

Reconnaissance and Targeted Flora and Vegetation Survey

Boundary Road Gravel Pit

(CPS 8496/1)

Popanyinning



Prepared for the Shire of Cuballing
June 2020



PO Box 9179, Picton WA 6229
0484 771 825 | enquiries@ecoedge.com.au

Version	Origin	Review	Review date	Release approval	Issue date
V1	C. Spencer	R. Smith			
V2	R. Smith	C. Spencer	10/06/2020		
Final Draft	C. Spencer	D. Brace	11/6/2020	Ecoedge	19/6/2020
Final				Ecoedge	25/6/2020

Executive Summary

Ecoedge was engaged by the Shire of Cuballing in September 2019 to undertake a Reconnaissance and Targeted flora and vegetation survey of a proposed 1.436 hectare gravel pit off Boundary Road just west of the Town of Popanyinning in the Shire of Cuballing.

The Shire are proposing to extend a gravel pit by clearing this vegetation in order to source gravel to support road construction projects in the region and required the survey to inform environmental approvals that may be associated with the proposal.

The flora and vegetation survey was undertaken on the 10th October 2019 in accordance with the Environmental Protection Authority (EPA) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016).

Sixty-five flora taxa were identified, with no introduced species.

No threatened flora, priority flora or other flora of conservation significance were found.

Two vegetation units were recognised both in Excellent condition.

The Wheatbelt Wandoo woodland vegetation unit is an occurrence of the State priority 3 (P3) 'Eucalypt Woodlands of the Western Australian Wheatbelt' ecological community (PEC) and the Federal Critically Endangered 'Eucalypt Woodlands of the Western Australian Wheatbelt' threatened ecological community (TEC). This Wheatbelt Wandoo woodland unit is 0.284 ha in size.

The Survey Area vegetation is a partial match for Beard vegetation association 1023 'Medium woodland; York gum, wandoo and salmon gum', which is mapped for the Survey Area. The extent remaining of this association at State (10.79%), IBRA region (10.84%), IBRA sub-region (12.32%) and local government (18.87%) levels is significantly below the Commonwealth's 30% retention target and it is also poorly represented within the Department of Biodiversity Conservation and Attractions estate (1.18%).

The Survey Area vegetation forms part of larger patch of bushland which is connected to a belt of native vegetation which surrounds town of Popanyinning. The belt is in turn part of a corridor of vegetation, in an otherwise cleared landscape, associated with the South Western Highway and the Hotham River which link to the Hotham River Nature Reserve in the north and the Montague State Forest in the South. Potential clearing of the Survey Area vegetation will not break or disconnect the existing corridor of vegetation but will reduce the area of the remaining vegetation and its contribution to the value of associated corridors.

There are no ESAs within or in close proximity to the Survey Area. The nearest is located approximately 6.2 km south of the Survey Area and is associated with the Montague State Forest.

It is recommended that clearing be confined to the 1.37 ha of Rock Sheoak Woodland with minimal disturbance to the State and Federally protected Wheatbelt Wandoo Woodland which is recognised as an occurrence of both the Federally protected 'Eucalypt Woodlands of the Western Australian Wheatbelt' TEC and State protected 'Eucalypt Woodlands of the Western Australian Wheatbelt' Priority three ecological community.

Contents

Executive Summary	3
Statement of Limitations	7
Reliance on Data	7
Report for Benefit of Client	7
1 Introduction	8
1.1 Scope and Objectives.....	11
2 Desktop Assessment	12
2.1 Biogeographic Region	12
2.2 Geology.....	12
2.3 Vegetation Description according to pre-European Mapping Datasets	14
2.3.1 Vegetation Associations	14
2.3.2 Assessment of Remaining Extent against Pre-European Extent.....	14
2.4 Threatened and Priority Ecological Communities (TEC/PEC).....	17
2.5 Threatened and Priority Flora	18
2.6 Ecological Corridors and Connectivity	21
2.7 Environmentally Sensitive Areas	21
3 Methods	22
3.1 Desktop Assessment.....	22
3.2 Field Survey.....	22
3.3 Survey Limitations	22
4 Results.....	24
4.1 Flora	24
4.2 Vegetation Units	24
4.3 Vegetation Condition.....	25
5 Threatened and Priority Ecological Communities	26
6 Discussion and conclusions.....	30
6.1 Significance of the Flora	30
6.2 Declared Pest Plants and Environmental Weeds	30
6.3 Significance of the Vegetation.....	30
6.3.1 Vegetation Units.....	30
6.3.2 Vegetation Associations	30
6.3.3 Ecological Corridors and Connectivity.....	30
6.3.4 Environmentally Sensitive Areas	31

7	Recommendations	31
8	References.....	32
	Appendix 1. Categories of DBCA Threatened and Priority Ecological Communities (DBCA 2018a, 2019a).....	Error! Bookmark not defined.
	Appendix 2. Categories of Threatened Ecological Communities under the EPBC Act (DotEE, 2018b).	
	Appendix 3. Protected Matters Search Tool and NatureMap reports.....	
	Appendix 4. Categories of Threatened and Priority List flora (DBCA, 2019b).	
	Appendix 5. Categories of Threatened Species under the EPBC Act (DotEE, 2018b).....	
	Appendix 6. Vegetation Condition Scale (EPA, 2016).	
	Appendix 7. List of Vascular Flora found within the Survey Area.....	
	Appendix 8 Threatened Ecological Community Report Form.....	

Table of Tables

	Table 1. Soil Mapping Units for the Survey Area (McArthur et al. 1977)	12
	Table 2. Beard vegetation association 1023 assessed against the Statewide Vegetation Statistics (Government of Western Australia, 2018).....	15
	Table 3. TECs and PECs occurring within 10 km of the Survey Area (DBCA, 2018a, 2019a; DotEE, 2019a).....	18
	Table 4. Threatened and Priority List flora known to occur within 10 km of the Survey Area (DBCA, 2019c; DotEE, 2019a.)	19
	Table 5. Limitations of the field survey with regard to assessment adequacy and accuracy.....	23
	Table 6. Area of each vegetation unit within the Survey Area.	25
	Table 7. Comparison of the Wheatbelt Wandoo woodland unit with Eucalypt Woodlands of the Western Australian Wheatbelt TEC key diagnostic characteristics criteria (DotEE, 2015).....	26
	Table 8. Eucalypt Woodlands of the Western Australian Wheatbelt TEC condition and area criteria adapted from DotEE, 2015.	26

Table of Figures

Figure 1. Aerial photograph showing the location of the Survey Area..... 9

Figure 2. The Survey Area in context of surrounding land uses 10

Figure 3. Soil subsystems mapped for the Survey Area (McArthur *et al.* 1977)..... 13

Figure 4. Vegetation Associations mapped within and nearby the Survey Area (Beard, 1980)..... 16

Figure 5. Rock Sheoak woodland. 24

Figure 6. Wheatbelt Wandoo woodland TEC (CR) and PEC (P3)..... 25

Figure 7. Vegetation units mapped within the Survey Area..... 28

Figure 8. Condition of vegetation within the Survey Area..... 29

Statement of Limitations

Reliance on Data

In the preparation of this report, Ecoedge has relied on data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report. Unless stated otherwise in the report, Ecoedge has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report are based in whole or in part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Ecoedge will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, unavailable, misrepresented or otherwise not fully disclosed to Ecoedge.

Report for Benefit of Client

The report has been prepared for the benefit of the Client and for no other party. Ecoedge assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including, without limitation, matters arising from any negligent act or omission of Ecoedge or for any loss or damage suffered by any other party relying on the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions, and should make their own enquiries and obtain independent advice in relation to such matters.

1 Introduction

Ecoedge was engaged by the Shire of Cuballing to undertake a reconnaissance and targeted flora and vegetation survey of a proposed 1.436 hectare gravel pit off Boundary Road just west of the town of Popanyinning, in the Shire of Cuballing (Survey Area). The proposed gravel pit is located within a larger patch of vegetation which occurs at the north-western corner of the town site and beyond which is predominantly cleared agricultural land (**Figure 1** and **Figure 2**).

The proposed extension to the gravel pit, is to provide raw material for the future ongoing road maintenance works within the Shire.

The survey was required to identify whether there were any conservation significant flora or vegetation within the survey area that will need to be considered as a part of the Shire's request to the Department of Water and Environmental Regulation (DWER) for a strategic purpose clearing permit CPS8496/1, and any Federal environmental approval processes that may also be required with the project.

The survey's methodology was aligned with State and Federal requirements for the bioregion and species and communities present, including the Western Australian Environmental Protection Authority (EPA) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016) and Commonwealth survey guidelines for relevant threatened species.

The flora and vegetation survey was undertaken on 10th October 2019. The total area surveyed was approximately 1.436 hectares in size and comprised of entirely of native vegetation.

This report compiles findings of the survey.

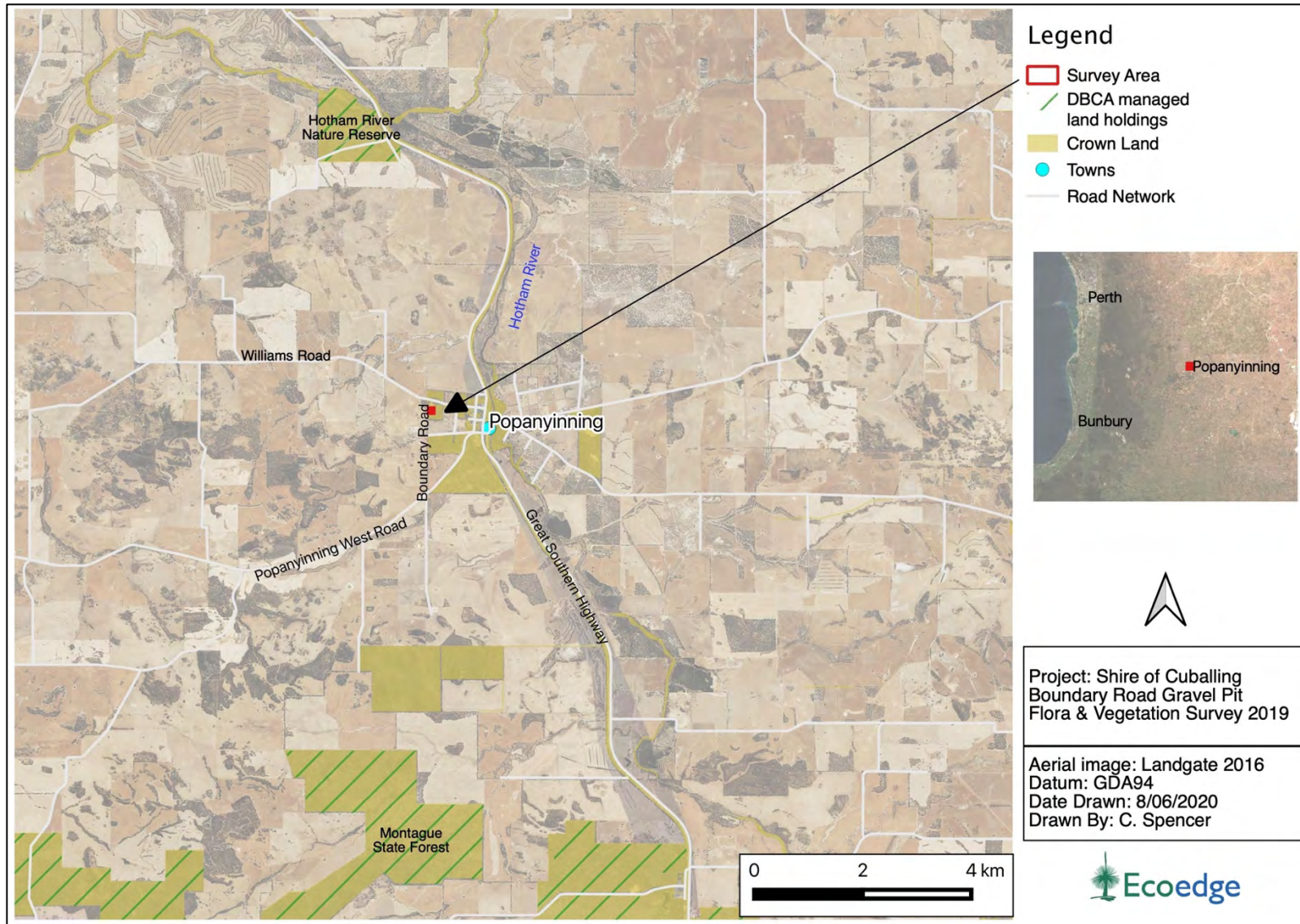


Figure 1. Aerial photograph showing the location of the Survey Area.



Figure 2. The Survey Area in context of surrounding land uses

1.1 Scope and Objectives

The objective of the Survey was to undertake a targeted and reconnaissance flora and vegetation survey of approximately 1.436 ha of land (all of which is native vegetation) adjacent to Boundary Road within the Shire of Cuballing. The Survey Area is proposed to be developed for a gravel pit.

The scope of work for this survey included:

- Recording the date(s) of the survey
- Recording all flora species present within the application area
- Noting any limitations for identifying species present, noting that the survey was required to be undertaken at an appropriate time for recording the majority of the species present.
- Recording the presence of threatened and priority ecological communities, especially the potential presence of the 'Eucalypt Woodlands of the Western Australian Wheatbelt Threatened Ecological Community' (TEC). The assessment of this TEC must be undertaken against the Commonwealth Department of the Environment and Energy's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approved Conservation Advice (including listing advice) for this community.

If a TEC or PEC is present, a map must be provided delineating the patch(es) of the TEC identified and its size (in hectares) and condition (using the Keighery scale).

- Undertaking multiple visits as required to confirm the identification of particular species if there is a risk those species could be declared rare or priority flora species.

If declared rare or priority flora were identified, additional surveys of any adjacent remnant vegetation was undertaken to determine the species' population size and distribution.

- Recording and provision of the GPS location of all declared rare or priority flora species identified.

2 Desktop Assessment

2.1 Biogeographic Region

The Survey Area is situated within the Avon Wheatbelt P2 (AW2) sub-region of the Avon Wheatbelt biogeographic region as defined in the Interim Biogeographical Regionalisation for Australia (IBRA) (Commonwealth of Australia, 2016).

2.2 Geology

The Survey Area occurs within the Southern Zone of Rejuvenated Drainage (SZRD). The SZRD generally comprises an erosional surface of gently undulating rises to low hills with continuous stream channels that flow in most years. Colluvial process are active with soils formed in colluvium or in-situ from weathered rock (Sawkins, 2010). The SZRD has been divided into landscape systems and subsystems. Within the SZRD, the Survey Area is situated on soils of the Dryandra soil landscape System, and within that on two subsystems: the 257DyNO - Norrine Subsystem and the 257DyNB - Noombaling Subsystem, as shown in **Figure 3** (McArthur *et al.* 1977). These are described in **Table 1**.

Table 1. Soil Mapping Units for the Survey Area (McArthur et al. 1977)

Zone	Landscape System	Soil Subsystem
257 - Southern Zone of Rejuvenated Drainage	257Dy - Dryandra System Gently undulating granitic terrain, in the central Zone of Rejuvenated Drainage, with deep sandy duplex, loamy duplex and brown loamy earth.	257 DyNO – Norrine Subsystem A complex of lateritic residuals and associated pediment; gravely sand, sand, duplex yellow soils and duricrust
		257DyNB - Noombaling Subsystem Long gentle and undulating hillslopes and divides. Colluvium / weathered granite, gneiss and some dolerite. Yellow/brown and grey deep sandy duplexes, brown deep loamy duplexes, sandy gravels and shallow duplexes. Marri-Wandoo / Jam-Sheoak.

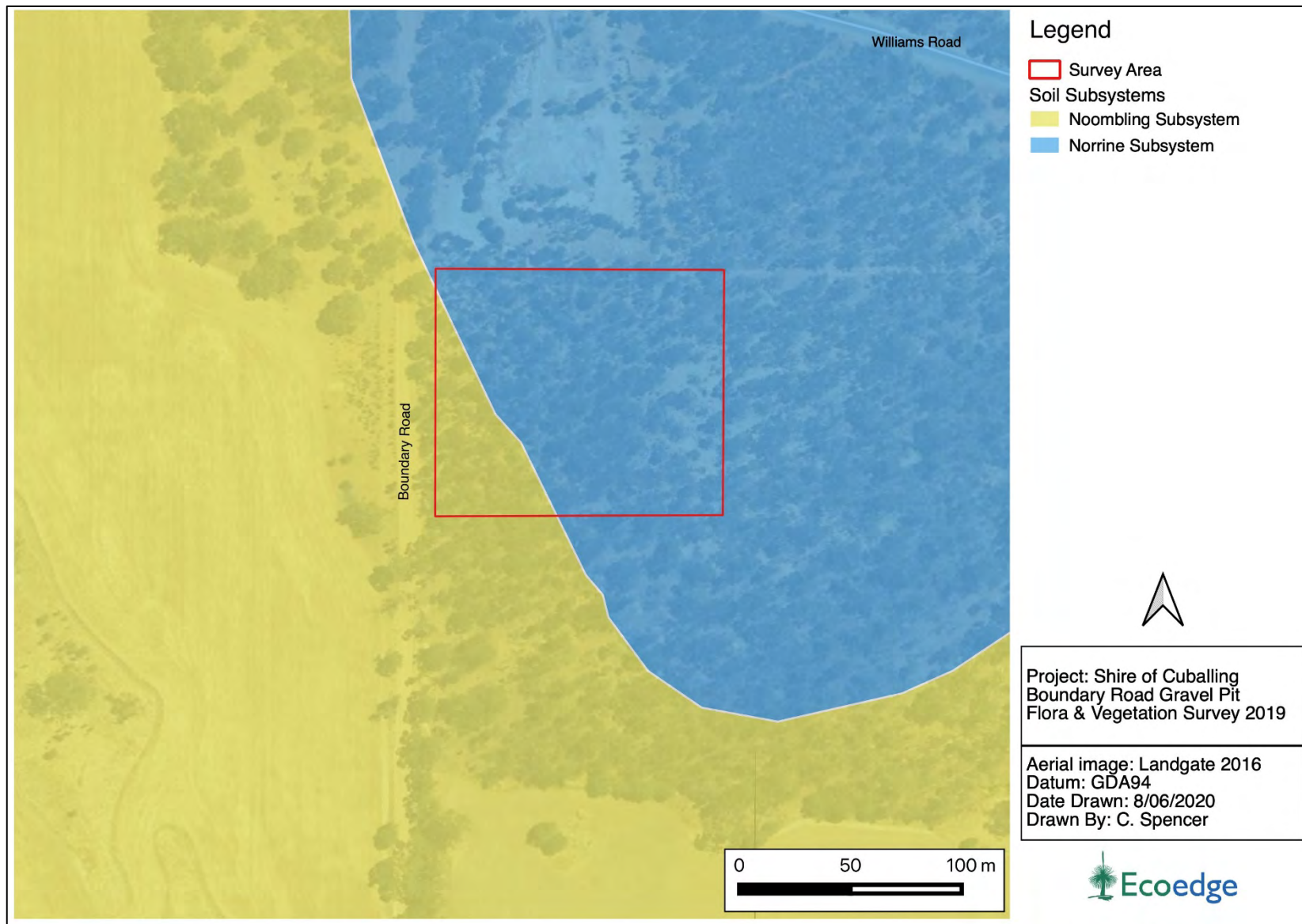


Figure 3. Soil subsystems mapped for the Survey Area (McArthur *et al.* 1977).

2.3 Vegetation Description according to pre-European Mapping Datasets

The Survey Area contains approximately 1.436 ha of remnant native vegetation.

2.3.1 Vegetation Associations

A systematic survey of native vegetation in Western Australia was undertaken by J. S. Beard (along with others) during the 1970s, which described vegetation systems in the south-west of Western Australia at a scale of 1:250,000. Beard's vegetation maps attempted to depict the vegetation as it might have been prior to European settlement in terms of type and extent (Beeston *et al.*, 2001). The Beard Vegetation Association dataset, also referred to as the pre-European native vegetation extent dataset, was digitised by Shepherd *et al.* (2002).

Beard vegetation associations have been described to a minimum standard of Level 3 "Broad Floristic Formation" for the National Vegetation Inventory System (NVIS) (state-wide to regional scale)¹. One Beard vegetation association is mapped across the Survey Area: Association 1023 'Medium woodland; York gum, wandoo and salmon gum'(Beard, 1980) **Figure 4.**

2.3.2 Assessment of Remaining Extent against Pre-European Extent

In 2001, the Commonwealth of Australia stated National Targets and Objectives for Biodiversity Conservation, which recognised that the retention of 30%, or more, of the pre-clearing extent of each ecological community was necessary if Australia's biological diversity was to be protected (Environment Australia, 2001).

In its report on the Statewide Vegetation Statistics incorporating the Comprehensive, Adequate and Representative (CAR) Reserve Analysis, the Government of Western Australia provides information on the pre-European and current extent of the ecological communities of Western Australia and reports on the status of the CAR reserve system for WA (Government of Western Australia, 2018). This system is also based on the National retention targets of 30% overall. Only reserves managed by DBCA under the *Conservation and Land Management Act 1984* are considered for inclusion in the "CAR Reserve Analysis".

An assessment of Beard's vegetation association 1023 against the *Statewide Vegetation Statistics* is presented in **Table 2.**

¹ Beard's vegetation mapping units are referred to as 'associations' however these do not correspond to the NVIS Level 5 'Associations'. The NVIS system was developed long after Beard's work was completed, and while both classification systems use the same term, NVIS 'Associations' describe vegetation in more detail than do Beard's.

The red, orange and yellow shading in the tables indicates the status of the Commonwealth 30% retention target.

Colour indicator	>30%	<30%	<10%
------------------	------	------	------

Table 2. Beard vegetation association 1023 assessed against the Statewide Vegetation Statistics (Government of Western Australia, 2018).

Beard Vegetation Association	Pre-European (ha)	Current Extent (ha)	% Remaining	% remaining in DBCA Managed Land
Association 1023				
State-wide	1,601,605.76	172,875.16	10.79%	1.18%
IBRA region:	1,522,680.40	165,123.59	10.84%	1.13%
IBRA sub-region	1,123,736.23	138,408.96	12.32%	1.27%
Shire of Cuballing	97,360.06	18,370.50	18.87%	4.77%

* Excludes Crown Freehold Department Interest Lands that are managed under Section 8(a) of the CALM Act.

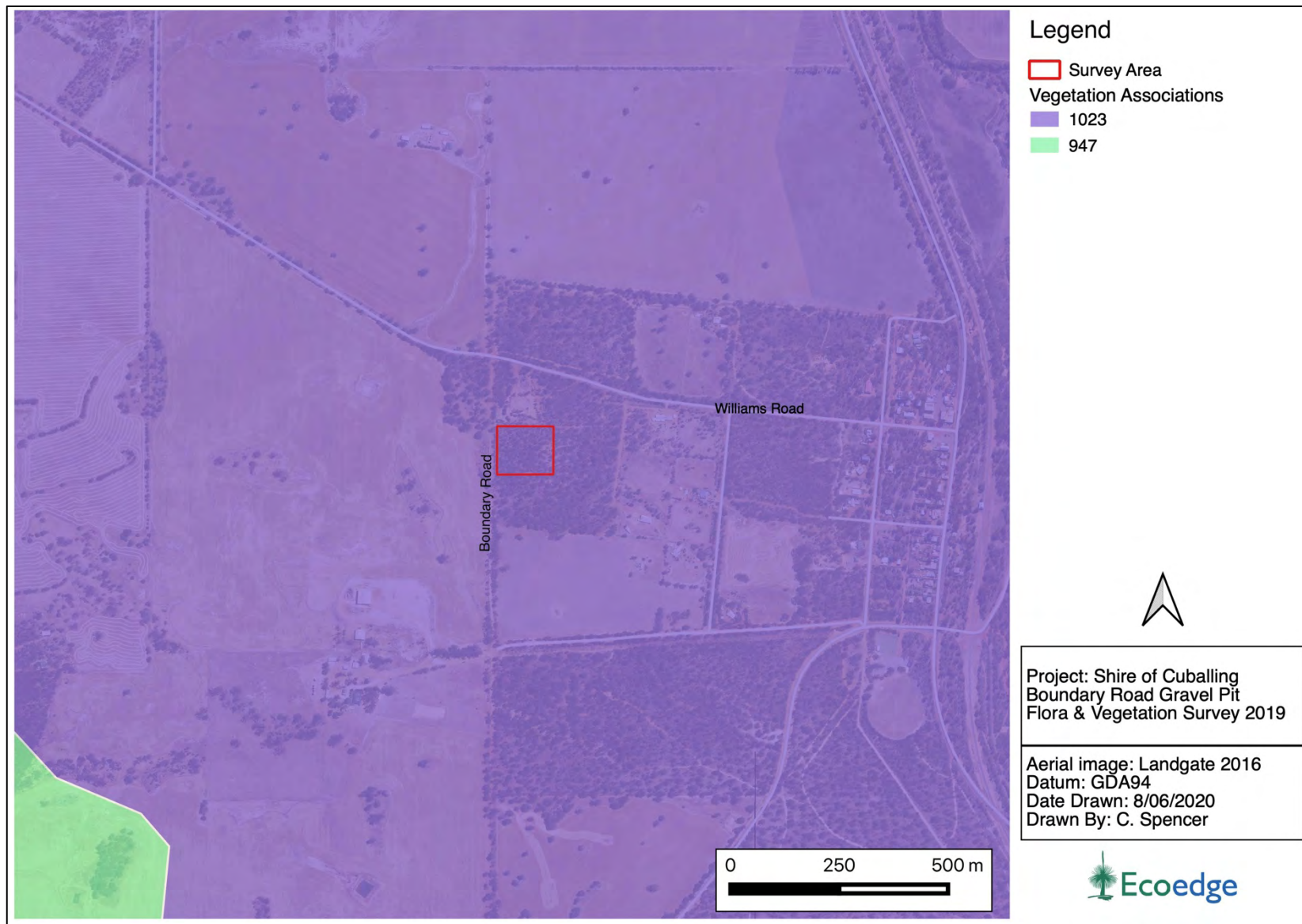


Figure 4. Vegetation Associations mapped within and nearby the Survey Area (Beard, 1980).

2.4 Threatened and Priority Ecological Communities (TEC/PEC).

Ecological communities are defined by Western Australia's DBCA (previously DPaW and the Department of Environment and Conservation (DEC)) as "...naturally occurring biological assemblages that occur in a particular type of habitat. They are the sum of species within an ecosystem and, as a whole, they provide many of the processes which support specific ecosystems and provide ecological services." (DEC, 2013).

Under Section 27 of the *Biodiversity Conservation Act 2016* (BC Act) the Western Australian Minister for Environment may list communities that are considered to be under significant threat as a Threatened ecological communities (TEC). These TECs can be listed under one of three conservation categories; critically endangered (CE), endangered (EN), vulnerable (V). The BC Act also provides for listing communities as collapsed ecological communities.

Possible TECs that do not meet survey criteria are added to the DBCA's Priority ecological community lists under Priorities 1, 2 or 3 (referred to as P1, P2, P3). 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 (P4). These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5 (P5) (DEC, 2013).

The current listing of Threatened and Priority ecological communities is specified in DBCA (2018a, 2019a). The conservation categories for these Threatened and Priority ecological communities are defined in **Appendix 1**.

Threatened ecological communities can also be listed under the Commonwealth *Environment and Biodiversity Conservation Act 1999* (EPBC Act) (Department of the Environment and Energy (DotEE), 2018a; Department of Environment, Water, Heritage and the Arts (DEWHA), 1999). There are three categories of TEC under the EPBC Act: Critically Endangered (CE), Endangered (E) and Vulnerable (V). These are defined in **Appendix 2** (DotEE, 2018b).

Under both the State (BC Act) and Federal Act (EPBC Act) ministerial authorisation is required where significant permanent modification to a TEC will occur.

A Protected Matters Search Tool report for communities listed under the EPBC Act occurring within a 10 km radius of the Survey Area was undertaken (DotEE, 2019a, **Appendix 3**), and the current DBCA TEC and PEC listings were consulted (DBCA, 2018a; DBCA, 2019a). Outcomes of these searches are presented in **Table 3**.

Noting that if an occurrence of a threatened ecological community is found during a survey conducted under the auspices of the *Environmental Protection Act 1986* (EP Act) it must be mandatorily reported to the Chief Executive Officer of the DBCA under Section 49 of the BC Act.

Table 3. TECs and PECs occurring within 10 km of the Survey Area (DBCA, 2018a, 2019a; DotEE, 2019a).

Community Name	Status (WA)	Status (EPBC Act)
'Eucalypt Woodlands of the Western Australian Wheatbelt'; a federally listed TEC consisting of numerous State-listed communities	P3	CR

Note: This table only includes formally recognised TECs that are known of and mapped by DBCA and are included in their database.

2.5 Threatened and Priority Flora

Species of flora and fauna are defined as having a Threatened or Priority conservation status where their extant populations are restricted geographically and or under threat of possible extinction. The Department of Biodiversity, Conservation and Attractions recognises these threats and consequently applies regulations towards population and species protection.

Threatened extant flora species are listed under Section 19 of the BC Act and are ranked according to their level of threat using the International Union for Conservation of Nature (IUCN) Red List categories and criteria of; critically endangered (CE), endangered (EN), vulnerable (VU). It is an offence to “take” or damage threatened flora without Ministerial approval. Section 5 of the Act defines “to take” as “... to gather, pluck, cut, pull up, destroy, dig up, remove, harvest or damage flora by any means”.

Priority flora are under consideration for future declaration as “Threatened flora”, dependent on more information. Species classified as Priority One to Three (referred to as P1, P2 and P3) are in need of further survey to determine their status, while Priority Four (P4) species are adequately known rare or threatened species that require regular monitoring.

Threatened flora lists are formally reviewed on an annual basis, whilst the priority flora list is subject to a less formal ongoing review. The current listing of Threatened and Priority flora was updated on the 5th December 2018 (DBCA, 2018b).

Categories of Threatened and Priority flora² as defined by the BC Act are presented in **Appendix 4**, (DBCA, 2019b).

Threatened flora may also be protected under the Commonwealth EPBC Act and be listed in one of six categories; the definitions of these categories are summarised in **Appendix 5** (DotEE, 2018b).

Threatened or Priority flora occurring within 10 km of the Survey Area generated from a NatureMap search and a Protected Matters Search Tool (PMST) search (DBCA 2019c, DotEE 2019a) are listed in **Table 4**. Several of the species listed in **Table 4** could potentially occur within the Survey Area, based on an assessment of their preferred habitats.

² Noting that if any threatened flora species are found during a survey conducted under the auspices of the EP Act that they must be mandatorily reported to the CEO of the DBCA under Section 43 of the BC Act.

Table 4. Threatened and Priority List flora known to occur within 10 km of the Survey Area (DBCA, 2019c; DotEE, 2019a.)

Species	Cons Status*	Flowering	Habitat	**Likelihood of Occurrence
<i>Acacia cochlocarpa</i> subsp. <i>cochlocarpa</i>	T (EN)	Jun-Aug	Velutinous, sprawling shrub, 0.3-0.7(-1.5) m high. Fl. yellow. Sandy clay or laterite.	Possible
<i>Acacia insolita</i> subsp. <i>recurva</i>	T (EN)	Sep	Spindly shrub, 0.6-1.2 m high. Fl. yellow-cream. Lateritic ridges.	Possible
<i>Banksia cuneata</i>	T (EN)	Sep-Dec	Non-lignotuberous, small tree or shrub, 2-4 m high. Fl. pink/pink & cream & yellow. Grey, yellow or yellow-brown sand.	Possible
<i>Banksia oligantha</i>	T (EN)	Oct-Nov	Non-lignotuberous shrub, to 3 m high. Fl. red & cream/orange-brown. Yellow or yellow-brown sand.	Possible
<i>Boronia capitata</i> subsp. <i>capitata</i>	T (EN)	Aug to Dec or Feb	Slender shrub, 0.3-1.3 m high. Fl. pink. Sand, often over laterite. Sandplains.	Possible
<i>Caladenia hoffmanii</i>	T (EN)	Aug-Oct	Tuberous, perennial, herb, 0.13-0.3 m high. Fl. green & yellow & red. Clay, loam, laterite, granite. Rocky outcrops and hillsides, ridges, swamps and gullies.	Unknown
<i>Darwinia carnea</i>	T (EN)	Oct to Dec	Spreading shrub, 0.2-0.45 m high. Fl. green & red. Lateritic loam & gravel.	Possible
<i>Roycea pycnophylloides</i>	T (EN)	Sep	Perennial, herb, forming densely branched, silvery mats to 1 m wide. Fl. Sandy soils, clay. Saline flats.	Unlikely
<i>Verticordia fimbrilepis</i> subsp. <i>fimbrilepis</i>	T (EN)	Oct-Dec, Jan	Shrub, 0.3-0.7 m high. Fl. pink-white. Gravelly sandy or clayey soils. Flats, road verges.	Possible
<i>Diuris micrantha</i>	T (VU)	Sep-Oct	Tuberous, perennial, herb, 0.3–0.6 m high. Fl. yellow, brown. Brown loamy clay. Winter-wet swamps, in shallow water.	Unlikely
<i>Eleocharis keigheryi</i>	T (VU)	Aug-Nov	Rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 m high. Fl. green. Clay, sandy loam. Emergent in freshwater: creeks, claypans	Unlikely
<i>Pultenaea pauciflora</i> (Narrogin Pea)	T (VU)	Oct - Nov	Dense, much-branched shrub, to 0.8 m high. Fl. yellow. Sandy & clay lateritic soils. Undulating country.	Possible

Species	Cons Status*	Flowering	Habitat	**Likelihood of Occurrence
<i>Banksia subpinnatifida</i> var. <i>subpinnatifida</i>	P2	Sep-Oct	Erect or straggling, non-lignotuberous shrub, 0.3-1.5 m high. Fl. yellow. Gravelly loam.	Possible
<i>Leucopogon audax</i>	P2	Aug-Oct	Erect open shrub to 150 cm high x 120 cm wide. Leaves helically arranged. Corolla tube white, lobes white, partially pink - longer than tube. Lateritic uplands.	Possible
<i>Acacia deflexa</i>	P3	Aug	Diffuse, much-branched shrub, 0.5-1.5 m high. Fl. yellow. Red-brown sandy loam. Undulating plains, along drainage lines.	Unlikely
<i>Anigozanthos bicolor</i> subsp. <i>exstans</i>	P3	Aug-Oct	Rhizomatous, perennial, herb, 0.1-0.25 m high. Fl. green&red. White sand, sandy clay loam.	Possible
<i>Conospermum scaposum</i>	P3	Oct to Dec or Jan to Feb	Erect shrub, 0.2-0.45(-0.75) m high. Fl. blue. White-grey sand, sandy clay. Low swampy areas, road verges.	Unlikely
<i>Thysanotus cymosus</i>	P3	Sep to Oct	Caespitose perennial, herb (with fibrous roots with ellipsoidal tubers), to 0.3 m high. Fl. purple. Clay, granitic or lateritic sand.	Possible
<i>Calothamnus brevifolius</i>	P4	Jan-Feb	Erect, spreading shrub, 0.3-0.6(-0.8) m high. Fl. red. White/grey or yellow sand.	Unlikely
<i>Stylidium tenuicarpum</i>	P4	Sep to Nov	Rosetted perennial, herb, 0.1-0.5 m high, Leaves broadly linear to narrowly oblanceolate, 1-7 cm long, 1-2.5 mm wide, apex mucronate, margin hyaline, glabrous. Scape hoary. Inflorescence racemose. Fl. yellow/orange. Sandy loam over laterite or granite. Rock outcrops, hillslopes, breakaways. Shrubland, open woodland.	Possible

*Note: The BC Act Conservation Status.

**

Likely – Known to occur within ten kilometres of the Survey Area with Suitable habitat within the Survey Area

Possible – Suitable habitat within the Survey Area but not known to occur within ten kilometres of the Survey Area

Unlikely – No suitable habitat present within the Survey Area

Unknown – Data deficient.

2.6 Ecological Corridors and Connectivity

The Survey Area occurs within and at the western boundary of a larger patch of bushland which is connected to a 'belt' of varying widths and degrees of condition around the periphery of the town of Popanyinning. This belt extends east and connects with the north-south aligned 'South Western Highway' corridor of planted and native vegetation and the similarly aligned vegetated corridor associated with the Hotham River. Both these corridors are connected to the DBCA managed Hotham River Nature Reserve in the north and the Montague State Forest in the south.

This network of vegetation occurs with a largely cleared agricultural landscape.

2.7 Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESAs) are protected under the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 and are selected for their environmental values at state or national levels (Government of Western Australia, 2005). They include:

- Defined wetlands and riparian vegetation within 50 m
- Areas covered by Threatened Ecological Communities
- Area of vegetation within 50 m of Threatened flora
- Bush Forever sites
- Declared World Heritage property sites.

There are no ESAs in close proximity to the Survey Area. The nearest is located approximately 6.2 km south of the Survey Area and is associated with the Montague State Forest.

3 Methods

3.1 Desktop Assessment

Prior to the field survey, a “desktop assessment” was carried out by downloading a NatureMap report listing all flora (including Threatened flora) occurring within 10 km of the Survey Area (DBCA 2019c) (**Appendix 3**). A Protected Matters Search report was also generated to provide information regarding Matters of National Environmental Significance (MNES) known or potentially occurring within 10 km of the Survey Area (DotEE, 2019a) (**Appendix 3**). This data was used to establish the list of Threatened and Priority flora to target during the survey, as well as providing a list of what other plant taxa might be encountered during the survey.

3.2 Field Survey

The field survey was undertaken by Russell Smith (SL flora permit FB62000192) on 10th October 2019. The Survey Area covered a total of approximately 1.436 ha, all of which was native vegetation. A comprehensive list was made of native and introduced flora and information on vegetation structure, dominant species and vegetation condition was collected at 22 assessment points through the Survey Area.

Flora species that were not identified in the field were photographed for later identification. Taxonomy and conservation status of flora species was checked against DBCA databases (MAX download, 26/09/2019, DBCA, 2019d).

Vegetation condition was assessed using the method of the EPA (2016) (**Appendix 6**).

3.3 Survey Limitations

Potential limitations with regard to the assessment are addressed in **Table 5**.

Table 5. Limitations of the field survey with regard to assessment adequacy and accuracy.

Aspect	Constraint	Comment
Scope	No	The survey scope was prepared in consultation with the client and was designed to comply with EPA requirements.
Proportion of flora identified	Minor	The survey was carried out in only one visit in October which is within the optimal survey time.
Climatic and seasonal effects	Minor	The survey area recorded about 70-80% of the average rainfall during the 2019 wet season (Apr-Nov). Herbaceous species germination may have been reduced.
Availability of contextual information	Minor	Some regional surveys have been carried out in the wheatbelt, and some contextual information is available.
Completeness of the survey	Negligible	All of the Survey Area vegetation was easily accessible.
Skill and knowledge of the botanists	No	The botanist has over 25 years' experience working in south west of WA, including 10 years' experience in the Avon Wheatbelt IBRA region.

4 Results

4.1 Flora

Sixty-five vascular flora taxa were identified within the 1.436 ha Survey Area. There was no Threatened flora, Priority flora nor other flora of conservation significance. No introduced flora, including Declared Pest Plants or Weeds of National Significance were identified within the Survey Area.

The list of vascular flora recorded during the field survey is included in **Appendix 7**.

4.2 Vegetation Units

Two vegetation units were described and mapped for the Survey Area: Wheatbelt Wandoo woodland (*Eucalyptus capillosa*) and Rock sheoak (*Allocasuarina huegeliana*) woodland. The vegetation units are described below with accompanying pictures (**Figure 5** and **Figure 6**) and mapped in **Figure 7** and **Figure 8**. Areas covered by each of the units are provided in **Table 6**.



Figure 5. Rock Sheoak woodland.

Rock sheoak woodland: *Allocasuarina huegeliana* woodland over *Leptospermum erubescens*, *Adenanthos cygnorum*, *Melaleuca tuberculata*, *Xanthorrhoea drummondii* shrubland over *Stylidium repens* very open herbland, *Neurachne alopecuroidea* scattered grasses and *Lepidosperma costale*, *L. resinsum* open sedgeland on gravelly yellow-brown sandy loam.



Figure 6. Wheatbelt Wandoo woodland TEC (CR) and PEC (P3).

Wheatbelt Wandoo woodland: *Eucalyptus capillosa* woodland over *Acacia chrysocephala*, *Banksia armata*, *Beaufortia incana*, *Daviesia longifolia*, *Lechenaultia biloba*, *Xanthorrhoea drummondii* open shrubland over *Dianella revoluta*, *Patersonia juncea*, *Podolepis lessonii*, *Tripterococcus brunonis* very open herbland and *Lepidosperma costale*, *L. resinosum* open sedgeland on rocky yellow-brown sandy loam on a breakaway.

4.3 Vegetation Condition

All vegetation in the Survey Area was in Excellent condition (**Table 6**). Vegetation condition is mapped in **Figure 8**.

Table 6. Area of each vegetation unit within the Survey Area.

Vegetation Unit	Condition	Conservation Status	Area (ha)	%
Wheatbelt Wandoo woodland	Excellent	(TEC - CR) PEC - P3	0.284	19.77
Rock Sheoak woodland	Excellent	-	1.152	80.23
Total			1.436	100.0

*Note: EPBC Act status is in brackets.

5 Threatened and Priority Ecological Communities

The Wheatbelt Wandoo woodland vegetation unit, which is dominated by *Eucalyptus capillosa*, meets the key diagnostic traits (minimum vegetation condition and area criteria) for the Federally-listed Critically Endangered Federally-listed TEC “Eucalypt Woodlands of the Western Australian Wheatbelt” (DotEE, 2015). **Table 7** shows how this community meets the key diagnostic criteria and **Table 8** shows how it meets the condition and minimum area thresholds for this EPBC listed community (DotEE, 2015). The occurrence of this TEC within the Survey Area is shown in the vegetation unit maps **Figure 7**.

A completed Threatened Ecological Community Report form is provided at **Appendix 8**.

Table 7. Comparison of the Wheatbelt Wandoo woodland unit with Eucalypt Woodlands of the Western Australian Wheatbelt TEC key diagnostic characteristics criteria (DotEE, 2015).

Condition Category	Comment
It occurs in one of the appropriate IBRA regions.	Yes, it occurs in the Avon Wheatbelt IBRA region.
The structure of the ecological community is a woodland in which the minimum crown cover of the tree canopy in a mature woodland is 10% (crowns measured as if they are opaque).	Yes, criteria met, canopy >10%.
The key species of the tree canopy are species of <i>Eucalyptus</i> (typically with a single trunk).	Yes, it contains <i>Eucalyptus capillosa</i> .
A native understorey is present but is of variable composition, being a combination of grasses, other herbs and shrubs.	Yes, criteria met, mostly in excellent condition.

Table 8. Eucalypt Woodlands of the Western Australian Wheatbelt TEC condition and area criteria adapted from DotEE, 2015.

Cover of exotic plants	Mature trees	Minimum Patch Size (non-roadside)	Comment
Category A: patches likely to correspond to a condition of Pristine / Excellent / Very good (Keighery, 1994)			
Exotic species account for 0 – 30% of total vegetation cover in understorey layer	Mature trees may be present or absent	2 hectares or more	The 0.284 ha of Wheatbelt Wandoo woodland in the Survey Area is contiguous with similar vegetation in similar condition to the east of the Survey Area. This increases

			the total area of the patch to greater than 2 ha.
Category B: Patches likely to correspond to a condition of Good (Keighery, 1994) AND retains important habitat features			
Exotic plant species account for more than 30, to 50% of total vegetation cover in the understorey layers (i.e. below the tree canopy)	Mature trees are present with at least 5 trees per 0.5 ha.	2 hectares or more	N/A
Category C: Patches likely to correspond to a condition of Good (Keighery, 1994)			
Exotic plant species account for more than 30, to 50% of total vegetation cover in the understorey layers (i.e. below the tree canopy).	Mature trees either absent or less than 5 trees per 0.5 ha are present.	5 hectares or more	N/A
Category D: Patches likely to correspond to a condition of Degraded to Good (Keighery, 1994).			
Exotic plant species account for more than 50 to 70% of total vegetation cover in the understorey layers (i.e. below the tree canopy).	Mature trees are present with at least 5 trees per 0.5 ha.	5 hectares or more	N/A

The Wheatbelt Wandoo woodland vegetation unit also meets the criteria of the State-listed Priority Three ecological community (PEC P3) “Eucalypt Woodlands of the Western Australian Wheatbelt”. It is similar to the Wheatbelt Wandoo over Scrub (EcapScrub) Wheatbelt sub-community (Harvey and Keighery, 2012).

The Rock Sheoak woodland vegetation unit is not considered to meet the definition of the TEC or the PEC because it does not have Eucalypt species in the overstory. It is also not considered to be part of any other conservation significant ecological community.

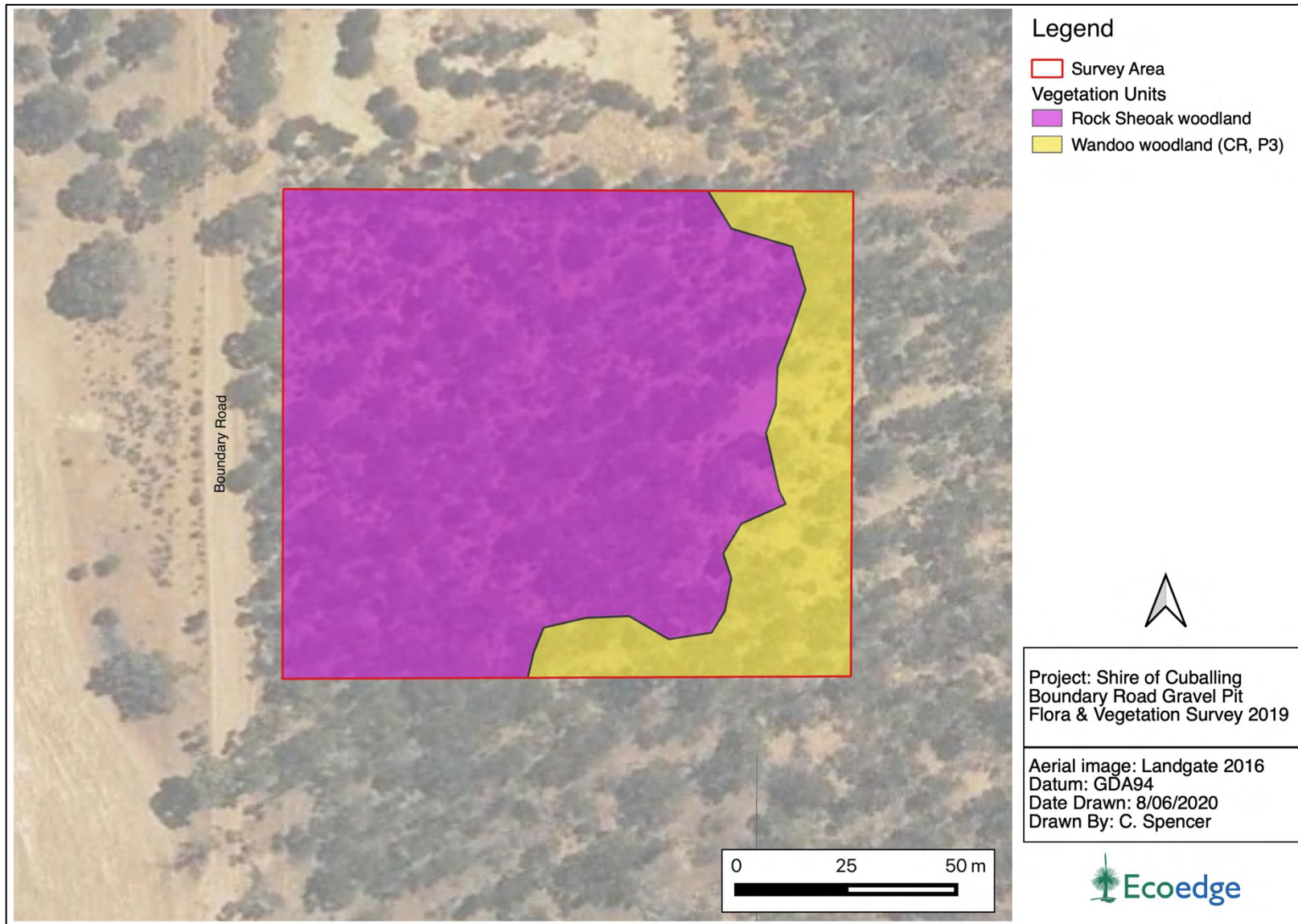


Figure 7. Vegetation units mapped within the Survey Area.



Figure 8. Condition of vegetation within the Survey Area.

6 Discussion and conclusions

6.1 Significance of the Flora

No Threatened or Priority flora were identified within the Survey Area. Nor were there any other flora of conservation significance.

6.2 Declared Pest Plants and Environmental Weeds

There were no introduced species including Declared Pest Plants or Weeds of National Significance within the Survey Area.

6.3 Significance of the Vegetation

6.3.1 Vegetation Units

The Wheatbelt Wandoo woodland vegetation unit is an occurrence of the State priority three (P3) 'Eucalypt Woodlands of the Western Australian Wheatbelt' ecological community (PEC) and the Federal Critically Endangered 'Eucalypt Woodlands of the Western Australian Wheatbelt' threatened ecological community (TEC). This unit is in Excellent condition and is 0.284 ha in size.

According to the Federally approved conservation advice for this TEC, any areas meeting the 'Eucalypt Woodlands of the Western Australian Wheatbelt' criteria (i.e. the Wheatbelt Wandoo woodland vegetation unit), are critical to the survival of the TEC (DotEE, 2015). This is because this ecological community occurs in a landscape that has been very heavily cleared and modified, and now exists as mostly very small and highly fragmented patches.

The remainder of the Survey Area vegetation comprising 1.37 ha of Rock Sheoak woodland, whilst also in Excellent condition, is not a TEC or PEC.

6.3.2 Vegetation Associations

One vegetation association is mapped for the Survey Area: association 1023 'Medium woodland; York gum, wandoo and salmon gum' (Beard, 1980). The surveyed community is a partial match for this Association, in that it is partly a Wheatbelt Wandoo woodland. The extent remaining of this association at State (10.79%), IBRA region (10.84%) and IBRA sub-region (12.32%) and local government (18.87%) levels is significantly below the Commonwealth government's 30% retention threshold and it is also poorly represented within the DBCA estate (1.18%).

6.3.3 Ecological Corridors and Connectivity

The 1.436 ha Survey Area vegetation forms part of larger patch of bushland which is connected to a belt of native vegetation which surrounds town of Popanyinning. The belt is in turn part of a corridor of vegetation, in an otherwise cleared landscape, associated with the South Western Highway and the Hotham River which link to the Hotham River Nature Reserve in the north and the Montague State Forest in the South.

Potential clearing of the Survey Area vegetation will not break, or disconnect the existing corridor of vegetation but will degrade the conservation value of the remaining vegetation and its contribution to the value of corridor. For example, clearing will increase the perimeter to surface area ratio of the remaining vegetation increasing the area for potential degrading impacts such as weed invasion, dust and wind. The largely cleared nature of the region increases the value of remaining bushland and the vegetated corridors of which they are a part. Quantification of the clearing impacts to these corridors is challenging and beyond the scope of this report.

6.3.4 Environmentally Sensitive Areas

There are no ESAs within or in close proximity to the Survey Area. The nearest is located approximately 6.2 km south of the Survey Area and is associated with the Montague State Forest.

7 Recommendations

It is recommended that clearing be confined to the 1.37 ha of Rock Sheoak Woodland with minimal disturbance to the Wheatbelt Wandoo Woodland which is recognised as an occurrence of both the Federally protected 'Eucalypt Woodlands of the Western Australian Wheatbelt' TEC and State protected 'Eucalypt Woodlands of the Western Australian Wheatbelt' Priority three ecological community.

8 References

- Beard, J.S. (1980). *The Vegetation of the Corrigin Area, Western Australia. Explanatory memoir – 1:250,000 map series*. Vegemap Publications, Perth, Australia.
- Beeston, G.R., Hopkins, A.J.M. and Shepherd, D.P. (eds) (2001). *Land-use and Vegetation, Western Australia*. Agriculture Western Australia, South Perth and National Land and Water Resources Audit, Canberra, from: <http://www.agriculture.gov.au/abares/aclump/Documents/WA%20Luse%201997%20Report.pdf>
- Commonwealth of Australia (2016). *Interim Biogeographic Regionalisation for Australia (IBRA), Version 7 (Subregions)*. Department of the Environment and Energy. <https://data.gov.au/dataset/interim-biogeographic-regionalisation-for-australia-ibra-version-7>
- Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*. Environment Australia, Department of Environment and Heritage, Canberra, Australian Capital Territory.
- Department of Biodiversity, Conservation and Attractions (2018a). Threatened ecological communities endorsed by the Minister for the Environment (June 2018). https://www.dpaw.wa.gov.au/images/plants-animals/threatened-species/threatened_ecological_communities_endorsed_by_the_minister_for_the_environment_june_2018.pdf
- Department of Biodiversity, Conservation and Attractions (2018b). Threatened and Priority Flora list (5 December 2018). Department of Biodiversity Conservation and Attractions. <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-plants>
- Department of Biodiversity, Conservation and Attractions (2019a). Priority ecological communities list (January 2019). Department of Biodiversity Conservation and Attractions. <https://www.dpaw.wa.gov.au/images/documents/plants-animals/threatened-species/Listings/Priority%20ecological%20communities%20list%20Jan%202019.pdf>
- Department of Biodiversity, Conservation and Attractions (2019b). Conservation codes for Western Australian Flora and Fauna (03/01/2019).
- Department of Biodiversity, Conservation and Attractions (2019c). Naturemap, Western Australian Herbarium. <http://naturemap.dpaw.wa.gov.au/default.aspx> accessed 3 October 2019.

- Department of Biodiversity Conservation and Attractions (2019d). The WA Herbarium Census of WA Plants Database (WACENSUS: 'Max': 26/09/2019 download).
- Department of Environment and Conservation (DEC) (2013). *Definitions, categories and criteria for threatened and priority ecological communities*. Department of Environment and Conservation, Perth, Western Australia.
- Department of the Environment and Energy. (2015). Approved Conservation Advice (including listing advice) for the Eucalypt Woodlands of the Western Australian Wheatbelt.
- Department of the Environment and Energy (DotEE) (2018a). *Threatened ecological communities under the EPBC Act*. <http://www.environment.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl>
- Department of the Environment and Energy (DotEE) (2018b). *Categories of Threatened species under the EPBC Act*. <http://www.environment.gov.au/biodiversity/threatened/species.html>
- Department of the Environment and Energy (DotEE) (2019a). *Protected Matters Search Tool query*. Generated 10 October 2019.
- Department of Environment Regulation (DER). (2016). *Environmentally Sensitive Areas GIS Mapping Dataset. 2016 Version*. Perth, Western Australia <https://www2.landgate.wa.gov.au/web/guest/57> (DER016).
- Department of Environment, Water, Heritage and the Arts (DEWHA) (1999) *Environment Protection and Biodiversity Conservation Act 1999*. Department of Environment, Water, Heritage and the Arts. Canberra, Australian Capital Territory.
- Environment Australia (2001). National objectives and targets for biodiversity conservation 2001–2005. <http://www.environment.gov.au/resource/national-objectives-and-targets-biodiversity-conservation-2001%E2%80%932005>
- Environmental Protection Authority of WA (2016). *Technical Guidance Flora and Vegetation Surveys for Environmental Impact*. EPA, Perth, Western Australia. http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA/Technical/Guidance/FloraandVegetationsurvey_Dec13.pdf Accessed 29 September 2017
- Government of Western Australia (2005). Environmental Protection (Environmentally Sensitive Areas) Notice 2005 (Environmental Protection Act 1986). *Government Gazette, No.55*.
- Government of Western Australia. (2018). *2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report)*. Current as of December 2017. WA Department

of Biodiversity, Conservation and Attractions, Perth,
<https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>

Harvey, J.M. and Keighery G.J. (2012) Benchmarking Wheatbelt Vegetation. Classification and Description of Eucalypt Woodlands. Wheatbelt Baseline Project, Wheatbelt Natural Resource Management Region and Department of Environment and Conservation. Perth.

Keighery, B. J. (1994). Bushland Plant Survey: A guide to plant community survey for the community. Wildflower Society of Western Australia (Inc.), Nedlands.

McArthur, W.M., Churchward, H.M. and Hick, P.T. (1977). Landforms and soils of the Murray River catchment area of Western Australia. CSIRO Australia. Division of Land Resources Management Series No. 3. Pp 1-23.

Sawkins, D N. (2010), Landscapes and soils of the Narrogin district. Department of Agriculture and Food, Western Australia, Perth. Bulletin 4807.

Shepherd, D., Beeston, G. and Hopkins, A. (2002). *Native Vegetation in Western Australia – Extent, Type and Status*. Department of Agriculture, Perth.

Appendix 1. Categories of threatened and priority ecological communities (DEC 2013).

Conservation code	Category
	(T) Threatened ecological community pursuant to Sect 27 of the <i>Biodiversity Conservation Act 2016</i> .
T	<p>(T) CR – Critically endangered</p> <p>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.</p>
	<p>(T) EN - Endangered</p> <p>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.</p>
	<p>(T) VU - Vulnerable</p> <p>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.</p>
	(P) Priority species – possible threatened communities.
p1	<p>Poorly known communities</p> <p>Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤ 5 occurrences or a total area of ≤ 100ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. 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.</p>

Conservation code	Category
P2	<p>Poorly known communities</p> <p>Communities that are known from few occurrences with a restricted distribution (generally ≤ 10 occurrences or a total area of ≤ 200ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) 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.</p>
P3	<p>Poorly known communities</p> <ul style="list-style-type: none"> a) 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: b) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat (within approximately 10 years), or; c) communities made up of large, and/or widespread occurrences, that may or may 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, inappropriate fire regimes, clearing, hydrological change etc. <p>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.</p>
P4	<p>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.</p> <ul style="list-style-type: none"> a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Conservation code	Category
P5	<p>Conservation dependent ecological communities</p> <p>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.</p>

Appendix 2. Categories of Threatened Ecological Communities under Section 182 of the Federal EPBC Act (DotEE 2018b).

Category	Definition
Critically endangered	If, at that time, an ecological community is facing an extremely high risk of extinction in the wild in the immediate future (indicative timeframe being the next 10 years).
Endangered	If, at that time, an ecological community is not critically endangered but is facing a very high risk of extinction in the wild in the near future (indicative timeframe being the next 20 years).
Vulnerable	If, at that time, an ecological, community is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium-term future (indicative timeframe being the next 50 years).

Appendix 3. Protected Matters Search Tool and NatureMap report.



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: 10/10/19 13:15:00

[Summary](#)

[Details](#)

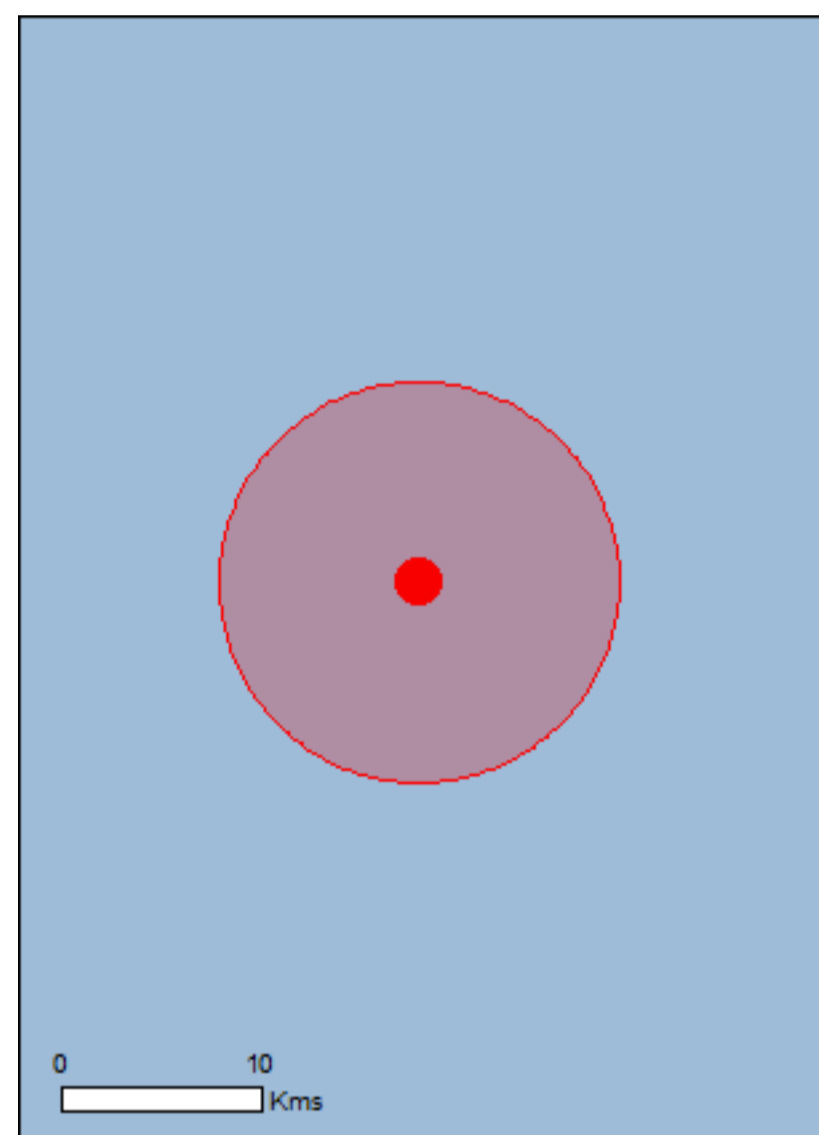
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

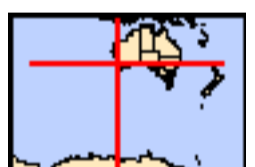
[Acknowledgements](#)



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

[Coordinates](#)

[Buffer: 10.0Km](#)



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	21
Listed Migratory Species:	6

Other Matters Protected by the EPBC Act

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

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

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

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

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	20
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Peel-yalgorup system	100 - 150km upstream

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
Eucalypt Woodlands of the Western Australian Wheatbelt	Critically Endangered	Community likely to occur within area

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

Name	Status	Type of Presence
------	--------	------------------

Birds

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

Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat may occur within area
--	------------	--

Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
--	------------	---

Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
---	------------	--

Mammals

Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat likely to occur within area
---	------------	--

Dasyurus geoffroi Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
--	------------	--

Macrotis lagotis Greater Bilby [282]	Vulnerable	Translocated population known to occur within area
---	------------	--

Myrmecobius fasciatus Numbat [294]	Endangered	Species or species habitat known to occur within area
---	------------	---

Phascogale calura Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]	Vulnerable	Species or species habitat known to occur within area
--	------------	---

Plants

Acacia cochlocarpa subsp. cochlocarpa Spiral-fruited Wattle [23877]	Endangered	Species or species
--	------------	--------------------

Name	Status	Type of Presence
Acacia insolita subsp. recurva Yornaning Wattle [64495]	Endangered	habitat may occur within area Species or species habitat known to occur within area
Banksia cuneata Matchstick Banksia, Quairading Banksia [9827]	Endangered	Species or species habitat known to occur within area
Banksia oligantha Wagin Banksia [20697]	Endangered	Species or species habitat likely to occur within area
Boronia capitata subsp. capitata a shrub [29156]	Endangered	Species or species habitat likely to occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat may occur within area
Darwinia carnea Mogumber Bell, Narrogin Bell [9736]	Endangered	Species or species habitat may occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat may occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area
Pultenaea pauciflora Narrogin Pea [14013]	Vulnerable	Species or species habitat may occur within area
Roycea pycnophylloides Saltmat [21161]	Endangered	Species or species habitat likely to occur within area
Verticordia fimbrialepis subsp. fimbrialepis Shy Featherflower [24631]	Endangered	Species or species habitat known to occur within area

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

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

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

Name	Threatened	Type of Presence
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may 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		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Hotham River	WA
Unnamed WA50165	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		
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		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
Feral deer Feral deer species in Australia [85733]		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

Name	Status	Type of Presence
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Carrichtera annua Ward's Weed [9511]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		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

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-32.66028 117.11528

Acknowledgements

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

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

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

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

Popannyining NatureMap Species Report

Created By Guest user on 03/10/2019

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 117° 06' 55" E, 32° 39' 37" S
Buffer 10km
Group By Kingdom

Kingdom	Species	Records
Animalia	158	552
Fungi	2	13
Plantae	416	755
TOTAL	576	1320

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Animalia				
1.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
2.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
3.	24262 <i>Acanthiza inornata</i> (Western Thornbill)			
4.	24265 <i>Acanthiza uropygialis</i> (Chestnut-rumped Thornbill)			
5.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
6.	<i>Allodessus bistrigatus</i>			
7.	<i>Alona rigidicaudis</i>			
8.	24312 <i>Anas gracilis</i> (Grey Teal)			
9.	24313 <i>Anas platyrhynchos</i> (Mallard)			
10.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
11.	<i>Anax papuensis</i>			
12.	<i>Anisops thienemanni</i>			
13.	25241 <i>Antaresia stimsoni</i> subsp. <i>stimsoni</i> (Stimson's Python)			
14.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
15.	24562 <i>Anthochaera lunulata</i> (Western Little Wattlebird)			
16.	<i>Antiporus gilberti</i>			
17.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
18.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
19.	24353 <i>Artamus cyanopterus</i> (Dusky Woodswallow)			
20.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
21.	<i>Austrochilonia subtenuis</i>			
22.	<i>Austrolestes annulosus</i>			
23.	<i>Barnardius zonarius</i>			
24.	<i>Berosus</i> sp.			
25.	<i>Bezzia</i> sp. 2 (SAP)			
26.	24319 <i>Biziura lobata</i> (Musk Duck)			
27.	<i>Brachionus angularis</i>			
28.	<i>Brachionus urceolaris</i> s.l.			
29.	24359 <i>Burhinus grallarius</i> (Bush Stone-curlew)			
30.	25714 <i>Cacatua pastinator</i> (Western Long-billed Corella)			
31.	25598 <i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
32.	42307 <i>Cacomantis pallidus</i> (Pallid Cuckoo)			
33.	<i>Calamoecia ampulla</i>			
34.	24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
35.	<i>Candonocypris novaezelandiae</i>			
36.	24086 <i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
37.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
38.	47909 <i>Cheramoeca leucosterna</i> (White-backed Swallow)			
39.	<i>Chironomus</i> aff. <i>altermans</i> (V24) (CB)			
40.	24980 <i>Christinus marmoratus</i> (Marbled Gecko)			
41.	24288 <i>Circus approximans</i> (Swamp Harrier)			
42.	<i>Cladotanytarsus</i> sp. A (SAP)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
43.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
44.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
45.	25592 <i>Corvus coronoides</i> (Australian Raven)			
46.	24671 <i>Coturnix pectoralis</i> (Stubble Quail)			
47.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
48.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
49.	25456 <i>Crenadactylus ocellatus</i> (Clawless Gecko)			
50.	24918 <i>Crenadactylus ocellatus</i> subsp. <i>ocellatus</i> (Clawless Gecko)			
51.	30893 <i>Cryptoblepharus buchananii</i>			
52.	25020 <i>Cryptoblepharus plagiocephalus</i>			
53.	<i>Cryptochironomus griseidorsum</i>			
54.	30901 <i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
55.	25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella)			
56.	<i>Dero digitata</i>			
57.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
58.	<i>Diplacodes haematodes</i>			
59.	<i>Dolichopodidae</i> sp. A (SAP)			
60.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
61.	<i>Ecnomus pansus/turgidus</i>			
62.	<i>Egretta novaehollandiae</i>			
63.	<i>Elanus axillaris</i>			
64.	47937 <i>Elsyornis melanops</i> (Black-fronted Dotterel)			
65.	<i>Eolophus roseicapillus</i>			
66.	24567 <i>Epthianura albifrons</i> (White-fronted Chat)			
67.	<i>Eucyclops australiensis</i>			
68.	25621 <i>Falco berigora</i> (Brown Falcon)			
69.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
70.	25727 <i>Fulica atra</i> (Eurasian Coot)			
71.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
72.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
73.	<i>Gymnometriocnemus</i> sp.=ortho sp A (?VSC11) (SAP)			
74.	25408 <i>Heleioporus albopunctatus</i> (Western Spotted Frog)			
75.	25410 <i>Heleioporus eyrei</i> (Moaning Frog)			
76.	<i>Hemicordulia tau</i>			
77.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
78.	<i>Hydrodroma</i> sp. B (SAP)			
79.	<i>Kiefferulus intertinctus</i>			
80.	25131 <i>Lerista distinguenda</i>			
81.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
82.	41413 <i>Liopholis multiscutata</i> (Bull Skink)			
83.	24326 <i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
84.	25654 <i>Malurus splendens</i> (Splendid Fairy-wren)			
85.	25663 <i>Melithreptus brevirostris</i> (Brown-headed Honeyeater)			
86.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
87.	<i>Mesocyclops brooksi</i>			
88.	25693 <i>Microeca fascinans</i> (Jacky Winter)			
89.	<i>Micronecta robusta</i>			
90.	25240 <i>Morelia spilota</i> subsp. <i>imbricata</i> (Carpet Python)			
91.	25192 <i>Morethia obscura</i>			
92.	24223 <i>Mus musculus</i> (House Mouse)	Y		
93.	25610 <i>Myiagra inquieta</i> (Restless Flycatcher)			
94.	25420 <i>Myobatrachus gouldii</i> (Turtle Frog)			
95.	24146 <i>Myrmecobius fasciatus</i> (Numbat, Walpurti)		T	
96.	<i>Naididae</i> (ex <i>Tubificidae</i>)			
97.	<i>Necterosoma penicillatus</i>			
98.	<i>Necterosoma regulare</i>			
99.	25426 <i>Neobatrachus pelobatoides</i> (Humming Frog)			
100.	24738 <i>Neophema elegans</i> (Elegant Parrot)			
101.	<i>Notalina spira</i>			
102.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
103.	<i>Oecetis</i> sp.			
104.	<i>Orthetrum caledonicum</i>			
105.	34016 <i>Ovis aries</i> (Sheep)			
106.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
107.	<i>Parachironomus</i> sp. 1 (VSCL35) (SAP)			
108.	<i>Paramerina levidensis</i>			
109.	25253 <i>Parasuta gouldii</i>			
110.	25681 <i>Pardalotus punctatus</i> (Spotted Pardalote)			
111.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
112.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
113.	48066 <i>Petroica boodang</i> (Scarlet Robin)			
114.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
115.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
116.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
117.	24098 <i>Phascogale calura</i> (Red-tailed Phascogale, Kenngoor)		S	
118.	48071 <i>Phylidonyris niger</i> (White-cheeked Honeyeater)			
119.	24596 <i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			
120.	24841 <i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
121.	25720 <i>Platycercus icterotis</i> (Western Rosella)			
122.	24746 <i>Platycercus icterotis</i> subsp. <i>xanthogenys</i> (Western Rosella (inland))		P4	
123.	24681 <i>Polioccephalus poliocephalus</i> (Hoary-headed Grebe)			
124.	<i>Polypedilum nubifer</i>			
125.	25722 <i>Polytelis anthopeplus</i> (Regent Parrot)			
126.	24683 <i>Pomatostomus superciliosus</i> (White-browed Babbler)			
127.	<i>Procladius paludicola</i>			
128.	42416 <i>Pseudonaja mengdeni</i> (Western Brown Snake)			
129.	<i>Purpureicephalus spurius</i>			
130.	<i>Pyralidae</i> nr. sp. 39/40 of JHH (SAP)			
131.	<i>Raveniella cirrata</i>			
132.	48096 <i>Rhipidura albiscapa</i> (Grey Fantail)			
133.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
134.	<i>Sarscyridopsis aculeata</i>			
135.	25534 <i>Sericornis frontalis</i> (White-browed Scrubwren)			
136.	<i>Sigara mullaka</i>			
137.	25266 <i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
138.	30948 <i>Smicromis brevirostris</i> (Weebill)			
139.	<i>Sternopriscus multimaculatus</i>			
140.	25597 <i>Strepera versicolor</i> (Grey Currawong)			
141.	25590 <i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
142.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
143.	24207 <i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			
144.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
145.	<i>Tanytarsus barbitarsis</i>			
146.	<i>Tanytarsus fuscithorax/semibarbitarsus</i>			
147.	24167 <i>Tarsipes rostratus</i> (Honey Possum, Noolbenger)			
148.	<i>Tasmanocoenis tillyardi</i>			
149.	<i>Testudinella patina</i>			
150.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
151.	24309 <i>Todiramphus sanctus</i> subsp. <i>sanctus</i> (Sacred Kingfisher)			
152.	<i>Triplectides australis</i>			
153.	24983 <i>Underwoodisaurus milii</i> (Barking Gecko)			
154.	24386 <i>Vanellus tricolor</i> (Banded Lapwing)			
155.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
156.	<i>Venatrix arenaris</i>			
157.	<i>Xanthagrion erythroneurum</i>			
158.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			

Fungi

159.	<i>Phytophthora cinnamomi</i>			
160.	28172 <i>Xanthoparmelia reptans</i>			

Plantae

161.	3200 <i>Acacia acuminata</i> (Jam, Mangard)			
162.	11915 <i>Acacia browniana</i> var. <i>intermedia</i>			
163.	3254 <i>Acacia celastrifolia</i> (Glowing Wattle)			
164.	3257 <i>Acacia chrysocephala</i>			
165.	3287 <i>Acacia deflexa</i>		P3	
166.	11661 <i>Acacia drummondii</i> subsp. <i>drummondii</i>			
167.	3324 <i>Acacia erinacea</i>			
168.	14624 <i>Acacia gemina</i>			
169.	16165 <i>Acacia insolita</i> subsp. <i>insolita</i>			
170.	14121 <i>Acacia insolita</i> subsp. <i>recurva</i>		T	
171.	3408 <i>Acacia lasiocalyx</i> (Silver Wattle, Wilyunwur)			
172.	3409 <i>Acacia lasiocarpa</i> (Panjang)			
173.	11519 <i>Acacia lasiocarpa</i> var. <i>bracteolata</i>			
174.	15721 <i>Acacia lasiocarpa</i> var. <i>sedifolia</i>			
175.	3442 <i>Acacia microbotrya</i> (Manna Wattle, Kalyang)			
176.	3527 <i>Acacia saligna</i> (Orange Wattle, Kudjong)			
177.	15484 <i>Acacia sphacelata</i> subsp. <i>sphacelata</i>			
178.	3557 <i>Acacia stenoptera</i> (Narrow Winged Wattle)			
179.	44513 <i>Acacia thieleana</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
180.	12674 <i>Acacia tratmaniana</i>			
181.	1775 <i>Adenanthos cygnorum</i> (Common Woollybush)			
182.	11837 <i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i> (Common Woollybush)			
183.	23501 <i>Agrostocrinum scabrum</i> subsp. <i>scabrum</i>			
184.	184 <i>Aira caryophyllea</i> (Silvery Hairgrass)	Y		
185.	1731 <i>Allocasuarina huegeliana</i> (Rock Sheoak, Kwool)			
186.	1732 <i>Allocasuarina humilis</i> (Dwarf Sheoak)			
187.	13380 <i>Amphibromus nervosus</i>			
188.	200 <i>Amphipogon turbinatus</i>			
189.	2380 <i>Amyema miquelii</i> (Stalked Mistletoe)			
190.	11357 <i>Anigozanthos bicolor</i> subsp. <i>exstans</i>		P3	
191.	1409 <i>Anigozanthos humilis</i> (Catspaw)			
192.	6945 <i>Anthocercis genistoides</i>			
193.	1116 <i>Aphelia brizula</i>			
194.	8779 <i>Asparagus asparagoides</i> (Bridal Creeper)	Y		
195.	20124 <i>Astartea muricata</i> (Inland Astartea)			
196.	4401 <i>Asterolasia squamuligera</i>			
197.	6325 <i>Astroloma drummondii</i>			
198.	6326 <i>Astroloma epacridis</i>			
199.	6334 <i>Astroloma pallidum</i> (Kick Bush)			
200.	6336 <i>Astroloma serratifolium</i> (Kondrung)			
201.	17237 <i>Austrostipa elegantissima</i>			
202.	17238 <i>Austrostipa eremophila</i>			
203.	17239 <i>Austrostipa exilis</i>			
204.	17245 <i>Austrostipa mollis</i>			
205.	17255 <i>Austrostipa trichophylla</i>			
206.	17257 <i>Austrostipa variabilis</i>			
207.	32682 <i>Banksia armata</i> var. <i>armata</i>			
208.	1800 <i>Banksia attenuata</i> (Slender Banksia, Piara)			
209.	1812 <i>Banksia cuneata</i> (Quairading Banksia)		T	
210.	32523 <i>Banksia fraseri</i> var. <i>fraseri</i>			
211.	32203 <i>Banksia nivea</i> subsp. <i>nivea</i>			
212.	1842 <i>Banksia prionotes</i> (Acorn Banksia)			
213.	11868 <i>Banksia sphaerocarpa</i> var. <i>caesia</i>			
214.	32045 <i>Banksia squarrosa</i> subsp. <i>squarrosa</i>			
215.	32041 <i>Banksia stiposa</i>			
216.	32039 <i>Banksia subpinnatifida</i> var. <i>subpinnatifida</i>		P2	
217.	741 <i>Baumea articulata</i> (Jointed Rush)			
218.	5378 <i>Beaufortia bracteosa</i>			
219.	5385 <i>Beaufortia incana</i> (Grey-leaved Beaufortia)			
220.	7046 <i>Bellardia trixago</i> (Bellardia)	Y		
221.	25798 <i>Billardiera fusiformis</i> (Australian Bluebell)			
222.	25779 <i>Billardiera venusta</i>			
223.	7856 <i>Blennospora drummondii</i>			
224.	11502 <i>Boronia capitata</i> subsp. <i>clavata</i>			
225.	1269 <i>Borya laciniata</i>			
226.	1272 <i>Borya scirpoidea</i>			
227.	1273 <i>Borya sphaerocephala</i> (Pincushions)			
228.	3710 <i>Bossiaea eriocarpa</i> (Common Brown Pea)			
229.	7882 <i>Brachyscome perpusilla</i>			
230.	244 <i>Briza maxima</i> (Blowfly Grass)	Y		
231.	253 <i>Bromus rubens</i> (Red Brome)	Y		
232.	1385 <i>Burchardia multiflora</i> (Dwarf Burchardia)			
233.	1276 <i>Caesia micrantha</i> (Pale Grass Lily)			
234.	29439 <i>Caesia</i> sp. <i>Wongan</i> (K.F. Kenneally 8820)			
235.	1586 <i>Caladenia discoidea</i> (Dancing Orchid)			
236.	1587 <i>Caladenia douthchiae</i>			
237.	11165 <i>Caladenia falcata</i>			
238.	1592 <i>Caladenia flava</i> (Cowslip Orchid)			
239.	15348 <i>Caladenia flava</i> subsp. <i>flava</i>			
240.	15502 <i>Caladenia footeana</i>			
241.	15363 <i>Caladenia longicauda</i> subsp. <i>eminens</i>			
242.	1607 <i>Caladenia multiclavata</i> (Lazy Spider Orchid)			
243.	15376 <i>Caladenia polychroma</i>			
244.	20430 <i>Caladenia</i> sp. <i>Wandoo</i> (G. Brockman GBB 671)			
245.	15382 <i>Caladenia uliginosa</i> subsp. <i>candicans</i>			
246.	17590 <i>Caladenia x cala</i>			
247.	15398 <i>Caladenia xantha</i>			
248.	5395 <i>Callistemon phoeniceus</i> (Lesser Bottlebrush, Dubarda)			
249.	5403 <i>Calothamnus brevifolius</i>		P4	

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
250.	35162 <i>Calothamnus planifolius</i> var. <i>planifolius</i>			
251.	35816 <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>			
252.	5429 <i>Calothamnus sanguineus</i> (Silky-leaved Blood flower, Pindak)			
253.	5439 <i>Calytrix angulata</i> (Yellow Starflower)			
254.	48450 <i>Calytrix cravenii</i>			
255.	5465 <i>Calytrix leschenaultii</i>			
256.	13655 <i>Calytrix simplex</i> subsp. <i>suboppositifolia</i>			
257.	5487 <i>Calytrix violacea</i>			
258.	2796 <i>Carpobrotus modestus</i> (Inland Pigface)			
259.	1742 <i>Casuarina obesa</i> (Swamp Sheoak, Kuli)			
260.	760 <i>Caustis dioica</i>			
261.	1121 <i>Centrolepis aristata</i> (Pointed Centrolepis)			
262.	1125 <i>Centrolepis drummondiana</i>			
263.	1133 <i>Centrolepis pilosa</i>			
264.	1134 <i>Centrolepis polygyna</i> (Wiry Centrolepis)			
265.	7924 <i>Ceratogyne obionoides</i> (Wingwort)			
266.	1280 <i>Chamaescilla corymbosa</i> (Blue Squill)			
267.	11299 <i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>			
268.	1281 <i>Chamaescilla spiralis</i>			
269.	2490 <i>Chenopodium glaucum</i> (Glaucous Goosefoot)	Y		
270.	763 <i>Chorizandra enodis</i> (Black Bristlerush)			
271.	764 <i>Chorizandra multiarticulata</i>			
272.	13111 <i>Chorizema aciculare</i> subsp. <i>laxum</i>			
273.	4561 <i>Comesperma scoparium</i> (Broom Milkwort)			
274.	4566 <i>Comesperma volubile</i> (Love Creeper)			
275.	1860 <i>Conospermum bracteosum</i>			
276.	15518 <i>Conospermum filifolium</i> subsp. <i>filifolium</i>			
277.	1881 <i>Conospermum scaposum</i>		P3	
278.	1882 <i>Conospermum stoechadis</i> (Common Smokebush)			
279.	15611 <i>Conospermum stoechadis</i> subsp. <i>stoechadis</i> (Common Smokebush)			
280.	11826 <i>Conostylis aculeata</i> subsp. <i>aculeata</i>			
281.	1447 <i>Conostylis pusilla</i>			
282.	11597 <i>Conostylis setigera</i> subsp. <i>setigera</i>			
283.	11883 <i>Corynotheca micrantha</i> var. <i>elongata</i>			
284.	7944 <i>Cotula bipinnata</i> (Ferny Cotula)	Y		
285.	7945 <i>Cotula coronopifolia</i> (Waterbuttons)	Y		
286.	3137 <i>Crassula colorata</i> (Dense Stonecrop)			
287.	13470 <i>Cryptandra arbutiflora</i> var. <i>arbutiflora</i>			
288.	4804 <i>Cryptandra nutans</i>			
289.	40661 <i>Cycnogeton lineare</i>			
290.	815 <i>Cyperus tenellus</i> (Tiny Flatsedge)	Y		
291.	7449 <i>Dampiera juncea</i> (Rush-like Dampiera)			
292.	7451 <i>Dampiera lavandulacea</i>			
293.	7453 <i>Dampiera lindleyi</i>			
294.	7458 <i>Dampiera obliqua</i>			
295.	6218 <i>Daucus glochidiatus</i> (Australian Carrot)			
296.	3796 <i>Daviesia benthamii</i>			
297.	3797 <i>Daviesia cardiophylla</i>			
298.	3800 <i>Daviesia costata</i>			
299.	16579 <i>Daviesia decipiens</i>			
300.	12326 <i>Daviesia hakeoides</i> subsp. <i>subnuda</i>			
301.	17663 <i>Desmocladius asper</i>			
302.	16326 <i>Dianella brevicaulis</i>			
303.	1259 <i>Dianella revoluta</i> (Blueberry Lily)			
304.	1287 <i>Dichopogon capillipes</i>			
305.	1288 <i>Dichopogon fimbriatus</i> (Chocolate Lily)			
306.	20367 <i>Dillwynia laxiflora</i>			
307.	11049 <i>Diuris corymbosa</i>			
308.	1634 <i>Diuris laxiflora</i> (Bee Orchid)			
309.	15436 <i>Diuris porrifolia</i>			
310.	1638 <i>Diuris setacea</i> (Bristly Donkey Orchid)			
311.	4765 <i>Dodonaea humifusa</i>			
312.	4775 <i>Dodonaea pinifolia</i>			
313.	13219 <i>Drosera bulbosa</i> subsp. <i>bulbosa</i>			
314.	3098 <i>Drosera glanduligera</i> (Pimpernel Sundew)			
315.	3105 <i>Drosera leucoblata</i> (Wheel Sundew)			
316.	3106 <i>Drosera macrantha</i> (Bridal Rainbow)			
317.	3109 <i>Drosera menziesii</i> (Pink Rainbow)			
318.	3116 <i>Drosera omissa</i> (Bright Sundew)			
319.	3125 <i>Drosera pycnoblata</i> (Pearly Sundew)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
320.	3128 <i>Drosera ramellosa</i> (Branched Sundew)			
321.	<i>Drosera</i> sp.			
322.	49090 <i>Drosera</i> sp. <i>Branched styles</i> (S.C. Coffey 193)			
323.	3132 <i>Drosera stricticaulis</i> (Erect Sundew)			
324.	3133 <i>Drosera subhirtella</i> (Sunny Rainbow)			
325.	48784 <i>Drosera x pingellyensis</i>			Y
326.	3135 <i>Drosera zonaria</i> (Painted Sundew)			
327.	349 <i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
328.	17605 <i>Eleocharis keigheryi</i>		T	
329.	5541 <i>Eremaea pauciflora</i>			
330.	14104 <i>Eremaea pauciflora</i> var. <i>pauciflora</i>			
331.	45243 <i>Ericomyrtus parviflora</i>			
332.	45244 <i>Ericomyrtus serpyllifolia</i>			
333.	4335 <i>Erodium cygnorum</i> (Blue Heronsbill)			
334.	5545 <i>Eucalyptus accedens</i> (Powderbark Wandoo)			
335.	17969 <i>Eucalyptus astringens</i> subsp. <i>astringens</i>			
336.	5628 <i>Eucalyptus drummondii</i> (Drummond's Gum)			
337.	12872 <i>Eucalyptus gardneri</i> subsp. <i>gardneri</i>			
338.	5675 <i>Eucalyptus incrassata</i> (Lerp Mallee)			
339.	12697 <i>Eucalyptus latens</i> (Narrow-leaved Red Mallee)			
340.	5701 <i>Eucalyptus longicornis</i> (Red Morrel, Moril)			
341.	11295 <i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i> (York Gum)			
342.	13547 <i>Eucalyptus marginata</i> subsp. <i>marginata</i> (Jarrah)			
343.	19666 <i>Eucalyptus phenax</i> subsp. <i>phenax</i>			
344.	5763 <i>Eucalyptus rudis</i> (Flooded Gum, Kulurda)			
345.	13511 <i>Eucalyptus rudis</i> subsp. <i>rudis</i>			
346.	5766 <i>Eucalyptus salmonophloia</i> (Salmon Gum, Wurak)			
347.	5797 <i>Eucalyptus wandoo</i> (Wandoo, Wondou)			
348.	12906 <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i>			
349.	899 <i>Gahnia ancistrophylla</i> (Hooked-leaf Saw Sedge)			
350.	19677 <i>Gahnia</i> sp. <i>dull bases</i> (K.R. Newbey 5111)			
351.	3895 <i>Gastrolobium calycinum</i> (York Road Poison)			
352.	3905 <i>Gastrolobium hookeri</i>			
353.	3909 <i>Gastrolobium microcarpum</i> (Sandplain Poison)			
354.	10981 <i>Gastrolobium parviflorum</i>			
355.	3927 <i>Gastrolobium stowardii</i>			
356.	6143 <i>Glischrocaryon aureum</i> (Common Popflower)			
357.	8002 <i>Gnephosis tenuissima</i>			
358.	3951 <i>Gompholobium marginatum</i>			
359.	3956 <i>Gompholobium shuttleworthii</i>			
360.	6149 <i>Gonocarpus cordiger</i>			
361.	12551 <i>Goodenia micrantha</i>			
362.	19285 <i>Goodenia pulchella</i> subsp. <i>Wheatbelt</i> (L.W. Sage & F. Hort 795)			
363.	13447 <i>Grevillea anethifolia</i>			
364.	2029 <i>Grevillea leptobotrys</i>			
365.	2102 <i>Grevillea tenuiflora</i> (Tassel Grevillea)			
366.	2164 <i>Hakea gilbertii</i>			
367.	2166 <i>Hakea incrassata</i> (Marble Hakea)			
368.	2175 <i>Hakea lissocarpha</i> (Honey Bush)			
369.	2196 <i>Hakea preissii</i> (Needle Tree, Dandjin)			
370.	2197 <i>Hakea prostrata</i> (Harsh Hakea)			
371.	2214 <i>Hakea trifurcata</i> (Two-leaf Hakea)			
372.	2216 <i>Hakea varia</i> (Variable-leaved Hakea)			
373.	17485 <i>Halgania anagalloides</i>			
374.	6687 <i>Halgania cyanea</i> (Rough Halgania)			
375.	8024 <i>Helichrysum leucopsidium</i>			
376.	6855 <i>Hemigenia humilis</i>			
377.	5114 <i>Hibbertia commutata</i>			
378.	5124 <i>Hibbertia exasperata</i>			
379.	20059 <i>Hibbertia hemignosta</i>			
380.	5135 <i>Hibbertia hypericoides</i> (Yellow Buttercups)			
381.	5166 <i>Hibbertia rupicola</i>			
382.	8476 <i>Hordeum hystrix</i> (Mediterranean Region Barley Grass)	Y		
383.	12742 <i>Hyalosperma demissum</i>			
384.	6226 <i>Hydrocotyle callicarpa</i> (Small Pennywort)			
385.	11546 <i>Hydrocotyle pilifera</i> var. <i>glabrata</i>			
386.	8086 <i>Hypochaeris glabra</i> (Smooth Catsear)	Y		
387.	910 <i>Isolepis cernua</i> (Nodding Club-rush)			
388.	20200 <i>Isolepis cernua</i> var. <i>setiformis</i>			
389.	911 <i>Isolepis congrua</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
390.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
391.	8844 <i>Isopogon crithmifolius</i>			
392.	2229 <i>Isopogon dubius</i> (Pincushion Coneflower)			
393.	2238 <i>Isopogon teretifolius</i> (Nodding Coneflower)			
394.	2243 <i>Isopogon villosus</i>			
395.	7396 <i>Isotoma hypocrateriformis</i> (Woodbridge Poison)			
396.	19700 <i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>			
397.	3993 <i>Isotropis drummondii</i> (Lamb Poison)			
398.	14739 <i>Jacksonia epiphyllum</i>			
399.	4012 <i>Jacksonia furcellata</i> (Grey Stinkwood)			
400.	4024 <i>Jacksonia racemosa</i>			
401.	4025 <i>Jacksonia restioides</i>			
402.	4029 <i>Jacksonia sternbergiana</i> (Stinkwood, Kapur)			
403.	20454 <i>Juncus acutus</i> subsp. <i>acutus</i>	Y		
404.	1178 <i>Juncus bufonius</i> (Toad Rush)	Y		
405.	1194 <i>Juncus radula</i>			
406.	4044 <i>Kennedia prostrata</i> (Scarlet Runner)			
407.	15498 <i>Kunzea glabrescens</i> (Spearwood)			
408.	5839 <i>Kunzea preissiana</i>			
409.	18585 <i>Lagenophora huegelii</i>			
410.	13284 <i>Lawrencella rosea</i>			
411.	1303 <i>Laxmannia grandiflora</i>			
412.	11815 <i>Laxmannia grandiflora</i> subsp. <i>grandiflora</i>			
413.	1305 <i>Laxmannia omnifertilis</i>			
414.	1309 <i>Laxmannia squarrosa</i>			
415.	7568 <i>Lechenaultia biloba</i> (Blue Leschenaultia)			
416.	19111 <i>Lechenaultia formosa</i> subsp. <i>Wheatbelt</i> (R.J. Cranfield 4718)			
417.	7590 <i>Lechenaultia tubiflora</i> (Heath Leschenaultia)			
418.	1073 <i>Lepidobolus chaetocephalus</i> (Bristle-headed Chaff Rush)			
419.	1075 <i>Lepidobolus preissianus</i>			
420.	41620 <i>Lepidosperma asperatum</i>			
421.	930 <i>Lepidosperma costale</i>			
422.	936 <i>Lepidosperma leptostachyum</i>			
423.	937 <i>Lepidosperma longitudinale</i> (Pithy Sword-sedge)			
424.	940 <i>Lepidosperma pubisquamum</i>			
425.	941 <i>Lepidosperma resinosum</i>			
426.	944 <i>Lepidosperma scabrum</i>			
427.	<i>Lepidosperma</i> sp.			
428.	1078 <i>Leptocarpus coangustatus</i>			
429.	15418 <i>Leptoceras menziesii</i>			
430.	5847 <i>Leptospermum erubescens</i> (Roadside Teatree)			
431.	44220 <i>Leucopogon audax</i>		P2	
432.	6391 <i>Leucopogon fimbriatus</i>			
433.	19371 <i>Leucopogon</i> sp. <i>Wandering</i> (F. Hort 419)			
434.	7676 <i>Levenhookia pusilla</i> (Midget Stylewort)			
435.	9289 <i>Lobelia anceps</i> (Angled Lobelia)			
436.	7405 <i>Lobelia rarifolia</i>			
437.	7408 <i>Lobelia tenuior</i> (Slender Lobelia)			
438.	<i>Lolium</i> sp.			
439.	1226 <i>Lomandra effusa</i> (Scented Matrush)			
440.	1232 <i>Lomandra micrantha</i> (Small-flower Mat-rush)			
441.	14542 <i>Lomandra micrantha</i> subsp. <i>micrantha</i>			
442.	1233 <i>Lomandra mucronata</i>			
443.	1242 <i>Lomandra rupestris</i>			
444.	15835 <i>Loxocarya striata</i>			
445.	36375 <i>Lysimachia arvensis</i> (Pimpernel)	Y		
446.	34736 <i>Lysinema pentapetalum</i>			
447.	19421 <i>Marianthus bicolor</i> (Painted Marianthus)			
448.	13273 <i>Melaleuca incana</i> subsp. <i>incana</i>			
449.	5975 <i>Melaleuca subtrigona</i>			
450.	15673 <i>Melaleuca tuberculata</i>			
451.	18232 <i>Melaleuca tuberculata</i> var. <i>tuberculata</i>			
452.	5987 <i>Melaleuca viminea</i> (Mohan)			
453.	954 <i>Mesomelaena preissii</i>			
454.	1660 <i>Microtis orbicularis</i> (Dark Mignonette Orchid)			
455.	8105 <i>Millotia myosotidifolia</i>			
456.	8106 <i>Millotia tenuifolia</i> (Soft Millotia)			
457.	14344 <i>Millotia tenuifolia</i> var. <i>tenuifolia</i> (Soft Millotia)			
458.	7410 <i>Monopsis debilis</i>	Y		
459.	19585 <i>Monotaxis grandiflora</i> var. <i>grandiflora</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
460.	19180 <i>Moraea miniata</i> (Two-leaf Cape Tulip)	Y		
461.	492 <i>Neurachne alopecuroidea</i> (Foxtail Mulga Grass)			
462.	2365 <i>Olox benthamiana</i>			
463.	8149 <i>Olearia rudis</i> (Rough Daisybush)			
464.	18255 <i>Opercularia vaginata</i> (Dog Weed)			
465.	46313 <i>Orianthera flaviflora</i>			
466.	7122 <i>Orobancha minor</i> (Lesser Broomrape)	Y		
467.	1537 <i>Orthrosanthus laxus</i> (Morning Iris)			
468.	30375 <i>Oxalis exilis</i>			
469.	43763 <i>Pauridia glabella</i>			
470.	2281 <i>Persoonia trinervis</i>			
471.	14443 <i>Petrophile ericifolia</i> subsp. <i>ericifolia</i>			
472.	2297 <i>Petrophile heterophylla</i> (Variable-leaved Cone Bush)			
473.	2308 <i>Petrophile seminuda</i>			
474.	20053 <i>Petrophile squamata</i> subsp. <i>northern</i> (J. Monks 40)			
475.	20460 <i>Pheladenia deformis</i>			
476.	16825 <i>Phyllangium divergens</i>			
477.	16824 <i>Phyllangium sulcatum</i>			
478.	4 <i>Phylloglossum drummondii</i> (Pigmy Clubmoss)			
479.	7297 <i>Plantago coronopus</i> (Buckshorn Plantain)	Y		
480.	45237 <i>Podolepis aristata</i> subsp. <i>aristata</i>			
481.	8175 <i>Podolepis gracilis</i> (Slender Podolepis)			
482.	8177 <i>Podolepis lessonii</i>			
483.	8179 <i>Podolepis nutans</i> (Nodding Podolepis)			
484.	8182 <i>Podotheca angustifolia</i> (Sticky Longheads)			
485.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
486.	583 <i>Polypogon tenellus</i>			
487.	4691 <i>Poranthera microphylla</i> (Small Poranthera)			
488.	110 <i>Potamogeton drummondii</i>			
489.	1679 <i>Prasophyllum ovale</i> (Little Leek Orchid)			
490.	13255 <i>Pterochaeta paniculata</i>			
491.	1685 <i>Pterostylis angusta</i>			
492.	11054 <i>Pterostylis hamiltonii</i> (Red-veined Shell Orchid)			
493.	10778 <i>Pterostylis picta</i>			
494.	1693 <i>Pterostylis recurva</i> (Jug Orchid)			
495.	12217 <i>Pterostylis sanguinea</i>			
496.	18657 <i>Pterostylis</i> sp. <i>inland</i> (A.C. Beaglehole 11880)			
497.	2742 <i>Ptilotus manglesii</i> (Pom Poms, Mumula)			
498.	13300 <i>Rhodanthe citrina</i>			
499.	13294 <i>Rhodanthe laevis</i>			
500.	13234 <i>Rhodanthe manglesii</i>			
501.	1556 <i>Romulea rosea</i> (Guildford Grass)	Y		
502.	14924 <i>Romulea rosea</i> var. <i>communis</i>	Y		
503.	11151 <i>Rostraria pumila</i>	Y		
504.	32426 <i>Rosulabryum campylothecium</i>			
505.	40425 <i>Rytidosperma caespitosum</i>			
506.	40427 <i>Rytidosperma setaceum</i>			
507.	2358 <i>Santalum murrayanum</i> (Bitter Quandong, Kulya)			
508.	2817 <i>Sarcozona praecox</i> (Sarcozona)			
509.	20861 <i>Scaevola repens</i> subsp. <i>West Talbot</i> (R. Davis 2755)			
510.	1002 <i>Schoenus nanus</i> (Tiny Bog Rush)			
511.	17614 <i>Schoenus plumosus</i>			
512.	1013 <i>Schoenus sculptus</i> (Gimlet Bog-rush)			
513.	14583 <i>Siloxerus multiflorus</i>			
514.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
515.	1312 <i>Sowerbaea laxiflora</i> (Purple Tassels)			
516.	4207 <i>Sphaerolobium medium</i>			
517.	4733 <i>Stackhousia monogyna</i>			
518.	9070 <i>Stackhousia pubescens</i> (Downy Stackhousia)			
519.	13478 <i>Stenanthemum tridentatum</i>			
520.	2316 <i>Stirlingia latifolia</i> (Blueboy)			
521.	30278 <i>Stylidium androsaceum</i>			
522.	7694 <i>Stylidium bulbiferum</i> (Circus Triggerplant)			
523.	7742 <i>Stylidium inundatum</i> (Hundreds and Thousands)			
524.	20610 <i>Stylidium perula</i>			
525.	7774 <i>Stylidium piliferum</i> (Common Butterfly Triggerplant)			
526.	18419 <i>Stylidium pingrupense</i>			
527.	7785 <i>Stylidium repens</i> (Matted Triggerplant)			
528.	<i>Stylidium</i> sp.			
529.	7804 <i>Stylidium tenuicarpum</i>			

P4

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
530.	45393 <i>Stylidium uniflorum</i> subsp. <i>uniflorum</i> (Pincushion Triggerplant)			
531.	9304 <i>Stylidium zeicolor</i> (Maize Triggerplant)			
532.	49142 <i>Styphelia</i> sp. <i>Narrogin</i> (R.D. Royce 8158)			
533.	15971 <i>Synaphea flabelliformis</i>			
534.	16761 <i>Synaphea interioris</i>			
535.	1034 <i>Tetraria capillaris</i> (Hair Sedge)			
536.	4528 <i>Tetratheca confertifolia</i>			
537.	4546 <i>Tetratheca virgata</i>			
538.	1701 <i>Thelymitra antennifera</i> (Vanilla Orchid)			
539.	<i>Thelymitra</i> sp.			
540.	5080 <i>Thomasia foliosa</i>			
541.	5086 <i>Thomasia macrocalyx</i>			
542.	1327 <i>Thysanotus cymosus</i>		P3	
543.	1343 <i>Thysanotus patersonii</i>			
544.	6268 <i>Trachymene cyanopetala</i>			
545.	6280 <i>Trachymene pilosa</i> (Native Parsnip)			
546.	1483 <i>Tribonanthes longipetala</i> (Branching Tiurmdin)			
547.	8251 <i>Trichocline spathulata</i> (Native Gerbera)			
548.	1361 <i>Tricoryne elatior</i> (Yellow Autumn Lily)			
549.	17542 <i>Trifolium arvense</i> var. <i>arvense</i>	Y		
550.	17763 <i>Trifolium campestre</i> var. <i>campestre</i> (Hop Clover)	Y		
551.	4295 <i>Trifolium dubium</i> (Suckling Clover)	Y		
552.	19174 <i>Triglochin</i> sp. <i>A Flora of Australia</i> (G.J. Keighery 2477)			
553.	1139 <i>Triithuria bibracteata</i>			
554.	4839 <i>Trymalium angustifolium</i>			
555.	15144 <i>Trymalium ledifolium</i> var. <i>lineare</i>			
556.	8255 <i>Ursinia anthemoides</i> (Ursinia)	Y		
557.	38388 <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Y		
558.	7656 <i>Velleia cynopotamica</i>			
559.	7665 <i>Velleia trinervis</i>			
560.	8257 <i>Vellereophyton dealbatum</i> (White Cudweed)	Y		
561.	12388 <i>Verticordia acerosa</i> var. <i>preissii</i>			
562.	6076 <i>Verticordia densiflora</i> (Compacted Featherflower)			
563.	12411 <i>Verticordia densiflora</i> var. <i>cespitosa</i>			
564.	15432 <i>Verticordia densiflora</i> var. <i>densiflora</i>			
565.	14713 <i>Verticordia fimbriolepis</i> subsp. <i>fimbriolepis</i>		T	
566.	12430 <i>Verticordia huegellii</i> var. <i>stylosa</i>			
567.	12439 <i>Verticordia lindleyi</i> subsp. <i>purpurea</i>			
568.	7389 <i>Wahlenbergia preissii</i>			
569.	13328 <i>Waitzia nitida</i>			
570.	9247 <i>Westringia rigida</i> (Stiff Westringia)			
571.	1394 <i>Wurmbea dioica</i> (Early Nancy)			
572.	1395 <i>Wurmbea drummondii</i> (York Gum Nancy)			
573.	1402 <i>Wurmbea sinora</i>			
574.	1403 <i>Wurmbea tenella</i> (Eight Nancy)			
575.	1252 <i>Xanthorrhoea drummondii</i>			
576.	6283 <i>Xanthosia atkinsoniana</i>			

Conservation Codes

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

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

Appendix 4. Definitions of Conservation Codes for Threatened and Priority flora (DBCA, 2019b).

Conservation code	Category
(T) Threatened species pursuant to Sect 19 of the BC Act 2016.	
T	<p>(T) CR – Critically endangered</p> <p>Threatened species considered to be <i>“facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines”</i>.</p>
	<p>(T) EN - Endangered</p> <p>Threatened species considered to be <i>“facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines”</i>.</p>
	<p>(T) VU - Vulnerable</p> <p>Threatened species considered to be <i>“facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines”</i>.</p>
(P) Priority species – possible Threatened species.	
P1	<p>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.</p>
P2	<p>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.</p>

Conservation code	Category
P3	<p>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.</p>
P4	<p>(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.</p> <p>(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>

Appendix 5. Categories of Threatened Species under the EPBC Act (DotEE, 2018b).

Category	Definition
Extinct (Ex)	A native species is eligible to be included in the extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
Extinct in the Wild (ExW)	A native species is eligible to be included in the extinct in the wild category at a particular time if, at that time (a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically Endangered (CE)	A native species is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
Endangered (EN)	A native species is eligible to be included in the endangered category at a particular time if, at that time (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
Vulnerable (VU)	A native species is eligible to be included in the vulnerable category at a particular time if, at that time (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.
Conservation Dependent (CD)	A native species is eligible to be included in the conservation dependent category at a particular time if, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

Appendix 6. Vegetation condition scale (EPA, 2016).

Vegetation Condition	South West and Interzone Botanical Provinces
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.
Excellent	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.
Very Good	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.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. 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.
Degraded	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.
Completely Degraded	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 comprising weed or crop species with isolated native trees and shrubs.

Appendix 7. List of Vascular Flora found in the Survey Area.

	FAMILY_NAME	SPECIES
1	Fabaceae	<i>Acacia chrysocephala</i>
2	Fabaceae	<i>Acacia pycnocephala</i>
3	Fabaceae	<i>Acacia stenoptera</i>
4	Proteaceae	<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i>
5	Casuarinaceae	<i>Allocasuarina huegeliana</i>
6	Ericaceae	<i>Astroloma epacridis</i>
7	Poaceae	<i>Austrostipa</i> sp.
8	Proteaceae	<i>Banksia armata</i>
9	Proteaceae	<i>Banksia nivea</i> subsp. <i>nivea</i>
10	Proteaceae	<i>Banksia nobilis</i>
11	Proteaceae	<i>Banksia sphaerocarpa</i> var. <i>caesia</i>
12	Proteaceae	<i>Banksia squarrosa</i>
13	Myrtaceae	<i>Beaufortia incana</i>
14	Cyperaceae	<i>Caustis dioica</i>
15	Polygalaceae	<i>Comesperma scoparium</i>
16	Haemodoraceae	<i>Conostylis setigera</i>
17	Goodeniaceae	<i>Dampiera lavandulacea</i>
18	Goodeniaceae	<i>Dampiera lindleyi</i>
19	Fabaceae	<i>Daviesia incrassata</i> subsp. <i>incrassata</i>
20	Fabaceae	<i>Daviesia longifolia</i>
21	Restionaceae	<i>Desmocladius lateriflorus</i>
22	Hemerocallidaceae	<i>Dianella revoluta</i>
23	Fabaceae	<i>Dillwynia laxiflora</i>
24	Droseraceae	<i>Drosera spilos</i>
25	Droseraceae	<i>Drosera pycnoblata</i>
26	Myrtaceae	<i>Ericomyrtus serpyllifolia</i>
27	Myrtaceae	<i>Eucalyptus capillosa</i>
28	Fabaceae	<i>Gastrolobium calycinum</i>
29	Fabaceae	<i>Gastrolobium stowardii</i>
30	Haloragaceae	<i>Glischrocaryon aureum</i>
31	Fabaceae	<i>Gompholobium marginatum</i>
32	Proteaceae	<i>Grevillea pulchella</i>
33	Lamiaceae	<i>Hemigenia incana</i>
34	Dilleniaceae	<i>Hibbertia exasperata</i>
35	Dilleniaceae	<i>Hibbertia spicata</i>
36	Fabaceae	<i>Jacksonia epiphyllum</i>
37	Fabaceae	<i>Jacksonia lehmannii</i>
38	Goodeniaceae	<i>Lechenaultia biloba</i>
39	Cyperaceae	<i>Lepidosperma costale</i>

40	Cyperaceae	<i>Lepidosperma resinosum</i>
41	Myrtaceae	<i>Leptospermum erubescens</i>
42	Ericaceae	<i>Leucopogon fimbriatus</i>
43	Ericaceae	<i>Leucopogon</i> sp. Wandering (F. Hort 419)
44	Stylidiaceae	<i>Levenhookia pusilla</i>
45	Asparagaceae	<i>Lomandra effusa</i>
46	Restionaceae	<i>Loxocarya striata</i>
47	Myrtaceae	<i>Melaleuca tuberculata</i>
48	Poaceae	<i>Neurachne alopecuroidea</i>
49	Olacaceae	<i>Olax benthamiana</i>
50	Rubiaceae	<i>Opercularia vaginata</i>
51	Iridaceae	<i>Patersonia juncea</i>
52	Proteaceae	<i>Petrophile imbricata</i>
53	Fabaceae	<i>Phyllota gracilis</i>
54	Asteraceae	<i>Podolepis lessonii</i>
55	Asteraceae	<i>Pterochaeta paniculata</i>
56	Poaceae	<i>Rytidosperma setaceum</i>
57	Stylidiaceae	<i>Stylidium adpressum</i>
58	Stylidiaceae	<i>Stylidium repens</i>
59	Stylidiaceae	<i>Stylidium zeicolor</i>
60	Stylidiaceae	<i>Stylidium piliferum</i>
61	Elaeocarpaceae	<i>Tetratheca confertifolia</i>
62	Orchidaceae	<i>Thelymitra macrophylla</i>
63	Asparagaceae	<i>Thysanotus patersonii</i>
64	Celastraceae	<i>Tripterococcus brunonis</i>
65	Xanthorrhoeaceae	<i>Xanthorrhoea drummondii</i>



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

COMMUNITY: Eucalypt Woodlands of the Western Australian Wheatbelt		OBSERVATION DATE: 10/10/2020
New occurrence <input type="checkbox"/>	Site ID: _____	CONS STATUS: TEC/PEC
OBSERVER/S: Russell Smith & Colin Spencer		PHONE: 0447809124
ROLE: botanists	ORGANISATION: Ecoedge	
EMAIL: russell@ecoedge.com.au		

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

Reserve No: _____

DISTRICT: _____ **LGA:** Cuballing **Land manager present:**

DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input checked="" type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM's <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: 6386522	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: 510585	Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____
Unknown <input type="checkbox"/>	Zone: 50	

LAND TENURE:

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

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

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

THREATS - type, and supporting information: e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.	Cause/Agent: e.g. weed type, grazing species, recreation type	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
•		%			
•		%			
•		%			
•		%			
•		%			
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme

*Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

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

Pristine <input type="checkbox"/> _____%	Very Good <input type="checkbox"/> _____%	Degraded <input type="checkbox"/> _____%
Excellent <input type="checkbox"/> _____%	Good <input type="checkbox"/> _____%	Completely Degraded <input type="checkbox"/> _____%

Please return form to:

communities.data@dpaw.wa.gov.au

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

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



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

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

ACTIONS IMPLEMENTED (include date):

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

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

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

CONDITION OF SOIL:
 Dry Moist Waterlogged Inundated Cracked Saline Other: _____

VEGETATION CLASSIFICATION:

1.	Woodland
2.	
3.	
4.	

FIRE HISTORY:

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

Actual Occurrence Landuse:

Please return form to:

communities.data@dpaw.wa.gov.au

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

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



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

Adjacent Landuse:

Associated Flora Species:

Eucalyptus capillosa woodland over Acacia chrysocephala, Banksia armata, Beaufortia incana, Daviesia longifolia, Lechenaultia biloba, Xanthorrhoea drummondii open shrubland over Dianella revoluta, Patersonia juncea, Podolepis lessonii, Tripterococcus brunonis very open herbland and Lepidosperma costale, L. resinsum open sedgeland

Associated Fauna Species:

OTHER COMMENTS:

ATTACHED: Map Mudmap Photo GIS data Field notes
Other:

COPY SENT TO: Regional Office District Office Other:

Submitter of record: Russell Smith **Role:** botanist
Signature: Russell Smith **Date submitted:** 29/03/2020

Please return form to:

communities.data@dpaw.wa.gov.au

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

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