Dilleniaceae	<i>Hibbertia huegelii</i>			Y
Dilleniaceae	<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>			Y
Dilleniaceae	<i>Hibbertia hypericoides</i> subsp. <i>septentrionalis</i>			Y
Dilleniaceae	<i>Hibbertia striata</i>			Y
Dioscoreaceae	<i>Dioscorea hastifolia</i>			Y
Droseraceae	<i>Drosera drummondii</i>			Y
Droseraceae	<i>Drosera erythrorhiza</i>			Y
Droseraceae	<i>Drosera gigantea</i>			Y
Droseraceae	<i>Drosera glanduligera</i>			Y
Droseraceae	<i>Drosera macrantha</i>			Y
Droseraceae	<i>Drosera menziesii</i>			Y
Droseraceae	<i>Drosera micrantha</i>			Y
Droseraceae	<i>Drosera porrecta</i>			Y
Ericaceae	<i>Conostephium pendulum</i>			Y
Ericaceae	<i>Lysinema pentapetalum</i>			Y
Ericaceae	<i>Styphelia conostephioides</i>			Y
Ericaceae	<i>Styphelia xerophylla</i>			Y
Euphorbiaceae	* <i>Euphorbia peplus</i>	Introduced (weed)	Y	Y
Euphorbiaceae	* <i>Euphorbia terracina</i>	Introduced (weed)	Y	Y
Euphorbiaceae	* <i>Ricinus communis</i>	Introduced (weed)	Y	Y

Euphorbiaceae	<i>Amperea ericoides</i>			Y
Euphorbiaceae	<i>Euphorbia drummondii</i>		Y	Y
Euphorbiaceae	<i>Monotaxis grandiflora</i> var. <i>grandiflora</i>			Y
Euphorbiaceae	<i>Stachystemon vermicularis</i>			Y
Fabaceae	* <i>Acacia iteaphylla</i>	Introduced (weed)		Y
Fabaceae	* <i>Acacia longifolia</i> subsp. <i>longifolia</i>	Introduced (weed)		Y
Fabaceae	* <i>Chamaecytisus palmensis</i>	Introduced (weed)		Y
Fabaceae	* <i>Lotus subbiflorus</i>	Introduced (weed)		Y
Fabaceae	* <i>Lupinus angustifolius</i>	Introduced (weed)	Y	Y
Fabaceae	* <i>Medicago polymorpha</i>	Introduced (weed)		Y
Fabaceae	* <i>Trifolium angustifolium</i> var. <i>angustifolium</i>	Introduced (weed)	Y	Y
Fabaceae	* <i>Trifolium arvense</i> var. <i>arvense</i>	Introduced (weed)	Y	Y
Fabaceae	* <i>Trifolium campestre</i> var. <i>campestre</i>	Introduced (weed)	Y	Y
Fabaceae	<i>Acacia applanata</i>			Y
Fabaceae	<i>Acacia huegelii</i>			Y
Fabaceae	<i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>			Y
Fabaceae	<i>Acacia pulchella</i> var. <i>glaberrima</i>			Y
Fabaceae	<i>Acacia saligna</i>			Y
Fabaceae	<i>Acacia sessilis</i>			Y
Fabaceae	<i>Acacia willdenowiana</i>			Y
Fabaceae	<i>Aotus cordifolia</i>			Y
Fabaceae	<i>Bossiaea eriocarpa</i>			Y
Fabaceae	<i>Cristonia biloba</i>			Y
Fabaceae	<i>Cristonia biloba</i> subsp. <i>biloba</i>			Y
Fabaceae	<i>Daviesia</i> ? <i>preissii</i>			Y
Fabaceae	<i>Daviesia divaricata</i> subsp. <i>divaricata</i>			Y
Fabaceae	<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>			Y

Fabaceae	<i>Daviesia physodes</i>			Y
Fabaceae	<i>Daviesia podophylla</i>			Y
Fabaceae	<i>Daviesia preissii</i>			Y
Fabaceae	<i>Daviesia</i> sp.			Y
Fabaceae	<i>Daviesia triflora</i>			Y
Fabaceae	<i>Gastrolobium linearifolium</i>			Y
Fabaceae	<i>Gompholobium tomentosum</i>			Y
Fabaceae	<i>Hardenbergia comptoniana</i>			Y
Fabaceae	<i>Hovea trisperma</i> var. <i>trisperma</i>			Y
Fabaceae	<i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>			Y
Fabaceae	<i>Jacksonia floribunda</i>		Y	Y
Fabaceae	<i>Jacksonia lehmannii</i>			Y
Fabaceae	<i>Jacksonia sternbergiana</i>		Y	Y
Fabaceae	<i>Kennedia prostrata</i>			Y
Fabaceae	<i>Sphaerolobium medium</i>			Y
Fabaceae	<i>Viminaria juncea</i>			Y
Geraniaceae	* <i>Pelargonium capitatum</i>	Introduced (weed)	Y	Y
Geraniaceae	<i>Geranium retrorsum</i>		Y	Y
Goodeniaceae	<i>Dampiera linearis</i>			Y
Goodeniaceae	<i>Goodenia micrantha</i>			Y
Goodeniaceae	<i>Scaevola canescens</i>			Y
Goodeniaceae	<i>Scaevola glandulifera</i>			Y
Goodeniaceae	<i>Scaevola repens</i> var. <i>repens</i>			Y
Haemodoraceae	<i>Anigozanthos manglesii</i>			Y
Haemodoraceae	<i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>			Y
Haemodoraceae	<i>Blancoa canescens</i>			Y
Haemodoraceae	<i>Conostylis aurea</i>			Y

Haemodoraceae	<i>Conostylis candicans</i>			Y
Haemodoraceae	<i>Conostylis juncea</i>			Y
Haemodoraceae	<i>Conostylis setigera</i> subsp. <i>setigera</i>			Y
Haemodoraceae	<i>Conostylis</i> sp.			Y
Haemodoraceae	<i>Haemodorum</i> ? <i>discolor</i>			Y
Haemodoraceae	<i>Haemodorum</i> ? <i>laxum</i>			Y
Haemodoraceae	<i>Haemodorum</i> ? <i>spicatum</i>			Y
Haemodoraceae	<i>Haemodorum</i> ? <i>venosum</i>			Y
Haemodoraceae	<i>Haemodorum discolor</i>			Y
Haemodoraceae	<i>Haemodorum paniculatum</i>			Y
Haemodoraceae	<i>Haemodorum</i> sp.			Y
Haemodoraceae	<i>Haemodorum sparsiflorum</i>			Y
Haemodoraceae	<i>Haemodorum spicatum</i>			Y
Haemodoraceae	<i>Phlebocarya ciliata</i>			Y
Haemodoraceae	<i>Phlebocarya filifolia</i>			Y
Haloragaceae	<i>Gonocarpus nodulosus</i>			Y
Hemerocallidaceae	<i>Arnocrinum preissii</i>			Y
Hemerocallidaceae	<i>Caesia occidentalis</i>			Y
Hemerocallidaceae	<i>Caesia</i> sp.			Y
Hemerocallidaceae	<i>Caesia</i> sp. Wongan (K.F. Kenneally 8820)			Y
Hemerocallidaceae	<i>Corynotheca micrantha</i> var. <i>elongata</i>			Y
Hemerocallidaceae	<i>Corynotheca micrantha</i> var. <i>micrantha</i>			Y
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. ? <i>cygnorum</i>			Y
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. ? <i>pubescens</i>			Y
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	Priority 2		Y
Hemerocallidaceae	<i>Tricoryne elatior</i>			Y
Iridaceae	* <i>Gladiolus cardinalis</i>	Introduced (weed)		Y

Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced (weed)		Y
Iridaceae	* <i>Hesperantha falcata</i>	Introduced (weed)		Y
Iridaceae	* <i>Romulea rosea</i>	Introduced (weed)		Y
Iridaceae	* <i>Watsonia meriana</i>	Introduced (weed)	Y	Y
Iridaceae	<i>Patersonia occidentalis</i> var. <i>occidentalis</i>			Y
Juncaceae	* <i>Juncus articulatus</i>	Introduced (weed)		Y
Juncaceae	* <i>Juncus bufonius</i>	Introduced (weed)	Y	Y
Juncaceae	* <i>Juncus capitatus</i>	Introduced (weed)		Y
Juncaceae	<i>Juncus pallidus</i>			Y
Juncaginaceae	<i>Cycnogeton huegelii</i>			Y
Lamiaceae	<i>Hemiandra glabra</i>			Y
Lamiaceae	<i>Hemiandra linearis</i>			Y
Lamiaceae	<i>Hemiandra pungens</i>			Y
Lamiaceae	<i>Hemiphora bartlingii</i>			Y
Lauraceae	<i>Cassytha aurea</i>			Y
Lauraceae	<i>Cassytha racemosa</i> forma <i>pilosa</i>			Y
Lentibulariaceae	<i>Utricularia multifida</i>			Y
Loganiaceae	<i>Phyllangium divergens</i>			Y
Loganiaceae	<i>Phyllangium paradoxum</i>			Y
Loranthaceae	<i>Nuytsia floribunda</i>			Y
Lythraceae	* <i>Lythrum hyssopifolia</i>	Introduced (weed)		Y
Meliaceae	<i>Melia azedarach</i>			Y
Molluginaceae	<i>Macarthuria australis</i>			Y
Moraceae	* <i>Ficus carica</i>	Introduced (weed)		Y
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced (weed)	Y	Y
Myrtaceae	* <i>Melaleuca armillaris</i>	Introduced (weed)	Y	Y
Myrtaceae	<i>Agonis flexuosa</i>			Y

Myrtaceae	<i>Astartea scoparia</i>			Y
Myrtaceae	<i>Babingtonia camphorosmae</i>			Y
Myrtaceae	<i>Calothamnus quadrifidus</i>			Y
Myrtaceae	<i>Calothamnus sanguineus</i>			Y
Myrtaceae	<i>Calytrix aurea</i>			Y
Myrtaceae	<i>Calytrix flavescens</i>			Y
Myrtaceae	<i>Calytrix fraseri</i>			Y
Myrtaceae	<i>Corymbia calophylla</i>			Y
Myrtaceae	<i>Eremaea fimbriata</i>			Y
Myrtaceae	<i>Eremaea pauciflora</i>			Y
Myrtaceae	<i>Eremaea pauciflora</i> var. <i>pauciflora</i>		Y	Y
Myrtaceae	<i>Eremaea purpurea</i>			Y
Myrtaceae	<i>Eucalyptus camaldulensis</i>		Y	Y
Myrtaceae	<i>Eucalyptus marginata</i>			Y
Myrtaceae	<i>Eucalyptus marginata</i> subsp. <i>marginata</i>			Y
Myrtaceae	<i>Eucalyptus patens</i>			Y
Myrtaceae	<i>Eucalyptus rudis</i> subsp. <i>rudis</i>			Y
Myrtaceae	<i>Eucalyptus todtiana</i>			Y
Myrtaceae	<i>Hypocalymma robustum</i>			Y
Myrtaceae	<i>Kunzea glabrescens</i>			Y
Myrtaceae	<i>Melaleuca brevifolia</i>			Y
Myrtaceae	<i>Melaleuca fulgens</i>			Y
Myrtaceae	<i>Melaleuca hamulosa</i>			Y
Myrtaceae	<i>Melaleuca incana</i> subsp. <i>incana</i>			Y
Myrtaceae	<i>Melaleuca lateritia</i>			Y
Myrtaceae	<i>Melaleuca nesophila</i>	Introduced (Planted)		Y
Myrtaceae	<i>Melaleuca preissiana</i>		Y	Y

Myrtaceae	<i>Melaleuca raphiophylla</i>			Y
Myrtaceae	<i>Melaleuca seriata</i>			Y
Myrtaceae	<i>Melaleuca</i> sp.			Y
Myrtaceae	<i>Melaleuca systema</i>			Y
Myrtaceae	<i>Melaleuca viminalis</i>	Priority 2		Y
Myrtaceae	<i>Melaleuca viminea</i> subsp. <i>viminea</i>			Y
Myrtaceae	<i>Pericalymma ellipticum</i> var. <i>ellipticum</i>			Y
Myrtaceae	<i>Pericalymma ellipticum</i> var. <i>floridum</i>			Y
Myrtaceae	<i>Scholtzia involucrata</i>			Y
Myrtaceae	<i>Scholtzia parviflora</i>			Y
Myrtaceae	<i>Taxandria linearifolia</i>			Y
Myrtaceae	<i>Verticordia densiflora</i> var. <i>densiflora</i>			Y
Myrtaceae	<i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>	Priority 4		Y
Myrtaceae	<i>Verticordia picta</i>			Y
Oleaceae	* <i>Olea europaea</i>	Introduced (weed)		Y
Onagraceae	<i>Epilobium hirtigerum</i>		Y	Y
Orchidaceae	* <i>Disa bracteata</i>	Introduced (weed)		Y
Orchidaceae	<i>Caladenia flava</i>			Y
Orchidaceae	<i>Caladenia flava</i> subsp. <i>flava</i>			Y
Orchidaceae	<i>Caladenia</i> sp.			Y
Orchidaceae	<i>Microtis media</i> subsp. <i>media</i>			Y
Orchidaceae	<i>Pterostylis</i> ? <i>vittata</i>			Y
Orchidaceae	<i>Pterostylis sanguinea</i>			Y
Orchidaceae	<i>Pterostylis</i> sp.			Y
Orchidaceae	<i>Pterostylis vittata</i>			Y
Orchidaceae	<i>Thelymitra</i> sp.			Y
Orobanchaceae	* <i>Orobanche minor</i>	Introduced (weed)	Y	Y

Papaveraceae	* <i>Fumaria capreolata</i>	Introduced (weed)	Y	Y
Phyllanthaceae	<i>Poranthera microphylla</i>			Y
Pittosporaceae	<i>Billardiera fraseri</i>			Y
Plantaginaceae	* <i>Callitriche stagnalis</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Aira caryophylla</i>	Introduced (weed)		Y
Poaceae	* <i>Aira cupaniana</i>	Introduced (weed)		Y
Poaceae	* <i>Arundo donax</i>	Introduced (weed)		Y
Poaceae	* <i>Avellinia michelii</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Avena fatua</i>	Introduced (weed)		Y
Poaceae	* <i>Brachypodium distachyon</i>	Introduced (weed)		Y
Poaceae	* <i>Briza maxima</i>	Introduced (weed)		Y
Poaceae	* <i>Briza minor</i>	Introduced (weed)		Y
Poaceae	* <i>Bromus diandrus</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Bromus hordeaceus</i>	Introduced (weed)		Y
Poaceae	* <i>Cenchrus clandestinus</i>	Introduced (weed)		Y
Poaceae	* <i>Cenchrus setaceus</i>	Introduced (weed)		Y
Poaceae	* <i>Cortaderia selloana</i>	Introduced (weed)		Y
Poaceae	* <i>Cynodon dactylon</i>	Introduced (weed)		Y
Poaceae	* <i>Ehrharta calycina</i>	Introduced (weed)		Y
Poaceae	* <i>Ehrharta longiflora</i>	Introduced (weed)		Y
Poaceae	* <i>Eragrostis curvula</i>	Introduced (weed)		Y
Poaceae	* <i>Hordeum leporinum</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Hyparrhenia hirta</i>	Introduced (weed)		Y
Poaceae	* <i>Lagurus ovatus</i>	Introduced (weed)		Y
Poaceae	* <i>Lolium multiflorum</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Lolium perenne</i>	Introduced (weed)		Y
Poaceae	* <i>Paspalum dilatatum</i>	Introduced (weed)	Y	Y

Poaceae	* <i>Paspalum urvillei</i>	Introduced (weed)		Y
Poaceae	* <i>Pentameris airoides</i> subsp. <i>airoides</i>	Introduced (weed)		Y
Poaceae	* <i>Pentameris pallida</i>	Introduced (weed)		Y
Poaceae	* <i>Phalaris aquatica</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Poa annua</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Polypogon monspeliensis</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Rostraria cristata</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Setaria parviflora</i>	Introduced (weed)		Y
Poaceae	* <i>Vulpia bromoides</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Vulpia muralis</i>	Introduced (weed)	Y	Y
Poaceae	* <i>Vulpia myuros</i> forma <i>myuros</i>	Introduced (weed)		Y
Poaceae	<i>Amhipogon laguroides</i>			Y
Poaceae	<i>Amhipogon turbinatus</i>			Y
Poaceae	<i>Austrostipa compressa</i>			Y
Poaceae	<i>Austrostipa elegantissima</i>			Y
Poaceae	<i>Austrostipa flavescens</i>			Y
Poaceae	<i>Deyeuxia quadriseta</i>			Y
Poaceae	<i>Neurachne alopecuroidea</i>			Y
Poaceae	<i>Rytidosperma occidentale</i>			Y
Poaceae	<i>Rytidosperma pilosum</i>			Y
Poaceae	<i>Rytidosperma setaceum</i>			Y
Poaceae	<i>Rytidosperma</i> sp.			Y
Polygalaceae	<i>Comesperma calymega</i>			Y
Portulacaceae	<i>Calandrinia granulifera</i>			Y
Primulaceae	* <i>Lysimachia arvensis</i>	Introduced (weed)	Y	Y
Proteaceae	<i>Adenanthos barbiger</i>			Y
Proteaceae	<i>Adenanthos cygnorum</i>			Y

Proteaceae	<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>			Y
Proteaceae	<i>Banksia attenuata</i>			Y
Proteaceae	<i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>dallanneyi</i>			Y
Proteaceae	<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>			Y
Proteaceae	<i>Banksia ilicifolia</i>			Y
Proteaceae	<i>Banksia menziesii</i>		Y	Y
Proteaceae	<i>Conospermum acerosum</i> subsp. <i>acerosum</i>			Y
Proteaceae	<i>Conospermum undulatum</i>	Threatened		Y
Proteaceae	<i>Hakea prostrata</i>			Y
Proteaceae	<i>Hakea ruscifolia</i>			Y
Proteaceae	<i>Hakea sulcata</i>			Y
Proteaceae	<i>Hakea trifurcata</i>			Y
Proteaceae	<i>Hakea varia</i>			Y
Proteaceae	<i>Isopogon autumnalis</i>	Priority 3		Y
Proteaceae	<i>Lambertia multiflora</i> var. <i>darlingensis</i>			Y
Proteaceae	<i>Persoonia elliptica</i>			Y
Proteaceae	<i>Persoonia saccata</i>			Y
Proteaceae	<i>Petrophile biloba</i>			Y
Proteaceae	<i>Petrophile linearis</i>			Y
Proteaceae	<i>Petrophile rigida</i>			Y
Proteaceae	<i>Stirlingia latifolia</i>		Y	Y
Proteaceae	<i>Synaphea petiolaris</i> subsp. <i>petiolaris</i>			Y
Proteaceae	<i>Synaphea spinulosa</i> subsp. <i>spinulosa</i>			Y
Restionaceae	<i>Alexgeorgea nitens</i>			Y
Restionaceae	<i>Chordifex sinuosus</i>			Y
Restionaceae	<i>Desmocladus fasciculatus</i>			Y
Restionaceae	<i>Desmocladus flexuosus</i>			Y

Restionaceae	<i>Hypolaena ? robusta</i>			Y
Restionaceae	<i>Hypolaena exsulca</i>			Y
Restionaceae	<i>Hypolaena robusta</i>	Priority 4		Y
Restionaceae	<i>Leptocarpus coangustatus</i>			Y
Restionaceae	<i>Lepyrodia muirii</i>			Y
Rosaceae	* <i>Rubus ulmifolius</i>	Introduced (WoNS, Declared)		Y
Rubiaceae	<i>Opercularia apiciflora</i>			Y
Rutaceae	<i>Philothea spicata</i>			Y
Scrophulariaceae	* <i>Dischisma arenarium</i>	Introduced (weed)	Y	Y
Solanaceae	* <i>Solanum linnaeanum</i>	Introduced (Declared)		Y
Solanaceae	* <i>Solanum nigrum</i>	Introduced (weed)		Y
Stylidiaceae	<i>Levenhookia pusilla</i>			Y
Stylidiaceae	<i>Levenhookia stipitata</i>			Y
Stylidiaceae	<i>Stylidium araeophyllum</i>			Y
Stylidiaceae	<i>Stylidium calcaratum</i>			Y
Stylidiaceae	<i>Stylidium dichotomum</i>			Y
Stylidiaceae	<i>Stylidium diuroides</i> subsp. <i>diuroides</i>			Y
Stylidiaceae	<i>Stylidium repens</i>			Y
Stylidiaceae	<i>Stylidium utricularioides</i>			Y
Thymelaeaceae	<i>Pimelea angustifolia</i>			Y
Thymelaeaceae	<i>Pimelea sulphurea</i>			Y
Tropaeolaceae	* <i>Tropaeolum majus</i>	Introduced (weed)		Y
Typhaceae	<i>Typha domingensis</i>			Y
Violaceae	<i>Hybanthus calycinus</i>			Y
Xanthorrhoeaceae	<i>Xanthorrhoea gracilis</i>			Y
Xanthorrhoeaceae	<i>Xanthorrhoea preissii</i>		Y	Y

Appendix 8

Raw Site Data and Photographs



GEH Bypass Interchange Project PH1 **Site** GBQ01
Described by RM/MET **Date** 10-Sep-19 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406356 mE 6468252 mN
Habitat Crest of east west trending dune.
Soil Creamy grey sand.
Rock Type N/A.
Vegetation *Allocasuarina fraseriana* open woodland over *Eucalyptus todtiana* (*Banksia menziesii*) low woodland over *Jacksonia floribunda* scattered tall shrubs over *Hibbertia hypericoides* subsp. *septentrionalis*, *Eremaea pauciflora* var. *pauciflora* low open shrubland over *Mesomelaena pseudostygia* open sedgeland over *Alexgeorgea nitens* open herbland.
Veg Condition Excellent.
Fire Age No sign of recent fire.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Acacia sessilis</i>	0.1	25	GBQ01-10	
* <i>Aira caryophyllea</i>	0.1	25	GBQ01-40	
<i>Alexgeorgea nitens</i>	25	20	GBQ01-17	
<i>Allocasuarina fraseriana</i>	0.1	800	GBQ01-56b	
<i>Allocasuarina fraseriana</i>	5	1400	GBQ01-02	
<i>Amphipogon turbinatus</i>	0.1	30	GBQ01-55	
<i>Amphipogon turbinatus</i>	0.1	15	GBQ01-20	
<i>Austrostipa compressa</i>	0.1	20	GBQ01-24	
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	0.1	30	GBQ01-56A	
<i>Banksia menziesii</i>	1	600		
* <i>Briza maxima</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	50	GBQ01-28	
<i>Caladenia flava</i> subsp. <i>flava</i>	0.1	15	GBQ01-53	
<i>Caladenia</i> sp.	0.1	5	GBQ01-36	ISM for det.
<i>Calytrix fraseri</i>	0.1	35	GBQ01-46	
<i>Conostephium pendulum</i>	0.1	15	GBQ01-32	
<i>Conostylis aurea</i>	0.1	20	GBQ01-19	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	20	GBQ01-43	
<i>Dasyogon bromeliifolius</i>	0.1	45	GBQ01-21	
<i>Desmocladus fasciculatus</i>	0.1	15	GBQ01-34	
<i>Drosera porrecta</i>	0.1	5	GBQ01-11	
* <i>Ehrharta calycina</i>	0.1	70	GBQ01-14	
<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	2	80	GBQ01-30	
<i>Eucalyptus todtiana</i>	12	600	GBQ01-03	
* <i>Gladiolus caryophyllaceus</i>	0.1	50	GBQ01-09	
<i>Gompholobium tomentosum</i>	0.1	50	GBQ01-08	
<i>Haemodorum</i> ? <i>venosum</i>	0.1	40	GBQ01-59	ISM for det.
<i>Haemodorum</i> sp.	0.1	35	GBQ01-33	ISM for det.
<i>Haemodorum</i> sp.	0.1	20	GBQ01-25	ISM for det.
<i>Hibbertia hypericoides</i> subsp. <i>septentrionalis</i>	6	50	GBQ01-05	
<i>Hyalosperma cotula</i>	1	10	GBQ01-41	
* <i>Hypochaeris glabra</i>	0.1	10	GBQ01-27	
<i>Hypolaena exsulca</i>	0.1	40	GBQ01-22	
<i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>	0.1	20	GBQ01-38	
<i>Jacksonia floribunda</i>	1	220	GBQ01-04	
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	45	GBQ01-23	
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	20	GBQ01-48	
<i>Levenhookia stipitata</i>	0.1	10	GBQ01-47	
<i>Lomandra caespitosa</i>	0.1	15	GBQ01-18	
<i>Lomandra hermaphrodita</i>	0.1	25	GBQ01-50	
<i>Lomandra suaveolens</i>	0.1	40	GBQ01-42	
<i>Lomandra suaveolens</i>	0.1	20	GBQ01-49	
<i>Mesomelaena pseudostygia</i>	15	60	GBQ01-06	
* <i>Olea europaea</i>	0.1	20	GBQ01-29	N=1
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	40	GBQ01-39	
<i>Petrophile linearis</i>	0.1	50	GBQ01-54	
<i>Phlebocarya filifolia</i>	0.1	30	GBQ01-22B	
<i>Pimelea sulphurea</i>	0.1	45	GBQ01-13	
<i>Podotheca angustifolia</i>	0.1	10	GBQ01-15B	

Species	% Cover	Height (cm)	Specimen	Notes
<i>Podotheca gnaphalioides</i>	0.1	10	GBQ01-15A	
<i>Poranthera microphylla</i>	0.1	5	GBQ01-37	
* <i>Romulea rosea</i>	0.1	30		
<i>Scaevola canescens</i>	0.1	50	GBQ01-07	
<i>Schoenus clandestinus</i>	0.1	5	GBQ01-16	
<i>Siloxerus humifusus</i>	0.1	5	GBQ01-44	
<i>Stirlingia latifolia</i>	0.1	50	GBQ01-35	
<i>Stylidium calcaratum</i>	0.1	5	GBQ01-01	
<i>Stylidium diuroides</i> subsp. <i>diuroides</i>	0.1	10	GBQ01-45	
<i>Synaphea petiolaris</i> subsp. <i>petiolaris</i>	0.1	30	GBQ01-57	
<i>Thysanotus manglesianus</i>	0.1	25	GBQ01-51	
<i>Trachymene pilosa</i>	0.1	15	GBQ01-12	
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	15	GBQ01-26	
<i>Xanthorrhoea preissii</i>	0.1	600	GBQ01-58	



GEH Bypass Interchange Project PH1
Site GBQ02

Described by RM/MET **Date** 10-Sept-19 **Type** Quadrat: 10 x 10 m

MGA Zone 50 406487 **mE** 6468223 **mN**
Habitat Gentle to moderate south facing slope of low dune upslope from seasonal dampland.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Jacksonia floribunda* scattered tall shrubs over *Xanthorrhoea preissii*, *Melaleuca seriata* open shrubland over *Ehrharta calycina*, *Pentameris pallida* scattered grasses over *Lyginia barbata* (*Lyginia imberbis*) open sedgeland over *Alexgeorgea nitens* (*Dasyopogon bromeliifolius*, *Ursinia anthemoides*) herbland.

Veg Condition Excellent to Very Good.

Fire Age No sign of recent fire.

Name	%Cover	Height (cm)	Specimen	Notes
<i>Acacia pulchella</i> var. <i>glaberima</i>	0.1	90	GBQ02-16	
<i>Alexgeorgea nitens</i>	40	15		
<i>Amphipogon turbinatus</i>	0.1	20	GBQ02-35	
<i>Arnocrinum preissii</i>	0.1	50	GBQ02-21	
<i>Astroloma xerophyllum</i>	0.1	50	GBQ02-07	
<i>Austrostipa compressa</i>	0.1	20	GBQ02-10	
<i>Austrostipa flavescens</i>	0.1	30	GBQ02-22	
<i>Banksia menziesii</i>	0.1	600		
<i>Blancoa canescens</i>	0.1	25	GBQ02-36	
<i>Blancoa canescens</i>	0.1	20	GBQ02-18	
<i>Bossiaea eriocarpa</i>	0.1	25	GBQ02-31	
* <i>Briza maxima</i>	0.1	15		
<i>Burchardia congesta</i>	0.1	30	GBQ02-30	
<i>Conostephium pendulum</i>	0.1	30	GBQ02-25	
<i>Conostylis</i> sp.	0.1	20	GBQ02-19	ISM for det.
<i>Dampiera linearis</i>	0.1	30	GBQ02-02	
<i>Dasyopogon bromeliifolius</i>	2	30		
<i>Drosera erythrorhiza</i>	0.1	1	GBQ02-09	
<i>Drosera menziesii</i>	0.1	5	GBQ02-26	
* <i>Ehrharta calycina</i>	1	60		
* <i>Gladiolus caryophyllaceus</i>	0.1	10		
<i>Haemodorum</i> sp.	0.1	25	GBQ02-33	ISM for det.
<i>Haemodorum spicatum</i>	0.1	30	GBQ02-13	
* <i>Hypochaeris glabra</i>	0.1	5		
<i>Hypolaena exsulca</i>	0.1	15	GBQ02-20	
<i>Jacksonia floribunda</i>	1	350		
<i>Lepidosperma oldhamii/calciicola</i>	0.1	20	GBQ02-34	
<i>Leucopogon conostephioides</i>	0.1	30	GBQ02-27	
<i>Levenhookia stipitata</i>	0.1	15	GBQ02-17	
<i>Lomandra hermaphrodita</i>	0.1	20	GBQ02-14	
<i>Lomandra suaveolens</i>	0.1	30	GBQ02-29	
<i>Lomandra suaveolens</i>	0.1	25	GBQ02-24	
<i>Lyginia barbata</i>	10	50	GBQ02-04	
<i>Lyginia imberbis</i>	2	60	GBQ02-06	
<i>Melaleuca seriata</i>	2	140	GBQ02-23	
* <i>Pentameris pallida</i>	1	15	GBQ02-01	
<i>Podotheca angustifolia</i>	0.1	10	GBQ02-05	
* <i>Romulea rosea</i>	0.1	15		
<i>Schoenus curvifolius</i>	0.1	30	GBQ02-32	
<i>Siloxerus humifusus</i>	0.1	10	GBQ02-08	
<i>Stirlingia latifolia</i>	0.1	50		
<i>Stylidium dichotomum</i>	0.1	10	GBQ02-15	
<i>Thysanotus patersonii</i>	0.1	30	GBQ02-28	
<i>Thysanotus</i> sp.	0.1	20	GBQ02-37	ISM for det.
<i>Trachymene pilosa</i>	0.1	15	GBQ02-11	
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	2	20		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	0.1	60	GBQ02-12	
* <i>Wahlenbergia capensis</i>	0.1	15		
<i>Xanthorrhoea preissii</i>	5	160	GBQ02-03	



GEH Bypass Interchange Project PH2

Site GBQ02R

Described by RM/ Date 4-Nov-20 Type Quadrat: 10 x 10 m

MGA Zone 50 406487 mE 6468223 mN

Habitat Gentle to moderate south facing slope of low dune upslope from seasonal dampland.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Jacksonia floribunda* scattered tall shrubs over *Xanthorrhoea preissii*, *Melaleuca seriata* open shrubland over *Ehrharta calycina*, *Pentameris pallida* scattered grasses over *Lyginia barbata* (*Lyginia imberbis*) open sedgeland over *Alexgeorgea nitens* (*Dasyopogon bromeliifolius*, *Ursinia anthemoides*) herbland.

Veg Condition Excellent to Very Good.

Fire Age No sign of recent fire.

Name	%Cover	Height (cm)	Specimen	Notes
<i>Acacia pulchella</i> var. <i>glaberima</i>	0.1	90		
<i>Alexgeorgea nitens</i>	40	15		
<i>Amphipogon turbinatus</i>	0.1	20		
<i>Astroloma xerophyllum</i>	0.1	50		
<i>Austrostipa compressa</i>	0.1	20		
<i>Austrostipa flavescens</i>	0.1	30		
<i>Banksia menziesii</i>	0.1	600		
<i>Blancoa canescens</i>	0.1	20		
<i>Bossiaea eriocarpa</i>	0.1	25		
<i>Briza maxima</i>	0.1	15		
<i>Burchardia congesta</i>	0.1	30		
<i>Conostephium pendulum</i>	0.1	30		
<i>Dampiera linearis</i>	0.1	30		
<i>Dasyopogon bromeliifolius</i>	4	30		
<i>Ehrharta calycina</i>	1	60		
<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	1.5	60		
<i>Gladiolus caryophyllaceus</i>	0.1	10		
<i>Haemodorum spicatum</i>	0.1	30		
<i>Hypolaena exsulca</i>	0.1	15		
<i>Jacksonia floribunda</i>	1	350		
<i>Lepidosperma oldhamii/calculicola</i>	0.1	20		
<i>Leucopogon conostephioides</i>	0.1	30		
<i>Levenhookia stipitata</i>	0.1	15		
<i>Lomandra hermaphrodita</i>	0.1	20		
<i>Lomandra suaveolens</i>	0.1	30		
<i>Lyginia barbata</i>	10	50		
<i>Lyginia imberbis</i>	2	60		
<i>Melaleuca seriata</i>	2	140		
<i>Pentameris pallida</i>	0.5	15		
<i>Romulea rosea</i>	0.1	15		
<i>Schoenus curvifolius</i>	0.1	30		N=1
<i>Stirlingia latifolia</i>	0.1	50		
<i>Stylidium dichotomum</i>	0.1	10		
<i>Thysanotus patersonii</i>	0.1	30		
<i>Trachymene pilosa</i>	0.1	90		
<i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	40	15		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	0.1	20		
<i>Wahlenbergia capensis</i>	0.1	50		
<i>Xanthorrhoea preissii</i>	0.1	20		



GEH Bypass Interchange Project PH1

Site GBQ03

Described by RM/MET Date 10-Sep-19 Type Quadrat: 10 x 10 m

MGA Zone 50 406491 mE 6468254 mN

Habitat Dune crest and south slope.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Jacksonia floribunda* scattered tall shrubs over *Eremaea pauciflora* open heath over *Astroloma xerophyllum* low open shrubs over *Lyginia imberbis* very open sedgeland over *Alexgeorgea nitens* (*Hypochaeris glabra*) herbland.

Veg Condition Excellent to Very Good.

Fire Age No sign of recent fire.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Alexgeorgea nitens</i>	40	20		
<i>Amphipogon turbinatus</i>	0.1	20	GBQ03-15	
<i>Amphipogon turbinatus</i>	0.1	20	GBQ03-19	
<i>Astroloma xerophyllum</i>	4	90	GBQ03-08	
<i>Austrostipa compressa</i>	0.1	25	GBQ03-16	
<i>Bossiaea eriocarpa</i>	0.1	30	GBQ03-14	
* <i>Briza maxima</i>	0.1	20		
<i>Burchardia congesta</i>	0.1	20	GBQ03-07	
<i>Caladenia</i> sp.	0.1	20	GBQ03-21	ISM for det.
<i>Conostylis juncea</i>	0.1	20	GBQ03-06	
<i>Drosera menziesii</i>	0.1	40	GBQ03-01	
<i>Drosera micrantha</i>	0.1	5	GBQ03-20	
* <i>Ehrharta calycina</i>	0.1	60		
<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	50	120		
* <i>Gladiolus cardinalis</i>	0.1	15	GBQ03-24	
* <i>Gladiolus caryophyllaceus</i>	0.1	20		
<i>Hibbertia hypericoides</i>	0.1	30		
<i>Hyalosperma cotula</i>	0.1	5	GBQ03-03	
* <i>Hypochaeris glabra</i>	0.5	5		
<i>Jacksonia floribunda</i>	2	250		
<i>Jacksonia floribunda</i>	0.1	5	GBQ03-12	
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	0.1	20	GBQ03-10	
<i>Levenhookia stipitata</i>	0.1	4	GBQ01-47	
<i>Lomandra hermaphrodita</i>	0.1	20	GBQ03-18	
<i>Lomandra suaveolens</i>	0.1	30	GBQ03-22	
<i>Lomandra suaveolens</i>	0.1	20	GBQ03-23	
<i>Lyginia barbata</i>	0.1	30	GBQ02-04=	
<i>Lyginia imberbis</i>	3	90	GBQ04-08=	
<i>Melaleuca systema</i>	0.1	90		
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	25	GBQ03-05	
* <i>Pentameris pallida</i>	0.1	20	GBQ03-09	
<i>Podotheca angustifolia</i>	0.1	10	GBQ03-11	
<i>Schoenus curvifolius</i>	0.1	30	GBQ03-04	
<i>Schoenus efoliatus</i>	0.1	20	GBQ03-17	
<i>Scholtzia involucrata</i>	0.1	40	GBQ03-02	
* <i>Sonchus oleraceus</i>	0.1	20		
<i>Stirlingia latifolia</i>	0.1	90		
<i>Stylidium repens</i>	0.1	20	GBQ03-25	
<i>Thysanotus patersonii</i>	0.1	40	GBQ03-13	
<i>Trachymene pilosa</i>	0.1	5		
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	15		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	0.1	60	GBQ03-26	



GEH Bypass Interchange Project PH1

Site GBQ04

Described by RM/MET Date 10-Sep-19 Type Quadrat: 10 x 10 m

MGA Zone 50 406552 mE 6468164 mN

Habitat Gentle slope to east, midslope, light grey sand with same litter.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Adenanthos cygnorum* scattered tall shrubs over *Pericalymma ellipticum* var. *floridum*, *Verticordia densiflora* var. *densiflora*, *Melaleuca seriata* closed heath over *Lyginia imberbis*, *Hypolaena exsulca* open sedgeland over *Ehrharta calycina*, *Pentameris airoides* subsp. *airoides*, *Vulpia bromoides* very open grassland over *Ursinia anthemoides* scattered herbs.

Veg Condition Excellent to Very Good.**Fire Age** Very long unburnt.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	0.5	230		
* <i>Briza minor</i>	0.1	10		
<i>Corynotheca micrantha</i> var. <i>micrantha</i>	0.1	40	GBQ04-11	
<i>Crassula colorata</i> var. <i>colorata</i>	0.1	2	GBQ04-10	
<i>Crassula decumbens</i> var. <i>decumbens</i>	0.1	5	GBQ04-12	
* <i>Ehrharta calycina</i>	1.5	60		
* <i>Gladiolus caryophyllaceus</i>	0.1	40		
* <i>Hypochaeris glabra</i>	0.1	5		
<i>Hypolaena exsulca</i>	5	50	GBQ04-07	
<i>Isolepis marginata</i>	0.1	10	GBQ04-17	
<i>Isolepis</i> sp.	0.1	10	GBQ04-04A	ISM for def.
* <i>Lotus subbiflorus</i>	0.1	10	GBQ04-06	
<i>Lyginia imberbis</i>	15	40	GBQ04-08	
<i>Lysimachia arvensis</i>	0.1	30		
<i>Melaleuca seriata</i>	10	160	GBQ04-02	
<i>Nuytsia floribunda</i>	0.1	500		
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	1	10	GBQ04-09	
<i>Pericalymma ellipticum</i> var. <i>ellipticum</i>	0.1	160	GBQ04-16	
<i>Pericalymma ellipticum</i> var. <i>floridum</i>	65	150	GBQ04-01	
* <i>Rostraria cristata</i>	0.1	15	GBQ04-13	
* <i>Silene gallica</i> var. <i>gallica</i>	0.1	15	GBQ04-15	
<i>Siloxerus humifusus</i>	0.1	10	GBQ14-04B	
<i>Stirlingia latifolia</i>	0.1	90		
<i>Trachymene pilosa</i>	0.1	5		
* <i>Trifolium campestre</i> var. <i>campestre</i>	0.1	15	GBQ04-14	
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	2	20		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	15	120	GBQ04-03	
* <i>Vulpia bromoides</i>	1	7	GBQ04-05	



GEH Bypass Interchange Project PH2 **Site** GBQ04R
Described by RM **Date** 4-Nov-20 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406552 **mE** 6468164 **mN**
Habitat Gentle slope to east, midslope, light grey sand with same litter.
Soil Creamy grey sand.
Rock Type None.
Vegetation *Adenanthos cygnorum* scattered tall shrubs over *Pericalymma ellipticum* var. *floridum*, *Verticordia densiflora* var. *densiflora*, *Melaleuca seriata* closed heath over *Lyginia imberbis*, *Hypolaena exsulca* open sedgeland over **Ehrharta calycina*, **Pentameris airoides* subsp. *airoides*, **Vulpia bromoides* very open grassland over **Ursinia anthemoides* scattered herbs.
Veg Condition Excellent to Very Good.
Fire Age Very long unburnt.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	0.5	230		
<i>Briza minor</i>	0.1	10		
<i>Corynotheca micrantha</i> var. <i>micrantha</i>	0.1	40		
<i>Crassula colorata</i> var. <i>colorata</i>	0.1	2		
<i>Crassula decumbens</i> var. <i>decumbens</i>	0.1	5		
<i>Ehrharta calycina</i>	1.5	60		
<i>Gladiolus caryophyllaceus</i>	0.1	40		
<i>Hypolaena exsulca</i>	5	50		
<i>Isolepis marginata</i>	0.1	10		
<i>Isolepis</i> sp.	0.1	10		
<i>Lyginia imberbis</i>	15	40		
<i>Lysimachia arvensis</i>	0.1	30		
<i>Melaleuca seriata</i>	10	160		
<i>Nuytsia floribunda</i>	0.1	500		
<i>Pentameris airoides</i> subsp. <i>airoides</i>	1	10		
<i>Pericalymma ellipticum</i> var. <i>ellipticum</i>	0.1	160		
<i>Pericalymma ellipticum</i> var. <i>floridum</i>	65	150		
<i>Stirlingia latifolia</i>	0.1	90		
<i>Trachymene pilosa</i>	0.1	5		
<i>Trifolium campestre</i> var. <i>campestre</i>	0.1	15		
<i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	2	20		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	15	120		
<i>Vulpia bromoides</i>	1	7		



GEH Bypass Interchange Project PH1 **Site** GBQ05
Described by RM/MET **Date** 10-Oct-19 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406588 **mE** 6468231 **mN**
Habitat Gently sloping dune to east.
Soil Creamy grey sand.
Rock Type None.
Vegetation *Corymbia calophylla*, *Nuytsia floribunda* low open woodland over *Jacksonia floribunda* scattered tall shrubs over *Kingia australis* scattered shrubs over *Banksia dallanneyi* var. *dallanneyi*, *Melaleuca systema*, *Verticordia densiflora* low open shrubland over **Ehrharta calycina* scattered tussock grasses over *Lyginia imberbis* (*Patersonia occidentalis* var. *occidentalis*, *Caustis dioica*, *Phlebocarya ciliata*, *Haemodorum* ? *laxum*) sedgeland over *Desmocladus fasciculatus*, *Corynotheca micrantha* var. *micrantha*, **Ursinia anthemoides* subsp. *anthemoides*, *Alexgeorgea nitens*, *Stylidium dichotomum* very open herbland.
Veg Condition Excellent.
Fire Age Very long unburnt.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	0.1	5		
<i>Alexgeorgea nitens</i>	1	12		
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	3	20	GBQ05-01	
* <i>Briza maxima</i>	0.1	15		N=50
<i>Caustis dioica</i>	5	50	GBQ05-05	
<i>Conostylis aurea</i>	0.1	15	GBQ05-18	
<i>Conostylis juncea</i>	0.1	20	GBQ05-09	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	10	GBQ05-17	
<i>Corymbia calophylla</i>	5	600		
<i>Corynotheca micrantha</i> var. <i>micrantha</i>	2	40	GBQ05-07	
<i>Dampiera linearis</i>	0.1	35		
<i>Dasyogon bromeliifolius</i>	2	40	GBQ01-21=	
<i>Desmocladus fasciculatus</i>	4	15	GBQ05-02	
* <i>Ehrharta calycina</i>	0.5	60		N=20
* <i>Gladiolus caryophyllaceus</i>	0.1	20		
<i>Haemodorum</i> ? <i>laxum</i>	0.5	60	GBQ05-21	ISM for def.
<i>Haemodorum</i> ? <i>laxum</i>	0.1	30	GBQ05-16	ISM for def.
* <i>Hypochaeris glabra</i>	0.1	2		
<i>Hypolaena exsulca</i>	0.1	25	GBQ05-12	
<i>Jacksonia floribunda</i>	1	250		
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	0.1	20	GBQ05-13	
<i>Kingia australis</i>	1	140		
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	35	GBQ05-08	
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	25	GBQ05-11	
<i>Lomandra hermaphrodita</i>	0.1	30	GBQ05-15	
<i>Lyginia barbata</i>	0.1	60	GBQ05-20	
<i>Lyginia imberbis</i>	35	50	GBQ05-03	
<i>Melaleuca systema</i>	2	90		
<i>Mesomelaena tetragona</i>	0.1	60	GBQ05-26	
<i>Nuytsia floribunda</i>	5	500		
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	7	70	GBQ05-10	
<i>Petrophile linearis</i>	0.1	20		
<i>Philotheca spicata</i>	0.1	20	GBQ05-22	
<i>Phlebocarya ciliata</i>	2	50	GBQ05-04	
<i>Phlebocarya filifolia</i>	0.1	35	GBQ05-23	
<i>Schoenus curvifolius</i>	0.1	30		
<i>Siloxerus humifusus</i>	0.1	5	GBQ05-25	
<i>Stirlingia latifolia</i>	0.1	90		
<i>Stylidium brunonianum</i>	0.1	30	GBQ05-06	
<i>Stylidium dichotomum</i>	0.5	20	GBQ05-19	
<i>Thysanotus thyrsoides</i>	0.1	5		
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	2	20		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	1	25	GBQ05-14	
<i>Xanthorrhoea preissii</i>	0.1	250	GBQ05-27	



GEH Bypass Interchange Project PH2 **Site** GBQ05R
Described by RM **Date** 4-Nov-20 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406588 **mE** 6468231 **mN**
Habitat Gently sloping dune to east.
Soil Creamy grey sand.
Rock Type None.
Vegetation *Corymbia calophylla*, *Nuytsia floribunda* low open woodland over *Jacksonia floribunda* scattered tall shrubs over *Kingia australis* scattered shrubs over *Banksia dallanneyi* var. *dallanneyi*, *Melaleuca systema*, *Verticordia densiflora* low open shrubland over **Ehrharta calycina* scattered tussock grasses over *Lyginia imberbis* (*Patersonia occidentalis* var. *occidentalis*, *Caustis dioica*, *Phlebocarya ciliata*, *Haemodorum ? laxum*) sedgeland over *Desmocladus fasciculatus*, *Corynotheca micrantha* var. *micrantha*, **Ursinia anthemoides* subsp. *anthemoides*, *Alexgeorgea nitens*, *Styliidium dichotomum* very open herbland.
Veg Condition Excellent.
Fire Age Very long unburnt.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	0.1	5		
<i>Alexgeorgea nitens</i>	1	12		
<i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>dallanneyi</i>	3	20		
<i>Briza maxima</i>	0.1	15		N=50
<i>Caustis dioica</i>	5	50		
<i>Conostylis aurea</i>	0.1	15		
<i>Conostylis juncea</i>	0.1	20		
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	10		
<i>Corymbia calophylla</i>	5	600		
<i>Corynotheca micrantha</i> var. <i>micrantha</i>	1	40		
<i>Dampiera linearis</i>	0.1	35		
<i>Dasyopogon bromeliifolius</i>	2	40		
<i>Desmocladus fasciculatus</i>	4	15		
<i>Ehrharta calycina</i>	1	60		N=20
<i>Eremaea pauciflora</i>	0.1	90		
<i>Gladiolus caryophyllaceus</i>	0.1	20		
<i>Haemodorum ? laxum</i>	0.1	30		
<i>Hypochaeris glabra</i>	0.1	2		
<i>Hypolaena exsulca</i>	0.1	25		
<i>Jacksonia floribunda</i>	2	250		
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	0.1	20		N=1
<i>Kingia australis</i>	1	140		
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	25		
<i>Lomandra hermaphrodita</i>	0.1	30		
<i>Lyginia barbata</i>	0.1	60		
<i>Lyginia imberbis</i>	35	50		
<i>Melaleuca systema</i>	1.5	90		
<i>Mesomelaena tetragona</i>	0.1	60		
<i>Nuytsia floribunda</i>	5	500		
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	7	70		
<i>Petrophile linearis</i>	0.1	20		
<i>Philotheca spicata</i>	0.1	20		
<i>Phlebocarya ciliata</i>	2	50		
<i>Phlebocarya filifolia</i>	0.1	35		
<i>Schoenus curvifolius</i>	0.1	30		
<i>Stirlingia latifolia</i>	0.1	90		
<i>Styliidium dichotomum</i>	0.1	20		
<i>Thysanotus thyrsoideus</i>	0.1	5		
<i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	1	20		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	1	25		
<i>Xanthorrhoea preissii</i>	0.1	250		



GEH Bypass Interchange Project PH1 **Site** GBQ06
Described by RM/MET **Date** 10-Oct-19 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406763 mE 6468308 mN
Habitat Crest of low dune north to south, gently undulating.
Soil Creamy grey sand.
Rock Type None.
Vegetation *Allocasuarina fraseriana* scattered trees over *Eucalyptus todtiana*, *Banksia menziesii* (*Banksia attenuata*) low woodland over *Adenanthos cygnorum* tall shrubland over *Xanthorrhoea preissii* scattered shrubs over *Hibbertia hypericoides* subsp. *hypericoides*, *Bossiaea eriocarpa*, *Stirlingia latifolia*, *Scaevola repens* var. *repens* low open shrubland over **Ehrharta calycina* scattered tussock grasses over *Mesomelaena pseudostygia*, *Lyginia imberbis* very open sedgeland.
Veg Condition Very Good to Good.
Fire Age Very long unburnt.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	20	450		
<i>Alexgeorgea nitens</i>	0.1	15		
<i>Allocasuarina fraseriana</i>	1	1200	GBQ06-01	
<i>Amphipogon turbinatus</i>	0.1	25	GBQ06-38	
<i>Amphipogon turbinatus</i>	0.1	20	GBQ06-15	
<i>Amphipogon turbinatus</i>	0.1	40	GBQ06-03	
<i>Austrostipa compressa</i>	0.1	20	GBQ06-17	
<i>Banksia attenuata</i>	1	700		
<i>Banksia menziesii</i>	25	700		
<i>Billardiera fraseri</i>	0.1	40	GBQ06-40	
<i>Blancoa canescens</i>	0.1	15	GBQ06-10	
<i>Bossiaea eriocarpa</i>	1	25	GBQ06-16	
<i>Bossiaea eriocarpa</i>	0.1	25		
* <i>Briza maxima</i>	0.1	15		
<i>Burchardia congesta</i>	0.1	10	GBQ06-14	
<i>Calytrix fraseri</i>	0.1	40	GBQ06-42	
<i>Conospermum acerosum</i> subsp. <i>acerosum</i>	0.1	45	GBQ06-19	
<i>Conostephium pendulum</i>	0.1	20	GBQ06-29	
<i>Conostylis juncea</i>	0.1	20	GBQ06-27	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	15	GBQ06-20	
<i>Dampiera linearis</i>	0.1	10		
<i>Dasyogon bromeliifolius</i>	0.1	45		
<i>Daviesia podophylla</i>	0.1	50	GBQ06-41	
<i>Daviesia triflora</i>	0.1	45	GBQ06-06	
<i>Drosera menziesii</i>	0.1	30	GBQ06-23	
<i>Drosera menziesii</i>	0.1	15	GBQ06-34	
* <i>Ehrharta calycina</i>	1	60		
<i>Eucalyptus todtiana</i>	2	900		
* <i>Gladiolus caryophyllaceus</i>	0.1	30		
<i>Gompholobium tomentosum</i>	0.1	25	GBQ06-18	
<i>Haemodorum</i> ? <i>spicatum</i>	0.1	25	GBQ06-39	ISM for det.
<i>Haemodorum</i> ? <i>venosum</i>	0.1	25	GBQ06-37	ISM for det.
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	2	45	GBQ06-09	
<i>Hibbertia striata</i>	0.1	30	GBQ06-30	
<i>Hyalosperma cotula</i>	0.1	5	GBQ06-32	
<i>Hypolaena robusta</i>	0.1	30	GBQ06-36	
<i>Jacksonia floribunda</i>	0.1	80		
<i>Jacksonia lehmannii</i>	0.1	30	GBQ06-35	
<i>Lambertia multiflora</i> var. <i>darlingensis</i>	0.1	50	GBQ06-05	
<i>Lepidosperma oldhamii/calcicola</i>	0.1	50	GBQ06-25	
<i>Lepidosperma oldhamii/calcicola</i>	0.1	30	GBQ06-07	
<i>Leucopogon conostephioides</i>	0.1	45	GBQ06-02	
<i>Lomandra caespitosa</i>	0.1	15	GBQ06-13	
<i>Lomandra caespitosa</i>	0.1	15	GBQ06-21	
<i>Lyginia barbata</i>	0.1	60	GBQ06-26	
<i>Lyginia imberbis</i>	1	90	GBQ04-08=	

Species	% Cover	Height (cm)	Specimen	Notes
<i>Mesomelaena pseudostygia</i>	2	60	GBQ06-11	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30	GBQ06-33	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	40	GBQ06-08	
<i>Petrophile linearis</i>	0.1	20		
<i>Philotheca spicata</i>	0.1	30	GBQ06-31	
<i>Scaevola repens</i> var. <i>repens</i>	1	30	GBQ06-12	
<i>Schoenus efoliatus</i>	0.1	30	GBQ06-04	
<i>Stirlingia latifolia</i>	1	50		
<i>Stylidium brunonianum</i>	0.1	20	GBQ06-24	
<i>Thysanotus manglesianus</i>	0.1	25	GBQ06-28	
<i>Trachymene pilosa</i>	0.1	5		
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	20		
<i>Xanthorrhoea preissii</i>	1	120	GBQ06-43	



GEH Bypass Interchange Project PH1 **Site** GBQ07
Described by RM/MET **Date** 10-Oct-19 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406643 mE 6468148 mN
Habitat Gently sloping broad dune to east.
Soil Creamy grey sand
Rock Type None.
Vegetation *Corymbia calophylla* low open woodland over *Kingia australis* tall open shrubland over *Lambertia multiflora* var. *darlingensis*, *Xanthorrhoea preissii*, *Allocasuarina humilis* open shrubland over *Eremaea pauciflora* var. *pauciflora*, *Hibbertia hypericoides* subsp.
hypericoides, *Babingtonia camphorosmae*, *Banksia dallanneyi* var. *dallanneyi*, *Bossiaea eriocarpa*, *Scaevola repens* var. *repens*, *Verticordia densiflora*, *Stirlingia latifolia* low shrubland over *Caustis dioica*, *Mesomelaena pseudostygia*, *Mesomelaena tetragona*, *Lyginia imberbis*, *Lepidosperma oldhamii/calpicola*, *Haemodorum* ? *venosum*, *Lomandra hermaphrodita* open sedgeland over *Alexgeorgea nitens*, *Dasyopogon bromeliifolius* (*Desmocladus fasciculatus*) very open herbland.
Veg Condition Very Good.
Fire Age Very long unburnt.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	0.1	5		Juvenile
* <i>Aira caryophyllea</i>	0.1	10	GBQ07-44	
<i>Alexgeorgea nitens</i>	5	10		
<i>Allocasuarina humilis</i>	1.5	100	GBQ07-12	
<i>Amphipogon turbinatus</i>	0.1	30	GBQ07-37	
<i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>	0.1	30	GBQ07-14	
<i>Aphelia cyperoides</i>	0.1	20	GBQ07-45	
<i>Apium annuum</i>	0.1	20	GBQ07-43	
<i>Babingtonia camphorosmae</i>	2	40	GBQ07-07	
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	3	20	GBQ07-11	
<i>Bossiaea eriocarpa</i>	1.5	25		
* <i>Briza maxima</i>	0.1	15		
<i>Calytrix aurea</i>	0.1	30	GBQ07-26B	
<i>Caustis dioica</i>	7	60	GBQ05-05=	
<i>Centrolepis aristata</i>	0.1	5	GBQ07-42	
<i>Centrolepis drummondiana</i>	0.1	3	GBQ07-41	
<i>Comesperma calymega</i>	0.1	25	GBQ07-17	
<i>Conostylis aurea</i>	0.1	20	GBQ07-16	
<i>Conostylis aurea</i>	0.1	15	GBQ07-04	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	15	GBQ07-05	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	20	GBQ07-27	
<i>Corymbia calophylla</i>	6	600		
<i>Crassula colorata</i> var. <i>colorata</i>	0.1	5	GBQ07-23	
<i>Dasyopogon bromeliifolius</i>	3	35		
<i>Desmocladus fasciculatus</i>	0.5	20	GBQ08-44=	
<i>Drosera macrantha</i>	0.1	50	GBQ07-13	
* <i>Ehrharta calycina</i>	0.1	120		
<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	3	90		
<i>Gastrolobium linearifolium</i>	0.1	20	GBQ07-32	
* <i>Gladiolus caryophyllaceus</i>	0.1	40		
<i>Haemodorum</i> ? <i>venosum</i>	1	110	GBQ07-08	ISM for det.
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	2	80		
* <i>Hypochaeris glabra</i>	0.1	5		
<i>Jacksonia lehmannii</i>	0.1	55	GBQ07-25	
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	0.1	20	GBQ07-20	
<i>Kingia australis</i>	2.5	400		
<i>Lambertia multiflora</i> var. <i>darlingensis</i>	2.5	170	GBQ07-30	
<i>Lepidosperma oldhamii/calpicola</i>	1	30	GBQ07-36	
<i>Lomandra hermaphrodita</i>	0.5	25	GBQ07-19	
<i>Lyginia imberbis</i>	1	50	GBQ07-24	
<i>Mesomelaena pseudostygia</i>	4	60	GBQ01-06=	
<i>Mesomelaena tetragona</i>	2	50	GBQ07-31	
<i>Mesomelaena tetragona</i>	0.5	110	GBQ07-34	

Species	% Cover	Height (cm)	Specimen	Notes
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30	GBQ07-22	
<i>Philotheca spicata</i>	0.1	50	GBQ07-09	
<i>Philotheca spicata</i>	0.1	40	GBQ07-26A	
<i>Philotheca spicata</i>	0.1	110	GBQ07-29	
<i>Phyllangium divergens</i>	0.1	5	GBQ07-40	
<i>Pterochaeta paniculata</i>	0.1	10	GBQ07-06	
<i>Pterostylis sanguinea</i>	0.1	30	GBQ07-21	
<i>Rytidosperma occidentale</i>	0.1	20	GBQ07-46	
<i>Rytidosperma setaceum</i>	0.1	25	GBQ07-38	
<i>Scaevola repens</i> var. <i>repens</i>	1	5	GBQ07-03	
<i>Siloxerus humifusus</i>	0.1	2	GBQ07-15	
<i>Stirlingia latifolia</i>	0.5	50		
<i>Stylidium calcaratum</i>	0.1	5	GBQ07-18	
<i>Stylidium dichotomum</i>	0.1	15	GBQ07-02	
<i>Tetraria octandra</i>	0.1	45	GBQ07-28	
<i>Thelymitra</i> sp.	0.1	15	GBQ07-01	ISM for det.
<i>Thysanotus thyrsoides</i>	0.1	35	GBQ07-35	
<i>Trachymene pilosa</i>	0.1	5		
<i>Tricoryne elatior</i>	0.1	75	GBQ07-10	
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	15		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	0.5	25	GBQ07-33	
<i>Wahlenbergia preissii</i>	0.1	8	GBQ07-39	
<i>Xanthorrhoea preissii</i>	5	150		



GEH Bypass Interchange Project PH2

Site GBQ07R

Described by RM Date 4-Nov-20 Type Quadrat: 10 x 10 m

MGA Zone 50 406643 mE 6468148 mN

Habitat Gently sloping broad dune to east.

Soil Creamy grey sand

Rock Type None.

Vegetation *Corymbia calophylla* low open woodland over *Kingia australis* tall open shrubland over *Lambertia multiflora* var. *darlingensis*, *Xanthorrhoea preissii*, *Allocasuarina humilis* open shrubland over *Eremaea pauciflora* var. *pauciflora*, *Hibbertia hypericoides* subsp. *hypericoides*, *Babingtonia camphorosmae*, *Banksia dallanneyi* var. *dallanneyi*, *Bossiaea eriocarpa*, *Scaevola repens* var. *repens*, *Verticordia densiflora*, *Stirlingia latifolia* low shrubland over *Caustis dioica*, *Mesomelaena pseudostygia*, *Mesomelaena tetragona*, *Lyginia imberbis*, *Lepidosperma oldhamii/callicola*, *Haemodorum* ? *venosum*, *Lomandra hermaphrodita* open sedgeland over *Alexgeorgea nitens*, *Dasyopogon bromeliifolius* (*Desmocladius fasciculatus*) very open herbland.

Veg Condition Very Good.**Fire Age** Very long unburnt.

Species	% Cover	Height (cm)	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	0.1	5		Juvenile
<i>Aira caryophylla</i>	0.1	10		
<i>Alexgeorgea nitens</i>	5	10		
<i>Allocasuarina humilis</i>	1.5	100		
<i>Amphipogon turbinatus</i>	0.1	30		
<i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>	0.1	30		
<i>Babingtonia camphorosmae</i>	2	40		
<i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>dallanneyi</i>	2	20		
<i>Bossiaea eriocarpa</i>	1.5	25		
<i>Briza maxima</i>	0.1	15		
<i>Calytrix aurea</i>	0.1	30		
<i>Caustis dioica</i>	7	60		
<i>Centrolepis aristata</i>	0.1	5		
<i>Comesperma calymega</i>	0.1	25		
<i>Conostylis aurea</i>	0.1	20		
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	15		
<i>Corymbia calophylla</i>	6	600		
<i>Dasyopogon bromeliifolius</i>	3	35		
<i>Desmocladius fasciculatus</i>	0.5	20		
<i>Ehrharta calycina</i>	0.1	120		
<i>Eremaea purpurea</i>	3	90		
<i>Gastrolobium linearifolium</i>	0.1	20		
<i>Gladiolus caryophyllaceus</i>	0.1	40		
<i>Haemodorum</i> ? <i>venosum</i>	1	110		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	2	80		
<i>Hypochaeris glabra</i>	0.1	5		
<i>Jacksonia lehmannii</i>	0.1	55		
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	0.1	20		N=1
<i>Kingia australis</i>	2.5	400		
<i>Lambertia multiflora</i> var. <i>darlingensis</i>	2.5	170		
<i>Lepidosperma oldhamii/callicola</i>	1	30		ISM for det.
<i>Lomandra hermaphrodita</i>	0.5	25		
<i>Lyginia imberbis</i>	1	50		
<i>Mesomelaena pseudostygia</i>	4	60		
<i>Mesomelaena tetragona</i>	2.5	50		
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30		
<i>Philothea spicata</i>	0.1	40		
<i>Rytidosperma occidentale</i>	0.1	20		
<i>Rytidosperma setaceum</i>	0.1	25		
<i>Scaevola repens</i> var. <i>repens</i>	1	5		
<i>Stirlingia latifolia</i>	0.5	50		
<i>Stylidium dichotomum</i>	0.5	15		

Species	% Cover	Height (cm)	Specimen	Notes
<i>Tetralia octandra</i>	0.1	45		
<i>Thysanotus thyrsoideus</i>	0.1	35		
<i>Trachymene pilosa</i>	0.1	5		
<i>Tricoryne elatior</i>	0.1	75		
<i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	15		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	0.5	25		
<i>Xanthorrhoea preissii</i>	7	150		



GEH Bypass Interchange Project PH1

Site GBQ08

Described by RM/MET **Date** 10-Oct-19 **Type** Quadrat 10 x 10 m**MGA Zone** 50 **406771 mE** **6468226 mN****Habitat** Gently sloping broad dune to east.**Soil** Creamy grey sand.**Rock Type** None.

Vegetation *Allocasuarina fraseriana* woodland over *Banksia menziesii*, *B. attenuata* low open woodland over, *Adenanthos cygnorum*, *Jacksonia floribunda* tall open shrubland over *Xanthorrhoea preissii* scattered shrubs over *Daviesia preissii*, *Bossiaea eriocarpa* (*Scholtzia involucrata*, *Scaevola repens* var. *repens*, *Hibbertia hypericoides* subsp. *hypericoides*, *Hibbertia huegelii*, *Daviesia podophylla*, *Astroloma xerophyllum*, *Hemiandra linearis*, *Stirlingia latifolia*, *Monotaxis grandiflora* var. *grandiflora* low shrubland over *Mesomelaena pseudostygia*, *Lyginia barbata* very open sedgeland over *Alexgeorgea nitens* open herbland.

Veg Condition Very Good, Good.**Fire Age** Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia sessilis</i>	0.1	35	GBQ08-52	
<i>Acacia willdenowiana</i>	0.1	20	GBQ08-26	
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	5	350		
* <i>Aira caryophyllea</i>	0.1	8	GBQ08-17	
<i>Alexgeorgea nitens</i>	15	20		
<i>Allocasuarina fraseriana</i>	15	1300	GBQ08-53	
<i>Amphipogon turbinatus</i>	0.1	20	GBQ08-21	
<i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>	0.1	10		
<i>Astroloma xerophyllum</i>	1	30	GBQ08-14	
<i>Austrostipa compressa</i>	0.1	25	GBQ08-01	
<i>Banksia attenuata</i>	1	600		
<i>Banksia menziesii</i>	1	900		
<i>Blancoa canescens</i>	0.1	20	GBQ08-56	
<i>Bossiaea eriocarpa</i>	0.1	30	GBQ08-23	
<i>Bossiaea eriocarpa</i>	3	15	GBQ08-05	
* <i>Briza maxima</i>	0.1	25		
<i>Burchardia congesta</i>	0.1	50	GBQ08-22	
<i>Caladenia flava</i> subsp. <i>flava</i>	0.1	10	GBQ08-32	
<i>Calandrinia granulifera</i>	0.1	2	GBQ08-48	
<i>Centrolepis drummondiana</i>	0.1	5	GBQ08-46A	
<i>Centrolepis inconspicua</i>	0.1	1	GBQ08-46B	
<i>Conostylis aurea</i>	0.1	20	GBQ08-28	
<i>Conostylis juncea</i>	0.1	20	GBQ08-55	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	20	GBQ08-45	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	15	GBQ08-37	
<i>Crassula colorata</i> var. <i>colorata</i>	0.1	2	GBQ08-47	
<i>Dampiera linearis</i>	0.1	15		
<i>Daviesia podophylla</i>	1	90	GBQ08-13	
<i>Daviesia preissii</i>	7	90	GBQ08-06	
<i>Daviesia triflora</i>	0.1	80	GBQ08-57	
<i>Desmocladius fasciculatus</i>	0.1	15	GBQ08-44	
<i>Drosera menziesii</i>	0.1	20	GBQ08-33	
<i>Drosera porrecta</i>	0.1	20	GBQ08-38	
* <i>Ehrharta calycina</i>	0.1	60		
* <i>Gladiolus caryophyllaceus</i>	0.1	60		
<i>Gompholobium tomentosum</i>	0.1	10	GBQ08-50	
<i>Haemodorum paniculatum</i>	0.1	70		
<i>Hemiandra linearis</i>	1	20	GBQ08-12	
<i>Hibbertia huegelii</i>	1.5	15	GBQ08-19	
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	1.5	50		
<i>Hovea trisperma</i> var. <i>trisperma</i>	0.1	15	GBQ08-30	
<i>Hybanthus calycinus</i>	0.1	25	GBQ08-20	
* <i>Hypochaeris glabra</i>	0.1	5		
<i>Jacksonia floribunda</i>	3	220	GBQ08-07	
<i>Jacksonia lehmannii</i>	0.1	30	GBQ08-34	

Species	%Cover	Height (cm)	Specimen	Notes
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	20	GBQ08-40	
<i>Lepidosperma leptostachyum</i>	0.1	45	GBQ08-36	
<i>Levenhookia stipitata</i>	0.1	4	GBQ08-04	
<i>Lomandra hermaphrodita</i>	0.1	25	GBQ08-11	
<i>Lyginia barbata</i>	1.5	40	GBQ08-39	
<i>Lyginia barbata</i>	0.1	90	GBQ08-18	
<i>Mesomelaena pseudostygia</i>	0.1	40	GBQ08-41	
<i>Mesomelaena pseudostygia</i>	1	45	GBQ08-10	
<i>Mesomelaena pseudostygia</i>	0.1	30	GBQ08-43B	
<i>Monotaxis grandiflora</i> var. <i>grandiflora</i>	0.5	10	GBQ08-15	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30	GBQ08-16	
<i>Petrophile biloba</i>	0.1	25		
<i>Quinetia urvillei</i>	0.1	3	GBQ08-02	
<i>Rytidosperma occidentale</i>	0.1	60	GBQ08-51	
<i>Rytidosperma pilosum</i>	0.1	50	GBQ08-42	
<i>Scaevola repens</i> var. <i>repens</i>	0.1	20	GBQ08-43A	
<i>Scaevola repens</i> var. <i>repens</i>	2	12	GBQ08-09	
<i>Schoenus clandestinus</i>	0.1	10	GBQ08-24	
<i>Schoenus efoliatus</i>	0.1	30	GBQ08-49	
<i>Scholtzia involucreta</i>	2	40		
<i>Stirlingia latifolia</i>	0.5	50		
<i>Stylidium calcaratum</i>	0.1	15	GBQ08-31	
<i>Stylidium diuroides</i> subsp. <i>diuroides</i>	0.1	15	GBQ08-29	
<i>Stylidium repens</i>	0.1	15	GBQ08-25	
<i>Thysanotus manglesianus</i>	0.1	30	GBQ08-08	
<i>Thysanotus thyrsoides</i>	0.1	60	GBQ08-27	
<i>Thysanotus triandrus</i>	0.1	20	GBQ08-54	
<i>Trachymene pilosa</i>	0.1	5	GBQ08-59	
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	20		
* <i>Vulpia bromoides</i>	0.1	10	GBQ08-35	
<i>Xanthorrhoea preissii</i>	0.1	120	GBQ08-58	
<i>Xanthorrhoea preissii</i>	1	110		



GEH Bypass Interchange Project PH2 **Site** GBQ08R**Described by** RM **Date** 10-Oct-19 **Type** Quadrat 10 x 10 m**MGA Zone** 50 406771 mE 6468226 mN**Habitat** Gently sloping broad dune to east.**Soil** Creamy grey sand.**Rock Type** None.**Vegetation** *Allocasuarina fraseriana* woodland over *Banksia menziesii*, *B. attenuata* low open woodland over, *Adenanthos cygnorum*, *Jacksonia floribunda* tall open shrubland over *Xanthorrhoea preissii* scattered shrubs over *Daviesia preissii*, *Bossiaea eriocarpa* (*Scholtzia involucrata*, *Scaevola repens* var. *repens*, *Hibbertia hypericoides* subsp. *hypericoides*, *Hibbertia huegelii*, *Daviesia podophylla*, *Astroloma xerophyllum*, *Hemiandra linearis*, *Stirlingia latifolia*, *Monotaxis grandiflora* var. *grandiflora* low shrubland over *Mesomelaena pseudostygia*, *Lyginia barbata* very open sedgeland over *Alexgeorgea nitens* open herbland.**Veg Condition** Very Good, Good.**Fire Age** Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia sessilis</i>	0.1	35		
<i>Acacia willdenowiana</i>	0.1	20		
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	5	350		
<i>Alexgeorgea nitens</i>	15	20		
<i>Allocasuarina fraseriana</i>	15	1300		
<i>Amphipogon turbinatus</i>	0.1	20		
<i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>	0.1	10		
<i>Astroloma xerophyllum</i>	1	30		
<i>Austrostipa compressa</i>	0.1	25		
<i>Banksia attenuata</i>	1	600		
<i>Banksia menziesii</i>	1	900		
<i>Blancoa canescens</i>	0.1	20		
<i>Bossiaea eriocarpa</i>	3	15		
<i>Briza maxima</i>	0.1	25		
<i>Burchardia congesta</i>	0.1	50		
<i>Conostylis aurea</i>	0.1	20		
<i>Conostylis juncea</i>	0.1	20		
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	15		
<i>Dampiera linearis</i>	0.1	15		
<i>Daviesia podophylla</i>	1	90		
<i>Daviesia preissii</i>	7	90		
<i>Daviesia triflora</i>	0.1	80		
<i>Desmocladius fasciculatus</i>	0.1	15		
<i>Ehrharta calycina</i>	0.1	60		
<i>Eucalyptus marginata</i>	0.1	800		
<i>Gladiolus caryophyllaceus</i>	0.1	60		
<i>Gompholobium tomentosum</i>	0.1	10		
<i>Haemodorum paniculatum</i>	0.1	70		
<i>Hemiandra linearis</i>	1	20		
<i>Hibbertia huegelii</i>	1.5	15		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	1.5	50		
<i>Hovea trisperma</i> var. <i>trisperma</i>	0.1	15		
<i>Hybanthus calycinus</i>	0.1	25		
<i>Jacksonia floribunda</i>	3	220		
<i>Jacksonia lehmannii</i>	0.1	30		
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	20		
<i>Lepidosperma leptostachyum</i>	0.1	45		
<i>Levenhookia stipitata</i>	0.1	4		
<i>Lomandra hermaphrodita</i>	0.1	25		
<i>Lyginia barbata</i>	1.5	40		
<i>Mesomelaena pseudostygia</i>	1	45		
<i>Monotaxis grandiflora</i> var. <i>grandiflora</i>	0.5	10		
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30		
<i>Petrophile biloba</i>	0.1	25		
<i>Quinetia urvillei</i>	0.1	3		

Species	%Cover	Height (cm)	Specimen	Notes
<i>Rytidosperma occidentale</i>	0.1	60		
<i>Rytidosperma pilosum</i>	0.1	50		
<i>Scaevola repens</i> var. <i>repens</i>	2	12		
<i>Schoenus clandestinus</i>	0.1	10		
<i>Schoenus efoliatus</i>	0.1	30		
<i>Scholtzia involucrata</i>	2	40		
<i>Stirlingia latifolia</i>	0.5	50		
<i>Stylidium calcaratum</i>	0.1	15		
<i>Stylidium repens</i>	0.1	15		
<i>Thysanotus manglesianus</i>	0.1	30		
<i>Thysanotus thyrsoides</i>	0.1	60		
<i>Trachymene pilosa</i>	0.1	5		
<i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	20		
<i>Xanthorrhoea preissii</i>	1	110		



GEH Bypass Interchange Project PH1

Site GBQ09

Described by RM/MET Date 11-Oct-19 Type Quadrat: 10 x 10 m

MGA Zone 50 406847 mE 6467890 mN

Habitat Grey sand with 50% litter layer. Perched on a dune, sloping to the south.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Eucalyptus marginata* subsp. *marginata* woodland over *Banksia attenuata* scattered low trees over *Adenanthos cygnorum* tall open shrubland over *Xanthorrhoea preissii* (*Acacia pulchella* var. *glaberrima*) shrubland over *Hovea trisperma* var. *trisperma*, *Bossiaea eriocarpa*, *Conostephium pendulum*, *Petrophile linearis*, *Hemiandra pungens* low open shrubland over *Lepidosperma oldhamii/calciicola*, *Lomandra preissii*, *Lomandra suaveolens* very open sedgeland over *Alexgeorgea nitens* (*Billardiera fraseri*) open herbland.

Veg Condition Very Good to Good.**Fire Age** Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia pulchella</i> var. <i>glaberrima</i>	0.5	110	GBQ09-17	
<i>Acacia willdenowiana</i>	0.1	10	GBQ09-26	
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	2	250		
* <i>Aira caryophyllea</i>	0.1	10	GBQ09-35	
<i>Alexgeorgea nitens</i>	15	20		
<i>Astroloma xerophyllum</i>	0.1	80	GBQ09-30	
<i>Austrostipa compressa</i>	0.1	40	GBQ09-36	
<i>Banksia attenuata</i>	1	150		Juvenile
<i>Billardiera fraseri</i>	0.5	45	GBQ09-03	
<i>Blancoa canescens</i>	0.1	20	GBQ08-56=	
<i>Bossiaea eriocarpa</i>	0.5	30	GBQ09-05	
* <i>Briza maxima</i>	0.1	20		
<i>Burchardia congesta</i>	0.1	40	GBQ09-16	
<i>Caladenia</i> sp.	0.1	10	GBQ09-29	ISM for det.
<i>Centrolepis drummondiana</i>	0.1	20	GBQ09-34	
<i>Conostephium pendulum</i>	1	25	GBQ09-02	
<i>Conostylis juncea</i>	0.1	20	GBQ09-06	
<i>Dampiera linearis</i>	0.1	15		
<i>Dasyopogon bromeliifolius</i>	0.1	40		
<i>Daviesia triflora</i>	0.1	20	GBQ09-20	
<i>Drosera menziesii</i>	0.1	20	GBQ09-27	
* <i>Ehrharta calycina</i>	0.1	80		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	20	600		
* <i>Gladiolus caryophyllaceus</i>	0.1	40		
<i>Hemiandra pungens</i>	0.5	15	GBQ09-15	
<i>Hibbertia huegelii</i>	0.1	20	GBQ09-12	
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	0.1	40		
<i>Hovea trisperma</i> var. <i>trisperma</i>	1	50	GBQ09-09	
<i>Hyalosperma cotula</i>	0.1	5	GBQ09-33	
<i>Hypolaena exsulca</i>	0.1	45	GBQ09-10	
<i>Jacksonia lehmannii</i>	0.1	70	GBQ09-28A	
<i>Kennedia prostrata</i>	0.1	15	GBQ09-23	
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	20	GBQ09-31	
<i>Lepidosperma oldhamii/calciicola</i>	2	45	GBQ09-24	
<i>Lomandra hermaphrodita</i>	0.1	20	GBQ09-18	
<i>Lomandra preissii</i>	0.1	40	GBQ09-28B	
<i>Lomandra preissii</i>	0.5	40	GBQ09-08	
<i>Lomandra preissii</i>	0.1	20	GBQ09-22	
<i>Lomandra suaveolens</i>	0.5	25	GBQ09-14	
<i>Lyginia barbata</i>	0.1	70	GBQ09-19	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	40	GBQ09-37	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30	GBQ09-11	
<i>Petrophile linearis</i>	0.5	20		
<i>Philothea spicata</i>	0.1	90	GBQ09-32	
<i>Phlebocarya ciliata</i>	0.1	30	GBQ09-13	
<i>Pterostylis vittata</i>	0.1	15	GBQ09-01	

Species	%Cover	Height (cm)	Specimen	Notes
<i>Scaevola repens</i> var. <i>repens</i>	0.1	10		
<i>Stirlingia latifolia</i>	0.1	50		
<i>Stylidium brunonianum</i>	0.1	10	GBQ09-07	
<i>Stylidium calcaratum</i>	0.1	5	GBQ09-04	
<i>Stylidium repens</i>	0.1	5		
<i>Thysanotus patersonii</i>	0.1	30	GBQ09-21	
<i>Trachymene pilosa</i>	0.1	5		
<i>Tricoryne elatior</i>	0.1	60	GBQ09-25	
<i>Xanthorrhoea preissii</i>	45	120		
<i>Xanthorrhoea preissii</i>	0.1	70	GBQ09-38	



GEH Bypass Interchange Project PH2

Site GBQ09R

Described by RM Date 3-Nov-20 Type Quadrat: 10 x 10 m

MGA Zone 50 406847 mE 6467890 mN

Habitat Grey sand with 50% litter layer. Perched on a dune, sloping to the south.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Eucalyptus marginata* subsp. *marginata* woodland over *Banksia attenuata* scattered low trees over *Adenanthos cygnorum* tall open shrubland over *Xanthorrhoea preissii* (*Acacia pulchella* var. *glaberrima*) shrubland over *Hovea trisperma* var. *trisperma*, *Bossiaea eriocarpa*, *Conostephium pendulum*, *Petrophile linearis*, *Hemiandra pungens* low open shrubland over *Lepidosperma oldhamii/calculicola*, *Lomandra preissii*, *Lomandra suaveolens* very open sedgeland over *Alexgeorgea nitens* (*Billardiera fraseri*) open herbland.

Veg Condition Very Good to Good.**Fire Age** Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia pulchella</i> var. <i>glaberrima</i>	0.5	110		
<i>Acacia willdenowiana</i>	0.1	10		
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	2	250		
<i>Aira caryophylla</i>	0.1	10		
<i>Alexgeorgea nitens</i>	15	20		
<i>Astroloma xerophyllum</i>	0.1	80		
<i>Austrostipa compressa</i>	0.1	40		
<i>Banksia attenuata</i>	1	150		Juvenile
<i>Billardiera fraseri</i>	0.5	45		
<i>Blancoa canescens</i>	0.1	20		
<i>Bossiaea eriocarpa</i>	0.5	30		
<i>Briza maxima</i>	0.1	20		
<i>Burchardia congesta</i>	0.1	40		
<i>Centrolepis drummondiana</i>	0.1	20		
<i>Conostephium pendulum</i>	0.5	25		
<i>Conostylis juncea</i>	0.1	20		
<i>Dampiera linearis</i>	0.1	15		
<i>Dasyopogon bromeliifolius</i>	0.1	40		
<i>Daviesia triflora</i>	0.1	20		
<i>Drosera menziesii</i>	0.1	20		
<i>Ehrharta calycina</i>	0.1	80		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	20	600		
<i>Gladiolus caryophyllaceus</i>	0.1	40		
<i>Hemiandra pungens</i>	0.5	15		
<i>Hibbertia huegelii</i>	0.1	20		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	0.1	40		
<i>Hovea trisperma</i> var. <i>trisperma</i>	1	50		
<i>Hypolaena exsulca</i>	0.1	45		
<i>Jacksonia lehmannii</i>	2	180		
<i>Kennedia prostrata</i>	0.1	15		
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	20		
<i>Lepidosperma oldhamii/calculicola</i>	2	45		
<i>Lomandra hermaphrodita</i>	0.1	20		
<i>Lomandra preissii</i>	1	40		
<i>Lomandra suaveolens</i>	0.5	25		
<i>Lyginia barbata</i>	0.1	70		
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30		
<i>Petrophile linearis</i>	0.5	20		
<i>Philotheca spicata</i>	0.1	90		
<i>Scaevola repens</i> var. <i>repens</i>	0.1	10		
<i>Stirlingia latifolia</i>	0.1	50		
<i>Stylidium repens</i>	0.1	5		
<i>Thysanotus patersonii</i>	0.1	30		
<i>Trachymene pilosa</i>	0.1	5		
<i>Tricoryne elatior</i>	0.1	60		
<i>Xanthorrhoea preissii</i>	45	120		



GEH Bypass Interchange Project PH1 **Site** GBQ10
Described by CEF/RM **Date** 29-Oct-19 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406092 **mE** 6470422 **mN**
Habitat Floodplain, adjacent to Helena River.
Soil Dark brown sandy clay loam.
Rock Type None.
Vegetation *Eucalyptus rudis* subsp. *rudis* open forest over **Ehrharta longiflora* (**Avena fatua*) closed grassland over **Fumaria capreolata*, **Chenopodium album* very open herbland.
Veg Condition Degraded.
Fire Age No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>*Avena fatua</i>	20	150	GBQ10-03	
<i>*Bromus diandrus</i>	0.1	45	GBQ10-07	
<i>*Chenopodium album</i>	2	130	GBQ10-05	
<i>Cyperus alterniflorus</i>	0.1	60	GBQ10-09	
<i>*Ehrharta longiflora</i>	70	30	GBQ10-04	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	50	1400	GBQ10-01	
<i>*Fumaria capreolata</i>	5	70	GBQ10-02	
<i>*Hordeum leporinum</i>	0.1	40	GBQ10-08	
<i>*Hypochaeris radicata</i>	0.1	5	GBQ10-11	
<i>*Sonchus oleraceus</i>	0.1	40	GBQ10-10	



GEH Bypass Interchange Project PH1 **Site** GBQ11

Described by CEF/RM **Date** 29-Oct-19 **Type** Quadrat: 10 x 10 m

MGA Zone 50 406235 **mE** 6469803 **mN**

Habitat Floodplain, north east facing.

Soil Dark brown sandy clay loam.

Rock Type None.

Vegetation *Eucalyptus rudis* subsp. *rudis* closed forest over **Ehrharta longiflora* tussock grassland over **Fumaria capreolata* herbland.

Veg Condition Degraded.

Fire Age No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>*Ehrharta longiflora</i>	45	60	GBQ12-01=	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	78	2000	GBQ11-01	
<i>*Fumaria capreolata</i>	50	40	GBQ10-02=	
<i>*Sonchus oleraceus</i>	0.1	20	GBQ10-10=	



GEH Bypass Interchange Project PH1 **Site** GBQ12
Described by CEF/RM **Date** 29-Oct-19 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406270 mE 6469668 mN
Habitat Floodplain, slightly sloping towards River.
Soil Dark brown sandy clay loam.
Rock Type None.
Vegetation *Melaleuca raphiophylla* low closed forest over **Ehrharta longiflora* (**Bromus diandrus*) open grassland over **Fumaria capreolata*, **Sonchus oleraceus* herbland.
Veg Condition Degraded.
Fire Age No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>*Bromus diandrus</i>	4	25	GBQ10-07=	
<i>*Ehrharta longiflora</i>	20	50	GBQ12-01	
<i>*Fumaria capreolata</i>	60	70	GBQ10-02=	
<i>Melaleuca raphiophylla</i>	90	800	GBQ12-02	
<i>*Sonchus asper</i>	0.1	120		
<i>*Sonchus oleraceus</i>	1	30	GBQ10-10=	



GEH Bypass Interchange Project PH1**Site** GBQ13**Described by** RM/AL**Date** 30-Oct-19**Type**

Quadrat: 10 x 10 m

MGA Zone 50

406791 mE

6469883 mN

Habitat Floodplain and some tributaries.**Soil** Dark brown sandy clay loam**Rock Type** None.**Vegetation** *Eucalyptus rudis* subsp. *rudis* open forest over **Bromus diandrus*, **Avena fatua*, **Ehrharta longiflora* grassland over **Fumaria capreolata* herbland.**Veg Condition** Degraded.**Fire Age** No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>*Avena fatua</i>	15	70	GBQ10-03=	
<i>*Bromus diandrus</i>	30	60	GBQ10-07=	
<i>*Chenopodium album</i>	0.1	60	GBQ10-05=	
<i>*Ehrharta longiflora</i>	15	70	GBQ12-01=	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	60	2500	GBQ10-01=	
<i>*Fumaria capreolata</i>	40	40	GBQ10-02=	
<i>*Hordeum leporinum</i>	0.1	30	GBQ10-08=	
<i>*Lagurus ovatus</i>	0.1	30	GBQ13-01	



GEH Bypass Interchange Project PH1 **Site** GBQ14
Described by RM/AL **Date** 1-Nov-19 **Type** Quadrat: 10 x 10 m
MGA Zone 50 407077 **mE** 6469293 **mN**
Habitat Gentle slope northwest aspect low lying damp depression.
Soil Dark brown silty clay Loam.
Rock Type None.
Vegetation *Melaleuca raphiophylla* (*Melaleuca preissiana*) low open forest over *Hakea varia*,
Jacksonia sternbergiana (*Viminaria juncea*) tall open shrubland over *Lepidosperma striatum*,
Cyathochaeta avenacea, *Lepidosperma longitudinale*, *Lyginia barbata* (*Lepidosperma*
oldhamii/calvicola, *Lepyrodia muirii*, *Patersonia occidentalis*) closed sedgeland over *Caesia*
sp. Wongan (K.F. Kenneally 8820), *Thysanotus dichotomus* very open herbland.
Veg Condition Excellent.
Fire Age No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Amphipogon laguroides</i>	0.1	40	GBQ14-20	
<i>Caesia</i> sp. Wongan (K.F. Kenneally 8820)	1	80	GBQ14-13	
<i>Cassytha racemosa</i> forma <i>pilosa</i>	0.1	2	GBQ14-06	
<i>Centrolepis aristata</i>	0.1	15	GBQ14-15	
<i>Cyathochaeta avenacea</i>	25	90	GBQ14-04A	
<i>Deyeuxia quadriseta</i>	0.1	100	GBQ14-12	
<i>Haemodorum</i> sp.	0.1	150	GBQ14-24	ISM for det.
<i>Hakea varia</i>	4	600	GBQ14-05	
* <i>Hypochaeris glabra</i>	0.1	1		
<i>Jacksonia sternbergiana</i>	3	550		
<i>Lepidosperma longitudinale</i>	25	90	GBQ14-10	
<i>Lepidosperma oldhamii/calvicola</i>	1	40	GBQ14-18	
<i>Lepidosperma oldhamii/calvicola</i>	5	100	GBQ14-23	
<i>Lepidosperma striatum</i>	25	110	GBQ14-19	
<i>Lepyrodia muirii</i>	2	60	GBQ14-09	
<i>Lobelia anceps</i>	0.1	15	GBQ14-14	
<i>Lyginia barbata</i>	10	1	GBQ08-39=	
<i>Melaleuca preissiana</i>	11	550	GBQ14-02	
<i>Melaleuca raphiophylla</i>	35	600	GBQ14-01	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	1	50		
<i>Pericalymma ellipticum</i> var. <i>floridum</i>	0.1	50	GBQ04-01=	
<i>Schoenus asperocarpus</i>	1	50	GBQ14-11	
<i>Schoenus sculptus</i>	0.1	5	GBQ14-17	
<i>Sonchus oleraceus</i>	0.1	2		
<i>Sphaerolobium medium</i>	0.1	60	GBQ14-22	
<i>Thysanotus dichotomus</i>	1	80	GBQ14-03	
<i>Viminaria juncea</i>	1	200		



GEH Bypass Interchange Project PH1
Site GBQ15

Described by RM/AL **Date** 1-Nov-19 **Type** **Quadrat:** 10 x 10 m

MGA Zone 50 406886 mE 6468343 mN

Habitat Flat sandplain.

Soil Dark brown loamy sand.

Rock Type None.

Vegetation *Banksia attenuata*, *Allocasuarina fraseriana* (*Corymbia calophylla*, *Eucalyptus todtiana*) woodland over *Banksia menziesii* low open woodland over *Allocasuarina humilis*, *Xanthorrhoea preissii* open shrubland over *Stirlingia latifolia* (*Bossiaea eriocarpa*, *Xanthorrhoea gracilis*, *Dasyopogon bromeliifolius*) low shrubland over *Schoenus efoliatus* scattered sedges over *Alexgeorgea nitens* (*Blanco canescens*, *Conostylis juncea*, **Ursinia anthemoides* subsp. *anthemoides*, *Caustis dioica*) open herbland.

Veg Condition Excellent.

Fire Age No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia willdenowiana</i>	0.1	30	GBQ15-14	
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	0.1	350		
* <i>Aira caryophyllea</i>	0.1	20	GBQ01-40=	
<i>Alexgeorgea nitens</i>	10	20		
<i>Allocasuarina fraseriana</i>	5	1100		
<i>Allocasuarina humilis</i>	1.5	150		
<i>Amphipogon turbinatus</i>	0.1	30	GBQ15-31	
<i>Amphipogon turbinatus</i>	0.1	30	GBQ15-36	
<i>Austrostipa compressa</i>	0.1	45	GBQ15-32	
<i>Banksia attenuata</i>	6	1100		
<i>Banksia menziesii</i>	8	500		
<i>Blancoa canescens</i>	2	20	GBQ15-21	
<i>Bossiaea eriocarpa</i>	3	60	GBQ15-03	
* <i>Briza maxima</i>	0.1	40		
<i>Burchardia congesta</i>	0.1	50		
<i>Caesia</i> sp.	0.1	50	GBQ15-08	ISM for det.
<i>Caladenia flava</i> subsp. <i>flava</i>	0.1	20	GBQ15-30	
<i>Caustis dioica</i>	0.5	60	GBQ05-05=	
<i>Chordifex sinuosus</i>	0.1	20	GBQ15-25	
<i>Conostephium pendulum</i>	0.1	40	GBQ15-22	
<i>Conostylis juncea</i>	1	20	GBQ15-28	
<i>Corymbia calophylla</i>	1	2000		
<i>Dampiera linearis</i>	0.1	20	GBQ15-18	
<i>Dasyopogon bromeliifolius</i>	1	70		
<i>Daviesia triflora</i>	0.1	40	GBQ15-37	
* <i>Ehrharta calycina</i>	0.1	80		
<i>Eucalyptus todtiana</i>	1	1200		
* <i>Gladiolus caryophyllaceus</i>	0.1	100		
<i>Gompholobium tomentosum</i>	0.1	25		
<i>Haemodorum</i> ? <i>laxum</i>	0.1	50	GBQ15-12	ISM for det.
<i>Haemodorum spicatum</i>	0.1	50	GBQ15-07	
<i>Hemiandra linearis</i>	0.1	25	GBQ15-35	
<i>Hibbertia huegelii</i>	0.1	30	GBQ15-23	
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	0.1	50		
<i>Hyalosperma cotula</i>	0.1	10	GBQ09-33=	
<i>Jacksonia floribunda</i>	0.1	90		
<i>Lomandra caespitosa</i>	0.1	20	GBQ15-13	
<i>Lomandra hermaphrodita</i>	0.1	20	GBQ15-29	
<i>Mesomelaena pseudostygia</i>	3	60	GBQ15-01	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	40		
<i>Phlebocarya filifolia</i>	0.1	30	GBQ15-20	
<i>Scaevola canescens</i>	0.1	15		
<i>Scaevola repens</i> var. <i>repens</i>	0.5	15		
<i>Schoenus efoliatus</i>	2	60	GBQ15-02	
* <i>Sonchus oleraceus</i>	0.1	10		
<i>Stirlingia latifolia</i>	8	60		

Species	%Cover	Height (cm)	Specimen	Notes
<i>Thysanotus manglesianus</i>	0.1	60		
<i>Trachymene pilosa</i>	0.1	7	GBQ15-27	
<i>Tricoryne elatior</i>	0.1	30	GBQ15-04	
<i>Tricoryne elatior</i>	0.1	30	GBQ15-34	
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.5	35		
* <i>Vulpia bromoides</i>	0.1	30	GBQ15-17	
<i>Wahlenbergia preissii</i>	0.1	15	GBQ15-26	
<i>Xanthorrhoea gracilis</i>	2	90	GBQ15-33	
<i>Xanthorrhoea preissii</i>	0.1	70	GBQ15-10	
<i>Xanthorrhoea preissii</i>	4	140	GBQ15-24	



GEH Bypass Interchange Project PH1 **Site** GBQ16
Described by RM/AL **Date** 4-Nov-19 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406987 mE 6467422 mN
Habitat Roadside plain.
Soil Dark brown loamy sand.
Rock Type None.
Vegetation *Eucalyptus marginata* subsp. *marginata* woodland over *Xanthorrhoea preissii* (**Acacia iteaphylla*) shrubland over *Daviesia preissii*, *Daviesia triflora*, *Conostephium pendulum* low open shrubland over **Eragrostis curvula*, **Ehrharta calycina* and **Briza maxima* very open grassland over *Mesomelaena pseudostygia*, *Lyginia barbata* and *Hypolaena exsulca* very open sedgeland.
Veg Condition Good; Degraded.
Fire Age Very long unburnt.

Species	Cover	Height (cm)	Specimen	Notes
<i>Acacia applanata</i>	0.1	25	GBQ16-11	
* <i>Acacia iteaphylla</i>	2	170	GBQ16-10	
* <i>Briza maxima</i>	1	30		
* <i>Briza minor</i>	0.1	20		
<i>Conostephium pendulum</i>	1	50	GRELO9-08=	
<i>Conostylis juncea</i>	0.1	30	GBQ16-02	
<i>Daviesia preissii</i>	3	80	GBQ16-01	
<i>Daviesia triflora</i>	2	70	GBQ16-09	
* <i>Ehrharta calycina</i>	1	90		
* <i>Ehrharta longiflora</i>	0.1	25	GBQ12-01=	
* <i>Eragrostis curvula</i>	2	120		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	15	1300		
* <i>Fumaria capreolata</i>	0.1	50	GBQ10-02=	
<i>Gompholobium tomentosum</i>	0.1	60		
<i>Hibbertia huegelii</i>	0.1	30	GBQ16-04	
<i>Hypolaena exsulca</i>	0.1	20	GBQ16-03	
<i>Hypolaena exsulca</i>	0.5	25	GBQ16-12	
<i>Lomandra hermaphrodita</i>	0.1	30	GBQ16-13	
<i>Lomandra sericea</i>	0.1	30	GBQ16-16	
<i>Lyginia barbata</i>	1	60	GBQ16-06	
<i>Lyginia barbata</i>	1	60	GBQ16-05	
<i>Mesomelaena pseudostygia</i>	1	60	GBQ01-06=	
<i>Microtis media</i> subsp. <i>media</i>	0.1	20	GBQ16-08	
* <i>Romulea rosea</i>	0.1	20		
<i>Thysanotus dichotomus</i>	0.1	30	GBQ14-03=	
<i>Tricoryne elatior</i>	0.1	30	GBQ16-14	
<i>Xanthorrhoea preissii</i>	15	120		



GEH Bypass Interchange Project PH1
Site GBQ17

Described by RM/AL **Date** 4-Nov-19 **Type** Quadrat: 10 x 10 m

MGA Zone 50 407161 **mE** 6466570 **mN**
Habitat Roadside plain.

Soil Dark brown loamy sand.

Rock Type N/A

Vegetation *Eucalyptus marginata* subsp. *marginata* woodland over *Banksia menziesii* low woodland over *Allocasuarina humilis* scattered tall shrubs over *Xanthorrhoea preissii* (*Stachystemon vermicularis*) open shrubland over *Hibbertia hypericoides* subsp. *hypericoides*, *Bossiaea eriocarpa*, *Banksia dallanneyi* var. *dallanneyi*, *Dasyopogon obliquifolius*, *Hemiandra linearis*, *Monotaxis grandiflora* var. *grandiflora* and *Scaevola repens* var. *repens* low shrubland over *Lepidosperma oldhamii/calvicola* and *Schoenus efoliatus* very open sedgeland.

Veg Condition Excellent to Very Good.

Fire Age Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia applanata</i>	0.1	25	GBQ16-11=	
<i>Alexgeorgea nitens</i>	0.1	20		
<i>Allocasuarina humilis</i>	1	250		
* <i>Avena fatua</i>	0.1	60		
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	3	30	GBQ17-08	
<i>Banksia menziesii</i>	10	900		
<i>Billardiera fraseri</i>	0.1	30	GBQ17-26	
<i>Bossiaea eriocarpa</i>	1	50		
* <i>Briza minor</i>	0.1	20	GBQ17-36	
<i>Burchardia congesta</i>	0.1	30		
<i>Caesia occidentalis</i>	1	60	GBQ17-17	
<i>Caesia occidentalis</i>	0.1	30	GBQ17-27	
<i>Conospermum undulatum</i>	0.1	40	GBQ17-30	
<i>Dampiera linearis</i>	0.1	30	GBQ17-14	
<i>Dasyopogon bromeliifolius</i>	0.1	30		
<i>Dasyopogon obliquifolius</i>	1	50	MN40-02=	
<i>Daviesia divaricata</i> subsp. <i>divaricata</i>	0.1	50		
<i>Daviesia divaricata</i> subsp. <i>divaricata</i>	0.1	40	GBQ17-33	
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>	0.1	60	GREL09-07=	
<i>Daviesia physodes</i>	0.1	130	GBQ17-11	
<i>Daviesia triflora</i>	0.1	40	GBQ17-32	
<i>Desmocladus fasciculatus</i>	0.1	20	GBQ17-18	
* <i>Disa bracteata</i>	0.1	20	GBQ17-15	
* <i>Eragrostis curvula</i>	1.5	60		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	20	1400	GBQ17-29	
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	5	900	GBQ17-28	
* <i>Gladiolus caryophyllaceus</i>	0.1	60		
<i>Haemodorum</i> ? <i>laxum</i>	0.1	60	GBQ17-09	ISM for det.
<i>Hakea ruscifolia</i>	0.1	90	GBQ17-35	
<i>Hemiandra linearis</i>	3	15	GBQ17-03	
<i>Hemiandra pungens</i>	0.1	40	GBQ17-07	
<i>Hibbertia huegelii</i>	0.1	30	GBQ17-34	
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	3	50		
<i>Hovea trisperma</i> var. <i>trisperma</i>	0.1	40	GBQ17-19	
<i>Hypocalymma robustum</i>	0.1	50	GBQ17-22	
<i>Hypolaena exsulca</i>	0.1	40	GBQ17-20	
<i>Lepidosperma oldhamii/calvicola</i>	1	50	GBQ17-04	
<i>Lepidosperma oldhamii/calvicola</i>	1	50	GBQ17-16	
<i>Lepidosperma oldhamii/calvicola</i>	0.1	40	GBQ17-10	
<i>Lepidosperma</i> sp.	0.1	40	GBQ17-21	ISM for det.
<i>Lomandra sericea</i>	0.1	30	GBQ17-23	
<i>Mesomelaena pseudostygia</i>	0.1	60	GBQ01-06=	
<i>Mesomelaena tetragona</i>	1	60	GBQ17-06	
<i>Microtis media</i> subsp. <i>media</i>	0.1	20	GBQ16-08=	
<i>Monotaxis grandiflora</i> var. <i>grandiflora</i>	4	30	GBQ17-02	
* <i>Olea europaea</i>	0.1	5		

Species	%Cover	Height (cm)	Specimen	Notes
<i>Petrophile linearis</i>	0.1	30		
<i>Pterostylis vittata</i>	0.1	20	GBQ17-31	
<i>Scaevola repens</i> var. <i>repens</i>	0.5	20		
<i>Schoenus efoliatus</i>	1	30	GBQ17-01	
<i>Stachystemon vermicularis</i>	0.5	150	GBQ17-05	
<i>Stirlingia latifolia</i>	0.1	60		
<i>Stirlingia latifolia</i>	0.1	20	GBQ17-24	
<i>Tricoryne elatior</i>	0.1	30	GBQ15-34=	
* <i>Watsonia meriana</i>	0.1	60		N=1
<i>Xanthorrhoea preissii</i>	10	130		
<i>Xanthosia huegelii</i>	0.1	20	GBQ17-13	



GEH Bypass Interchange Project PH1

Site GBQ18

Described by RM/AL **Date** 5-Nov-19 **Type** Quadrat: 10 x 10 m**MGA Zone** 50 **407008 mE** **6467622 mN****Habitat** Sand dune north south. Grey sand with humus.**Soil** Dark brown loamy sand.**Rock Type** None.**Vegetation** *Eucalyptus marginata* subsp. *marginata*, *Allocasuarina fraseriana*, *Banksia menziesii* woodland over *Banksia attenuata* low open woodland over *Xanthorrhoea preissii* shrubland over *Stirlingia latifolia*, *Daviesia nudiflora* subsp. *nudiflora*, *Daviesia physodes*, *Bossiaea eriocarpa*, *Hibbertia hypericoides* subsp. *hypericoides* low open shrubland over *Mesomelaena pseudostygia*, *Lomandra hermaphrodita*, *Lomandra preissii* very open sedgeland over *Desmocladius flexuosus* very open herbland.**Veg Condition** Excellent to Very Good.**Fire Age** Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia willdenowiana</i>	0.1	30	GREL09-09=	
<i>Allocasuarina fraseriana</i>	10	1600		
<i>Allocasuarina humilis</i>	0.1	70		
<i>Banksia attenuata</i>	5	700		
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	0.1	30	GREL09-10=	
<i>Banksia menziesii</i>	5	1200		
<i>Billardiera fraseri</i>	0.1	30	GREL09-03=	
<i>Bossiaea eriocarpa</i>	1	40		
* <i>Brachypodium distachyon</i>	0.1	20	GBQ18-16	
<i>Burchardia congesta</i>	0.1	30		
<i>Caesia occidentalis</i>	0.1	40	GBQ17-17=	
<i>Caesia occidentalis</i>	0.1	60	GBQ18-10	
<i>Dasyogon bromeliifolius</i>	0.1	40		
<i>Dasyogon obliquifolius</i>	0.1	40	MN40-02=	
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>	2	70	GREL09-07=	
<i>Daviesia physodes</i>	2	50	GBQ17-11	
<i>Daviesia triflora</i>	0.1	30	GBQ18-06	
<i>Desmocladius flexuosus</i>	7	30	GREL09-04	
* <i>Disa bracteata</i>	0.1	25	GBQ17-15=	
* <i>Ehrharta calycina</i>	0.1	60		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	10	1800		
* <i>Gladiolus caryophyllaceus</i>	0.1	60		
<i>Gompholobium tomentosum</i>	0.1	30		
<i>Haemodorum</i> ? <i>laxum</i>	0.1	50	GBQ17-09=	ISM for det.
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	3	30		
<i>Hybanthus calycinus</i>	0.1	50	GBQ18-03	
<i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>	0.1	20	GBQ18-12	
<i>Lepidosperma leptostachyum</i>	0.1	60	GBQ18-05	
<i>Lepidosperma oldhamii/calvicola</i>	0.1	60	GBQ18-08	
<i>Lepidosperma oldhamii/calvicola</i>	0.1	40	GBQ18-04	
<i>Lepidosperma oldhamii/calvicola</i>	0.1	60	GBQ18-11	
<i>Lepidosperma</i> sp.	1	25	GBQ17-21=	ISM for det.
<i>Lomandra hermaphrodita</i>	0.1	40	GBQ18-13B	
<i>Lomandra preissii</i>	0.1	60	GBQ18-14	
<i>Lomandra preissii</i>	0.5	60	GBQ18-02	
<i>Mesomelaena pseudostygia</i>	2	40	GBQ01-06=	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	40		
<i>Philothea spicata</i>	0.1	60	GBQ18-09	
<i>Pimelea angustifolia</i>	0.1	70	GBQ18-01	
<i>Pterostylis vittata</i>	0.1	25	GBQ18-15	
* <i>Romulea rosea</i>	0.1	20		
<i>Scaevola repens</i> var. <i>repens</i>	0.1	20		
<i>Schoenus efoliatus</i>	0.1	30	GBQ18-13A	
<i>Stirlingia latifolia</i>	3	60		
<i>Thysanotus sparteus</i>	0.1	80	GBQ18-07	
<i>Tricoryne elatior</i>	0.1	50	GBQ18-17	

Species	%Cover	Height (cm)	Specimen	Notes
<i>Xanthorrhoea preissii</i>	20	130		



GEH Bypass Interchange Project PH1

Site GBQ19

Described by RM/AL Date 5-Nov-19 Type Quadrat: 10 x 10 m

MGA Zone 50 407183 mE 6466952 mN

Habitat Sand dune N-S.

Soil Dark brown loamy sand.

Rock Type None.

Vegetation *Eucalyptus todtiana* (*Corymbia calophylla*) woodland over *Banksia menziesii*, *Banksia attenuata*, *Allocasuarina fraseriana* low woodland over *Xanthorrhoea preissii* open shrubland over **Leptospermum laevigatum*, *Hibbertia hypericoides* subsp. *hypericoides*, *Allocasuarina humilis*, *Stirlingia latifolia*, *Isopogon autumnalis*, *Dasypogon bromeliifolius*, *Gompholobium tomentosum*, *Daviesia podophylla*, *Monotaxis grandiflora* var. *grandiflora* low shrubland over *Mesomelaena pseudostygia*, *Lyginia barbata*, *Lepidosperma leptostachyum* very open sedgeland over *Alexgeorgea nitens* very open herbland.

Veg Condition Excellent to Very Good.**Fire Age** Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia sessilis</i>	0.1	80	GBQ19-07	
<i>Acacia willdenowiana</i>	0.1	30	GREL09-09=	
<i>Alexgeorgea nitens</i>	5	20		
<i>Allocasuarina fraseriana</i>	1.5	400		
<i>Allocasuarina humilis</i>	2	90		
<i>Austrostipa elegantissima</i>	0.1	60	GBQ19-03	
<i>Banksia attenuata</i>	5	450		
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	0.1	30	GREL09-10=	
<i>Banksia menziesii</i>	8	500		
<i>Bossiaea eriocarpa</i>	0.1	30		
* <i>Briza maxima</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	30		
<i>Cassytha racemosa</i> forma <i>pilosa</i>	0.1	60	GBQ14-06=	
<i>Caustis dioica</i>	5	60	GBQ05-05=	
<i>Corymbia calophylla</i>	10	1800		
<i>Cristonia biloba</i>	0.1	40	GBQ19-15	
<i>Cyathochaeta avenacea</i>	0.1	80	GBQ19-10	
<i>Dampiera linearis</i>	0.1	25	GBQ15-18=	
<i>Dasypogon bromeliifolius</i>	0.5	60		
<i>Dasypogon obliquifolius</i>	0.1	30	MN40-02=	
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>	0.1	60	GREL09-07=	
<i>Daviesia physodes</i>	0.1	90	GBQ17-11=	
<i>Daviesia podophylla</i>	1	40	GBQ19-02	
<i>Daviesia triflora</i>	0.1	40	GBQ18-06=	
<i>Desmocladius fasciculatus</i>	0.1	20	GBQ17-18=	
<i>Desmocladius flexuosus</i>	0.1	30	GREL09-04=	
* <i>Ehrharta calycina</i>	0.1	60		
<i>Eremaea fimbriata</i>	0.1	60	GBQ19-05	
<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	0.1	70	GBQ19-06	
<i>Eucalyptus todtiana</i>	25	1500		
* <i>Gladiolus caryophyllaceus</i>	0.1	30		
<i>Gompholobium tomentosum</i>	0.5	45		
<i>Hibbertia hypericoides</i>	3	50		
<i>Hyalosperma cotula</i>	0.1	10	GBQ01-41=	
<i>Hybanthus calycinus</i>	0.1	25	GBQ19-19	
<i>Hypolaena exsulca</i>	0.1	40	GBQ19-11	
<i>Isopogon autumnalis</i>	0.5	80	GBQ19-01	
<i>Jacksonia floribunda</i>	0.1	120		
<i>Lepidosperma leptostachyum</i>	1	30	GBQ19-16	
<i>Lepidosperma oldhamii/calvicola</i>	0.1	30	GBQ19-22	
<i>Leptospermum laevigatum</i>	5	60	GBQ19-20	
<i>Lomandra nigricans</i>	0.1	60	GBQ19-18	
<i>Lomandra preissii</i>	0.1	40	GBQ19-13	
<i>Lomandra preissii</i>	0.1	30	GBQ19-21	
<i>Lyginia barbata</i>	1	50	GBQ19-08	

Species	%Cover	Height (cm)	Specimen	Notes
<i>Mesomelaena pseudostygia</i>	3	30	GBQ01-06=	
<i>Monotaxis grandiflora</i> var. <i>grandiflora</i>	1	20	GBQ17-02=	
<i>Philotheca spicata</i>	0.1	40	GBQ19-17	
* <i>Romulea rosea</i>	0.1	15		
<i>Schoenus clandestinus</i>	0.1	5	GBQ19-09	
<i>Scholtzia involucrata</i>	0.1	60	GBQ19-12	
* <i>Sonchus oleraceus</i>	0.1	15		
<i>Stirlingia latifolia</i>	1	70		
<i>Tricoryne elatior</i>	0.1	30	GBQ15-34=	
<i>Tricoryne elatior</i>	0.1	60	GBQ19-04	
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	10		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	0.1	70	GBQ19-23	
<i>Xanthorrhoea preissii</i>	7	120		



GEH Bypass Interchange Project PH1

Site GBQ20

Described by RM/AL

Date 7-May-20

Type

Quadrat: 10 x 10 m

MGA Zone 50

407026 mE

6467853 mN

Habitat Sandy plain.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Allocasuarina fraseriana*, *Banksia menziesii* (*Eucalyptus marginata* subsp. *marginata*) low open woodland over *Xanthorrhoea preissii* open shrubland over *Banksia dallanneyi* var. *dallanneyi* scattered low shrubs over *Mesomelaena pseudostygia* very open sedgeland over *Alexgeorgea nitens* very open herbland.

Veg Condition Excellent.**Fire Age** No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia sessilis</i>	0.1	40	GBQ20-05	
<i>Acacia willdenowiana</i>	0.1	20		
<i>Alexgeorgea nitens</i>	3	30		
<i>Allocasuarina fraseriana</i>	5	450		
<i>Allocasuarina humilis</i>	0.1	120		
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	1	30		
<i>Banksia menziesii</i>	3	500		
<i>Bossiaea eriocarpa</i>	0.1	20		
* <i>Briza maxima</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	30		
<i>Caustis dioica</i>	0.1	30		
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	20	GBQ20-14	
<i>Cristonia biloba</i>	0.1	20	GBQ20-03	
<i>Dampiera linearis</i>	0.1	20	GBQ20-13	
<i>Dasyogon bromeliifolius</i>	0.1	30		
<i>Dasyogon obliquifolius</i>	0.5	20	GBQ20-11	
<i>Daviesia divaricata</i> subsp. <i>divaricata</i>	0.1	60	GBQ20-08	
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>	0.1	40		
<i>Daviesia triflora</i>	0.1	70	GBQ20-16	
<i>Desmocladius fasciculatus</i>	0.1	20		
* <i>Ehrharta longiflora</i>	0.1	10	GBQ20-09	
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	1	450		
* <i>Gladiolus caryophyllaceus</i>	0.1	20	Gladioli	
<i>Hibbertia hypericoides</i>	0.1	40		
<i>Hypocalymma robustum</i>	0.1	30		
<i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>	0.1	20	GBQ20-10	
<i>Lomandra caespitosa</i>	0.1	30	GBQ20-01	
<i>Lomandra</i> sp.	0.1	30	GBQ20-06	ISM for det.
<i>Lomandra</i> sp.	0.1	20	GBQ20-12	ISM for det.
<i>Lomandra</i> sp.	0.1	20	GBQ20-15	ISM for det.
<i>Lomandra suaveolens</i>	0.1	40	GBQ20-04	
<i>Mesomelaena pseudostygia</i>	3	60	GBQ20-02	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30		
<i>Petrophile linearis</i>	0.1	30		
<i>Pterostylis</i> sp.	0.1	5	GBQ20-07	ISM for det.
<i>Scaevola canescens</i>	0.1	30		
<i>Thysanotus manglesianus</i>	0.1	30		
<i>Trachymene pilosa</i>	0.1	20		
<i>Xanthorrhoea preissii</i>	9	130		



GEH Bypass Interchange Project PH1 **Site** GBQ21
Described by RM/AL **Date** 7-May-20 **Type** Quadrat: 10 x 10 m
MGA Zone 50 407028 mE 6467695 mN
Habitat Sandy plain.
Soil Creamy grey sand.
Rock Type None.
Vegetation *Eucalyptus marginata* subsp. *marginata*, *Banksia attenuata*, *Allocasuarina fraseriana*, *Banksia menziesii* low open woodland over *Xanthorrhoea preissii* (*Allocasuarina humilis*, *Hakea prostrata*) open shrubland over *Banksia dallanneyi* var. *dallanneyi* low open shrubland over *Mesomelaena pseudostygia* scattered sedges over *Alexgeorgea nitens* open herbland.
Veg Condition Excellent.
Fire Age No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia willdenowiana</i>	0.1	20		
<i>Alexgeorgea nitens</i>	3	30		
<i>Allocasuarina fraseriana</i>	2	450		
<i>Allocasuarina humilis</i>	0.5	120		
<i>Banksia attenuata</i>	3	500		
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	2.5	30		
<i>Banksia menziesii</i>	1	450		
<i>Bossiaea eriocarpa</i>	0.1	20		
* <i>Briza maxima</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	30		
<i>Calectasia narragara</i>	0.1	25	GBQ21-14	
<i>Conostephium pendulum</i>	0.1	20	GBQ21-04	
<i>Conostylis juncea</i>	0.1	30	GBQ21-10	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	20	GBQ20-14=	
<i>Cristonia biloba</i>	0.1	20	GBQ20-03=	
<i>Dampiera linearis</i>	0.1	10	GBQ20-13=	
<i>Dasyogon bromeliifolius</i>	0.1	30		
<i>Dasyogon obliquifolius</i>	0.1	20	GBQ20-11=	
<i>Daviesia divaricata</i> subsp. <i>divaricata</i>	0.1	30	GBQ20-08=	
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>	0.1	70		
<i>Daviesia</i> sp.	0.1	20	GBQ21-06	ISM for det.
<i>Desmocladius fasciculatus</i>	0.1	20		
* <i>Ehrharta longiflora</i>	0.1	10	GBQ20-09=	
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	3	700		
* <i>Gladiolus caryophyllaceus</i>	0.1	20	Gladioli	
<i>Hakea prostrata</i>	0.5	130	GBQ21-12	
<i>Hardenbergia comptoniana</i>	0.1	5		
<i>Hibbertia huegellii</i>	0.1	30	GBQ21-03	
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	0.1	40		
<i>Hovea trisperma</i> var. <i>trisperma</i>	0.1	30		
<i>Hybanthus calycinus</i>	0.1	20	GBQ21-02	
<i>Hypocalymma robustum</i>	0.1	20		
<i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>	0.1	20	GBQ20-10=	
<i>Kennedia prostrata</i>	0.1	5		
<i>Lomandra caespitosa</i>	0.1	20	GBQ21-05	
<i>Lomandra caespitosa</i>	0.1	30	GBQ20-01=	
<i>Lomandra preissii</i>	0.1	35	GBQ21-01	
<i>Lomandra</i> sp.	0.1	20	GBQ20-12=	ISM for det.
<i>Lomandra</i> sp.	0.1	30	GBQ20-06=	ISM for det.
<i>Mesomelaena pseudostygia</i>	1	60	GBQ20-02=	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	50		
<i>Petrophile linearis</i>	0.1	30		
<i>Phlebocarya ciliata</i>	0.1	20	GBQ21-07	
<i>Pimelea angustifolia</i>	0.1	20	GBQ21-11	
<i>Pterostylis</i> sp.	0.1	5	GBQ20-07=	ISM for det.
<i>Schoenus efoliatus</i>	0.1	60	GBQ21-09	
<i>Stachystemon vermicularis</i>	0.1	20	GBQ21-08	
<i>Stirlingia latifolia</i>	0.1	40		

Species	%Cover	Height (cm)	Specimen	Notes
<i>Stylidium repens</i>	0.1	15	GBQ21-13	
<i>Tetraria octandra</i>	0.1	50		
<i>Xanthorrhoea preissii</i>	7	130		



GEH Bypass Interchange Project PH1 **Site** GBQ22
Described by RM/AL **Date** 8-May-20 **Type** Quadrat: 10 x 10 m
MGA Zone 50 407047 mE 6468411 mN
Habitat Sandy plain.
Soil Creamy grey sand.
Rock Type None.
Vegetation *Eucalyptus marginata* subsp. *marginata*, *Banksia menziesii*, *Allocasuarina fraseriana* low woodland over *Xanthorrhoea preissii* shrubland over *Mesomelaena pseudostygia* (*Lyginia imberbis*) very open sedgeland over *Alexgeorgea nitens* scattered herbs.
Veg Condition Very Good.
Fire Age No sign of recent fire.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia willdenowiana</i>	0.1	20		
<i>Alexgeorgea nitens</i>	0.5	30		
<i>Allocasuarina fraseriana</i>	2	450		
<i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>	0.1	10		
<i>Banksia attenuata</i>	0.1	90		
<i>Banksia menziesii</i>	7	400		
<i>Bossiaea eriocarpa</i>	0.1	20		
* <i>Briza maxima</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	30		
<i>Caustis dioica</i>	0.1	20		
<i>Conostephium pendulum</i>	0.1	20	GBQ21-04=	
<i>Conostylis juncea</i>	0.1	20	GBQ21-10=	
<i>Conostylis juncea</i>	0.1	20	GBQ22-05	
<i>Cristonia biloba</i>	0.1	20	GBQ20-03=	
<i>Dasyopogon bromeliifolius</i>	0.1	40		
<i>Daviesia divaricata</i> subsp. <i>divaricata</i>	0.1	60	GBQ20-08=	
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>	0.1	70		
<i>Daviesia triflora</i>	0.1	70	GBQ20-16=	
<i>Desmocladus fasciculatus</i>	0.1	20		
<i>Drosera erythrorhiza</i>	0.1	5		
* <i>Ehrharta calycina</i>	0.1	40		
* <i>Ehrharta longiflora</i>	0.1	10	GBQ20-09=	
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	2	700		
* <i>Gladiolus caryophyllaceus</i>	0.1	20		
<i>Gompholobium tomentosum</i>	0.1	5		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	0.1	40		
<i>Hypolaena exsulca</i>	0.1	20	GBQ22-04	
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	20	GBQ22-03	
<i>Lomandra</i> sp.	0.1	30	GBQ20-06=	ISM for det.
<i>Lomandra</i> sp.	0.1	20	GBQ20-15=	ISM for det.
<i>Lomandra</i> sp.	0.1	20	GBQ20-12=	ISM; Sterile.
<i>Lyginia imberbis</i>	1	50	GBQ22-01	
<i>Mesomelaena pseudostygia</i>	2	60	GBQ20-02=	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	50		
<i>Pimelea angustifolia</i>	0.1	20	GBQ21-11=	
* <i>Romulea rosea</i>	0.1	20		
<i>Thysanotus manglesianus</i>	0.1	30		
<i>Trachymene pilosa</i>	0.1	20		
<i>Tricoryne elatior</i>	0.1	30	GBQ22-02	
<i>Xanthorrhoea preissii</i>	11	170		



GEH Bypass Interchange Project PH1

Site GBQ23

Described by RM/AL

Date 8-May-20

Type

Quadrat: 10 x 10 m

MGA Zone 50

407013 mE

6468565 mN

Habitat Sandy plain.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Eucalyptus tottiana* (*Banksia ilicifolia*) low woodland over *Adenanthos cygnorum* subsp. *cygnorum* tall open shrubland over *Xanthorrhoea preissii* open shrubland over *Banksia menziesii* scattered low shrubs.

Veg Condition Degraded.**Fire Age** No sign of recent fire.

Name	%Cover	Height (cm)	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	12	350		
* <i>Aira caryophyllea</i>	0.1	20		
<i>Banksia ilicifolia</i>	3	600		
<i>Banksia menziesii</i>	0.5	70		
<i>Burchardia congesta</i>	0.1	30		
* <i>Ehrharta calycina</i>	0.1	40		
* <i>Ehrharta longiflora</i>	0.1	50		
<i>Eucalyptus tottiana</i>	20	700		
* <i>Gladiolus caryophyllaceus</i>	0.1	20		
<i>Gompholobium tomentosum</i>	0.1	20		
<i>Jacksonia floribunda</i>	0.1	230		
<i>Lomandra caespitosa</i>	0.1	20	GBQ20-01=	
<i>Lomandra preissii</i>	0.1	20	GBQ23-02	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	50		
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30	GBQ23-01	
<i>Pterostylis</i> sp.	0.1	15	GBQ20-07=	ISM for det.
* <i>Romulea rosea</i>	0.1	20		
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	15		
<i>Xanthorrhoea preissii</i>	11	170		



GEH Bypass Interchange Project PH1 **Site** GBQ24
Described by JTMET **Date** 11/05/20 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406799 mE 6468023 mN

Habitat Gentle NW facing midslope

Soil White/grey sand, thin top layer of humus, 70% litter cover

Rock Type Sandy loam

Vegetation *Allocasuarina fraseriana* open woodland, over *Eucalyptus todtiana* scattered low trees, over *Adenanthos cygnorum* subsp. *cygnorum* (*Jacksonia floribunda*) tall shrubland, over *Styphelia xerophylla*, *Calytrix fraseri*, *Daviesia* ? *preissii* open shrubland, over *Stirlingia latifolia*, *Hemiandra pungens* (*Hibbertia hypericoides*, *Xanthorrhoea preissii*, *H. huegelii*) low shrubland over *Alexgeorgea nitens*, *Schoenus caespitius*, *Chordifex sinuosus*, *Hemiandra pungens* (*Dasypogon bromeliifolius*, *Mesomelaena pseudostygia*, *Lyginia imberbis*) open segdeland/herbland, over *Austrostipa elegantissima* scattered tussock grasses.

Veg Condition Very Good.

Fire Age Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia sessilis</i>	0.1	30	GBQ24-40	
<i>Acacia willdenowiana</i>	0.1	35	GBQ24-08	
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	10	500		
<i>Aira cupaniana</i>	0.1	8	GBQ24-24	
<i>Alexgeorgea nitens</i>	5	15		
<i>Allocasuarina fraseriana</i>	7	1200		
<i>Allocasuarina humilis</i>	0.1	180	GBQ24-43	
<i>Amphipogon turbinatus</i>	0.1	40	GBQ24-30	
<i>Arnocrinum preissii</i>	0.1	50	GBQ24-39	
<i>Austrostipa compressa</i>	0.1	40	GBQ24-33	
<i>Austrostipa elegantissima</i>	1	90	GBQ24-01	
<i>Bossiaea eriocarpa</i>	0.1	40	GBQ24-34	
<i>Briza maxima</i>	0.1	25		
<i>Burchardia congesta</i>	0.1	45	GBQ24-49	
<i>Calytrix fraseri</i>	2	200		
<i>Caustis dioica</i>	0.1	45		
<i>Chordifex sinuosus</i>	4	45	GBQ24-29	
<i>Conostephium pendulum</i>	0.1	25	GBQ24-28	
<i>Conostylis aurea</i>	0.1	12	GBQ24-09	
<i>Conostylis juncea</i>	0.1	15	GBQ24-38	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	15	GBQ24-32	
<i>Crassula colorata</i>	0.1	5	GBQ24-22	
<i>Dampiera linearis</i>	0.1	15		
<i>Dasypogon bromeliifolius</i>	1	75	GBQ24-11	
<i>Daviesia</i> ? <i>preissii</i>	2	130	GBQ24-05	Greg K det.
<i>Daviesia triflora</i>	0.1	50		
<i>Ehrharta calycina</i>	0.1	50		
<i>Eucalyptus todtiana</i>	1	700		Possible hybrid
<i>Gladiolus caryophyllaceus</i>	0.1	30		
<i>Gompholobium tomentosum</i>	0.1	50	GBQ24-35	
<i>Haemodorum discolor</i>	0.1	110	GBQ24-15	
<i>Hemiandra pungens</i>	4	20	GBQ24-25	
<i>Hemiphora bartlingii</i>	0.1	60	GBQ24-12	
<i>Hibbertia huegelii</i>	0.5	15	GBQ24-04	
<i>Hibbertia hypericoides</i>	2	35		
<i>Hyalosperma cotula</i>	0.1	12	GBQ24-17	
<i>Hypolaena</i> ? <i>robusta</i>	0.1	45	GBQ24-47	
<i>Jacksonia floribunda</i>	2	230		
<i>Lepidosperma apicola</i>	0.1	45	GBQ24-27	
<i>Lepidosperma leptostachyum</i>	0.1	45	GBQ24-36	
<i>Levenhookia pusilla</i>	0.1	5	GBQ24-21	
<i>Levenhookia stipitata</i>	0.1	7	GBQ24-23	
<i>Lobelia tenuior</i>	0.1	20	GBQ24-12B	
<i>Lomandra hermaphrodita</i>	0.1	40	GBQ24-37	

<i>Lomandra nigricans</i>	0.1	30	GBQ24-06	
<i>Lomandra suaveolens</i>	0.1	5	GBQ24-42	
<i>Lomandra suaveolens</i>	0.1	10	GBQ24-07	
<i>Lyginia imberbis</i>	1	95	GBQ24-02	
<i>Mesomelaena pseudostygia</i>	1	40	GBQ24-14	
<i>Millotia tenuifolia</i>	0.1	15	GBQ24-19	
<i>Patersonia occidentalis</i>	0.1	50		
<i>Pentameris pallida</i>	0.1	10	GBQ24-48	
<i>Petrophile linearis</i>	0.1	25		
<i>Phlebocarya filifolia</i>	0.1	45	GBQ24-16	
<i>Phyllangium divergens</i>	0.1	15	GBQ24-20	
<i>Podotheca angustifolia</i>	0.1	4	GBQ24-45	
<i>Rytidosperma occidentale</i>	0.1	40	GBQ24-13	
<i>Scaevola repens</i> var. <i>repens</i>	0.1	20		
<i>Schoenus caespititius</i>	4	50	GBQ24-10	
<i>Schoenus curvifolius</i>	0.1	20		
<i>Scholtzia involucrata</i>	0.1	40		
<i>Stirlingia latifolia</i>	6	50		
<i>Stylidium araeophyllum</i>	0.1	45	GBQ24-31	
<i>Stylidium calcaratum</i>	0.1	8	GBQ24-26	
<i>Stylidium repens</i>	0.1	5	GBQ24-46	
<i>Styphelia xerophylla</i>	3	100	GBQ24-03	
<i>Trachymene pilosa</i>	0.1	8		
<i>Ursinia anthemoides</i>	0.1	20		
<i>Vulpia myuros</i> forma <i>myuros</i>	0.1	10	GBQ24-41	
<i>Wahlenbergia preissii</i>	0.1	20	GBQ24-18	
<i>Watsonia meriana</i>	0.1	40		
<i>Xanthorrhoea preissii</i>	1	90		



GEH Bypass Interchange Project PH1 **Site** GBQ25
Described by JTMET **Date** 11/03/20 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406590 mE 6468273 mN
Habitat Lower part of gently sloping swale between two dunes
Soil Gray sand with some humus, 30% litter cover
Rock Type Sandy loam
Vegetation *Corymbia calophylla* open woodland, over *Adenanthos cygnorum* tall shrubland, over *Kingia australis*, *Calytrix fraseri*, *Xanthorrhoea preissii* shrubland, over *Gastrolobium linearifolium* scattered low shrubs, over *Alexgeorgea nitens*, *Lyginia imberbis*, *Schoenus pedicellatus* (*Phlebocarya filifolia*, *Dasypogon bromeliifolius*, *Hypolaena exsulca*, *Conostylis aurea*, *Corynotheca micrantha* var. *micrantha*) sedgeland/herbland.
Veg Condition Excellent.
Fire Age Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia sessilis</i>	0.1	40	GBQ25-13	
<i>Adenanthos cygnorum</i>	17	400		
<i>Aira cupaniana</i>	0.1	7	GBQ25-33	
<i>Alexgeorgea nitens</i>	25	20	GBQ25-04	
<i>Austrostipa compressa</i>	0.1	20	GBQ25-02	
<i>Babingtonia camphorosmae</i>	0.1	40		
<i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i>	5	25	GBQ25-19	
<i>Blancoa canescens</i>	0.1	20	GBQ25-41	
<i>Briza maxima</i>	0.1	10		
<i>Burchardia congesta</i>	0.1	40	GBQ25-05	
<i>Calytrix fraseri</i>	4	120	GBQ25-09	
<i>Caustis dioica</i>	0.1	60		
<i>Centrolepis aristata</i>	0.1	15	GBQ25-16B	
<i>Centrolepis aristata</i>	0.1	6	GBQ25-35	
<i>Centrolepis drummondiana</i>	0.1	5	GBQ25-36	
<i>Conostylis aurea</i>	1	20	GBQ25-03	
<i>Conostylis juncea</i>	0.1	30	GBQ25-47	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	12	GBQ25-26	
<i>Corymbia calophylla</i>	2	1500		
<i>Corynotheca micrantha</i> var. <i>micrantha</i>	1	60	GBQ25-43	
<i>Cyathochaeta avenacea</i>	0.1	50	GBQ25-48	
<i>Dampiera linearis</i>	0.1	20	GBQ25-23	
<i>Dasypogon bromeliifolius</i>	2	40	GBQ25-10	
<i>Desmodcladus fasciculatus</i>	0.1	15	GBQ25-31	
<i>Drosera drummondii</i>	0.1	15	GBQ25-34	
<i>Ehrharta calycina</i>	3	100	GBQ25-18	
<i>Gastrolobium linearifolium</i>	1	30	GBQ25-08	
<i>Gladiolus caryophyllaceus</i>	0.1	50		
<i>Haemodorum spicatum</i>	0.1	100	GBQ25-14	
<i>Haemodorum spicatum</i>	0.1	90	GBQ25-50	
<i>Hesperantha falcata</i>	0.1	10	GBQ25-28	
<i>Hyalosperma cotula</i>	0.1	8	GBQ25-24	
<i>Hypochaeris glabra</i>	0.1	5	Dead	
<i>Hypolaena exsulca</i>	1	35	GBQ25-40	
<i>Jacksonia floribunda</i>	0.1	350		Just outside
<i>Johnsonia pubescens</i> subsp. ? <i>pubescens</i>	0.1	15	GBQ25-29	Greg K def. N=1
<i>Kingia australis</i>	5	140		
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	12	GBQ25-06	
<i>Levenhookia stipitata</i>	0.1	3	GBQ25-38	
<i>Lomandra preissii</i>	0.1	50	GBQ25-17	
<i>Lyginia imberbis</i>	15	50	GBQ25-20	
<i>Patersonia occidentalis</i>	0.1	30	GBQ25-21	
<i>Pentameris pallida</i>	0.1	20	GBQ25-44	
<i>Philotheca spicata</i>	0.1	100	GBQ25-49	
<i>Phlebocarya filifolia</i>	3	20	GBQ25-07	
<i>Phyllangium paradoxum</i>	0.1	2	GBQ25-27	

<i>Rytidosperma occidentale</i>	0.1	80	GBQ25-42	
<i>Schoenus caespititius</i>	0.1	30	GBQ25-39	
<i>Schoenus caespititius</i>	0.1	45	GBQ25-16	
<i>Schoenus pedicellatus</i>	10	50	GBQ25-11	
<i>Siloxerus humifusus</i>	0.1	2	GBQ25-25	
<i>Stirlingia latifolia</i>	0.1	70	GBQ25-30	
<i>Stylidium ? ciliatum</i>	0.1	35	GBQ25-22	Greg K det.
<i>Stylidium dichotomum</i>	0.1	12	GBQ25-46	
<i>Thysanotus thyrsoides</i>	0.1	45	GBQ25-32	
<i>Trachymene pilosa</i>	0.1	8	GBQ25-15	
<i>Tricoryne elatior</i>	0.1	45	GBQ25-12	
<i>Ursinia anthemoides</i>	0.1	25		
<i>Vulpia myuros forma myuros</i>	0.1	12	GBQ25-45	
<i>Wahlenbergia preissii</i>	0.1	3	GBQ25-37	
<i>Wahlenbergia preissii</i>	0.1	15	GBQ25-01	
<i>Xanthorrhoea preissii</i>	3	150	GBQ25-53	



GEH Bypass Interchange Project PH1
Site GBQ26

Described by JTMET **Date** 11/04/20 **Type** Quadrat: 10 x 10 m

MGA Zone 50 406745 mE 6468367 mN

Habitat Almost at crest/upper slope of north-south trending sand dune

Soil Grey sand; some humus; litter cover 75%

Rock Type Sandy loam

Vegetation *Allocasuarina fraseriana* scattered trees, over *Banksia attenuata*, *B. menziesii* low open forest, over *Eucalyptus todtiana* scattered low trees, over *Adenanthos cygnorum* tall open shrubland, over *Jacksonia floribunda* scattered shrubs, over *Bossiaea eriocarpa* (*Hibbertia hypericoides*) scattered low shrubs over *Alexgeorgea nitens* (*Dasypogon bromeliifolius*) sedgeland and *Amphipogon turbinatus* scattered tussock grasses.

Veg Condition Good, Degraded.

Fire Age Burnt 1-2 years ago, Burnt 3-5 years ago.

Notes *Banksia illicifolia* 11m height, 7m of NE quad corner. Rabbit faeces outside quadrat. Adjacent to small area burnt; *Austrostipa* abundant but no other fire species recorded; Many individuals of *Haemodorum* sp. outside quad in burnt area.

Species	%Cover	Height	Specimen	Notes
<i>Acacia applanata</i>	0.1	35	GBQ26-12	
<i>Adenanthos cygnorum</i>	7	550		
<i>Alexgeorgea nitens</i>	50	15		
<i>Allocasuarina fraseriana</i>	1	1800	GBQ26-01	
<i>Amphipogon turbinatus</i>	0.5	40	GBQ26-14	
<i>Arnocrinum preissii</i>	0.1	35	GBQ26-16	
<i>Austrostipa compressa</i>	0.1	50	GBQ26-26	
<i>Banksia attenuata</i>	15	1200		
<i>Banksia menziesii</i>	15	1200		
<i>Blancoa canescens</i>	0.1	20	GBQ26-19	
<i>Bossiaea eriocarpa</i>	1	40		
<i>Briza maxima</i>	0.1	50		
<i>Chaetospora curvifolia</i>	0.1	45	GBQ26-27	
<i>Conostylis aurea</i>	0.1	25	GBQ26-23	
<i>Conostylis candicans</i>	0.1	12	GBQ26-04	
<i>Conostylis juncea</i>	0.1	10	GBQ26-17	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	15	GBQ26-09	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	20	GBQ26-07	
<i>Dampiera linearis</i>	0.1	25		
<i>Dasypogon bromeliifolius</i>	4	50		
<i>Daviesia triflora</i>	0.1	50		
<i>Desmocladus fasciculatus</i>	0.1	15		
<i>Ehrharta calycina</i>	0.1	80		
<i>Eucalyptus todtiana</i>	1	900		
<i>Gladiolus caryophyllaceus</i>	0.1	40		
<i>Gompholobium tomentosum</i>	0.1	10		
<i>Haemodorum</i> ? <i>discolor</i>	0.1	100	GBQ26-25	Greg K det.
<i>Haemodorum spicatum</i>	0.1	150	GBQ26-18	
<i>Hibbertia hypericoides</i>	0.5	35		
<i>Hyalosperma cotula</i>	0.1	10	GBQ28-14=	2m outside SW corner
<i>Hypochaeris glabra</i>	0.1	5		
<i>Jacksonia floribunda</i>	0.5	180		
<i>Lepidosperma</i> ? <i>pubisquameum</i>	0.1	50	GBQ26-10	Greg K det.
<i>Lomandra caespitosa</i>	0.1	50	GBQ26-06	
<i>Lomandra caespitosa</i>	0.1	45	GBQ26-20	
<i>Lomandra nigricans</i>	0.1	45	GBQ26-22	
<i>Lomandra nigricans</i>	0.1	35	GBQ26-03	
<i>Lomandra preissii</i>	0.1	45	GBQ26-11	
<i>Lomandra suaveolens</i>	0.1	25	GBQ26-15	
<i>Lyginia imberbis</i>	0.1	70	GBQ26-13	
<i>Mesomelaena pseudostygia</i>	0.1	60	GBQ26-21	
<i>Patersonia occidentalis</i>	0.1	55	GBQ26-28	
<i>Petrophile linearis</i>	0.1	20		1.5m outside south side
<i>Romulea rosea</i>	0.1	10		
<i>Scaevola repens</i>	0.1	15	GBQ26-02	
<i>Schoenus caespititius</i>	0.1	50	GBQ260-8	

<i>Stirlingia latifolia</i>	0.1	20	GBQ26-05	
<i>Trachymene pilosa</i>	0.1	15		
<i>Tricoryne elatior</i>	0.1	15	GBQ26-29	
<i>Ursinia anthemoides</i>	0.1	20		
<i>Xanthorrhoea preissii</i>	0.1	170	GBQ26-24	



GEH Bypass Interchange Project PH1
Site GBQ27

Described by JTMET

Date

11/05/20

Type

Quadrat: 10 x 10 m

MGA Zone 50

406737 mE

6468098 mN

Habitat

Very gentle NW facing slope, low position in the landscape

Soil

Light Grey with patchy white surface, thin layer leaf litter, 20% litter cover

Rock Type

Sandy loam

Vegetation

Allocasuarina fraseriana low open woodland, over *Xanthorrhoea preissii* open shrubland, over *Hibbertia hypericoides* subsp. *Hypericoides* (*Jacksonia lehmannii*, *Styphelia xerophylla*) low open shrubland, over *Caustis dioica*, *Alexgeorgea nitens* (*Mesomelaena tetragona*, *Schoenus caespititius*, *Dasyopogon bromeliifolius*, *Conostylis aurea*, *Haemodorum discolor*, *Lyginia imberbis*) sedge/herbland.

Veg Condition

Very Good.

Fire Age

Very long unburnt.

Notes

[Beyond study scope] ~*Xanthorrhoea* near NW stipe 2cm diameter, 75cm long; spike 130cm, leaves 1m long, flat diamond TS. Patch of *Eremaea pauci* just outside quad,

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia applanata</i>	0.1	30	GBQ27-53	
<i>Acacia sessilis</i>	0.1	12	GBQ27-13	
<i>Aira cupaniana</i>	0.1	10	GBQ27-19	
<i>Alexgeorgea nitens</i>	12	20		
<i>Allocasuarina fraseriana</i>	2	900		
<i>Amperea ericoides</i>	0.1	10	GBQ27-43	
<i>Amphipogon turbinatus</i>	0.1	15	GBQ27-22	
<i>Anigozanthos manglesii</i>	0.1	5	GBQ27-09	Greg K. det.
<i>Austrostipa compressa</i>	0.1	35	GBQ24-33=	
<i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i>	0.1	15	GBQ27-15	
<i>Briza maxima</i>	0.1	20		
<i>Burchardia congesta</i>	0.1	60	GBQ27-51	
<i>Cassytha aurea</i>	0.1	45	GBQ27-06	
<i>Caustis dioica</i>	20	60		
<i>Centrolepis aristata</i>	0.1	5	GBQ27-46	
<i>Comesperma calymega</i>	0.1	50	GBQ27-25	
<i>Conostylis aurea</i>	0.5	20	GBQ27-29	
<i>Conostylis juncea</i>	0.1	15	GBQ27-11	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	10	GBQ27-28	
<i>Cristonia biloba</i> subsp. <i>biloba</i>	0.1	15	GBQ27-48	
<i>Cyanothamnus ramosus</i> subsp. <i>anethifolius</i>	0.1	40	GBQ27-44	
<i>Dampiera linearis</i>	0.1	15		
<i>Dasyopogon bromeliifolius</i>	1	50	GBQ27-26	
<i>Dasyopogon bromeliifolius</i>	2	45		
<i>Desmocladus fasciculatus</i>	0.1	12		
<i>Ehrharta calycina</i>	0.1	70		
<i>Eucalyptus todtiana</i>	0.1	700		Possibly hybrid
<i>Gladiolus caryophyllaceus</i>	0.1	75		
<i>Haemodorum discolor</i>	0.5	110	GBQ27-14	
<i>Haemodorum spicatum</i>	0.1	105	GBQ27-24	
<i>Hibbertia hypericoides</i>	0.1	20		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	2	45	GBQ27-39	
<i>Hyalosperma cotula</i>	0.1	12	GBQ24-17=	
<i>Hypochaeris glabra</i>	0.1	5		
<i>Hypolaena exsulca</i>	0.1	55	GBQ27-20	
<i>Isolepis marginata</i>	0.1	1	GBQ27-36	
<i>Jacksonia lehmannii</i>	1	20		
<i>Johnsonia pubescens</i> subsp. ? <i>pubescens</i>	0.1	15	GBQ27-41	Greg K. det.
<i>Laxmannia sessiliflora</i> subsp. <i>australis</i>	0.1	5	GBQ27-18	
<i>Lepidosperma apricola</i>	0.1	30	GBQ27-17	
<i>Levenhookia stipitata</i>	0.1	5	GBQ27-34	
<i>Lomandra hermaphrodita</i>	0.1	50	GBQ27-42	
<i>Lomandra hermaphrodita</i>	0.1	40	GBQ27-52	
<i>Lomandra nigricans</i>	0.1	55	GBQ27-38	

<i>Lyginia imberbis</i>	0.5	55	GBQ27-23	
<i>Mesomelaena pseudostygia</i>	0.1	45	GBQ27-10	
<i>Mesomelaena tetragona</i>	5	70	GBQ27-12	
<i>Patersonia occidentalis</i>	0.1	40	GBQ27-16	
<i>Pentameris pallida</i>	0.1	12	GBQ27-07	
<i>Phyllangium paradoxum</i>	0.1	5	GBQ27-32	
<i>Pimelea angustifolia</i>	0.1	20	GBQ27-03	
<i>Podotheca angustifolia</i>	0.1	2	GBQ27-31	
<i>Poranthera microphylla</i>	0.1	5	GBQ27-45	
<i>Pterochaeta paniculata</i>	0.1	8	GBQ27-40	
<i>Rytidosperma</i> sp.	0.1	55	GBQ27-50	
<i>Scaevola glandulifera</i>	0.1	40	GBQ27-01	
<i>Scaevola repens</i> var. <i>repens</i>	0.1	10		
<i>Schoenus caespititius</i>	0.1	55	GBQ27-02	
<i>Schoenus caespititius</i>	0.1	4	GBQ27-04	
<i>Schoenus caespititius</i>	5	55	GBQ27-21	
<i>Scholtzia involucrata</i>	0.1	45		
<i>Siloxerus humifusus</i>	0.1	1	GBQ27-35	
<i>Stylidium</i> ? <i>ciliatum</i>	0.1	3	GBQ27-27	Greg K. det.
<i>Stylidium calcaratum</i>	0.1	7	GBQ27-37	
<i>Stylidium dichotomum</i>	0.1	8	GBQ27-05	
<i>Stylidium diuroides</i> subsp. <i>diuroides</i>	0.1	20	GBQ27-33	
<i>Stylidium diuroides</i> subsp. <i>diuroides</i>	0.1	15	GBQ27-47	
<i>Stylidium repens</i>	0.1	8		
<i>Styphelia xerophylla</i>	1	80	GBQ24-03=	
<i>Thysanotus patersonii</i>	0.1	20	GBQ27-49	
<i>Trachymene pilosa</i>	0.1	6		
<i>Ursinia anthemoides</i>	0.1	25		
<i>Vulpia myuros</i> forma <i>myuros</i>	0.1	25	GBQ27-30	
<i>Xanthorrhoea preissii</i>	2	130		
<i>Xanthosia huegelii</i>	0.1	10	GBQ27-08	



GEH Bypass Interchange Project PH1

Site GBQ28

Described by JTMET Date 11/03/20 Type Quadrat: 10 x 10 m

MGA Zone 50 406657 mE 6468310 mN

Soil Gray sand with humus mat in places; 20% litter cover

Rock Type Sandy loam

Vegetation *Eucalyptus todtiana* scattered trees, over *Banksia menziesii*, *B. attenuata* low woodland, over *Adenanthos cygnorum* tall shrubland, over *Jacksonia floribunda* tall open shrubland, over *Eremaea pauciflora* var. *pauciflora* (*Hibbertia hypericoides* subsp. *hypericoides*, *Daviesia triflora*, *Bossiaea eriocarpa*, *Stirlingia latifolia*) low shrubland, over *Alexgeorgea nitens* (*Lyginia imberbis*, *Schoenus caespititius*, *Blancoa canescens*) open sedgeland/herbland and **Ehrharta calycina* scattered tussock grasses.

Veg Condition Very Good, Good.**Fire Age** Very long unburnt.**Notes** *Allocasuarina* ? *fraseriana* 20m from quad

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia pulchella</i> var. <i>glaberrima</i>	0.1	7	GBQ28-56	
<i>Adenanthos cygnorum</i>	20	450		
<i>Aira cupaniana</i>	0.1	5	GBQ28-32	
<i>Alexgeorgea nitens</i>	23	15	GBQ28-07	
<i>Amphipogon turbinatus</i>	0.1	20	GBQ28-28	
<i>Austrostipa compressa</i>	0.1	60	GBQ28-01	
<i>Banksia attenuata</i>	5	1000	Not in quad	
<i>Banksia menziesii</i>	10	700		
<i>Blancoa canescens</i>	0.5	15		
<i>Bossiaea eriocarpa</i>	1	25	GBQ28-09	
<i>Briza maxima</i>	0.1	10		
<i>Burchardia congesta</i>	0.1	15	GBQ28-30	
<i>Caladenia flava</i>	0.1	10	GBQ28-31	
<i>Calectasia narragara</i>	0.1	25	GBQ28-52	
<i>Centrolepis drummondiana</i>	0.1	1	GBQ28-55	
<i>Chaetospora curvifolia</i>	0.1	35	GBQ28-23	
<i>Conospermum acerosum</i> subsp. <i>acerosum</i>	0.1	40	GBQ28-08	
<i>Conostylis aurea</i>	0.1	25	GBQ28-58	90cm outside quad
<i>Conostylis juncea</i>	0.1	22	GBQ28-20	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	10	GBQ28-35	
<i>Crassula colorata</i>	0.1	4	GBQ28-54	
<i>Cyanothamnus ramosus</i> subsp. <i>anethifolius</i>	0.1	25	GBQ28-36	
<i>Dampiera linearis</i>	0.1	12	GBQ28-13	
<i>Dasypogon bromeliifolius</i>	0.1	50	GBQ28-46	
<i>Daviesia triflora</i>	1	45	GBQ28-24	
<i>Drosera drummondii</i>	0.1	30	GBQ28-29	
<i>Drosera erythrorhiza</i>	0.1	1	GBQ28-04	
<i>Drosera menziesii</i>	0.1	20	GBQ28-51	
<i>Ehrharta calycina</i>	1	80		
<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	18	50	GBQ28-41	
<i>Eucalyptus todtiana</i>	1	1200		Less than 1m outside quad
<i>Gladiolus caryophyllaceus</i>	0.1	20		
<i>Gompholobium tomentosum</i>	0.1	20	GBQ28-37	
<i>Haemodorum discolor</i>	0.1	30	GBQ28-10	
<i>Haemodorum spicatum</i>	0.1	70	GBQ28-11	
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	2	25	GBQ28-05	
<i>Hovea trisperma</i>	0.1	20	GBQ28-38	
<i>Hyalosperma cotula</i>	0.1	8	GBQ28-14	
<i>Hypochaeris glabra</i>	0.1	5		
<i>Isolepis marginata</i>	0.1	5 cm	GBQ28-33	
<i>Jacksonia floribunda</i>	2	270	GBQ28-22	
<i>Lepidosperma pubisquameum</i>	0.1	50	GBQ28-40	
<i>Lepidosperma pubisquameum</i>	0.1	40	GBQ28-50	

<i>Leucopogon conostephioides</i>	0.1	25	GBQ28-12	
<i>Leucopogon conostephioides</i>	0.1	25	GBQ28-06	
<i>Levenhookia stipitata</i>	0.1	5	GBQ28-53	
<i>Lobelia tenuior</i>	0.1	12	GBQ28-18	
<i>Lomandra caespitosa</i>	0.1	40	GBQ28-27	
<i>Lomandra caespitosa</i>	0.1	15	GBQ28-26	
<i>Lomandra hermaphrodita</i>	0.1	20	GBQ28-17	
<i>Lomandra integra</i>	0.1	30	GBQ28-45	
<i>Lomandra nigricans</i>	0.1	45	GBQ28-49	
<i>Lyginia barbata</i>	0.1	55	GBQ28-39	
<i>Lyginia imberbis</i>	1	90	GBQ28-43	
<i>Patersonia occidentalis</i>	0.1	60	GBQ28-02	
<i>Petrophile linearis</i>	0.1	15	GBQ28-47	
<i>Philothea spicata</i>	0.1	100	GBQ28-44	
<i>Phyllangium divergens</i>	0.1	4	GBQ28-15	
<i>Schoenus caespitius</i>	1	50	GBQ28-34	
<i>Scholtzia involucrata</i>	0.1	50	GBQ28-57	90cm outside quad
<i>Stirlingia latifolia</i>	1	60	GBQ28-03	
<i>Stylidium repens</i>	0.1	5	GBQ28-48	
<i>Thysanotus sparteus</i>	0.1	20	GBQ28-19	
<i>Trachymene pilosa</i>	0.1	12	GBQ28-21	
<i>Tricoryne elatior</i>	0.1	40	GBQ28-25	
<i>Ursinia anthemoides</i>	0.1	10		
<i>Wahlenbergia capensis</i>	0.1	15		
<i>Wahlenbergia preissii</i>	0.1	15	GBQ28-16	
<i>Wahlenbergia preissii</i>	0.1	8	GBQ28-42	



GEH Bypass Interchange Project PH1 **Site** GBQ29
Described by JTMET **Date** 11/06/20 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406435 **mE** 6468236 **mN**
Habitat South facing gentle slope, midslope of sand dune
Soil Grey/ white sand, very thin layer leaf litter, 30% litter cover
Rock Type Sandy loam
Vegetation *Banksia menziesii* low open woodland, over *Jacksonia floribunda* scattered tall shrubs, over *Styphelia xerophylla* (*Verticordia densiflora* var. *densiflora*, *Stirlingia latifolia*, *Xanthorrhoea preissii*) low open shrubland, over *Lyginia barbata*, *Dasypogon bromeliifolius* (*Corynotheca micrantha* var. *micrantha*, *Mesomelaena pseudostygia*) open sedgeland and **Pentameris pallida*, **Ehrharta calycina* (*Amphipogon turbinatus*) very open tussock grassland.
Veg Condition Degraded.
Fire Age Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia pulchella</i> var. <i>glaberrima</i>	0.1	170	GBQ29-15	
<i>Acacia sessilis</i>	0.1	50	GBQ29-01	
<i>Amphipogon turbinatus</i>	0.5	45	GBQ29-07	
<i>Banksia menziesii</i>	3	600		
<i>Bossiaea eriocarpa</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	10	Grazed	
<i>Centrolepis aristata</i>	0.1	4	GBQ29-25	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	15	GBQ29-11	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	20	GBQ29-20	
<i>Corynotheca micrantha</i> var. <i>micrantha</i>	2	50	GBQ29-09	
<i>Dampiera linearis</i>	0.1	20		
<i>Dasypogon bromeliifolius</i>	4	50	GBQ29-02	
<i>Ehrharta calycina</i>	2	100		
<i>Eremaea pauciflora</i>	0.1	100		1m outside North side
<i>Gladiolus caryophyllaceus</i>	0.1	30		
<i>Haemodorum spicatum</i>	0.1	45	GBQ29-22	
<i>Hakea trifurcata</i>	0.1	330		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	0.1	30	GBQ29-14	
<i>Jacksonia floribunda</i>	1	350		
<i>Lepidosperma leptostachyum</i>	0.1	50	GBQ29-18	
<i>Lomandra caespitosa</i>	0.1	10	GBQ29-21	
<i>Lomandra caespitosa</i>	0.1	30	GBQ29-16	
<i>Lomandra hermaphrodita</i>	0.1	15	GBQ29-26	
<i>Lyginia barbata</i>	5	60	GBQ29-10	
<i>Mesomelaena pseudostygia</i>	1	80	GBQ29-12	
<i>Pentameris pallida</i>	4	25	GBQ29-03	
<i>Petrophile linearis</i>	0.1	25		
<i>Philothea spicata</i>	0.1	50	GBQ29-05	
<i>Phlebocarya filifolia</i>	0.1	50	GBQ29-17	
<i>Podotheca angustifolia</i>	0.1	5	GBQ29-23	
<i>Rytidosperma occidentale</i>	0.1	35	GBQ29-06	
<i>Scholtzia involuocrata</i>	0.1	50		
<i>Siloxerus humifusus</i>	0.1	2	GBQ29-24	
<i>Stirlingia latifolia</i>	1	30		
<i>Styphelia xerophylla</i>	2	50	GBQ29-04	
<i>Trachymene pilosa</i>	0.1	10		
<i>Verticordia densiflora</i> var. <i>densiflora</i>	1	100	GBQ29-13	
<i>Xanthorrhoea preissii</i>	0.5	100	GBQ29-19	



GEH Bypass Interchange Project PH1 **Site** GBQ30
Described by JTMET **Date** 11/04/20 **Type** Quadrat: 10 x 10 m
MGA Zone 50 406711 mE 6468154 mN
Habitat Gently undulating, slight NW slope
Soil Grey/brown at surface, pale grey clay/silt at depth (ants); some humus; thin leaf litter layer
Rock Type Loam
Vegetation *Allocasuarina fraseriana* (*Eucalyptus todtiana*) low woodland, over *Xanthorrhoea preissii*, *Adenanthos cygnorum* subsp. *cygnorum* (*Jacksonia floribunda*, *Lambertia multiflora* var. *darlingensis*) tall shrubland, over *Hibbertia hypericoides* (*Stirlingia latifolia*) low open shrubland, over *Caustis dioica*, *Alexgeorgea nitens* (*Mesomelaena tetragona*, *Leptospermum laevigatum*, *Conostylis aurea*, *Dasypogon bromeliifolius*) sedgeland/herbland.
Veg Condition Excellent, Very Good.
Fire Age Very long unburnt.
Notes Site was positioned away from highly disturbed land.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia applanata</i>	0.1	45	GBQ30-47	
<i>Acacia sessilis</i>	0.1	35	GBQ30-06	
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	4	300		
<i>Aira caryophyllea</i>	0.1	5	GBQ30-37	
<i>Alexgeorgea nitens</i>	12	15		
<i>Allocasuarina fraseriana</i>	9	500	GBQ30-53	
<i>Aphelia cyperoides</i>	0.1	2	GBQ30-45	
<i>Austrostipa compressa</i>	0.1	30	GBQ30-11	
<i>Babingtonia camphorosmae</i>	0.1	35		
<i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i>	0.1	40	GBQ30-8	
<i>Blancoa canescens</i>	0.1	15	GBQ30-23	
<i>Briza maxima</i>	0.1	5		
<i>Calytrix aurea</i>	0.1	65	GBQ30-26	
<i>Caustis dioica</i>	20	40		
<i>Centrolepis aristata</i>	0.1	5	GBQ30-19	
<i>Centrolepis drummondiana</i>	0.1	4	GBQ30-38	
<i>Comesperma calymega</i>	0.1	55	GBQ30-17	
<i>Conostylis aurea</i>	1	20	GBQ30-04	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	12	GBQ30-22	
<i>Cristonia biloba</i> subsp. <i>biloba</i>	0.1	40	GBQ30-48	
<i>Dampiera linearis</i>	0.1	15		
<i>Dasypogon bromeliifolius</i>	0.5	45		
<i>Dasypogon bromeliifolius</i>	0.1	35	GBQ30-02	
<i>Desmocladius fasciculatus</i>	0.1	10		
<i>Drosera glanduligera</i>	0.1	3	GBQ30-40	
<i>Ehrharta calycina</i>	0.1	100		1m outside quadrat
<i>Eucalyptus todtiana</i>	4	500	GBQ30-28	Possibly hybrid
<i>Gladiolus caryophyllaceus</i>	0.1	50		
<i>Gompholobium tomentosum</i>	0.1	25	GBQ30-36	
<i>Haemodorum discolor</i>	0.1	60	GBQ30-25	
<i>Hemiandra pungens</i>	0.1	25	GBQ30-16	
<i>Hibbertia huegelii</i>	0.1	25	GBQ30-55	
<i>Hibbertia hypericoides</i>	5	70		
<i>Hyalosperma cotula</i>	0.1	12	GBQ30-13	
<i>Hypochaeris glabra</i>	0.1	5		
<i>Isotoma hypocrateriformis</i>	0.1	15	GBQ30-52	
<i>Jacksonia floribunda</i>	1	180		
<i>Jacksonia lehmannii</i>	0.1	30	GBQ30-01	
<i>Johnsonia pubescens</i> subsp. ? <i>cygnorum</i>	0.1	20	GBQ30-12	Greg K. det.
<i>Lambertia multiflora</i> var. <i>darlingensis</i>	1	200		
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	0.1	20	GBQ30-20	
<i>Leptospermum laevigatum</i>	2	400		
<i>Levenhookia stipitata</i>	0.1	10	GBQ30-41	
<i>Lomandra hermaphrodita</i>	0.1	35	GBQ30-46	
<i>Lyginia imberbis</i>	0.1	55	GBQ30-29	

<i>Lysinema pentapetalum</i>	0.1	65	GBQ30-30	
<i>Mesomelaena tetragona</i>	3	50	GBQ30-49	
<i>Neurachne alopecuroidea</i>	0.1	40	GBQ30-31	
<i>Patersonia occidentalis</i>	0.1	40	GBQ30-34	
<i>Pentameris pallida</i>	0.1	15	GBQ30-35	
<i>Petrophile biloba</i>	0.1	20		
<i>Philotheca spicata</i>	0.1	40	GBQ30-10	
<i>Phlebocarya ciliata</i>	0.1	60	GBQ31-08=	
<i>Phyllangium paradoxum</i>	0.1	4	GBQ30-39	
<i>Pimelea angustifolia</i>	0.1	55	GBQ30-27	
<i>Pterochaeta paniculata</i>	0.1	15	GBQ30-18	
<i>Quinetia urvillei</i>	0.1	4	GBQ30-42	
<i>Rytidosperma occidentale</i>	0.1	1	GBQ30-33	
<i>Scaevola glandulifera</i>	0.1	30	GBQ30-51	
<i>Scaevola repens</i> var. <i>repens</i>	0.1	20	GBQ31-19=	
<i>Schoenus curvifolius</i>	0.1	20		
<i>Siloxerus humifusus</i>	0.1	2	GBQ30-21	
<i>Stirlingia latifolia</i>	2	30		
<i>Stylidium calcaratum</i>	0.1	15	GBQ30-43	
<i>Stylidium dichotomum</i>	0.1	17	GBQ30-9	
<i>Stylidium repens</i>	1	15	GBQ30-7	
<i>Styphelia xerophylla</i>	0.1	50	GBQ30-03	
<i>Tetraria octandra</i>	0.1	30	GBQ30-24	
<i>Thysanotus thyrsoides</i>	0.1	30	GBQ30-14	
<i>Trachymene pilosa</i>	0.1	8		
<i>Tricoryne elatior</i>	0.1	60	GBQ30-32	
<i>Ursinia anthemoides</i>	0.1	20		
<i>Wahlenbergia preissii</i>	0.1	5	GBQ30-44	
<i>Xanthorrhoea preissii</i>	5	150		
<i>Xanthosia huegelii</i>	0.1	15	GBQ30-05	



GEH Bypass Interchange Project PH1
Site GBQ31

Described by JTMET

Date 11/04/20

Type Quadrat 10 x 10 m

MGA Zone 50 406783 mE

6468147 mN

Habitat Low lying, very gentle slope (possibly south facing); soil is more damp than 30m up the slope

Soil Grey sand, humus rich near surface, thin leaf litter layer <90% litter cover

Rock Type Sandy loam

Vegetation *Eucalyptus marginata* subsp. *marginata* low woodland, over *Adenanthos cygnorum* subsp. *cygnorum* (*Melaleuca brevifolia*) tall open shrubland, over *Xanthorrhoea preissii* open shrubland, over *Banksia dallanneyi* subsp. *dallanneyi* (*Bossiaea eriocarpa*) scattered low shrubs, over *Dasypogon bromeliifolius* (*Phlebocarya ciliata*) very open sedgeland/herbland.

Veg Condition Degraded.

Fire Age Very long unburnt.

Species	%Cover	Height (cm)	Specimen	Notes
<i>Acacia applanata/willdenowiana</i>	0.1	40	GBQ31-12	
<i>Acacia huegelii</i>	0.1	80	GBQ31-01	
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	2	350		
<i>Alexgeorgea nitens</i>	0.1	15		
<i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i>	1	25	GBQ31-22	
<i>Bossiaea eriocarpa</i>	0.5	35		
<i>Burchardia congesta</i>	0.1	30	GBQ31-18	
<i>Conostylis juncea</i>	0.1	35	GBQ31-06	
<i>Dampiera linearis</i>	0.1	12		
<i>Dasypogon bromeliifolius</i>	5	70	GBQ31-05	
<i>Desmodcladus fasciculatus</i>	0.1	12		
<i>Ehrharta calycina</i>	0.1	60		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	27	800		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	1	650	GBQ31-25	Jarrah x Prickly bark hybrid
<i>Gompholobium tomentosum</i>	0.1	50	GBQ31-10	
<i>Hibbertia huegelii</i>	0.1	15	GBQ31-14	
<i>Hovea trisperma</i> var. <i>trisperma</i>	0.1	20	GBQ31-13	
<i>Hypolaena exsulca</i>	0.1	50	GBQ31-07	
<i>Jacksonia floribunda</i>	0.1	25		
<i>Lepidosperma leptostachyum</i>	0.1	30	GBQ31-21	
<i>Lomandra caespitosa</i>	0.1	25	GBQ31-16	
<i>Lomandra hermaphrodita</i>	0.1	40	GBQ31-17	
<i>Lomandra preissii</i>	0.1	45	GBQ31-09	
<i>Lyginia imberbis</i>	0.1	50	GBQ31-15	
<i>Melaleuca brevifolia</i>	0.5	200	GBQ31-20	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	40	GBQ31-02	
<i>Phlebocarya ciliata</i>	2	60	GBQ31-08	
<i>Pterostylis</i> ? <i>vittata</i>	0.1	20	GBQ31-23	
<i>Scaevola repens</i> var. <i>repens</i>	0.1	10	GBQ31-19	
<i>Schoenus caespititius</i>	0.1	45	GBQ31-03	
<i>Stirlingia latifolia</i>	0.1	35		
<i>Stylidium araeophyllum</i>	0.1	30	GBQ31-11	
<i>Tricoryne elatior</i>	0.1	30	GBQ31-04	
<i>Xanthorrhoea preissii</i>	0.1	150		
<i>Xanthorrhoea preissii</i>	4	150	GBQ31-24	



GEH Bypass Interchange Project PH1

Site GEHREL01

Described by CEF/RM

Date 29-Oct-19

Type

Relevé: 50 x 50 m

MGA Zone 50

406357 mE

6469657 mN

Habitat Wetland area perched above river.

Soil Dark brown sandy clay loam.

Rock Type None.

Vegetation *Bolboschoenus caldwellii*, **Juncus bufonius*, *Typha domingensis* tall sedgeland over **Isolepis prolifera*, *Cyperus alterniflorus* very open sedgeland over **Bromus hordeaceus* very open grassland over **Lotus subbiflorus* very open herbland.

Veg Condition Degraded.

Fire Age Very long unburnt.

Species	%Cover	Height	Specimen	Notes
<i>*Bolboschoenus caldwellii</i>	20	100	GREL01-05	
<i>*Bromus diandrus</i>	0.1	40	GBQ10-07=	
<i>*Bromus hordeaceus</i>	1	60	GREL01-01	
<i>*Coryza bonariensis</i>	0.1	80		
<i>*Cynodon dactylon</i>	5	20		
<i>Cyperus alterniflorus</i>	2	60	GBQ10-09=	
<i>*Echium plantagineum</i>	0.1	30		N=10
<i>*Isolepis prolifera</i>	1	60	GREL01-03	
<i>*Juncus bufonius</i>	10	120	GREL01-06	
<i>*Lolium perenne</i>	0.1	50	GREL01-02	
<i>*Lotus subbiflorus</i>	1	80	GREL01-07	
<i>*Lupinus angustifolius</i>	0.1	30		
<i>*Lythrum hyssopifolia</i>	0.1	20	GREL01-10	
<i>*Medicago polymorpha</i>	0.1	20		
<i>*Paspalum urvillei</i>	0.1	130	GREL01-09	
<i>Pseudognaphalium luteoalbum</i>	0.1	20	GREL01-11	
<i>*Ricinus communis</i>	0.1	80		
<i>*Rostraria cristata</i>	0.1	25	GREL01-12	
<i>*Sonchus asper</i>	0.1	50		
<i>*Sonchus oleraceus</i>	0.1	30		
<i>Typha domingensis</i>	1	120	GREL01-13	



GEH Bypass Interchange Project PH1 **Site** GEHREL02
Described by RM/AL **Date** 30-Oct-19 **Type** Relevé: 20 x 20 m
MGA Zone 50 407125 mE 6469352 mN
Habitat Floodbank of lake.
Soil Dark brown silty clay Loam.
Rock Type None.
Vegetation *Corymbia calophylla* open woodland over *Melaleuca raphiophylla* low open forest over
**Bromus diandrus*, **Briza maxima*, **Briza minor*, **Ehrharta calycina*, **Avena fatua* very open
tussock grassland over *Schoenus clandestinus*, *Juncus articulatus*, **Juncus capitatus*, *Isolepis*
cernua var. *setiformis* sedgeland over *Cycnogeton huegelii* scattered herbs.
Veg Condition Good.
Fire Age No sign of recent fire.

Species	%Cover	Height	Specimen	Notes
<i>*Arundo donax</i>	0.1	500		
<i>*Asparagus asparagoides</i>	0.1	100		N=4
<i>*Avena fatua</i>	0.5	70	GBQ10-03=	
<i>*Briza maxima</i>	2	40		
<i>*Briza minor</i>	1	30		
<i>*Bromus diandrus</i>	5	30	GBQ10-07=	
<i>Corymbia calophylla</i>	5	1400		
<i>Cycnogeton huegelii</i>	2	50	CF02-03=	
<i>*Ehrharta calycina</i>	0.5	70		
<i>Isolepis cernua</i> var. <i>setiformis</i>	1	10	GREL02-11	
<i>Isolepis cyperoides</i>	0.1	15	GREL02-10	
<i>Juncus articulatus</i>	10	40	GREL02-07	
<i>*Juncus capitatus</i>	5	20	GREL02-08	
<i>Juncus pallidus</i>	0.1	30	GREL02-02	
<i>Lobelia anceps</i>	0.1	30	GREL02-03	
<i>Melaleuca lateritia</i>	0.1	140	GREL02-09	
<i>Melaleuca raphiophylla</i>	40	900	GREL02-01	
<i>Pericalymma ellipticum</i> var. <i>floridum</i>	0.1	200	GBQ04-01=	
<i>*Schinus terebinthifolius</i>	0.1	400		
<i>Schoenus clandestinus</i>	30	10	GREL02-04	
<i>*Sonchus oleraceus</i>	0.1	30		
<i>*Trifolium campestre</i> var. <i>campestre</i>	0.1	20	GREL02-12	



GEH Bypass Interchange Project PH1

Site GEHREL03

Described by RM/AL **Date** 30-Oct-19 **Type** Relevé: 20 x 20 m**MGA Zone** 50 405830 mE 6468233 mN**Habitat** Roadside, flat, plain.**Soil** Dark brown sandy loam.**Rock Type** None**Vegetation** *Eucalyptus rudis* subsp. *rudis*, *Casuarina obesa*, *Eucalyptus camaldulensis* open forest over *Melaleuca raphiophylla*, **Melaleuca nesophila* tall open shrubland over **Cenchrus clandestinus*, **Ehrharta calycina*, **Ehrharta longiflora*, **Bromus diandrus* closed tussock grassland.**Veg Condition** Degraded.**Fire Age** No sign of recent fire.

Species	%Cover	Height	Specimen	Notes
<i>Acacia saligna</i>	0.1	450		
<i>Agonis flexuosa</i>	1	7		
* <i>Avena fatua</i>	0.5	80	GBQ10-03=	
* <i>Bromus diandrus</i>	5	30	GBQ10-07=	
<i>Casuarina obesa</i>	10	2000	GREL03-03	
* <i>Cenchrus clandestinus</i>	75	80	GREL03-05	
* <i>Ehrharta calycina</i>	5	70		
* <i>Ehrharta longiflora</i>	5	60	GREL03-04	
* <i>Ehrharta longiflora</i>	0.1	60	GBQ12-01=	
<i>Eucalyptus camaldulensis</i>	5	3000	GREL03-01	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	50	2500		
* <i>Fumaria capreolata</i>	0.1	30	GBQ10-02=	
* <i>Hypochaeris radicata</i>	0.1	70	GREL03-07	
* <i>Lolium multiflorum</i>	1	30	GREL03-08	
* <i>Melaleuca hamulosa</i>	0.1	300	GREL03-09	Planted
* <i>Melaleuca nesophila</i>	2	400	GREL03-06	Planted
<i>Melaleuca raphiophylla</i>	3	400	GREL03-02	
* <i>Schinus terebinthifolius</i>	0.1	5		
* <i>Solanum nigrum</i>	0.1	70		
* <i>Zantedeschia aethiopica</i>	0.1	100		N=3



GEH Bypass Interchange Project PH1

Site GEHREL04

Described by RM

Date 30-Oct-19

Type

Relevé: 5 x 50 m

MGA Zone 50

404907 mE

6466608 mN

Habitat Fringing vegetation around a man-made lake.**Soil** Dark brown loamy sand.**Rock Type** None.**Vegetation** **Melaleuca armillaris*, **Casuarina ?equisetifolia* low open forest over **Cynodon dactylon* scattered grasses.**Veg Condition** Very Good, Good.**Fire Age** Very long unburnt.

Species	%Cover	Height	Specimen	Notes
* <i>Avena fatua</i>	0.1	40		
* <i>Briza maxima</i>	0.1	30		
* <i>Casuarina ?equisetifolia</i>	15	1200	GREL04-02	ISM for det.
* <i>Cynodon dactylon</i>	1	20		
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	0.1	400	GREL04-04	
* <i>Gladiolus caryophyllaceus</i>	0.1	30		
* <i>Hydrocotyle ranunculoides</i>	0.1	5	GREL04-05	
* <i>Melaleuca armillaris</i>	45	1200	GREL04-01	
<i>Melaleuca viminalis</i>	0.1	280	GREL04-03	N=1. Planted.
* <i>Pelargonium capitatum</i>	0.1	60		
* <i>Schinus terebinthifolius</i>	0.1	300		



GEH Bypass Interchange Project PH1 **Site** GEHREL05**Described by** RM **Date** 29-Oct-19 **Type** Relevé: 10 x 30 m**MGA Zone** 50 406039 **mE** 6470377 **mN****Habitat** Channel and bank of Helena River flowing west.**Soil** Dark brown silty clay Loam.**Rock Type** None.**Vegetation** *Eucalyptus rudis* subsp. *rudis* open forest over *Ficus carica* low woodland over *Gomphocarpus fruticosus* (*Chenopodium album*) open shrubland over *Rubus ulmifolius* low shrubland over *Avena fatua*, *Bromus diandrus* very open tussock grassland over *Cyperus alterniflorus* scattered sedges over *Cycnogeton huegelii*, *Fumaria capreolata* very open hermland.**Veg Condition** Degraded.**Fire Age** Very long unburnt.

Species	%Cover	Height	Specimen	Notes
* <i>Avena fatua</i>	5	150	GBQ10-03=	
* <i>Bromus diandrus</i>	1	45	GBQ10-07=	
* <i>Chenopodium album</i>	2	130	GBQ10-05=	
* <i>Chenopodium album</i>	0.1	50	GBQ10-05=	
<i>Cycnogeton huegelii</i>	1	50	CF02-03=	
<i>Cyperus alterniflorus</i>	1	60	GBQ10-09=	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	50	1400	GBQ10-01=	
* <i>Ficus carica</i>	30	900		
* <i>Fumaria capreolata</i>	5	70	GBQ10-02=	
* <i>Gomphocarpus fruticosus</i>	1	120		N=200
* <i>Hordeum leporinum</i>	0.1	40	GBQ10-08=	
* <i>Hypochoeris radicata</i>	0.1	5	GBQ10-11=	
* <i>Rubus ulmifolius</i>	5	90		N=20
* <i>Setaria parviflora</i>	0.1	60	CF02-01=	
* <i>Sonchus asper</i>	0.1	110		
* <i>Sonchus oleraceus</i>	0.1	40	GBQ10-10=	
* <i>Zantedeschia aethiopica</i>	0.1	60		N=1



GEH Bypass Interchange Project PH1

Site GEHREL06

Described by CEF/RM Date 29-Oct-19 Type Relevé 20 x 20 m

MGA Zone 50 406064 mE 6470400 mN

Habitat Floodplain and bank of Helena River.

Soil Dark brown silty clay Loam.

Rock Type None.

Vegetation *Eucalyptus rudis* subsp. *rudis* open forest over *Ficus carica* low woodland over *Ehrharta longiflora* (*Avena fatua*) very open grassland over *Fumaria capreolata* open herbland.

Veg Condition Degraded.

Fire Age Very long unburnt.

Species	%Cover	Height	Specimen	Notes
<i>Avena fatua</i>	1	150	GBQ10-03=	
<i>Bromus diandrus</i>	0.1	45	GBQ10-07=	
<i>Chenopodium album</i>	0.1	130	GBQ10-05=	
<i>Cyperus alterniflorus</i>	0.1	60	GBQ10-09=	
<i>Ehrharta longiflora</i>	5	30	GBQ10-04=	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	45	1400	GBQ10-01=	
<i>Ficus carica</i>	40	800		
<i>Fumaria capreolata</i>	20	70	GBQ10-02=	
<i>Hordeum leporinum</i>	0.1	40	GBQ10-08=	
<i>Hypochaeris radicata</i>	0.1	5	GBQ10-11=	
<i>Sonchus oleraceus</i>	0.1	40	GBQ10-10=	



GEH Bypass Interchange Project PH1

Site GEHREL07

Described by RM Date 10-Oct-19 Type Relevé: 20 x 20 m

MGA Zone 50 406535 mE 6468275 mN

Habitat Dune crest and south slope.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Jacksonia floribunda* scattered tall shrubs over *Eremaea pauciflora* subsp. *pauciflora* open heath over *Astroloma xerophyllum* low open shrubs over *Lyginia imberbis* very open sedgeland.

Veg Condition Excellent, Very Good.

Fire Age No sign of recent fire.

Species	%Cover	Height	Specimen	Notes
<i>Alexgeorgea nitens</i>	35	20		
<i>Amphipogon turbinatus</i>	0.1	20	GBQ03-19=	
<i>Amphipogon turbinatus</i>	0.1	20	GBQ03-15=	
<i>Astroloma xerophyllum</i>	3	90	GBQ03-08=	
<i>Austrostipa compressa</i>	0.1	25	GBQ03-16=	
<i>Bossiaea eriocarpa</i>	0.1	1	GBQ03-14=	
* <i>Briza maxima</i>	0.1	20		
<i>Burchardia congesta</i>	0.1	20	GBQ03-07=	
<i>Conostylis juncea</i>	0.1	20	GBQ03-06=	
* <i>Ehrharta calycina</i>	0.1	60		
<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	40	120		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	0.1	30		
<i>Hyalosperma cotula</i>	0.1	5	GBQ03-03=	
* <i>Hypochoeris glabra</i>	0.5	5		
<i>Jacksonia floribunda</i>	1.5	250		
<i>Jacksonia floribunda</i>	0.1	20	GBQ03-12=	juvenile
<i>Levenhookia stipitata</i>	0.1	4	GBQ01-47=	
<i>Lomandra hermaphrodita</i>	0.1	20	GBQ03-18=	
<i>Lomandra suaveolens</i>	0.1	30	GBQ03-22=	
<i>Lyginia barbata</i>	0.1	30	GBQ02-04=	
<i>Lyginia imberbis</i>	2	90	GBQ04-08=	
<i>Melaleuca systema</i>	0.1	90		
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	25	GBQ03-05=	
* <i>Pentameris pallida</i>	0.1	20	GBQ03-09=	
<i>Podotheca angustifolia</i>	0.1	10	GBQ03-11=	
<i>Schoenus efoliatus</i>	0.1	20	GBQ03-17=	
<i>Scholtzia involuocrata</i>	0.1	40	GBQ03-02=	
* <i>Sonchus oleraceus</i>	0.1	20		
<i>Stirlingia latifolia</i>	0.1	90		
<i>Stylidium repens</i>	0.1	20	GBQ03-25=	
<i>Thysanotus patersonii</i>	0.1	40	GBQ03-13=	
<i>Trachymene pilosa</i>	0.1	7		
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	15		



GEH Bypass Interchange Project PH1

Site GEHREL08

Described by CEF/RM Date 29-Oct-19 Type Relevé: 20 x 20 m

MGA Zone 50 406202 mE 6470390 mN

Habitat Floodplain, adjacent to Helena River.

Soil Dark brown sandy clay loam.

Rock Type None.

Vegetation *Eucalyptus rudis* subsp. *rudis* open forest over *Ehrharta longiflora* (*Avena fatua*) closed grassland over *Fumaria capreolata*, *Chenopodium album*, *Echium plantagineum* very open herbland.

Veg Condition Degraded.

Fire Age No sign of recent fire.

Species	%Cover	Height	Specimen	Notes
* <i>Avena fatua</i>	18	150	GBQ10-03=	
* <i>Bromus diandrus</i>	0.1	45	GBQ10-07=	
* <i>Chenopodium album</i>	1	130	GBQ10-05=	
<i>Cyperus alterniflorus</i>	0.1	60	GBQ10-09=	
* <i>Echium plantagineum</i>	1	40		N=30
* <i>Ehrharta calycina</i>	0.1	70		
* <i>Ehrharta longiflora</i>	60	30	GBQ10-04=	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	55	1400	GBQ10-01=	
* <i>Euphorbia terracina</i>	0.1	30		
* <i>Fumaria capreolata</i>	7	70	GBQ10-02=	
* <i>Gomphocarpus fruticosus</i>	0.1	90		N=3
* <i>Hordeum leporinum</i>	0.1	40	GBQ10-08=	
* <i>Lupinus angustifolius</i>	0.1	30		
* <i>Sonchus oleraceus</i>	0.1	40	GBQ10-10=	



GEH Bypass Interchange Project PH1**Site** GEHREL09**Described by** RM/AL **Date** 4-Nov-19 **Type** Relevé: 20 x 20 m**MGA Zone** 50 **406953 mE** **6467549 mN****Habitat** Roadside plain.**Soil** Dark brown Loamy sand.**Rock Type** None.**Vegetation** *Eucalyptus marginata* subsp. *marginata* open forest over *Adenanthos cygnorum*, *Calothamnus sanguineus*, *Xanthorrhoea preissii* tall open shrubland over *Hibbertia hypericoides* subsp. *hypericoides*, *Gompholobium tomentosum* scattered low shrubs over **Eragrostis curvula* (**Ehrharta calycina*, **Briza maxima*) open grassland over *Lyginia barbata*, *Lomandra preissii*, *Lepidosperma* sp. scattered sedges over *Alexgeorgea nitens*, *Desmocladius flexuosus*, *Corynotheca micrantha* var. *elongata* open herbland.**Veg Condition** Good, Degraded.**Fire Age** Very long unburnt.

Species	%Cover	Height	Specimen	Notes
<i>Acacia willdenowiana</i>	0.1	25	GREL09-09	
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	2	220		
<i>Alexgeorgea nitens</i>	5	15		
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	0.1	35	GREL09-10	
<i>Billardiera fraseri</i>	0.1	80	GREL09-03	
<i>Bossiaea eriocarpa</i>	0.1	35	GBQ06-16=	
* <i>Briza maxima</i>	1	30		
* <i>Briza minor</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	30		
<i>Calothamnus sanguineus</i>	1	220		
<i>Conostephium pendulum</i>	0.1	40	GREL09-08	
<i>Conostylis juncea</i>	0.1	30	GREL09-14	
<i>Corynotheca micrantha</i> var. <i>elongata</i>	1	20		
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>	0.1	60	GREL09-07	
<i>Desmocladius flexuosus</i>	10	20	GREL09-04	
* <i>Ehrharta calycina</i>	1	110		
* <i>Eragrostis curvula</i>	10	120		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	40	1800		
* <i>Euphorbia terracina</i>	0.1	30		
* <i>Gladiolus caryophyllaceus</i>	0.1	50		
<i>Gompholobium tomentosum</i>	0.5	15		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	0.5	40		
<i>Kennedia prostrata</i>	0.1	20		
<i>Kunzea glabrescens</i>	0.1	450	GREL09-02	
<i>Lepidosperma</i> sp.	0.5	30	GREL09-11	
<i>Lomandra preissii</i>	0.5	40	GREL09-06	
<i>Lomandra preissii</i>	0.1	40	GREL09-12	
<i>Lyginia barbata</i>	1	50	GREL09-05	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30		
* <i>Romulea rosea</i>	0.1	20		
* <i>Sonchus oleraceus</i>	0.1	15		
<i>Xanthorrhoea preissii</i>	5	200		



GEH Bypass Interchange Project PH1 **Site** GEHREL10
Described by CEF/RM **Date** 29-Oct-19 **Type** Relevé: 20 x 20 m
MGA Zone 50 406261 mE 6469667 mN
Habitat Floodplain, slightly sloping towards river.
Soil Dark brown sandy clay loam.
Rock Type None.
Vegetation *Melaleuca raphiophylla*, (*Melaleuca preissiana*, *Eucalyptus rudis* subsp. *rudis*) low open forest over *Ehrharta longiflora*, *Bromus diandrus* very open grassland over *Sonchus oleraceus*, *Fumaria capreolata* herbland.
Veg Condition Degraded.
Fire Age Very long unburnt.

Species	%Cover	Height	Specimen	Notes
* <i>Avena fatua</i>	0.1	30	GBQ10-03=	
* <i>Bromus diandrus</i>	4	25	GBQ10-07=	
* <i>Ehrharta longiflora</i>	20	50	GBQ12-01=	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	0.5	900	CF08-01=	
* <i>Euphorbia terracina</i>	0.1	30		
* <i>Fumaria capreolata</i>	60	70	GBQ10-02=	
<i>Melaleuca preissiana</i>	2	600		
<i>Melaleuca raphiophylla</i>	80	800	GBQ12-02=	
* <i>Sonchus oleraceus</i>	1	30	GBQ10-10=	



GEH Bypass Interchange Project PH1

Site GEHREL11

Described by RM/AL Date 5-Nov-19 Type Relevé: 20 x 20 m

MGA Zone 50 406954 mE 6467881 mN

Habitat Crest of Grey sand dune.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Eucalyptus marginata* subsp. *marginata* open woodland over *Banksia menziesii*, (*Banksia attenuata*) low open woodland over *Adenanthos cygnorum* subsp. *cygnorum* tall open shrubland over *Xanthorrhoea preissii*, *Allocasuarina humilis* open shrubland over *Dasypogon bromeliifolius*, *Hibbertia hypericoides* subsp. *hypericoides*, *Bossiaea eriocarpa*, *Scaevola repens* var. *repens* low open shrubland over *Mesomelaena pseudostygia*, *Schoenus efoliatus* very open sedgeland over *Alexgeorgea nitens* scattered herbs.

Veg Condition Excellent, Very Good.**Fire Age** Very long unburnt.

Species	%Cover	Height	Specimen	Notes
<i>Acacia sessilis</i>	0.1	30	GREL11-07	
<i>Acacia willdenowiana</i>	0.1	30	GREL09-09=	
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	5	450		
<i>Alexgeorgea nitens</i>	2	30		
<i>Allocasuarina humilis</i>	2	120		
<i>Amphipogon turbinatus</i>	0.1	30	GREL11-13	
<i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>	0.1	30		
<i>Banksia attenuata</i>	0.5	210		
<i>Banksia dallanneyi</i> var. <i>dallanneyi</i>	0.1	20	GREL09-10=	
<i>Banksia menziesii</i>	5	400		
<i>Blancoa canescens</i>	0.1	25	GBQ15-21=	
<i>Bossiaea eriocarpa</i>	1	30		
* <i>Briza maxima</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	30		
<i>Caustis dioica</i>	0.1	20	GBQ05-05=	
<i>Conostylis setigera</i> subsp. <i>setigera</i>	0.1	25	GREL11-06	
<i>Dampiera linearis</i>	0.1	25	GBQ15-18=	
<i>Dasypogon bromeliifolius</i>	2	60		
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>	0.1	50	GREL09-07=	
<i>Desmocladius fasciculatus</i>	0.1	20	GBQ17-18=	
* <i>Ehrharta calycina</i>	0.1	50		
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	8	1800		
* <i>Gladiolus caryophyllaceus</i>	0.1	25		
<i>Haemodorum</i> sp.	0.1	40		ISM for det.
<i>Hemiandra linearis</i>	0.1	25	GBQ17-03=	
<i>Hibbertia huegelii</i>	0.1	30	GBQ17-34=	
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	2	30		
<i>Hovea trisperma</i> var. <i>trisperma</i>	0.1	35	GBQ17-19=	
<i>Hybanthus calycinus</i>	0.1	20	GREL11-02	
<i>Hybanthus calycinus</i>	0.1	10	GREL11-08	
<i>Lepidosperma leptostachyum</i>	0.1	60	GREL11-04	
<i>Lomandra hermaphrodita</i>	0.1	30	GBQ16-13=	
<i>Lyginia barbata</i>	0.1	60	GBQ16-05=	
<i>Mesomelaena pseudostygia</i>	2	60	GBQ01-06=	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	30		
<i>Petrophile linearis</i>	0.1	30	GEHREL11	
<i>Phlebocarya ciliata</i>	0.1	30	GREL11-09	
<i>Pimelea angustifolia</i>	0.1	25	GREL11-10	
<i>Rytidosperma occidentale</i>	0.1	50	GREL11-14	
<i>Rytidosperma pilosum</i>	0.1	30	GREL11-11	
<i>Scaevola canescens</i>	0.1	30	GREL11-03	
<i>Scaevola repens</i> var. <i>repens</i>	0.5	20		
<i>Schoenus efoliatus</i>	1	30	GREL11-05	
<i>Stylidium repens</i>	0.1	5	GREL11-01	
<i>Synaphea spinulosa</i> subsp. <i>spinulosa</i>	0.1	70	GREL11-15	
<i>Tetragia octandra</i>	0.1	30	GREL11-12	

Species	%Cover	Height	Specimen	Notes
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	10		
<i>Xanthorrhoea preissii</i>	5	120		
<i>Xanthosia huegelii</i>	0.1	20	GBQ17-13=	



GEH Bypass Interchange Project PH1

Site GEHREL12

Described by RM/AL Date 6-Nov-19 Type Relevé: 20 x 20 m

MGA Zone 50 406718 mE 6468450 mN

Habitat Sand dune east west.

Soil Creamy grey sand.

Rock Type None.

Vegetation *Eucalyptus todtiana*, *Allocasuarina fraseriana* woodland over *Banksia menziesii* (*Banksia attenuata*) low open forest over *Adenanthos cygnorum* subsp. *cygnorum* tall open shrubland over *Xanthorrhoea preissii*, *Jacksonia floribunda*, *Allocasuarina humilis* scattered shrubs over *Stirlingia latifolia*, *Dasypogon bromeliifolius*, *Hibbertia hypericoides* subsp. *hypericoides*, *Bossiaea eriocarpa* low open shrubland over *Mesomelaena pseudostygia*, *Lyginia barbata* very open sedgeland over *Alexgeorgea nitens* very open herbland.

Veg Condition Very Good to Good.**Fire Age** Very long unburnt.

Species	%Cover	Height	Specimen	Notes
<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>	5	280		
<i>Alexgeorgea nitens</i>	4	20		
<i>Allocasuarina fraseriana</i>	7	1100		
<i>Allocasuarina humilis</i>	2	130		
<i>Banksia attenuata</i>	2	800		
<i>Banksia menziesii</i>	35	900		
<i>Blancoa canescens</i>	0.1	20	GBQ15-21=	
<i>Bossiaea eriocarpa</i>	1	40	GBQ06-16=	
<i>Briza maxima</i>	0.1	30		
<i>Burchardia congesta</i>	0.1	50		
<i>Conospermum acerosum</i> subsp. <i>acerosum</i>	0.1	120	GREL12-01	
<i>Dasypogon bromeliifolius</i>	4	40	GBQ01-21=	
<i>Daviesia triflora</i>	0.1	60	GBQ18-06=	
<i>Ehrharta calycina</i>	0.1	50		
<i>Eucalyptus todtiana</i>	10	1500		
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	2	40		
<i>Jacksonia floribunda</i>	1	170		
<i>Lyginia barbata</i>	1	50	GBQ16-05=	
<i>Lyginia barbata</i>	1	45	GBQ08-39=	
<i>Mesomelaena pseudostygia</i>	3	60	GBQ01-06=	
<i>Microtis media</i> subsp. <i>media</i>	0.1	25	GBQ16-08=	
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	0.1	50		
<i>Petrophile linearis</i>	0.1	25		
<i>Stirlingia latifolia</i>	3	90		
<i>Stylidium calcaratum</i>	0.1	5	GBQ01-01=	
<i>Xanthorrhoea preissii</i>	2	130		



GEH Bypass Interchange Project PH1 Site GEHREL13

Described by RM/AL Date 30-Oct-19 Type Relevé: 10 x 30 m

MGA Zone 50 406880 mE 6469693 mN

Habitat Floodplain and bank of Helena River.

Soil Dark brown silty clay Loam.

Rock Type None.

Vegetation *Eucalyptus rudis* subsp. *rudis* open forest over *Melaleuca raphiophylla* low open woodland over *Ehrharta longiflora*, *Bromus diandrus* open grassland over *Fumaria capreolata*, *Cycnogeton huegelii* open herbland.

Veg Condition Degraded, Good.

Fire Age Very long unburnt.

Species	%Cover	Height	Specimen	Notes
* <i>Bromus diandrus</i>	10	25	GBQ10-07=	
* <i>Chenopodium album</i>	0.1	40	GBQ10-05=	
<i>Cycnogeton huegelii</i>	2	50	CF02-03=	
<i>Cyperus alterniflorus</i>	0.1	60	GBQ10-09=	
* <i>Ehrharta longiflora</i>	20	50	GBQ12-01=	
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	50	1500	GBQ10-01=	
* <i>Euphorbia terracina</i>	0.1	30		
* <i>Fumaria capreolata</i>	15	70	GBQ10-02=	
* <i>Hordeum leporinum</i>	0.1	30	GBQ10-08=	
* <i>Hypochaeris radicata</i>	0.1	5	GBQ10-11=	
<i>Melaleuca raphiophylla</i>	5	600		
* <i>Sonchus oleraceus</i>	0.1	30	GBQ10-10=	



GEH Bypass Interchange Project PH1 **Site** GEHREL14
Described by RM/AL **Date** 30-Oct-19 **Type** Relevé: 10 x 30 m
MGA Zone 50 406984 mE 6469703 mN
Habitat Roadside bank sloping to east.
Soil Dark brown loamy sand.
Rock Type None.
Vegetation *Corymbia calophylla* low woodland over *Pteridium esculentum* low closed heath over
Avena fatua*, **Bromus diandrus* scattered grasses over **Fumaria capreolata* (Sonchus asper*) open herbland.
Veg Condition Good.
Fire Age Very long unburnt.

Species	%Cover	Height	Specimen	Notes
<i>*Avena fatua</i>	2	80	GBQ10-03=	
<i>*Bromus diandrus</i>	1	30	GBQ10-07=	
<i>Corymbia calophylla</i>	25	1500		
<i>*Euphorbia terracina</i>	0.1	30		
<i>*Fumaria capreolata</i>	25	40	GBQ10-02=	
<i>*Hordeum leporinum</i>	0.1	30	GBQ10-08=	
<i>Pteridium esculentum</i>	65	90	GREL14-01	
<i>*Raphanus raphanistrum</i>	0.1	70		
<i>*Sonchus asper</i>	1	50		
<i>*Sonchus oleraceus</i>	0.1	30		



GEH Bypass Interchange Project PH1**Site** GEHREL15**Described by** RM/AL **Date** 4-Nov-19 **Type** Relevé: 20 x 20 m**MGA Zone** 50 **404120 mE** **6468197 mN****Habitat** Sandy plain, roadside.**Soil** Creamy grey sand.**Rock Type** None.**Vegetation** *Eucalyptus todtiana*, *Corymbia calophylla* low woodland over *Banksia menziesii*, *Banksia attenuata* low open woodland over *Adenanthos barbiger* (*Acacia saligna*, *Calothamnus quadrifidus*) tall open shrubland over *Eragrostis curvula* open tussock grassland.**Veg Condition** Good.**Fire Age** No sign of recent fire.

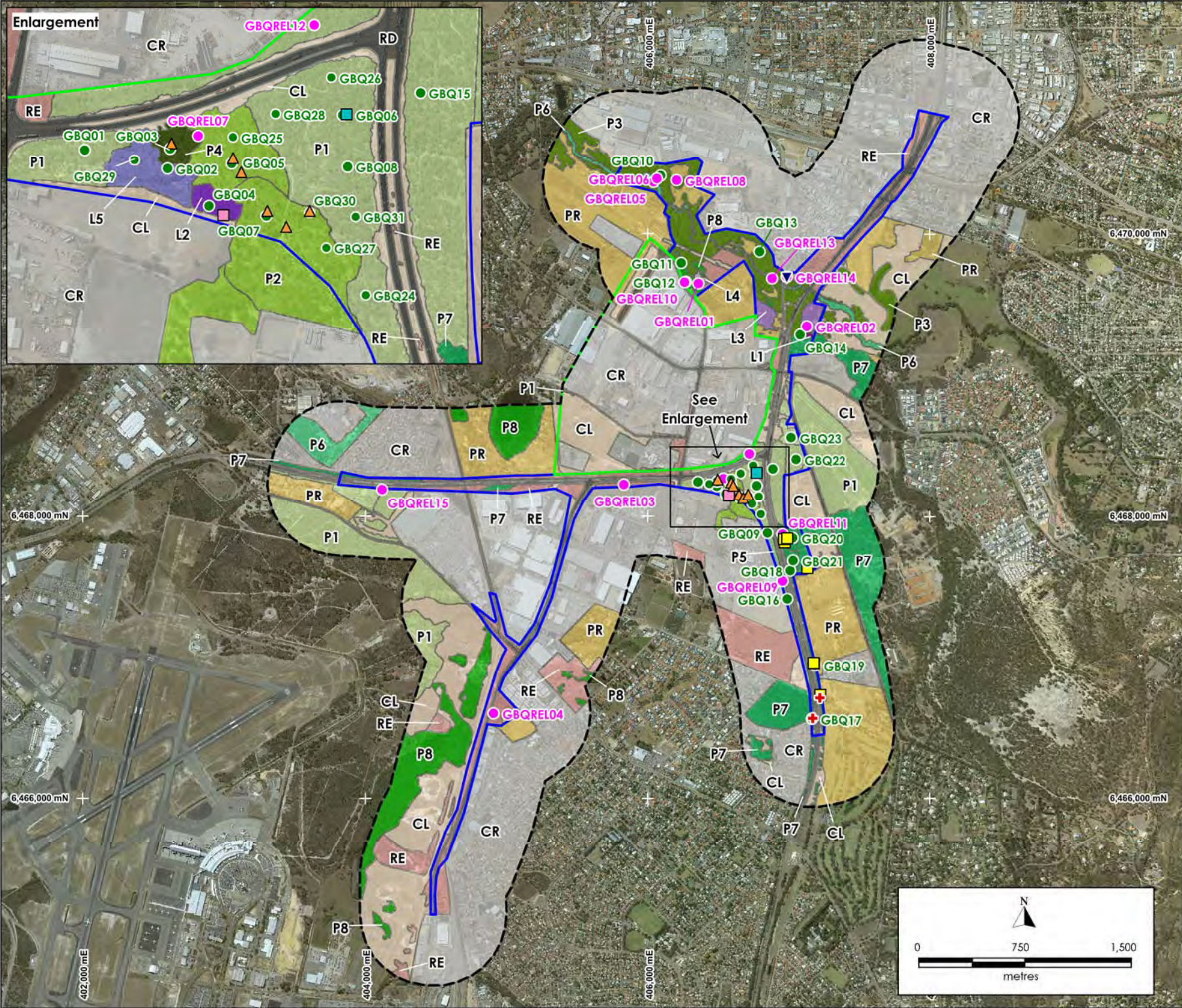
Species	%Cover	Height	Specimen	Notes
<i>Acacia saligna</i>	2	180		
<i>Adenanthos barbiger</i>	4	230		
<i>Banksia attenuata</i>	2	450		
<i>Banksia menziesii</i>	5	300		
* <i>Briza maxima</i>	0.1	30		
<i>Calothamnus quadrifidus</i>	1	250		
<i>Corymbia calophylla</i>	5	600		
* <i>Ehrharta calycina</i>	0.1	40		
* <i>Eragrostis curvula</i>	20	40		
<i>Eucalyptus todtiana</i>	7	500		
* <i>Gladiolus caryophyllaceus</i>	0.1	30		N=5
<i>Gompholobium tomentosum</i>	0.1	30		
* <i>Leptospermum laevigatum</i>	2	250		
* <i>Pelargonium capitatum</i>	0.1	50		
* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	0.1	10		



Appendix 9

Vegetation Type Mapping and Sampling Site Locations





- GEHBI Level 1 Survey area
 - GEHBI Level 2 Survey area
 - Contextual area (500m buffer)
 - Quadrat site location
 - Relevé site location
- Conservation Significant Flora (current survey)**
Threatened
- + *Conospermum undulatum*
 - Priority 2**
 - ▲ *Johnsonia pubescens* subsp. *cygnorum*
 - ▼ *Melaleuca viminalis* *
 - Priority 3**
 - *Isopogon autumnalis*
 - Priority 4**
 - *Hypolaena robusta*
 - *Verticordia lindleyi* subsp. *lindleyi*
- * Planted species









Author: R Mason Drawn: M Robinson
 Job No.: 1484
 Date: 29 July 2020 Revised: 21 May 2021
 Projection: MGA Z50 Scale: 1:35,000 @ A4

GEHBI Biological Vegetation




Biota
Environmental Sciences

Great Eastern Highway Bypass Interchanges Vegetation Mapping Descriptions



Vegetation Types

	L1	<i>Melaleuca</i> over sedges
	L2	Swamp Teatree over sedges
	L3	Marri over <i>Melaleuca</i> low open woodland on claypits
	L4	Mixed sedge dampland
	L5	<i>Jacksonia</i> over <i>Xanthorrhoea</i> with sedges
	P1	<i>Allocasuarina</i> and <i>Banksia</i> over <i>Xanthorrhoea</i> with sedges
	P2	Marri over <i>Kingia australis</i> with sedges
	P3	Flooded Gum over weedy grasses on floodplain
	P4	<i>Eremaea</i> open heath
	P5	Jarrah over <i>Xanthorrhoea</i> with mixed shrubs and herbs
	P6	Flooded Gum over weedy understorey on riverbank
	P7	Jarrah and <i>Banksia</i> over <i>Xanthorrhoea</i> with sedges
	P8	<i>Melaleuca</i> low open forest over weedy understorey

Modified Areas

	CR	Commercial/residential mixed use
	PR	Private property/mixed use
	RE	Planted/revegetated

Cleared Areas

	CL	Cleared
	RD	Bitumen roads

PROJ	SITE	PEG_ID	EAST	NORTH
1484	GBQ01	1	406356	6468252
1484	GBQ01	2	406344	6468252
1484	GBQ01	3	406347	6468241
1484	GBQ01	4	406357	6468242
1484	GBQ02	1	406487	6468223
1484	GBQ02	2	406477	6468220
1484	GBQ02	3	406475	6468229
1484	GBQ02	4	406485	6468232
1484	GBQ03	1	406491	6468254
1484	GBQ03	2	406499	6468259
1484	GBQ03	3	406495	6468268
1484	GBQ03	4	406486	6468263
1484	GBQ04	1	406552	6468164
1484	GBQ04	2	406562	6468166
1484	GBQ04	3	406559	6468176
1484	GBQ04	4	406550	6468173
1484	GBQ05	1	406588	6468231
1484	GBQ05	2	406582	6468241
1484	GBQ05	3	406594	6468244
1484	GBQ05	4	406597	6468234
1484	GBQ06	1	406763	6468308
1484	GBQ06	2	406772	6468314
1484	GBQ06	3	406776	6468307
1484	GBQ06	4	406767	6468300
1484	GBQ07	1	406643	6468148
1484	GBQ07	2	406650	6468153
1484	GBQ07	3	406645	6468160
1484	GBQ07	4	406637	6468155
1484	GBQ08	1	406771	6468226
1484	GBQ08	2	406766	6468234
1484	GBQ08	3	406758	6468227
1484	GBQ08	4	406763	6468220
1484	GBQ09	1	406847	6467890
1484	GBQ09	2	406858	6467883
1484	GBQ09	3	406848	6467881
1484	GBQ09	4	406857	6467894
1484	GBQ10	1	406092	6470422
1484	GBQ10	2	406087	6470409
1484	GBQ10	3	406081	6470418
1484	GBQ10	4	406096	6470413
1484	GBQ11	1	406235	6469803
1484	GBQ11	2	406234	6469795
1484	GBQ11	3	406225	6469791
1484	GBQ11	4	406220	6469800
1484	GBQ12	1	406270	6469668
1484	GBQ12	2	406267	6469676
1484	GBQ12	3	406277	6469682
1484	GBQ12	4	406279	6469673

PROJ	SITE	PEG_ID	EAST	NORTH
1484	GBQ13	1	406791	6469883
1484	GBQ13	2	406792	6469877
1484	GBQ13	3	406800	6469879
1484	GBQ13	4	406798	6469886
1484	GBQ14	1	407077	6469293
1484	GBQ14	2	407083	6469287
1484	GBQ14	3	407090	6469293
1484	GBQ14	4	407085	6469299
1484	GBQ15	1	406886	6468343
1484	GBQ15	2	406895	6468348
1484	GBQ15	3	406892	6468357
1484	GBQ15	4	406883	6468353
1484	GBQ16	1	406987	6467422
1484	GBQ16	2	406975	6467430
1484	GBQ16	3	406977	6467422
1484	GBQ16	4	406985	6467431
1484	GBQ17	1	407161	6466570
1484	GBQ17	2	407162	6466580
1484	GBQ17	3	407169	6466580
1484	GBQ17	4	407170	6466569
1484	GBQ18	1	407008	6467622
1484	GBQ18	2	407008	6467632
1484	GBQ18	3	406999	6467633
1484	GBQ18	4	406997	6467624
1484	GBQ19	1	407183	6466952
1484	GBQ19	2	407181	6466961
1484	GBQ19	3	407171	6466958
1484	GBQ19	4	407173	6466948
1484	GBQ20	1	407026	6467853
1484	GBQ20	2	407017	6467854
1484	GBQ20	3	407014	6467845
1484	GBQ20	4	407023	6467845
1484	GBQ21	1	407028	6467695
1484	GBQ21	2	407022	6467687
1484	GBQ21	3	407028	6467683
1484	GBQ21	4	407036	6467690
1484	GBQ22	1	407047	6468411
1484	GBQ22	2	407056	6468415
1484	GBQ22	3	407058	6468406
1484	GBQ22	4	407048	6468402
1484	GBQ23	1	407013	6468565
1484	GBQ23	2	407004	6468560
1484	GBQ23	3	407007	6468549
1484	GBQ23	4	407015	6468553
1484	GBQ24	1	406799	6468023
1484	GBQ24	2	406799	6468013
1484	GBQ24	3	406790	6468013
1484	GBQ24	4	406789	6468023

PROJ	SITE	PEG_ID	EAST	NORTH
1484	GBQ25	1	406590	6468273
1484	GBQ25	2	406581	6468272
1484	GBQ25	3	406582	6468263
1484	GBQ25	4	406592	6468265
1484	GBQ26	1	406745	6468367
1484	GBQ26	2	406754	6468367
1484	GBQ26	3	406745	6468376
1484	GBQ26	4	406753	6468376
1484	GBQ27	1	406737	6468098
1484	GBQ27	2	406734	6468088
1484	GBQ27	3	406725	6468092
1484	GBQ27	4	406728	6468101
1484	GBQ28	1	406657	6468310
1484	GBQ28	2	406660	6468301
1484	GBQ28	3	406652	6468298
1484	GBQ28	4	406648	6468306
1484	GBQ29	1	406435	6468236
1484	GBQ29	2	406445	6468235
1484	GBQ29	3	406444	6468224
1484	GBQ29	4	406433	6468225
1484	GBQ30	1	406711	6468154
1484	GBQ30	2	406718	6468148
1484	GBQ30	3	406714	6468141
1484	GBQ30	4	406706	6468146
1484	GBQ31	1	406783	6468147
1484	GBQ31	2	406785	6468157
1484	GBQ31	3	406775	6468158
1484	GBQ31	4	406775	6468149
1484	GEHREL01	1	406357	6469657
1484	GEHREL02	1	407125	6469352
1484	GEHREL03	1	405830	6468233
1484	GEHREL03	2	405884	6468236
1484	GEHREL04	1	404907	6466608
1484	GEHREL05	1	406039	6470377
1484	GEHREL06	1	406064	6470400
1484	GEHREL07	1	406535	6468275
1484	GEHREL08	1	406202	6470390
1484	GEHREL09	1	406953	6467549
1484	GEHREL10	1	406261	6469667
1484	GEHREL11	1	406954	6467881
1484	GEHREL12	1	406718	6468450
1484	GEHREL13	1	406880	6469693
1484	GEHREL14	1	406984	6469703
1484	GEHREL15	1	404120	6468197

Appendix 10

Locations of Significant Flora



Family	Species	Status	Site	Location	Easting	Northing	Date	Field No.	Number of Individuals / Cover	Notes
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	P2			406590	6468238	10/10/19	GBQ05-13	1	
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	P2			406644	6468154	10/10/19	GBQ07-20	1	
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	P2			406493	6468261	09/10/19	GBQ03-10	1	
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	P2			406603	6468215	03/11/20	RM01	1	
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	P2			406674	6468129	03/11/20	RM01=	5	
Hemerocallidaceae	<i>Johnsonia pubescens</i> subsp. ? <i>cygnorum</i>	P2			406711	6468154	04/11/20	GBQ30-12	1	
Myrtaceae	<i>Melaleuca viminalis</i>	P2			406984	6469703	10/30/19	GREL04-03	1	Planted
Myrtaceae	<i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>	P4	Opp.		406575	6468147	04/11/19	MROEOP55	1	
Proteaceae	<i>Conospermum undulatum</i>	T	Opp.		407218	6466718	04/11/19	MROEOP27	1	
Proteaceae	<i>Conospermum undulatum</i>	T			407166	6466574	04/11/19		2	
Proteaceae	<i>Isopogon autumnalis</i>	P3	Opp.		407127	6467633	07/05/20	BA01	11	
Proteaceae	<i>Isopogon autumnalis</i>	P3	Opp.		406968	6467812	05/11/19	AB04	70	
Proteaceae	<i>Isopogon autumnalis</i>	P3	Opp.		406963	6467836	05/11/19		15	
Proteaceae	<i>Isopogon autumnalis</i>	P3	Opp.		407219	6466729	04/11/19		15	
Proteaceae	<i>Isopogon autumnalis</i>	P3			407177	6466955	05/11/19	GBQ19-01	4	
Proteaceae	<i>Isopogon autumnalis</i>	P3	Opp.		406986	6467841	07/05/20		2	
Proteaceae	<i>Isopogon autumnalis</i>	P3	Opp.		407174	6466958	11/04/19	MROEOP22	11	
Restionaceae	<i>Hypolaena robusta</i>	P4			406769	6468307	10/10/19	GBQ06-36	1	



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au/> under Standard Report Forms

TAXON: <u>Conospermum undulatum</u>		TPFL Pop. No.: _____	
OBSERVATION DATE: <u>04/11/2019</u>		CONSERVATION STATUS: <u>T</u> New population <input checked="" type="checkbox"/>	
OBSERVER/S: <u>Rebecca Mason, Ayesha Lapinski</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Approximately 15 km ENE of Perth Central Business District

880 m N of the intersection of Roe Highway and Kalamunda Road along Roe HWY in the Bushland on the western side of the road adjacent to Hawksvale Reserve

Approximately 20 m W into the bushland **Reserve No.:** _____

DBC DISTRICT: <u>Swan</u>		LGA: <u>City of Swan</u>		Land manager present: <input type="checkbox"/>	
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input checked="" type="checkbox"/>		DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM's <input checked="" type="checkbox"/>		GPS <input type="checkbox"/> Differential GPS <input checked="" type="checkbox"/> Map <input type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: <u>6466574</u>		No. satellites: _____ Map used: _____	
WGS84 <input type="checkbox"/>		Long / Easting: <u>407166</u>		Boundary polygon captured: <input type="checkbox"/> Map scale: _____	
Unknown <input type="checkbox"/>		ZONE: <u>50</u>			
LAND TENURE:					
Nature reserve <input type="checkbox"/>		Timber reserve <input type="checkbox"/>		Private property <input type="checkbox"/>	
National park <input type="checkbox"/>		State forest <input type="checkbox"/>		Pastoral lease <input type="checkbox"/>	
Conservation park <input type="checkbox"/>		Water reserve <input type="checkbox"/>		UCL <input type="checkbox"/> SLK/Pole _____ to _____	
				Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/>	
				MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/>	
				Specify other: _____	

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____																
EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m ² : _____																
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/> Count method: _____ <small>(Refer to field manual for list)</small>																
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>																
TOTAL POP'N STRUCTURE:																
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td style="text-align:center">2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Mature:	Juveniles:	Seedlings:	Totals:	Alive	2				Dead				
	Mature:	Juveniles:	Seedlings:	Totals:												
Alive	2															
Dead																
Area of pop (m ²): _____																
Note: Pls record count as numbers (not percentages) for database.																
QUADRATS PRESENT: No. _____ Size _____ Data attached <input type="checkbox"/> Total area of quadrats (m ²): 100																
Summary Quad. Totals: Alive																
REPRODUCTIVE STATE:																
Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input type="checkbox"/>																
Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehisced fruit <input type="checkbox"/> Percentage in flower: _____%																

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing (complete vegetation clearing for road widening/installation purposes)	E	E	S
• Weeds (Occurs within 20 m of road, edge effects and dispersal of weeds into bushland)	L	H	L
•	---	---	---

Please return completed form to **Species And Communities Branch DBCA**,
 Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au
RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.
 Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; eg gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input checked="" type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other: _____		Specify other: _____	Specify other: _____	
Drainage line <input type="checkbox"/>				Dark Brown	
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					
CONDITION OF SOIL:	Dry <input checked="" type="checkbox"/>	Moist <input type="checkbox"/>	Waterlogged <input type="checkbox"/>	Inundated <input type="checkbox"/>	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia);
2. Open shrubland (Hibbertia sp., Acacia spp.);
3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus marginata subsp. marginata Woodland over
 2. Banksia menziesii Low woodland over Allocasuarina humilis scattered tall shrubs over Xanthorrhoea preissii Sparse shrubland
 3. Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallanneyi var. dallanneyi, Dasypogon obliquifolius Low open shrubland
 4. Lepidosperma oldamii/calcolica and Schoenus efoliatus Sparse sedgeland
- Stachystemon vermicularis, Hemiandra linearis, Monotaxis grandiflora var. grandiflora, Scaevola repens var. repens

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Occurs along the roadside

DRF PERMIT/ LICENCE No: FB62000035 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licencing pages on DBCA's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Rebecca Mason Role: Senior Botanist Signed: _____ Date: 06/05/2020

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.
Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au/> under Standard Report Forms

TAXON: <u>Conospermum undulatum</u>		TPFL Pop. No.: _____	
OBSERVATION DATE: <u>04/11/2020</u>		CONSERVATION STATUS: <u>T</u> New population <input checked="" type="checkbox"/>	
OBSERVER/S: <u>Rebecca Mason, Malcolm Trudgen</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Approximately 15 km ENE of Perth Central Business District</u>			
<u>Approximately 1 km N of the intersection of Roe Highway and Kalamunda Road along Roe HWY in the bushland on the eastern side of the road</u>			
<u>Approximately 15 m E into the bushland</u> Reserve No.: _____			
DBC DISTRICT: <u>Swan</u>		LGA: <u>City of Swan</u> Land manager present: <input type="checkbox"/>	
DATUM: <input checked="" type="checkbox"/> GDA94 / MGA94 <input type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown			
COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>6466718</u> Long / Easting: <u>407218</u> ZONE: <u>50</u>			
METHOD USED: GPS <input type="checkbox"/> Differential GPS <input checked="" type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input type="checkbox"/> Map scale: _____			
LAND TENURE:			
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____
			Shire road reserve <input type="checkbox"/>
			Other Crown reserve <input type="checkbox"/>
			Specify other: _____

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____			
EFFORT: Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____	
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/> Count method: _____ <small>(Refer to field manual for list)</small>			
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>			
TOTAL POP'N STRUCTURE:			
	Mature:	Juveniles:	Seedlings:
Alive	<u>1</u>		
Dead			
QUADRATS PRESENT: No. - _____ Size - _____ Data attached <input type="checkbox"/> Total area of quadrats (m ²): - _____			
Summary Quad. Totals: Alive			
REPRODUCTIVE STATE: Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input type="checkbox"/> Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehisced fruit <input type="checkbox"/> Percentage in flower: _____ %			

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing (complete vegetation clearing for road widening/installation purposes)	E	E	S
• Weeds (Occurs within 20 m of road, edge effects and dispersal of weeds into bushland)	L	H	L
•	---	---	---

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:

- Crest
- Hill
- Ridge
- Outcrop
- Slope
- Flat
- Open depression
- Drainage line
- Closed depression
- Wetland

ROCK TYPE:

- Granite
- Dolerite
- Laterite
- Ironstone
- Limestone
- Quartz

Specify other: _____

Specific Landform Element:

(Refer to field manual for additional values)

LOOSE ROCK:

(on soil surface; eg gravel, quartz fields)

- 0-10%
- 10-30%
- 30-50%
- 50-100%

SOIL TYPE:

- Sand
- Sandy loam
- Loam
- Clay loam
- Light clay
- Peat

Specify other: _____

SOIL COLOUR:

- Red
- Brown
- Yellow
- White
- Grey
- Black

Specify other: _____

DRAINAGE:

- Well drained
- Seasonally inundated
- Permanently inundated
- Tidal

CONDITION OF SOIL:

- Dry
- Moist
- Waterlogged
- Inundated

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii Low open Woodland
2. Xanthorrhoea preissii, Allocasuarina humilis Sparse shrubland
3. Dasypogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallaneyi var. dallaneyi Low sparse shrubland
4. Mesomelaena pseudostygia, Schoenus efoliatus Sparse sedgeland over Alexgeorgea nitens scattered herbs

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT:

- Pristine
- Excellent
- Very good
- Good
- Degraded
- Completely degraded

COMMENT:

FIRE HISTORY:

Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High Medium Low No signs of fire

FENCING:

Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS:

Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB62000035

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Rebecca Mason Role: Senior Botanist Signed: _____ Date: 06/05/2021

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au/> under Standard Report Forms

TAXON: Hypolaena robusta		TPFL Pop. No.: _____	
OBSERVATION DATE: 10/10/2019		CONSERVATION STATUS: P4	
		New population <input checked="" type="checkbox"/>	
OBSERVER/S: Rebecca Mason, Malcolm Trudgen		PHONE: 9328 1900	
		:	
ROLE: Botanist		ORGANISATION: Biota Environmental Sciences	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):			
Approximately 15 km ENE of Perth Central Business District			
Approximately 290 m W of the intersection of Roe Highway and Great Eastern Highway Bypass in the bushland on the southern side of the road, Approximately 180 m S into the bushland			
Reserve No.: _____			
DBC DISTRICT: Swan		LGA: City of Swan	
Land manager present: <input type="checkbox"/>			
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)	
GDA94 / MGA94 <input checked="" type="checkbox"/>		DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: 6468308	
WGS84 <input type="checkbox"/>		Long / Easting: 406763	
Unknown <input type="checkbox"/>		ZONE: 50	
METHOD USED:			
		GPS <input type="checkbox"/> Differential GPS <input checked="" type="checkbox"/> Map <input type="checkbox"/>	
		No. satellites: _____ Map used: _____	
		Boundary polygon captured: <input type="checkbox"/> Map scale: _____	
LAND TENURE:			
Nature reserve <input type="checkbox"/>		Timber reserve <input type="checkbox"/>	
National park <input type="checkbox"/>		Private property <input type="checkbox"/>	
Conservation park <input type="checkbox"/>		Pastoral lease <input type="checkbox"/>	
		Rail reserve <input type="checkbox"/>	
		MRWA road reserve <input type="checkbox"/>	
		Shire road reserve <input type="checkbox"/>	
		Other Crown reserve <input type="checkbox"/>	
		Water reserve <input type="checkbox"/>	
		UCL <input type="checkbox"/> SLK/Pole _____ to _____	
		Specify other: _____	

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input checked="" type="checkbox"/> Area observed (m ²): _____			
EFFORT: Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____	
POP'N COUNT ACCURACY: Actual <input checked="" type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/> Count method: _____			
(Refer to field manual for list)			
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>			
TOTAL POP'N STRUCTURE:			
	Mature:	Juveniles:	Seedlings:
Alive	1		
Dead			
Area of pop (m ²): _____			
Note: Pls record count as numbers (not percentages) for database.			
QUADRATS PRESENT: No. <u>1</u> Size 10m x10m _____ Data attached <input checked="" type="checkbox"/> Total area of quadrats (m ²): <u>100</u>			
Summary Quad. Totals: Alive			
REPRODUCTIVE STATE:			
Clonal <input type="checkbox"/>		Vegetative <input checked="" type="checkbox"/>	
Immature fruit <input type="checkbox"/>		Fruit <input type="checkbox"/>	
		Flowerbud <input type="checkbox"/>	
		Dehisced fruit <input type="checkbox"/>	
		Flower <input type="checkbox"/>	
		Percentage in flower: _____%	

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing (complete vegetation clearing for road widening/installation purposes)	E	E	S
•	---	---	---
•	---	---	---

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; eg gravel, quartz fields)	Sand <input checked="" type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input checked="" type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input checked="" type="checkbox"/>	Brown <input type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input type="checkbox"/>	Grey <input checked="" type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other: _____		Specify other: _____	Specify other: _____	
Drainage line <input type="checkbox"/>					
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					
CONDITION OF SOIL:	Dry <input checked="" type="checkbox"/>	Moist <input type="checkbox"/>	Waterlogged <input type="checkbox"/>	Inundated <input type="checkbox"/>	

**VEGETATION
CLASSIFICATION*:**

Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia);
2. Open shrubland (Hibbertia sp., Acacia spp.);
3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Allocasuarina fraseriana scattered trees over Eucalyptus tottiana, Banksia menziesii (Banksia attenuata) Low open Woodland

 2. Xanthorrhoea preissii Sparse shrubland

 3. Hibbertia hypericoides subsp. hypericoides, Bossiaea eriocarpa, Stirlingia latifolia, Scaevola repens var. repens Low sparse shrubland

 4. Mesomelaena pseudostygia, Lyginia imberbis Sparse sedgeland

- Alexgeorgea nitens

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT: _____

FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB62000035 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Rebecca Mason Role: Senior Botanist Signed: _____ Date: 06/05/2021

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Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

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TAXON: <u>Isopogon autumnalis</u>		TPFL Pop. No.: _____	
OBSERVATION DATE: <u>05/11/2019</u>		CONSERVATION STATUS: <u>P3</u> New population <input checked="" type="checkbox"/>	
OBSERVER/S: <u>Rebecca Mason, Malcolm Trudgen</u>		PHONE: <u>9328 1900</u>	
ROLE: <u>Botanist</u>		ORGANISATION: <u>Biota Environmental Sciences</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Approximately 15 km ENE of Perth Central Business District</u>			
<u>Approximately 290 m W of the intersection of Roe Highway and Great Eastern Highway Bypass in the bushland on the southern side of the road, Approximately 180 m S into the bushland</u>			
DBC DISTRICT: <u>Swan</u>		LGA: <u>City of Swan</u> Land manager present: <input type="checkbox"/>	
DATUM: <input checked="" type="checkbox"/> GDA94 / MGA94 <input type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown			
COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input checked="" type="checkbox"/> Lat / Northing: <u>6467812</u> Long / Easting: <u>406968</u> ZONE: <u>50</u>			
METHOD USED: GPS <input type="checkbox"/> Differential GPS <input checked="" type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input type="checkbox"/> Map scale: _____			
LAND TENURE: Nature reserve <input type="checkbox"/> Timber reserve <input type="checkbox"/> Private property <input type="checkbox"/> Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/> National park <input type="checkbox"/> State forest <input type="checkbox"/> Pastoral lease <input type="checkbox"/> MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/> Conservation park <input type="checkbox"/> Water reserve <input type="checkbox"/> UCL <input type="checkbox"/> SLK/Pole _____ to _____ Specify other: _____			

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____			
EFFORT: Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____	
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/> Count method: _____ <small>(Refer to field manual for list)</small>			
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>			
TOTAL POP'N STRUCTURE:			
	Mature:	Juveniles:	Seedlings:
Alive	70		
Dead			
QUADRATS PRESENT: No. <u>1</u> Size _____ Data attached <input checked="" type="checkbox"/> Total area of quadrats (m ²): <u>100</u>			
Summary Quad. Totals: Alive			
REPRODUCTIVE STATE: Clonal <input type="checkbox"/> Vegetative <input checked="" type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input type="checkbox"/> Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehisced fruit <input type="checkbox"/> Percentage in flower: _____%			

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing (complete vegetation clearing for road widening/installation purposes)	E	E	S
•	---	---	---
•	---	---	---



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; eg gravel, quartz fields)	Sand <input checked="" type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input checked="" type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input type="checkbox"/>	Grey <input checked="" type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other: _____		Specify other: _____	Specify other: _____	
Drainage line <input type="checkbox"/>					
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					
CONDITION OF SOIL:	Dry <input checked="" type="checkbox"/>	Moist <input type="checkbox"/>	Waterlogged <input type="checkbox"/>	Inundated <input type="checkbox"/>	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

- Eucalyptus marginata subsp. marginata, Banksia attenuata, Allocasuarina fraseriana and Banksia menziesii Low open Woodland
- Xanthorrhoea preissii, Allocasuarina humilis Sparse shrubland
- Dasyogon bromeliifolius, Hibbertia hypericoides, Bossiaea eriocarpa, Banksia dallaneyi var. dallaneyi Low sparse shrubland
- Mesomelaena pseudostygia, Schoenus efoliatus Sparse sedgeland over Alexgeorgea nitens scattered herbs

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB62000035 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Rebecca Mason Role: Senior Botanist Signed: _____ Date: 06/05/2021

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.
Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

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TAXON: <u>Johnsonia pubescens subsp. cygnorum</u>		TPFL Pop. No.: _____
OBSERVATION DATE: <u>10/10/2019</u>	CONSERVATION STATUS: <u>P2</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Rebecca Mason, Malcolm Trudgen</u>	PHONE _____	<u>9328 1900</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Biota Environmental Sciences</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Approximately 15 km ENE of Perth Central Business District

Approximately 200 m west of the intersection of Roe Highway and Great Eastern Highway Bypass in the bushland on the southern side of the road

Approximately is 70 m S into the bushland **Reserve No.:** _____

DBC DISTRICT: Swan **LGA:** City of Swan Land manager present:

DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown

COORDINATES: (If UTM coords provided, Zone is also required)
 DecDegrees DegMinSec UTM **Lat / Northing:** 6468238
Long / Easting: 406590 **ZONE:** 50

METHOD USED: GPS Differential GPS Map
 No. satellites: _____ Map used: _____
 Boundary polygon captured: Map scale: _____

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method: _____
(Refer to field manual for list)

WHAT COUNTED: Plants Clumps Clonal stems

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	2			
Dead				

Area of pop (m²): _____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. 4 Size 10 x 10 m Data attached Total area of quadrats (m²): 400

Summary Quad. Totals: Alive

Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehisced fruit <input type="checkbox"/>	Percentage in flower: _____ %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS - type, agent and supporting information: <small>Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)</small>	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing (complete vegetation clearing for road widening/installation purposes)	E	E	S
• Weeds (Occurs within 70 m of road, edge effects and dispersal of weeds into bushland)	L	H	L
•	---	---	---



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; eg gravel, quartz fields)	Sand <input checked="" type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input checked="" type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input type="checkbox"/>	Grey <input checked="" type="checkbox"/>	
Flat <input type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other: _____		Specify other: _____	Specify other: _____	
Drainage line <input type="checkbox"/>				Creamy Grey	
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					
	Specific Landform Element: _____	Mid-slope			
	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry <input checked="" type="checkbox"/>	Moist <input type="checkbox"/>	Waterlogged <input type="checkbox"/>	Inundated <input type="checkbox"/>	

**VEGETATION
CLASSIFICATION*:**

Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia);
2. Open shrubland (Hibbertia sp., Acacia spp.);
3. Isolated clumps of sedges (Mesomelaena tetragona)

1. *Corymbia calophylla*, *Nuytsia floribunda* Low open woodland over *Jacksonia floribunda* scattered tall shrubs over *Kingia australis* scattered shrubs over

 2. *Banksia dallanneyi*, *Melaleuca systema*, *Verticordia densiflora* Low sparse shrubland over

 3. **Ehrharta calycina* scattered tussock grasses over *lyginia imberbis* Sedgeland

 4. *Desmocladus fasciculatus*, *Corynotheca micrantha* var. *micrantha*, *Ursinia anthemoides*, *Alexgeorgia nitens* Sparse forbland

- Patersonia occidentalis* var. *occidentalis*, *Caustis dioica*, *Phlebocarya ciliata*, *Haemodorum ? laxum*
- Stylidium dichotomum*, *Xanthorrhoea preissii*, *Lomandra hermaphrodita*, *Dasyogon Bromeliifolius*, *Mesomelaena ssp.*, *Stirlingia latifolia*, *Bossiaea eriocarpa*, *Lepidosperma ssp.*

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT: _____

FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB62000035 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Rebecca Mason Role: Senior Botanist Signed: _____ Date: 06/05/2021

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.
Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au/> under Standard Report Forms

TAXON:	Verticordia lindleyi subsp. lindleyi	TPFL Pop. No.:	
OBSERVATION DATE:	04/11/2019	CONSERVATION STATUS:	P4 New population <input checked="" type="checkbox"/>
OBSERVER/S:	Rebecca Mason, Malcolm Trudgen	PHONE	9328 1900
ROLE:	Botanist	ORGANISATION:	Biota Environmental Sciences

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
 Approximately 15 km ENE of Perth Central Business District
 Approximately 290 m W of the intersection of Roe Highway and Great Eastern Highway Bypass in the bushland on the southern side of the road, Approximately 180 m S into the bushland **Reserve No.:** _____

DBC DISTRICT: Swan **LGA:** City of Swan Land manager present:

DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown

COORDINATES: (If UTM coords provided, Zone is also required)
 DecDegrees DegMinSec UTM **Lat / Northing:** 6468147
Long / Easting: 406575 **ZONE:** 50

METHOD USED:
 GPS Differential GPS Map
 No. satellites: _____ Map used: _____
 Boundary polygon captured: Map scale: _____

LAND TENURE:

<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input type="checkbox"/> UCL	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method: _____
(Refer to field manual for list)

WHAT COUNTED: Plants Clumps Clonal stems

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:	Area of pop (m ²): _____ <small>Note: Pls record count as numbers (not percentages) for database.</small>
Alive	1				
Dead					

QUADRATS PRESENT: No. _____ Size _____ Data attached Total area of quadrats (m²): _____

Summary Quad. Totals: Alive

REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input checked="" type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input type="checkbox"/>
	Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehisced fruit <input type="checkbox"/>	Percentage in flower: _____%

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing (complete vegetation clearing for road widening/installation purposes)	E	E	S
•	---	---	---
•	---	---	---



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:

- Crest
- Hill
- Ridge
- Outcrop
- Slope
- Flat
- Open depression
- Drainage line
- Closed depression
- Wetland

ROCK TYPE:

- Granite
- Dolerite
- Laterite
- Ironstone
- Limestone
- Quartz

Specify other: _____

Specific Landform Element:

(Refer to field manual for additional values)

LOOSE ROCK:

(on soil surface; eg gravel, quartz fields)

- 0-10%
- 10-30%
- 30-50%
- 50-100%

SOIL TYPE:

- Sand
- Sandy loam
- Loam
- Clay loam
- Light clay
- Peat

Specify other: _____

SOIL COLOUR:

- Red
- Brown
- Yellow
- White
- Grey
- Black

Specify other: _____

DRAINAGE:

- Well drained
- Seasonally inundated
- Permanently inundated
- Tidal

CONDITION OF SOIL:

- Dry
- Moist
- Waterlogged
- Inundated

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Adenanthos cygnorum scattered tall shrub over Pericalymma ellipticum var. floridum, Verticordia densiflora, Melaleuca seriata Closed shrubland

2. Lynginia imberbis, Hypolaena exsulca Open sedgeland

3. Ehrharta calycina, Pentameris airoides subsp. airoides Sparse grassland

4.

ASSOCIATED SPECIES:

Ursinia anthemoides

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT:

- Pristine
- Excellent
- Very good
- Good
- Degraded
- Completely degraded

COMMENT:

FIRE HISTORY:

Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High Medium Low No signs of fire

FENCING:

Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS:

Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB62000035

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SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other: _____

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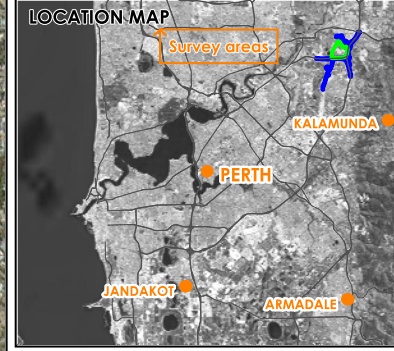
Appendix 11

Vegetation Condition Mapping and Introduced Flora Locations



Vegetation Condition

- Excellent
- Excellent to Very Good
- Very Good
- Very Good to Good
- Good
- Degraded
- Completely Degraded
- Cleared

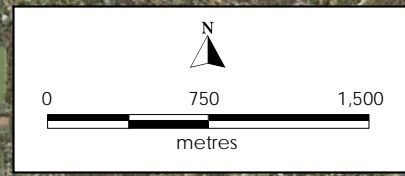
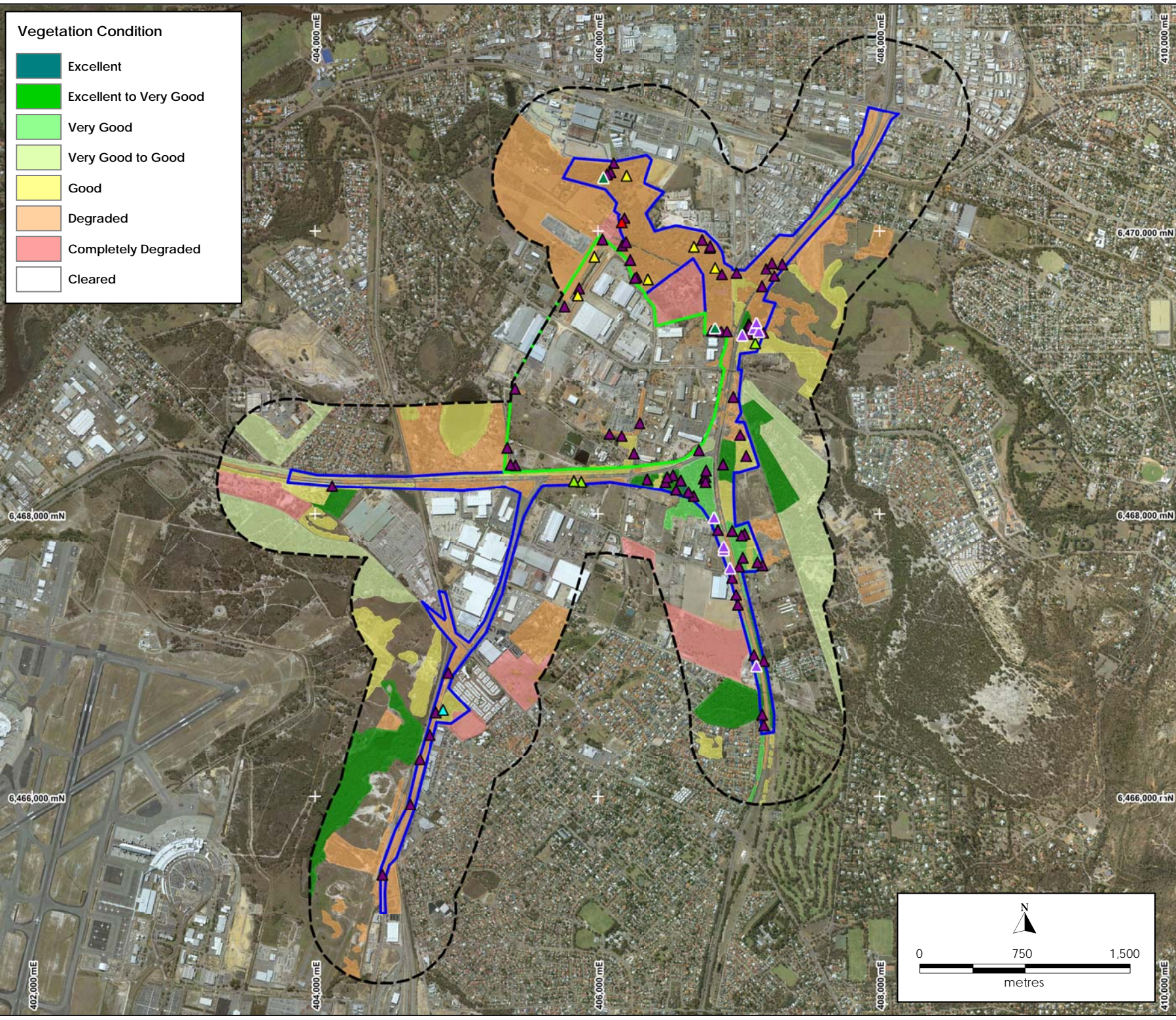


- GEHBI Level 1 Survey area
- GEHBI Level 2 Survey area
- Contextual area (500m buffer)

- Introduced Flora (Declared Pest)**
- Asparagus asparagoides*
 - Rubus ulmifolius*
- Introduced Flora (WoNS; Declared Pest)**
- Echium plantagineum*
 - Hydrocotyle ranunculoides*
 - Solanum linnaeanum*
 - Zantedeschia aethiopica*
- Other introduced flora record

Author: R Mason Drawn: M Robinson
 Job No.: 1484
 Date: 29 July 2020 Revised: 18 Aug 2021
 Projection: MGA Z50 Scale: 1:35,000 @ A4

**GEHBI Biological
Vegetation Condition**



Summary of rankings for the weeds recorded within the survey area.

Ecological Impact rankings from Department of Parks and Wildlife (2016): U = Unknown; H = High; M = Medium; L = Low; – = Not listed.

Invasiveness rankings from Department of Parks and Wildlife (2014): U = Unknown; R = Rapid; M = Moderate; S = Slow; – = Not listed.

Family	Species (Common Name)	Ecological Impact	Invasiveness	Weed Status
Anacardiaceae	* <i>Schinus terebinthifolius</i> (Brazilian Pepper)	H	M	
Apocynaceae	* <i>Gomphocarpus fruticosus</i> Narrowleaf Cottonbush	H	R	
Araceae	* <i>Zantedeschia aethiopica</i> (Arum Lily)	H	R	Declared Pest (Exempt)
Araliaceae	* <i>Hydrocotyle ranunculoides</i> (Robust Pennywort)	H	R	Declared Pest (C3 Management)
Asparagaceae	* <i>Asparagus asparagoides</i> (Bridal Creeper)	H	R	WoNS; Declared Pest (Exempt)
Asteraceae	* <i>Conyza bonariensis</i> (Flaxleaf Fleabane)	L	M	
	* <i>Cotula turbinata</i> (Funnel Weed)	L	M	
	* <i>Hedypnois rhagadioloides</i> (Cretan Weed)	U	U	
	* <i>Hypochaeris glabra</i> (Smooth Catsear)	H	R	
	* <i>Hypochaeris radicata</i> (Flat Weed)	H	R	
	* <i>Sonchus asper</i> (Rough Sowthistle)	U	R	
	* <i>Sonchus oleraceus</i> (Common Sowthistle)	U	R	
	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i> (Ursinia)	U	R	
Bignoniaceae	* <i>Campsis radicans</i>	-	-	
Boraginaceae	* <i>Echium plantagineum</i> (Paterson's Curse)	H	M	Declared Pest (Exempt)
Brassicaceae	* <i>Raphanus raphanistrum</i> (Wild Radish)	U	M	
Campanulaceae	* <i>Monopsis debilis</i> var. <i>depressa</i> (Monopsis)	M	R	
	* <i>Wahlenbergia capensis</i> (Cape Bluebell)	U	R	
Caryophyllaceae	* <i>Polycarpon tetraphyllum</i> (Fourleaf Allseed)	M	R	
	* <i>Sagina apetala</i> (Annual Pearlwort)	L	R	
	* <i>Silene gallica</i> var. <i>gallica</i> (French Catchfly)	L	M	
	* <i>Stellaria pallida</i>	L	R	
Chenopodiaceae	* <i>Chenopodium album</i> (Fat Hen)	U	S	
Convolvulaceae	* <i>Ipomoea cairica</i> (Coast Morning Glory)	H	M	
Cyperaceae	* <i>Cyperus tenellus</i> (Tiny Flatsedge)	L	U	
	* <i>Isolepis prolifera</i> (Budding Clubrush)	U	R	
Euphorbiaceae	* <i>Euphorbia peplus</i> (Petty Spurge)	U	M	
	* <i>Euphorbia terracina</i> (Geraldton Carnation Weed)	H	R	
	* <i>Ricinus communis</i> (Castor Oil Plant)	M	R	
Fabaceae	* <i>Acacia iteaphylla</i> (Flinders Range Wattle)	H	R	
	* <i>Acacia longifolia</i> subsp. <i>Longifolia</i>	H	R	
	* <i>Chamaecytisus palmensis</i> (Tagasaste)	M	M	
	* <i>Lotus subbiflorus</i> (Hairy Birdsfoot Trefoil)	H	R	
	* <i>Lupinus angustifolius</i> (Narrowleaf Lupin)	H	M	
	* <i>Medicago polymorpha</i> (Burr Medic)	U	R	

Family	Species (Common Name)	Ecological Impact	Invasiveness	Weed Status
	* <i>Trifolium angustifolium</i> var. <i>angustifolium</i> (Narrowleaf Clover)	U	U	
	* <i>Trifolium arvense</i> var. <i>arvense</i>	U	U	
	* <i>Trifolium campestre</i> var. <i>campestre</i> (Hop Clover)	U	U	
Geraniaceae	* <i>Pelargonium capitatum</i> (Rose Pelargonium)	H	R	
Iridaceae	* <i>Gladiolus cardinalis</i>	-	-	
	* <i>Gladiolus caryophyllaceus</i> (Wild Gladiolus)	H	R	
	* <i>Hesperantha falcata</i>	H	R	
	* <i>Romulea rosea</i> (Guildford Grass)	U	R	
	* <i>Watsonia meriana</i> var. <i>meriana</i>	H	R	
Juncaceae	* <i>Juncus articulatus</i> (Jointed Rush)	U	S	
	* <i>Juncus bufonius</i> (Toadrush)	U	R	
	* <i>Juncus capitatus</i> (Capitate Rush)	U	R	
Lythraceae	* <i>Lythrum hyssopifolia</i> (Lesser Loosetrife)	U	S	
Meliaceae	* <i>Melia azedarach</i> (Cape Lilac, White Cedar)	L	M	
Moraceae	* <i>Ficus carica</i> (Common Fig)	H	M	
Myrtaceae	* <i>Leptospermum laevigatum</i> (Victorian Teatree)	H	R	
	* <i>Melaleuca armillaris</i>	U	U	
	* <i>Melaleuca hamulosa</i>			
Oleaceae	* <i>Olea europaea</i> subsp. <i>europaea</i> (Olive)	H	R	
Orchidaceae	* <i>Disa bracteata</i> (South African Orchid)	U	R	
Orobanchaceae	* <i>Orobanche minor</i> (Broom Rape)	U	R	
Papaveraceae	* <i>Fumaria capreolata</i> (Whiteflower Fumitory)	H	R	
Plantaginaceae	* <i>Callitriche stagnalis</i> (Common Starwort)	U	S	
Poaceae	* <i>Aira caryophylla</i> (Silvery Hairgrass)	U	U	
	* <i>Arundo donax</i> (Giant Reed)	H	S	
	* <i>Avellinia michelii</i> (Avellinia)	U	U	
	* <i>Avena fatua</i> (Wild Oat)	H	M	
	* <i>Brachypodium distachyon</i> (False Broome)	U	S	
	* <i>Briza maxima</i> (Blowfly Grass)	U	R	
	* <i>Briza minor</i> (Shivery Grass)	U	R	
	* <i>Bromus diandrus</i> (Great Brome)	H	R	
	* <i>Bromus hordeaceus</i> (Soft Brome)	U	U	
	* <i>Cenchrus clandestinus</i> (Kikuyu Grass)	H	S	
	* <i>Cenchrus setaceus</i> (Fountain Grass)	H	R	
	* <i>Cortaderia selloana</i> (Pampas Grass)	H	R	
	* <i>Cynodon dactylon</i> (Couch Grass)	H	R	
	* <i>Ehrharta calycina</i> (Perennial Veldt Grass)	H	R	
	* <i>Ehrharta longiflora</i> (Annual Veldt Grass)	M	R	

Family	Species (Common Name)	Ecological Impact	Invasiveness	Weed Status
	* <i>Eragrostis curvula</i> (African Lovegrass)	H	R	
	* <i>Hordeum leporinum</i> (Barley Grass)	H	U	
	* <i>Hyparrhenia hirta</i> (Tambookie Grass)	H	R	
	* <i>Lagurus ovatus</i> (Hare's Tail Grass)	H	R	
	* <i>Lolium multiflorum</i> (Stiff Ryegrass)	H	R	
	* <i>Lolium perenne</i> (Stiff Ryegrass)	H	R	
	* <i>Paspalum dilatatum</i> (Paspalum)	H	M	
	* <i>Paspalum urvillei</i> (Vasey Grass)	H	M	
	* <i>Pentameris airoides</i> subsp. <i>airoides</i> (False Hairgrass)	U	R	
	* <i>Pentameris pallida</i> (Perennial False Hairgrass)	H	U	
	* <i>Phalaris aquatica</i> (Canary Grass)	M	U	
	* <i>Poa annua</i> (Winter Grass)	L	R	
	* <i>Polypogon monspeliensis</i> (Annual Barbgrass)	M	R	
	* <i>Rostraria cristata</i> (Annual Cat's Tail)	U	U	
	* <i>Setaria parviflora</i> (Slender Pigeon Grass)	L	U	
	* <i>Vulpia bromoides</i> (Squirrel's Tail Fescue)	H	R	
	* <i>Vulpia muralis</i>	H	R	
Primulaceae	* <i>Lysimachia arvensis</i> (Pimpernel)	U	R	
Rosaceae	* <i>Rubus ulmifolius</i> (Blackberry)	H	M	WonS; Declared Pest (C3 Management, Exempt)
Scrophulariaceae	* <i>Dischisma arenarium</i> (Dischisma)	U	R	
Solanaceae	* <i>Solanum linnaeanum</i> (Apple of Sodom)	H	R	Declared Pest (Exempt)
	* <i>Solanum nigrum</i> (Black Berry Nightshade)	M	R	
Tropaeolaceae	* <i>Tropaeolum majus</i> (Garden Nasturtium)	L	M	

Family	Species	Status	Site:	Date:	Field No:	Easting	Northing	Number of Individuals / Cover
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHREL02	01-Nov-19		407125	6469352	10.0%
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHREL03	01-Nov-19		405830	6468233	10.0%
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHREL04	01-Nov-19		404907	6466608	10.0%
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		407164	6469609	1
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		407169	6467636	1
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		407169	6467636	1
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		407152	6469285	1
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPMET	01-Nov-19		407107	6466995	2
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		404812	6466433	5
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		407070	6469344	5
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	LVL1RMOP	01-Nov-19		405415	6468884	5
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		404907	6466608	7
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		407308	6469767	100
Anacardiaceae	* <i>Schinus terebinthifolius</i>	Introduced	GEHB-OPRM	01-Nov-19		407251	6469683	100
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	01-Nov-19		406039	6470377	200
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	LVL1RMOP	04-Nov-19		405867	6469594	1
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	LVL1RMOP	04-Nov-19		405867	6469594	1
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	04-Nov-19		406202	6470390	3
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHREL08	04-Nov-19		406202	6470390	3
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	LVL1RMOP	04-Nov-19		405418	6468344	10
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	04-Nov-19		406741	6469937	25
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	04-Nov-19		407193	6469733	50
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	04-Nov-19		406917	6469290	100
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHREL05	04-Nov-19		406039	6470377	200
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	04-Nov-19		406832	6469315	500
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	04-Nov-19		406808	6469295	1000
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	04-Nov-19		406876	6469289	2000
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	01-Nov-19		406187	6470092	1
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	01-Nov-19		406198	6469922	1
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	01-Nov-19		404856	6466591	10
Apocynaceae	* <i>Gomphocarpus fruticosus</i>	Introduced	GEHB-OPRM	01-Nov-19		406171	6469898	10
Araceae	* <i>Zantedeschia aethiopica</i>	Introduced (Declared Pest)	GEHB-OPMET	04-Nov-19		407117	6469207	1
Araceae	* <i>Zantedeschia aethiopica</i>	Introduced (Declared Pest)	GEHB-OPRM	04-Nov-19		405882	6468229	1
Araceae	* <i>Zantedeschia aethiopica</i>	Introduced (Declared Pest)	GEHREL05	04-Nov-19		406039	6470377	1
Araceae	* <i>Zantedeschia aethiopica</i>	Introduced (Declared Pest)	GEHREL03	04-Nov-19		405830	6468233	3
Araceae	* <i>Zantedeschia aethiopica</i>	Introduced (Declared Pest)	GEHB-OPRM	04-Nov-19		406825	6467978	4
Araliaceae	* <i>Hydrocotyle ranunculoides</i>	Introduced (Declared Pest)	GEHREL04	04-Nov-19	GREL04-05	404907	6466608	1

Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHB-OPMET	04-Nov-19		406894	6467745	1
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHB-OPMET	04-Nov-19		407125	6466920	1
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHB-OPRM	04-Nov-19		406825	6467976	1
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHB-OPRM	04-Nov-19		406894	6467769	1
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHB-OPRM	04-Nov-19		406938	6467618	1
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHB-OPRM	04-Nov-19		407025	6469264	1
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHB-OPRM	04-Nov-19		407107	6469310	1
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHB-OPRM	04-Nov-19		407143	6469289	1
Asparagaceae	* <i>Asparagus asparagoides</i>	Introduced (WoNS; Declared Pest)	GEHREL02	04-Nov-19		407125	6469352	4
Asteraceae	* <i>Conyza bonariensis</i>	Introduced	GEHREL01	04-Nov-19		406357	6469657	0.1%
Asteraceae	* <i>Cotula turbinata</i>	Introduced	LVLTRMOP	04-Nov-19	L1MN11-07	405415	6468884	1
Asteraceae	* <i>Hedypnois rhagadioloides</i>	Introduced	LVLTRMOP	04-Nov-19	L1MN01-05	406168	6468550	1
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced	GBQ02	04-Nov-19		406481	6468226	0.1%
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced	GBQ04	05-Nov-19		406556	6468170	0.1%
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced	GBQ05	05-Nov-19		406590	6468238	0.1%
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced	GBQ07	05-Nov-19		406644	6468154	0.1%
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced	GBQ08	05-Nov-19		406765	6468227	0.1%
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced	GBQ14	05-Nov-19		407084	6469293	0.1%
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced	GBQ03	05-Nov-19		406493	6468261	0.5%
Asteraceae	* <i>Hypochaeris glabra</i>	Introduced	GEHREL07	05-Nov-19		406535	6468275	0.5%
Asteraceae	* <i>Hypochaeris radicata</i>	Introduced	GBQ10	05-Nov-19	GBQ10-11	406088	6470415	0.1%
Asteraceae	* <i>Hypochaeris radicata</i>	Introduced	GEHREL05	05-Nov-19	GBQ10-11=	406039	6470377	0.1%
Asteraceae	* <i>Hypochaeris radicata</i>	Introduced	GEHREL06	05-Nov-19	GBQ10-11=	406064	6470400	0.1%
Asteraceae	* <i>Hypochaeris radicata</i>	Introduced	GEHREL13	05-Nov-19	GBQ10-11=	406880	6469693	0.1%
Asteraceae	* <i>Sonchus asper</i>	Introduced	GBQ12	05-Nov-19		406273	6469675	0.1%
Asteraceae	* <i>Sonchus asper</i>	Introduced	GEHREL01	05-Nov-19		406357	6469657	0.1%
Asteraceae	* <i>Sonchus asper</i>	Introduced	GEHREL05	05-Nov-19		406039	6470377	0.1%
Asteraceae	* <i>Sonchus asper</i>	Introduced	GEHREL14	05-Nov-19		406984	6469703	1.0%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GBQ10	05-Nov-19	GBQ10-10	406088	6470415	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GBQ11	06-Nov-19	GBQ10-10=	406228	6469797	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL05	06-Nov-19	GBQ10-10=	406039	6470377	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL06	06-Nov-19	GBQ10-10=	406064	6470400	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL08	06-Nov-19	GBQ10-10=	406202	6470390	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL13	06-Nov-19	GBQ10-10=	406880	6469693	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GBQ03	06-Nov-19		406493	6468261	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GBQ14	06-Nov-19		407084	6469293	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GBQ15	06-Nov-19		406889	6468350	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GBQ12	06-Nov-19	GBQ10-10=	406273	6469675	1.0%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL10	06-Nov-19	GBQ10-10=	406261	6469667	1.0%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GBQ19	08-Oct-19		407177	6466955	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL01	08-Oct-19		406357	6469657	0.1%

Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL02	08-Oct-19		407125	6469352	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL07	08-Oct-19		406535	6468275	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL09	08-Oct-19		406953	6467549	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL13	08-Oct-19		406880	6469693	0.1%
Asteraceae	* <i>Sonchus oleraceus</i>	Introduced	GEHREL14	08-Oct-19		406984	6469703	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ01	08-Oct-19	GBQ01-26	406351	6468246	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ03	08-Oct-19		406493	6468261	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ06	08-Oct-19		406769	6468307	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ07	08-Oct-19		406644	6468154	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ08	08-Oct-19		406765	6468227	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ19	08-Oct-19		407177	6466955	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ23	08-Oct-19		407010	6468557	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GEHREL07	08-Oct-19		406535	6468275	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GEHREL11	08-Oct-19		406954	6467881	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GEHREL15	08-Oct-19		404120	6468197	0.1%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ15	08-Oct-19		406889	6468350	0.5%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ02	08-Oct-19		406481	6468226	2.0%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ04	08-Oct-19		406556	6468170	2.0%
Asteraceae	* <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Introduced	GBQ05	08-Oct-19		406590	6468238	2.0%
Bignoniaceae	* <i>Campsis radicans</i>	Introduced	GEHB-OPMET	08-Oct-19	MetOp05	406763	6468264	1
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	GEHREL01	08-Oct-19		406357	6469657	10.0%
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	GEHREL08	08-Oct-19		406202	6470390	10.0%
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	LVLIRMOP	08-Oct-19		405858	6469546	20
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	LVLIRMOP	08-Oct-19		405858	6469546	20
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	GEHB-OPRM	08-Oct-19		406202	6470390	30
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	LVLIRMOP	08-Oct-19		405975	6469819	30
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	LVLIRMOP	08-Oct-19		405975	6469819	30
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	GEHB-OPRM	08-Oct-19		406833	6469741	100
Boraginaceae	* <i>Echium plantagineum</i>	Introduced (Declared Pest)	GEHB-OPRM	08-Oct-19		406683	6469890	1000
Brassicaceae	* <i>Raphanus raphanistrum</i>	Introduced	GEHREL14	08-Oct-19		406984	6469703	0.1%
Brassicaceae	* <i>Raphanus raphanistrum</i>	Introduced	LVLIRMOP	08-Oct-19	L1MN17-02	406032	6469940	1
Campanulaceae	* <i>Monopsis debilis</i> var. <i>depressa</i>	Introduced	GEHB-OPMET	08-Oct-19	MRoeOp89	407063	6469271	2
Campanulaceae	* <i>Wahlenbergia capensis</i>	Introduced	GBQ02	08-Oct-19		406481	6468226	0.1%
Caryophyllaceae	* <i>Polycarpon tetraphyllum</i>	Introduced	LVLIRMOP	08-Oct-19	L1MN18-02	405764	6469468	1
Caryophyllaceae	* <i>Sagina apetala</i>	Introduced	LVLIRMOP	08-Oct-19	L1MN01-10	406168	6468550	1
Caryophyllaceae	* <i>Silene gallica</i> var. <i>gallica</i>	Introduced	GBQ04	08-Oct-19	GBQ04-15	406556	6468170	0.1%
Caryophyllaceae	* <i>Stellaria pallida</i>	Introduced	LVLIRMOP	08-Oct-19	L1MN18-03	405764	6469468	100
Chenopodiaceae	* <i>Chenopodium album</i>	Introduced	GEHREL13	08-Oct-19	GBQ10-05	406880	6469693	0.1%
Chenopodiaceae	* <i>Chenopodium album</i>	Introduced	GBQ13	08-Oct-19	GBQ10-05=	406795	6469882	0.1%
Chenopodiaceae	* <i>Chenopodium album</i>	Introduced	GEHREL05	08-Oct-19	GBQ10-05=	406039	6470377	0.1%
Chenopodiaceae	* <i>Chenopodium album</i>	Introduced	GEHREL06	08-Oct-19	GBQ10-05=	406064	6470400	0.1%

Chenopodiaceae	* <i>Chenopodium album</i>	Introduced	GEHREL08	08-Oct-19	GBQ10-05=	406202	6470390	1.0%
Chenopodiaceae	* <i>Chenopodium album</i>	Introduced	GBQ10	08-Oct-19	GBQ10-05=	406088	6470415	2.0%
Chenopodiaceae	* <i>Chenopodium album</i>	Introduced	GEHREL05	08-Oct-19	GBQ10-05=	406039	6470377	2.0%
Convolvulaceae	* <i>Ipomoea cairica</i>	Introduced	GEHB-OPRM	08-Oct-19		407235	6469774	1
Cyperaceae	* <i>Cyperus tenellus</i>	Introduced	GEHB-OPMET	08-Oct-19	MTRM01	407173	6469280	1
Cyperaceae	* <i>Isoplepis prolifera</i>	Introduced	GEHREL01	08-Oct-19	GREL01-03	406357	6469657	1.0%
Euphorbiaceae	* <i>Euphorbia peplus</i>	Introduced	LVLTRMOP	08-Oct-19	L1MN01-03	406168	6468550	1
Euphorbiaceae	* <i>Euphorbia peplus</i>	Introduced	LVLTRMOP	08-Oct-19	L1MN20-01	406254	6468427	1
Euphorbiaceae	* <i>Euphorbia terracina</i>	Introduced	LVLTRMOP	08-Oct-19	L1MN11-08	405415	6468884	1
Euphorbiaceae	* <i>Euphorbia terracina</i>	Introduced	GEHREL08	09-Oct-19		406202	6470390	0.1%
Euphorbiaceae	* <i>Euphorbia terracina</i>	Introduced	GEHREL09	09-Oct-19		406953	6467549	0.1%
Euphorbiaceae	* <i>Euphorbia terracina</i>	Introduced	GEHREL10	09-Oct-19		406261	6469667	0.1%
Euphorbiaceae	* <i>Euphorbia terracina</i>	Introduced	GEHREL13	09-Oct-19		406880	6469693	0.1%
Euphorbiaceae	* <i>Euphorbia terracina</i>	Introduced	GEHREL14	09-Oct-19		406984	6469703	0.1%
Euphorbiaceae	* <i>Ricinus communis</i>	Introduced	GEHREL01	09-Oct-19		406357	6469657	0.1%
Euphorbiaceae	* <i>Ricinus communis</i>	Introduced	GEHB-OPRM	09-Oct-19		407164	6469609	1
Euphorbiaceae	* <i>Ricinus communis</i>	Introduced	LVLTRMOP	09-Oct-19		406296	6468643	2
Euphorbiaceae	* <i>Ricinus communis</i>	Introduced	GEHB-OPRM	09-Oct-19		406039	6470377	10
Fabaceae	* <i>Acacia iteaphylla</i>	Introduced	GBQ16	09-Oct-19	GBQ16-10	406981	6467427	2.0%
Fabaceae	* <i>Acacia longifolia subsp. longifolia</i>	Introduced	GEHB-OPRM	09-Oct-19		406832	6469315	2
Fabaceae	* <i>Chamaecytisus palmensis</i>	Introduced	GEHB-OPRM	09-Oct-19		406994	6467356	1
Fabaceae	* <i>Lotus subbiflorus</i>	Introduced	GBQ04	09-Oct-19	GBQ04-06	406556	6468170	0.1%
Fabaceae	* <i>Lotus subbiflorus</i>	Introduced	GEHREL01	09-Oct-19	GREL01-07	406357	6469657	1.0%
Fabaceae	* <i>Lupinus angustifolius</i>	Introduced	GEHREL01	09-Oct-19		406357	6469657	0.1%
Fabaceae	* <i>Lupinus angustifolius</i>	Introduced	GEHREL08	09-Oct-19		406202	6470390	0.1%
Fabaceae	* <i>Lupinus angustifolius</i>	Introduced	LVLTRMOP	09-Oct-19	L1MN12-04	405360	6468467	1
Fabaceae	* <i>Medicago polymorpha</i>	Introduced	GEHREL01	09-Oct-19		406357	6469657	0.1%
Fabaceae	* <i>Trifolium angustifolium var. angustifolium</i>	Introduced	LVLTRMOP	09-Oct-19	L1MN11-06	405415	6468884	1
Fabaceae	* <i>Trifolium arvense var. arvense</i>	Introduced	LVLTRMOP	09-Oct-19	L1MN01-04	406168	6468550	1
Fabaceae	* <i>Trifolium campestre var. campestre</i>	Introduced	GBQ04	09-Oct-19	GBQ04-14	406556	6468170	0.1%
Fabaceae	* <i>Trifolium campestre var. campestre</i>	Introduced	GEHREL02	09-Oct-19	GREL02-12	407125	6469352	0.1%
Fabaceae	* <i>Trifolium campestre var. campestre</i>	Introduced	LVLTRMOP	09-Oct-19	L1MN11-05	405415	6468884	1
Geraniaceae	* <i>Pelargonium capitatum</i>	Introduced	GEHREL04	09-Oct-19		404907	6466608	0.1%
Geraniaceae	* <i>Pelargonium capitatum</i>	Introduced	GEHREL15	09-Oct-19		404120	6468197	0.1%
Geraniaceae	* <i>Pelargonium capitatum</i>	Introduced	LVLTRMOP	09-Oct-19	L1MN12-05	405360	6468467	1
Geraniaceae	* <i>Pelargonium capitatum</i>	Introduced	GEHB-OPRM	09-Oct-19		404907	6466608	5
Iridaceae	* <i>Gladiolus cardinalis</i>	Introduced	GBQ03	09-Oct-19	GBQ03-24	406493	6468261	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ01	09-Oct-19	GBQ01-09	406351	6468246	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ02	09-Oct-19		406481	6468226	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ03	09-Oct-19		406493	6468261	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ04	09-Oct-19		406556	6468170	0.1%

Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ05	09-Oct-19		406590	6468238	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ06	09-Oct-19		406769	6468307	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ07	09-Oct-19		406644	6468154	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ08	10-Oct-19		406765	6468227	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ09	10-Oct-19		406852	6467888	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ15	10-Oct-19		406889	6468350	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ17	10-Oct-19		407166	6466574	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ18	10-Oct-19		407003	6467628	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ19	10-Oct-19		407177	6466955	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ20	10-Oct-19		407020	6467849	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ21	10-Oct-19		407029	6467689	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ22	10-Oct-19		407052	6468409	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GBQ23	10-Oct-19		407010	6468557	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GEHREL04	10-Oct-19		404907	6466608	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GEHREL09	10-Oct-19		406953	6467549	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GEHREL11	10-Oct-19		406954	6467881	0.1%
Iridaceae	* <i>Gladiolus caryophyllaceus</i>	Introduced	GEHREL15	10-Oct-19		404120	6468197	5
Iridaceae	* <i>Hesperanthera falcata</i>	Introduced	GBQ25	03-Nov-20		406590	6468273	1
Iridaceae	* <i>Romulea rosea</i>	Introduced	GBQ01	10-Oct-19		406351	6468246	0.1%
Iridaceae	* <i>Romulea rosea</i>	Introduced	GBQ02	10-Oct-19		406481	6468226	0.1%
Iridaceae	* <i>Romulea rosea</i>	Introduced	GBQ16	10-Oct-19		406981	6467427	0.1%
Iridaceae	* <i>Romulea rosea</i>	Introduced	GBQ18	10-Oct-19		407003	6467628	0.1%
Iridaceae	* <i>Romulea rosea</i>	Introduced	GBQ19	10-Oct-19		407177	6466955	0.1%
Iridaceae	* <i>Romulea rosea</i>	Introduced	GBQ22	10-Oct-19		407052	6468409	0.1%
Iridaceae	* <i>Romulea rosea</i>	Introduced	GBQ23	10-Oct-19		407010	6468557	0.1%
Iridaceae	* <i>Romulea rosea</i>	Introduced	GEHREL09	10-Oct-19		406953	6467549	0.1%
Iridaceae	* <i>Watsonia meriana</i>	Introduced	GBQ17	10-Oct-19		407166	6466574	1
Iridaceae	* <i>Watsonia meriana</i>	Introduced	LVLIRMOP	10-Oct-19		406296	6468643	4
Iridaceae	* <i>Watsonia meriana</i>	Introduced	GEHB-OPRM	10-Oct-19		404856	6466591	30
Iridaceae	* <i>Watsonia meriana</i>	Introduced	GEHB-OPRM	10-Oct-19		404740	6466259	1000
Juncaceae	* <i>Juncus articulatus</i>	Introduced	GEHREL02	10-Oct-19	GREL02-07	407125	6469352	10.0%
Juncaceae	* <i>Juncus bufonius</i>	Introduced	GEHREL01	10-Oct-19	GREL01-06	406357	6469657	10.0%
Juncaceae	* <i>Juncus bufonius</i>	Introduced	LVLIRMOP	10-Oct-19	L1MN01-11	406168	6468550	1
Juncaceae	* <i>Juncus bufonius</i>	Introduced	LVLIRMOP	10-Oct-19	L1MN20-03	406254	6468427	1
Juncaceae	* <i>Juncus capitatus</i>	Introduced	GEHREL02	10-Oct-19	GREL02-08	407125	6469352	5.0%
Juncaceae	* <i>Juncus capitatus</i>	Introduced	GEHB-OPMET	10-Oct-19	MTRM04	407173	6469280	1
Lythraceae	* <i>Lythrum hyssopifolia</i>	Introduced	GEHREL01	10-Oct-19	GREL01-10	406357	6469657	0.1%
Moraceae	* <i>Ficus carica</i>	Introduced	GEHREL05	10-Oct-19		406039	6470377	30.0%
Moraceae	* <i>Ficus carica</i>	Introduced	GEHREL06	10-Oct-19		406064	6470400	40.0%
Myrtaceae	* <i>Melaleuca hamulosa</i>	Introduced (Planted)	GEHREL03	30-Oct-19	GREL03-09	405830	6468233	0.1%
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GBQ19	04-Nov-19	GBQ19-20	407177	6466955	5.0%

Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	04-Nov-19		407132	6467657	1
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	04-Nov-19		404812	6466433	20
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	04-Nov-19		404856	6466591	20
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	04-Nov-19		404944	6466872	25
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	04-Nov-19		404475	6465443	30
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	04-Nov-19		404673	6465941	45
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	10-Nov-19		406681	6468125	10
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	10-Nov-19		406752	6468252	10
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	10-Nov-19		406765	6468263	100
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHREL15	07-May-20		404120	6468197	2.0%
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	07-May-20		407041	6467860	5
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	LVLIRMOP	07-May-20		405383	6468348	5
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	07-May-20		406961	6468826	20
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	07-May-20		406832	6469315	30
Myrtaceae	* <i>Leptospermum laevigatum</i>	Introduced	GEHB-OPRM	07-May-20		406765	6468263	100
Myrtaceae	* <i>Melaleuca amillaris</i>	Introduced	GEHREL04	07-May-20	L1MN02-01	404907	6466608	45.0%
Myrtaceae	* <i>Melaleuca amillaris</i>	Introduced	GEHREL04	07-May-20	GREL04-01	404907	6466608	1
Oleaceae	* <i>Olea europaea</i>	Introduced	GBQ01	07-May-20	GBQ01-29	406351	6468246	1
Oleaceae	* <i>Olea europaea</i>	Introduced	GBQ17	07-May-20		407166	6466574	1
Oleaceae	* <i>Olea europaea</i>	Introduced	GEHB-OPRM	08-May-20		406111	6470481	1
Orchidaceae	* <i>Disa bracteata</i>	Introduced	GBQ17	08-May-20	GBQ17-15	407166	6466574	0.1%
Orchidaceae	* <i>Disa bracteata</i>	Introduced	GBQ18	08-May-20	GBQ17-15=	407003	6467628	0.1%
Orobanchaceae	* <i>Orobanche minor</i>	Introduced	LVLIRMOP	08-May-20	L1MN11-09	405415	6468884	1
Orobanchaceae	* <i>Orobanche minor</i>	Introduced	LVLIRMOP	08-May-20	L1MN12-09	405360	6468467	1
Orobanchaceae	* <i>Orobanche minor</i>	Introduced	LVLIRMOP	08-May-20	L1MN14-03	405858	6469546	1
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GEHREL13	29-Oct-19	GBQ10-02=	406880	6469693	15.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GEHREL14	29-Oct-19	GBQ10-02=	406984	6469703	25.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GEHREL10	29-Oct-19	GBQ10-02=	406261	6469667	60.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	LVLIRMOP	29-Oct-19	L1MN17-01	406032	6469940	1
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GBQ16	08-May-20	GBQ10-02=	406981	6467427	0.1%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GEHREL03	08-May-20	GBQ10-02=	405830	6468233	0.1%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GBQ10	08-May-20	GBQ10-02	406088	6470415	5.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GEHREL05	08-May-20	GBQ10-02=	406039	6470377	5.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GEHREL08	08-May-20	GBQ10-02=	406202	6470390	7.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GEHREL06	08-May-20	GBQ10-02=	406064	6470400	20.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GBQ13	08-May-20	GBQ10-02=	406795	6469882	40.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GBQ11	08-May-20	GBQ10-02=	406228	6469797	50.0%
Papaveraceae	* <i>Fumaria capreolata</i>	Introduced	GBQ12	08-May-20	GBQ10-02=	406273	6469675	60.0%
Plantaginaceae	* <i>Callitriche stagnalis</i>	Introduced	LVLIRMOP	29-Oct-19	L1MN12-08	405360	6468467	1
Poaceae	* <i>Aira caryophylla</i>	Introduced	GBQ01	29-Oct-19	GBQ01-40	406351	6468246	0.1%
Poaceae	* <i>Aira caryophylla</i>	Introduced	GBQ15	29-Oct-19	GBQ01-40=	406889	6468350	0.1%

Poaceae	* <i>Aira caryophyllea</i>	Introduced	GBQ07	29-Oct-19	GBQ07-44	406644	6468154	0.1%
Poaceae	* <i>Aira caryophyllea</i>	Introduced	GBQ08	29-Oct-19	GBQ08-17	406765	6468227	0.1%
Poaceae	* <i>Aira caryophyllea</i>	Introduced	GBQ09	29-Oct-19	GBQ09-35	406852	6467888	0.1%
Poaceae	* <i>Aira caryophyllea</i>	Introduced	GBQ23	29-Oct-19		407010	6468557	0.1%
Poaceae	* <i>Arundo donax</i>	Introduced	GEHREL02	29-Oct-19		407125	6469352	0.1%
Poaceae	* <i>Arundo donax</i>	Introduced	GEHB-OPRM	29-Oct-19		406202	6470390	1
Poaceae	* <i>Avellinia michelii</i>	Introduced	LVLTRMOP	29-Oct-19	L1MN17-03	406032	6469940	1
Poaceae	* <i>Avena fatua</i>	Introduced	GBQ17	29-Oct-19	GBQ10-03	407166	6466574	0.1%
Poaceae	* <i>Avena fatua</i>	Introduced	GEHREL04	29-Oct-19	GBQ10-03=	404907	6466608	0.1%
Poaceae	* <i>Avena fatua</i>	Introduced	GEHREL10	29-Oct-19	GBQ10-03=	406261	6469667	0.1%
Poaceae	* <i>Avena fatua</i>	Introduced	GEHREL02	29-Oct-19		407125	6469352	0.5%
Poaceae	* <i>Avena fatua</i>	Introduced	GEHREL03	29-Oct-19		405830	6468233	0.5%
Poaceae	* <i>Avena fatua</i>	Introduced	GEHREL06	29-Oct-19	GBQ10-03=	406064	6470400	1.0%
Poaceae	* <i>Avena fatua</i>	Introduced	GEHREL14	29-Oct-19	GBQ10-03=	406984	6469703	2.0%
Poaceae	* <i>Avena fatua</i>	Introduced	GEHREL05	29-Oct-19	GBQ10-03=	406039	6470377	5.0%
Poaceae	* <i>Avena fatua</i>	Introduced	GBQ13	29-Oct-19	GBQ10-03=	406795	6469882	15.0%
Poaceae	* <i>Avena fatua</i>	Introduced	GEHREL08	29-Oct-19	GBQ10-03=	406202	6470390	18.0%
Poaceae	* <i>Avena fatua</i>	Introduced	GBQ10	29-Oct-19	GBQ10-03=	406088	6470415	20.0%
Poaceae	* <i>Brachypodium distachyon</i>	Introduced	GBQ18	29-Oct-19	GBQ18-16	407003	6467628	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ01	29-Oct-19		406351	6468246	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ02	29-Oct-19		406481	6468226	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ03	29-Oct-19		406493	6468261	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ06	29-Oct-19		406769	6468307	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ07	29-Oct-19		406644	6468154	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ08	29-Oct-19		406765	6468227	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ09	29-Oct-19		406852	6467888	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ15	29-Oct-19		406889	6468350	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ19	29-Oct-19		407177	6466955	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ20	29-Oct-19		407020	6467849	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ21	29-Oct-19		407029	6467689	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ22	29-Oct-19		407052	6468409	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GEHREL04	29-Oct-19		404907	6466608	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GEHREL07	29-Oct-19		406535	6468275	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GEHREL11	29-Oct-19		406954	6467881	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GEHREL12	29-Oct-19		406718	6468450	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GEHREL15	29-Oct-19		404120	6468197	0.1%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ16	29-Oct-19		406981	6467427	1.0%
Poaceae	* <i>Briza maxima</i>	Introduced	GEHREL09	29-Oct-19		406953	6467549	1.0%
Poaceae	* <i>Briza maxima</i>	Introduced	GEHREL02	29-Oct-19		407125	6469352	2.0%
Poaceae	* <i>Briza maxima</i>	Introduced	GBQ05	29-Oct-19		406590	6468238	50
Poaceae	* <i>Briza minor</i>	Introduced	GBQ17	29-Oct-19	GBQ17-36	407166	6466574	0.1%

Poaceae	* <i>Briza minor</i>	Introduced	GBQ04	29-Oct-19		406556	6468170	0.1%
Poaceae	* <i>Briza minor</i>	Introduced	GBQ16	29-Oct-19		406981	6467427	0.1%
Poaceae	* <i>Briza minor</i>	Introduced	GEHREL09	29-Oct-19		406953	6467549	0.1%
Poaceae	* <i>Briza minor</i>	Introduced	GEHREL02	29-Oct-19		407125	6469352	1.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GBQ10	29-Oct-19	GBQ10-07=	406088	6470415	0.1%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL01	29-Oct-19	GBQ10-07=	406357	6469657	0.1%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL08	29-Oct-19	GBQ10-07=	406202	6470390	0.1%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL06	29-Oct-19	L1MN01-01=	406064	6470400	0.1%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL05	29-Oct-19	GBQ10-07=	406039	6470377	1.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL14	29-Oct-19	GBQ10-07=	406984	6469703	1.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GBQ12	29-Oct-19	GBQ10-07	406273	6469675	4.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL10	29-Oct-19	GBQ10-07=	406261	6469667	4.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL02	29-Oct-19	GBQ10-07=	407125	6469352	5.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL03	29-Oct-19	GBQ10-07=	405830	6468233	5.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GEHREL13	29-Oct-19	GBQ10-07=	406880	6469693	10.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	GBQ13	29-Oct-19	GBQ10-07=	406795	6469882	30.0%
Poaceae	* <i>Bromus diandrus</i>	Introduced	LVLTRMOP	29-Oct-19	L1MN01-01	406168	6468550	1
Poaceae	* <i>Bromus hordeaceus</i>	Introduced	GEHREL01	29-Oct-19	GREL01-01	406357	6469657	1.0%
Poaceae	* <i>Cenchrus clandestinus</i>	Introduced	GEHREL03	29-Oct-19	GREL03-05	405830	6468233	75.0%
Poaceae	* <i>Cenchrus setaceus</i>	Introduced	GEHB-OPRM	29-Oct-19		407164	6469609	1
Poaceae	* <i>Cortaderia selloana</i>	Introduced	GEHB-OPMET	29-Oct-19		407078	6469334	1
Poaceae	* <i>Cynodon dactylon</i>	Introduced	GEHREL04	29-Oct-19		404907	6466608	1.0%
Poaceae	* <i>Cynodon dactylon</i>	Introduced	GEHREL01	29-Oct-19		406357	6469657	5.0%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ01	29-Oct-19	GBQ01-14	406351	6468246	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ03	29-Oct-19		406493	6468261	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ07	29-Oct-19		406644	6468154	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ08	29-Oct-19		406765	6468227	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ09	29-Oct-19		406852	6467888	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ15	29-Oct-19		406889	6468350	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ05	29-Oct-19		406590	6468238	0.5%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ02	29-Oct-19		406481	6468226	1.0%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ06	29-Oct-19		406769	6468307	1.0%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ16	29-Oct-19		406981	6467427	1.0%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ04	29-Oct-19		406556	6468170	1.5%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ18	30-Oct-19		407003	6467628	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ19	30-Oct-19		407177	6466955	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ22	30-Oct-19		407052	6468409	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GBQ23	30-Oct-19		407010	6468557	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GEHREL07	30-Oct-19		406535	6468275	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GEHREL08	30-Oct-19		406202	6470390	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GEHREL11	30-Oct-19		406954	6467881	0.1%

Poaceae	* <i>Ehrharta calycina</i>	Introduced	GEHREL12	30-Oct-19		406718	6468450	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GEHREL15	30-Oct-19		404120	6468197	0.1%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GEHREL02	30-Oct-19		407125	6469352	0.5%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GEHREL09	30-Oct-19		406953	6467549	1.0%
Poaceae	* <i>Ehrharta calycina</i>	Introduced	GEHREL03	30-Oct-19		405830	6468233	5.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ16	30-Oct-19	GBQ12-01=	406981	6467427	0.1%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ20	30-Oct-19	GBQ20-09	407020	6467849	0.1%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ21	30-Oct-19	GBQ20-09=	407029	6467689	0.1%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ22	30-Oct-19	GBQ20-09=	407052	6468409	0.1%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GEHREL03	30-Oct-19	GREL03-04	405830	6468233	0.1%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ23	30-Oct-19		407010	6468557	0.1%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GEHREL06	30-Oct-19	GBQ10-04=	406064	6470400	5.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GEHREL03	30-Oct-19	GBQ12-01=	405830	6468233	5.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ13	30-Oct-19	GBQ12-01=	406795	6469882	15.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ12	30-Oct-19	GBQ12-01	406273	6469675	20.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GEHREL10	30-Oct-19	GBQ12-01=	406261	6469667	20.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GEHREL13	30-Oct-19	GBQ12-01=	406880	6469693	20.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ11	30-Oct-19	GBQ12-01=	406228	6469797	45.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GEHREL08	30-Oct-19	GBQ10-04=	406202	6470390	60.0%
Poaceae	* <i>Ehrharta longiflora</i>	Introduced	GBQ10	30-Oct-19	GBQ10-04	406088	6470415	70.0%
Poaceae	* <i>Eragrostis curvula</i>	Introduced	GBQ17	30-Oct-19		407166	6466574	1.5%
Poaceae	* <i>Eragrostis curvula</i>	Introduced	GBQ16	30-Oct-19		406981	6467427	2.0%
Poaceae	* <i>Eragrostis curvula</i>	Introduced	GEHREL09	30-Oct-19		406953	6467549	10.0%
Poaceae	* <i>Eragrostis curvula</i>	Introduced	GEHREL15	30-Oct-19		404120	6468197	20.0%
Poaceae	* <i>Hordeum leporinum</i>	Introduced	GBQ10	30-Oct-19	GBQ10-08	406088	6470415	0.1%
Poaceae	* <i>Hordeum leporinum</i>	Introduced	GBQ13	30-Oct-19	GBQ10-08=	406795	6469882	0.1%
Poaceae	* <i>Hordeum leporinum</i>	Introduced	GEHREL05	30-Oct-19	GBQ10-08=	406039	6470377	0.1%
Poaceae	* <i>Hordeum leporinum</i>	Introduced	GEHREL06	30-Oct-19	GBQ10-08=	406064	6470400	0.1%
Poaceae	* <i>Hordeum leporinum</i>	Introduced	GEHREL08	30-Oct-19	GBQ10-08=	406202	6470390	0.1%
Poaceae	* <i>Hordeum leporinum</i>	Introduced	GEHREL13	30-Oct-19	GBQ10-08=	406880	6469693	0.1%
Poaceae	* <i>Hordeum leporinum</i>	Introduced	GEHREL14	30-Oct-19	GBQ10-08=	406984	6469703	0.1%
Poaceae	* <i>Hordeum leporinum</i>	Introduced	LVL1RMOP	30-Oct-19	L1MN17-09	406032	6469940	1
Poaceae	* <i>Hordeum leporinum</i>	Introduced	LVL1RMOP	30-Oct-19	L1MN20-07	406254	6468427	1
Poaceae	* <i>Hyparrhenia hirta</i>	Introduced	GEHB-OPMET	30-Oct-19	MROEOP01	407178	6466500	20
Poaceae	* <i>Lagurus ovatus</i>	Introduced	GBQ13	30-Oct-19	GBQ13-01	406795	6469882	0.1%
Poaceae	* <i>Lolium multiflorum</i>	Introduced	GEHREL03	30-Oct-19	GREL03-08	405830	6468233	1.0%
Poaceae	* <i>Lolium multiflorum</i>	Introduced	LVL1RMOP	30-Oct-19	L1MN04-02	406081	6468565	50.0%
Poaceae	* <i>Lolium perenne</i>	Introduced	GEHREL01	30-Oct-19	GREL01-02	406357	6469657	0.1%
Poaceae	* <i>Paspalum dilatatum</i>	Introduced	LVL1RMOP	30-Oct-19	L1MN04-02B	406081	6468565	1
Poaceae	* <i>Paspalum urvillei</i>	Introduced	GEHREL01	30-Oct-19	GREL01-09	406357	6469657	0.1%
Poaceae	* <i>Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	GBQ04	30-Oct-19	GBQ04-09	406556	6468170	1.0%

Poaceae	* <i>Pentameris pallida</i>	Introduced	GBQ03	30-Oct-19	GBQ03-09	406493	6468261	0.1%
Poaceae	* <i>Pentameris pallida</i>	Introduced	GEHREL07	30-Oct-19	GBQ03-09=	406535	6468275	0.1%
Poaceae	* <i>Pentameris pallida</i>	Introduced	GBQ02	30-Oct-19	GBQ02-01	406481	6468226	1.0%
Poaceae	* <i>Phalaris aquatica</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN14-01	405858	6469546	1
Poaceae	* <i>Poa annua</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN01-12	406168	6468550	1
Poaceae	* <i>Poa annua</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN17-04	406032	6469940	1
Poaceae	* <i>Poa annua</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN20-02	406254	6468427	1
Poaceae	* <i>Polypogon monspeliensis</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN17-08	406032	6469940	1
Poaceae	* <i>Rostraria cristata</i>	Introduced	GBQ04	30-Oct-19	GBQ04-13	406556	6468170	0.1%
Poaceae	* <i>Rostraria cristata</i>	Introduced	GEHREL01	30-Oct-19	GREL01-12	406357	6469657	0.1%
Poaceae	* <i>Rostraria cristata</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN04-04	406081	6468565	1
Poaceae	* <i>Rostraria cristata</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN04-05	406081	6468565	1
Poaceae	* <i>Rostraria cristata</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN17-07	406032	6469940	1
Poaceae	* <i>Rostraria cristata</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN20-06	406254	6468427	1
Poaceae	* <i>Setaria parviflora</i>	Introduced	GEHREL05	30-Oct-19	CF02-01=	406039	6470377	0.1%
Poaceae	* <i>Vulpia bromoides</i>	Introduced	GBQ08	30-Oct-19	GBQ08-35	406765	6468227	0.1%
Poaceae	* <i>Vulpia bromoides</i>	Introduced	GBQ15	30-Oct-19	GBQ15-17	406889	6468350	0.1%
Poaceae	* <i>Vulpia bromoides</i>	Introduced	GBQ04	30-Oct-19	GBQ04-05	406556	6468170	1.0%
Poaceae	* <i>Vulpia bromoides</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN17-10	406032	6469940	1
Poaceae	* <i>Vulpia muralis</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN13-01	405383	6468348	1
Primulaceae	* <i>Lysimachia arvensis</i>	Introduced	GBQ04	30-Oct-19		406556	6468170	0.1%
Primulaceae	* <i>Lysimachia arvensis</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN17-06	406032	6469940	1
Rosaceae	* <i>Rubus ulmifolius</i>	Introduced (WoNS; Declared Pest)	GEHREL05	30-Oct-19		406039	6470377	5.0%
Rosaceae	* <i>Rubus ulmifolius</i>	Introduced (WoNS; Declared Pest)	GEHB-OPRM	30-Oct-19		406039	6470377	20
Rosaceae	* <i>Rubus ulmifolius</i>	Introduced (WoNS; Declared Pest)	GEHB-OPRM	30-Oct-19		406832	6469315	50
Scrophulariaceae	* <i>Dischisma arenarium</i>	Introduced	LVLIRMOP	30-Oct-19	L1MN13-02	405383	6468348	1
Solanaceae	* <i>Solanum linnaeanum</i>	Introduced (Declared Pest)	GEHB-OPRM	30-Oct-19		406168	6470061	1
Solanaceae	* <i>Solanum nigrum</i>	Introduced	GEHREL03	30-Oct-19		405830	6468233	0.1%
Tropaeolaceae	* <i>Tropaeolum majus</i>	Introduced	GEHB-OPRM	30-Oct-19		406798	6469893	50

Appendix 12

Selection PATN Inputs and Outputs



Table 1: List of taxa that were omitted or treated as other taxa for the purposes of the floristic analysis.

Taxon	Name Referred to for Analysis
Acacia applanata	Acacia willdenowiana
Acacia applanata/ willdenowiana	Acacia willdenowiana
Acacia iteaphylla	omitted
Acacia pulchella var. glaberrima	Acacia pulchella
Adenanthos barbiger	omitted
Adenanthos cygnorum subsp. cygnorum	Adenanthos cygnorum
Anigozanthos manglesii subsp. manglesii	Anigozanthos manglesii
Arundo donax	omitted
Asparagus asparagoides	Myrsiphyllum asparagoides
Austrostipa compressa	Stipa compressa
Austrostipa elegantissima	Stipa elegantissima
Austrostipa flavescens	Stipa flavescens
Babingtonia camphorosmae	Baekkea camphorosmae
Banksia dallanneyi susp. dallanneyi	Dryandra nivea
Billardiera fraseri	Pronaya fraseri
Blancoa canescens	omitted
Bolboschoenus caldwellii	omitted
Brachypodium distachyon	omitted
Bromus hordeaceus	omitted
Burchardia congesta	Burchardia umbellata
Caesia sp.	omitted
Caesia sp. Wongan (K.F. Kenneally 8820)	Caesia micrantha large swamp form scps (BJK&NG 094)
Caladenia flava subsp. flava	Caladenia flava
Caladenia sp.	omitted
Calectasia narragara	Calectasia cyanea
Cassytha aurea	Cassytha aurea var. hirta
Cassytha racemosa forma pilosa	Cassytha racemosa
Casuarina ? equisetifolia	omitted
Cenchrus clandestinus	omitted
Centrolepis inconspicua	Centrolepis aristata
Centrolepis sp.	omitted
Chaetospora curvifolia	Schoenus curvifolius
Chenopodium album	Chenopodium macrospermum
Chordifex sinuosus	Restio sinosus scps ms
Conospermum acerosum subsp. acerosum	Conospermum acerosum
Conospermum undulatum	omitted
Conostylis setigera subsp. setigera	Conostylis setigera
Conostylis sp.	omitted
Corymbia calophylla	Eucalyptus calophylla
Corynotheca micrantha var. elongata	Corynotheca micrantha
Corynotheca micrantha var. micrantha	Corynotheca micrantha
Crassula colorata var. colorata	Crassula colorata
Crassula decumbens var. decumbens	Crassula decumbens
Cristonia biloba	Templetonia biloba
Cyanothamnus ramosus subsp. anethifolius	Boronia ramosa
Cycnogeton huegelii	Triglochin procerum
Cyperus alterniflorus	omitted
Daviesia divaricata subsp. divaricata	Daviesia divaricata
Daviesia nudiflora subsp. nudiflora	Daviesia nudiflora
Daviesia ? preissii	Daviesia preissii
Daviesia sp.	omitted
Desmocladius fasciculatus	Loxocarya fasciculata
Desmocladius flexuosus	Loxocarya flexuosa
Disa bracteata	Monadenia bracteata
Drosera menziesii	Drosera menziesii subsp. menziesii
Drosera drummondii	Drosera menziesii subsp. penicillaris
Drosera micrantha	omitted
Drosera porrecta	Drosera stolonifera
Echium plantagineum	omitted

<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	<i>Eremaea pauciflora</i>
<i>Eucalyptus camaldulensis</i>	omitted
<i>Eucalyptus marginata</i> subsp. <i>marginata</i>	<i>Eucalyptus marginata</i>
<i>Eucalyptus rudis</i> subsp. <i>rudis</i>	<i>Eucalyptus rudis</i>
<i>Ficus carica</i>	omitted
<i>Gastrolobium linearifolium</i>	<i>Oxylobium lineare</i>
<i>Gladiolus cardinalis</i>	omitted
<i>Gomphocarpus fruticosus</i>	omitted
<i>Haemodorum</i> ? <i>discolor</i>	<i>Haemodorum paniculatum</i>
<i>Haemodorum</i> ? <i>laxum</i>	<i>Haemodorum laxum</i>
<i>Haemodorum</i> ? <i>spicatum</i>	<i>Haemodorum spicatum</i>
<i>Haemodorum</i> ? <i>venosum</i>	omitted
<i>Haemodorum</i> sp.	omitted
<i>Hemiandra linearis</i>	<i>Hemiandra pungens</i>
<i>Hemiandra pungens</i>	<i>Hemiandra pungens</i>
<i>Hemiphora bartlingii</i>	omitted
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	<i>Hibbertia hypericoides</i>
<i>Hibbertia hypericoides</i> subsp. <i>septentrionalis</i>	<i>Hibbertia hypericoides</i>
<i>Hibbertia striata</i>	<i>Hibbertia huegelii</i>
<i>Hovea trisperma</i> var. <i>trisperma</i>	<i>Hovea trisperma</i>
<i>Hydrocotyle ranunculoides</i>	omitted
<i>Hypochaeris radicata</i>	<i>Hypochaeris glabra</i>
<i>Hypolaena</i> ? <i>robusta</i>	omitted
<i>Hypolaena robusta</i>	omitted
<i>Isolepis cernua</i> var. <i>setiformis</i>	<i>Isolepis setiformis</i>
<i>Isolepis prolifera</i>	omitted
<i>Isolepis</i> sp.	omitted
<i>Isopogon autumnalis</i>	<i>Isopogon drumondii</i>
<i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>	<i>Isotropis cuneifolia</i>
<i>Jacksonia floribunda</i>	<i>Jacksonia densiflora</i> / <i>floribunda</i> complex scps
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>	<i>Johnsonia pubescens</i>
<i>Johnsonia pubescens</i> subsp. ? <i>cygnorum</i>	<i>Johnsonia pubescens</i>
<i>Johnsonia pubescens</i> subsp. ? <i>pubescens</i>	<i>Johnsonia pubescens</i>
<i>Juncus articulatus</i>	omitted
<i>Kunzea glabrescens</i>	<i>Kunzea ericifolia</i>
<i>Lambertia multiflora</i> var. <i>darlingensis</i>	<i>Lambertia multiflora</i>
<i>Laxmannia ramosa</i> subsp. <i>ramosa</i>	<i>Laxmannia ramosa</i>
<i>Laxmannia sessiliflora</i> subsp. <i>australis</i>	<i>Laxmannia sessiliflora</i>
<i>Lepidosperma apricola</i>	omitted
<i>Lepidosperma leptostachyum</i>	omitted - 08, 18, 19, 24, 29, 31, rel11
<i>Lepidosperma oldhamii/calculicola</i>	<i>Lepidosperma angustatum</i>
<i>Lepidosperma</i> sp.	omitted
<i>Lepidosperma pubisquameum</i>	<i>Lepidosperma squamatum</i>
<i>Lepidosperma</i> ? <i>pubisquameum</i>	<i>Lepidosperma squamatum</i>
<i>Lepidosperma striatum</i>	<i>Lepidosperma eastern terete</i> scps (BJK&NG 232)
<i>Leptospermum laevigatum</i>	omitted
<i>Lobelia anceps</i>	<i>Lobelia alata</i>
<i>Lomandra integra</i>	<i>Lomandra nigricans</i>
<i>Lomandra</i> sp.	omitted
<i>Lotus subbiflorus</i>	<i>Lotus suaveolens</i>
<i>Lupinus angustifolius</i>	omitted
<i>Lyginia imberbis</i>	<i>Lyginia barbata</i>
<i>Lysimachia arvensis</i>	<i>Anagallis arvensis</i>
<i>Lysinema pentapetalum</i>	<i>Lysinema ciliatum</i>
<i>Lythrum hyssopifolia</i>	omitted
<i>Medicago polymorpha</i>	omitted
<i>Melaleuca armillaris</i>	omitted
<i>Melaleuca brevifolia</i>	omitted
<i>Melaleuca nesophila</i>	omitted
<i>Melaleuca</i> sp.	omitted
<i>Melaleuca systema</i>	<i>Melaleuca acerosa</i>

<i>Melaleuca viminalis</i>	omitted
<i>Microtis media</i> subsp. <i>media</i>	<i>Microtis media</i>
<i>Monotaxis grandiflora</i> var. <i>grandiflora</i>	<i>Monotaxis grandiflora</i>
<i>Olea europaea</i>	omitted
<i>Paspalum urvillei</i>	omitted
<i>Patersonia occidentalis</i> var. <i>occidentalis</i>	<i>Patersonia occidentalis</i>
<i>Pentameris airoides</i> subsp. <i>airoides</i>	<i>Pentaschistis airoides</i>
<i>Pentameris pallida</i>	<i>Pentaschistis thunbergii</i>
<i>Pericalymma ellipticum</i> var. <i>ellipticum</i>	<i>Pericalymma ellipticum</i>
<i>Pericalymma ellipticum</i> var. <i>floridum</i>	<i>Pericalymma ellipticum</i>
<i>Petrophile biloba</i>	omitted
<i>Philothea spicata</i>	<i>Eriostemon spicatus</i>
<i>Phlebocarya filifolia</i>	<i>Phlebocarya ciliata</i>
<i>Phyllangium divergens</i>	<i>Mitrasacme paradoxa</i>
<i>Phyllangium paradoxum</i>	<i>Mitrasacme paradoxa</i>
<i>Pimelea angustifolia</i>	omitted - 18,21,22, 27, 30, rel11
<i>Pseudognaphalium luteoalbum</i>	<i>Pseudognaphalium luteo-album</i>
<i>Pterostylis</i> sp.	omitted
<i>Pterostylis</i> ? <i>vittata</i>	<i>Pterostylis vittata</i>
<i>Raphanus raphanistrum</i>	omitted
<i>Ricinus communis</i>	omitted
<i>Rostraria cristata</i>	omitted
<i>Rubus ulmifolius</i>	omitted
<i>Rytidosperma occidentale</i>	<i>Danthonia occidentalis</i>
<i>Rytidosperma pilosum</i>	<i>Danthonia pilosa</i>
<i>Rytidosperma setaceum</i>	<i>Danthonia setacea</i>
<i>Rytidosperma</i> sp.	omitted
<i>Schinus terebinthifolius</i>	omitted
<i>Schoenus caespititius</i>	omitted
<i>Schoenus efoliatus</i>	<i>Schoenus rodwayanus</i>
<i>Setaria parviflora</i>	omitted
<i>Silene gallica</i> var. <i>gallica</i>	<i>Silene gallica</i>
<i>Styphelia xerophylla</i>	<i>Astroloma xerophyllum</i>
<i>Stylidium ciliatum</i>	omitted
<i>Stylidium diuroides</i> subsp. <i>diuroides</i>	<i>Stylidium diuroides</i>
<i>Synaphea petiolaris</i> subsp. <i>petiolaris</i>	<i>Synaphea petiolaris</i>
<i>Synaphea spinulosa</i> subsp. <i>spinulosa</i>	<i>Synaphea spinulosa</i>
<i>Thelymitra</i> sp.	omitted
<i>Thysanotus manglesianus</i>	<i>Thysanotus</i> sp. <i>manglesianus/patersonii</i> scps
<i>Thysanotus patersonii</i>	<i>Thysanotus</i> sp. <i>manglesianus/patersonii</i> scps
<i>Thysanotus</i> sp.	omitted
<i>Trifolium campestre</i> var. <i>campestre</i>	<i>Trifolium campestre</i>
<i>Typha domingensis</i>	omitted
<i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	<i>Ursinia anthemoides</i>
<i>Verticordia densiflora</i> var. <i>densiflora</i>	<i>Verticordia densiflora</i>
<i>Vulpia myuros</i> forma <i>myuros</i>	<i>Vulpia myuros</i>

Column Fusion Dendrogram

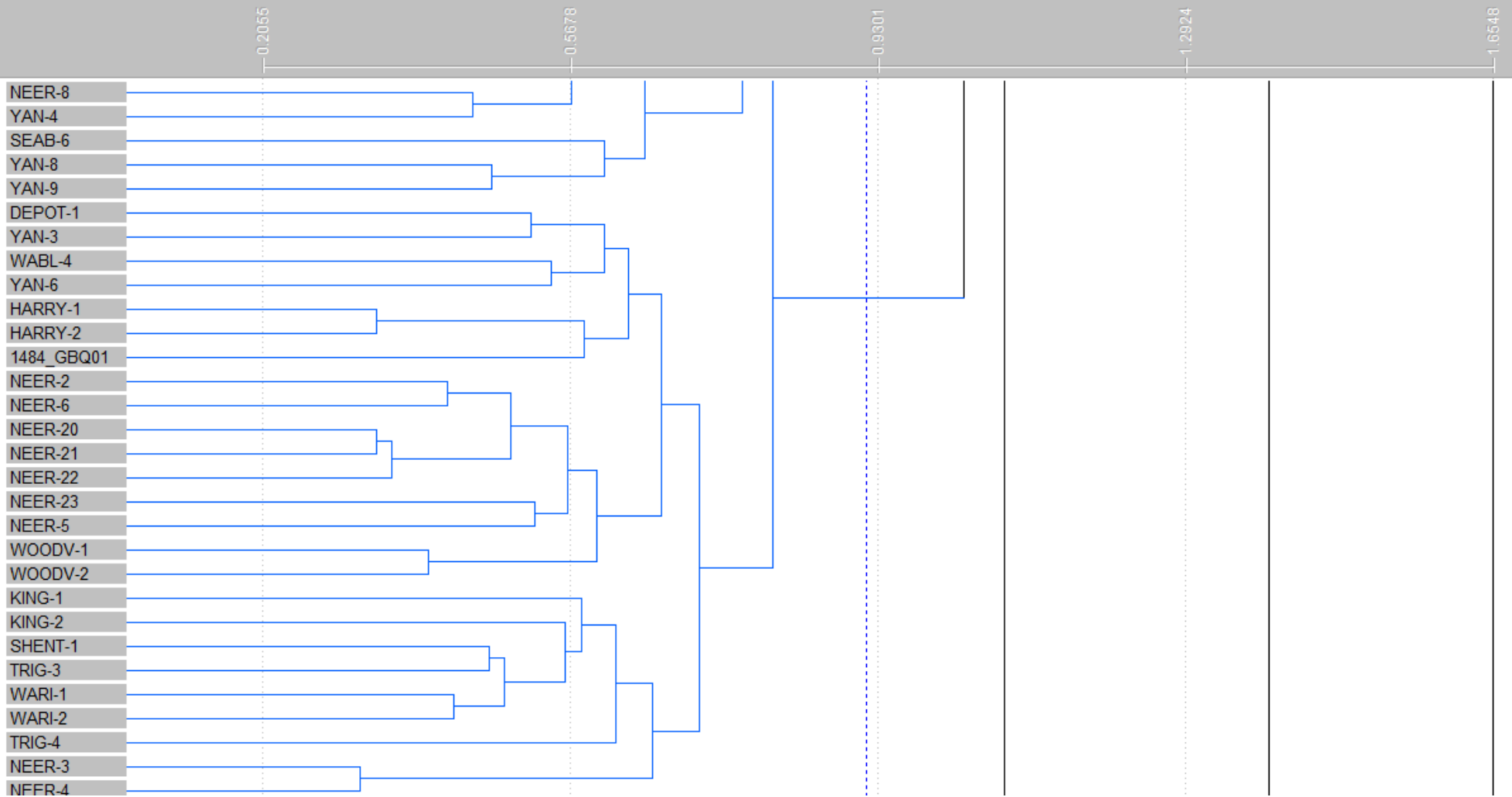


Figure 1: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ01

Column Fusion Dendrogram

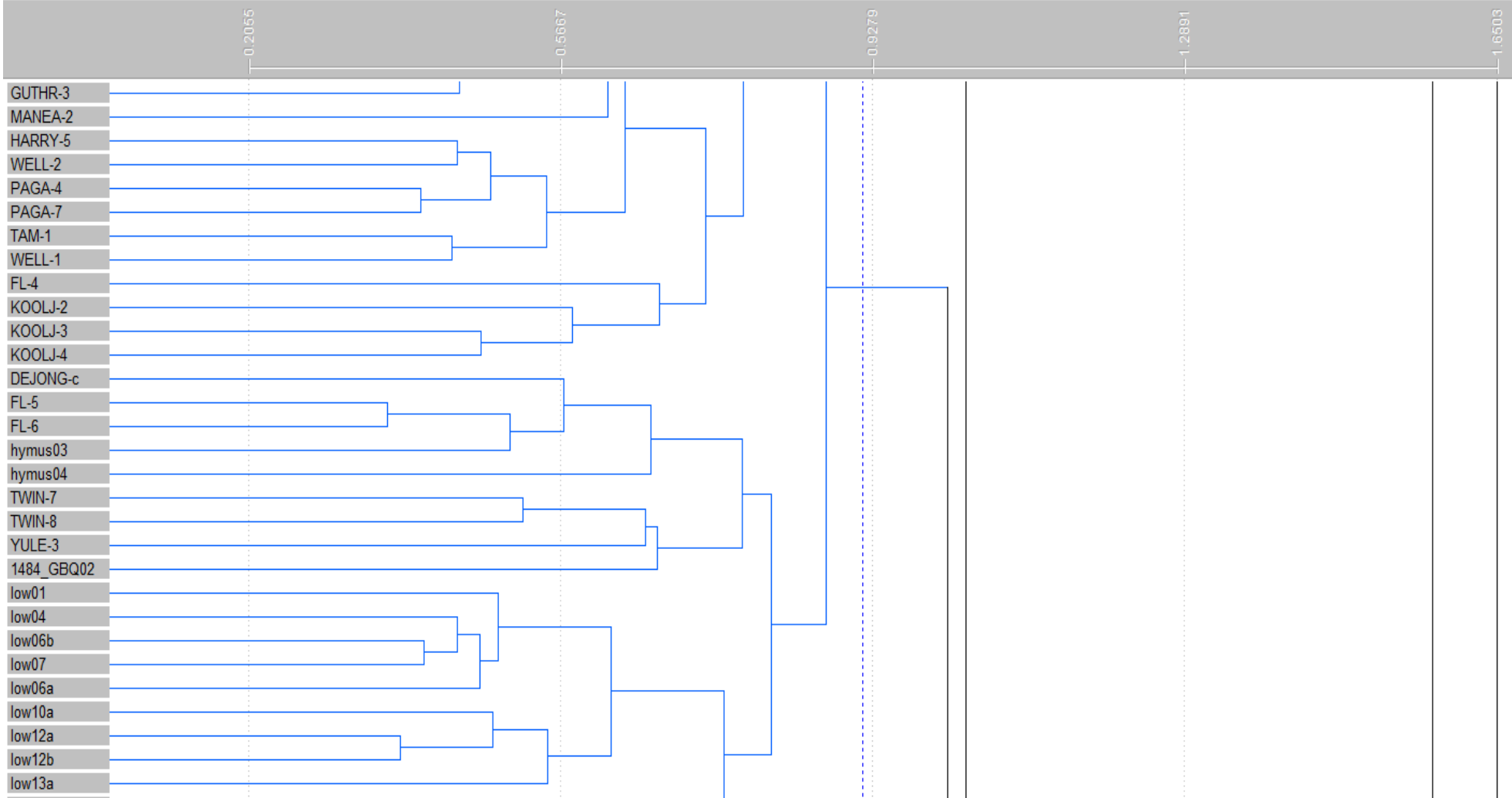


Figure 2: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ02

Column Fusion Dendrogram

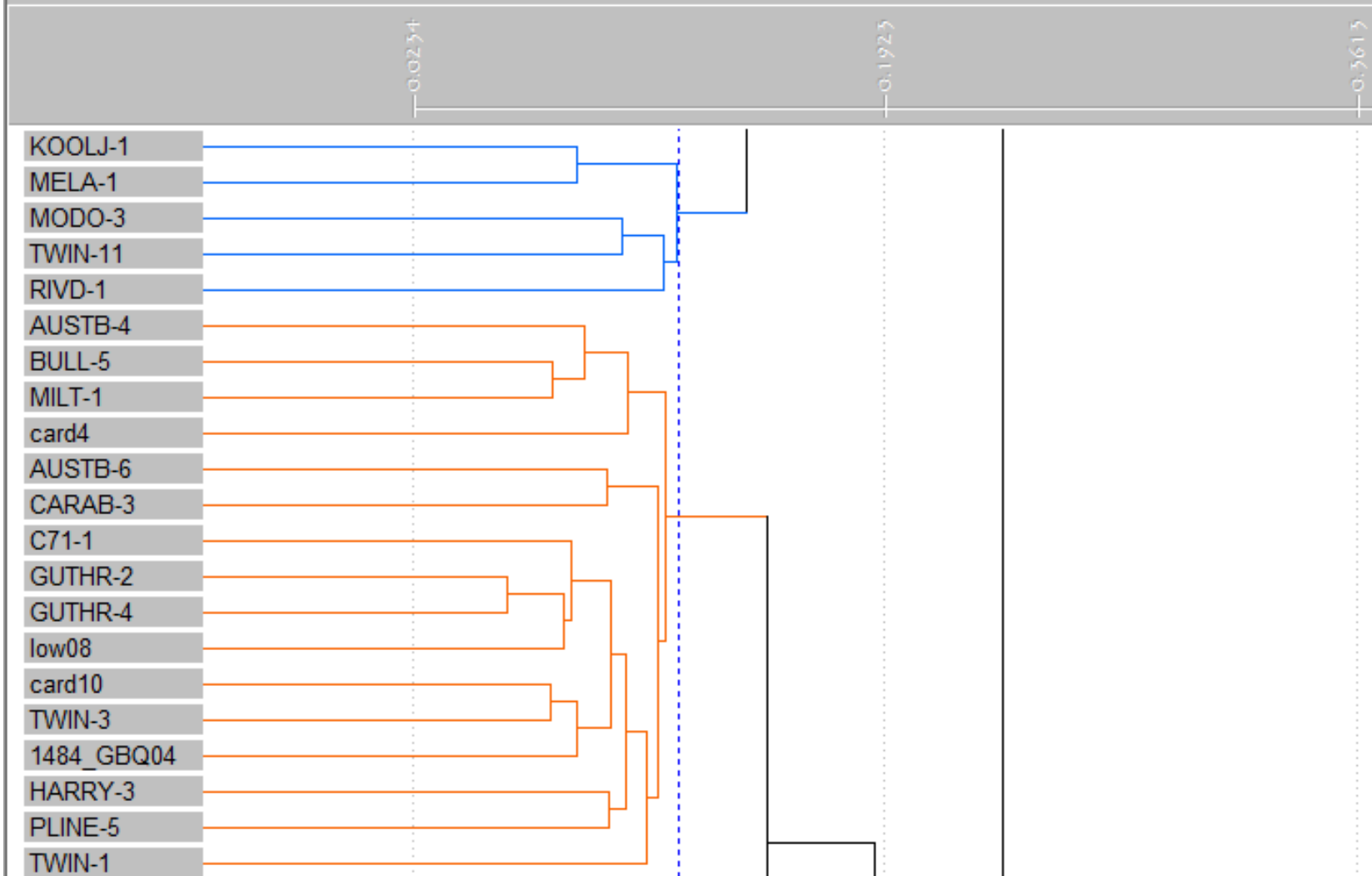


Figure 3: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ04

Column Fusion Dendrogram

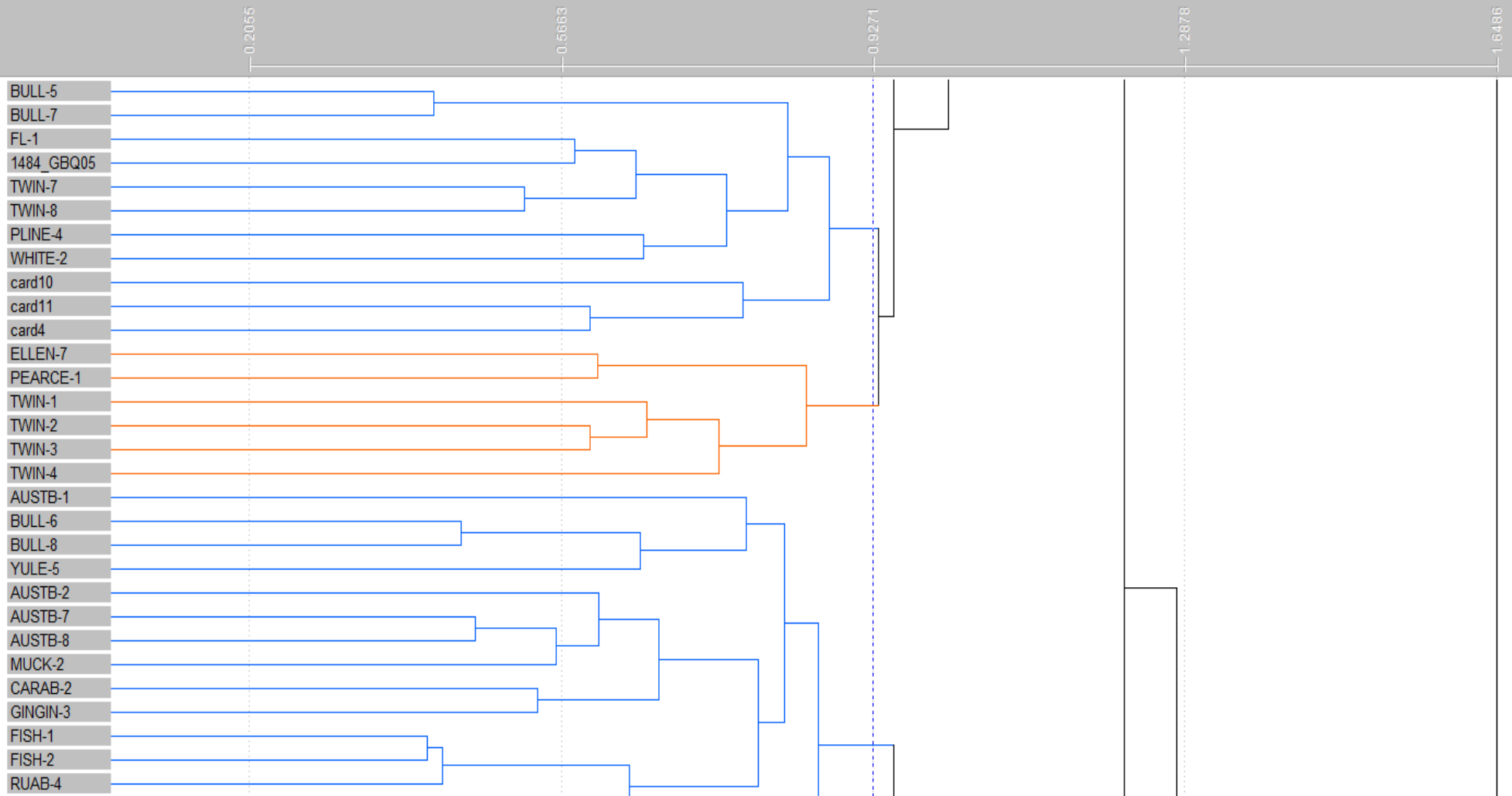


Figure 4: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ05

Column Fusion Dendrogram

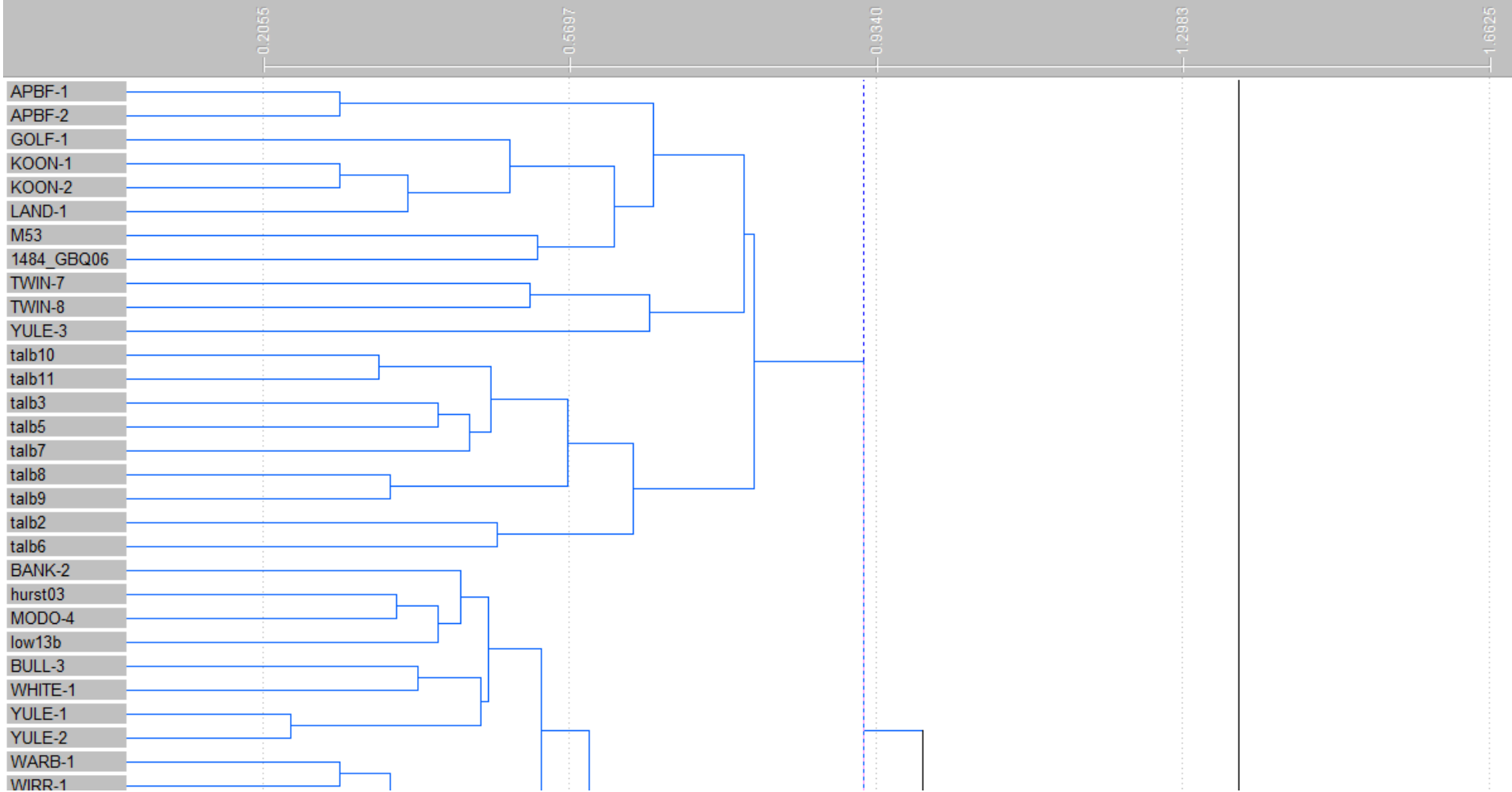


Figure 5: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ06

Column Fusion Dendrogram

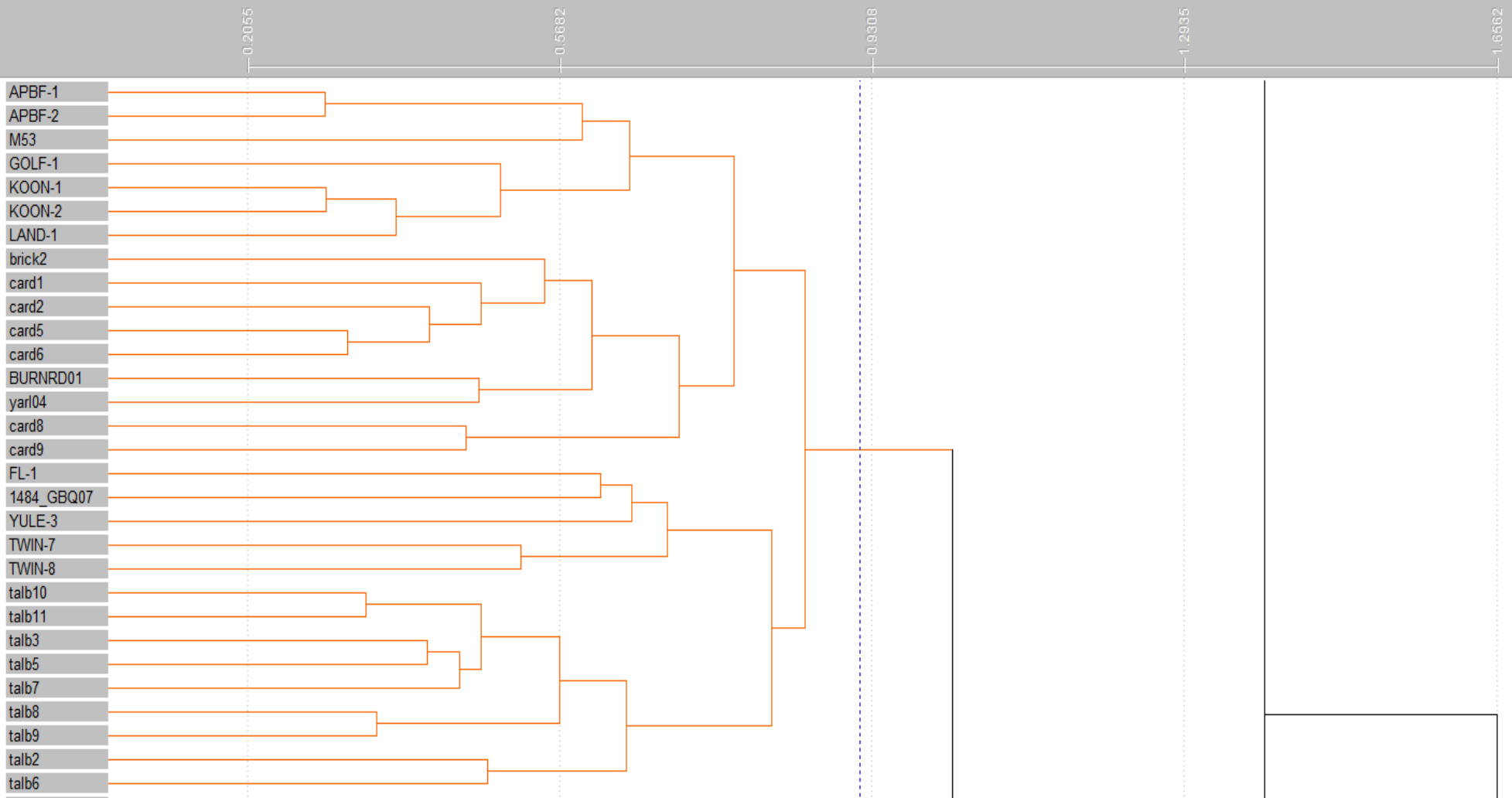


Figure 6: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ07

Column Fusion Dendrogram

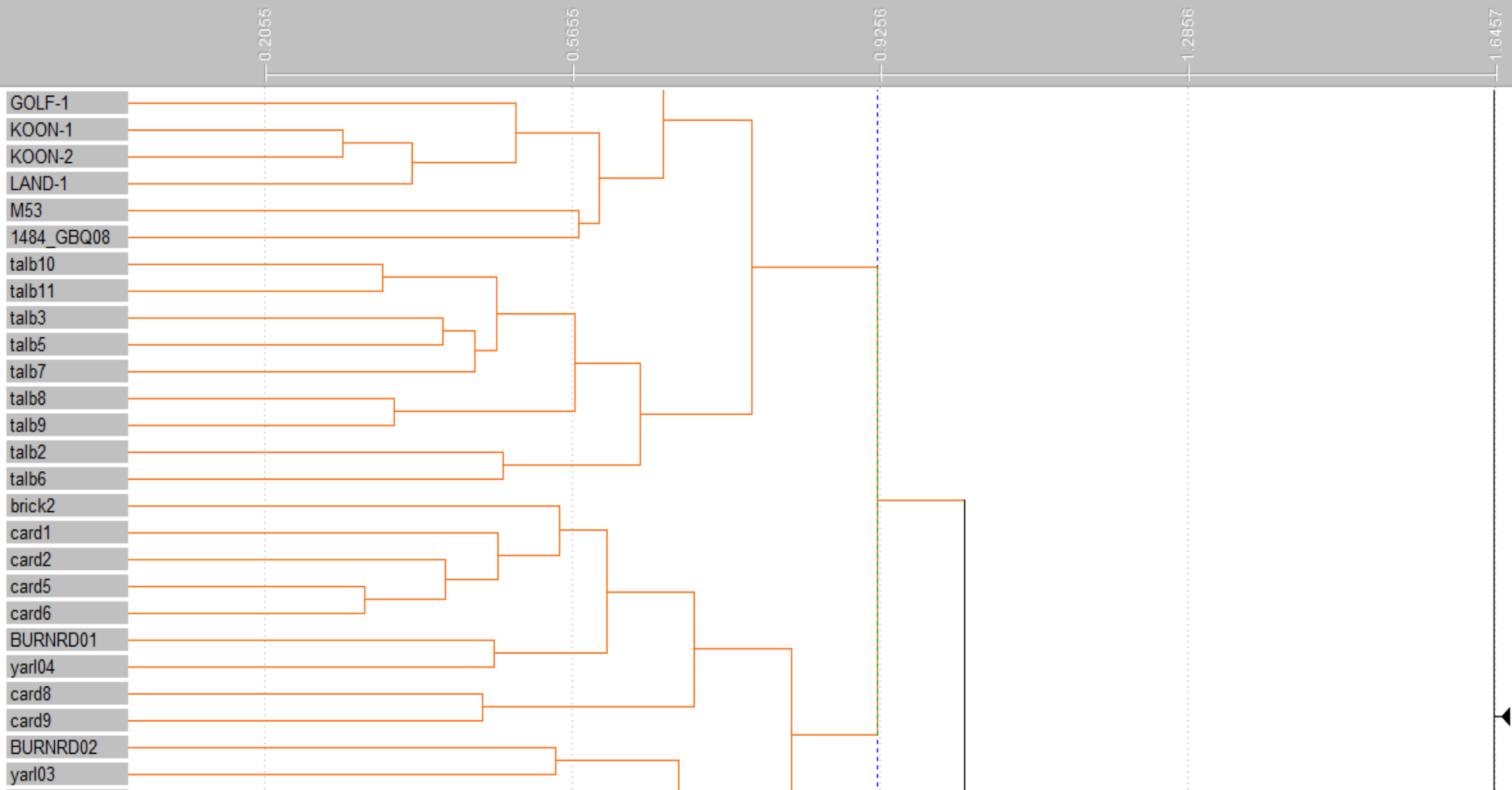


Figure 7: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ08

Column Fusion Dendrogram

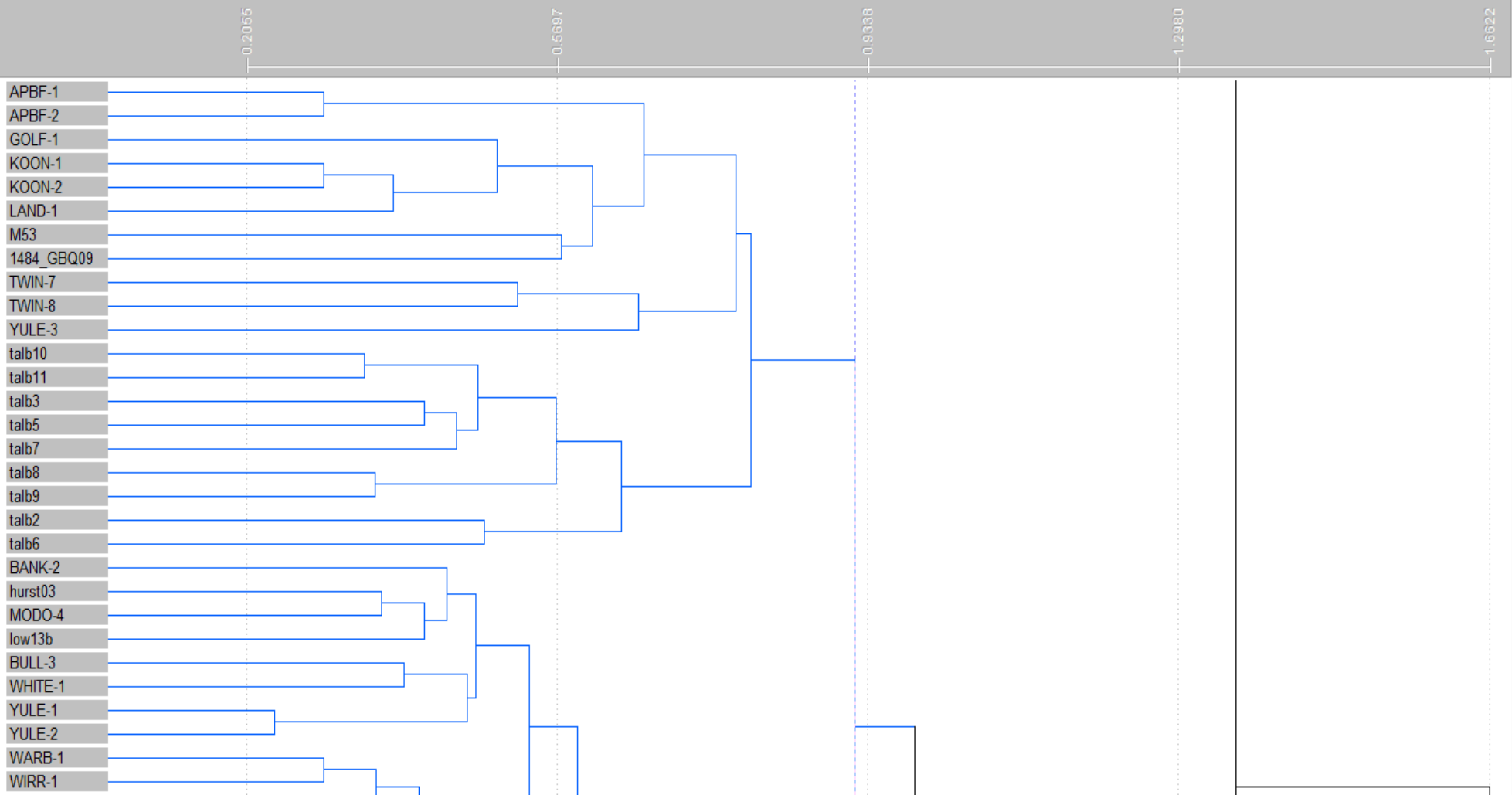


Figure 8: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ09

Column Fusion Dendrogram

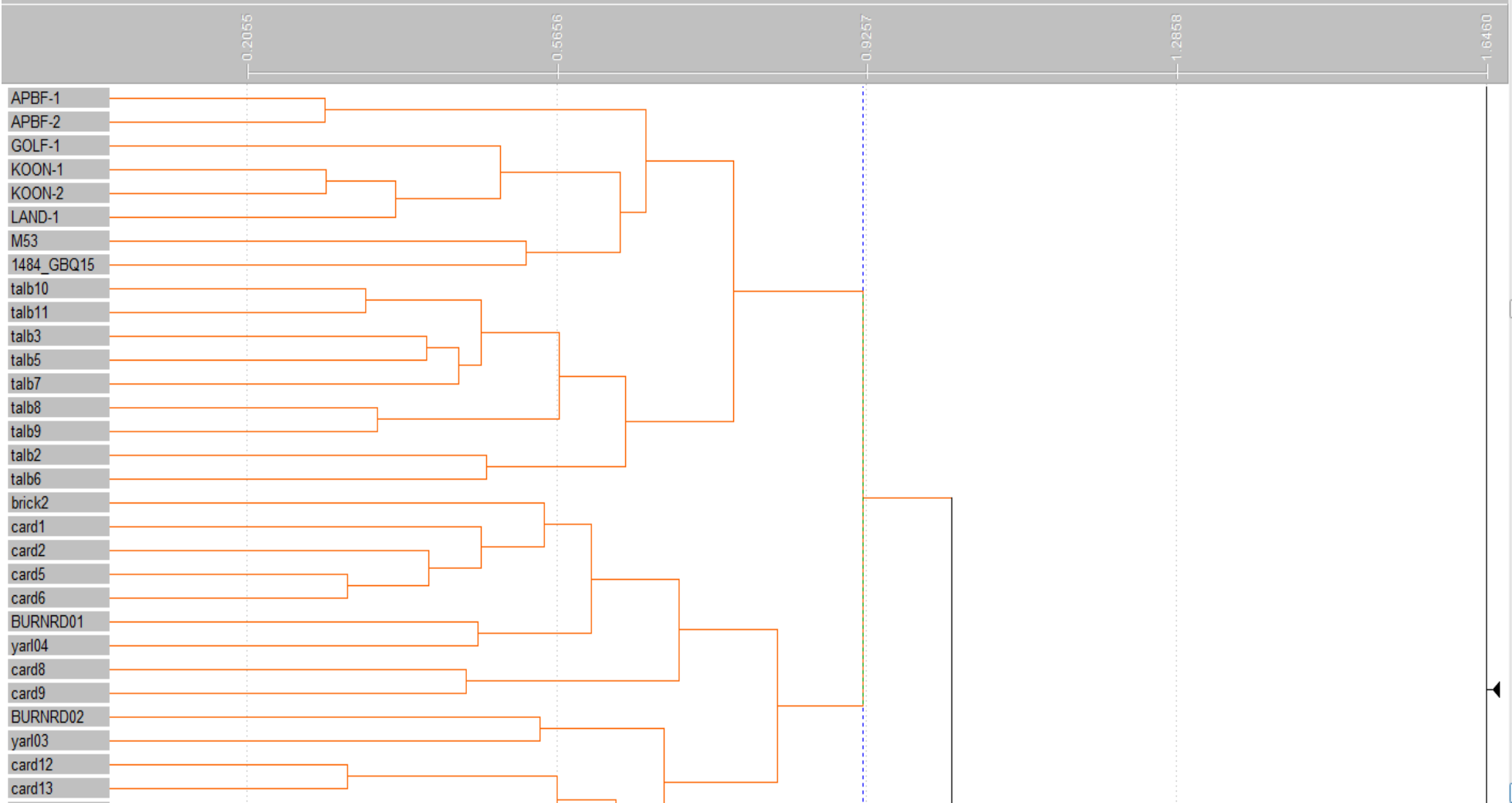


Figure 9: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ15

Column Fusion Dendrogram

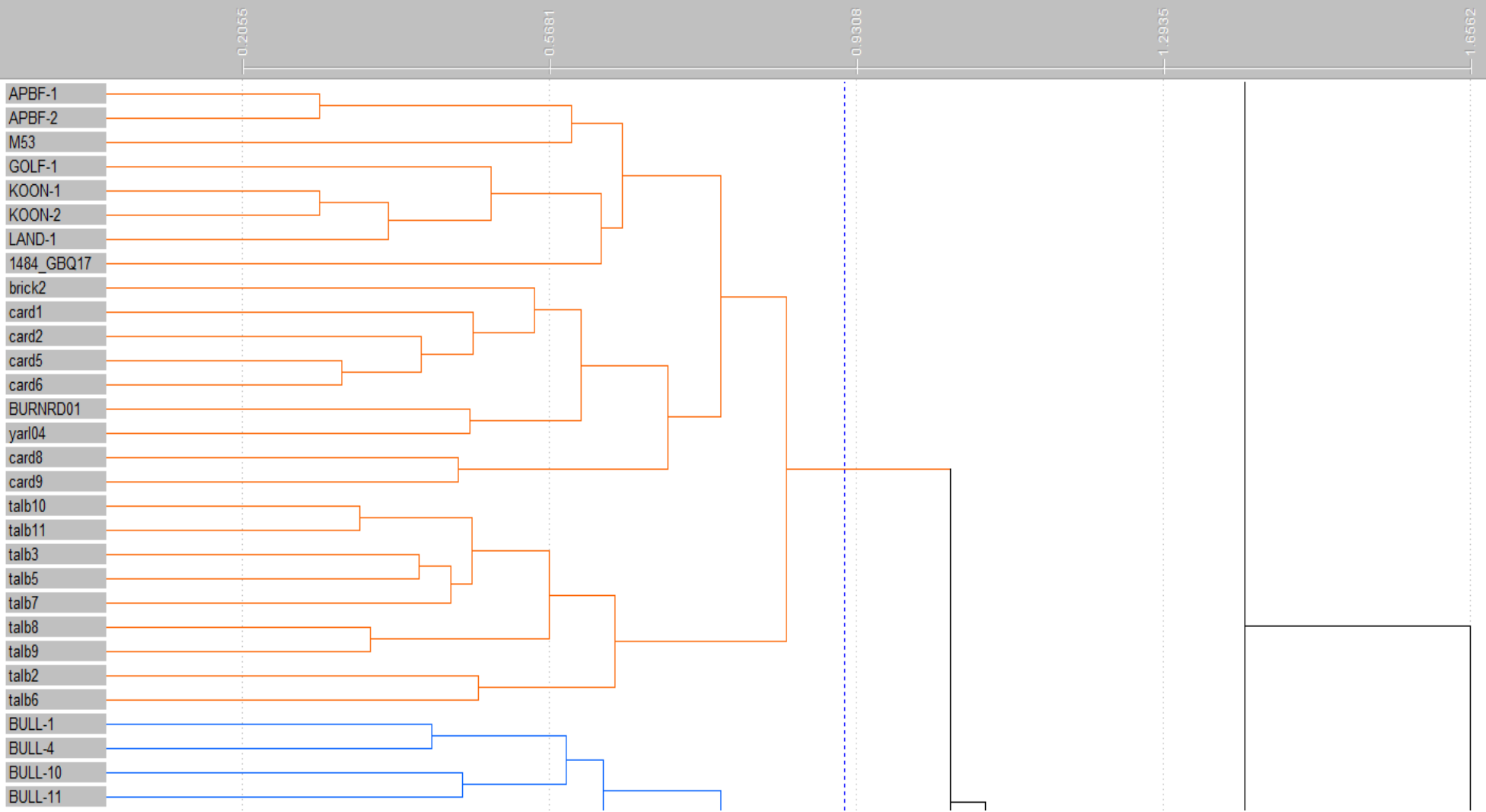


Figure 10: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ17

Column Fusion Dendrogram

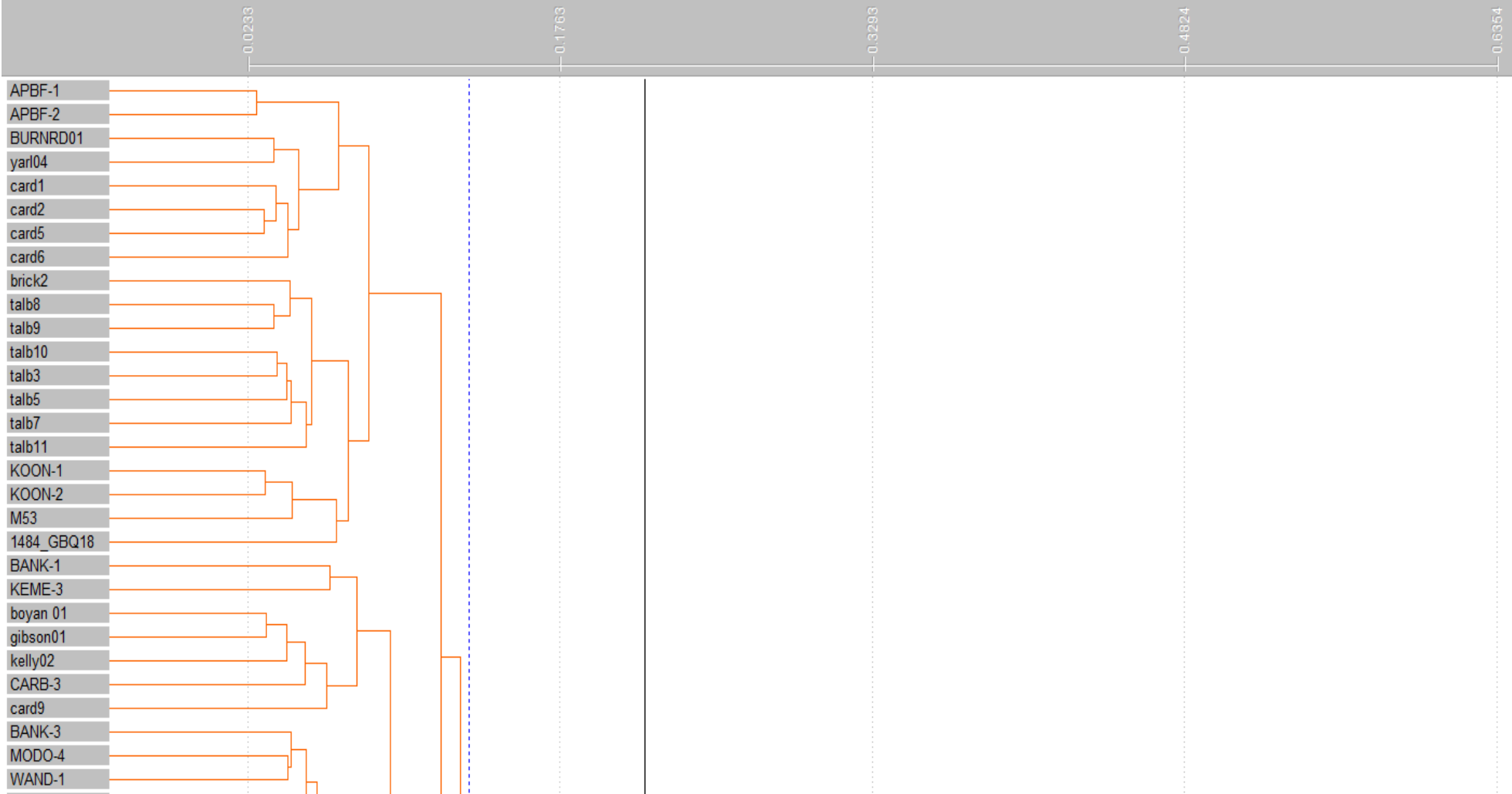


Figure 11: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ18

Column Fusion Dendrogram

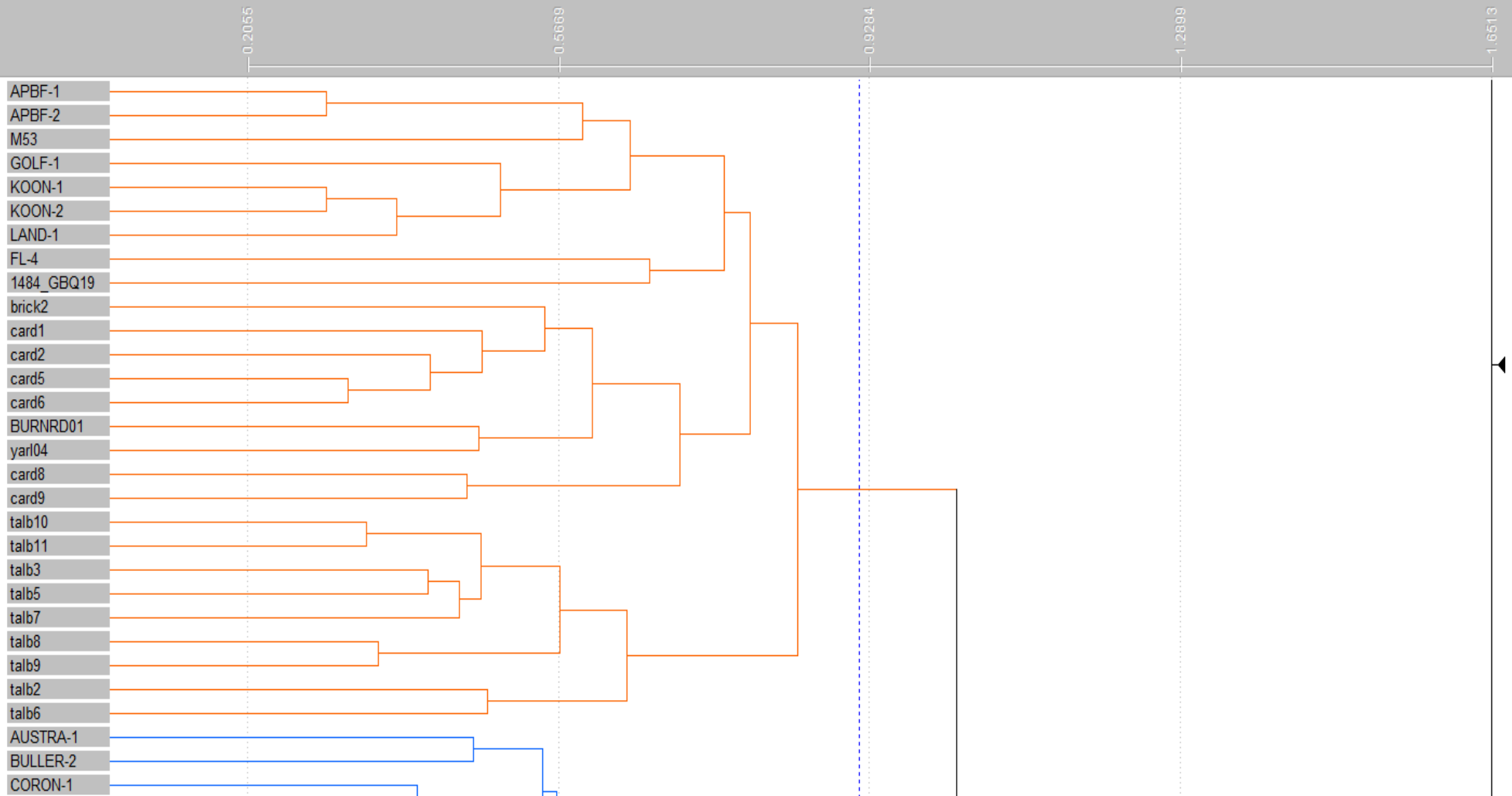


Figure 12: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ19

Column Fusion Dendrogram

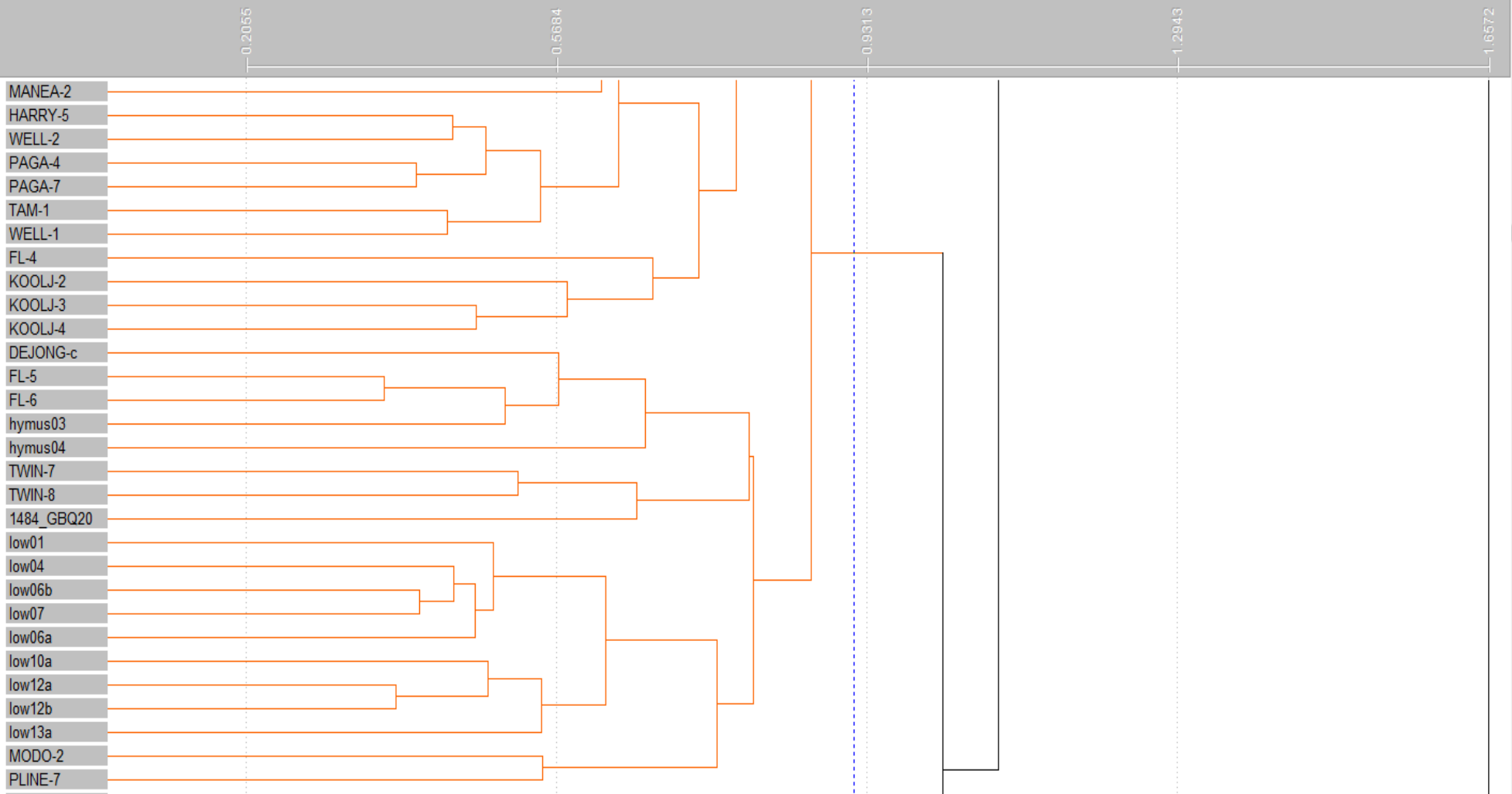


Figure 13: Dendrogram section from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ20

Column Fusion Dendrogram

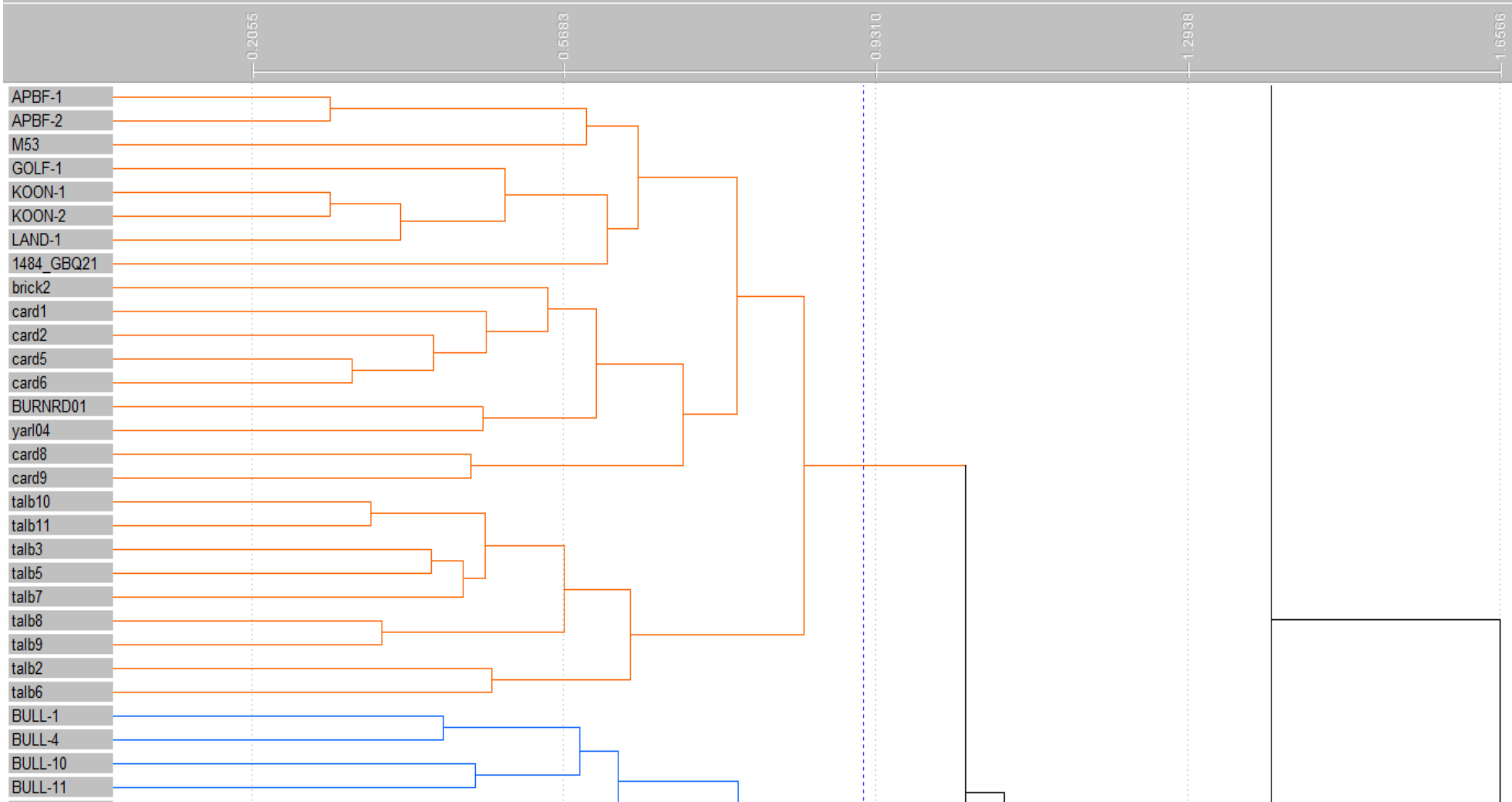


Figure 14: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ21

Column Fusion Dendrogram

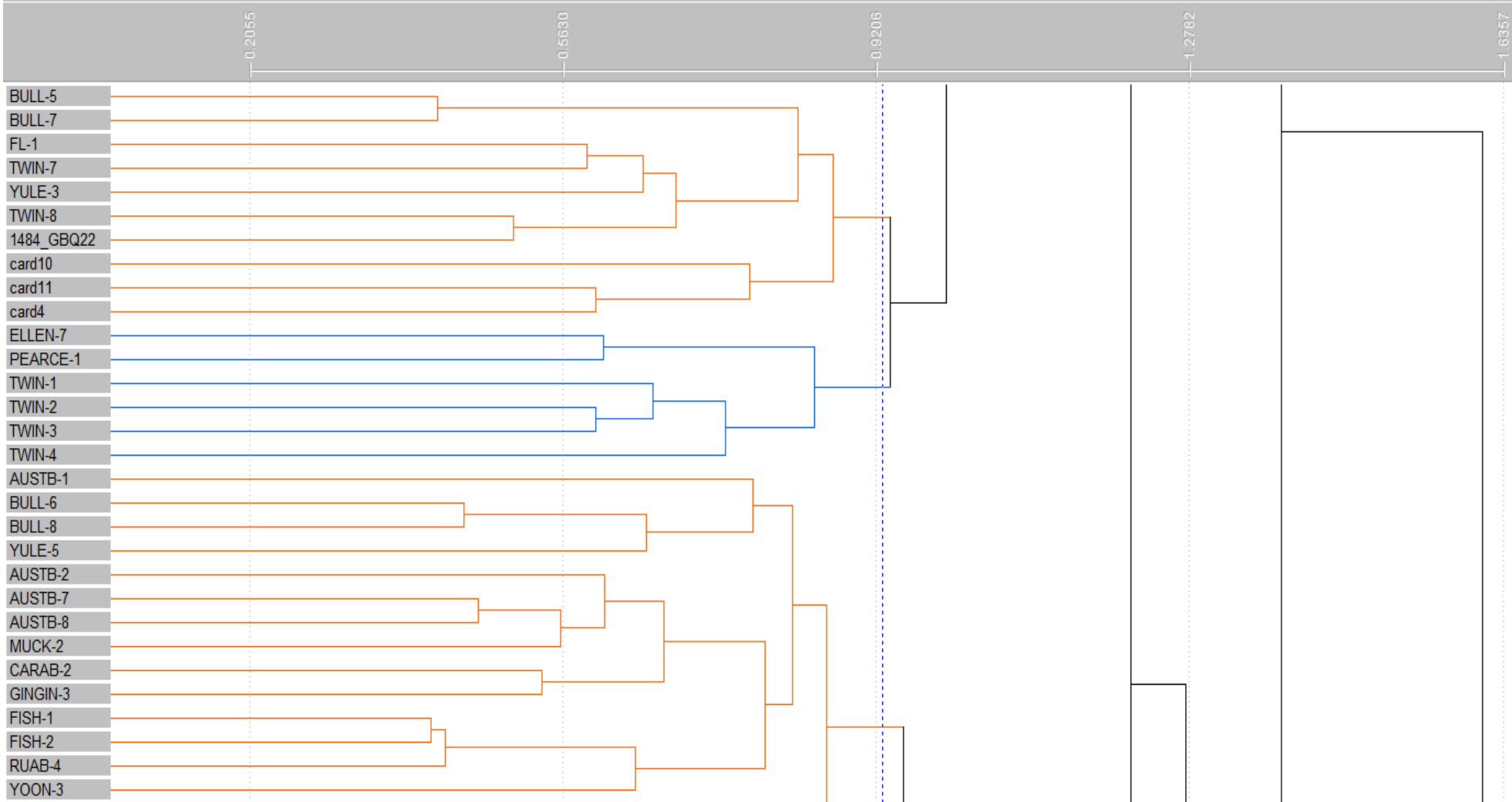


Figure 15: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ22

Column Fusion Dendrogram

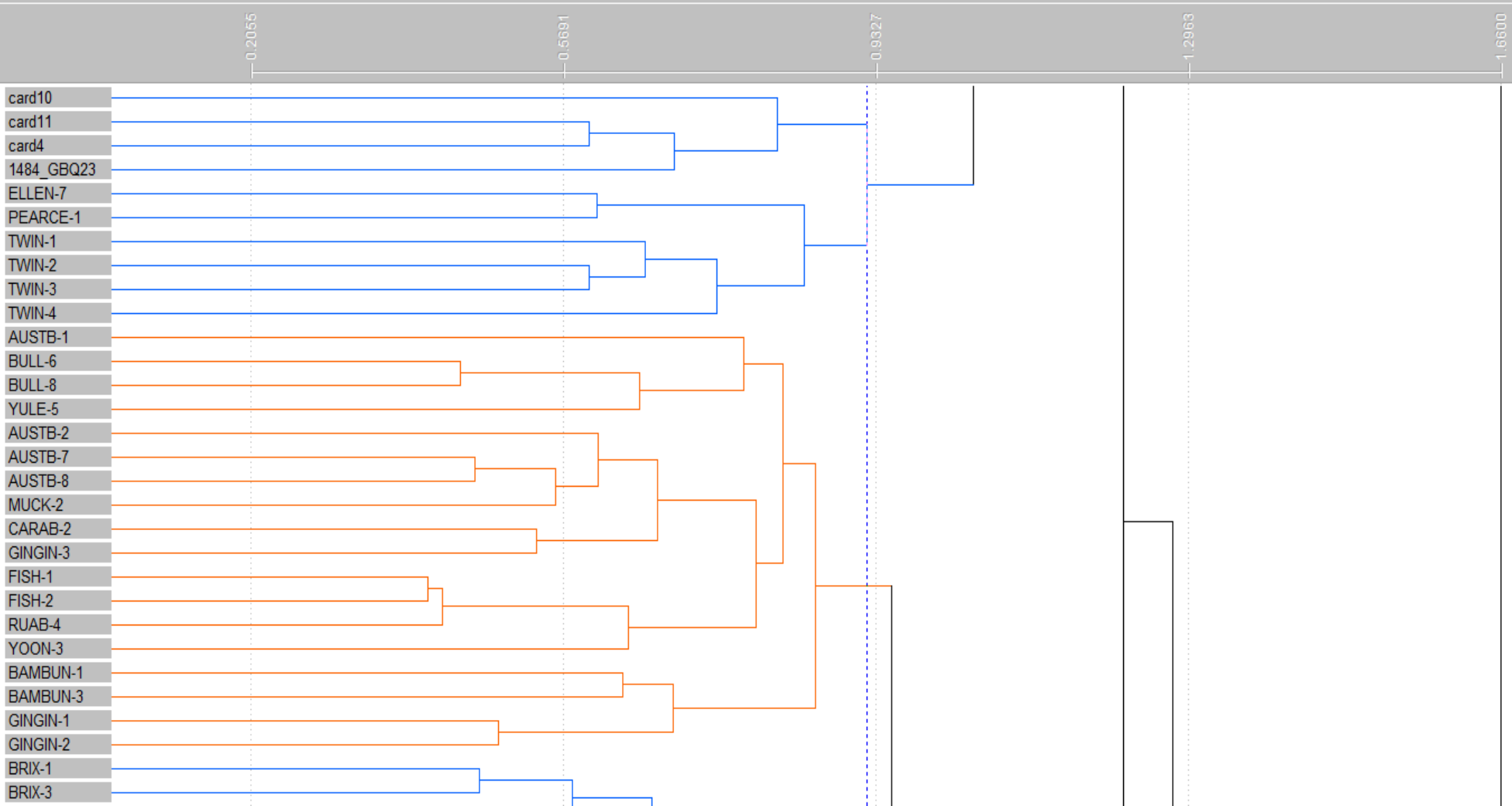


Figure 16: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ23

Column Fusion Dendrogram

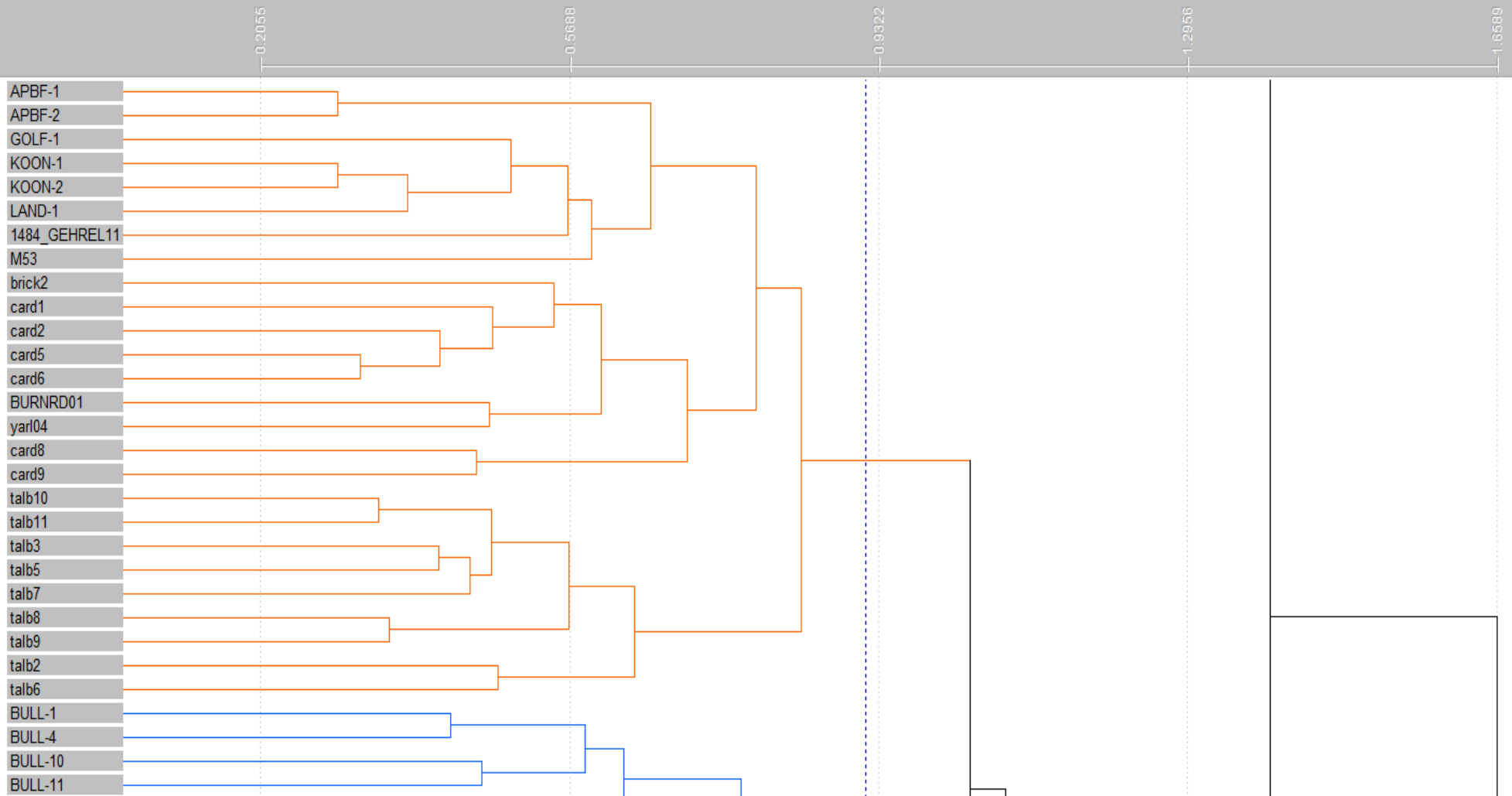


Figure 17: Dendrogram from floristic clustering analysis against the Gibson SCP data set – relevé GEHREL11

Column Fusion Dendrogram

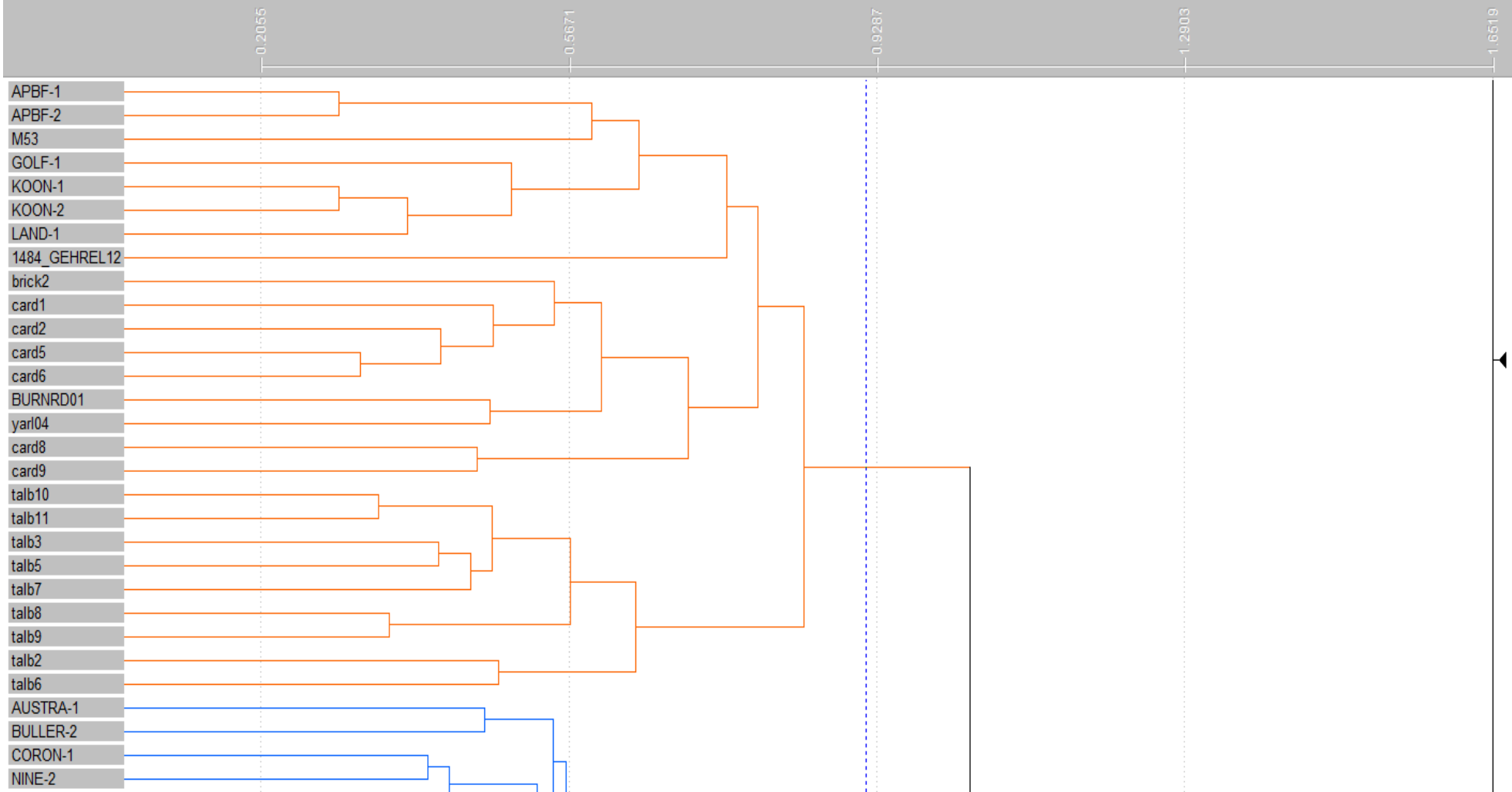


Figure 18: Dendrogram from floristic clustering analysis against the Gibson SCP data set – relevé GEHREL12

Column Fusion Dendrogram

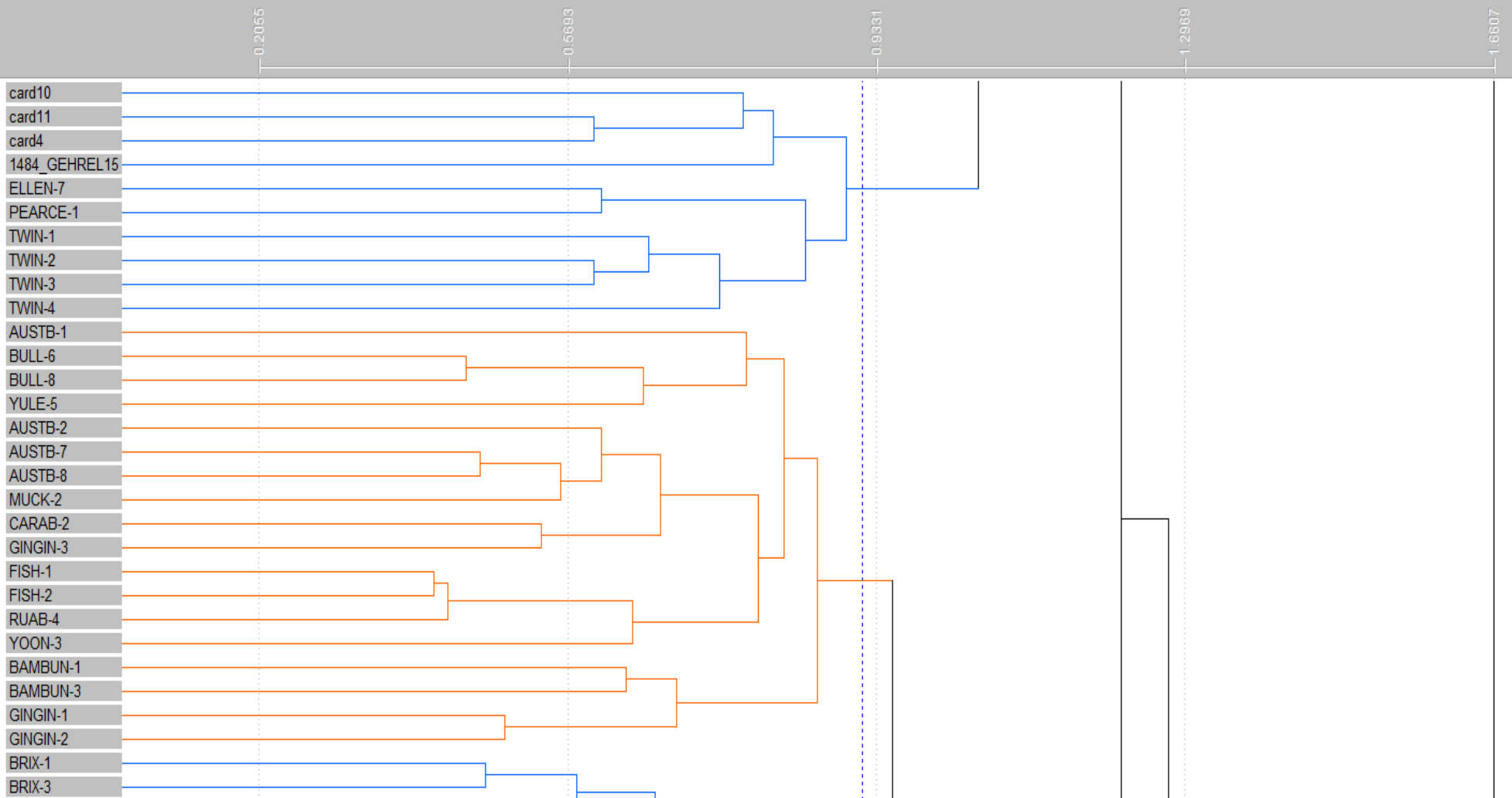


Figure 19: Dendrogram from floristic clustering analysis against the Gibson SCP data set – relevé GEHREL15

Column Fusion Dendrogram

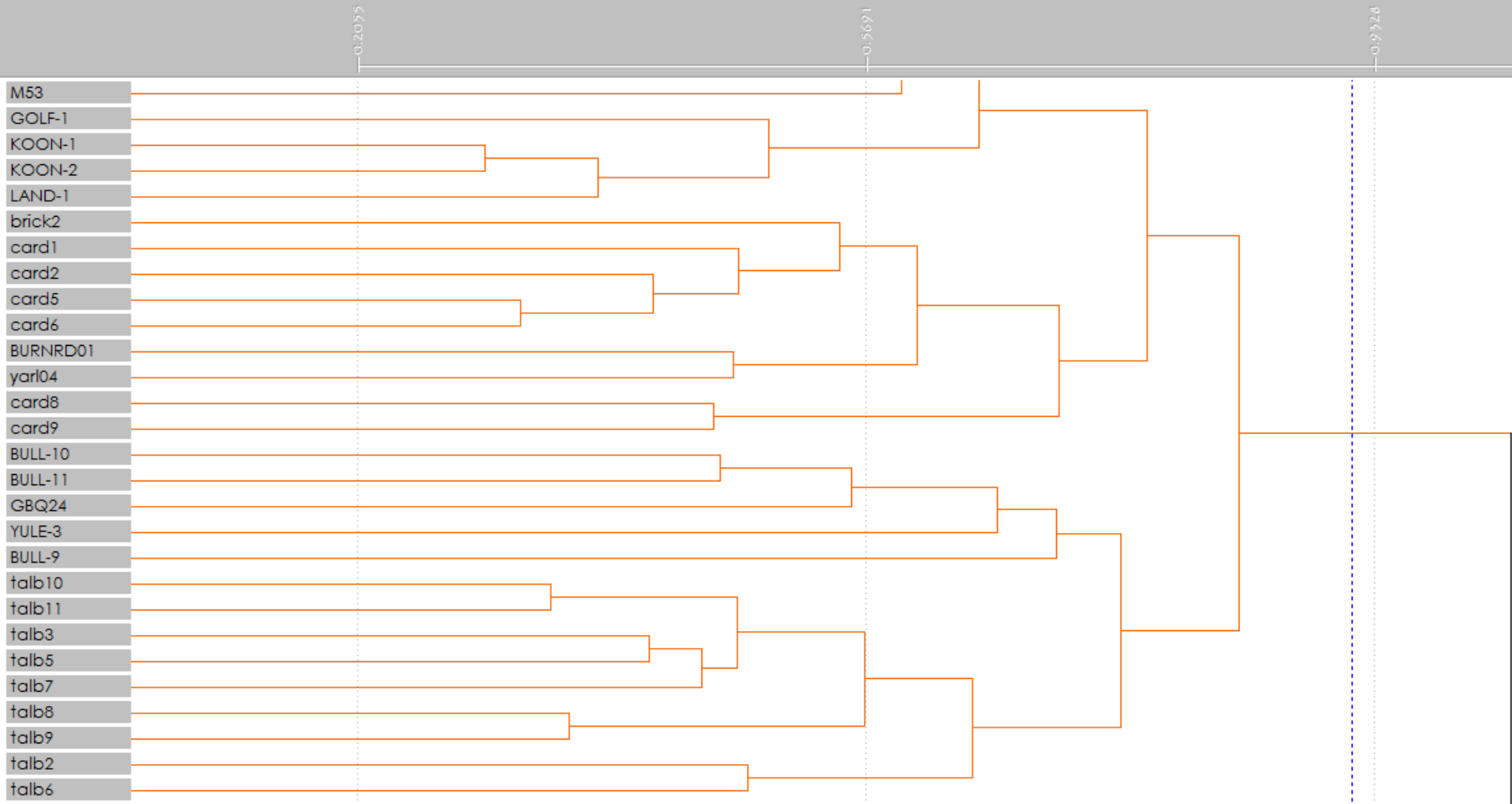


Figure 20: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ24

Column Fusion Dendrogram

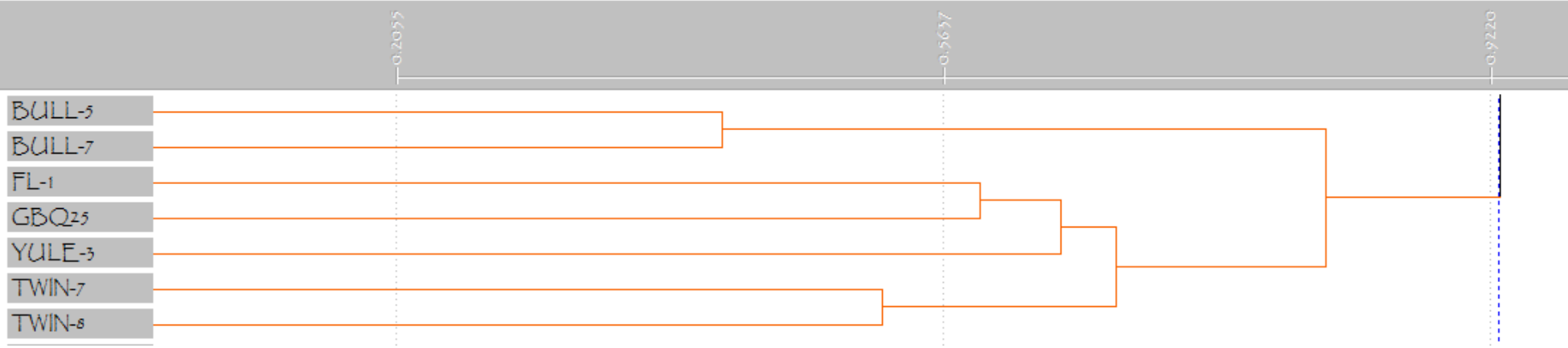


Figure 21: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ25

Column Fusion Dendrogram

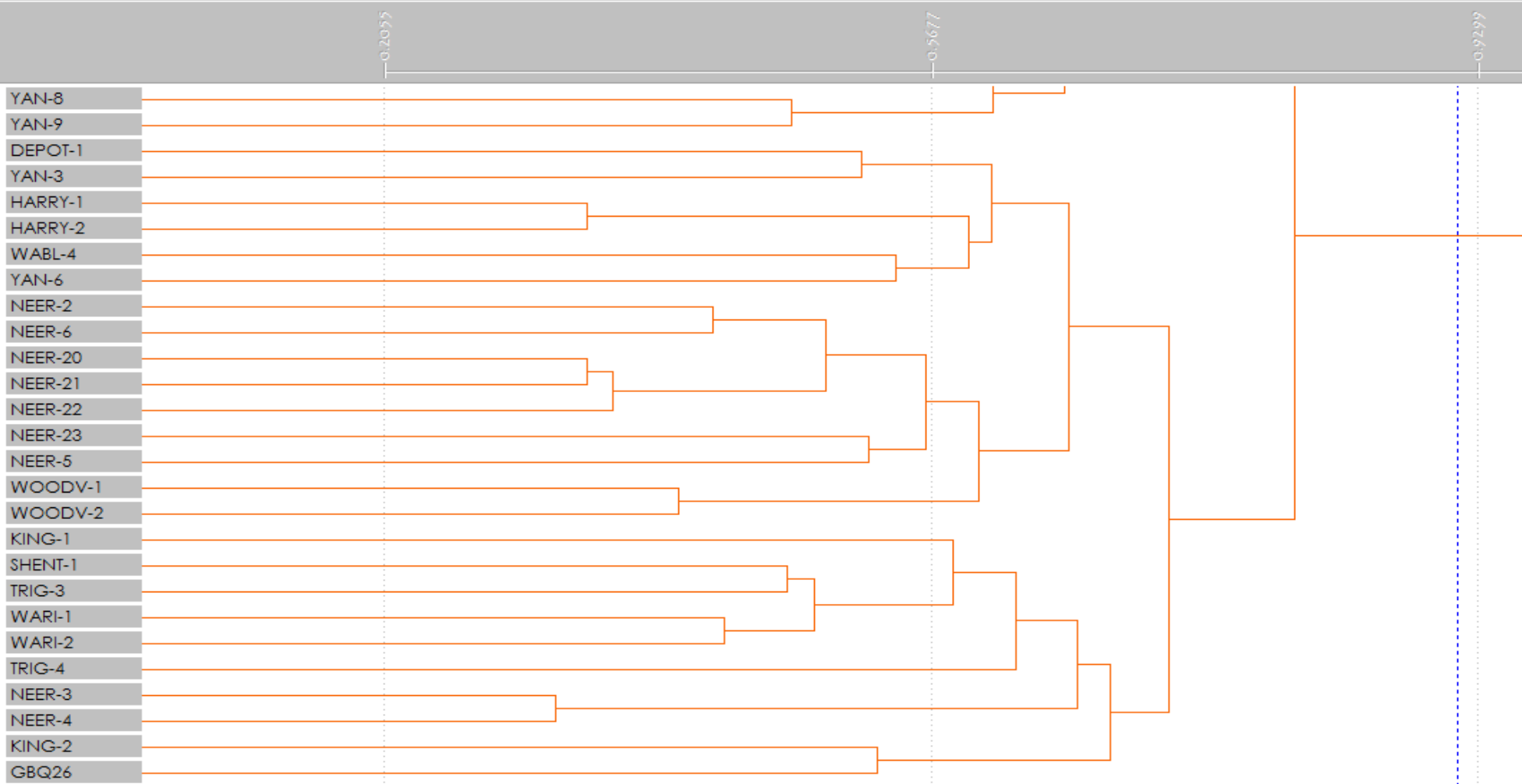


Figure 22: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ26

Column Fusion Dendrogram

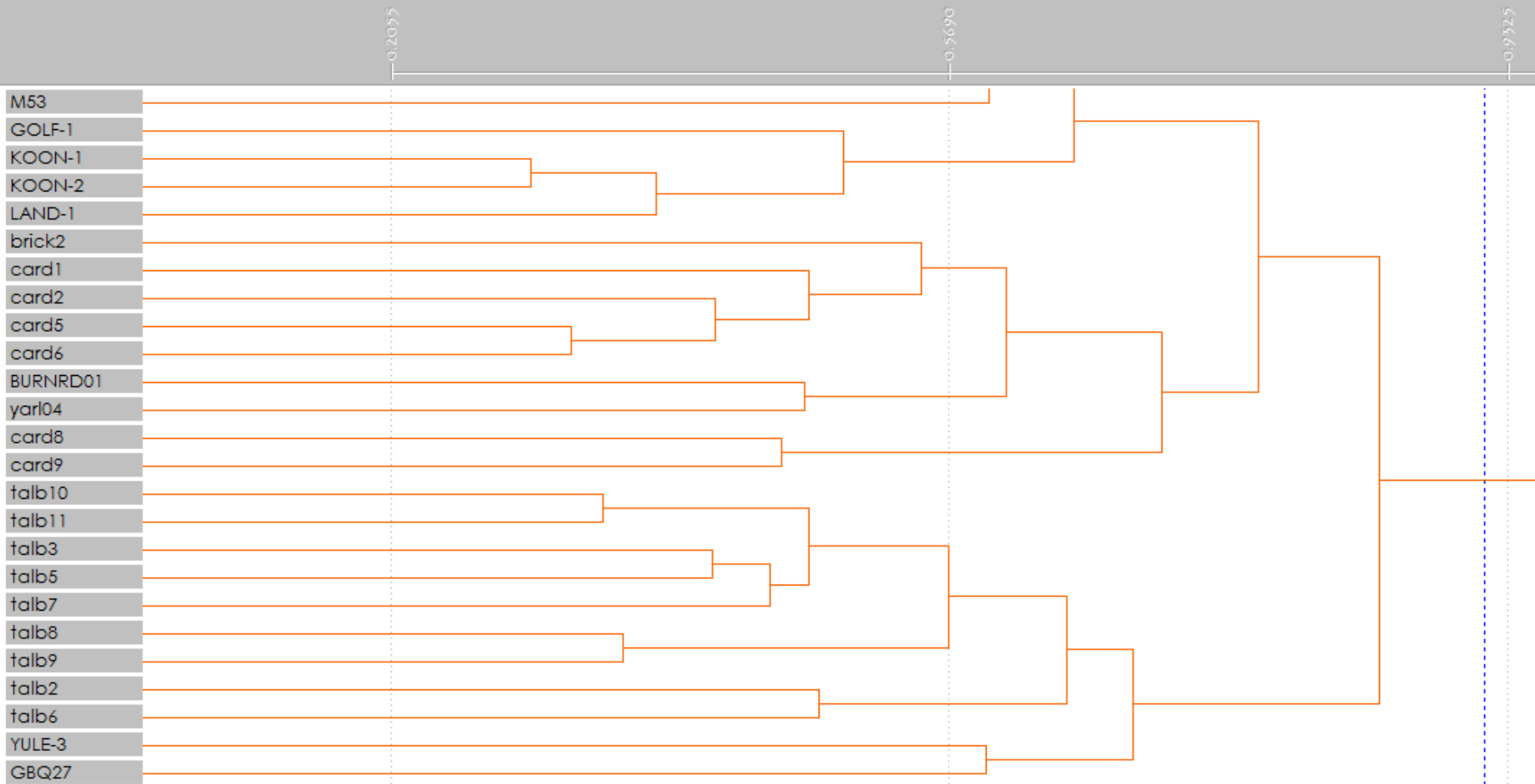


Figure 23: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ27

Column Fusion Dendrogram

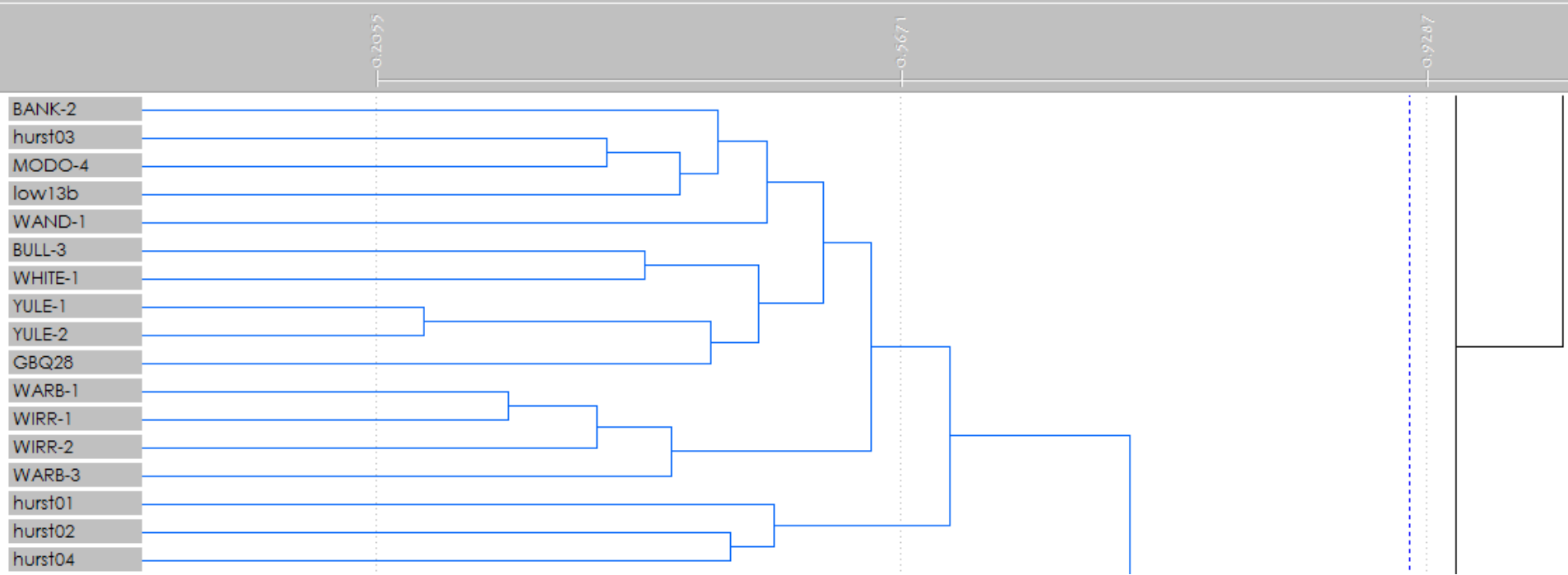


Figure 24: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ28

Column Fusion Dendrogram

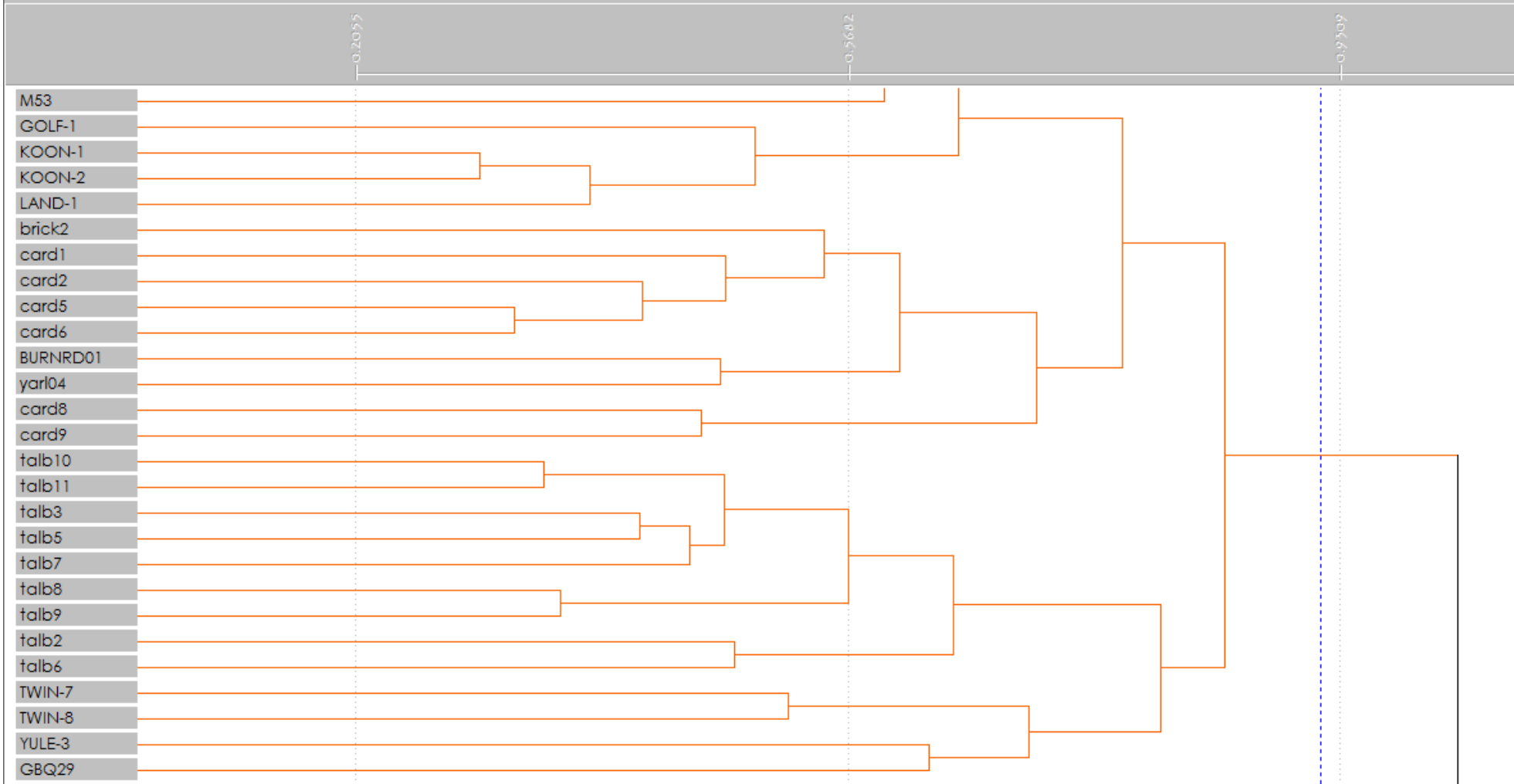


Figure 25: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ29

Column Fusion Dendrogram

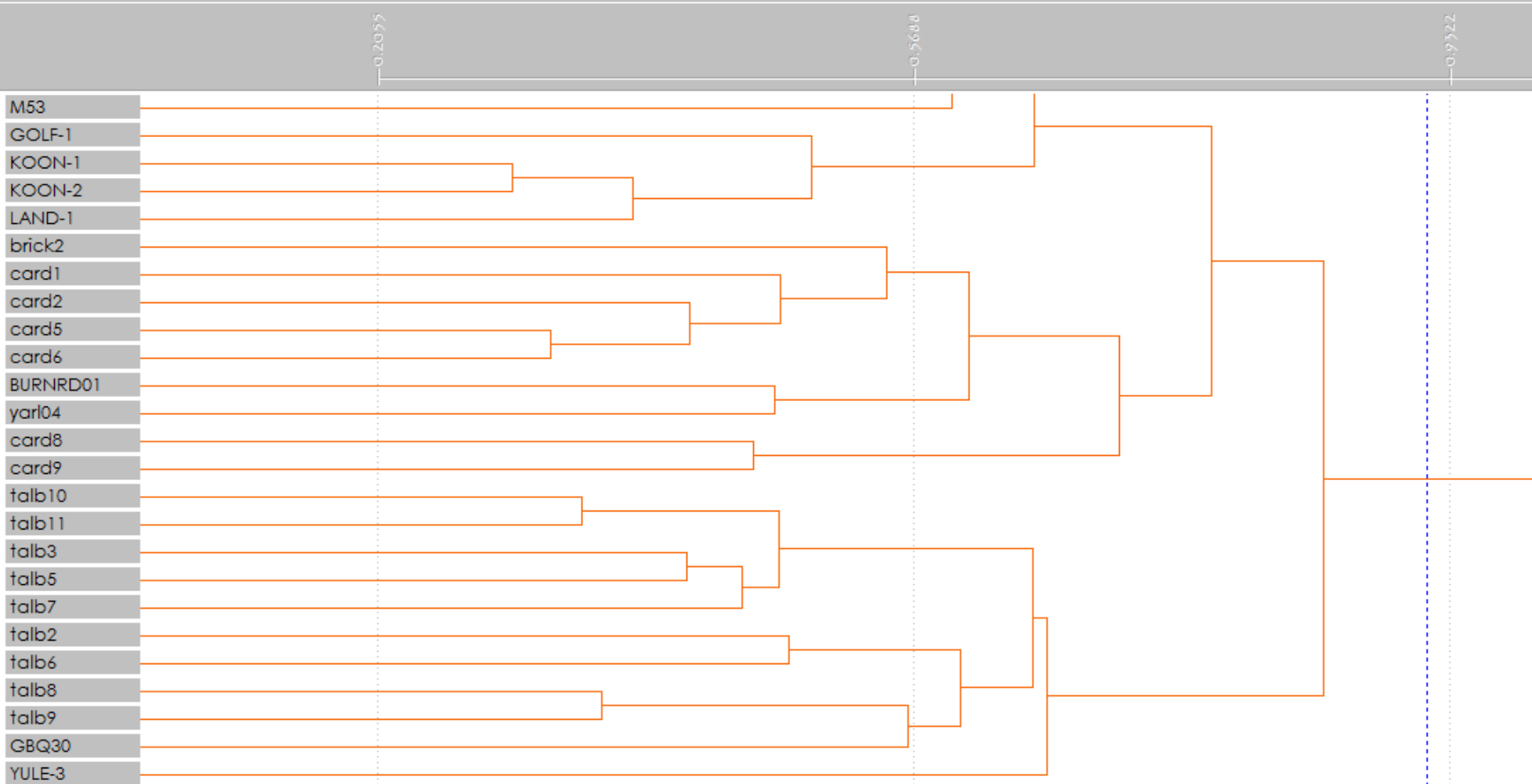


Figure 26: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ30

Column Fusion Dendrogram

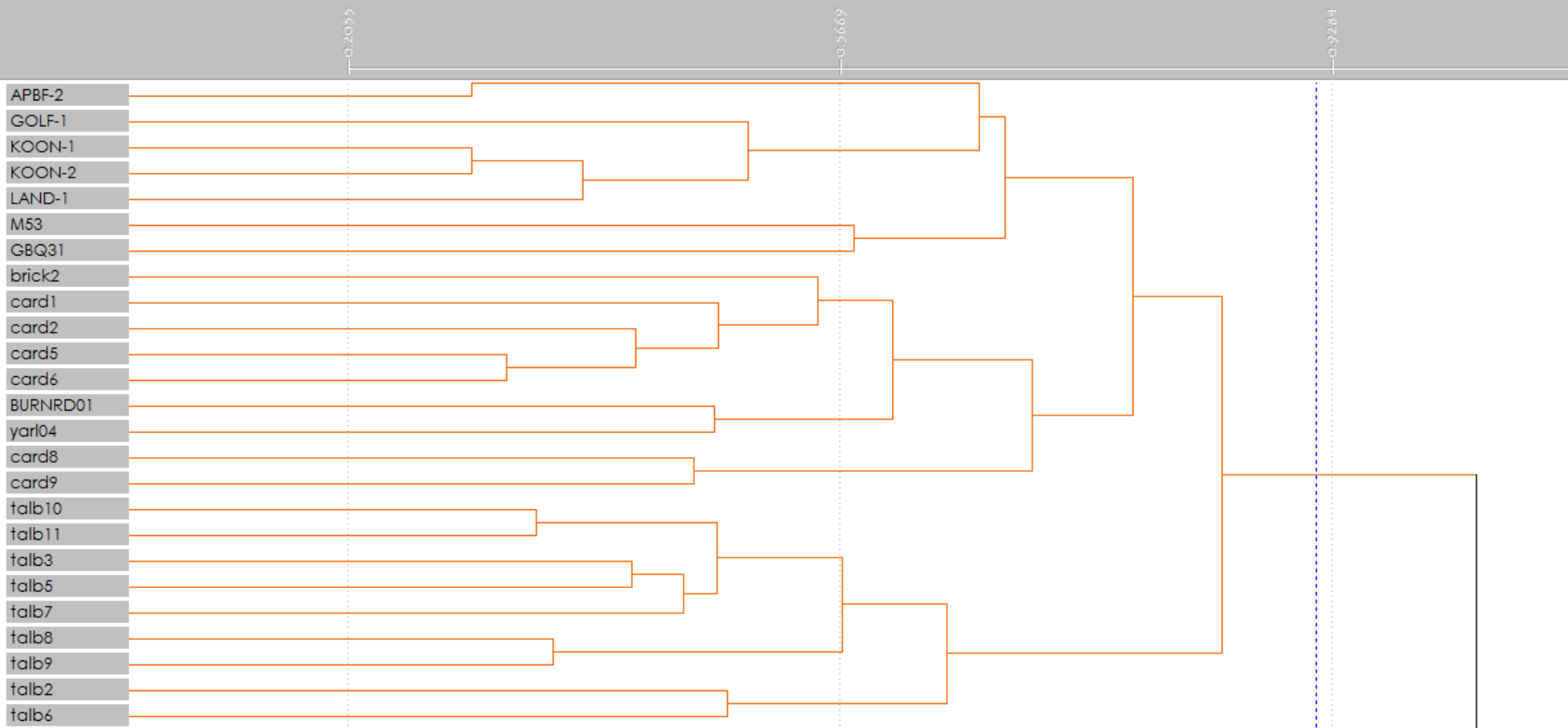


Figure 27: Dendrogram from floristic clustering analysis against the Gibson SCP data set – quadrat GBQ31

Table 2: Most similar sites to each of the quadrats subject to NNB analysis for the current study (where >0.5 is less similar)

Site	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
GBQ01	HARRY-2	YULE-1	talb9	hurst03	WIRR-2	LAND-1	MILT-4	WHITE-1	NEER-2	SHENT-1	low04	WATERRD1	WARI-2	WELL-2	YULE-2	YULE-3	BULL-11	WARB-3	SHE-2	card3
Similarity	0.5043	0.5455	0.5484	0.5537	0.568	0.568	0.5704	0.5714	0.5728	0.58	0.58	0.5806	0.5826	0.584	0.5856	0.5888	0.5893	0.5906	0.5909	0.5922
FCT	28	23a	20c	23a	23a	20a	28	23a	28	28	21a	28	28	21a	23a	21c	28	23a	28	21a
GBQ02	WHITE-1	YULE-1	YULE-2	WARB-1	WIRR-2	WIRR-1	WARB-3	hurst03	BULL-11	BULL-3	GOLF-1	talb5	talb7	card11	MODO-4	MELA-9	TWIN-8	HARRY-4	NINE-2	ELDO-1
Similarity	0.5152	0.5258	0.5306	0.5455	0.5536	0.5556	0.5614	0.6111	0.6162	0.6216	0.6238	0.6238	0.6304	0.6308	0.6311	0.6327	0.6386	0.6386	0.6421	0.6421
FCT	23a	23a	23a	23a	23a	23a	23a	23a	28	23a	20a	20c	20c	6	23a	23b	21c	23a	21a	23b
GBQ02R	YULE-1	YULE-2	WHITE-1	WARB-1	WIRR-2	WIRR-1	WARB-3	BULL-3	talb7	hurst03	MELA-9	BULL-11	ELDO-1	NINE-2	MELA-2	GOLF-1	SINT-1	talb5	MODO-4	card11
Similarity	0.5102	0.5152	0.52	0.5315	0.5398	0.5424	0.5478	0.6071	0.6129	0.6147	0.6162	0.62	0.625	0.625	0.6264	0.6275	0.6275	0.6275	0.6346	0.6364
FCT	23a	23a	23a	23a	23a	23a	23a	23a	20c	23a	23b	28	23b	21a	23b	20a	23a	20c	23a	6
GBQ04	TWIN-3	MILT-1	GUTHR-4	card10	GUTHR-2	BULL-5	low08	GUTHR-1	WHITE-2	AUSTB-6	PLINE-5	card4	AUSTB-4	BULL-7	talb6	HARRY-3	AUSTB-5	CARAB-3	WARI-1	C71-1
Similarity	6	5	5	6	5	5	5	4	4	5	5	6	5	5	20c	5	5	11	28	11
FCT	0.0741	0.0853	0.0886	0.0889	0.0891	0.0892	0.0932	0.0947	0.0954	0.096	0.0981	0.0983	0.0984	0.1006	0.102	0.1022	0.1028	0.1033	0.1046	0.1047
GBQ04R	TWIN-3	MILT-1	GUTHR-4	card10	GUTHR-2	BULL-5	low08	GUTHR-1	WHITE-2	AUSTB-6	PLINE-5	card4	AUSTB-4	BULL-7	talb6	HARRY-3	AUSTB-5	CARAB-3	WARI-1	C71-1
Similarity	6	5	5	6	5	5	5	4	4	5	5	6	5	5	20c	5	5	11	28	11
FCT	0.0741	0.0853	0.0886	0.0889	0.0891	0.0892	0.0932	0.0947	0.0954	0.096	0.0981	0.0983	0.0984	0.1006	0.102	0.1022	0.1028	0.1033	0.1046	0.1047
GBQ05	brick8	FL-1	card8	TWIN-7	M53	BULL-3	talb9	talb8	YULE-2	WHITE-1	WIRR-1	MPK03	card9	LAND-1	GOLF-1	BRIX-2	YULE-1	brick3	MPK02	AUSTRA-1
Similarity	0.5556	0.5814	0.6047	0.6098	0.6154	0.6182	0.6182	0.6283	0.6289	0.6327	0.6379	0.6383	0.6383	0.6396	0.64	0.6444	0.6458	0.6481	0.6486	0.6522
FCT	3a	4	20b	21c	20a	23a	20c	20c	23a	23a	23a	23b	20b	20a	20a	3a	23a	3a	22	21a
GBQ05R	brick8	FL-1	BULL-3	talb9	card8	YULE-2	talb8	TWIN-7	M53	card9	MPK03	WIRR-1	LAND-1	YULE-1	WHITE-1	ELDO-1	WIRR-2	GOLF-1	SINT-1	MILT-7
Similarity	0.56	0.5862	0.6036	0.6036	0.6092	0.6122	0.614	0.6145	0.619	0.6211	0.6211	0.6239	0.625	0.6289	0.6364	0.6421	0.6429	0.6436	0.6436	0.6444
FCT	3a	4	23a	20c	20b	23a	20c	20c	20a	20b	23b	23a	20a	23a	23a	23b	23a	20a	23b	23b
GBQ06	BULL-3	hurst03	WHITE-1	WIRR-2	WARB-3	M53	SINT-1	YULE-1	YULE-2	BULL-11	ELDO-1	KING-2	talb9	WAND-1	WIRR-1	talb11	MPK03	DEJONG-c	FL-5	MELA-6
Similarity	0.4701	0.4912	0.5048	0.5085	0.5167	0.5315	0.5327	0.534	0.5385	0.5429	0.5446	0.551	0.5556	0.5577	0.561	0.5625	0.5644	0.5682	0.5682	0.5699
FCT	23a	23a	23a	23a	23a	20a	23b	23a	23a	28	23b	28	20c	23a	23a	20c	23b	21c	21c	23b
GBQ07	talb9	talb2	BULL-10	LAND-1	talb5	FL-1	talb8	YULE-3	BRIX-5	brick8	GOLF-1	card3	talb6	YULE-1	YULE-2	APBF-2	WIRR-1	card13	hurst01	WARB-3
Similarity	0.5625	0.5766	0.5862	0.5969	0.6102	0.6154	0.6183	0.6216	0.6303	0.641	0.6441	0.6449	0.6449	0.6491	0.6522	0.6563	0.6567	0.6613	0.6613	0.6641
FCT	20c	20c	28	20a	20c	4	20c	21c	3a	3a	20a	21a	20c	23a	23a	20a	23a	3b	23a	23a
GBQ07R	talb9	talb2	BULL-10	LAND-1	talb5	FL-1	talb8	YULE-3	BRIX-5	brick8	GOLF-1	card3	talb6	YULE-1	YULE-2	APBF-2	WIRR-1	card13	hurst01	WARB-3
Similarity	0.5625	0.5766	0.5862	0.5969	0.6102	0.6154	0.6183	0.6216	0.6303	0.641	0.6441	0.6449	0.6449	0.6491	0.6522	0.6563	0.6567	0.6613	0.6613	0.6641
FCT	20c	20c	28	20a	20c	4	20c	21c	3a	3a	20a	21a	20c	23a	23a	20a	23a	3b	23a	23a
GBQ08	YULE-1	WARB-3	KOON-1	WHITE-1	hurst03	WIRR-1	YULE-2	WIRR-2	BULL-3	talb9	KOON-2	WARB-1	dard02	BANK-2	M53	LAND-1	BULL-11	HARRY-2	NEER-2	talb10
Similarity	0.5122	0.5143	0.5152	0.52	0.5224	0.5245	0.5323	0.5362	0.5474	0.5474	0.5538	0.5588	0.5616	0.5625	0.5725	0.5797	0.584	0.5846	0.5862	0.589
FCT	23a	23a	20a	23a	23a	23a	23a	23a	23a	20c	20a	23a	21b	23a	20a	20a	28	28	28	20c
GBQ08R	KOON-1	YULE-1	WARB-3	WHITE-1	hurst03	WIRR-1	YULE-2	WIRR-2	BULL-3	talb9	KOON-2	WARB-1	dard02	BANK-2	M53	GOLF-1	LAND-1	BULL-11	HARRY-2	NEER-2
Similarity	0.5038	0.5161	0.5177	0.5238	0.5259	0.5278	0.536	0.5396	0.5507	0.5507	0.5573	0.562	0.5646	0.5659	0.5758	0.5781	0.5827	0.5873	0.5878	0.5897
FCT	20a	23a	23a	23a	23a	23a	23a	23a	20a	20c	20a	23a	21b	23a	20a	20a	20a	28	28	28
GBQ09	MPK01	YULE-2	BULL-3	WHITE-1	WIRR-2	AUSTRA-1	hurst03	BANK-3	WARB-3	SINT-1	LAND-1	BULL-11	WIRR-1	NINE-2	KOON-1	WAND-1	CAPEL-7	YAN-3	MODO-4	MPK03
Similarity	0.5048	0.5094	0.5126	0.514	0.5167	0.5248	0.5345	0.5385	0.541	0.5413	0.55	0.5514	0.552	0.5534	0.5614	0.566	0.567	0.567	0.5676	0.5728
FCT	23b	23a	23a	23a	23a	21a	23a	23a	23a	23b	20a	28	23a	21a	20a	23a	21a	28	23a	23b
GBQ09R	YULE-2	BULL-3	WHITE-1	WIRR-2	MPK01	WARB-3	AUSTRA-1	BULL-11	hurst03	WIRR-1	BANK-3	SINT-1	KOON-1	LAND-1	NINE-2	M53	GOLF-1	YULE-1	YAN-20	WAND-1
Similarity	0.4953	0.5	0.5	0.5041	0.5094	0.5285	0.5294	0.537	0.5385	0.5397	0.5424	0.5455	0.5478	0.5537	0.5577	0.5614	0.5636	0.566	0.569	0.5701
FCT	23a	23a	23a	23a	23b	23a	21a	28	23a	23a	23a	23b	20a	20a	21a	20a	20a	23a	23b	23a
GBQ15	BULL-3	WIRR-2	hurst03	M53	WHITE-1	BULL-11	KING-2	YULE-1	WARB-3	talb7	talb9	WARI-2	YULE-2	WARB-1	talb10	GOLF-1	talb5	low04	WELL-2	WAND-1
Similarity	0.5207	0.5246	0.5254	0.5304	0.5413	0.5413	0.549	0.5514	0.5645	0.5686	0.5702	0.5714	0.5741	0.5833	0.5846	0.5856	0.5856	0.5876	0.5902	0.5926
FCT	23a	23a	23a	20a	23a	28	28	23a	23a	20c	20c	28	23a	23a	20c	20a	20c	21a	21a	23a
GBQ17	KOON-2	KOON-1	LAND-1	M53	APBF-1	card5	card1	talb9	BURNRD01	BULL-1	card6	yar104	card2	card12	BULL-3	waro02	card7	card9	BULL-4	GOLF-1
Similarity	0.5413	0.5495	0.5897	0.6	0.6033	0.6036	0.6147	0.6207	0.6207	0.6289	0.6381	0.646	0.6471	0.6538	0.6552	0.6585	0.6591	0.66	0.6694	0.6792
FCT	20a	20a	20a	20a	20a	20b	20b	20c	20b	28	20b	20b	20b	3b	23a	3b	21a	20b	28	20a
GBQ18	talb11	KOON-2	KOON-1	M53	card5	card1	LAND-1	card2	talb9	BURNRD01	BULL-4	talb8	card3	GOLF-1	brick2	talb10	TRIG-4	BANK-3	BULL-1	WIRR-1
Similarity	0.059	0.061	0.0625	0.0647	0.0655	0.0655	0.0668	0.0677	0.0686	0.0691	0.0691	0.0698	0.0703	0.0716	0.0718	0.0743	0.0747	0.0751	0.0754	0.0757
FCT	20c	20a	20a	20a	20b	20b	20a	20b	20c	20b	28	20c	21a	20a	20b	20c	28	23a	28	23a
GBQ19	KING-2	BULL-3	talb9	KOON-1	KOON-2	WIRR-1	LAND-1	WAND-1	WHITE-1	APBF-1	M53	card3	talb7	THOM-2	BULL-11	WIRR-2	card7	hurst03	talb10	APBF-2
Similarity	0.5922	0.6066	0.6066	0.6068	0.6174	0.625	0.626	0.633	0.6364	0.6378	0.6379	0.6436	0.6505	0.6531	0.6545	0.6585	0.6596	0.6639	0.6641	0.6721
FCT	28	23a	20c	20a	20a	23a	20a	23a	23a	20a	20a	21a	20c	24	28	23a	21a	23a	20c	20a
GBQ20	BULL-11	talb9	WARI-2	BULL-10	card7	TWIN-8	KOON-2	M53	BULL-4	KOON-1	LAND-1	WELL-2	GOLF-1	talb11	BULL-1	THOM-2	HARRY-1	card5	YAN-3	WOODV-1
Similarity	0.5699	0.581	0.5833	0.5914	0.6104	0.6104	0.6122	0.6162												

Table 2: Most similar sites to each of the quadrats subject to NNB analysis for the current study (where >0.5 is less similar)

Site	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
GBQ21	KOON-1	card7	KOON-2	BURNRD01	WAND-1	card6	M53	BULL-3	APBF-1	LAND-1	WARI-2	YAN-3	card9	BULL-4	card5	WELL-2	yarl04	THOM-2	AUSTRA-1	talb9
Similarity	0.5273	0.5402	0.5556	0.5826	0.5882	0.5962	0.5963	0.6	0.6	0.6034	0.6038	0.6129	0.6162	0.6167	0.6182	0.6207	0.625	0.6264	0.6289	0.6348
FCT	20a	21a	20a	20b	23a	20b	20a	23a	20a	20a	28	28	20b	28	20b	21a	20b	24	21a	20c
GBQ22	TWIN-8	card7	low06b	M53	KOON-1	KING-2	WARI-2	low06a	talb9	LAND-1	WIRR-2	THOM-2	WOODV-2	WAND-1	AUSTRA-1	NINE-2	card3	YULE-1	card11	hurst03
Similarity	0.5065	0.5584	0.561	0.5758	0.58	0.5814	0.5833	0.5844	0.6	0.6038	0.6038	0.6049	0.6049	0.6087	0.6092	0.618	0.619	0.6264	0.6271	0.6275
FCT	21c	21a	21c	20a	20a	28	28	21c	20c	20a	23a	24	28	23a	21a	21a	21a	23a	6	23a
GBQ23	card11	MELA-5	low07	MPK03	PLINE-4	YULE-1	WAND-1	FL-6	THOM-2	hurst03	MELA-6	card4	MPK02	HARRY-4	KING-2	talb7	SHENT-1	WOODV-2	low04	WIRR-2
Similarity	0.6585	0.6727	0.6897	0.6901	0.6923	0.6986	0.7027	0.7091	0.7143	0.7143	0.7143	0.7209	0.7255	0.7288	0.7353	0.7353	0.746	0.746	0.746	0.75
FCT	6	22	21c	23b	4	23a	23a	21c	24	23a	23b	6	22	23a	28	20c	28	28	21a	23a
GEHREL11	KOON-1	KOON-2	BULL-3	talb9	BULL-4	BULL-11	APBF-1	MUCK-1	M53	talb11	GOLF-1	LAND-1	SHENT-1	hurst03	AUSTRA-1	WARB-3	BANK-3	WHITE-1	BULL-10	talb10
Similarity	0.4679	0.4953	0.5088	0.5439	0.5462	0.549	0.563	0.5682	0.5741	0.5914	0.5962	0.6	0.6	0.6036	0.6042	0.6068	0.6071	0.6078	0.6078	0.6098
FCT	20a	20a	23a	20c	28	28	20a	23b	20a	20c	20a	20a	28	23a	21a	23a	23a	23a	28	20c
GEHREL12	THOM-2	card7	M53	ELDO-1	GOLF-1	MELA-6	WAND-1	FL-5	WHITE-1	WIRR-2	YULE-2	MILT-8	BULL-3	DEJONG-c	KOON-1	TWIN-8	PLINE-2	MILT-7	MUCK-1	KING-2
Similarity	0.6	0.6061	0.6136	0.6154	0.619	0.6286	0.6296	0.6308	0.6341	0.6421	0.6543	0.6563	0.6596	0.6615	0.6629	0.6667	0.6667	0.6712	0.6765	0.68
FCT	24	21a	20a	23b	20a	23b	23a	21c	23a	23a	23a	23b	23a	21c	20a	21c	23b	23b	23b	28
GEHREL15	WOODV-2	FL-6	TRIG-5	THOM-2	SHENT-1	BOLD-1	YAN-4	low07	card11	DEPOT-1	hurst04	BOLD-2	MODO-2	TRIG-3	NEER-3	TAM-1	card4	YULE-1	hurst03	low06b
Similarity	0.6949	0.7255	0.7586	0.7627	0.7627	0.7627	0.7681	0.7778	0.7838	0.7895	0.791	0.791	0.7917	0.7922	0.7931	0.7931	0.7949	0.7971	0.8	0.8
FCT	28	21c	24	24	28	24	28	21c	6	28	23a	24	21c	28	28	21a	6	23a	23a	21c
GBQ24	BULL-11	WHITE-1	hurst03	YULE-1	WARB-3	BULL-3	WIRR-2	talb5	GOLF-1	YULE-2	M53	SINT-1	talb10	KOON-1	talb9	WATERRD1	talb7	hurst02	WIRR-1	dard02
Similarity	0.4915	0.5085	0.5118	0.5172	0.5188	0.5231	0.5267	0.5333	0.55	0.5556	0.5645	0.5667	0.5683	0.584	0.5846	0.5846	0.5856	0.5873	0.5882	0.5971
FCT	FCT 28	FCT 23a	FCT 23a	FCT 23a	FCT 23a	FCT 23a	FCT 23a	FCT 20c	FCT 20a	FCT 23a	FCT 20a	FCT 23b	FCT 20c	FCT 20a	FCT 20c	FCT 28	FCT 20c	FCT 23a	FCT 23a	FCT 21b
GBQ25	FL-1	YULE-3	brick8	talb5	WIRR-1	YULE-1	YULE-2	card8	BULL-10	card12	WHITE-1	WIRR-2	TWIN-7	SINT-1	WARB-3	MELA-9	hurst01	MPK03	brick3	WHITE-2
Similarity	0.5876	0.5962	0.6	0.6216	0.622	0.6262	0.6481	0.6495	0.6514	0.6514	0.6514	0.6557	0.6559	0.6577	0.6613	0.6667	0.6752	0.6762	0.6807	0.6818
FCT	FCT 4	FCT 21c	FCT 3a	FCT 20c	FCT 23a	FCT 23a	FCT 23a	FCT 20b	FCT 28	FCT 3b	FCT 23a	FCT 23a	FCT 21c	FCT 23b	FCT 23a	FCT 23b	FCT 23a	FCT 23b	FCT 3a	FCT 4
GBQ26	KING-2	BULL-3	hurst03	M53	AUSTRA-1	WIRR-2	TWIN-8	WAND-1	BULL-11	talb11	GOLF-1	talb5	WIRR-1	LAND-1	YULE-1	YULE-2	HARRY-2	card7	WARB-1	KOON-1
Similarity	0.5319	0.5575	0.5636	0.5701	0.5789	0.5965	0.6	0.6	0.604	0.6087	0.6117	0.6117	0.6134	0.614	0.6162	0.62	0.6226	0.6235	0.625	0.6296
FCT	FCT 28	FCT 23a	FCT 23a	FCT 20a	FCT 21a	FCT 23a	FCT 21c	FCT 23a	FCT 28	FCT 20c	FCT 20a	FCT 20c	FCT 23a	FCT 20a	FCT 23a	FCT 23a	FCT 28	FCT 21a	FCT 23a	FCT 20a
GBQ27	YULE-1	talb5	talb9	hurst03	YULE-3	BULL-11	talb2	card3	YULE-2	WARB-3	HARRY-2	talb3	WHITE-1	talb8	FL-1	M53	BULL-3	brick8	WIRR-2	talb7
Similarity	0.5517	0.5667	0.5692	0.5906	0.5929	0.6102	0.6115	0.6147	0.6239	0.6241	0.626	0.626	0.6271	0.6391	0.6415	0.6452	0.6462	0.6471	0.6489	0.6577
FCT	FCT 23a	FCT 20c	FCT 20c	FCT 23a	FCT 21c	FCT 28	FCT 20c	FCT 21a	FCT 23a	FCT 23a	FCT 28	FCT 20c	FCT 23a	FCT 20c	FCT 4	FCT 20a	FCT 23a	FCT 3a	FCT 23a	FCT 20c
GBQ28	YULE-1	YULE-2	WHITE-1	WIRR-2	BULL-3	hurst03	MELA-2	MELA-9	WARB-3	WIRR-1	WARB-1	MPK03	MELA-8	MELA-6	BANK-2	NINE-2	MILT-4	SINT-1	MPK01	WAND-1
Similarity	0.3982	0.4386	0.4435	0.4531	0.4803	0.4839	0.4906	0.4912	0.4923	0.5038	0.5079	0.5135	0.5207	0.534	0.5424	0.5495	0.5507	0.5556	0.5575	0.5614
FCT	FCT 23a	FCT 23a	FCT 23a	FCT 23a	FCT 23a	FCT 23a	FCT 23b	FCT 23b	FCT 23a	FCT 23a	FCT 23a	FCT 23b	FCT 23b	FCT 23b	FCT 23a	FCT 21a	FCT 28	FCT 23b	FCT 23b	FCT 23a
GBQ29	talb7	BULL-11	YULE-1	NINE-2	talb11	BULL-3	SINT-1	talb5	WIRR-1	YULE-2	WARB-1	YULE-3	WIRR-2	hurst02	YAN-20	MELA-6	MILT-6	ELDO-1	hurst01	card3
Similarity	0.5714	0.5824	0.5955	0.6092	0.6098	0.6117	0.6129	0.6129	0.6147	0.6222	0.6275	0.6279	0.6346	0.6364	0.6364	0.6456	0.6471	0.6552	0.6566	0.6585
FCT	FCT 20c	FCT 28	FCT 23a	FCT 21a	FCT 20c	FCT 23a	FCT 23b	FCT 20c	FCT 23a	FCT 23a	FCT 23a	FCT 21c	FCT 23a	FCT 23a	FCT 23b	FCT 23b	FCT 21a	FCT 23b	FCT 23a	FCT 21a
GBQ30	talb9	talb8	WIRR-2	WHITE-1	hurst03	YULE-3	talb2	FL-1	WARB-3	brick8	BULL-3	WIRR-1	LAND-1	YULE-1	talb5	BRIX-5	MPK03	waro 02	hurst01	NEER-8
Similarity	0.5407	0.5507	0.5588	0.561	0.5909	0.5932	0.5972	0.6036	0.6087	0.6129	0.6148	0.617	0.6176	0.6198	0.632	0.6349	0.6471	0.6479	0.6489	0.6508
FCT	FCT 20c	FCT 20c	FCT 23a	FCT 23a	FCT 23a	FCT 21c	FCT 20c	FCT 4	FCT 23a	FCT 3a	FCT 23a	FCT 23a	FCT 20a	FCT 23a	FCT 20c	FCT 3a	FCT 23b	FCT 3b	FCT 23a	FCT 28
GBQ31	AUSTRA-1	M53	card3	BULL-3	PLINE-3	card9	MPK01	BANK-3	HARRY-4	MODO-5	SINT-1	MUCK-1	CRAMPT-2	CAPEL-1	FL-4	LAND-1	KOON-1	low06b	YAN-19	GOLF-1
Similarity	0.5641	0.5778	0.6	0.6042	0.6207	0.625	0.6341	0.6383	0.6471	0.6486	0.6512	0.6571	0.6629	0.6667	0.6667	0.6701	0.6703	0.6712	0.6739	0.6744
FCT	FCT 21a	FCT 20a	FCT 21a	FCT 23a	FCT 21a	FCT 20b	FCT 23b	FCT 23a	FCT 23a	FCT 23a	FCT 23b	FCT 23b	FCT 21a	FCT 21b	FCT 21a	FCT 20a	FCT 20a	FCT 21c	FCT 23b	FCT 20a

Appendix 13

Selected PRIMER Inputs and Outputs



Table 1: List of taxa that were omitted or treated as other taxa for the purposes of the floristic analysis.

Taxon	Name Referred to for Analysis
Acacia huegelii	omitted; singleton
Acacia iteaphylla	omitted; weed singleton
Acacia longifolia subsp. longifolia	omitted; weed singleton
Adenanthos cygnorum	Adenanthos cygnorum subsp. cygnorum
Agonis flexuosa	omitted; singleton
Alternanthera denticulata	omitted; singleton
Amphipogon laguroides	omitted; singleton
Aotus cordifolia	omitted; singleton
Apium annuum	omitted; singleton
Astartea scoparia	omitted; singleton
Austrostipa elegantissima	omitted; singleton
Austrostipa flavescens	omitted; singleton
Avellinia michelii	omitted; weed singleton
Baumea rubiginosa	omitted; singleton
Brachypodium distachyon	omitted; weed singleton
Bromus hordeaceus	omitted; weed singleton
Caesia sp.	omitted; may refer to multiple species
Caladenia sp.	omitted; may refer to multiple species
Calandrinia granulifera	omitted; singleton
Callitris arenaria	omitted; singleton
Callitris preissii	omitted; singleton
Callitris pyramidalis	omitted; singleton
Calothamnus quadrifidus	omitted; singleton
Calothamnus sanguineus	omitted; singleton
Calytrix flavescens	omitted; singleton
Campsis radicans	omitted; weed singleton
Casuarina ? equisetifolia	omitted; singleton
Cenchrus clandestinus	omitted; weed singleton
Cenchrus setaceus	omitted; weed singleton
Centrolepis inconspicua	omitted; singleton
Centrolepis sp.	omitted; may refer to multiple species
Chamaecytisus palmensis	omitted; weed singleton
Comesperma calymega	omitted; singleton
Conostylis sp.	omitted; may refer to multiple species
Cortaderia selleana	omitted; weed singleton
Cotula turbinata	omitted; weed singleton
Daviesia sp.	omitted; may refer to multiple species
Dioscorea hastifolia	omitted; singleton
Dischisma arenarium	omitted; weed singleton
Drosera gigantea	omitted; singleton
Drosera macrantha	omitted; singleton
Drosera micrantha	omitted; singleton
Epilobium hirtigerum	omitted; singleton
Euphorbia drummondii	omitted; singleton
Euphorbia peplus	omitted; weed singleton
Gahnia decomposita	omitted; singleton
Gastrolobium linearifolium	omitted; singleton
Geranium retrorsum	omitted; singleton
Gladiolus cardinalis	omitted; weed singleton
Gonocarpus nodulosus	omitted; singleton
Goodenia micrantha	omitted; singleton
Haemodorum ? spicatum	omitted; singleton
Haemodorum paniculatum	omitted; singleton
Haemodorum sp.	omitted; may refer to multiple species
Hakea prostrata	omitted; singleton
Hakea ruscifolia	omitted; singleton

<i>Hakea sulcata</i>	omitted; singleton
<i>Hakea trifurcata</i>	omitted; singleton
<i>Hakea varia</i>	omitted; singleton
<i>Hardenbergia comptoniana</i>	omitted; singleton
<i>Hedypnois rhagadioloides</i>	omitted; weed singleton
<i>Hemiandra glabra</i>	omitted; singleton
<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>	<i>Hibbertia hypericoides</i>
<i>Hibbertia hypericoides</i> subsp. <i>septentrionalis</i>	<i>Hibbertia hypericoides</i>
<i>Hibbertia striata</i>	omitted; singleton
<i>Hyparrhenia hirta</i>	omitted; weed singleton
<i>Hypolaena robusta</i>	omitted; singleton
<i>Ipomoea cairica</i>	omitted; weed singleton
<i>Isolepis</i> sp.	omitted; may refer to multiple species
<i>Kunzea glabrescens</i>	omitted; singleton
<i>Lagurus ovatus</i>	omitted; weed singleton
<i>Lepidosperma</i> sp.	omitted; may refer to multiple species
<i>Leptocarpus coangustus</i>	omitted; singleton
<i>Lepyrodia muirii</i>	omitted; singleton
<i>Lolium perenne</i>	omitted; weed singleton
<i>Lomandra micrantha</i> subsp. <i>micrantha</i>	omitted; singleton
<i>Lomandra nigricans</i>	omitted; singleton
<i>Lomandra</i> sp.	omitted; may refer to multiple species
<i>Macarthuria australis</i>	omitted; singleton
<i>Medicago polymorpha</i>	omitted; weed singleton
<i>Melaleuca armillaris</i>	omitted; weed singleton
<i>Melaleuca fulgens</i>	omitted; singleton
<i>Melaleuca hamulosa</i>	omitted; singleton
<i>Melaleuca incana</i> subsp. <i>incana</i>	omitted; singleton
<i>Melaleuca lateritia</i>	omitted; singleton
<i>Melaleuca nesophila</i>	omitted; singleton
<i>Melaleuca</i> sp.	omitted; may refer to multiple species
<i>Melaleuca viminalis</i>	omitted; singleton
<i>Melaleuca viminea</i> subsp. <i>viminea</i>	omitted; singleton
<i>Melia azedarach</i>	omitted; singleton
<i>Monopsis debilis</i> var. <i>depressa</i>	omitted; weed singleton
<i>Neurachne alopecuroidea</i>	omitted; singleton
<i>Opercularia apiciflora</i>	omitted; singleton
<i>Orobanche minor</i>	omitted; weed singleton
<i>Paspalum dilatatum</i>	omitted; weed singleton
<i>Paspalum urvillei</i>	omitted; weed singleton
<i>Pentameris airoides</i> subsp. <i>airoides</i>	omitted; weed singleton
<i>Persoonia saccata</i>	omitted; singleton
<i>Petrophile biloba</i>	omitted; singleton
<i>Petrophile rigida</i>	omitted; singleton
<i>Phyllangium divergens</i>	omitted; singleton
<i>Pimelea sulphurea</i>	omitted; singleton
<i>Poa annua</i>	omitted; weed singleton
<i>Podotheca gnaphalioides</i>	omitted; singleton
<i>Polycarpon tetraphyllum</i>	omitted; weed singleton
<i>Polypogon monspeliensis</i>	omitted; weed singleton
<i>Poranthera microphylla</i>	omitted; singleton
<i>Pseudognaphalium luteoalbum</i>	omitted; singleton
<i>Pterostylis sanguinea</i>	omitted; singleton
<i>Pterostylis</i> sp.	omitted; may refer to multiple species
<i>Quinetia urvillei</i>	omitted; singleton
<i>Rytidosperma setaceum</i>	omitted; singleton
<i>Scaevola glandulifera</i>	omitted; singleton
<i>Senecio condylus</i>	omitted; singleton

<i>Setaria parviflora</i>	omitted; weed singleton
<i>Silene gallica</i> var. <i>gallica</i>	omitted; weed singleton
<i>Solanum linnaeanum</i>	omitted; weed singleton
<i>Solanum nigrum</i>	omitted; weed singleton
<i>Stellaria pallida</i>	omitted; weed singleton
<i>Stylidium utricularioides</i>	omitted; singleton
<i>Synaphea petiolaris</i> subsp. <i>petiolaris</i>	omitted; singleton
<i>Synaphea spinulosa</i> subsp. <i>spinulosa</i>	omitted; singleton
<i>Taxandria linearifolia</i>	omitted; singleton
<i>Thelymitra</i> sp.	omitted; may refer to multiple species
<i>Thysanotus</i> sp.	omitted; may refer to multiple species
<i>Thysanotus sparteus</i>	omitted; singleton
<i>Trifolium angustifolium</i> var. <i>angustifolium</i>	omitted; weed singleton
<i>Trifolium arvense</i> var. <i>arvense</i>	omitted; weed singleton
<i>Tropaeolum majus</i>	omitted; weed singleton
<i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>	omitted; singleton
<i>Verticordia picta</i>	omitted; singleton
<i>Vulpia muralis</i>	omitted; weed singleton
<i>Wahlenbergia capensis</i>	omitted; weed singleton
<i>Xanthorrhoea gracilis</i>	omitted; singleton

Site similarity based on cover, group average method

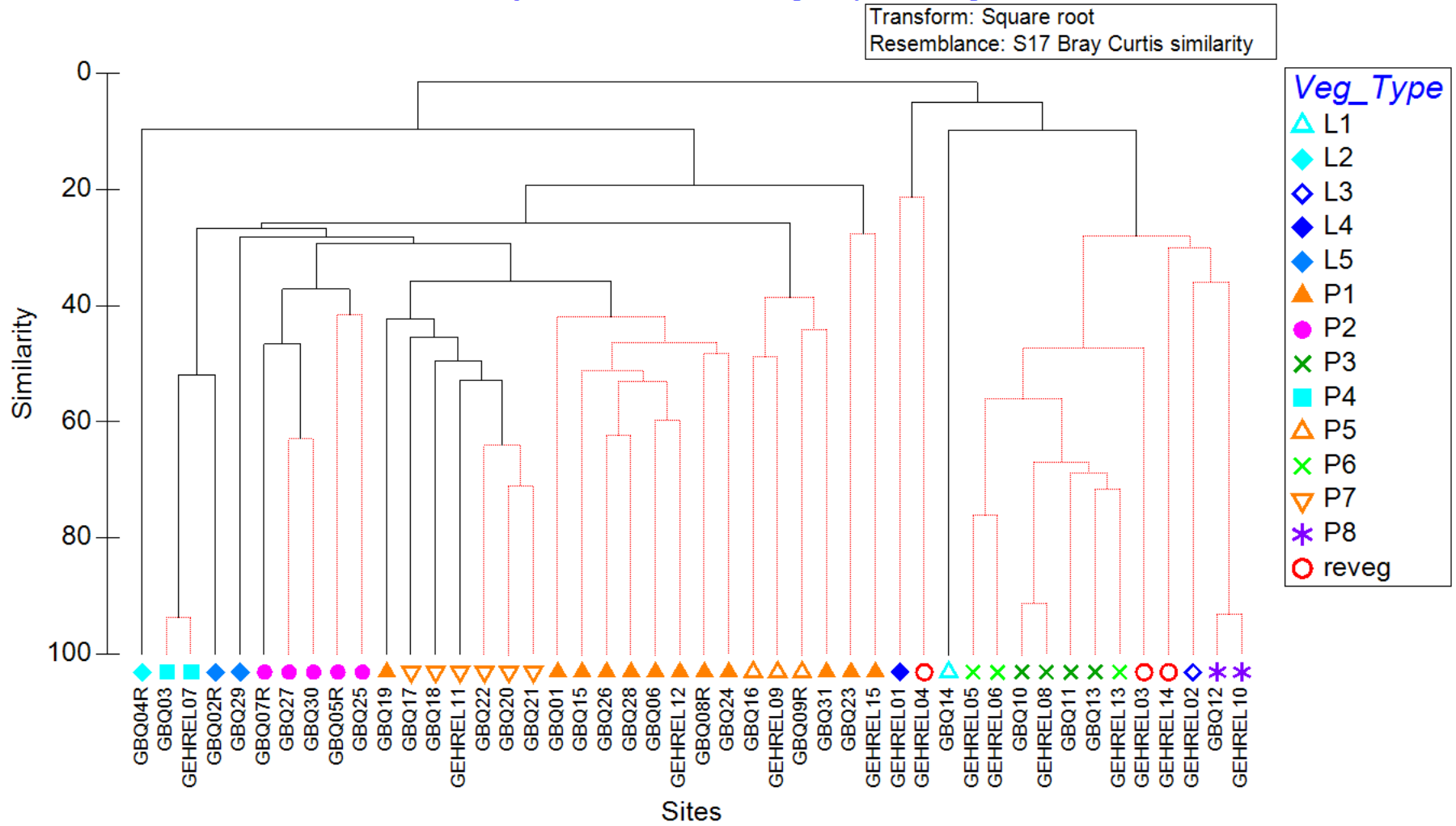


Figure 1: Dendrogram from floristic clustering analysis of sites from the current survey (based on percent cover of all annual and perennial taxa, excluding singletons; coded by vegetation type).

NMDS Plot Based on Percentage Cover

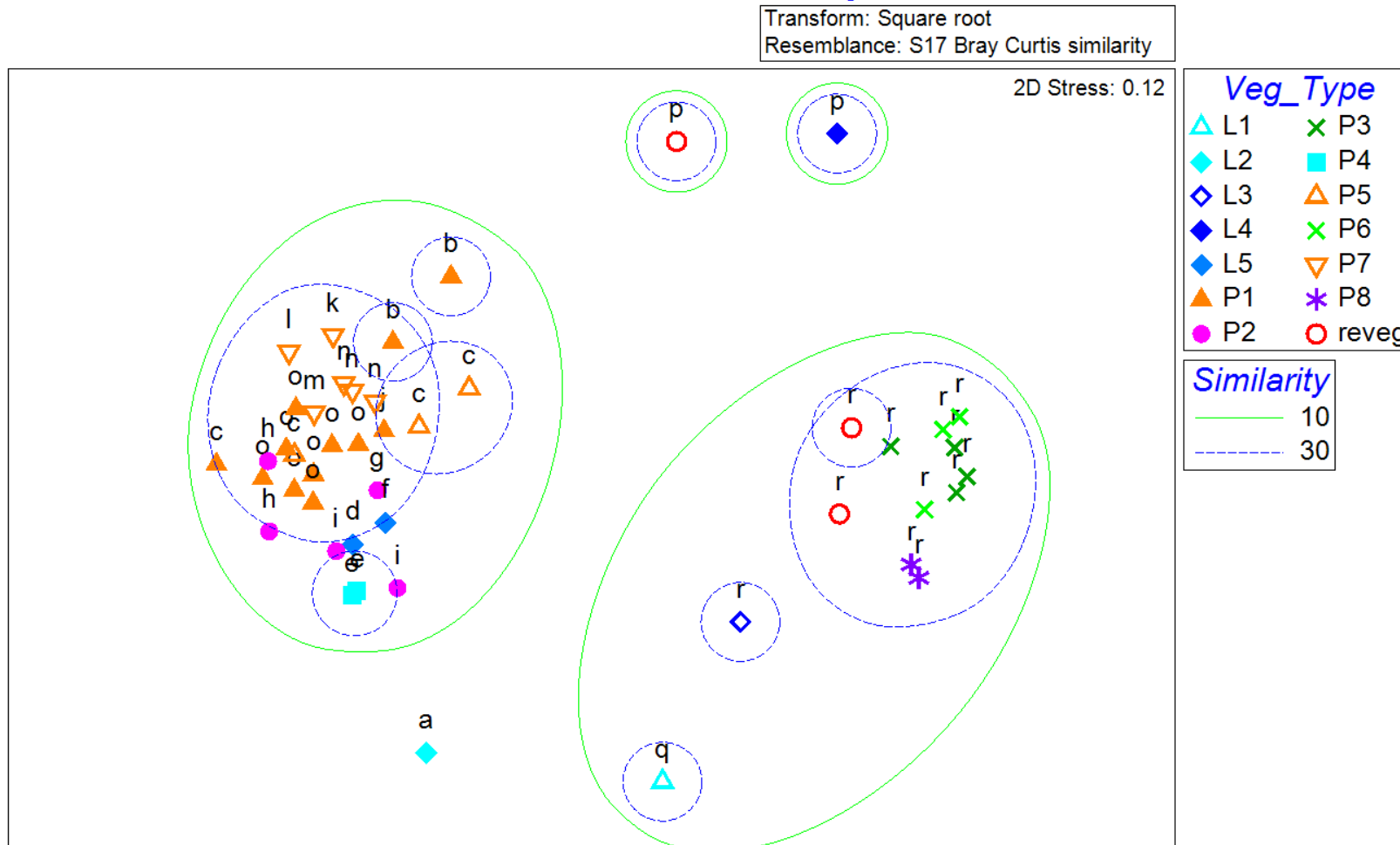


Figure 2: NMDS plot based of sites from the current survey (based on percent cover of all annual and perennial taxa, excluding singletons; coded by vegetation type).

Table 2: Indicator species for the floristic groups identified from the current survey (based on cover percentage cover), together with sites in each vegetation type

Floristic Group	SIMPER Indicator Species (maximum of top 4) (Cumulative Similarity)	Veg Code	Sites
a	N/A: less than 2 samples	L2	GBQ04R
b	<i>Eucalyptus todtiana</i> , <i>Banksia menziesii</i> , <i>Gompholobium tomentosum</i> , <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i> (86.3%)	P1	GEHREL15, GBQ23
c	<i>Eucalyptus marginata</i> subsp. <i>marginata</i> , <i>Xanthorrhoea preissii</i> , <i>Alexgeorgea nitens</i> , <i>Lyginia barbata</i> (63.7%)	P5	GBQ09R, GBQ16, GEHREL09
		P1	GBQ31
d	N/A: less than 2 samples	L5	GBQ02R
e	<i>Eremaea pauciflora</i> var. <i>pauciflora</i> , <i>Alexgeorgea nitens</i> , <i>Astroloma xerophyllum</i> , <i>Lyginia imberbis</i> (63.3%)	P4	GBQ03, GEHREL07
f	N/A: less than 2 samples	L5	GBQ29
g	N/A: less than 2 samples	P2	GBQ07R
h	<i>Caustis dioica</i> , <i>Alexgeorgea nitens</i> , <i>Mesomelaena tetragona</i> , <i>Allocasuarina fraseriana</i> (43.9%)	P2	GBQ27, GBQ30
i	<i>Lyginia imberbis</i> , <i>Corymbia calophylla</i> , <i>Dasypogon bromeliifolius</i> , <i>Kingia australis</i> (44.35%)	P2	GBQ05R, GBQ25
j	N/A: less than 2 samples	P1	GBQ19
k	N/A: less than 2 samples	P7	GBQ17
l	N/A: less than 2 samples	P7	GBQ18
m	N/A: less than 2 samples	P7	GEHREL11
n	<i>Xanthorrhoea preissii</i> , <i>Allocasuarina fraseriana</i> , <i>Banksia menziesii</i> , <i>Mesomelaena pseudostygia</i> (44.3%)	P7	GBQ20, GBQ21, GBQ22
o	<i>Alexgeorgea nitens</i> , <i>Banksia menziesii</i> , <i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i> , <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i> (34.6%)	P1	GBQ01, GBQ06, GBQ08R, GBQ15, GBQ24, GBQ26, GBQ28, GEHREL12
p	<i>Cynodon dactylon</i> (100%)	L4	GEHREL01
		RE	GEHREL04
q	N/A: less than 2 samples	L1	GBQ14
r	<i>Eucalyptus rudis</i> subsp. <i>rudis</i> , <i>Ehrharta longiflora</i> , <i>Fumaria capreolata</i> , <i>Avena fatua</i> (82.8%)	P3	GBQ10, GBQ11, GBQ13, GEHREL08
		P6	GEHREL05, GEHREL06, GEHREL13
		RE	GEHREL03, GEHREL14
		L3	GEHREL02
		P8	GBQ12, GEHREL10

Appendix 14

Black Cockatoo Breeding Habitat Trees



Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Marri, <i>Corymbia calophylla</i>	530	-31.9341	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	610	-31.9341	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	860	-31.9336	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	560	-31.9332	116.018	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	860	-31.9329	116.0186	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	630	-31.9324	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	500	-31.9321	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	700	-31.9313	116.0178	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	740	-31.931	116.0177	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	780	-31.9305	116.0177	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	700	-31.9303	116.0176	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	620	-31.9302	116.0176	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	620	-31.9301	116.0175	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	600	-31.93	116.0175	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	650	-31.93	116.0182	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	650	-31.9298	116.0181	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	620	-31.9298	116.0175	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	850	-31.9298	116.0174	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	650	-31.9297	116.0181	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	630	-31.9297	116.0174	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	570	-31.9296	116.0174	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	650	-31.9296	116.018	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	750	-31.9293	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	750	-31.9292	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	680	-31.9292	116.0173	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	640	-31.9291	116.0173	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	820	-31.9284	116.017	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	530	-31.9282	116.017	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	550	-31.9279	116.0169	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	760	-31.9272	116.0167	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	630	-31.9265	116.0172	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	870	-31.9265	116.0172	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	710	-31.9263	116.0171	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	570	-31.926	116.0171	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	500	-31.9252	116.0167	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	820	-31.925	116.0167	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	810	-31.9249	116.0166	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	810	-31.9248	116.0166	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	600	-31.9246	116.0158	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	750	-31.9233	116.0155	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	540	-31.9232	116.0155	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	1030	-31.9232	116.0155	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	690	-31.923	116.0154	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	920	-31.9229	116.0154	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	610	-31.9225	116.0153	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	640	-31.9221	116.0152	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	660	-31.9219	116.0152	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	1220	-31.9215	116.015	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	670	-31.9183	116.0098	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	700	-31.9182	115.9889	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	520	-31.9181	116.0118	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	570	-31.9181	115.9896	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.918	115.9854	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	590	-31.918	116.002	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	520	-31.918	115.9915	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	910	-31.9177	116.0102	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	670	-31.9175	116.0099	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	520	-31.9175	115.9889	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	530	-31.9175	116.0102	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	610	-31.9175	115.9915	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	840	-31.9174	115.9887	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	680	-31.9174	116.0119	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	700	-31.9174	115.9899	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	1060	-31.9174	115.9881	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	890	-31.9174	115.988	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Marri, <i>Corymbia calophylla</i>	620	-31.9173	115.9886	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	0	-31.9173	115.9881	1	Unsuitable
Marri, <i>Corymbia calophylla</i>	940	-31.9173	115.988	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	800	-31.9146	116.0062	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	0	-31.9137	116.0033	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	700	-31.9122	116.0001	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	650	-31.9092	116.0177	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	670	-31.9092	116.0175	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	590	-31.9091	116.0177	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	640	-31.9091	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	920	-31.9091	116.0178	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	560	-31.9088	116.0168	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	550	-31.9087	116.0176	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	950	-31.9082	116.0182	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	530	-31.9081	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	630	-31.9081	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	800	-31.9081	116.0183	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	720	-31.908	116.0177	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	640	-31.9078	116.0163	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	570	-31.9077	116.0153	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.9073	116.0171	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	850	-31.9071	116.0189	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	640	-31.9071	116.0167	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.9068	116.0191	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	700	-31.9066	116.0177	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	650	-31.9065	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	930	-31.9064	116.0179	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	680	-31.9064	116.0175	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	550	-31.9064	116.0181	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	540	-31.9061	116.018	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	890	-31.9047	116.0162	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	750	-31.9047	116.0163	1	Unsuitable
Marri, <i>Corymbia calophylla</i>	660	-31.9046	116.0138	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	500	-31.9045	116.0194	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	920	-31.9045	116.0146	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	780	-31.9045	116.0156	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	500	-31.9045	116.0194	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	860	-31.9044	116.0156	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	630	-31.9044	116.0144	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	600	-31.9044	116.0194	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	540	-31.9043	116.0196	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.9041	116.0136	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.9041	116.0197	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	680	-31.9041	116.0134	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.904	116.0135	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.904	116.0152	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	780	-31.9039	116.0134	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	910	-31.9038	116.0185	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	670	-31.9033	116.0077	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	1230	-31.9025	116.0198	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	690	-31.9025	116.0195	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	660	-31.9024	116.0206	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	660	-31.9024	116.02	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	710	-31.9024	116.0199	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	550	-31.9024	116.0199	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	530	-31.9019	116.0088	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	670	-31.9009	116.0233	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	520	-31.9009	116.0233	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	530	-31.9007	116.0234	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	770	-31.9006	116.0237	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.9006	116.0238	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	600	-31.9003	116.0228	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	580	-31.9003	116.0229	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	710	-31.8986	116.0245	0	Unsuitable
Marri, <i>Corymbia calophylla</i>	510	-31.8986	116.0245	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Marri, <i>Corymbia calophylla</i>	720	-31.8967	116.0257	0	Unsuitable
Tuart, <i>Eucalyptus gomphocephala</i>	520	-31.9114	116.0161	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	660	-31.9335	116.0179	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	850	-31.9333	116.0179	1	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1460	-31.9331	116.0187	1	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	600	-31.933	116.018	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	550	-31.9329	116.018	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	940	-31.9328	116.0178	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	560	-31.9326	116.0179	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	700	-31.9322	116.0179	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1190	-31.9321	116.0179	1	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1250	-31.932	116.0185	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	510	-31.9318	116.0179	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	750	-31.9316	116.0185	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	570	-31.9306	116.0182	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	950	-31.9299	116.0174	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	560	-31.9294	116.0174	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1280	-31.929	116.0179	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1420	-31.9288	116.0179	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	550	-31.9285	116.0177	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	550	-31.9283	116.0176	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	670	-31.9277	116.0175	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	580	-31.9254	116.0168	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	770	-31.9253	116.0168	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	540	-31.9253	116.0168	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	750	-31.9253	116.0162	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	510	-31.9252	116.0167	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	540	-31.9252	116.0159	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	740	-31.9244	116.0166	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	530	-31.9242	116.0158	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	680	-31.9241	116.0156	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1090	-31.9241	116.0156	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	590	-31.924	116.0164	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	600	-31.9238	116.0164	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1160	-31.9238	116.0155	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	540	-31.9236	116.0175	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	500	-31.9236	116.0156	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	520	-31.9235	116.0156	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1400	-31.9235	116.0163	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	780	-31.9235	116.0164	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	530	-31.9234	116.0156	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	540	-31.9232	116.0179	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	520	-31.9232	116.0161	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	510	-31.9231	116.0162	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1080	-31.9229	116.0165	3	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1360	-31.9229	116.0162	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	690	-31.9229	116.0163	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	730	-31.9228	116.0154	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	520	-31.9227	116.0164	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	600	-31.9226	116.0176	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	670	-31.9226	116.0166	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	570	-31.9222	116.0164	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1000	-31.9221	116.0166	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	680	-31.9221	116.016	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	670	-31.922	116.0164	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	690	-31.9219	116.0163	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	980	-31.9219	116.015	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	1000	-31.9218	116.0168	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	890	-31.9216	116.0167	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	520	-31.9215	116.0166	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	600	-31.9215	116.0156	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	620	-31.9214	116.0173	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	560	-31.9214	116.0173	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	560	-31.9213	116.0149	0	Unsuitable
Jarra, <i>Eucalyptus marginata</i>	510	-31.9212	116.0159	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Jarrah, <i>Eucalyptus marginata</i>	1100	-31.9211	116.0148	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	700	-31.9211	116.0167	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	1200	-31.9211	116.0147	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	730	-31.921	116.0148	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	840	-31.921	116.0149	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	1520	-31.9208	116.0156	1	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	510	-31.919	116.0142	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	740	-31.9185	116.0142	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	510	-31.9178	116.0129	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	670	-31.9174	115.9972	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	770	-31.9173	116.0163	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	660	-31.9172	116.0161	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	730	-31.9171	116.0161	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	620	-31.917	116.0162	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	620	-31.917	116.0129	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	600	-31.9169	116.0164	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	510	-31.9169	116.0107	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	570	-31.9168	116.0141	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	680	-31.9166	116.017	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	500	-31.9163	116.0155	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	710	-31.9159	116.0139	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	680	-31.9159	116.0139	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	890	-31.9159	116.0138	3	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	720	-31.9158	116.0142	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	580	-31.9157	116.014	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	750	-31.9152	116.0163	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	600	-31.914	116.0157	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	850	-31.9139	116.0155	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	890	-31.9125	116.0158	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	1000	-31.9122	116.0002	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	590	-31.9097	116.0173	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	940	-31.9097	116.0174	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	500	-31.9097	116.0175	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	500	-31.9097	116.0176	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	560	-31.9096	116.0177	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	600	-31.9095	116.0167	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	800	-31.9094	116.0171	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	560	-31.9093	116.0168	0	Unsuitable
Jarrah, <i>Eucalyptus marginata</i>	510	-31.9092	116.0177	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9324	115.9953	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9322	115.9955	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9286	116.017	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9275	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9271	116.0166	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9249	116.016	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1380	-31.9243	116.0158	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.918	116.0032	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.918	116.003	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.918	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.918	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.918	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9179	115.9968	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9179	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9179	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9179	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9179	116.0043	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9178	115.9965	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9178	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9178	116.0047	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9178	116.0053	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9178	115.9832	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9174	115.993	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9174	115.9981	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9174	115.9982	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9174	115.9965	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9174	115.995	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9174	115.998	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9174	115.9964	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9174	115.9978	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9174	115.9972	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9174	115.9966	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9174	115.9998	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9174	115.9951	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9174	115.9974	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9174	115.9961	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9174	115.9973	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9174	115.9944	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9173	115.9993	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9173	115.9844	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9173	115.9937	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9173	115.9937	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9173	115.9933	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9173	115.9956	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9172	115.9944	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9172	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9172	115.9938	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9172	115.994	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9171	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9171	115.9829	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9168	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9166	116.0117	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1030	-31.9166	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9149	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	0	-31.9142	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	0	-31.9141	116.0061	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9137	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.913	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.913	116.0026	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9128	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9125	116.0027	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9124	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9121	116.0025	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.912	116.0027	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9118	115.9996	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.911	116.0154	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9109	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9106	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9103	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9087	116.0166	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9087	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9077	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9076	116.0162	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9076	116.0162	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9073	116.0162	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1840	-31.907	116.0162	5	Potentially suitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.907	116.0154	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.907	116.0173	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.907	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.907	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9069	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1060	-31.9069	116.0156	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9069	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1250	-31.9069	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.9069	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9069	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9068	116.0156	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9068	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1060	-31.9068	116.0153	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.9068	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9067	116.0174	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9067	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9067	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9067	116.0175	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9067	116.0155	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9066	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9066	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9066	116.0154	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9065	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9065	116.0153	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2440	-31.9065	116.0155	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9064	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9064	116.0167	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.9064	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.9064	116.0166	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9064	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9064	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9064	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9064	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9063	116.0167	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9063	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1220	-31.9063	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9063	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9062	116.0171	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9061	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9061	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9061	116.0165	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9061	116.0169	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9061	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9061	116.0167	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9061	116.0169	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9061	116.0166	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.906	116.0167	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.906	116.0163	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.906	116.0167	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.906	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.906	116.0169	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.906	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.906	116.017	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.906	116.0181	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.906	116.017	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1240	-31.9059	116.0172	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9059	116.0169	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9059	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9059	116.0173	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.9059	116.0181	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9058	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9058	116.0174	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9058	116.0163	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9058	116.0171	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9058	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9058	116.0184	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9058	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9058	116.0183	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9058	116.0165	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9058	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9058	116.0163	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9058	116.0181	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.9057	116.0175	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.9057	116.0171	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9057	116.0182	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9057	116.0175	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1140	-31.9057	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9057	116.0165	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9057	116.0166	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9057	116.0168	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9057	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1080	-31.9057	116.0162	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1110	-31.9057	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9057	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9057	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9057	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1350	-31.9057	116.0176	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9056	116.0167	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1260	-31.9056	116.0183	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9056	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9056	116.0185	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9056	116.017	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1180	-31.9056	116.0172	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9056	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9056	116.0162	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9056	116.0166	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9056	116.0178	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9056	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1400	-31.9056	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9056	116.0178	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9055	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9055	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9055	116.0174	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9055	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1030	-31.9055	116.0184	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9055	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9055	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9055	116.0166	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9055	116.0163	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9055	116.0171	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9055	116.0185	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9055	116.0186	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9055	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9055	116.0177	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.9054	116.0175	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9054	116.0186	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	0	-31.9054	116.0186	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.9054	116.0177	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9054	116.0172	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9054	116.0178	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9054	116.0159	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9054	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9054	116.0169	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9054	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9054	116.0186	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9054	116.0186	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.9054	116.0176	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1370	-31.9054	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1920	-31.9053	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9053	116.017	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9053	116.0187	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9053	116.0187	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1490	-31.9053	116.0173	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9053	116.0177	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1180	-31.9053	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9053	116.0163	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1320	-31.9053	116.0149	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9052	116.0175	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9052	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9052	116.0187	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9052	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9052	116.0173	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9052	116.0163	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9052	116.0176	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9052	116.0157	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9052	116.0162	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9052	116.0189	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.9051	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9051	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.9051	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.9051	116.0169	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9051	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9051	116.0165	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9051	116.0176	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9051	116.0163	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1420	-31.9051	116.0155	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.9051	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9051	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9051	116.0168	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.905	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.905	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1360	-31.905	116.0162	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.905	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.905	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.905	116.0155	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.905	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.905	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1400	-31.905	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.905	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9049	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9049	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9049	116.0156	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.9049	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9049	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9049	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9049	116.0173	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9049	116.0155	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9049	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9048	116.0165	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9048	116.0171	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9048	116.0164	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9048	116.0178	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9048	116.0154	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9048	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9048	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9048	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9048	116.0155	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9048	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9047	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1390	-31.9047	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9047	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.9047	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.9047	116.0156	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.9047	116.0114	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9047	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.9047	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9047	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2170	-31.9047	116.0146	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1540	-31.9047	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9047	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9047	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9046	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9046	116.0156	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9046	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9046	116.0143	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1340	-31.9046	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9046	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9046	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9046	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1070	-31.9046	116.0093	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9045	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9045	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9045	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.9045	116.0155	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9045	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9045	116.0153	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9045	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9045	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.9045	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9045	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9045	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9044	116.0156	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9044	116.0157	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9044	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9044	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9044	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9044	116.0158	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.9044	116.0153	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.9044	116.0138	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9044	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9044	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.9044	116.0145	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9044	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9043	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1560	-31.9043	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9043	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1110	-31.9043	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1420	-31.9043	116.0137	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9043	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9043	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1040	-31.9043	116.0145	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9043	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9043	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9042	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9042	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9042	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1400	-31.9042	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9042	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9042	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9042	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9042	116.0155	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9042	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9042	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9042	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1250	-31.9042	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9042	116.0174	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9042	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9042	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9041	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.9041	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9041	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9041	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9041	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9041	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.9041	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9041	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9041	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9041	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.9041	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9041	116.0137	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9041	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9041	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.904	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.904	116.0151	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.904	116.0138	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	1280	-31.904	116.0136	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1130	-31.904	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.904	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.904	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.904	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.904	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.904	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.904	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.904	116.0137	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1490	-31.904	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.904	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.904	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1440	-31.904	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9039	116.0138	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9039	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1060	-31.9039	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9039	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9039	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9039	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9039	116.0204	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1340	-31.9039	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1220	-31.9039	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1080	-31.9039	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.9038	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.9038	116.0129	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1220	-31.9038	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9038	116.0204	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.9038	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9038	116.0143	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1080	-31.9038	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9038	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9038	116.0202	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9038	116.019	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9038	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9038	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.9038	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9038	116.0134	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9038	116.0181	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9038	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1080	-31.9038	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9038	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9037	116.0181	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9037	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9037	116.0134	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9037	116.0138	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9037	116.0134	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1450	-31.9037	116.0103	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9037	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9037	116.013	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1130	-31.9037	116.0134	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1520	-31.9037	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9037	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9037	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.9037	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9037	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9037	116.0138	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9037	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9037	116.0145	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9037	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9037	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9037	116.0135	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9037	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9037	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1110	-31.9037	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9036	116.0084	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	1570	-31.9036	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9036	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9036	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9036	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9036	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9036	116.0183	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1600	-31.9036	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9036	116.0134	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9036	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1090	-31.9036	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9036	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9036	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9036	116.0195	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9036	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9036	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1020	-31.9036	116.0137	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9036	116.0133	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1310	-31.9035	116.0133	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9035	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.9035	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9035	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9035	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9035	116.015	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9035	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9035	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9035	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9035	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9035	116.0136	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9035	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1170	-31.9035	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9035	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	460	-31.9035	116.0089	2	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9035	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	0	-31.9035	116.0185	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9035	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.9035	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9035	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9035	116.0136	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	720	-31.9035	116.0205	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9035	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9035	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9035	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9035	116.0152	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1020	-31.9035	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9034	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9034	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9034	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1450	-31.9034	116.0134	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9034	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9034	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9034	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1520	-31.9034	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9034	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9034	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9034	116.0143	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9034	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9034	116.0197	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1720	-31.9034	116.0103	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9034	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9034	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9034	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9034	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9034	116.0136	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9034	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9034	116.0088	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9034	116.0143	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9034	116.0145	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9034	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.9033	116.0138	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2270	-31.9033	116.0129	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.9033	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1020	-31.9033	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.9033	116.0137	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9033	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9033	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9033	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9033	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9033	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9033	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	0	-31.9033	116.0188	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.9033	116.0107	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9033	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9033	116.0107	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9033	116.0149	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9033	116.0133	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1070	-31.9033	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9033	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9033	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9033	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9033	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9033	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.9033	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9033	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9033	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1280	-31.9033	116.0127	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9033	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1510	-31.9033	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9032	116.0127	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9032	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9032	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.9032	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9032	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1800	-31.9032	116.0105	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1190	-31.9032	116.011	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	910	-31.9032	116.0128	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9032	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9032	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9032	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9032	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9032	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1340	-31.9032	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9032	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9032	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.9032	116.0107	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1350	-31.9032	116.0124	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1230	-31.9032	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9032	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9032	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9032	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9032	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9031	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9031	116.0106	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9031	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9031	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1160	-31.9031	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9031	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1090	-31.9031	116.0145	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1330	-31.9031	116.0122	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.9031	116.0116	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1320	-31.9031	116.0143	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9031	116.0141	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9031	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9031	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9031	116.013	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9031	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1140	-31.9031	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9031	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1560	-31.9031	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1690	-31.9031	116.0137	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1140	-31.9031	116.0143	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1380	-31.9031	116.0103	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9031	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9031	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1240	-31.9031	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.9031	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9031	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.9031	116.0111	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1190	-31.903	116.0148	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1350	-31.903	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.903	116.0129	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.903	116.0146	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.903	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.903	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	950	-31.903	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.903	116.012	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.903	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.903	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.903	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	950	-31.903	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.903	116.011	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.903	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2000	-31.903	116.0122	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.903	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.903	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.903	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.903	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.903	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1180	-31.903	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.903	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.903	116.0105	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2240	-31.9029	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9029	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.9029	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1360	-31.9029	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9029	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9029	116.0103	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9029	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9029	116.011	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	720	-31.9029	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9029	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9029	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1450	-31.9029	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9029	116.0099	2	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9029	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.9029	116.0123	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1080	-31.9029	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9029	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.9029	116.0101	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2430	-31.9029	116.0128	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9029	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.9029	116.011	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9029	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9029	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9029	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9028	116.0106	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9028	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9028	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9028	116.0147	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9028	116.0113	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9028	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9028	116.0113	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9028	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9028	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9028	116.0113	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9028	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9028	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1070	-31.9028	116.0114	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9028	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9028	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1030	-31.9028	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9028	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9028	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9028	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9027	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.9027	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9027	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9027	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9027	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	720	-31.9027	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1060	-31.9027	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9027	116.0101	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9027	116.0111	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9027	116.0116	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9027	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9027	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1190	-31.9027	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.9027	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9027	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9027	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.9026	116.0113	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1060	-31.9026	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9026	116.0103	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9026	116.0101	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9026	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.9026	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9026	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9026	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9026	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1030	-31.9026	116.011	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	910	-31.9026	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9026	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.9026	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9026	116.0127	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9026	116.0128	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9026	116.0118	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9026	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9026	116.0144	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9026	116.0128	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.9026	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9026	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9026	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1520	-31.9026	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9025	116.0127	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9025	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9025	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9025	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.9025	116.0128	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9025	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9025	116.0117	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9025	116.0109	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9025	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9025	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9025	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9025	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.9025	116.0114	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9025	116.0128	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9025	116.0118	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9025	116.0129	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9025	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9025	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9025	116.0113	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9025	116.0123	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9025	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9025	116.0114	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9025	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9025	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1330	-31.9025	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.9025	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9025	116.0106	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9025	116.0118	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9025	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9025	116.0127	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9025	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1340	-31.9025	116.0125	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9025	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9025	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9025	116.0116	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9025	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1360	-31.9024	116.0124	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	950	-31.9024	116.0107	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9024	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9024	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9024	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1070	-31.9024	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9024	116.0103	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9024	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9024	116.0113	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9024	116.0105	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9024	116.0125	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9024	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9024	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9024	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9024	116.0111	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9024	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1250	-31.9024	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9024	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9024	116.011	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.9024	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1060	-31.9024	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9024	116.014	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9024	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9024	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9024	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9024	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9024	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9024	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9024	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.9024	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9024	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9024	116.0106	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	950	-31.9024	116.0116	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1270	-31.9024	116.0124	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.9024	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9023	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9023	116.0092	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9023	116.0139	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9023	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9023	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9023	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1110	-31.9023	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9023	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1400	-31.9023	116.0125	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9023	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9023	116.0142	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.9023	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9023	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9023	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1640	-31.9023	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1070	-31.9023	116.012	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1190	-31.9023	116.0127	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.9023	116.0118	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.9023	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9023	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9023	116.0111	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9023	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9023	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1180	-31.9023	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9023	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9023	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9023	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1090	-31.9023	116.0084	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9023	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9023	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9023	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9023	116.0101	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1040	-31.9023	116.0103	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9023	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9023	116.012	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9023	116.0132	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9023	116.0105	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9023	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9023	116.0135	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9023	116.0132	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9023	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9023	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	720	-31.9022	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9022	116.0126	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9022	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9022	116.0134	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9022	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9022	116.0107	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9022	116.0106	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9022	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1310	-31.9022	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9022	116.0105	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1280	-31.9022	116.012	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9022	116.0085	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.9022	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9022	116.0106	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9022	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9022	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9022	116.0116	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9022	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9022	116.012	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9022	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9022	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9022	116.0111	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.9022	116.0103	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9022	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9022	116.0122	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9022	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9022	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9021	116.0113	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9021	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9021	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9021	116.01	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9021	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1080	-31.9021	116.0122	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9021	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9021	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9021	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9021	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9021	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9021	116.0114	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9021	116.012	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9021	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9021	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.9021	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9021	116.0105	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9021	116.011	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9021	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9021	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.9021	116.0101	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.9021	116.0104	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9021	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9021	116.0105	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9021	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9021	116.0107	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9021	116.0106	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.902	116.0102	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.902	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.902	116.0105	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.902	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.902	116.0099	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.902	116.0119	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.902	116.0118	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1540	-31.902	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.902	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.902	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.902	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.902	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.902	116.0115	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1910	-31.902	116.0088	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.902	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.902	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.902	116.0118	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.902	116.0108	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.902	116.0117	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.902	116.0112	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.902	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.902	116.0125	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.902	116.0124	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.902	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.902	116.0113	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1160	-31.902	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9019	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.9019	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.9019	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9019	116.0114	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.9019	116.0123	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9019	116.0111	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9019	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1360	-31.9019	116.0098	1	Potentially suitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9019	116.022	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1870	-31.9018	116.009	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9018	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.9018	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9018	116.0109	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9018	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9018	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9018	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9018	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1460	-31.9018	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9018	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9018	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9018	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9018	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.9017	116.009	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1320	-31.9017	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.9017	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9017	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9017	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9017	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9017	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9017	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.9017	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9017	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1170	-31.9017	116.0085	2	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1170	-31.9016	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9016	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1030	-31.9016	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9016	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9016	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9016	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9016	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9016	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1160	-31.9016	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9015	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1240	-31.9015	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9015	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1230	-31.9015	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9015	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1040	-31.9015	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1310	-31.9015	116.0088	1	Potentially suitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9015	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1110	-31.9015	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.9015	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9014	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9014	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.9014	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	830	-31.9014	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.9014	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.9014	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9014	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9014	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9014	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	910	-31.9014	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.9014	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9013	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9013	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9013	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	950	-31.9013	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9013	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9013	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9013	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.9013	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9013	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9013	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9013	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.9013	116.0086	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9012	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9012	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9012	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1020	-31.9012	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.9012	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9012	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.9012	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.9012	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9012	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.9012	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.9012	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.9012	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9012	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9012	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.9012	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.9011	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9011	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.9011	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.9011	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	720	-31.9011	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9011	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9011	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9011	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.9011	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1630	-31.901	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.901	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.901	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.901	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.901	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9009	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.9009	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9009	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9009	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1120	-31.9009	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1030	-31.9009	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1220	-31.9009	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9009	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1750	-31.9009	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.9009	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1190	-31.9008	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9008	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.9008	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.9008	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1170	-31.9008	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	860	-31.9008	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9007	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1480	-31.9007	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.9007	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1750	-31.9007	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1760	-31.9006	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.9006	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.9006	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1090	-31.9006	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.9006	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.9006	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.9005	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.9005	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1750	-31.9005	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1230	-31.9005	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.9005	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.9004	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1540	-31.9004	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1210	-31.9004	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.9004	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9004	116.0088	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.9004	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.9004	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2480	-31.9004	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.9004	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9004	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1240	-31.9003	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.9003	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1600	-31.9003	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1190	-31.9003	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.9003	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1890	-31.9003	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.9002	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9002	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.9002	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.9002	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.9001	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.9001	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.9	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.9	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.9	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.8999	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.8999	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.8999	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8999	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.8998	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8998	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8998	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1120	-31.8997	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1800	-31.8997	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2180	-31.8996	116.007	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.8996	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1400	-31.8996	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1520	-31.8996	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.8996	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.8996	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1770	-31.8996	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.8995	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1120	-31.8995	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8995	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1430	-31.8994	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8994	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.8994	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.8994	116.0068	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.8994	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.8994	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1430	-31.8994	116.0098	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1260	-31.8993	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8993	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.8992	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1420	-31.8992	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8992	116.0068	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.8992	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8992	116.0067	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1490	-31.8992	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2000	-31.8992	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.8992	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1650	-31.8991	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.8991	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.8991	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1310	-31.8991	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1030	-31.8991	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1900	-31.899	116.0068	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.899	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.899	116.0067	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.899	116.0082	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.899	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.899	116.0058	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	790	-31.899	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.899	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.8989	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.8989	116.0067	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.8989	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.8989	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.8989	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.8989	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.8989	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1850	-31.8989	116.0082	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.8989	116.0064	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1030	-31.8989	116.0056	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1220	-31.8989	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	840	-31.8989	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	960	-31.8989	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8988	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.8988	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.8988	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8988	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1020	-31.8988	116.0059	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.8988	116.0052	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.8988	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8988	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.8988	116.0051	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.8988	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.8988	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.8988	116.0059	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1730	-31.8988	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8988	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.8988	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.8988	116.0058	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.8987	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.8987	116.0051	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.8987	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.8987	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8987	116.0053	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.8987	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8987	116.0051	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1770	-31.8987	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1180	-31.8987	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8987	116.0051	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.8987	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.8987	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8987	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.8987	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.8987	116.0046	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.8987	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.8987	116.0064	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8987	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8987	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.8987	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8987	116.0043	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.8987	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.8987	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1840	-31.8987	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.8987	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.8986	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1340	-31.8986	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1340	-31.8986	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8986	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.8986	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.8986	116.0063	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8986	116.008	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.8986	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8986	116.0054	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1040	-31.8986	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.8986	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	630	-31.8986	116.0063	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8986	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.8986	116.006	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	720	-31.8986	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1320	-31.8986	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.8986	116.0059	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.8986	116.0045	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8985	116.0068	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8985	116.0044	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.8985	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1080	-31.8985	116.0056	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8985	116.0044	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.8985	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.8985	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8985	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.8985	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.8985	116.0061	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.8985	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1560	-31.8985	116.0058	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1210	-31.8985	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1450	-31.8985	116.0047	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.8985	116.0064	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.8985	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8985	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1680	-31.8985	116.0052	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.8985	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8985	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1210	-31.8985	116.0078	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.8985	116.0042	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.8985	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1080	-31.8985	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.8985	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1070	-31.8985	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1240	-31.8984	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8984	116.0036	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1430	-31.8984	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1530	-31.8984	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1800	-31.8984	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.8984	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1250	-31.8984	116.0046	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	810	-31.8984	116.0076	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1120	-31.8984	116.0063	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.8984	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1310	-31.8984	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.8984	116.0042	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8984	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1390	-31.8984	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	870	-31.8984	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	540	-31.8984	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.8984	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1020	-31.8984	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8984	116.0035	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1570	-31.8984	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1190	-31.8984	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1180	-31.8984	116.0045	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.8984	116.0054	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1330	-31.8984	116.0051	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.8983	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1410	-31.8983	116.0052	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1130	-31.8983	116.0082	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8983	116.0075	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	1120	-31.8983	116.006	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.8983	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1070	-31.8983	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8983	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1070	-31.8983	116.006	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	980	-31.8983	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1600	-31.8983	116.0084	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1530	-31.8983	116.0044	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.8983	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1750	-31.8983	116.0056	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.8983	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.8983	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8983	116.0036	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8983	116.0039	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1730	-31.8983	116.0047	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8983	116.0057	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8983	116.0057	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1870	-31.8982	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1770	-31.8982	116.0063	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8982	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.8982	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1340	-31.8982	116.004	1	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.8982	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1350	-31.8982	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8982	116.0036	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	940	-31.8982	116.0056	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	930	-31.8982	116.0079	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8982	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.8982	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.8982	116.0057	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8982	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.8982	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1730	-31.8982	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	580	-31.8982	116.0057	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.8982	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	640	-31.8982	116.0053	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.8982	116.0054	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8982	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	850	-31.8981	116.0067	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	910	-31.8981	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8981	116.0095	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8981	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.8981	116.0061	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8981	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8981	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.8981	116.0059	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1310	-31.8981	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1330	-31.8981	116.0038	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.8981	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8981	116.0064	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1590	-31.8981	116.0058	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.8981	116.0054	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.8981	116.0068	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8981	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.8981	116.0039	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.8981	116.0043	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1060	-31.8981	116.0047	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8981	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.8981	116.0055	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.8981	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1670	-31.8981	116.0087	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8981	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.8981	116.0043	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1280	-31.8981	116.0044	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.898	116.0045	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	910	-31.898	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1020	-31.898	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	620	-31.898	116.0055	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.898	116.0043	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1260	-31.898	116.0052	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1240	-31.898	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1290	-31.898	116.0068	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1480	-31.898	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.898	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.898	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.898	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.898	116.0071	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	730	-31.898	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1380	-31.898	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1210	-31.898	116.0044	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1210	-31.898	116.0077	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.898	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1260	-31.898	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1500	-31.898	116.007	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1110	-31.898	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.898	116.0042	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1360	-31.898	116.0046	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1170	-31.8979	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8979	116.0089	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.8979	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1170	-31.8979	116.0038	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8979	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1150	-31.8979	116.004	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.8979	116.0046	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	510	-31.8979	116.0068	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8979	116.0045	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	720	-31.8979	116.0094	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.8979	116.0053	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1090	-31.8979	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.8979	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1130	-31.8979	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.8979	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1270	-31.8979	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8979	116.0063	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.8979	116.004	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1130	-31.8979	116.0051	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.8979	116.0068	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8979	116.0063	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1660	-31.8979	116.0056	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1300	-31.8979	116.0043	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	2120	-31.8979	116.004	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1180	-31.8979	116.0054	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1240	-31.8979	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1320	-31.8978	116.0046	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8978	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.8978	116.0074	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.8978	116.0047	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	650	-31.8978	116.0055	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	910	-31.8978	116.0047	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8978	116.0059	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.8978	116.0073	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8978	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.8978	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.8978	116.0057	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1040	-31.8978	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1050	-31.8978	116.0069	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	920	-31.8978	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.8978	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	880	-31.8978	116.0052	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.8978	116.0061	0	Unsuitable






Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.8978	116.0059	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.8977	116.0061	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.8977	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1020	-31.8977	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.8977	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8977	116.0051	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1040	-31.8977	116.0057	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.8977	116.0055	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.8977	116.0062	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	530	-31.8977	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.8977	116.0044	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	890	-31.8977	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.8977	116.0055	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	680	-31.8977	116.0053	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8977	116.0059	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8977	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.8977	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.8977	116.0052	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.8977	116.0061	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1390	-31.8977	116.0097	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.8977	116.0043	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1100	-31.8977	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	820	-31.8977	116.0054	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	900	-31.8977	116.0096	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1010	-31.8977	116.006	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	780	-31.8977	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1090	-31.8977	116.0057	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1040	-31.8977	116.0053	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8977	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.8977	116.0059	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	610	-31.8977	116.0058	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.8977	116.0046	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	520	-31.8976	116.0043	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.8976	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.8976	116.0052	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.8976	116.004	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.8976	116.0048	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.8976	116.0056	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.8976	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	500	-31.8976	116.0054	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.8976	116.0065	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.8976	116.0081	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1530	-31.8976	116.0039	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1160	-31.8976	116.004	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1040	-31.8976	116.0053	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.8976	116.0056	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.8976	116.0055	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	560	-31.8976	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	740	-31.8976	116.0052	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	570	-31.8976	116.0054	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	990	-31.8976	116.0055	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	710	-31.8976	116.0041	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	690	-31.8976	116.0042	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	750	-31.8976	116.0066	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	950	-31.8976	116.0042	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8976	116.004	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1140	-31.8976	116.0044	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1730	-31.8976	116.005	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	970	-31.8976	116.0049	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8975	116.0072	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.8975	116.0092	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.8975	116.0075	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	700	-31.8975	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	660	-31.8975	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	770	-31.8975	116.0077	0	Unsuitable

Tree Species	DBH	Latitude	Longitude	Hollows	Breeding Suitability
Flooded Gum, <i>Eucalyptus rudis</i>	2000	-31.8975	116.0083	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	550	-31.8974	116.008	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	800	-31.8974	116.0093	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1200	-31.8974	116.0091	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.8974	116.009	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	670	-31.8974	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	590	-31.8974	116.0086	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	760	-31.8974	116.0085	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	600	-31.8973	116.0088	0	Unsuitable
Flooded Gum, <i>Eucalyptus rudis</i>	1000	-31.8973	116.0087	0	Unsuitable
Dead stag, Indeterminate species	940	-31.9237	116.0177	0	Unsuitable
Dead stag, Indeterminate species	1070	-31.9051	116.014	1	Unsuitable
Dead stag, Indeterminate species	970	-31.9035	116.0096	0	Unsuitable
Dead stag, Indeterminate species	870	-31.902	116.0085	1	Potentially suitable
Dead stag, Indeterminate species	840	-31.8995	116.0091	0	Unsuitable
Dead stag, Indeterminate species	760	-31.8984	116.0073	1	Unsuitable





Appendix 15


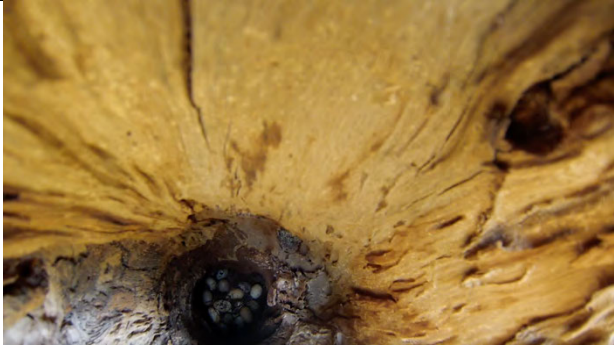



Black Cockatoo Hollow Inspection Images



Tree Species	DBH	Easting (MGA50)	Northing (MGA50)	Number of Hollows Assessed	Determination	Comments	Photos
Flooded Gum	134	405820.65	6470413.54	1	Not suitable	Base of hollow has opening to the environment	
Stag	76	406126.381	6470395.94	1	Not suitable	Too shallow	
Flooded Gum	117	406244.132	6470033.85	1	Not suitable	Too shallow	
Stag	87	406245.6	6469997.06	1	Not suitable	Too open	
Flooded Gum	109	406236.133	6469967.38	1	Potentially suitable	No signs of use	

Flooded Gum	46	406288.148	6469832.28	1	Not suitable	Too open		
Flooded Gum	105	406489.586	6469883.88	2	Not suitable	Too shallow	 	
Flooded Gum	150	406539.193	6469877.36	1	Not suitable	Too shallow		
Marri	75	406984.897	6469710.8	1	Not suitable	Too open		
Flooded Gum	244	406912.952	6469510.71	1	Not suitable	Too shallow		

Flooded Gum	184	406980.115	6469445.47	2	Suitable	One hollow contained Common Brushtail Possum (<i>Trichosurus vulpecula</i>), the other too shallow	
Jarrah	89	406758.961	6468465.03	3	Not suitable	Not hollow, too open and too shallow	
Jarrah	119	407160.855	6466667.14	1	Not suitable	Not hollow	
Jarrah	146	407243.767	6466563.02	1	Not suitable	Not hollow	

Flooded Gum	185	406210.209	6470341.06	1	Not suitable	Not hollow		
Flooded Gum	131	406272.514	6470053.07	1	Suitable	Contains duck eggs, suspected to be from Australian Wood Duck (<i>Chenonetta jubata</i>) or Australasian Shoveller (<i>Spatula rhynchotis</i>).		
Flooded Gum	92	406291.1	6470027.19	1	Not suitable	Too shallow; Contains a feather, suspected to be from Australian Ringneck (<i>Barnardius zonarius</i>) or Rainbow Lorikeet (<i>Trichoglossus moluccanus</i>).		
Flooded Gum	136	406364.719	6470011.79	1	Suitable	Hollow entrance displayed chew marks		
Flooded Gum	80	406248.082	6469974.25	1	Not suitable	Too shallow		

Flooded Gum	200	406596.749	6469891.62	1	Not suitable	Not hollow		
Jarrah	152	406933.468	6467917.89	2	Not suitable	Too narrow	 	
Jarrah	108	407025.417	6467684.14	3	Not suitable	Not hollow		