

SHOEMAKER-LEVY ACCESS CORRIDOR

FLORA AND VEGETATION ASSESSMENT

FQM AUSTRALIA NICKEL PTY LTD

MAY 2015



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Cover photos (clockwise from upper left): *Chamelaucium megalopetalum*, *Calytrix decandra*, *Pterostylis leptochila*, *Thelymitra benthamiana*. All photos by Woodman Environmental, from Shoemaker-Levy Access Corridor, 2014.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
1. INTRODUCTION	1
1.1 PROJECT AND ASSESSMENT DESCRIPTION	1
1.2 PROJECT AND STUDY AREA DEFINITIONS	1
1.3 LEVEL OF ASSESSMENT	4
1.4 AIMS AND OBJECTIVES	4
2. BACKGROUND	6
2.1 CLIMATE	6
2.2 GEOLOGY, SOILS AND LANDFORMS	7
2.3 REGIONAL VEGETATION.....	7
2.4 REGIONAL FLORA	13
2.5 LOCAL FLORA AND VEGETATION SURVEYS.....	14
2.6 SUMMARY OF SIGNIFICANT FLORA, INTRODUCED FLORA AND SIGNIFICANT VEGETATION	16
2.6.1 Significant Flora	16
2.6.2 Introduced Flora	20
3. METHODS.....	22
3.1 PERSONNEL AND LICENSING	22
3.2 AERIAL PHOTOGRAPHY INTERPRETATION.....	22
3.3 FIELD SURVEY METHODS	22
3.3.1 Study Area	22
3.3.2 Approved Access Alignment.....	24
3.4 PLANT COLLECTION AND IDENTIFICATION	26
3.5 CLASSIFICATION ANALYSIS.....	26
3.6 VEGETATION TYPE DEFINITION, DESCRIPTION AND MAPPING	28
3.7 VEGETATION CONDITION	29
3.8 SIGNIFICANT FLORA AND VEGETATION	29
3.8.1 Significant Flora	29
3.8.2 Significant Vegetation.....	30
3.9 COMPARISON OF PROJECT AREA AND APPROVED ALIGNMENT	31
4. ADEQUACY AND LIMITATIONS OF SURVEY	31
4.1 ADEQUACY OF SURVEY	31
4.2 LIMITATIONS OF SURVEY	32
5. RESULTS.....	35
5.1 FLORA OF THE STUDY AREA	35
5.1.1 Vascular Flora Census	35
5.1.2 Summary of Significant Flora Taxa	35

5.1.3 Listed Significant Flora Taxa	40
5.1.4 Unlisted Significant Flora Taxa	51
5.1.5 Other Taxa of Interest	53
5.1.6 Introduced Taxa	59
5.2 VEGETATION OF THE STUDY AREA	60
5.2.1 Vegetation Types	60
5.2.2 Other Areas Described.....	74
5.2.3 Summary of Significant Vegetation	74
5.2.4 Listed Significant Vegetation	78
5.2.5 Unlisted Significant Vegetation	79
5.2.6 Vegetation Condition.....	80
5.3 FLORA AND VEGETATION OF THE APPROVED ACCESS ALIGNMENT	83
5.3.1 Flora	83
5.3.2 Vegetation	85
6. DISCUSSION AND CONCLUSIONS	89
6.1 FLORA OF THE STUDY AREA	89
6.2 VEGETATION OF THE STUDY AREA	90
6.3 COMPARISON OF THE PROJECT AREA AND APPROVED ACCESS ALIGNMENT.....	92
7. REFERENCES.....	95

FIGURES

- Figure 1: Project Area, Study Area and Approved Access Alignment Location
- Figure 2: Mean Maximum and Minimum Temperatures (° Celsius) and Mean Rainfall (mm) for Ravensthorpe (Bureau of Meteorology 2015)
- Figure 3: Vegetation System Associations in the Study Area
- Figure 4: Location of Priority Ecological Communities in Relation to Study Area and Approved Access Alignment
- Figure 5: Study Area and Project Area Quadrats, Detailed Recording Sites and Track Logs and Approved Access Alignment Track Logs
- Figure 6: Study Area Species Accumulation Curve
- Figure 7: Locations of *Conostylis lepidospermoides* (Threatened) in the Study Area
- Figure 8: Locations of Priority Flora and Other Significant Flora in the Study Area
- Figure 9: Vegetation Types in the Study Area
- Figure 10: Study Area, Introduced Flora Taxa and Vegetation Condition
- Figure 11: Significant Flora Taxa along the Approved Access Alignment

TABLES

- Table 1: Extent of Vegetation System Associations within the Study Area
- Table 2: Significant Flora Taxa Known from within or in the Vicinity of the Study Area
- Table 3: Introduced Flora Taxa Known from within or in the Vicinity of the Study Area
- Table 4: Personnel and Licensing Information
- Table 5: Limitations of the Flora and Vegetation Survey of the Study Area
- Table 6: Summary of Significant Flora Taxa Known from within the Study Area
- Table 7: Taxa Where Collections Represent Significant Range Extensions to the Known Ranges of these Taxa, or Fill Distribution Gaps (DPaW 2015a)
- Table 8: Short-Range Endemic Taxa Recorded in the Study Area
- Table 9: Summary of Introduced Taxa Recorded from within the Study Area
- Table 10: Summary of Vegetation Types Mapped in the Study Area
- Table 11: Summary of Significance of Vegetation Types in the Study Area
- Table 12: Significant Flora Taxa Recorded Along the Approved Access Alignment
- Table 13: Plant Communities Recorded Along the Approved Access Alignment
- Table 14: Comparison of Flora and Vegetation Values of the Project Area and the Approved Access Alignment

PLATES

- Plate 1: *Conostylis lepidospermoides* (Threatened)
- Plate 2: *Drosera grievei* (P1)

Plate 3:	<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596) (P1)
Plate 4:	<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2)
Plate 5:	<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3)
Plate 6:	<i>Micromyrtus navicularis</i> (P3)
Plate 7:	<i>Synaphea platyphylla</i> (P3)
Plate 8:	<i>Allocasuarina ?hystricosa</i> (P4)
Plate 9:	<i>Pultenaea calycina</i> subsp. <i>proxena</i> (P4)
Plate 10:	<i>Thysanotus parviflorus</i> (P4)
Plate 11:	<i>Eremophila glabra</i> s. lat.
Plate 12:	<i>Lepidosperma</i> sp. 'Fitzgerald Tuberculate'
Plate 13:	<i>Synaphea</i> aff. <i>petiolaris</i>
Plate 14:	VT 1 (Quadrat SC-63)
Plate 15:	VT 2 (Quadrat SC-02)
Plate 16:	VT 3 (Quadrat SC-56)
Plate 17:	VT 4 (Quadrat SC-09)
Plate 18:	VT 5 (Quadrat SC-19)
Plate 19:	VT 6 (Quadrat SC-24)
Plate 20:	VT 7 (Quadrat SC-31)
Plate 21:	VT 8 (Quadrat SC-44)
Plate 22:	VT 9 (Quadrat SC-48)
Plate 23:	VT 10 (Quadrat SC-49)
Plate 24:	VT 11 (Quadrat SC-54)
Plate 25:	VT 12 (Quadrat SC-55)
Plate 26:	VT 13 (Quadrat SC-11)
Plate 27:	VT 14 (Quadrat SC-29)
Plate 28:	VT 15 (Quadrat SC-38)
Plate 29:	VT 16 (Quadrat SC-60)
Plate 30:	VT 17 (Quadrat SC-32)
Plate 31:	VT 18 (Quadrat SC-58)

APPENDICES

Appendix A:	Results of Search of the Department of the Environment (DoE) Database with Regard to Environmental Matters of National Significance (DoE 2015)
Appendix B:	Definitions, Categories and Criteria for Threatened and Priority Ecological Communities (DPaW 2010a)
Appendix C:	Taxa Returned from the Search of DPaW's Threatened Flora Databases (DPaW 2013b)
Appendix D:	Conservation Codes for Western Australian Flora and Fauna (DPaW 2014b)

Appendix E:	Vegetation Condition Scale for the South-West Botanical Province (Keighery 1994)
Appendix F:	Vascular Plant Taxa Amalgamated in or Omitted From the Classification Analysis
Appendix G:	OptimClass Combinations Tested for Classification Analysis
Appendix H:	Vascular Plant Taxa Recorded in the Study Area
Appendix I:	Raw Data Recorded within Quadrats in the Study Area
Appendix J:	Location Details of Conservation Significant Flora and Introduced Flora Recorded within the Study Area and Surrounds, and along Approved Access Alignment, 2014
Appendix K:	Classification Analysis Dendrogram of Quadrats Established in the Study Area
Appendix L:	Results of Indicator Species Analysis of Quadrat Data from the Study Area
Appendix M:	Detailed Descriptions of Vegetation Types Described in the Study Area
Appendix N:	Matrix of Vascular Plant Taxa Recorded within Each Vegetation Type Described in the Study Area
Appendix O:	Classification Analysis Dendrogram of Quadrats Established in the Study Area and Ravensthorpe Range by Markey <i>et al.</i> (2012)

EXECUTIVE SUMMARY

FQM Australia Nickel Pty Ltd (FQM) currently mine and process nickel laterite ore to produce a mixed nickel and cobalt hydroxide precipitate at their Ravensthorpe Nickel Operations (RNO), located approximately 35 km east of the town of Ravensthorpe, Western Australia. Approval has previously been granted under the Western Australian *Environmental Protection Act 1986* (EP Act) for the mining of 3 orebodies within the RNO, namely the Halleys, Hale-Bopp and Shoemaker-Levy orebodies, and for the construction of a mine access road and conveyor between the Shoemaker-Levy orebody and the processing plant area.

FQM have determined that an alternative access alignment between the Shoemaker-Levy orebody and the processing plant is required. As part of investigations into development of an alternative Shoemaker-Levy conveyor alignment ('the Project'), FQM commissioned Woodman Environmental Consulting Pty Ltd (Woodman Environmental) to conduct an assessment of the flora and vegetation values of the Project, and to compare these to the flora and vegetation values of the approved access alignment. The flora and vegetation assessment of the Project Study Area ('Study Area') was undertaken at a Level 2 standard as defined by the Environmental Protection Authority's (EPA) Guidance Statement No. 51 (EPA 2004), and Position Statement No. 3 (EPA 2002).

Field survey of the Study Area, and the approved access alignment was conducted over 2 visits in Spring, from the 18th – 26th September 2014, and from the 6th – 13th October 2014. A total of 63 permanently marked flora survey quadrats were established during survey. All quadrats covered an area of 100 m² for understorey sampling, with all quadrats measuring 10 m x 10 m. Each quadrat was extended to an area of 400 m² to sample canopy taxa. This quadrat size and structure corresponds to that used during the Department of Parks and Wildlife (DPaW) Ravensthorpe Range floristic survey (Markey *et al.* 2012). Specific, targeted searching for significant flora taxa in the Study Area and Project Area (where proposed impacts will occur) was undertaken as part of this survey for such taxa that could be positively identified in the field. Classification analysis of quadrat data from the Study Area was conducted to define vegetation types (VTs) in the Study Area.

Survey along the approved access alignment was conducted on foot and by vehicle (where possible) by way of a linear transect, approximately from end to end, with a second transect walked where required to return to the vehicle. These transects broadly followed the approved access alignment, extending approximately 50 m either side of the approved access alignment depending on features encountered. To allow comparison of the vegetation of the approved access alignment to vegetation of the Study Area, the vegetation along the approved access alignment was inspected, with brief notes recorded on dominant taxa, structural composition and soils. Preliminary 'plant communities' were described – these are designated as such to differentiate them from VTs, which are described following classification analysis. Searching for significant flora and introduced flora taxa was also conducted while traversing the transects along the approved access alignment.

A total of 530 discrete vascular flora taxa and 1 known hybrid were recorded within the Study Area. These taxa represent 59 families and 203 genera. The most well-represented

families were Myrtaceae (92 taxa and 1 known hybrid), Fabaceae (63 taxa), Proteaceae (54 taxa) and Cyperaceae (40 taxa).

A total of 13 significant flora taxa were recorded by this survey of the Study Area, including 1 taxon listed as Threatened under the *Wildlife Conservation Act 1950* (WA) (WC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act). These were:

- *Conostylis lepidospermoides* (Threatened);
- *Drosera grievei* (P1);
- *Lepidosperma* sp. Mt Chester (S. Kern et al. LCH 16596) (P1);
- *Tricostularia* sp. Lake King (A.M. Coates 2298) (P2);
- *Dampiera* sp. Ravensthorpe (G.F. Craig 8277) (P3);
- *Micromyrtus navicularis* (P3);
- *Synaphea platyphylla* (P3);
- *Allocasuarina ?hystricosa* (P4);
- *Pultenaea calycina* subsp. *proxena* (P4);
- *Thysanotus parviflorus* (P4);
- *Eremophila glabra* s. lat. (potentially undescribed);
- *Lepidosperma* sp. 'Fitzgerald Tuberculate' (potentially undescribed); and
- *Synaphea* aff. *petiolaris* (potentially undescribed).

A total of 16 introduced flora taxa were recorded by this survey of the Study Area. Of these *Eragrostis curvula* (African Lovegrass) is considered to be a serious weed of disturbed ground capable of invading adjacent bushland (Hussey *et al.* 2007). The remaining weeds recorded in the Study Area are not considered to be particularly serious, however *Cynodon dactylon* (Couch) is known to be highly invasive in wetland areas (Hussey *et al.* 2007).

Classification analysis resulted in the description of 18 VTs in the Study Area. At a higher level in the classification dendrogram, the 18 VTs were arranged into 3 broad groups, as outlined below:

- Group 1 (VTs 1-4) corresponds to vegetation that is commonly referred to as Kwongan shrubland on sandplains. In the Study Area, this group generally consists of mallee shrubland or woodland dominated by *Eucalyptus pleurocarpa* over taxon-rich shrublands on sandplains, with variable levels of laterite.
- Group 2 (VTs 5-15) corresponds to vegetation on clay soils associated with greenstone or laterite geology, including drainage lines associated with such geologies. It generally consists of mallee woodlands co-dominated by a number of *Eucalyptus* taxa over mixed shrublands.
- Group 3 (VTs 16-18) corresponds to vegetation on granite-derived soils. It generally consists of tall to mid shrublands dominated by *Allocasuarina campestris* and/or *Calothamnus quadrifidus* subsp. *quadrifidus*, over low mixed shrublands and sedgeland.

It is considered that the EPBC-listed Threatened Ecological Community (TEC) 'Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered) occurs in the Study Area, with all occurrences of VTs 1, 2, 3, 4 and 15 considered to represent this TEC. This TEC is considered equivalent to the DPaW-classified Priority Ecological Community (PEC) 'Proteaceae Dominated Kwongan Shrublands of the

Southeast Coastal Floristic Province of Western Australia' (Priority 3) in the Study Area. It is also considered that the Priority 3 PEC 'Swamp Yate (*Eucalyptus occidentalis*) woodlands in seasonally inundated clay basins (South Coast)' occurs in the Study Area, with all occurrences of VT 8 in the Study Area considered to represent this PEC.

The majority of the remaining VTs are not considered to be represented in the nearby Ravensthorpe Range floristic community dataset (Markey *et al.* 2012). Such VTs may therefore be of potential regional significance; however, as this cannot be confirmed, they are considered to be of unknown regional significance. Most are likely to occur outside the Study Area based on potential suitable habitat identified from aerial photography. A number of the remaining VTs are considered to be of local significance, primarily as they were considered to have restricted distributions, and were mapped over a small total area in the Study Area.

The majority of the remaining VTs are not considered to be represented in the nearby Ravensthorpe Range floristic community dataset (Markey *et al.* 2012). Most are likely to occur outside the Study Area based on potential suitable habitat identified from aerial photography.

A total of 6 significant flora taxa were recorded by this survey of the approved access alignment, including 1 taxon listed as Threatened under the WC Act. These were:

- *Acrotriche orbicularis* (Threatened);
- *Allocasuarina ?hystricosa* (P4);
- *Beyeria villosa* (P4);
- *Grevillea fastigiata* (P4);
- *Goodenia phillipsiae* (P4); and
- *Pultenaea calycina* subsp. *proxena* (P4).

A total of 13 plant communities were recorded along the approved access alignment. Seven of these plant communities are considered to be broadly equivalent to VTs described and mapped in the Study Area. Of the plant communities described along the approved access alignment, it is considered that plant communities 9 and 10 likely represent the EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and the equivalent DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3). The majority of the vegetation along the approved access alignment was considered to be in 'Pristine' condition (Keighery 1994), with small areas of disturbance associated with historical mining, and an absence or low levels of introduced flora taxa.

Based on information currently available, the Project Area and the approved access alignment are considered to be similar in terms of important flora and vegetation values. Although the length of the proposed access within the Project Area is longer than the approved access alignment, approximately 2.6 km is located within already cleared paddocks, and therefore the length within intact remnant vegetation is similar to that of the approved access alignment. While more significant flora taxa were recorded in the Project Area, it is considered likely that additional significant flora taxa would be located along the approved access alignment if it were surveyed to the same level as the Project Area. The

number of preliminary plant communities along the approved access alignment parallels the number of VTs in the Project Area, and it is therefore considered that the Project Area and the approved access alignment are similar in terms of vegetation diversity. Both the Project Area and the approved access alignment are also considered to contain occurrences of the EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered). It is therefore considered that the Project is unlikely to result in significantly greater impacts to flora and vegetation values when compared to the approved access alignment.

1. INTRODUCTION

1.1 Project and Assessment Description

FQM Australia Nickel Pty Ltd (FQM) currently mine and process nickel laterite ore to produce a mixed nickel and cobalt hydroxide precipitate at their Ravensthorpe Nickel Operations (RNO), located approximately 35 km east of the town of Ravensthorpe, Western Australia (Figure 1). Approval has previously been granted under the Western Australian *Environmental Protection Act 1986* (EP Act) for the mining of 3 orebodies within the RNO, namely the Halleys, Hale-Bopp and Shoemaker-Levy orebodies, and for the construction of a mine access road and conveyor corridor between the Shoemaker-Levy orebody and the processing plant area (Government of Western Australia 2003). Baseline flora and vegetation studies were completed to support these approvals.

FQM have determined that an alternative to the approved access alignment between the Shoemaker-Levy orebody and the processing plant is required. An alternative alignment has been designed that traverses more consistent topography, avoiding minor creek lines and steep gradients that would otherwise entail significant earthworks and additional risks to local drainage patterns. Discussions held with the Environmental Protection Authority (EPA) have determined that an additional approval under Section 45c of the EP Act would be required prior to FQM constructing infrastructure within the alternative alignment. The EPA indicated that a minimum study corridor width of 1 km is required in order to adequately assess impacts from linear infrastructure in Western Australia. In addition, flora and vegetation values within the alternative access alignment must be compared to those of the approved access alignment, in order to address the requirements of a Section 45c approval.

As part of investigations into development of the alternative Shoemaker-Levy access alignment ('the Project'), FQM commissioned Woodman Environmental Consulting Pty Ltd (Woodman Environmental) to conduct an assessment of the flora and vegetation values of the Project, and to compare these to the flora and vegetation values of the original access alignment.

1.2 Project and Study Area Definitions

FQM initially supplied Woodman Environmental with a 200 m wide corridor, within which the Project would be constructed. This is defined as the 'Project Area'. As the EPA requires a minimum study corridor width of 1 km for linear infrastructure, a 400 m buffer was applied to the Project Area. Subsequent to the commencement of the field component of this assessment, the alignment of Project Area was altered slightly. A 400 m buffer was therefore required to be applied for the updated Project Area alignment. As data had already been acquired from the initial Project Area buffer, it was considered desirable to include the initial Project Area buffer with the updated Project Area buffer to create a study corridor that was slightly larger than the minimum 1 km width required. This combined study corridor is defined as the 'Study Area'. The Project Area and Study Area are shown on Figure 1. The Project Area covers approximately 222 hectares (ha), while the Study Area covers approximately 1578 ha.

For the purposes of consistent terminology throughout this report, the term Study Area is used when discussing background information (including climate, geology and soils etc.) and the majority of the results of this assessment, with the term Project Area used in specific instances where required.

The majority of both the Project Area and Study Area is remnant vegetation, with smaller areas of cleared paddocks and RNO infrastructure also present. The Study Area is predominantly located on the Unallocated Crown Land (UCL), with a smaller portion located on private property.

As mentioned in Section 1.1, the EPA requires the flora and vegetation values within the Project Area to be compared to those of the original approved Shoemaker-Levy access alignment, in order to address the requirements of a Section 45c approval. The original approved Shoemaker-Levy access alignment was supplied to Woodman Environmental as a centreline. This is defined as the 'approved access alignment', and is also shown on Figure 1.



 <p>WOODMAN ENVIRONMENTAL</p> <p>This map should only be used in conjunction with WEC report FQM14-37-01</p>	<p>Project Area, Study Area and Approved Access Alignment Location</p> <p>Revision: A - 20 March 2015</p>	Author: David Coultas	<p>Figure</p> <p>1</p>
		WEC Ref: FQM14-37-01	
Filename: FQM14-37-01-f01.mxd	Scale: 1:30,000 (A3) Grid: MGA Zone 51		

1.3 Level of Assessment

The flora and vegetation assessment of the Study Area was undertaken at a Level 2 standard as defined by the Environmental Protection Authority's (EPA) Guidance Statement No. 51 (EPA 2004), and Position Statement No. 3 (EPA 2002). This level of survey was determined to be appropriate using Table 2 of Guidance Statement No. 51, where the Bioregion Group is defined as Group 1, and the nature of potential impacts is considered to be Moderate (EPA 2004).

A Level 2 survey is defined as a background research/desktop study and reconnaissance survey, followed by a detailed or comprehensive field survey. A detailed field survey was considered appropriate (as opposed to a comprehensive survey), as a number of surveys have been recently conducted in the vicinity of the Study Area (e.g. Western Botanical 2005, 2006a; Markey *et al.* 2012), which provide regional context when considering the flora and vegetation values of the Study Area.

This report presents the results of both the desktop and field survey components of the Level 2 survey of the Study Area. The results of the background research/desktop study, which include a review of known information relevant to the Study Area through all sources of literature available, are presented in Section 2. The results of the detailed field survey of the Study Area are presented in Section 5. A reconnaissance survey (as part of a Level 1 background research/desktop study) was not conducted as part of this flora and vegetation assessment. As a detailed survey was determined to be required in the planning phase of this survey, which incorporates survey to a greater intensity than a reconnaissance survey as defined by EPA (2004), a reconnaissance survey was not considered necessary.

1.4 Aims and Objectives

The aims of this flora and vegetation assessment were:

- Determine the flora and vegetation values of the Study Area, to provide baseline information when considering the potential impacts of the Project; and
- Compare the flora and vegetation values of the Study Area to the flora and vegetation values of the approved access alignment.

The overall objectives of the flora and vegetation assessment were to:

- Compile a list of flora taxa (native and introduced) that occur within the Study Area;
- Identify and record the locations of flora taxa that occur within the Study Area that are one of the following (hereafter referred to as significant flora taxa):
 - Listed Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act);
 - Threatened Flora under the *Wildlife Conservation Act 1950* (WA) (WC Act); and
 - Priority Flora taxa as classified by the Western Australian Department of Parks and Wildlife (DPaW);
 - Other significant flora taxa as defined by the EPA (2004).
- Identify and map the location of all Vegetation Types (VTs) that occur within the Study Area;

- Assess the condition of the remnant vegetation within the Study Area and identify and record the locations of introduced flora taxa within remnant vegetation;
- Identify and map the location of VTs that occur within the Study Area that are listed as one of the following (herein referred to as significant vegetation):
 - Threatened Ecological Community (TEC) under the EPBC Act;
 - TEC as classified by DPaW and endorsed by the WA Minister for the Environment; and
 - 'Priority Ecological Community' (PEC) as classified by DPaW.
- Identify plant communities, potential significant vegetation and significant flora taxa along the approved access alignment, to allow comparison with the Project Area.

The tasks undertaken to meet these objectives for the flora and vegetation survey were:

- Review all existing literature relating to flora, vegetation and other environmental factors relevant to the Study Area, including relevant state and federal databases;
- Establish flora survey quadrats throughout all discernible vegetation patterns within all areas of remnant vegetation in the Study Area;
- Undertake a classification analysis to define VTs within the Study Area;
- Map the distribution of VTs within the Study Area using a combination of aerial photograph interpretation and field observations, and discuss the composition of such VTs, including in the context of significant vegetation;
- Map and discuss the condition of the vegetation of the Study Area;
- Conduct supplementary searches for significant flora taxa, including Threatened Species under the EPBC Act, Threatened Flora taxa under the WC Act, and DPaW-classified Priority Flora taxa, as well as introduced taxa, that may be present within remnant vegetation in the Study Area;
- Inspect the approved access alignment, and record plant communities, significant flora taxa, significant vegetation and vegetation condition; and
- Provide a report including maps detailing VTs, significant flora taxa, introduced taxa, significant vegetation, and the condition of vegetation within the Study Area, and plant communities, significant flora taxa, significant vegetation and vegetation condition along the approved access alignment.

2. BACKGROUND

2.1 Climate

The Study Area is located within the Esperance Plains region in the Southwest Province of Western Australia (Beard 1990). The Esperance Plains region is characterised by a warm Mediterranean climate with winter precipitation (Beard 1990), with precipitation generally provided by cold fronts. There are 5-6 dry months per year (where evaporation exceeds precipitation), with the region generally receiving between 500-700 mm of precipitation annually. Figure 2 displays average monthly maximum and minimum temperatures, and average monthly rainfall, recorded for Ravensthorpe, the nearest long-term meteorological station to the Study Area (Bureau of Meteorology 2015).

The highest average daily maximum temperature at Ravensthorpe occurs in January (29.0 °C) with the lowest average minimum temperature experienced in July and August (both 6.7 °C) (data from 1962-2014). The average annual rainfall for this station is 426.9 mm (data from 1901-2014). Average monthly rainfall peaks from late autumn to early spring (May-September), with the highest rainfall on average received in July (47.3 mm). Rainfall received at Ravensthorpe prior to survey being conducted over the winter period (May-September), which is considered to be the most relevant period in terms of promoting plant growth and flowering in the Esperance Plains region, slightly exceeded the long-term average, with 229.2 mm received compared to the average of 221.3 mm (Bureau of Meteorology 2015).

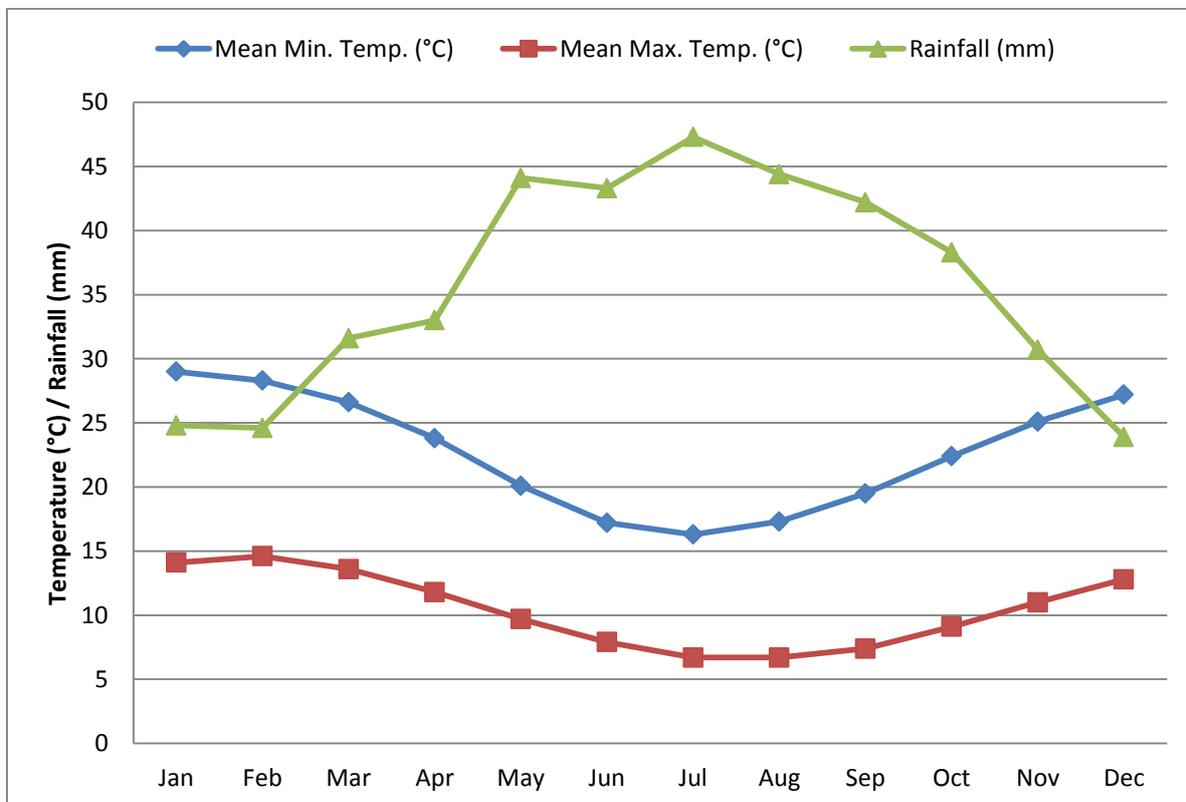


Figure 2: Mean Maximum and Minimum Temperatures (° Celsius) and Mean Rainfall (mm) for Ravensthorpe (Bureau of Meteorology 2015)

2.2 Geology, Soils and Landforms

The Esperance Plains region consists of a relatively flat and monotonous plain rising gently from near sea level at the coast to about 100 m, which is broken by quartzite ranges and granite domes. The plain is formed from Tertiary sediments from the Plantagenet Group, which are Eocene sands and siltstones (Beard 1990). There are numerous granite bosses and hills, particularly along the coast, and several significant ranges, including the quartzite Stirling Range, Barren Ranges and Russell Range, and the Ravensthorpe Range, which is a greenstone belt. Soils are chiefly sandy neutral yellow-mottled soils containing variable amounts of ironstone gravel, alternating with leached sands that sometimes contain ironstone gravel and are underlain by a clay substrate. Valleys have hard alkaline and neutral yellow-mottled soils.

The Study Area is located within and adjacent to the Ravensthorpe Range. The geology of the Ravensthorpe Range is essentially a linear outcropping of a complex of Archean metavolcanic (mafic and ultramafic) and metasedimentary bedrock, faulted and folded to produce a sharp ridge and peaks (Witt 1997, 1998, cited in Markey *et al.* 2012). These metavolcanics and metasediments are inter-bedded within the Archean granitoid gneiss of the southern Yilgarn Craton. The uplands of the ridge and peaks are covered by an undulating upland of Quaternary laterites or silcretes, produced from in situ weathering. The eroding margins of this caprock give way to colluvial slopes with some outcropping bedrock and deep valleys incised into steep slopes. Surrounding the Ravensthorpe Range are Tertiary sediments, colluvium and sand that overlie the Archean granitoid gneiss, forming extensive, low-lying plains and alluvial flats interrupted by outcrops and hills.

Blandford (2002; cited in Western Botanical 2006a) conducted a preliminary assessment of soil landscapes within the RNO tenements, and found a high degree of variability. Soils within the tenements were derived from:

- Fine angular sands derived in-situ weathering of silcretes, found on the laterite caps of hills;
- Gravely weathered laterite and ferricrete forming the caps of hills;
- Clays derived from weathering of komatiite bedrock and the closely associated cellular silcrete that form the RNO orebodies, found on the upper slopes of Bandalup Hill and parts of the Shoemaker-Levy orebody area;
- Fine silty sands derived from the weathering of magnesite and dolomite;
- Heavy red clays in valley floors;
- Duplex sandy clays over heavy clays surrounding the Bandalup Hill complex; and
- Aeolian siliceous sands, ingressing from the granitoid landscapes to the northeast.

Soil landscapes described by Blandford (2002; cited in Western Botanical 2006a) demonstrated complex stratigraphy and spatial separation based on underlying geology, landscape position and weathering processes.

2.3 Regional Vegetation

The Study Area is located in the Esperance Plains Interim Biogeographic Regionalisation for Australia (IBRA) region (Commonwealth of Australia 2012). The Esperance Plains IBRA

region is equivalent to the Eyre Botanical District as defined by Beard (1990). The vegetation of this IBRA region is characterised by a mallee-heath formation on the predominant sand plains, with the most dominant mallee species being *Eucalyptus pleurocarpa* (tallerack), and the heath understorey dominated by proteaceous and myrtaceous shrubs (Beard 1990; Comer *et al.* 2001). Herbfields and heaths occur on granite tors and quartzite ranges that rise from the plains, while Eucalypt mallee and woodlands occur in gullies and alluvial foot-slopes (Beard 1990; Comer *et al.* 2001). Thickets and scrub occur on dunes close to the coast, with thickets and heaths occurring in swampy areas. There are several large salt lakes on the plain (Beard 1990).

Within this IBRA region, the majority of the Study Area is located within the Fitzgerald IBRA subregion, with the southern end of the Study Area located within the Recherche IBRA subregion (Commonwealth of Australia 2012). Due to the very limited area of the Study Area present within the Recherche IBRA subregion, only the Fitzgerald IBRA subregion is discussed further.

The Fitzgerald IBRA region has a high diversity of vegetation types, which are often cryptic and endemically localised in nature (Comer *et al.* 2001). Eucalypt species dominate most vegetation types, with a high diversity of Eucalypt species present in many types (Comer *et al.* 2001). Broad vegetation types include the following (from Comer *et al.* 2001):

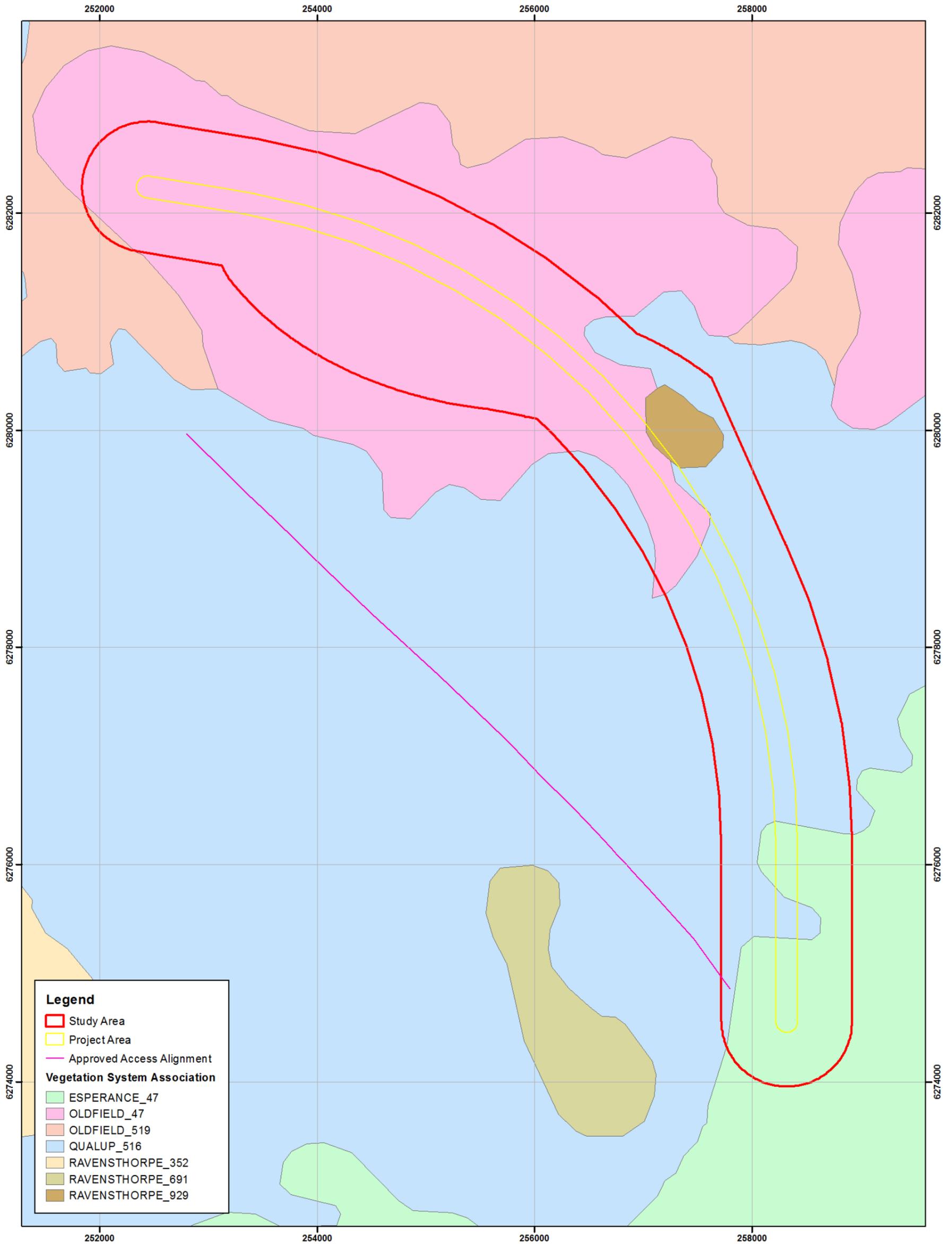
- coastal dune woodlands of *Eucalyptus utilis* and *E. cornuta*;
- coastal shrublands and heathlands dominated by *Agonis flexuosa*, *Eucalyptus angulosa* and *E. notactites*;
- mallee shrubland and heath (rich in endemics) dominated by *Eucalyptus captiosa*, *E. decipiens* subsp. *chalara* and subsp. *adesmophloia*, *E. falcata*, *E. flocktoniae*, *E. lehmannii*, *E. phaenophylla*, *E. pleurocarpa*, *E. sporadica*, *E. tetraptera*, *E. thamnoides* and *E. uncinata*;
- mallet and moort woodlands on gravel rises, clay sheets and colluvial slopes and greenstone (rich in endemics), with typical dominants including *Eucalyptus astringens* subsp. *redacta*, *E. cernua*, *E. clivicola*, *E. megacornuta*, *E. platypus* subsp. *platypus*, and *E. praetermissa*;
- Yate and York Gum (in the Pallinup system) woodlands on alluvials;
- Jarrah/Marri woodlands in the west; and
- Goldfields woodland and mallee systems mixing with south coast and wheatbelt taxa on greenstone in the east with *Eucalyptus annulata*, *E. brachycalyx*, *E. cernua*, *E. desmondensis*, *E. gardneri* subsp. *ravensthorpensis*, *E. occidentalis*, *E. oleosa* subsp. *corvina*, and *E. salmonophloia*.

Beard (1973) mapped vegetation of the Ravensthorpe area (including the Study Area) related to physiognomy, at a scale of 1:250,000 (Beard 1973). The Study Area coincides with 4 vegetation systems described by Beard (1973), being Oldfield, Qualup, Ravensthorpe and Esperance. The vegetation mapping by Beard (1973) was used by Shepherd *et al.* (2002) to describe vegetation system associations. Vegetation system associations were also described at a scale of 1:250,000. Five vegetation system associations occur in the Study Area, as summarised in Table 1 and shown on Figure 3. Table 1 also presents the current extent of each vegetation system association in relation to its pre-European extent (Government of Western Australia 2013), and the percentage of the current extent of each vegetation system association currently protected for conservation (in DPaW-managed

land). The majority of vegetation system associations present in the Study Area remain relatively well represented, with more than 60 % of the pre-European extent remaining. Only Esperance_47 has been extensively cleared, with less than 15 % of its pre-European extent remaining. However, the majority of vegetation system associations present in the Study Area are not well protected for conservation; only Qualup_516 is considered well protected, with more than 51 % of its current extent reserved. The remaining vegetation system associations have less than 15 % of their current extent reserved.

Table 1: Extent of Vegetation System Associations within the Study Area (Government of Western Australia 2013)

Vegetation System Association	Description	Current Extent (ha)	Percentage of Pre-European Extent Remaining	Percentage of Current Extent Protected for Conservation
Esperance_47	Shrublands; tallerack (<i>Eucalyptus pleurocarpa</i>) mallee-heath	61,386	14.91	11.20
Oldfield_47	Shrublands; tallerack (<i>Eucalyptus pleurocarpa</i>) mallee-heath	41,676	62.84	2.00
Oldfield_519	Shrublands; mallee scrub, <i>Eucalyptus eremophila</i>	104,829	69.81	10.41
Qualup_516	Shrublands; mallee scrub, black marlock (<i>Eucalyptus redunca</i>)	145,834	88.68	51.28
Ravensthorpe_929	Low forest; moort (<i>Eucalyptus platypus</i>)	357	100.00	0.00



Legend

- Study Area
- Project Area
- Approved Access Alignment

Vegetation System Association

- ESPERANCE_47
- OLDFIELD_47
- OLDFIELD_519
- QUALUP_516
- RAVENSTHORPE_352
- RAVENSTHORPE_691
- RAVENSTHORPE_929

 <p style="font-size: small;">This map should only be used in conjunction with WEC report FQM14-37-01</p>	 <p>Vegetation System Associations in the Study Area</p>	Author: David Coultas	Figure 3
		WEC Ref: FQM14-37-01	
Revision: A - 20 March 2015	Filename: FQM14-37-01-f03.mxd	Scale: 1:30,000 (A3) Grid: MGA Zone 51	

A search of the Commonwealth Department of the Environment (DoE) database with regard to environmental matters of national significance listed under the EPBC Act was performed for an area encompassing the Study Area, with a 50 km buffer (DoE 2015). The results of this search indicate 1 TEC listed under the EPBC Act is likely to occur within the search area, being 'Proteaceae Dominated Kwonkgan Shrublands of the Southeast Coastal Floristic Province of Western Australia'. This TEC is listed as Endangered. The results of this search are presented in Appendix A.

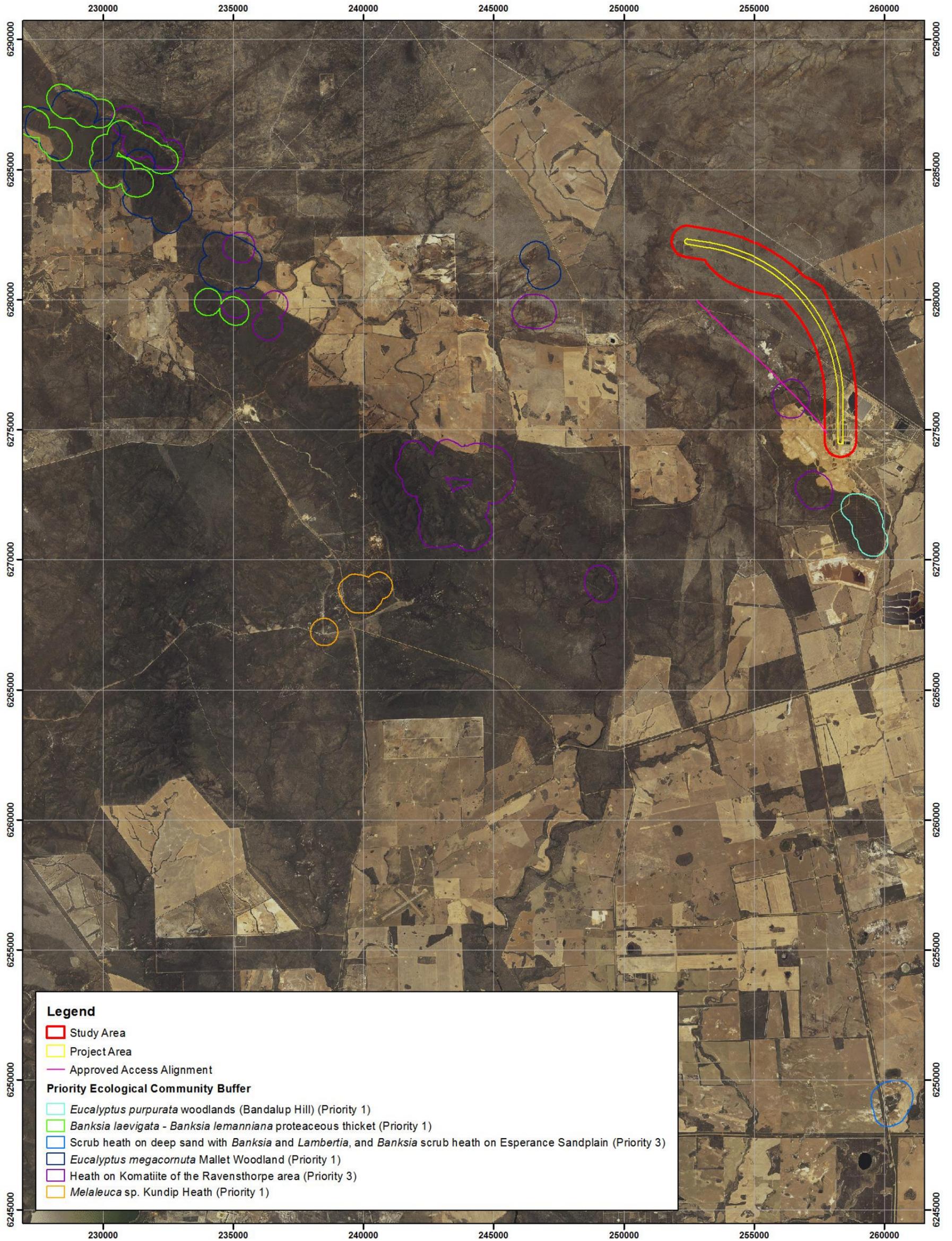
A search of DPaW's TEC and PEC database was undertaken for an area encompassing the Study Area with a buffer of 50 km, to identify the presence of any DPaW-classified TECs and/or DPaW-classified PECs that coincide with the search area (DPaW 2013a). No DPaW-classified TECs coincide with the search area, however 6 DPaW-classified PECs coincide with the search area, being:

- '*Banksia laevigata* – *Banksia lemniiana* proteaceous thicket' (Priority 1);
- '*Eucalyptus megacornuta* Mallet Woodland' (Priority 1);
- '*Eucalyptus purpurata* woodlands (Bandalup Hill)' (Priority 1);
- 'Melaleuca sp. Kundip Heath' (Priority 1);
- 'Heath on Komatiite of the Ravensthorpe area' (Priority 3); and
- 'Scrub heath on deep sand with *Banksia* and *Lambertia*, and *Banksia* scrub heath on Esperance Sandplain' (Priority 3).

No occurrences of these PECs are currently known from the Study Area, however occurrences of '*Eucalyptus purpurata* woodlands (Bandalup Hill)' (Priority 1) and 'Heath on Komatiite of the Ravensthorpe area' (Priority 3) are known from just outside the Study Area (Figure 4).

The DPaW-classified PECs '*Banksia laevigata* – *Banksia lemniiana* proteaceous thicket' (Priority 1) and 'Scrub heath on deep sand with *Banksia* and *Lambertia*, and *Banksia* scrub heath on Esperance Sandplain' (Priority 3) are considered to be a component of the EPBC-listed TEC 'Proteaceae Dominated Kwonkgan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (DPaW 2014a).

Appendix B presents definitions, categories and criteria for TECs and PECs (DPaW 2010a).



 <p>WOODMAN ENVIRONMENTAL</p> <p>This map should only be used in conjunction with WEC report FQM14-37-01</p>	 <p>N</p>	Location of Priority Ecological Communities in Relation to Study Area and Approved Access Alignment		Author: David Coultas	Figure 4
				WEC Ref: FQM14-37-01	
				Filename: FQM14-37-01-f04.mxd	
				Revision: A - 20 March 2015	
				Scale: 1:125,000 (A3) Grid: MGA Zone 51	

2.4 Regional Flora

DPaW's threatened flora databases, including the Western Australian Herbarium (WAHerb) specimen database, Threatened and Priority Flora database, and Threatened and Priority Flora List, were searched for information regarding listed significant taxa known from within or in the immediate vicinity of the Study Area (DPaW 2013b). The search was requested for the Study Area with a 50 km buffer.

A total of 104 taxa were returned from the database search. Of these, 14 taxa listed as Threatened under the WC Act were returned, the remainder (90) comprising DPaW-classified Priority flora taxa. These taxa are presented in Appendix C, and in Section 2.6.1. Of these taxa, records of *Hibbertia abyssa* (Threatened) and *Goodenia phillipsiae* (P4) occur within the Study Area (DPaW 2013b); it is worthy of note, however, that the record of *Hibbertia abyssa* (Threatened) is recorded as being on 'topsoil stockpiles within minesite' (DPaW 2013b). Appendix D presents conservation codes for Western Australia flora (DPaW 2014b).

The search of the DoE database (DoE 2015) with regard to environmental matters of national significance listed under the EPBC Act (Appendix A) returned 32 flora taxa listed as Threatened Species. These taxa are listed in Appendix A. None of the taxa are known to occur within the Study Area. It is considered that many of the taxa returned from this search are not relevant to this assessment; most are not known from within 50 km of the Study Area, with many known to be endemic to the Stirling Ranges (DPaW 2015a). Therefore, only taxa that were also returned from the search of DPaW's threatened flora databases (see above) are considered relevant to this assessment. Such taxa are noted in Section 2.6.1.

The search of the DoE database with regard to environmental matters of national significance listed under the EPBC Act identified that 5 significant invasive flora taxa, or habitat for the taxa, may occur within the Study Area and surrounds: *Asparagus asparagoides* (Bridal Creeper), *Carrichtera annua* (Ward's Weed), *Lycium ferocissimum* (African Boxthorn), *Rubus fruticosus* aggregate (Blackberry) and *Tamarix aphylla* (Athel Pine). Of these taxa, *Asparagus asparagoides*, *Carrichtera annua* and *Lycium ferocissimum* are considered relevant to this assessment, as they are known from within the vicinity of the Study Area (DPaW 2015a). *Rubus fruticosus* aggregate (Blackberry) and *Tamarix aphylla* (Athel Pine) are not known from within the vicinity of the Study Area, and are hence not considered relevant to this assessment.

Asparagus asparagoides (Bridal Creeper) is listed as a Declared Pest in Western Australia under the *Biosecurity and Agriculture Management Act 2007* (BAM Act) (Department of Agriculture and Food 2015), and is a Weed of National Significance (WoNS) (Australian Weeds Committee 2015). *Lycium ferocissimum* is not listed as a Declared Pest in Western Australia (Department of Agriculture and Food 2015), but is a listed WoNS (Australian Weeds Committee 2015). *Carrichtera annua* is not a Declared Pest in Western Australia or a listed WoNS, but is considered by the States and Territories to pose a particularly significant threat to biodiversity (DoE 2015).

A search of the WAHerb specimen database for records of introduced taxa within the Study Area and surrounds was performed using the online tool NatureMap (DPaW 2015a). A total

of 27 introduced taxa were returned. These taxa are presented in Section 2.6.2. Of these taxa, *Asparagus asparagoides* (Bridal Creeper) is a Declared Pest in Western Australia under the BAM Act and a listed WoNS, while *Gomphocarpus fruticosus* (Narrowleaf Cottonbush) and *Moraea miniata* (Two-leaf Cape Tulip) are both Declared Pests under the BAM Act. *Erharta calycina* is also considered to be a serious weed (Hussey *et al.* 2007).

2.5 Local Flora and Vegetation Surveys

A number of flora and vegetation surveys have been conducted in the vicinity of the Study Area for the RNO. Several recent surveys and reports were the subject of an earlier review by Woodman Environmental (2014). The studies reviewed were:

- Flora and Vegetation Survey for Ravensthorpe Nickel Project – September-October 2000 (Landcare Services Pty Ltd 2000);
- Flora and Vegetation Surveys – October-November 2001 – Ravensthorpe Region (Landcare Services Pty Ltd 2001);
- Habitats, Vegetation and Flora of the Ravensthorpe Nickel Operation Tenements (Western Botanical 2005);
- Baseline Vegetation Assessments – 2001-2006 (Western Botanical 2006a);
- A Review of the Flora, Vegetation and Habitats of the Halleys Orebody and Associated Areas for the Halleys Notice of Intent (Western Botanical 2006b);
- Baseline Vegetation Assessments, Shoemaker-Levy 2008 (Western Botanical 2010);
- Halleys Orebody Declared Rare and Priority Flora Targeted Survey (Western Botanical 2011); and
- Targeted Rare and Priority Flora Survey: Hale-Bopp Waste Dump Area Vegetation Remnants (McQuoid 2013).
- Western Botanical significant flora data – supplied by FQM

These surveys indicate that at least 833 vascular flora taxa occur in the RNO area, with a total of 20 significant flora taxa have been recorded in the RNO area by the aforementioned surveys. These taxa are outlined in Section 2.6.1. Of these taxa, records of *Goodenia phillipsiae* (P4) and *Grevillea fastigiata* (P4) are known to occur in the Study Area. Six introduced flora have been recorded; these are outlined in Section 2.6.2. Of the introduced flora recorded, *Carthamus lanatus* is a Declared Pest in Western Australia under the BAM Act, while *Eragrostis curvula* is recognised as being a serious weed of disturbed ground capable of invading adjacent bushland (Hussey *et al.* 2007).

The most recent description and mapping of vegetation in the RNO area was undertaken by Western Botanical (2005), which covers part of the Study Area, and the entire approved access alignment. A further small area of vegetation, located near Bandalup Hill outside the Study Area, was described and mapped by McQuoid (2013).

A total of 17 habitat areas were defined by Western Botanical (2005) in the RNO area, differentiated on surface soils, underlying soils and parent rock, dominant vegetation structure and floristic composition. These were:

- Laterite Mallee Shrubland (LMS)
- Lateritic Saprolite Breakaway (LSBr)
- Mallee Heath on Komatiite (MHK)

- Rocky Calcareous Loam Woodland (RCLW)
- Sandy Silcrete Thicket (SST)
- Magnesite Mallee Shrubland (MMS)
- Magnesite Mallet Woodland (with *Eucalyptus purpurata*) (WMp)
- Heath on Granite (HG)
- Heath on Silcrete (HS)
- Heath on Komatiite (HK)
- Mallee Heath on Duplex Clayey Sand (MHD)
- Mallet Woodlands on Red Clay (WC)
- Drainage Line Woodland (DrW)
- Sand Sheet over Laterite Mallee Shrubland (SLMS)
- Sand Sheet Mallee Shrubland in Depressions (SSMS)
- Sand Sheet Mallee Shrubland over Paleosol Clay (SCMS)
- Sand Sheet Heath in Depressions (SSH)

Western Botanical (2006a) discussed the conservation significance of habitat areas in the RNO area, and reported that 3 of the habitat areas, namely Magnesite Mallet Woodland (with *Eucalyptus purpurata*) (WMp), Heath on Komatiite (HK) and Sandy Silcrete Thicket (SST) were regionally significant. Of these, Heath on Komatiite (HK) and Woodlands on Magnesite with *Eucalyptus purpurata* (WMp) habitat areas mapped by Western Botanical (2005) are now classified as PECs by DPaW (see Section 2.3). The Sandy Silcrete Thicket (SST) habitat area was assessed against the criteria for a DPaW-classified TEC or PEC (Kern 2010), and it was determined that it did not meet the criteria for either a TEC or PEC. This habitat area is therefore not considered to be of significance.

McQuoid (2013) defined and mapped 2 vegetation communities as part of a survey of the Hale-Bopp Waste Dump Area Vegetation Remnants, being:

- Mallee Shrubland over Heath; and
- Mallee Shrubland over Proteaceous Shrubland and Heath.

McQuoid (2013) determined that part of the Mallee over Proteaceous Shrubland and Heath vegetation community represents the DPaW-classified Priority 3 PEC 'Dense, obligate seeding Proteaceae dominated shrublands and kwongan of the Esperance Sandplain', which is now known as 'Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (DPaW 2014a). This PEC corresponds to the EPBC-listed TEC 'Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia', which is listed as Endangered (DoE 2015).

Two recent flora and vegetation surveys have been conducted over the Ravensthorpe Range, being Craig *et al.* (2008) and Markey *et al.* (2012); the most relevant is considered to be Markey *et al.* (2012). This survey obtained floristic data from 266 permanent plots, measuring 10 m by 10 m for understorey taxa and 20 m by 20 m for upper storey taxa, established across the Ravensthorpe Range. No quadrats were established in the Study Area. A total of 697 vascular taxa were recorded. Of these, 57 significant flora taxa were recorded. These taxa are outlined in Section 2.6.1. Six introduced flora taxa were recorded; these taxa are outlined in Section 2.6.2. Of these, *Asparagus asparagoides* (Bridal Creeper) is a Declared Pest in Western Australia under the BAM Act and a listed WoNS.

Markey *et al.* (2012) described 21 vegetation communities across the Ravensthorpe Range, from 3 broad groups. No comment was made on the significance of these vegetation communities.

An assessment of the taxonomic and conservation status of *Lepidosperma* taxa from the Ravensthorpe Range area has previously been undertaken (Barrett *et al.* 2009). *Lepidosperma* has been under revision for some time, however there are many putative new taxa that require taxonomic resolution, and therefore identification of collections is difficult. This assessment identified 42 putative taxa in the Ravensthorpe Range area, however many taxa are not yet formally listed on the census of vascular plant taxa in Western Australia (DPaW 2015b), as they require further study. Thirteen taxa are now considered to be of significance; 8 of these are DPaW-classified Priority flora taxa, with the remainder having no formal ranking, as they are not formally listed on the census of vascular plant taxa in Western Australia. These taxa were:

- *Lepidosperma* sp. Archer Drive (S. Kern & R. Jasper LCH 18300) (P1);
- *Lepidosperma* sp. Elverdton (R. Jasper *et al.* LCH 16844) (P1);
- *Lepidosperma* sp. Maydon (S. Kern, R. Jasper, H. Hughes LCH 17844) (P1)
- *Lepidosperma* sp. Mt Chester (S. Kern *et al.* LCH 16596) (P1)
- *Lepidosperma* sp. Mt Short (S. Kern *et al.* LCH 17510) (P1)
- *Lepidosperma* sp. Steere River (S. Kern, R. Jasper, H. Hughes LCH 17764) (P1)
- *Lepidosperma* sp. Hopetoun Road (S. Kern *et al.* LCH 16552) (P3)
- *Lepidosperma* sp. Shoemaker Levy (L. Ang & O. Davies 10815) (P3)
- *Lepidosperma* sp. 'Fitzgerald River (A.S. George 9935)'
- *Lepidosperma* sp. 'Floater Road (R.L. Barrett RLB 2765)'
- *Lepidosperma* sp. 'Pallerup Rocks (R.L. Barrett RLB 3449)'
- *Lepidosperma* sp. 'Ravensthorpe Range (R.L. Barrett RLB 2766)'
- *Lepidosperma* sp. 'Tamarine Road (S.Kern *et al.* LCH 16711)'

2.6 Summary of Significant Flora, Introduced Flora and Significant Vegetation

2.6.1 Significant Flora

A list of significant flora taxa that are known from within or in the vicinity of the Study Area is presented in Table 2, along with their conservation status (DPaW 2014b). This list has been compiled from the results of searches of DPaW's databases, and from local flora surveys undertaken in the vicinity of the Study Area.

A total of 120 significant taxa are known from within or in the vicinity of the Study Area, including listed Threatened Flora, DPaW-classified Priority Flora taxa and potentially undescribed taxa.

Table 2: Significant Flora Taxa Known from within or in the Vicinity of the Study Area

Taxon	Status	Source*			
		DPaW	RNO Surveys	Markey <i>et al.</i>	Barrett <i>et al.</i>
<i>Acacia rhamphophylla</i>	Threatened	x			
<i>Acrotriche orbicularis</i>	Threatened	x		x	
<i>Anigozanthos bicolor</i> subsp. <i>minor</i>	Threatened	x			
<i>Beyeria cockertonii</i>	Threatened	x	x	x	
<i>Conostylis lepidospermoides</i>	Threatened	x			
<i>Daviesia megacalyx</i>	Threatened	x		x	
<i>Eremophila denticulata</i> subsp. <i>denticulata</i>	Threatened	x			
<i>Eucalyptus purpurata</i>	Threatened	x	x	x	
<i>Hibbertia abyssa</i>	Threatened	x	x	x	
<i>Kunzea acicularis</i>	Threatened	x			
<i>Kunzea similis</i> subsp. <i>mediterranea</i>	Threatened	x	x	x	
<i>Marianthus aquilonaris</i>	Threatened	x			
<i>Rhizanthella gardneri</i>	Threatened	x			
<i>Thelymitra psammophila</i>	Threatened	x			
<i>Acacia</i> sp. Ravensthorpe Range (B.R. Maslin 5463)	P1	x		x	
<i>Austrostipa</i> sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	P1	x		x	
<i>Austrostipa</i> sp. Ravensthorpe Range (A. Markey & J. Allen 6261)	P1	x		x	
<i>Brachyloma nguba</i>	P1	x			
<i>Caladenia longijimbriata</i>	P1	x			
<i>Calothamnus roseus</i>	P1	x		x	
<i>Chorizema circinale</i>	P1	x			
<i>Cryptandra exserta</i>	P1	x			
<i>Drosera grieviei</i>	P1			x	
<i>Eucalyptus dielsii</i> x <i>platypus</i>	P1	x			
<i>Grevillea sulcata</i>	P1	x		x	
<i>Guichenotia anota</i>	P1	x		x	
<i>Guichenotia apetala</i>	P1	x		x	
<i>Gyrostemon</i> sp. Ravensthorpe (G. Cockerton & N. Eveleigh 9467)	P1	x	x		
<i>Hibbertia atrichosepala</i>	P1	x		x	
<i>Lasioptalum</i> sp. Desmond (N. McQuoid 653)	P1	x			
<i>Lepidosperma</i> sp. Archer Drive (S. Kern & R. Jasper LCH 18300)	P1			x	x
<i>Lepidosperma</i> sp. Elverdton (R. Jasper et al. LCH 16844)	P1			x	x
<i>Lepidosperma</i> sp. Maydon (S. Kern, R. Jasper, H. Hughes LCH 17844)	P1			x	x
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596)	P1			x	x
<i>Lepidosperma</i> sp. Mt Short (S. Kern et al. LCH 17510)	P1			x	x
<i>Lepidosperma</i> sp. Steere River (S. Kern, R. Jasper, H. Hughes LCH 17764)	P1			x	x
<i>Melaleuca similis</i>	P1	x			
<i>Melaleuca sophisma</i>	P1	x			

Taxon	Status	Source*			
		DPaW	RNO Surveys	Markey <i>et al.</i>	Barrett <i>et al.</i>
<i>Microcybe pauciflora</i> subsp. <i>grandis</i>	P1	x		x	
<i>Pultenaea wudjariensis</i>	P1	x	x	x	
<i>Synaphea</i> sp. flat canaliculata (M. Bennett 794)	P1	x			
<i>Tetralochea applanata</i>	P1	x		x	
<i>Cassinia arcuata</i>	P2	x		x	
<i>Dampiera orchardii</i>	P2	x			
<i>Daviesia newbeyi</i>	P2	x			
<i>Daviesia pauciflora</i>	P2	x			
<i>Eucalyptus sinuosa</i>	P2	x			
<i>Levenhookia pulcherrima</i>	P2	x			
<i>Opercularia hirsuta</i>	P2	x			
<i>Thomasia</i> sp. Hopetoun (K.R. Newbey 4896)	P2	x			
<i>Thysanotus brachiatus</i>	P2	x			
<i>Acacia bifaria</i>	P3	x		x	
<i>Acacia errabunda</i>	P3	x			
<i>Acacia improcera</i>	P3	x			
<i>Acacia newbeyi</i>	P3	x			
<i>Astartea reticulata</i> [#]	P3	x	x		
<i>Astroloma</i> sp. Dumbleyung (A.J.G. Wilson 146)	P3	x			
<i>Banksia corvijuga</i>	P3	x		x	
<i>Banksia lullfitzii</i>	P3	x			
<i>Banksia megalotia</i>	P3	x			
<i>Banksia rufa</i> subsp. <i>chelomacarpa</i>	P3	x			
<i>Banksia rufa</i> subsp. <i>flavescens</i>	P3	x			
<i>Beyeria sulcata</i> var. <i>truncata</i>	P3	x			
<i>Cryptandra polyclada</i> subsp. <i>polyclada</i>	P3	x			
<i>Dampiera sericantha</i>	P3	x			
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277)	P3	x			
<i>Eremophila compressa</i>	P3	x			
<i>Eucalyptus quaerenda</i>	P3	x			
<i>Grevillea fulgens</i>	P3	x		x	
<i>Grevillea punctata</i>	P3	x	x	x	
<i>Hakea brachyptera</i>	P3	x			
<i>Lechenaultia acutiloba</i>	P3	x			
<i>Lepidosperma</i> sp. Hopetoun Road (S. Kern <i>et al.</i> LCH 16552)	P3			x	x
<i>Lepidosperma</i> sp. Shoemaker Levy (L. Ang & O. Davies 10815)	P3			x	x
<i>Melaleuca coccinea</i>	P3	x			
<i>Melaleuca sculponeata</i>	P3	x			
<i>Micromyrtus navicularis</i>	P3	x		x	
<i>Persoonia brevirhachis</i>	P3	x			
<i>Pultenaea calycina</i> subsp. <i>calycina</i>	P3	x			
<i>Pultenaea craigiana</i>	P3	x		x	
<i>Pultenaea indira</i> subsp. <i>monstrosita</i>	P3	x		x	
<i>Pultenaea vestita</i>	P3	x	x		
<i>Sphaerolobium validum</i>	P3	x			

Taxon	Status	Source*			
		DPaW	RNO Surveys	Markey <i>et al.</i>	Barrett <i>et al.</i>
<i>Spyridium mucronatum</i> subsp. <i>recurvum</i>	P3	x			
<i>Stylidium pulviniforme</i>	P3	x			
<i>Synaphea drummondii</i>	P3			x	
<i>Synaphea platyphylla</i>	P3	x	x		
<i>Acacia argutifolia</i>	P4	x			
<i>Acacia dictyoneura</i>	P4	x			
<i>Acacia grisea</i>	P4	x		x	
<i>Allocasuarina hystricosa</i>	P4	x	x	x	
<i>Banksia foliosissima</i>	P4	x		x	
<i>Banksia laevigata</i> subsp. <i>laevigata</i>	P4	x		x	
<i>Beyeria villosa</i>	P4	x	x	x	
<i>Chorizema ulotropis</i>	P4	x		x	
<i>Dampiera deltoidea</i>	P4	x	x	x	
<i>Eremophila serpens</i>	P4	x			
<i>Eucalyptus desmondensis</i>	P4	x		x	
<i>Eucalyptus stoatei</i>	P4	x	x	x	
<i>Eucalyptus x bennettiae</i>	P4	x		x	
<i>Goodenia phillipsiae</i>	P4	x	x	x	
<i>Goodenia stenophylla</i>	P4	x		x	
<i>Grevillea fastigiata</i>	P4	x	x	x	
<i>Grevillea prostrata</i>	P4	x			
<i>Gyrostemon ditrigynus</i>	P4	x			
<i>Lepidium pseudotasmanicum</i>	P4	x			
<i>Marianthus mollis</i>	P4	x		x	
<i>Melaleuca penicula</i>	P4	x	x	x	
<i>Pimelea physodes</i>	P4			x	
<i>Pterostylis</i> sp. Ongerup (K.R. Newbey 4874)	P4	x		x	
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	x	x	x	
<i>Rinzia affinis</i>	P4	x			
<i>Stachystemon vinosus</i>	P4	x	x	x	
<i>Thysanotus parviflorus</i>	P4	x	x	x	
<i>Verticordia integra</i>	P4	x			
<i>Lepidosperma</i> sp. "Fitzgerald River (A.S. George 9935)"	Potentially undescribed			x	x
<i>Lepidosperma</i> sp. "Floater Road (R.L. Barrett RLB 2765)"	Potentially undescribed				x
<i>Lepidosperma</i> sp. "Pallerup Rocks (R.L. Barrett RLB 3449)"	Potentially undescribed				x
<i>Lepidosperma</i> sp. "Ravensthorpe Range (R.L. Barrett RLB 2766)"	Potentially undescribed			x	x
<i>Lepidosperma</i> sp. "Tamarine Road (S.Kern et al. LCH 16711)"	Potentially undescribed				x

* Sources of records are:

- DPaW - WAHerb specimen database, Threatened and Priority Flora Database and Threatened and Priority Flora List
- RNO Surveys – surveys as listed in Section 2.5 conducted in the RNO area
- Markey *et al.* – Floristic Communities of the Ravensthorpe Range (Markey *et al.* 2012)
- Barrett *et al.* - Preliminary assessment of taxonomic and conservation status of *Lepidosperma* species (Cyperaceae) from the greater Ravensthorpe Range (Barrett *et al.* 2012).

#Recorded as *Astartea ?reticulata* by RNO Surveys

2.6.2 Introduced Flora

A list of introduced flora taxa known from within or in the vicinity of the Study Area, or may have/is likely to have habitat within the vicinity of the Study Area is presented in Table 3. This has been compiled from WAHerb specimen data, from the search of the DoE database, and from local flora surveys (see Sections 2.4 and 2.5). A total of 38 introduced taxa are known to occur within or in the vicinity of the Study Area.

Table 3: Introduced Flora Taxa Known from within or in the Vicinity of the Study Area

Taxon	Common Name	DPaW	DoE^	RNO Surveys	Markey <i>et al.</i>	Comments
<i>Aira caryophylllea</i>	Silvery Hairgrass	x				-
<i>Asparagus asparagoides</i>	Bridal Creeper	x	x		x	Declared Pest; WoNS
<i>Asphodelus fistulosus</i>	Onion Weed				x	
<i>Avena fatua</i>	Wild Oat				x	
<i>Briza minor</i>	Shivery Grass	x				
<i>Carduus tenuiflorus</i>	Sheep Thistle			x		
<i>Carrichtera annua</i>	Ward's Weed		x			Serious weed
<i>Carthamus lanatus</i>	Saffron Thistle			x		Declared Pest
<i>Centaurea melitensis</i>	Maltese Cockspur	x				
<i>Cerastium glomeratum</i>	Mouse Ear Chickweed	x				
<i>Cotula coronopifolia</i>	Waterbuttons	x				
<i>Cotyledon orbiculata</i>	Pig's Ear	x				
<i>Crassula natans var. minus</i>	Floating Stonecrop	x				
<i>Cyperus tenellus</i>	Tiny Flatsedge	x				
<i>Disa bracteata</i>	South African Orchid	x				
<i>Ehrharta calycina</i>	Perennial Veldt Grass	x				Serious weed
<i>Ehrharta longiflora</i>	Annual Veldt Grass	x				
<i>Eragrostis curvula</i>	African Lovegrass			x		Serious weed
<i>Gomphocarpus fruticosus</i>	Narrowleaf Cottonbush	x				
<i>Hordeum marinum</i>	Sea Barley	x				
<i>Hypochaeris glabra</i> [#]	Smooth Catsear	x		x		
<i>Juncus bufonius</i>	Toad Rush	x				
<i>Lepidium africanum</i>	Rubble Peppergrass				x	
<i>Lolium perenne</i>	Perennial Ryegrass				x	
<i>Lycium ferocissimum</i>	African Boxthorn		x			WoNS
<i>Lysimachia arvensis</i>	Pimpernel			x		

Taxon	Common Name	DPaW	DoE [^]	RNO Surveys	Markey <i>et al.</i>	Comments
<i>Mesembryanthemum nodiflorum</i>	Slender Iceplant	x				
<i>Monopsis debilis</i>	Pansy Lobelia	x				
<i>Moraea miniata</i>	Two-leaf Cape Tulip	x				Declared Pest
<i>Parapholis incurva</i>	Coast Barbgrass	x				
<i>Rapistrum rugosum</i>	Turnip Weed	x				
<i>Senecio angulatus</i>	Creeping Groundsel	x				
<i>Silene gallica var. gallica</i>	French Catchfly	x				
<i>Solanum nigrum</i>	Black Berry Nightshade			x		
<i>Sonchus oleraceus</i>	Common Sowthistle	x			x	
<i>Trifolium subterraneum</i>	Subterranean Clover	x				
<i>Ursinia anthemoides subsp. anthemoides</i>	Ursinia	x				
<i>Vellereophyton dealbatum</i>	White Cudweed	x				

* Sources of records are:

- DPaW - WAHerb specimen database, other DPaW databases (DPaW 2015a)
- DoE – search of the DoE database with regard to environmental matters of national significance listed under the EPBC Act (DoE 2015)
- RNO Surveys – surveys as listed in Section 2.5 conducted in the RNO area
- Markey *et al.* – Floristic Communities of the Ravensthorpe Range (Markey *et al.* 2012)

Recorded as *Hypochaeris* sp. by RNO Surveys

[^] DoE (2015) lists if species, or species habitat, is known to, likely or may occur within the search area.

3. METHODS

3.1 Personnel and Licensing

Table 4 lists the personnel involved in both fieldwork and plant identifications for the survey of the Study Area. The field team leader has had 10 years previous field experience in similar areas to the Study Area, with personnel involved in plant identifications having several years of taxonomic experience with the flora of the south-west botanical province. All plant material was collected under the scientific licences pursuant to the WC Act Section 23C and Section 23F as listed in Table 4.

Table 4: Personnel and Licensing Information

Personnel	Role	Qualifications	Flora Collecting Permit (WC Act (WA))
David Coultas	Project manager; Fieldwork (team leader); Plant identifications; Reporting	BSc (Environmental Biology) (Hons)	SL010958 (Section 23C) 106-1314 (Section 23F)
Samuel Coultas	Fieldwork	BSc (Environmental Biology)	SL010963 (Section 23C) 111-1314 (Section 23F)
Alison Saligari	Fieldwork; Plant identifications	BSc (Environmental Biology) (Hons)	SL010959 (Section 23C) 107-1314 (Section 23F)
Megan Stone	Fieldwork	BSc (Conservation and Wildlife Biology) (Hons)	SL011018 (Section 23C)

3.2 Aerial Photography Interpretation

Initial interpretation of ortho-rectified aerial photography at a scale of 1:10,000 was conducted to determine preliminary vegetation patterns present within the Study Area, with quadrats allocated based on these patterns. A minimum of 3 quadrats were allocated to each discernible vegetation pattern where possible; such replication is required for meaningful results to be produced following classification analysis of quadrat data, and to provide local context for VT distribution.

3.3 Field Survey Methods

3.3.1 Study Area

The field survey was conducted over 2 visits in Spring, from the 18th – 26th September 2014, and from the 6th – 13th October 2014. It is considered that these visits were conducted in the most appropriate time to survey in the Esperance Plains Bioregion, as the majority of taxa in this region flower in Spring.

Access to the Study Area and the approved access alignment was achieved on foot and by vehicle using existing tracks. However, large parts of the Study Area were not accessible by vehicle, necessitating access by foot only.

A total of 63 permanently marked flora survey quadrats were established during survey in 2014. Quadrats were marked with a single fence dropper at the recorded GPS coordinate for the quadrat, and labelled with a punched metal tag. All quadrats covered an area of 100 m² for understorey sampling, with all quadrats measuring 10 m x 10 m. Each quadrat was extended to an area of 400 m² to sample canopy taxa; quadrats generally measured 20 m x 20 m, however in narrow vegetation patterns such as those associated with drainage lines, quadrats measured 40 m x 10 m. This quadrat size and structure corresponds to that used during the DPaW (as the Department of Environment and Conservation) Ravensthorpe Range floristic survey (Markey *et al.* 2012). At least 3 quadrats were surveyed within each vegetation pattern initially identified from aerial photography interpretation. The quadrats were orientated north-south/east-west where possible, with the bearings of each side recorded for any quadrats that could not be established in this fashion.

All vascular flora taxa that were visually identifiable within each quadrat were recorded. At least 1 reference specimen of most taxa (excluding common, distinctive taxa) encountered was collected for verification and identification purposes (see Section 3.4).

The following information was recorded at each quadrat:

- Personnel;
- Unique quadrat number;
- Date of survey;
- GPS coordinates (GDA94);
- Site photograph;
- Topography (including landform type and aspect);
- Soil colour and type (including the presence of any rock outcropping and surface stones);
- Vegetation condition (Keighery (1994), displayed in Appendix E);
- Approximate time since fire;
- Presence of disturbance (if any);
- Percentage foliage cover (for each taxon); and
- Height (m) (for each taxon, excluding climbers/aerial shrubs).

A single detailed recording site was also established, within an area that was not suitable for a quadrat because the vegetation was partially degraded and very narrow. The detailed recording site was sampled from a central point to a radius of 10 m. All data recorded for quadrats was also recorded for the detailed recording site, however only dominant and common taxa were recorded. The detailed recording site was not permanently marked.

Locations of quadrats and detailed recording sites are presented on Figure 5.

Additional flora taxa were also recorded opportunistically in the Study Area via a search around the general vicinity of each quadrat or detailed recording site, and during traverses on foot between quadrats or detailed recording sites.

Mapping notes of vegetation pattern boundaries and distribution were also taken while traversing the Study Area on foot and by vehicle. This was to aid in mapping polygons of vegetation patterns that were not allocated quadrats. Not all vegetation pattern polygons received quadrats or detailed recording sites because of time constraints, however many

polygons could be confidently allocated to a final VT using a combination of mapping notes and aerial photograph interpretation.

Specific, targeted searching for significant flora taxa in the Study Area and Project Area was undertaken as part of this survey for such taxa that could be positively identified in the field. Within the Project Area, transects at 20 m intervals were traversed through all appropriate habitat for particular significant flora taxa. GPS coordinates (using hand held Garmin GPS units) were recorded for each individual or clump of individuals, with abundance recorded for the latter. Outside the Project Area within the Study Area, wandering transects were employed through appropriate habitat for significant flora taxa, with any locations recorded as for the Project Area.

Any locations of introduced flora taxa identified in the Study Area while traversing to and between quadrats, and while conducting searching for significant flora taxa, were treated using the same methods as used for locations of significant flora taxa.

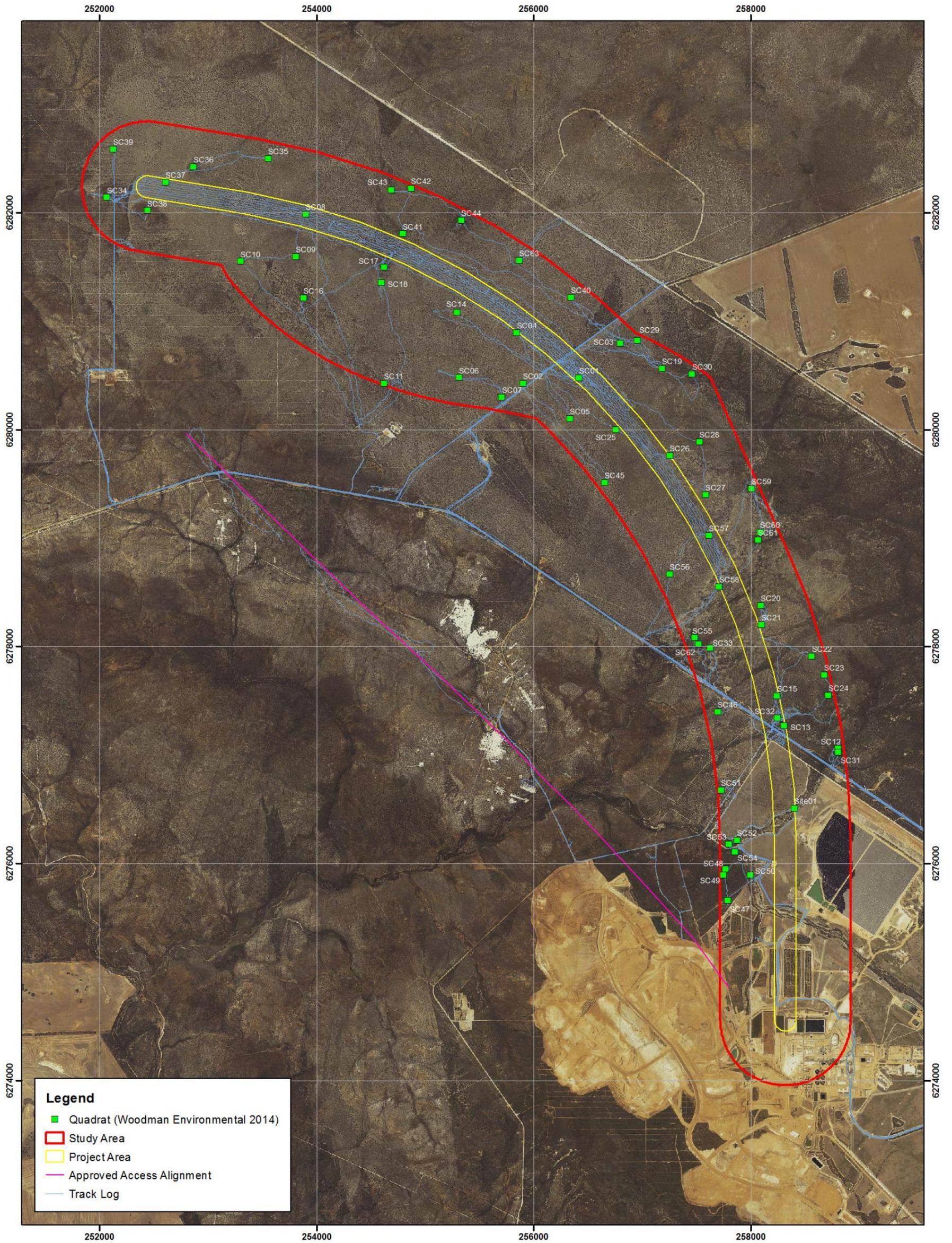
All traverses in the Study Area and Project Area are presented as track logs on Figure 5.

3.3.2 Approved Access Alignment

Survey along the approved access alignment was conducted on foot and by vehicle (where possible) by way of a linear transect, approximately from end to end, with a second transect walked where required to return to the vehicle. These transects broadly followed the approved access alignment, extending approximately 50 m either side of the approved access alignment depending on features encountered. Vegetation mapping over the approved access alignment has previously been undertaken (Western Botanical 2005). However, this vegetation mapping was undertaken using different methods to those employed in the Study Area, and therefore is not directly comparable to VTs described in the Study Area. To allow comparison of the vegetation of the approved access alignment to vegetation of the Study Area, the vegetation along the approved access alignment was inspected, with brief notes recorded on dominant taxa, structural composition and soils. Preliminary 'plant communities' were described – these are designated as such to differentiate them from VTs, which are described following classification analysis. Notes were then taken on the potential relationships between such plant communities and VTs in the Study Area.

Searching for significant flora and introduced flora taxa was conducted while traversing the transects along the approved access alignment. Any existing locations of significant flora taxa in the vicinity of the approved access alignment were inspected, to confirm presence and abundance. GPS coordinates and abundance at any new locations of significant flora and introduced flora taxa discovered were recorded as per in the Study Area.

All traverses in the approved access alignment are presented as track logs on Figure 5.



 <p>WOODMAN ENVIRONMENTAL</p> <p><small>This map should only be used in conjunction with WEC report FQM14-37-01</small></p>		Study Area Quadrats, Detailed Recording Sites and Track Logs and Approved Access Alignment Track Logs		Author: David Coultas	Figure 5
		Revision: A - 20 March 2015		WEC Ref: FQM14-37-01 Filename: FQM14-37-01-f05.mxd	
		Scale: 1:30,000 (A3) Grid: MGA Zone 51			

3.4 Plant Collection and Identification

Specimens of unknown taxa were collected and pressed for later identification at the WAHerb. Identifications were undertaken by experienced botanists David Coultas and Alison Saligari. External experts of particular families or genera were consulted for any specimens considered to be difficult to identify or of taxonomic interest, including Dr Russell Barrett for identification of specimens from the family Cyperaceae, particularly *Lepidosperma*.

Taxon nomenclature generally follows *Florabase* (DPaW 2015b) with all names checked against the current DPaW Max database to ensure their validity. However, in cases where names of plant taxa have been published recently in scientific literature but have not been adopted on *Florabase* (DPaW 2015b), nomenclature in the published literature is followed. The conservation status of each taxon was checked against *Florabase*, which provides the most up-to-date information regarding the conservation status of flora taxa in Western Australia.

Specimens of interest, including significant flora taxa, range extensions of taxa and potential new taxa, will be sent to the WAHerb for consideration for vouchering as soon as practicable. However as this process is via donation, the WAHerb may not voucher all such specimens, in accordance with its own requirements. The specimen vouchering will be supported by completed Threatened and Priority Flora Report Forms (TPRFs) submitted to DPaW (Species and Communities Branch) in the case of listed significant flora (e.g. Threatened and Priority flora taxa).

All other specimens are kept in-house for reference for a period of 1 year after finalisation of project.

3.5 Classification Analysis

Classification analysis of quadrat data from the Study Area was conducted using 62 quadrats established in the Study Area during this survey, using 450 vascular taxa. One quadrat (SC-52) was omitted from the analysis; this quadrat was established in a degraded creekline and had a high number of introduced taxa, and was therefore not considered suitable for analysis. Taxa belonging to several categories were removed prior to analysis, as listed below:

- Introduced taxa – introduced taxa were removed as their distributions are generally defined by the presence of disturbance (e.g. clearing, animal movement) rather than particular habitat types.
- Known hybrids – hybrids were removed as they are generally present as isolated individuals and at scattered locations only, and as they are generally of unknown or presumed origin.
- Taxa where identification was unclear – such taxa were removed from the analysis where identification was unclear due to poor available material in the field.
- Taxa that could not be consistently identified due to lack of flowering material – 1 taxon, *Haemodorum discolor*, was positively identified from a flowering specimen

collected at 1 quadrat. This taxon was suspected to occur at a number of other quadrats, however identification could not be confirmed because of the absence of flowering material. It was therefore removed from the analysis.

Some taxa and infra-taxa were also amalgamated where taxonomy was unclear or could not be determined in all cases, such as taxa in the *Schoenus subclaxus* complex.

All taxa removed and amalgamated from the classification analysis (excluding introduced taxa and known hybrids) are presented in Appendix F.

Initially, an OptimClass analysis was undertaken to determine the most suitable approach to classification based on the available data. OptimClass (Tichý *et al.* 2010) evaluates the quality of a set of different partitions of the same dataset, based on the number of taxa that are faithful to clusters of that partition. Faithful taxa are identified using the Fisher's exact test for the right-tailed hypothesis, which is a suitable measure of statistical fidelity of taxa to clusters of quadrats (Sokal & Rohlf 1995; Chytrý *et al.* 2002).

For the OptimClass analysis a selection of the most widely-used techniques in community ecology were tested, including Unweighted Pair-Group Method using Arithmetic Averages (UPGMA), Beta Flexible Clustering and Ward's Method in combination with a Bray-Curtis Index, Similarity Ratio, Chord Distance and none or logarithmic and/or power transformations of species percentage foliage cover. The full list of combinations tested is shown in Appendix G. The cluster analyses used to calculate OptimClass values were performed using the software packages JUICE 7.0.123 (Tichý 2002) and PC-ORD 5.32 (McCune & Mefford 2006).

The OptimClass analysis influenced the selection of a classification analysis using a 1-layer data matrix (presence/absence data only) with no transformation, with Beta Flexible Clustering ($\beta = 0.25$) as the clustering tool, and Bray-Curtis as the similarity ratio. A similar classification method was used by Markey *et al.* (2012) for their survey of the Ravensthorpe Range.

Classification analysis was conducted using the PATN (V3.1.2) package (Belbin & Collins 2009), with the results of the classification produced as a dendrogram. A taxon and quadrat matrix was produced, with the matrix sorted into taxon groups generated from the classification. Indicator taxon analysis (INDVAL) was conducted using PC-Ord (McCune & Mefford 2011) using the method of Dufrene & Legendre (1997). The INDVAL measures were used to determine the indicator taxa for each VT and a Monte Carlo permutation test was used to test for the significance of the indicator taxa.

A second classification analysis was conducted using 62 quadrats from the Study Area, together with quadrats from the Ravensthorpe Range used by Markey *et al.* (2012) in their classification analysis. This analysis was conducted to determine the relationships between quadrats established in the Study Area and quadrats established across the Ravensthorpe Range. If a quadrat or quadrats from the Study Area were found to reside with quadrats from the Ravensthorpe Range in clusters determined to be plausible with respect to species groups, it could be reasonably inferred that the Study Area VT that such quadrat/s was classified in by the first classification outlined above has a wider distribution across the

Ravensthorpe Range. This is important when considering the regional significance of VTs described in the Study Area.

This classification analysis included all 266 quadrats established for the Ravensthorpe Range study (Markey *et al.* 2012). The classification analysis conducted by Markey *et al.* (2012) omitted 1 quadrat, however this quadrat was considered desirable to be included as it appeared to be similar to several quadrats in the Study Area. The classification parameters were as for the classification of Study Area-only quadrats outlined above. Taxon removals and amalgamations were as for the classification of Study Area-only quadrats outlined above, and as detailed in Markey *et al.* (2012). The results of this classification analysis are discussed in Section 5.2.5.

Although data from quadrats established by Western Botanical (2006a, 2010) for the RNO area was available, it was decided not to include such data in a classification analysis with data from the Study Area. There were several reasons that influenced this decision, as detailed below:

- Much of the data was recorded in 2005 or earlier, with the most recent data recorded in 2008. Due to significant changes in taxonomy in the Ravensthorpe area over intervening years, the data is taxonomically out-of-date, and updating the data to reflect current taxonomy would be a time-consuming and difficult process. There are also many informal names in the data that could not be utilised;
- A large number of the quadrats established in the Bandalup Hill area are 10 m by 1 m in size, significantly smaller than the quadrats established in the Study Area. It is not considered appropriate to analyse data from 2 different quadrat sizes;
- The majority of quadrats and the majority of habitat area polygons in the Shoemaker-Levy orebody area are contained within the approved clearing footprint, and therefore provide little value in terms of assessing the regional distribution and conservation significance of VTs described in the Study Area.

3.6 Vegetation Type Definition, Description and Mapping

OptimClass analysis of Study Area quadrat data identified approximately 13 quadrat clusters as the optimal number when applying the classification parameters outlined in Section 3.5. The classification dendrogram and taxon group matrix were initially examined at the 13-cluster level, to determine the plausibility of clusters with regard to taxon groups, and also field observations and indicator taxon analysis. This process determined a final number of clusters, which were considered to represent VTs.

VT descriptions have been adapted from the National Vegetation Information System (NVIS) Australian Vegetation Attribute Manual Version 6.0 (ESCAVI 2003). This model follows nationally-agreed guidelines to describe and represent VTs, so that comparable and consistent data is produced nation-wide. It must be noted that the NVIS system utilises vegetation descriptions derived from structural characteristics of the individual community units, while the VTs presented in this report have been derived from analysis of quadrat floristics, excluding any structural component. VTs therefore may include multiple structural types. Considering the effect of disturbance factors such as fire on vegetation structure, this

approach is designed to provide a map of VTs that reflect taxon composition and the influences of the physical and chemical environment rather than disturbance history.

For the purposes of this report, it is considered that a VT is equivalent to a NVIS sub-association as described in ESCAVI (2003). Common taxa within each stratum were generally defined as taxa that occurred in greater than one-third of quadrats established within a particular VT (however this varied slightly depending on the number of quadrats); these may include taxa not in the VT description, as the VT description is based on dominance within each stratum, as well as the frequency that a taxon was recorded within each VT.

The locations of quadrats within each VT were used in conjunction with aerial photography interpretation and field notes taken during survey to develop VT mapping polygon boundaries. These VT mapping polygon boundaries were then digitised using Geographic Information System (GIS) software.

3.7 Vegetation Condition

Vegetation condition was recorded at all quadrats, and also opportunistically within the Study Area where areas of disturbance to vegetation were noted (e.g. weed infestations, mineral exploration). Vegetation condition was also noted opportunistically within the approved access alignment. Vegetation condition was described using a vegetation condition scale from Keighery (1994). The Keighery (1994) scale is presented in Appendix E. Vegetation condition polygon boundaries for the Study Area were developed using this information in conjunction with aerial photography interpretation, and were digitised as for VT polygon boundaries.

3.8 Significant Flora and Vegetation

3.8.1 Significant Flora

EPA Guidance Statement No. 51 (EPA 2004) considers that any taxon listed as Threatened under relevant legislation (WC Act, EPBC Act), or classified by DPaW as Priority flora, is considered to be significant. Such taxa are therefore addressed in this report. Guidance Statement No. 51 also notes that a flora taxon may also be considered as significant if it meets one of the following criteria:

- It has a keystone role in a particular habitat for threatened species, or supporting large populations representing a significant proportion of the local regional population of a species;
- It is of relic status;
- It has anomalous features that indicate a potential new discovery;
- It is representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range);
- It is a restricted subspecies, variety, or naturally occurring hybrid;
- It displays local endemism/has a restricted distribution;
- It is poorly reserved.

It is considered that the criterion of level of reservation (i.e. presence in conservation reserves such as national parks or nature reserves) is difficult to apply in the context of this

report, as the lack of comprehensive surveys of reserves in the region surrounding the Study Area makes accurate determination of the reservation status of a particular taxon difficult. However, level of reservation may be relevant in the context of addressing the significance of a taxon that meets one of the other criteria listed above, particularly listed Threatened or Priority flora taxa, as taxa meeting these criteria may be of higher significance if they are known to be not or poorly reserved.

Significant taxa are discussed in Section 5.1.2 – 5.1.4.

No classification of the potential local significance of locations of significant flora taxa has been undertaken as part of this study. It is considered that such a classification is best undertaken as part of any overall impact assessment that may need to be undertaken for the Project, as significant flora information may change prior to such an impact assessment being conducted.

3.8.2 Significant Vegetation

EPA Guidance Statement No. 51 (EPA 2004) considers that vegetation listed as a TEC under the EPBC Act, or classified as a TEC or PEC by DPaW, is considered to be significant. Such vegetation is therefore addressed in this report. Guidance Statement No. 51 also notes that vegetation may also be considered as significant if it meets one of the following criteria:

- It is uncommon or scarce;
- It contains unusual species;
- It has a novel combinations of species;
- It plays a role as a refuge;
- It plays a role as a key habitat for threatened species or large populations representing a significant proportion of the local to regional total population of a species;
- It is representative of the range of a unit (particularly, a good local and/or regional example of a unit in 'prime' habitat, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range);
- It has a restricted distribution.

These criteria are generally applicable to VTs mapped in the Study Area, and are therefore used to determine whether a VT is locally significant (with 'local' referring to the Study Area). It is more difficult to apply these criteria in a regional context, as there is no publicly-available Esperance Plains-wide dataset of VTs. Previous surveys in the RNO area (Western Botanical 2005) and the Ravensthorpe Range (Craig *et al.* 2008; Markey *et al.* 2012) potentially provide some relevant context when assessing the regional significance of VTs. As mentioned in Section 3.5, a supplementary classification analysis was conducted using data from Markey *et al.* (2012), to determine the similarity between quadrats from the Study Area and quadrats from Markey *et al.* (2012). The results of this analysis are therefore considered when determining the potential regional significance of VTs described in the Study Area. The occurrence of potential suitable habitat for VTs outside the Study Area was also considered; potential suitable habitat was determined by reviewing landform and soil patterns observable on aerial photography over areas in the immediate vicinity of the Study Area.

With regard to the regional significance of VTs described in the Study Area, no comparison between VTs described in the Study Area and habitat area mapping by Western Botanical (2005) has been attempted. These habitat areas were described using different methods to those used to define VTs, and it is not possible to compare them to VTs. Additionally, as mentioned in Section 3.5, a large number of habitat area polygons are contained within already-approved clearing footprints for the RNO, and therefore provide little value in terms of assessing the regional distribution and conservation significance of VTs described in the Study Area. Comparison between VTs described in the Study Area and vegetation units described by Craig *et al.* (2008) was also not attempted; as for Western Botanical (2005) habitat areas, vegetation units were described using different methods, with this study also focussing primarily on the Ravensthorpe Range.

Significant vegetation is discussed in Sections 5.2.4 – 5.2.6.

3.9 Comparison of Project Area and Approved Alignment

As mentioned in Section 1.1, the EPA requires the flora and vegetation values within the Project Area to be compared to those of the approved access alignment, in order to address the requirements of a Section 45c approval. Therefore, this report compares the Project Area and the approved access alignment in terms of important flora and vegetation issues, including potential level of clearing (indicated by the length of the access), significant flora, significant vegetation, vegetation diversity, vegetation condition and sensitive areas (e.g. wetlands). The comparison is presented in Section 6.3.

4. ADEQUACY AND LIMITATIONS OF SURVEY

4.1 Adequacy of Survey

The Study Area covers 1577.8 ha, with 63 quadrats established within it. Quadrats were established in all preliminary vegetation patterns discernable by initial aerial photograph interpretation (see Section 3.2 and 3.3), both to adequately sample variation in vegetation throughout the Study Area, and to ensure adequacy of sampling for vascular plant taxa. The number of quadrats established in the Study Area is considered to be an acceptable number given the diversity of topography and soil types noted in the Study Area.

To provide an indication of the adequacy of this survey, a taxon accumulation curve was produced using PC-Ord (V 6) (McCune and Mefford 2011). Taxon accumulation curves represent a theoretical model of the relationship between sampling intensity and taxon accumulation; when sampling intensity is increased, taxon accumulation is reduced, and a taxon accumulation curve becomes asymptotic.

The taxon accumulation curve for quadrat data from the Study Area was generated using all native taxa (both annual and perennial) recorded within each quadrat. Taxon accumulation calculations for the Study Area were then undertaken via PC-Ord, utilising the Chao-2 estimator for species richness (Chao 1987), and compared to the actual number of taxa recorded in the Study Area. This gives some indication as to whether sufficient quadrats have been surveyed to adequately sample the species richness in the Study Area. As the

generation of species accumulation curves includes quadrat data only, and not opportunistically-recorded taxa, the indication of adequacy of survey provided is considered to be conservative.

Figure 6 presents the species accumulation curve generated from quadrat data from the Study Area. Using the Chao-2 estimator, the recorded number of taxa within quadrats is equivalent to 80.7 % of the estimated taxon richness in the Study Area. Sampling was therefore considered to be adequate using this estimation measure. It is of interest that the estimated number of taxa in the Study Area from quadrats only using Chao-2 was 557; when opportunistic records of taxa are included, 530 taxa were recorded in the Study Area (see Section 5.1.1), indicating that the Study Area was relatively well-sampled.

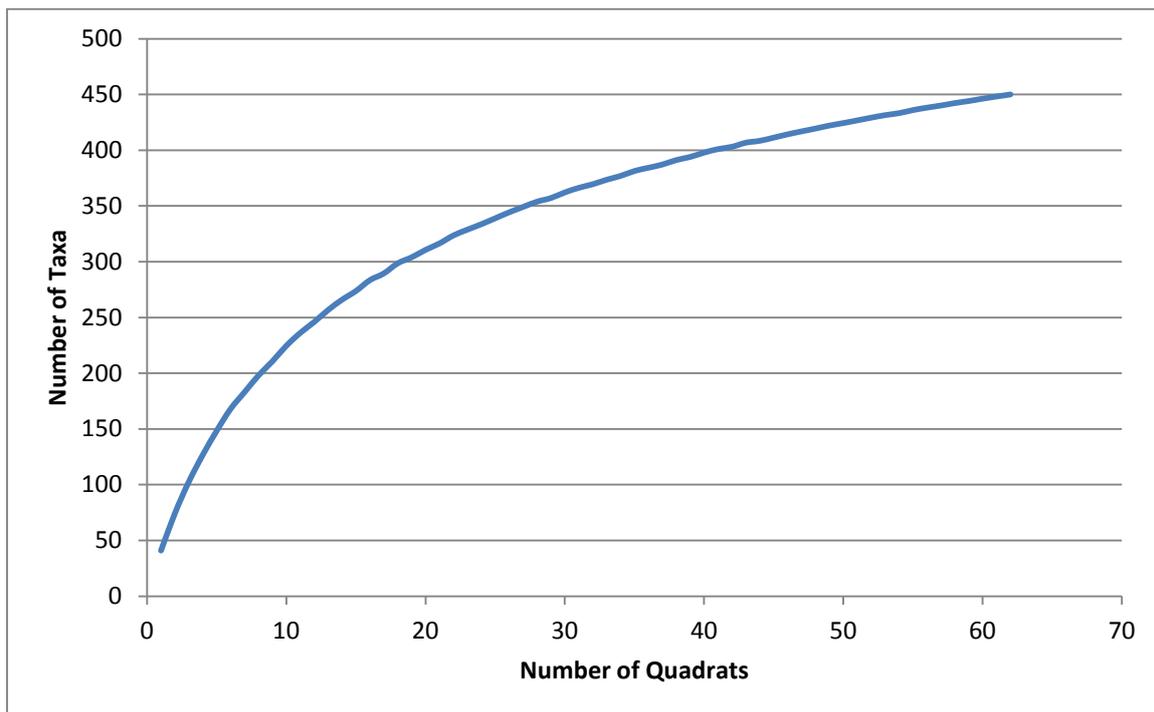


Figure 6: Study Area Species Accumulation Curve

Another adequacy of survey measure is that developed by Mueller-Dombois and Ellenberg (1974), who suggest that a cut-off point might be when a 10 % increase in quadrats surveyed results in a 5 % (or less) increase in taxa recorded. This measure was also calculated using all native taxa recorded within each quadrat. The number of quadrats established in the Study Area satisfies this adequacy measure suggested by Mueller-Dombois and Ellenberg (1974), with the final taxon increase value of 2.52 % recorded following a 10 % increase in quadrats.

4.2 Limitations of Survey

Table 5 presents the limitations of the flora and vegetation survey of the Study Area in accordance with EPA Guidance Statement No. 51 (EPA 2004).

Table 5: Limitations of the Flora and Vegetation Survey of the Study Area

Limitation	Limitation of Survey	Comment
Level of survey.	No	Level 2 Detailed Survey: The field component of the detailed survey commenced in September 2014 and was completed in October 2014, within the usual peak flowering season in the Esperance Plains region. Replicated quadrats were established in each vegetation pattern identified in the Study Area. EPA (2004) indicates that survey should also be undertaken in other seasons, and it is noted that some perennial taxa expected to occur in the Study Area flower in other seasons (e.g. Winter). However, it is considered that survey in the peak flowering season only is adequate in this case, as it is likely that most taxa that flower outside the peak flowering season could be identified during the survey period.
Competency/experience of the consultant(s) carrying out the survey.	No	Senior personnel undertaking the survey have had experience in conducting similar assessments, including assessments in the similar Geraldton Sandplains bioregion at Eneabba. Senior personnel provided guidance to less experienced botanists throughout the survey where necessary.
Scope (floral groups that were sampled; some sampling methods not able to be employed because of constraints?)	No	All vascular groups that were present in the Study Area were sampled. No constraints prevented appropriate sampling techniques (quadrat establishment, foot transects) being employed.
Proportion of flora identified, recorded and/or collected.	No	A high proportion of perennial vascular taxa were recorded based on the intensity and method of survey. A high proportion of ephemeral vascular taxa were recorded based on the intensity and method of survey, and above-average rainfall prior to survey (see timing/weather/season/cycle below). Unknown vascular taxa were collected, with specimens identified at the WAHerb. Adequacy of survey measures indicate a high percentage (80.7) of taxa expected to occur in the Study Area was recorded (Chao-2 estimator), and the number of quadrats established in the Study Area satisfies the criterion suggested by Mueller-Dombois and Ellenberg (1974), with an increase of 2.52 % in species recorded per increase of 10 % of quadrats.
Sources of information e.g. previously available information (whether historic or recent) as distinct from new data.	No	Sources of information used included government databases (DPaW, DoE) and several reports and unpublished data from the vicinity of the Study Area. Good contextual information for the Study Area was available prior to the survey.
The proportion of the task achieved and further work which might be needed.	Potential minor	The Level 2 survey was completed, with the survey including some searching for significant flora taxa. No further survey within the Study Area is considered necessary at this time, however searching for significant flora identified following survey may be required depending on the precise location of proposed impact areas.

Limitation	Limitation of Survey	Comment
Timing/weather/season/cycle.	No	The field survey was conducted in Spring, corresponding with the optimum flowering period for the Esperance Plains region. The flowering period was considered by Woodman Environmental to be good, with above-average rainfall (229.2 mm received compared to the average of 221.3 mm) (Bureau of Meteorology 2015) over the Winter period prior to survey (May-September).
Disturbances (e.g. fire, flood, accidental human intervention etc.), which affected results of survey.	No	A significant proportion of the Study Area was burnt by an intense fire in late January 2002 (Western Botanical 2010). Although this event occurred many years prior to survey, the areas burnt by the fire are still clearly visible on aerial photography, and also in the field, with the vegetation structure differing between burnt and unburnt areas. It is considered unlikely that this fire has affected the results of the field survey in terms of taxon composition, as the time since fire is great enough that taxon composition is likely to be relatively similar between burnt and unburnt areas. However, the fire has had a minor effect on mapping of VTs in some parts of the Study Area, with boundaries of VTs being difficult to determine both in the field and on aerial photography in some instances.
Intensity of survey.	No	The survey intensity was considered adequate to identify floristic groupings of terrestrial flora and expected taxon richness as required by a Level 2 survey, with replication of quadrats in VTs and foot searching undertaken throughout the Study Area.
Completeness and mapping reliability.	Potential minor	The survey of the Study Area is considered complete in terms of mapping of VTs. Specific searching for significant flora taxa was undertaken for some species, with further searching in final impact areas potentially required. Mapping reliability was considered good as high resolution aerial photography was used, with 63 quadrats established in the Study Area, however in some instances mapping boundaries were difficult to determine from aerial photography. Foot and vehicle transects were employed, however relatively recent fire affected mapping reliability in some instances.
Resources and experience of personnel.	No	Adequate resources including experienced field personnel and taxonomists with appropriate expertise in the flora of the South-West Botanical Province were utilised.
Remoteness and/or access problems.	No	Access to the Study Area was considered adequate, with a number of roads and tracks utilised, and relatively short distances between such roads and tracks requiring foot access.

5. RESULTS

5.1 Flora of the Study Area

5.1.1 Vascular Flora Census

A total of 530 discrete vascular flora taxa and 1 known hybrid (listed on Florabase (DPaW 2015b)) were recorded within the Study Area. These taxa represent 59 families and 203 genera. The most well-represented families were Myrtaceae (92 taxa and 1 known hybrid), Fabaceae (63 taxa), Proteaceae (54 taxa) and Cyperaceae (40 taxa).

Average taxon richness per quadrat was 41.2 (\pm 17.1), with the greatest number of taxa recorded in a single quadrat being 81, and the lowest number being 5. A full list of taxa is presented in Appendix H, with raw quadrat and detailed recording site data and parameters presented in Appendix I.

5.1.2 Summary of Significant Flora Taxa

Table 6 presents a list of significant flora taxa recorded in the Study Area, together with location information. A total of 13 significant flora taxa were recorded during this survey of the Study Area, including 1 taxon listed as Threatened under both the WC Act and the EPBC Act. Locations of significant flora taxa from this survey of the Study Area are presented in Appendix J, and displayed on Figures 7 and 8.

As previously mentioned in Section 2.4, *Hibbertia abyssa* (Threatened) is known to occur in the Study Area, from 1 DPaW record (DPaW 2013b). However, this location occurs on a topsoil stockpile near the RNO plant at the southern end of the Study Area, with no locations recorded in remnant vegetation in the Study Area by this survey or by other surveys reviewed as part of this project. This taxon is only known from Bandalup Hill and immediate surrounds in relatively specific habitat (sandstone and saprolite breakaways), and was not expected to occur in the Study Area. For the purposes of this report, *Hibbertia abyssa* (Threatened) is not considered to occur in the Study Area, and is not discussed further; the presence of individuals on topsoil stockpiles is related to future rehabilitation activities that are beyond the scope of this report. The record for this taxon is therefore not presented.

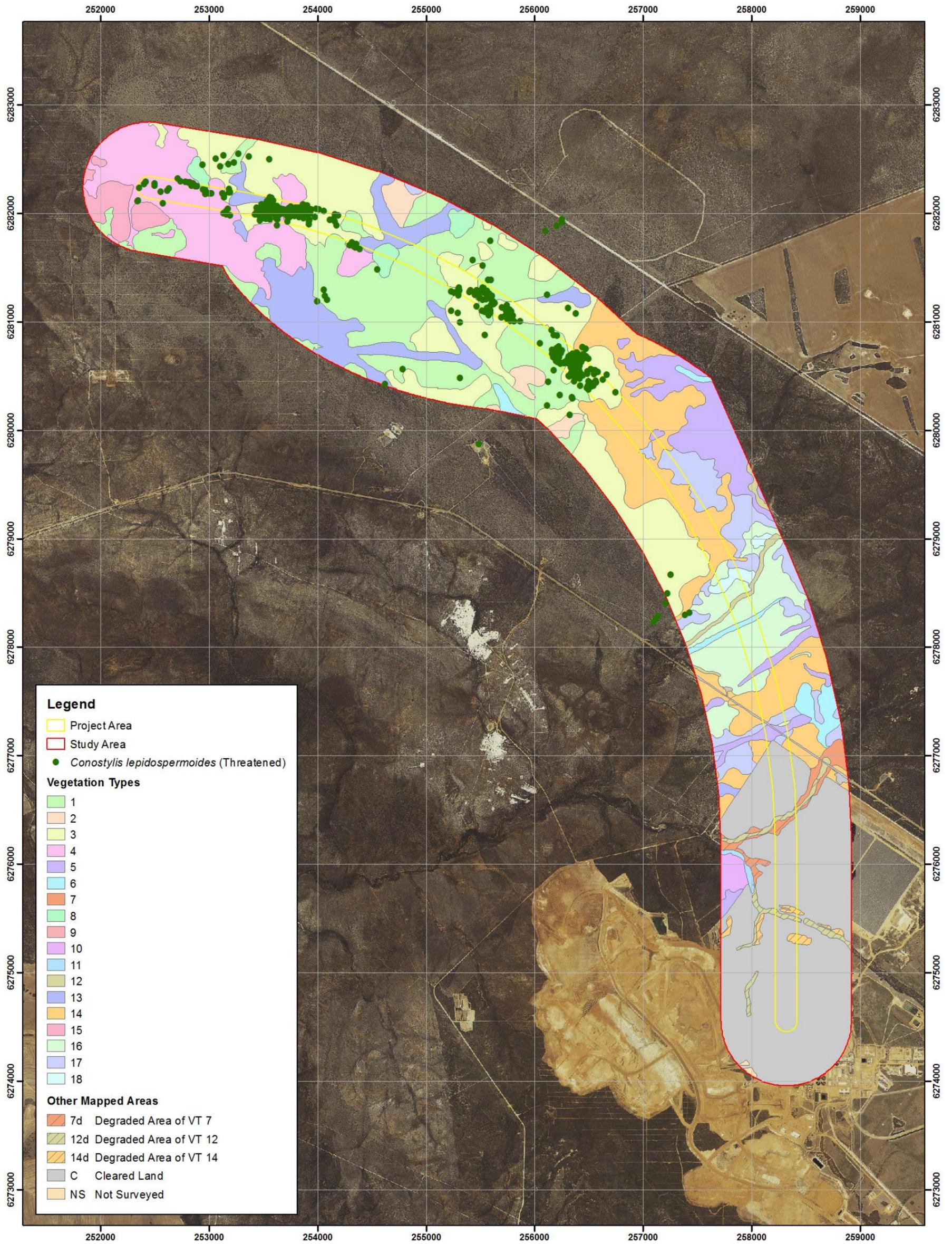
Sections 2.4 and 2.5 also note that *Goodenia phillipsiae* (P4) and *Grevillea fastigiata* (P4) occur in the Study Area, with 2 DPaW records (DPaW 2013b) of *Goodenia phillipsiae* and 1 Western Botanical record of *Grevillea fastigiata* known. This survey did not record *Goodenia phillipsiae* in the Study Area, despite inspection of one of the known locations, and numerous foot transects elsewhere in the Study Area. The known location inspected was recorded in 1962, at 19 miles east of Ravensthorpe (DPaW 2013b). Due to the age of the record, this location would not have been recorded using a GPS, and therefore it is considered that this location is erroneous; the habitat was also at variance with the known habitat of this taxon at locations of this taxon recorded outside the Study Area by Woodman Environmental (see Section 5.3). The second location of this taxon is known to be erroneous; the locality details stipulate that it is from a baseline quadrat established by Western Botanical (2006a), that is located approximately 3 km north-east of the location provided by DPaW (2013b), outside the Study Area. It is therefore considered that *Goodenia*

phillipsiae is not currently known from the Study Area. The records for this taxon are therefore not presented.

The location of *Grevillea fastigiata* is on the South Coast Highway; despite numerous foot transects being undertaken in the vicinity of the record, this taxon was not recorded, and was not recorded elsewhere in the Study Area. This location also does not correspond to the known habitat for this taxon (areas of komatiite or basalt) (DPaW 2015b). However, it was noted that the closely related taxon *Grevillea rigida* subsp. *rigida* occurred in the vicinity of this location. It is therefore considered that at this location *Grevillea rigida* subsp. *rigida* was erroneously identified as *Grevillea fastigiata*, and *Grevillea fastigiata* is not currently known from the Study Area. The record for this taxon is therefore not presented.

Table 6: Summary of Significant Flora Taxa Known from within the Study Area

Taxon	Conservation Code	Total Number of Locations Known in the Project Area	Total Number of Locations Known in the Study Area	Total Number of Individuals Known in the Project Area	Total Number of Individuals Known in the Study Area	Vegetation Types
<i>Conostylis lepidospermoides</i>	Threatened	394	486	1,351	2,129	1, 2, 3, 4, 13, 14, 17
<i>Drosera grieviei</i>	P1	1	5	NA	NA	1, 2, 4
<i>Lepidosperma</i> sp. Mt Chester (S. Kern <i>et al.</i> LCH 16596)	P1	1	5	NA	NA	5, 6, 14
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298)	P2	1	3	NA	NA	1, 2, 3
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277)	P3	0	4	NA	NA	16, 17, 18
<i>Micromyrtus navicularis</i>	P3	41	60	331	595	5, 14, 17
<i>Synaphea platyphylla</i>	P3	11	32	106	580	1
<i>Allocasuarina ?hystricosa</i>	P4	0	2	NA	NA	15
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	0	2	0	350	15
<i>Thysanotus parviflorus</i>	P4	1	1	NA	NA	4
<i>Eremophila glabra</i> s. lat.	Potentially undescribed	0	1	NA	NA	8
<i>Lepidosperma</i> sp. 'Fitzgerald Tuberculate'	Potentially undescribed	0	1	NA	NA	16
<i>Synaphea</i> aff. <i>petiolaris</i>	Potentially undescribed	0	3	NA	NA	2, 4, 18



Legend

- Project Area
- Study Area
- Conostylis lepidospermoides* (Threatened)

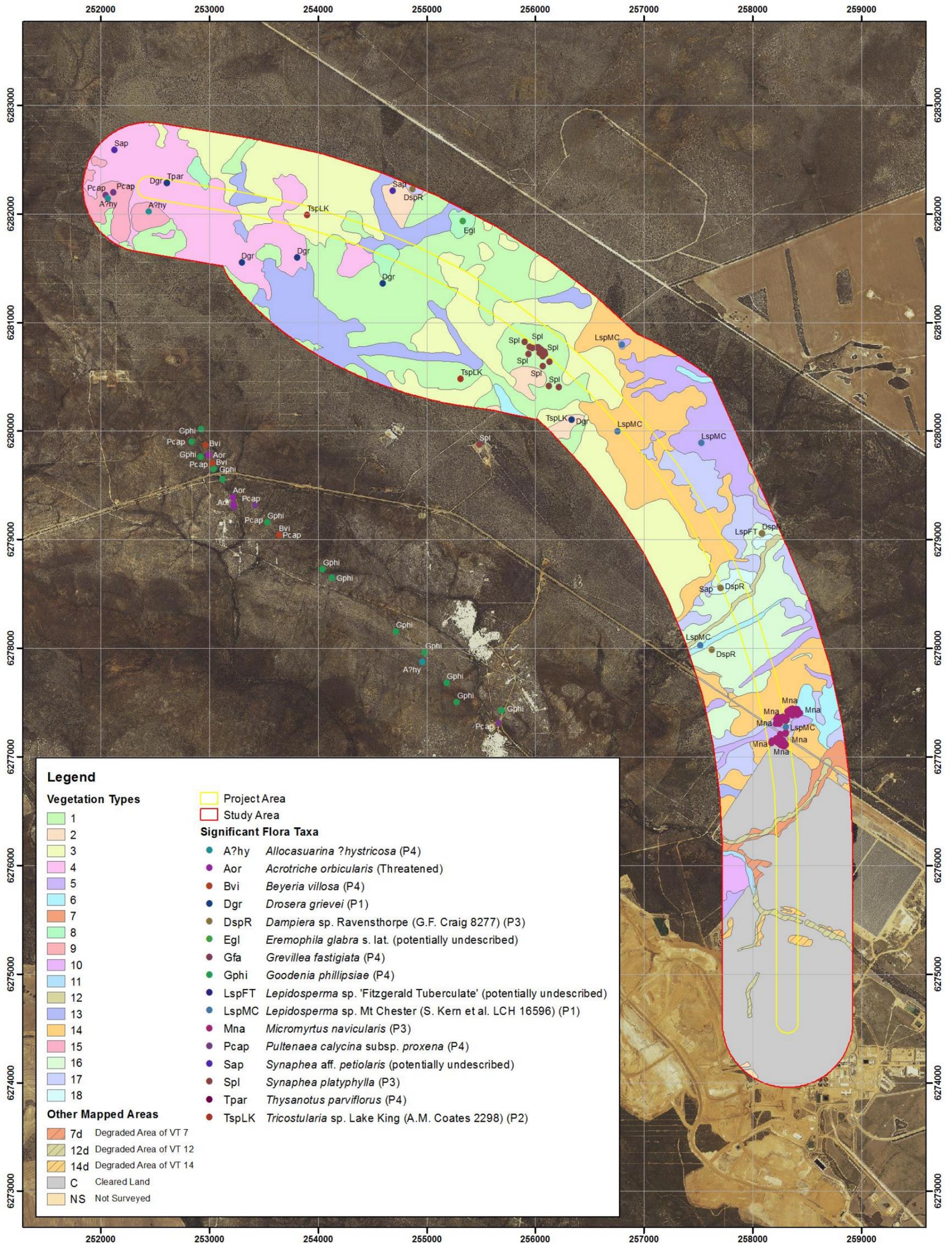
Vegetation Types

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

Other Mapped Areas

- 7d Degraded Area of VT 7
- 12d Degraded Area of VT 12
- 14d Degraded Area of VT 14
- C Cleared Land
- NS Not Surveyed

 <p>This map should only be used in conjunction with WEC report FQM14-37-01</p>	<p>Locations of <i>Conostylis lepidospermoides</i> (Threatened) in the Study Area</p>	<p>Author: David Coultas</p>	<p>Figure</p> <p>7</p>	
				WEC Ref: FQM14-37-01
				Filename: FQM14-37-01-f07.mxd
				Scale: 1:30,000 (A3) Grid: MGA Zone 51
	Revision: A - 20 March 2015			



<p>This map should only be used in conjunction with WEC report FQM14-37-01</p>	<p style="text-align: center;">Locations of Priority Flora and Other Significant Flora in the Study Area</p>	Author: David Coultas	Figure 8
		WEC Ref: FQM14-37-01	
Revision: A - 20 March 2015	Filename: FQM14-37-01-f08.mxd		
Scale: 1:30,000 (A3) Grid: MGA Zone 51			

5.1.3 Listed Significant Flora Taxa

One Threatened Flora taxon listed under the WC Act and EPBC Act was recorded within the Study Area, being *Conostylis lepidospermoides*.

Nine DPaW-classified Priority Flora taxa were recorded within the Study Area, being:

- *Drosera grievei* (P1);
- *Lepidosperma* sp. Mt Chester (S. Kern et al. LCH 16596) (P1);
- *Tricostularia* sp. Lake King (A.M. Coates 2298) (P2);
- *Dampiera* sp. Ravensthorpe (G.F. Craig 8277) (P3);
- *Micromyrtus navicularis* (P3);
- *Synaphea platyphylla* (P3);
- *Allocasuarina ?hystricosa* (P4);
- *Pultenaea calycina* subsp. *proxena* (P4); and
- *Thysanotus parviflorus* (P4);

These taxa are discussed further below. With reference to known locations of significant flora taxa, in most cases it is not possible to accurately determine the number of known populations, with a population defined as a discrete group of individuals of a taxon separated by more than 500 m from the next discrete group of individuals (DPaW 2010b). Instead, groups of point records in close proximity to each other are referred to as 'broad localities', in lieu of more detailed population information. However, if population information is available, as is the case with many Threatened taxa, this information is presented.

***Conostylis lepidospermoides* (Threatened)**

Conostylis lepidospermoides (Threatened) is a tufted, sedge-like perennial herb to approximately 0.3 m high (Plate 1) that occurs on grey or yellow sand over laterite on plains (DPaW 2015b). This taxon is listed as Vulnerable under the WC Act, and Endangered under the EPBC Act (DPaW 2014c). This taxon occurs over a range of approximately 160 km in Western Australia (where it is endemic), from near Frank Hann National Park in the north-west and Ravensthorpe in the west to near Dalyup in the east (DPaW 2015a). There are 47 DPaW records of this taxon in Western Australia (DPaW 2015a); the most recent available assessment of these records indicates that there are 17 populations known, with 670 individuals recorded across these populations (Threatened Species Scientific Committee 2008). Many of these populations are on road verges, however 2 occur in conservation reserves.

This taxon was identified relatively early in this survey of the Study Area, allowing specific searching to be conducted. This included transects at 20 m intervals through all appropriate habitat in the Project Area, and wandering transects through appropriate habitat in the Study Area. A total of 486 point locations were recorded in the Study Area, consisting of 2,129 individuals. Of these, 394 point locations consisting of 1,351 individuals were recorded in the Project Area (Table 6; Figure 7). All locations occur on sandy soils, occasionally over laterite, in the northern half of the Study Area. An additional 9 point locations consisting of 59 individuals were recorded outside the Study Area while traversing to and from the Study Area, in similar habitat to records in the Study Area. The individuals recorded within and in the vicinity of the Study Area in a large intact area of vegetation represent a significant population of this taxon, considering that the most recent estimates of individuals indicates that 670 are known, and most populations are on road verges (Threatened Species Scientific Committee 2008).



Plate 1: *Conostylis lepidospermoides* (Threatened) (Photos: Woodman Environmental)

***Drosera grieveri* (P1)**

Drosera grieveri (P1) is a fibrous-rooted perennial herb to 3 cm high (Plate 2) that occurs on grey or brown sand or loam on slopes of hills or sandplains (DPaW 2015b). This taxon occurs over a range of approximately 130 km in Western Australia (where it is endemic), from near Ravensthorpe in the east to east of Lake Grace in the west (DPaW 2015a). The records from the Study Area represent a range extension of approximately 20 km for this taxon.

There are 30 DPaW records of this taxon in Western Australia, representing 7 broad localities. None of these localities occur in conservation reserves (DPaW 2015a). This taxon was recorded at 5 point locations by this survey of the Study Area (Table 6; Figure 8). One point location was recorded in the Project Area. This taxon was identified subsequent to field survey being completed, and therefore no counts of individuals or targeted searching was undertaken, however it was noted as being relatively common at all locations. All locations occur on sandy soils, occasionally over laterite, in the northern half of the Study Area (Figure 8).



Plate 2: *Drosera grieveri* (P1) (Photos: H. Hughes, R. Jasper & S. Kern, from Florabase (DPaW 2015b))

***Lepidosperma* sp. Mt Chester (S. Kern *et al.* LCH 16596) (P1)**

Lepidosperma sp. Mt Chester (S. Kern *et al.* LCH 16596) (P1) is a tufted sedge to 0.35 m high (Plate 3) that occurs on grey, brown or red sandy or clay loam soils, often over greenstone, on slopes of hills (DPaW 2015b). This taxon occurs over a range of approximately 35 km in Western Australia (where it is endemic), from near Kundip in the east to near Fitzgerald River National Park in the west (DPaW 2015a). However, Barrett *et al.* (2009) notes that this taxon is also known from south-east of Lake King, which would extend its distribution north by approximately 50 km. The record from the Study Area represents a slight range extension of approximately 10 km for this taxon. Barrett *et al.* (2009) noted that this taxon could represent an extreme morphotype of the common taxon *Lepidosperma gahnioides*, however these 2 taxa often occur together without apparent intergradation. It was also noted that this taxon was poorly known, but probably not threatened.

There are 16 DPaW records of this taxon in Western Australia, representing 5 broad localities (not including the record south-east of Lake King noted by Barrett *et al.* (2009). None of these localities occur in conservation reserves (DPaW 2015a). This taxon was recorded at 5 point locations by this survey of the Study Area (Table 6; Figure 8). One point location was recorded in the Project Area. This taxon was identified subsequent to field survey being completed, and therefore no counts of individuals or targeted searching was undertaken, however it was noted as being relatively common at most locations. All locations occur on clay soils, occasionally over greenstone, in the southern half of the Study Area (Figure 8).



Plate 3: *Lepidosperma* sp. Mt Chester (S. Kern *et al.* LCH 16596) (P1) (Photo: Woodman Environmental – pressed specimen)

***Tricostularia* sp. Lake King (A.M. Coates 2298) (P2)**

Tricostularia sp. Lake King (A.M. Coates 2298) (P2) is a tufted sedge to 0.35 m high (Plate 4) that occurs on sandy soils on plains (DPaW 2015b). This taxon occurs over a range of approximately 95 km in Western Australia (where it is endemic), from Dragon Rocks Nature Reserve in the north-west to near Lake King in the south-east (DPaW 2015a). The records from the Study Area represent a range extension of approximately 60 km for this taxon.

There are 6 DPaW records of this taxon in Western Australia, representing 5 broad localities. Several of these localities occur in conservation reserves (DPaW 2015a). This taxon was recorded at 3 point locations by this survey of the Study Area (Table 6; Figure 8). One point location was recorded in the Project Area. This taxon was identified subsequent to field survey being completed, and therefore no counts of individuals or targeted searching was undertaken, however it was noted as being relatively common at most locations. All locations occur on sandy soils, occasionally over laterite, in the northern half of the Study Area.



Plate 4: *Tricostularia* sp. Lake King (A.M. Coates 2298) (P2) (Photo: Woodman Environmental – pressed specimen)

***Dampiera* sp. Ravensthorpe (G.F. Craig 8277) (P3)**

Dampiera sp. Ravensthorpe (G.F. Craig 8277) (P3) is an erect, rush-like perennial herb to 0.5 m high (Plate 5) that occurs on rocky outcrops (often gossan) on hills (DPaW 2015b). This taxon occurs over a range of approximately 20 km in the vicinity of Ravensthorpe, where it is endemic (DPaW 2015a). The records from the Study Area represent a slight range extension of approximately 10 km for this taxon.

There are 11 DPaW records of this taxon in Western Australia, representing 4 broad localities. None of these localities occur in conservation reserves (DPaW 2015a). This taxon was recorded at 4 point locations by this survey of the Study Area (Table 6; Figure 8). No point locations were recorded in the Project Area. This taxon was identified subsequent to field survey being completed, and therefore no counts of individuals or targeted searching was undertaken, however it was noted as being relatively uncommon at all locations. All locations occur in association with granite outcropping in the Study Area.



Plate 5: *Dampiera* sp. Ravensthorpe (G.F. Craig 8277) (P3) (Photo: Woodman Environmental – pressed specimen)

***Micromyrtus navicularis* (P3)**

Micromyrtus navicularis (P3) is an erect, spindly shrub to 1.6 m high (Plate 6) that occurs on yellow or brown sandy loam soils, often over laterite or granite, on hills (DPaW 2015b). This taxon occurs over a range of approximately 45 km in the vicinity of Ravensthorpe, where it is endemic (DPaW 2015a).

There are 40 DPaW records of this taxon in Western Australia, representing 13 broad localities. None of these localities occur in conservation reserves (DPaW 2015a). This taxon was identified relatively early in this survey of the Study Area, allowing specific searching to be conducted. This included transects at 20 m intervals through all appropriate habitat in the Project Area, and wandering transects through appropriate habitat in the Study Area. *Micromyrtus navicularis* was recorded at 60 point locations by this survey of the Study Area, consisting of 595 individuals. Of these, 41 point locations consisting of 331 individuals were recorded in the Project Area (Table 6; Figure 8). All locations occur on yellow sandy loam soils overlying granite.



Plate 6: *Micromyrtus navicularis* (P3) (Photo: Woodman Environmental)

***Synaphea platyphylla* (P3)**

Synaphea platyphylla (P3) is a caespitose shrub to 0.5 m high (Plate 7) that occurs on sandy soils over laterite or granite on plains (DPaW 2015b). This taxon occurs over a range of approximately 290 km in Western Australia (where it is endemic), however it occurs in 2 markedly disjunct areas, being in the vicinity of Jerdacuttup (east of Ravensthorpe) over a range of approximately 15 km, and in the vicinity of Toolibin over a range of approximately 40 km (DPaW 2015a).

There are 29 DPaW records of this taxon in Western Australia, representing 10 broad localities. Two of these localities appear to occur in conservation reserves (DPaW 2015a). This taxon was identified relatively early in this survey of the Study Area, allowing specific searching to be conducted. This included transects at 20 m intervals through all appropriate habitat in the Project Area, and wandering transects through appropriate habitat in the Study Area. *Synaphea platyphylla* was recorded at 32 point locations by this survey of the Study Area, consisting of 580 individuals. Of these, 11 point locations consisting of 106 individuals were recorded in the Project Area (Table 6; Figure 8). All locations occur on grey sandy soils over laterite in the northern half of the Study Area. An additional point location consisting of 30 individuals was recorded outside the Study Area while traversing to the Study Area in a gravel pit; this taxon has previously been recorded at this location by Western Botanical (2010).



Plate 7: *Synaphea platyphylla* (P3) (Photo: Woodman Environmental)

***Allocasuarina ?hystricosa* (P4)**

Allocasuarina ?hystricosa (P4) (Plate 8) could not be positively identified as *Allocasuarina hystricosa* (P4) because no mature fruiting cones could be found. *Allocasuarina ?hystricosa* is an erect shrub to 3 m high that occurs on loam or clay soils over laterite or basalt, usually on hills (DPaW 2015b). This taxon occurs over a range of approximately 120 km in Western Australia (where it is endemic), from the western edge of Fitzgerald National Park in the west, to Jerdacuttup (east of Ravensthorpe) in the east (DPaW 2015a).

There are 53 DPaW records of this taxon in Western Australia, representing 14 broad localities. Two of these localities occur in Fitzgerald River National Park (DPaW 2015a). *Allocasuarina ?hystricosa* (P4) was recorded at 2 point locations by this survey of the Study Area (Table 6; Figure 8). No locations were recorded in the Project Area. This taxon was identified subsequent to field survey being completed and therefore no counts of individuals or targeted searching was undertaken, however it was noted as being relatively common at both locations. Both locations occur on brown clay loam soils over laterite at the northern end of the Study Area.



Plate 8: *Allocasuarina ?hystricosa* (P4) (Photo: Woodman Environmental – pressed specimen)

***Pultenaea calycina* subsp. *proxena* (P4)**

Pultenaea calycina subsp. *proxena* (P4) is an erect shrub to 1 m high (Plate 9) that occurs on clay soils over magnesite (DPaW 2015b). This taxon occurs over a range of approximately 30 km between Jerdacuttup and Ravensthorpe, where it is endemic (DPaW 2015a).

There are 56 DPaW records of this taxon in Western Australia, representing 24 broad localities. None of these localities appear to occur in conservation reserves (DPaW 2015a). This taxon was identified relatively early in this survey of the Study Area, allowing specific searching to be conducted. However, this species is restricted to magnesite soils, with only a very small, discrete area of magnesite being identified in the Study Area. *Pultenaea calycina* subsp. *proxena* (P4) was recorded at 2 point locations in this area of magnesite (Table 6; Figure 8), consisting of 350 individuals. No point locations were recorded in the Project Area.



Pultenaea calycina subsp. *proxena* Photos: D. Brassington, R. Jasper & S. Kern

Plate 9: *Pultenaea calycina* subsp. *proxena* (P4) (Photos: D. Brassington, R. Jasper & S. Kern, from Florabase (DPaW 2015b))

***Thysanotus parviflorus* (P4)**

Thysanotus parviflorus (P4) is a tuberous perennial herb to 0.2 m high (Plate 10) that occurs on sandy soils on flats, hills and plains (DPaW 2015b). This taxon occurs over a range of approximately 485 km in Western Australia (where it is endemic), from west of Cranbrook in the west to near Condingup in the east (DPaW 2015a).

There are 17 DPaW records of this taxon in Western Australia, representing 14 broad localities. Several of these localities appear to occur in conservation reserves, including Stirling Range and Fitzgerald River National Parks (DPaW 2015a). *Thysanotus parviflorus* was recorded at 1 point location by this survey of the Study Area (Table 6; Figure 8). This point location was also within the Project Area. This taxon was identified subsequent to field survey being completed and therefore no counts of individuals or targeted searching was undertaken, however it was noted as being uncommon at the recorded location. The location occurred on yellow-grey sandy soil at the northern end of the Study Area.



Plate 10: *Thysanotus parviflorus* (P4) (Photos: N.H. Brittan & B.A. Fuhrer, from Florabase (DPaW 2015b))

5.1.4 Unlisted Significant Flora Taxa

A collection identified by *Eremophila* expert Andrew Brown as *Eremophila glabra* s. lat. was collected within the Study Area. This putative taxon (Plate 12) has been collected previously elsewhere, however is poorly known and requires further taxonomic investigation to determine its taxonomic status; it may represent an undescribed subspecies of *Eremophila glabra* (M. Hislop pers. comm. 2015). As a precaution, it is considered of significance. It was recorded at 1 location in the Study Area, however no counts of individuals were made (Table 6; Figure 8). The location was on a winter-wet clay flat under *Eucalyptus occidentalis*. This location was not within the Project Area

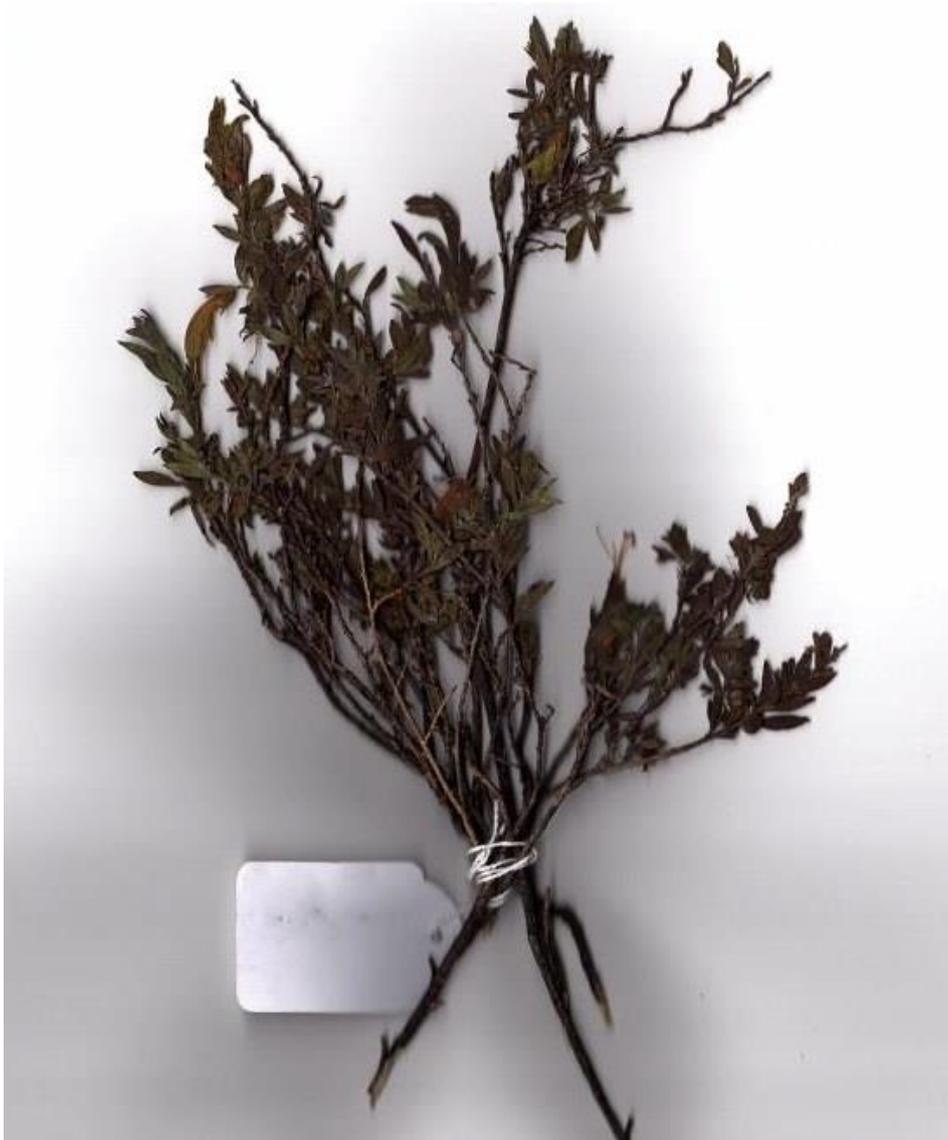


Plate 11: *Eremophila glabra* s. lat. (Photo: Woodman Environmental – pressed specimen)

A collection identified by *Lepidosperma* expert Dr. Russell Barrett as *Lepidosperma* sp. 'Fitzgerald Tuberculate' was collected within the Study Area. This putative taxon (Plate 12) is currently only known at a single other location on the northern edge of Fitzgerald River National Park, and therefore this location is also a range extension for this taxon. It is poorly known and requires further taxonomic investigation (R. Barrett pers. comm. 2015); as a precaution it is considered of significance. It was recorded at 1 location in the Study Area, however no counts of individuals were made (Table 6; Figure 8). The location was associated with granite outcropping. This location was not within the Project Area.



Plate 12: *Lepidosperma* sp. 'Fitzgerald Tuberculate' (Photo: Woodman Environmental – pressed specimen)

A collection identified by *Synaphea* expert Dr. Ryonen Butcher (WAHerb) as *Synaphea* aff. *petiolaris* was collected within the Study Area. This putative taxon (Plate 13) has affinities to *Synaphea petiolaris*, however did not match another collection from the Study Area identified as *Synaphea petiolaris* subsp. *petiolaris*. The material collected was poor, and further material is required to allow for accurate identification (R. Butcher pers. comm. 2015). As a precaution, it is considered of significance, in lieu of additional material being collected. It was recorded at 3 locations in the Study Area, however no counts of individuals were made (Table 6; Figure 8). The locations were associated with sandy loam soils, occasionally with laterite or granite. No locations were within the Project Area.



Plate 13: *Synaphea* aff. *petiolaris* (Photo: Woodman Environmental – pressed specimen)

5.1.5 Other Taxa of Interest

Potentially Undescribed Taxa

A collection identified as *Calytrix* aff. *leschenaultii* was collected within the Study Area. *Calytrix leschenaultii* is recognised as a species complex, and is currently under taxonomic revision (M. Hislop pers. comm. 2015). *Calytrix* aff. *leschenaultii* has very small flowers relative to another collection from the Study Area identified as *Calytrix leschenaultii*, is a low, spreading shrub as opposed to an erect shrub, and was only recorded on granite-derived soils, as opposed to sandy soils for *Calytrix leschenaultii*. As *Calytrix* aff. *leschenaultii* and *Calytrix leschenaultii* were clearly distinct from each other in the field, it is considered desirable to treat them as separate entities in lieu of taxonomic revision. *Calytrix* aff.

leschenaultii was recorded at 6 locations in the Study Area, and was noted as being common at all locations. It is considered likely that this taxon occurs in areas outside the Study Area based on known habitat. Therefore, although *Calytrix* aff. *leschenaultii* is considered to be of potential taxonomic interest, it is not considered to be of significance.

A collection identified by *Synaphea* expert Dr. Ryonen Butcher as *Synaphea* aff. *drummondii* was collected within the Study Area. *Synaphea drummondii* requires revision, with potential putative taxa closely related to this species, including the collection from the Study Area, requiring taxonomic attention. *Synaphea* aff. *drummondii* has been collected a number of times in the Ravensthorpe area, and also in Fitzgerald River National Park (R. Butcher pers. comm. 2015). It was recorded at 2 locations in the Study Area, and was noted as being common at both locations. Therefore, although *Synaphea* aff. *drummondii* is considered to be of potential taxonomic interest, it is not considered to be of significance.

The hybrid taxon *Eucalyptus x erythrandra* was collected in the Study Area. This is a known hybrid that is listed on the Census of Western Australian Plants (DPaW 2015b), and is considered to be a hybrid between *Eucalyptus tetraptera* and *Eucalyptus incrassata*, both of which were recorded in the Study Area. It is not considered to be of significance.

Distribution Extensions and Distribution Gaps

Table 7 presents taxa where the collections from the Study Area represent extensions to the known distribution of such taxa, or otherwise fill gaps within the known distribution of such taxa, according to NatureMap (DPaW 2015a). Table 7 also presents an assessment of the significance of each taxon, in line with EPA (2004), where a significant taxon can be defined by 'being representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range)'. Several of the taxa in Table 7 are listed or unlisted significant taxa that are outlined in Sections 5.1.3 and 5.1.4, however none of the remaining taxa are considered to be significant in the context of the Study Area.

Table 7: Taxa Where Collections Represent Significant Range Extensions to the Known Ranges of these Taxa, or Fill Distribution Gaps (DPaW 2015a)

Taxon	Description	Significance
<i>Acacia evenulosa</i>	Extension of known distribution to the south	Not significant – widespread taxon, relatively common in Study Area with multiple locations recorded (3)
<i>Actinobole uliginosum</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Allocasuarina acuarina</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Atriplex ?bunburyana</i>	Extension of known distribution to the south (if identification confirmed)	Not significant – widespread taxon, multiple locations (2) recorded in Study Area
<i>Atriplex ?paludosa</i>	Fills gap in known distribution (if identification confirmed)	Not significant – widespread taxon, within known range
<i>Blennospora drummondii</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Calandrinia granulifera</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Chorizema cytisoides</i>	Extension of known distribution to the east	Not significant – widespread taxon, common in Study Area with multiple locations recorded (8)
<i>Chthonocephalus pseudevax</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Convolvulus remotus</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Cryptandra spyridioides</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Cyathostemon tenuifolius</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3)	Extension of known distribution to the east	Listed significant taxon – Section 5.1.3
<i>Drosera grieviei</i> (P1)	Extension of known distribution to the east	Listed significant taxon - Section 5.1.3
<i>Drosera moorei</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Erodium cygnorum</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Ficinia nodosa</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Hakea ruscifolia</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Isoetopsis graminifolia</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Lepidosperma</i> sp. ‘Fitzgerald Tuberculate’	Extension of known distribution to the east	Unlisted significant taxon – Section 5.1.4
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596) (P1)	Extension of known distribution to the east	Listed significant taxon - Section 5.1.3
<i>Leucopogon woodsii</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range

Taxon	Description	Significance
<i>Logania flaviflora</i>	Extension of known distribution to the south-east	Not significant – widespread taxon, minor range extension, 1 location recorded in Study Area however likely to be present elsewhere in vicinity based on topography and soil type
<i>Lomandra nigricans</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Melaleuca lecanantha</i>	Extension of known distribution to the south	Not significant – widespread taxon, multiple locations recorded in Study Area (2), likely to be present elsewhere in vicinity based on topography and soil types
<i>Melaleuca platycalyx</i>	Extension of known distribution to the east	Not significant – widespread taxon, minor range extension, 1 location recorded in Study Area however likely to be present elsewhere in vicinity based on topography and soil type
<i>Olearia</i> sp. <i>Eremicola</i> (Diels & Pritzel s.n. PERTH 00449628)	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Pimelea pendens</i>	Large (115 km) extension of known distribution to the west	Not significant – widespread taxon, 1 location recorded in Study Area, likely to be present elsewhere in vicinity based on topography and soil type, 2 locations recorded nearby at Bandalup Hill by Western Botanical (2006a), likely to be present in areas between Study Area and known range based on preferred habitat
<i>Rhodanthe pygmaea</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Schoenus calcatus</i>	Extension of known distribution to the south	Not significant – widespread taxon, multiple locations recorded in Study Area (4), likely to be present elsewhere in vicinity based on topography and soil types
<i>Stackhousia</i> sp. Thick sepals (A.E. Orchard 1547)	Large (160 km) extension of known distribution to the west	Not significant – widespread taxon, multiple locations recorded in Study Area (3), likely to be present elsewhere in vicinity based on topography and soil type, likely to be present in areas between Study Area and known range based on preferred habitat, recently erected phrase name, specimens may have previously been identified as <i>Stackhousia scoparia</i>
<i>Stylidium zeicolor</i>	Extension of known distribution to the east	Not significant – widespread taxon, minor range extension, 1 location recorded in Study Area however likely to be present elsewhere in vicinity based on topography and soil type

Taxon	Description	Significance
<i>Styphelia melaleuroides</i> var. <i>melaleuroides</i>	Extension of known distribution to the north-east	Not significant – widespread taxon, minor range extension, 1 location recorded in Study Area however likely to be present elsewhere in vicinity based on topography and soil type
<i>Synaphea reticulata</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Tecticornia syncarpa</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Thelymitra benthamiana</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Thysanotus thyrsoides</i>	Extension of known distribution to the east	Not significant – widespread taxon, minor range extension, 1 location recorded in Study Area however likely to be present elsewhere in vicinity based on topography and soil type
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2)	Extension of known distribution to the east	Listed significant taxon – Section 5.1.3
<i>Tricostularia neesii</i>	Extension of known distribution to the east	Not significant – widespread taxon, minor range extension, 1 location recorded in Study Area however likely to be present elsewhere in vicinity based on topography and soil type
<i>Vittadinia australasica</i> var. <i>australasica</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Wahlenbergia gracilentia</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range
<i>Wilsonia backhousei</i>	Fills gap in known distribution	Not significant – widespread taxon, within known range

Short-Range Endemic Taxa

Table 8 presents taxa recorded in the Study Area that are considered to be short-range endemic. Short-range endemic taxa are defined as taxa that have a total known range of less than 10,000 km², with NatureMap (DPaW 2015) used to calculate approximate range areas. This definition was used by Markey *et al.* (2012) to determine short-range endemic taxa recorded in their survey of the Ravensthorpe Range, following definitions used for invertebrate taxa (Harvey 2002, cited in Markey *et al.* 2012). Table 8 also presents an assessment of the significance of each taxon, in line with EPA (2004), where a significant taxon can be defined by displaying 'local endemism/has a restricted distribution'. A total of 18 taxa were considered to be short-range endemics. Several of the short-range endemic taxa are listed or unlisted significant taxa that are outlined in Sections 5.1.3 and 5.1.4, however none of the remaining short-range endemic taxa recorded are considered to be otherwise significant in the context of the Study Area.

Table 8: Short-Range Endemic Taxa Recorded in the Study Area

Taxon	Significance
<i>Acacia heterochroa</i> subsp. <i>heterochroa</i>	Not significant – large number of records across known range (73), known from a conservation reserve, 1 location recorded in Study Area however likely to be present elsewhere in vicinity based on topography and soil type
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	Not significant – large number of records across known range (48), known from a conservation reserve, common in Study Area with multiple locations recorded (9)
<i>Allocasuarina ?hystricosa</i> (P4)	Listed significant taxon - Section 5.1.3
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3)	Listed significant taxon - Section 5.1.3
<i>Drosera grieviei</i> (P1)	Listed significant taxon - Section 5.1.3
<i>Grevillea rigida</i> subsp. <i>rigida</i>	Not significant – reasonable number of records across known range (12), known from a conservation reserve, common in Study Area with multiple locations recorded (5)
<i>Hybanthus floribundus</i> subsp. <i>adpressus</i>	Not significant – large number of records across known range (56), known from conservation reserves, multiple locations recorded in Study Area (2)
<i>Jacksonia elongata</i>	Not significant – large number of records across known range (67), known from conservation reserves from numerous records, common in Study Area with multiple locations recorded (9)
<i>Lepidosperma gahnioides</i>	Not significant – large number of records across known range (46), known from a conservation reserve, common in Study Area with multiple locations recorded (5)
<i>Lepidosperma</i> sp. 'Fitzgerald Tuberculate'	Unlisted significant taxon – Section 5.1.4
<i>Lepidosperma</i> sp. 'Clathrate' (R.L. Barrett & G.F. Craig RLB 3570)	Barrett <i>et al.</i> (2009) note that this taxon is relatively common in the Ravensthorpe Range area, is known from Fitzgerald River National Park, and is not threatened. Multiple locations recorded in Study Area (3)
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596) (P1)	Listed significant taxon - Section 5.1.3
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	Barrett <i>et al.</i> (2009) note that this taxon is scattered across the Ravensthorpe Range from approximately 15 locations, and is probably not threatened. Common in Study Area with multiple locations (16)
<i>Leucopogon heterophyllus</i>	Not significant – large number of records across known range (25), common in Study Area with multiple locations recorded (9)
<i>Melaleuca ulicoides</i>	Not significant – reasonable number of records across known range (10), known from a conservation reserve, restricted in Study Area with 1 location recorded however known to occur at multiple locations (>30 in adjacent areas (Western Botanical 2006a)
<i>Micromyrtus navicularis</i> (P3)	Listed significant taxon - Section 5.1.3
<i>Pultenaea calycina</i> subsp. <i>proxena</i> (P4)	Listed significant taxon - Section 5.1.3
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2)	Listed significant taxon - Section 5.1.3

5.1.6 Introduced Taxa

A total of 16 introduced flora taxa were recorded by this survey of the Study Area. Table 9 presents a list of the introduced flora taxa recorded in the Study Area, together with location information, and ratings for each introduced taxon under the Environmental Weed Strategy for Western Australia (CALM 1999). The majority of weed locations were recorded in creeks, with most locations also being in the southern half of the Study Area near the South Coast Highway and farmland areas.

Of the introduced taxa recorded in the Study Area, *Eragrostis curvula* (African Lovegrass) is considered to be a serious weed of disturbed ground capable of invading adjacent bushland (Hussey *et al.* 2007). This taxon was not recorded in native vegetation during this survey, with a single location noted on the verge of the South Coast Highway. It is expected that this taxon occurs intermittently along the South Coast Highway in the Study Area, and may also occur in paddocks south of the South Coast Highway. The remaining weeds recorded in the Study Area are not considered to be particularly serious, however *Cynodon dactylon* (Couch) is known to be highly invasive in wetland areas (Hussey *et al.* 2007).

Locations of each of these flora taxa are presented in Appendix J, and presented on Figure 10.

Table 9: Summary of Introduced Taxa Recorded from within the Study Area

Taxon	Common Name	Number of Locations Recorded in the Study Area	Vegetation Types	Environmental Weeds Rating (CALM 1999)
* <i>Avellinia michelii</i>	-	2	6	To be advised
* <i>Briza maxima</i>	Blowfly Grass	2	11, 12	Moderate
* <i>Briza minor</i>	Shivery Grass	1	11	Moderate
* <i>Conyza sumatrensis</i>	Tall Fleabane	1	7	Low
* <i>Cotula coronopifolia</i>	Waterbuttons	1	12	Not rated
* <i>Cynodon dactylon</i>	Couch	1	11	Moderate
* <i>Ehrharta longiflora</i>	Annual Veldt Grass	2	12	Moderate
* <i>Eragrostis curvula</i>	African Lovegrass	1	5	High
* <i>Hypochaeris glabra</i>	Smooth Catsear	9	6, 7, 8, 11, 12, 16	Moderate
* <i>Lolium rigidum</i>	Annual Ryegrass	1	12	Moderate
* <i>Lysimachia arvensis</i>	Pimpernel	5	6, 8, 11, 12	Moderate
* <i>Parapholis incurva</i>	Coast Barbgrass	1	12	Mild
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	False Hairgrass	8	6, 7, 8, 12	Moderate
* <i>Solanum nigrum</i>	Black Berry Nightshade	1	11	Moderate
* <i>Sonchus oleraceus</i>	Common Sowthistle	5	7, 11, 12, 16	Moderate
* <i>Ursinia anthemoides</i>	Ursinia	2	8, 12	Moderate

5.2 Vegetation of the Study Area

5.2.1 Vegetation Types

Examination of the Study Area quadrat classification dendrogram at the 13-cluster level (the optimal level as determined by OptimClass), found that, while the clusters were broadly plausible at this level, 2 clusters could plausibly be subdivided, based on further examination of taxon groups, as well as consideration of field observations, and indicator taxon analysis. This subdivision resulted in 18 clusters being recognised, which are considered to represent VTs. Although this subdivision of clusters results in the VTs being resolved at differing levels of similarity, the recognition of 18 VTs is supported by field observations and indicator taxon analysis. Of the 18 VTs, 13 have been mapped in the Project Area. Appendix K presents the classification dendrogram, with the VTs ordered from 1 to 18 from left to right in the dendrogram. The optimal 13-cluster level is also shown on the dendrogram. Appendix L presents the results of the indicator taxon analysis.

At a higher level in the classification dendrogram, the 18 VTs were arranged into 3 broad groups, as outlined below:

- Group 1 (VTs 1-4) corresponds to vegetation that is commonly referred to as Kwongan shrubland on sandplains. In the Study Area, this group generally consists of mallee shrubland or woodland dominated by *Eucalyptus pleurocarpa* over taxon-rich shrubland on sandplains, with variable levels of laterite.
- Group 2 (VTs 5-15) corresponds to vegetation on clay soils associated with greenstone or laterite geology, including drainage lines associated with such geologies. It generally consists of mallee woodlands co-dominated by a number of *Eucalyptus* taxa over mixed shrublands.
- Group 3 (VTs 16-18) corresponds to vegetation on granite-derived soils. It generally consists of tall to mid shrublands dominated by *Allocasuarina campestris* and/or *Calothamnus quadrifidus* subsp. *quadrifidus*, over low mixed shrublands and sedgeland.

The VTs described in the Study Area are summarised in Table 10 below, including a description of the VT (as per Section 3.6), total area mapped in the Study Area, and number of quadrats established in each VT. A map of the VTs described in the Study Area is presented in Figure 9. Appendix M presents detailed information on VTs described in the Study Area, including indicator and common taxa. Appendix N presents a taxon-VT matrix (quadrat and detailed recording site data only).

As noted in Section 3.5, 1 quadrat (SC-52) established in a degraded creekline was omitted from the analysis. This quadrat was manually allocated to VT 10 based on dominant taxa. The single detailed recording site established in the Study Area (Site01) was also allocated to VT 10 based on dominant taxa (Figure 9).

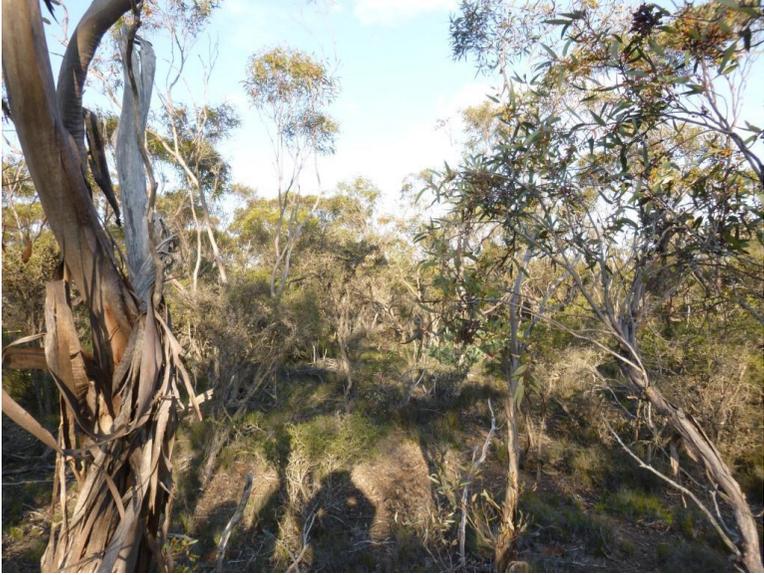
Several areas in the vicinity of RNO infrastructure were mapped as degraded versions of VTs, including VTs 7, 10 and 13. These areas have historically been grazed, and have also been impacted by the invasion of introduced taxa. These areas are designated with a 'd' following the VT number on Figure 9. Areas of these VTs mapped as degraded versions are noted in Table 10 below.

As noted in Section 5.1.3, a small, discrete band of magnesite outcropping and soil was located at the western end of the Study Area. This corresponds to the locations of the Priority flora taxon *Pultenaea calycina* subsp. *proxena* (P4) (Figure 8), a taxon known to be primarily restricted to magnesite soils. Although this and several other taxa in the vicinity that appear to be restricted to magnesite were associated with this magnesite area, it was considered to be too small an area to be mapped at a scale of 1:10,000. This area was therefore included in the surrounding polygon of VT 15.

Table 10: Summary of Vegetation Types Mapped in the Study Area

VT	Summary	Photograph
1	<p>Description: Mid mallee woodland or shrubland dominated by <i>Eucalyptus pleurocarpa</i> over mid sparse to open shrubland dominated by <i>Banksia lemmaniana</i>, <i>Banksia media</i> and <i>Hakea pandanycarpa</i> subsp. <i>pandanycarpa</i> over low shrubland of mixed taxa dominated by <i>Banksia cirsioides</i>, <i>Banksia obovata</i>, <i>Allocasuarina humilis</i>, <i>Beaufortia micrantha</i> var. <i>micrantha</i> and <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> on grey-brown sandy loams, usually with lateritic gravel, on undulating plains</p> <p>Area mapped: 237.8 ha in Study Area (15.1 %); 26.9 ha in Project Area (12.1 %)</p> <p>Sampling: 5 quadrats</p> <p>Significant Taxa: <i>Conostylis lepidospermoides</i> (Threatened), <i>Drosera grievei</i> (P1), <i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2), <i>Synaphea platyphylla</i> (P3).</p> <p>Plate 14: Quadrat SC-63 (Photograph - Woodman Environmental)</p>	
2	<p>Description: Mid open mallee woodland or shrubland dominated by <i>Eucalyptus pleurocarpa</i> and <i>Eucalyptus tetraptera</i> over mid sparse shrubland dominated by <i>Daviesia pachyphylla</i> over low shrubland of mixed taxa dominated by <i>Banksia cirsioides</i>, <i>Melaleuca tuberculata</i> var. <i>macrophylla</i>, <i>Hakea incrassata</i>, <i>Allocasuarina humilis</i> and <i>Mesomelaena stygia</i> subsp. <i>stygia</i> on grey-brown or yellow-brown sandy loams with lateritic gravel on undulating plains</p> <p>Area mapped: 19.5 ha in Study Area (1.2 %); not mapped in Project Area.</p> <p>Sampling: 3 quadrats</p> <p>Significant Taxa: <i>Conostylis lepidospermoides</i> (Threatened), <i>Drosera grievei</i> (P1), <i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2), <i>Synaphea</i> aff. <i>petiolaris</i> (potentially undescribed)</p> <p>Plate 15: Quadrat SC-02 (Photograph - Woodman Environmental)</p>	

VT	Summary	Photograph
3	<p>Description: Mid mallee woodland or shrubland dominated by <i>Eucalyptus pleurocarpa</i> over mid sparse to open shrubland dominated by <i>Hakea pandanica</i> subsp. <i>pandanica</i> and <i>Hakea corymbosa</i> over low shrubland and sedgeland of mixed taxa dominated by <i>Allocasuarina humilis</i>, <i>Beaufortia micrantha</i> var. <i>micrantha</i>, <i>Melaleuca carrii</i>, <i>Calothamnus gracilis</i> and <i>Mesomelaena stygia</i> subsp. <i>stygia</i> on grey or grey-brown sandy loams on undulating plains</p> <p>Area mapped: 270.6 ha in Study Area (17.2 %); 43.0 ha in Project Area (19.4 %).</p> <p>Sampling: 5 quadrats</p> <p>Significant Taxa: <i>Conostylis lepidospermoides</i> (Threatened), <i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2)</p> <p>Plate 16: Quadrat SC-56 (Photograph - Woodman Environmental)</p>	
4	<p>Description: Mid isolated mallees of <i>Eucalyptus pleurocarpa</i> over mid sparse shrubland dominated by <i>Adenanthos cuneatus</i>, <i>Jacksonia elongata</i> and <i>Hakea obliqua</i> subsp. <i>parvifolia</i> over low shrubland and sedgeland of mixed taxa dominated by <i>Allocasuarina acuarina</i>, <i>Banksia violacea</i>, <i>Calothamnus gracilis</i>, <i>Taxandria spathulata</i> and <i>Caustis dioica</i> on grey-brown or yellow-brown sandy loams on undulating plains and flats</p> <p>Area mapped: 134.0 ha in Study Area (8.5 %); 19.4 ha in Project Area (8.8 %).</p> <p>Sampling: 4 quadrats</p> <p>Significant Taxa: <i>Conostylis lepidospermoides</i> (Threatened), <i>Drosera grievii</i> (P1), <i>Thysanotus parviflorus</i> (P4), <i>Synaphea</i> aff. <i>petiolaris</i> (potentially undescribed)</p> <p>Plate 17: Quadrat SC-09 (Photograph - Woodman Environmental)</p>	

VT	Summary	Photograph
5	<p>Description: Mid mallee woodland of mixed taxa including <i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>, <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> and <i>Eucalyptus pileata</i> over mid to low shrubland to open shrubland of mixed taxa including <i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>, <i>Grevillea pectinata</i>, <i>Melaleuca hamata</i>, <i>Melaleuca subfalcata</i> and <i>Melaleuca johnsonii</i> over low sparse sedgeland of mixed taxa dominated by <i>Gahnia ancistrophylla</i> on brown clay with greenstone, sedimentary or quartz stones on hill slopes and crests</p> <p>Area mapped: 77.3 ha in Study Area (4.9 %); 3.6 ha in Project Area (1.6 %).</p> <p>Sampling: 6 quadrats</p> <p>Significant Taxa: <i>Lepidosperma</i> sp. Mt Chester (S. Kern <i>et al.</i> LCH 16596) (P1), <i>Micromyrtus navicularis</i> (P3)</p> <p>Plate 18: Quadrat SC-19 (Photograph - Woodman Environmental)</p>	
6	<p>Description: Mid mallee woodland of mixed taxa including <i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>, <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>, <i>Eucalyptus pileata</i> and <i>Eucalyptus calycogona</i> subsp. <i>calycogona</i> over mid to low open shrubland of mixed taxa including <i>Acacia glaucoptera</i>, <i>Melaleuca lateriflora</i> and <i>Daviesia nematophylla</i> over low sparse sedgeland and shrubland of mixed taxa including <i>Lepidosperma fimbriatum</i>, <i>Gahnia ancistrophylla</i>, <i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005) and <i>Wilsonia humilis</i> on brown clay with greenstone, sedimentary or quartz stones on water-gaining flats and hill slopes</p> <p>Area mapped: 21.0 ha in Study Area (1.3 %); 0.9 ha in Project Area (0.4 %).</p> <p>Sampling: 4 quadrats</p> <p>Significant Taxa: <i>Lepidosperma</i> sp. Mt Chester (S. Kern <i>et al.</i> LCH 16596) (P1)</p> <p>Plate 19: Quadrat SC-24 (Photograph - Woodman Environmental)</p>	

VT	Summary	Photograph
7	<p>Description: Mid mallee woodland of mixed taxa including <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507) and <i>Eucalyptus uncinata</i> over tall sparse shrubland dominated by <i>Hakea laurina</i> and <i>Melaleuca hamata</i> over mid sparse shrubland of mixed taxa including <i>Templetonia retusa</i> and <i>Hakea lissocarpha</i> over low open to sparse sedgeland of mixed taxa dominated by <i>Lomandra effusa</i>, <i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798), <i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118) and <i>Gahnia ancistrophylla</i> on grey or brown clay on flats adjacent to drainage lines</p> <p>Area mapped: 13.6 ha in Study Area (0.9 %), including 2.7 ha (0.2 %) mapped as 7d; 1.5 ha in Project Area (0.7 %).</p> <p>Sampling: 3 quadrats</p> <p>Significant Taxa: -</p> <p>Plate 20: Quadrat SC-31 (Photograph - Woodman Environmental)</p>	
8	<p>Description: Mid woodland to open forest of <i>Eucalyptus occidentalis</i> over tall to mid sparse shrubland of mixed taxa including <i>Acacia cyclops</i>, <i>Acacia saligna</i> subsp. <i>lindleyi</i> ms, <i>Hakea nitida</i> and <i>Melaleuca thapsina</i> over low open to sparse sedgeland and shrubland of mixed taxa dominated by <i>Schoenus subfascicularis</i> and <i>Thomasia angustifolia</i> on grey-brown sandy loam or sandy clay in basins</p> <p>Area mapped: 12.9 ha in Study Area (0.8 %); 2.3 ha in Project Area (1.0 %).</p> <p>Sampling: 3 quadrats</p> <p>Significant Taxa: <i>Eremophila glabra</i> s. lat. (potentially undescribed)</p> <p>Plate 21: Quadrat SC-44 (Photograph - Woodman Environmental)</p>	

VT	Summary	Photograph
9	<p>Description: Mid mallee woodland of <i>Eucalyptus ecostata</i> and <i>Eucalyptus pleurocarpa</i> over tall open shrubland of <i>Banksia lemanniana</i> and <i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> over mid open shrubland of <i>Melaleuca hamata</i>, <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> and <i>Leptospermum oligandrum</i> over low sparse shrubland and grassland of mixed taxa dominated by <i>Darwinia diosmoides</i> and <i>Spartochloa scirpoidea</i> over low sparse sedgeland dominated by <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay with laterite gravel over laterite outcropping on hill crests.</p> <p>Area mapped: 0.3 ha in Study Area (0.02 %); not mapped in Project Area</p> <p>Sampling: 1 quadrat</p> <p>Significant Taxa: -</p> <p>Plate 22: Quadrat SC-48 (Photograph - Woodman Environmental)</p>	
10	<p>Description: Mid mallee woodland of <i>Eucalyptus ecostata</i> and <i>Eucalyptus pleurocarpa</i> over tall open shrubland of <i>Banksia lemanniana</i> over mid shrubland of mixed taxa dominated by <i>Petrophile fastigiata</i>, <i>Melaleuca villosisepala</i>, <i>Melaleuca pentagona</i> var. <i>pentagona</i> and <i>Taxandria spathulata</i> over low sparse shrubland of mixed taxa including <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585), <i>Leucopogon opponens</i>, <i>Beaufortia schaueri</i> and <i>Leucopogon cuneifolius</i> over low sparse sedgeland dominated by <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay with laterite gravel, occasionally with laterite outcropping, on hill slopes and crests.</p> <p>Area mapped: 7.2 ha in Study Area (0.5 %); not mapped in Project Area</p> <p>Sampling: 1 quadrat</p> <p>Significant Taxa: -</p> <p>Plate 23: Quadrat SC-49 (Photograph - Woodman Environmental)</p>	

VT	Summary	Photograph
11	<p>Description: Occasional mid open forest of <i>Eucalyptus occidentalis</i> over tall to mid open shrubland of mixed taxa dominated by <i>Melaleuca cuticularis</i> over tall sedgeland dominated by <i>Gahnia trifida</i> and <i>Juncus kraussii</i> subsp. <i>australiensis</i> on grey or brown clay in creeks</p> <p>Area mapped: 2.2 ha in Study Area (0.1 %); not mapped in Project Area</p> <p>Sampling: 2 quadrats</p> <p>Significant Taxa: -</p> <p>Plate 24: Quadrat SC-54 (Photograph - Woodman Environmental)</p>	
12	<p>Description: Mid isolated trees to open woodland of <i>Eucalyptus occidentalis</i> over tall to mid open shrubland of mixed taxa dominated by <i>Melaleuca hamulosa</i>, <i>Melaleuca acuminata</i> subsp. <i>acuminata</i>, <i>Callistemon phoeniceus</i> and occasionally <i>Melaleuca cuticularis</i> over low open to sparse samphire shrubland of mixed taxa including <i>Tecticornia lepidosperma</i>, <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> and <i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i> on grey or brown sandy clay in saline creeks</p> <p>Area mapped: 20.6 ha in Study Area (1.3 %), including 11.5 ha (0.7 %) mapped as 12d; 2.6 ha in Project Area (1.2 %), including 1.8 ha (0.8 %) mapped as 12d</p> <p>Sampling: 2 quadrats from classification, 1 additional quadrat and 1 detailed recording site manually allocated</p> <p>Significant Taxa: -</p> <p>Plate 25: Quadrat SC-55 (Photograph - Woodman Environmental)</p>	

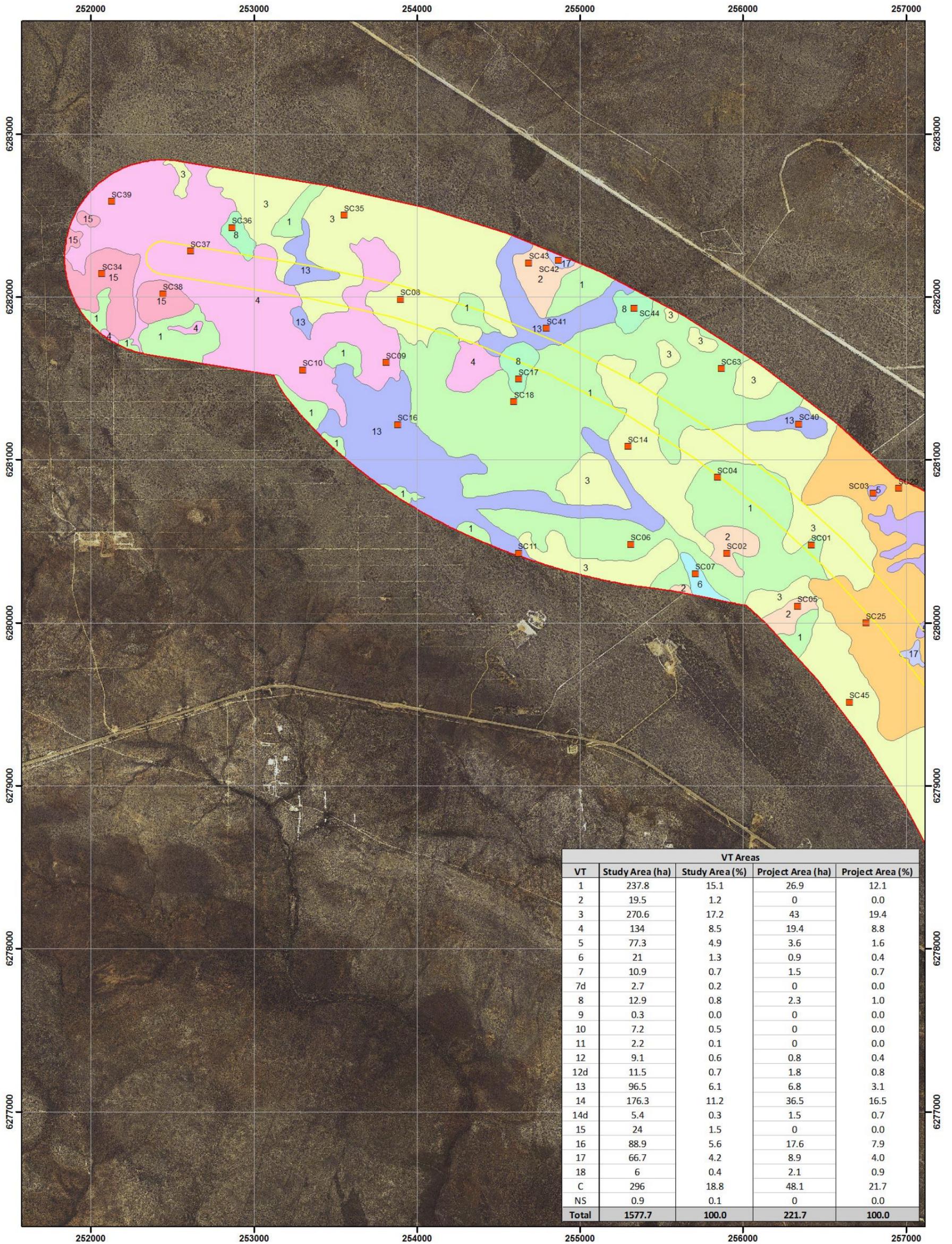
VT	Summary	Photograph
13	<p>Description: Mid mallee woodland of mixed taxa dominated by <i>Eucalyptus sporadica</i> and <i>Eucalyptus uncinata</i> over tall to mid sparse shrubland of mixed taxa including <i>Banksia media</i> and <i>Exocarpos sparteus</i> over low open shrubland of mixed taxa dominated by <i>Melaleuca rigidifolia</i>, <i>Melaleuca carrii</i>, <i>Grevillea nudiflora</i>, <i>Acacia gonophylla</i> and <i>Lasiopetalum rosmarinifolium</i> over low sparse sedgeland of mixed taxa including <i>Gahnia ancistrophylla</i> and <i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287) on grey-brown clay or sandy loams, often with lateritic gravel, on undulating plains</p> <p>Area mapped: 96.5 ha in Study Area (6.1 %); 6.8 ha in Project Area (3.1 %).</p> <p>Sampling: 5 quadrats</p> <p>Significant Taxa: <i>Conostylis lepidospermoides</i> (Threatened)</p> <p>Plate 26: Quadrat SC-11 (Photograph - Woodman Environmental)</p>	
14	<p>Description: Mid mallee woodland of mixed taxa including <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus pleurocarpa</i>, <i>Eucalyptus uncinata</i>, <i>Eucalyptus kessellii</i> subsp. <i>eugnota</i> and <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> over tall to mid sparse shrubland of mixed taxa including <i>Banksia media</i> and <i>Hakea pandanica</i> subsp. <i>pandanica</i> over low shrubland of mixed taxa dominated by <i>Melaleuca rigidifolia</i>, <i>Beaufortia schaueri</i>, <i>Daviesia lancifolia</i> and <i>Grevillea nudiflora</i> on grey-brown clay with quartz, ironstone and sedimentary stones on undulating plains and low hills</p> <p>Area mapped: 181.7 ha in Study Area (11.5 %), including 5.4 ha (0.3 %) mapped as 14d; 38 ha in Project Area (17.2 %), including 1.5 ha (0.7 %) mapped as 14d.</p> <p>Sampling: 5 quadrats</p> <p>Significant Taxa: <i>Conostylis lepidospermoides</i> (Threatened), <i>Lepidosperma</i> sp. Mt Chester (S. Kern <i>et al.</i> LCH 16596) (P1), <i>Micromyrtus navicularis</i> (P3)</p> <p>Plate 27: Quadrat SC-29 (Photograph - Woodman Environmental)</p>	

VT	Summary	Photograph
15	<p>Description: Mid mallee woodland of mixed taxa including <i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i>, <i>Eucalyptus pleurocarpa</i>, <i>Eucalyptus uncinata</i> and <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507) over tall to mid sparse shrubland of mixed taxa including <i>Banksia lemmaniana</i>, <i>Banksia media</i>, <i>Melaleuca hamata</i> and <i>Allocasuarina ?hystricosa</i> over low open shrubland of mixed taxa dominated by <i>Melaleuca rigidifolia</i>, <i>Acacia ingrata</i>, <i>Grevillea nudiflora</i>, <i>Pultenaea indira</i> subsp. <i>indira</i> and <i>Daviesia anceps</i> over low sparse sedgeland of mixed taxa dominated by <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay loam with lateritic gravel over occasional laterite outcropping on crests of low hills</p> <p>Area mapped: 24.0 ha in Study Area (1.5 %); not mapped in Project Area</p> <p>Sampling: 2 quadrats</p> <p>Significant Taxa: <i>Allocasuarina ?hystricosa</i> (P4), <i>Pultenaea calycina</i> subsp. <i>proxena</i> (P4)</p> <p>Plate 28: Quadrat SC-38 (Photograph - Woodman Environmental)</p>	
16	<p>Description: Tall shrubland of <i>Acacia lasiocalyx</i> over mid sparse to open shrubland and grassland of mixed taxa dominated by <i>Allocasuarina campestris</i>, <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>, <i>Grevillea rigida</i> subsp. <i>rigida</i>, <i>Thryptomene australis</i> subsp. <i>australis</i> over low sparse to open shrubland and grassland of mixed taxa dominated by <i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>, <i>Calytrix</i> aff. <i>leschenaultii</i> and <i>Spartochloa scirpoidea</i> over low sparse to open sedgeland of mixed taxa dominated by <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), <i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553) and <i>Borya constricta</i> on grey, yellow or brown sandy or clay loam with granite stones over granite outcropping on valley slopes</p> <p>Area mapped: 88.9 ha in Study Area (5.6 %); 17.6 ha in in Project Area (7.9 %).</p> <p>Sampling: 5 quadrats</p> <p>Significant Taxa: <i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277), <i>Lepidosperma</i> sp. 'Fitzgerald Tuberculate' (potentially undescribed)</p> <p>Plate 29: Quadrat SC-60 (Photograph - Woodman Environmental)</p>	

VT	Summary	Photograph
17	<p>Description: Tall to mid shrubland dominated by <i>Allocasuarina campestris</i> and occasionally <i>Melaleuca hamata</i> over mid to low open to sparse shrubland of mixed species dominated by <i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>, <i>Daviesia pachyphylla</i>, <i>Grevillea teretifolia</i> and <i>Melaleuca carrii</i> over low sparse to open sedgeland of mixed species dominated by <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) and occasionally <i>Schoenus calcatuus</i> on yellow-brown or brown clay with granite or laterite stones on undulating plains and valley slopes</p> <p>Area mapped: 66.7 ha in Study Area (4.2 %); 8.9 ha in Project Area (4.0 %).</p> <p>Sampling: 4 quadrats</p> <p>Significant Taxa: <i>Conostylis lepidospermoides</i> (Threatened), <i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3), <i>Micromyrtus navicularis</i> (P3)</p> <p>Plate 30: Quadrat SC-32 (Photograph - Woodman Environmental)</p>	
18	<p>Description: Mid shrubland dominated by <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> over low open to sparse shrubland of mixed species dominated by <i>Calytrix</i> aff. <i>leschenaultii</i>, <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085) and <i>Melaleuca carrii</i> over low open to sparse sedgeland dominated by <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) over grey clay loam with granite stones and occasional granite outcropping on valley slopes</p> <p>Area mapped: 6.0 ha in Study Area (0.4 %); 2.1 ha in Project Area (0.9 %).</p> <p>Sampling: 2 quadrats</p> <p>Significant Taxa: <i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3), <i>Synaphea</i> aff. <i>petiolaris</i></p> <p>Plate 31: Quadrat SC-58 (Photograph - Woodman Environmental)</p>	

Legend	
	Quadrat (Woodman Environmental 2014)
	Project Area
	Study Area
Vegetation Types	
	1 Mid mallee woodland or shrubland dominated by <i>Eucalyptus pleurocarpa</i> over mid sparse to open shrubland dominated by <i>Banksia lemanniana</i> , <i>Banksia media</i> and <i>Hakea pandanica</i> subsp. <i>pandanica</i> over low shrubland of mixed taxa dominated by <i>Banksia cirsioides</i> , <i>Banksia obovata</i> , <i>Allocasuarina humilis</i> , <i>Beaufortia micrantha</i> var. <i>micrantha</i> and <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> on grey-brown sandy loams, usually with lateritic gravel, on undulating plains
	2 Mid open mallee woodland or shrubland dominated by <i>Eucalyptus pleurocarpa</i> and <i>Eucalyptus tetraptera</i> over mid sparse shrubland dominated by <i>Daviesia pachyphylla</i> over low shrubland of mixed taxa dominated by <i>Banksia cirsioides</i> , <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Hakea incrassata</i> , <i>Allocasuarina humilis</i> and <i>Mesomelaena stygia</i> subsp. <i>stygia</i> on grey-brown or yellow-brown sandy loams with lateritic gravel on undulating plains
	3 Mid mallee woodland or shrubland dominated by <i>Eucalyptus pleurocarpa</i> over mid sparse to open shrubland dominated by <i>Hakea pandanica</i> subsp. <i>pandanica</i> and <i>Hakea corymbosa</i> over low shrubland and sedgeland of mixed taxa dominated by <i>Allocasuarina humilis</i> , <i>Beaufortia micrantha</i> var. <i>micrantha</i> , <i>Melaleuca carrii</i> , <i>Calothamnus gracilis</i> and <i>Mesomelaena stygia</i> subsp. <i>stygia</i> on grey or grey-brown sandy loams on undulating plains
	4 Mid isolated mallees of <i>Eucalyptus pleurocarpa</i> over mid sparse shrubland dominated by <i>Adenanthos cuneatus</i> , <i>Jacksonia elongata</i> and <i>Hakea obliqua</i> subsp. <i>parvifolia</i> over low shrubland and sedgeland of mixed taxa dominated by <i>Allocasuarina acutata</i> , <i>Banksia violacea</i> , <i>Calothamnus gracilis</i> , <i>Taxandria spathulata</i> and <i>Causitis dioica</i> on grey-brown or yellow-brown sandy loams on undulating plains and flats
	5 Mid mallee woodland of mixed taxa including <i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> and <i>Eucalyptus pileata</i> over mid to low shrubland to open shrubland of mixed taxa including <i>Daviesia benthamii</i> subsp. <i>acanthoclona</i> , <i>Grevillea pectinata</i> , <i>Melaleuca hamata</i> , <i>Melaleuca subfalcata</i> and <i>Melaleuca johnsonii</i> over low sparse sedgeland of mixed taxa dominated by <i>Gahnia ancistrophylla</i> on brown clay with greenstone, sedimentary or quartz stones on hill slopes and crests
	6 Mid mallee woodland of mixed taxa including <i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> , <i>Eucalyptus pileata</i> and <i>Eucalyptus calycogona</i> subsp. <i>calycogona</i> over mid to low open shrubland of mixed taxa including <i>Acacia glaucoptera</i> , <i>Melaleuca lateriflora</i> and <i>Daviesia nematophylla</i> over low sparse sedgeland and shrubland of mixed taxa including <i>Lepidosperma fimbriatum</i> , <i>Gahnia ancistrophylla</i> , <i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005) and <i>Wilsonia humilis</i> on brown clay with greenstone, sedimentary or quartz stones on water-gaining flats and hill slopes
	7 Mid mallee woodland of mixed taxa including <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507) and <i>Eucalyptus uncinata</i> over tall sparse shrubland dominated by <i>Hakea laurina</i> and <i>Melaleuca hamata</i> over mid sparse shrubland of mixed taxa including <i>Templetonia retusa</i> and <i>Hakea lissocarpa</i> over low open to sparse sedgeland of mixed taxa dominated by <i>Lomandra effusa</i> , <i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798), <i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118) and <i>Gahnia ancistrophylla</i> on grey or brown clay on flats adjacent to drainage lines
	8 Mid woodland to open forest of <i>Eucalyptus occidentalis</i> over tall to mid sparse shrubland of mixed taxa including <i>Acacia cyclops</i> , <i>Acacia saligna</i> subsp. <i>lindleyi</i> ms, <i>Hakea nitida</i> and <i>Melaleuca thapsina</i> over low open to sparse sedgeland and shrubland of mixed taxa dominated by <i>Schoenus subfascicularis</i> and <i>Thomasia angustifolia</i> on grey-brown sandy loam or sandy clay in basins
	9 Mid mallee woodland of <i>Eucalyptus ecostata</i> and <i>Eucalyptus pleurocarpa</i> over tall open shrubland of <i>Banksia lemanniana</i> and <i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> over mid open shrubland of <i>Melaleuca hamata</i> , <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> and <i>Leptospermum oligandrum</i> over low sparse shrubland and grassland of mixed taxa dominated by <i>Darwinia diosmoides</i> and <i>Spartochloa scirpoidea</i> over low sparse sedgeland dominated by <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay with laterite gravel over laterite outcropping on hill crests.
	10 Mid mallee woodland of <i>Eucalyptus ecostata</i> and <i>Eucalyptus pleurocarpa</i> over tall open shrubland of <i>Banksia lemanniana</i> over mid shrubland of mixed taxa dominated by <i>Petrophile fastigiata</i> , <i>Melaleuca villosispala</i> , <i>Melaleuca pentagona</i> var. <i>pentagona</i> and <i>Taxandria spathulata</i> over low sparse shrubland of mixed taxa including <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585), <i>Leucopogon opponens</i> , <i>Beaufortia schaueri</i> and <i>Leucopogon cuneifolius</i> over low sparse sedgeland dominated by <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay with laterite gravel, occasionally with laterite outcropping, on hill slopes and crests.
	11 Occasional mid open forest of <i>Eucalyptus occidentalis</i> over tall to mid open shrubland of mixed taxa dominated by <i>Melaleuca cuticularis</i> over tall sedgeland dominated by <i>Gahnia trifida</i> and <i>Juncus kraussii</i> subsp. <i>australiensis</i> on grey or brown clay in creeks
	12 Mid isolated trees to open woodland of <i>Eucalyptus occidentalis</i> over tall to mid open shrubland of mixed taxa dominated by <i>Melaleuca hamulosa</i> , <i>Melaleuca acuminata</i> subsp. <i>acuminata</i> , <i>Callistemon phoeniceus</i> and occasionally <i>Melaleuca cuticularis</i> over low open to sparse samphire shrubland of mixed taxa including <i>Tecticornia lepidosperma</i> , <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> and <i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i> on grey or brown sandy clay in saline creeks
	13 Mid mallee woodland of mixed taxa dominated by <i>Eucalyptus sporadica</i> and <i>Eucalyptus uncinata</i> over tall to mid sparse shrubland of mixed taxa including <i>Banksia media</i> and <i>Exocarpos sparteus</i> over low open shrubland of mixed taxa dominated by <i>Melaleuca rigidifolia</i> , <i>Melaleuca carrii</i> , <i>Grevillea nudiflora</i> , <i>Acacia gonophylla</i> and <i>Lasiopetalum rosmarinifolium</i> over low sparse sedgeland of mixed taxa including <i>Gahnia ancistrophylla</i> and <i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287) on grey-brown clay or sandy loams, often with lateritic gravel, on undulating plains
	14 Mid mallee woodland of mixed taxa including <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus uncinata</i> , <i>Eucalyptus kessellii</i> subsp. <i>eugnota</i> and <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> over tall to mid sparse shrubland of mixed taxa including <i>Banksia media</i> and <i>Hakea pandanica</i> subsp. <i>pandanica</i> over low shrubland of mixed taxa dominated by <i>Melaleuca rigidifolia</i> , <i>Beaufortia schaueri</i> , <i>Daviesia lancifolia</i> and <i>Grevillea nudiflora</i> on grey-brown clay with quartz, ironstone and sedimentary stones on undulating plains and low hills
	15 Mid mallee woodland of mixed taxa including <i>Eucalyptus kessellii</i> subsp. <i>eugnota</i> , <i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus uncinata</i> and <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507) over tall to mid sparse shrubland of mixed taxa including <i>Banksia lemanniana</i> , <i>Banksia media</i> , <i>Melaleuca hamata</i> and <i>Allocasuarina ?hystricosa</i> over low open shrubland of mixed taxa dominated by <i>Melaleuca rigidifolia</i> , <i>Acacia ingrata</i> , <i>Grevillea nudiflora</i> , <i>Pultenaea indira</i> subsp. <i>indira</i> and <i>Daviesia anceps</i> over low sparse sedgeland of mixed taxa dominated by <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay loam with lateritic gravel over occasional laterite outcropping on crests of low hills
	16 Tall shrubland of <i>Acacia lasiocalyx</i> over mid sparse to open shrubland and grassland of mixed taxa dominated by <i>Allocasuarina campestris</i> , <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> , <i>Grevillea rigida</i> subsp. <i>rigida</i> , <i>Thryptomene australis</i> subsp. <i>australis</i> over low sparse to open shrubland and grassland of mixed taxa dominated by <i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i> , <i>Calytrix</i> aff. <i>leschenaultii</i> and <i>Spartochloa scirpoidea</i> over low sparse to open sedgeland of mixed taxa dominated by <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), <i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553) and <i>Borya constricta</i> on grey, yellow or brown sandy or clay loam with granite stones over granite outcropping on valley slopes
	17 Tall to mid shrubland dominated by <i>Allocasuarina campestris</i> and occasionally <i>Melaleuca hamata</i> over mid to low open to sparse shrubland of mixed species dominated by <i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i> , <i>Daviesia pachyphylla</i> , <i>Grevillea teretifolia</i> and <i>Melaleuca carrii</i> over low sparse to open sedgeland of mixed species dominated by <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) and occasionally <i>Schoenus calcatus</i> on yellow-brown or brown clay with granite or laterite stones on undulating plains and valley slopes
	18 Mid shrubland dominated by <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> over low open to sparse shrubland of mixed species dominated by <i>Calytrix</i> aff. <i>leschenaultii</i> , <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085) and <i>Melaleuca carrii</i> over low open to sparse sedgeland dominated by <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) over grey clay loam with granite stones and occasional granite outcropping on valley slopes
Other Mapped Areas	
	7d Degraded Area of VT 7
	12d Degraded Area of VT 12
	14d Degraded Area of VT 14
	C Cleared Land
	NS Not Surveyed

<p>WOODMAN ENVIRONMENTAL</p> <p>This map should only be used in conjunction with WEC report FQM14-37-01</p>		<p>Author: David Coultas</p>		<p>Figure</p> <p>9.0</p>
		<p>Vegetation Types in the Study Area</p>		
		<p>WEC Ref: FQM14-37-01</p>		
		<p>Filename: FQM14-37-01-f09.mxd</p>		
<p>Revision: A - 20 March 2015</p>		<p>Scale: 1:20,000 (A3) Grid: MGA Zone 51</p>		



VT Areas				
VT	Study Area (ha)	Study Area (%)	Project Area (ha)	Project Area (%)
1	237.8	15.1	26.9	12.1
2	19.5	1.2	0	0.0
3	270.6	17.2	43	19.4
4	134	8.5	19.4	8.8
5	77.3	4.9	3.6	1.6
6	21	1.3	0.9	0.4
7	10.9	0.7	1.5	0.7
7d	2.7	0.2	0	0.0
8	12.9	0.8	2.3	1.0
9	0.3	0.0	0	0.0
10	7.2	0.5	0	0.0
11	2.2	0.1	0	0.0
12	9.1	0.6	0.8	0.4
12d	11.5	0.7	1.8	0.8
13	96.5	6.1	6.8	3.1
14	176.3	11.2	36.5	16.5
14d	5.4	0.3	1.5	0.7
15	24	1.5	0	0.0
16	88.9	5.6	17.6	7.9
17	66.7	4.2	8.9	4.0
18	6	0.4	2.1	0.9
C	296	18.8	48.1	21.7
NS	0.9	0.1	0	0.0
Total	1577.7	100.0	221.7	100.0

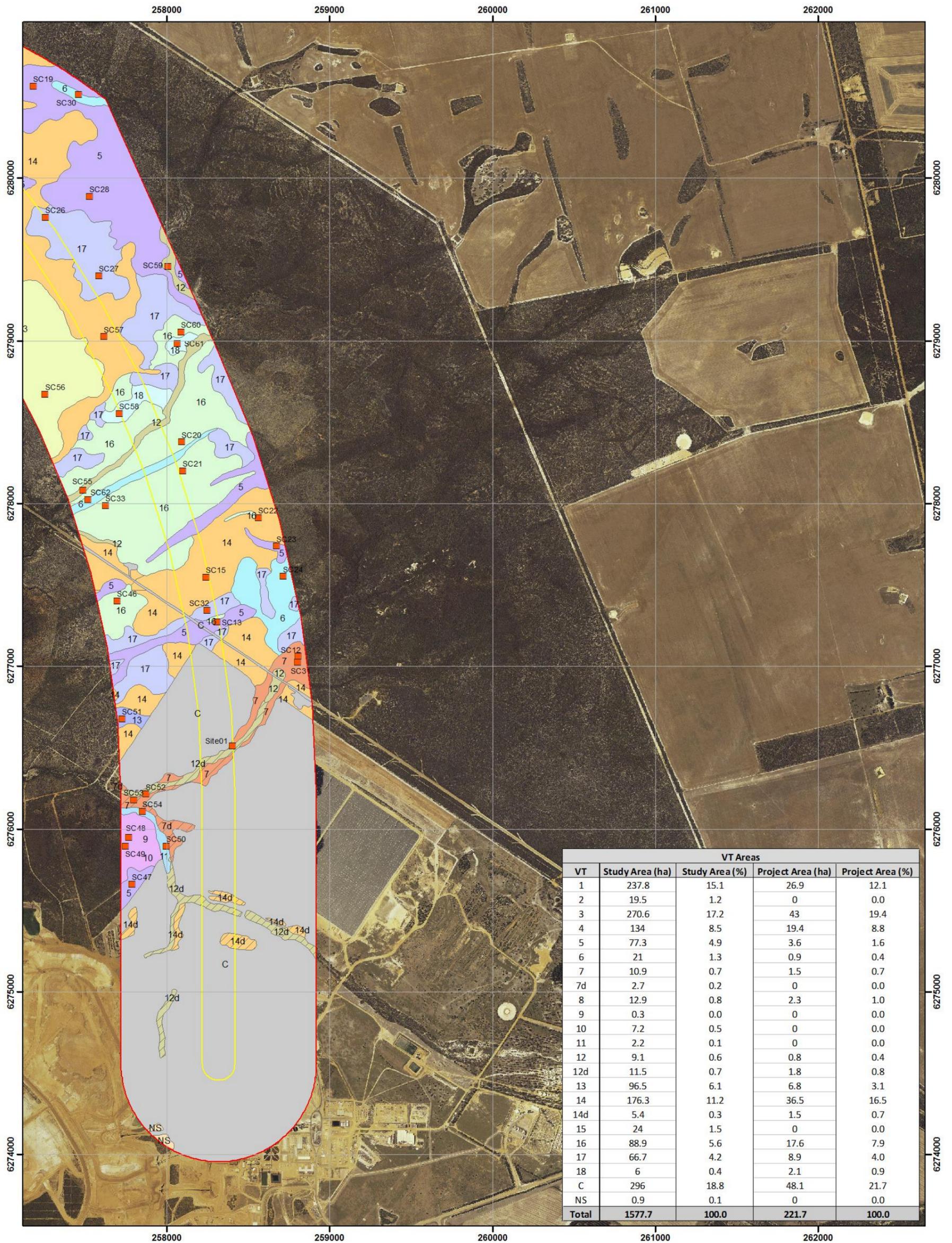
This map should only be used in conjunction with WEC report FQM14-37-01

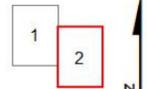
Vegetation Types in the Study Area

Revision: A - 20 March 2015

Author: David Coultas
WEC Ref: FQM14-37-01
Filename: FQM14-37-01-f09.mxd
Scale: 1:20,000 (A3) Grid: MGA Zone 51

Figure
9.1



 <p>WOODMAN ENVIRONMENTAL</p> <p>This map should only be used in conjunction with WEC report FQM14-37-01</p>		<p>Vegetation Types in the Study Area</p>		<p>Author: David Coultas</p>	<p>Figure</p> <p>9.2</p>
		<p>Revision: A - 20 March 2015</p>		<p>WEC Ref: FQM14-37-01</p> <p>Filename: FQM14-37-01-f09.mxd</p>	
		<p>Scale: 1:20,000 (A3) Grid: MGA Zone 51</p>			

5.2.2 Other Areas Described

Significant areas where no vegetation occurred because of human disturbance were mapped as 'Cleared Land' (C). This included paddocks at the southern end of the Study Area which contained pasture or planted and occasional remnant trees, RNO infrastructure, topsoil stock piles, and the South Coast Highway and associated gravel pits (Figure 9). A total of 296.0 ha of 'Cleared Land' have been mapped, representing 18.8 % of the Study Area. Smaller tracks were not mapped as 'Cleared Land' because of their complexity and small size.

Two small areas at the very southern end of the Study Area could not be accessed, as they were located adjacent to active mining infrastructure and were deemed too difficult and unsafe to access. These areas are located within the approved clearing footprint for the RNO operations on Bandalup Hill, and were mapped as 'Not Surveyed' (NS). A total of 0.9 ha of NS have been mapped, representing 0.1 % of the Study Area.

5.2.3 Summary of Significant Vegetation

Three listed significant communities were recorded by this survey of the Study Area, being:

- EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered);
- DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3); and
- DPaW-classified PEC 'Swamp Yate (*Eucalyptus occidentalis*) woodlands in seasonally inundated clay basins (South Coast)' (Priority 3).

It should be noted that the former 2 listed significant communities are considered equivalent; this is discussed further in Section 5.2.4.

The above listed significant communities are represented by 1 or more VTs mapped in the Study Area. These VTs are identified in Table 11 below, and are discussed further in Section 5.2.4. Both listed significant communities are represented by VTs that have been mapped in the Project Area (Figure 9).

A number of the VTs mapped in the Study Area are also considered to be of local and/or regional significance for reasons other than formal listing, as defined by EPA Guidance Statement No. 51 (EPA 2004). These VTs are also identified in Table 11 below, and are discussed further in Section 5.2.5.

Table 11: Summary of Significance of Vegetation Types in the Study Area

VT	Local Significance	Regional Significance
1	<p>Considered of local significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia'; Mapped over several relatively large occurrences in the Study Area, mapped in the Project Area. 	<p>Considered of regional significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3); Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.
2	<p>Considered of local significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia'; Mapped over several small occurrences in the Study Area, not mapped in the Project Area. 	<p>Considered of regional significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3); Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.
3	<p>Considered of local significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia'; Mapped over several relatively large occurrences in the Study Area, mapped in the Project Area. 	<p>Considered of regional significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3); Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.

VT	Local Significance	Regional Significance
4	<p>Considered of local significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3); Mapped over several relatively large occurrences in the Study Area, mapped in the Project Area. 	<p>Considered of regional significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3); Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.
5	<p>Not considered of local significance</p> <ul style="list-style-type: none"> Mapped over several relatively large occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns; Likely to occur along approved access alignment.
6	<p>Considered of local significance</p> <ul style="list-style-type: none"> Mapped over several small occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns; Likely to occur along approved access alignment.
7	<p>Considered of local significance</p> <ul style="list-style-type: none"> Mapped over several small occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Represented in Markey <i>et al.</i> (2012) dataset, known to occur outside the Study Area
8	<p>Considered of local significance</p> <ul style="list-style-type: none"> Represents DPaW-classified PEC 'Swamp Yate (<i>Eucalyptus occidentalis</i>) woodlands in seasonally inundated clay basins (South Coast)' (Priority 3); Mapped over several small occurrences in the Study Area, mapped in the Project Area. 	<p>Considered of regional significance</p> <ul style="list-style-type: none"> Represents DPaW-classified PEC 'Swamp Yate (<i>Eucalyptus occidentalis</i>) woodlands in seasonally inundated clay basins (South Coast)' (Priority 3); Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.
9	<p>Considered of local significance</p> <ul style="list-style-type: none"> Mapped over 1 small occurrence in the Study Area, not mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Represented in Markey <i>et al.</i> (2012) dataset, known to occur outside the Study Area.
10	<p>Considered of local significance</p> <ul style="list-style-type: none"> Mapped over 1 small occurrence in the Study Area, not mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Represented in Markey <i>et al.</i> (2012) dataset, known to occur outside the Study Area; Likely to occur along approved access alignment.

VT	Local Significance	Regional Significance
11	<p>Considered of local significance</p> <ul style="list-style-type: none"> Mapped over 1 small occurrence in the Study Area, not mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns; Likely to occur along approved access alignment.
12	<p>Considered of local significance</p> <ul style="list-style-type: none"> Mapped over several small occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.
13	<p>Not considered of local significance</p> <ul style="list-style-type: none"> Mapped over several relatively large occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.
14	<p>Not considered of local significance</p> <ul style="list-style-type: none"> Mapped over several relatively large occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.
15	<p>Considered of local significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3); Mapped over several small occurrences in the Study Area, not mapped in the Project Area. 	<p>Considered of regional significance</p> <ul style="list-style-type: none"> Represents EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3); Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns; Likely to occur along approved access alignment.
16	<p>Not considered of local significance</p> <ul style="list-style-type: none"> Mapped over several relatively large occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns; Likely to occur along approved access alignment.
17	<p>Not considered of local significance</p> <ul style="list-style-type: none"> Mapped over several relatively large occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns; Likely to occur along approved access alignment.
18	<p>Considered of local significance</p> <ul style="list-style-type: none"> Mapped over several small occurrences in the Study Area, mapped in the Project Area. 	<p>Regional significance unknown</p> <ul style="list-style-type: none"> Not represented in Markey <i>et al.</i> (2012) dataset; Likely to extend outside Study Area based on aerial photography patterns.

5.2.4 Listed Significant Vegetation

It is considered that the EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' occurs in the Study Area. This TEC is listed as Endangered. To be considered to represent this TEC, vegetation must satisfy the following criteria (Threatened Species Scientific Committee 2014):

1. Occurs within the Southeast Coastal Floristic Province;
- and
- 2a: Characterised by Proteaceae taxa having 30 % or greater cover across all layers where these shrubs occur;
- or
- 2b: Two or more diagnostic Proteaceae taxa are present that are likely to form a significant vegetative component when regenerated. The use of diagnostic taxa is for situations in which the cover of Proteaceae taxa is reduced due to recent disturbance (e.g. fire).

The first criterion is met for all vegetation in the Study Area, as the Study Area is located within the Southeast Coastal Floristic Province. With regard to the remaining criteria, VTs 1, 2, 3, 4 and 15 all meet criterion 2b for the presence of diagnostic Proteaceae taxa. These VTs all occur in an area that was burnt in 2004, and vegetation cover remains lower than long-unburnt areas sampled elsewhere in the Study Area. It is therefore considered that, given adequate time, the cover of Proteaceae taxa would meet the threshold level of 30 %, as most quadrats established within these VTs are rich in Proteaceae taxa. All occurrences of VTs 1, 2, 3, 4 and 15 are therefore considered to represent the 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' TEC, and are considered to be locally and regionally significant. As VTs 1, 3 and 4 were mapped in the Project Area, this TEC also occurs in the Project Area.

While no DPaW-classified TEC is equivalent to the EPBC-listed 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia', the DPaW-classified Priority 3 PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' is noted as being a component of this TEC (DPaW 2014a). Based on the description given in DPaW (2014a), it is considered that VTs 1, 2, 3, 4 and 15 also represent this PEC.

It is also considered that the DPaW-classified Priority 3 PEC 'Swamp Yate (*Eucalyptus occidentalis*) woodlands in seasonally inundated clay basins (South Coast)' occurs in the Study Area. This PEC is defined by the presence of *Eucalyptus occidentalis* in seasonally inundated clay basins. In the Study Area, all occurrences of VT 8 satisfy this definition, and are therefore considered to represent this PEC. Photographs and taxon lists from occurrences of VT 8 in the Study Area were provided to Val English of the DPaW Species and Communities branch. Her assessment of the photographs and taxon lists noted that although there was limited overlap in taxon lists from occurrences in the Study Area and occurrences in the western part of the South Coast, on which the nomination of this PEC was based, the understorey of this PEC was likely to be floristically variable over its range across the South Coast (V. English pers. comm. 2015). It was therefore confirmed that the occurrences of VT 8 in the Study Area were representative of the aforementioned PEC (V.

English pers. comm. 2015). The occurrences of VT 8 in the Study Area are therefore considered to be locally and regionally significant. As VT 8 was mapped in the Project Area, this PEC also occurs in the Project Area.

5.2.5 Unlisted Significant Vegetation

Examination of the classification dendrogram of the Study Area and Markey *et al.* (2012) quadrat data (Appendix O) shows the majority of VTs defined in the Study Area being represented as discrete clusters in this dendrogram, indicating that they are not particularly closely related to the communities described by Markey *et al.* (2012). This was expected, as the Markey *et al.* (2012) survey concentrated on the Ravensthorpe Range itself, with much of the Study Area located on sand plains adjacent to the Ravensthorpe Range. A number of VTs, including VTs 1, 2, 3 and 4, VTs 5 and 6, VTs 13, 14 and 15, and VTs 16, 17 and 18, form discrete clusters, several of which that are separated at a relatively high level in the dendrogram (Appendix O); it is therefore considered that these VTs are not represented in the Markey *et al.* (2012) floristic community dataset. VTs 8, 11 and 12 form a discrete cluster separated at a relatively high level in the dendrogram, together with a single Markey *et al.* (2012) quadrat. This quadrat (R038) was omitted by Markey *et al.* (2012) prior to their analysis, as it was an outlier in preliminary analyses and sampled alluvial flats, as opposed to the Ravensthorpe Range for all other quadrats. However, this quadrat appears well separated from VTs 8, 11 and 12 based on taxon composition, and therefore it is considered that VTs 8, 11 and 12 are not represented in the Markey *et al.* (2012) dataset.

The VTs considered to not be represented in the Markey *et al.* (2012) dataset may therefore be of potential regional significance, however, as this cannot be confirmed, they are considered to be of unknown regional significance, and are designated as such in Table 11. It is worthy of note that many are likely to occur outside the Study Area based on potential suitable habitat identified from aerial photography. Some VTs are also likely to occur along the approved access alignment (Table 11; Table 13).

Quadrats from 3 VTs (7, 9 and 10) are nested within larger groupings of Markey *et al.* (2012) quadrats (Appendix O). This indicates a close relationship between these VTs and the communities described by Markey *et al.* (2012). This was also expected, as these VTs are composed of quadrats that were established in the vicinity of Bandalup Hill, which was also sampled by Markey *et al.* (2012). It is therefore considered that these VTs are represented regionally. As the groupings within which quadrats from these VTs are nested in are relatively large, it is also considered that these VTs are likely to be of lower regional significance, however this cannot be confirmed. These VTs are therefore also considered to be of unknown regional significance (Table 11).

One quadrat from VT 5 also grouped with a cluster of Markey *et al.* (2012) quadrats; an examination of the taxon composition of this quadrat and the quadrats it grouped with indicates that the grouping of this quadrat is aberrant, however further investigation would be required to determine the factors that influenced this grouping.

A number of VTs are considered to be of local significance, primarily as they were considered to have restricted distributions, and were mapped over a small total area. These are also detailed in Table 11. It is considered that the VTs mapped in the Study Area do not meet any

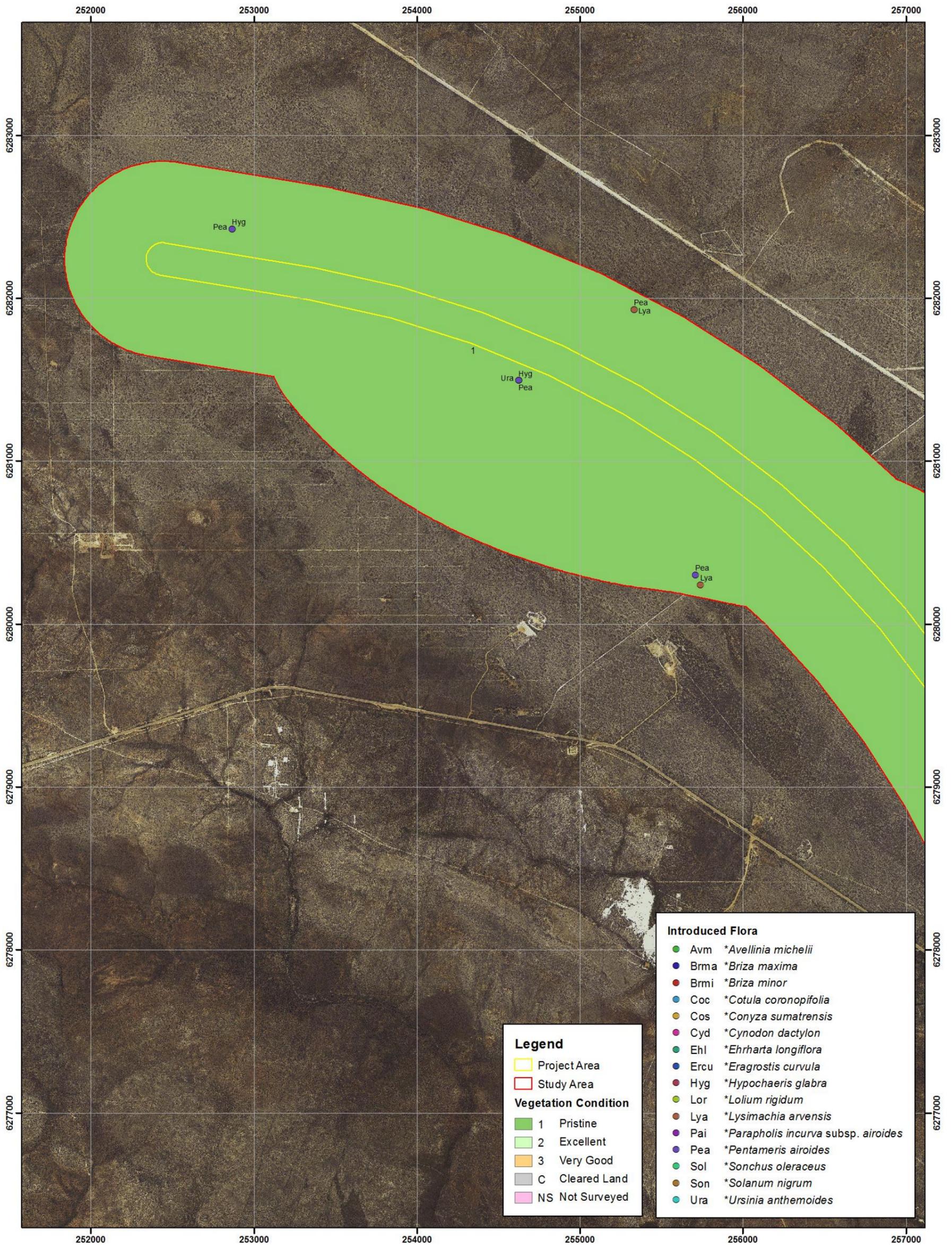
further criteria for significant vegetation as listed in EPA Guidance Statement No. 51 (EPA 2004) and outlined in Section 3.8.2.

5.2.6 Vegetation Condition

Vegetation condition mapping polygons are displayed on Figure 10. The majority of the vegetation in the Study Area was considered to be in 'Pristine' condition (Keighery 1994), with little to no disturbance and an absence or low levels of introduced flora taxa. No obvious evidence of Dieback (*Phytophthora cinnamomi*) was noted in the Study Area, however Dieback can only be confirmed by soil sample analysis, which is beyond the scope of this report.

A number of small areas of vegetation in the vicinity of RNO infrastructure were considered to be in 'Very Good' condition. These areas have historically been grazed, with the understorey cover and diversity affected because of this. Several areas also possessed high cover of introduced taxa, while part of a major drainage line that flows through cleared paddocks appeared to be suffering from increased soil salinity, with deaths of tree taxa noted. Part of a second major drainage line that crosses the South Coast Highway was considered to be in 'Excellent' condition; a number of introduced taxa were noted as being present at low levels, and deaths of shrubs and trees were noted, with previous drought conditions and increased salinity noted as a possible cause.

The areas in the Study Area mapped as 'Cleared Land' (see Section 5.2.2) were not allocated condition scores, as they are essentially completely cleared. These areas are mapped as 'Cleared Land' on Figure 10.



Legend

- Project Area
- Study Area

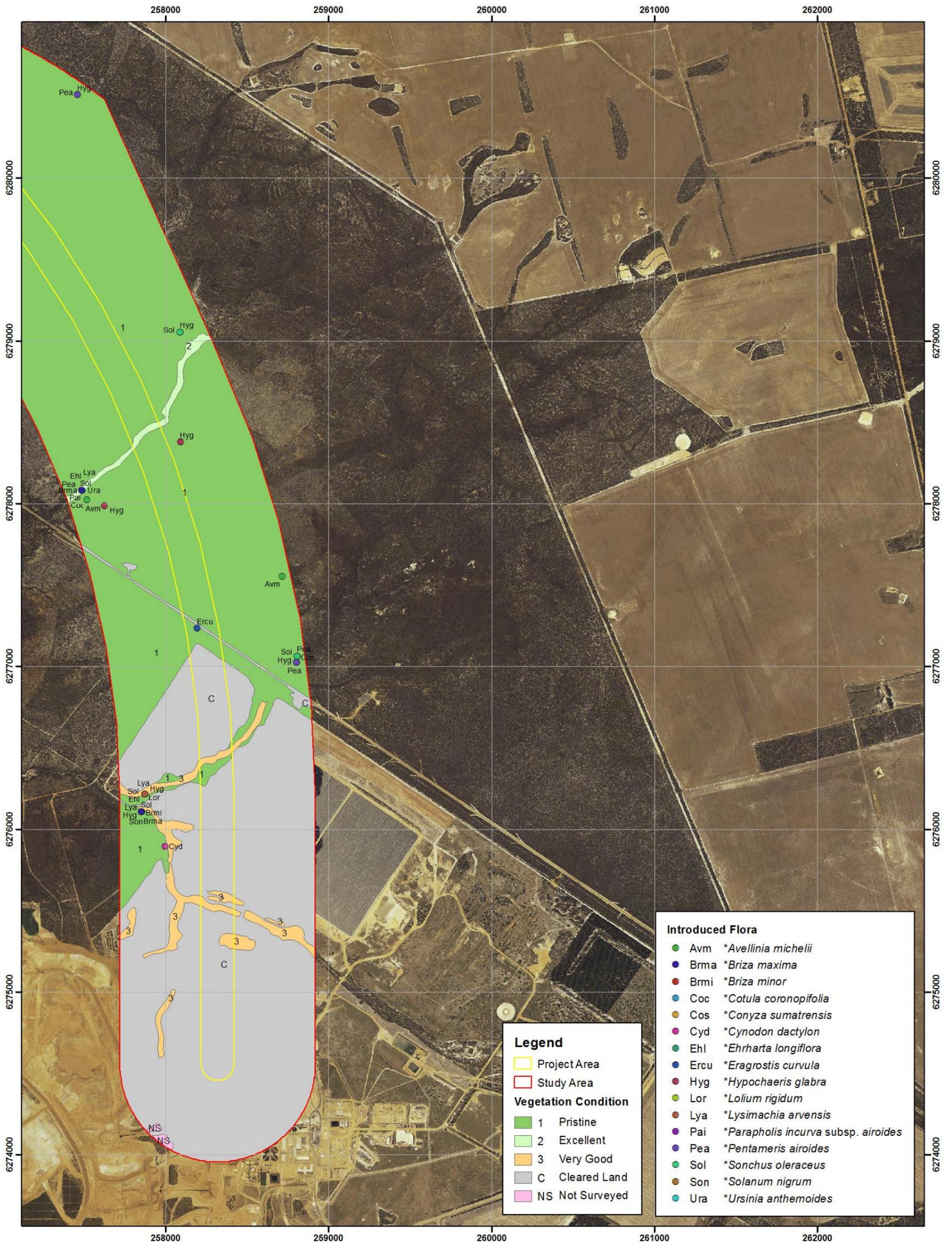
Vegetation Condition

- 1 Pristine
- 2 Excellent
- 3 Very Good
- C Cleared Land
- NS Not Surveyed

Introduced Flora

- Avm **Avellinia michelii*
- Brma **Briza maxima*
- Brmi **Briza minor*
- Coc **Cotula coronopifolia*
- Cos **Conyza sumatrensis*
- Cyd **Cynodon dactylon*
- Ehl **Ehrharta longiflora*
- Ercu **Eragrostis curvula*
- Hyg **Hypochaeris glabra*
- Lor **Lolium rigidum*
- Lya **Lysimachia arvensis*
- Pai **Parapholis incurva* subsp. *airoides*
- Pea **Pentameris airoides*
- Sol **Sonchus oleraceus*
- Son **Solanum nigrum*
- Ura **Ursinia anthemoides*

<p style="font-size: small;">This map should only be used in conjunction with WEC report FQM14-37-01</p>		<p>Study Area, Introduced Flora Taxa and Vegetation Condition</p>	Author: David Coultas WEC Ref: FQM14-37-01 Filename: FQM14-37-01-f10.mxd Scale: 1:20,000 (A3) Grid: MGA Zone 51	<p>Figure</p> <p style="font-size: 2em;">10.1</p>
		Revision: A - 20 March 2015		



<p>WOODMAN ENVIRONMENTAL</p> <p>This map should only be used in conjunction with WEC report FQM14-37-01</p>		<p>Study Area, Introduced Flora Taxa and Vegetation Condition</p>	<p>Author: David Coultas</p>	<p>Figure</p> <p>10.2</p>
		<p>Revision: A - 20 March 2015</p>	<p>WEC Ref: FQM14-37-01</p> <p>Filename: FQM14-37-01-f10.mxd</p> <p>Scale: 1:20,000 (A3) Grid: MGA Zone 51</p>	

5.3 Flora and Vegetation of the Approved Access Alignment

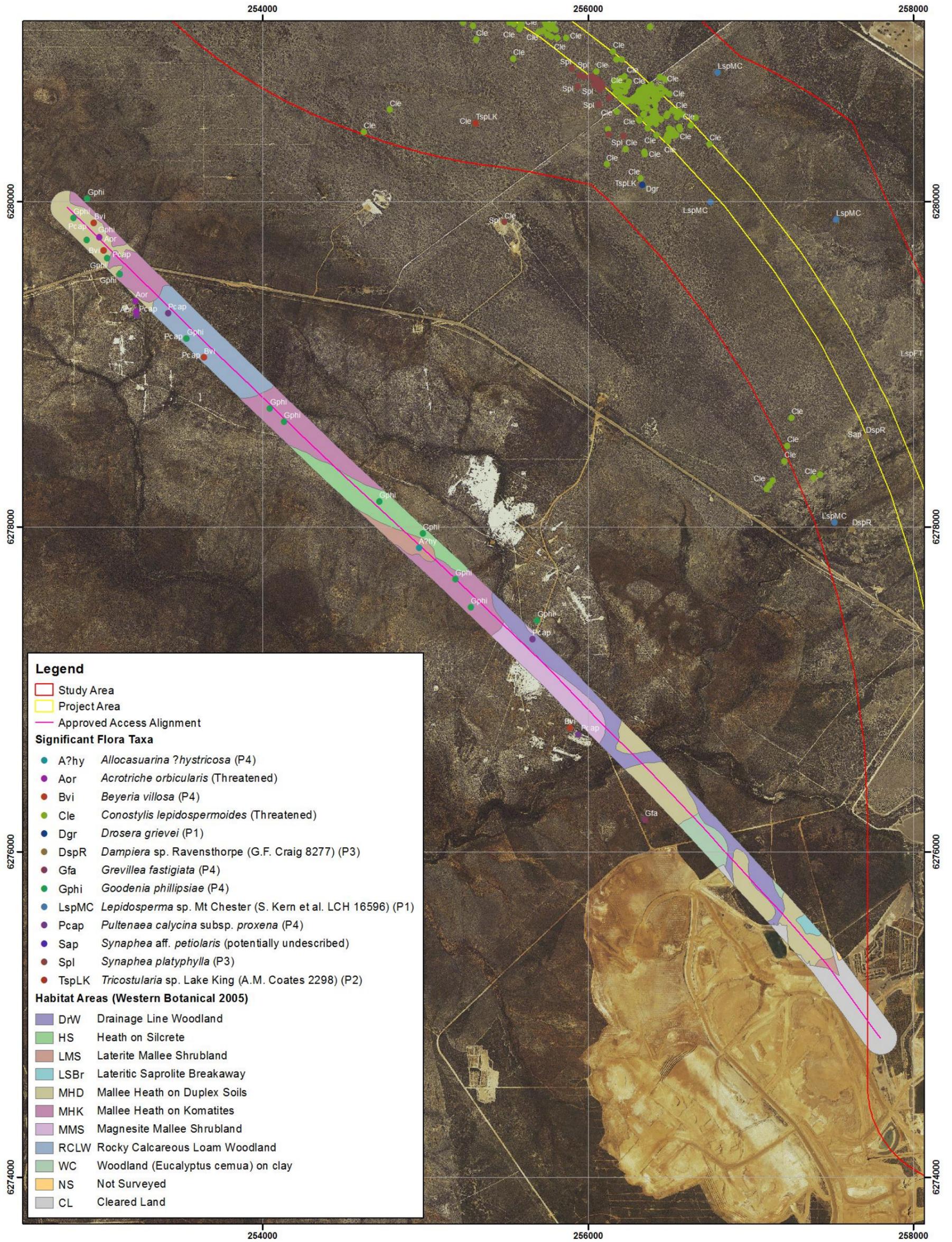
5.3.1 Flora

A total of 6 significant flora taxa were recorded during this survey of the approved access alignment, including 1 taxon listed as Threatened under the WC Act. These taxa are presented in Table 12. Locations of significant flora taxa from this survey are presented in Appendix J, and displayed on Figure 11. It is worthy of note, however, that this survey of the approved access alignment for significant flora was not considered comprehensive, and it is possible that further significant flora taxa may occur along the approved access alignment; this includes *Lepidosperma* taxa, which were not targeted by this survey.

Records of 3 additional significant flora taxa from DPaW's threatened flora databases, being *Eucalyptus stoatei* (P4), *Melaleuca penicula* (P4) and *Stachystemon vinosus* (P4), occur in the approved access alignment. The location of *Eucalyptus stoatei* (P4) is known to be erroneous, as the locality details do not match the coordinates given, with the locality details stipulating that this taxon was recorded adjacent to the South Coast Highway. This taxon is therefore not considered to occur at this location, and is not currently considered to occur in the approved access alignment. The location of *Stachystemon vinosus* (P4) occurs in a cleared area on the edge of native vegetation, and therefore this taxon is not currently known from the approved access alignment. The location of *Melaleuca penicula* (P4) was inspected, however this taxon could not be located. This taxon is also currently not considered to occur in the approved access alignment. These taxa are therefore not presented in Table 12.

Table 12: Significant Flora Taxa Recorded Along the Approved Access Alignment

Taxon	Conservation Code	Total Number of Locations Recorded in Approved Access Alignment	Total Number of Individuals Recorded in Approved Access Alignment
<i>Acrotriche orbicularis</i>	Threatened	3	24
<i>Allocasuarina ?hystricosa</i>	P4	1	20
<i>Beyeria villosa</i>	P4	4	480
<i>Grevillea fastigiata</i>	P4	1	30
<i>Goodenia phillipsiae</i>	P4	13	138
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	9	821



 <p>This map should only be used in conjunction with WEC report FQM14-37-01</p>	<p style="text-align: center;">Significant Flora along the Approved Access Alignment</p> <p style="text-align: center;">Revision: A - 20 March 2015</p>	Author: David Coultas	Figure 11
		WEC Ref: FQM14-37-01	
Filename: FQM14-37-01-f11.mxd	Scale: 1:20,000 (A3) Grid: MGA Zone 51		

5.3.2 Vegetation

A total of 13 plant communities were recorded along the approved access alignment (Table 13). Seven of these plant communities are considered to be broadly equivalent to VTs described and mapped in the Study Area. Some of the plant communities also appear to be broadly equivalent to habitat areas as mapped over the approved access alignment by Western Botanical, however, in some cases occurrences of multiple plant communities correspond to a single habitat area described by Western Botanical (2005). It is worthy of note that the plant communities were described briefly, with notes recorded on dominant taxa only, and relationships to VTs mapped in the Study Area not determined by classification analysis. Plant communities were not mapped over the approved access alignment, however the Western Botanical (2005) habitat area mapping is presented on Figure 11 for contextual purposes.

Of the plant communities described along the approved access alignment, it is considered that plant communities 9 and 10 likely represent the EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and the DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3). These plant communities were noted as having a relatively high cover of Proteaceae taxa, particularly *Banksia* taxa. Should confirmation that these plant communities represent this TEC be required, a quadrat-based assessment of these communities would be necessary.

No other plant communities are considered to represent any listed significant vegetation. However, the approved access alignment intersects the buffer of a known location of the DPaW-classified PEC 'Heath on Komatiite of the Ravensthorpe area' (Priority 3) (Figure 4). The area of the PEC is considered to be the area mapped as 'Heath on Komatiite' by Western Botanical (2005), however in DPaW's PEC database, the location of this PEC is designated by a buffer polygon around this mapped area. While the approved access alignment intersects the PEC buffer polygon, it does not intersect the Western Botanical (2005) mapping polygons, and hence this PEC is not considered to occur along the approved access alignment.

Table 13: Plant Communities Recorded Along the Approved Access Alignment

Plant Community	Description	Relationship to VTs in the Study Area	Notes
1	Mixed mallee woodland over mid shrubland dominated by mixed <i>Melaleuca</i> species over mixed sedgeland on ?dolerite-derived soils	Considered broadly equivalent to VT 5	<ul style="list-style-type: none"> Mapped within polygons of Mallee Heath on Duplex Clayey Sand (MHD), Mallee Heath on Komatiite (MHK), Rocky Calcareous Loam Woodland (RCLW) (Western Botanical 2005)
2	Mallet woodland of <i>Eucalyptus cernua</i> over sparse mid shrubland of mixed shrubs on clay soils	No similar VT in Study Area	<ul style="list-style-type: none"> Mapped within polygon of Mallet Woodlands on Red Clay (WC) (Western Botanical 2005)
3	Mixed mallee woodland including <i>Eucalyptus pleurocarpa</i> over tall shrubland of <i>Banksia lemniiana</i> over mid shrubland of mixed <i>Melaleuca</i> species	Considered broadly equivalent to VT 10	<ul style="list-style-type: none"> Mapped within polygon of Laterite Mallee Shrubland (LMS) (Western Botanical 2005)
4	Mid shrubland of <i>Allocasuarina campestris</i> , <i>Thryptomene australis</i> subsp. <i>australis</i> and <i>Calothamnus quadrifidus</i> over low sedgeland of <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) on granite	Considered broadly equivalent to VT 16	<ul style="list-style-type: none"> Mapped within polygon of Heath on Granite (HG) (Western Botanical 2005)
5	Tall woodland of <i>Eucalyptus occidentalis</i> over tall shrubland of mixed <i>Melaleuca</i> species over mixed sedgeland	Considered broadly equivalent to VT 11	<ul style="list-style-type: none"> Mapped within polygons of Drainage Line Woodland (DrW) (Western Botanical 2005)
6	Mixed mallee woodland over mid shrubland of mixed species including <i>Pultenaea calycina</i> subsp. <i>proxena</i> and <i>Beyeria villosa</i> on magnesite soils with magnesite outcropping	No similar VT in Study Area	<ul style="list-style-type: none"> Mapped within polygons of Magnesite Mallee Shrubland (MMS) (Western Botanical 2005)
7	Mixed mallee woodland over mid shrubland of mixed species including <i>Halgania andromedifolia</i> and <i>Glycocystis beckeri</i> on clay soils with some magnesite	No similar VT in Study Area	<ul style="list-style-type: none"> Mapped within polygons of Magnesite Mallee Shrubland (MMS) (Western Botanical 2005)
8	Mixed mallee woodland over mid shrubland of mixed species including <i>Acacia glaucoptera</i> and <i>Daviesia benthamii</i> subsp. <i>acanthoclona</i> over low shrubland of mixed <i>Melaleuca</i> species on ?dolerite-derived soils	Considered broadly equivalent to VT 6	<ul style="list-style-type: none"> Mapped within polygons of Magnesite Mallee Shrubland (MMS), Mallee Heath on Komatiite (MHK) (Western Botanical 2005)

Plant Community	Description	Relationship to VTs in the Study Area	Notes
9	Mixed mallee woodland including <i>Eucalyptus pleurocarpa</i> and <i>Eucalyptus ecostata</i> over mid shrubland dominated by <i>Banksia obovata</i> and <i>Jacksonia elongata</i> on lateritic and silcrete soils	No similar VT in Study Area	<ul style="list-style-type: none"> Likely to represent EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3) Mapped within polygon of Laterite Mallee Shrubland (LMS) (Western Botanical 2005)
10	Mixed mallee woodland including <i>Eucalyptus pleurocarpa</i> over mid shrubland of <i>Banksia lehmanniana</i> and <i>Allocasuarina ?hystricosa</i> over low shrubland of mixed species on lateritic soils	Considered broadly equivalent to VT 15	<ul style="list-style-type: none"> Likely to represent EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), and DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3) Mapped within polygon of Mallee Heath on Komatiite (MHK) (Western Botanical 2005)
11	Tall shrubland of <i>Allocasuarina campestris</i> and <i>Melaleuca hamata</i> over low shrubland of <i>Calothamnus quadrifidus</i> , <i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i> and <i>Daviesia pachyphylla</i> over low sedgeland and shrubland of <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) and <i>Verticordia oxylepis</i> over granite and silcrete soils	Considered broadly equivalent to VT 17	<ul style="list-style-type: none"> Mapped within polygon of Heath on Silcrete (HS) (Western Botanical 2005)
12	Mixed mallee woodland over mid shrubland of mixed <i>Melaleuca</i> and <i>Acacia</i> species on magnesite soils	No similar VT in Study Area	<ul style="list-style-type: none"> Mapped within polygon of Rocky Calcareous Loam Woodland (RCLW) (Western Botanical 2005)
13	Mixed mallee woodland over low shrubland of mixed <i>Melaleuca</i> species over low sedgeland and shrubland of mixed species including <i>Goodenia phillipsiae</i> on ?ironstone soils	No similar VT in Study Area	<ul style="list-style-type: none"> Mapped within polygon of Mallee Heath on Komatiite (MHK) (Western Botanical 2005)

The majority of the vegetation encountered along the approved access alignment was considered to be in 'Pristine' condition (Keighery 1994), with little to no disturbance and an absence or low levels of introduced flora taxa. Several areas of vegetation along the central and northern sections of the approved access alignment have historically been disturbed for mining of magnesite; portions of these areas are completely cleared, while other areas are degraded, with much of the original taxon diversity lost. Introduced species were noted in a drainage line that had been disturbed for such activities. These areas were considered to be in 'Very Good' to 'Good' condition.

6. DISCUSSION AND CONCLUSIONS

6.1 Flora of the Study Area

A total of 530 discrete vascular flora taxa and 1 known hybrid were recorded within the Study Area. Considering its relatively small area (1578 ha), the Study Area is highly diverse in terms of taxon richness; a relatively large number (18) of short-range endemic taxa were also recorded. This was expected, given that the Esperance Plains bioregion is well known for its high taxon diversity and taxon endemism (Beard 1990; Comer *et al.* 2001). The relatively high number of collections that represent range extensions or fill gaps in the known distributions of taxa also indicates the complexity of local floristic composition and rapid turnover of taxa over relatively short geographical distances; it was expected that few such collections would be made, given that numerous surveys have recently been conducted in close proximity to the Study Area (e.g. Markey *et al.* 2012). There was also a rapid turnover of taxa correlated with soil and substrate types within the Study Area noted; reflecting the complex geology and varied topography of the Ravensthorpe Range area (Markey *et al.* 2012).

The taxon total is marginally lower than the estimate made using the Chao-2 estimator for taxon richness for the Study Area (557), indicating that the Study Area was relatively well-sampled. The taxon total compares favourably with several other studies in the vicinity of the Study Area, including Craig *et al.* (2008) (500 taxa), Markey *et al.* (2012) (697 taxa), and various studies undertaken over the greater RNO area (at least 833 taxa). It should be noted that these other studies occupy greater areas than the Study Area, and capture a larger variety of landforms and topography. It is considered that this survey of the Study Area was conducted in a relatively good flowering season; this being reflected in the relatively high number of ephemeral taxa recorded, including 10 ephemeral Asteraceae taxa alone.

A total of 13 taxa recorded in the Study Area are considered to be significant flora taxa. This includes 1 taxon listed as Threatened under the WC Act and the EPBC Act, 9 DPaW-classified Priority flora taxa, and 3 potentially undescribed taxa. There is the potential that additional significant flora taxa may be present in the Study Area and Project Area, however given the level of survey conducted, it is considered that the majority of significant flora taxa in the Study Area and Project Area have been recorded by this survey.

The Threatened taxon *Conostylis lepidospermoides* was the subject of targeted searching by this survey of the Study Area, and was recorded widely in the western part of the Study Area, including within the Project Area. It is considered that the Project Area has been comprehensively surveyed for this taxon. There are likely to be further individuals in the Study Area, and in the vicinity of the Study Area, as this taxon is relatively common in the Study Area and was recorded in several similar areas outside the Study Area. A permit to take individuals pursuant to the WC Act will be required where individuals are to be disturbed. The individuals recorded by this survey significantly increase the total number of individuals known across its range. This species is known to have been recorded previously over a relatively large (> 160 km) range, but is considered to be inconspicuous when not in flower, which may explain why such a large population of this species has been overlooked until now (Threatened Species Scientific Committee 2008).

Of the 9 Priority flora taxa recorded by this survey, *Micromyrtus navicularis* (P3), *Synaphea platyphylla* (P3) and *Pultenaea calycina* subsp. *proxena* (P4) were the subject of targeted searching, with the former 2 taxa recorded in the Project Area. It is considered that the Project Area has been comprehensively surveyed for these taxa. It is possible that there are further individuals of the former 2 taxa in the Study Area, and also in areas adjacent to the Study Area. However, *Pultenaea calycina* subsp. *proxena* (P4) occupies specific habitat and is extremely unlikely to occur elsewhere in the Study Area.

The remaining Priority flora taxa recorded in the Study Area were not the subject of targeted searching, as they were identified subsequent to survey being conducted. Currently, 4 of the remaining 6 Priority flora taxa are known from the Project Area (*Drosera grievei* (P1), *Lepidosperma* sp. Mt Chester (S. Kern et al. LCH 16596) (P1), *Tricostularia* sp. Lake King (A.M. Coates 2298) (P2) and *Thysanotus parviflorus* (P4)). It is also expected that *Dampiera* sp. Ravensthorpe (G.F. Craig 8277) (P3) is likely to occur in the Project Area, as suitable habitat is known to occur there. *Allocasuarina ?hystricosa* (P4) is considered unlikely to occur in the Project Area, as it was recorded in specific habitat (lateritic hills near the Shoemaker-Levy deposit) that are absent from the Project Area.

Three potentially undescribed taxa considered to be significant were also recorded in the Study Area. None of these taxa are currently known from the Project Area. *Eremophila glabra* s. lat. was recorded in a single clay basin in the Study Area; all other basins in the Study Area were inspected, with this taxon not recorded. It is considered highly unlikely that this taxon occurs in the Project Area. *Lepidosperma* sp. 'Fitzgerald Tuberculate' may occur in the Project Area, as suitable habitat is known to occur. *Synaphea* aff. *platyphylla* may also occur in the Project Area, however it is considered desirable to obtain additional flowering material initially, as there is the potential that the taxonomy of this entity could be resolved.

Two other collections from the Study Area may represent undescribed taxa, however these taxa are not considered to be significant flora taxa. Both entities (*Calytrix* aff. *leschenaultii* and *Synaphea* aff. *drummondii*) were generally widespread and common in the Study Area, with *Synaphea* aff. *drummondii* also known from other localities in the region. Both taxa are from taxonomically complex groups that are currently undergoing or require revision by taxonomists; it is therefore unlikely that their taxonomic status will be resolved in the immediate future.

Sixteen introduced flora taxa were recorded by this survey of the Study Area. Most locations were in the southern half of the Study Area near the South Coast Highway and farmland areas. *Eragrostis curvula* (African Lovegrass) is considered to be the most serious weed recorded in the Study Area, as it is capable of invading undisturbed bushland; the remaining introduced flora taxa recorded in the Study Area are less serious and are unlikely to cause serious impacts to native vegetation in the Study Area or Project Area. It is important that proposed Project impacts employ appropriate hygiene procedures, including post-impact inspections, to manage the potential introduction and spread of introduced taxa, particularly in regard to *Eragrostis curvula*.

6.2 Vegetation of the Study Area

Classification analysis of quadrat data from the Study Area arranged quadrats into 18 plausible clusters; these clusters were used to define VTs in the Study Area. Considering the

relatively small area of the Study Area, the Study Area is also highly diverse in terms of vegetation communities, with many of the VTs mapped over small occurrences. As for floristic diversity, this was expected; nearby studies (e.g. Craig *et al.* (2008), Markey *et al.* (2012)) have reported that the vegetation of the Ravensthorpe Range area is strongly correlated with topographical and geological variables. This coupled with the highly varied topography and geology of the Ravensthorpe Range area has resulted in a complex array of communities, many of which occupy spatially small areas.

The total number of VTs described in the Study Area compares favourably with Markey *et al.* (2012), who described 21 communities over their larger study area. However, the total number of VTs is significantly lower than the 70 vegetation units described by Craig *et al.* (2008) over the Ravensthorpe Range, and higher than the 17 habitat areas mapped by Western Botanical (2005) over the larger RNO area. This reflects the differences in sampling methodologies and classification methods; as the methods of this assessment are similar to those employed by Markey *et al.* (2012), it was expected that the results of their study would compare most favourably with this assessment. The studies by Craig *et al.* (2008) and Western Botanical (2005) did not employ a quadrat-based sampling method, and also used different methods to classify quadrats compared to this assessment and that of Markey *et al.* (2012).

The parameters used for the classification analysis in this assessment are considered to have produced a robust classification with ecologically plausible clusters of quadrats that were used to define VTs. However, some clusters contained a small number of quadrats (in some cases only 1), and therefore some VTs were defined using a limited data. This issue frequently arises when sampling is restricted to a narrow linear corridor, as for the Study Area, and may result in the description of somewhat artificial VTs that reflect the limited level of sampling. It is possible that with further sampling from a wider geographical area, some of the VTs described in the Study Area could be found to be minor variants of more broadly circumscribed VTs, however this is beyond the scope of this assessment. In the meantime, the VTs described in the Study Area are considered to be a relatively accurate reflection of the floristic, geological and topographical variability of the Study Area.

As mentioned in Section 4.2, some difficulty was encountered in determining VT mapping boundaries in the Study Area using aerial photography. Fire has played some part, however the dominance of many VTs by superficially similar mallee *Eucalyptus* taxa, which often obscured underlying soil patterns in long-unburnt areas, resulted in many VTs appearing similar on aerial photography. This issue was also identified by Craig *et al.* (2008), and was reflected in their mapping methods, with extensive time spent walking transects to confirm vegetation boundaries. Similar transects were employed in the Study Area, however time constraints prevented access to some areas. Notwithstanding this, it is considered that the VT mapping polygons presented in this assessment are relatively accurate, and reliable for the purposes of the environmental impact assessment process in Western Australia.

The EPBC-listed TEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered), which is equivalent to the DPaW-classified PEC 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Priority 3), is considered to occur in the Study Area and Project Area. It is considered that VTs 1, 2, 3, 4 and 15 represent this TEC. These VTs

occupy a relatively large proportion Project Area, however were also mapped widely outside the Project Area in the Study Area. This TEC is also known to occur widely in the South Coast region, from large occurrences (Threatened Species Scientific Committee 2014). It is desirable that the location of proposed Project impacts are such that disturbance to VTs that represent this TEC are minimised, with appropriate hygiene measures employed to prevent the introduction and spread of Dieback and introduced taxa, which have been identified as key threats to this TEC (Threatened Species Scientific Committee 2014).

It is also considered that the Priority 3 PEC 'Swamp Yate (*Eucalyptus occidentalis*) woodlands in seasonally inundated clay basins (South Coast)' occurs in the Study Area. It is considered that VT 8 represents this PEC. This VT occurs within the Project Area, however in 2 very small, discrete occurrences. It is desirable that disturbance to VT 8 is minimised or avoided entirely if possible, and that natural surface drainage is maintained in the vicinity of occurrences of VT 8, as they appear to be dependent on seasonal inundation.

The regional significance of the remaining VTs described in the Study area is unknown, as there is no regional dataset available for comparison. The Markey *et al.* (2012) dataset from the Ravensthorpe Range provides some context, however it concerns only the Ravensthorpe Range itself, not the surrounding plains, which includes the majority of the Study Area. All VTs are likely to extend outside the Project Area and Study Area in the local area, particularly as the much of the Study Area is located within a large area of uncleared remnant vegetation. However, the large areas of uncleared vegetation surrounding the Study Area are vested as UCL, with very little reserved for conservation. Three VTs (7, 9 and 10) are considered to be represented in the dataset of Markey *et al.* (2012), and therefore are known to occur outside the Study Area in the Ravensthorpe Range. These VTs are less likely to be of regional significance, however as their spatial area within the Ravensthorpe Range has not been determined, their regional significance remains unknown.

In a local context, a number of VTs are considered to be of local significance, primarily as they have restricted distributions within the Study Area, and were mapped over a small total area. However, no VTs were restricted to the Project Area, with distributions known within the wider Study Area.

6.3 Comparison of the Project Area and Approved Access Alignment

As mentioned in Section 1.1, the EPA requested the flora and vegetation values within the Project Area be compared to those of the approved access alignment, in order to address the requirements of a Section 45c approval. Table 14 presents a summary of the important flora and vegetation values of the Project Area and the approved access alignment. This comparison is restricted to the presence of known significant vegetation (TECs and PECs) and listed significant flora taxa recognisable in the field at the time of survey (see Section 3.3.2).

Although the length of the proposed access within the Project Area is longer than the approved access alignment, approximately 2.6 km is located within already cleared paddocks, and therefore the length within intact remnant vegetation is similar to that of the approved access alignment (Table 14). The condition of the intact remnant vegetation in both the Project Area and along the approved access alignment is also considered to be

similar, generally being ranked as Pristine (Keighery 1994). Both the Project Area and the approved access alignment also intersect similar sensitive areas, however it is considered that the approved access alignment intersects more steep terrain that may be prone to erosion. The Project Area intersects 2 seasonally inundated clay basins, none of which are present along the approved access alignment, however only the margins of these areas are intersected, and these areas could potentially be avoided entirely by the final Project alignment.

More significant flora taxa were recorded in the Project Area, however this was expected given the differing survey efforts in the Project Area and along the approved access alignment. It is considered likely that additional significant flora taxa would be located along the approved access alignment if it were surveyed to the same level as the Project Area. There is also the potential for further significant flora taxa to occur in the Project area, as the Project Area has not been comprehensively surveyed for all significant flora taxa recorded in the Study Area. It is also worthy of note that while 1 Threatened taxon was recorded in the Project Area and along the approved access alignment, the taxon recorded along the approved access alignment (*Acrotriche orbicularis*) is considered to be of higher significance, given its very restricted distribution (known range of 12 km) and preference for a relatively restricted habitat (magnesite soils) compared to that of the taxon recorded in the Project Area (*Conostylis lepidospermoides*), which is known over a much larger range (160 km) and occupies a broader, widespread habitat type (grey or yellow sand over laterite on plains).

Although based on a preliminary assessment only, the number of plant communities along the approved access alignment parallels the number of VTs in the Project Area, however some plant communities along the approved access alignment are not considered to occur in Project Area, and vice versa. It is therefore considered that the Project Area and the approved access alignment are similar in terms of vegetation diversity. Both the Project Area and the approved access alignment are also considered to contain occurrences of the EPBC-listed TEC 'Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Endangered). The Project Area also contains the DPaW-classified PEC 'Swamp Yate (*Eucalyptus occidentalis*) woodlands in seasonally inundated clay basins (South Coast)'. However, it only intersects the margins of 2 seasonally inundated clay basins considered to contain this PEC, which could be avoided entirely by the approved access alignment.

Based on information currently available, the Project Area and the approved access alignment are considered to be similar in terms of important flora and vegetation values. It is therefore considered that the Project is unlikely to result in significantly greater impacts to flora and vegetation values when compared to the approved access alignment.

Table 14: Comparison of Flora and Vegetation Values of the Project Area and the Approved Access Alignment

Value	Project Area	Approved Access Alignment
Length of access	<ul style="list-style-type: none"> 11.1 km, 8.5 km in intact native vegetation 	<ul style="list-style-type: none"> 7.2 km, 6.7 km in intact native vegetation

Value	Project Area	Approved Access Alignment
Significant Flora	<ul style="list-style-type: none"> 7 significant flora taxa, including 1 Threatened taxon and 6 Priority flora taxa, currently known; Threatened taxon (<i>Conostylis lepidospermoides</i>) listed as Vulnerable under the WC Act, and Endangered under the EPBC Act. 	<ul style="list-style-type: none"> 6 significant flora taxa, including 1 Threatened taxon and 5 Priority flora taxa, currently known; Threatened taxon (<i>Acrotriche orbicularis</i>) listed as Vulnerable under the WC Act, not listed under the EPBC Act.
Significant Vegetation	<ul style="list-style-type: none"> 1 EPBC listed TEC (equivalent to 1 DPaW-classified PEC) mapped over relatively large proportion of Project Area; 1 DPaW-classified PEC mapped over small proportion of Project Area 	<ul style="list-style-type: none"> 1 EPBC listed TEC (equivalent to 1 DPaW-classified PEC) mapped over relatively large proportion of Project Area;
Vegetation Diversity	<ul style="list-style-type: none"> 13 VTs mapped in Project Area. 	<ul style="list-style-type: none"> 13 preliminary plant communities mapped along approved access alignment.
Vegetation Condition	<ul style="list-style-type: none"> Majority of vegetation is in Pristine condition, some degraded vegetation present in farmland areas. 	<ul style="list-style-type: none"> Majority of vegetation is in Pristine condition, some degraded vegetation present near historical mining areas.
Sensitive Areas	<ul style="list-style-type: none"> Intersects the margins of 2 seasonally inundated clay basins; Intersects 2 relatively large creeks; Crosses 1 steep valley where erosion is potentially an issue. 	<ul style="list-style-type: none"> Intersects 2 relatively large creeks, and several minor drainage lines; Crosses several steep hills and associated valleys where erosion is potentially an issue.

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Appendix A: Results of Search of the Department of the Environment (DoE) Database with Regard to Environmental Matters of National Significance



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: 27/01/15 19:07:46

[Summary](#)

[Details](#)

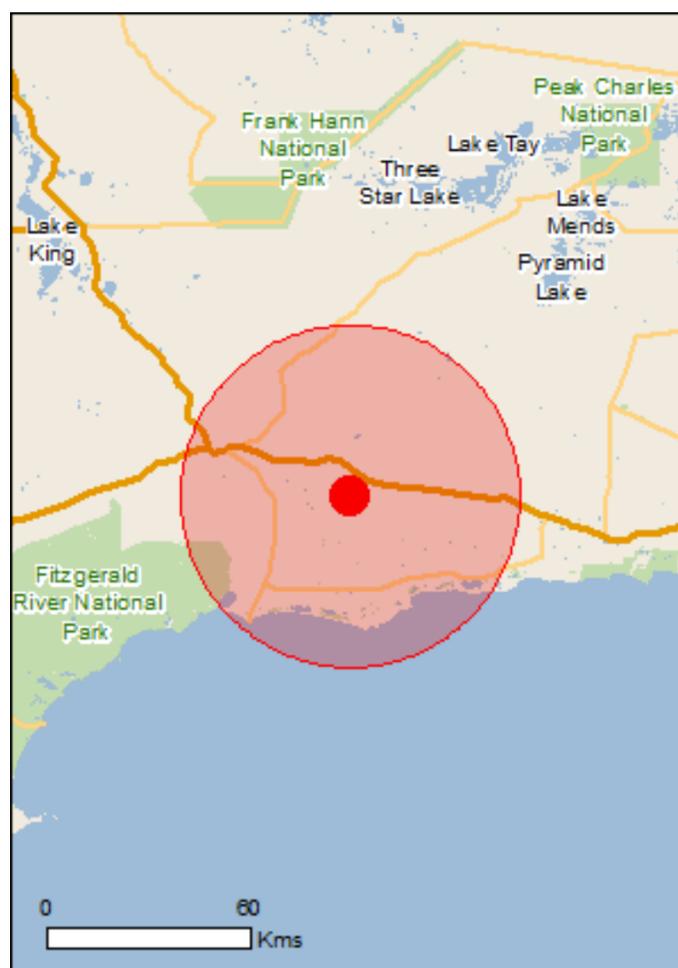
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

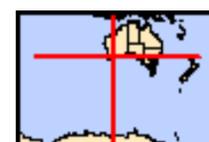
[Acknowledgements](#)



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

[Coordinates](#)

Buffer: 50.0Km



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:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	1
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	67
Listed Migratory Species:	34

Other Matters Protected by the EPBC Act

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

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As [heritage values](#) of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate.

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

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

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	58
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine	1

Extra Information

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

Place on the RNE:	9
State and Territory Reserves:	12
Regional Forest Agreements:	None
Invasive Species:	15
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties [\[Resource Information \]](#)

Name	State	Status
Natural		
Great Western Woodlands of Western Australia	WA	Nominated place

Commonwealth Marine Areas [\[Resource Information \]](#)

Approval may be required for a proposed activity that is likely to have a significant impact on the environment in a Commonwealth Marine Area, when the action is outside the Commonwealth Marine Area, or the environment anywhere when the action is taken within the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name
EEZ and Territorial Sea

Marine Regions [\[Resource Information \]](#)

If you are planning to undertake action in an area in or close to a Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name
South-west

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
Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	Community likely to occur within area

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

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Dasyornis longirostris Western Bristlebird [515]	Vulnerable	Species or species habitat likely to occur within area
Diomedea epomophora epomophora Southern Royal Albatross [25996]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora sanfordi Northern Royal Albatross [82331]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans antipodensis Antipodean Albatross [82269]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans exulans Tristan Albatross [82337]	Endangered	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Pezoporus flaviventris Western Ground Parrot, Kyloring [84650]	Critically Endangered	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat likely to occur within area
Neophoca cinerea Australian Sea-lion [22]	Vulnerable	Breeding known to occur within area
Parantechinus apicalis Dibbler [313]	Endangered	Species or species habitat likely to occur within area
Phascogale calura Red-tailed Phascogale [316]	Endangered	Species or species habitat known to occur within area
Pseudomys shortridgei Dayang, Heath Rat [77]	Vulnerable	Species or species habitat likely to occur within area
Plants		
Acacia rhamnophylla Kundip Wattle [64659]	Endangered	Species or species habitat known to occur within area
Adenanthos dobagii Fitzgerald Woollybush [21253]	Endangered	Species or species habitat likely to occur within area
Adenanthos ellipticus Oval-leaf Adenanthos [4570]	Vulnerable	Species or species habitat likely to occur within area
Adenanthos pungens subsp. effusus Sprawling Spiky Adenanthos [10742]	Endangered	Species or species habitat likely to occur within area
Anigozanthos bicolor subsp. minor Little Kangaroo Paw, Two-coloured Kangaroo Paw, Small Two-colour Kangaroo Paw [21241]	Endangered	Species or species habitat known to occur within area
Banksia anatona Cactus Dryandra [82758]	Critically Endangered	Species or species habitat may occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat may occur within area
Centrolepis caespitosa [6393]	Endangered	Species or species habitat likely to occur within area
Conostylis lepidospermoides Sedge Conostylis [9254]	Endangered	Species or species habitat likely to occur within area
Coopernookia georgei Mauve Coopernookia [21218]	Endangered	Species or species habitat likely to occur within area
Darwinia oxylepis Gillham's Bell [13188]	Endangered	Species or species habitat may occur within area
Darwinia wittwerorum Wittwer's Mountain Bell [15626]	Endangered	Species or species

Name	Status	Type of Presence
Daviesia megacalyx Long-sepalled Daviesia [56785]	Endangered	habitat may occur within area Species or species habitat known to occur within area
Daviesia obovata Paddle-leaf Daviesia [17311]	Endangered	Species or species habitat may occur within area
Eremophila denticulata subsp. denticulata Fitzgerald Eremophila [64569]	Vulnerable	Species or species habitat likely to occur within area
Eremophila lactea Milky Emu Bush [2416]	Endangered	Species or species habitat may occur within area
Eremophila subteretifolia Lake King Eremophila [56702]	Endangered	Species or species habitat likely to occur within area
Eremophila verticillata Whorled Eremophila [7032]	Endangered	Species or species habitat may occur within area
Eucalyptus burdettiana Burdett Gum [13505]	Endangered	Species or species habitat likely to occur within area
Eucalyptus coronata Crowned Mallee [2308]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus merrickiae Goblet Mallee [13119]	Vulnerable	Species or species habitat likely to occur within area
Grevillea involucrata Lake Varley Grevillea [4631]	Endangered	Species or species habitat likely to occur within area
Kennedia glabrata Northcliffe Kennedia [16452]	Vulnerable	Species or species habitat likely to occur within area
Marianthus mollis Hairy-fruited Billardiera [82825]	Endangered	Species or species habitat likely to occur within area
Muehlenbeckia horrida subsp. abdita Remote Thorny Lignum [65937]	Critically Endangered	Species or species habitat may occur within area
Rhizanthella gardneri Underground Orchid, Western Australian Underground Orchid [20109]	Endangered	Species or species habitat likely to occur within area
Ricinocarpos trichophorus Barrens Wedding Bush [19931]	Endangered	Species or species habitat likely to occur within area
Roycea pycnophylloides Saltmat [21161]	Endangered	Species or species habitat may occur within area
Sphenotoma drummondii Mountain Paper-heath [21160]	Endangered	Species or species habitat may occur within area
Stylidium galioides Yellow Mountain Triggerplant [4666]	Vulnerable	Species or species habitat likely to occur

Name	Status	Type of Presence within area
Thelymitra psammophila Sandplain Sun-orchid [4908]	Vulnerable	Species or species habitat likely to occur within area
Verticordia crebra [55678]	Vulnerable	Species or species habitat likely to occur within area
Verticordia pityrhops Little Pine Verticordia, Pine-like Featherflower [55798]	Endangered	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Sharks		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species [Resource Information]		
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered*	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species

Name	Threatened	Type of Presence
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		habitat may occur within area Foraging, feeding or related behaviour likely to occur within area
Sterna anaethetus Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Migratory Wetlands Species		
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 likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

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

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

Name
Commonwealth Land -

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

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

Name	Threatened	Type of Presence
Birds		
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 likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered*	Foraging, feeding or related behaviour likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Larus pacificus Pacific Gull [811]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Foraging, feeding or related behaviour likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area
Sterna anaethetus Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Breeding known to occur within area
Fish		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri New Zealand Fur-seal [20]		Breeding known to occur within area
Neophoca cinerea Australian Sea-lion [22]	Vulnerable	Breeding known to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Whales and other Cetaceans		
[Resource Information]		
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species

Name	Status	Type of Presence
Balaenoptera edeni Bryde's Whale [35]		habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Commonwealth Reserves Marine [Resource Information]

Name	Label
South-west Corner	Special Purpose Zone (IUCN VI)

Extra Information

Places on the RNE [Resource Information]

Note that not all Indigenous sites may be listed.

Name	State	Status
Natural		
North Fitzgerald Area	WA	Indicative Place
The South Coast Reserves	WA	Indicative Place
Cocanarup Reserve	WA	Registered
Fitzgerald River National Park (1980 boundary)	WA	Registered
Fitzgerald River National Park (1989 Boundary)	WA	Registered
Jerdacuttup River Komatiites	WA	Registered
Ravensthorpe Range Area	WA	Registered
Historic		
Mine Managers House (former)	WA	Indicative Place
Palace Hotel	WA	Registered

State and Territory Reserves	[Resource Information]
Name	State
Cheadanup	WA
East Naernup	WA
Fitzgerald River	WA
Jerdacuttup Lakes	WA
Kundip	WA
Lake Shaster	WA
Overshot Hill	WA
Ravensthorpe Range	WA
Unnamed WA26662	WA
Unnamed WA27177	WA
Unnamed WA43060	WA
Unnamed WA49742	WA

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		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Carrichtera annua Ward's Weed [9511]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
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

Nationally Important Wetlands [\[Resource Information \]](#)

Name	State
Culham Inlet System	WA

Coordinates

-33.67917 120.39194

Caveat

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Acknowledgements

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

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

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

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

Appendix B: Definitions, Categories and Criteria for Threatened and Priority Ecological Communities (DPaW 2010)

DEFINITIONS, CATEGORIES AND CRITERIA FOR THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES

1. GENERAL DEFINITIONS

Ecological Community

A naturally occurring biological assemblage that occurs in a particular type of habitat.

Note: The scale at which ecological communities are defined will often depend on the level of detail in the information source, therefore no particular scale is specified.

A **threatened ecological community** (TEC) is one which is found to fit into one of the following categories; “presumed totally destroyed”, “critically endangered”, “endangered” or “vulnerable”.

Possible threatened ecological communities that do not meet survey criteria are added to DEC’s Priority Ecological Community Lists under Priorities 1, 2 and 3. Ecological Communities that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

An **assemblage** is a defined group of biological entities.

Habitat is defined as the areas in which an organism and/or assemblage of organisms lives. It includes the abiotic factors (eg. substrate and topography), and the biotic factors.

Occurrence: a discrete example of an ecological community, separated from other examples of the same community by more than 20 metres of a different ecological community, an artificial surface or a totally destroyed community.

By ensuring that every discrete occurrence is recognised and recorded future changes in status can be readily monitored.

Adequately Surveyed is defined as follows:

“An ecological community that has been searched for thoroughly in most likely habitats, by relevant experts.”

Community structure is defined as follows:

“The spatial organisation, construction and arrangement of the biological elements comprising a biological assemblage” (eg. *Eucalyptus salmonophloia* woodland over scattered small shrubs over dense herbs; structure in a faunal assemblage could refer to trophic structure, eg. dominance by feeders on detritus as distinct from feeders on live plants).

Definitions of Modification and Destruction of an ecological community:

Modification: “changes to some or all of ecological processes (including abiotic processes such as hydrology), species composition and community structure as a direct or indirect result of human activities. The level of damage involved could be ameliorated naturally or by human intervention.”

Destruction: “modification such that reestablishment of ecological processes, species composition and community structure within the range of variability exhibited by the original community is unlikely within the foreseeable future even with positive human intervention.”

Note: Modification and destruction are difficult concepts to quantify, and their application will be determined by scientific judgement. Examples of modification and total destruction are cited below:

Modification of ecological processes: The hydrology of Toolibin Lake has been altered by clearing of the catchment such that death of some of the original flora has occurred due to dependence on fresh water. The system may be bought back to a semblance of the original state by redirecting saline runoff and pumping waters of the rising underground watertable away to restore the hydrological balance. Total destruction of downstream lakes has occurred due to hydrology being altered to the point that few of the original flora or fauna species are able to tolerate the level of salinity and/or water logging.

Modification of structure: The understorey of a plant community may be altered by weed invasion due to nutrient enrichment by addition of fertiliser. Should the additional nutrients be removed from the system the balance may be restored, and the original plant species better able to compete. Total destruction may occur if additional nutrients continue to be added to the system causing the understorey to be completely replaced by weed species, and death of overstorey species due to inability to tolerate high nutrient levels.

Modification of species composition: Pollution may cause alteration of the invertebrate species present in a freshwater lake. Removal of pollutants may allow the return of the original inhabitant species. Addition of residual highly toxic substances may cause permanent changes to water quality, and total destruction of the community.

Threatening processes are defined as follows:

“Any process or activity that threatens to destroy or significantly modify the ecological community and/or affect the continuing evolutionary processes within any ecological community.”

Examples of some of the continuing threatening processes in Western Australia include: general pollution; competition, predation and change induced in ecological communities as a result of introduced animals; competition and displacement of native plants by introduced species; hydrological changes; inappropriate fire regimes; diseases resulting from introduced microorganisms; direct human exploitation and disturbance of ecological communities.

Restoration is defined as returning an ecological community to its pre-disturbance or natural state in terms of abiotic conditions, community structure and species composition.

Rehabilitation is defined as the re-establishment of ecological attributes in a damaged ecological community although the community will remain modified.

2. DEFINITIONS AND CRITERIA FOR PRESUMED TOTALLY DESTROYED, CRITICALLY ENDANGERED, ENDANGERED AND VULNERABLE ECOLOGICAL COMMUNITIES

Presumed Totally Destroyed (PD)

An ecological community that has been adequately searched for but for which no representative occurrences have been located. The community has been found to be totally destroyed or so extensively modified throughout its range that no occurrence of it is likely to recover its species composition and/or structure in the foreseeable future.

An ecological community will be listed as presumed totally destroyed if there are no recent records of the community being extant and either of the following applies (A or B):

- A) Records within the last 50 years have not been confirmed despite thorough searches of known or likely habitats or
- B) All occurrences recorded within the last 50 years have since been destroyed

Critically Endangered (CR)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated.

An ecological community will be listed as **Critically Endangered** when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future. This will be determined on the basis of the best available information, by it meeting **any one or more** of the following criteria (A, B or C):

- A) The estimated geographic range, and/or total area occupied, and/or number of discrete occurrences since European settlement have been reduced by at least 90% **and either or both** of the following apply (i or ii):
 - i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is imminent (within approximately 10 years);
 - ii) modification throughout its range is continuing such that in the immediate future (within approximately 10 years) the community is unlikely to be capable of being substantially rehabilitated.
- B) Current distribution is limited, **and one or more** of the following apply (i, ii or iii):

i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the immediate future (within approximately 10 years);

ii) there are very few occurrences, each of which is small and/or isolated and extremely vulnerable to known threatening processes;

iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes.

C) The ecological community exists only as highly modified occurrences that may be capable of being rehabilitated if such work begins in the immediate future (within approximately 10 years).

Endangered (EN)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or was originally of limited distribution and is in danger of significant modification throughout its range or severe modification or destruction over most of its range in the near future.

An ecological community will be listed as **Endangered** when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. This will be determined on the basis of the best available information by it meeting **any one or more** of the following criteria (A, B, or C):

A) The geographic range, and/or total area occupied, and/or number of discrete occurrences have been reduced by at least 70% since European settlement **and either or both** of the following apply (i or ii):

i) the estimated geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is likely in the short term future (within approximately 20 years);

ii) modification throughout its range is continuing such that in the short term future (within approximately 20 years) the community is unlikely to be capable of being substantially restored or rehabilitated.

B) Current distribution is limited, **and one or more** of the following apply (i, ii or iii):

i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the short term future (within approximately 20 years);

ii) there are few occurrences, each of which is small and/or isolated and all or most occurrences are very vulnerable to known threatening processes;

iii) there may be many occurrences but total area is small and all or most occurrences are small and/or isolated and very vulnerable to known threatening processes.

C) The ecological community exists only as very modified occurrences that may be capable of being substantially restored or rehabilitated if such work begins in the short-term future (within approximately 20 years).

Vulnerable (VU)

An ecological community that has been adequately surveyed and is found to be declining and/or has declined in distribution and/or condition and whose ultimate security has not yet been assured and/or a community that is still widespread but is believed likely to move into a category of higher threat in the near future if threatening processes continue or begin operating throughout its range.

An ecological community will be listed as **Vulnerable** when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing a high risk of total destruction or significant modification in the medium to long-term future. This will be determined on the basis of the best available information by it meeting **any one or more** of the following criteria (A, B or C):

A) The ecological community exists largely as modified occurrences that are likely to be capable of being substantially restored or rehabilitated.

B) The ecological community may already be modified and would be vulnerable to threatening processes, is restricted in area and/or range and/or is only found at a few locations.

C) The ecological community may be still widespread but is believed likely to move into a category of higher threat in the medium to long term future because of existing or impending threatening processes.

3. DEFINITIONS AND CRITERIA FOR PRIORITY ECOLOGICAL COMMUNITIES

PRIORITY ECOLOGICAL COMMUNITY LIST

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the 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.

Appendix C: Taxa Returned from the Search of DPaW's Threatened Flora Databases (DPaW 2013b)

Taxon	Status	Source		
		WAHerb	TPFL	TP List
<i>Acacia rhamphophylla</i>	Threatened			x
<i>Acrotriche orbicularis</i>	Threatened	x	x	x
<i>Anigozanthos bicolor</i> subsp. <i>minor</i>	Threatened			x
<i>Beyeria cockertonii</i>	Threatened	x	x	x
<i>Conostylis lepidospermoides</i>	Threatened	x	x	x
<i>Daviesia megacalyx</i>	Threatened			x
<i>Eremophila denticulata</i> subsp. <i>denticulata</i>	Threatened			x
<i>Eucalyptus purpurata</i>	Threatened	x	x	x
<i>Hibbertia abyssa</i>	Threatened	x	x	x
<i>Kunzea acicularis</i>	Threatened			x
<i>Kunzea similis</i> subsp. <i>mediterranea</i>	Threatened	x	x	x
<i>Marianthus aquilonaris</i>	Threatened			x
<i>Rhizanthella gardneri</i>	Threatened			x
<i>Thelymitra psammophila</i>	Threatened			x
<i>Acacia</i> sp. Ravensthorpe Range (B.R. Maslin 5463)	P1			x
<i>Austrostipa</i> sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	P1			x
<i>Austrostipa</i> sp. Ravensthorpe Range (A. Markey & J. Allen 6261)	P1			x
<i>Brachyloma nguba</i>	P1			x
<i>Caladenia longifimbriata</i>	P1			x
<i>Calothamnus roseus</i>	P1			x
<i>Chorizema circinale</i>	P1	x		
<i>Cryptandra exserta</i>	P1			x
<i>Eucalyptus dielsii</i> x <i>platypus</i>	P1			x
<i>Grevillea sulcata</i>	P1			x
<i>Guichenotia anota</i>	P1			x
<i>Guichenotia apetala</i>	P1			x
<i>Gyrostemon</i> sp. Ravensthorpe (G. Cockerton & N. Eveleigh 9467)	P1	x		x
<i>Hibbertia atrichosepala</i>	P1			x
<i>Lasiopetalum</i> sp. Desmond (N. McQuoid 653)	P1			x
<i>Melaleuca similis</i>	P1	x		x
<i>Melaleuca sophisma</i>	P1			x
<i>Microcybe pauciflora</i> subsp. <i>grandis</i>	P1	x		x
<i>Pultenaea wudjariensis</i>	P1	x	x	x
<i>Synaphea</i> sp. flat canaliculata (M. Bennett 794)	P1			x

Taxon	Status	Source		
		WAHerb	TPFL	TP List
<i>Tetradlea applanata</i>	P1			X
<i>Cassinia arcuata</i>	P2			X
<i>Dampiera orchardii</i>	P2			X
<i>Daviesia newbeyi</i>	P2			X
<i>Daviesia pauciflora</i>	P2			X
<i>Eucalyptus sinuosa</i>	P2			X
<i>Levenhookia pulcherrima</i>	P2			X
<i>Melaleuca penicula</i>	P2	X	X	X
<i>Opercularia hirsuta</i>	P2			X
<i>Thomasia</i> sp. Hopetoun (K.R. Newbey 4896)	P2			X
<i>Thysanotus brachiatus</i>	P2			X
<i>Acacia bifaria</i>	P3			X
<i>Acacia errabunda</i>	P3			X
<i>Acacia improcera</i>	P3	X		X
<i>Acacia newbeyi</i>	P3			X
<i>Astartea reticulata</i>	P3			X
<i>Astroloma</i> sp. Dumblebung (A.J.G. Wilson 146)	P3			X
<i>Banksia corvijuga</i>	P3			X
<i>Banksia lullfitzii</i>	P3	X		X
<i>Banksia meganotia</i>	P3			X
<i>Banksia rufa</i> subsp. <i>chelomacarpa</i>	P3			X
<i>Banksia rufa</i> subsp. <i>flavescens</i>	P3			X
<i>Beyeria sulcata</i> var. <i>truncata</i>	P3			X
<i>Cryptandra polyclada</i> subsp. <i>polyclada</i>	P3			X
<i>Dampiera sericantha</i>	P3			X
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277)	P3			X
<i>Eremophila compressa</i>	P3	X		
<i>Eucalyptus quaerenda</i>	P3			X
<i>Grevillea fulgens</i>	P3			X
<i>Grevillea punctata</i>	P3	X		X
<i>Hakea brachyptera</i>	P3			X
<i>Lechenaultia acutiloba</i>	P3			X
<i>Melaleuca coccinea</i>	P3			X
<i>Melaleuca sculponeata</i>	P3			X
<i>Micromyrtus navicularis</i>	P3	X		X
<i>Persoonia brevirhachis</i>	P3			X
<i>Pultenaea calycina</i> subsp. <i>calycina</i>	P3			X
<i>Pultenaea craigiana</i>	P3			X

Taxon	Status	Source		
		WAHerb	TPFL	TP List
<i>Pultenaea indira</i> subsp. <i>monstrosita</i>	P3			X
<i>Pultenaea vestita</i>	P3			X
<i>Sphaerolobium validum</i>	P3	X		X
<i>Spyridium mucronatum</i> subsp. <i>recurvum</i>	P3			X
<i>Stylidium pulviniforme</i>	P3			X
<i>Synaphea platyphylla</i>	P3	X		X
<i>Acacia argutifolia</i>	P4			X
<i>Acacia dictyoneura</i>	P4			X
<i>Acacia grisea</i>	P4			X
<i>Allocasuarina hystricosa</i>	P4	X	X	X
<i>Banksia foliosissima</i>	P4			X
<i>Banksia laevigata</i> subsp. <i>laevigata</i>	P4			X
<i>Beyeria villosa</i>	P4	X		X
<i>Chorizema ulotropis</i>	P4			X
<i>Dampiera deltoidea</i>	P4	X	X	X
<i>Eremophila serpens</i>	P4			X
<i>Eucalyptus desmondensis</i>	P4			X
<i>Eucalyptus stoatei</i>	P4	X		X
<i>Eucalyptus x bennettiae</i>	P4			X
<i>Goodenia phillipsiae</i>	P4	X	X	X
<i>Goodenia stenophylla</i>	P4			X
<i>Grevillea fastigiata</i>	P4	X	X	X
<i>Grevillea prostrata</i>	P4			X
<i>Gyrostemon ditrigynus</i>	P4			X
<i>Lepidium pseudotasmanicum</i>	P4			X
<i>Marianthus mollis</i>	P4			X
<i>Pterostylis</i> sp. Ongerup (K.R. Newbey 4874)	P4			X
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	X	X	X
<i>Rinzia affinis</i>	P4			X
<i>Stachystemon vinosus</i>	P4	X	X	X
<i>Thysanotus parviflorus</i>	P4	X		
<i>Verticordia integra</i>	P4			X

*Note: Sources of records are:

- TP List – DPaW Threatened and Priority Flora List
- TPFL – DPaW Threatened and Priority Flora Database
- WAHerb – WAHerb specimen database

**Appendix D: Conservation Codes for Western Australian Flora and Fauna
(DPaW 2014b)**

T Threatened species

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

- Fauna that is rare or likely to become extinct are declared to be fauna that is in need of special protection
- Flora that are extant and considered likely to become extinct, or rare and therefore in need of special protection, are declared to be rare flora

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

X Presumed extinct species

Listed as Specially Protected under the *Wildlife Conservation Act 1950*, published under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).

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

IA Migratory birds protected under an international agreement

Listed as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.

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), relating to the protection of migratory birds.

S Other specially protected fauna

Listed as Specially Protected under the *Wildlife Conservation Act 1950*. Fauna declared to be in need of special protection, otherwise than for the reasons mentioned for Schedules 1, 2 or 3, are published under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.

Threatened Fauna and Flora are ranked according to their level of threat using IUCN Red List categories and criteria. *For example:* Carnaby's Cockatoo (*Calyptorhynchus latirostris*) is listed as 'Specially Protected' under the *Wildlife Conservation Act 1950*, published under Schedule 1, and referred to as a 'Threatened' species with a ranking of 'Endangered'.

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

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

VU Vulnerable - considered to be facing a high risk of extinction in the wild.

A list of the current rankings can be downloaded from the Parks and Wildlife Threatened Species and Communities webpage at <http://dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/>

P Priority species

Species that maybe threatened or near threatened but are data deficient, have not yet been adequately surveyed to be listed under the Schedules of the Wildlife Conservation (Specially Protected Fauna) Notice or the Wildlife Conservation (Rare Flora) Notice, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened list for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Conservation dependent species that are subject to a specific conservation program are placed in Priority 5.

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

1: Priority One: Poorly-known species

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

2: Priority Two: Poorly-known species

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

3: Priority Three: Poorly-known species

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

- 4: Priority Four: Rare, Near Threatened and other species in need of monitoring**
- (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
- (b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
- (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
- 5: Priority Five: Conservation Dependent species**
- Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

*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, variety or forma).

Last updated 2 December 2014

**Appendix E: Vegetation Condition Scale for the South-West Botanical
Province (Keighery 1994)**

Condition Ranking	Description	Example
1	Pristine or nearly so; no obvious signs of disturbance.	
2	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.	Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.
3	Vegetation structure altered, obvious signs of disturbance.	Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
4	Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it.	Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
5	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management.	Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.
6	The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species.	These areas are often described as 'parkland cleared' with the flora composing of weed or crop species with isolated native trees and shrubs.

Appendix F: Vascular Plant Taxa Amalgamated in or Omitted From the Floristic Analysis

Description	Taxon	Reasoning
Omitted Taxa	<i>Dampiera</i> sp.	Could not be positively identified – taxonomy unclear
	<i>Haemodorum discolor</i>	Unable to be consistently identified across Study Area – identification possible only when flowering material present
	? <i>Hypolaena fastigiata</i>	Could not be positively identified – taxonomy unclear
Amalgamated Taxa	<i>Schoenus subflavus</i> <i>Schoenus subflavus</i> subsp. <i>subflavus</i>	Amalgamated due to unclear taxonomy

Appendix G: OptimClass Combinations Tested for Classification Analysis

Clustering	Resemblance	Transformation
Average Linkage (UPGMA)	Bray-Curtis	none
Average Linkage (UPGMA)	Bray-Curtis	log(2)
Average Linkage (UPGMA)	Bray-Curtis	power 0.333
Average Linkage (UPGMA)	Bray-Curtis	power 0
Average Linkage (UPGMA)	Jaccard	none
Average Linkage (UPGMA)	Jaccard	log(2)
Average Linkage (UPGMA)	Jaccard	power 0.333
Average Linkage (UPGMA)	Jaccard	power 0
Beta flexible ($\beta = -0.25$)	Bray-Curtis	none
Beta flexible ($\beta = -0.25$)	Bray-Curtis	log(2)
Beta flexible ($\beta = -0.25$)	Bray-Curtis	power 0.333
Beta flexible ($\beta = -0.25$)	Bray-Curtis	power 0
Beta flexible ($\beta = -0.25$)	Jaccard	none
Beta flexible ($\beta = -0.25$)	Jaccard	log(2)
Beta flexible ($\beta = -0.25$)	Jaccard	power 0.333
Beta flexible ($\beta = -0.25$)	Jaccard	power 0
Beta flexible ($\beta = -0.1$)	Bray-Curtis	none
Beta flexible ($\beta = -0.1$)	Bray-Curtis	log(2)
Beta flexible ($\beta = -0.1$)	Bray-Curtis	power 0.333
Beta flexible ($\beta = -0.1$)	Bray-Curtis	power 0
Beta flexible ($\beta = -0.1$)	Jaccard	none
Beta flexible ($\beta = -0.1$)	Jaccard	log(2)
Beta flexible ($\beta = -0.1$)	Jaccard	power 0.333
Beta flexible ($\beta = -0.1$)	Jaccard	power 0
Beta flexible ($\beta = -0.4$)	Bray-Curtis	none
Beta flexible ($\beta = -0.4$)	Bray-Curtis	log(2)
Beta flexible ($\beta = -0.4$)	Bray-Curtis	power 0.333
Beta flexible ($\beta = -0.4$)	Bray-Curtis	power 0
Beta flexible ($\beta = -0.4$)	Jaccard	none
Beta flexible ($\beta = -0.4$)	Jaccard	log(2)
Beta flexible ($\beta = -0.4$)	Jaccard	power 0.333
Beta flexible ($\beta = -0.4$)	Jaccard	power 0
Ward's method (= ISS)	Chord (= normalised ED)	none
Ward's method (= ISS)	Chord (= normalised ED)	log(2)
Ward's method (= ISS)	Chord (= normalised ED)	power 0.333
Ward's method (= ISS)	Chord (= normalised ED)	power 0
Ward's method (= ISS)	Euclid	none
Ward's method (= ISS)	Euclid	log(2)
Ward's method (= ISS)	Euclid	power 0.333
Ward's method (= ISS)	Euclid	power 0
Furthest neighbour (CLC)	Bray-Curtis	none
Furthest neighbour (CLC)	Bray-Curtis	log(2)
Furthest neighbour (CLC)	Bray-Curtis	power 0.333
Furthest neighbour (CLC)	Bray-Curtis	power 0
Furthest neighbour (CLC)	Jaccard	none
Furthest neighbour (CLC)	Jaccard	log(2)
Furthest neighbour (CLC)	Jaccard	power 0.333
Furthest neighbour (CLC)	Jaccard	power 0

Appendix H: Vascular Plant Taxa Recorded in the Study Area

Family	Taxon
Aizoaceae	<i>Carpobrotus modestus</i>
Amaranthaceae	<i>Ptilotus spathulatus</i>
Anarthriaceae	<i>Anarthria humilis</i> <i>Anarthria laevis</i> <i>Lyginia imberbis</i>
Apiaceae	<i>Apium annuum</i> <i>Daucus glochidiatus</i> <i>Platysace deflexa</i> <i>Platysace effusa</i>
Araliaceae	<i>Hydrocotyle callicarpa</i> <i>Trachymene ornata</i> <i>Trachymene pilosa</i>
Asparagaceae	<i>Chamaescilla corymbosa</i> <i>Chamaescilla spiralis</i> <i>Chamaexeros serra</i> <i>Laxmannia paleacea</i> <i>Laxmannia ramosa</i> subsp. <i>deflexa</i> <i>Lomandra effusa</i> <i>Lomandra hastilis</i> <i>Lomandra micrantha</i> subsp. <i>teretifolia</i> <i>Lomandra mucronata</i> <i>Lomandra nigricans</i> <i>Lomandra rupestris</i> <i>Thysanotus parviflorus</i> (P4) <i>Thysanotus patersonii</i> <i>Thysanotus sparteus</i> <i>Thysanotus thyrsoides</i>
Asphodelaceae	<i>Bulbine semibarbata</i>
Asteraceae	<i>Actinobole uliginosum</i> <i>Argentipallium niveum</i> <i>Blennospora drummondii</i> <i>Chthonocephalus pseudevax</i> * <i>Conyza sumatrensis</i> * <i>Cotula coronopifolia</i> <i>Helichrysum luteoalbum</i> * <i>Hypochaeris glabra</i> <i>Isoetopsis graminifolia</i> <i>Lagenophora huegelii</i>

Asteraceae cont.	<i>Millotia tenuifolia</i> var. <i>tenuifolia</i> <i>Olearia imbricata</i> <i>Olearia</i> sp. <i>Eremicola</i> (Diels & Pritzel s.n. PERTH 00449628) <i>Ozothamnus lepidophyllus</i> <i>Pterochaeta paniculata</i> <i>Rhodanthe pygmaea</i> <i>Senecio glossanthus</i> <i>Senecio quadridentatus</i> * <i>Sonchus oleraceus</i> * <i>Ursinia anthemoides</i> <i>Vittadinia australasica</i> var. <i>australasica</i> <i>Vittadinia gracilis</i>
Boraginaceae	<i>Halgania cyanea</i> var. <i>cyanea</i>
Boryaceae	<i>Borya constricta</i>
Campanulaceae	<i>Isotoma hypocrateriformis</i> <i>Wahlenbergia gracilentia</i>
Caryophyllaceae	<i>Spergularia marina</i>
Casuarinaceae	<i>Allocasuarina acuaria</i> <i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Allocasuarina ?hystricosa</i> (P4) <i>Allocasuarina microstachya</i> <i>Allocasuarina thuyoides</i>
Celastraceae	<i>Stackhousia monogyna</i> <i>Stackhousia scoparia</i> <i>Stackhousia</i> sp. Thick sepals (A.E. Orchard 1547)
Chenopodiaceae	<i>Atriplex ?bunburyana</i> <i>Atriplex ?paludosa</i> <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> <i>Rhagodia preissii</i> subsp. <i>preissii</i> <i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i> <i>Tecticornia lepidosperma</i> <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> <i>Tecticornia syncarpa</i> <i>Threlkeldia diffusa</i>
Convolvulaceae	<i>Convolvulus remotus</i> <i>Wilsonia backhousei</i> <i>Wilsonia humilis</i>

Crassulaceae	<i>Crassula exserta</i>
Cupressaceae	<i>Callitris roei</i>
Cyperaceae	<i>Caustis dioica</i> <i>Cyathochaeta equitans</i> <i>Ficinia nodosa</i> <i>Gahnia ancistrophylla</i> <i>Gahnia aristata</i> <i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005) <i>Gahnia trifida</i> <i>Isolepis marginata</i> <i>Lepidosperma carphoides</i> <i>Lepidosperma fimbriatum</i> <i>Lepidosperma gahnioides</i> <i>Lepidosperma sanguinolentum</i> <i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798) <i>Lepidosperma</i> sp. 'Clathrate' (R.L. Barrett & G.F. Craig RLB 3570) <i>Lepidosperma</i> sp. 'Dale River' (R. Davis 1051) <i>Lepidosperma</i> sp. 'Fitzgerald Tuberculate' <i>Lepidosperma</i> sp. 'Jerdacuttup' (R.L. Barrett RLB 2770) <i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553) <i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287) <i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596) (P1) <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) <i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118) <i>Lepidosperma</i> sp. 'Slender Tuberculate' (R.L. Barrett RLB 3476) <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522) <i>Mesomelaena stygia</i> subsp. <i>stygia</i> <i>Schoenus brevisetis</i> <i>Schoenus caespititius</i> <i>Schoenus calcatus</i> <i>Schoenus obtusifolius</i> <i>Schoenus racemosus</i> <i>Schoenus sesquispiculus</i> <i>Schoenus subfascicularis</i> <i>Schoenus subflavus</i> <i>Schoenus subflavus</i> subsp. ?long leaves (K.L. Wilson 2865) <i>Schoenus subflavus</i> subsp. <i>subflavus</i> <i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897) <i>Tricostularia compressa</i> <i>Tricostularia neesii</i> <i>Tricostularia</i> sp. Hopetoun (M. Bennett 646) <i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2)

Dasypogonaceae	<i>Calectasia grandiflora</i> subsp. Wheatbelt (A.M. Coates 4315)
Dilleniaceae	<i>Hibbertia gracilipes</i> <i>Hibbertia psilocarpa</i> <i>Hibbertia pungens</i> <i>Hibbertia recurvifolia</i>
Droseraceae	<i>Drosera grievei</i> (P1) <i>Drosera moorei</i>
Ericaceae	<i>Acrotriche cordata</i> <i>Acrotriche ramiflora</i> <i>Andersonia macranthera</i> <i>Andersonia parvifolia</i> <i>Astroloma epacridis</i> <i>Astroloma microphyllum</i> <i>Astroloma prostratum</i> <i>Astroloma serratifolium</i> <i>Astroloma tectum</i> <i>Coleanthera myrtoides</i> <i>Leucopogon brevicuspis</i> <i>Leucopogon concinnus</i> <i>Leucopogon cuneifolius</i> <i>Leucopogon fimbriatus</i> <i>Leucopogon heterophyllus</i> <i>Leucopogon opponens</i> <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085) <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585) <i>Leucopogon tamminensis</i> var. <i>australis</i> <i>Leucopogon woodsii</i> <i>Lysinema ciliatum</i> <i>Styphelia intertexta</i> <i>Styphelia melaleuroides</i> var. <i>melaleuroides</i>
Euphorbiaceae	<i>Beyeria brevifolia</i> <i>Monotaxis paxii</i> <i>Stachystemon polyandrus</i>
Fabaceae	<i>Acacia acanthoclada</i> subsp. <i>acanthoclada</i> <i>Acacia aemula</i> subsp. <i>aemula</i> <i>Acacia assimilis</i> subsp. <i>atroviridis</i> <i>Acacia chrysella</i> <i>Acacia chrysocephala</i> <i>Acacia curvata</i> <i>Acacia cyclops</i> <i>Acacia evenulosa</i>

Fabaceae cont.

Acacia glaucoptera
Acacia gonophylla
Acacia harveyi
Acacia heterochroa subsp. *heterochroa*
Acacia ingrata
Acacia lasiocalyx
Acacia latipes subsp. *latipes*
Acacia moirii subsp. *moirii*
Acacia mutabilis subsp. *mutabilis*
Acacia octonervia
Acacia patagiata
Acacia pinguiculosa subsp. *pinguiculosa*
Acacia pravifolia
Acacia saligna subsp. *lindleyi* ms
Acacia subcaerulea
Acacia sulcata var. *platyphylla*
Acacia unifissilis
Chorizema aciculare subsp. *aciculare*
Chorizema cytisoides
Chorizema nervosum
Daviesia anceps
Daviesia articulata
Daviesia benthamii subsp. *acanthoclona*
Daviesia lancifolia
Daviesia nematophylla
Daviesia pachyphylla
Daviesia teretifolia
Dillwynia divaricata
Eutaxia empetrifolia
Eutaxia inuncta
Eutaxia parvifolia
Gastrolobium latifolium
Gastrolobium parviflorum
Gastrolobium punctatum
Gompholobium baxteri
Gompholobium confertum
Gompholobium cyaninum
Gompholobium knightianum
Gompholobium marginatum
Gompholobium scabrum
Gompholobium tomentosum
Hovea trisperma
Isotropis drummondii
Jacksonia condensata
Jacksonia elongata
Mirbelia multicaulis

Fabaceae cont.	<i>Pultenaea barbata</i> <i>Pultenaea calycina</i> subsp. <i>proxena</i> (P4) <i>Pultenaea indira</i> subsp. <i>indira</i> <i>Senna</i> sp. Pallinup River (J.W. Green 4847) <i>Sphaerolobium daviesioides</i> <i>Sphaerolobium drummondii</i> <i>Templetonia battii</i> <i>Templetonia retusa</i> <i>Templetonia sulcata</i>
Geraniaceae	<i>Erodium cygnorum</i> <i>Pelargonium littorale</i>
Goodeniaceae	<i>Anthotium humile</i> <i>Cooperhooikia polygalacea</i> <i>Cooperhooikia strophiolata</i> <i>Dampiera angulata</i> <i>Dampiera fasciculata</i> <i>Dampiera juncea</i> <i>Dampiera lavandulacea</i> <i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3) <i>Goodenia affinis</i> <i>Goodenia berardiana</i> <i>Goodenia ?coerulea</i> <i>Goodenia concinna</i> <i>Goodenia occidentalis</i> <i>Goodenia pterigosperma</i> <i>Goodenia scapigera</i> subsp. <i>scapigera</i> <i>Goodenia viscida</i> <i>Lechenaultia heteromera</i>
Haemodoraceae	<i>Anigozanthos humilis</i> subsp. <i>humilis</i> <i>Anigozanthos rufus</i> <i>Conostylis argentea</i> <i>Conostylis lepidospermoides</i> (T) <i>Conostylis seorsiflora</i> subsp. <i>seorsiflora</i> <i>Haemodorum discolor</i>
Haloragaceae	<i>Glischrocaryon aureum</i> <i>Glischrocaryon roei</i> <i>Gonocarpus nodulosus</i>
Hemerocallidaceae	<i>Agrostocrinum scabrum</i> subsp. <i>scabrum</i> <i>Dianella brevicaulis</i> <i>Dianella revoluta</i> <i>Johnsonia acaulis</i>

Hemerocallidaceae cont.	<i>Stypandra glauca</i> <i>Tricoryne ?tenella</i>
Iridaceae	<i>Patersonia lanata</i> forma <i>lanata</i> <i>Patersonia occidentalis</i>
Juncaceae	<i>Juncus kraussii</i> subsp. <i>australiensis</i> <i>Juncus pallidus</i>
Lamiaceae	<i>Hemigenia teretiuscula</i> <i>Microcorys glabra</i> <i>Microcorys subcanescens</i> <i>Prostanthera baxteri</i> <i>Prostanthera serpyllifolia</i> subsp. <i>microphylla</i> <i>Westringia dampieri</i>
Lauraceae	<i>Cassytha flava</i> <i>Cassytha glabella</i> forma <i>dispar</i> <i>Cassytha melantha</i> <i>Cassytha pomiformis</i>
Loganiaceae	<i>Logania buxifolia</i> <i>Logania callosa</i> <i>Logania flaviflora</i> <i>Logania micrantha</i> <i>Logania stenophylla</i> <i>Phyllangium divergens</i>
Malvaceae	<i>Alyogyne hakeifolia</i> <i>Alyogyne</i> sp. Southern Coast (A.S. George 289) <i>Guichenotia micrantha</i> <i>Lasiopetalum compactum</i> <i>Lasiopetalum rosmarinifolium</i> <i>Thomasia angustifolia</i> <i>Thomasia microphylla</i>
Myrtaceae	<i>Astus tetragonus</i> <i>Baeckea latens</i> <i>Baeckea pachyphylla</i> <i>Baeckea preissiana</i> <i>Beaufortia micrantha</i> var. <i>micrantha</i> <i>Beaufortia schaueri</i> <i>Callistemon phoeniceus</i> <i>Calothamnus gibbosus</i> <i>Calothamnus gracilis</i> <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>

Myrtaceae cont.

Calytrix decandra
Calytrix leschenaultii
Calytrix aff. *leschenaultii*
Chamelaucium ciliatum
Chamelaucium megalopetalum
Conothamnus aureus
Cyathostemon blackettii
Cyathostemon tenuifolius
Darwinia diosmoides
Darwinia vestita
Ericomyrtus drummondii
Ericomyrtus parviflora
Ericomyrtus serpyllifolia
Eucalyptus calycogona subsp. *calycogona*
Eucalyptus ecostata
Eucalyptus eremophila subsp. *eremophila*
Eucalyptus flocktoniae subsp. *flocktoniae*
Eucalyptus incrassata
Eucalyptus kessellii subsp. *eugnosta*
Eucalyptus leptocalyx subsp. *leptocalyx*
Eucalyptus occidentalis
Eucalyptus perangusta
Eucalyptus phaenophylla subsp. *interjacens*
Eucalyptus pileata
Eucalyptus platypus subsp. *congregata*
Eucalyptus pleurocarpa
Eucalyptus quadrans
Eucalyptus sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)
Eucalyptus sporadica
Eucalyptus suggrandis subsp. *suggrandis*
Eucalyptus tetraptera
Eucalyptus uncinata
Eucalyptus x *erythrandra*
Kunzea affinis
Kunzea jucunda
Kunzea micromera
Kunzea preissiana
Leptospermum erubescens
Leptospermum inelegans
Leptospermum maxwellii
Leptospermum nitens
Leptospermum oligandrum
Leptospermum spinescens
Melaleuca acuminata subsp. *acuminata*
Melaleuca brevifolia
Melaleuca calycina

Myrtaceae cont.	<i>Melaleuca carrii</i> <i>Melaleuca cuticularis</i> <i>Melaleuca elliptica</i> <i>Melaleuca glaberrima</i> <i>Melaleuca hamata</i> <i>Melaleuca hamulosa</i> <i>Melaleuca johnsonii</i> <i>Melaleuca lateralis</i> <i>Melaleuca lateriflora</i> <i>Melaleuca lecanantha</i> <i>Melaleuca pauperiflora</i> subsp. <i>pauperiflora</i> <i>Melaleuca pentagona</i> var. <i>pentagona</i> <i>Melaleuca platycalyx</i> <i>Melaleuca pulchella</i> <i>Melaleuca rigidifolia</i> <i>Melaleuca societatis</i> <i>Melaleuca striata</i> <i>Melaleuca subfalcata</i> <i>Melaleuca thapsina</i> <i>Melaleuca torquata</i> <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> <i>Melaleuca ulicoides</i> <i>Melaleuca undulata</i> <i>Melaleuca villosisepala</i> <i>Micromyrtus elobata</i> subsp. <i>elobata</i> <i>Micromyrtus imbricata</i> <i>Micromyrtus navicularis</i> (P3) <i>Rinzia communis</i> <i>Taxandria spathulata</i> <i>Tetrapora verrucosa</i> <i>Thryptomene australis</i> subsp. <i>australis</i> <i>Verticordia acerosa</i> var. <i>preissii</i> <i>Verticordia chrysantha</i> <i>Verticordia densiflora</i> var. <i>cespitosa</i> <i>Verticordia eriocephala</i> <i>Verticordia inclusa</i> <i>Verticordia pennigera</i>
Olacaceae	<i>Olax benthamiana</i>
Orchidaceae	<i>Caladenia attingens</i> subsp. <i>gracillima</i> <i>Caladenia brevisura</i> <i>Caladenia longicauda</i> <i>Cyrtostylis</i> sp. <i>Diuris setacea</i> <i>Elythranthera brunonis</i>

Orchidaceae cont.	<i>Eriochilus dilatatus</i> <i>Leporella fimbriata</i> <i>Pterostylis leptochila</i> <i>Pterostylis recurva</i> <i>Pyrorchis nigricans</i> <i>Thelymitra benthamiana</i> <i>Thelymitra campanulata</i> <i>Thelymitra graminea</i> <i>Thelymitra macrophylla</i> <i>Thelymitra occidentalis</i> <i>Thelymitra petrophila</i> <i>Thelymitra villosa</i>
Oxalidaceae	<i>Oxalis exilis</i>
Phyllanthaceae	<i>Phyllanthus calycinus</i> <i>Phyllanthus scaber</i> <i>Poranthera microphylla</i>
Pittosporaceae	<i>Billardiera coriacea</i> <i>Billardiera fusiformis</i> <i>Billardiera venusta</i> <i>Cheiranthra brevifolia</i>
Poaceae	<i>Amphipogon avenaceus</i> <i>Amphipogon strictus</i> <i>Amphipogon turbinatus</i> <i>Austrostipa elegantissima</i> <i>Austrostipa juncifolia</i> <i>Austrostipa pycnostachya</i> <i>Austrostipa variabilis</i> * <i>Avellinia michelii</i> * <i>Briza maxima</i> * <i>Briza minor</i> * <i>Cynodon dactylon</i> * <i>Ehrharta longiflora</i> * <i>Lolium rigidum</i> <i>Neurachne alopecuroidea</i> * <i>Parapholis incurva</i> * <i>Pentameris airoides</i> subsp. <i>airoides</i> <i>Rytidosperma setaceum</i> <i>Spartochloa scirpoidea</i>
Polygalaceae	<i>Comesperma ciliatum</i> <i>Comesperma drummondii</i> <i>Comesperma integerrimum</i>

Polygalaceae cont.	<i>Comesperma scoparium</i> <i>Comesperma spinosum</i> <i>Comesperma volubile</i>
Portulacaceae	<i>Calandrinia eremaea</i> <i>Calandrinia granulifera</i>
Primulaceae	* <i>Lysimachia arvensis</i> <i>Samolus junceus</i>
Proteaceae	<i>Adenanthos cuneatus</i> <i>Banksia cirsioides</i> <i>Banksia lemanniana</i> <i>Banksia media</i> <i>Banksia obovata</i> <i>Banksia obtusa</i> <i>Banksia pteridifolia</i> subsp. <i>pteridifolia</i> <i>Banksia repens</i> <i>Banksia violacea</i> <i>Conospermum distichum</i> <i>Franklandia fucifolia</i> <i>Grevillea huegelii</i> <i>Grevillea nudiflora</i> <i>Grevillea oligantha</i> <i>Grevillea pectinata</i> <i>Grevillea rigida</i> subsp. <i>rigida</i> <i>Grevillea teretifolia</i> <i>Hakea commutata</i> <i>Hakea corymbosa</i> <i>Hakea cygna</i> subsp. <i>cygna</i> <i>Hakea horrida</i> <i>Hakea ilicifolia</i> <i>Hakea incrassata</i> <i>Hakea laurina</i> <i>Hakea lissocarpha</i> <i>Hakea marginata</i> <i>Hakea nitida</i> <i>Hakea obliqua</i> subsp. <i>parviflora</i> <i>Hakea pandanycarpa</i> subsp. <i>pandanycarpa</i> <i>Hakea prostrata</i> <i>Hakea ruscifolia</i> <i>Hakea trifurcata</i> <i>Hakea verrucosa</i> <i>Isopogon polycephalus</i> <i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813) <i>Isopogon trilobus</i>

Proteaceae cont.	<i>Persoonia helix</i>
	<i>Persoonia striata</i>
	<i>Persoonia teretifolia</i>
	<i>Petrophile cyathiforma</i>
	<i>Petrophile fastigiata</i>
	<i>Petrophile seminuda</i>
	<i>Petrophile squamata</i> subsp. northern (J. Monks 40)
	<i>Petrophile teretifolia</i>
	<i>Stirlingia anethifolia</i>
	<i>Synaphea divaricata</i>
	<i>Synaphea</i> aff. <i>drummondii</i>
	<i>Synaphea favosa</i>
	<i>Synaphea oligantha</i>
	<i>Synaphea</i> aff. <i>petiolaris</i>
	<i>Synaphea petiolaris</i> subsp. <i>petiolaris</i>
	<i>Synaphea platyphylla</i> (P3)
<i>Synaphea reticulata</i>	
<i>Synaphea spinulosa</i> subsp. <i>major</i>	
Restionaceae	<i>Chordifex sphacelatus</i>
	<i>Harperia lateriflora</i>
	<i>Hypolaena fastigiata</i>
	<i>Lepidobolus chaetocephalus</i>
	<i>Lepidobolus preissianus</i>
Rhamnaceae	<i>Cryptandra graniticola</i>
	<i>Cryptandra myriantha</i>
	<i>Cryptandra nutans</i>
	<i>Cryptandra pungens</i>
	<i>Cryptandra spyridioides</i>
	<i>Cryptandra wilsonii</i>
	<i>Spyridium cordatum</i>
	<i>Stenanthemum intricatum</i>
	<i>Stenanthemum tridentatum</i>
	<i>Trymalium elachophyllum</i>
Rubiaceae	<i>Opercularia apiciflora</i>
	<i>Opercularia vaginata</i>
Rutaceae	<i>Boronia coerulescens</i> subsp. <i>spinescens</i>
	<i>Boronia crassifolia</i>
	<i>Boronia crenulata</i> var. <i>crenulata</i>
	<i>Boronia inconspicua</i>
	<i>Boronia inornata</i> subsp. <i>leptophylla</i>
	<i>Boronia penicillata</i>
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	

Rutaceae cont.	<i>Boronia spathulata</i> <i>Boronia subsessilis</i> <i>Phebalium lepidotum</i> <i>Phebalium tuberosum</i>
Santalaceae	<i>Exocarpos aphyllus</i> <i>Exocarpos sparteus</i> <i>Leptomeria pachyclada</i> <i>Leptomeria pauciflora</i> <i>Santalum acuminatum</i>
Sapindaceae	<i>Dodonaea caespitosa</i> <i>Dodonaea concinna</i> <i>Dodonaea ptarmicaefolia</i> <i>Dodonaea viscosa</i> subsp. <i>angustissima</i>
Scrophulariaceae	<i>Eremophila glabra</i> s. lat.
Solanaceae	* <i>Solanum nigrum</i> <i>Solanum symonii</i>
Stylidiaceae	<i>Levenhookia pusilla</i> <i>Levenhookia stipitata</i> <i>Stylidium breviscapum</i> <i>Stylidium dichotomum</i> <i>Stylidium piliferum</i> <i>Stylidium repens</i> <i>Stylidium schoenoides</i> <i>Stylidium zeicolor</i>
Thymelaeaceae	<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i> <i>Pimelea imbricata</i> var. <i>piligera</i> <i>Pimelea pendens</i>
Violaceae	<i>Hybanthus floribundus</i> subsp. <i>adpressus</i>
Xanthorrhoeaceae	<i>Xanthorrhoea platyphylla</i>

Note: * denotes introduced taxon

Appendix I: Raw Data Recorded within Quadrats in the Study Area

Site Name: SC01
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 18/09/2014
 GPS Location: GDA94 Zone 51 256418E 6280478N
 Vegetation Type: 1
 Landform Type: Undulating plain (other)
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*
 Mid Stratum 1: *Banksia lemanniana*, *Banksia media*
 Lower Stratum 1: *Allocasuarina humilis*, *Banksia violacea*, *Beaufortia micrantha* var. *micrantha*, *Grevillea nudiflora*, *Lepidosperma* sp. 'Jerdacuttup' (R.L. Barrett RLB 2770), *Leucopogon heterophyllus*, *Melaleuca tuberculata* var. *macrophylla*, *Mesomelaena stygia* subsp. *stygia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia unifissilis</i>	0.4	0.1
<i>Allocasuarina humilis</i>	0.4	1.5
<i>Allocasuarina microstachya</i>	0.3	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Andersonia macranthera</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.6	0.1
<i>Banksia lemanniana</i>	1.8	0.5
<i>Banksia media</i>	1.5	3
<i>Banksia violacea</i>	0.5	1
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	10
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	0.1	0.1
<i>Calectasia grandiflora</i> subsp. Wheatbelt (A.M. Coates 4315)	0.1	0.1
<i>Calytrix decandra</i>		
<i>Calytrix leschenaultii</i>	0.4	0.1

<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Caustis dioica</i>	0.3	0.1
<i>Chordifex sphacelatus</i>	0.1	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Conostylis lepidospermoides</i> (T)	0.1	0.1
<i>Cryptandra spyridioides</i>	0.1	0.1
<i>Dampiera juncea</i>	0.3	0.1
<i>Darwinia vestita</i>	0.6	0.6
<i>Daviesia teretifolia</i>	0.5	0.1
<i>Eucalyptus pleurocarpa</i>	3.5	20
<i>Goodenia pterigosperma</i>	0.1	0.1
<i>Grevillea nudiflora</i>	0.6	2
<i>Hakea corymbosa</i>		
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.6	4
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	0.5
<i>Isopogon polycephalus</i>		
<i>Isopogon trilobus</i>	0.5	0.1
<i>Kunzea jucunda</i>		
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.2	0.1
<i>Lepidosperma</i> sp. ' <i>Clathrate</i> ' (R.L. Barrett & G.F. Craig RLB 3570)	0.3	0.1
<i>Lepidosperma</i> sp. ' <i>Jerdacuttup</i> ' (R.L. Barrett RLB 2770)	0.4	1
<i>Lepidosperma</i> sp. ' <i>Tibialate</i> ' (R.L. Barrett RLB 3522)	0.2	0.1
<i>Leptospermum maxwellii</i>	0.7	0.1
<i>Leptospermum spinescens</i>	0.4	0.1
<i>Leucopogon heterophyllus</i>	0.4	2
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.3	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.4	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.5	0.1
<i>Melaleuca carrii</i>	0.3	0.1
<i>Melaleuca rigidifolia</i>		
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.4	3
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.3	1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.6	0.1
<i>Persoonia striata</i>	0.1	0.1
<i>Petrophile fastigiata</i>	0.4	0.1

<i>Petrophile seminuda</i>	0.4	0.1
<i>Petrophile squamata</i> subsp. northern (J. Monks 40)		
<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i>	0.1	0.1
<i>Stachystemon polyandrus</i>	0.1	0.1
<i>Stackhousia scoparia</i>	0.3	0.1
<i>Synaphea divaricata</i>	0.3	0.1
<i>Thysanotus sparteus</i>	0.4	0.1
<i>Tricostularia</i> sp. Hopetoun (M. Bennett 646)	0.1	0.1
<i>Verticordia acerosa</i> var. <i>preissii</i>	0.4	0.1
<i>Verticordia chrysantha</i>	0.4	0.1
<i>Verticordia inclusa</i>		

PHOTO

Site Name: SC02
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 19/09/2014
 GPS Location: GDA94 Zone 51 255901E 6280428N
 Vegetation Type: 2
 Landform Type: Undulating plain (other)
 Slope Class: Level (0 degrees)
 Soil Type: Clay Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*, *Eucalyptus tetraptera*
 Mid Stratum 1: *Daviesia pachyphylla*, *Hakea pandanicarpa* subsp. *pandanicarpa*
 Lower Stratum 1: *Banksia cirsioides*, *Beaufortia micrantha* var. *micrantha*, *Dampiera juncea*, *Hakea incrassata*, *Mesomelaena stygia* subsp. *stygia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia moirii</i> subsp. <i>moirii</i>	0.1	0.1
<i>Acacia unifissilis</i>	0.3	0.2
<i>Allocasuarina microstachya</i>	0.2	0.2
<i>Allocasuarina thuyoides</i>	0.4	0.3
<i>Amphipogon avenaceus</i>	0.3	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Andersonia parvifolia</i>	0.3	0.3
<i>Baeckea preissiana</i>	0.5	0.1
<i>Banksia cirsioides</i>	0.7	4
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	0.5
<i>Calytrix leschenaultii</i>	0.3	0.1
<i>Cassytha flava</i>	0	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1

<i>Caustis dioica</i>	0.3	0.1
<i>Chamelaucium ciliatum</i>	0.4	0.1
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.1	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Dampiera juncea</i>	0.3	0.5
<i>Darwinia vestita</i>	0.4	0.1
<i>Daviesia pachyphylla</i>	1.5	2
<i>Eucalyptus pleurocarpa</i>	2.5	2
<i>Eucalyptus tetraptera</i>	2.5	1
<i>Hakea corymbosa</i>	0.6	0.2
<i>Hakea cygna</i> subsp. <i>cygna</i>	0.5	0.3
<i>Hakea incrassata</i>	0.5	0.5
<i>Hakea lissocarpha</i>	0.6	0.1
<i>Hakea pandanicarpa</i> subsp. <i>pandanicarpa</i>	1	1
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.3	0.1
<i>Isotropis drummondii</i>		
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma</i> sp. 'Clathrate' (R.L. Barrett & G.F. Craig RLB 3570)	0.3	0.1
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.3	0.4
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.1	0.1
<i>Leptospermum oligandrum</i>	0.5	0.3
<i>Leptospermum spinescens</i>	0.4	0.1
<i>Leucopogon concinnus</i>	0.3	0.4
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.3	0.2
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.3	0.1
<i>Leucopogon tamminensis</i> var. <i>australis</i>	0.2	0.4
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.5	0.1
<i>Melaleuca carrii</i>	0.3	0.3
<i>Melaleuca rigidifolia</i>	0.3	0.3
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	1
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.3	2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Opercularia vaginata</i>	0.1	0.1
<i>Persoonia striata</i>	0.2	0.1

<i>Petrophile fastigiata</i>	0.3	0.1
<i>Petrophile seminuda</i>	0.3	0.3
<i>Petrophile squamata</i> subsp. northern (J. Monks 40)	0.3	0.1
<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i>	0.1	0.1
<i>Platysace effusa</i>	0.3	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.2	0.1
<i>Pyrorchis nigricans</i>		
<i>Schoenus brevisetis</i>	0.1	0.1
<i>Schoenus subflavus</i> subsp. ?long leaves (K.L. Wilson 2865)	0.1	0.1
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Stylidium repens</i>	0.1	0.1
<i>Synaphea divaricata</i>	0.2	0.2
<i>Synaphea reticulata</i>	0.2	0.1
<i>Synaphea spinulosa</i> subsp. <i>major</i>	0.3	0.1
<i>Taxandria spathulata</i>		
<i>Thelymitra campanulata</i>		
<i>Verticordia chrysantha</i>	0.4	0.1

PHOTO

Site Name:	SC03
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	19/09/2014
GPS Location:	GDA94 Zone 51 256797E 6280795N
Vegetation Type:	5
Landform Type:	Undulating plain (other)
Slope Class:	Gently Inclined (3 degrees)
Soil Type:	Clay (other)
Soil Colour:	Grey-brown (other)
Rock Outcrop:	No bedrock exposed
CF Abundance:	2-10%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Ironstone, Quartz (other)
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus kessellii* subsp. *eugnota*, *Eucalyptus leptocalyx* subsp. *leptocalyx*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus suggrandis* subsp. *suggrandis*, *Eucalyptus tetraptera*

Lower Stratum 1: *Daviesia benthamii* subsp. *acanthoclona*, *Melaleuca calycina*, *Melaleuca societatis*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia curvata</i>	0.3	0.1
<i>Acacia glaucoptera</i>		
<i>Acacia gonophylla</i>	0.3	0.1
<i>Acacia pravifolia</i>	0.3	0.1
<i>Acrotriche cordata</i>		
<i>Boronia inornata</i> subsp. <i>leptophylla</i>	0.3	0.2
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.2
<i>Chorizema nervosum</i>	0.1	0.1
<i>Comesperma spinosum</i>	0.2	0.1
<i>Cyathostemon tenuifolius</i>	0.3	0.2
<i>Dampiera angulata</i>	0.3	0.1
<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>	0.5	4
<i>Dianella revoluta</i>	0.3	0.1

<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	1.5	5
<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i>	1.8	1
<i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i>	1.8	1
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	1.5	10
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	1.5	10
<i>Eucalyptus tetraptera</i>	2	0.5
<i>Eutaxia parvifolia</i>	0.2	0.1
<i>Exocarpos aphyllus</i>	0.5	0.2
<i>Exocarpos sparteus</i>	1.8	0.1
<i>Gahnia ancistrophylla</i>	0.4	3
<i>Gahnia aristata</i>	0.1	0.3
<i>Gompholobium confertum</i>	0.3	0.1
<i>Goodenia ?coerulea</i>	0.1	0.1
<i>Grevillea huegelii</i>		
<i>Grevillea nudiflora</i>	0.4	0.2
<i>Grevillea oligantha</i>	0.3	0.1
<i>Hibbertia pungens</i>	0.2	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.3	0.1
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596) (P1)	0.1	0.1
<i>Leucopogon opponens</i>	0.3	0.1
<i>Logania stenophylla</i>	0.1	0.1
<i>Melaleuca calycina</i>	0.6	2
<i>Melaleuca johnsonii</i>	0.2	0.3
<i>Melaleuca lateriflora</i>	0.4	0.3
<i>Melaleuca societatis</i>	0.3	8
<i>Melaleuca subfalcata</i>	0.3	0.5
<i>Microcorys glabra</i>	0.2	0.2
<i>Platysace deflexa</i>	0.3	0.1
<i>Styphelia intertexta</i>	0.3	0.1
<i>Templetonia sulcata</i>	0.3	0.1
<i>Thomasia microphylla</i>	0.2	0.1

PHOTO



Site Name: SC04
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 20/09/2014
 GPS Location: GDA94 Zone 51 255844E 6280893N
 Vegetation Type: 1
 Landform Type: Undulating plain (other)
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus pleurocarpa*
 Mid Stratum 1: *Banksia lemanniana*, *Banksia media*, *Hakea pandanicarpa* subsp. *pandanicarpa*
 Lower Stratum 1: *Banksia cirsioides*, *Banksia violacea*, *Beaufortia micrantha* var. *micrantha*, *Taxandria spathulata*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia chrysocephala</i>	0.2	0.1
<i>Acacia ingrata</i>	0.2	0.1
<i>Acacia moirii</i> subsp. <i>moirii</i>	0.1	0.1
<i>Acacia unifissilis</i>	0.3	0.1
<i>Allocasuarina humilis</i>	0.4	0.5
<i>Allocasuarina microstachya</i>	0.2	0.1
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Andersonia macranthera</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.3	0.1
<i>Banksia cirsioides</i>	0.6	1
<i>Banksia lemanniana</i>	1.5	3

<i>Banksia media</i>	1	2
<i>Banksia obovata</i>	0.6	0.8
<i>Banksia obtusa</i>	0.2	0.2
<i>Banksia repens</i>		
<i>Banksia violacea</i>	0.6	1
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	4
<i>Boronia crassifolia</i>	0.1	0.2
<i>Calothamnus gracilis</i>	0.4	0.1
<i>Calytrix leschenaultii</i>	0.4	0.1
<i>Cassytha flava</i>	0	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Caustis dioica</i>	0.3	0.3
<i>Chordifex sphacelatus</i>	0.1	0.1
<i>Chorizema cytisoides</i>	0.4	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Dampiera juncea</i>	0.3	0.1
<i>Darwinia vestita</i>	0.3	0.1
<i>Daviesia anceps</i>	0.3	0.2
<i>Daviesia teretifolia</i>	0.3	0.1
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	1.6	0.5
<i>Eucalyptus pleurocarpa</i>	2.5	15
<i>Gahnia ancistrophylla</i>	0.4	0.3
<i>Gompholobium baxteri</i>	0.3	0.2
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	0.5	0.1
<i>Grevillea nudiflora</i>	0.3	0.2
<i>Hakea corymbosa</i>	1.5	0.5
<i>Hakea obliqua</i> subsp. <i>parviflora</i>	0.4	0.1
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.3	5
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.1	0.2
<i>Isopogon polycephalus</i>	0.3	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.3	0.1
<i>Isopogon trilobus</i>	0.3	0.1
<i>Jacksonia elongata</i>	0.8	0.5
<i>Lasiopetalum rosmarinifolium</i>	0.1	0.1
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.3	0.1
<i>Leptospermum spinescens</i>	0.4	0.2
<i>Leucopogon concinnus</i>	0.1	0.1
<i>Leucopogon heterophyllus</i>	0.4	0.5
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.3	0.2

<i>Leucopogon tamminensis</i> var. <i>australis</i>	0.2	0.1
<i>Logania micrantha</i>	0.2	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.4	0.2
<i>Melaleuca lateralis</i>	0.2	0.1
<i>Melaleuca rigidifolia</i>	0.3	2
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Oxalys benthamiana</i>	0.6	0.5
<i>Persoonia striata</i>	0.1	0.1
<i>Petrophile seminuda</i>	0.3	0.3
<i>Petrophile squamata</i> subsp. northern (J. Monks 40)	0.3	0.1
<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i>	0.1	0.1
<i>Platysace effusa</i>	0.4	0.1
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.1	0.1
<i>Stachystemon polyandrus</i>	0.1	0.1
<i>Stackhousia scoparia</i>	0.2	0.1
<i>Stylidium piliferum</i>	0.1	0.1
<i>Stylidium schoenoides</i>	0.1	0.1
<i>Synaphea divaricata</i>	0.2	0.1
<i>Taxandria spathulata</i>	0.7	1.5
<i>Tricostularia</i> sp. Hopetoun (M. Bennett 646)	0.2	0.1

PHOTO



Site Name: SC05
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 20/09/2014
 GPS Location: GDA94 Zone 51 256334E 6280101N
 Vegetation Type: 2
 Landform Type: Undulating plain (other)
 Slope Class: Level (0 degrees)
 Soil Type: Clay Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*
 Lower Stratum 1: *Andersonia parvifolia*, *Banksia cirsioides*, *Hakea cygna* subsp. *cygna*,
Leptospermum oligandrum, *Melaleuca tuberculata* var. *macrophylla*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia unifissilis</i>	0.3	0.1
<i>Allocasuarina humilis</i>	0.3	0.5
<i>Allocasuarina microstachya</i>	0.3	0.5
<i>Allocasuarina thuyoides</i>	0.1	0.1
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Andersonia parvifolia</i>	0.2	3
<i>Baeckea preissiana</i>	0.4	0.1
<i>Banksia cirsioides</i>	0.6	5
<i>Banksia violacea</i>	0.4	0.5
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.3	0.2
<i>Calytrix leschenaultii</i>	0.2	0.1
<i>Cassytha flava</i>	0	0.1
<i>Caustis dioica</i>	0.2	0.1
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.1	0.1

<i>Chorizema cytisoides</i>	0.4	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Dampiera juncea</i>	0.3	0.1
<i>Daviesia teretifolia</i>	0.3	0.1
<i>Drosera grievei</i> (P1)	0.1	0.1
<i>Eucalyptus pleurocarpa</i>	3	2
<i>Hakea cygna</i> subsp. <i>cygna</i>	0.6	8
<i>Hakea prostrata</i>		
<i>Hakea trifurcata</i>	0.7	0.5
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	0.3
<i>Kunzea micromera</i>	0.3	0.1
<i>Kunzea preissiana</i>	0.6	0.3
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.2	0.1
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.3	0.1
<i>Leptospermum oligandrum</i>	0.7	3
<i>Leptospermum spinescens</i>	0.4	0.1
<i>Leucopogon fimbriatus</i>	0.3	0.1
<i>Leucopogon heterophyllus</i>	0.4	0.3
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.2	0.1
<i>Lysinema ciliatum</i>	0.5	0.3
<i>Melaleuca carrii</i>	0.3	0.1
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	3
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.3	3
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Persoonia striata</i>	0.2	0.1
<i>Petrophile fastigiata</i>	0.3	0.2
<i>Petrophile seminuda</i>	0.4	0.2
<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i>	0.1	0.1
<i>Platysace effusa</i>	0.1	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.2	0.2
<i>Schoenus obtusifolius</i>	0.2	0.1
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Stachystemon polyandrus</i>	0.1	0.1
<i>Stackhousia scoparia</i>	0.3	0.1
<i>Synaphea divaricata</i>	0.2	0.1
<i>Taxandria spathulata</i>	0.7	0.8
<i>Thelymitra campanulata</i>	0.3	0.1

<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2)	0.2	0.1
<i>Verticordia chrysantha</i>	0.4	0.2
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.3	0.2

PHOTO

Site Name: SC06
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 20/09/2014
 GPS Location: GDA94 Zone 51 255312E 6280481N
 Vegetation Type: 1
 Landform Type: Undulating plain (other)
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*, *Eucalyptus tetraptera*
 Mid Stratum 1: *Banksia obovata*, *Hakea pandanica* subsp. *pandanica*, *Taxandria spathulata*
 Lower Stratum 1: *Beaufortia micrantha* var. *micrantha*, *Calothamnus gracilis*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia unifissilis</i>	0.4	0.1
<i>Allocasuarina humilis</i>	0.4	0.5
<i>Allocasuarina microstachya</i>	0.2	0.3
<i>Allocasuarina thuyoides</i>	0.3	0.2
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Andersonia macranthera</i>	0.1	0.1
<i>Andersonia parvifolia</i>	0.2	0.2
<i>Astroloma prostratum</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.4	0.1
<i>Banksia cirsioides</i>	0.6	0.3
<i>Banksia lemmaniana</i>	1.8	0.5
<i>Banksia media</i>	1	0.5
<i>Banksia obovata</i>	1.3	1
<i>Banksia violacea</i>	0.5	0.1
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	4

<i>Boronia crassifolia</i>	0.1	0.1
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	0.2	0.1
<i>Calothamnus gracilis</i>	0.3	4
<i>Calytrix leschenaultii</i>	0.2	0.1
<i>Cassytha flava</i>	0	0.1
<i>Caustis dioica</i>	0.3	0.2
<i>Chamelaucium ciliatum</i>	0.4	0.1
<i>Chordifex sphacelatus</i>	0.2	0.2
<i>Chorizema cytisoides</i>	0.4	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Conostylis lepidospermoides</i> (T)	0.2	0.1
<i>Conothamnus aureus</i>	0.2	0.5
<i>Dampiera juncea</i>	0.3	0.1
<i>Dampiera</i> sp.	0.1	0.1
<i>Darwinia vestita</i>	0.4	0.1
<i>Daviesia teretifolia</i>	0.4	0.3
<i>Eucalyptus pleurocarpa</i>	3	10
<i>Eucalyptus tetraptera</i>	2	0.3
<i>Gompholobium knightianum</i>	0.1	0.1
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	0.3	0.1
<i>Hakea corymbosa</i>	0.5	0.1
<i>Hakea ilicifolia</i>	0.5	0.1
<i>Hakea nitida</i>	0.3	0.1
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.3	9
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	0.5
<i>Isopogon polycephalus</i>	0.2	0.1
<i>Isopogon trilobus</i>	0.4	0.4
<i>Jacksonia elongata</i>	0.8	0.1
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.1	0.1
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.2	0.1
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.3	0.2
<i>Leptospermum erubescens</i>	0.8	0.5
<i>Leptospermum spinescens</i>	0.5	0.1
<i>Leucopogon heterophyllus</i>	0.4	0.5
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.2
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.2
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra nigricans</i>	0.3	0.1
<i>Lysinema ciliatum</i>	0.6	0.3

<i>Melaleuca carrii</i>	0.3	0.2
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.4	2
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.5
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.3	0.2
<i>Opercularia vaginata</i>	0.1	0.1
<i>Persoonia striata</i>	0.2	0.1
<i>Petrophile fastigiata</i>	0.3	0.1
<i>Petrophile seminuda</i>	0.4	0.4
<i>Petrophile squamata</i> subsp. northern (J. Monks 40)	0.3	0.1
<i>Petrophile teretifolia</i>	0.4	0.1
<i>Platysace effusa</i>	0.4	0.1
<i>Schoenus brevisetis</i>	0.2	0.1
<i>Schoenus subflavus</i> subsp. ?long leaves (K.L. Wilson 2865)	0.1	0.1
<i>Stachystemon polyandrus</i>	0.1	0.1
<i>Stylidium piliferum</i>	0.1	0.1
<i>Synaphea divaricata</i>	0.2	0.1
<i>Taxandria spathulata</i>	1	1
<i>Thelymitra campanulata</i>	0.2	0.1
<i>Tricostularia</i> sp. Hopetoun (M. Bennett 646)	0.1	0.1
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2)	0.2	0.1
<i>Verticordia chrysantha</i>	0.5	0.1
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.2	0.1
<i>Verticordia inclusa</i>	0.3	0.1

PHOTO



Site Name: SC07
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 20/09/2014
 GPS Location: GDA94 Zone 51 255707E 6280301N
 Vegetation Type: 6
 Landform Type: Open Depression
 Slope Class: Level (0 degrees)
 Soil Type: Sandy clay (other)
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus suggrandis* subsp. *suggrandis*, *Exocarpos sparteus*
 Mid Stratum 1: *Acacia glaucoptera*, *Daviesia benthamii* subsp. *acanthoclona*, *Melaleuca hamata*
 Lower Stratum 1: *Dodonaea caespitosa*, *Gahnia ancistrophylla*, *Rhagodia preissii* subsp. *preissii*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia curvata</i>	0.4	0.1
<i>Acacia glaucoptera</i>	1.5	9
<i>Acacia ingrata</i>	0.3	0.2
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Billardiera coriacea</i>	0	0.1
<i>Callitris roei</i>	0.1	0.1
<i>Crassula exserta</i>	0.1	0.1
<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>	1.2	7
<i>Dianella brevicaulis</i>		
<i>Dodonaea caespitosa</i>	0.3	2
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	3	12
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	3	3
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	2	5

<i>Exocarpos sparteus</i>	3	1
<i>Gahnia ancistrophylla</i>	0.4	8
<i>Gastrolobium parviflorum</i>		
<i>Goodenia concinna</i>		
<i>Hakea laurina</i>		
<i>Lasiopetalum rosmarinifolium</i>	0.4	0.1
<i>Lepidosperma fimbriatum</i>	0.2	0.1
<i>Melaleuca hamata</i>	1.2	4
<i>Melaleuca subfalcata</i>	0.4	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Opercularia apiciflora</i>	0.1	0.1
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	0.1	0.1
<i>Rhagodia preissii</i> subsp. <i>preissii</i>	0.5	0.5
<i>Wilsonia humilis</i>	0.1	0.2

PHOTO

Site Name: SC08
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 21/09/2014
 GPS Location: GDA94 Zone 51 253900E 6281986N
 Vegetation Type: 3
 Landform Type: Undulating plain (other)
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*
 Mid Stratum 1: *Banksia media*, *Hakea obliqua* subsp. *parviflora*, *Hakea pandanicarpa* subsp. *pandanicarpa*, *Leptospermum erubescens*, *Leptospermum oligandrum*
 Lower Stratum 1: *Allocasuarina thuyoides*, *Beaufortia micrantha* var. *micrantha*, *Calothamnus gracilis*, *Daviesia teretifolia*, *Melaleuca carrii*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia latipes</i> subsp. <i>latipes</i>	0.3	0.1
<i>Acacia unifissilis</i>	0.3	0.2
<i>Allocasuarina humilis</i>	0.6	0.5
<i>Allocasuarina microstachya</i>	0.3	0.2
<i>Allocasuarina thuyoides</i>	0.8	1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Argentipallium niveum</i>	0.2	0.1
<i>Baeckea preissiana</i>	0.5	0.1
<i>Banksia media</i>	1.8	5
<i>Banksia obtusa</i>	0.1	0.2
<i>Banksia violacea</i>	0.4	0.1

<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	5
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	0.2	0.1
<i>Calothamnus gracilis</i>	0.4	3
<i>Calytrix leschenaultii</i>	0.3	0.3
<i>Cassytha flava</i>	0	0.1
<i>Caustis dioica</i>	0.3	0.5
<i>Chamelaucium megalopetalum</i>	0.4	0.2
<i>Chordifex sphacelatus</i>	0.2	0.1
<i>Chorizema cytisoides</i>	0.3	0.1
<i>Conostylis lepidospermoides</i> (T)	0.2	0.2
<i>Conothamnus aureus</i>	0.3	0.2
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Daviesia teretifolia</i>	0.4	1
<i>Elythranthera brunonis</i>		
<i>Eucalyptus pleurocarpa</i>	3	15
<i>Gompholobium tomentosum</i>	0.4	0.2
<i>Hakea corymbosa</i>	1.8	0.4
<i>Hakea nitida</i>	0.5	0.1
<i>Hakea obliqua</i> subsp. <i>parviflora</i>	1	1.5
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.8	5
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Isopogon trilobus</i>	0.4	0.1
<i>Kunzea preissiana</i>	0.6	0.2
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.3	0.1
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.4	0.4
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.3	0.2
<i>Leptospermum erubescens</i>	1.6	6
<i>Leptospermum oligandrum</i>	1.2	1.5
<i>Leptospermum spinescens</i>	0.5	0.2
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.5
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.3	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Melaleuca carrii</i>	0.4	1
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	0.5
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Persoonia striata</i>	0.2	0.1
<i>Petrophile fastigiata</i>	0.4	0.1

<i>Petrophile squamata</i> subsp. northern (J. Monks 40)	0.6	0.1
<i>Petrophile teretifolia</i>	0.4	0.1
<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i>	0.1	0.1
<i>Schoenus brevisetis</i>	0.2	0.1
<i>Schoenus obtusifolius</i>	0.2	0.1
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.1	0.1
<i>Stylidium piliferum</i>	0.1	0.1
<i>Synaphea spinulosa</i> subsp. <i>major</i>	0.2	0.1
<i>Tricostularia</i> sp. Hopetoun (M. Bennett 646)	0.1	0.1
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298) (P2)	0.2	0.2
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.2	0.1

PHOTO

Site Name: SC09
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 21/09/2014
 GPS Location: GDA94 Zone 51 253810E 6281597N
 Vegetation Type: 4
 Landform Type: Flat
 Slope Class: Level (0 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*
 Mid Stratum 1: *Adenanthos cuneatus*, *Chamelaucium megalopetalum*, *Leptospermum erubescens*
 Lower Stratum 1: *Allocasuarina acuaria*, *Banksia repens*, *Banksia violacea*, *Beaufortia micrantha* var. *micrantha*, *Caustis dioica*, *Conothamnus aureus*, *Daviesia teretifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia aemula</i> subsp. <i>aemula</i>	0.3	0.1
<i>Acacia unifissilis</i>	0.4	0.2
<i>Adenanthos cuneatus</i>	1.2	3
<i>Allocasuarina acuaria</i>	0.6	3
<i>Allocasuarina humilis</i>	0.6	1
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.3	0.1
<i>Banksia cirsioides</i>	0.6	0.1
<i>Banksia obtusa</i>	0.2	0.2
<i>Banksia repens</i>	0.3	2
<i>Banksia violacea</i>	0.5	1
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	1
<i>Boronia crassifolia</i>	0.1	0.1
<i>Boronia penicillata</i>	0.1	0.1

<i>Calothamnus gracilis</i>	0.4	0.2
<i>Calytrix decandra</i>	0.3	0.2
<i>Calytrix leschenaultii</i>	0.3	0.1
<i>Cassytha flava</i>	0	0.1
<i>Caustis dioica</i>	0.4	2
<i>Chamelaucium megalopetalum</i>	0.8	3
<i>Chordifex sphacelatus</i>	0.2	0.2
<i>Conothamnus aureus</i>	0.3	5
<i>Dampiera juncea</i>	0.3	0.2
<i>Daviesia teretifolia</i>	0.5	1
<i>Drosera grievei</i> (P1)	0.1	0.1
<i>Eucalyptus pleurocarpa</i>	2.5	1
<i>Gompholobium scabrum</i>	0.3	0.1
<i>Grevillea nudiflora</i>	0.5	0.2
<i>Hakea obliqua</i> subsp. <i>parviflora</i>	1.5	1
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.1	0.1
<i>Hibbertia recurvifolia</i>	0.4	0.4
<i>Hypolaena fastigiata</i>	0.2	0.1
<i>Isopogon polycephalus</i>	0.3	1
<i>Isopogon trilobus</i>	0.4	0.1
<i>Jacksonia elongata</i>	1	0.3
<i>Johnsonia acaulis</i>	0.1	0.1
<i>Leptomeria pauciflora</i>	0.2	0.1
<i>Leptospermum erubescens</i>	2	4.4
<i>Leptospermum spinescens</i>	0.4	0.1
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.3
<i>Logania micrantha</i>	0.2	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lomandra nigricans</i>	0.3	0.1
<i>Lyginia imberbis</i>	0.3	0.1
<i>Lysinema ciliatum</i>	0.6	0.5
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	0.5
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.3	0.2
<i>Persoonia striata</i>	0.3	0.1
<i>Petrophile fastigiata</i>	0.2	0.1
<i>Petrophile teretifolia</i>	0.4	0.1
<i>Platysace effusa</i>	0.5	0.1
<i>Pultenaea barbata</i>	0.2	0.1
<i>Schoenus caespititius</i>	0.5	0.2
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.1	0.1
<i>Stachystemon polyandrus</i>	0.2	0.1

<i>Stackhousia scoparia</i>	0.2	0.1
<i>Stackhousia</i> sp. Thick sepals (A.E. Orchard 1547)	0.4	0.1
<i>Stirlingia anethifolia</i>	0.3	0.1
<i>Synaphea divaricata</i>	0.2	0.1
<i>Tricostularia neesii</i>	0.5	0.2
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.3	0.1

PHOTO

Site Name: SC10
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 21/09/2014
 GPS Location: GDA94 Zone 51 253300E 6281552N
 Vegetation Type: 4
 Landform Type: Undulating plain (other)
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown-yellow (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1: *Adenanthos cuneatus, Hakea corymbosa, Jacksonia elongata, Leptospermum erubescens*
 Lower Stratum 1: *Allocasuarina acuaria, Banksia violacea, Calothamnus gracilis*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Adenanthos cuneatus</i>	1	3
<i>Allocasuarina acuaria</i>	0.5	2
<i>Allocasuarina humilis</i>	0.4	0.3
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anigozanthos rufus</i>	0.3	0.1
<i>Baeckea preissiana</i>	0.3	0.1
<i>Banksia cirsioides</i>	0.6	0.2
<i>Banksia obtusa</i>	0.2	0.2
<i>Banksia violacea</i>	0.5	2
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	0.1	0.1
<i>Calothamnus gracilis</i>	0.4	5
<i>Calytrix decandra</i>	0.3	0.3
<i>Cassytha flava</i>	0	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Caustis dioica</i>	0.4	2
<i>Chamelaucium megalopetalum</i>	0.6	0.4
<i>Chordifex sphacelatus</i>	0.1	0.1

<i>Chorizema cytisoides</i>	0.3	0.1
<i>Conospermum distichum</i>	0.4	0.5
<i>Conothamnus aureus</i>	0.3	3
<i>Cyathochaeta equitans</i>	1.3	0.2
<i>Dampiera</i> sp.	0.1	0.1
<i>Daviesia teretifolia</i>	0.4	0.5
<i>Drosera grievei</i> (P1)	0.1	0.1
<i>Franklandia fucifolia</i>		
<i>Gompholobium tomentosum</i>	0.3	0.1
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	0.3	0.1
<i>Hakea corymbosa</i>	1.5	1
<i>Hakea obliqua</i> subsp. <i>parviflora</i>	1.5	2
<i>Hakea ruscifolia</i>		
<i>Hibbertia gracilipes</i>	0.2	0.2
<i>Hibbertia recurvifolia</i>	0.3	0.4
<i>Hypolaena fastigiata</i>	0.2	0.2
<i>Isopogon polycephalus</i>	0.2	0.2
<i>Isopogon trilobus</i>	0.4	0.3
<i>Jacksonia elongata</i>	1.5	4
<i>Leptospermum erubescens</i>	1.5	4
<i>Leptospermum spinescens</i>	0.3	0.1
<i>Leucopogon fimbriatus</i>	0.5	0.1
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.1
<i>Logania micrantha</i>	0.3	0.1
<i>Lyginia imberbis</i>	0.3	0.2
<i>Lysinema ciliatum</i>	0.6	0.3
<i>Melaleuca striata</i>	0.6	0.5
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.4	0.2
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.2
<i>Persoonia helix</i>	0.4	0.2
<i>Persoonia striata</i>	0.3	0.1
<i>Petrophile cyathiforma</i>	0.4	0.2
<i>Petrophile teretifolia</i>	0.5	0.1
<i>Platysace effusa</i>	0.5	0.1
<i>Pultenaea barbata</i>	0.3	0.1
<i>Schoenus brevisetis</i>	0.1	0.1
<i>Schoenus caespitius</i>	0.3	0.2
<i>Stackhousia</i> sp. Thick sepals (A.E. Orchard 1547)	0.3	0.1
<i>Stirlingia anethifolia</i>	0.4	0.4
<i>Synaphea oligantha</i>	0.2	0.2
<i>Taxandria spathulata</i>	0.7	0.5
<i>Tricostularia neesii</i>	0.5	0.2
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.3	0.1

<i>Xanthorrhoea platyphylla</i>		
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PHOTO



Site Name:	SC11
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	21/09/2014
GPS Location:	GDA94 Zone 51 254623E 6280428N
Vegetation Type:	13
Landform Type:	Undulating plain (other)
Slope Class:	Level (0 degrees)
Soil Type:	Sandy Loam
Soil Colour:	Grey-brown (other)
Rock Outcrop:	No bedrock exposed
CF Abundance:	2-10%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Laterite, Ironstone
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1:	<i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus sporadica</i> , <i>Eucalyptus uncinata</i>
Mid Stratum 1:	<i>Banksia media</i> , <i>Hakea pandanica</i> subsp. <i>pandanica</i> , <i>Lasiopetalum rosmarinifolium</i>
Lower Stratum 1:	<i>Acacia curvata</i> , <i>Grevillea nudiflora</i> , <i>Melaleuca lateralis</i> , <i>Melaleuca rigidifolia</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia curvata</i>	0.4	0.5
<i>Acacia gonophylla</i>	0.4	0.5
<i>Acacia ingrata</i>	0.2	0.5
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Banksia media</i>	1.2	1
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.3	0.2
<i>Boronia crassifolia</i>	0.1	0.2
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	0.1	0.1
<i>Callitris roei</i>	0.2	0.1
<i>Calytrix leschenaultii</i>	0.2	0.1
<i>Cassytha flava</i>	0	0.1
<i>Chorizema cytisoides</i>	0.3	0.1
<i>Conostylis argentea</i>	0.1	0.1

<i>Conostylis lepidospermoides</i> (T)	0.1	0.1
<i>Dampiera lavandulacea</i>	0.3	0.1
<i>Daviesia anceps</i>	0.4	0.3
<i>Eucalyptus pleurocarpa</i>	3	4
<i>Eucalyptus sporadica</i>	3	15
<i>Eucalyptus uncinata</i>	3	3
<i>Exocarpos sparteus</i>	2.5	1
<i>Gahnia ancistrophylla</i>	0.3	0.5
<i>Gompholobium baxteri</i>	0.2	0.2
<i>Grevillea nudiflora</i>	0.4	0.5
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.8	5
<i>Hibbertia gracilipes</i>	0.1	0.1
<i>Hibbertia pungens</i>	0.2	0.1
<i>Hibbertia recurvifolia</i>	0.3	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.1	0.1
<i>Lasiopetalum rosmarinifolium</i>	1	2
<i>Lepidosperma carphoides</i>	0.3	0.1
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.3	0.1
<i>Leptospermum oligandrum</i>	0.5	0.3
<i>Leptospermum spinescens</i>	0.2	0.2
<i>Leucopogon heterophyllus</i>	0.3	0.1
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.1
<i>Leucopogon tamminensis</i> var. <i>australis</i>	0.2	0.1
<i>Logania micrantha</i>	0.3	0.2
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Melaleuca carrii</i>	0.3	0.1
<i>Melaleuca lateralis</i>	0.2	0.5
<i>Melaleuca rigidifolia</i>	0.4	6
<i>Melaleuca subfalcata</i>	0.4	0.1
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.3	0.1
<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i>	0.2	0.1
<i>Platysace deflexa</i>	0.4	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.3	0.5
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.1	0.1
<i>Stachystemon polyandrus</i>	0.2	0.1
<i>Verticordia acerosa</i> var. <i>preissii</i>	0.3	0.1

PHOTO



Site Name: SC12
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 22/09/2014
 GPS Location: GDA94 Zone 51 258805E 6277064N
 Vegetation Type: 7
 Landform Type: Drainage Line
 Slope Class: Very Gently Inclined (1 degree)
 Aspect: W
 Soil Type: Clay (other)
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus ecostata*, *Eucalyptus occidentalis*, *Eucalyptus phaenophylla* subsp. *interjacens*, *Eucalyptus platypus* subsp. *congregata*, *Eucalyptus uncinata*
 Mid Stratum 1: *Hakea lissocarpha*, *Melaleuca acuminata* subsp. *acuminata*
 Lower Stratum 1: *Lomandra effusa*, *Spartochloa scirpoidea*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia harveyi</i>		
<i>Acacia saligna</i> subsp. <i>lindleyi</i> ms		
<i>Alyogyne</i> sp. Southern Coast (A.S. George 289)		
<i>Astus tetragonus</i>		
<i>Austrostipa elegantissima</i>	0.4	0.1
<i>Austrostipa variabilis</i>	0.2	0.2
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	0.6	0.5
<i>Convolvulus remotus</i>	0	0.1
* <i>Conyza sumatrensis</i>	0.2	0.1
<i>Dampiera lavandulacea</i>	0.3	0.1
<i>Dianella revoluta</i>	0.5	0.1
<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>	1.8	0.2
<i>Enchylaena tomentosa</i>	0.3	0.1
<i>Erodium cygnorum</i>	0.1	0.1

<i>Eucalyptus ecostata</i>	5	2
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>		
<i>Eucalyptus occidentalis</i>	12	15
<i>Eucalyptus phaenophylla</i> subsp. <i>interjacens</i>	5	2
<i>Eucalyptus pileata</i>		
<i>Eucalyptus platypus</i> subsp. <i>congregata</i>	7	4
<i>Eucalyptus uncinata</i>	5	2
<i>Goodenia affinis</i>		
<i>Hakea laurina</i>	5	1
<i>Hakea lissocarpha</i>	1.5	2
<i>Lagenophora huegelii</i>	0.1	0.1
<i>Lasiopetalum compactum</i>	0.5	0.1
<i>Lepidosperma sanguinolentum</i>		
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798)	0.4	1
<i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118)	0.5	3
<i>Lepidosperma</i> sp. 'Slender Tuberculate' (R.L. Barrett RLB 3476)	0.3	1
<i>Lomandra effusa</i>	0.4	4
<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>	3	5
<i>Melaleuca elliptica</i>		
<i>Melaleuca hamata</i>	2	0.2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Oxalis exilis</i>	0.1	0.1
<i>Pelargonium littorale</i>	0.1	0.1
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	0.1	0.1
<i>Phyllanthus calycinus</i>		
<i>Pterostylis recurva</i>	0.4	0.1
<i>Rytidosperma setaceum</i>	0.1	0.1
<i>Senna</i> sp. Pallinup River (J.W. Green 4847)	0.5	0.3
* <i>Sonchus oleraceus</i>	0.1	0.1
<i>Spartochloa scirpoidea</i>	1	1
<i>Stackhousia monogyna</i>		
<i>Templetonia retusa</i>	2	1
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.2	0.2
<i>Thomasia angustifolia</i>		
<i>Thysanotus patersonii</i>	0	0.1
<i>Trachymene ornata</i>	0.1	0.1
<i>Trachymene pilosa</i>	0.1	0.1
<i>Trymalium elachophyllum</i>		
<i>Wahlenbergia gracilentia</i>	0.1	0.1

PHOTO



Site Name: SC13
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 22/09/2014
 GPS Location: GDA94 Zone 51 258307E 6277272N
 Vegetation Type: 5
 Landform Type: Crest of low hill (other)
 Slope Class: Level (0 degrees)
 Soil Type: Clay (other)
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: 20-50%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >10

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus pileata*, *Santalum acuminatum*
 Mid Stratum 1: *Melaleuca undulata*
 Lower Stratum 1: *Gahnia* sp. Ravensthorpe (G.F. Craig 5005), *Grevillea huegelii*, *Neurachne alopecuroidea*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia glaucoptera</i>	1.5	2
<i>Austrostipa pycnostachya</i>	0.3	0.1
<i>Boronia inornata</i> subsp. <i>leptophylla</i>	0.2	0.2
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Cooperookia polygalacea</i>		
<i>Cryptandra wilsonii</i>	0.1	0.1
<i>Daviesia nematophylla</i>		
<i>Dianella revoluta</i>	0.4	0.1
<i>Dodonaea caespitosa</i>	0.2	0.2
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	4	25
<i>Eucalyptus pileata</i>	4	5
<i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005)	0.3	10
<i>Goodenia</i> ? <i>coerulea</i>	0.2	0.1

<i>Grevillea huegelii</i>	0.3	1
<i>Grevillea pectinata</i>	0.6	0.5
<i>Hibbertia psilocarpa</i>	0.5	0.3
<i>Lepidosperma gahnioides</i>	0.3	0.1
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596) (P1)	0.1	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Melaleuca hamata</i>	2	0.5
<i>Melaleuca undulata</i>	2	20
<i>Neurachne alopecuroidea</i>	0.1	0.3
<i>Santalum acuminatum</i>	2.5	3
<i>Templetonia battii</i>	0.6	0.2
<i>Thelymitra occidentalis</i>	0.2	0.1
<i>Wilsonia humilis</i>	0.1	0.1

PHOTO

Site Name: SC14
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 22/09/2014
 GPS Location: GDA94 Zone 51 255295E 6281082N
 Vegetation Type: 3
 Landform Type: Undulating plain (other)
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*
 Mid Stratum 1: *Hakea pandanica* subsp. *pandanica*
 Lower Stratum 1: *Allocasuarina humilis*, *Baeckea preissiana*, *Mesomelaena stygia* subsp. *stygia*, *Oxalys benthamiana*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia latipes</i> subsp. <i>latipes</i>	0.6	0.5
<i>Acacia unifissilis</i>	0.3	0.5
<i>Allocasuarina humilis</i>	0.4	0.6
<i>Allocasuarina microstachya</i>	0.2	0.1
<i>Amphipogon avenaceus</i>	0	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Argentipallium niveum</i>	0.2	0.1
<i>Baeckea preissiana</i>	0.5	0.5
<i>Banksia lemanniana</i>	1.5	0.4
<i>Banksia obtusa</i>	0.2	0.2
<i>Banksia repens</i>	0.3	0.5
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.5	0.2
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	0.2	0.1
<i>Calothamnus gracilis</i>	0.5	0.3
<i>Calytrix leschenaultii</i>	0.3	0.3
<i>Cassytha flava</i>	0	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1

<i>Chamelaucium megalopetalum</i>	1	0.3
<i>Chordifex sphacelatus</i>	0.2	0.2
<i>Conostylis lepidospermoides</i> (T)	0.2	0.2
<i>Conothamnus aureus</i>	0.4	0.2
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Dampiera juncea</i>	0.3	0.1
<i>Dampiera lavandulacea</i>	0.3	0.1
<i>Daviesia teretifolia</i>	0.3	0.4
<i>Eucalyptus pleurocarpa</i>	3	10
<i>Grevillea nudiflora</i>	0.7	0.2
<i>Hakea corymbosa</i>	1.4	0.3
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.3	7
<i>Hibbertia gracilipes</i>	0.3	0.2
<i>Isopogon polycephalus</i>	0.3	0.3
<i>Isopogon trilobus</i>	0.5	0.2
<i>Kunzea preissiana</i>	0.7	0.4
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.3	0.2
<i>Lepidosperma gahnioides</i>	0.4	0.3
<i>Lepidosperma</i> sp. 'Clathrate' (R.L. Barrett & G.F. Craig RLB 3570)	0.3	0.1
<i>Leptospermum inelegans</i>	0.6	0.4
<i>Leptospermum oligandrum</i>	0.5	0.2
<i>Leptospermum spinescens</i>	0.4	0.2
<i>Leucopogon heterophyllus</i>	0.3	0.1
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.3	0.5
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.1
<i>Lysinema ciliatum</i>	0.5	0.1
<i>Melaleuca carrii</i>	0.3	0.4
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	0.1
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.6	0.5
<i>Persoonia striata</i>	0.2	0.1
<i>Petrophile fastigiata</i>	0.4	0.2
<i>Petrophile seminuda</i>	0.4	0.2
<i>Petrophile teretifolia</i>	0.4	0.1
<i>Schoenus obtusifolius</i>	0.1	0.1
<i>Schoenus subfascicularis</i>	0.3	0.1
<i>Stachystemon polyandrus</i>	0.2	0.1
<i>Stylidium piliferum</i>	0.1	0.1
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.3	0.1

PHOTO



Site Name: SC15
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 22/09/2014
 GPS Location: GDA94 Zone 51 258241E 6277548N
 Vegetation Type: 14
 Landform Type: Crest of low hill (other)
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Light Clay
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Granite, Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >10

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus leptocalyx* subsp. *leptocalyx*, *Eucalyptus pleurocarpa*,
Eucalyptus uncinata
 Mid Stratum 1: *Baeckea pachyphylla*
 Lower Stratum 1: *Banksia cirsioides*, *Beaufortia schaueri*, *Melaleuca rigidifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia ingrata</i>	0.4	0.3
<i>Allocasuarina thuyoides</i>	0.3	0.1
<i>Amphipogon avenaceus</i>	0.4	0.2
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Baeckea pachyphylla</i>	2	15
<i>Banksia cirsioides</i>	0.5	5
<i>Beaufortia schaueri</i>	1	10
<i>Boronia crassifolia</i>	0.4	0.3
<i>Callitris roei</i>	0.5	0.1
<i>Chamaexeros serra</i>	0.1	0.1
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.2	0.1
<i>Conostylis argentea</i>	0.2	0.2
<i>Cryptandra wilsonii</i>	0.2	0.1

<i>Dampiera juncea</i>	0.4	0.1
<i>Dampiera lavandulacea</i>	0.2	0.1
<i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i>	4.5	2.5
<i>Eucalyptus pleurocarpa</i>	7	20
<i>Eucalyptus uncinata</i>	5	2.5
<i>Gahnia ancistrophylla</i>	0.3	0.1
<i>Gompholobium confertum</i>	0.4	0.2
<i>Grevillea oligantha</i>	0.3	0.1
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.3	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.6	0.5
<i>Lepidosperma carphoides</i>	0.3	0.1
<i>Lepidosperma fimbriatum</i>	0.3	0.3
<i>Leptospermum spinescens</i>	0.2	0.1
<i>Leucopogon concinnus</i>	0.4	0.1
<i>Leucopogon fimbriatus</i>	0.5	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.3	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.2	0.1
<i>Melaleuca carrii</i>	0.4	0.5
<i>Melaleuca rigidifolia</i>	0.5	5
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.4
<i>Monotaxis paxii</i>	0.1	0.1
<i>Petrophile squamata</i> subsp. northern (J. Monks 40)	0.5	0.1
<i>Tetrapora verrucosa</i>	1	0.2
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.2	0.1

PHOTO



Site Name: SC16
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 23/09/2014
 GPS Location: GDA94 Zone 51 253881E 6281215N
 Vegetation Type: 13
 Landform Type: Undulating plain (other)
 Slope Class: Level (0 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 50-90%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Laterite, Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus ecostata*, *Eucalyptus sporadica*, *Eucalyptus uncinata*

Lower Stratum 1: *Acacia gonophylla*, *Daviesia anceps*, *Spyridium cordatum*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia acanthoclada</i> subsp. <i>acanthoclada</i>		
<i>Acacia gonophylla</i>	0.3	0.5
<i>Acacia sulcata</i> var. <i>platyphylla</i>		
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Beyeria brevifolia</i>	0.5	0.3
<i>Boronia crenulata</i> var. <i>crenulata</i>	0.3	0.1
<i>Callitris roei</i>	0.6	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Daviesia anceps</i>	0.4	0.6
<i>Eucalyptus ecostata</i>	3	5
<i>Eucalyptus sporadica</i>	3	20
<i>Eucalyptus uncinata</i>	2	10
<i>Gahnia ancistrophylla</i>	0.3	0.2
<i>Gastrolobium latifolium</i>	0.1	0.4
<i>Gompholobium confertum</i>	0.4	0.1
<i>Goodenia concinna</i>		
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	0.3	0.1

<i>Grevillea nudiflora</i>	0.4	0.4
<i>Hakea corymbosa</i>	0.1	0.1
<i>Hakea laurina</i>	0.3	0.1
<i>Hibbertia gracilipes</i>	0.1	0.1
<i>Hibbertia pungens</i>	0.4	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.4	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.4	0.2
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.4	0.6
<i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118)	0.4	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Melaleuca rigidifolia</i>	0.3	0.2
<i>Monotaxis paxii</i>	0.1	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Oxalys benthamiana</i>	0.3	0.2
<i>Pimelea pendens</i>	0.4	0.1
<i>Platysace deflexa</i>	0.4	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.3	0.2
<i>Rinzia communis</i>	0.1	0.1
<i>Schoenus racemosus</i>	0.2	0.2
<i>Spyridium cordatum</i>	0.3	0.4
<i>Templetonia retusa</i>	0.4	0.2

PHOTO



Site Name: SC17
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 23/09/2014
 GPS Location: GDA94 Zone 51 254624E 6281496N
 Vegetation Type: 8
 Landform Type: Closed Depression
 Slope Class: Level (0 degrees)
 Soil Type: Sandy clay (other)
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus occidentalis*
 Mid Stratum 1: *Hakea nitida*
 Lower Stratum 1: *Schoenus subfascicularis*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia cyclops</i>	3	0.5
<i>Acacia latipes</i> subsp. <i>latipes</i>	0.4	0.4
<i>Acacia saligna</i> subsp. <i>lindleyi</i> ms	1.8	0.4
<i>Actinobole uliginosum</i>	0.1	0.1
<i>Anarthria laevis</i>		
<i>Anigozanthos humilis</i> subsp. <i>humilis</i>		
<i>Austrostipa variabilis</i>	0.1	0.1
<i>Caladenia longicauda</i>	0.1	0.1
<i>Calandrinia eremaea</i>	0.1	0.1
<i>Calandrinia granulifera</i>	0.1	0.1
<i>Chthonocephalus pseudevax</i>	0.1	0.1
<i>Convolvulus remotus</i>	0	0.1
<i>Crassula exserta</i>	0.1	0.1
<i>Dianella brevicaulis</i>	0.3	0.2
<i>Erodium cygnorum</i>	0.1	0.1
<i>Eucalyptus occidentalis</i>	11	30
<i>Eutaxia empetrifolia</i>	0.2	0.5
<i>Hakea nitida</i>	1	1.5

<i>Hydrocotyle callicarpa</i>	0.1	0.1
* <i>Hypochaeris glabra</i>	0.1	0.1
<i>Isoetopsis graminifolia</i>	0.1	0.1
<i>Lagenophora huegelii</i>	0.1	0.1
<i>Melaleuca hamata</i>	0.8	0.3
<i>Melaleuca thapsina</i>	1.5	0.5
<i>Millotia tenuifolia</i> var. <i>tenuifolia</i>	0.1	0.1
<i>Oxalis exilis</i>	0.1	0.1
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	0.1	0.1
<i>Rhodanthe pygmaea</i>	0.1	0.1
<i>Rytidosperma setaceum</i>	0.1	0.1
<i>Schoenus subfascicularis</i>	0.4	8
<i>Thomasia angustifolia</i>	0.3	1
* <i>Ursinia anthemoides</i>	0.1	0.1
<i>Verticordia eriocephala</i>		
<i>Vittadinia gracilis</i>	0.1	0.1
<i>Wahlenbergia gracilentia</i>	0.1	0.1

PHOTO

Site Name: SC18
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 23/09/2014
 GPS Location: GDA94 Zone 51 254595E 6281357N
 Vegetation Type: 1
 Landform Type: Undulating plain (other)
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Sandy clay (other)
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Laterite, Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus ecostata, Eucalyptus perangusta, Eucalyptus pleurocarpa*
 Mid Stratum 1: *Banksia cirsioides*
 Lower Stratum 1: *Allocasuarina humilis, Banksia violacea, Calothamnus gracilis, Jacksonia elongata, Lysinema ciliatum*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia gonophylla</i>	0.4	0.1
<i>Acacia unifissilis</i>	0.3	0.3
<i>Allocasuarina humilis</i>	0.4	0.5
<i>Allocasuarina thuyoides</i>	0.3	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Astroloma prostratum</i>	0.1	0.1
<i>Astroloma tectum</i>	0.1	0.1
<i>Banksia cirsioides</i>	1	6
<i>Banksia obovata</i>	0.4	0.1
<i>Banksia violacea</i>	0.4	0.5
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.3	0.3
<i>Calothamnus gracilis</i>	0.4	0.5
<i>Cassytha flava</i>	0	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1

<i>Caustis dioica</i>	0.3	0.5
<i>Chamelaucium ciliatum</i>	0.3	0.1
<i>Chordifex sphacelatus</i>	0.1	0.1
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.1	0.1
<i>Comesperma drummondii</i>	0.3	0.1
<i>Conothamnus aureus</i>	0.3	0.1
<i>Dampiera juncea</i>	0.3	0.1
<i>Daviesia pachyphylla</i>	0.4	0.1
<i>Daviesia teretifolia</i>	0.5	0.2
<i>Drosera grievei</i> (P1)	0.1	0.1
<i>Eucalyptus ecostata</i>	2.5	2
<i>Eucalyptus perangusta</i>	1.2	3
<i>Eucalyptus pleurocarpa</i>	2.5	4
<i>Gompholobium knightianum</i>	0.1	0.1
<i>Hakea corymbosa</i>	1.2	0.3
<i>Hakea obliqua</i> subsp. <i>parviflora</i>	1.2	0.3
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.2	0.5
<i>Hibbertia gracilipes</i>	0.3	0.3
<i>Isopogon polycephalus</i>	0.4	0.3
<i>Isopogon trilobus</i>	0.4	0.1
<i>Isotropis drummondii</i>	0.2	0.1
<i>Jacksonia elongata</i>	0.7	0.5
<i>Lepidobolus chaetocephalus</i>	0.3	0.1
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.2	0.2
<i>Leptospermum oligandrum</i>	0.8	0.2
<i>Leptospermum spinescens</i>	0.4	0.1
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	0.2
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.1	0.1
<i>Leucopogon woodsii</i>	0.2	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.6	2.5
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	0.5
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.5
<i>Olax benthamiana</i>	0.7	0.4
<i>Patersonia lanata</i> forma <i>lanata</i>	0.2	0.1
<i>Persoonia helix</i>	0.3	0.1
<i>Persoonia striata</i>	0.2	0.2
<i>Petrophile seminuda</i>	0.4	0.2
<i>Petrophile teretifolia</i>	0.3	0.1
<i>Platysace effusa</i>	0.5	0.1
<i>Schoenus brevisetis</i>	0.1	0.1

<i>Schoenus obtusifolius</i>	0.1	0.1
<i>Sphaerolobium daviesioides</i>	0.2	0.1
<i>Stachystemon polyandrus</i>	0.2	0.1
<i>Stackhousia scoparia</i>	0.2	0.1
<i>Synaphea divaricata</i>	0.2	0.3
<i>Synaphea favosa</i>	0.1	0.1
<i>Taxandria spathulata</i>	0.4	0.2

PHOTO

Site Name: SC19
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 23/09/2014
 GPS Location: GDA94 Zone 51 257181E 6280564N
 Vegetation Type: 5
 Landform Type: Undulating plain (other)
 Slope Class: Gently Inclined (3 degrees)
 Aspect: S
 Soil Type: Clay (other)
 Soil Colour: Brown
 Rock Outcrop: ?Sandstone/Conglomerate (other), 2-10% bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Quartz & ?sandstone (other)
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5, with some >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus eremophila* subsp. *eremophila*, *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus phaenophylla* subsp. *interjacens*, *Eucalyptus quadrans*, *Eucalyptus suggrandis* subsp. *suggrandis*, *Eucalyptus uncinata*
 Mid Stratum 1: *Melaleuca hamata*
 Lower Stratum 1: *Gahnia ancistrophylla*, *Gastrolobium parviflorum*, *Melaleuca glaberrima*, *Melaleuca johnsonii*, *Melaleuca rigidifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia glaucoptera</i>	0.2	0.1
<i>Acacia gonophylla</i>	0.4	0.1
<i>Acacia ingrata</i>	0.3	0.1
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>		
<i>Boronia inconspicua</i>	0.4	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Cassytha melantha</i>	0	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Cryptandra wilsonii</i>	0.3	0.1
<i>Cyathostemon tenuifolius</i>	0.4	0.1
<i>Dampiera angulata</i>	0.4	0.2

<i>Dampiera lavandulacea</i>	0.2	0.1
<i>Daviesia anceps</i>	0.3	0.3
<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>	0.5	0.4
<i>Dianella revoluta</i>	0.4	0.1
<i>Dodonaea caespitosa</i>	0.2	0.1
<i>Dodonaea concinna</i>		
<i>Eucalyptus eremophila</i> subsp. <i>eremophila</i>	2	2.5
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	2.5	15
<i>Eucalyptus phaenophylla</i> subsp. <i>interjacens</i>	2.5	4
<i>Eucalyptus quadrans</i>	2	1
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	2.5	4
<i>Eucalyptus uncinata</i>	2	5
<i>Eutaxia parvifolia</i>	0.1	0.1
<i>Gahnia ancistrophylla</i>	0.3	1
<i>Gastrolobium parviflorum</i>	0.4	5
<i>Gompholobium confertum</i>	0.3	0.1
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	0.5	0.1
<i>Grevillea nudiflora</i>	0.3	0.1
<i>Grevillea oligantha</i>	0.4	0.3
<i>Grevillea pectinata</i>	0.6	0.3
<i>Hakea laurina</i>	1.5	0.7
<i>Hakea lissocarpha</i>	0.5	0.2
<i>Hakea marginata</i>	0.3	0.1
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.1	0.1
<i>Hibbertia pungens</i>	0.4	0.1
<i>Lepidosperma fimbriatum</i>	0.3	0.1
<i>Lepidosperma</i> sp. 'Jerdacuttup' (R.L. Barrett RLB 2770)	0.4	0.1
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.2	0.1
<i>Melaleuca calycina</i>	0.5	0.1
<i>Melaleuca glaberrima</i>	0.4	5
<i>Melaleuca hamata</i>	1.3	2
<i>Melaleuca johnsonii</i>	0.3	1
<i>Melaleuca rigidifolia</i>	0.4	5
<i>Melaleuca subfalcata</i>	0.3	0.3
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olearia imbricata</i>	0.4	0.1
<i>Phebalium lepidotum</i>		
<i>Platysace deflexa</i>	0.3	0.1
<i>Rinzia communis</i>	0.1	0.1
<i>Spyridium cordatum</i>	0.2	0.5
<i>Styphelia intertexta</i>	0.4	0.1
<i>Templetonia sulcata</i>	0.3	0.1

<i>Tetrapora verrucosa</i>	0.4	0.2
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PHOTO



Site Name:	SC20
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	24/09/2014
GPS Location:	GDA94 Zone 51 258090E 6278379N
Vegetation Type:	16
Landform Type:	Mid Slope
Slope Class:	Moderately Inclined (10 degrees)
Soil Type:	Sandy clay (other)
Soil Colour:	Brown
Rock Outcrop:	Granite, 20-50% bedrock exposed
CF Abundance:	10-20%
CF Sizes:	2-6mm, 6-20mm, 20-60mm, 60-200mm, 200-600mm
CF Types:	Granite
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	>10

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1:	<i>Acacia lasiocalyx</i>
Mid Stratum 1:	<i>Melaleuca elliptica</i> , <i>Thryptomene australis</i> subsp. <i>australis</i>
Lower Stratum 1:	<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553), <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), <i>Spartochloa scirpoidea</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia lasiocalyx</i>	4.5	8
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	0.4	1
<i>Allocasuarina campestris</i>	0.6	0.2
<i>Amphipogon strictus</i>	0.2	0.1
<i>Blennospora drummondii</i>	0.1	0.1
<i>Borya constricta</i>	0.1	0.2
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	0.5	0.2
<i>Chamaescilla corymbosa</i>	0.1	0.1
<i>Chamaescilla spiralis</i>	0.1	0.1
<i>Gonocarpus nodulosus</i>	0.1	0.1
<i>Goodenia berardiana</i>	0.1	0.1
<i>Goodenia occidentalis</i>	0.1	0.1
<i>Grevillea rigida</i> subsp. <i>rigida</i>	1	1

* <i>Hypochaeris glabra</i>	0.1	0.1
<i>Isotoma hypocrateriformis</i>	0.1	0.1
<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553)	0.5	3
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.4	4
<i>Leptospermum nitens</i>		
<i>Levenhookia pusilla</i>	0.1	0.1
<i>Melaleuca elliptica</i>	1	3
<i>Opercularia vaginata</i>	0.1	0.1
<i>Phyllangium divergens</i>	0.1	0.1
<i>Platysace deflexa</i>	0.1	0.1
<i>Poranthera microphylla</i>	0.1	0.1
<i>Rhodanthe pygmaea</i>	0.1	0.1
<i>Schoenus subflavus</i>	0.1	0.2
<i>Spartochloa scirpoidea</i>	1.8	8
<i>Stylidium dichotomum</i>	0.1	0.1
<i>Stypandra glauca</i>	0.2	0.1
<i>Thryptomene australis</i> subsp. <i>australis</i>	0.8	3.5
<i>Trachymene ornata</i>	0.1	0.1

PHOTO

Site Name:	SC21
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	24/09/2014
GPS Location:	GDA94 Zone 51 258097E 6278202N
Vegetation Type:	16
Landform Type:	Upper Slope
Slope Class:	Gently Inclined (3 degrees)
Soil Type:	Sandy clay (other)
Soil Colour:	Brown
Rock Outcrop:	Granite, <2% bedrock exposed
CF Abundance:	<2%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Granite
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1:	<i>Allocasuarina campestris</i> , <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> , <i>Calytrix</i> aff. <i>leschenaultii</i> , <i>Cryptandra graniticola</i> , <i>Melaleuca hamata</i> , <i>Thryptomene australis</i> subsp. <i>australis</i>
Lower Stratum 1:	<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	0.4	0.5
<i>Allocasuarina campestris</i>	0.6	5
<i>Amphipogon strictus</i>	0.2	0.1
<i>Astroloma serratifolium</i>	0.2	0.1
<i>Borya constricta</i>	0.1	0.1
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	1	4
<i>Calytrix</i> aff. <i>leschenaultii</i>	0.2	3
<i>Chamaescilla spiralis</i>	0.1	0.1
<i>Cryptandra graniticola</i>	0.3	3
<i>Daviesia pachyphylla</i>	1.2	0.3
<i>Grevillea rigida</i> subsp. <i>rigida</i>	0.6	0.3
<i>Kunzea affinis</i>	1	0.3
<i>Lepidobolus preissianus</i>	0.2	0.1
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L.	0.3	10

<i>Barrett & M.D. Barrett RLB 2984)</i>		
<i>Melaleuca hamata</i>	0.6	2
<i>Mirbelia multicaulis</i>	0.2	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Platysace deflexa</i>	0.5	0.1
<i>Schoenus sesquispiculus</i>	0.2	0.1
<i>Schoenus subflavus</i>	0.1	0.1
<i>Spartochloa scirpoidea</i>	0.5	0.3
<i>Stylidium dichotomum</i>	0.1	0.1
<i>Thelymitra villosa</i>	0.1	0.1
<i>Thryptomene australis</i> subsp. <i>australis</i>	0.5	2
<i>Thysanotus patersonii</i>	0.1	0.1
<i>Verticordia chrysantha</i>	0.3	0.1

PHOTO

Site Name: SC22
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 24/09/2014
 GPS Location: GDA94 Zone 51 258561E 6277913N
 Vegetation Type: 14
 Landform Type: Undulating plain (other)
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Clay (other)
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Quartz & ?sandstone/conglomerate (other)
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus phaenophylla* subsp. *interjacens*, *Eucalyptus pleurocarpa*,
Eucalyptus sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507),
Eucalyptus uncinata
 Lower Stratum 1: *Beaufortia schaueri*, *Daviesia lancifolia*, *Grevillea oligantha*, *Hakea*
pandanicarpa subsp. *pandanicarpa*, *Melaleuca rigidifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia chrysocephala</i>	0.2	0.1
<i>Acacia gonophylla</i>	0.4	0.3
<i>Acrotriche ramiflora</i>	0.3	0.1
<i>Allocasuarina humilis</i>	0.4	0.2
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Banksia cirsioides</i>	0.4	0.3
<i>Beaufortia schaueri</i>	0.3	8
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Dampiera angulata</i>	0.3	0.1
<i>Daviesia lancifolia</i>	0.3	15
<i>Daviesia teretifolia</i>	0.4	0.3
<i>Eucalyptus phaenophylla</i> subsp. <i>interjacens</i>	1.5	2
<i>Eucalyptus pleurocarpa</i>	3	5
<i>Eucalyptus</i> sp. Southern Wheatbelt (D.	2.5	1

Nicolle & M. French DN 5507)		
<i>Eucalyptus uncinata</i>	2.5	2
<i>Exocarpos sparteus</i>	2.5	0.5
<i>Gahnia ancistrophylla</i>	0.3	0.3
<i>Gompholobium confertum</i>	0.2	0.1
<i>Grevillea nudiflora</i>	0.4	1
<i>Grevillea oligantha</i>	0.5	3
<i>Hakea marginata</i>	0.3	0.1
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	0.6	4
<i>Hakea trifurcata</i>	0.4	0.3
<i>Hibbertia gracilipes</i>	0.3	0.2
<i>Hibbertia pungens</i>	0.3	0.2
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.4	0.1
<i>Lepidosperma carphoides</i>	0.2	0.1
<i>Lepidosperma fimbriatum</i>	0.3	0.2
<i>Leptospermum spinescens</i>	0.2	0.1
<i>Leucopogon concinnus</i>	0.3	0.2
<i>Leucopogon fimbriatus</i>	0.3	0.2
<i>Leucopogon opponens</i>	0.4	3
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Melaleuca rigidifolia</i>	0.3	15
<i>Melaleuca subfalcata</i>	0.4	1
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.2	0.1
<i>Spyridium cordatum</i>	0.2	0.1
<i>Tetrapora verrucosa</i>	0.3	0.1
<i>Tetrapora</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.1	0.1

PHOTO



Site Name:	SC23
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	24/09/2014
GPS Location:	GDA94 Zone 51 258674E 6277739N
Vegetation Type:	5
Landform Type:	Undulating plain (other)
Slope Class:	Very Gently Inclined (1 degree)
Soil Type:	Clay (other)
Soil Colour:	Grey-brown (other)
Rock Outcrop:	No bedrock exposed
CF Abundance:	<2%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Quartz & ?sandstone/conglomerate (other)
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1:	<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> , <i>Eucalyptus pileata</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)
Lower Stratum 1:	<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i> , <i>Grevillea pectinata</i> , <i>Melaleuca calycina</i> , <i>Melaleuca hamata</i> , <i>Melaleuca johnsonii</i> , <i>Melaleuca subfalcata</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia glaucoptera</i>	0.3	0.1
<i>Acacia ingrata</i>	0.3	0.4
<i>Acrotriche cordata</i>	0.2	0.1
<i>Billardiera coriacea</i>	0	0.1
<i>Boronia inconspicua</i>	0.2	0.1
<i>Boronia inornata</i> subsp. <i>leptophylla</i>	0.3	0.3
<i>Cassytha melantha</i>	0	0.3
<i>Chorizema nervosum</i>	0.2	0.1
<i>Comesperma spinosum</i>	0.2	0.1
<i>Cooperookia polygalacea</i>	0.5	0.1
<i>Daviesia anceps</i>	0.3	0.1
<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>	0.5	2
<i>Daviesia lancifolia</i>	0.3	0.3
<i>Dianella revoluta</i>	0.3	0.1
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	3	10

<i>Eucalyptus pileata</i>	2.5	10
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	2.5	10
<i>Gahnia ancistrophylla</i>	0.2	2
<i>Gompholobium confertum</i>	0.3	0.1
<i>Goodenia ?coerulea</i>	0.3	0.1
<i>Grevillea nudiflora</i>	0.4	0.1
<i>Grevillea oligantha</i>	0.3	0.1
<i>Grevillea pectinata</i>	0.6	2
<i>Hibbertia psilocarpa</i>	0.3	0.1
<i>Hibbertia pungens</i>	0.3	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.3	0.1
<i>Lepidosperma gahnioides</i>	0.1	0.1
<i>Leucopogon opponens</i>	0.3	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Melaleuca calycina</i>	0.6	2
<i>Melaleuca hamata</i>	0.6	3
<i>Melaleuca johnsonii</i>	0.4	5
<i>Melaleuca lateriflora</i>	0.5	1
<i>Melaleuca subfalcata</i>	0.4	2
<i>Microcorys glabra</i>	0.2	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Spyridium cordatum</i>	0.2	0.3
<i>Styphelia intertexta</i>	0.2	0.1
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.1	0.1

PHOTO



Site Name: SC24
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 24/09/2014
 GPS Location: GDA94 Zone 51 258714E 6277553N
 Vegetation Type: 6
 Landform Type: Undulating plain (other)
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Clay (other)
 Soil Colour: Light brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus calycogona* subsp. *calycogona*, *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus pileata*
 Mid Stratum 1: *Acacia glaucoptera*, *Daviesia benthamii* subsp. *acanthoclona*, *Melaleuca undulata*
 Lower Stratum 1: *Gahnia* sp. Ravensthorpe (G.F. Craig 5005)

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia glaucoptera</i>	1.5	1.5
<i>Austrostipa pycnostachya</i>	0.4	0.1
* <i>Avellinia michelii</i>	0.1	0.1
<i>Callitris roei</i>	0.2	0.1
<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>	1.5	3
<i>Eucalyptus calycogona</i> subsp. <i>calycogona</i>	2	1
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	5	20
<i>Eucalyptus pileata</i>	5	20
<i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005)	0.3	10
<i>Lepidosperma fimbriatum</i>	0.3	0.5
<i>Lepidosperma gahnioides</i>	0.3	0.1
<i>Melaleuca lateriflora</i>	0.8	0.5
<i>Melaleuca undulata</i>	2	12

<i>Oxalis exilis</i>	0.1	0.1
<i>Rytidosperma setaceum</i>	0.4	0.1
<i>Wilsonia humilis</i>	0.1	0.1

PHOTO

Site Name: SC25
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 25/09/2014
 GPS Location: GDA94 Zone 51 256755E 6279999N
 Vegetation Type: 14
 Landform Type: Undulating plain (other)
 Slope Class: Level (0 degrees)
 Soil Type: Clay (other)
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus kessellii* subsp. *eugnosta*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus suggrandis* subsp. *suggrandis*, *Eucalyptus tetraptera*
 Lower Stratum 1: *Beaufortia schaueri*, *Daviesia lancifolia*, *Gahnia ancistrophylla*, *Melaleuca rigidifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia curvata</i>	0.4	0.1
<i>Acacia gonophylla</i>	0.3	0.5
<i>Acacia octonervia</i>	0.3	0.1
<i>Acacia pravifolia</i>	0.3	0.1
<i>Acrotriche cordata</i>	0.3	0.3
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anthotium humile</i>	0.1	0.1
<i>Banksia media</i>	0.4	0.5
<i>Beaufortia schaueri</i>	0.3	4
<i>Boronia inornata</i> subsp. <i>leptophylla</i>	0.3	0.5
<i>Calothamnus gibbosus</i>	0.2	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Chorizema cytisoides</i>	0.3	0.1
<i>Comesperma spinosum</i>	0.3	0.3

<i>Cryptandra wilsonii</i>	0.2	0.1
<i>Dampiera angulata</i>	0.3	0.1
<i>Daviesia anceps</i>	0.3	0.3
<i>Daviesia lancifolia</i>	0.3	5
<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i>	2.5	7
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	2.5	10
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	2.5	5
<i>Eucalyptus tetraptera</i>	2	1
<i>Eucalyptus uncinata</i>	2.5	3
<i>Gahnia ancistrophylla</i>	0.4	5
<i>Grevillea nudiflora</i>	0.3	0.2
<i>Grevillea oligantha</i>	0.4	1.5
<i>Hakea marginata</i>	0.4	0.5
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Hibbertia psilocarpa</i>	0.3	0.1
<i>Hibbertia pungens</i>	0.3	0.2
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.3	0.1
<i>Lepidosperma fimbriatum</i>	0.3	0.3
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.4	0.2
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596) (P1)	0.2	0.1
<i>Leucopogon tamminensis</i> var. <i>australis</i>	0.3	0.2
<i>Melaleuca lateriflora</i>	0.3	0.2
<i>Melaleuca rigidifolia</i>	0.4	10
<i>Melaleuca societatis</i>	0.3	0.2
<i>Melaleuca subfalcata</i>	0.4	1
<i>Microcorys glabra</i>	0.3	0.2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Opercularia vaginata</i>	0.1	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.2	0.1
<i>Schoenus obtusifolius</i>	0.1	0.1
<i>Schoenus racemosus</i>	0.2	0.1
<i>Spyridium cordatum</i>	0.2	0.3
<i>Templetonia sulcata</i>	0.4	0.5
<i>Tetrapora verrucosa</i>	0.5	0.2
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.3	0.1

PHOTO



Site Name: SC26
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 25/09/2014
 GPS Location: GDA94 Zone 51 257254E 6279760N
 Vegetation Type: 17
 Landform Type: Undulating plain (other)
 Slope Class: Gently Inclined (3 degrees)
 Aspect: E
 Soil Type: Sandy clay (other)
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus perangusta*
 Mid Stratum 1: *Allocasuarina campestris*
 Lower Stratum 1: *Lepidosperma* sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	0.2	0.3
<i>Allocasuarina campestris</i>	1.1	70
<i>Allocasuarina microstachya</i>	0.2	0.2
<i>Amhipogon strictus</i>	0.1	0.1
<i>Astroloma serratifolium</i>	0.3	0.1
<i>Baeckea preissiana</i>	0.2	0.2
<i>Boronia coerulescens</i> subsp. <i>spinescens</i>	0.1	0.1
<i>Calytrix leschenaultii</i>	0.3	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Chamaescilla spiralis</i>	0.1	0.1
<i>Cryptandra myriantha</i>	0.3	0.1
<i>Cryptandra pungens</i>	0.5	0.1
<i>Daviesia pachyphylla</i>	1	1.5

<i>Elythranthera brunonis</i>	0.1	0.1
<i>Ericomyrtus drummondii</i>	0.3	0.2
<i>Ericomyrtus parviflora</i>	0.3	0.2
<i>Eucalyptus perangusta</i>	1.3	1
<i>Grevillea teretifolia</i>	0.7	0.7
<i>Hakea incrassata</i>	0.4	0.5
<i>Hemigenia teretiuscula</i>		
<i>Hibbertia gracilipes</i>	0.2	0.2
<i>Lepidobolus preissianus</i>	0.2	0.1
<i>Lepidosperma fimbriatum</i>	0.3	0.3
<i>Lepidosperma sanguinolentum</i>	1	1.5
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.3	7
<i>Leucopogon brevicuspis</i>		
<i>Leucopogon concinnus</i>	0.2	0.1
<i>Melaleuca carrii</i>	0.3	1
<i>Melaleuca hamata</i>	1.1	1.5
<i>Melaleuca lecanantha</i>		
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.2	0.2
<i>Micromyrtus elobata</i> subsp. <i>elobata</i>		
<i>Mirbelia multicaulis</i>	0.2	0.2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Schoenus calcatus</i>	0.1	0.1
<i>Schoenus sesquispiculus</i>	0.2	0.1
<i>Schoenus subflavus</i>	0.1	0.1
<i>Verticordia chrysantha</i>	0.3	0.1

PHOTO



Site Name: SC27
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 25/09/2014
 GPS Location: GDA94 Zone 51 257583E 6279401N
 Vegetation Type: 17
 Landform Type: Upper Slope
 Slope Class: Gently Inclined (3 degrees)
 Aspect: NE
 Soil Type: Clay (other)
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Granite, Quartz (other)
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1: *Allocasuarina campestris, Melaleuca hamata*
 Lower Stratum 1: *Acacia pinguiculosa* subsp. *pinguiculosa*
 Lower Stratum 2: *Lepidosperma* sp. '*Robust Pruinose*' (R.L. Barrett & M.D. Barrett RLB 2984)

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	0.5	5
<i>Allocasuarina campestris</i>	1	50
<i>Amphipogon strictus</i>	0.1	0.1
<i>Astroloma serratifolium</i>	0.3	0.1
<i>Calytrix leschenaultii</i>	0.3	0.1
<i>Daviesia pachyphylla</i>	1.5	1.5
<i>Ericomyrtus parviflora</i>	0.5	0.4
<i>Ericomyrtus serpyllifolia</i>	0.6	0.1
<i>Grevillea teretifolia</i>	0.6	0.4
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Kunzea affinis</i>	0.6	0.1
<i>Lepidobolus preissianus</i>	0.2	0.1
<i>Lepidosperma fimbriatum</i>	0.4	0.1

<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.3	12
<i>Melaleuca carrii</i>	0.3	0.2
<i>Melaleuca hamata</i>	1.3	4
<i>Mirbelia multicaulis</i>	0.1	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Petrophile seminuda</i>	0.5	0.2
<i>Platysace deflexa</i>	0.3	0.1
<i>Schoenus calcatus</i>	0.1	0.1
<i>Schoenus subflavus</i>	0.1	0.1
<i>Stylidium dichotomum</i>	0.1	0.1
<i>Thelymitra benthamiana</i>	0.1	0.1
<i>Verticordia chrysantha</i>	0.4	0.1
<i>Verticordia eriocephala</i>		

PHOTO

Site Name:	SC28
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	25/09/2014
GPS Location:	GDA94 Zone 51 257526E 6279888N
Vegetation Type:	5
Landform Type:	Upper Slope
Slope Class:	Very Gently Inclined (1 degree)
Soil Type:	Sandy clay (other)
Soil Colour:	Light brown (other)
Rock Outcrop:	No bedrock exposed
CF Abundance:	10-20%
CF Sizes:	2-6mm, 6-20mm, 20-60mm
CF Types:	Quartz & ?sandstone/conglomerate (other)
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1:	<i>Eucalyptus eremophila</i> subsp. <i>eremophila</i> , <i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> , <i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i> , <i>Eucalyptus pileata</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)
Mid Stratum 1:	<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i> , <i>Grevillea pectinata</i>
Lower Stratum 1:	<i>Melaleuca johnsonii</i> , <i>Melaleuca societatis</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia curvata</i>	0.5	0.5
<i>Acacia ingrata</i>	0.2	0.1
<i>Acacia pravifolia</i>	0.2	0.1
<i>Boronia inornata</i> subsp. <i>leptophylla</i>	0.2	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Chorizema nervosum</i>	0.3	0.1
<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>	1	5
<i>Eucalyptus eremophila</i> subsp. <i>eremophila</i>	2	3
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	2	5
<i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i>	2	5
<i>Eucalyptus pileata</i>	2	5
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	2	12

<i>Gahnia ancistrophylla</i>	0.2	0.4
<i>Gahnia aristata</i>	0.2	0.2
<i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005)	0.2	0.2
<i>Gompholobium confertum</i>	0.2	0.2
<i>Goodenia</i> ? <i>coerulea</i>	0.1	0.1
<i>Grevillea oligantha</i>	0.1	0.1
<i>Grevillea pectinata</i>	1	7
<i>Hibbertia psilocarpa</i>	0.2	0.1
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596) (P1)	0.1	0.1
<i>Melaleuca hamata</i>	0.7	0.8
<i>Melaleuca johnsonii</i>	0.4	1
<i>Melaleuca lateriflora</i>	0.5	0.5
<i>Melaleuca societatis</i>	0.4	35
<i>Melaleuca subfalcata</i>	0.3	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Templetonia sulcata</i>	0.4	0.3
<i>Wilsonia humilis</i>	0.1	0.1

PHOTO

Site Name:	SC29
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	25/09/2014
GPS Location:	GDA94 Zone 51 256955E 6280825N
Vegetation Type:	14
Landform Type:	Undulating plain (other)
Slope Class:	Very Gently Inclined (1 degree)
Soil Type:	Sandy clay (other)
Soil Colour:	Grey-brown (other)
Rock Outcrop:	No bedrock exposed
CF Abundance:	<2%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Laterite
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1:	<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i> , <i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i> , <i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus sporadica</i> , <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> , <i>Eucalyptus tetraptera</i> , <i>Eucalyptus uncinata</i>
Lower Stratum 1:	<i>Beaufortia schaueri</i> , <i>Daviesia lancifolia</i> , <i>Melaleuca rigidifolia</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia curvata</i>	0.3	0.1
<i>Acacia gonophylla</i>	0.3	0.1
<i>Acacia ingrata</i>	0.2	0.2
<i>Acrotriche cordata</i>	0.4	0.2
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Andersonia parvifolia</i>	0.2	0.1
<i>Banksia media</i>	0.6	3.5
<i>Beaufortia schaueri</i>	0.3	7
<i>Boronia crassifolia</i>	0.1	0.1
<i>Callitris roei</i>	0.1	0.1
<i>Calothamnus gibbosus</i>	0.3	0.3
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Cyathostemon tenuifolius</i>	0.3	0.1
<i>Dampiera fasciculata</i>	0.3	0.1

<i>Daviesia anceps</i>	0.3	0.2
<i>Daviesia lancifolia</i>	0.3	7
<i>Eucalyptus incrassata</i>		
<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i>	2.5	2
<i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i>	2.5	1.5
<i>Eucalyptus pleurocarpa</i>	1.5	1
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	2.5	7
<i>Eucalyptus sporadica</i>	2	1.5
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	2.5	3
<i>Eucalyptus tetraptera</i>	1.5	1
<i>Eucalyptus uncinata</i>	2.5	1.5
<i>Eucalyptus x erythrandra</i>		
<i>Gahnia ancistrophylla</i>	0.3	1
<i>Gahnia aristata</i>	0.1	0.1
<i>Gompholobium confertum</i>	0.3	0.1
<i>Goodenia ?coerulea</i>	0.1	0.1
<i>Grevillea nudiflora</i>	0.4	1
<i>Grevillea oligantha</i>	0.2	0.1
<i>Hakea marginata</i>	0.3	0.1
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	0.6	0.2
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.1	0.1
<i>Hibbertia pungens</i>	0.2	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.2	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.3	0.1
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.2	0.2
<i>Leucopogon concinnus</i>	0.3	0.1
<i>Leucopogon tamminensis</i> var. <i>australis</i>	0.2	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.2	0.1
<i>Lysinema ciliatum</i>	0.5	0.2
<i>Melaleuca lateralis</i>	0.4	0.1
<i>Melaleuca lateriflora</i>	0.4	0.2
<i>Melaleuca rigidifolia</i>	0.3	15
<i>Melaleuca societatis</i>	0.2	0.1
<i>Melaleuca subfalcata</i>	0.3	0.5
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Phebalium lepidotum</i>	0.3	0.1
<i>Platysace deflexa</i>	0.3	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.2	0.1
<i>Schoenus racemosus</i>	0.2	0.1
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Sphaerolobium drummondii</i>	0.3	0.1

<i>Spyridium cordatum</i>	0.2	0.1
<i>Templetonia sulcata</i>	0.3	1
<i>Tetrapora verrucosa</i>	0.3	0.1

PHOTO

Site Name: SC30
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 25/09/2014
 GPS Location: GDA94 Zone 51 257459E 6280513N
 Vegetation Type: 6
 Landform Type: Undulating plain (other)
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Clay (other)
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Quartz & ?sandstone/conglomerate (other)
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >10

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus quadrans*,
Eucalyptus sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507),
Eucalyptus suggrandis subsp. *suggrandis*, *Eucalyptus uncinata*
 Mid Stratum 1: *Acacia glaucoptera*, *Daviesia nematophylla*
 Lower Stratum 1: *Melaleuca johnsonii*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia glaucoptera</i>	1.2	1.5
<i>Austrostipa elegantissima</i>	1	0.1
<i>Austrostipa variabilis</i>	0.1	0.1
<i>Cassytha melantha</i>	0	0.1
<i>Daviesia nematophylla</i>	1.2	6
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	6	15
<i>Eucalyptus quadrans</i>	3	5
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	6	5
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	6	5
<i>Eucalyptus uncinata</i>	6	5
<i>Gahnia ancistrophylla</i>	0.3	1
<i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005)	0.1	0.1

<i>Grevillea huegelii</i>	0.2	1
* <i>Hypochaeris glabra</i>	0.1	0.1
<i>Lepidosperma fimbriatum</i>	0.2	3
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798)	0.2	0.1
<i>Melaleuca hamata</i>	1.2	0.5
<i>Melaleuca johnsonii</i>	0.6	1.5
<i>Melaleuca lateriflora</i>	0.5	0.3
<i>Melaleuca societatis</i>	1.2	1.5
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Oxalis exilis</i>	0.1	0.1
<i>Ozothamnus lepidophyllus</i>		
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	0.1	0.1
<i>Prostanthera serpyllifolia</i> subsp. <i>microphylla</i>	0.2	0.1
<i>Rytidosperma setaceum</i>	0.1	0.1
<i>Senecio glossanthus</i>	0.1	0.1
<i>Styphelia intertexta</i>	0.3	0.2
<i>Templetonia sulcata</i>	0.7	0.2
<i>Wilsonia humilis</i>	0.1	0.2

PHOTO

Site Name:	SC31
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	26/09/2014
GPS Location:	GDA94 Zone 51 258802E 6277027N
Vegetation Type:	7
Landform Type:	Lower Slope
Slope Class:	Very Gently Inclined (1 degree)
Soil Type:	Clay (other)
Soil Colour:	Grey-brown (other)
Rock Outcrop:	No bedrock exposed
CF Abundance:	<2%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Quartz & ?sandstone/conglomerate (other)
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	>5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1:	<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> , <i>Eucalyptus pileata</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Hakea laurina</i>
Mid Stratum 1:	<i>Melaleuca hamata</i>
Mid Stratum 2:	<i>Melaleuca glaberrima</i> , <i>Melaleuca lateriflora</i>
Lower Stratum 1:	<i>Gahnia ancistrophylla</i> , <i>Lepidosperma fimbriatum</i> , <i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798), <i>Lomandra effusa</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia glaucoptera</i>	1	0.4
<i>Acacia ingrata</i>	0.4	0.5
<i>Acacia patagiata</i>	2	1.5
<i>Astroloma microphyllum</i>	0.3	0.2
<i>Austrostipa variabilis</i>	0.2	0.1
<i>Boronia inconspicua</i>	0.2	0.2
<i>Convolvulus remotus</i>	0	0.1
<i>Cooperookia strophiolata</i>	0.4	0.2
<i>Dianella revoluta</i>	0.6	0.1
<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>	0.6	0.1
<i>Eriochilus dilatatus</i>	0.1	0.1
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	6	10

<i>Eucalyptus pileata</i>	6	10
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	6	20
<i>Gahnia ancistrophylla</i>	0.5	5
<i>Gompholobium confertum</i>	0.6	0.3
<i>Hakea laurina</i>	5	3
* <i>Hypochaeris glabra</i>	0.1	0.1
<i>Lagenophora huegelii</i>	0.1	0.1
<i>Lepidosperma fimbriatum</i>	0.3	5
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798)	0.4	0.1
<i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118)	0.4	0.2
<i>Lomandra effusa</i>	0.5	5
<i>Melaleuca glaberrima</i>	1	1
<i>Melaleuca hamata</i>	3	6
<i>Melaleuca lateriflora</i>	1	3
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Oxalis exilis</i>	0.1	0.1
<i>Ozothamnus lepidophyllus</i>	0.4	0.1
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	0.1	0.1
<i>Pterostylis recurva</i>		
<i>Pyrorchis nigricans</i>		
<i>Rytidosperma setaceum</i>	0.2	0.1
<i>Styphelia intertexta</i>	0.4	0.1
<i>Templetonia retusa</i>	2	3
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.2	0.1
<i>Trachymene pilosa</i>	0.1	0.1
<i>Wahlenbergia gracilentata</i>	0.1	0.1
<i>Wilsonia humilis</i>	0.1	0.1

PHOTO



Site Name: SC32
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 26/09/2014
 GPS Location: GDA94 Zone 51 258247E 6277344N
 Vegetation Type: 17
 Landform Type: Crest
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Clay (other)
 Soil Colour: Yellow-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Granite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1: *Allocasuarina campestris*, *Melaleuca hamata*
 Lower Stratum 1: *Acacia pinguiculosa* subsp. *pinguiculosa*, *Ericomyrtus drummondii*,
Hemigenia teretiuscula
 Lower Stratum 2: *Lepidosperma fimbriatum*, *Lepidosperma* sp. 'Robust Pruinose' (R.L.
Barrett & M.D. Barrett RLB 2984), *Schoenus calcatus*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	1	3
<i>Allocasuarina campestris</i>	2.5	25
<i>Allocasuarina microstachya</i>	0.3	0.2
<i>Amphipogon strictus</i>	0.1	0.1
<i>Astroloma serratifolium</i>	0.5	0.3
<i>Caladenia attingens</i> subsp. <i>gracillima</i>		
<i>Calytrix leschenaultii</i>	0.3	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Cryptandra graniticola</i>	0.5	0.3
<i>Daviesia pachyphylla</i>	2	0.5
<i>Elythranthera brunonis</i>	0.2	0.1
<i>Ericomyrtus drummondii</i>	0.4	0.5
<i>Ericomyrtus serpyllifolia</i>	0.6	0.1

<i>Hemigenia teretiuscula</i>	0.2	1
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidobolus preissianus</i>	0.1	0.1
<i>Lepidosperma fimbriatum</i>	0.4	2
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.4	25
<i>Melaleuca carrii</i>	0.4	0.3
<i>Melaleuca hamata</i>	2.5	2
<i>Melaleuca lecanantha</i>	0.4	0.1
<i>Micromyrtus navicularis</i> (P3)	1	0.5
<i>Mirbelia multicaulis</i>	0.3	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Petrophile seminuda</i>	1	1.5
<i>Platysace deflexa</i>	0.4	0.2
<i>Schoenus calcatus</i>	0.1	5
<i>Schoenus sesquispiculus</i>	0.2	0.1
<i>Schoenus subflavus</i>	0.1	0.1
<i>Verticordia chrysantha</i>	0.4	0.4

PHOTO

Site Name:	SC33
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	26/09/2014
GPS Location:	GDA94 Zone 51 257625E 6277987N
Vegetation Type:	16
Landform Type:	Granite outcrop (other)
Slope Class:	Gently Inclined (3 degrees)
Soil Type:	Clay (other)
Soil Colour:	Yellow-brown (other)
Rock Outcrop:	Granite, 20-50% bedrock exposed
CF Abundance:	2-10%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Granite
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	>5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1:	<i>Acacia lasiocalyx</i>
Mid Stratum 1:	<i>Acacia assimilis</i> subsp. <i>atroviridis</i> , <i>Allocasuarina campestris</i> , <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> , <i>Grevillea rigida</i> subsp. <i>rigida</i> , <i>Kunzea affinis</i> , <i>Leptospermum nitens</i> , <i>Thryptomene australis</i> subsp. <i>australis</i>
Lower Stratum 1:	<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553), <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia assimilis</i> subsp. <i>atroviridis</i>	2	7
<i>Acacia lasiocalyx</i>	3	10
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	0.4	1
<i>Agrostocrinum scabrum</i> subsp. <i>scabrum</i>	0.3	0.1
<i>Allocasuarina campestris</i>	1	4
<i>Amphipogon strictus</i>	0.1	0.1
<i>Astroloma serratifolium</i>	0.4	0.2
<i>Borya constricta</i>	0.1	0.2
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	0.6	5
<i>Calytrix</i> aff. <i>leschenaultii</i>	0.3	0.4
<i>Comesperma scoparium</i>		

<i>Cryptandra graniticola</i>	0.5	0.1
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3)	0.3	0.1
<i>Daviesia pachyphylla</i>	0.1	0.1
<i>Drosera moorei</i>		
<i>Elythranthera brunonis</i>	0.2	0.1
<i>Grevillea rigida</i> subsp. <i>rigida</i>	1.3	7
* <i>Hypochaeris glabra</i>	0.1	0.1
<i>Kunzea affinis</i>	1.5	4
<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553)	0.5	8
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.2	2
<i>Leptospermum nitens</i>	1.5	4
<i>Leucopogon brevicuspis</i>	0.2	0.2
<i>Leucopogon fimbriatus</i>	0.3	0.2
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.2
<i>Levenhookia pusilla</i>	0.1	0.1
<i>Mirbelia multicaulis</i>	0.2	0.2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Opercularia vaginata</i>	0.1	0.1
<i>Pterochaeta paniculata</i>	0.1	0.1
<i>Schoenus sesquispiculus</i>	0.1	0.1
<i>Schoenus subflavus</i>	0.1	0.1
<i>Spartochloa scirpoidea</i>	0.5	0.1
<i>Stylidium dichotomum</i>	0.1	0.1
<i>Synaphea divaricata</i>	0.2	0.1
<i>Thelymitra benthamiana</i>	0.1	0.1
<i>Thryptomene australis</i> subsp. <i>australis</i>	1	4
<i>Thysanotus patersonii</i>	0	0.1
<i>Verticordia chrysantha</i>	0.4	0.1

PHOTO



Site Name: SC34
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 06/10/2014
 GPS Location: GDA94 Zone 51 252069E 6282142N
 Vegetation Type: 15
 Landform Type: Crest
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Clay Loam
 Soil Colour: Light brown (other)
 Rock Outcrop: Laterite, <2% bedrock exposed
 CF Abundance: 20-50%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus kessellii* subsp. *eugnosta*, *Eucalyptus pleurocarpa*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus uncinata*
 Mid Stratum 1: *Banksia lemanniana*
 Lower Stratum 1: *Acacia ingrata*, *Chamelaucium ciliatum*, *Grevillea nudiflora*, *Melaleuca rigidifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia curvata</i>	0.4	0.5
<i>Acacia gonophylla</i>	0.4	0.1
<i>Acacia ingrata</i>	0.2	3
<i>Allocasuarina ?hystricosa</i> (P4)	0.4	0.2
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Banksia cirsioides</i>	0.6	0.4
<i>Banksia lemanniana</i>	1.5	2
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.3	0.1
<i>Beaufortia schaueri</i>	0.4	0.1
<i>Cassytha pomiformis</i>	0	0.1
<i>Chamelaucium ciliatum</i>	0.6	2
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.2	0.1

<i>Conostylis argentea</i>	0.1	0.1
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Daviesia anceps</i>	0.3	0.1
<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i>	2.5	5
<i>Eucalyptus pleurocarpa</i>	2	3
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	2.5	5
<i>Eucalyptus uncinata</i>	2.5	5
<i>Gahnia ancistrophylla</i>	0.3	0.2
<i>Grevillea nudiflora</i>	0.4	3
<i>Hakea verrucosa</i>	0.4	0.3
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	0.2
<i>Hybanthus floribundus</i> subsp. <i>adpressus</i>	0.2	0.1
<i>Isopogon trilobus</i>	0.4	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.4	0.1
<i>Lepidobolus chaetocephalus</i>	0.2	0.1
<i>Lepidosperma carphoides</i>	0.3	0.1
<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553)	0.4	0.2
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.3	0.2
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.2	0.5
<i>Leptospermum spinescens</i>	0.3	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.2
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.6	0.1
<i>Melaleuca hamata</i>	1	0.5
<i>Melaleuca rigidifolia</i>	0.3	10
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.3	4
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Petrophile fastigiata</i>	0.4	0.1
<i>Petrophile seminuda</i>	0.4	1.5
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.3	0.3
<i>Schoenus racemosus</i>	0.2	0.1
<i>Schoenus subflavus</i>	0.1	0.1
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1

PHOTO



Site Name:	SC35
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	07/10/2014
GPS Location:	GDA94 Zone 51 253555E 6282501N
Vegetation Type:	3
Landform Type:	Undulating plain (other)
Slope Class:	Very Gently Inclined (1 degree)
Soil Type:	Sandy Loam
Soil Colour:	Grey
Rock Outcrop:	No bedrock exposed
CF Abundance:	0%
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1:	<i>Eucalyptus pleurocarpa</i>
Mid Stratum 1:	<i>Banksia media</i> , <i>Hakea corymbosa</i> , <i>Hakea obliqua</i> subsp. <i>parviflora</i> , <i>Hakea pandanicarpa</i> subsp. <i>pandanicarpa</i>
Lower Stratum 1:	<i>Acacia unifissilis</i> , <i>Beaufortia micrantha</i> var. <i>micrantha</i> , <i>Lysinema ciliatum</i> , <i>Melaleuca rigidifolia</i> , <i>Olax benthamiana</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia unifissilis</i>	0.4	5
<i>Allocasuarina humilis</i>	0.6	1
<i>Allocasuarina microstachya</i>	0.2	0.1
<i>Allocasuarina thuyoides</i>	0.6	1
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Andersonia parvifolia</i>	0.2	0.2
<i>Argentipallium niveum</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.4	0.3
<i>Banksia media</i>	1	2.5
<i>Banksia repens</i>	0.2	1
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	3
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	0.2	0.1
<i>Calothamnus gracilis</i>	0.4	0.5
<i>Calytrix leschenaultii</i>	0.2	0.1

<i>Cassytha flava</i>	0	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Caustis dioica</i>	0.3	1
<i>Conostylis lepidospermoides</i> (T)	0.2	0.1
<i>Daviesia teretifolia</i>	0.2	0.2
<i>Eucalyptus pleurocarpa</i>	3	15
<i>Hakea corymbosa</i>	1.2	0.2
<i>Hakea obliqua</i> subsp. <i>parviflora</i>	1.2	0.2
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.2	8
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Isopogon polycephalus</i>	0.2	0.3
<i>Isopogon trilobus</i>	0.4	0.1
<i>Kunzea preissiana</i>	0.5	0.2
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.3	0.1
<i>Lepidosperma</i> sp. ' <i>Tibialate</i> ' (R.L. Barrett RLB 3522)	0.2	0.5
<i>Leptospermum oligandrum</i>	0.6	1
<i>Leptospermum spinescens</i>	0.4	0.5
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.2
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.2	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.6	2
<i>Melaleuca carrii</i>	0.3	0.5
<i>Melaleuca rigidifolia</i>	0.3	3
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	0.5
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.6	2
<i>Persoonia striata</i>	0.2	0.1
<i>Petrophile fastigiata</i>	0.3	0.2
<i>Platysace deflexa</i>	0.3	0.1
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.2	0.1
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Stylidium piliferum</i>	0.1	0.1
<i>Synaphea</i> aff. <i>drummondii</i>	0.2	0.2
<i>Tricostularia</i> sp. Hopetoun (M. Bennett 646)	0.2	0.1
<i>Verticordia acerosa</i> var. <i>preissii</i>	0.3	0.2

PHOTO



Site Name: SC36
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 07/10/2014
 GPS Location: GDA94 Zone 51 252866E 6282424N
 Vegetation Type: 8
 Landform Type: Closed Depression
 Slope Class: Level (0 degrees)
 Soil Type: Sandy clay (other)
 Soil Colour: Grey
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus occidentalis*
 Mid Stratum 1: *Acacia cyclops*, *Hakea laurina*
 Mid Stratum 2: *Calothamnus quadrifidus* subsp. *quadrifidus*, *Melaleuca thapsina*
 Lower Stratum 1: *Schoenus subfascicularis*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia cyclops</i>	3	4
<i>Acacia saligna</i> subsp. <i>lindleyi</i> ms	1.4	0.5
<i>Anarthria laevis</i>	0.5	0.5
<i>Billardiera coriacea</i>	0	0.1
<i>Calandrinia granulifera</i>	0.1	0.1
<i>Calothamnus gibbosus</i>	0.4	0.2
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	1.5	10
<i>Dianella brevicaulis</i>	0.5	1
<i>Eucalyptus occidentalis</i>	10	15
<i>Hakea corymbosa</i>	0.7	0.3
<i>Hakea laurina</i>	2.5	1
* <i>Hypochoeris glabra</i>	0.1	0.1
<i>Leptospermum erubescens</i>	1	0.2
<i>Melaleuca thapsina</i>	1.3	3
<i>Patersonia occidentalis</i>		
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	0.1	0.1
<i>Rhagodia preissii</i> subsp. <i>preissii</i>	0.7	0.2

<i>Schoenus subfascicularis</i>	0.4	50
<i>Thomasia angustifolia</i>	0.3	2.5

PHOTO

Site Name: SC37
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 07/10/2014
 GPS Location: GDA94 Zone 51 252611E 6282281N
 Vegetation Type: 4
 Landform Type: Lower Slope
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Yellow-grey (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1: *Adenanthos cuneatus*, *Hakea obliqua* subsp. *parviflora*
 Lower Stratum 1: *Allocasuarina acuaria*, *Banksia repens*, *Banksia violacea*, *Calothamnus gracilis*, *Caustis dioica*, *Conospermum distichum*, *Conothamnus aureus*, *Daviesia teretifolia*, *Taxandria spathulata*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia unifissilis</i>	0.3	0.2
<i>Adenanthos cuneatus</i>	1.2	2.5
<i>Allocasuarina acuaria</i>	0.5	2.5
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Banksia media</i>	0.8	0.2
<i>Banksia obtusa</i>	0.1	0.3
<i>Banksia repens</i>	0.2	1.5
<i>Banksia violacea</i>	0.4	2
<i>Boronia spathulata</i>		
<i>Calothamnus gracilis</i>	0.4	1
<i>Calytrix decandra</i>	0.3	0.3
<i>Caustis dioica</i>	0.3	1
<i>Chamelaucium megalopetalum</i>	0.6	0.1
<i>Chordifex sphacelatus</i>	0.2	0.1
<i>Conospermum distichum</i>	0.4	1
<i>Conothamnus aureus</i>	0.4	1
<i>Daviesia teretifolia</i>	0.4	1

<i>Drosera grievei</i> (P1)	0.1	0.1
<i>Hakea corymbosa</i>	1.3	1
<i>Hakea obliqua</i> subsp. <i>parviflora</i>	1.5	2
<i>Hypolaena fastigiata</i>	0.1	0.1
<i>Isopogon polycephalus</i>	0.2	0.3
<i>Isopogon trilobus</i>	0.4	0.3
<i>Jacksonia elongata</i>	1	0.5
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.1
<i>Lyginia imberbis</i>	0.3	0.2
<i>Lysinema ciliatum</i>	0.5	0.3
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.3	1
<i>Persoonia striata</i>	0.2	0.1
<i>Petrophile cyathiforma</i>	0.4	0.2
<i>Petrophile teretifolia</i>	0.5	0.2
<i>Schoenus caespititius</i>	0.4	0.5
<i>Stachystemon polyandrus</i>	0.2	0.1
<i>Stirlingia anethifolia</i>	0.3	0.7
<i>Stylidium piliferum</i>	0.1	0.1
<i>Taxandria spathulata</i>	0.5	2.5
<i>Thysanotus parviflorus</i> (P4)		
<i>Tricostularia compressa</i>	0.3	0.1

PHOTO

Site Name: SC38
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 07/10/2014
 GPS Location: GDA94 Zone 51 252443E 6282019N
 Vegetation Type: 15
 Landform Type: Crest
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Clay Loam
 Soil Colour: Light brown (other)
 Rock Outcrop: Laterite, <2% bedrock exposed
 CF Abundance: 20-50%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus kessellii* subsp. *eugnosta*, *Eucalyptus pleurocarpa*, *Eucalyptus uncinata*
 Mid Stratum 1: *Banksia lemanniana*
 Lower Stratum 1: *Acacia ingrata*, *Daviesia anceps*, *Goodenia scapigera* subsp. *scapigera*, *Lepidosperma* sp. 'Tibialate' (R.L. Barrett RLB 3522), *Mesomelaena stygia* subsp. *stygia*, *Pultenaea indira* subsp. *indira*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia ingrata</i>	0.2	7
<i>Acacia sulcata</i> var. <i>platyphylla</i>	0.5	0.3
<i>Allocasuarina ?hystricosa</i> (P4)	0.7	1.5
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Banksia cirsioides</i>	0.6	0.2
<i>Banksia lemanniana</i>	1.4	3
<i>Banksia media</i>	1	0.3
<i>Beaufortia schaueri</i>	0.4	0.1
<i>Chamelaucium ciliatum</i>	0.3	0.1
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.2	0.1
<i>Dampiera lavandulacea</i>	0.3	0.1
<i>Daviesia anceps</i>	0.3	3

<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i>	2.5	10
<i>Eucalyptus pleurocarpa</i>	2.5	1
<i>Eucalyptus uncinata</i>	2	1
<i>Gahnia ancistrophylla</i>	0.3	0.1
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	0.5	2
<i>Grevillea nudiflora</i>	0.3	0.5
<i>Hakea verrucosa</i>	0.3	0.1
<i>Hibbertia gracilipes</i>	0.2	0.2
<i>Hybanthus floribundus</i> subsp. <i>adpressus</i>	0.2	0.2
<i>Lasiopetalum rosmarinifolium</i>	0.5	0.3
<i>Lepidobolus chaetocephalus</i>	0.2	0.1
<i>Lepidosperma carphoides</i>	0.3	0.1
<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553)	0.3	0.3
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.4	0.5
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.3	7
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.2
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Melaleuca hamata</i>	1	0.2
<i>Melaleuca rigidifolia</i>	0.4	0.3
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.3	3
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.6	0.5
<i>Petrophile seminuda</i>	0.4	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.3	2
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Stackhousia</i> sp. Thick sepals (A.E. Orchard 1547)	0.3	0.1

PHOTO



Site Name: SC39
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 07/10/2014
 GPS Location: GDA94 Zone 51 252128E 6282586N
 Vegetation Type: 4
 Landform Type: Undulating plain (other)
 Slope Class: Level (0 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: >90%
 CF Sizes: 2-6mm
 CF Types: Quartz (other)
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*
 Mid Stratum 1: *Adenanthos cuneatus*, *Banksia lemanniana*
 Lower Stratum 1: *Allocasuarina acuaria*, *Banksia repens*, *Mesomelaena stygia* subsp. *stygia*, *Taxandria spathulata*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Adenanthos cuneatus</i>	1.2	2
<i>Allocasuarina acuaria</i>	0.5	3
<i>Allocasuarina humilis</i>	1	1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.4	0.1
<i>Banksia lemanniana</i>	1.7	2
<i>Banksia repens</i>	0.2	1.5
<i>Banksia violacea</i>	0.3	0.5
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	0.1
<i>Boronia crassifolia</i>	0.2	0.2
<i>Boronia spathulata</i>	0.2	0.1
<i>Calothamnus gracilis</i>	0.8	3
<i>Calytrix decandra</i>	0.3	0.1
<i>Calytrix leschenaultii</i>	0.3	0.1

<i>Cassytha flava</i>	0	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Caustis dioica</i>	0.2	0.5
<i>Chamelaucium megalopetalum</i>	1	0.3
<i>Chordifex sphacelatus</i>	0.1	0.1
<i>Conospermum distichum</i>	0.4	0.1
<i>Conothamnus aureus</i>	0.4	0.2
<i>Cyathochaeta equitans</i>	1	0.5
<i>Dampiera juncea</i>	0.3	0.1
<i>Dampiera</i> sp.	0.1	0.1
<i>Darwinia vestita</i>	0.4	0.1
<i>Daviesia teretifolia</i>	0.3	0.5
<i>Eucalyptus pleurocarpa</i>	3	4
<i>Gompholobium scabrum</i>	0.3	0.1
<i>Gompholobium tomentosum</i>	0.3	0.1
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	0.3	0.1
<i>Hibbertia gracilipes</i>	0.3	0.2
<i>Hibbertia recurvifolia</i>	0.3	0.2
<i>Hypolaena fastigiata</i>	0.1	0.1
<i>Isopogon polycephalus</i>	0.2	0.5
<i>Isopogon trilobus</i>	0.4	0.3
<i>Jacksonia elongata</i>	1	0.5
<i>Laxmannia ramosa</i> subsp. <i>deflexa</i>	0.1	0.1
<i>Lechenaultia heteromera</i>	0.1	0.1
<i>Leptospermum oligandrum</i>	1.2	0.5
<i>Leptospermum spinescens</i>	0.4	0.3
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.3	0.2
<i>Lyginia imberbis</i>	0.4	0.2
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	0.3
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.3	1.5
<i>Persoonia helix</i>	0.3	0.2
<i>Persoonia striata</i>	0.3	0.1
<i>Petrophile fastigiata</i>	0.3	0.1
<i>Platysace effusa</i>	0.4	0.1
<i>Schoenus caespititius</i>	0.4	0.3
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.1	0.1
<i>Stachystemon polyandrus</i>	0.4	0.1
<i>Stirlingia anethifolia</i>	0.5	0.3
<i>Stylidium piliferum</i>	0.1	0.1
<i>Synaphea</i> aff. <i>petiolaris</i>	0.2	0.1
<i>Taxandria spathulata</i>	0.8	1
<i>Thysanotus sparteus</i>	0.4	0.1
<i>Tricostularia neesii</i>	0.4	0.2

<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.4	0.1
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PHOTO



Site Name: SC40
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 07/10/2014
 GPS Location: GDA94 Zone 51 256343E 6281219N
 Vegetation Type: 13
 Landform Type: Undulating plain (other)
 Slope Class: Level (0 degrees)
 Soil Type: Sandy clay (other)
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: 5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus phaenophylla* subsp. *interjacens*, *Eucalyptus pleurocarpa*,
Eucalyptus sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507),
Eucalyptus sporadica, *Eucalyptus uncinata*
 Lower Stratum 1: *Acacia curvata*, *Melaleuca carrii*, *Melaleuca rigidifolia*, *Melaleuca*
subfalcata

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia acanthoclada</i> subsp. <i>acanthoclada</i>	0.2	0.1
<i>Acacia chrysocephala</i>	0.2	0.2
<i>Acacia curvata</i>	0.4	2.5
<i>Acacia ingrata</i>	0.3	0.3
<i>Baeckea pachyphylla</i>	0.3	0.2
<i>Banksia media</i>	0.7	0.5
<i>Callitris roei</i>	0.2	0.1
<i>Calothamnus gibbosus</i>	0.4	0.5
<i>Calytrix leschenaultii</i>	0.2	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Chamelaucium ciliatum</i>	0.3	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Dampiera lavandulacea</i>	0.1	0.1
<i>Daviesia lancifolia</i>	0.2	0.5
<i>Dianella revoluta</i>	0.4	0.2

<i>Eucalyptus phaenophylla</i> subsp. <i>interjacens</i>	2.5	5
<i>Eucalyptus pleurocarpa</i>	2.5	1.5
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	2.5	15
<i>Eucalyptus sporadica</i>	2.5	1.5
<i>Eucalyptus uncinata</i>	2.5	5
<i>Exocarpos sparteus</i>	2	0.5
<i>Gahnia ancistrophylla</i>	0.2	2
<i>Gompholobium baxteri</i>	0.2	0.1
<i>Grevillea nudiflora</i>	0.3	1
<i>Hakea laurina</i>	0.6	0.2
<i>Hakea lissocarpha</i>	0.2	0.1
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	0.4	0.2
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Hibbertia pungens</i>	0.2	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.2	0.1
<i>Kunzea jucunda</i>	0.6	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.4	0.3
<i>Lepidosperma</i> sp. 'Jerdacuttup' (R.L. Barrett RLB 2770)	0.2	0.1
<i>Leucopogon concinnus</i>	0.3	0.1
<i>Leucopogon heterophyllus</i>	0.4	0.2
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.1
<i>Leucopogon tamminensis</i> var. <i>australis</i>	0.2	0.1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lysinema ciliatum</i>	0.5	0.1
<i>Melaleuca carrii</i>	0.4	5
<i>Melaleuca lateralis</i>	0.3	0.1
<i>Melaleuca rigidifolia</i>	0.3	10
<i>Melaleuca subfalcata</i>	0.4	5
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.4	0.1
<i>Phebalium lepidotum</i>	0.4	0.1
<i>Platysace deflexa</i>	0.5	0.1
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.3	0.1

PHOTO



Site Name: SC41
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 08/10/2014
 GPS Location: GDA94 Zone 51 254795E 6281807N
 Vegetation Type: 13
 Landform Type: Mid Slope
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 20-50%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus ecostata, Eucalyptus sporadica, Eucalyptus uncinata*
 Mid Stratum 1: *Melaleuca hamata*
 Lower Stratum 1: *Acacia chrysocephala, Acacia gonophylla, Beyeria brevifolia, Gastrolobium latifolium, Lasiopetalum rosmarinifolium, Lepidosperma sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287), Melaleuca rigidifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia chrysocephala</i>	0.4	2
<i>Acacia cyclops</i>	1	0.1
<i>Acacia gonophylla</i>	0.4	2
<i>Acacia sulcata</i> var. <i>platyphylla</i>	0.4	0.2
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Argentipallium niveum</i>	0.2	0.1
<i>Banksia cirsioides</i>	0.4	0.3
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	0.1
<i>Beyeria brevifolia</i>	1	4
<i>Boronia crassifolia</i>	0.1	0.2
<i>Callitris roei</i>	0.2	0.1
<i>Calytrix leschenaultii</i>	0.3	0.1
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.1	0.1

<i>Comesperma scoparium</i>	0.1	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Cryptandra nutans</i>	0.2	0.1
<i>Dampiera angulata</i>	0.3	0.1
<i>Dampiera lavandulacea</i>	0.2	0.1
<i>Daviesia pachyphylla</i>	1	0.3
<i>Daviesia teretifolia</i>	0.4	0.2
<i>Eucalyptus ecostata</i>	3	20
<i>Eucalyptus sporadica</i>	3	20
<i>Eucalyptus uncinata</i>	3	2
<i>Gastrolobium latifolium</i>	0.1	3
<i>Gompholobium baxteri</i>	0.2	0.3
<i>Goodenia concinna</i>	0.1	0.1
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	0.3	0.1
<i>Hakea incrassata</i>	0.4	0.5
<i>Hakea lissocarpha</i>	0.2	0.1
<i>Hakea nitida</i>	0.3	0.1
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.1	0.1
<i>Hibbertia pungens</i>	0.3	0.1
<i>Hovea trisperma</i>	0.1	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.4	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.6	1
<i>Lepidobolus chaetocephalus</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.3	0.5
<i>Lepidosperma sanguinolentum</i>	0.6	0.2
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.3	4
<i>Leptospermum spinescens</i>	0.2	0.1
<i>Leucopogon concinnus</i>	0.3	0.1
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.3
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Melaleuca carrii</i>	0.3	0.2
<i>Melaleuca hamata</i>	1.5	5
<i>Melaleuca rigidifolia</i>	0.3	1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.5	0.2
<i>Petrophile fastigiata</i>	0.2	0.1
<i>Petrophile squamata</i> subsp. northern (J.	0.6	1

Monks 40)		
<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i>	0.4	0.1
<i>Platysace deflexa</i>	0.3	0.3
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.2	0.2
<i>Rinzia communis</i>	0.1	0.1
<i>Schoenus racemosus</i>	0.2	0.1
<i>Spyridium cordatum</i>	0.2	0.1
<i>Stylidium piliferum</i>	0.1	0.1
<i>Verticordia acerosa</i> var. <i>preissii</i>	0.4	0.1

PHOTO

Site Name:	SC42
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	08/10/2014
GPS Location:	GDA94 Zone 51 254869E 6282225N
Vegetation Type:	17
Landform Type:	Undulating plain (other)
Slope Class:	Very Gently Inclined (1 degree)
Soil Type:	Clay (other)
Soil Colour:	Yellow-brown (other)
Rock Outcrop:	No bedrock exposed
CF Abundance:	<2%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Laterite
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1:	<i>Acacia assimilis</i> subsp. <i>atroviridis</i> , <i>Allocasuarina campestris</i> , <i>Melaleuca hamata</i>
Lower Stratum 1:	<i>Allocasuarina microstachya</i> , <i>Grevillea teretifolia</i> , <i>Hakea incrassata</i> , <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522), <i>Melaleuca carrii</i> , <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Schoenus calcatus</i> , <i>Verticordia chrysantha</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia assimilis</i> subsp. <i>atroviridis</i>	1.5	4
<i>Allocasuarina campestris</i>	1.8	25
<i>Allocasuarina microstachya</i>	0.3	0.5
<i>Baeckea preissiana</i>	0.3	0.1
<i>Calytrix leschenaultii</i>	0.2	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Conostylis argentea</i>	0.1	0.2
<i>Cryptandra graniticola</i>	0.2	0.1
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Cryptandra pungens</i>	0.2	0.1
<i>Dampiera lavandulacea</i>	0.1	0.1
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3)	0.2	0.1

<i>Daviesia pachyphylla</i>	0.6	0.2
<i>Gompholobium marginatum</i>		
<i>Grevillea teretifolia</i>	0.6	0.5
<i>Hakea incrassata</i>	1	7
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidobolus preissianus</i>	0.1	0.1
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.3	5
<i>Leucopogon concinnus</i>	0.3	0.2
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.3	0.3
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.2
<i>Lomandra mucronata</i>	0.1	0.1
<i>Melaleuca carrii</i>	0.3	1
<i>Melaleuca hamata</i>	1.8	8
<i>Melaleuca platycalyx</i>	0.3	0.3
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	6
<i>Mirbelia multicaulis</i>	0.1	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Petrophile seminuda</i>	0.4	0.1
<i>Pimelea imbricata</i> var. <i>piligera</i>		
<i>Schoenus calcatus</i>	0.1	7
<i>Schoenus subflavus</i>	0.1	0.1
<i>Stylidium zeicolor</i>	0.1	0.1
<i>Verticordia chrysantha</i>	0.5	1.5

PHOTO



Site Name:	SC43
Site Type:	QUADRAT
Dimensions:	10m x 10m
Survey Date:	08/10/2014
GPS Location:	GDA94 Zone 51 254687E 6282209N
Vegetation Type:	2
Landform Type:	Undulating plain (other)
Slope Class:	Very Gently Inclined (1 degree)
Soil Type:	Sandy Loam
Soil Colour:	Yellow-brown (other)
Rock Outcrop:	No bedrock exposed
CF Abundance:	2-10%
CF Sizes:	2-6mm, 6-20mm
CF Types:	Laterite
Vegetation Condition:	Southern Vegetation Condition - 1 - Pristine
Fire:	5

DOMINANT TAXA IN VEGETATION STRATA

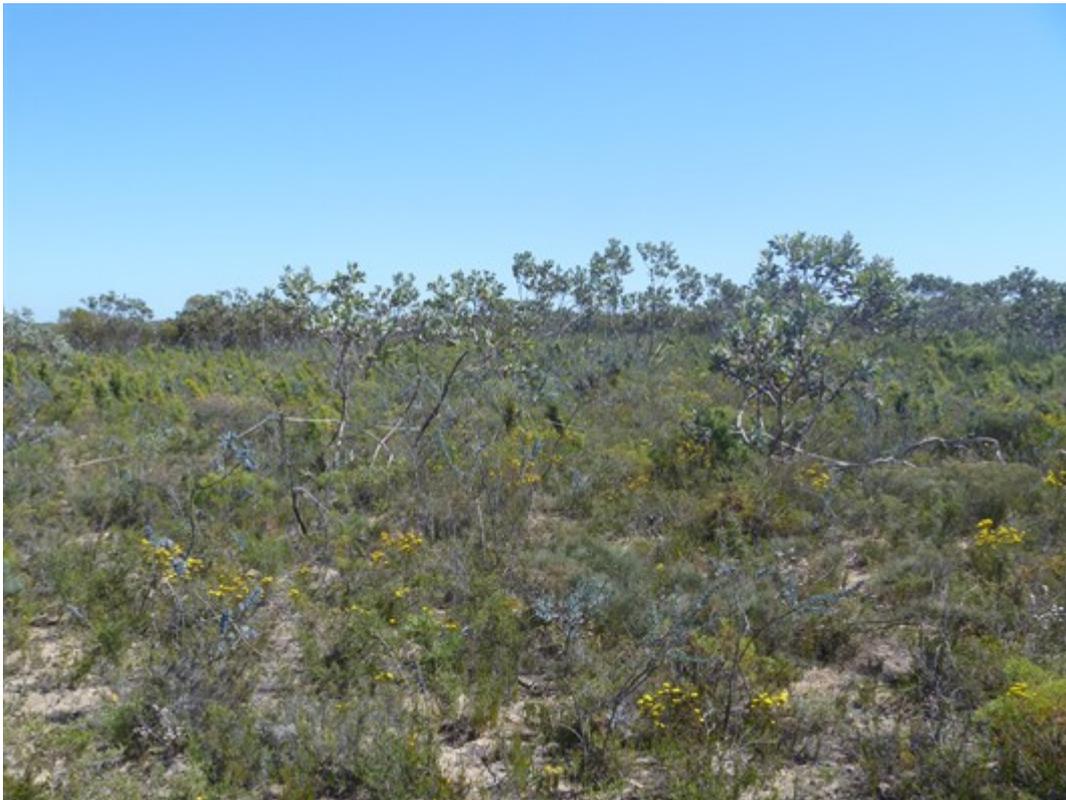
Upper Stratum 1:	<i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus sporadica</i> , <i>Eucalyptus tetraptera</i>
Mid Stratum 1:	<i>Daviesia pachyphylla</i>
Lower Stratum 1:	<i>Acacia evenulosa</i> , <i>Allocasuarina humilis</i> , <i>Allocasuarina microstachya</i> , <i>Banksia cirsioides</i> , <i>Hakea incrassata</i> , <i>Hibbertia gracilipes</i> , <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522), <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Mesomelaena stygia</i> subsp. <i>stygia</i> , <i>Petrophile fastigiata</i> , <i>Petrophile seminuda</i> , <i>Verticordia chrysantha</i>

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia evenulosa</i>	0.6	2
<i>Acacia gonophylla</i>	0.3	0.1
<i>Allocasuarina humilis</i>	0.5	10
<i>Allocasuarina microstachya</i>	0.3	3
<i>Allocasuarina thuyoides</i>	0.4	0.2
<i>Amhipogon avenaceus</i>	0.1	0.1
<i>Amhipogon turbinatus</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.4	0.3
<i>Banksia cirsioides</i>	0.7	1
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.3	0.1
<i>Calectasia grandiflora</i> subsp. <i>Wheatbelt</i>	0.2	0.1

(A.M. Coates 4315)		
<i>Callitris roei</i>	0.1	0.1
<i>Calytrix leschenaultii</i>	0.3	0.1
<i>Cassytha flava</i>	0	0.1
<i>Cassytha pomiformis</i>	0	0.1
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.1	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Cryptandra myriantha</i>	0.1	0.1
<i>Cryptandra nutans</i>	0.1	0.1
<i>Dampiera juncea</i>	0.3	0.1
<i>Daviesia pachyphylla</i>	1.5	4
<i>Eucalyptus pleurocarpa</i>	3	10
<i>Eucalyptus sporadica</i>	2	1
<i>Eucalyptus tetraptera</i>	3	2
<i>Grevillea nudiflora</i>	0.3	0.2
<i>Grevillea teretifolia</i>	0.3	0.1
<i>Hakea incrassata</i>	0.5	3
<i>Hakea pandanicarpa</i> subsp. <i>pandanicarpa</i>	0.4	0.1
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	2
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidobolus chaetocephalus</i>	0.2	0.1
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.2	0.1
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.2	2
<i>Leptospermum spinescens</i>	0.4	0.5
<i>Leucopogon concinnus</i>	0.3	0.2
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.5
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.5	0.1
<i>Melaleuca carrii</i>	0.3	0.1
<i>Melaleuca rigidifolia</i>	0.3	0.1
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.4	8
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	2
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.4	0.1
<i>Opercularia vaginata</i>	0.1	0.1
<i>Persoonia striata</i>	0.1	0.1
<i>Petrophile fastigiata</i>	0.4	1
<i>Petrophile seminuda</i>	0.5	4

<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.1	0.1
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Stylidium piliferum</i>	0.1	0.1
<i>Synaphea</i> aff. <i>petiolaris</i>	0.2	0.1
<i>Verticordia acerosa</i> var. <i>preissii</i>	0.3	0.1
<i>Verticordia chrysantha</i>	0.5	5
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.1	0.1

PHOTO

Site Name: SC44
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 08/10/2014
 GPS Location: GDA94 Zone 51 255332E 6281930N
 Vegetation Type: 8
 Landform Type: Closed Depression
 Slope Class: Level (0 degrees)
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown with pink at surface (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus occidentalis*
 Mid Stratum 1: *Acacia cyclops*
 Mid Stratum 2: *Hakea nitida*
 Lower Stratum 1: *Ficinia nodosa*, *Schoenus subfascicularis*, *Thomasia angustifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia cyclops</i>	2.5	2
<i>Actinobole uliginosum</i>	0.1	0.1
<i>Austrostipa variabilis</i>	0.1	0.1
<i>Bulbine semibarbata</i>	0.1	0.1
<i>Conostylis seorsiflora</i> subsp. <i>seorsiflora</i>	0.1	0.1
<i>Daucus glochidiatus</i>	0.1	0.1
<i>Eremophila glabra</i>		
<i>Eucalyptus occidentalis</i>	15	35
<i>Eutaxia empetrifolia</i>	0.2	0.1
<i>Ficinia nodosa</i>	0.6	4
<i>Goodenia viscida</i>		
<i>Hakea nitida</i>	1.5	1
? <i>Hypolaena fastigiata</i>	0.2	0.1
<i>Isolepis marginata</i>	0.1	0.1
<i>Lomandra rupestris</i>	0.2	0.3
* <i>Lysimachia arvensis</i>	0.1	0.1
<i>Millotia tenuifolia</i> var. <i>tenuifolia</i>	0.1	0.1

<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olearia</i> sp. <i>Eremicola</i> (Diels & Pritzel s.n. PERTH 00449628)	1.5	0.2
<i>Oxalis exilis</i>	0.1	0.1
<i>Patersonia occidentalis</i>	0.2	0.1
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	0.1	0.1
<i>Ptilotus spathulatus</i>	0.1	0.1
<i>Rhodanthe pygmaea</i>	0.1	0.1
<i>Rytidosperma setaceum</i>	0.1	0.1
<i>Schoenus subfascicularis</i>	0.4	3
<i>Senecio quadridentatus</i>	0.4	0.1
<i>Thelymitra macrophylla</i>	0.4	0.1
<i>Thomasia angustifolia</i>	0.3	3
<i>Vittadinia australasica</i> var. <i>australasica</i>	0.1	0.1
<i>Wahlenbergia gracilentia</i>	0.1	0.1

PHOTO

Site Name: SC45
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 08/10/2014
 GPS Location: GDA94 Zone 51 256652E 6279512N
 Vegetation Type: 3
 Landform Type: Undulating plain (other)
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Sandy Loam
 Soil Colour: Grey
 Rock Outcrop: No bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa, Eucalyptus tetraptera, Eucalyptus uncinata*
 Mid Stratum 1: *Banksia lemanniana*
 Lower Stratum 1: *Allocasuarina humilis, Allocasuarina thuyoides, Beaufortia micrantha* var. *micrantha, Calothamnus gracilis, Leptospermum spinescens, Leucopogon* sp. *Coujinup* (M.A. Burgman 1085), *Melaleuca rigidifolia, Melaleuca tuberculata* var. *macrophylla*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia chrysocephala</i>	0.4	0.2
<i>Allocasuarina humilis</i>	0.5	3
<i>Allocasuarina microstachya</i>	0.3	0.2
<i>Allocasuarina thuyoides</i>	0.5	1
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Anarthria humilis</i>	0.1	0.1
<i>Argentipallium niveum</i>	0.2	0.1
<i>Baeckea preissiana</i>	0.3	0.2
<i>Banksia lemanniana</i>	2	4
<i>Banksia obtusa</i>	0.2	2
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	3

<i>Calectasia grandiflora</i> subsp. Wheatbelt (A.M. Coates 4315)	0.2	0.1
<i>Calothamnus gibbosus</i>	0.4	0.3
<i>Calothamnus gracilis</i>	0.5	0.5
<i>Calytrix leschenaultii</i>	0.3	0.2
<i>Cassytha flava</i>	0	0.1
<i>Caustis dioica</i>	0.3	0.1
<i>Chamelaucium ciliatum</i>	0.4	0.5
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.1	0.1
<i>Chorizema cytisoides</i>	0.2	0.1
<i>Conostylis argentea</i>	0.2	0.2
<i>Dampiera lavandulacea</i>	0.1	0.1
<i>Darwinia vestita</i>	0.3	0.1
<i>Daviesia teretifolia</i>	0.3	3
<i>Dillwynia divaricata</i>	0.4	1
<i>Eucalyptus pleurocarpa</i>	2.5	20
<i>Eucalyptus tetraptera</i>	2.5	1
<i>Eucalyptus uncinata</i>	2	1
<i>Gompholobium knightianum</i>	0.1	0.1
<i>Grevillea nudiflora</i>	0.4	1
<i>Hakea ilicifolia</i>	0.2	0.2
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.1	0.2
<i>Isopogon polycephalus</i>	0.4	1.5
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.2	0.2
<i>Kunzea affinis</i>	0.5	0.1
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.2	0.2
<i>Lepidosperma</i> sp. 'Jerdacuttup' (R.L. Barrett RLB 2770)	0.2	0.1
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.3	0.1
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.2	0.1
<i>Leptospermum spinescens</i>	0.7	0.5
<i>Leucopogon heterophyllus</i>	0.4	0.3
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	5
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lysinema ciliatum</i>	0.5	0.1
<i>Melaleuca rigidifolia</i>	0.3	8
<i>Melaleuca subfalcata</i>	0.5	0.1
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.4	8
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.4

<i>Micromyrtus elobata</i> subsp. <i>elobata</i>	0.3	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Platysace deflexa</i>	0.3	0.1
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.1	0.1
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Stylidium repens</i>	0.1	0.1
<i>Synaphea divaricata</i>	0.2	0.1
<i>Tricostularia</i> sp. Hopetoun (M. Bennett 646)	0.2	0.1
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.2	0.1
<i>Verticordia inclusa</i>	0.3	0.1

PHOTO

Site Name: SC46
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 08/10/2014
 GPS Location: GDA94 Zone 51 257695E 6277401N
 Vegetation Type: 16
 Landform Type: Upper Slope
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Clay Loam
 Soil Colour: Light brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 20-50%
 CF Sizes: 2-6mm
 CF Types: Granite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1: *Daviesia pachyphylla*, *Melaleuca hamata*
 Lower Stratum 1: *Acacia pinguiculosa* subsp. *pinguiculosa*, *Allocasuarina campestris*,
Calytrix aff. *leschenaultii*, *Lepidosperma* sp. 'Robust Pruinose' (R.L. Barrett
 & M.D. Barrett RLB 2984), *Melaleuca carrii*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	0.4	2.5
<i>Allocasuarina campestris</i>	0.5	1
<i>Astroloma serratifolium</i>	0.4	0.2
<i>Borya constricta</i>	0.1	0.3
<i>Calytrix</i> aff. <i>leschenaultii</i>	0.3	20
<i>Cassytha flava</i>	0	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Chamaescilla spiralis</i>	0.1	0.1
<i>Cryptandra graniticola</i>	0.3	0.2
<i>Daviesia pachyphylla</i>	1.5	1
<i>Ericomyrtus parviflora</i>	0.2	0.1
<i>Grevillea rigida</i> subsp. <i>rigida</i>	0.6	1
<i>Haemodorum discolor</i>	0.5	0.1
<i>Kunzea affinis</i>	1.2	0.3
<i>Lepidobolus preissianus</i>	0.2	0.2

<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.3	20
<i>Leucopogon brevicuspis</i>	0.2	0.1
<i>Melaleuca carrii</i>	0.4	3
<i>Melaleuca hamata</i>	1.5	7
<i>Mirbelia multicaulis</i>	0.1	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Pimelea imbricata</i> var. <i>piligera</i>	0.1	0.1
<i>Schoenus subflavus</i>	0.1	0.1
<i>Stylidium dichotomum</i>	0.1	0.1
<i>Thelymitra benthamiana</i>	0.3	0.1
<i>Thryptomene australis</i> subsp. <i>australis</i>	0.7	0.3

PHOTO

Site Name: SC47
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 09/10/2014
 GPS Location: GDA94 Zone 51 257786E 6275661N
 Vegetation Type: 5
 Landform Type: Lower Slope
 Slope Class: Gently Inclined (3 degrees)
 Aspect: NE
 Soil Type: Clay (other)
 Soil Colour: Light brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 50-90%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Ironstone, Ironstone pea gravel (other)
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >15

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus calycogona* subsp. *calycogona*, *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus phaenophylla* subsp. *interjacens*, *Eucalyptus pileata*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus suggrandis* subsp. *suggrandis*
 Mid Stratum 1: *Grevillea pectinata*, *Melaleuca hamata*, *Melaleuca rigidifolia*, *Melaleuca subfalcata*, *Melaleuca ulicoides*
 Lower Stratum 1: *Gahnia ancistrophylla*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia glaucoptera</i>	1.6	1
<i>Acacia ingrata</i>	0.3	0.2
<i>Anthotium humile</i>	0.1	0.1
<i>Baeckea latens</i>		
<i>Banksia media</i>	3	1
<i>Boronia inornata</i> subsp. <i>leptophylla</i>	0.3	0.3
<i>Cassytha glabella</i> forma <i>dispar</i>	0	0.1
<i>Comesperma spinosum</i>	0.3	0.3
<i>Cooperookia polygalacea</i>	0.3	0.1
<i>Daviesia articulata</i>	1	0.4

<i>Eucalyptus calycogona</i> subsp. <i>calycogona</i>	2.5	1
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	3	25
<i>Eucalyptus phaenophylla</i> subsp. <i>interjacens</i>	3	1.5
<i>Eucalyptus pileata</i>	2.5	1
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	3	10
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	3	4
<i>Exocarpos aphyllus</i>	1.8	0.5
<i>Gahnia ancistrophylla</i>	0.4	5
<i>Goodenia</i> ? <i>coerulea</i>	0.1	0.1
<i>Grevillea huegelii</i>	0.4	1
<i>Grevillea pectinata</i>	1.4	2
<i>Hakea commutata</i>	0.8	0.2
<i>Hibbertia psilocarpa</i>	0.3	0.1
<i>Melaleuca hamata</i>	1.8	2
<i>Melaleuca lateriflora</i>	0.6	0.2
<i>Melaleuca rigidifolia</i>	1.4	2
<i>Melaleuca subfalcata</i>	1.8	3
<i>Melaleuca torquata</i>	1	0.3
<i>Melaleuca ulicoides</i>	1.5	30
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Styphelia intertexta</i>	0.2	0.1
<i>Tetrapora verrucosa</i>	0.4	0.2
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.2	0.1
<i>Thelymitra occidentalis</i>	0.1	0.1
<i>Wilsonia humilis</i>	0.1	0.1

PHOTO



Site Name: SC48
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 09/10/2014
 GPS Location: GDA94 Zone 51 257767E 6275949N
 Vegetation Type: 9
 Landform Type: Crest
 Slope Class: Moderately Inclined (10 degrees)
 Aspect: N
 Soil Type: Sandy clay (other)
 Soil Colour: Brown
 Rock Outcrop: Laterite, 2-10% bedrock exposed
 CF Abundance: 50-90%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Laterite, Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >15

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Banksia lemanniana, Eucalyptus ecostata, Eucalyptus pleurocarpa*
 Mid Stratum 1: *Calothamnus quadrifidus* subsp. *quadrifidus, Melaleuca hamata*
 Lower Stratum 1: *Darwinia diosmoides, Lepidosperma* sp. '*Tibialate*' (R.L. Barrett RLB 3522), *Spartochloa scirpoidea*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i>	1.8	2
<i>Banksia lemanniana</i>	3.5	8
<i>Boronia inconspicua</i>	0.3	0.1
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	2.5	4
<i>Darwinia diosmoides</i>	0.5	4
<i>Eucalyptus ecostata</i>	4	6
<i>Eucalyptus pleurocarpa</i>	3.5	3
<i>Gastrolobium parviflorum</i>	0.4	0.5
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Lepidosperma sanguinolentum</i>	0.4	0.2
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798)	0.4	0.2
<i>Lepidosperma</i> sp. ' <i>Tibialate</i> ' (R.L. Barrett	0.3	2

RLB 3522)		
<i>Leptospermum oligandrum</i>	1.5	1.5
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.3	0.3
<i>Lomandra mucronata</i>	0.1	0.1
<i>Melaleuca hamata</i>	2	5
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Phebalium lepidotum</i>	1	0.5
<i>Spartochloa scirpoidea</i>	0.7	1
<i>Thelymitra occidentalis</i>	0.1	0.1

PHOTO

Site Name: SC49
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 09/10/2014
 GPS Location: GDA94 Zone 51 257746E 6275896N
 Vegetation Type: 10
 Landform Type: Upper Slope
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Light Clay
 Soil Colour: Pale brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 50-90%
 CF Types: Laterite, Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: ~15

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Banksia lemanniana, Eucalyptus ecostata, Eucalyptus pleurocarpa*
 Mid Stratum 1: *Melaleuca villosisepala, Petrophile fastigiata, Taxandria spathulata*
 Lower Stratum 1: *Leucopogon* sp. Newdegate (M. Hislop 3585)

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia subcaerulea</i>		
<i>Banksia cirsioides</i>	0.7	0.5
<i>Banksia lemanniana</i>	3.5	10
<i>Beaufortia schaueri</i>	0.5	2
<i>Beyeria brevifolia</i>	0.7	0.2
<i>Calytrix leschenaultii</i>	0.2	0.1
<i>Dampiera lavandulacea</i>	0.1	0.1
<i>Eucalyptus ecostata</i>	3.5	7
<i>Eucalyptus pleurocarpa</i>	3.5	7
<i>Hakea lissocarpha</i>	1.5	0.5
<i>Hibbertia gracilipes</i>	0.2	0.2
<i>Jacksonia elongata</i>	1.5	0.3
<i>Kunzea affinis</i>	1.5	0.5
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.2	1
<i>Leptospermum spinescens</i>	0.4	0.1
<i>Leucopogon cuneifolius</i>	0.7	1

<i>Leucopogon opponens</i>	0.5	3.5
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.4	5
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.6	0.1
<i>Melaleuca pentagona</i> var. <i>pentagona</i>	2	3
<i>Melaleuca rigidifolia</i>	0.6	0.5
<i>Melaleuca villosisepala</i>	1.4	4
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Petrophile fastigiata</i>	1.4	30
<i>Taxandria spathulata</i>	1.6	3
<i>Verticordia acerosa</i> var. <i>preissii</i>	0.3	0.2

PHOTO

Site Name: SC50
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 09/10/2014
 GPS Location: GDA94 Zone 51 257996E 6275896N
 Vegetation Type: 11
 Landform Type: Lowerslope/ drainage line (other)
 Slope Class: Moderately Inclined (10 degrees)
 Aspect: S
 Soil Type: Sandy clay (other)
 Soil Colour: Brown
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Ironstone
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: ~15

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Melaleuca brevifolia*, *Melaleuca cuticularis*
 Lower Stratum 1: *Gahnia trifida*, *Juncus kraussii* subsp. *australiensis*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Atriplex ?bunburyana</i>		
<i>Atriplex ?paludosa</i>		
<i>Austrostipa juncifolia</i>		
<i>Cassytha glabella</i> forma <i>dispar</i>		0.1
* <i>Cynodon dactylon</i>		
<i>Gahnia trifida</i>	1.5	70
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	0.5	3
<i>Melaleuca brevifolia</i>	2.5	7
<i>Melaleuca cuticularis</i>	3	15
<i>Spergularia marina</i>		
<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>		
<i>Threlkeldia diffusa</i>		

PHOTO



Site Name: SC51
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 09/10/2014
 GPS Location: GDA94 Zone 51 257726E 6276677N
 Vegetation Type: 13
 Landform Type: Undulating plain (other)
 Slope Class: Gently Inclined (3 degrees)
 Soil Type: Clay Loam
 Soil Colour: Grey
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus sporadica*, *Eucalyptus suggrandis* subsp. *suggrandis*, *Eucalyptus uncinata*
 Lower Stratum 1: *Melaleuca rigidifolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia chrysocephala</i>	0.4	3
<i>Acacia curvata</i>	0.6	0.5
<i>Acacia gonophylla</i>	0.4	0.2
<i>Acacia ingrata</i>	0.2	0.2
<i>Banksia media</i>	1	4
<i>Calytrix leschenaultii</i>	0.2	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>		0.1
<i>Cheiranthra brevifolia</i>		
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.2	0.1
<i>Cryptandra pungens</i>	0.3	0.1
<i>Cyathostemon tenuifolius</i>	0.2	0.2
<i>Dampiera lavandulacea</i>	0.1	0.1
<i>Daviesia anceps</i>	0.3	0.1
<i>Dodonaea caespitosa</i>	0.2	0.1
<i>Eucalyptus pleurocarpa</i>	2	1
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	2.5	7

<i>Eucalyptus sporadica</i>	2.5	15
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	2.5	2
<i>Eucalyptus uncinata</i>	2.5	5
<i>Exocarpos sparteus</i>	2.5	3
<i>Gahnia ancistrophylla</i>	0.3	0.5
<i>Grevillea nudiflora</i>	0.7	0.5
<i>Hakea laurina</i>	2.5	1
<i>Hibbertia gracilipes</i>	0.2	0.5
<i>Hibbertia pungens</i>	0.5	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.5	0.2
<i>Lepidosperma carphoides</i>	0.3	0.2
<i>Lepidosperma fimbriatum</i>	0.4	0.2
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798)	0.4	0.1
<i>Lepidosperma</i> sp. 'Jerdacuttup' (R.L. Barrett RLB 2770)	0.3	0.2
<i>Leucopogon brevicuspis</i>	0.2	0.1
<i>Leucopogon concinnus</i>	0.3	0.2
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	0.2
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.2
<i>Melaleuca carrii</i>	0.3	0.3
<i>Melaleuca glaberrima</i>	0.3	4
<i>Melaleuca hamata</i>	0.7	0.5
<i>Melaleuca rigidifolia</i>	0.4	10
<i>Melaleuca subfalcata</i>	0.5	1.5
<i>Micromyrtus elobata</i> subsp. <i>elobata</i>	0.3	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olax benthamiana</i>	0.4	1
<i>Platysace deflexa</i>	0.3	0.1
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.3	0.2
<i>Rinzia communis</i>	0.1	0.1
<i>Stenanthemum intricatum</i>	0.2	0.1
<i>Thysanotus sparteus</i>		
<i>Tricoryne ?tenella</i>	0.3	0.1

PHOTO



Site Name: SC52
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 09/10/2014
 GPS Location: GDA94 Zone 51 257872E 6276215N
 Vegetation Type: 12
 Landform Type: Drainage Line
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Sandy clay (other)
 Soil Colour: Grey
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Laterite, Ironstone
 Vegetation Condition: Southern Vegetation Condition - 3 - Very Good
 Disturbance: Exotic Weeds, Salinity
 Fire: >15

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus occidentalis*
 Mid Stratum 1: *Acacia saligna* subsp. *lindleyi* ms, *Melaleuca hamata*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia saligna</i> subsp. <i>lindleyi</i> ms	3	3
<i>Austrostipa elegantissima</i>	0.5	0.2
<i>Callistemon phoeniceus</i>	3	1.5
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	1.2	3
* <i>Ehrharta longiflora</i>	0.4	0.2
<i>Eucalyptus occidentalis</i>	10	10
* <i>Hypochaeris glabra</i>	0.1	0.1
* <i>Lolium rigidum</i>	0.4	0.1
* <i>Lysimachia arvensis</i>	0.2	0.1
<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>	1.7	1.5
<i>Melaleuca hamata</i>	3	2
* <i>Sonchus oleraceus</i>	0.4	0.1
<i>Spartochloa scirpoidea</i>	0.7	0.3
<i>Spergularia marina</i>	0.1	0.1
<i>Tecticornia lepidosperma</i>	0.5	12

PHOTO



Site Name: SC53
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 09/01/2014
 GPS Location: GDA94 Zone 51 257796E 6276180N
 Vegetation Type: 7
 Landform Type: Flat
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Clay Loam
 Soil Colour: Grey
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Disturbance: Grazing
 Fire: ~15

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus incrassata*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)
 Upper Stratum 2: *Eucalyptus uncinata*
 Mid Stratum 1: *Hakea lissocarpha*, *Melaleuca hamata*, *Templetonia retusa*
 Lower Stratum 1: *Lasiopetalum compactum*, *Lepidosperma* sp. Bandalup Scabrid (N. Eveleigh 10798), *Lomandra effusa*, *Rinzia communis*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia ingrata</i>	0.3	0.2
<i>Austrostipa pycnostachya</i>	0.2	0.1
<i>Austrostipa variabilis</i>	0.1	0.1
<i>Billardiera venusta</i>		0.2
<i>Boronia inconspicua</i>	0.2	0.2
<i>Boronia inornata</i> subsp. <i>leptophylla</i>	0.2	0.3
<i>Caladenia brevisura</i>	0.1	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>		0.1
<i>Chorizema nervosum</i>	0.5	0.5
<i>Comesperma volubile</i>		0.1
<i>Dampiera lavandulacea</i>	0.1	0.1
<i>Daviesia anceps</i>	0.4	0.2
<i>Eucalyptus incrassata</i>	3	1

<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	6	25
<i>Eucalyptus uncinata</i>	3	1
<i>Gahnia ancistrophylla</i>	0.4	0.5
<i>Gompholobium confertum</i>	0.5	0.4
<i>Grevillea nudiflora</i>	0.6	1
<i>Hakea lissocarpha</i>	2	3
<i>Hibbertia gracilipes</i>	0.2	0.1
<i>Hibbertia pungens</i>	0.4	0.2
<i>Lasiopetalum compactum</i>	0.8	2
<i>Lepidosperma sanguinolentum</i>	0.8	0.1
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798)	0.5	1
<i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118)	0.3	0.3
<i>Lomandra effusa</i>	0.4	7
<i>Lomandra mucronata</i>	0.1	0.1
<i>Melaleuca hamata</i>	2	5
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Rinzia communis</i>	0.2	1.5
<i>Rytidosperma setaceum</i>	0.1	0.1
<i>Santalum acuminatum</i>	0.2	0.1
<i>Templetonia retusa</i>	1.5	1.5
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.2	0.1
<i>Thomasia microphylla</i>	0.2	0.1

PHOTO



Site Name: SC54
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 10/10/2014
 GPS Location: GDA94 Zone 51 257851E 6276108N
 Vegetation Type: 11
 Landform Type: Drainage Line
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Clay (other)
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus occidentalis*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)
 Mid Stratum 1: *Acacia saligna* subsp. *lindleyi* ms, *Melaleuca cuticularis*
 Lower Stratum 1: *Austrostipa juncifolia*, *Gahnia trifida*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia cyclops</i>	2	0.5
<i>Acacia patagiata</i>	1.5	0.5
<i>Acacia saligna</i> subsp. <i>lindleyi</i> ms	4	6
<i>Alyogyne</i> sp. Southern Coast (A.S. George 289)	0.1	0.1
<i>Austrostipa elegantissima</i>	0.5	0.1
<i>Austrostipa juncifolia</i>	0.6	8
<i>Billardiera fusiformis</i>		0.5
* <i>Briza maxima</i>	0.2	0.1
* <i>Briza minor</i>	0.1	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>		0.1
<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>	2	4
<i>Eucalyptus occidentalis</i>	9	30
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	8	3
<i>Gahnia trifida</i>	1	10
* <i>Hypochaeris glabra</i>	0.1	0.1

<i>Juncus kraussii</i> subsp. <i>australiensis</i>	1	8
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798)	0.7	0.5
* <i>Lysimachia arvensis</i>	0.1	0.1
<i>Melaleuca cuticularis</i>	2	25
<i>Rytidosperma setaceum</i>	0.2	0.1
* <i>Solanum nigrum</i>	0.2	0.1
* <i>Sonchus oleraceus</i>	0.1	0.1
<i>Thelymitra graminea</i>	0.1	0.1

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Site Name: SC55
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 10/10/2014
 GPS Location: GDA94 Zone 51 257485E 6278082N
 Vegetation Type: 12
 Landform Type: Drainage Line
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Sand
 Soil Colour: Brown
 Rock Outcrop: Granite, 2-10% bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 2 - Excellent
 Disturbance: Exotic Weeds, (other)
 Fire: >5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1: *Melaleuca hamulosa*
 Mid Stratum 2: *Acacia patagiata*, *Melaleuca cuticularis*
 Lower Stratum 1: *Gahnia trifida*, *Tecticornia lepidosperma*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia patagiata</i>	1	2
<i>Apium annuum</i>	0.1	0.1
<i>Baeckea pachyphylla</i>	1	0.2
* <i>Briza maxima</i>	0.1	0.1
<i>Callistemon phoeniceus</i>	1.5	3
<i>Carpobrotus modestus</i>	0.1	0.5
<i>Comesperma integerrimum</i>		0.5
* <i>Cotula coronopifolia</i>	0.1	0.1
<i>Dodonaea caespitosa</i>	0.2	0.2
* <i>Ehrharta longiflora</i>	0.2	0.1
<i>Eucalyptus occidentalis</i>	3	1
<i>Gahnia trifida</i>	1.5	5
<i>Guichenotia micrantha</i>		
<i>Helichrysum luteoalbum</i>	0.1	0.1
<i>Lepidosperma sanguinolentum</i>	0.6	0.3
* <i>Lysimachia arvensis</i>	0.1	0.5
<i>Melaleuca cuticularis</i>	1.5	20

<i>Melaleuca hamulosa</i>	1.5	5
* <i>Parapholis incurva</i>	0.1	0.1
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	0.1	0.1
<i>Rhagodia preissii</i> subsp. <i>preissii</i>	1.5	0.5
<i>Samolus junceus</i>	0.3	0.1
<i>Senecio glossanthus</i>	0.2	0.1
<i>Solanum symonii</i>	0.1	0.1
* <i>Sonchus oleraceus</i>	0.1	0.1
<i>Tecticornia lepidosperma</i>	0.4	2
<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>	0.4	1
<i>Trachymene pilosa</i>	0.1	0.1
* <i>Ursinia anthemoides</i>	0.2	0.1

PHOTO

Site Name: SC56
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 10/10/2014
 GPS Location: GDA94 Zone 51 257253E 6278671N
 Vegetation Type: 3
 Landform Type: Plain
 Slope Class: Level (0 degrees)
 Soil Type: Clay Loam
 Soil Colour: Grey
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: ~5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*
 Mid Stratum 1: *Hakea corymbosa*, *Hakea pandanicarpa* subsp. *pandanicarpa*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Allocasuarina humilis</i>	0.7	5
<i>Amphipogon avenaceus</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Argentipallium niveum</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.3	0.5
<i>Banksia obtusa</i>	0.1	0.3
<i>Banksia violacea</i>	0.5	1.5
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.5	5
<i>Calectasia grandiflora</i> subsp. Wheatbelt (A.M. Coates 4315)	0.2	0.1
<i>Calothamnus gracilis</i>	0.7	5
<i>Calytrix leschenaultii</i>	0.3	0.3
<i>Cassytha flava</i>		0.1
<i>Caustis dioica</i>	0.4	3
<i>Chordifex sphacelatus</i>	0.2	0.3
<i>Conostylis lepidospermoides</i> (T)	0.1	0.2
<i>Conothamnus aureus</i>	0.3	0.5
<i>Cryptandra spyridioides</i>	0.1	0.1
<i>Dampiera</i> sp.	0.1	0.1

<i>Darwinia vestita</i>	0.4	0.1
<i>Daviesia teretifolia</i>	0.5	3
<i>Dillwynia divaricata</i>	0.5	6
<i>Eucalyptus pleurocarpa</i>	3	20
<i>Gastrolobium punctatum</i>	0.2	0.1
<i>Goodenia pterigosperma</i>	0.1	0.1
<i>Grevillea nudiflora</i>	0.4	2
<i>Hakea corymbosa</i>	1.2	2
<i>Hakea ilicifolia</i>	0.3	0.2
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.5	3
<i>Hakea prostrata</i>	0.2	0.1
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.2	0.3
<i>Kunzea preissiana</i>	0.4	0.1
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.3	1
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	0.3	0.5
<i>Leptospermum erubescens</i>	0.4	0.1
<i>Leptospermum spinescens</i>	0.6	0.5
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	1
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lysinema ciliatum</i>	0.7	0.5
<i>Melaleuca carrii</i>	0.4	3
<i>Melaleuca rigidifolia</i>	0.4	0.5
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.4	5
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.3
<i>Micromyrtus elobata</i> subsp. <i>elobata</i>	0.2	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Opercularia vaginata</i>	0.1	0.1
<i>Platysace effusa</i>	0.5	0.2
<i>Schoenus subfascicularis</i>	0.4	0.2
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	0.1	0.1
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Stackhousia scoparia</i>	0.3	0.3
<i>Stylidium piliferum</i>	0.1	0.1
<i>Taxandria spathulata</i>	0.5	1
<i>Verticordia chrysantha</i>	0.3	0.1
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.3	0.1
<i>Verticordia inclusa</i>	0.3	0.1

PHOTO



Site Name: SC57
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 10/10/2014
 GPS Location: GDA94 Zone 51 257614E 6279026N
 Vegetation Type: 14
 Landform Type: Plain
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Clay Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Quartz (other)
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: ~5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus kessellii* subsp. *eugnosta*, *Eucalyptus leptocalyx* subsp. *leptocalyx*, *Eucalyptus pleurocarpa*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus suggrandis* subsp. *suggrandis*, *Eucalyptus tetraptera*, *Eucalyptus uncinata*
 Mid Stratum 1: *Banksia lemmaniana*, *Banksia media*, *Hakea pandanicarpa* subsp. *pandanicarpa*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia chrysocephala</i>	0.3	0.3
<i>Acacia curvata</i>	0.5	0.5
<i>Acacia moirii</i> subsp. <i>moirii</i>	0.1	0.1
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Andersonia parvifolia</i>	0.2	0.1
<i>Astroloma microphyllum</i>	0.1	0.1
<i>Banksia cirsioides</i>	0.4	0.2
<i>Banksia lemmaniana</i>	1.5	1
<i>Banksia media</i>	1	3
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.3	0.3
<i>Beaufortia schaueri</i>	0.4	15
<i>Boronia crassifolia</i>	0.1	0.1
<i>Cassytha glabella</i> forma <i>dispar</i>		0.1

<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	0.1	0.1
<i>Cyathostemon tenuifolius</i>	0.3	0.1
<i>Dampiera lavandulacea</i>	0.1	0.1
<i>Daviesia anceps</i>	0.3	0.1
<i>Daviesia lancifolia</i>	0.3	8
<i>Daviesia teretifolia</i>	0.3	0.5
<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i>	2	2
<i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i>	2	2
<i>Eucalyptus pleurocarpa</i>	2.5	5
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)	2.5	15
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>	1.5	1
<i>Eucalyptus tetraptera</i>	1.3	0.5
<i>Eucalyptus uncinata</i>	2.5	2
<i>Gahnia ancistrophylla</i>	0.3	2
<i>Gahnia aristata</i>	0.1	0.1
<i>Gompholobium baxteri</i>	0.3	0.1
<i>Gompholobium confertum</i>	0.3	0.1
<i>Goodenia pterigosperma</i>	0.1	0.1
<i>Grevillea nudiflora</i>	0.3	2
<i>Hakea lissocarpha</i>	0.3	0.2
<i>Hakea marginata</i>	0.3	1
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1	1
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.1	0.2
<i>Hibbertia pungens</i>	0.1	0.1
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.3	0.1
<i>Lasiopetalum rosmarinifolium</i>	0.6	0.5
<i>Laxmannia ramosa</i> subsp. <i>deflexa</i>	0.1	0.1
<i>Lepidosperma carphoides</i>	0.3	1
<i>Lepidosperma</i> sp. 'Dale River' (R. Davis 1051)	0.3	1
<i>Leucopogon fimbriatus</i>	0.3	0.2
<i>Leucopogon opponens</i>	0.4	0.3
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.3	0.2
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.2
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.5	0.1
<i>Melaleuca carrii</i>	0.3	0.2
<i>Melaleuca lateralis</i>	0.3	0.2
<i>Melaleuca rigidifolia</i>	0.3	15

<i>Melaleuca subfalcata</i>	0.3	0.5
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.2	0.3
<i>Microcorys subcanescens</i>	0.1	0.2
<i>Monotaxis paxii</i>	0.1	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Patersonia occidentalis</i>	0.1	0.1
<i>Persoonia striata</i>	0.1	0.1
<i>Petrophile fastigiata</i>	0.1	0.1
<i>Petrophile squamata</i> subsp. northern (J. Monks 40)	0.4	0.3
<i>Pultenaea indira</i> subsp. <i>indira</i>	0.3	0.5
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>	0.1	0.1
<i>Spyridium cordatum</i>	0.1	0.3
<i>Tetrapora verrucosa</i>	0.3	3
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)	0.3	0.1

PHOTO

Site Name: SC58
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 10/10/2014
 GPS Location: GDA94 Zone 51 257708E 6278554N
 Vegetation Type: 18
 Landform Type: Upper Slope
 Slope Class: Moderately Inclined (10 degrees)
 Aspect: SE
 Soil Type: Clay Loam
 Soil Colour: Grey
 Rock Outcrop: Granite, <2% bedrock exposed
 CF Abundance: <2%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Granite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: ~5

DOMINANT TAXA IN VEGETATION STRATA

Mid Stratum 1: *Calothamnus quadrifidus* subsp. *quadrifidus*
 Lower Stratum 1: *Calytrix* aff. *leschenaultii*, *Leucopogon* sp. Coujinup (M.A. Burgman 1085)

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia unifissilis</i>	0.3	0.2
<i>Allocasuarina microstachya</i>	0.3	0.2
<i>Amphipogon strictus</i>	0.2	0.2
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Andersonia parvifolia</i>	0.2	0.1
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	1	50
<i>Calytrix</i> aff. <i>leschenaultii</i>	0.3	15
<i>Conostylis argentea</i>	0.1	0.1
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3)	0.3	0.1
<i>Daviesia teretifolia</i>	0.4	0.3
<i>Grevillea teretifolia</i>	0.4	0.5
<i>Harperia lateriflora</i>	0.1	0.1
<i>Hibbertia gracilipes</i>	0.3	0.1
<i>Lepidobolus preissianus</i>	0.2	0.1

<i>Lepidosperma carphoides</i>	0.3	0.2
<i>Lepidosperma fimbriatum</i>	0.4	0.1
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.3	0.3
<i>Leptospermum oligandrum</i>	0.6	0.3
<i>Leucopogon brevicuspis</i>	0.2	0.2
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.2	5
<i>Melaleuca carrii</i>	0.3	0.2
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Opercularia vaginata</i>	0.2	0.2
<i>Persoonia striata</i>	0.3	0.5
<i>Petrophile fastigiata</i>	0.3	0.1
<i>Petrophile seminuda</i>	0.4	1
<i>Pimelea imbricata</i> var. <i>piligera</i>	0.1	0.1
<i>Platysace deflexa</i>	0.5	0.3
<i>Platysace effusa</i>	0.5	1
<i>Pterostylis recurva</i>	0.2	0.1
<i>Schoenus sesquispiculus</i>	0.2	0.4
<i>Schoenus subflavus</i>	0.1	0.1
<i>Stylidium dichotomum</i>	0.1	0.1
<i>Stylidium piliferum</i>	0.1	0.1
<i>Synaphea</i> aff. <i>petiolaris</i>	0.2	0.1
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.3	0.1
<i>Verticordia pennigera</i>	0.4	0.3

PHOTO



Site Name: SC59
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 11/10/2014
 GPS Location: GDA94 Zone 51 258006E 6279456N
 Vegetation Type: 12
 Landform Type: Drainage Line
 Slope Class: Very Gently Inclined (1 degree)
 Soil Type: Light Clay
 Soil Colour: Grey
 Rock Outcrop: No bedrock exposed
 CF Abundance: 0%
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >15

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Melaleuca hamulosa*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Austrostipa pycnostachya</i>	0.4	0.1
<i>Carpobrotus modestus</i>	0.1	0.5
<i>Melaleuca hamulosa</i>	2.5	15
<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	0.2	20
<i>Tecticornia lepidosperma</i>	0.4	3
<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>	0.3	0.3
<i>Tecticornia syncarpa</i>	0.4	3
<i>Wilsonia backhousei</i>	0.1	6

PHOTO



Site Name: SC60
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 11/10/2014
 GPS Location: GDA94 Zone 51 258087E 6279055N
 Vegetation Type: 16
 Landform Type: Upperslope / granite outcrop (other)
 Slope Class: Moderately Inclined (10 degrees)
 Aspect: SE
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: Granite, 20-50% bedrock exposed
 CF Abundance: 10-20%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Granite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: >15

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Acacia lasiocalyx*
 Mid Stratum 1: *Calothamnus quadrifidus* subsp. *quadrifidus*, *Grevillea rigida* subsp. *rigida*, *Leptospermum nitens*, *Thryptomene australis* subsp. *australis*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia assimilis</i> subsp. <i>atroviridis</i>	1.5	0.2
<i>Acacia lasiocalyx</i>	3	8
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>	0.5	6
<i>Agrostocrinum scabrum</i> subsp. <i>scabrum</i>	0.3	0.1
<i>Allocasuarina campestris</i>	0.6	2
<i>Astroloma serratifolium</i>	0.4	0.2
<i>Astus tetragonus</i>	0.5	2
<i>Boronia subsessilis</i>	0.2	0.1
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	1	8
<i>Calytrix</i> aff. <i>leschenaultii</i>	0.2	0.1
<i>Comesperma ciliatum</i>		
<i>Cryptandra graniticola</i>	0.3	0.2
<i>Cryptandra pungens</i>	0.4	0.1
<i>Cyrtostylis</i> sp.	0.1	0.1

<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277) (P3)	0.3	0.1
<i>Dianella brevicaulis</i>	0.4	0.1
<i>Grevillea rigida</i> subsp. <i>rigida</i>	1.3	8
<i>Hibbertia gracilipes</i>	0.2	0.1
* <i>Hypochaeris glabra</i>	0.1	0.1
<i>Lepidosperma</i> sp. 'Fitzgerald Tuberculate'	0.4	1
<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553)	0.5	2
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.4	4
<i>Leptospermum nitens</i>	1.3	5
<i>Leucopogon fimbriatus</i>	0.4	0.2
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	0.1
<i>Levenhookia pusilla</i>	0.1	0.1
<i>Levenhookia stipitata</i>	0.1	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Opercularia vaginata</i>	0.1	0.1
<i>Phyllanthus calycinus</i>	0.4	0.3
<i>Platysace deflexa</i>	0.3	0.3
<i>Poranthera microphylla</i>	0.1	0.1
<i>Pterochaeta paniculata</i>	0.1	0.1
<i>Rytidosperma setaceum</i>	0.1	0.1
<i>Schoenus subflavus</i>	0.1	0.1
* <i>Sonchus oleraceus</i>	0.2	0.1
<i>Spartochloa scirpoidea</i>	1	0.5
<i>Stylidium dichotomum</i>	0.1	0.1
<i>Thelymitra petrophila</i>	0.3	0.1
<i>Thryptomene australis</i> subsp. <i>australis</i>	1.3	4
<i>Thysanotus thyrsoideus</i>	0.2	0.1
<i>Trachymene ornata</i>	0.1	0.1
<i>Trachymene pilosa</i>	0.1	0.1

PHOTO



Site Name: SC61
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 11/10/2014
 GPS Location: GDA94 Zone 51 258065E 6278984N
 Vegetation Type: 18
 Landform Type: Lower Slope
 Slope Class: Moderately Inclined (10 degrees)
 Aspect: E
 Soil Type: Light Clay
 Soil Colour: Grey
 Rock Outcrop: Granite, <2% bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Granite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: ~5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Allocasuarina campestris*, *Calothamnus quadrifidus* subsp. *quadrifidus*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Allocasuarina campestris</i>	1	5
<i>Amphipogon strictus</i>	0.1	0.1
<i>Astus tetragonus</i>	0.5	0.3
<i>Billardiera fusiformis</i>		
<i>Boronia coerulescens</i> subsp. <i>spinescens</i>	0.3	0.1
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>	1.2	35
<i>Calytrix</i> aff. <i>leschenaultii</i>	0.4	4
<i>Cassytha flava</i>		0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Daviesia teretifolia</i>	0.5	0.5
<i>Ericomyrtus parviflora</i>	0.3	0.3
<i>Ericomyrtus serpyllifolia</i>	0.8	0.5
<i>Lepidobolus preissianus</i>	0.3	0.5
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)	0.3	15
<i>Leucopogon brevicuspis</i>	0.3	0.2
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman)	0.1	0.1

1085)		
<i>Melaleuca carrii</i>	0.3	2
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	0.1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Pimelea imbricata</i> var. <i>piligera</i>	0.1	0.1
<i>Schoenus sesquispiculus</i>	0.2	0.2
<i>Schoenus subflavus</i>	0.1	0.1
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.3	0.5
<i>Verticordia pennigera</i>	0.2	0.1

PHOTO

Site Name: SC62
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 11/10/2014
 GPS Location: AGD84 Zone 51 257517E 6278025N
 Vegetation Type: 6
 Landform Type: Mid Slope
 Slope Class: Moderately Inclined (10 degrees)
 Aspect: N
 Soil Type: Clay Loam
 Soil Colour: Brown
 Rock Outcrop: Dolerite, 10-20% bedrock exposed
 CF Abundance: 20-50%
 CF Sizes: 2-6mm, 6-20mm, 20-60mm
 CF Types: Dolerite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: ~5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus calycogona* subsp. *calycogona*, *Eucalyptus pileata*
 Mid Stratum 1: *Acacia glaucoptera*, *Daviesia nematophylla*, *Dodonaea ptarmicaefolia*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia glaucoptera</i>	1.5	10
<i>Astroloma epacridis</i>	0.4	0.1
<i>Austrostipa variabilis</i>	0.1	0.1
* <i>Avellinia michelii</i>	0.1	0.1
<i>Cassytha melantha</i>		8
<i>Cryptandra wilsonii</i>	0.3	0.1
<i>Daviesia nematophylla</i>	1	10
<i>Dodonaea ptarmicaefolia</i>	1	10
<i>Eucalyptus calycogona</i> subsp. <i>calycogona</i>	2	5
<i>Eucalyptus pileata</i>	2	30
<i>Lepidosperma fimbriatum</i>	0.2	0.1
<i>Lepidosperma gahnioides</i>	0.3	0.2
<i>Lepidosperma</i> sp. 'Jerdacuttup' (R.L. Barrett RLB 2770)	0.3	0.2
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al.	0.2	0.2

LCH 16596) (P1)		
<i>Melaleuca lateriflora</i>	0.8	5
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olearia</i> sp. <i>Eremicola</i> (Diels & Pritzel s.n. PERTH 00449628)	1	0.3
<i>Rytidosperma setaceum</i>	0.2	0.1
<i>Santalum acuminatum</i>	1.2	1
<i>Senna</i> sp. Pallinup River (J.W. Green 4847)	0.4	0.3
<i>Stenanthemum tridentatum</i>	0.1	0.1
<i>Thelymitra petrophila</i>	0.2	0.1
<i>Wilsonia humilis</i>	0.1	0.1

PHOTO

Site Name: SC63
 Site Type: QUADRAT
 Dimensions: 10m x 10m
 Survey Date: 13/10/2014
 GPS Location: GDA94 Zone 51 255866E 6281560N
 Vegetation Type: 1
 Landform Type: Undulating plain (other)
 Slope Class: Very Gently Inclined (1 degree)
 Aspect: W
 Soil Type: Sandy Loam
 Soil Colour: Grey-brown (other)
 Rock Outcrop: No bedrock exposed
 CF Abundance: 2-10%
 CF Sizes: 2-6mm, 6-20mm
 CF Types: Laterite
 Vegetation Condition: Southern Vegetation Condition - 1 - Pristine
 Fire: ~5

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus pleurocarpa*
 Mid Stratum 1: *Banksia lemanniana*, *Banksia media*, *Banksia obovata*, *Hakea pandanica* subsp. *pandanica*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Acacia evenulosa</i>	0.4	0.1
<i>Acacia moirii</i> subsp. <i>moirii</i>	0.1	0.1
<i>Allocasuarina humilis</i>	0.7	3
<i>Allocasuarina microstachya</i>	0.1	0.2
<i>Amphipogon turbinatus</i>	0.1	0.1
<i>Baeckea preissiana</i>	0.3	0.1
<i>Banksia cirsioides</i>	0.5	2
<i>Banksia lemanniana</i>	1.6	6
<i>Banksia media</i>	1.2	4
<i>Banksia obovata</i>	1.2	2
<i>Banksia violacea</i>	0.5	2
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	0.4	20
<i>Boronia crassifolia</i>	0.1	0.1
<i>Callitris roei</i>	0.5	0.2

<i>Calothamnus gracilis</i>	0.3	0.3
<i>Cassytha flava</i>		0.1
<i>Cassytha glabella</i> forma <i>dispar</i>		0.1
<i>Caustis dioica</i>	0.3	1
<i>Chamelaucium ciliatum</i>	0.4	0.5
<i>Chordifex sphacelatus</i>	0.2	0.1
<i>Comesperma drummondii</i>	0.1	0.1
<i>Conostylis argentea</i>	0.1	0.1
<i>Conothamnus aureus</i>	0.3	0.2
<i>Cryptandra nutans</i>	0.2	0.1
<i>Dampiera juncea</i>	0.3	0.3
<i>Darwinia vestita</i>	0.5	0.1
<i>Daviesia teretifolia</i>	0.4	0.5
<i>Eucalyptus pleurocarpa</i>	3.5	20
<i>Grevillea nudiflora</i>	0.3	0.3
<i>Hakea ilicifolia</i>	0.5	1.5
<i>Hakea laurina</i>	1.4	0.5
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	1.4	6
<i>Hibbertia gracilipes</i>	0.1	0.5
<i>Isopogon polycephalus</i>	0.2	0.3
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	0.3	0.2
<i>Isopogon trilobus</i>	0.4	0.2
<i>Jacksonia elongata</i>	1	0.3
<i>Laxmannia paleacea</i>	0.1	0.1
<i>Lepidobolus chaetocephalus</i>	0.2	0.1
<i>Lepidosperma carphoides</i>	0.2	0.1
<i>Lepidosperma</i> sp. 'Jerdacuttup' (R.L. Barrett RLB 2770)	0.3	0.1
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	0.3	0.3
<i>Leptospermum erubescens</i>	0.5	0.5
<i>Leucopogon concinnus</i>	0.3	0.2
<i>Leucopogon heterophyllus</i>	0.3	0.5
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	0.1	0.1
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	0.2	0.5
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	0.3	0.1
<i>Lomandra mucronata</i>	0.1	0.1
<i>Lysinema ciliatum</i>	0.6	0.3
<i>Melaleuca carrii</i>	0.3	0.2
<i>Melaleuca rigidifolia</i>	0.3	0.5
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	0.3	5
<i>Melaleuca villosisepala</i>	0.6	0.5

<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	0.1	1
<i>Neurachne alopecuroidea</i>	0.1	0.1
<i>Olox benthamiana</i>	0.4	0.2
<i>Persoonia striata</i>	0.2	0.1
<i>Petrophile seminuda</i>	0.4	0.2
<i>Petrophile squamata</i> subsp. northern (J. Monks 40)	0.5	0.1
<i>Schoenus subflavus</i>	0.1	0.1
<i>Stachystemon polyandrus</i>	0.3	0.1
<i>Synaphea divaricata</i>	0.1	0.1
<i>Taxandria spathulata</i>	0.5	0.3
<i>Verticordia chrysantha</i>	0.3	0.1
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	0.4	0.2

PHOTO

Site Name: Site01
 Site Type: AREA
 Survey Date: 09/10/2014
 GPS Location: GDA94 Zone 51 258404E 6276512N
 Vegetation Type: 12
 Landform Type: Drainage Line
 Slope Class: Level (0 degrees)
 Vegetation Condition: Southern Vegetation Condition - 3 - Very Good
 Disturbance: Grazing, Exotic Weeds, Salinity
 Fire: >10

DOMINANT TAXA IN VEGETATION STRATA

Upper Stratum 1: *Eucalyptus occidentalis*
 Mid Stratum 1: *Melaleuca acuminata* subsp. *acuminata*

SPECIES LIST

Taxon Name	Avg. Height	Cover Alive
<i>Atriplex ?bunburyana</i>		
<i>Callistemon phoeniceus</i>		
<i>Eucalyptus occidentalis</i>		
<i>Gahnia ancistrophylla</i>		
<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>		
<i>Melaleuca hamata</i>		

PHOTO



Appendix J: Location Details of Conservation Significant Flora and Introduced Flora Recorded within the Study Area and Surrounds, and along Approved Conveyer Alignment, 2014

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Acrotriche orbicularis</i>	Threatened	253226	6279323	Opportunistic	15
<i>Acrotriche orbicularis</i>	Threatened	253220	6279390	Opportunistic	5
<i>Acrotriche orbicularis</i>	Threatened	252998	6279780	Opportunistic	4
<i>Allocasuarina ?hystricosa</i>	P4	254964	6277872	Opportunistic	20
<i>Allocasuarina ?hystricosa</i>	P4	252443	6282019	SC38	-
<i>Allocasuarina ?hystricosa</i>	P4	252069	6282142	SC34	-
<i>Beyeria villosa</i>	P4	253643	6279041	Opportunistic	30
<i>Beyeria villosa</i>	P4	255889	6276763	Opportunistic	100
<i>Beyeria villosa</i>	P4	253027	6279701	Opportunistic	100
<i>Beyeria villosa</i>	P4	252966	6279868	Opportunistic	250
<i>Conostylis lepidospermoides</i>	Threatened	255543	6280879	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	255313	6280996	Opportunistic	7
<i>Conostylis lepidospermoides</i>	Threatened	255233	6281100	Opportunistic	15
<i>Conostylis lepidospermoides</i>	Threatened	254550	6281483	Opportunistic	50
<i>Conostylis lepidospermoides</i>	Threatened	254783	6280565	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	253998	6281188	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256346	6280307	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	256350	6280293	Opportunistic	30
<i>Conostylis lepidospermoides</i>	Threatened	256483	6280392	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	253105	6282434	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253178	6282452	Opportunistic	30
<i>Conostylis lepidospermoides</i>	Threatened	253231	6282469	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	253367	6282522	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	253273	6282552	Opportunistic	30
<i>Conostylis lepidospermoides</i>	Threatened	254070	6281241	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	254056	6281296	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	254089	6281204	Opportunistic	6

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	256367	6280453	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256178	6280552	Opportunistic	25
<i>Conostylis lepidospermoides</i>	Threatened	256126	6280446	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	256324	6280143	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	256233	6280323	Opportunistic	11
<i>Conostylis lepidospermoides</i>	Threatened	257427	6278320	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	257388	6278300	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	257099	6278232	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	257116	6278258	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	257137	6278285	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	257207	6278404	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	257225	6278498	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256307	6281128	Opportunistic	25
<i>Conostylis lepidospermoides</i>	Threatened	256114	6281250	Opportunistic	15
<i>Conostylis lepidospermoides</i>	Threatened	255523	6281517	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	255429	6281571	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	255593	6281749	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256116	6280230	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	255488	6279874	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	253135	6282535	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	253063	6282502	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	252943	6282448	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	252710	6282321	Opportunistic	30
<i>Conostylis lepidospermoides</i>	Threatened	256382	6281075	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256296	6280646	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	256305	6280642	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256306	6280639	Opportunistic	3

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	256305	6280637	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256304	6280636	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256302	6280633	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256301	6280631	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256300	6280629	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256299	6280627	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256303	6280619	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256309	6280619	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256312	6280623	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256315	6280626	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256316	6280624	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256316	6280619	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256316	6280618	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256318	6280615	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256319	6280614	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256324	6280611	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256325	6280607	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256327	6280607	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256336	6280606	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256338	6280603	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256365	6280572	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256395	6280552	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256448	6280507	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256544	6280411	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256531	6280421	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256521	6280427	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256518	6280430	Opportunistic	1

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	256519	6280436	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256504	6280447	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256499	6280450	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256421	6280530	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256418	6280530	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256406	6280537	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256243	6280710	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256244	6280717	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256201	6280755	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255868	6281007	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255803	6281058	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255798	6281062	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255780	6281081	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255781	6281081	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255782	6281081	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255783	6281081	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255783	6281081	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255780	6281081	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255780	6281081	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255776	6281083	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255762	6281094	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255742	6281102	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255738	6281103	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255734	6281108	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255701	6281133	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255634	6281173	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255630	6281172	Opportunistic	1

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	255623	6281180	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255624	6281180	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255624	6281180	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255618	6281186	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255617	6281189	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255611	6281190	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255606	6281192	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255576	6281218	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255492	6281272	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255476	6281283	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255463	6281290	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255408	6281292	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255408	6281292	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255448	6281273	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255457	6281270	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255551	6281207	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255623	6281163	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255744	6281082	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255757	6281078	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255757	6281078	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255762	6281071	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255762	6281071	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255765	6281067	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255771	6281065	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255774	6281065	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256217	6280715	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256488	6280541	Opportunistic	1

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	256407	6280615	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256404	6280616	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256364	6280652	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256364	6280653	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256362	6280654	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256360	6280658	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256356	6280668	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256345	6280676	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256345	6280677	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256345	6280677	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256345	6280677	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256343	6280677	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256341	6280679	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256337	6280679	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256331	6280687	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256331	6280688	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256422	6280411	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256527	6280408	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256526	6280408	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256526	6280409	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256524	6280408	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256524	6280408	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256523	6280408	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256522	6280409	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256515	6280414	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256417	6280494	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256403	6280504	Opportunistic	3

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	256395	6280518	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256272	6280621	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256271	6280624	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256377	6280703	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	256382	6280697	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	256418	6280668	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256520	6280565	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256542	6280555	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	256561	6280535	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	256631	6280469	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256748	6280352	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256582	6280537	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	256560	6280553	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	256449	6280659	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256421	6280689	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256401	6280691	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256397	6280694	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256397	6280699	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256392	6280714	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256386	6280717	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256235	6280614	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256383	6280482	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256344	6280541	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256248	6280620	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	252737	6282298	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	252785	6282289	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	252811	6282285	Opportunistic	2

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	252822	6282283	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	252853	6282273	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253184	6282223	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253558	6282148	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253575	6282142	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253864	6282081	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253875	6282077	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253906	6282071	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253986	6282042	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254013	6282038	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254058	6282019	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	254161	6281990	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	254188	6281980	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255567	6281262	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255554	6281273	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	255548	6281279	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	254159	6281923	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254114	6281941	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253929	6281998	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253916	6282005	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253911	6282010	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253897	6282012	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253866	6282017	Opportunistic	7
<i>Conostylis lepidospermoides</i>	Threatened	253836	6282028	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	253825	6282031	Opportunistic	16
<i>Conostylis lepidospermoides</i>	Threatened	253807	6282038	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253793	6282039	Opportunistic	3

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	253772	6282037	Opportunistic	12
<i>Conostylis lepidospermoides</i>	Threatened	253753	6282044	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253735	6282046	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253626	6282067	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253590	6282078	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253535	6282093	Opportunistic	15
<i>Conostylis lepidospermoides</i>	Threatened	253141	6282168	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253020	6282184	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253003	6282185	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	252499	6282273	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	252417	6282289	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	252401	6282269	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	252497	6282255	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	252633	6282232	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	252964	6282177	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253140	6282147	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253485	6282081	Opportunistic	15
<i>Conostylis lepidospermoides</i>	Threatened	253499	6282078	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253515	6282077	Opportunistic	17
<i>Conostylis lepidospermoides</i>	Threatened	253530	6282070	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253565	6282064	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253585	6282059	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253620	6282053	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253669	6282041	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253687	6282034	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253702	6282033	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253722	6282033	Opportunistic	4

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	253748	6282022	Opportunistic	9
<i>Conostylis lepidospermoides</i>	Threatened	253784	6282020	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253823	6282007	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253853	6282005	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253879	6281993	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253889	6281986	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253902	6281993	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	253977	6281963	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253921	6281923	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253744	6281967	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253719	6281975	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253648	6281984	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253622	6281992	Opportunistic	7
<i>Conostylis lepidospermoides</i>	Threatened	253588	6281998	Opportunistic	15
<i>Conostylis lepidospermoides</i>	Threatened	253570	6282003	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253534	6282010	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	253495	6282021	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253462	6282022	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253438	6282013	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	253455	6282007	Opportunistic	15
<i>Conostylis lepidospermoides</i>	Threatened	253487	6281999	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	253517	6281999	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253554	6281985	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253622	6281970	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253922	6281899	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255301	6281316	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255724	6281050	Opportunistic	1

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	255751	6281026	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255774	6281012	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255579	6281061	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255543	6281092	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255517	6281101	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	255465	6281141	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255298	6281243	Opportunistic	7
<i>Conostylis lepidospermoides</i>	Threatened	255260	6281268	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255231	6281280	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254387	6281672	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	254350	6281687	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254334	6281697	Opportunistic	7
<i>Conostylis lepidospermoides</i>	Threatened	254297	6281708	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253628	6281891	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253471	6281933	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253197	6281979	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253159	6281992	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253133	6282000	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	252575	6282091	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	252342	6282112	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256209	6280874	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256154	6280923	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	255582	6281258	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	255609	6281241	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	255746	6281153	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256202	6280676	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256178	6280688	Opportunistic	2

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	256160	6280707	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256052	6280801	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256308	6280659	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256337	6280629	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	256346	6280611	Opportunistic	12
<i>Conostylis lepidospermoides</i>	Threatened	256411	6280559	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256252	6280736	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256224	6280771	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	255786	6281098	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	255771	6281110	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	255750	6281122	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	255592	6281228	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255558	6281256	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255531	6281268	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	255510	6281278	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255490	6281286	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	254175	6281889	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	255397	6281273	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255451	6281251	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255490	6281224	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255498	6281218	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	255519	6281202	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255599	6281153	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255811	6281007	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256163	6280740	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256186	6280719	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256229	6280677	Opportunistic	2

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	255572	6281386	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255597	6281384	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256568	6280443	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256561	6280457	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256484	6280525	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256417	6280593	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256377	6280615	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256358	6280643	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256329	6280658	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	256313	6280679	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256357	6280501	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256495	6280373	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256502	6280396	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256489	6280412	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	256371	6280505	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256340	6280534	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256349	6280704	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	256367	6280685	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256388	6280664	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256404	6280651	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256431	6280630	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256548	6280518	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256664	6280515	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256499	6280660	Opportunistic	8
<i>Conostylis lepidospermoides</i>	Threatened	256477	6280680	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256451	6280703	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256315	6280505	Opportunistic	1

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	256317	6280499	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256333	6280579	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256276	6280632	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	252838	6282256	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	252875	6282253	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	252875	6282252	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	252889	6282249	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253184	6282196	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253196	6282196	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253547	6282125	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253553	6282119	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253556	6282118	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253566	6282124	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253589	6282120	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253589	6282120	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253853	6282063	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253865	6282053	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253867	6282053	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253870	6282053	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253880	6282054	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253886	6282053	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253943	6282037	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	255564	6281285	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255531	6281311	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255520	6281314	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254152	6281948	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253938	6282020	Opportunistic	7

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	253923	6282019	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253918	6282024	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253905	6282032	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253890	6282030	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253888	6282026	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253879	6282034	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253865	6282043	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253858	6282045	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253854	6282042	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253839	6282045	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253830	6282050	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253821	6282052	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253814	6282050	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253809	6282050	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253792	6282054	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253755	6282062	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253573	6282104	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253549	6282111	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253536	6282113	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253126	6282185	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	252967	6282217	Opportunistic	7
<i>Conostylis lepidospermoides</i>	Threatened	252948	6282219	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	252945	6282220	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	252616	6282210	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253490	6282060	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253498	6282058	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253500	6282057	Opportunistic	3

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	253511	6282057	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253520	6282055	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253539	6282047	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253584	6282044	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253592	6282042	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253594	6282038	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253596	6282037	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253612	6282032	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253617	6282033	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253652	6282025	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	253661	6282023	Opportunistic	11
<i>Conostylis lepidospermoides</i>	Threatened	253664	6282019	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253669	6282017	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253738	6282006	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253924	6281940	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253869	6281956	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253830	6281965	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253787	6281978	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253777	6281983	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253670	6282002	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253641	6282009	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253630	6282011	Opportunistic	9
<i>Conostylis lepidospermoides</i>	Threatened	253626	6282012	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253620	6282012	Opportunistic	12
<i>Conostylis lepidospermoides</i>	Threatened	253617	6282012	Opportunistic	9
<i>Conostylis lepidospermoides</i>	Threatened	253607	6282011	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253604	6282011	Opportunistic	5

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	253598	6282014	Opportunistic	7
<i>Conostylis lepidospermoides</i>	Threatened	253591	6282017	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253562	6282027	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253550	6282029	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253518	6282035	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253511	6282037	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253496	6282037	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253492	6282038	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253489	6282038	Opportunistic	9
<i>Conostylis lepidospermoides</i>	Threatened	253481	6282038	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253437	6282050	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	252554	6282199	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	252356	6282237	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253172	6282040	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253426	6281992	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253431	6281991	Opportunistic	6
<i>Conostylis lepidospermoides</i>	Threatened	253450	6281989	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253454	6281988	Opportunistic	12
<i>Conostylis lepidospermoides</i>	Threatened	253465	6281984	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253476	6281985	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253480	6281983	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253485	6281981	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253500	6281978	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253532	6281975	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253541	6281969	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253616	6281954	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253626	6281945	Opportunistic	1

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	253630	6281944	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253725	6281927	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255298	6281298	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255307	6281289	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255563	6281125	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	255579	6281121	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255593	6281105	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255592	6281103	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255697	6281043	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255591	6281081	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	255585	6281085	Opportunistic	10
<i>Conostylis lepidospermoides</i>	Threatened	255299	6281266	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254357	6281715	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254352	6281715	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	254348	6281718	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	254317	6281733	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253559	6281945	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	253524	6281951	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253520	6281953	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253504	6281956	Opportunistic	7
<i>Conostylis lepidospermoides</i>	Threatened	253500	6281956	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	253486	6281957	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	253481	6281953	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	253477	6281954	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	253157	6282021	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	252348	6282116	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256175	6280876	Opportunistic	1

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Conostylis lepidospermoides</i>	Threatened	256230	6280626	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256222	6280629	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256218	6280629	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256214	6280631	Opportunistic	4
<i>Conostylis lepidospermoides</i>	Threatened	256200	6280642	Opportunistic	3
<i>Conostylis lepidospermoides</i>	Threatened	256172	6280673	Opportunistic	2
<i>Conostylis lepidospermoides</i>	Threatened	256251	6281943	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	256252	6281919	Opportunistic	20
<i>Conostylis lepidospermoides</i>	Threatened	256203	6281882	Opportunistic	5
<i>Conostylis lepidospermoides</i>	Threatened	256100	6281839	Opportunistic	15
<i>Conostylis lepidospermoides</i>	Threatened	256441	6280766	Opportunistic	15
<i>Conostylis lepidospermoides</i>	Threatened	256472	6280752	Opportunistic	1
<i>Conostylis lepidospermoides</i>	Threatened	255295	6281082	SC14	5
<i>Conostylis lepidospermoides</i>	Threatened	253555	6282501	SC35	2
<i>Conostylis lepidospermoides</i>	Threatened	257253	6278671	SC56	20
<i>Conostylis lepidospermoides</i>	Threatened	253900	6281986	SC08	30
<i>Conostylis lepidospermoides</i>	Threatened	256418	6280478	SC01	2
<i>Conostylis lepidospermoides</i>	Threatened	255312	6280481	SC06	2
<i>Conostylis lepidospermoides</i>	Threatened	254623	6280428	SC11	2
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277)	P3	254869	6282225	SC42	-
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277)	P3	257708	6278554	SC58	-
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277)	P3	258087	6279055	SC60	-
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277)	P3	257625	6277987	SC33	-
<i>Drosera grievei</i>	P1	254595	6281357	SC18	-
<i>Drosera grievei</i>	P1	252611	6282281	SC37	-
<i>Drosera grievei</i>	P1	253300	6281552	SC10	-
<i>Drosera grievei</i>	P1	253810	6281597	SC09	-

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Drosera grievei</i>	P1	256334	6280101	SC05	-
<i>Eremophila glabra</i> s. lat.	Potentially undescribed	255332	6281930	SC44	-
<i>Goodenia phillipsiae</i>	P4	255688	6277424	Opportunistic	3
<i>Goodenia phillipsiae</i>	P4	255280	6277504	Opportunistic	1
<i>Goodenia phillipsiae</i>	P4	254985	6277960	Opportunistic	2
<i>Goodenia phillipsiae</i>	P4	254719	6278154	Opportunistic	1
<i>Goodenia phillipsiae</i>	P4	254132	6278648	Opportunistic	20
<i>Goodenia phillipsiae</i>	P4	254045	6278729	Opportunistic	20
<i>Goodenia phillipsiae</i>	P4	255186	6277679	Opportunistic	5
<i>Goodenia phillipsiae</i>	P4	253123	6279555	Opportunistic	15
<i>Goodenia phillipsiae</i>	P4	253534	6279157	Opportunistic	1
<i>Goodenia phillipsiae</i>	P4	253044	6279651	Opportunistic	10
<i>Goodenia phillipsiae</i>	P4	252920	6279763	Opportunistic	10
<i>Goodenia phillipsiae</i>	P4	252838	6279900	Opportunistic	20
<i>Goodenia phillipsiae</i>	P4	252924	6280019	Opportunistic	30
<i>Grevillea fastigiata</i>	P4	256351	6276198	Opportunistic	30
<i>Lepidosperma</i> sp. 'Fitzgerald Tuberculate'	Potentially undescribed	258087	6279055	SC60	-
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596)	P1	258307	6277272	SC13	-
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596)	P1	257526	6279888	SC28	-
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596)	P1	256797	6280795	SC03	-
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596)	P1	256755	6279999	SC25	-
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596)	P1	257517	6278025	SC62	-
<i>Micromyrtus navicularis</i>	P3	258178	6277147	Opportunistic	2
<i>Micromyrtus navicularis</i>	P3	258180	6277136	Opportunistic	10
<i>Micromyrtus navicularis</i>	P3	258254	6277207	Opportunistic	2
<i>Micromyrtus navicularis</i>	P3	258271	6277160	Opportunistic	2
<i>Micromyrtus navicularis</i>	P3	258268	6277150	Opportunistic	12

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Micromyrtus navicularis</i>	P3	258260	6277144	Opportunistic	15
<i>Micromyrtus navicularis</i>	P3	258251	6277135	Opportunistic	20
<i>Micromyrtus navicularis</i>	P3	258241	6277125	Opportunistic	20
<i>Micromyrtus navicularis</i>	P3	258256	6277114	Opportunistic	25
<i>Micromyrtus navicularis</i>	P3	258261	6277127	Opportunistic	20
<i>Micromyrtus navicularis</i>	P3	258269	6277139	Opportunistic	25
<i>Micromyrtus navicularis</i>	P3	258281	6277151	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258306	6277110	Opportunistic	10
<i>Micromyrtus navicularis</i>	P3	258292	6277097	Opportunistic	10
<i>Micromyrtus navicularis</i>	P3	258304	6277212	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258252	6277306	Opportunistic	6
<i>Micromyrtus navicularis</i>	P3	258303	6277330	Opportunistic	2
<i>Micromyrtus navicularis</i>	P3	258435	6277404	Opportunistic	1
<i>Micromyrtus navicularis</i>	P3	258409	6277435	Opportunistic	2
<i>Micromyrtus navicularis</i>	P3	258394	6277436	Opportunistic	25
<i>Micromyrtus navicularis</i>	P3	258381	6277433	Opportunistic	35
<i>Micromyrtus navicularis</i>	P3	258368	6277441	Opportunistic	25
<i>Micromyrtus navicularis</i>	P3	258353	6277436	Opportunistic	40
<i>Micromyrtus navicularis</i>	P3	258335	6277425	Opportunistic	35
<i>Micromyrtus navicularis</i>	P3	258319	6277418	Opportunistic	25
<i>Micromyrtus navicularis</i>	P3	258231	6277366	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258174	6277127	Opportunistic	3
<i>Micromyrtus navicularis</i>	P3	258220	6277167	Opportunistic	2
<i>Micromyrtus navicularis</i>	P3	258233	6277175	Opportunistic	3
<i>Micromyrtus navicularis</i>	P3	258261	6277168	Opportunistic	1
<i>Micromyrtus navicularis</i>	P3	258259	6277161	Opportunistic	8
<i>Micromyrtus navicularis</i>	P3	258249	6277155	Opportunistic	2

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Micromyrtus navicularis</i>	P3	258247	6277146	Opportunistic	15
<i>Micromyrtus navicularis</i>	P3	258228	6277140	Opportunistic	15
<i>Micromyrtus navicularis</i>	P3	258228	6277132	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258265	6277109	Opportunistic	4
<i>Micromyrtus navicularis</i>	P3	258275	6277117	Opportunistic	11
<i>Micromyrtus navicularis</i>	P3	258293	6277127	Opportunistic	4
<i>Micromyrtus navicularis</i>	P3	258283	6277115	Opportunistic	12
<i>Micromyrtus navicularis</i>	P3	258275	6277103	Opportunistic	6
<i>Micromyrtus navicularis</i>	P3	258307	6277224	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258213	6277303	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258261	6277329	Opportunistic	3
<i>Micromyrtus navicularis</i>	P3	258286	6277339	Opportunistic	10
<i>Micromyrtus navicularis</i>	P3	258301	6277342	Opportunistic	3
<i>Micromyrtus navicularis</i>	P3	258314	6277347	Opportunistic	2
<i>Micromyrtus navicularis</i>	P3	258368	6277381	Opportunistic	1
<i>Micromyrtus navicularis</i>	P3	258414	6277384	Opportunistic	2
<i>Micromyrtus navicularis</i>	P3	258429	6277398	Opportunistic	7
<i>Micromyrtus navicularis</i>	P3	258420	6277418	Opportunistic	3
<i>Micromyrtus navicularis</i>	P3	258405	6277421	Opportunistic	20
<i>Micromyrtus navicularis</i>	P3	258383	6277423	Opportunistic	3
<i>Micromyrtus navicularis</i>	P3	258373	6277424	Opportunistic	15
<i>Micromyrtus navicularis</i>	P3	258354	6277421	Opportunistic	8
<i>Micromyrtus navicularis</i>	P3	258339	6277408	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258327	6277392	Opportunistic	10
<i>Micromyrtus navicularis</i>	P3	258278	6277368	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258259	6277362	Opportunistic	5
<i>Micromyrtus navicularis</i>	P3	258244	6277356	Opportunistic	5

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Micromyrtus navicularis</i>	P3	258221	6277345	Opportunistic	3
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	252120	6282196	Opportunistic	200
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	255662	6277308	Opportunistic	20
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	255940	6276721	Opportunistic	20
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	253422	6279314	Opportunistic	100
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	255889	6276763	Opportunistic	500
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	253534	6279157	Opportunistic	1
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	253643	6279041	Opportunistic	50
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	253228	6279300	Opportunistic	10
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	252966	6279868	Opportunistic	20
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	253027	6279701	Opportunistic	100
<i>Pultenaea calycina</i> subsp. <i>proxena</i>	P4	252049	6282173	Opportunistic	150
<i>Synaphea</i> aff. <i>petiolaris</i>	Potentially undescribed	252128	6282586	SC39	-
<i>Synaphea</i> aff. <i>petiolaris</i>	Potentially undescribed	257708	6278554	SC58	-
<i>Synaphea</i> aff. <i>petiolaris</i>	Potentially undescribed	254687	6282209	SC43	-
<i>Synaphea platyphylla</i>	P3	256127	6280413	Opportunistic	20
<i>Synaphea platyphylla</i>	P3	256068	6280596	Opportunistic	50
<i>Synaphea platyphylla</i>	P3	255902	6280818	Opportunistic	100
<i>Synaphea platyphylla</i>	P3	255939	6280710	Opportunistic	80
<i>Synaphea platyphylla</i>	P3	256219	6280405	Opportunistic	10
<i>Synaphea platyphylla</i>	P3	255488	6279874	Opportunistic	30
<i>Synaphea platyphylla</i>	P3	255947	6280775	Opportunistic	20
<i>Synaphea platyphylla</i>	P3	255975	6280766	Opportunistic	30
<i>Synaphea platyphylla</i>	P3	256038	6280719	Opportunistic	22
<i>Synaphea platyphylla</i>	P3	256062	6280708	Opportunistic	20
<i>Synaphea platyphylla</i>	P3	256072	6280687	Opportunistic	8
<i>Synaphea platyphylla</i>	P3	256129	6280639	Opportunistic	2

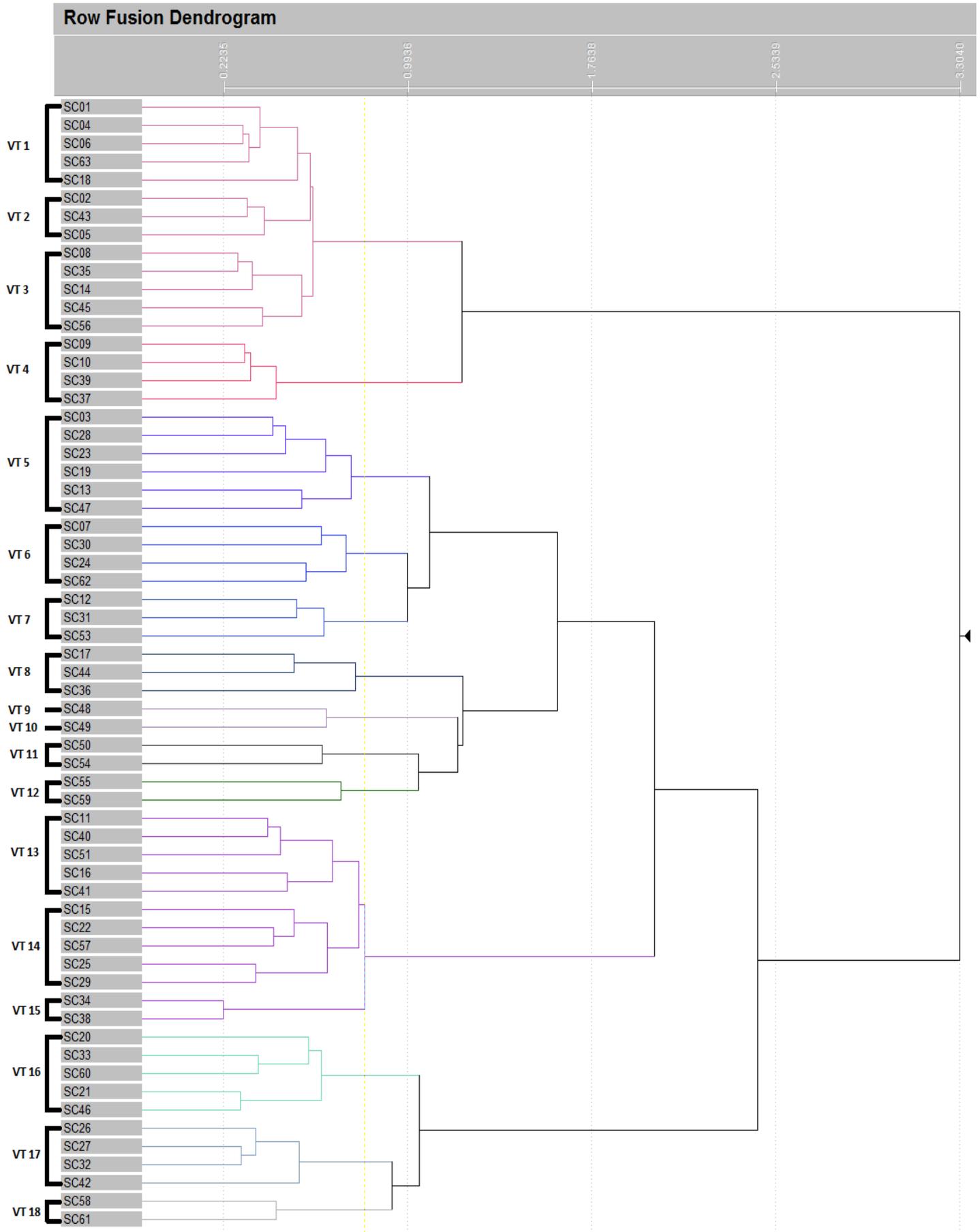
Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>Synaphea platyphylla</i>	P3	256014	6280767	Opportunistic	5
<i>Synaphea platyphylla</i>	P3	256026	6280765	Opportunistic	2
<i>Synaphea platyphylla</i>	P3	256030	6280768	Opportunistic	2
<i>Synaphea platyphylla</i>	P3	256034	6280763	Opportunistic	6
<i>Synaphea platyphylla</i>	P3	256039	6280757	Opportunistic	5
<i>Synaphea platyphylla</i>	P3	256047	6280754	Opportunistic	12
<i>Synaphea platyphylla</i>	P3	256051	6280751	Opportunistic	29
<i>Synaphea platyphylla</i>	P3	256055	6280748	Opportunistic	7
<i>Synaphea platyphylla</i>	P3	256059	6280745	Opportunistic	14
<i>Synaphea platyphylla</i>	P3	256060	6280738	Opportunistic	8
<i>Synaphea platyphylla</i>	P3	256059	6280734	Opportunistic	32
<i>Synaphea platyphylla</i>	P3	256063	6280734	Opportunistic	12
<i>Synaphea platyphylla</i>	P3	256065	6280730	Opportunistic	22
<i>Synaphea platyphylla</i>	P3	256069	6280733	Opportunistic	10
<i>Synaphea platyphylla</i>	P3	256073	6280729	Opportunistic	12
<i>Synaphea platyphylla</i>	P3	256080	6280728	Opportunistic	5
<i>Synaphea platyphylla</i>	P3	256083	6280729	Opportunistic	4
<i>Synaphea platyphylla</i>	P3	256083	6280722	Opportunistic	18
<i>Synaphea platyphylla</i>	P3	256083	6280717	Opportunistic	11
<i>Synaphea platyphylla</i>	P3	256086	6280713	Opportunistic	1
<i>Synaphea platyphylla</i>	P3	256091	6280710	Opportunistic	1
<i>Thysanotus parviflorus</i>	P4	252611	6282281	SC37	-
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298)	P2	253900	6281986	SC08	-
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298)	P2	256334	6280101	SC05	-
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298)	P2	255312	6280481	SC06	-
* <i>Avellinia michelii</i>	Introduced	258714	6277553	SC24	-
* <i>Avellinia michelii</i>	Introduced	257517	6278025	SC62	-

Taxon	Conservation Code	Easting	Northing	Record Location	Count
* <i>Briza maxima</i>	Introduced	257485	6278082	SC55	-
* <i>Briza maxima</i>	Introduced	257851	6276108	SC54	-
* <i>Briza minor</i>	Introduced	257851	6276108	SC54	-
* <i>Conyza sumatrensis</i>	Introduced	258805	6277064	SC12	-
* <i>Cotula coronopifolia</i>	Introduced	257485	6278082	SC55	-
* <i>Cynodon dactylon</i>	Introduced	257996	6275896	SC50	-
* <i>Ehrharta longiflora</i>	Introduced	257485	6278082	SC55	-
* <i>Ehrharta longiflora</i>	Introduced	257872	6276215	SC52	-
* <i>Eragrostis curvula</i>	Introduced	258194	6277234	Opportunistic	100
* <i>Hypochaeris glabra</i>	Introduced	257851	6276108	SC54	-
* <i>Hypochaeris glabra</i>	Introduced	257459	6280513	SC30	-
* <i>Hypochaeris glabra</i>	Introduced	258802	6277027	SC31	-
* <i>Hypochaeris glabra</i>	Introduced	257872	6276215	SC52	-
* <i>Hypochaeris glabra</i>	Introduced	258087	6279055	SC60	-
* <i>Hypochaeris glabra</i>	Introduced	252866	6282424	SC36	-
* <i>Hypochaeris glabra</i>	Introduced	254624	6281496	SC17	-
* <i>Hypochaeris glabra</i>	Introduced	257625	6277987	SC33	-
* <i>Hypochaeris glabra</i>	Introduced	258090	6278379	SC20	-
* <i>Lolium rigidum</i>	Introduced	257872	6276215	SC52	-
* <i>Lysimachia arvensis</i>	Introduced	255738	6280241	Opportunistic	30
* <i>Lysimachia arvensis</i>	Introduced	257485	6278082	SC55	-
* <i>Lysimachia arvensis</i>	Introduced	257851	6276108	SC54	-
* <i>Lysimachia arvensis</i>	Introduced	257872	6276215	SC52	-
* <i>Lysimachia arvensis</i>	Introduced	255332	6281930	SC44	-
* <i>Parapholis incurva</i>	Introduced	257485	6278082	SC55	-
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	252866	6282424	SC36	-
* <i>Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	257459	6280513	SC30	-

Taxon	Conservation Code	Easting	Northing	Record Location	Count
<i>*Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	258802	6277027	SC31	-
<i>*Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	255332	6281930	SC44	-
<i>*Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	257485	6278082	SC55	-
<i>*Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	258805	6277064	SC12	-
<i>*Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	255707	6280301	SC07	-
<i>*Pentameris airoides</i> subsp. <i>airoides</i>	Introduced	254624	6281496	SC17	-
<i>*Solanum nigrum</i>	Introduced	257851	6276108	SC54	-
<i>*Sonchus oleraceus</i>	Introduced	258805	6277064	SC12	-
<i>*Sonchus oleraceus</i>	Introduced	258087	6279055	SC60	-
<i>*Sonchus oleraceus</i>	Introduced	257851	6276108	SC54	-
<i>*Sonchus oleraceus</i>	Introduced	257872	6276215	SC52	-
<i>*Sonchus oleraceus</i>	Introduced	257485	6278082	SC55	-
<i>*Ursinia anthemoides</i>	Introduced	254624	6281496	SC17	-
<i>*Ursinia anthemoides</i>	Introduced	257485	6278082	SC55	-

Note: All GPS co-ordinates in GDA94, Zone 51

Appendix K: Classification Analysis Dendrogram of Quadrats Established in the Study Area



Appendix L: Results of Indicator Species Analysis of Quadrat Data from the Study Area

Taxon	Vegetation Type															
	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18
<i>Allocasuarina humilis</i> **	28	12	28	16	0	0	0	0	0	0	0	1	0	0	0	0
<i>Andersonia macranthera</i> **	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Astroloma prostratum</i> *	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Banksia obovata</i> ***	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Banksia violacea</i> ***	37	4	6	37	0	0	0	0	0	0	0	0	0	0	0	0
<i>Beaufortia micrantha</i> var. <i>micrantha</i> *	22	22	22	5	0	0	0	0	0	0	3	1	5	0	0	0
<i>Caustis dioica</i> **	29	13	18	29	0	0	0	0	0	0	0	0	0	0	0	0
<i>Chordifex sphacelatus</i> ***	38	0	14	38	0	0	0	0	0	0	0	0	0	0	0	0
<i>Comesperma drummondii</i> *	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Dampiera juncea</i> **	34	34	1	9	0	0	0	0	0	0	0	1	0	0	0	0
<i>Daviesia teretifolia</i> *	20	2	20	20	0	0	0	0	0	0	1	3	0	0	0	20
<i>Eucalyptus pleurocarpa</i> *	17	17	17	4	0	0	0	0	0	0	6	11	17	0	0	0
<i>Hakea pandanocarpa</i> subsp. <i>pandanicarpa</i> ***	29	13	18	0	0	0	0	0	0	0	5	10	0	0	0	0
<i>Isopogon trilobus</i> **	32	0	12	32	0	0	0	0	0	0	0	0	8	0	0	0
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)*	16	16	16	16	0	0	0	0	0	0	6	1	0	3	0	16
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)*	21	21	3	0	0	0	0	0	0	0	13	3	21	0	1	0
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i> *	16	16	10	1	2	0	0	0	0	0	10	10	16	0	1	0
<i>Lysinema ciliatum</i> *	22	22	14	12	0	0	0	0	0	0	1	3	5	0	0	0
<i>Olex benthamiana</i> **	31	3	5	0	0	0	0	0	0	0	31	0	8	0	0	0
<i>Persoonia striata</i> *	23	23	8	23	0	0	0	0	0	0	0	1	0	0	0	6
<i>Stachystemon polyandrus</i> ***	40	4	2	23	0	0	0	0	0	0	2	0	0	0	0	0
<i>Synaphea divaricata</i> ***	43	19	2	3	0	0	0	0	0	0	0	0	0	2	0	0
<i>Allocasuarina microstachya</i> *	17	26	17	0	0	0	0	0	0	0	0	0	0	0	15	6
<i>Allocasuarina thuyoides</i> ***	7	45	16	0	0	0	0	0	0	0	0	2	0	0	0	0
<i>Amphipogon avenaceus</i> **	5	32	20	8	0	2	0	0	0	0	0	1	0	0	0	0
<i>Baeckea preissiana</i> **	16	25	25	14	0	0	0	0	0	0	0	0	0	0	6	0
<i>Calytrix leschenaultii</i> **	7	20	20	5	0	0	0	0	0	0	13	0	0	0	20	0

Taxon	Vegetation Type															
	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18
<i>Cassytha flava</i> *	14	22	22	13	0	0	0	0	0	0	1	0	0	1	0	6
<i>Cryptandra myriantha</i> *	0	36	6	0	0	0	0	0	0	0	6	0	9	0	9	0
<i>Hakea cygna</i> subsp. <i>cygna</i> **	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harperia lateriflora</i> *	8	22	14	1	1	0	0	0	0	0	1	8	5	0	0	5
<i>Laxmannia paleacea</i> **	19	30	30	0	0	0	0	0	0	0	0	0	0	0	8	0
<i>Leptospermum spinescens</i> *	13	21	21	12	0	0	0	0	0	0	3	3	5	0	0	0
<i>Neurachne alopecuroidea</i> *	6	9	9	0	6	5	9	1	0	0	9	6	9	6	9	9
<i>Verticordia chrysantha</i> **	11	31	1	0	0	0	0	0	0	0	0	0	0	5	31	0
<i>Argentipallium niveum</i> ***	0	0	83	0	0	0	0	0	0	0	3	0	0	0	0	0
<i>Calothamnus gracilis</i> ***	23	0	36	36	0	0	0	0	0	0	0	0	0	0	0	0
<i>Conostylis lepidospermoides</i> *	11	0	46	0	0	0	0	0	0	0	3	0	0	0	0	0
<i>Dillwynia divaricata</i> *	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Kunzea preissiana</i> *	0	10	56	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lepidosperma carphoides</i> *	13	2	21	0	0	0	0	0	0	0	7	7	21	0	0	5
<i>Adenanthos cuneatus</i> ***	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0
<i>Allocasuarina acuaria</i> ***	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0
<i>Banksia repens</i> *	0	0	14	49	0	0	0	0	0	0	0	0	0	0	0	0
<i>Calytrix decandra</i> ***	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0
<i>Chamelaucium megalopetalum</i> ***	0	0	11	71	0	0	0	0	0	0	0	0	0	0	0	0
<i>Conothamnus aureus</i> ***	16	0	16	45	0	0	0	0	0	0	0	0	0	0	0	0
<i>Conospermum distichum</i> **	0	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cyathochaeta equitans</i> *	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0
<i>Drosera grieviei</i> *	3	9	0	44	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gompholobium scabrum</i> *	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gompholobium tomentosum</i> *	0	0	6	36	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hibbertia recurvifolia</i> *	0	0	0	59	0	0	0	0	0	0	4	0	0	0	0	0
<i>Hypolaena fastigiata</i> ***	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0

Taxon	Vegetation Type															
	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18
<i>Isopogon polycephalus</i> ***	27	0	15	42	0	0	0	0	0	0	0	0	0	0	0	0
<i>Jacksonia elongata</i> ***	36	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lyginia imberbis</i> ***	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0
<i>Persoonia helix</i> *	6	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0
<i>Petrophile cyathiforma</i> *	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0
<i>Pultenaea barbata</i> *	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0
<i>Schoenus caespitius</i> ***	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0
<i>Stirlingia anethifolia</i> ***	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0
<i>Tricostularia neesii</i> **	0	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0
<i>Boronia inornata</i> subsp. <i>leptophylla</i> **	0	0	0	0	51	0	8	0	0	0	0	3	0	0	0	0
<i>Comesperma spinosum</i> *	0	0	0	0	36	0	0	0	0	0	0	6	0	0	0	0
<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i> *	0	0	0	0	38	21	0	0	0	0	0	0	0	0	0	0
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> ***	2	0	0	0	44	25	5	0	0	0	0	0	0	0	0	0
<i>Goodenia ?coerulea</i> ***	0	0	0	0	67	0	0	0	0	0	0	4	0	0	0	0
<i>Grevillea pectinata</i> ***	0	0	0	0	83	0	0	0	0	0	0	0	0	0	0	0
<i>Hibbertia psilocarpa</i> *	0	0	0	0	51	0	0	0	0	0	0	5	0	0	0	0
<i>Melaleuca calycina</i> *	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0
<i>Melaleuca johnsonii</i> *	0	0	0	0	48	7	0	0	0	0	0	0	0	0	0	0
<i>Styphelia intertexta</i> *	0	0	0	0	36	5	9	0	0	0	0	0	0	0	0	0
<i>Acacia glaucoptera</i> ***	0	0	0	0	22	50	6	0	0	0	0	0	0	0	0	0
<i>Daviesia nematophylla</i> *	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0
<i>Eucalyptus calycogona</i> subsp. <i>calycogona</i> *	0	0	0	0	4	38	0	0	0	0	0	0	0	0	0	0
<i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005)*	0	0	0	0	13	30	0	0	0	0	0	0	0	0	0	0
<i>Lepidosperma fimbriatum</i> *	0	0	0	0	1	28	3	0	0	0	1	10	0	0	16	7
<i>Wilsonia humilis</i> ***	0	0	0	0	14	55	6	0	0	0	0	0	0	0	0	0
<i>Austrostipa variabilis</i> *	0	0	0	0	0	12	46	21	0	0	0	0	0	0	0	0
<i>Boronia inconspicua</i> *	0	0	0	0	11	0	44	0	0	0	0	0	0	0	0	0

Taxon	Vegetation Type															
	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18
<i>Convolvulus remotus</i> *	0	0	0	0	0	0	44	11	0	0	0	0	0	0	0	0
<i>Dodonaea viscosa</i> subsp. <i>angustissima</i> *	0	0	0	0	0	0	38	0	21	0	0	0	0	0	0	0
<i>Lagenophora huegelii</i> *	0	0	0	0	0	0	44	11	0	0	0	0	0	0	0	0
<i>Lasiopetalum compactum</i> **	0	0	0	0	0	0	67	0	0	0	0	0	0	0	0	0
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Evelegh 10798)*	0	0	0	0	0	3	51	0	13	0	2	0	0	0	0	0
<i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118)***	0	0	0	0	0	0	83	0	0	0	3	0	0	0	0	0
<i>Lomandra effusa</i> ***	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0
<i>Templetonia retusa</i> ***	0	0	0	0	0	0	83	0	0	0	3	0	0	0	0	0
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)***	0	0	0	0	5	0	47	0	0	0	2	17	0	0	0	0
<i>Wahlenbergia gracilentia</i> *	0	0	0	0	0	0	33	33	0	0	0	0	0	0	0	0
<i>Acacia cyclops</i> *	0	0	0	0	0	0	0	59	15	0	2	0	0	0	0	0
<i>Acacia saligna</i> subsp. <i>lindleyi</i> ms*	0	0	0	0	0	0	0	38	21	0	0	0	0	0	0	0
<i>Actinobole uliginosum</i> **	0	0	0	0	0	0	0	67	0	0	0	0	0	0	0	0
<i>Calandrinia granulifera</i> **	0	0	0	0	0	0	0	67	0	0	0	0	0	0	0	0
<i>Dianella brevicaulis</i> *	0	0	0	0	0	0	0	51	0	0	0	0	0	5	0	0
<i>Eucalyptus occidentalis</i> *	0	0	0	0	0	0	5	43	11	11	0	0	0	0	0	0
<i>Eutaxia empetrifolia</i> **	0	0	0	0	0	0	0	67	0	0	0	0	0	0	0	0
<i>Hakea nitida</i> *	3	0	3	0	0	0	0	35	0	0	3	0	0	0	0	0
<i>Melaleuca thapsina</i> **	0	0	0	0	0	0	0	67	0	0	0	0	0	0	0	0
<i>Millotia tenuifolia</i> var. <i>tenuifolia</i> **	0	0	0	0	0	0	0	67	0	0	0	0	0	0	0	0
<i>Rhodanthe pygmaea</i> *	0	0	0	0	0	0	0	51	0	0	0	0	0	5	0	0
<i>Schoenus subfascicularis</i> ***	0	0	11	0	0	0	0	71	0	0	0	0	0	0	0	0
<i>Thomasia angustifolia</i> ***	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0
<i>Cassytha glabella</i> forma <i>dispar</i> **	10	2	3	4	11	0	2	0	16	0	3	10	0	1	9	0
<i>Gahnia trifida</i> **	0	0	0	0	0	0	0	0	67	17	0	0	0	0	0	0
<i>Juncus kraussii</i> subsp. <i>australiensis</i> **	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0
<i>Melaleuca cuticularis</i> **	0	0	0	0	0	0	0	0	67	17	0	0	0	0	0	0

Taxon	Vegetation Type															
	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18
<i>Carpobrotus modestus</i> **	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
<i>Melaleuca hamulosa</i> **	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
<i>Tecticornia lepidosperma</i> **	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> **	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
<i>Beyeria brevifolia</i> *	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0
<i>Eucalyptus sporadica</i> ***	0	7	0	0	0	0	0	0	0	0	65	3	0	0	0	0
<i>Eucalyptus uncinata</i> *	0	0	1	0	1	1	10	0	0	0	23	23	23	0	0	0
<i>Gastrolobium latifolium</i> *	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0
<i>Gompholobium baxteri</i> *	4	0	0	0	0	0	0	0	0	0	36	4	0	0	0	0
<i>Hibbertia pungens</i> ***	0	0	0	0	9	0	4	0	0	0	38	24	0	0	0	0
<i>Lasiopetalum rosmarinifolium</i> **	1	0	0	0	3	2	0	0	0	0	31	5	31	0	0	0
<i>Melaleuca rigidifolia</i> **	3	9	7	0	2	0	0	0	0	0	20	20	20	0	0	0
<i>Platysace deflexa</i> ***	0	0	5	0	3	0	0	0	0	0	28	1	0	10	7	7
<i>Beaufortia schaueri</i> **	0	0	0	0	0	0	0	0	0	0	0	50	50	0	0	0
<i>Daviesia lancifolia</i> **	0	0	0	0	2	0	0	0	0	0	3	55	0	0	0	0
<i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i> *	0	0	0	0	12	0	0	0	0	0	0	39	0	0	0	0
<i>Gahnia ancistrophylla</i> **	1	0	0	0	14	5	9	0	0	0	13	20	20	0	0	0
<i>Grevillea oligantha</i> *	0	0	0	0	30	0	0	0	0	0	0	44	0	0	0	0
<i>Hakea marginata</i> ***	0	0	0	0	3	0	0	0	0	0	0	66	0	0	0	0
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)***	6	4	1	0	0	0	0	0	0	0	23	37	0	0	0	0
<i>Spyridium cordatum</i> *	0	0	0	0	7	0	0	0	0	0	10	42	0	0	0	0
<i>Tetrapora verrucosa</i> ***	0	0	0	0	8	0	0	0	0	0	0	75	0	0	0	0
<i>Acacia ingrata</i> *	1	0	0	0	12	2	12	0	0	0	10	4	26	0	0	0
<i>Allocasuarina ?hystricosa</i> **	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
<i>Banksia lemmaniana</i> **	24	0	6	2	0	0	0	0	0	0	0	2	38	0	0	0
<i>Chamelaucium ciliatum</i> *	15	5	2	0	0	0	0	0	0	0	2	0	43	0	0	0
<i>Daviesia anceps</i> **	1	0	0	0	4	0	4	0	0	0	12	12	33	0	0	0

Taxon	Vegetation Type															
	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18
<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i> **	0	0	0	0	2	0	0	0	0	0	0	20	57	0	0	0
<i>Grevillea nudiflora</i> **	7	2	7	1	5	0	2	0	0	0	12	12	19	0	0	0
<i>Hakea verrucosa</i> **	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
<i>Hybanthus floribundus</i> subsp. <i>adpressus</i> **	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
<i>Lepidobolus chaetocephalus</i> *	8	6	0	0	0	0	0	0	0	0	2	0	52	0	0	0
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)*	1	13	10	0	0	0	0	0	0	0	10	5	29	0	0	0
<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553)**	0	0	0	0	0	0	0	0	0	0	0	0	63	23	0	0
<i>Pultenaea indira</i> subsp. <i>indira</i> *	0	14	0	0	0	0	0	0	0	0	20	20	31	0	0	0
<i>Acacia lasiocalyx</i> **	0	0	0	0	0	0	0	0	0	0	0	0	0	60	0	0
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i> ***	0	0	0	0	0	0	0	0	0	0	0	0	0	57	32	0
<i>Agrostocrinum scabrum</i> subsp. <i>scabrum</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0
<i>Allocasuarina campestris</i> **	0	0	0	0	0	0	0	0	0	0	0	0	0	40	40	10
<i>Astroloma serratifolium</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	41	36	0
<i>Borya constricta</i> ***	0	0	0	0	0	0	0	0	0	0	0	0	0	80	0	0
<i>Chamaescilla spiralis</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	42	7	0
<i>Cryptandra graniticola</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	49	19	0
<i>Grevillea rigida</i> subsp. <i>rigida</i> ***	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
<i>Kunzea affinis</i> *	0	0	4	0	0	0	0	0	0	0	0	0	0	34	6	0
<i>Leptospermum nitens</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)*	0	0	0	0	0	0	0	0	0	0	0	0	0	36	20	36
<i>Levenhookia pusilla</i> **	0	0	0	0	0	0	0	0	0	0	0	0	0	60	0	0
<i>Poranthera microphylla</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0
<i>Pterochaeta paniculata</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0
<i>Spartochloa scirpoidea</i> *	0	0	0	0	0	0	10	0	0	0	0	0	0	56	0	0
<i>Stylidium dichotomum</i> ***	0	0	0	0	0	0	0	0	0	0	0	0	0	57	4	14

Taxon	Vegetation Type															
	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18
<i>Thryptomene australis</i> subsp. <i>australis</i> ***	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
<i>Daviesia pachyphylla</i> ***	2	17	0	0	0	0	0	0	0	0	2	0	0	14	38	0
<i>Elythranthera brunonis</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	6	36	0
<i>Ericomyrtus drummondii</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0
<i>Grevillea teretifolia</i> *	0	7	0	0	0	0	0	0	0	0	0	0	0	0	36	16
<i>Lepidobolus preissianus</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	7	42	42
<i>Mirbelia multicaulis</i> ***	0	0	0	0	0	0	0	0	0	0	0	0	0	23	63	0
<i>Schoenus calcatus</i> ***	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
<i>Amphipogon strictus</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	15	24	43
<i>Calytrix</i> aff. <i>leschenaultii</i> **	0	0	0	0	0	0	0	0	0	0	0	0	0	36	0	56
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> *	0	0	0	0	0	0	5	5	0	0	0	0	0	26	0	41
<i>Leucopogon brevicuspis</i> **	0	0	0	0	0	0	0	0	0	0	3	0	0	10	0	63
<i>Pimelea imbricata</i> var. <i>piligera</i> **	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	83
<i>Schoenus sesquispiculus</i> *	0	0	0	0	0	0	0	0	0	0	0	0	0	8	13	53
<i>Verticordia pennigera</i> **	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100

Note: Shading denotes highest indicator values per taxon;

Indicator values (%) are shown only for taxa which were significant at $P < 0.05$ (* = $p < 0.05$; ** = $p < 0.01$; *** = $p < 0.001$).

Appendix M: Detailed Descriptions of Vegetation Types Described in the Study Area

Vegetation Type 1:

Mid mallee woodland or shrubland dominated by *Eucalyptus pleurocarpa* over mid sparse to open shrubland dominated by *Banksia lemanniana*, *Banksia media* and *Hakea pandanica* subsp. *pandanica* over low shrubland of mixed taxa dominated by *Banksia cirsioides*, *Banksia obovata*, *Allocasuarina humilis*, *Beaufortia micrantha* var. *micrantha* and *Melaleuca tuberculata* var. *macrophylla* on grey-brown sandy loams, usually with lateritic gravel, on undulating plains

Total Area Mapped in Study Area (ha)	237.8
Percentage of Study Area	15.1
Sampling	5 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland or Shrubland (Mallees 3-10 m)	<i>Eucalyptus pleurocarpa</i>
Mid Stratum 1	Mid Sparse to Open Shrubland (Shrubs 1-2 m)	<i>Banksia lemanniana</i> , <i>Banksia media</i> , <i>Hakea pandanica</i> subsp. <i>pandanica</i> .
Lower Stratum 1	Low Shrubland (Shrubs < 1 m)	<i>Acacia unifissilis</i> , <i>Allocasuarina humilis</i> , <i>Allocasuarina microstachya</i> , <i>Amphipogon turbinatus</i> , <i>Andersonia macranthera</i> , <i>Baeckea preissiana</i> , <i>Banksia cirsioides</i> , <i>Banksia obovata</i> , <i>Banksia violacea</i> , <i>Beaufortia micrantha</i> var. <i>micrantha</i> , <i>Boronia crassifolia</i> , <i>Calothamnus gracilis</i> , <i>Calytrix leschenaultii</i> , <i>Cassytha flava</i> , <i>Cassytha glabella</i> forma <i>dispar</i> , <i>Caustis dioica</i> , <i>Chamelaucium ciliatum</i> , <i>Chordifex sphacelatus</i> , <i>Conostylis argentea</i> , <i>Conothamnus aureus</i> , <i>Dampiera juncea</i> , <i>Darwinia vestita</i> , <i>Daviesia teretifolia</i> , <i>Grevillea nudiflora</i> , <i>Hakea corymbosa</i> , <i>Harperia lateriflora</i> , <i>Hibbertia gracilipes</i> , <i>Isopogon polycephalus</i> , <i>Isopogon trilobus</i> , <i>Jacksonia elongata</i> , <i>Laxmannia paleacea</i> , <i>Lepidosperma carphoides</i> , <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522), <i>Leptospermum spinescens</i> , <i>Leucopogon heterophyllus</i> , <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085), <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585), <i>Lomandra micrantha</i> subsp. <i>teretifolia</i> , <i>Lomandra mucronata</i> , <i>Lysinema ciliatum</i> , <i>Melaleuca carrii</i> , <i>Melaleuca rigidifolia</i> , <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Mesomelaena stygia</i> subsp. <i>stygia</i> , <i>Neurachne alopecuroidea</i> , <i>Olax benthamiana</i> , <i>Persoonia striata</i> , <i>Petrophile seminuda</i> , <i>Petrophile squamata</i> subsp. northern (J. Monks 40), <i>Platysace effusa</i> , <i>Stachystemon polyandrus</i> , <i>Stackhousia scoparia</i> , <i>Synaphea divaricata</i> , <i>Taxandria spathulata</i> , <i>Tricostularia</i> sp. Hopetoun (M. Bennett 646), <i>Verticordia chrysantha</i> .

Indicator Taxa: *Allocasuarina humilis*, *Andersonia macranthera*, *Astroloma prostratum*, *Banksia obovata*, *Banksia violacea*, *Beaufortia micrantha* var. *micrantha*, *Caustis dioica*, *Chordifex sphacelatus*, *Comesperma*

drummondii, *Dampiera juncea*, *Daviesia teretifolia*, *Eucalyptus pleurocarpa*, *Hakea pandanica* subsp. *pandanica*, *Isopogon trilobus*, *Leucopogon* sp. Coujinup (M.A. Burgman 1085), *Leucopogon* sp. Newdegate (M. Hislop 3585), *Lomandra micrantha* subsp. *teretifolia*, *Lysinema ciliatum*, *Olox benthamiana*, *Persoonia striata*, *Stachystemon polyandrus*, *Synaphea divaricata*.

Landform Types: Undulating plains

Soil Types: Grey-brown sandy loam, Grey-brown sandy loam with laterite or ironstone gravel, Grey-brown sandy clay with laterite and ironstone gravel

Total No. of Vascular Plant Taxa: 137

Average Native Taxon Richness: 69 (± 9.7) taxa per quadrat



Vegetation Type 1 (Quadrat SC-63) (Photo: Woodman Environmental)

Vegetation Type 2:

Mid open mallee woodland or shrubland dominated by *Eucalyptus pleurocarpa* and *Eucalyptus tetraptera* over mid sparse shrubland dominated by *Daviesia pachyphylla* over low shrubland of mixed taxa dominated by *Banksia cirsioides*, *Melaleuca tuberculata* var. *macrophylla*, *Hakea incrassata*, *Allocasuarina humilis* and *Mesomelaena stygia* subsp. *stygia* on grey-brown or yellow-brown sandy loams with lateritic gravel on undulating plains

Total Area Mapped in Study Area (ha)	19.5
Percentage of Study Area	1.2
Sampling	3 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Open Mallee Woodland or Shrubland (Mallees 3-10 m)	<i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus tetraptera</i>
Mid Stratum 1	Mid Sparse Shrubland (Shrubs 1-2 m)	<i>Daviesia pachyphylla</i> , <i>Hakea pandanicarpa</i> subsp. <i>pandanicarpa</i>
Lower Stratum 1	Low Shrubland (Shrubs < 1 m)	<i>Acacia unifissilis</i> , <i>Allocasuarina humilis</i> , <i>Allocasuarina microstachya</i> , <i>Allocasuarina thuyoides</i> , <i>Amphipogon avenaceus</i> , <i>Amphipogon turbinatus</i> , <i>Anarthria humilis</i> , <i>Andersonia parvifolia</i> , <i>Baeckea preissiana</i> , <i>Banksia cirsioides</i> , <i>Beaufortia micrantha</i> var. <i>micrantha</i> , <i>Calytrix leschenaultii</i> , <i>Cassytha flava</i> , <i>Caustis dioica</i> , <i>Chorizema aciculare</i> subsp. <i>aciculare</i> , <i>Conostylis argentea</i> , <i>Cryptandra myriantha</i> , <i>Dampiera juncea</i> , <i>Hakea cygna</i> subsp. <i>cygna</i> , <i>Hakea incrassata</i> , <i>Harperia lateriflora</i> , <i>Hibbertia gracilipes</i> , <i>Laxmannia paleacea</i> , <i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287), <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522), <i>Leptospermum oligandrum</i> , <i>Leptospermum spinescens</i> , <i>Leucopogon concinnus</i> , <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085), <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585), <i>Lomandra micrantha</i> subsp. <i>teretifolia</i> , <i>Lomandra mucronata</i> , <i>Lysinema ciliatum</i> , <i>Melaleuca carrii</i> , <i>Melaleuca rigidifolia</i> , <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Mesomelaena stygia</i> subsp. <i>stygia</i> , <i>Neurachne alopecuroidea</i> , <i>Opercularia vaginata</i> , <i>Persoonia striata</i> , <i>Petrophile fastigiata</i> , <i>Petrophile seminuda</i> , <i>Pimelea brevifolia</i> subsp. <i>brevifolia</i> , <i>Platysace effusa</i> , <i>Pultenaea indira</i> subsp. <i>indira</i> , <i>Schoenus subflavus</i> subsp. <i>subflavus</i> , <i>Schoenus subflavus</i> subsp. ?long leaves (K.L. Wilson 2865), <i>Synaphea divaricata</i> , <i>Taxandria spathulata</i> , <i>Thelymitra campanulata</i> , <i>Verticordia chrysantha</i> , <i>Verticordia densiflora</i> var. <i>cespitosa</i>

Indicator Taxa:

Allocasuarina microstachya, *Allocasuarina thuyoides*, *Amphipogon avenaceus*, *Baeckea preissiana*, *Beaufortia micrantha* var. *micrantha*, *Calytrix leschenaultii*, *Cassytha flava*, *Cryptandra myriantha*, *Dampiera juncea*, *Eucalyptus pleurocarpa*, *Hakea cygna* subsp. *cygna*,

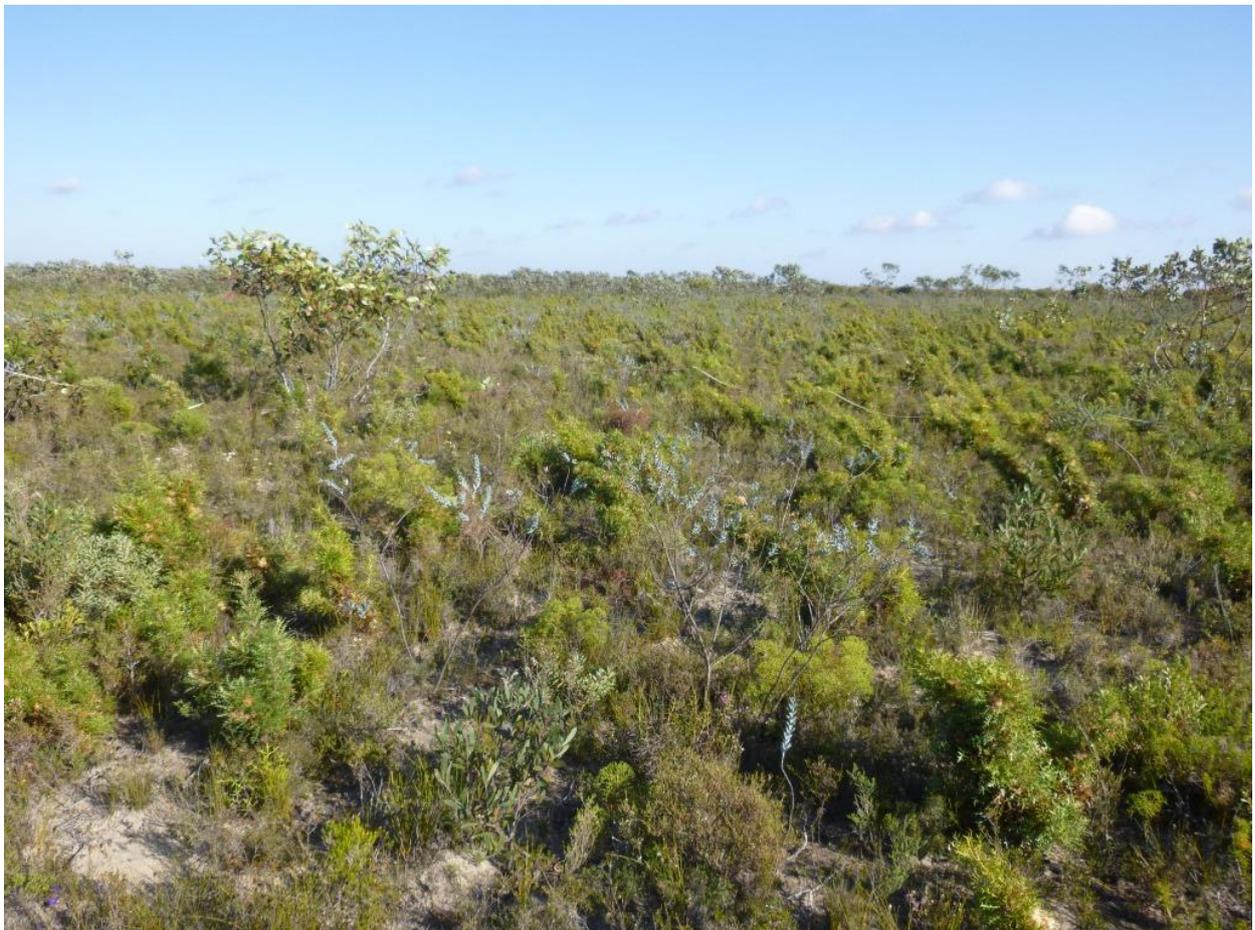
Harperia lateriflora, *Laxmannia paleacea*, *Leptospermum spinescens*,
Leucopogon sp. Coujinup (M.A. Burgman 1085), *Leucopogon* sp.
Newdegate (M. Hislop 3585), *Lomandra micrantha* subsp. *teretifolia*,
Lysinema ciliatum, *Neurachne alopecuroidea*, *Persoonia striata*,
Verticordia chrysantha

Landform Types: Undulating plains

Soil Types: Grey-brown clay-loam with ironstone gravel, yellow-brown sandy loam with laterite gravel

Total No. of Vascular Plant Taxa: 101

Average Native Taxon Richness: 61.3 (\pm 4.2) taxa per quadrat



Vegetation Type 2 (Quadrat SC-02) (Photo: Woodman Environmental)

Vegetation Type 3:

Mid mallee woodland or shrubland dominated by *Eucalyptus pleurocarpa* over mid sparse to open shrubland dominated by *Hakea pandanica* subsp. *pandanica* and *Hakea corymbosa* over low shrubland and sedgeland of mixed taxa dominated by *Allocasuarina humilis*, *Beaufortia micrantha* var. *micrantha*, *Melaleuca carrii*, *Calothamnus gracilis* and *Mesomelaena stygia* subsp. *stygia* on grey or grey-brown sandy loams on undulating plains

Total Area Mapped in Study Area (ha)	270.6
Percentage of Study Area	17.2
Sampling	5 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland or Shrubland (Mallees 3-10 m)	<i>Eucalyptus pleurocarpa</i>
Mid Stratum 1	Mid Sparse to Open Shrubland (Shrubs 1-2 m)	<i>Hakea corymbosa</i> , <i>Hakea pandanica</i> subsp. <i>pandanica</i>
Lower Stratum 1	Low Shrubland and Sedgeland (Shrubs and Sedges < 1 m)	<i>Acacia unifissilis</i> , <i>Allocasuarina humilis</i> , <i>Allocasuarina microstachya</i> , <i>Allocasuarina thuyoides</i> , <i>Amphipogon avenaceus</i> , <i>Amphipogon turbinatus</i> , <i>Anarthria humilis</i> , <i>Argentipallium niveum</i> , <i>Baeckea preissiana</i> , <i>Banksia obtusa</i> , <i>Beaufortia micrantha</i> var. <i>micrantha</i> , <i>Boronia ramosa</i> subsp. <i>anethifolia</i> , <i>Calothamnus gracilis</i> , <i>Calytrix leschenaultii</i> , <i>Cassytha flava</i> , <i>Caustis dioica</i> , <i>Chordifex sphacelatus</i> , <i>Conostylis lepidospermoides</i> , <i>Conothamnus aureus</i> , <i>Daviesia teretifolia</i> , <i>Grevillea nudiflora</i> , <i>Harperia lateriflora</i> , <i>Hibbertia gracilipes</i> , <i>Isopogon polycephalus</i> , <i>Isopogon trilobus</i> , <i>Kunzea preissiana</i> , <i>Laxmannia paleacea</i> , <i>Lepidosperma carphoides</i> , <i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287), <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522), <i>Leptospermum oligandrum</i> , <i>Leptospermum spinescens</i> , <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085), <i>Lomandra micrantha</i> subsp. <i>teretifolia</i> , <i>Lysinema ciliatum</i> , <i>Melaleuca carrii</i> , <i>Melaleuca rigidifolia</i> , <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Mesomelaena stygia</i> subsp. <i>stygia</i> , <i>Neurachne alopecuroidea</i> , <i>Persoonia striata</i> , <i>Petrophile fastigiata</i> , <i>Schoenus subflavus</i> subsp. ?long leaves (K.L. Wilson 2865), <i>Schoenus subflavus</i> subsp. <i>subflavus</i> , <i>Stylidium piliferum</i> , <i>Tricostularia</i> sp. Hopetoun (M. Bennett 646), <i>Verticordia densiflora</i> var. <i>cespitosa</i>

Indicator Taxa: *Allocasuarina humilis*, *Argentipallium niveum*, *Baeckea preissiana*, *Beaufortia micrantha* var. *micrantha*, *Calothamnus gracilis*, *Calytrix leschenaultii*, *Cassytha flava*, *Conostylis lepidospermoides*, *Daviesia teretifolia*, *Dillwynia divaricata*, *Eucalyptus pleurocarpa*, *Kunzea preissiana*, *Lepidosperma carphoides*, *Laxmannia paleacea*,

Leptospermum spinescens, *Leucopogon* sp. Coujinup (M.A. Burgman 1085), *Neurachne alopecuroidea*

Landform Types: Plains, undulating plains

Soil Types: Grey or Grey-brown sandy loam, Grey-brown sandy loam with laterite gravel, Grey clay loam

Total No. of Vascular Plant Taxa: 116

Average Native Taxon Richness: 58.4 (\pm 3.6) taxa per quadrat



Vegetation Type 3 (Quadrat SC-56) (Photo: Woodman Environmental)

Vegetation Type 4:

Mid isolated mallees of *Eucalyptus pleurocarpa* over mid sparse shrubland dominated by *Adenanthos cuneatus*, *Jacksonia elongata* and *Hakea obliqua* subsp. *parvifolia* over low shrubland and sedgeland of mixed taxa dominated by *Allocasuarina acuaria*, *Banksia violacea*, *Calothamnus gracilis*, *Taxandria spathulata* and *Caustis dioica* on grey-brown or yellow-brown sandy loams on undulating plains and flats

Total Area Mapped in Study Area (ha)	134.0
Percentage of Study Area	8.5
Sampling	4 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Isolated Mallees (Mallees 3-10 m)	<i>Eucalyptus pleurocarpa</i>
Mid Stratum 1	Mid Sparse Shrubland (Shrubs 1-2 m)	<i>Adenanthos cuneatus</i> , <i>Hakea corymbosa</i> , <i>Hakea obliqua</i> subsp. <i>parviflora</i> , <i>Jacksonia elongata</i>
Lower Stratum 1	Low Shrubland and Sedgeland (Shrubs and Sedges < 1 m)	<i>Acacia unifissilis</i> , , <i>Allocasuarina acuaria</i> , <i>Allocasuarina humilis</i> , <i>Amphipogon avenaceus</i> , <i>Amphipogon turbinatus</i> , <i>Baeckea preissiana</i> , <i>Banksia cirsioides</i> , <i>Banksia obtusa</i> , <i>Banksia repens</i> , <i>Banksia violacea</i> , <i>Beaufortia micrantha</i> var. <i>micrantha</i> , <i>Boronia crassifolia</i> , <i>Boronia spathulata</i> , <i>Calothamnus gracilis</i> , <i>Calytrix decandra</i> , <i>Calytrix leschenaultii</i> , <i>Cassytha flava</i> , <i>Cassytha glabella</i> forma <i>dispar</i> , <i>Caustis dioica</i> , <i>Chamelaucium megalopetalum</i> , <i>Chordifex sphacelatus</i> , <i>Conospermum distichum</i> , <i>Conothamnus aureus</i> , <i>Cyathochaeta equitans</i> , <i>Dampiera juncea</i> , <i>Daviesia teretifolia</i> , <i>Drosera grievei</i> , <i>Gompholobium scabrum</i> , <i>Gompholobium tomentosum</i> , <i>Goodenia scapigera</i> subsp. <i>scapigera</i> , <i>Hibbertia gracilipes</i> , <i>Hibbertia recurvifolia</i> , <i>Hypolaena fastigiata</i> , <i>Isopogon polycephalus</i> , <i>Isopogon trilobus</i> , <i>Leptospermum erubescens</i> , <i>Leptospermum spinescens</i> , <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085), <i>Logania micrantha</i> , <i>Lyginia imberbis</i> , <i>Lysinema ciliatum</i> , <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Mesomelaena stygia</i> subsp. <i>stygia</i> , <i>Persoonia helix</i> , <i>Persoonia striata</i> , <i>Petrophile cyathiforma</i> , <i>Petrophile fastigiata</i> , <i>Petrophile teretifolia</i> , <i>Platysace effusa</i> , <i>Pultenaea barbata</i> , <i>Schoenus caespitius</i> , <i>Schoenus subflavus</i> subsp. ?long leaves (K.L. Wilson 2865), <i>Stachystemon polyandrus</i> , <i>Stackhousia</i> sp. Thick sepals (A.E. Orchard 1547), <i>Stirlingia anethifolia</i> , <i>Stylidium piliferum</i> , <i>Taxandria spathulata</i> , <i>Tricostularia neesii</i> , <i>Verticordia densiflora</i> var. <i>caespitosa</i>

Indicator Taxa: *Adenanthos cuneatus*, *Allocasuarina acuaria*, *Banksia repens*, *Banksia violacea*, *Calothamnus gracilis*, *Calytrix decandra*, *Caustis dioica*, *Chamelaucium megalopetalum*, *Conothamnus aureus*, *Conospermum distichum*, *Chordifex sphacelatus*, *Cyathochaeta equitans*, *Daviesia teretifolia*, *Drosera grievei*, *Gompholobium scabrum*, *Gompholobium tomentosum*, *Hibbertia recurvifolia*, *Hypolaena fastigiata*, *Isopogon*

polycephalus, *Isopogon trilobus*, *Jacksonia elongata*, *Leucopogon* sp. Coujinup (M.A. Burgman 1085), *Lyginia imberbis*, *Persoonia helix*, *Persoonia striata*, *Petrophile cyathiforma*, *Pultenaea barbata*, *Schoenus caespititius*, *Stirlingia anethifolia*, *Tricostularia neesii*

Landform Types: Flats, undulating plains, lower slopes

Soil Types: Grey-brown, yellow-grey or yellow-brown sandy loam, grey-brown sandy loam with quartz gravel.

Total No. of Vascular Plant Taxa: 95

Average Native Taxon Richness: 53.7 (\pm 12.2) taxa per quadrat



Vegetation Type 4 (Quadrat SC-09) (Photo: Woodman Environmental)

Vegetation Type 5:

Mid mallee woodland of mixed taxa including *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus suggrandis* subsp. *suggrandis* and *Eucalyptus pileata* over mid to low shrubland to open shrubland of mixed taxa including *Daviesia benthamii* subsp. *acanthoclona*, *Grevillea pectinata*, *Melaleuca hamata*, *Melaleuca subfalcata* and *Melaleuca johnsonii* over low sparse sedgeland of mixed taxa dominated by *Gahnia ancistrophylla* on brown clay with greenstone, sedimentary or quartz stones on hill slopes and crests

Total Area Mapped in Study Area (ha)	77.3
Percentage of Study Area	4.9
Sampling	6 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland (Mallees 3-10 m)	<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> , <i>Eucalyptus pileata</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> .
Mid Stratum 1	Mid to Low Shrubland to Open Shrubland (Shrubs 0.5-2 m)	<i>Acacia glaucoptera</i> , <i>Cooperookia polygalacea</i> , <i>Daviesia benthamii</i> subsp. <i>acanthoclona</i> , <i>Dianella revoluta</i> , <i>Grevillea huegelii</i> , <i>Grevillea nudiflora</i> , <i>Grevillea oligantha</i> , <i>Grevillea pectinata</i> , <i>Melaleuca calycina</i> , <i>Melaleuca hamata</i> , <i>Melaleuca johnsonii</i> , <i>Melaleuca lateriflora</i> , <i>Melaleuca subfalcata</i> , <i>Templetonia sulcata</i> .
Lower Stratum 1	Low Sparse Sedgeland (Sedges < 1 m)	<i>Acacia ingrata</i> , <i>Boronia inornata</i> subsp. <i>leptophylla</i> , <i>Cassytha glabella</i> forma <i>dispar</i> , <i>Chorizema nervosum</i> , <i>Comesperma spinosum</i> , <i>Gahnia ancistrophylla</i> , <i>Gompholobium confertum</i> , <i>Goodenia ?coerulea</i> , <i>Hibbertia psilocarpa</i> , <i>Hibbertia pungens</i> , <i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596), <i>Neurachne alopecuroidea</i> , <i>Styphelia intertexta</i> , <i>Wilsonia humilis</i> .

Indicator Taxa: *Boronia inornata* subsp. *leptophylla*, *Comesperma spinosum*, *Daviesia benthamii* subsp. *acanthoclona*, *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Goodenia ?coerulea*, *Grevillea pectinata*, *Hibbertia psilocarpa*, *Melaleuca calycina*, *Melaleuca johnsonii*, *Styphelia intertexta*

Landform Types: Low hills, undulating plains, slopes

Soil Types: Grey-brown or brown clay with ironstone and/or quartz gravel, brown or grey-brown clay or sandy clay with quartz, sedimentary and greenstone gravel and sedimentary outcropping

Total No. of Vascular Plant Taxa: 102

Average Native Taxon Richness: 36.5 (\pm 9.9) taxa per quadrat



Vegetation Type 5 (Quadrat SC-19) (Photo: Woodman Environmental)

Vegetation Type 6:

Mid mallee woodland of mixed taxa including *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus suggrandis* subsp. *suggrandis*, *Eucalyptus pileata* and *Eucalyptus calycogona* subsp. *calycogona* over mid to low open shrubland of mixed taxa including *Acacia glaucoptera*, *Melaleuca lateriflora* and *Daviesia nematophylla* over low sparse sedgeland and shrubland of mixed taxa including *Lepidosperma fimbriatum*, *Gahnia ancistrophylla*, *Gahnia* sp. Ravensthorpe (G.F. Craig 5005) and *Wilsonia humilis* on brown clay with greenstone, sedimentary or quartz stones on water-gaining flats and hill slopes

Total Area Mapped in Study Area (ha)	21.0
Percentage of Study Area	1.3
Sampling	4 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland (Mallees 3-10 m)	<i>Eucalyptus calycogona</i> subsp. <i>calycogona</i> , <i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> , <i>Eucalyptus pileata</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> .
Mid Stratum 1	Mid to Low Open Shrubland (Shrubs 0.5-2 m)	<i>Acacia glaucoptera</i> , <i>Callitris roei</i> , <i>Daviesia benthamii</i> subsp. <i>acanthoclona</i> , <i>Daviesia nematophylla</i> , <i>Melaleuca hamata</i> , <i>Melaleuca lateriflora</i> .
Lower Stratum 1	Low Sparse Sedgeland and Shrubland (Sedges and Shrubs < 0.5 m)	* <i>Avellinia michelii</i> , <i>Austrostipa variabilis</i> , <i>Cassytha melantha</i> , <i>Gahnia ancistrophylla</i> , <i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005), <i>Lepidosperma fimbriatum</i> , <i>Lepidosperma gahnioides</i> , <i>Neurachne alopecuroidea</i> , * <i>Pentameris airoides</i> subsp. <i>airoides</i> , <i>Oxalis exilis</i> , <i>Rytidosperma setaceum</i> , <i>Wilsonia humilis</i> .

Indicator Taxa: *Acacia glaucoptera*, *Daviesia nematophylla*, *Eucalyptus calycogona* subsp. *calycogona*, *Gahnia* sp. Ravensthorpe (G.F. Craig 5005), *Lepidosperma fimbriatum*, *Wilsonia humilis*

Landform Types: Open depressions, undulating plains, mid slopes

Soil Types: Grey-brown sandy clay, brown clay with laterite or quartz and sedimentary gravel, brown clay loam with greenstone stones and greenstone outcropping

Total No. of Vascular Plant Taxa: 63

Average Native Taxon Richness: 21.5 (± 4.9) taxa per quadrat



Vegetation Type 6 (Quadrat SC-24) (Photo: Woodman Environmental)

Vegetation Type 7:

Mid mallee woodland of mixed taxa including *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507) and *Eucalyptus uncinata* over tall sparse shrubland dominated by *Hakea laurina* and *Melaleuca hamata* over mid sparse shrubland of mixed taxa including *Templetonia retusa* and *Hakea lissocarpha* over low open to sparse sedgeland of mixed taxa dominated by *Lomandra effusa*, *Lepidosperma* sp. Bandalup Scabrid (N. Eveleigh 10798), *Lepidosperma* sp. Saltbush Hill (K.R. Newbey 4118) and *Gahnia ancistrophylla* on grey or brown clay on flats adjacent to drainage lines

Total Area Mapped in Study Area (ha)	13.6 (includes 2.7 ha mapped as degraded)
Percentage of Study Area	0.9 (includes 0.2 % mapped as degraded)
Sampling	3 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland (Mallees 3-10 m)	<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> , <i>Eucalyptus pileata</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus uncinata</i>
Upper Stratum 2	Tall Sparse Shrubland (Shrubs > 2 m)	<i>Hakea laurina</i> , <i>Melaleuca hamata</i> .
Mid Stratum 1	Mid Sparse Shrubland (Shrubs 0.5-2 m)	<i>Dodonaea viscosa</i> subsp. <i>angustissima</i> , <i>Hakea lissocarpha</i> , <i>Templetonia retusa</i> .
Lower Stratum 1	Low Open to Sparse Sedgeland (Sedges < 0.5 m)	<i>Acacia ingrata</i> , <i>Austrostipa variabilis</i> , <i>Boronia inconspicua</i> , <i>Convolvulus remotus</i> , <i>Dampiera lavandulacea</i> , <i>Dianella revoluta</i> , <i>Gahnia ancistrophylla</i> , <i>Gompholobium confertum</i> , <i>Lagenophora huegelii</i> , <i>Lasiopetalum compactum</i> , <i>Lepidosperma sanguinolentum</i> , <i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798), <i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118), <i>Lomandra effusa</i> , <i>Neurachne alopecuroidea</i> , <i>Oxalis exilis</i> , * <i>Pentameris airoides</i> subsp. <i>airoides</i> , <i>Pterostylis recurva</i> , <i>Rytidosperma setaceum</i> , <i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897), <i>Trachymene pilosa</i> , <i>Wahlenbergia gracilenta</i>

Indicator Taxa: *Austrostipa variabilis*, *Boronia inconspicua*, *Convolvulus remotus*, *Dodonaea viscosa* subsp. *angustissima*, *Lagenophora huegelii*, *Lasiopetalum compactum*, *Lepidosperma* sp. Bandalup Scabrid (N. Eveleigh 10798), *Lepidosperma* sp. Saltbush Hill (K.R. Newbey 4118), *Lomandra effusa*, *Neurachne alopecuroidea*, *Templetonia retusa*, *Tetraria* sp. Mt Madden (C.D. Turley 40 BP/897), *Wahlenbergia gracilenta*

Landform Types: Drainage line flats, lower slopes

Soil Types: Brown clay, grey clay loam, grey-brown clay with quartz and sedimentary gravel

Total No. of Vascular Plant Taxa: 87

Average Native Taxon Richness: 35.7 (\pm 1.2) taxa per quadrat



Vegetation Type 7(Quadrat SC-31) (Photo: Woodman Environmental)

Vegetation Type 8:

Mid woodland to open forest of *Eucalyptus occidentalis* over tall to mid sparse shrubland of mixed taxa including *Acacia cyclops*, *Acacia saligna* subsp. *lindleyi* ms, *Hakea nitida* and *Melaleuca thapsina* over low open to sparse sedgeland and shrubland of mixed taxa dominated by *Schoenus subfascicularis* and *Thomasia angustifolia* on grey-brown sandy loam or sandy clay in basins

Total Area Mapped in Study Area (ha)	12.9
Percentage of Study Area	0.8
Sampling	3 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Woodland to Open Forest (Trees 3-10 m)	<i>Eucalyptus occidentalis</i>
Mid Stratum 1	Tall to Mid Sparse Shrubland (Shrubs > 1 m)	<i>Acacia cyclops</i> , <i>Acacia saligna</i> subsp. <i>lindleyi</i> ms, <i>Hakea nitida</i> , <i>Melaleuca thapsina</i>
Lower Stratum 1	Low Open to Sparse Sedgeland and Shrubland (Sedges and Shrubs < 1 m)	<i>Actinobole uliginosum</i> , <i>Anarthria laevis</i> , <i>Austrostipa variabilis</i> , <i>Calandrinia granulifera</i> , <i>Dianella brevicaulis</i> , <i>Eutaxia empetrifolia</i> , <i>*Hypochaeris glabra</i> , <i>Millotia tenuifolia</i> var. <i>tenuifolia</i> , <i>Oxalis exilis</i> , <i>Patersonia occidentalis</i> , <i>*Pentameris airoides</i> subsp. <i>airoides</i> , <i>Rhodanthe pygmaea</i> , <i>Rytidosperma setaceum</i> , <i>Schoenus subfascicularis</i> , <i>Thomasia angustifolia</i> , <i>Wahlenbergia gracilentia</i>

Indicator Taxa: *Acacia cyclops*, *Acacia saligna* subsp. *lindleyi* ms, *Actinobole uliginosum*, *Calandrinia granulifera*, *Dianella brevicaulis*, *Eucalyptus occidentalis*, *Eutaxia empetrifolia*, *Hakea nitida*, *Melaleuca thapsina*, *Millotia tenuifolia* var. *tenuifolia*, *Rhodanthe pygmaea*, *Schoenus subfascicularis*, *Thomasia angustifolia*, *Wahlenbergia gracilentia*

Landform Types: Basins (closed depressions)

Soil Types: Grey or Grey-brown sandy clay

Total No. of Vascular Plant Taxa: 58

Average Native Taxon Richness: 23.3 (± 6.7) taxa per quadrat



Vegetation Type 8 (Quadrat SC-44) (Photo: Woodman Environmental)

Vegetation Type 9:

Mid mallee woodland of *Eucalyptus ecostata* and *Eucalyptus pleurocarpa* over tall open shrubland of *Banksia lemmaniana* and *Allocasuarina acutivalvis* subsp. *acutivalvis* over mid open shrubland of *Melaleuca hamata*, *Calothamnus quadrifidus* subsp. *quadrifidus* and *Leptospermum oligandrum* over low sparse shrubland and grassland of mixed taxa dominated by *Darwinia diosmoides* and *Spartochloa scirpoidea* over low sparse sedgeland dominated by *Lepidosperma* sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay with laterite gravel over laterite outcropping on hill crests.

Total Area Mapped in Study Area (ha)	0.3
Percentage of Study Area	0.02
Sampling	1 quadrat within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland (Mallees 3-10 m)	<i>Eucalyptus ecostata</i> , <i>Eucalyptus pleurocarpa</i>
Upper Stratum 2	Tall Open Shrubland (Shrubs > 2 m)	<i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> , <i>Banksia lemmaniana</i>
Mid Stratum 1	Mid Open Shrubland (Shrubs 1-2 m)	<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> , <i>Leptospermum oligandrum</i> , <i>Melaleuca hamata</i>
Low Stratum 1	Low Sparse Shrubland and Grassland (Shrubs and Grasses < 1 m)	<i>Darwinia diosmoides</i> , <i>Hibbertia gracilipes</i> , <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585), <i>Phebalium lepidotum</i> , <i>Spartochloa scirpoidea</i> , <i>Boronia inconspicua</i> , <i>Gastrolobium parviflorum</i>
Low Stratum 2	Low Sparse Sedgeland (Sedges < 1 m)	<i>Lepidosperma sanguinolentum</i> , <i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798), <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522), <i>Leptospermum oligandrum</i> , <i>Lomandra mucronata</i> , <i>Neurachne alopecuroidea</i> , <i>Thelymitra occidentalis</i> .

Indicator Taxa: Not applicable – 1 quadrat

Landform Types: Crests

Soil Types: Brown clay with laterite gravel over laterite outcropping

Total No. of Vascular Plant Taxa: 20

Average Native Taxon Richness: Not applicable – 1 quadrat



Vegetation Type 9 (Quadrat SC-48) (Photo: Woodman Environmental)

Vegetation Type 10:

Mid mallee woodland of *Eucalyptus ecostata* and *Eucalyptus pleurocarpa* over tall open shrubland of *Banksia lemmaniana* over mid shrubland of mixed taxa dominated by *Petrophile fastigiata*, *Melaleuca villosisepala*, *Melaleuca pentagona* var. *pentagona* and *Taxandria spathulata* over low sparse shrubland of mixed taxa including *Leucopogon* sp. Newdegate (M. Hislop 3585), *Leucopogon opponens*, *Beaufortia schaueri* and *Leucopogon cuneifolius* over low sparse sedgeland dominated by *Lepidosperma* sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay with laterite gravel, occasionally with laterite outcropping, on hill slopes and crests.

Total Area Mapped in Study Area (ha)	7.2
Percentage of Study Area	0.5
Sampling	1 quadrat within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland (Mallees 3-10 m)	<i>Eucalyptus ecostata</i> , <i>Eucalyptus pleurocarpa</i>
Upper Stratum 2	Tall Open Shrubland (Shrubs > 2 m)	<i>Banksia lemmaniana</i>
Mid Stratum 1	Mid Shrubland (Shrubs 1-2 m)	<i>Acacia subcaerulea</i> , <i>Hakea lissocarpha</i> , <i>Jacksonia elongata</i> , <i>Kunzea affinis</i> , <i>Melaleuca pentagona</i> var. <i>pentagona</i> , <i>Melaleuca villosisepala</i> , <i>Petrophile fastigiata</i> , <i>Taxandria spathulata</i>
Low Stratum 1	Low Sparse Shrubland (Shrubs < 1 m)	<i>Banksia cirsioides</i> , <i>Beaufortia schaueri</i> , <i>Beyeria brevifolia</i> , <i>Calytrix leschenaultii</i> , <i>Dampiera lavandulacea</i> , <i>Hibbertia gracilipes</i> , <i>Leptospermum spinescens</i> , <i>Leucopogon cuneifolius</i> , <i>Leucopogon opponens</i> , <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585), <i>Lysinema ciliatum</i> , <i>Melaleuca rigidifolia</i> , <i>Verticordia acerosa</i> var. <i>preissii</i>
Low Stratum 2	Low Sparse Sedgeland (Sedges < 1 m)	<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522), <i>Lomandra mucronata</i> , <i>Neurachne alopecuroidea</i>

Indicator Taxa: Not applicable – 1 quadrat

Landform Types: Hill slopes, crests

Soil Types: Brown clay with laterite gravel, occasionally with laterite outcropping

Total No. of Vascular Plant Taxa: 27

Average Native Taxon Richness: Not applicable – 1 quadrat



Vegetation Type 10 (Quadrat SC-49) (Photo: Woodman Environmental)

Vegetation Type 11:

Occasional mid open forest of *Eucalyptus occidentalis* over tall to mid open shrubland of mixed taxa dominated by *Melaleuca cuticularis* over tall sedgeland dominated by *Gahnia trifida* and *Juncus kraussii* subsp. *australiensis* on grey or brown clay in creeks

Total Area Mapped in Study Area (ha)	2.2
Percentage of Study Area	0.1
Sampling	2 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Occasional Open Forest (Trees 3-10 m)	<i>Eucalyptus occidentalis</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)
Mid Stratum 1	Tall to Mid Open Shrubland (Shrubs > 1 m)	<i>Acacia cyclops</i> , <i>Acacia patagiata</i> , <i>Acacia saligna</i> subsp. <i>lindleyi</i> ms, <i>Dodonaea viscosa</i> subsp. <i>angustissima</i> , <i>Melaleuca brevifolia</i> , <i>Melaleuca cuticularis</i>
Low Stratum 1	Tall Sedgeland (Sedges 1-2 m)	<i>Alyogyne</i> sp. Southern Coast (A.S. George 289), <i>Atriplex</i> ? <i>bunburyana</i> , <i>Atriplex</i> ? <i>paludosa</i> , <i>Austrostipa elegantissima</i> , <i>Austrostipa juncifolia</i> , <i>Billardiera fusiformis</i> , * <i>Briza maxima</i> , * <i>Briza minor</i> , <i>Cassytha glabella</i> forma <i>dispar</i> , * <i>Cynodon dactylon</i> , <i>Gahnia trifida</i> , * <i>Hypochaeris glabra</i> , <i>Juncus kraussii</i> subsp. <i>australiensis</i> , <i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798), * <i>Lysimachia arvensis</i> , <i>Rytidosperma setaceum</i> , * <i>Solanum nigrum</i> , * <i>Sonchus oleraceus</i> , <i>Spergularia marina</i> , <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> , <i>Thelymitra graminea</i> , <i>Threlkeldia diffusa</i> .

Indicator Taxa: *Cassytha glabella* forma *dispar*, *Gahnia trifida*, *Juncus kraussii* subsp. *australiensis*, *Melaleuca cuticularis*

Landform Types: Drainage lines, lower slopes with water seepage

Soil Types: Brown sandy clay with ironstone gravel, Grey-brown clay

Total No. of Vascular Plant Taxa: 30

Average Native Taxon Richness: 11 (± 8.5) species per quadrat



Vegetation Type 11 (SC -54) (Photo: Woodman Environmental)

Vegetation Type 12:

Mid isolated trees to open woodland of *Eucalyptus occidentalis* over tall to mid open shrubland of mixed taxa dominated by *Melaleuca hamulosa*, *Melaleuca acuminata* subsp. *acuminata*, *Callistemon phoeniceus* and occasionally *Melaleuca cuticularis* over low open to sparse samphire shrubland of mixed taxa including *Tecticornia lepidosperma*, *Tecticornia pergranulata* subsp. *pergranulata* and *Sarcocornia quinqueflora* subsp. *quinqueflora* on grey or brown sandy clay in saline creeks

Total Area Mapped in Study Area (ha)	20.6 (includes 11.5 ha mapped as degraded)
Percentage of Study Area	1.3 (includes 0.7 % mapped as degraded)
Sampling	3 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Isolated Trees to Open Woodland (Trees 3-10 m)	<i>Eucalyptus occidentalis</i>
Mid Stratum 1	Tall to Mid Open Shrubland (Shrubs > 1 m)	<i>Callistemon phoeniceus</i> , <i>Melaleuca acuminata</i> subsp. <i>acuminata</i> , <i>Melaleuca hamulosa</i>
Low Stratum 1	Low Open to Sparse Samphire Shrubland (Samphire Shrubs < 1 m)	<i>Carpobrotus modestus</i> , <i>*Ehrharta longiflora</i> , <i>*Lysimachia arvensis</i> , <i>*Sonchus oleraceus</i> , <i>Tecticornia lepidosperma</i> , <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>

Indicator Taxa: *Carpobrotus modestus*, *Melaleuca hamulosa*, *Tecticornia lepidosperma*, *Tecticornia pergranulata* subsp. *pergranulata*

Landform Types: Creeks

Soil Types: Grey clay, grey sandy clay with laterite and ironstone gravel, brown sand with granite outcropping

Total No. of Vascular Plant Taxa: 33

Average Native Taxon Richness: 17.0 (± 8.3) taxa per quadrat



Vegetation Type 12 (Quadrat SC-55) (Photo: Woodman Environmental)

Vegetation Type 13:

Mid mallee woodland of mixed taxa dominated by *Eucalyptus sporadica* and *Eucalyptus uncinata* over tall to mid sparse shrubland of mixed taxa including *Banksia media* and *Exocarpos sparteus* over low open shrubland of mixed taxa dominated by *Melaleuca rigidifolia*, *Melaleuca carrii*, *Grevillea nudiflora*, *Acacia gonophylla* and *Lasiopetalum rosmarinifolium* over low sparse sedgeland of mixed taxa including *Gahnia ancistrophylla* and *Lepidosperma* sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287) on grey-brown clay or sandy loams, often with lateritic gravel, on undulating plains

Total Area Mapped in Study Area (ha)	96.5
Percentage of Study Area	6.1
Sampling	5 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland (Mallees 3-10 m)	<i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus sporadica</i> , <i>Eucalyptus uncinata</i>
Mid Stratum 1	Tall to Mid Sparse Shrubland (Shrubs > 1 m)	<i>Banksia media</i> , <i>Callitris roei</i> , <i>Hakea laurina</i> , <i>Exocarpos sparteus</i>
Lower Stratum 1	Low Open Shrubland (Shrubs < 1 m)	<i>Acacia chrysocephala</i> , <i>Acacia curvata</i> , <i>Acacia gonophylla</i> , <i>Acacia ingrata</i> , <i>Calytrix leschenaultii</i> , <i>Dampiera lavandulacea</i> , <i>Daviesia anceps</i> , <i>Gompholobium baxteri</i> , <i>Grevillea nudiflora</i> , <i>Hibbertia gracilipes</i> , <i>Hibbertia pungens</i> , <i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813), <i>Lasiopetalum rosmarinifolium</i> , <i>Leucopogon concinnus</i> , <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085), <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585), <i>Melaleuca carrii</i> , <i>Melaleuca rigidifolia</i> , <i>Melaleuca subfalcata</i> , <i>Olax benthamiana</i> , <i>Platysace deflexa</i> , <i>Pultenaea indira</i> subsp. <i>indira</i> , <i>Rinzia communis</i>
Lower Stratum 2	Low Sparse Sedgeland (Sedges < 1 m)	<i>Amphipogon turbinatus</i> , <i>Conostylis argentea</i> , <i>Gahnia ancistrophylla</i> , <i>Lepidosperma carphoides</i> , <i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287), <i>Lomandra micrantha</i> subsp. <i>teretifolia</i> , <i>Neurachne alopecuroidea</i>

Indicator Taxa: *Beyeria brevifolia*, *Eucalyptus sporadica*, *Eucalyptus uncinata*, *Gastrolobium latifolium*, *Gompholobium baxteri*, *Hibbertia pungens*, *Lasiopetalum rosmarinifolium*, *Melaleuca rigidifolia*, *Neurachne alopecuroidea*, *Olax benthamiana*, *Platysace deflexa*.

Landform Types: Undulating plains

Soil Types: Grey-brown sandy loam with laterite and ironstone gravel, brown sandy clay, grey clay loam

Total No. of Vascular Plant Taxa: 120

Average Native Taxon Richness: 49 (\pm 9.4) taxa per quadrat



Vegetation Type 13 (Quadrat SC-11) (Photo: Woodman Environmental)

Vegetation Type 14:

Mid mallee woodland of mixed taxa including *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), *Eucalyptus pleurocarpa*, *Eucalyptus uncinata*, *Eucalyptus kessellii* subsp. *eugnota* and *Eucalyptus suggrandis* subsp. *suggrandis* over tall to mid sparse shrubland of mixed taxa including *Banksia media* and *Hakea pandanica* subsp. *pandanica* over low shrubland of mixed taxa dominated by *Melaleuca rigidifolia*, *Beaufortia schaueri*, *Daviesia lancifolia* and *Grevillea nudiflora* on grey-brown clay with quartz, ironstone and sedimentary stones on undulating plains and low hills

Total Area Mapped in Study Area (ha)	181.7 (includes 5.4 ha mapped as degraded)
Percentage of Study Area	11.5 (includes 0.3 % mapped as degraded)
Sampling	5 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland (Mallees 3-10 m)	<i>Eucalyptus kessellii</i> subsp. <i>eugnota</i> , <i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i> , <i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507), <i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i> , <i>Eucalyptus tetraptera</i> , <i>Eucalyptus uncinata</i>
Mid Stratum 1	Tall to Mid Sparse Shrubland (Shrubs > 1 m)	<i>Banksia media</i> , <i>Hakea pandanica</i> subsp. <i>pandanica</i> , <i>Tetrapora verrucosa</i>
Lower Stratum 1	Low Shrubland (Shrubs < 1 m)	<i>Acacia curvata</i> , <i>Acacia gonophylla</i> , <i>Amphipogon turbinatus</i> , <i>Banksia cirsioides</i> , <i>Beaufortia schaueri</i> , <i>Boronia crassifolia</i> , <i>Cassytha glabella</i> forma <i>dispar</i> , <i>Daviesia anceps</i> , <i>Daviesia lancifolia</i> , <i>Gahnia ancistrophylla</i> , <i>Gompholobium confertum</i> , <i>Grevillea nudiflora</i> , <i>Grevillea oligantha</i> , <i>Hakea marginata</i> , <i>Harperia lateriflora</i> , <i>Hibbertia gracilipes</i> , <i>Hibbertia pungens</i> , <i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813), <i>Lepidosperma carphoides</i> , <i>Lepidosperma fimbriatum</i> , <i>Leucopogon concinnus</i> , <i>Leucopogon fimbriatus</i> , <i>Lomandra micrantha</i> subsp. <i>teretifolia</i> , <i>Lomandra mucronata</i> , <i>Melaleuca rigidifolia</i> , <i>Melaleuca subfalcata</i> , <i>Mesomelaena stygia</i> subsp. <i>stygia</i> , <i>Neurachne alopecuroidea</i> , <i>Pultenaea indira</i> subsp. <i>indira</i> , <i>Spyridium cordatum</i> , <i>Tetrapora</i> sp. Mt Madden (C.D. Turley 40 BP/897)

Indicator Taxa: *Beaufortia schaueri*, *Daviesia lancifolia*, *Eucalyptus leptocalyx* subsp. *leptocalyx*, *Eucalyptus uncinata*, *Gahnia ancistrophylla*, *Grevillea oligantha*, *Hakea marginata*, *Isopogon* sp. Fitzgerald River (D.B. Foreman 813), *Melaleuca rigidifolia*, *Spyridium cordatum*, *Tetrapora verrucosa*.

Landform Types: Low hills, undulating plains

Soil Types: Brown clay with sedimentary, quartz and ironstone gravel, grey-brown clay with ironstone gravel, grey-brown sandy clay with laterite gravel, grey-brown clay loam with quartz gravel

Total No. of Vascular Plant Taxa: 116

Average Native Taxon Richness: 51 (\pm 11.2) taxa per quadrat



Vegetation Type 14 (Quadrat SC-29) (Photo: Woodman Environmental)

Vegetation Type 15:

Mid mallee woodland of mixed taxa including *Eucalyptus kessellii* subsp. *eugnosta*, *Eucalyptus pleurocarpa*, *Eucalyptus uncinata* and *Eucalyptus* sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507) over tall to mid sparse shrubland of mixed taxa including *Banksia lemmaniana*, *Banksia media*, *Melaleuca hamata* and *Allocasuarina ?hystricosa* over low open shrubland of mixed taxa dominated by *Melaleuca rigidifolia*, *Acacia ingrata*, *Grevillea nudiflora*, *Pultenaea indira* subsp. *indira* and *Daviesia anceps* over low sparse sedgeland of mixed taxa dominated by *Lepidosperma* sp. 'Tibialate' (R.L. Barrett RLB 3522) on brown clay loam with lateritic gravel over occasional laterite outcropping on crests of low hills

Total Area Mapped in Study Area (ha)	24.0
Percentage of Study Area	1.5
Sampling	2 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Mid Mallee Woodland (Mallees 3-10 m)	<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i> , <i>Eucalyptus pleurocarpa</i> , <i>Eucalyptus uncinata</i> .
Mid Stratum 1	Tall to Mid Sparse Shrubland (Shrubs > 1 m)	<i>Allocasuarina ?hystricosa</i> , <i>Banksia lemmaniana</i> , <i>Melaleuca hamata</i> .
Lower Stratum 1	Low Open Shrubland (Shrubs < 1 m)	<i>Acacia ingrata</i> , <i>Banksia cirsioides</i> , <i>Beaufortia schaueri</i> , <i>Chamelaucium ciliatum</i> , <i>Chorizema aciculare</i> subsp. <i>aciculare</i> , <i>Daviesia anceps</i> , <i>Grevillea nudiflora</i> , <i>Hakea verrucosa</i> , <i>Hibbertia gracilipes</i> , <i>Hybanthus floribundus</i> subsp. <i>adpressus</i> , <i>Lasiopetalum rosmarinifolium</i> , <i>Leucopogon</i> sp. Newdegate (M. Hislop 3585), <i>Melaleuca rigidifolia</i> , <i>Petrophile seminuda</i> , <i>Pultenaea indira</i> subsp. <i>indira</i> .
Lower Stratum 2	Low Sparse Sedgeland (Sedges < 1 m)	<i>Amphipogon turbinatus</i> , <i>Gahnia ancistrophylla</i> , <i>Lepidobolus chaetocephalus</i> , <i>Lepidosperma carphoides</i> , <i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553), <i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287), <i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522), <i>Lomandra micrantha</i> subsp. <i>teretifolia</i> , <i>Lomandra mucronata</i> , <i>Mesomelaena stygia</i> subsp. <i>stygia</i> , <i>Neurachne alopecuroidea</i> , <i>Schoenus subflavus</i> subsp. <i>subflavus</i> .

Indicator Taxa:

Acacia ingrata, *Allocasuarina ?hystricosa*, *Banksia lemmaniana*, *Beaufortia schaueri*, *Chamelaucium ciliatum*, *Daviesia anceps*, *Eucalyptus kessellii* subsp. *eugnosta*, *Eucalyptus pleurocarpa*, *Eucalyptus uncinata*, *Gahnia ancistrophylla*, *Grevillea nudiflora*, *Hakea verrucosa*, *Hybanthus floribundus* subsp. *adpressus*, *Lasiopetalum rosmarinifolium*, *Lepidobolus chaetocephalus*, *Lepidosperma carphoides*, *Lepidosperma* sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287), *Lepidosperma* sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553), *Leucopogon* sp. Newdegate (M. Hislop 3585), *Lomandra*

micrantha subsp. *teretifolia*, *Melaleuca rigidifolia*, *Neurachne alopecuroidea*, *Pultenaea indira* subsp. *indira*

Landform Types: Crests of low hills

Soil Types: Brown clay loam with lateritic gravel and lateritic outcropping

Total No. of Vascular Plant Taxa: 53

Average Native Taxon Richness: 42.5 (\pm 4.9) taxa per quadrat



Vegetation Type 15 (Quadrat SC-38) (Photo: Woodman Environmental)

Vegetation Type 16:

Tall shrubland of *Acacia lasiocalyx* over mid sparse to open shrubland and grassland of mixed taxa dominated by *Allocasuarina campestris*, *Calothamnus quadrifidus* subsp. *quadrifidus*, *Grevillea rigida* subsp. *rigida*, *Thryptomene australis* subsp. *australis* over low sparse to open shrubland and grassland of mixed taxa dominated by *Acacia pinguiculosa* subsp. *pinguiculosa*, *Calytrix* aff. *leschenaultii* and *Spartochloa scirpoidea* over low sparse to open sedgeland of mixed taxa dominated by *Lepidosperma* sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), *Lepidosperma* sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553) and *Borya constricta* on grey, yellow or brown sandy or clay loam with granite stones over granite outcropping on valley slopes

Total Area Mapped in Study Area (ha)	88.9
Percentage of Study Area	5.6
Sampling	5 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Tall Shrubland (Shrubs > 2 m)	<i>Acacia lasiocalyx</i>
Mid Stratum 1	Mid Sparse Shrubland (Shrubs > 1 m)	<i>Allocasuarina campestris</i> , <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> , <i>Daviesia pachyphylla</i> , <i>Grevillea rigida</i> subsp. <i>rigida</i> , <i>Kunzea affinis</i> , <i>Leptospermum nitens</i> , <i>Thryptomene australis</i> subsp. <i>australis</i>
Lower Stratum 1	Low Sparse to Open Shrubland and Grassland (Shrubs and grasses < 1 m)	<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i> , <i>Astroloma serratifolium</i> , <i>Calytrix</i> aff. <i>leschenaultii</i> , <i>Cryptandra graniticola</i> , <i>Mirbelia multicaulis</i> , <i>Platysace deflexa</i> , <i>Spartochloa scirpoidea</i>
Lower Stratum 2	Low Sparse to Open Sedgeland (Sedges < 1 m)	<i>Amphipogon strictus</i> , <i>Borya constricta</i> , <i>Chamaescilla spiralis</i> , <i>Hypochaeris glabra</i> , <i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553), <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), <i>Levenhookia pusilla</i> , <i>Neurachne alopecuroidea</i> , <i>Opercularia vaginata</i> , <i>Schoenus subflavus</i> , <i>Stylidium dichotomum</i>

Indicator Taxa: *Acacia lasiocalyx*, *Acacia pinguiculosa* subsp. *pinguiculosa*, *Agrostocrinum scabrum* subsp. *scabrum*, *Allocasuarina campestris*, *Astroloma serratifolium*, *Borya constricta*, *Chamaescilla spiralis*, *Cryptandra graniticola*, *Grevillea rigida* subsp. *rigida*, *Kunzea affinis*, *Leptospermum nitens*, *Lepidosperma* sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), *Levenhookia pusilla*, *Poranthera microphylla*, *Pterochaeta paniculata*, *Spartochloa scirpoidea*, *Stylidium dichotomum*, *Thryptomene australis* subsp. *australis*

Landform Types: Mid slopes

Soil Types: Brown sandy clay, grey-brown sandy loam or yellow-brown clay, all with granite stones and granite outcropping, brown clay loam with granite stones.

Total No. of Vascular Plant Taxa: 77

Average Native Taxon Richness: 31.2 (\pm 6.5) taxa per quadrat



Vegetation Type 16 (Quadrat SC-60) (Photo: Woodman Environmental)

Vegetation Type 17:

Tall to mid shrubland dominated by *Allocasuarina campestris* and occasionally *Melaleuca hamata* over mid to low open to sparse shrubland of mixed species dominated by *Acacia pinguiculosa* subsp. *pinguiculosa*, *Daviesia pachyphylla*, *Grevillea teretifolia* and *Melaleuca carrii* over low sparse to open sedgeland of mixed species dominated by *Lepidosperma* sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) and occasionally *Schoenus calcatus* on yellow-brown or brown clay with granite or laterite stones on undulating plains and valley slopes

Total Area Mapped in Study Area (ha)	66.7
Percentage of Study Area	4.2
Sampling	4 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Upper Stratum 1	Tall to Mid Shrubland (Shrubs > 1 m)	<i>Allocasuarina campestris</i> , <i>Melaleuca hamata</i>
Lower Stratum 1	Mid to Low Open to Sparse Shrubland (Shrubs < 2 m)	<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i> , <i>Allocasuarina microstachya</i> , <i>Astroloma serratifolium</i> , <i>Calytrix leschenaultii</i> , <i>Cryptandra granitica</i> , <i>Cryptandra myriantha</i> , <i>Cryptandra pungens</i> , <i>Daviesia pachyphylla</i> , <i>Ericomyrtus drummondii</i> , <i>Ericomyrtus parviflora</i> , <i>Ericomyrtus serpyllifolia</i> , <i>Grevillea teretifolia</i> , <i>Hakea incrassata</i> , <i>Hemigenia teretiuscula</i> , <i>Hibbertia gracilipes</i> , <i>Leucopogon concinnus</i> , <i>Melaleuca carrii</i> , <i>Melaleuca lecanantha</i> , <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Mirbelia multicaulis</i> , <i>Petrophile seminuda</i> , <i>Platysace deflexa</i> , <i>Verticordia chrysantha</i>
Lower Stratum 2	Low Sparse to Open Sedgeland (Sedges < 1 m)	<i>Amphipogon strictus</i> , <i>Cassytha glabella</i> forma <i>dispar</i> , <i>Elythranthera brunonis</i> , <i>Laxmannia paleacea</i> , <i>Lepidobolus preissianus</i> , <i>Lepidosperma fimbriatum</i> , <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), <i>Neurachne alopecuroidea</i> , <i>Schoenus calcatus</i> , <i>Schoenus sesquispiculus</i> , <i>Schoenus subflavus</i>

Indicator Taxa: *Allocasuarina campestris*, *Calytrix leschenaultii*, *Daviesia pachyphylla*, *Elythranthera brunonis*, *Ericomyrtus drummondii*, *Grevillea teretifolia*, *Lepidobolus preissianus*, *Mirbelia multicaulis*, *Neurachne alopecuroidea*, *Schoenus calcatus*, *Verticordia chrysantha*.

Landform Types: Undulating plains, crests of low hills, slopes of valleys

Soil Types: Brown sandy clay with laterite gravel, yellow-brown or brown clay with granite, quartz or laterite stones

Total No. of Vascular Plant Taxa: 61

Average Native Taxon Richness: 30.5 (\pm 4.4) taxa per quadrat



Vegetation Type 17 (Quadrat SC-32) (Photo: Woodman Environmental)

Vegetation Type 18:

Mid shrubland dominated by *Calothamnus quadrifidus* subsp. *quadrifidus* over low open to sparse shrubland of mixed species dominated by *Calytrix* aff. *leschenaultii*, *Leucopogon* sp. Coujinup (M.A. Burgman 1085) and *Melaleuca carrii* over low open to sparse sedgeland dominated by *Lepidosperma* sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984) over grey clay loam with granite stones and occasional granite outcropping on valley slopes

Total Area Mapped in Study Area	6.0
Percentage of Study Area	0.4
Sampling	2 quadrats within Study Area

Common taxa recorded within each stratum:

Stratum	Dominant Descriptor	Taxa
Mid Stratum 1	Mid Shrubland (Shrubs 1-2 m)	<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>
Lower Stratum 1	Low Open to Sparse Shrubland (Shrubs < 1 m)	<i>Calytrix</i> aff. <i>leschenaultii</i> , <i>Daviesia teretifolia</i> , <i>Leucopogon brevicuspis</i> , <i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085), <i>Melaleuca carrii</i> , <i>Melaleuca tuberculata</i> var. <i>macrophylla</i> , <i>Pimelea imbricata</i> var. <i>piligera</i> , <i>Verticordia densiflora</i> var. <i>cespitosa</i> , <i>Verticordia pennigera</i>
Lower Stratum 2	Low Open to Sparse Sedgeland (Sedges < 1 m)	<i>Amphipogon strictus</i> , <i>Conostylis argentea</i> , <i>Lepidobolus preissianus</i> , <i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), <i>Neurachne alopecuroidea</i> , <i>Schoenus sesquispiculus</i> , <i>Schoenus subflavus</i>

Indicator Taxa: *Amphipogon strictus*, *Calytrix* aff. *leschenaultii*, *Calothamnus quadrifidus* subsp. *quadrifidus*, *Daviesia teretifolia*, *Lepidobolus preissianus*, *Lepidosperma* sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984), *Leucopogon brevicuspis*, *Leucopogon* sp. Coujinup (M.A. Burgman 1085), *Neurachne alopecuroidea*, *Pimelea imbricata* var. *piligera*, *Schoenus sesquispiculus*, *Verticordia pennigera*

Landform Types: Valley slopes

Soil Types: Grey clay or clay loam with granite stones and granite outcropping

Total No. of Vascular Plant Taxa: 45

Average Native Taxon Richness: 30.5 (± 10.6) taxa per quadrat



Vegetation Type 18 (Quadrat SC-58) (Photo: Woodman Environmental)

Appendix N: Matrix of Vascular Plant Taxa Recorded within Each Vegetation Type Described in the Study Area

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Acacia acanthoclada</i> subsp. <i>acanthoclada</i>													X					
<i>Acacia aemula</i> subsp. <i>aemula</i>				X														
<i>Acacia assimilis</i> subsp. <i>atroviridis</i>																X	X	
<i>Acacia chrysocephala</i>	X		X										X	X				
<i>Acacia curvata</i>					X	X							X	X	X			
<i>Acacia cyclops</i>								X			X		X					
<i>Acacia evenulosa</i>	X	X																
<i>Acacia glaucoptera</i>					X	X	X											
<i>Acacia gonophylla</i>	X	X			X								X	X	X			
<i>Acacia harveyi</i>							X											
<i>Acacia ingrata</i>	X				X	X	X						X	X	X			
<i>Acacia lasiocalyx</i>																X		
<i>Acacia latipes</i> subsp. <i>latipes</i>			X					X										
<i>Acacia moirii</i> subsp. <i>moirii</i>	X	X												X				
<i>Acacia octonervia</i>														X				
<i>Acacia patagiata</i>							X				X	X						
<i>Acacia pinguiculosa</i> subsp. <i>pinguiculosa</i>					X											X	X	
<i>Acacia pravifolia</i>					X									X				
<i>Acacia saligna</i> subsp. <i>lindleyi</i> ms							X	X			X	X						
<i>Acacia subcaerulea</i>										X								
<i>Acacia sulcata</i> var. <i>platyphylla</i>													X		X			
<i>Acacia unifissilis</i>	X	X	X	X														X
<i>Acrotriche cordata</i>					X									X				
<i>Acrotriche ramiflora</i>														X				
<i>Actinobole uliginosum</i>								X										
<i>Adenanthos cuneatus</i>				X														
<i>Agrostocrinum scabrum</i> subsp. <i>scabrum</i>																X		
<i>Allocauarina acuaria</i>				X														
<i>Allocauarina acutivalvis</i> subsp. <i>acutivalvis</i>									X									
<i>Allocauarina campestris</i>																X	X	X
<i>Allocauarina humilis</i>	X	X	X	X										X				
<i>Allocauarina ?hystricosa</i>															X			
<i>Allocauarina microstachya</i>	X	X	X														X	X

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Allocasuarina thuyoides</i>	X	X	X											X				
<i>Alyogyne</i> sp. Southern Coast (A.S. George 289)							X				X							
<i>Amphipogon avenaceus</i>	X	X	X	X		X								X				
<i>Amphipogon strictus</i>																X	X	X
<i>Amphipogon turbinatus</i>	X	X	X	X									X	X	X			X
<i>Anarthria humilis</i>	X	X	X											X				
<i>Anarthria laevis</i>								X										
<i>Andersonia macranthera</i>	X																	
<i>Andersonia parvifolia</i>	X	X	X											X				X
<i>Anigozanthos humilis</i> subsp. <i>humilis</i>								X										
<i>Anigozanthos rufus</i>				X														
<i>Anthotium humile</i>					X									X				
<i>Apium annuum</i>												X						
<i>Argentipallium niveum</i>			X										X					
<i>Astroloma epacridis</i>						X												
<i>Astroloma microphyllum</i>							X							X				
<i>Astroloma prostratum</i>	X																	
<i>Astroloma serratifolium</i>																X	X	
<i>Astroloma tectum</i>	X																	
<i>Astus tetragonus</i>							X									X		X
<i>Atriplex ?bunburyana</i>											X	X						
<i>Atriplex ?paludosa</i>											X							
<i>Austrostipa elegantissima</i>						X	X				X	X						
<i>Austrostipa juncifolia</i>											X							
<i>Austrostipa pycnostachya</i>					X	X	X					X						
<i>Austrostipa variabilis</i>						X	X	X										
* <i>Avellinia michelii</i>						X												
<i>Baeckea latens</i>					X													
<i>Baeckea pachyphylla</i>												X	X	X				
<i>Baeckea preissiana</i>	X	X	X	X													X	
<i>Banksia cirsioides</i>	X	X		X						X			X	X	X			
<i>Banksia lemnioides</i>	X		X	X					X	X				X	X			
<i>Banksia media</i>	X		X	X	X								X	X	X			

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Banksia obovata</i>	X																	
<i>Banksia obtusa</i>	X		X	X														
<i>Banksia repens</i>	X		X	X														
<i>Banksia violacea</i>	X	X	X	X														
<i>Beaufortia micrantha</i> var. <i>micrantha</i>	X	X	X	X									X	X	X			
<i>Beaufortia schaueri</i>										X				X	X			
<i>Beyeria brevifolia</i>										X			X					
<i>Billardiera coriacea</i>					X	X		X										
<i>Billardiera fusiformis</i>											X							X
<i>Billardiera venusta</i>							X											
<i>Blennoispora drummondii</i>																X		
<i>Boronia coerulescens</i> subsp. <i>spinescens</i>																	X	X
<i>Boronia crassifolia</i>	X			X									X	X				
<i>Boronia crenulata</i> var. <i>crenulata</i>													X					
<i>Boronia inconspicua</i>					X		X		X									
<i>Boronia inornata</i> subsp. <i>leptophylla</i>					X		X							X				
<i>Boronia penicillata</i>				X														
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>	X		X	X									X					
<i>Boronia spathulata</i>				X														
<i>Boronia subsessilis</i>																X		
<i>Borya constricta</i>																X		
* <i>Briza maxima</i>											X	X						
* <i>Briza minor</i>											X							
<i>Bulbine semibarbata</i>								X										
<i>Caladenia attingens</i> subsp. <i>gracillima</i>																	X	
<i>Caladenia brevisura</i>							X											
<i>Caladenia longicauda</i>								X										
<i>Calandrinia eremaea</i>								X										
<i>Calandrinia granulifera</i>								X										
<i>Calectasia grandiflora</i> subsp. <i>Wheatbelt</i> (A.M. Coates 4315)	X	X	X															
<i>Callistemon phoeniceus</i>												X						
<i>Callitris roei</i>	X	X				X							X	X				

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Calothamnus gibbosus</i>			X					X					X	X				
<i>Calothamnus gracilis</i>	X		X	X														
<i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>							X	X	X							X		X
<i>Calytrix decandra</i>	X			X														
<i>Calytrix</i> aff. <i>leschenaultii</i>																X		X
<i>Calytrix leschenaultii</i>	X	X	X	X						X			X				X	
<i>Carpobrotus modestus</i>												X						
<i>Cassytha flava</i>	X	X	X	X									X			X		X
<i>Cassytha glabella</i> forma <i>dispar</i>	X	X	X	X	X		X				X		X	X		X	X	
<i>Cassytha melantha</i>					X	X												
<i>Cassytha pomiformis</i>		X													X			
<i>Caustis dioica</i>	X	X	X	X														
<i>Chamaescilla corymbosa</i>																X		
<i>Chamaescilla spiralis</i>																X	X	
<i>Chamaexeros serra</i>														X				
<i>Chamelaucium ciliatum</i>	X	X	X										X		X			
<i>Chamelaucium megalopetalum</i>			X	X														
<i>Cheiranthra brevifolia</i>													X					
<i>Chordifex sphacelatus</i>	X		X	X														
<i>Chorizema aciculare</i> subsp. <i>aciculare</i>	X	X	X										X	X	X			
<i>Chorizema cytisoides</i>	X	X	X	X									X	X				
<i>Chorizema nervosum</i>					X		X											
<i>Chthonocephalus pseudevax</i>								X										
<i>Comesperma ciliatum</i>																X		
<i>Comesperma drummondii</i>	X																	
<i>Comesperma integerrimum</i>												X						
<i>Comesperma scoparium</i>													X			X		
<i>Comesperma spinosum</i>					X									X				
<i>Comesperma volubile</i>							X											
<i>Conospermum distichum</i>				X														
<i>Conostylis argentea</i>	X	X	X		X								X	X	X		X	X
<i>Conostylis lepidospermoides</i>	X		X										X					
<i>Conostylis seorsiflora</i> subsp. <i>seorsiflora</i>								X										

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Conothamnus aureus</i>	X		X	X														
<i>Convolvulus remotus</i>							X	X										
* <i>Conyza sumatrensis</i>							X											
<i>Coopernookia polygalacea</i>					X													
<i>Coopernookia strophiolata</i>							X											
* <i>Cotula coronopifolia</i>												X						
<i>Crassula exserta</i>						X		X										
<i>Cryptandra graniticola</i>																X	X	
<i>Cryptandra myriantha</i>		X	X										X		X		X	
<i>Cryptandra nutans</i>	X	X											X					
<i>Cryptandra pungens</i>													X			X	X	
<i>Cryptandra spyridioides</i>	X		X															
<i>Cryptandra wilsonii</i>					X	X								X				
<i>Cyathochaeta equitans</i>				X														
<i>Cyathostemon tenuifolius</i>					X								X	X				
* <i>Cynodon dactylon</i>												X						
<i>Cyrtostylis</i> sp.																X		
<i>Dampiera angulata</i>					X								X	X				
<i>Dampiera fasciculata</i>														X				
<i>Dampiera juncea</i>	X	X	X	X										X				
<i>Dampiera lavandulacea</i>			X		X		X			X			X	X	X		X	
<i>Dampiera</i> sp. Ravensthorpe (G.F. Craig 8277)																X	X	X
<i>Darwinia diosmoides</i>									X									
<i>Darwinia vestita</i>	X	X	X	X														
<i>Daucus glochidiatus</i>								X										
<i>Daviesia anceps</i>	X				X		X						X	X	X			
<i>Daviesia articulata</i>					X													
<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>					X	X												
<i>Daviesia lancifolia</i>					X								X	X				
<i>Daviesia nematophylla</i>					X	X												
<i>Daviesia pachyphylla</i>	X	X											X			X	X	
<i>Daviesia teretifolia</i>	X	X	X	X									X	X				X
<i>Dianella brevicaulis</i>						X		X								X		

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Dianella revoluta</i>					X		X						X					
<i>Dillwynia divaricata</i>			X															
<i>Dodonaea caespitosa</i>					X	X						X	X					
<i>Dodonaea concinna</i>					X													
<i>Dodonaea ptarmicaefolia</i>						X												
<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>							X				X							
<i>Drosera grieveri</i>	X	X		X														
<i>Drosera moorei</i>																X		
* <i>Ehrharta longiflora</i>												X						
<i>Elythranthera brunonis</i>			X													X	X	
<i>Enchylaena tomentosa</i>							X											
<i>Eremophila glabra</i>								X										
<i>Ericomyrtus drummondii</i>																	X	
<i>Ericomyrtus parviflora</i>																X	X	X
<i>Ericomyrtus serpyllifolia</i>																	X	X
<i>Eriochilus dilatatus</i>							X											
<i>Erodium cygnorum</i>							X	X										
<i>Eucalyptus calycogona</i> subsp. <i>calycogona</i>					X	X												
<i>Eucalyptus ecostata</i>	X						X		X	X			X					
<i>Eucalyptus eremophila</i> subsp. <i>eremophila</i>					X													
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>	X				X	X	X											
<i>Eucalyptus incrassata</i>							X							X				
<i>Eucalyptus kessellii</i> subsp. <i>eugnosta</i>					X									X	X			
<i>Eucalyptus leptocalyx</i> subsp. <i>leptocalyx</i>					X									X				
<i>Eucalyptus occidentalis</i>							X	X			X	X						
<i>Eucalyptus perangusta</i>	X																X	
<i>Eucalyptus phaenophylla</i> subsp. <i>interjacens</i>					X		X						X	X				
<i>Eucalyptus pileata</i>					X	X	X											
<i>Eucalyptus platypus</i> subsp. <i>congregata</i>							X											
<i>Eucalyptus pleurocarpa</i>	X	X	X	X					X	X			X	X	X			
<i>Eucalyptus quadrans</i>					X	X												
<i>Eucalyptus</i> sp. Southern Wheatbelt (D. Nicolle & M. French DN 5507)					X	X	X				X		X	X	X			

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Eucalyptus sporadica</i>		X											X	X				
<i>Eucalyptus suggrandis</i> subsp. <i>suggrandis</i>					X	X							X	X				
<i>Eucalyptus tetraptera</i>	X	X	X		X									X				
<i>Eucalyptus uncinata</i>			X		X	X	X						X	X	X			
<i>Eucalyptus x erythrandra</i>														X				
<i>Eutaxia empetrifolia</i>								X										
<i>Eutaxia parvifolia</i>					X													
<i>Exocarpos aphyllus</i>					X													
<i>Exocarpos sparteus</i>					X	X							X	X				
<i>Ficinia nodosa</i>								X										
<i>Franklandia fucifolia</i>				X														
<i>Gahnia ancistrophylla</i>	X				X	X	X					X	X	X	X			
<i>Gahnia aristata</i>					X									X				
<i>Gahnia</i> sp. Ravensthorpe (G.F. Craig 5005)					X	X												
<i>Gahnia trifida</i>											X	X						
<i>Gastrolobium latifolium</i>													X					
<i>Gastrolobium parviflorum</i>					X	X			X									
<i>Gastrolobium punctatum</i>			X															
<i>Gompholobium baxteri</i>	X												X	X				
<i>Gompholobium confertum</i>					X		X						X	X				
<i>Gompholobium knightianum</i>	X		X															
<i>Gompholobium marginatum</i>																		X
<i>Gompholobium scabrum</i>				X														
<i>Gompholobium tomentosum</i>			X	X														
<i>Gonocarpus nodulosus</i>																X		
<i>Goodenia affinis</i>							X											
<i>Goodenia berardiana</i>																X		
<i>Goodenia ?coerulea</i>					X									X				
<i>Goodenia concinna</i>						X							X					
<i>Goodenia occidentalis</i>																X		
<i>Goodenia pterigosperma</i>	X		X											X				
<i>Goodenia scapigera</i> subsp. <i>scapigera</i>	X			X	X								X		X			
<i>Goodenia viscida</i>								X										

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Grevillea huegelii</i>					X	X												
<i>Grevillea nudiflora</i>	X	X	X	X	X		X						X	X	X			
<i>Grevillea oligantha</i>					X									X				
<i>Grevillea pectinata</i>					X													
<i>Grevillea rigida</i> subsp. <i>rigida</i>																X		
<i>Grevillea teretifolia</i>		X															X	X
<i>Guichenotia micrantha</i>												X						
<i>Haemodorum discolor</i>																X		
<i>Hakea commutata</i>					X													
<i>Hakea corymbosa</i>	X	X	X	X				X					X					
<i>Hakea cygna</i> subsp. <i>cygna</i>		X																
<i>Hakea ilicifolia</i>	X		X															
<i>Hakea incrassata</i>		X											X				X	
<i>Hakea laurina</i>	X				X	X	X	X					X					
<i>Hakea lissocarpha</i>		X			X		X			X			X	X				
<i>Hakea marginata</i>					X									X				
<i>Hakea nitida</i>	X		X					X					X					
<i>Hakea obliqua</i> subsp. <i>parviflora</i>	X		X	X														
<i>Hakea pandanica</i> subsp. <i>pandanica</i>	X	X	X										X	X				
<i>Hakea prostrata</i>		X	X															
<i>Hakea ruscifolia</i>				X														
<i>Hakea trifurcata</i>		X												X				
<i>Hakea verrucosa</i>															X			
<i>Harperia lateriflora</i>	X	X	X	X	X								X	X	X			X
<i>Helichrysum luteoalbum</i>												X						
<i>Hemigenia teretiuscula</i>																	X	
<i>Hibbertia gracilipes</i>	X	X	X	X	X		X		X	X			X	X	X	X	X	X
<i>Hibbertia psilocarpa</i>					X									X				
<i>Hibbertia pungens</i>					X		X						X	X				
<i>Hibbertia recurvifolia</i>				X									X					
<i>Hovea trisperma</i>													X					
<i>Hybanthus floribundus</i> subsp. <i>adpressus</i>															X			
<i>Hydrocotyle callicarpa</i>								X										

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>*Hypochaeris glabra</i>						X	X	X			X	X				X		
<i>Hypolaena fastigiata</i>				X														
<i>Isoetopsis graminifolia</i>								X										
<i>Isolepis marginata</i>								X										
<i>Isopogon polycephalus</i>	X		X	X														
<i>Isopogon</i> sp. Fitzgerald River (D.B. Foreman 813)	X	X	X										X	X				
<i>Isopogon trilobus</i>	X		X	X											X			
<i>Isotoma hypocrateriformis</i>																X		
<i>Isotropis drummondii</i>	X	X																
<i>Jacksonia elongata</i>	X			X						X								
<i>Johnsonia acaulis</i>				X														
<i>Juncus kraussii</i> subsp. <i>australiensis</i>											X							
<i>Kunzea affinis</i>			X							X						X	X	
<i>Kunzea jucunda</i>	X												X					
<i>Kunzea micromera</i>		X																
<i>Kunzea preissiana</i>		X	X															
<i>Lagenophora huegelii</i>							X	X										
<i>Lasiopetalum compactum</i>							X											
<i>Lasiopetalum rosmarinifolium</i>	X				X	X							X	X	X			
<i>Laxmannia paleacea</i>	X	X	X														X	
<i>Laxmannia ramosa</i> subsp. <i>deflexa</i>				X										X				
<i>Lechenaultia heteromera</i>				X														
<i>Lepidobolus chaetocephalus</i>	X	X											X		X			
<i>Lepidobolus preissianus</i>																X	X	X
<i>Lepidosperma carphoides</i>	X	X	X										X	X	X			X
<i>Lepidosperma fimbriatum</i>					X	X	X						X	X			X	X
<i>Lepidosperma gahnioides</i>			X		X	X												
<i>Lepidosperma sanguinolentum</i>							X		X			X	X				X	
<i>Lepidosperma</i> sp. Bandalup Scabrid (N. Eveleigh 10798)						X	X		X		X		X					
<i>Lepidosperma</i> sp. 'Clathrate' (R.L. Barrett & G.F. Craig RLB 3570)	X	X	X															

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Lepidosperma</i> sp. 'Dale River' (R. Davis 1051)														X				
<i>Lepidosperma</i> sp. 'Fitzgerald Tuberculate'																X		
<i>Lepidosperma</i> sp. 'Jerdacuttup' (R.L. Barrett RLB 2770)	X		X		X	X							X					
<i>Lepidosperma</i> sp. 'Mt Benson' (R.L. Barrett & G.F. Craig RLB 3553)															X	X		
<i>Lepidosperma</i> sp. Mt Burdett (M.A. Burgman & C. Layman MAB 3287)	X	X	X										X	X	X			
<i>Lepidosperma</i> sp. Mt Chester (S. Kern et al. LCH 16596)					X	X								X				
<i>Lepidosperma</i> sp. 'Robust Pruinose' (R.L. Barrett & M.D. Barrett RLB 2984)																X	X	X
<i>Lepidosperma</i> sp. Saltbush Hill (K.R. Newbey 4118)								X						X				
<i>Lepidosperma</i> sp. 'Slender Tuberculate' (R.L. Barrett RLB 3476)								X										
<i>Lepidosperma</i> sp. 'Tibialate' (R.L. Barrett RLB 3522)	X	X	X		X				X	X					X		X	
<i>Leptomeria pauciflora</i>				X														
<i>Leptospermum erubescens</i>	X		X	X				X										
<i>Leptospermum inelegans</i>			X															
<i>Leptospermum maxwellii</i>	X																	
<i>Leptospermum nitens</i>																X		
<i>Leptospermum oligandrum</i>	X	X	X	X					X				X					X
<i>Leptospermum spinescens</i>	X	X	X	X						X			X	X	X			
<i>Leucopogon brevicuspis</i>													X			X	X	X
<i>Leucopogon concinnus</i>	X	X											X	X			X	
<i>Leucopogon cuneifolius</i>										X								
<i>Leucopogon fimbriatus</i>		X		X										X		X		
<i>Leucopogon heterophyllus</i>	X	X	X										X					
<i>Leucopogon opponens</i>					X					X				X				
<i>Leucopogon</i> sp. Coujinup (M.A. Burgman 1085)	X	X	X	X									X	X		X		X
<i>Leucopogon</i> sp. Newdegate (M. Hislop 3585)	X	X	X						X	X			X	X	X		X	

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Leucopogon tamminensis</i> var. <i>australis</i>	X	X											X	X				
<i>Leucopogon woodsii</i>	X																	
<i>Levenhookia pusilla</i>																X		
<i>Levenhookia stipitata</i>																X		
<i>Logania micrantha</i>	X			X									X					
<i>Logania stenophylla</i>					X													
* <i>Lolium rigidum</i>												X						
<i>Lomandra effusa</i>							X											
<i>Lomandra micrantha</i> subsp. <i>teretifolia</i>	X	X	X	X	X								X	X	X		X	
<i>Lomandra mucronata</i>	X	X	X	X			X		X	X			X	X	X		X	
<i>Lomandra nigricans</i>	X			X														
<i>Lomandra rupestris</i>								X										
<i>Lyginia imberbis</i>				X														
* <i>Lysimachia arvensis</i>								X			X	X						
<i>Lysinema ciliatum</i>	X	X	X	X						X			X	X	X			
<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>							X						X					
<i>Melaleuca brevifolia</i>											X							
<i>Melaleuca calycina</i>					X													
<i>Melaleuca carrii</i>	X	X	X										X	X		X	X	X
<i>Melaleuca cuticularis</i>											X	X						
<i>Melaleuca elliptica</i>							X									X		
<i>Melaleuca glaberrima</i>					X		X						X					
<i>Melaleuca hamata</i>					X	X	X	X	X			X	X		X	X	X	
<i>Melaleuca hamulosa</i>												X						
<i>Melaleuca johnsonii</i>					X	X												
<i>Melaleuca lateralis</i>	X												X	X				
<i>Melaleuca lateriflora</i>					X	X	X							X				
<i>Melaleuca lecanantha</i>																	X	
<i>Melaleuca pentagona</i> var. <i>pentagona</i>										X								
<i>Melaleuca platycalyx</i>																	X	
<i>Melaleuca rigidifolia</i>	X	X	X		X					X			X	X	X			
<i>Melaleuca societatis</i>					X	X								X				
<i>Melaleuca striata</i>				X														

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Melaleuca subfalcata</i>			X		X	X							X	X				
<i>Melaleuca thapsina</i>								X										
<i>Melaleuca torquata</i>					X													
<i>Melaleuca tuberculata</i> var. <i>macrophylla</i>	X	X	X	X													X	X
<i>Melaleuca ulicoides</i>					X													
<i>Melaleuca undulata</i>					X	X												
<i>Melaleuca villosisepala</i>	X									X								
<i>Mesomelaena stygia</i> subsp. <i>stygia</i>	X	X	X	X									X	X	X			
<i>Microcorys glabra</i>					X									X				
<i>Microcorys subcanescens</i>														X				
<i>Micromyrtus elobata</i> subsp. <i>elobata</i>			X										X				X	
<i>Micromyrtus navicularis</i>																	X	
<i>Millotia tenuifolia</i> var. <i>tenuifolia</i>								X										
<i>Mirbelia multicaulis</i>																X	X	
<i>Monotaxis paxii</i>													X	X				
<i>Neurachne alopecuroidea</i>	X	X	X		X	X	X	X	X	X			X	X	X	X	X	X
<i>Olox benthamiana</i>	X	X	X										X		X			
<i>Olearia imbricata</i>					X													
<i>Olearia</i> sp. <i>Eremicola</i> (Diels & Pritzel s.n. PERTH 00449628)						X		X										
<i>Opercularia apiciflora</i>						X												
<i>Opercularia vaginata</i>	X	X	X											X		X		X
<i>Oxalis exilis</i>						X	X	X										
<i>Ozothamnus lepidophyllus</i>						X	X											
* <i>Parapholis incurva</i>												X						
<i>Patersonia lanata</i> forma <i>lanata</i>	X																	
<i>Patersonia occidentalis</i>								X						X				
<i>Pelargonium littorale</i>							X											
* <i>Pentameris airoides</i> subsp. <i>airoides</i>						X	X	X				X						
<i>Persoonia helix</i>	X			X														
<i>Persoonia striata</i>	X	X	X	X										X				X
<i>Petrophile cyathiforma</i>				X														
<i>Petrophile fastigiata</i>	X	X	X	X						X			X	X	X			X

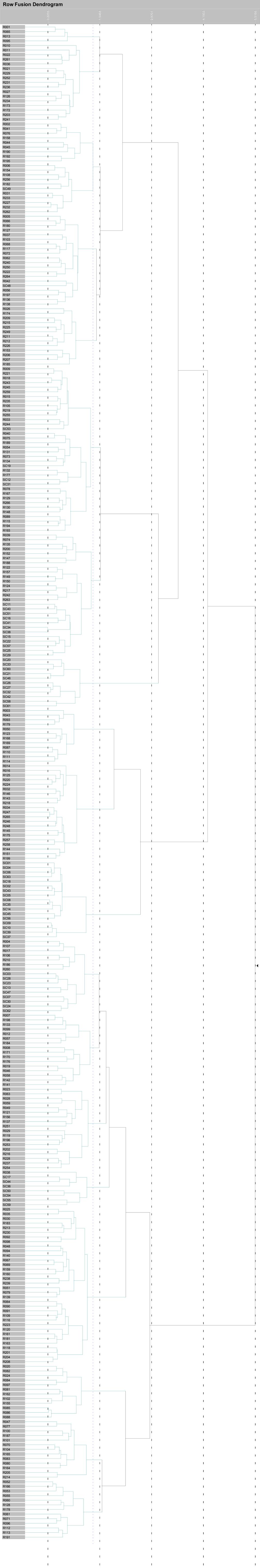
Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Petrophile seminuda</i>	X	X	X												X		X	X
<i>Petrophile squamata</i> subsp. <i>northern</i> (J. Monks 40)	X	X	X										X	X				
<i>Petrophile teretifolia</i>	X		X	X														
<i>Phebalium lepidotum</i>					X				X				X	X				
<i>Phyllangium divergens</i>																X		
<i>Phyllanthus calycinus</i>							X									X		
<i>Pimelea brevifolia</i> subsp. <i>brevifolia</i>	X	X	X										X					
<i>Pimelea imbricata</i> var. <i>piligera</i>																X	X	X
<i>Pimelea pendens</i>													X					
<i>Platysace deflexa</i>			X		X								X	X		X	X	X
<i>Platysace effusa</i>	X	X	X	X														X
<i>Poranthera microphylla</i>																X		
<i>Prostanthera serpyllifolia</i> subsp. <i>microphylla</i>						X												
<i>Pterochaeta paniculata</i>																X		
<i>Pterostylis recurva</i>							X											X
<i>Ptilotus spathulatus</i>								X										
<i>Pultenaea barbata</i>				X														
<i>Pultenaea indira</i> subsp. <i>indira</i>		X											X	X	X			
<i>Pyrorchis nigricans</i>		X					X											
<i>Rhagodia preissii</i> subsp. <i>preissii</i>						X		X				X						
<i>Rhodanthe pygmaea</i>								X								X		
<i>Rinzia communis</i>					X		X						X					
<i>Rytidosperma setaceum</i>						X	X	X			X					X		
<i>Samolus junceus</i>												X						
<i>Santalum acuminatum</i>					X	X	X											
<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>												X						
<i>Schoenus brevisetis</i>	X	X	X	X														
<i>Schoenus caespitius</i>				X														
<i>Schoenus calcatus</i>																	X	
<i>Schoenus obtusifolius</i>	X	X	X											X				
<i>Schoenus racemosus</i>													X	X	X			
<i>Schoenus sesquispiculus</i>																X	X	X

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Schoenus subfascicularis</i>			X					X										
<i>Schoenus subflavus</i>	X														X	X	X	X
<i>Schoenus subflavus</i> subsp. <i>subflavus</i>		X	X											X	X			
<i>Schoenus subflavus</i> subsp. ? <i>long leaves</i> (K.L. Wilson 2865)	X	X	X	X									X					
<i>Senecio glossanthus</i>						X						X						
<i>Senecio quadridentatus</i>								X										
<i>Senna</i> sp. Pallinup River (J.W. Green 4847)						X	X											
* <i>Solanum nigrum</i>											X							
<i>Solanum symonii</i>												X						
* <i>Sonchus oleraceus</i>							X				X	X				X		
<i>Spartochloa scirpoidea</i>							X		X			X				X		
<i>Spergularia marina</i>											X	X						
<i>Sphaerolobium daviesioides</i>	X																	
<i>Sphaerolobium drummondii</i>														X				
<i>Spyridium cordatum</i>					X								X	X				
<i>Stachystemon polyandrus</i>	X	X	X	X									X					
<i>Stackhousia monogyna</i>							X											
<i>Stackhousia scoparia</i>	X	X	X	X														
<i>Stackhousia</i> sp. Thick sepals (A.E. Orchard 1547)				X											X			
<i>Stenanthemum intricatum</i>													X					
<i>Stenanthemum tridentatum</i>						X												
<i>Stirlingia anethifolia</i>				X														
<i>Stylidium dichotomum</i>																X	X	X
<i>Stylidium piliferum</i>	X	X	X	X									X					X
<i>Stylidium repens</i>		X	X															
<i>Stylidium schoenoides</i>	X																	
<i>Stylidium zeicolor</i>																	X	
<i>Stypandra glauca</i>																X		
<i>Styphelia intertexta</i>					X	X	X											
<i>Synaphea divaricata</i>	X	X	X	X												X		
<i>Synaphea</i> aff. <i>drummondii</i>			X															
<i>Synaphea favosa</i>	X																	

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Synaphea oligantha</i>				X														
<i>Synaphea</i> aff. <i>petiolaris</i>		X		X														X
<i>Synaphea reticulata</i>		X																
<i>Synaphea spinulosa</i> subsp. <i>major</i>		X	X															
<i>Taxandria spathulata</i>	X	X	X	X						X								
<i>Tecticornia lepidosperma</i>												X						
<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>											X	X						
<i>Tecticornia syncarpa</i>												X						
<i>Templetonia battii</i>					X													
<i>Templetonia retusa</i>							X						X					
<i>Templetonia sulcata</i>					X	X								X				
<i>Tetrapora verrucosa</i>					X									X				
<i>Tetraria</i> sp. Mt Madden (C.D. Turley 40 BP/897)					X		X						X	X				
<i>Thelymitra benthamiana</i>																X	X	
<i>Thelymitra campanulata</i>	X	X																
<i>Thelymitra graminea</i>											X							
<i>Thelymitra macrophylla</i>								X										
<i>Thelymitra occidentalis</i>					X				X									
<i>Thelymitra petrophila</i>						X										X		
<i>Thelymitra villosa</i>																X		
<i>Thomasia angustifolia</i>							X	X										
<i>Thomasia microphylla</i>					X		X											
<i>Threlkeldia diffusa</i>											X							
<i>Thryptomene australis</i> subsp. <i>australis</i>																X		
<i>Thysanotus parviflorus</i>				X														
<i>Thysanotus patersonii</i>							X									X		
<i>Thysanotus sparteus</i>	X			X									X					
<i>Thysanotus thyrsoideus</i>																X		
<i>Trachymene ornata</i>							X									X		
<i>Trachymene pilosa</i>							X					X				X		
<i>Tricoryne</i> ? <i>tenella</i>													X					
<i>Tricostularia compressa</i>				X														
<i>Tricostularia neesii</i>				X														

Taxon	Vegetation Type																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Tricostularia</i> sp. Hopetoun (M. Bennett 646)	X		X															
<i>Tricostularia</i> sp. Lake King (A.M. Coates 2298)	X	X	X															
<i>Trymalium elachophyllum</i>							X											
* <i>Ursinia anthemoides</i>								X				X						
<i>Verticordia acerosa</i> var. <i>preissii</i>	X	X	X							X			X					
<i>Verticordia chrysantha</i>	X	X	X													X	X	
<i>Verticordia densiflora</i> var. <i>cespitosa</i>	X	X	X	X										X				X
<i>Verticordia eriocephala</i>								X									X	
<i>Verticordia inclusa</i>	X		X															
<i>Verticordia pennigera</i>																		X
<i>Vittadinia australasica</i> var. <i>australasica</i>								X										
<i>Vittadinia gracilis</i>								X										
<i>Wahlenbergia gracilentia</i>							X	X										
<i>Wilsonia backhousei</i>												X						
<i>Wilsonia humilis</i>					X	X	X											
<i>Xanthorrhoea platyphylla</i>				X														

Appendix O: Classification Analysis Dendrogram of Quadrats Established in the Study Area and Ravensthorpe Range by Markey et al. (2012)



Row Fusion Dendrogram

0.2235 1.5468 2.8701 4.1933 5.5166

R001
R065
R013
R095
R010
R011
R022
R261
R036
R021
R229
R252
R231
R236
R027
R126
R234
R173
R172
R203
R241
R002
R041
R076
R158
R044
R045
R190
R192
R195
R006
R154
R108
R256
R182
SC49
R031
R233
R227
R232
R262
R005
R066
R180
R127
R037
R103
R068
R117
R072
R062
R240
R250
R222
R264
R042
SC48
R056
R197
R136
R138
R026
R174
R209
R215
R225
R249
R211
R212
R226
R153
R206
R207
R185
R009
R221
R018
R243
R245
R259
R015
R235
R105
R219
R255
R033
R244
SC53
R040
R075
R189
R054
R131
R073
R134
SC19
R132
R177
SC12
SC31
R078
R167
R129
R266
R130
R148
R089
R115
R194
R193
R039
R074
R135
R200
R152
R147
R188
R122
R157
R149
R150
R124
R217
R242
R263
SC11
SC40
SC51
SC16
SC41
SC34
SC38
SC15
SC22
SC57
SC25
SC29
SC20
SC33
SC60
SC21
SC46
SC26
SC27
SC32
SC42
SC68
SC61
R003
R043
R093
R179
R050
R123
R168
R169
R087
R110
R111
R114
R014
R016
R125
R220
R224
R032
R146
R143
R218
R034
R247
R265
R246
R248
R145
R175
R257
R258
R144
R151
R199
SC01
SC04
SC06
SC63
SC18
SC02
SC43
SC05
SC08
SC35
SC14
SC45
SC56
SC09
SC10
SC39
SC37
R004
R107
R017
R106
R210
R186
R260
SC03
SC28
SC23
SC13
SC47
SC07
SC30
SC24
SC62
R007
R198
R133
R099
R012
R057
R184
R008
R171
R170
R019
R046
R058
R141
R142
R023
R063
R028
R059
R049
R121
R156
R137
R251
R029
R119
R196
R253
R202
R216
R228
R237
R254
R038
SC17
SC44
SC36
SC50
SC55
SC59
R025
R035
R030
R183
R213
R230
R092
R098
R048
R094
R140
R067
R069
R159
R160
R238
R239
R051
R079
R139
R064
R090
R091
R109
R116
R223
R120
R181
R163
R118
R201
R208
R020
R082
R024
R084
R097
R081
R162
R102
R155
R085
R086
R088
R047
R077
R100
R187
R101
R070
R165
R083
R080
R164
R205
R214
R052
R166
R053
R055
R060
R128
R178
R061
R071
R096
R112
R113
R191