

Vegetation, Flora, Fauna and Environmental Considerations Report

Shire of Esperance 2022-23 Strategic Purpose Permit Site C – Rollond Road, SLK 0-15.9



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February 2023



Acknowledgement of country

The Shire of Esperance acknowledges the Kepa Kurl Wudjari people of the Nyungar nation and Ngadju people who are the traditional custodians of this land and their continuing connection to land, waters and community. We pay our respect to their Elders past, present and emerging and we extend that respect to other Aboriginal Australians today.

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BAM Act: Biosecurity and Agriculture Management Act 2007 (WA) BC Act: Biodiversity Conservation Act 2016 (WA) **BOM:** Bureau of Meteorology DBCA: Department of Biodiversity, Conservation and Attractions EP Act: Environmental Protection Act 1986 (WA) **EPA:** Environmental Protection Authority EPBC Act: Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) **IBRA:** Interim Biogeographical Regionalisation for Australia **IUCN:** International Union of Conservation Nature **LGA:** Local Government Area **NVIS:** National Vegetation Information System **PEC:** Priority Ecological Community PF: Priority Flora (Under BC Act) SOE: Shire of Esperance **SLK:** Straight Line Kilometres (Main Roads WA) **TEC:** Threatened Ecological Community **TF:** Threatened Flora (Under BC Act) **TPFL:** Threatened and Priority Flora Database (DBCA) UCL: Unallocated Crown Land **WAH:** Western Australian Herbarium (PERTH) WAOL: Western Australian Organism List

1 Executive Summary

The Shire of Esperance Environmental Team was commissioned by the Shire of Esperance Asset Management department to undertake a review of the flora, vegetation and fauna values on the proposed Rollond Road, SLK 0-15.9 project in 2022-23 as part of their Strategic Purpose Permit application.

The proposed development involves the clearing of 7.945 ha of native vegetation for the purpose of road widening for public safety.

To complete these works, native vegetation up to 2m from the current road footprint on both sides of the road is required to be cleared, increasing the active road footprint to 17m. This requires clearing of 7.945 ha of native vegetation. To mitigate impact of clearing vegetation, where feasible clearing will not occur to the full permitted width, conserving vegetation.

The proposed works are located 90 km north of Esperance, within the Shire of Esperance managed road reserve of Rollond Road. Specifically, it is starting from Coolgardie-Esperance Highway, at straight line kilometre (SLK) 282.65 (Main Roads, 2022) and heads west 15.9km. A point within the proposed clearing permit area is 6336469.19m N, 371491.35m E (UTM Zone 51 H, GDA94).

The Shire of Esperance's two Environmental Scientists completed the site assessment on Rollond Road, SLK 0-15.9 between the 22nd of August to 25th August, 2022.

A total of 247 vascular plant taxa from 144 plant genera and 51 plant families were recorded within the 'Rollond Road, SLK 0-15.9' survey area during the 2022 survey. The majority of taxa was recorded within the Proteaceae (18 taxa), Myrtaceae (56 taxa), Fabaceae (37 taxa), and Asteraceae (18 taxa) families (Appendix 1). This total included 219 native species and 28 introduced (weed) species.

8 priority flora species pursuant to the Biodiversity Conservation Act (2016) and as listed by the Department of Biodiversity, Conservation and Attractions (DBCA) were recorded within the 'Rollond Road, SLK 0-15.9' survey area. No plant taxa listed as Threatened pursuant to Schedule 1 of the Environment Protection and Biodiversity Conservation (EPBC) Act 1999 were recorded during the survey within the proposed 'Rollond Road, SLK 0-15.9' survey area.

Taxon	Conservation	Total	Total Plants	Plants to
	Code	Locations		be cleared
Conostephium uncinatum	P2	1	17	0
Halgania sp. Peak Eleanora	P2	3	298	84
Acacia bartlei	P3	1	1	1
Acacia glaucissima	P3	2	20	14
Conostephium marchantiorum	P3	1	32	0
Goodenia laevis ssp. laevis	P3	3	702	637
Pityrodia chrysocalyx	P3	2	424	2
Eucalyptus dolichorhyncha	P4	2	142	49

Table 1: Summary of Priority flora species recorded in 'Site C – Rollond Road, SLK 0-15.9' project area.

There was one vegetation unit that may match the state listed Priority Ecological Community (PEC) "Swamp Yate (*Eucalyptus occidentalis*) woodland in seasonally-inundated basins". No other TECs or PECs were located within 'Site C - Rollond Road, SLK 0-15.9'.

The project area contains suitable foraging habitat for the EPBC listed Carnaby's cockatoo (*Calyptorhynchus latirostis*). Approximately 0.32 ha of high quality native foraging habitat. The Chuditch, Grey Falcon, Malleefowl and Western Rosella all had records listed nearby the project area and had potentially suitable habitat within the project area. No other threatened fauna species under either the BC Act or EPBC Act are likely to be impacted upon by this proposal.

Should the development of 'Rollond Road, SLK 0-15.9' go ahead the following recommendations are made as a means of minimizing the impacts of infrastructure activities on the flora, vegetation and fauna values in the area:

- Minimise clearing to minimum amount required
- Avoid larger habitat trees wherever possible;
- Maintain existing drainage systems, spoon drains and ensuring tracks and other infrastructure areas do not disrupt or divert historic water flow patterns;
- Minimise soil disturbance during clearing and practice standard vehicle hygiene to ensure introduced (exotic) species do not become established within the 'Rollond Road, SLK 0-15.9' survey area;
- Minimize all threatening processes to native vegetation.

These have been addressed in the attached Weed and Dieback plan and provided these measures are implemented, there should be no impediments to the widening of 'Rollond Road, SLK 0-15.9'.

1 Introduction

The Shire of Esperance endeavors to maintain a high level of road safety, being proactive in identifying high risk road designs and progressively upgrading them. The Shire of Esperance manages the largest road network of any local government in Western Australia, encompassing a total of 4,593 km of road. The Shire of Esperance is submitting 'Rollond Road, SLK 0-15.9' project as Site C under the '2022-23 Strategic Purpose Permit' (Figure 1), for the purpose of road widening for public safety.

1.1 Location and Scope of Project

The proposed works are located ~7.7km north of the Grass Patch townsite, within the Shire of Esperance managed road reserve of Rollond Road. Specifically, it is starting from Coolgardie-Esperance Highway, at straight line kilometre (SLK) 282.65 (Main Roads, 2022) and heads west 15.9km. A point within the proposed clearing permit area is 372377m N, 6330479m E (UTM Zone 51 H, GDA94).

Rollond Road is particularly narrow resulting in safety issues during high traffic periods such as harvest season. Rollond Road requires widening to maintain the safety of road users during harvest and peak use. To complete these works, native vegetation up to 2m from the current road footprint on both sides of the road is required to be cleared, increasing the active road footprint to 17m. To mitigate impact of clearing vegetation, where feasible clearing will not occur to the full permitted width, conserving vegetation.

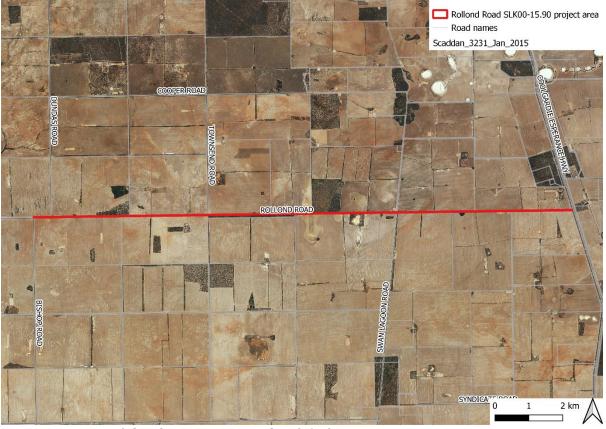


Figure 1. Location of 'Site C – Rollond Road, SLK 0-15.9'.

Site C – Rollond Road, SLK 0-15.9 - Vegetation, Flora, Fauna and Environmental Considerations Report

1.2 Environmental Legislation and Guidelines

The Commonwealth (federal) legislation relevant to this survey is the:

• Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

The following Western Australian (state) legislation relevant to this survey include the:

- Biodiversity Conservation Act 2016 (BC Act);
- Biodiversity Conservation Act 2016 Biodiversity Conservation (Listing of Native Species) (Flora) Order 2022
- Biodiversity Conservation Act 2016 Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2022
- Biosecurity and Agriculture Management Act 2007 (BAM Act);
- Environmental Protection Act 1986 (EP Act);

Western Australian guidelines relevant to this survey are the:

- Environmental Factor Guideline: Flora and Vegetation (Environmental Protection Authority [EPA] 2016);
- Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016);
- A guide to the assessment of applications to clear native vegetation, Under Part V Division 2 of the Environmental Protection Act 1986 (DWER, 2014)
- Technical Guidance Terrestrial vertebrate fauna surveys for environmental impact assessment (EPA, 2020)

International Agreements relevant to this survey are the:

- Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment 1974 (Japan-Australia Migratory Bird Agreement – JAMBA)
- Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment 1986 (China-Australia Migratory Bird Agreement – CAMBA)
- Agreement between the Government of Australia and the Government of the Republic of Korea on the Protection of Migratory Birds 2007 (Republic of Korea-Australia Migratory Bird Agreement – ROKAMBA)
- Convention on Wetlands of International Importance 1971 (Ramsar Convention)

2 **OBJECTIVES**

The objective of this survey was to undertake a flora, fauna and vegetation assessment of the 'Rollond Road, SLK 0-15.9' survey area including:

- Undertake a desktop study of the flora, fauna and vegetation of the 'Rollond Road, SLK 0-15.9' survey area, with an emphasis on threatened and priority flora, threatened and priority ecological communities (TECs and PECs) and Threatened and Priority fauna;
- Review the historical literature of the 'Rollond Road, SLK 0-15.9' survey area;

- Undertake a detailed survey of the 'Rollond Road, SLK 0-15.9' survey area, and collect and identify the vascular plant species present;
- Review the conservation status of the vascular plant species recorded by reference to current literature and listings by the Department of Biodiversity, Conservation and Attractions (DBCA) and plant collections held at the Western Australian State Herbarium (WAH), and listed by the Department of Climate Change, Energy, the Environment and Water under the EPBC Act;
- Define and map the vegetation communities in the 'Rollond Road, SLK 0-15.9' survey area;
- Define and map the location of any threatened and priority flora located within the 'Rollond Road, SLK 0-15.9' survey area;
- Define any management issues related to flora, fauna and vegetation values;
- Provide recommendations on the local and regional significance of the vegetation communities; and
- Prepare a report summarising the findings.

3 METHODS

3.1 Desktop Assessment

A desktop assessment with a 20km buffer zone was conducted using DBCA datasets sourced under agreement for:

- WA Herbarium data (WAH) (DBCA, 2022d)
- Threatened and Priority Flora Database (TPFL) (DBCA, 2022c)
- DBCA's Esperance District Threatened Flora spatial dataset (DBCA, 2022a)
- Threatened and Priority Ecological Communities (DBCA, 2021)
- Threatened, specially protected and priority fauna (DBCA, 2022e)
- Black cockatoo roost and breeding sites (DBCA, 2022f)

In addition, the EPBC Act Protected Matters Search Tool, was also checked to identify the possible occurrence of threatened and priority flora, fauna and threatened and priority ecological communities within the 'Rollond Road, SLK 0-15.9' area. Search parameters were 'by polygon' and a 20 km buffer was applied to the search area; standard used in this IBRA subregion.

In addition, historical documentation and state datasets including:

- Vegetation mapping of the region, principally that of Beard (1976)
- 2020 Vegetation Extent by State-wide Pre-European mapping statistics
- Soil landscape mapping (DAFWA)
- Dieback Information Data Management System (DIDMS) (Gaia Resources)
- Shire of Esperance Weed Mapping Data
- Existing site digital orthophotos (Scaddan 2015)
- Atlas of Living Australia database
- Hydrographic Catchments (DWER)
- Crown Reserves (Landgate)

3.2 Field Survey

The site was initially inspected on 13st July 2022, by Julie Waters and Katherine Walkerden the SOE's Environmental Coordinator and Environmental Officer. A general assessment of possible ecological impacts included historical clearing, impact of fire regimes, regeneration from disturbance, waterlogging, senescence, weeds, erosion, sedimentation, invasive fauna, *Phytophthora* Dieback, and illegal dumping of rubbish. Populations of *Eucalyptus dolichorhyncha* and *Halgania* sp. Peak Eleanora were also observed and collected during this inspection.

A detailed field assessment of the flora and vegetation of the 'Rollond Road, SLK 0-15.9' survey area was undertaken by Shire of Esperance botanists between the 22nd and 31st of August 2022 in accordance with methods outlined in Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016). All botanists held valid collection licences to collect flora for scientific purposes, issued under the BC Act.

The methodology for assessing threatened and priority flora consisted of traversing by foot the entire 'Rollond Road, SLK 0-15.9' survey area. The road was used as a continuous transect. Vegetation up to 5 meters from the edge of the existing road's back-slope was assessed to accurately cover the 2m width proposed clearing permit area. All species were recorded, and botanists collected all but the very common, well known species.

For PF or TF species identified in the desktop survey as possible to occur, scans of pressed specimens from either the WAH or local Esperance District Herbarium were taken into the field. Suitable associated habitat for TF or PF identified in the desktop study were particularly focused on, and extensively searched. If suspected or known conservation significant flora species were encountered, a specimen was collected for subsequent identification with GPS coordinates and plant numbers recorded for the population. During the survey, a field herbarium for 'Rollond Road, SLK 0-15.9' was also constructed.

All species unknown in the field were collected, pressed and dress in accordance with WAH instructions, and later identified by SOE's three Botanists, using keys, WA Herbarium's Florabase, literature and Esperance District Herbarium. Any species that were unable to be identified were submitted to the WAH for identification. Nomenclature of the species recorded is in accordance with the WAH.

The site was revisited on the 2nd of December 2022 to collect specimens of priority flora (*Halgania* sp. Peak Eleanora, and *Pityrodia chrysocalyx*) which were sterile during the initial survey, a fruiting specimen of the anomalous *Acacia aff. merrallii* was also collected during the visit. A follow up survey was conducted on the 13th of January 2023 by Katherine Walkerden to specifically target the counting of Priority three *Acacia glaucissima*.

The vegetation communities of 'Site C – Rollond Road, SLK 0-15.9' was assessed for the presence a TEC or PEC (DBCA 2018, 2021) comparing that to descriptions in approved conservation advice for these communities.

Specifically, the site was assessed for the Environmental Protection and Biodiversity Conservation Act 1999 listed 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province

of Western Australia (Kwongkan)' TEC. The presence of Kwongkan was identified using diagnostic characteristics defined in the 'Approved Conservation Advice for Kwongkan (Commonwealth of Australia, 2014)' as;

2a) Characterised by Proteaceae species having 30% or greater cover of Proteaceae species across all layers where these shrubs occur (crowns measured as if they are opaque). And/or

2b) Two or more diagnostic Proteaceae species are present that are likely to form a significant vegetative component when regenerated.

PEC's do not have published approved conservation advice. Comparison of the vegetation community occurred using 'Priority Ecological Communities for Western Australia, Version 33 (DBCA 2022)' definitions.

As 'Site C – Rollond Road, SLK 0-15.9'is a long linear site, quadrant-based data was not used to determine if the site meet the TEC definitions, this was due to the inability to site an appropriately sized quadrant (As per Table 1, Technical Guidance – Flora and vegetation surveys for Environmental Impact Assessment (EPA 2016) within the narrow road verge area.

Only a basic fauna survey was conducted as per EPA (2020) guidelines. Observations of fauna presence, such as call sounds, footprints and scats were noted, and the area assessed for suitability of habitat within 'Site C – Rollond Road, SLK 0-15.9' for fauna species identified in the desktop survey. Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) feeding, roosting and nesting habitat was also assessed using EPBC Act referral guidelines (2022).

3.3 Survey Timing

According to Table 3 in the Technical Guidance – Flora and vegetation surveys for Environmental Impact Assessment (EPA 2016), the primary survey timing for the South-west and Interzone Botanical Province is Spring (September-November). As all surveys at 'Rollond Road, SLK 0-15.9' were conducted in late August, it falls within this period. The surveys were timed, where possible, to align with peak flowering periods of conservation significant flora with the potential to occur in the 'Rollond Road, SLK 0-15.9' survey area.

The 2022 spring rainfall was above average, and hence spring flowering continued for an extended period in 2022.

3.4 Vegetation Descriptions

Vegetation community was assessed during the field survey. Broad vegetation types defined by structure and composition were recorded and described using the National Vegetation Information System (NVIS) (ESCAVI 2003) classification system.

Condition of vegetation was assessed using Table 2 of the Technical Guidance – Flora and vegetation surveys for Environmental Impact Assessment (EPA 2016) categories, as 'Excellent', 'Very Good', 'Good', 'Degraded' or 'Completely Degraded'. This illustrates how healthy vegetation is, determined by vegetation structure, weed cover, presence of dieback, historical clearing, grazing and other signs of disturbance.

Additionally, possible environmentally sensitive areas, such as wetlands or granite, were noted. Overall, an assessment of environmental impacts to Department of Water and Environmental Regulation's (DWER) biodiversity values were inspected and valued.

3.5 Survey Limitations

A general assessment was made of the survey against a range of factors that may have limited the outcomes and conclusions of this report (Table 2). Based on this assessment, the present survey has not been subject to constraints which would affect the thoroughness of the survey, and the conclusions which have been formed.

Potential Survey Limitation	Impact on Current Survey
Availability of contextual information at a regional and local scale	Not a limitation: Reference resources such as Beard's mapping, together with online flora and vegetation information, have provided an appropriate level of information for the current survey. The vegetation of the Esperance shire has previously been mapped by Beard (1976).
Resources (i.e. were there adequate resources to complete the survey to the required standard).	Not a constraint: Adequate resources were made available by Shire of Esperance to complete the surveys.
Competency/experience of team carrying out survey; experience in the bioregion surveyed	Not a limitation: Botanists had extensive experience working within the Shire of Esperance and wider areas. Two of the botanists have consistently worked within this bioregion for more than 15 years. Botanists were familiar with flora in the area. Any unknown or potential threatened or priority flora species were collected and identified, utilising resources available at the Western Australian Herbarium and consultation with expert taxonomists.
Proportion of flora collected and identification issues	Potential limitation: While many plants were in flower during the survey, a proportion of plants encountered during the survey were sterile and may impact the chance of identification of some specimens to species level. Orchid species may not emerge each year if conditions are not favourable. Although these may affect the completeness of the species list, it is not expected to have a significant effect on mapping reliability, nor on the identification of threatened and priority species in the area as the majority were perennial species. Surveys were only undertaken in one year
Effort and extent of survey	Potential limitation: The survey area was thoroughly covered. The threatened and priority flora search undertaken by botanists by means of foot-traverse along the edge of the road and into roadside vegetation ensured thorough coverage of the survey area. Flora that was unknown or resembled threatened or priority flora were collected, the location and habitat noted, and the number of plants estimated.
Mapping reliability	Not a constraint. Handheld GPS units were used for the survey, which for a majority of field conditions have an accuracy level of ± 5 m.
Survey timing, rainfall, season of survey	Not a limitation: The EPA (2016a) recommends that flora and vegetation surveys in the South – West Botanical Province be

Table 2: Potential limitations a	affecting the	conclusions n	nade in this report	
			naue in uns report	

Site C – Rollond Road, SLK 0-15.9 - Vegetation, Flora, Fauna and Environmental Considerations Report

	conducted in Spring (September-November). All surveys have been conducted in late August which falls within this period. Rainfall in 2022 was above average, and continued well into December.
Disturbances (fire/flood/clearing)	Not a limitation: The 'Rollond Road, SLK 0-15.9' survey area exhibits minimal levels of disturbance, mainly from historic clearing.

4 DESKTOP ASSESSMENT RESULTS

4.1 Climate

The Salmon Gums climate is described as a semi-arid (Dry) Warm Mediterranean climate (BoM 2022). The area receives an average annual rainfall of 355 mm. The Shire of Esperance received an unusually high level of rainfall in 2022 resulting in an extended flowering period.

4.2 Catchment

'Site C – Rollond Road, SLK 0-15.9' is present within the Lort River catchment area and the Bandy Creek Catchment area. It is located approximately 74km from the coast.

4.3 Geology, Soils and Topography

Three geological units were identified within 'Site C – 'Rollond Road, SLK 0-15.9', by Schoknecht et al. (2004). It is described as:

- Tertiary marine sediments with aeolian carbonate rich deposits in places.
- Quaternary aeolian sand deposits over Tertiary marine sediments.
- Thin Tertiary sediments with additions of calcareous aeolian material over weathered bedrock.

Within the area, there has been three soil types recorded. These are described as:

- Alkaline grey shallow sandy duplex soils with associated pale deep sands and minor deep sandy duplexes, ironstone gravel soils.
- Alkaline grey shallow sandy duplex soils with associated pale deep sands and alkaline grey deep sandy duplex soils.
- Alkaline grey shallow sandy duplex soils and calcareous loamy earths with minor non-cracking clays and bare rock.

During the field survey, topography was observed to be dominated by gently undulating plains. Using Schnoknect et al. (2004), the project topography is mapped at a fine scale, traversing three topographic areas. These include:

- Level to gently undulating plain with areas of gilgai microrelief. Drainage is generally poorly developed and usually internal.
- Gently undulating plain with occasional subdued sand sheets and dunes. Drainage in internal to occasional small swamps.
- Very gently inclined scarp with external drainage via a well-developed network of incipient streams.

4.4 Regional Vegetation

The site is located within the Eastern Mallee (MaL01) Interim Biogeographic Regionalisation of Australia (Thackway & Cresswell 1995) subregion. The MaL01 is described as "the south-eastern of Yilgarn Craton is gently undulating, with partially occluded drainage. Mainly Mallee over Myrtaceous-Proteaceous heaths on duplex (sand over clay) soils. Melaleuca shrublands characterize alluvia, and Halosarcia low shrublands occur on saline alluvium. A mosaic of mixed Eucalypt woodlands and Mallee occur on calcareous earth plans, and sandplains overlying the Eocene Limestone strata in the East. Semi-arid (dry) and warm Mediterranean".

Beard (1973) mapped two vegetation associations (VA) within the 'Site C – Rollond Road, SLK 0-15.9' (Table 3). The area was mapped as containing Salmon Gums 486 and Ridley 519 vegetation associations. Salmon Gums 486 has moderate levels of vegetation remaining with 37% of vegetation within the Eastern Mallee subregion remaining, Ridley 519 has high levels of vegetation remaining with 86% of its vegetation remaining within the Eastern Mallee subregion.

15.9', and statistics on pre-European remaining area	S.	
Vegetation Association		
Name	Salmon Gums_486	Ridley_519
Description	Woodland / Mallee	Eucalypt shrubland Eucalyptus eremophila, E. redunca, E. spp.
Vegetation to be cleared (ha)	7.33	0.64
Pre-European extent	58.69	61.71
Pre-European extent in IBRA region MaL01 (%)	37.38	86.75
Pre-European extent in LGA (%)	39.38	88.86

6.70

16.88

Table 3. Vegetation associations mapped by Beard (1973) within the 'Site C – Rollond Road, SLK 0-15.9', and statistics on pre-European remaining areas.

4.5 Surrounding Land Use

Current extent conserved in IUCN area (%)

The area directly included in the clearing permit application 'Site C – Rollond Road, SLK 0-15.9' is currently intact and vegetated 20 m and 100m wide road reserve, managed by the Shire of Esperance. The current road footprint occupies 15 m. The surrounding land use is agricultural cropping land.

The site was 0.6km south of Reserve 29680 (Red Lake Townsite Nature Reserve) this was the closest conservation reserve to the project area. No other conservation vested reserves were within 5km of the site.

4.6 Potential Threatened and Priority Flora

3 threatened flora (TF) and 34 priority flora (PF) were recorded within a 20 km radius of the proposed impact site (Appendix 3). Of these, no TF species and 22 PF species had suitable known associated habitat that corresponded with vegetation communities and soil type of 'Site C – Rollond Road, SLK 0-15.9' project. No confirmed records of priority flora were directly located within the clearing permit area.

4.7 Potential Threatened and Priority Ecological Communities

The desktop search identified the BC listed priority ecological community (PEC) 'Granite outcrop pools with endemic aquatic fauna' as being 9km from the site. This PEC was not relevant to the site as 'Site C – Rollond Road, SLK 0-15.9' had no granite outcrops. No other state or federally listed TEC's or PECs were identified by the desktop study as being within the 20km buffer of 'Site C – 'Rollond Road, SLK 0-15.9'.

4.8 Potential Threatened and Priority Fauna

4 threatened fauna and 2 priority fauna were recorded within a 20 km radius of the proposed impact site (Appendix 4). An additional 6 species were listed as occurring by the EPBC Protected Matters Tool.

4.9 *Phytophthora* Dieback

Dieback Information Delivery and Management System (DIDMS; GAIA Resources, SCNRM & State NRM 2022) data shows no *Phytophthora cinnamomi* or other *Phytophthora* sp. dieback sample results in the immediate area.

5 FIELD SURVEY RESULTS AND DISCUSSION

5.1 Flora

A total of 247 vascular plant taxa from 144 plant genera and 51 plant families were recorded within the 'Rollond Road, SLK 0-15.9' survey area during the 2022 survey. The majority of taxa was recorded within the Proteaceae (18 taxa), Myrtaceae (56 taxa), Fabaceae (37 taxa), and Asteraceae (18 taxa) families (Appendix 1). This total included 219 native species and 28 introduced (weed) species.

Numerous specimen's unknown to surveyors were collected and verified at the WAH as non-threatened species, such as:

- Leucopogon canaliculatus (Accession #9740; KSW13322, Specimen retained)
- Acacia dermatophylla (Accession #9770; KSW10922, Specimen retained)
- Acacia hadrophylla (Accession #9770; KSW12122, Specimen retained)
- Jacksonia racemosa (Accession #9857; KSW18922, Specimen retained).
- Calytrix tetragona (Accession #9857; KSW19022, Specimen not retained).
- Cyathostemon sp. (Accession #9770; KSW11222, Specimen not retained).
- Cyathostemon sp. (Accession #9770; KSW11322, Specimen retained).
- Verticordia plumosa var. incrassata (Accession #9770; KSW11522, Specimen retained).

A number of plant specimens collected could not be identified accurately to species level due to the absence of sufficient taxonomic characters to enable accurate identification. The principal reasons for not being able to fully identify some of the collected specimens to species level were:

- Plant material was sterile or lacked sufficient taxonomic features to permit accurate identification to species level. In these cases, the species is identified as, for example, *Calandrinia sp.* and *Lolium* sp.
- The plant material collected could not be determined to a known taxon. For example, *Lepidosperma* sp. and *Cyathostemon* sp. (currently undergoing taxonomic revision).

5.2 Threatened and Priority Flora

No TF species, were identified within the clearing footprint. In addition, the targeted flora survey identified 8 PF species, 6 of these within the proposed clearing permit footprint (Table 4). Queries of spatial datasets were requested specifically for these species, to interrogate impact of proposed works on species sustainability (DBCA 2022a; DBCA 2022c; DBCA 2022d). DBCA do not actively manage or monitor the majority of low priority species, due to their prevalence in the landscape relative to TF. There are 137 species recorded as priority three or four conservation status within the Shire of Esperance boundaries (DBCA 2023). It was noted that additional information on *Goodenia laevis ssp. laevis, Acacia bartlei, Acacia glaucissima and Eucalyptus dolichorhyncha* was located on file.

Table 4: Summary of priority flora species recorded in 'Site C – Rollond Road, SLK 0-15.9' project area.

Taxon	Conservation Code	Total Locations	Total Plants	Plants to be cleared
Conostephium uncinatum	P2	1	17	0
Halgania sp. Peak Eleanora	P2	3	298	84
Acacia bartlei	P3	1	1	1
Acacia glaucissima	P3	2	20	14
Conostephium marchantiorum	P3	1	32	0
Goodenia laevis ssp. laevis	P3	3	702	637
Pityrodia chrysocalyx	P3	2	424	2
Eucalyptus dolichorhyncha	P4	2	142	49

5.2.1 Conostephium uncinatum, Priority 2

A specimen of *Conostephium uncinatum* was sent to the WA Herbarium for identification confirmation (KSW10622; Accession # 9770 with specimen retained). It was confirmed as *Conostephium uncinatum* by Michael Hislop on 27/10/2022. A Threatened and Priority Reporting Form (TPFL) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 30/01/2023 (Appendix 2.1). If proposed works occur none of the 17 plants counted will be impacted upon.



Figure 2. Location of Priority 2 species *Conostephium uncinatum* just outside the 'Site C – Rollond Road, SLK 0-15.9' project.

5.2.2 Halgania sp. Peak Eleanora, Priority 2

Specimens of *Halgania sp. Peak Eleanora* were sent to the WA Herbarium for identification confirmation, a specimen was collected for each of the three populations.

- Eastern population (SLK 5.74-5.83) (KSW21022; Accession #9874 with specimen retained). It was confirmed as *Halgania* sp. Peak Eleanora by Michael Hislop on 23/1/2023.
- Central population (SLK 8.73-10.66) (KSW8922; Accession #9693; PERTH 09516425). It was confirmed as *Halgania* sp. Peak Eleanora by Michael Hislop on 23/8/2022.
- Western population (SLK 13.19-13.53) (KSW21022; Accession #9874 with specimen retained & KSW11922 ACC9770 with specimen retained) It was confirmed as *Halgania* sp. Peak Eleanora by Michael Hislop on 23/1/2023.

A Threatened and Priority Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 30/1/2023 (Appendix 2.2, 2.3, 2.4). If proposed works occur, 84 plants will be impacted upon, from a population total of 298. Breaking down clearing by population;

- Eastern population, 1 of 2 plants will be taken
- Central population, 81 of 293 plants will be taken
- Western population, 2 of 3 plants will be taken

The central population was contained within the 100m wide road reserve, which likely has a total population much greater than that counted during the survey, this central population Is unlikely to be significantly impacted by the clearing.

Analysing Western Australian Herbarium and DBCA TPFL data, *Halgania* sp. Peak Eleanora has a wide geographic range spanning 320km east to west and a 120km north to south range. With specimens present in the Shire of Esperance and Shire of Kondinin. There were 10 confirmed herbarium specimens for *Halgania* sp. Peak Eleanora, five of the specimens were from Unallocated Crown Land, two specimens were from Peak Charles National Park, the last three specimens were from insecure tenure.

Additionally, 22 populations of this species totaling 6000 plants were reported by Ecoscape during the State Barrier Fence Biological surveys (Ecoscape, 2015), only one of these populations totaling 50+ plants were located on DBCA databases.

There is a large 116km gap between the two westernmost populations and a 90km gap between the first and third easternmost populations, almost the entirety of these gaps is poorly surveyed UCL with potential to have additional populations of this species.

Sheet number	Location	Frequency	Tenure	Record date
2631946	3 km SSE of Peak Charles, Peak Charles National Park, c. 45 km W of Salmon Gums	Common	National Park	9/11/1979
2636530	39.5 km SSE of Peak Eleanora, 2.55 km N of Rollond Road on Fields road		Unclear.	25/09/1984
5020190	NW of Grass Patch, roadside Poverty Lane	Occasional.	Road reserve	10/11/1997
8023697	10.4 km E of Bremer Range turnoff track on Lake King-Norseman Road	Occasional	UCL	8/10/2007
8471975	Mt Newmont	Very common.	UCL	15/09/2012
8643482	Peak Charles Road N of Peak Charles both sides of road. Population extends from at least 32° 49' 49" to 32° 50' 13.4"		National Park	5/05/2013
9062297	C. 20 km W of Salmon Gums on agricultural boundary firebreak	50+ plants.	UCL & Dog Fence Reserve.	6/10/2013
8644829	5.5 km SW of Mount Newmont	An extensive colony of several kilometres in length that would number in their millions.	UCL	3/08/2014

Table 5. Known Herbarium records of Priority 2 species *Halgania* sp. Peak Eleanora, detailing locality, frequency, tenure and collection date. (DBCA, 2023a)

9232982	1.5 km SSW of Kau Rock. 1.8 km W along firebreak from NW corner of Loc 417	Localised patch.	UCL	22/05/2019
9215085	Forrestania, 22 km S of Mt Holland Airport, c. 83 km E of Hyden	C. 1% cover.	Private land	3/11/2019

PERTH 09516425 Halgania sp. Peak Eleanora (M.A. Burgman 3547 B) Boraginaceae	
 Plant Description, Notes: Small shrub, 25 cm tall. blue 5 mm wide flowers, small leaves (4-5 mm long). Vegetation: Mixed Mallee over Melaleuca uncinata and mixed understorey shrubs. Associated species include: Prostanthera serpyllifolia, Lissanthe rubicunda, Pimelea cracens, Eucalyptus dolichorhyncha. Site Description: Roadside, level plain, no signs of fire. Frequency: single plant was found, though no survey has been conducted. Nearest Named Place: Grass Patch State: WA Collector: Waters, J.; Walkerden, K. Coll No: KSW8922 Collection Date: 13 July 2022 Conservation Code: 2 	
Confirmavit: M. Hislop Date: 23 August 2022 Origin: PERTH Duplicates to: ESP. Record Basis: PreservedSpecimen	

Figure 3. Extract from Florabase (DBCA 2022) of Priority 2 species, *Halgania sp. Peak Eleanora,* record of Specimen KSW8922, located directly within the proposed 'Site C – Rollond Road, SLK 0-15.9' area.



Figure 4. Location of Priority 2 species *Halgania sp.* Peak Eleanora within the 'Site C – Rollond Road, SLK 0-15.9' project.

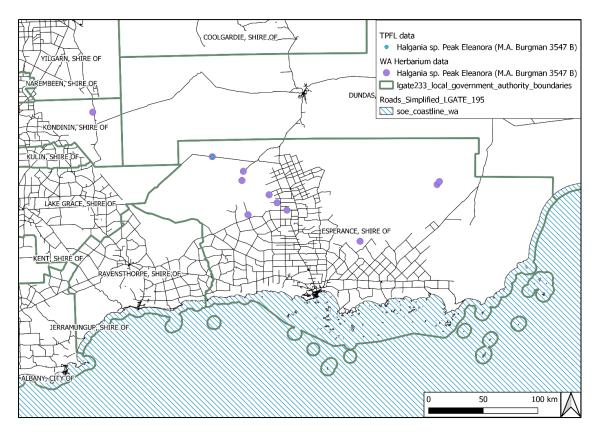


Figure 5. Known records of Priority 2 species *Halgania* sp. Peak Eleanora across a 210 km east-west geographic range (DBCA 2023).

5.2.3 Acacia bartlei, Priority 3

A specimen of *Acacia bartlei* was sent to the WA Herbarium for identification confirmation (KSW11622; Accession # 9770 with specimen retained). It was confirmed as *Acacia bartlei* by Michael Hislop on 27/10/2022. A Threatened and Priority Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 30/01/2023 (Appendix 2.6). If proposed works occur, 1 plant will be impacted upon, from a population total of 1. Despite extensive searching no more plants could be found, this is likely due to historical clearing in that location.

Acacia bartlei has a wide geographic range spanning 166km east to west and 64km north to south, all populations of this species are located within the Shire of Esperance. There was a total of 29 preserved herbarium specimens for this species. A large majority of the occurrences are geographically inaccurate and have unclear tenure. A single specimen was located within conservation estate (Dundas Nature Reserve), 3 specimens were located within UCL, 3 specimens were located within Shire of Esperance recreation reserves and 3 had been located within a road reserve, the remaining records had unclear tenure or were within private property. Several of the 29 records are likely to represent the same population, but it is unclear due to geographic uncertainty of the records.

Four additional populations have been found by Julie Waters and Katherine Walkerden during spring 2022, which have not yet been mounted at the WA Herbarium (Table 6.). Two of these were minor eastern range extensions. Examining prior herbarium records and recent finds of *Acacia bartlei*, the species inhabits a range of habitat types, with the most frequent habitat descriptions being Open Mallee woodland, Closed Mallee Woodland and a *Eucalyptus occidentalis* swamp. There were several records of the species growing on the edges of salt lakes. Only a single record of *Acacia bartlei* had been entered into the TPFL database.

Table 6. Confirmed records of Priority 3 species, Acacia bartlei found by Julie Waters and Katherine

 Walkerden during Spring 2022.

Herbarium	Location	Site	Frequency	Tenure	Record	Confirmative
reference		description			date	
KSW142-p	Rollond road (SLK	Lort River,	24	Road	13/08/2022	R. Davis
Accession#	40.58) and Lort River	fringing		Reserve &		
9713	crossing. Southern	saline river		DPLH		
	section of road			Parklands		
	reserve.			Reserve		
KSW14922	Circle Valley road at	Open	Single plant	Road	16/09/2022	M. Hislop
Accession#	SLK 0.26. Southern	Woodland	found	Reserve		-
9783	side of road.					
KSW15922	Coolinup road	Edge of Salt	7 plants in	Road	13/09/2022	M. Hislop
Accession#	collected at SLK	Lake	total	Reserve		
9841	38.81. Eastern side of					
	road.					
KSW16522	Heywood road at SLK	Salinity	7 plants.	Road	12/10/2022	M. Hislop
Accession#	5.47. Eastern side of	affected		Reserve		
9841	road.	Eucalyptus				
		occidentalis				
		swamp				

Table 7. Known Herbarium records of Priority 3 species *Acacia bartlei,* detailing location details, frequency, tenure and collection date (DBCA, 2023a).

Sheet number	Location	Frequency	Tenure	Record date
192996	1 mile E of Kau Rock		UCL	16/10/1970
666157	15.5 km W of Scaddan		Unclear	19/12/1971
666149	Scaddan		Unclear	1973
666122	62 miles S of Norseman on Esperance Road [= ca 1 km S of Salmon Gums]		Unclear	1973
666130	31.4 miles from Esperance on way to Norseman		Unclear	1973
192457	W of highway on Swan Lagoon Road, between Truslove and Salmon Gums		Unclear	1979
880558	Circle Valley		Unclear	1987

1264540	E of Scaddan - track between Dempster and		Unclear	6/09/1984
658693	Burdett Roads 0.5 km W of Kau Rock		UCL	6/09/1984
		abundant	Unclear	
619876	500 metres W of Highway, ca 5-6 km N of Scaddan (on Aboriginal Lands Trust block),	abundant.	Unclear	14/08/1985
768618	2 km S of Scaddan on Coolgardie - Esperance Highway		Unclear	31/08/1986
5334039	Edge of salt lake boundary Reserve 24952 and Loc.418, ca 600 m W of Highway, Scaddan,		Shire recreation reserve	22/09/1998
5267153	Coolinup, Kau Rock Road (Neridup Location 413), Esperance,		Private land	24/09/1998
5591562	Wittenoom Road, 1 km S of Burdett Road		Road reserve	27/06/2000
5591570	NE of Esperance, Burdett Road, 4 km W of Backmans Road	about 10 plants along road verge.	Private land	27/06/2000
5591511	2 km S of Scaddan on Coolgardie - Esperance Highway		Shire recreation reserve	27/06/2000
5689627	NE of Esperance, Burdett Road, 4 km W of Blackmans Road		Private land	5/12/2000
5689619	2 km S of Scaddan on Coolgardie - Esperance Highway		Shire recreation reserve	5/12/2000
8183546	Grass Patch. Opposite Grass Patch Road. 0.4 km S of Grass Patch Tavern, Roe	moderately common.	Unclear	19/08/2001
8183511	12.2 km S of Grass Patch. Tavern along Coolgardie Esperance Highway, Roe	moderately common.	Unclear	24/01/2002
6736394	Mt Ney Rd, 3 km S of Burdett Rd (NE of Esperance)	Frequent, localised.	Private land	29/09/2002
6748694	On Griggs Road 5.6 km E of Lort River (NW of Esperance)	frequent localised.	Private land	19/03/2003
6748708	8.3 km W of Wittenoom Road on Scaddan Road (NE of Esperance)	frequent.	Road Reserve.	19/03/2003
6748724	Burdett Road, midway between Mt Ney Road and Backmans Road (NE of Esperance)	frequent.	Private land	19/03/2003
6748716	Opposite entrance to Wittenoom Hills station on Backmans Road, 4.1 km NE of Lanes Road (approx 1 km SW of Burdett Road, adjacent to old gravel pit) NE of Esperance	occasional.	Private land	19/03/2003
8391351	ca 4 km SW of Pyramid Lake, 120 km NW of Esperance		Unclear	1/09/2012
9061525	C. 8 km SE of Mt Ney, along firebreak adjacent to agricultural land	200+ plants.	UCL	1/10/2014
8705976	INV 478. Track SW of Gnamma Hill on Fraser Range Station, track joins Dempster Road	infrequent.	Nature Reserve	30/07/2015
192996	Scaddan Road, near entrance to 'Viking' farm, extending W to low lying swampy area	>= 50 plants.	Road reserve.	13/12/2017



Figure 6. Location of Priority 3 species *Acacia bartlei* within the 'Site C – Rollond Road, SLK 0-15.9' project.

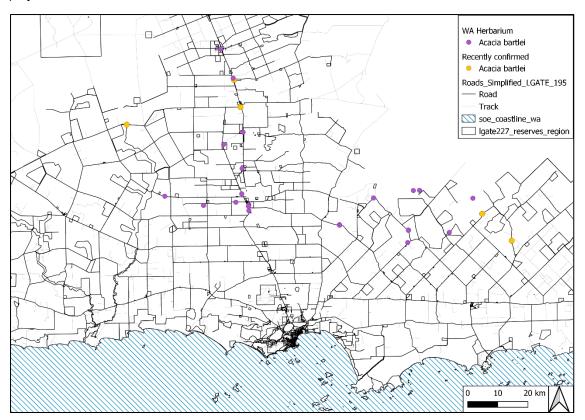


Figure 7. Known records of priority 3 species *Acacia bartlei* across an 166km East to West geographic range and a 64km North to South geographic range (DBCA 2022) including recently discovered populations by the Shire of Esperance.

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5.2.4 Acacia glaucissima, Priority 3

Two specimens of *Acacia glaucissima* were sent to the WA Herbarium for identification confirmation (KSW10822 & KSW12022; Accession # 9770 with specimen KSW12022 retained). Both were confirmed as *Acacia glaucissima by* Michael Hislop on 27/10/2022. A Threatened and Priority Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 30/01/2023 (Appendix 2.6 and Appendix 2.7). If proposed works occur, 14 plants will be impacted upon, from a population total of 20.

There was a total of 22 confirmed herbarium records for this species, A single TPFL record was present and an additional 8 populations were confirmed in 2022 by WA Herbarium staff which have yet to be databased. Additionally, 82 populations of this species totaling 10,000 plants were reported by Ecoscape during the State Barrier Fence Biological surveys (Ecoscape, 2015), only two of these populations totaling 40+ plants were on DBCA databases.

The species had a wide geographic range with a 261km east to west geographic range, and a 69km north to south range. The species contains large gaps in its range in which there are large expanses of poorly surveyed UCL.

Examining herbarium data, *Acacia glaucissima* is listed as growing in Mallee woodland and Shrubland, however most of the records had no site or vegetation descriptions. The Rollond road site has typical vegetation for this species. A single herbarium specimen had been listed as growing within a recent chained firebreak and recent collections (KSW040-p, KSW043-p) were collected within a strategic firebreak and a third specimen was collected within a fire scar (KSW146-p). Germination in this species (along with many other acacia's) appears to be stimulated after disturbance.

A majority of herbarium specimens with clear tenure were located within Shire Road Reserves and UCL, a single specimen was listed within conservation estate.

Herbarium	Location	Disturbance	Frequency	Tenure	Record	Confirma		
reference					date	tive		
KSW040-p	4.3km north of Dempster Road	Chained	locally	Road	29/05/2022	R. Davis		
Accession#	and Ridley Road intersection,	firebreak	common	Reserve				
9604	within undeveloped section of							
	Dempster Road Reserve.							
KSW043-p	2.5 km North of Dempster road	Chained	Locally	Road	29/05/2022	R. Davis		
Accession#	and Ridley Road Intersection.	firebreak	common	Reserve				
9604	Un developed section of							
	Dempster road reserve.							
KSW116-p	Eldred Road 2.8km West of		Locally	Road	15/07/2022	R. Davis		
Accession#	Hobby Road, South of road		common,	Reserve				
9640	within road reserve.		several					

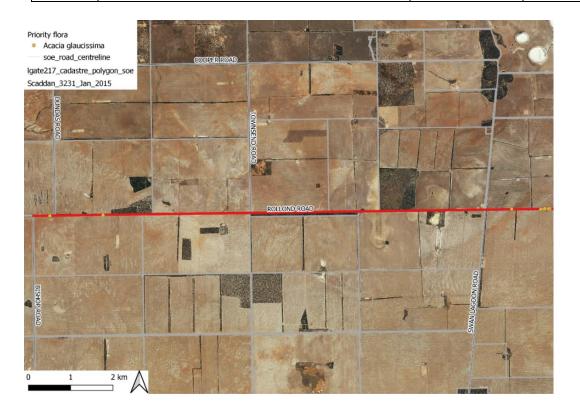
Table 8. Confirmed records of Priority 3 species, *Acacia glaucissima* found by Julie Waters and Katherine Walkerden during 2022.

			dozen			
			seen.			
KSW146-p	Belgian Road at SLK 20.5.	Burned area	Locally	Road	13/08/2022	R. Davis
Accession	Western side of road.		common	Reserve		
# 9713	′		50+			
KSW12522	40m South of Circle Valley		158 plants	Road	16/09/2022	M. Hislop
Accession	Road at SLK 0.52, Within		in a	Reserve		
# 9740	Reserve 24007		scattered			
			distribution			
KSW12722	Circle Valley Road at SLK 4.32		Plants	Road	20/09/2022	M. Hislop
Accession	On northern side of Road.		scattered	Reserve		
# 9740			throughout			
			road			
			reserve.			
KSW13022	Eldred road at SLK 16.35		3 in	Road	1/09/2022	M. Hislop
Accession			population.	Reserve		
# 9740						
KSW13522	Near Eldred road and Hobby		19 plants	Road	1/09/2022	M. Hislop
Accession	road Intersection. Eldred Road		GPS'd	Reserve		
# 9783	at SLK 12.69		within			
			population			

Table 9. Known Herbarium records of priority 3 species *Acacia glaucissima,* detailing location details, frequency, tenure and collection date (DBCA, 2023a).

Sheet number	Location	Frequency	Tenure	Record date
178047	Salmon Gums, ca 110 km N of Esperance		Unclear	12/09/1964
932833	S of Mount Madden. (Shire of Lake Grace)		Unclear	12/09/1964
934437	22 miles S of Salmon Gums		Unclear	14/09/1964
178098	Near Mount Heywood		UCL	17/09/1970
133175	2.5 km S of Salmon Gums towards Esperance		Unclear	18/12/1971
178063	W of Grass Patch on the Esperance - Norseman Highway		Unclear	10/1976
178071	1.4 km W of Goodwins turn on Swan Lagoon Road (Swan Lagoon Road is between Truslove and Salmon Gums)		Unclear	09/1979
145408	25 km NNE of Mount Ney		UCL	6/05/1983
332143	8 km due W of Grass Patch, 7.5 km W of Norseman - Esperance Highway on Grass Patch Road		Unclear	9/08/1983
178055	20 km S of Salmon Gums on Coolgardie - Esperance Highway		Road Reserve	25/09/1983
178039	20 km S of Salmon Gums on Coolgardie - Esperance Highway		Road Reserve	25/09/1983

346012	27.85 km ENE of Salmon Gums, 6.1 km N of Elford Road on McNee Road		Unclear	10/12/1983
704873	20 km S of Salmon Gums on Coolgardie - Esperance Highway towards Esperance		Road Reserve	29/12/1983
609676	2.6 km N of Rollands Road on Fields Road [c. 45 km due W of Red Lake]		Road Reserve	08/1984
345547	31.6 km NNE of Mount Heywood, 12.41 km NW of Mount Ney Road on Clyde Road.		UCL	08/1984
758884	Dempster Road (1 km NE of intersection with Bronzewing Road), 4 km due SW of Mount Ridley which is N of Esperance		UCL	15/08/1985
8350256	12.3 km W of Coolgardie Esperance Highway, approximately 120 km N of Esperance town site		UCL	7/02/2002
7400594	Kambalda to Esperance Pipeline Survey, found between rail line and track		Rail Reserve.	5/11/2002
8040044	Mount Ney Road, 2 km NE from junction with Howick Road	occasional.	Conservation reserve	15/09/2005
7504152	4.7 km S of Grass Patch West Road on Belgian Road in rehabilitating gravel pit on E side of road	ca 100 plants.	Road reserve.	7/12/2006
9061460	C. 25 km NE of Salmon Gums, on a firebreak on the agricultural boundary	10+ plants.	UCL	24/11/2013
9061576	C. 2.5 km of Beaumont Nature Reserve and 2 km NE of where Heywood Road terminates	30+ plants.	Undeveloped Road Reserve	25/11/2013



Site C – Rollond Road, SLK 0-15.9 - Vegetation, Flora, Fauna and Environmental Considerations Report

Figure 8. Location of Priority 3 species *Acacia glaucissima* within the 'Site C – Rollond Road, SLK 0-15.9' project.

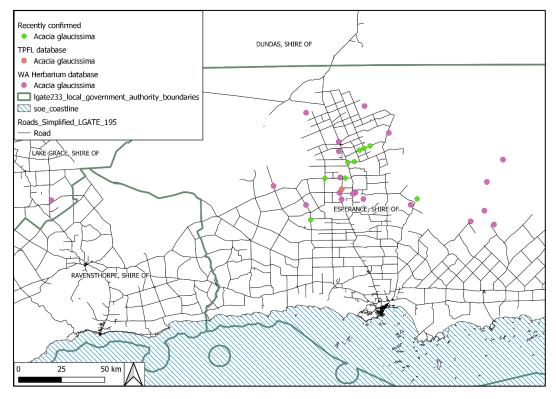


Figure 9. Known records of Priority 3 species *Acacia glaucissima* across a 261km east to west geographic range, and a 69km north to south geographic range (DBCA 2022) including recently discovered populations by the Shire of Esperance.

5.2.5 Conostephium marchantiorum, Priority 3

A specimen of *Conostephium marchantiorum* was sent to the WA Herbarium for identification confirmation (KSW10522; Accession # 9770 with specimen retained). It was confirmed as *Conostephium marchantiorum by* Michael Hislop on 27/1/2022. A Threatened and Priority Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 30/1/2023 (Appendix 2.9). If proposed works occur, none of the 32 plants counted will be impacted upon.

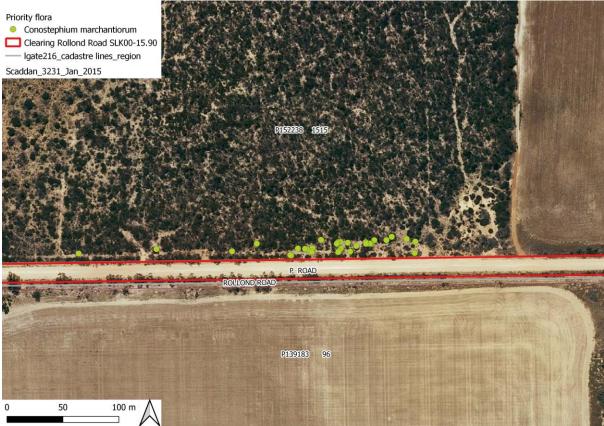


Figure 10. Location of Priority 3 species *Conostephium marchantiorum* within the 'Site C – Rollond Road, SLK 0-15.9' project.

5.2.6 Goodenia laevis ssp. laevis, Priority 3

Specimens of *Goodenia laevis ssp. laevis* were sent to the WA Herbarium for identification confirmation, a specimen was collected for each of the three populations.

- Eastern population (SLK 0.63-1.4) (KSW11022; Accession #9770 with specimen not retained). It was confirmed as *Goodenia laevis* ssp. *laevis* by Michael Hislop on 27/10/22.
- Central population (SLK 9.59-10.63) (KSW11022; Accession #9770 with specimen retained). It was confirmed as *Goodenia laevis* ssp. *laevis* by Michael Hislop on 27/10/22.
- Western population (SLK 12.95-13.27) (KSW11822; Accession #9770 with specimen not retained). It was confirmed as *Goodenia laevis* ssp. *laevis* by Michael Hislop on 27/10/22.

Threatened and Priority Reporting Forms (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 30/01/2023 (Appendix 2.10, 2.11, 2.12). If proposed works occur, 637 plants will be impacted upon, from a population total of 702.

The Shire of Esperance has discovered numerous new populations of *Goodenia laevis* ssp. *laevis* in since 2019 (Table 10). Herbarium specimens and Threatened and Priority Reporting Forms (TPRF)

have been completed for confirmed populations. Only one of these had been entered into TPFL at 07/02/2023.

At all sites, the plants were present in the road active footprint that is regularly graded or in dam catchments – all sites with a high level of disturbance. These are specifically outlined below. It can be inferred that the abundance of *Goodenia laevis* ssp. *laevis* at the site is partially due to the disturbance caused by mechanical grading of the road shoulders.

Using the WA Herbarium spatial data, the below inferences can be discussed:

- G. laevis ssp. laevis is geographically restricted to the Esperance Mallee area, extending from Scaddan to Norseman, and the Cascade region to the edge of Cape Arid. In total this covers 18,000 km².
- Almost all associated vegetation is described as a variation of mixed Melaleuca shrubland with Eucalyptus woodland over-storey. Extensive areas of this vegetation type remain, providing likely habitat, with similar soil type and associated vegetation.
- 27 records of populations are recorded on the WA Herbarium databases, two records are on the TPFL database. 14 new populations discovered by Shire of Esperance in recent years have not added to DBCA data.
- Of the 27 recorded specimens, seven records are directly described as being within a previously disturbed site, such as old limestone pits, along firebreaks or road shoulders. An additional specimen was listed as growing in a fire scar.

Additionally, Ecoscape had reported finding 58 new populations of *Goodenia laevis* ssp. *laevis* containing a total population of 12,000 plants during the State Barrier Fence Biological surveys (Ecoscape, 2015). There was no record of these collections on DBCA databases.

Goodenia laevis ssp. laevis is a common species with Mallee habitat and has been historically been under surveyed. The species has had 22 new confirmed populations since 2020 that the Shire of Esperance is aware of, as a result the species has been nominated for delisting by the Esperance DBCA.

Table 10. Confirmed records of Priority 3 species, *Goodenia laevis* ssp. *laevis* found by Shire of Esperance staff since 2019.

Herbarium reference	Location	Site description	Frequency	Tenure	Record date	Confirmative
KW041, Accession# 8281, Specimen not retained	Located in historical footprint of Norwood Rd, t intersection of Norwood and Dempster Rd. Road before stagger was put in	Slope, limestone, 30-50% loose rock, sandy loam, white soil, well drained, dry	100-150 plants in road area	Road Reserve.	10/12/2019	M. Hislop
KW043 Accession# 8281, Specimen not retained	2.86 to 3.5 km north of Cascade Rd, on Neds Corner Rd	Slope, limestone, 30-50% loose material, clay loam, white, well drained, dry soil	82 plants present	Road Reserve.	25/10/2019 - mapped 09/12/2019	M. Hislop
KW059, Accession# 8334, Specimen not retained	On Grass Patch Rd, 2.2 km west of Bishops Rd.	Flat, well drained. White/grey clay Ioam. Limestone base	50+	Road Reserve.		M. Hislop
KW061, Accession# 8334, Specimen not retained	Grass Patch townsite - R19624. north-west corner of intersection of grass patch Rd and Coolgardie- Esperance Hwy	Flat, loose material with large amounts of leaf litter. White soil - clay loam, likely limestone base	3 plants	Road Reserve.	22/01/20	M. Hislop
KW062, Accession# 8334, Specimen not retained	On north-east intersection of Dalyup and Rasyk Rd.	Gentle slope (heading towards constructed dam), white/grey soil, clay loam, limestone bed rock	200-250 plants	Road Reserve.		M. Hislop
KW076, Specimen not retained	On Holt Rd from 2.4 km to intersection of Burnside Rd. On road reserve	Gently undulating plains, yellow-white sandy loam	Scattered along entire transect - total of 83 plants	Road Reserve.	08/09/20	M. Hislop
KW098	~47 km north of Esperance townsite. ~19 km east of Scaddan townsite. On Styles Rd, from 1.5 to 2 km south of	Closed Mallee Woodland with dense Melaleuca shrubland, distinguished from the surrounding	70-90	Road reserve	14/10/2020	M. Hislop

					1	
	Norwood Rd and Styles Rd intersection. On both sides of road reserve					
KSW2021, Accession #9133, Specimen not retained	Holt Rd SLK 6.4- 11.61	Narrow Road reserve in mostly excellent condition	24	Road reserve	6/09/2021	M. Hislop
KSW2821, Accession# 9190, Specimen not retained	Neds Corner Rd, near Grass Patch Rd intersection	Road Reserve	100s	Road Reserve	29/09/2021	M. Hislop
KSW5421, Accession# 9361, Specimen not retained	R37505, Cascade Rd, Cascade	Historic landfill site	100+ scattered throughout R37505, estimate only	Shire reserve	13/12/2021	M. Hislop
KSW2722, Accession# 9405, Specimen not retained	Cascade road SLK 94.17	Road shoulder in Shire Road Reserve	4 plants seen, area not surveyed	Road Reserve	25/01/2022	M. Hislop
KSW3122, Accession# 9441, Specimen not retained	Reserve 19965, Neighbouring Hawkey rd & Dalyup rd T junction	formerly used for limestone extraction, burned in 2015 Scaddan/ Grasspatch bushfires	Around 100 older plants growing along access track, 200+ younger plants in burned area, 300+ in rehabilitated limestone pit	Shire reserve	5/02/2022	M. Hislop
KSW032-p, Accession# 9604	Dempster Road SLK 41.58. Eastern side of road.	Limestone road shoulder.	6	Road Reserve	15/05/2022	R. Davis
KSW12922, Accession# 9740,		Road shoulder.	26 plants GPS'd, 300 metres of	Road Reserve	13/09/2022	M. Hislop

Specimen retained			road was surveyed			
KSW16222, Accession# 9841, Specimen not retained	Heywood road at SLK 5.58. Western side of road.	Plants just off road. No signs of fire.	7 plants found during survey.	Road Reserve	12/10/2022	M. Hislop

Table 11. Known Herbarium and TPFL records of Priority 3 species *Goodenia laevis* ssp. *laevis,* detailing location details, frequency, tenure and collection date. (DBCA, 2023a)

Sheet number/ TPFL population	Location	Frequency	Record date
2607786	Kumarl,		Apr-38
2607719	8 km SE of Mount Beaumont, ca 90 km NE of Esperance	rare.	10/11/1980
2607689	35 km N of Gibson on Esperance - Coolgardie highway		9/11/1982
2607697	20 km E of Scaddan on Styles Road		2/12/1982
2607700	3.4 km S of Mount Ney		Aug-83
4111648	Oldfield 1343 [This location is 28 km NW of Cascade as advised by collector 23/8/2001]		7/12/1993
4256131	Scaddan Road between Norseman-Esperance Highway and rail crossing	abundant locally.	24/12/1995
5083575	28 km NNW of Condingup, Kay Rock Road, NE of Esperance,		31/12/1995
6374417	Grass Patch, 3.9 km S of Grass Patch Track near railway line, E	moderately	15/01/1998
	side of Coolgardie Esperance Highway. 5.9 km N of Sime Road. Roe District	common.	
5645115	W side Kau Rock Road ca 300 m N of Mount Ney Road, NE of Esperance,	occasional.	20/11/1998
5400562	New Hyden/Norseman track, ca 17 km W of Great Eastern Highway,	occasional.	13/04/1999
7400330	Norseman, Coolgardie region		20/09/2001
7400403	Norseman, Coolgardie Region		20/09/2001
7184859	1.5 km W of Fields Road on Grass Patch West Road	100+ plants.	16/01/2004
7218923	Bremer Range; c. 50 km S of Hyden-Norseman Road on Maggie Hayes Ninety Mile Tanks track, then E on track to Lake Medcalf for 5-8 km then N on 4WD track for 1.5 km then W along gridline at AGD84 6400000 mN	occasional.	16/03/2005
8111928	N side of Heywood Road ca 4 km N of Karl Berg junction in old limestone pit, Condingup	2-5 plants.	29/11/2008
9062238	N boundary of Beaumont Nature Reserve. c. 1.5 km E of Mt Beaumont	200+ plants.	23/10/2013
9062203	On agricultural boundary firebreak, c. 39 km E of Salmon Gums	50+ plants.	5/11/2013
9062211	On the boundary of Beaumont Nature Reserve, c. 1 km S of Mt Beaumont	30+ plants.	25/11/2013

9139338	Speddingup Reserve, NE boundary on Belgian Road, 60 m W of Robins Road	uncommon; 2 plants per 100	22/11/2016
		sq m.	
9196420	In the Cascade townsite, on Wilaust Street, c. 60 m N of Asha	> 15 plants.	9/12/2019
	Court, c. 80 km NW of Esperance townsite		
9375384	C. 112 km NW of Esperance, c. 25 km NW of Cascade	25 plants.	17/09/2020
Population #1	townsite. On West Point Road c. 300 m from the intersection of		
	West Point Road and Cascade Road		
9475788	Griggs Road SLK 4.65		18/09/2020
Population# 2	Shire Road Reserve, along Styles Rd. Ca 1.5-2.0km S from		14/10/2020
-	Norwood Rd and Styles Rd intersection. On both sides of road		
	reserve		
9365362	Parmango Road SLK 21.89 - 22.7	100+	18/01/2022
9475850	Swan Lagoon Road at SLK 20.93, E of Scaddan	24+	5/02/2022
9475893	Dalyup Road SLK 14.43, E of Gibson	300+ plants	16/02/2022
9475885	Norwood Road SLK 1.49, E of Scaddan	100+	27/02/2022



Figure 11. Location of Priority 3 species *Goodenia laevis* ssp. *laevis* within the 'Site C – Rollond Road, SLK 0-15.9' project.

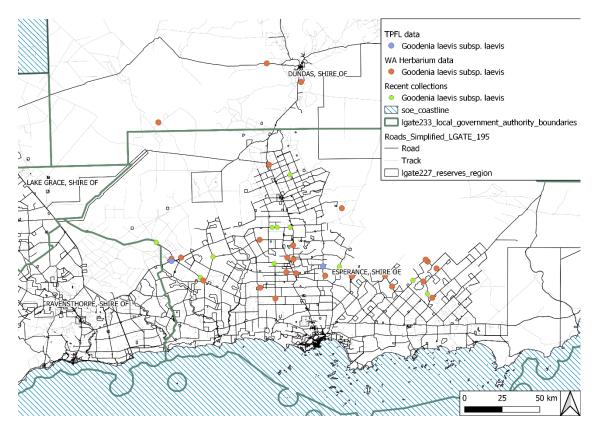


Figure 12. Known records of Priority 3 species *Goodenia laevis* ssp. *laevis* across an 157km north to south and 188km west to east geographic range (DBCA 2022) including some recently discovered populations by the Shire of Esperance.

5.2.7 Pityrodia chrysocalyx, Priority 3

Specimens of *Pityrodia chrysocalyx* was sent to the WA Herbarium for identification confirmation, a specimen was collected for both of the new populations.

- Eastern population (SLK 6.36-6.37) (KSW20822; Accession #9874 with specimen retained). It
 was confirmed as *Pityrodia chrysocalyx* by Michael Hislop on 23/1/2023.
- Western population (SLK 7.26-7.42) (KSW10722; Accession #9770 with specimen not retained). It was confirmed as *Pityrodia chrysocalyx* by Michael Hislop on 27/10/22.

A Threatened and Priority Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 30/01/2023 (Appendix 2.13, 2.14). If proposed works occur, two plants will be impacted upon, from a population total of 424. Due to only two plants being taken there is unlikely to be any significant impact on this population.

A 30 minute survey occurred within Lot 1515 on Plan 152238 after obtaining permission from the landholders (Figure 13.). 399 plants were found during the brief survey bringing the total number of plants found to 424. The total population within Lot 1515 on Plan 152238 was significantly larger than those counted throughout the 30 minute traverse, with the population appearing to be within the entire sand heath area of the lot. A second traverse occurred in the eastern corner of the bush block within Lot 1515, where no additional plants were found, this area was a different vegetation type explaining

the absence of the species. Given the very large population size it is unlikely that the clearing of two plants will have any impact on this species.

Analysing the WA Herbarium database there was a total of 20 records. There was no TPFL records for this species. The species has a wide geographic range spanning 136km north to south and 130km west to east. Of the confirmed herbarium records, 7 were within UCL, and 4 or 5 were within road and rail reserves, none of the records were within conservation estate.

Additionally, 11 populations of this species totalling 5000 plants were reported by Ecoscape during the State Barrier Fence Biological surveys (Ecoscape, 2015), only two of these populations totalling 150+ plants were located on DBCA databases.

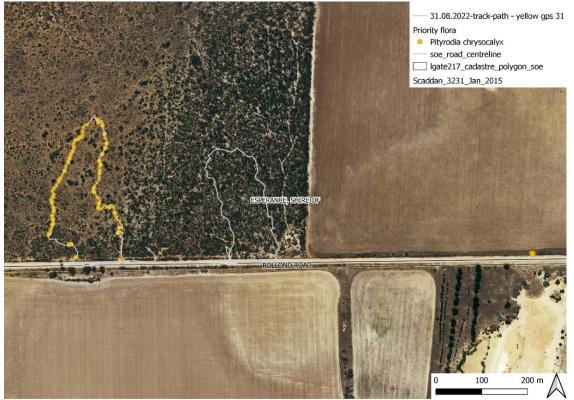


Figure 13. Location of Priority 3 species *Pityrodia chrysocalyx* within the 'Site C – Rollond Road, SLK 0-15.9' project.

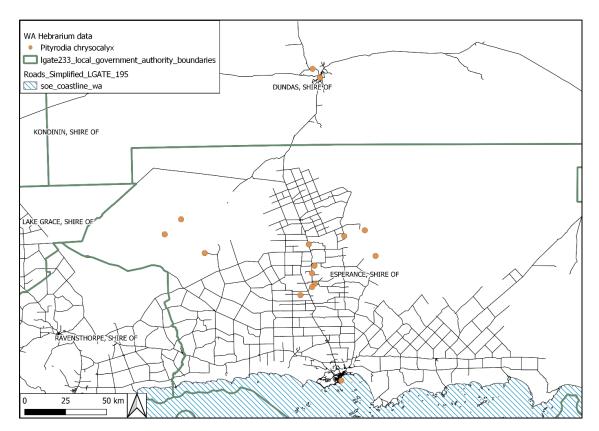


Figure 14. Known records of Priority 3 species *Pityrodia chrysocalyx* across an 136km north to south and 130km west to east geographic range (DBCA 2023).

Table 12. Known Herbarium records of priority 3 species Pityrodia chrysocalyx, detailing location details, frequency, tenure and collection date.

Sheet number/ TPFL population	Location Frequency		Tenure	Record date
1066005	Esperance area?		Uncertain	1972
1065521	Grass Patch septentrionalem versus (North of Grass Patch)		Uncertain	5/09/1962
1065971	Prope Grass Patch, septentrionalem versus (Near Grass Patch towards N)		Uncertain	5/09/1962
1065947	Near Norseman.		Uncertain	14/10/1967
1065963	Near Norseman.		Uncertain	14/10/1967
1065505	13 km N of Scaddan.		Uncertain	13/11/1976
1065513	13 km N of Scaddan.		Uncertain	13/11/1976
1065939	42 km S of Salmon Gums (13 km N of Scaddan)		Uncertain	13/11/1976
1065998	72 km W of Salmon Gums		UCL	11/11/1979
1065955	About 5 km S of Grass Patch along Coolgardie- Esperance Highway, about 60 km N of Esperance		Road Reserve	2/10/1981
1985353	11 km N of Mount Ridley		UCL	13/10/1990

5328888	ca 5.2 km W along Thomas Road from Coolgardie - Esperance Highway,		Road reserve or Tijuk Foundation Reserve	23/09/1998
5332710	N of Grass Patch on Coolgardie - Esperance highway, opposite WAWA Reserve,	several plants.	Road Reserve	4/11/1998
7400578	Kambalda to Esperance Pipeline Survey ca 125 km S of Kambalda.		Rail Reserve	5/11/2002
8090688	Pyramid Lake Road, where road turns into sand track	21-50 plants.	UCL	24/08/2009
8160899	Lake Tay mine, ca 1 km S of mine area on edge of salt lake	2-5 plants.	UCL	22/09/2009
8667063	On the Cascade to Lake Tay Road. Approximately 2 km SE of the southern shore of Lake Tay	10-20 plants.	UCL	5/09/2012
9061835	1.5 km along Davies Road from Carranya Road intersection, c. 28 km ESE of Salmon Gums	100+ plants.	UCL	5/11/2013
9061827	C. 40 km E of Salmon Gums on agricultural boundary firebreak	50+ plants.	UCL	5/11/2013
9449973	Ca. 55 km N of Esperance townsite and ca. 9.5 km N of Scaddan townsite. On western railway corridor, with two populations at 1 km S and 1.5 km S of the Truslove Road railway crossing	71 plants.	Rail Reserve	12/10/2021



Figure 15. Photograph of Priority 3 *Pityrodia chrysocalyx* within the 'Site C – Rollond Road, SLK 0-15.9' project. Photo taken by Katherine Walkerden on 02.09.2022.

5.2.8 Eucalyptus dolichorhyncha, Priority 4

Specimens of *Eucalyptus dolichorhyncha* were sent to the WA Herbarium for identification confirmation, a specimen was collected for each of the populations.

- Eastern population (SLK 5.1-5.96) (KSW12222; Accession #9770 with specimen not retained. It was confirmed as *Eucalyptus dolichorhyncha* by Michael Hislop on 31.8.2023.
- Central population (SLK 8.73-10.66) (KSW8822; Accession #9693; PERTH 09516441). It was confirmed as by Michael Hislop on 23.8.22.

A Threatened and Priority Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 30/01/2023 (Appendix 2.15, 2.16). If proposed works occur, 49 plants will be impacted upon, from a population total of 142.

There was a total of 48 herbarium specimens, two TPFL records and an additional specimen confirmed by Rob Davis which has not yet been added to either DBCA database.

Additionally, 10 populations of this species totaling 435 plants were reported by Ecoscape during the State Barrier Fence Biological surveys (Ecoscape, 2015), no records of these populations are present on DBCA databases.

The species was restricted to the Shire of Esperance between Salmon Gums and Scaddan with a total range of 97km east to west and 55km north to south. Most of the records of this species predate GPS devices becoming widespread and many of the records have non-specific location descriptions, however of the records with specific location details a majority (18) were located within road reserves. Three were located within UCL, one specimen was located within Truslove nature reserve and one specimen was located within rail reserve, one TPFL record was within a Shire water supply reserve. Two specimens were located within farmland that appear to have been cleared since collection.

The species is locally common between Salmon Gums and Grass Patch, though this area has seen widespread clearing for farmland with road reserves being the main refugia for the species, there is significant areas of minimally surveyed UCL to the south-west of Salmon Gums with suitable habitat for the species.

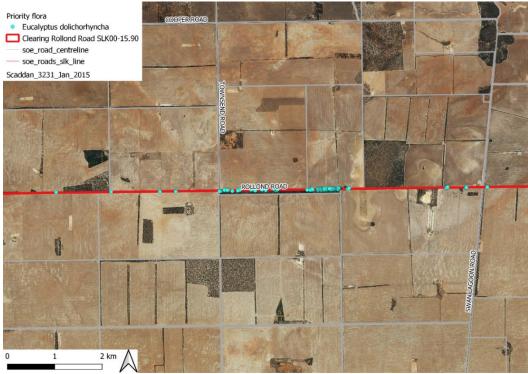


Figure 16. Location of Priority 4 species *Eucalyptus dolichorhyncha* within the 'Site C – Rollond Road, SLK 0-15.9' project.

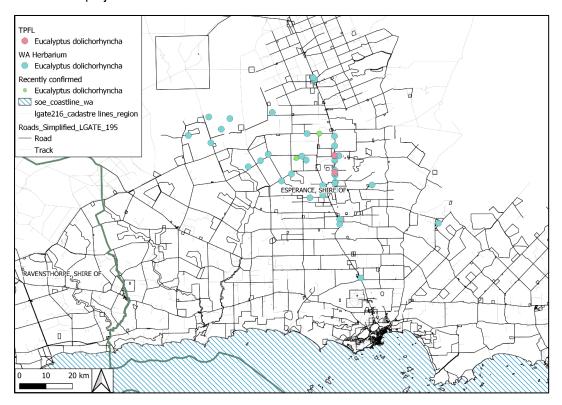


Figure 17. Known records of Priority 4 species *Eucalyptus dolichorhyncha* across a 97km east to west km geographic range and a 55km north to south geographic range (DBCA 2023) including recently discovered populations by the Shire of Esperance.

Sheet number/ TPFL	Location Frequency		Tenure	Record date
population				
1162349	Grass Patch, prope Esperance [near Esperance]			22/05/1924
1161822	Grass Patch		Unclear	22/05/1924
1161830	Grass Patch		Unclear	22/05/1924
1161849	Grass Patch		Unclear	22/05/1924
1162438	Salmon Gums		Unclear	17/07/1924
1162373	Salmon Gums		Unclear	17/07/1924
1162357	Grass Patch, between Salmon Gums and Esperance		Unclear	10/10/1931
1161377	Near Grass Patch		Unclear	31/01/1935
1161865	Near Grass Patch		Unclear	31/01/1935
1162381	Near Grass Patch		Unclear	31/01/1935
1364189	Scaddan		Unclear	1/12/1938
1161784	2 miles S of Red Lake		Unclear	18/04/1953
1364197	Grass Patch - near hotel		Unclear	16/03/1957
1166166	Grass Patch townsite,		Unclear	16/03/1957
1162403	Grass Patch		Unclear	6/08/1959
1161334	34 545-mile peg, ca 35 miles S of Salmon		Road	5/11/1962
	Gums		reserve.	
1161806	Prope Grass Patch (meridionalem versus) [S of Grass Patch]		Unclear	10/02/1966
1161873	18.7 miles S of Salmon Gums	infrequent.	Unclear	13/03/1967
5253624	Esperance to Ravensthorpe		Unclear	1/04/1968
1162330	532-mile peg on Norseman - Esperance road. [34 km S of Salmon Gums on the Coolgardie - Esperance Highway]		Road reserve.	1/04/1968
1161792	Gibson North, N of Esperance		Unclear	11/06/1969
1162314/ 1162411	13.7 miles S of Salmon Gums		Unclear	15/02/1970
1161342	Esperance - Kalgoorlie 538-mile peg. [44 km S of Salmon Gums on the Coolgardie Esperance Highway.]		Road Reserve	13/01/1972
4340280	Wittenoom Hills, 35 miles N of Esperance,		Unclear	1/08/1975
1364685	Main road S of Salmon Gums		Road reserve.	18/09/1976
1161881	15.2 km S of Grass Patch		Unclear	30/12/1979
1161814	18 km W of Roberts Swamp, ca 50 km W of Grass Patch		Unclear	14/11/1980
1162365	Thomas Road, 7 km S of Truslove Reserve		Road Reserve	21/01/1981

Table 13. Known Herbarium records of priority 4 species *Eucalyptus dolichorhyncha*, detailing location details, frequency, tenure and collection date. (DBCA, 2023a)

1162322	18 km W on Ravenswood Road, which is		Road	22/01/1981
1162446	14 km S of Salmon Gums on Highway Williams Road, NE corner of Block No.		Reserve Land Act	22/01/1981
	1837 on litho 402/80		(Type 2) (cleared	
			since	
			collection)	
1161857	4.8 km N of Truslove Reserve on		Road	22/01/1981
	Esperance Highway. litho 402/80		Reserve	
1161350	10 km SSW of Roberts Swamp, on Grass		Road	1/03/1983
	Patch Road		Reserve	
1161903	11 km W of Grass Patch		Unclear	10/09/1983
1161369	6.7 km W along Hawkey Road from		Unclear	14/11/1987
	highway			
4393600	9 km N/NE of Scaddan		Land Act	29/08/1995
			(Type 2)	
			(cleared	
			since	
5590302	On wid line 1.0 km E from Eielde Deed	fraguant	collection)	11/11/1000
009030Z	On grid line 1.9 km E from Fields Road, 14.7 km N of Rollands Road	frequent.	UCL	11/11/1999
5762243	On edge of Lort River, ca 11.5 km N of	occasional.	UCL	11/11/1999
5762170	Rolland Road		UCL	15/11/1999
5/021/0	On N-S track, 7.5 km N of Rollands Road, 5 km E of Fields Road,	occasional.	UCL	10/11/1999
5937892	W side of Esperance - Coolgardie		Road	17/04/2000
	Highway, 7.3 km S of Grass Patch, 1.3 km		Reserve	
	S of Sime Road, Roe District,			
5766214	10.8-11 km W of Grass Patch West Road	100's of plants.	Road reserve	2/03/2001
	on N and S road verges, almost pure			
	stands extend for several kms		_	
6975348	Long term monitoring plot 02VA, 1.1 km S		Conservation	4/09/2001
	from NW corner of Bishops Nature		reserve	
	Reserve (Gazetted Reserve 29012) along			
0111070	Bishops Road, 200 m E from road edge	а Грана		20/00/2002
9141073	50 to 100 m E of Coolgardie Esperance	c. 5 plants	Rail reserve	30/06/2003
	Highway between railway line and cleared farmland, 3.9 km N of Red Lake, 13.5 km	adjacent to 20 m of track.		
	S of Salmon Gums	UT LIDON.		
7020570	5 km N of Truslove Road on road to		Road	18/12/2004
1020010	Norseman		Reserve	
7905637	Grass Patch Road, between Williams and		Road	7/12/2007
	Belgian, W of Grass Patch		Reserve	.,,,,
7934254	14.5 km NE of Scaddan		Road	14/08/2008
-			Reserve	

9448853	Rollond Road, 8.5 km W of Coolgardie - Esperance Highway	dominant.	Road Reserve	7/10/2010
Population #2	Esperance-Coolgardie Highway. 5.0km - 7.0km north of Truslove Rd (7.0km south of Grass Patch).	30	Road Reserve	18/02/2020
Population #1	Crown Reserve #19624, Lot 501. Ca 1.1km WNW of Grass Patch Rd and Coolgardie-Esperance Hwy intersection.	1	Shire Reserve vested for: Water supply, Recreation, Racecourse	25/09/2020
9516441	Rollond Road SLK 9.7, Grass Patch	locally common.	Road Reserve	13/07/2022
9515682/ 9515720	Williams Road SLK 7.07, Lort River	scattered throughout road reserve.	Road Reserve	24/07/2022

5.2.9 *Acacia aff. merrallii,* not threatened

Specimens Acacia aff. merrallii was sent to the WA Herbarium for identification confirmation.

- KSW11722; Accession #9770 with specimen retained. It was identified as *Acacia aff. merrallii* by Michael Hislop on 31/10/2023.
- KSW19122; Accession #9857with specimen retained. It was identified as *Acacia aff. merrallii* by Michael Hislop on 10/01/2023.
- KSW20922; Accession #9874 with specimen retained. It was identified as *Acacia aff. merrallii* by Michael Hislop on 23/01/2023.

An initial specimen of an unidentified *Acacia* (KSW11722; Accession 9770) was sent to the WA Herbarium for identification, the specimen was described as an anomalous entity: "not fitting well within the described taxa, it is clearly close to *Acacia glaucissima* and its close relative *Acacia merrallii* having the stipules of the former combined with the presence of branchlet hairs (although atypically patchy and sparse) associated with the latter." Michael Hislop speculated that the Acacia may be a hybrid of *Acacia glaucissima* (P3) and *Acacia merrallii* (NT).

This *Acacia* was prolific throughout the central area of the site, with hundreds of plants seen throughout the survey. An additional flowering specimen was accessioned (KSW19122; Accession #9857) and a fruiting specimen was collected and accessioned in December (KSW20922; Accession #9874). These additional submissions were accessioned in the hopes of providing further understanding of the anomalous population.

No population count of this plant was conducted, however the population was present in high numbers within remnant vegetation within Lot 1515 on Plan 152238 and the 200 metre wide section of the Rollond Road reserve. The population is unlikely to be threatened by the proposed project.



Figure 18. Scan of Acacia aff. merrallii, KSW11722 Accession #9770

5.3 Weeds

Agricultural weeds were the most significant issue within 'Site C – Rollond Road, SLK 0-15.9' area. Overall, 29 invasive species were identified within the project area (Appendix 8.1). Of these, the most extensive and of serious concern were invasive grasses such as *Avena barbata*, *Hordeum leporinum*, *Lolium sp*. There were areas within the project which had been historically cleared and had been completely invaded by agricultural weeds.

Weed management strategies are currently being discussed operationally, such as spraying material stockpiles in agricultural private property prior to use and periodic spraying of road verges for a 12 month period after road construction.

5.4 Dieback

No signs of dieback were present within the reserve. Vegetation type 'C' had a moderate number of proteaceous species present, and could be susceptible to dieback. Proposed works will be conducted using appropriate hygiene measures to limit spreading of the disease, including clearing in dry conditions and clean down of vehicles and machinery before entering the site.

5.5 Vegetation Communities

Four vegetation communities were identified within the 'Site C – Rollond Road, SLK 0-15.9', as defined by structure and composition (Table 14). It is believed that the Beard (1973) vegetation associations identified in Section 4.4 are an appropriate match for two of the vegetation types observed. Vegetation type B and C did not match the Beard vegetation types for the area, these were both small microhabitats resulting from variations

of soil and topography, these vegetation types are unlikely to match the broad Beard vegetation mapping.

Туре	Description	Figure	Closest Matching Beard Vegetation Association	Area to be cleared(ha)	Diversity (native species)
A	Eucalyptus over Acacia and mixed Melaleuca shrubland		SALMON GUMS_486	7.500	147
В	Calothamnus quadrifidus and Eucalyptus pleurocarpa dominated mixed sand heath		Did not match listed vegetation associations	0.051	62
С	Eucalyptus occidentalis dominated valley floor		Did not match listed vegetation associations	0.047	21
D	<i>Eucalyptus pleurocarpa</i> and <i>Banksia media</i> low woodland		RIDLEY_519	0.301	49

 Table 14. Vegetation communities identified within proposed 'Site C – Rollond Road, SLK 0-15.9'

 project area.



Figure 19. Vegetation types within the 'Site C – Rollond Road, SLK 0-15.9' area.



Figure 20. Close up of vegetation types within SLK 5.33 and 8.41 section of the 'Site C – Rollond Road, SLK 0-15.9' project area.



Figure 21. Vegetation type A identified in 'Site C – Rollond Road, SLK 0-15.9' project, described as Eucalyptus over Acacia and mixed Melaleuca shrubland.



Figure 22. Vegetation type B identified in 'Site C – Rollond Road, SLK 0-15.9' project, described as *Calothamnus quadrifidus* and *Eucalyptus pleurocarpa* dominated mixed sand heath.



Figure 23. Vegetation type C identified in 'Site C – Rollond Road, SLK 0-15.9' project, described as *Eucalyptus occidentalis* dominated valley floor.



Figure 24. Vegetation type D identified in 'Site C – Rollond Road, SLK 0-15.9' project, described as *Eucalyptus pleurocarpa* and *Banksia media* low woodland.

5.6 Vegetation Condition

Vegetation condition varies dramatically (table 15). With excellent condition vegetation being present within the 100-metre section of road reserve (SLK 8.2-10.76). The rest of the road reserve was 20 metres wide and was in a generally poorer condition. The site had seen historical fence line clearing, crossover clearing, weed introductions and disturbance from road maintenance activities. A majority of the vegetation was considered to be in a very good condition (Table 15.)

Vegetation Type	Excellent	Very Good	Good	Degraded	Completely Degraded	Total
A	1.091	4.733	1.423	0.240	0.012	7.500
В	-	<0.001	0.031	0.020	<0.01	0.051
С	-	-	0.030	0.017	-	0.047
D	-	-	0.145	0.156	-	0.301
-	-	-	-	-	0.04	0.044
Total	1.09	4.74	1.63	0.43	0.06	7.945

Table 15. Quantifying vegetation to be cleared by vegetation type and condition	on.
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Figure 25. Vegetation condition across 'Site C - Rollond Road, SLK 0-15.9' project, ranging from an excellent to completely degraded condition.

5.7 Threatened Ecological Communities

None of the vegetation communities met criteria to be considered as Kwongkan TEC. There was a low level of proteaceous species, with none of the vegetation types mapped meeting the 30% threshold of proteaceous plant cover at any layer.

Within the 'Site C - Rollond Road, SLK 0-15.9' project area, Vegetation type C was described as *Eucalyptus occidentalis*, this vegetation type was compared to 'Swamp Yate, *Eucalyptus occidentalis*, woodlands in seasonally inundated clay basins in the South Coast of Western Australia' PEC (Table 16). The vegetation lacked any understorey species, was not seasonally inundated and could not be considered to be the Swamp Yate PEC.

Table 16. Comparison between potential occurrence of the Swamp Yate PEC and listing documentation criteria "Swamp Yate, *Eucalyptus occidentalis*, woodlands in seasonally inundated clay basins in the South Coast of Western Australia" (Appendix 14) within vegetation types B and D 'Site F – Ridgeland Road, SLK 0 - 5.69'

Swamp Yate (Eucalyptus occidentalis) woodlands in seasonally inundated	Criterion 1: Abiotic Factors i) Occurs on valley floor; ii) Basin is	Criterion 2: Centre of basin inhabited by Eucalyptus occidentalis	Criterion 4: Fringing the wetland is dense rushes and sedges.	Criterion 3: Peripheral to the central basin is a waterlogged zone of <i>E</i> .	Swamp Yate PEC (Yes / No) Area (ha) within
clay basins with intact	more or	low woodland		occidentalis associated	Site

understorey and fringing vegetation	less circular; iii) Seasonally inundated.	(often with an understory of <i>Melaleuca</i> <i>cuticularis</i>).		with heath to open scrub and/or small trees. <i>Melaleuca</i> <i>calycina, M.</i> <i>glaberrima, M.</i> <i>incana, M.</i> <i>pulchella,</i> <i>Taxandria</i> <i>callistachys</i> ;	
Vegetation type C	 i) Vegetation type occurred on floor of a shallow valley ii) Basin was not circular iii) Vegetation type was not seasonally inundated 	Vegetation type was dominated by <i>Eucalyptus</i> <i>occidentalis</i>	There were no Rushes or sedges within the vegetation type	There was no understorey species present within this vegetation type. Sandplain species were present on the edge of this species.	No

5.8 Fauna

Of the species identified within the desktop survey, only *Calyptorhynchus latirostris, Dasyurus geoffroii, Falco hypoleucos, Leipoa ocellata, Platycercus icterotis xanthogenys* could have suitable habitat within the proposed clearing permit area.

During the field survey, both foxes and rabbits were both observed within the area. A Dugite (Figure 26) and various bird calls were observed during the flora survey.



Figure 26. Dugite photographed on the 24/08/2022 by Katherine Walkerden.

5.8.1 Carnaby's Black Cockatoo, Calyptorhynchus latirostris, EN

The closest known record for this species was 8.1km from the project area.

The Shire of Esperance Black Cockatoo assessment was conducted in accordance with the EPBC Act referral guidelines for three threatened black cockatoo species (Department of Agriculture, Water and the Environment, 2022). Vegetation types B and D both contained Banksias and Hakeas that provided suitable foraging for the species and had nearby pine trees on private land providing potential roosting habitat. As Vegetation type B and D only contained a combined 0.32 ha of vegetation to be cleared the foraging quality scoring tool (Appendix 13) was not undertaken due to only being applicable to habitat over 1 ha of size.

No evidence of Carnaby's Cockatoos was observed during the survey. While completing the survey the owners of Lot 1515 on Plan 152238 had informed Shire of Esperance staff that they had never seen Carnaby's Cockatoos along Rollond Road despite decades living on the property.

Given that the site did not;

- contain any nesting sites or large trees with hollows;
- contain night roosting areas;
- the amount of high-quality foraging habitat was less than 1 ha;

a referral for assessment and approval under the *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act) is unlikely to be required.

5.8.2 Chuditch, Dasyurus geoffroii, VU

The closest known record for this species was 5.7km from the project area. The Chuditch has been historically inhabited a wide range of habitats, but today it survives mostly in Jarrah Eucalyptus marginata forests and woodlands, mallee shrublands and heathlands. The vegetation within this site likely provides important habitat connectivity for this species, the 200-metre section of road reserve and road reserve bordered by intact vegetation has the potential to provide suitable foraging habitat for this species, this includes a total of 1.67ha of vegetation.

5.8.3 Malleefowl, Leipoa ocellata, VU

The closest known record for this species was 3.1km from the project area. Malleefowl are predominantly found within shrublands and low woodlands dominated by Mallees and are associated with Broombush (*Melaleuca uncinata*). Vegetation type A is somewhat suitable for this species, though most of the site is lacking the dense leaf litter that's the species uses for its nest construction. Foxes had been directly overserved at this site and are a contributing factor to the declining population of this species. Malleefowl are unlikely to utilise the narrow sections of road reserve where predation by foxes is most likely. The 200 m wide section of road reserve is likely the only section of the site that provides abundant leaf litter and suitable cover from predators for this species, the clearing in this area is a total of 0.94 ha. No Malleefowl or evidence of Malleefowl activity was encountered during the flora survey or fieldwork.

5.8.4 Grey Falcon, Falco hypoleucos, VU

The closest known record for this species was 10.88km from the project area. The distribution of this species is restricted largely to areas of the highest annual average temperatures where there is an average annual rainfall of less than 500 mm. It favours lightly timbered and untimbered lowland plains that are crossed by tree-lined watercourses. It uses the abandoned nests of other bird species, particularly corvids. All of the vegetation within the site provided potentially suitable hunting grounds for this species, vegetation types A & C provided potentially suitable nesting habitat for this species, this includes a total of 7.58 ha of vegetation to be cleared by the project.

5.8.5 Western Rosella, Platycercus icterotis xanthogenys, P4

The closest known record for this species was 1.1km from the project area at the Red Lake Townsite Nature Reserve. The species is found in open eucalypt forest and timbered areas.

The Mallee woodland within Red Lake Nature Reserve is a closed woodland, not matching the habitat description for the Western Rosella. Vegetation type A was consistent with the within the Red Lake Townsite Nature reserve in which this species has been previously recorded, Vegetation type A has a total of 7.5ha of vegetation to be cleared.

No Western Rosellas were observed during the flora survey.

6 REVIEW OF 10 CLEARING PRINCIPLES FOR NATIVE VEGETATION

The 'Site C – Rollond Road, SLK 0-15.9' project may be at variance to some of the clearing principles that the Department of Water and Environmental Regulations (DWER) assess applications, as listed under Schedule 5 of the Environmental Protection Act 1986 (DWER 2019).

6.1 Principle (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Biodiversity at this site is high with 222 native species recorded over four vegetation communities.

6.2 Principle (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Vegetation type B & D contained suitable foraging habitat for Carnaby's Black Cockatoo, there was a combined total of 0.32ha of Carnaby's habitat within 'Site C – Rollond Road, SLK 0-15.9'. Due to the low amount of clearing a referral for assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is unlikely to be required.

The vegetation being cleared is also potentially provides suitable habitat for the Chuditch, Grey Falcon, Malleefowl and Western Rosella.

6.3 Principle (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Eight priority flora species were observed in the area:

Conostephium uncinatum (P2) and *Conostephium marchantiorum* (P3) will not impacted by the project as all specimens were outside the project area.

Halgania sp. Peak Eleanora (P2) has 3 populations within 'Site C – Rollond Road, SLK 0-15.9'. The two small populations will each only have single plant remaining after works occur. The central population was within the 100m wide road reserve and likely has a total population much greater than that counted

during the survey, this central population is unlikely to be significantly impacted by the clearing. In total, 84 plants from a total of 298 plants will be cleared.

Acacia bartlei (P3) has only a single isolated plant within the project area. The entire population will be taken.

Acacia glaucissima (P3) is a relatively common species within the Eastern Mallee IBRA subregion, the species has been under reported, with Julie Waters and Katherine Walkerden having accessioned 8 additional populations over 2022. 14 of the total population of 20 plants within 'Site C – Rollond Road, SLK 0-15.9' will be taken.

Goodenia laevis ssp. laevis (P3) is a common species which benefits from routine disturbance, the species has been nominated for delisting by the Esperance DBCA.

Only two *Pityrodia chrysocalyx* (P3) plants from a total counted population of 424 plants will be cleared. The total population at this location is likely to be significantly higher and extends well outside the clearing footprint. It is highly unlikely that there will be any significant impacts to this population.

Eucalyptus dolichorhyncha (P4) is a relatively common species between Scaddan and Salmon Gums which is dependent on road reserves for habitat, 49 plants from a total count of 142 will be taken.

6.4 Principle (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

None of the vegetation associations were relevant to the 'Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia' TEC.

Vegetation type C was potentially relevant to the 'Swamp Yate, *Eucalyptus occidentalis*, woodlands in seasonally inundated clay basins in the South Coast of Western Australia' PEC, however due to the vague description of this PEC it is unclear whether this vegetation type qualifies. There was 0.03ha of good condition vegetation and 0.02 ha of degraded condition vegetation in this vegetation type.

6.5 Principle (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

The immediate surroundings of the site were highly cleared agricultural land, with the intact vegetation within the site likely playing contributing to ecological linkages in the area. The 20m wide sections of narrow road reserve do not represent significant remnants of native vegetation, the 100m section of road reserve would constitute a significant remnant of vegetation, but only a small area of this is being cleared (0.94 ha).

6.6 Principle (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

The only section of vegetation that could be potentially be considered a wetland was Vegetation type 'C' the *Eucalyptus occidentalis* woodland, though it was not evident that there was any water pooling at the vegetation type during winter.

6.7 Principle (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Vegetation within this area will be providing limited function as windbreaks and erosion control for the agricultural areas surrounding it. Given the narrowness of the road reserve and extent of clearing wind erosion will be significantly worsened for neighbouring agricultural properties, many of which lack windbreaks.

6.8 Principle (h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

The project is located 680m from the Red Lake Townsite Nature Reserve, the vegetation along Rollond road likely provides important ecological linkages to this Reserve and clearing for this project is likely to have a negative impact on the ecological connectivity of the Red Lake Townsite Nature Reserve.

6.9 Principle (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Clearing of this size is unlikely to have any significant impacts of surface or groundwater quality.

6.10 Principle (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Clearing of this size in a low rainfall area of Grass Patch is unlikely to have any impact on flood risk.

7 RECOMMENDATIONS

As Shire Environmental Coordinator signs off on project work packs the following recommendation will be included within the internal SOE approval process for the road project

- Minimise clearing to minimum amount required
- Avoid larger habitat trees wherever possible;
- Maintain existing drainage systems, spoon drains and ensuring tracks and other infrastructure areas do not disrupt or divert historic water flow patterns;
- Remove and stockpile topsoil, log debris and leaf litter where possible for use in future rehabilitation programs. If possible, stockpiled topsoil should be directly replaced on disturbed areas;
- Minimise soil disturbance during clearing and practice standard vehicle hygiene to ensure introduced (exotic) species do not become established within the 'Rollond Road, SLK 0-15.9' survey area;
- Minimize all threatening processes to native vegetation.

8 LIST OF PERSONNEL

The following Shire of Esperance Staff were involved in this project.

Name	Julie Waters		
Position	Environmental Coordinator		
Project Involvement	Desktop and Field Survey, Specimen Identification, GIS Mapping		
	Data Interpretation and Report writing		
Qualifications	BEnvSc (Hons)		
Experience	20 years working in environmental field including Flora		
	Conservation Officer for previous DBCA, and 15 years'		
	experience as a botanist in the region		
Scientific Licence	FT61000787		

Name	Katherine Walkerden
Position	Environmental Officer
Project Involvement	Desktop and Field Survey, Specimen Identification, GIS Mapping,
	Data Interpretation and Report writing
Qualifications	BSc, MEnvSc
Experience	Two years' experience as a Botanist in the region (as of April
	2023)
Scientific Licence	FT61000788

Name	Rosamund Mary Hoggart
Position	Environmental Assistant
Project Involvement	Specimen Identification
Qualifications and Experience	BSc (Hons)Ag
	15 years' experience as a botanist in the region and is highly regarded by Esperance Wildflower Society and her peers in Esperance as one of the best botanists in Esperance.
Scientific Licence	N/A

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10 APPENDICES

Appendix 1: Incidental species list

Family	Genus	Species	Weed	WA Conservation Status	Herbarium Reference
Aizoaceae	Carpobrotus	modesta			
Aizoaceae	Mesembryanthemum	crystallinum	Х		
Aizoaceae	Mesembryanthemum	nodiflorum	Х		
Amaranthaceae	Ptilotus	holosericeus			
Anarthriaceae	Lyginia	imberbis			
Apiaceae	Platysace	effusa			
Apocynaceae	Alyxia	buxifolia			
Asparagaceae	Lomandra	effusa			
Asparagaceae	Lomandra	mucronata			
Asparagaceae	Thysanotus	patersonii			
Asphodelaceae	Asphodelus	fistulosus	Х		
Asteraceae	Arctotheca	calendula	Х		
Asteraceae	Asteridea	athrixioides			
Asteraceae	Brachyscome	ciliaris			
Asteraceae	Cirsium	vulgare	Х		
Asteraceae	Erigeron	bonariensis	Х		
Asteraceae	Hyalosperma	demissum			
Asteraceae	Monoculus	monstrosus	Х		
Asteraceae	Olearia	muelleri			
Asteraceae	Olearia	sp. Eremicola			
Asteraceae	Onopordum	acaulon	Х		
Asteraceae	Podolepis	rugata			
Asteraceae	Pogonolepis	muelleriana			
Asteraceae	Pseudognaphalium	luteoalbum	Х		
Asteraceae	Siemssenia	capillaris			
Asteraceae	Sonchus	oleraceus	Х		
Asteraceae	Vittadinia	gracilis			
Asteraceae	Waitzia	suaveolens var. flava			
Boraginaceae	Halgania	andromedifolia			
Boraginaceae	Halgania	sp. Peak Eleanora		P2	KSW8922 ACC9693, KSW11922 ACC9770, KSW21022 &

					KSW21122 ACC9874
Brassicaceae	Brassica	napus	Х		
Brassicaceae	Brassica	tournefortii	Х		
Brassicaceae	Carrichtera	annua	Х		
Brassicaceae	Lepidium	africanum	Х		
Brassicaceae	Rapistrum	rugosum	Х		
Caryophyllaceae	Silene	nocturna	Х		
Casuarinaceae	Allocasuarina	huegelii			
Casuarinaceae	Allocasuarina	lehmanniana ssp. ecarinata			
Chenopodiaceae	Atriplex	exilifolia			
Chenopodiaceae	Atriplex	lindleyi ssp. inflata			
Chenopodiaceae	Atriplex	semibaccata			
Chenopodiaceae	Chenopodium	desertorum ssp. desertorum			
Chenopodiaceae	Enchylaena	tomentosa			
Chenopodiaceae	Eriochiton	sclerolaenoides			
Chenopodiaceae	Maireana	erioclada			
Chenopodiaceae	Maireana	trichoptera			
Chenopodiaceae	Rhagodia	baccata ssp. baccata			
Chenopodiaceae	Rhagodia	crassifolia			
Chenopodiaceae	Rhagodia	preissii ssp. preissii			
Chenopodiaceae	Sclerolaena	diacantha			
Chenopodiaceae	Sclerolaena	obliquicuspis			
Chenopodiaceae	Threlkeldia	diffusa			
Convolvulaceae	Wilsonia	humilis			
Cupressaceae	Callitris	roei			
Cyperaceae	Gahnia	ancistrophylla			
Cyperaceae	Lepidosperma	sp.			
Cyperaceae	Schoenus	caespititius			
Dilleniaceae	Hibbertia	exasperata			
Dilleniaceae	Hibbertia	oligantha			
Dilleniaceae	Hibbertia	psilocarpa			
Dilleniaceae	Hibbertia	pungens			
Ericaceae	Conostephium	marchantiorum		P3	KSW10522 ACC9770
Ericaceae	Conostephium	uncinatum		P2	KSW10622 ACC9770
Ericaceae	Leucopogon	canaliculatus			KSW13322 ACC 9740
Ericaceae	Lissanthe	rubicunda			
Ericaceae	Lysinema	ciliatum			

Ericaceae	Styphelia	sp. Cascades		KSW20722 ACC9874
Ericaceae	Styphelia	subulata		
Euphorbiaceae	Beyeria	sulcata		
Euphorbiaceae	Monotaxis	рахіі		
Fabaceae	Acacia	aff. Merrallii		KSW11722 ACC9770, KSW20922 ACC9874, KSW19122 ACC9857
Fabaceae	Acacia	assimilis ssp. atroviridis		
Fabaceae	Acacia	bartlei	P3	KSW11622 ACC9770
Fabaceae	Acacia	brachyclada		
Fabaceae	Acacia	crassuloides		
Fabaceae	Acacia	cupularis		
Fabaceae	Acacia	dermatophylla		KSW10922 ACC9770
Fabaceae	Acacia	erinacea		
Fabaceae	Acacia	glaucissima	P3	KSW10822, KSW12022 ACC9770
Fabaceae	Acacia	gonophylla		
Fabaceae	Acacia	hadrophylla		KSW12122 ACC9770
Fabaceae	Acacia	lachnophylla		
Fabaceae	Acacia	mutabilis ssp. angustifolia		
Fabaceae	Acacia	pachypoda		
Fabaceae	Acacia	patagiata		
Fabaceae	Acacia	pravifolia		KSW13322 ACC 9740
Fabaceae	Acacia	profusa		
Fabaceae	Acacia	sulcata ssp. sulcata		
Fabaceae	Acacia	pritzeliana		
Fabaceae	Aotus	sp. Esperance		
Fabaceae	Bossiaea	leptacantha		
Fabaceae	Chorizema	aciculare		
Fabaceae	Daviesia	aphylla		
Fabaceae	Daviesia	lancifolia		
Fabaceae	Dillwynia	sp. Mallee		
Fabaceae	Gastrolobium	melanocarpum		
Fabaceae	Gompholobium	tomentosum		

Fabaceae	Jacksonia	racemosa			KSW18922 ACC9857
Fabaceae	Kennedia	sp. South Coast			
Fabaceae	Medicago	tornata	Х		
Fabaceae	Pisum	sp.	Х		
Fabaceae	Pultenaea	arida			
Fabaceae	Pultenaea	elachista			
Fabaceae	Pultenaea	purpurea			
Fabaceae	Senna	cardiosperma			
Fabaceae	Templetonia	sulcata			
Fabaceae	Vicia	sativa	Х		
Goodeniaceae	Coopernookia	polygalacea			
Goodeniaceae	Coopernookia	strophiolata			
Goodeniaceae	Dampiera	lavandulacea			
Goodeniaceae	Goodenia	incana			
Goodeniaceae	Goodenia	laevis ssp. laevis		P3	KSW11022, KSW11122, KSW11822 ACC9770
Goodeniaceae	Goodenia	scapigera			
Haemodoraceae	Anigozanthos	rufus			
Hemerocallidaceae	Dianella	brevicaulis			
Hemerocallidaceae	Dianella	revoluta			
Iridaceae	Patersonia	occidentalis			
Lamiaceae	Microcorys	glabra ssp. glabra			
Lamiaceae	Pityrodia	chrysocalyx		P3	KSW10722 ACC9770, 20822 ACC9874
Lamiaceae	Prostanthera	serpyllifolia			
Lamiaceae	Westringia	rigida			
Lauraceae	Cassytha	melantha			
Loganiaceae	Logania	stenophylla			
Malvaceae	Lasiopetalum	compactum			
Malvaceae	Lasiopetalum	rosmarinifolium			
Malvaceae	Malva	parvifolia	Х		
Montiaceae	Calandrinia	sp.			
Myrtaceae	Beaufortia	empetrifolia			
Myrtaceae	Calothamnus	gracilis			
Myrtaceae	Calothamnus	quadrifidus			
Myrtaceae	Calytrix	depressa			

Myrtaceae	Calytrix	tetragona		KSW19022 ACC9857 not retained
Myrtaceae	Calytrix	lechenaultii		
Myrtaceae	Conothamnus	aureus		
Myrtaceae	Cyathostemon	blackettii		
Myrtaceae	Cyathostemon	sp.		KSW11222, KSW11322 ACC 9770
Myrtaceae	Darwinia	sp. Karonie		
Myrtaceae	Eucalyptus	angulosa		
Myrtaceae	Eucalyptus	calycogona ssp. calycogona		
Myrtaceae	Eucalyptus	conglobata ssp. perata		
Myrtaceae	Eucalyptus	cylindriflora		
Myrtaceae	Eucalyptus	dielsii		
Myrtaceae	Eucalyptus	diptera		
Myrtaceae	Eucalyptus	dolichorhyncha	P4	KSW8822 ACC9693, KSW12222 ACC 9770
Myrtaceae	Eucalyptus	dundasii		
Myrtaceae	Eucalyptus	eremophila		
Myrtaceae	Eucalyptus	extensa		
Myrtaceae	Eucalyptus	flocktoniae		
Myrtaceae	Eucalyptus	incrassata		
Myrtaceae	Eucalyptus	leptocalyx		
Myrtaceae	Eucalyptus	Iongicornis		
Myrtaceae	Eucalyptus	occidentalis		
Myrtaceae	Eucalyptus	platypus		
Myrtaceae	Eucalyptus	pleurocarpa		
Myrtaceae	Eucalyptus	sp. Southern Wheatbelt		
Myrtaceae	Eucalyptus	tumida		
Myrtaceae	Eucalyptus	uncinata		
Myrtaceae	Eucalyptus	virella		
Myrtaceae	Leptospermum	maxwellii		
Myrtaceae	Melaleuca	bromelioides		
Myrtaceae	Melaleuca	calycina		
Myrtaceae	Melaleuca	cucullata		
Myrtaceae	Melaleuca	eleuterostachya		
Myrtaceae	Melaleuca	hamata		
Myrtaceae	Melaleuca	hamata		
Myrtaceae	Melaleuca	johnsonii		

Myrtaceae	Melaleuca	linguiformis		
Myrtaceae	Melaleuca	pentagona ssp. pentagona		
Myrtaceae	Melaleuca	podiocarpa		
Myrtaceae	Melaleuca	sapientes		
Myrtaceae	Melaleuca	strobophylla		
Myrtaceae	Melaleuca	strobophylla		
Myrtaceae	Melaleuca	teuthidoides		
Myrtaceae	Melaleuca	thyoides		
Myrtaceae	Melaleuca	undulata		
Myrtaceae	Melaleuca	carrii		
Myrtaceae	Melaleuca	glaberrima		
Myrtaceae	Melaleuca	phoidophylla		
Myrtaceae	Melaleuca	societatis		
Myrtaceae	Micromyrtus	elobata ssp. elobata		
Myrtaceae	Rinzia	icosandra		
Myrtaceae	Verticordia	chrysantha		
Myrtaceae	Verticordia	plumosa var. incrassata		KSW11522, 9770
Orchidaceae	Orchid	mutica		
Orchidaceae	Pterostylis	vittata		
Phyllanthaceae	Lasiandra	calycina		
Pinaceae	Pinus	pinaster	Х	
Pittosporaceae	Billardiera	coriacea		
Pittosporaceae	Cheiranthera	filifolia		
Plumbaginaceae	Limonium	lobatum	Х	
Poaceae	Aristida	contorta		
Poaceae	Austrostipa	drummondii		
Poaceae	Austrostipa	elegantissima		
Poaceae	Avena	barbata	Х	
Poaceae	Hordeum	leporinum	Х	
Poaceae	Lolium	sp.	Х	
Poaceae	Rytidosperma	setaceum		
Poaceae	Triticum	aestivum	Х	
Polygalaceae	Comesperma	scoparium		
Polygalaceae	Comesperma	spinosum		
Polygonaceae	Muehlenbeckia	adpressa		
Primulaceae	Lysimachia	arvensis	Х	
Proteaceae	Banksia	media		
Proteaceae	Grevillea	plurijuga		
Proteaceae	Grevillea	acuaria		
Proteaceae	Grevillea	huegelii		
Proteaceae	Grevillea	incrassata		

Proteaceae	Grevillea	oligantha		
Proteaceae	Grevillea	pectinata		
Proteaceae	Grevillea	teretifolia		
Proteaceae	Hakea	cinerea		
Proteaceae	Hakea	commutata		
Proteaceae	Hakea	corymbosa		
Proteaceae	Hakea	multilineata		
Proteaceae	Hakea	nitida		
Proteaceae	Hakea	adnata		
Proteaceae	Persoonia	helix		
Proteaceae	Persoonia	teretifolia		
Proteaceae	Petrophile	seminuda		
Proteaceae	Synaphea	media		
Restionaceae	Chordifex	sphacelatus		
Restionaceae	Hopkinsia	adscendens		
Rhamnaceae	Cryptandra	pungens		
Rhamnaceae	Cryptandra	recurva		
Rhamnaceae	Pomaderris	rotundifolia		
Rhamnaceae	Spyridium	minutum		
Rhamnaceae	Spyridium	mucronatum ssp.		
		mucronatum		
Rhamnaceae	Trymalium	myrtillus ssp. myrtillus		
Rubiaceae	Opercularia	spermacocea		
Rutaceae	Boronia	crassifolia		
Rutaceae	Boronia	inornata		
Rutaceae	Cyanothamnus	baeckeacea ssp.		
		baeckeacea		
Rutaceae	Cyanothamnus	inconspicuus		
Rutaceae	Cyanothamnus	fabianoides ssp.		
Dutaaaa	Mierreeuche	fabianoides		
Rutaceae	Microcybe	multiflora ssp. multiflora		
Rutaceae	Microcybe	multiflora ssp. multiflora		
Rutaceae	Phebalium	obovatum		
Santalaceae	Exocarpos	aphyllus		
Santalaceae	Exocarpos	sparteus		
Santalaceae	Santalum	acuminatum		
Sapindaceae	Dodonaea	bursariifolia		
Sapindaceae	Dodonaea Framanhila	stenozyga		
Scrophulariaceae	Eremophila	dichroantha		
Scrophulariaceae	Eremophila	psilocalyx		
Solanaceae	Solanum	nigrum	X	
Thymelaeaceae	Pimelea	aeruginosa		

Violaceae	Hybanthus	epacroides		

Appendix 2: TPRF Forms

pendix 2.1 - Conost							
Conservation and Attra	sity.	hreatened	and Priorit	.y			
		Flora Per	port Form	-	16-1	alon d d blo	
blease complete as much of	the form as nos			s bordered in bla		sion 1.4 Ma	
he form please refer to the Threatened	& Priority Flora Report F	Form (TPRF) manual on th	e DBCA website at www.d	baix wa gov au/blants-	and-animals/	Inreatened-sce	cies-and-
						an Nat	
TAXON: Conostephiur OBSERVATION DATE:	02/12/2022	CON	SERVATION STAT	TUS: P2	TPFL P	op. No: w populat	ion N
	erine walkerden		SERVATION STAT			416558774	_
ROLE: Environmental O		ORG	ANISATION: Shir	e of Esperance		410336774	*
EMAIL: Katherine.Walke				e or esperance			
DESCRIPTION OF LOCATIO	<u> </u>		and the effeture and dense	For to that shoes "			
Rollod Road Reserve betw	-	1		iono marpiadoj.			
Rollou Road Reserve bein	een oek o.or -r	.00 and 1 an 1022	30 201 1313				
					Reserve M	No:	
DBCA DISTRICT: Esperance	e	LGA: Espera	ince	Land ma	inager pres	ent:	_
		M coords provided, Zone	<u> </u>	ETHOD USED:			
GDA94 / MGA94		· _	UTMs 🔲	GPS 📓 Diffe	erential G	PS 🔲 🛛 🔊	tap 🗖
AGD84 / AMG84	t / Northing: 37	2735.0		. satellites:	M	ap used:	
WGS84 🔲 Lon	g/Easting: 63	30501.6		undary polygon ptured:	M	ap scale:	
Unknown	ZONE: 51						
LAND TENURE:							
EARD TENURE.							
Nature reserve	Timber reserve	Private prop	erty 📓	Rail reserve		Shire road	
Nature reserve	State forest	Pastoral le	ase 🗖 MRWA	A road reserve 🗖	Seedi	Other Crown	
Nature reserve		Pastoral le		A road reserve 🗖	Specif		
Nature reserve	State forest	Pastoral le	ase MRWA	A road reserve 🗖	Specif	Other Crown	
Nature reserve National park Conservation park AREA ASSESSMENT: Edg	State forest	Pastoral le L artial survey 🛛 F	ase MRWA	A road reserve		Other Crown	
Nature reserve National park Conservation park AREA ASSESSMENT: Edg	State forest Water reserve	Pastoral le L artial survey 🛛 F	ase MRW/ CL SLK/Pole ull survey Are No. of minu Estimate	to to a observed (m²): tes spent / 100 m Count method:	² :	Other Crown	
Nature reserve National park Conservation park AREA ASSESSMENT: Edg EFFORT: Time POP'N COUNT ACCURACY:	State forest Water reserve	Pastoral le utial survey 🛛 F ninutes): <u>40</u> Extrapolation 🔲	ase MRWA JCL SLK/Pole Ull survey Are No. of minu Estimate (Faster	a observed (m²): tes spent / 100 m	² :	Other Crown	
Nature reserve Anational park Conservation park AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED:	State forest Water reserve	Pastoral le utial survey X F ninutes): <u>40</u> Extrapolation I Clumps I	Ase MRWA JCL SLK/Pole Ull survey Are No. of minu Estimate (Refer Clonal stems ()	A road reserve to to tes spent / 100 m Count method: to field manual for list)	² :	Other Crown	
Nature reserve Antional park Conservation park AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE:	State forest Water reserve e survey Preserve spent surveying (m : Actual Plants Mature:	Pastoral le utial survey 🛛 F ninutes): <u>40</u> Extrapolation 🔲	ase MRWA JCL SLK/Pole Ull survey Are No. of minu Estimate (Faster	to to a observed (m²): tes spent / 100 m Count method:	² 2	Other Crown ty other:	reserve
Nature reserve Antional park Conservation c	State forest Water reserve	Pastoral le utial survey 🛛 F ninutes): <u>40</u> Extrapolation 🔲	Ase MRWA JCL SLK/Pole Ull survey Are No. of minu Estimate (Refer Clonal stems ()	A road reserve to to tes spent / 100 m Count method: to field manual for list)	² :	Other Crown ty other:	:
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Nature reserve Anational park Conservation park AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT:	State forest Water reserve e survey Preserve spent surveying (m : Actual Plants Mature:	Pastoral le utial survey 🛛 F ninutes): <u>40</u> Extrapolation 🔲	Ase MRWA JCL SLK/Pole Ull survey Are No. of minu Estimate (Refer Clonal stems ()	A road reserve in to interpret to interpret to interpret (m²): tes spent / 100 m Count method: to field manual for list)	Area Note: (not p	Other Crown ty other:	:
Nature reserve Anational park Conservation park AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT: Summary Quad. Totals: Alive	State forest Water reserve	Pastoral le	Ase MRWA JCL SLK/Pole UII survey SLK/Pole UII survey Are No. of minu Estimate (Faster Clonal stems (Seedlings: Seedlings: Data attached	A road reserve to to ta observed (m²): tes spent / 100 m Count method: to field manual for list) Totals: d Total a	Area Note: not p rea of qua	Other Crown ty other:	:
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Nature reserve Antional park Conservation park Conservation park POP'N COUNT ACCURACY: WHAT COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT S PRE SENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immat	State forest Water reserve e survey Prispent surveying (n Actual Plants Mature: 17 No. Clonal Clonal Luce fuit	Pastoral le	Ase MRWA JCL SLK/Pole UII survey Are No. of minu Estimate (Refer Clonal stems S Seedlings: Data attached Flowerbud Dehisced fruit	A road reserve to to ta observed (m²): tes spent / 100 m Count method: to field manual for list) Totals: d Total a Percei	Area Note: (not p Flower E ntage in flow	Other Crown ty other:	:
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se return completed form to Species And Communities Program DBCA, Piea

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au RECORD S: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:_________ Sheet No.:______ Record Entered In Database D

Conservation a	iodiversity, of Attractions	Threatened a	nd Priority		
COLUMN ANTINA		Flora Repo	3	Versi	on 1.4 March 2021
HABITAT INFORMATI	DN:				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest 🗖	Granite 🔲	(on soil surface; eg	Sand 📓	Red 🗖	Well drained
Hill 🗖	Dolerite 🔲	gravel, quartz fields)	Sandy loam 🔲	Brown 🔲	Seasonally
Ridge 🔲	Laterite 🔲	0-10% 🗖	Loam 🔲	Yellow 🗖	inundated
Outcrop 🔲	Ironstone	10-30%	Clay loam 🔲	White 🗖	Permanently inundated
Slope 🗖	Limestone 🔲	30-50%	Light clay 🔲	Grey 🗖	Tidal 🔲
Flat 🗖	Quartz 🔲	50-100%	Peat 🗖	Black	
Open depression 🔲	Specify other:	00-100/e 🖬	Specify other:	Specify other:	
Drainage line					
Closed depression	Specific Landfor	m Element:	_		
Wetland	(Refer to field manual for				
CONDITION OF 80IL:	Dry 📓	Moist 🗖	Waterlogged 🗖	inundated 🗖	
VEGETATION CLASSIFICATION*: Egr.1. Banksia woodand (B. attenuata, B. Hidtolia); 2. Open shrubland (Hibbertia sp., Acadia spp.); 3. kolated clumps of sedges (Mitetragona)		a and Banksia media ov ludes: Dampiera lavand			<u> </u>
	4.				
A\$SOCIATED					
SPECIES:					
Other (non-dominant) spp Please record up to four of the	most representative upgetation	invertiations to these deceive	nt coories in each inter\. Sin:	et en Energetone chould tale	w 2010 Australian Soli and
Land Survey Field Handbook gu					
CONDITION OF HABITAT COMMENT:	: Pristine 🗖	Excellent 📓 Very go	od 🗖 🛛 Good 🗖	Degraded 🔲 Com	pietely degraded
FIRE HISTORY: La	st Fire: Season/Month	Year:	Fire intensity: Hig	n 🗖 Medium 🗖 🛛 Low 🗖	No signs of fire 📓
FENCING:	Not required 📓	Present 🗖 🛛 Replac	ce / repair 🔲	Required 🗖 🛛 Leng	th regid:
ROAD SIDE MARKER S:	Not required 📓	Present 🔲 🛛 Replac	e / reposition 🗖	Required 🔲 Quar	dity reg'd:
		ended management act data available, and how t		ed actions -	
	 For further information on a 	61000788-1a Note if or athorisation and licening require be recorded above in the OTHE			
SPECIMEN: Collect	tors No: WA He	erb. 🛛 Regional Herb	. District Herb.	Other:	
LODGEMENT: WA H	ement No:	10622 ACC9770 Specin	nen retained		
ATTACHED: Map	Mudmap Photo	GIS data 🛛 Field	d notes 🔲 🛛 C	Other:	
COPY SENT TO:	gional Office Distric	ct Office 📓 🛛 O	ther:		
Submitter of Record: Ka	therine Walkerden	Role: Environmental Off	licer Signed:	Date: 30	/01/2023
Locked Bag 1	04, BENTLEY DEL	d form to Species IVERY CENTRE W i to Flora Administrativ red by:	A 6983 OR email to e Officer, Species and	o: flora.data@dbca Communities Program	.wa.gov.au

Appendix 2.2 *Halgania* sp. Peak Eleanora – P2 Eastern population

Conservation and			and Priority port Form	v	ersion 1.4 Ma	rch 2021
lease complete as muci		ssible, with emphasi	s on those sections bo			
e form please refer to the Threat mmunifies/fhreatened-clarits	ened & Priority Flora Rep	or Form (TPRF) manual on th	e DBCA weeste at www.doaw	val dov, aurorants-and-anime	in an	00000000
TAXON: Halgana s	ip. Peak Elaenor			TPFL	Pop. No:	
OBSERVATION DATE	2.12.2022	CON	SERVATION STATUS	:I	lew popula	tion 🛛
OBSERVER/S: Ka	atherine walkerde	n		PHONE	041655877	4
ROLE: Environmenta			ANISATION: Shire of	Esperance		
EMAIL: Katherine.Wa	alkerden@espera	nce.wa.gov.au				
DESCRIPTION OF LOCA						
Rollond road, Southern si		-	ad and Rollond road int	ersection. Immediat	ely north of L	ot 96 on
Plan 139183. 9.7km Nortl SLK 5.84-5.74	n West of Grass Pat	ch Townsite.				
521(0.010.71				Reserve	NO:	
DBCA DISTRICT: Esper	rance	LGA: Espera	nce	Land manager pr	esent:	_
DATUM: (COORDINATES: (#	UTM coords provided, Zone	is also required) METH	OD U SED:		
GDA94 / MGA94 関	DecDegrees 🔲	DegMinSec 🔲 🛛	JTMs 🔲 GPS	5 🛛 Differential	GPS 🔲 🔰	/ap 🔲
AGD84 / AMG84	Lat / Northing:	373984.1			Map used:	
WGS84	Long / Easting:	6330496.3	Bound	ary polygon ed:	Map scale:	
Unknown 🗖	ZONE:	51		_		
LAND TENURE:	-					
Nature reserve	Timber reserve	Private prope	erty 🗖 🛛 Ra	il reserve 🗖	Shire road	d reserve
National park	State forest			d reserve 🗖	Other Crown	reserve
Conservation park	Water reserve	u u	CL 🔲 SLK/Pol	≥ <u>5.84</u> to <u>5.74</u> Spe	cify other:	
AREA ASSESSMENT:	Edge survey 🗖	Partial survey 🛛 🛛 F	ull survey 🔲 🛛 Area ol	oserved (m²):		
EFFORT: Ti	me spent surveying	(minutes):	No. of minutes	spent / 100 m ² :		
POP'N COUNT ACCURA	CY: Actual	Extrapolation		ount method:		
WHAT COUNTED:	Plants	Clumps	(Refer to the Clonal stems	id manual for list)		
TOTAL POP'N STRUCTURE		Juveniles:		otals:		
Alive	2	Carolinee.	ocouningo.		ea of pop (m²	
	2				ear or pop (m-	
Dead				(no	t percentages) fo	database.
QUADRATS PRESENT:	No	Size	Data attached	Total area of q	uadrats (m ²):	
Summary Quad. Totals: All					_	
REPRODUCTIVE STATE:	Cional 🗖 mature fruit 🗖	Vegetative Fruit	Flowerbud 🔲 Dehisced fruit 🔲	Flower Percentage in t		
CONDITION OF PLANT 8:	Healthy	Moderate	Poor 🗖	Senescent	_	
COMMENT:	Healery 🖬		P001	Genescen	-	
	and autoporting int	armation:		Current	Potential	Potenti
THREAT \$ - type, agent a Eg clearing, too frequent fire, wee			ents. Specify agent where relev	Impact	Impaot	Threat
Rate current and potential th	reat impact: N=NII, L=Lo	v, M=Medium, H=High, E=Ext	NETTIE	(N-E)	(L-E)	Onset
	ipact: S=Short (<12mths)	,M≓Medium (<9yrs), L=Long ((Syrs+)			(8-L)
 Low population size 				M	E	
Deed wide size				N	E	<u>s</u>
 Road widneing 				1	1	
Road woneing						

Crest Hill Ridge Outcrop Li Slope Li Flat Open depression Sp Drainage line Closed depression Sp Wetland Refer Condition OF SolL: VEGETATION CLASSIFICATION: Eg. 1. Barisia woodand (Baristenata, B. licitola; 2. Open shrubland (Hoberia so, Acadia spp.); 8. kolated dumps of sedges (Mietragona) 2. 3. 4. 4. 4. 4. 4. 4. 4	CK TYPE: Granite Granite Gra	ional values) Moist I er sparse shrubland strostipa elegantiss es (with up to three domin uther lup to three domin uther income	SOIL TYPE: Sand Sandy Ioam Comment Loam Clay Ioam Clay Ioam Clay Ioam Clay Ioam Clay Ioam Clay Clay Clay Clay Clay Clay Clay Clay	SOIL COLOUR: Red Brown Color Yellow Color White Color Black Color Black Color Specify other: Inundated Color Inundated Color I	losus, Eragrostis ow 2009 Australian Sol upletely degraded
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Hill Cuterop C	Dolerite Laterite Laterite Laterite ronstone Quartz Quartz Quartz Cuarts Quartz Cuarts Quarts Qua	gravel, quartz fields) 0-10% 10-30% 30-50% 50-100% lement: ional values) Moist er sparse shrubland istrostipa elegantiss es (with up to three domin ither information and shu iselient Very ge	Sandy loam	Brown Yellow White Grey Black Specify other: Inundated clude: Cyathostemon s ntosa, Asphodelus fistu	Seasonally inundated Permanently inundated Tidal p., Atriplex sp., losus, Eragrostis
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LORA AUTHORISATION / LIC thorsation/licence is required. For furth				pecimens or plant matienal is ta lora and Wild ife Licensing page	
ny actions carried out under authorisatio	ns/licences should be rec	corded above in the OTHE	R COMMENTS section.		and the second second here and the
PECIMEN: Collectors No:	-		b. 🔲 District Herb. 🕻	Other:	
ODGEMENT: WA Herb Lodgement No		22 ACC9874			
TTACHED: Map Mudr	nap Photo	GIS data 📓 Fiel	ld notes 🔲	Other:	
OPY SENT TO: Regional Of	fice District Of	ffice 🖬 🛛 C	Other:		
bmitter of Record: Katherine V	Valkerden Role	: Environmental Of	ficer Signed:	Date: 30	0/01/2023
Please retu	rn completed f	form to Species	s And Communi	ties Program DB	CA,
Locked Bag 104, BE		ERY CENTRE W	/A 6983 OR email 1	to: flora.data@dbcs d Communities Program	a.wa.gov.au

Appendix 2.3 Halgania sp. Peak Eleanora – P2 Central population

Department of Biodivers Conservation and Attra	ity, ctions	Threatened a	and Priorit	у			
Contemport of		Flora Rep	ort Form	-	Ve	rsion 1.4 Ma	reh 2024
please complete as much of		ossible, with emphasis	on those sections		lack. For inf	ormation on how	v to complete
the form please refer to the Threatened a communities/threatened-clarits	Priority Flora Rep	ort Form (TPRF) manual on the	DBCA website at www.dt	awwa.cov.au/olant	s-and-animals	Vibreatened-sce	cies-and-
TAXON: Halgania sp. F	eak Elanor				TPFL P	op. No:	
OBSERVATION DATE:	30.07.2022	CONS	ERVATION STAT	US:		ew populat	tion 🛛
OBSERVER/S: Kathe	rine Walkerde	en, Julie Waters		Pł		0416558774	
ROLE: Environmental O	ficer	ORGA	NISATION: Shire	e of Esperance	e —		
EMAIL: Katherine.Walke	den@espera	ince.wa.gov.au					
DESCRIPTION OF LOCATIO	N (Provide at least	t nearest towninamed locality, ar	nd the distance and direct	ion to that place):			
Rollond road slk 10.76-8.73	3						
Roadside, level plain, no signs	of fire.						
					Reserve	_	
DBCA DISTRICT: Esperance DATUM: COO		LGA: Esperan		Land n	nanager pre	sent:	
1	Degrees 🔲	f UTM coards provided, Zone is DegMinSec 🔲 U	<u> </u>		fferential G	PS 🗖 🛛 🛛	/ap 🔲
GDA94 / MGA94 📓	/ Northing:	· –	_	. satellites:		lap used:	and and
AGD84 / AMG84	· -			undary polygon		· _	
WGS84 Lon Unknown	g / Easting:	6330434.6		otured:	. N	ap scale:	
	ZONE:	51					
LAND TENURE:	-						_
Nature reserve	Timber reserve			Rail reserve	1		i reserve 📓
National park	State forest Water reserve		se 🖬 🛛 MRWA SL 🖬 SLK/Pole	road reserve		Other Grown	n reserve
	The second strengther who						
AREA A \$ SE \$ SMENT: Edg		/_	Il survey 🔲 Are	a observed (m ²):		
EFFORT: Time :	pent surveying	g (minutes):	Il survey 🔲 Are No. of minu	a observed (m² tes spent / 100): m ² :		
	pent surveying	/_	Il survey Are No. of minut Estimate	a observed (m ² tes spent / 100 Count method): m ² :		
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EFFORT: Time is POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N 8TRUCTURE: Alive Dead QUADRAT S PRE SENT: 8ummary Quad. Totals: Alive REPRODUCTIVE STATE: Immate CONDITION OF PLANT8: COMMENT: Only plants nea THREAT S - type, agent and Eg dearing, too frequent fire, weed, ds Rate current and potential threat i Estimate time to potential impact	Plants Wreying Actual Plants M Mature: 293 No. Clonal Clonal Clon	g (minutes): Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate surveyed, population likely of formation: I manual for list of threads & ages w, M=Medium, H=High, E=Extern	Il survey Are No. of minut Estimate (Refer Clonal stems) Seedilinge: Data attached Data attached Dehisced fruit Poor Considerably larger.	a observed (m² tes spent / 100 Count method o field manual for is Totals: Totals Total Pero): m ² : d: d: hote (not) area of qu Flower [] entage in fo ienescent [] Current impaot (N-E)	a of pop (m²) Pis record cour percentages) for adrats (m²): wer: <u>95%</u> Potential Impaot (L-E)	Potential Threat (8-L)
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Please return completed form to Species And Communities Program DBCA,

Department o Conservation	f Biodiversity, and Attractions	Threatened a	nd Priority		
ACCOUNTS OF THE ACCOUNTS		Flora Repo	ort Form	Versi	on 1.4 March 2021
HABITAT INFORMAT	TION:	-			
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest Hill	Dolerite	(on soil surface; eg gravel, quartz fields)	Sand 🔲 Sandy loam 🔲	Red 🗖 Brown 🗖	Well drained Seasonally inundated
Ridge Outcrop Slope	Ironstone	0-10% 🔲 10-30% 🔲 30-50% 🔲	Loam Clay loam Light clay	Yellow White Grey	Permanently inundated I Tidal I
Flat C Open depression C Drainage line	Specify other:	50-100% 🔲	Peat D Specify other:	Black 🗖 Specify other:	
Closed depression	3 Specific Landfo		_		
CONDITION OF SOIL:	Dry 📓	Moist 🗖	Waterlogged 🗖	inundated 🗖	
VEGETATION CLA SSIFICATION*: Eg. 1. Banksia woodland (B attenuata, B. licitofua); 2. Open shrubland (Hibbertia sp., Acadia spp.); 3. Solated dumps of sedges (Mitetragona)	Prostanthera serpyl	Velaleuca uncinata and m lifolia, Lissanthe rubicund	,		
		ion layers (with up to three domin al for further information and stru		ructural Formations should folio	w 2009 Australian Soli an
	_	Excellent Very go			pietety degraded
	Last Fire: Season/Mon		Fire intensity: Hg	-	No signs of fire 📓
FENCING: ROAD SIDE MARKER 8:	Not required 🔤		oe / repair 🛄 oe / reposition 🔲		th req'd:
		mended management ac		ted actions -	
authorisation/licence is requi Any actions carried out unde		T61000788-1a Note if on authorisation and licening require id be recorded above in the OTHE	ements see the Threatened Fi	pecimens or plant matienal is to fora and Wild ife Licensing pag	
LODGEMENT: WA	-	Herb. Regional Herb W8922 ACC9639 PERTH 0		Other:	
ATTACHED: Map	Mudmap Phot	GIS data 🖬 Fiel	d notes 🔲	Other:	
COPY SENT TO:	egional Office Dist	trict Office 🛛 🛛 C	Other:		
		Role: Environmental Of	ficer Signed:	Date: 30	

Department of Biodiversi Conservation and Attrac	ty.	hreatened	and Priori	ty			
ADVENUES (F		Flora Reg	ort Form	-	1/-	rsion 1.4 Ma	mh 2024
Please complexe as much of a the form please refer to the Threatened 8 commutiles/threatened clarits		ble, with emphasis	s on those section		black. For inf	formation on how	v to complet
TAXON: Halgania sp. P	eak Eleanor				TPFL F	op. No:	
OBSERVATION DATE:	2.12.2022	CONS	SERVATION STA	TUS:	N	ew populat	tion 🛛
	rine walkerden				_	041655877	4
ROLE: Environmental Of EMAIL: Katherine.Walker			ANISATION: Shi	ire of Esperar	nce		
DESCRIPTION OF LOCATION	<u> </u>		and the distance and dire	ction to that place)	:		
Rollond Road at SLK 13.19- 13	-					d reserve.	
					Reserve	No:	
DBCA DISTRICT: Esperance		LGA: Esperar	nce	Lan	d manager pre		
DATUM: COO	RDINATES: (ITUT)	I coords provided, Zone is	s also required) M	ETHOD U SEC	D:		
GDA94 / MGA94 🛛	Degrees 🔲 🛛 D	egMinSec 🔲 🛛 U	JTMs 🔲	GPS 🛛	Differential G	PS 🔲 🛛 🛛	/ap 🗖
AGD84 / AMG84	/Northing:		N	o. satellites:	N	(ap used:	
	g / Easting:			oundary polyg aptured:	on N	(ap scale:	
Unknown	ZONE:			aptureu:			
LAND TENURE:							
Nature reserve	Timber reserve 🔲	Private prope	rty 🗖	Rail reserve		Shire road	
	State forest	Pastoral lea	-		-	Other Crown	neserve
National park				A road reserve			The state of the
Conservation park	Water reserve	rtial survey 🔲 🛛 Fu	CL 🔲 SLK/Pole	to to	Spec	ity other:	
Conservation park	Water reserve	rtial survey 🔲 🛛 Fu	CL SLK/Pole	to t	Spec m²): 10 m²:		
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Conservation park	Water reserve	Unitial survey Finitutes): Extrapolation Clumps Juveniles: Juveniles: Vegetative Finit Moderate Moderate	CL SLK/Pole	to	Spec m²): 00 m²: nod: r list) Are: Note (not tal area of qu Flower Ercentage in fic Senescent Senescent	ity other:): database Potent Three
Conservation park	Water reserve	U tial survey Fu inutes): Extrapolation Clumps Juveniles: Juveniles: Size Fnut Moderate Moderate ation: ual for list of fireats & age Medium, H=High, E=Ed	CL SLK/Pole	to	Spec m ²): 100 m ² : nod: r lst) Are: Note (not) tal area of qu Flower f ercentage in fic Senescent	ity other:): database. Potent Three Onse
Conservation park	Water reserve	U tial survey Fu inutes): Extrapolation Clumps Juveniles: Juveniles: Size Fnut Moderate Moderate ation: ual for list of fireats & age Medium, H=High, E=Ed	CL SLK/Pole	to	Spec m ²): D0 m ² : hod: r list) Are: Note (not) tal area of qu Flower Flower Eroentage in fic Senescent Mote (not) (no	ity other:): database. Potent Three Once
Conservation park	Water reserve	U tial survey Fu inutes): Extrapolation Clumps Juveniles: Juveniles: Size Fnut Moderate Moderate ation: ual for list of fireats & age Medium, H=High, E=Ed	CL SLK/Pole	to	Spec m²): 00 m²: nod: r list) Are: Note (not tal area of qu Flower Ercentage in fic Senescent Senescent	ity other:): database. Potent Three Once
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Appendix 2.4 Halgania sp. Peak Eleanora – P2 Western population

Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORD S: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:__________ Sheet No.:______ Record Entered In Database D

1.92.1	tion and	Attractions	Threatened a			
EDUDRED OF BELLEVILLE			Flora Rep	ort Form	Vers	ion 1.4 March 2021
HABITAT INFORM	ATION					
LANDFORM:	-	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	_	Granite	(on soil surface; eg gravel, quartz fields)	Sand 🔲	Red 🗖	Well drained
Ridge		Dolerite		Sandy loam	Brown 🗖 Yellow 🗖	Seasonally inundated
Outcrop		Ironstone	0-10% 🔲		White	Permanently
Slope	_	Limestone	10-30% 🔲	Light clay	Grey 🗖	inundated
		Quartz	30-50% 🗖	Peat	Black	Tidal
Open depression	_	Specify other:	50-100% 🗖	Specify other:	Specify other:	
Drainage line	_					
Closed depression						
Wetland	_	Specific Landfor (Refer to field manual for				
ONDITION OF 801	-	Dry 📓	Moist	Waterlogged 🗖	inundated 🗖	
EGETATION	5.	lixed Mallee woods	and with Melaleucas an	nd Fabaceae shruhs		
LASSIFICATION			the second s			
g: 1. Banksia woodland tienuata, B. Ilicifolia);	(B. 2	-				
. Open shrubland Ibbertia sp., Acada sp	a.); 3	-				
 Isolated clumps of sed (Utetragona) 	ges 4	-				
<u> </u>		_				
SSOCIATED						
	- 1					
ASSOCIATED SPECIES: Xher (non-dominant) sp	_					
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SPECIES: Ther (non-dominant) sp lease record up to four nd Survey Field Handbo	of the mo ok guidei		i for further information and st		_	_
PECIE 8: ther (non-dominant) sp. lease record up to four in d Survey Field Handbo	of the mo ok guidei	ines – refer to field manua	i for further information and st	ructural formation table.	_	
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Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au RECORDS: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:_________ Sheet No.:______ Record Entered In Database D

Appendix 2.6 Acacia bartlei – P3

	sity, actions	Threatened a	and Priority	1			
CONTRACTOR ALCONOMIC OF RECEIVER ALCONOMICS		Flora Rep	ort Form		Ve	ersion 1.4 Ma	rch 2021
Please complete as much of		sible, with emphasis	on those sections		black. For in	formation on how	w to complete
the form please refer to the Threatened communities/threatened-clarits	& Priority Flora Report	Form (TPRF) manual on the	DBCA website at <u>www.doc</u>	akwa ooy au/olar	risandanima	süncertened-soo	cies-and-
TAXON: Acacia bartlei					TPFL I	Pop. No:	
OBSERVATION DATE:	22/08/2022	CONS	ERVATION STATU	JS: P3	-	lew populat	tion 🛛
OBSERVER/S: Kathe	rine Walkerden,	Julie waters		P	HONE	041655877	4
ROLE: Environmental O	fficer	ORGA	NISATION: Shire	of Esperance	ce –		
EMAIL: Katherine.Walke	rden@esperanc	e.wa.gov.au					
DESCRIPTION OF LOCATIO	N (Provide at least ne	arest towninamed locality, ar	nd the distance and directio	n to that place):			
Rollond Road, 200 metres we	st of Coolgardie-E	sperance Highway. R	ollond road SLK 0.2.				
Narrow road reserve. Clay-loa	am soil. No signs o	of fire.			-		
BROA BIATRIOT. Experience		LOA. Experie		Land	Reserve		
DBCA DISTRICT: Esperance DATUM: COO		LGA: Esperan		HOD U SED:	manager pro	esent:	
			-	_	ifferential C	GPS 🗖 🛛 🔊	ap 🔲
GDA94 / MGA94 📓 Lat	/Northing: 37	9514.4	No	satellites:		Map used:	
AGD84 / AMG84				ndary polygo	n		
Unknown		30568.8				Map scale:	
_	ZONE: 51						
LAND TENURE:							
Nature reserve	State forest			Rail reserve			d reserve 📓 n reserve 🔲
Conservation park	Water reserve		CL SLK/Pole			ify other:	
		esticleurs au 🖸 🛛 Eu		abaamind In	35.		
AREA ASSESSMENT: Edg EFFORT: Times	e survey 🔲 🛛 Pi spent surveying (n		ll survey 🔲 🛛 Area	observed (m	·):		
		ninutes):	No. of minute	s spent / 100) m ²		
POP'N COUNT ACCURACY:			No. of minute Estimate	s spent / 100 Count metho			
		ninutes): Extrapolation	Estimate 🔲		od:	1	
			Estimate 🔲	Count metho	od:		
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Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORD S: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:_______ Sheet No.:______ Record Entered In Database D

Departme Conserve	nt of Biodiversi tion and Attrac	ity, ctions	Threa	teneo	l and	Priori	ty				
CONTRACTOR ANTINALIA			Flo	ora Re	port l	orm			Ve	rsion 1.4 Mar	ch 2021
HABITAT INFORM	ATION:										
LANDFORM:	1	ROCK TYPE:	LOO	SE ROCK	: :	OIL TYPE	:	SOIL CO	DLOUR:	DRAI	NAGE:
Crest		Granite 🔲 Dolerite 🔲	aravel	oil surface; e , quartz fielo	ic)	Sand andy loam	_	8	Red 🗖		ined 🔲
Ridge Outcrop	_	Laterite		0-10%		Loam Clay loam	_		ellow 🔲 White 🔲	inunda Permar	ted 🔲
Slope		Limestone	1	10-30% 30-50%	_	Light clay			Grey 🗖		ed 🔲 Tidal 🔲
Flat Open depression		Quartz		50-100%	□ s	Peat pecify othe	_	Specify	other:		
Drainage line Closed depression		Specific Landf	form Elemen	nt:	-7		_ !		-	-	
Wetland CONDITION OF 801	- (100	fer to field manual Dry		alues) st 🗖	Wat	erlogged 🗖	1	inundate	a 🗖		
		, _		_			-				1.0
/EGETATION CLASSIFICATION Sg: 1. Banksia woodland	: weed	d Mallee wood Is.	dland with s	cattered N	Aelaleucas	and Faba	ceae shru	ubs with n	nixed Bra	ssicaceae an	d Poacea
ig. I. Bankala Woodahu Benuata, B. Ilicitolia); J. Open shrubland Hibbertia sp., Acadia sp	2.										
Hibbereal sp., Acada sp 3. Isolated clumps of sed Mitetragona)											
SOCIATED											
SPECIES: Other (non-dominant) sp											
	Last Fire	Pristine	Excellent	Year:	ry good	Good		Medium		v 🗖 No signs	
FENCING:		ot required 📓	Present		teplace / rej	_		equired E	_	ngth reg'd:	
ROAD SIDE MARKER		ot required 🔤	Present	_	teplace / re;			tequired		uantity reg'd:	
DTHER COMMENT Include date. Also i							emented	actions -	_		
LORA AUTHORI	quired. For fu	rther information o	n authorisation	and licening r	equirements	see the Threa	itened Flora			s taken) then no ages on DBCA's	
PECIMEN: C	ollectors N		uid be recorded Herb.	above in the Regional		District H	_	Other	:		
ODGEMENT: V		KS	W11622 AC	<u> </u>			_				
ATTACHED:		dmap Pho	GIS	data 📕	Field note	s 🔲	Ott	her:			
OPY SENT TO:	Regional	Office Dis	strict Office		Other:	_					
ubmitter of Record	Katherine	Walkerden	Role: En	vironmenta	al Officer	Signed:			Date:	30/01/2023	
		_						-	_		
		URN COMPLE SENTLEY D									011

Department of Blodin	versity,	hreatened	and Priority			
Conservation and A	/tractions		3			
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Please complete as much te form please refer to the Threaten						
ommunities/inreatened-clants						_
TAXON: Acacia glau					Pop. No:	
OBSERVATION DATE:	22/08/2022		SERVATION STATU		lew populat	
OBSERVER/S: Kat ROLE: Environmental	therine Walkerden,		ANISATION: Shire	PHONE _	041655877	4
	kerden@esperance		ANISATION. Shire	orEsperance		
		-				
DESCRIPTION OF LOCAT Rollond Road 3.6km wes	7	1.			Road betwe	an SLK
3.69 and 3.85. Sample c			Population was pres	ent between Rollond	Road betwe	en olk
Narrow road reserve. Cla	ay-loam soil. No sig	ins of fire.				
				Reserve	No:	
DBCA DISTRICT: Espera		LGA: Espera		Land manager pr	esent: 🗖	
	OORDINATES: (If UT DecDegrees		- · ·	HOD U SED: PS 🐱 Differential		
GDA94 / MGA94		-				/ap 🔲
AGD84 / AMG84 🔲	Lat / Northing: 37	58/2			Map used:	
	ong / Easting: 63	30509	captu	dary polygon ired:	Map scale:	
Unknown 🔲	ZONE: 51			_		
LAND TENURE:						
Nature reserve	Timber reserve	Private prope	·	Rail reserve	Shire road	
National park	State forest Water reserve	Pastoral les		bad reserve 🔲 ble <u>3.69</u> to <u>4.57</u> Spe	Other Crowr	n reserve
	THE REAL PROPERTY AND			over <u>2.02</u> to <u>2.21</u> ope	cny other.	
AREA ASSESSMENT: E	dge survey 🔲 🛛 Pa	artial survey 🛛 🛛 F	/ _	observed (m²):		
	e spent surveying (n			s spent / 100 m ² :		
POP'N COUNT ACCURAC	:Y: Actual 🗖	Extrapolation	_	Count method: leid manual for list)		
WHAT COUNTED:	Plants 🛛	Clumps 🔲	Clonal stems			
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:		
Alive	18			An	ea of pop (m ²)):
Dead					e: Pls record cour	
	No.	Size			t percentages) for	
OUNDRATE DREPENT.					understa Jus?ht	
		5126	Data attached	Total area of q	uadrats (m ²):	
Summary Quad. Totals: Alive	2				_	
Summary Quad. Totals: Alive REPRODUCTIVE STATE:		Vegetative	Flowerbud	Total area of q Flower Percentage in 1		
Summary Quad. Totals: Alive REPRODUCTIVE STATE: Imm CONDITION OF PLANTS:	cional	Vegetative 🗖	Flowerbud	Flawer	lower:%	
8ummary Quad. Totals: Alive REPRODUCTIVE 8TATE: Imm CONDITION OF PLANT 8: COMMENT:	Cional Cional Healthy	Vegetative Fruit Moderate	Flowerbud Dehisced fruit	Flower Percentage in f Senescent	lower:	i .
REPRODUCTIVE STATE: Imm CONDITION OF PLANTS: COMMENT: THREATS - type, agent ar	e Cional Cional Antonio Cional Antonio Cional Cional Cional Antonio Cional Antoni	Vegetative Fruit Moderate mation:	Flowerbud Dehisced fruit	Flower Percentage in f Senescent	lower:%	Potenti
Summary Quad. Totals: Alive REPRODUCTIVE STATE: Imm CONDITION OF PLANTS: COMMENT: THREATS - type, agent ar	e Cional Cional Hardine fruit Healthy Realthy	Vegetative Fruit Moderate mation:	Flowerbud Dehisced fruit Poor	Flower Percentage in f Senescent	lower:%	Potenti Threa Onse
Summary Quad. Totals: Alive REPRODUCTIVE STATE: Imm CONDITION OF PLANTS: COMMENT: THREATS - type, agent ar Eg dearing, too frequent fire, weed,	Clonal Clonal Healthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealth (dsease. Field the field mast impact N=NII, L=Low, N	Vegetative Fruit Moderate mation: nual for list of threats & ag	Flowerbud Dehisced fruit Flowerbud F	Flower Percentage in i Senescent Current Impaot	Potential Impaot	Potenti Threa Onse
Bummary Quad. Totals: Alive REPRODUCTIVE STATE: Imm CONDITION OF PLANTS: COMMENT: THREATS - type, agent ar Eg dearing, too trequent fire, weed, Rate current and potential thre Estimate time to potential imp	Clonal Clonal Healthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealth (dsease. Field the field mast impact N=NII, L=Low, N	Vegetative Fruit Moderate mation: nual for list of threats & ag	Flowerbud Dehisced fruit Flowerbud F	Flower Percentage in 1 Senescent evant. (N-E)	Potential Impaot (L-E)	Potenti Threa Onse (8-L)
Bummary Quad. Totals: Alive REPRODUCTIVE STATE: Imm CONDITION OF PLANTS: COMMENT: THREATS - type, agent ar Eg dearing, too trequent fire, weed, Rate current and potential thre Estimate time to potential imp	Clonal Clonal Healthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealth (dsease. Field the field mast impact N=NII, L=Low, N	Vegetative Fruit Moderate mation: nual for list of threats & ag	Flowerbud Dehisced fruit Flowerbud F	Flower Percentage in i Senescent Current Impaot	Potential Impaot	Potenti Threa Onse
Bummary Quad. Totals: Alive REPRODUCTIVE BTATE: Imm CONDITION OF PLANT 8: COMMENT: THREATS - type, agent ar Eg dearing, too trequent fire, weed, Rate current and potential thre Estimate time to potential imp • Road widening	Clonal Clonal Healthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealth (dsease. Field the field mast impact N=NII, L=Low, N	Vegetative Fruit Moderate mation: nual for list of threats & ag	Flowerbud Dehisced fruit Flowerbud F	Flower Percentage in 1 Senescent evant. (N-E)	Potential Impaot (L-E)	Potenti Threa Once (8-L)
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Bummary Quad. Totals: Alive REPRODUCTIVE BTATE: Imm CONDITION OF PLANT 8: COMMENT: THREATS - type, agent ar Eg dearing, too trequent fire, weed, Rate current and potential thre Estimate time to potential imp • Road widening	Clonal Clonal Healthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealthy Mealth (dsease. Field the field mast impact N=NII, L=Low, N	Vegetative Fruit Moderate mation: nual for list of threats & ag	Flowerbud Dehisced fruit Flowerbud F	Flower Percentage in 1 Senescent evant. (N-E)	Potential Impaot (L-E)	Potenti Threa Onset (3-L)

Appendix 2.7 Acacia glaucissima – P3 – Eastern population

Conservation a			. =		
CONTRACTOR AND TAKEN		Flora Repo	rt Form	Vers	ion 1.4 March 2021
HABITAT INFORMATIO					
LANDFORM:	ROCK TYPE:	LOOSE ROCK: fon soil surface: eq	SOIL TYPE: Sand 🕅	SOIL COLOUR:	DRAINAGE:
Crest 🔲 Hill 🔲	Granite 🗖	(on soil sumace; eg gravel, quartz fields)	Sandy loam	Red 🗖 Brown 🗖	Well drained
Ridge	Laterite		Loam	Yellow	Seasonally inundated
Outcrop	Ironstone	0-10% 🔲	Clay loam	White	Permanently
Slope	Limestone	10-30% 🔲	Light clay	Grey	inundated
Flat	Quartz	30-50% 🔲	Peat	Black	Tidal 🕻
Open depression	Specify other:	50-100% 🔲	Specify other:	Specify other:	
Drainage line	openny ontan		upuerly entan	upuny unun	
Closed depression					
Wetland	Specific Landform				
CONDITION OF SOIL:	(Refer to field manual for a Dry	additional values) Moist 🔲	Waterlogged	inundated	
	, _	_			
/EGETATION CLASSIFICATION*:		nd with scattered Melale cies include: Enchylaena			
ig: 1. Banksia woodland (B.	Eremophilla dicroanth	,	comencusa, Punenae	a anua, coopernookia	scropinolata,
ttenuata, B. Ilicitolia); 2. Open shrubland	2.				
Hibbertia sp., Acadia spp.); Isolated clumps of sedges					
Mitetragona)	3.				
	4.				
SOCIATED					
2ther (non-dominant) spp Rease record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT	idelines – refer to field manual f	layers (with up to three domina for further information and struct Excellent 🔲 Very goo	tural formation table.	_	_
2ther (non-dominant) spp Rease record up to four of the disurvey Field Handbook gu CONDITION OF HABITAT	ideines – refer to field manual f	Excellent Very goo	ural formation table.	Degraded 🗖 Con	npietely degraded
Other (non-dominant) spp Please record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:	ideines – refer to field manual f : Pristine	torfurther information and struct Excellent Yeay goo	ural formation table. od M Good D Fire Intensity: на	Degraded 🔲 Con	No signs of fire
Other (non-dominant) spp Please record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:	ideines – refer to field manual f : Pristine idei Fire: Season/Month: Not required Not required Please include recomment	Infurther information and shuch Excellent I Very good Year: Present I Replac Present Replac ended management action	ural formation table. od Good Fire Intensity: Hig e / repair ons and/or implement	Degraded Con h Medium Low Required Len Required Qua	npietely degraded
Other (non-dominant) spp Please record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:	ideines – refer to field manual f : Pristine idei Fire: Season/Month: Not required Not required Please include recomment	Present Replac	ural formation table. od Good Fire Intensity: Hig e / repair ons and/or implement	Degraded Con h Medium Low Required Len Required Qua	npietely degraded
Ather (non-dominant) spp lease record up to four of the nd Survey Field Hendbook gu CONDITION OF HABITAT COMMENT:	ideines – refer to field manual f : Pristine idei Fire: Season/Month: Not required Not required Please include recomment	Infurther information and shuch Excellent I Very good Year: Present I Replac Present Replac ended management action	ural formation table. od Good Fire Intensity: Hig e / repair ons and/or implement	Degraded Con h Medium Low Required Len Required Qua	npietely degraded
Ather (non-dominant) spp lease record up to four of the nd Survey Field Hendbook gu CONDITION OF HABITAT COMMENT:	ideines – refer to field manual f : Pristine idei Fire: Season/Month: Not required Not required Please include recomment	Infurther information and shuch Excellent I Very good Year: Present I Replac Present Replac ended management action	ural formation table. od Good Fire Intensity: Hig e / repair ons and/or implement	Degraded Con h Medium Low Required Len Required Qua	npietely degraded
Other (non-dominant) spp Rease record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:		terfurther information and struct Excellent Year: Year: Present Replac Present Replac ended management acti ata available, and how b 81000788-1a Note if on thorisation and icenting require		Degraded Con h Medium Low Required Len Required Qua ed actions -	npietely degraded
Other (non-dominant) spp Please record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:		terturther information and struct Excellent Year: Year: Present Replao Present Replao ended management acti ata available, and how b 81000788-1a Note if on thorisation and loaning requires e recorded above in the OTHEF		Degraded Con h Medium Low Required Len Required Qua ed actions -	npietely degraded
Diter (non-dominant) spp Please record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:	Idelnes – refer to field manual f : Pristine III ist Fire: Season/Month: Not required III Not required IIII Please include recommon de details of additional d ON / LICENCE No: FT(d. For further information on au- uthorisations/icences should b tors No: WA He lerb	terfurther information and struct Excellent Very gos Present Replac Present Replac Present Replac ended management acti ata available, and how b structure and horing requires e recorded above in the OTHER rb. Regional Herb.		Degraded Con h Medium Low Required Len Required Qua ed actions -	npietely degraded
Diter (non-dominant) spp Please record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT: FIRE HISTORY: La FIRE HISTORY: La FIRE COMMENTS: COLDE MARKER 8: COTHER COMMENTS: COLDE date. Also include	Idelnes – refer to field manual f Second Market Ma	terturther information and struct Excellent Year: Year: Present Replao Present Replao ended management acti ata available, and how b 81000788-1a Note if on thorisation and loaning requires e recorded above in the OTHEF		Degraded Con h Medium Low Required Len Required Qua ed actions -	npietely degraded
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Condeminant) spp Please record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT: FIRE HISTORY: La FENCING: ROAD BIDE MARKER 8: COTHER COMMENT S: (Include date. Also inclused CONDENT: Collect Undersation/locroe is require invitation/locroe is required invitation/locroe		terturther information and struct Excellent Year: Present Replac Present Replac Present Replac ended management acti ata available, and how b Replac ended management acti ata available, and how b Replac encoded above in the OTHEF rb. Replace in the OTHEF rb. Replace in the OTHEF GIS data Field	ural formation table. d Good Fire Intensity: Hig frepair frepation frepa	Degraded Con h Medium Low Required Len Required Qua ed actions -	npietely degraded
IN Survey Field Handbook gu CONDITION OF HABITAT COMMENT: FIRE HISTORY: La FENCING: ROAD SIDE MARKER 8: DTHER COMMENT S: (Include date. Also include COMMENT ALSO INCLUDE COMMENT: Collect CODGEMENT: COLLECT COMMENT: COLLECT COMME	Idelnes – refer to field manual f Ist Fire: Season/Month: Not required P Not required P Please include recomma de details of additional d ON / LICENCE NO: FTG d. For further information on au- uthorisations/icences should b tors No: WA He lerb sement No: KSW: Mudmap Photo gional Office Districe	terturther information and struct Excellent Year: Present Replac Present Replac Present Replac ended management acti ata available, and how b Replac ended management acti ata available, and how b Replac encorded above in the OTHEF rb. Replace in the OTHEF rb. Replace in the OTHEF GIS data Field	ural formation table. d Good Fire Intensity: Hig frepair frepa	Degraded Con Required Lew Required Qua ed actions - pecimens or plant matienal is one and Wild fle Licensing pa Other:	npietely degraded
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Copy Sent To: Republic of Record: Ka		terturther information and struct Excellent Very gos Very gos Present Replac Present Replac Present Replac ended management acti ata available, and how b structure in the CTHEF rb. Regional Herb. 10822 ACC9770 specim GIS data Field t Office Option		Degraded Con h Medium Low Required Len Required Qua ed actions - pecimens or plant matteral is on and Wild the Licensing part Other: Date: 3	npletely degraded I I I No signs of fire I I I I I I I I I I I I I I I I I I I

Conservation and Attr	raity, ractions	Threatened	and Priority	1		
CONTRACTOR AND TAXA		Flora Rep	port Form		Version 1.4 Ma	rch 2021
Nease complete as much or e form please refer to the Threatener communities/Incodened-clarits						
TAXON: Acaica glauc	issima			TF	FL Pop. No:	
OBSERVATION DATE:	31/08/2022	CON	SERVATION STATU		New popula	tion 🛛
OBSERVER/S: Kath	erine Walkerden,	Julie Waters		PHON	E 041655877	4
ROLE: Environmental C	Officer	ORG	ANISATION: Shire	of Esperance		
EMAIL: Katherine.Walke	erden@esperanc	e.wa.gov.au				
DESCRIPTION OF LOCATIO	-	arest towninamed locality,	and the distance and directio	n to that place):		
Rollond road SLK 14.23-1 Narrow road reserve, Clay		ans of fire				
Narrow road reserve, Glay	-loam soll. No si	gils of file.		Res	erve No:	
DBCA DISTRICT: Esperan	ce	LGA: Espera	nce	Land manag	er present:	
		TM coords provided, Zone		HOD USED:		
GDA94 / MGA94	-	DegMinSec 🔲 🛛	JTMs 🔲 🤅 G	PS Differer	itial GPS 🔲 🛛 🕺	/ap 🗖
AGD84 / AMG84	at / Northing: 36	4249		satellites:	Map used:	
	ng/Easting: 63	30357		ndary polygon ured:	Map scale:	
Unknown 🗖	ZONE: 51			_		
AND TENURE:						
Nature reserve	Timber reserve		· · · ·	Rail reserve	Shire road	
EFFORT: Time	spent surveying (n	artial survey 🛛 🖡 Fininutes):	Ull survey Area No. of minute	road reserve Image: mail to the served (m²): Image: mail to the served (m²): </th <th>Other Crown</th> <th>n reserve</th>	Other Crown	n reserve
Conservation park	Water reserve	artial survey 🛛 🛛 F	Ull survey Area No. of minute Estimate	observed (m ²):		n reserve
Conservation park	Water reserve	artial survey 🛛 F ninutes): Extrapolation 🗖	UL SLK/Po ull survey Area No. of minute Estimate	observed (m ²): s spent / 100 m ² : Count method:		a reserve
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Conservation park	Vater reserve ge survey P spent surveying (r ': Actual Plants Mature:	u artial survey X F ninutes): Extrapolation	ICL I SLK/Po ull survey Area No. of minute Estimate Refer to (Refer to Clonal stems I	observed (m²): s spent / 100 m²: Count method: field manual for list)	Specify other:):
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Conservation park	Water reserve	U artial survey F ninutes): Extrapolation U U U U U U U U U U U U U U U U U U U	ICL SLK/Po ull survey Area No. of minute Estimate G (Rater to Clonal stems G Seedilings: Seedilings: Data attached Flowerbud Dehisced fruit	observed (m²): es spent / 100 m²: Count method: fied manual for list) Totals: Total area Fio Percentag Senes	Area of pop (m ²) Area of pop (m ²) Note: Pis record cou (not percentages) for of quadrats (m ²): wer e in flower: cent): detabase
Conservation park	Water reserve	Clumps Clumps Clumps Clumps Size Size Size Moderate Moder	ICL SLK/Po ull survey Area No. of minute Estimate (Refer to Clonal stems (Seedilings: Data attached Data attached Dehisced fruit (Poor (observed (m²): observed (m²): s spent / 100 m²: Count method: field manual for list) Totals: Total area Fio Percentag Senes Curr	Area of pop (m ² Area of pop (m ² Note: Pis record cou (not percentages) for of quadrats (m ²): wer e e in flower:? cent e?):
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Conservation park	Water reserve		ICL SLK/Po ull survey Area No. of minute Estimate Construction (Rater to Clonal stems Construction Seedilings: Seedilings: Data attached Data attached Dehisced fruit Poor Construction Poor Construction	ile 14.23 to 15.5 observed (m²): es spent / 100 m²: Count method: field manual for list) Totals: Total area Field Percentag Senes	Area of pop (m ² Note: Pis record cou (not percentages) for of quadrats (m ²): wer e in flower: ?? cent en flower: ?? cent en flower: ??):
Conservation park	Water reserve		ICL SLK/Po ull survey Area No. of minute Estimate Construction (Rater to Clonal stems Construction Seedilings: Seedilings: Data attached Data attached Dehisced fruit Poor Construction Poor Construction	ile 14.23 to 15.5 observed (m²): es spent / 100 m²: Count method: field manual for list) Totals: Total area Field Percentag Senes	Area of pop (m ²) Area of pop (m ²) Note: Pis record oou (not percentages) for of quadrats (m ²): wer ent en flower: 9 cent en flower: 9):
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Conservation park	Water reserve		ICL SLK/Po ull survey Area No. of minute Estimate Construction (Rater to Clonal stems Construction Seedilings: Seedilings: Data attached Data attached Dehisced fruit Poor Construction Poor Construction	ile 14.23 to 15.5 observed (m²): is spent / 100 m²: Count method: field manual for list) Totals: Totals: Fio Percentag Senes fevant. Curr impa (N-l	Specify other:): ti as numb database Poteni Thre- Onse (3-L
Conservation park	Water reserve		ICL SLK/Po ull survey Area No. of minute Estimate Control (Rater to Clonal stems Control Seedilings: Data attached Data attached Dehisced fruit Poor Control Poor Control	ile 14.23 to 15.5 observed (m²): is spent / 100 m²: Count method: field manual for list) Totals: Totals: Fio Percentag Senes fievant. Curr impi (N-i E	Specify other:):

Appendix 2.8 Acacia glaucissima - P3 - Western population

ADVORADED OF MALE			F	lora Re	eport i	orm		Versi	ion 1.4 March 2021
ABITAT INFO	RMATIO	N:							
LANDFOR	М:	ROCK TY	PE: L	DOSE ROCK	C: 8	OIL TYPE:	SOIL C	OLOUR:	DRAINAGE:
	est 🔲	Granit	ara	vel, quartz fiel	ds)	Sand 🛛		Red	Well drained
	Hill 🗖	Dolerit			, S	andy loam		Brown	Seasonally inundated
	ige 🔲 rop 🔲	Laterit Ironston	_	0-10%		Loam Clay loam		Yellow 🔲 White 🔲	Permanently
	ope 🗖	Limeston	_	10-30%		Light clay		Grey	inundated
	Flat	Quart	_	30-50%		Peat		Black	Tidal 🗖
Open depress	_	Specify of	_	50-100%	• s	pecify other:	Specif	ly other:	
Drainage I	ine 🗖								
losed depress	ion 🗖				_				
Wetla	and 🔲		andform Eler anual for addition						
ONDITION OF 8	OIL:	Dry		Noist 🗖	Wate	erlogged 🗖	inundat	ed 🗖	
EGETATION		Degraded mixe	d Mallee woo	dland with M	felaleucas :	and Fabaceae	shrubs with N	lixed Poace	ae and
LASSIFICATIO		Brassicaceae v	veeds.						
g 1. Bariksia woodi teruata, B. Ilicitolia)		2.							
Open shrubland Ibbertia sp., Acada		3.							
Isolated clumps of Atetragona)		4.							
SOCIATED	-								
PECIES:	-								
ther (non-dominant)									
ease record up to fr d Survey Field Har ONDITION OF H OMMENT: IRE HISTORY: ENCING:	ABITAT:	ost representative eines – refer to fiel Pristine t Fire: Season Not required Not required	d manual for furth Excell Month: Pres	er information ar ent III V Year: ent III F	nd structural fo	mation table. Good D ire intensity: r	Degrade	d 🖬 Com m 🔲 Low 🖬 Leng	_
ease record up to fr of Survey Field Han ONDITION OF H COMMENT: IRE HISTORY: ENCING: COAD SIDE MARP THER COMME	our of the m nabook guid (ABITAT: : Las KER 8: ENT \$: (P	t Fire: Season Not required	d manual for furth Excell Month: Pres Pres ecommended	er information ar ent Q V Year: ent Q F ent D F	ery good F Replace / rep Replace / rep nt actions a	Ine Intensity: I Good I Ine Intensity: I pair I position I Ind/or impleme	Degrade High 🔲 Mediu Required 🕻 Required 🕻	d 🖬 Com m 🔲 Low 🖬 🔲 Leng 🔲 Quar	pletely degraded No signs of fire the regid:
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Appendix 2.9 Conostephium marchantiorum – P3

Lenst Decontract of Biodynamics. Threastoned and Priority			
Conservation and Attractions Inneatened and Fhority			
Flora Report Form	Ve	ersion 1.4 Ma	irch 2021
Please complete as much of the form as possible, with emphasis on those sections bordered i the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at your documents of an			
communities/invalence/coints			
TAXON: Conostephium marchantiorum	TPFL	Pop. No:	
OBSERVATION DATE: 2/12/2022 CONSERVATION STATUS: P3	N	lew popula	tion 🔲
OBSERVER/S: Katherine Walkerden	PHONE	041655877	4
ROLE: Environmental Officer ORGANISATION: Shire of Espera	ance		
EMAIL: Katherine.Walkerden@esperance.wa.gov.au			
DE SCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place	().		
Private land on edge of road reserve.Sandy soil.			
Rollond Road 6.9km west of Esperance-Coolgardie Highway. Rollond Road at SLK 6.96.		_	_
	Reserve		
DBCA DISTRICT: LGA: La DATUM: COORDINATE \$: 0f UTM coords provided, Zone is also required; METHOD U\$E	nd manager pro	esent: 🗖	
DecDegrees DegMinSec UTMs Ges GPS	Differential (SPS 🗖 🕴	Map 🔲
GDA94 / MGA94 🛛 Lat / Northing: 372757 1 No. establidge:		Map used:	
AGD84 / AMG84	000	·	
Unknown	ם י	Map scale:	
ZONE: 51			
LAND TENURE:	-		
Nature reserve Timber reserve Private property Rail reserve National park State forest Pastoral lease MRWA road reserve	_		d reserve 📓
Conservation park Water reserve UUCL SLK/Pole to		cify other:	
AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed EFFORT: Time spent surveying (minutes): No. of minutes spent / '	· · · . ==		
POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count me			
(Refer to field manual			
WHAT COUNTED: Plants 🖬 Clumps 🔲 Clonal stems 🔲			
TOTAL POP'N STRUCTURE: Mature: Juveniles: Seedlings: Totals:			
Alive 32	Are	sa of pop (m²):
Dead		e: Pls record cou percentages) fo	
QUADRATS PRESENT: No. Size Data attached	otal area of qu		
Summary Quad. Totals: Alive		. ,	
REPRODUCTIVE STATE: Clonal Vegetative Flowerbud	Flower		
Immature fruit 🔲 🛛 Fruit 🛄 Dehisced fruit 🛄	Percentage in f	ower:9	6
CONDITION OF PLANTS: Healthy Moderate	Senescent		
COMMENT: Populatin extends into provate property. Estimate is likely a significant undercount			
THREATS - type, agent and supporting information:	Current	Potential	Potential
Eg clearing, too frequent fire, weed, disease. Refer to field manual for 1st of threats & agents. Specify agent where relevant.	Impaot	Impaot	Threat Onset
Rate current and potential threat impact: N=NII, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	(N-E)	(L-E)	(8-L)
Estimate unite to potentiar impact. G-onor. (< territory, m-medium (-opioy, ttung (opior)			
•			
		1	
Discos roture completed form to Constant And Communities I	leases -	NPCA	
Please return completed form to Species And Communities F	-		
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flo RECORD 5: Please forward to Flora Administrative Officer, Species and Com			7.8U
Record entered by: Sheet No.:			n Databace 🗆

Department of I Conservation	Biodiversity, and Attractions	Threatened a	and Priority		
CONTRACTOR AND A		Flora Rep	ort Form	Ver	sion 1.4 March 2021
HABITAT INFORMATI	ON:				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite 🔲	(on soil surface; eg gravel, quartz fields)	Sand 🔲	Red 🔲	Well drained 🔲
Hill 🗖	_		Sandy loam 🔲	Brown 🔲	Seasonally
Ridge 🔲		0-10%	Loam 🗖	Yellow 🗖	inundated Permanently
Outcrop 🔲	Ironstone	10-30%	Clay loam 🔲	White 🗖	inundated
Slope 🔲	Limestone 🔲	30-50%	Light clay	Grey 🗖	Tidal 🗖
Flat 🗖		50-100%	Peat 🗖	Black	
Open depression 🔲	Specify other:	00-100 <i>/</i> e	Specify other:	Specify other:	
Drainage line 🔲		_			
Closed depression	Specific Landf	orm Element:	_		
Wetland	(Refer to field manual t				
CONDITION OF BOIL:	Dry 🗖	Moist	Waterlogged 🗖	inundated 🗖	
VEGETATION CLASSIFICATION*: Eg. 1. Banksia woodand (8. attenuata, B. Ildiolia); 2. Open shubland (Hoberta sp., Acadia spp.); 3. Isolated clumps of sedges (Misteragona)		arpa and Banksia media includes: Dampiera lavar			-
(wowanagena)	4.				
ASSOCIATED SPECIES:	Conostephium uncir	natum			
Other (non-dominant) spp					
		tion layers (with up to three dom ual for further information and st		tructural Formations should fo	llow 2009 Australian Soli a
CONDITION OF HABITAT	_	_		Description Description	
COMMENT:	T: Pristine 🗖	Excellent M Very	good 🗖 🛛 Good 🗖	Degraded 🔲 Co	mpletely degraded 🔲
	ast Fire: Season/Mon	th: Year:	Fire intensity: H	ich 🗖 Medium 🗖 🛛 Low	No signs of fire
FENCING:	Not required		lace / repair	-	ogth regid:
ROAD SIDE MARKER S:	Not required		lace / reposition		antity reg'd:
		mended management a al data available, and ho		ted actions -	
FLORA AUTHORISAT authorisation/licence is require Any actions carried out under a	d. For further information or	FT61000788 Note if only a authorisation and licening required to the OTR	y observing plants (i.e. no spec irements see the Threatened R HER COMMENTS section.		
SPECIMEN: Collect	ctors No:	VA Herb. 🔲 🛛 Regional	Herb. 🔲 District He	rb. 🔲 Other:	
LODGEMENT: WA P	Herb Lodgement	KSW10522 ACC 9770 retaibed	specimen		
ATTACHED: Map	Mudmap 🔲 🖡	Photo 🔲 📓 GIS data	Field notes	Other:	
COPY SENT TO: Re	egional Office 🔲	District Office	Other:		

Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au RECORD S: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:______ & theet No.:_____ Record Entered In Database D

Appendix 2.10 Goodenia laevis ssp. laevis – P3 – Eastern population

R	Department of Biodiversity, Conservation and Attractions
deputy sectors of	

Threatened and Priority

Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <u>www.dcac.wa.ocy.au/blants-and-animals/threatened-sections and-</u>

TAXON: Good	denia laev	is subsp. lae	evis			TPFL F	op. No:	
OBSERVATION D	DATE:	22/08/2022	2 CO	NSERVATION ST	FATUS: P3	N	ew popula	tion 🛛
OBSERVER/S:	Kather	ine Walkerd	en, Julie Waters			PHONE	041655877	4
ROLE: Environe	mental Of	ficer	OR	GANISATION: S	Shire of Espera	nce –		
EMAIL: Katherin	ne.Walker	den@espera	ance.wa.gov.au	_				
L			at nearest town/named localit	by and the distance and d	Institute to that place?			
		-	e-Coolgardie Highway				at SLK 0.63	1.4
			ns of fire. Plants grow				at Set 0.05	2.4
						Reserve	No:	
DBCA DISTRICT:	Esperance		LGA: Espe	rance	Lan	d manager pro	sent:	_
DATUM:	coo	RDINATES:	If UTM coords provided, Zor	re is also required)	METHOD U SEC	D:		
	Dec	Degrees 🔲	DegMinSec 🔲	UTMs 🔲	GPS 📓	Differential G	PS 🔲 🕴	/ap 🔲
GDA94 / MGA94 AGD84 / AMG84	Lat	/ Northing:	378373.3		No. satellites:	N	lap used:	
WGS84	_	, / Easting:	6330551.8		Boundary polyg captured:		ap scale:	
Unknown		ZONE:	51		captarea.	-		
LAND TENURE:			V 1					
Nature reserve		Timber reserve	Private pro	operty	Rail reserve		Shire roat	d reserve 📓
National park	_	State forest			RWA road reserve	=		n reserve
Conservation park		Water reserve		UGL 🗖	SLK/Pole 0.63 to		ify other:	
		_	_			_	_	
AREA A \$ SE \$ SMEI	~		Partial survey 🗖	/	Area observed (
EFFORT:		pent surveyin	· · ·		ninutes spent / 10			
POP'N COUNT AC	CURACY:	Actual 🗖	Extrapolation		Count meth efer to field manual fo			
WHAT COUNTED:		Plants 🕅	Clumps	Clonal stems		1104/		
TOTAL POP'N STRUC	TURE-	Mature:	Juveniles:	Seedlings:	Totala:	1		
TOTAL FOF N STRUC	Alive		507611166.	seedings.	Totals.			
	Alive	33					a of pop (m ²	
	Dead						: Pis record cou percentages) for	
QUADRATS PRESI	ENT:	No.	Size	Data attac	hed 🔲 To	tal area of qu	adrats (m ²):	
Summary Quad. Tota	ils: Alive							
REPRODUCTIVE STA	ATE:	Cional 🗖	Vegetative 🗖	Flowerbu	d 🗖	Flower		
	Immatu	re fruit 🗖	Fruit 🗖	Dehisced fru	it 🖸 P	ercentage in fi	ower: <u>70</u> %	
CONDITION OF PLAT	NT8: H	lealthy 📓	Moderate 🗖	Poo	× 🗖	Senescent		
COMMENT:								
		unnadine in	formation:			Current	Potential	Potential
THREATS - type, a	-			annais Smarth arrest	from palm mat	Impaot	Impaot	Threat
· · ·			d manual for list of threats & ow, M=Medium, H=High, E≕		na e reientrit.	(N-E)	(L-E)	Onset
			s), M=Medium (<syrs), l="Lor</td"><td></td><td></td><td></td><td></td><td>(8-L)</td></syrs),>					(8-L)
Development of the state	-	-				1		

 Estimate time to potential impact: S=Short (<12mths), M=Medium (<Byrs), L=Long (Byrs+)</th>
 N
 L
 S

 • Road widening
 N
 L
 S

 • Image: Second second

Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORD S: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:______ Sheet No.:_____ Record Entered in Database D

Site C – Rollond Road, SLK 0-15.9 - Vegetation, Flora, Fauna and Environmental Considerations Report

Version 1.4 March 2021

1.9.1	nd Attractions	Threatened a	2		
CONTRACTOR AND TAXA		Flora Repo	rt Form	Versi	ion 1.4 March 2021
HABITAT INFORMATIO					
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg gravel, quartz fields)	Sand 🔲	Red 🗖	Well drained
Hill 🖸	Dolerite		Sandy loam	Brown	Seasonally inundated
Ridge	Laterite	0-10% 🔲	Loam	Yellow	Permanently
Outcrop	_	10-30% 🔲	Clay loam	White	inundated 🚺
Slope 🗖 Flat 🗖	Limestone 🔲 Quartz 🔲	30-50% 🔲	Light clay	Grey 🗖	Tidal
_		50-100% 🔲	Peat 🔲	Black	
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
	Specific Landfor	m Element:			
Wetland	(Refer to field manual for				
CONDITION OF SOIL:	Dry 🗖	Moist 🗖	Waterlogged	inundated 🗖	
Eg: 1. Banisia woodland (B. atienuata, B. Ilicitolia); 2. Open shrubland Hibbertia sp., Acacia spp.); 3. Isolated clumps of sedges	Eremophilla dicroanth 2.	ecies include: Enchylaen ha	a tomentosa, Pultena	ea arida, Coopernookia	i strophiolata,
Mitetragona)	3.				
	4.				
	4.				
ASSOCIATED SPECIES:					
SPECIES: Other (non-dominant) spp Rease record up to four of the		n layers (with up to three domine		ructural Formations should foli	ow 2009 Australian So
SPECIES: Other (non-dominant) spp Rease record up to four of the	idelines – refer to field manual	n layers (with up to three domine for further information and struc Excellent U Very go	tural formation table.	_	
SPECIE S: Dther (non-dominant) spp Please record up to four of the and Survey Field Handbook gui	idelines – refer to field manual	for further information and struc	tural formation table.	_	
SPECIE 8: Other (non-dominant) spp Rease record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:	idelines – refer to field manual	Excellent Very go	tural formation table.	Degraded 🔲 Com	npietely degraded
SPECIE S: Diter (non-dominant) spp Rease record up to four of the ind Survey Field Handbook gu CONDITION OF HABITAT COMMENT: FIRE HISTORY: La FENCING:	ideines – refer to field manual : Pristine 🗖 Ist Fire: Season/Month Not required 📓	Iterfuther information and struc Excellent Very go : Year: Present Replac	tural formation table. od Good Good Fire Intensity: His of repair	Degraded 🔲 Com gh 🛄 Medium 💷 Low 🖬 Required 🛄 Leng	No signs of fire
SPECIE 8: Diter (non-dominant) spp Rease record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT: FIRE HISTORY: La	ideines – refer to field manual : Pristine	Iterfuther information and struc Excellent Very go : Year: Present Replac	itural formation table. od Good Fire Intensity: He	Degraded 🔲 Com gh 🛄 Medium 💷 Low 🖬 Required 🛄 Leng	No signs of fire
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SPECIE S: Ther (non-dominant) spp Please record up to four of the ind Survey Field Handbook gu CONDITION OF HABITAT COMMENT: FIRE HISTORY: La FENCING: ROAD SIDE MARKER 8: OTHER COMMENTS: (Include date. Also include CONDENT: VA H Longe CODGEMENT: WA H Lodge ATTACHED: Map	Idelnes – refer to field manual Second Second Second Month Not required Second Month Not required Second Please include recomm de details of additional of ON / LICENCE No: FT d. For further information on a uthorisations/icences should in thors No: WA He lerb	Iter further information and struc Excellent Very go Present Replac Present Replac Present Replac tended management act data available, and how in C61000788 Note if only of uthorisation and losning require be recorded above in the OTHE erb. Regional Herb 11022 ACC9770	tural formation table. od Good Fire Intensity: History of report Constraints of the set of report to the set of the set	Degraded Com gh Medium Low Required Leng Required Quar ted actions -	npletely degraded No signs of fire gth req'd: nftty req'd:

Please return completed form to Species And Communities Program DBCA,

6-3							
Department of Biodivers Conservation and Attra	actions	hreatened	and Priorit	у			
COOLEMAN OF THE CO		Flora Re	port Form		Ve	rsion 1.4 Ma	rch 2021
please complete as much of		sible, with emphasi	Is on those sections				
the form please refer to the Threatened communities/threatened-clants	& Priority Flora Report P	Form (TPRF) manual on t	he DBCA website at <u>www.dt</u>	awwaloov aurolane	25132511028	Water Inconside	005-000-
TAXON: Goodenia lae	vis subsp. laevis				TPFL P	op. No:	
OBSERVATION DATE:	24/08/2022	CONS	ERVATION STATU	S: P3	Ne	ew populat	tion 🛛
	erine Walkerden,				_	416558774	4
ROLE: Environental Offic			ANISATION: Shire	e of esperance	2		
EMAIL: Katherine.Walke		-					
DESCRIPTION OF LOCATIO	-		and the distance and direct	on to that place):			
Rollond Road, population ext Road reserve. Clay loam soil.			ad shoulder				
	0				Reserve	No:	
DBCA DISTRICT: Esperance	e	LGA: Espera	ince	Land m	lanager pre	sent: 📓	
		M coords provided, Zone DegMinSec 🔲	<u> </u>	THODUSED: GPS 🖬 Dif	Internetical C		
GDA94 / MGA94 関		9819.43	_	_	ferential G	_	(ap 🗖
AGD84 / AMG84	<u> </u>			. satellites:		ap used:	
WGS84 D Lon Unknown D	g/Easting: 63:	30440.95		itured:	I M	ap scale:	
_	ZONE: 51						
LAND TENURE: Nature reserve	Timber reserve	Private prop	activ 🗖	Rail reserve 🗖		Chira cond	reserve
		Envale prop	enty 🖬	PLAIT RESILT VC MM		OTHER LOAD	
National park	State forest	Pastoral le	ase 🔲 MRWA	road reserve		Other Crown	reserve
National park	State forest		JCL 🔲 SLK/F	ole <u>10.21</u> to <u>9.59</u>	Speci	Other Crown fy other:	reserve
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Appendix 2.11 Goodenia laevis ssp. laevis – P3 – Central population

Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

Conservation a	nd Attractions	Threatened a			
CONTRACTOR ANTI-A		Flora Repo	ort Form	Versi	ion 1.4 March 202
HABITAT INFORMATIO	DN:				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest 🔲	Granite 🔲	(on soil surface; eg gravel, quartz fields)	Sand 🔲	Red 🗖	Well drained
Hill 🗖	Dolerite	graver, quartz neitas)	Sandy loam 🔲	Brown 🗖	Seasonally
Ridge 🔲	Laterite	0.40% D	Loam 🔲	Yellow 🗖	inundated
Outcrop 🔲	Ironstone	0-10%	Clay loam 🔲	White 🗖	Permanently inundated
Slope 🔲	Limestone	10-30%	Light clay 🔲	Grey 🗖	inundated Tidal
Flat 🛛	Quartz 🔲	30-50%	Peat 🔲	Black	(Ida)
Open depression	Specify other:	50-100% 🔲	Specify other:	Specify other:	
Drainage line					
Closed depression					
Wetland	Specific Landfor				
_	(Refer to field manual for	<u> </u>			
CONDITION OF SOIL:	Dry 🗖	Moist 🗖	Waterlogged	inundated 🗖	
EGETATION	1.				
CLASSIFICATION*: Str. 1. Banksia woodland (B.		and with Melaleucas and		ociated species include	Halgania sp. Pea
itienuata, B. Ilicitolia);		e ciliaris, Goodenia scapi	igera		
2. Open shrubland Hibbertia sp., Acadia spp.) :	2.				
 Isolated clumps of sedges 	3.				
Mitetragona)					
	4.				
SPECIES: Ther (non-dominant) spp	mod resourced to use of the	e buen hills in te three deader	nai ann dia in anch in anti-Ch	natural Economicana alum dei della	ou 2000 Australias Sa
SPECIES: Ther (non-dominant) spp fease record up to four of the nd Survey Field Handbook gu	idelines – refer to field manua	n layers (with up to three domin (for further information and stru Excellent M Very go	ctural formation table.	_	
SPECIE 5: Ther (non-dominant) spp Tease record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:	idelines – refer to field manua	i for further information and stru Excellent Very go	ctural formation table.	Degraded 🗖 Com	pletely degraded
SPECIE 5: Ther (non-dominant) spp Tease record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT:	idelines – refer to field manua	i for further information and stru Excellent Very go	ctural formation table.	Degraded 🗖 Com	pletely degraded
SPECIE 5: Ther (non-dominant) spp Tease record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT: FIRE HISTORY: La	idelines – refer to field manua	Forfurther Information and strue Excellent Very go	ctural formation table.	Degraded 🔲 Com	pletely degraded
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SPECIE 8: Zher (non-dominant) spp Hease record up to four of the nd Survey Field Handbook gu CONDITION OF HABITAT COMMENT: FIRE HISTORY: La ENCING: ROAD SIDE MARKER 8: OTHER COMMENTS: (ideines – refer to field manua : Pristine ist Fire: Season/Month Not required Not required Please include recomm	I forfuther information and stru Excellent Year: Year: Fresent Repla Present Repla nended management aci	ctural formation table.	Degraded Com gh Medium Low Required Leng Required Quar	No signs of fire
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SPECIE S: Zher (non-dominant) spp Tease record up to four of the nd Survey Field Handbook gui CONDITION OF HABITAT COMMENT:	ideines – refer to field manua Pristine ist Fire: Season/Month Not required Not required Please include recomm de details of additional ON / LICENCE No: n on authorisation and loavin hould be recorded above in th tors No: Werb Lodgement	I forfurther information and stru Excellent Very go Present Repla- Present Repla- Present Repla- nended management ac- data available, and how Note If only observing grequiments see the Threate e OTHER COMMENTS section	ctural tomation table.	Degraded Com gh Medium Low Required Leng Required Quar ted actions -	npietely degraded
SPECIE S: Zher (non-dominant) spp Passe record up to four of the in Survey Field Handbook gu CONDITION OF HABITAT COMMENT: IRE HISTORY: La ENCING: ROAD 8IDE MARKER 8: DTHER COMMENTS: (Include date. Also include CONDENT: LORA AUTHORISATI splind. For further information splind. For further information specimens: Collect CODGEMENT: WA H	idelnes – refer to field manual Pristine Int Fire: Season/Month Not required Not required Please include recomm de details of additional Please include recomm de details of additional ON / LICENCE No: In on authorisation and licenin hould be recorded above in th tors No: Verb Lodgement	I forfuther information and stru Excellent Very go Present Repla- Present Repla- Present Repla- Repla- nended management act data available, and how Note If only observing grequirements see the Threate e OTHER COMMENTS section A Herb. Regional h	ctural tomation table.	Degraded Com gh Medium Low Required Leng Required Quar ted actions -	npietely degraded

Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

Appendix 2.12 Goodenia laevis ssp. laevis – P3 – Western population

Department of Biodiversity Conservation and Attracti	ions Tr	nreatened a	nd Priority	/			
CONTRACTOR AND CONTRACTOR		Flora Repo	ort Form		Ve	rsion 1.4 Ma	rch 2021
please complete as much of th	ne form as possib	le, with emphasis o	on those sections	bordered in b	lack. For inf	ormation on how	v to complete
the form please refer to the Threatened & I communities/threatened-clarits	Priority Flora Report For	m (TPRF) manual on the L	JBCA website at <u>www.db</u>	awwa.cov.au/olan	Perioden mer	Anares teineo asoo	<u>cics-ent-</u>
TAXON: Goodenia laevi	s subsp. laevis				TPFL P	op. No:	
OBSERVATION DATE:	30/08/2022	CONSE	RVATION STAT	US: P3	N	ew populat	tion 🛛
	ne Walkerden, J				_	041655877	4
ROLE: Environemntal Offi			IISATION: Shire	of Esperanc	e		
EMAIL: Katherine.Walkerd	len@esperance.	wa.gov.au					
DESCRIPTION OF LOCATION	1	1.		- F			
Rollond Road at SLK 12.95-13.2	27, 2.5km West of	Townsend road. Spe	cimen collected fro	m Southern si	de of road	reserve.	
					Reserve	No:	
DBCA DISTRICT: Esperance		LGA: Esperanc	e	Land n	nanager pre		
	DINATES: (ITUTM	coords provided, Zone is a		THOD U SED:		_	
GDA94 / MGA94 関	Degrees 🔲 🛛 De	sgMinSec 🔲 🛛 UT	Ms 📓 🛛 G	PS 📓 Di	fferential G	PS 🗖 🛛 🛛	Aap 🔲
AGD84 / AMG84	Northing: 3664	196	No.	satellites:	N	ap used:	
WGS84 🔲 Long	/Easting: 6330	397		ndary polygon tured:	. N	lap scale:	
Unknown	ZONE: 51		cap	ureu:			
LAND TENURE:	20112. 01						
Nature reserve	imber reserve	Private property		Rail reserve		Shire road	i reserve 📓
National park	State forest	Pastoral lease		road reserve 🗖			reserve
Conservation park	Water reserve	UCL	. 🗖 SLK/Po	le <u>12.95</u> to <u>13.27</u>	Z Spec	ify other:	
AREA ASSESSMENT: Edge	survey 🔲 🛛 Part	ial survey 🔲 🛛 Full	survey 🔲 🛛 Area	observed (m ²):		
	ent surveying (min			es spent / 100			
POP'N COUNT ACCURACY:	Actual 🔲	Extrapolation 🔲	Estimate Befer tr	Count methor field manual for is			
WHAT COUNTED:	Plants 🔲	Clumps	Clonal stems		-,		
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:			
Alive	23				Ares	a of pop (m ²)):
Dead						Pis record cour percentages) for	
QUADRATS PRESENT:	No.	Size	Data attached	Total		adrats (m ²):	
Summary Quad. Totals: Alive							
REPRODUCTIVE STATE: C	lonal 🗖	Vegetative 🗖	Flowerbud		Flower	8	
Immature	e fruit 🗖	Fruit 🗖	Dehisced fruit 🗖	Perc	entage in fic	ower: <u>70</u> %	
CONDITION OF PLANTS: He	ealthy 🗖	Moderate 🗖	Poor 🗖	8	Senescent		
COMMENT:							
THREAT\$ - type, agent and se	upporting informa	ation:			Current	Potential	Potential Threat
Eg clearing, too frequent fire, weed, clises				elevant.	Impaot (N-E)	impaot (L-E)	Onset
Rate current and potential threat im Estimate time to potential impact: S					,	,,	(8-L)
		1 7 7 917					

Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORD S: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:______ Sheet No.:_____ Record Entered In Database D

Department of B Conservation at	odiversity, nd Attractions	Threatened a Flora Repo	3	Versi	on 1.4 March 2021
HABITAT INFORMATIO	NA-				on the march Loc I
LANDFORM:	ROCK TYPE:	LOOPE BOOK	SOIL TYPE:	ROIL COLOUR:	DRAINAGE:
	Granite	LOOSE ROCK: (on soil surface; eg	Soil TTPE: Sand	SOIL COLOUR: Red	Well drained
Crest	Dolerite	gravel, quartz fields)	Sandy loam	Brown	Seasonally
Ridge	Laterite		Loam	Yellow	inundated
Outcrop	Ironstone	0-10% 🔲	Clay loam	White	Permanently
Slope	Limestone	10-30% 🔲		=	inundated
Flat	Quartz	30-50% 🔲	Light clay 🔲 Peat 🔲	Grey 🗖 Black 🗖	Tidal 🔲
Open depression	Specify other:	50-100% 🔲	Specify other:	Specify other:	
Drainage line	specity other.		apecity other.	apecity other.	
Closed depression					
Wetland	Specific Landfor				
_	(Refer to field manual for	<u> </u>			
CONDITION OF SOIL:	Dry 🗖	Moist 🗖	Waterlogged	inundated 🗖	
VEGETATION	1. Mixed Mallee woo	dland with Melaleucas a	nd Fabaceae shrubs.		
CLASSIFICATION*: - Eg: 1. Banksia woodland (B.	2.				
attenuata, B. Ilicitolia); 2. Open shrubland					
(Hibbertia sp., Acadia spp.); 3. Isolated clumps of sedges	3.				
(Mietragona)	4.				
A\$SOCIATED					
SPECIES:					
Other (non-dominant) spp Please record up to four of the	most representative vegetation	n lavers (with up to three domina	ant species in each laver's Str	uctural Formations should folio	w 2009 Australian Soli and
Land Survey Field Handbook gui					
CONDITION OF HABITAT	Pristine	Excellent 🔲 Very go	od 📓 🛛 Good 🗖	Degraded 🗖 🛛 Com	pletely degraded 🔲
COMMENT:					
FIRE HISTORY: La	st Fire: Season/Month	: Year:	Fire intensity: Hig	ph 🗖 Medium 🗖 🛛 Low 🗖	No signs of fire 🗖
FENCING:	Not required 📓	Present 🗖 🛛 Replac	e / repair 🗖	Required 🔲 🛛 Leng	th req'd:
ROAD SIDE MARKER S:	Not required 📓	Present 🔲 🛛 Replac	e / reposition 🛄	Required 🔲 Quar	tity req'd:
		ended management act		ed actions -	
include date. Also include	le details of additional	data available, and how t	to locate it.)		
FLORA AUTHORISATIO				plant matieral is taken) then re	
		g requirements see the Threater e OTHER COMMENTS section.	ned Flora and Wild ife Licensi	ng pages on DBCA's website.	Any actions carried out
SPECIMEN: Collect	tors No: WA H	erb. 📓 🛛 Regional Herb	District Herb.	Other:	
LODGEMENT: WA H Lodge	erb KSW ment No:	11822 ACC9770			
АТТАСНЕД: Мар	Mudmap Photo	GIS data 📓 Field	d notes 🔲 🛛 🤇	Other:	
COPY SENT TO:	pional Office Distri	ct Office 🛛 🛛 O	ther:		
Submitter of Record: Kat	therine Walkerden	Role: Environemntal offi	icer Signed:	Date: 30	/01/2023
Locked Bag 1	04, BENTLEY DEI	ed form to Species	A 6983 OR email f	to: flora.data@dbca	a.wa.gov.au
REC	ORDS: Please forwar Record ent	d to Flora Administrativ ered by:	e Officer, Species and Sheet No.:). Entered in Database 🗆

Please complete as much of the form as possible, with emphasis on those sections bordered		ersion 1.4 Ma formation on hos	
re form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <u>www.doaw.wa.orv.au</u> communities/threatened-clarits	clants-and-enimal	slinestened-sp	cles-and-
TAXON: Pityrodia chrysocalyx	TPEL E	Pop. No:	
OBSERVATION DATE: 02/12/2023 CONSERVATION STATUS: P3		ew popula	tion 5
OBSERVER/S: Katherine Walkerden		041655877	_
ROLE: Environemntal Officer ORGANISATION: Shire of Espera	_	011000077	
EMAIL: Katherine.Walkerden@esperance.wa.gov.au			
DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place	0°		
Rollond road SLK 6.36, 1.17km West of Rollond road and Swan Lagoon road intersection.		West of Gra	ss Pat
townsite.			
Degraded road reserve. Loss of vegetation structure, historical clearing for fence construction.		_	_
	Reserve		
DBCA DISTRICT: Esperance LGA: Esperance La DATUM: COORDINATES: (r/UTM coords provided, Zone is also required) METHOD USE	nd manager pro	isent: 🔤	
DecDegrees DegMinSec UTMs GPS GPS GPS	Differential G	SPS 🗖 🕴	/ap 🔲
GDA94 / MGA94 A Lat / Northing: 373380.2 No estalities:		Map used:	
AGD84 / AMG84	000	·	_
WGS84 Long / Easting: 6330502.0 captured:		Map scale:	-
ZONE: 51			
LAND TENURE:	-		
Nature reserve Timber reserve Private property Rail reserve National park MRWA road reserve National isase MRWA road reserve		Shire road Other Crown	
Conservation park Water reserve UUCL SLK/Pole to		ify other:	
		_	
AREA ASSESSMENT: Edge survey D Partial survey D Full survey Area observed			
EFFORT: Time spent surveying (minutes): No. of minutes spent / 1 POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count me			
(Refer to field manual)			
WHAT COUNTED: Plants 🔲 Clumps 🔲 Clonal stems 🔲			
TOTAL POP'N STRUCTURE: Mature: Juveniles: Seedlings: Totals:			
Alive 9	Are	a of pop (m ²):
Dead		: Pls record cou	
	tal area of gu	percentages) for variante (m2):	
Summary Quad. Totals: Alive	stal area or qu	aoraes (m-):	_
REPRODUCTIVE STATE: Clonal Vegetative Flowerbud	Flower	8	
	Percentage in fi		
CONDITION OF PLANT 8: Healthy D Moderate Poor	Senescent		
COMMENT:		_	
	Current	Potential	Poten
THREAT \$ - type, agent and supporting information: Eg dearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant.	Impaot	Impaot	Thre
Rate current and potential threat impact N=NII, L=Low, M=Medium, H=High, E=Extreme	(N-E)	(L-E)	Onse
Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			(8-L
Road widening	N	м	S-N
	<u> </u>	<u> </u>	
Competition with weeds	м	м	
 Small population size 	- L	м	

Appendix 2.13 *Pityrodia chrysocalyx* – P3 – Eastern population

Department of Conservation	Biodiversity, and Attractions	Threatened a	nd Priority		
CONTRACTOR AND TAKEN		Flora Repo	rt Form	Vers	ion 1.4 March 2021
HABITAT INFORMATI	ION:				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest 🗖	Granite 🔲	(on soil surface; eg	Sand 🔲	Red 🗖	Well drained 🔲
на 🗖	Dolerite	gravel, quartz fields)	Sandy loam 🔲	Brown 🗖	Seasonally
Ridge 🗖	Laterite		Loam 🔲	Yellow 🗖	inundated
Outcrop 🗖	Ironstone	0-10% 🔲	Clay loam 🔲	White 🗖	Permanently inundated
Slope 🗖	Limestone	10-30% 🔲	Light clay	Grey 🗖	inundated 🔲 Tidal 🔲
Flat 🗖	Quartz 🔲	30-50% 🔲	Peat 🔲	Black	ngar 🖬
Open depression	Specify other:	50-100% 🔲	Specify other:	Specify other:	
Drainage line					
Closed depression					
Wetland	Specific Landfor				
CONDITION OF SOIL:	(Refer to field manual for Dry	additional values) Moist	Waterlogged	inundated 🔲	
	Diy 🖬		wateriogged 🔤	individued 🖬	
VEGETATION CLASSIFICATION*:	*	with Scattered Anigozar			
Eg: 1. Banksia woodland (B.		aster and significant inva	sion by Eragrostis cur	vula and Avena barbata	ð.
attenuata, B. Ilicitolia); 2. Open shrubland	2.				
(Hibbertia sp., Acadia spp.);	3.				
 Isolated clumps of sedges (Mitetragona) 					
	4.				
A \$ SOCIATED SPECIE S:					
Other (non-dominant) spp					
* Please record up to four of the		n layers (with up to three domina		uctural Formations should foli	ow 2009 Australian Soli and
Land Survey Field Handbook g	uidelines – refer to field manual	for further information and struc	tural formation table.		
CONDITION OF HABITA	T: Pristine 🗖	Excellent 🔲 🛛 Very go	od 🗖 🛛 Good 🗖	Degraded 🖬 Con	pletely degraded 🔲
COMMENT:					
FIRE HISTORY: L	ast Fire: Season/Month	: Year:	Fire intensity: Hig	gh 🔲 Medium 🔲 🛛 Low 🛙	No signs of fire 🗖
FENCING:	Not required 📓	Present 🗖 🛛 Replac	e / repair 🗖	Required 🔲 🛛 Leng	gth reg'd:
ROAD SIDE MARKER 8:	Not required 📓	Present 🔲 🛛 Replac	e / reposition 🗖	Required 🔲 🛛 Qua	ntity req'd:
OTHER COMMENTS:	(Please include recomn	nended management acti	ons and/or implement	ed actions -	
include date. Also inclu	de details of additional	data available, and how t	o locate it.)		
FLORA AUTHORISAT	ION / LICENCE No: FT	61000788 Note if only of	serving plants (i.e. no speci	mens or plant matienal is taker	n) then no
authorisation/licence is require Any actions carried out upday	 For further information on a authorisations/licences should. 	uthorisation and licening require be recorded above in the OTHER	ments see the Threatened FI CONVENTS section	ora and Wild ife Licensing pag	jes on DBCA's website.
	ctors No:	_			
	WAH	erb. 📓 Regional Herb	District Herb.	Other:	
LODGEMENT: WA	Herb				
	ement No: KSW	/20822 ACC 9874 specin	ten retained		
ATTACHED: Map	Mudmap Photo	GIS data 🛛 Field	i notes 🔲	Other:	
		ana anna 🖬 Ficil			
COPY SENT TO:	gional Office Distri	ct Office 📓 🛛 O	ther:		
Submitter of Record: Ka	atherine Walkerden	Role: Environemntal offi	cer Signed:	Date: 30	/01/2023

Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au RECORDS: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:__________ Sheet No.:______ Record Entered In Database D

Appendix 2.14 Pityrodia chrysocalyx - P3 - Western population

Department of Biodiversi Conservation and Attrac	ity, ttions	hreatened	and Priority	1			
1.00.1 		Flora Rep	-				
blease complete as much of t	the form of need			hordored in h		rsion 1.4 Ma	
he form please refer to the Threatened 8							
communities/Inreatened-clants							
TAXON: Pityrodia chryso	2				TPFL F	op. No:	_
OBSERVATION DATE:	24/08/2022	CONS	ERVATION STATU	JS: P3	N	ew populat	tion 🛛
OBSERVER/S: Kather	rine Walkerden,	Julie Waters		PI	HONE	0416558774	4
ROLE: Environemntal Of	ficer	ORGA	ANISATION: Shire	of Esperanc	e		
EMAIL: Katherine.Walker	den@esperanc	e.wa.gov.au					
DESCRIPTION OF LOCATION	N (Provide at least ne	arest town/named locality, a	nd the distance and directio	n to that place"C			
Rollond Road 7.2km west of E		-		, ,	_		
Plan 152238 Lot 1515		· ·					
Narrow road reserve borderin	g intact bushland	I. Sandy soil. No signs	s of fire. Decline, shal	low valley.	Reserve	No:	
DBCA DISTRICT: Esperance	5	LGA: Esperar	nce	Land r	nanager pre	sent: 📓	
		M coords provided, Zone is		THOD USED:		_	_
GDA94 / MGA94 🕅	Degrees 🔲	DegMinSec 🔲 🛛 U	JTMs 🖬 🛛 G	PS 📓 Di	fferential G	SPS 🗖 🛛 🔊	tap 🔲
AGD84 / AMG84	/ Northing: 37	2464.85	No.	satellites:	N	(ap used:	
WGS84 🔲 Long	g/Easting: 63	30490.98		ndary polygon	- 0.	ap scale:	
Unknown	ZONE: 51		capt	tured:			
LAND TENURE:	20112. 01						
	Timber reserve	Private proper	rty 🗖	Rail reserve		Shire road	reserve
National park	State forest	Pastoral lea		road reserve		Other Crown	
Conservation park	Water reserve	LK.					
AREA ASSESSMENT: Edge EFFORT: Time s	e survey 🔲 P	artial survey 🛛 Fu	/	to):	ity other:	
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT S PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE:		artial survey 🛛 Fu	Ill survey Area No. of minute Estimate	observed (m² es spent / 100 Count methor field maruai for is Totals:): m²: d: at) Are Note	a of pop (m²) : Pis record cour percentages; for adrats (m²):	nt as numbers database.
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT \$ PRE SENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu	Plants Mature: 415 No. Clonel	Artial survey V Fu hinutes): 70 Extrapolation Clumps Juveniles: Size Vegetative Vegetative	Ill survey Area No. of minute Estimate Gater to Gonal stems Seedlinge: Data attached Flowerbud	observed (m² es spent / 100 Count methou field manual for la Totals:): m ² : d: d: Note (not area of qu Flower	a of pop (m²) : Pis record cour percentages; for adrats (m²):	nt as number database.
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT S PRE SENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANTS: F	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate	Ill survey Area No. of minute Estimate Geter to Clonal stems Seedlings: Data attached Flowerbud Dehisced fruit	observed (m² es spent / 100 Count methou field manual for la Totals:): m ² : d: d: td) Are Note (not area of qu Elower [sentage in fit Senescent]	a of pop (m²) : Pis record cour percentages; for adrats (m²): ower: <u>70</u> %	nt as number database.
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANTS: F COMMENT: Only a very smaller	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Vegetative Fruit Moderate And block was survey	Ill survey Area No. of minute Estimate Geter to Clonal stems Seedlings: Data attached Flowerbud Dehisced fruit Poor	observed (m² es spent / 100 Count methou field manual for la Totals:): m ² : d: d: td) Are Note (not area of qu Elower [sentage in fit Senescent]	a of pop (m²) : Pis record cour percentages; for adrats (m²): ower: <u>70</u> %	rt as number database.
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT S PRE SENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANTS: F	Plants Plants	artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Vegetative Fruit Woderate Moderate thland block was survey mation:	Ill survey Area No. of minute Estimate Constitute (Refer to Clonal stems Constitute) Seedilings: Data attached Data attached Flowerbud Dehisced fruit Dehisced fruit Poor Constitute Poor Cons	observed (m² es spent / 100 Count method field manual for le Totals: Totals: Total Percession Rely to be signifi): m ² : d: d: d: d: d: d: d: d: d: d: d: d: d: d	a of pop (m²) : Pis record cour percentages) for adrats (m²): adrats (m²): 	t as number database. Potentia Threat
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT \$ PRE SENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANT 8: F COMMENT: Only a very sma THREAT \$ - type, agent and a Eg dearing, too frequent fire, weed, dis Rate current and potential threat in	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate And block was survey mation: nual for ist of threats & age And the survey	Ill survey Area No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Dehisced fruit Poor red, total population is to ens. Speoty agent where or eme	observed (m² es spent / 100 Count method field manual for le Totals: Totals: Total Percession Rely to be signifi): m ² : d: d: d: d: Are Note (not area of qu Entage in fit Senescent cantly highe	a of pop (m²) : Pis record cour percentages) for adrats (m²): adrats (m²): 	t as rumber database. Potentia Threat Onset
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT \$ PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANTS: F COMMENT: Only a very sma THREAT \$ - type, agent and a Eg dearing, too frequent fire, weed, dis Rate current and potential threat in Estimate time to potential timeat in	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate And block was survey mation: nual for ist of threats & age And the survey	Ill survey Area No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Dehisced fruit Poor red, total population is to ens. Speoty agent where or eme	observed (m² es spent / 100 Count method field manual for le Totals: Totals: Total Percession Rely to be signifi): m ² : d: d: d: d: d: d: d: d: d: d: d: d: d: d	a of pop (m²) : Pis record cour percentages) for adrats (m²): adrats (m²): 	t as number database. Potentia Threat
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT S PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANTS: F COMMENT: Only a very sma THREATS - type, agent and a Eg dearing, too frequent fire, weed, dis Rate current and potential threat in	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate And block was survey mation: nual for ist of threats & age And the survey	Ill survey Area No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Dehisced fruit Poor red, total population is to ens. Speoty agent where or eme	observed (m² es spent / 100 Count method field manual for le Totals: Totals: Total Percession Rely to be signifi): m ² : d: d: d: d: d: d: d: d: d: d: d: d: d: d	a of pop (m²) : Pis record cour percentages; for adrats (m²): : : : : : : : : : : : : :	t as rumbers database. Potentia Threat Onset
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT \$ PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANTS: F COMMENT: Only a very sma THREAT \$ - type, agent and a Eg dearing, too frequent fire, weed, dis Rate current and potential threat in Estimate time to potential timeat in	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate And block was survey mation: nual for ist of threats & age And the survey	Ill survey Area No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Dehisced fruit Poor red, total population is to ens. Speoty agent where or eme	observed (m² es spent / 100 Count method field manual for le Totals: Totals: Total Percession Rely to be signifi): m ² : d:	a of pop (m²) : Pis record cour percentages) for adrats (m²): adrats (m²): 	t as rumbers database. Potentia Threat Onset (8-L)
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT \$ PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANTS: F COMMENT: Only a very sma THREAT \$ - type, agent and a Eg dearing, too frequent fire, weed, dis Rate current and potential threat in Estimate time to potential timeat in	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate And block was survey mation: nual for ist of threats & age And the survey	Ill survey Area No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Dehisced fruit Poor red, total population is to ens. Speoty agent where or eme	observed (m² es spent / 100 Count method field manual for le Totals: Totals: Total Percession Rely to be signifi): m ² : d:	a of pop (m²) : Pis record cour percentages; for adrats (m²): : : : : : : : : : : : : :	Potentia Threat Onset (3-L)
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT \$ PRE SENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANT 8: H COMMENT: Only a very sma THREAT \$ - type, agent and a Eg dearing, too frequent fire, weed, das Rate current and potential threat is Estimate time to potential impact: • Road widening	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate And block was survey mation: nual for ist of threats & age And the survey	Ill survey Area No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Dehisced fruit Poor red, total population is to ens. Speoty agent where or eme	observed (m² es spent / 100 Count method field manual for le Totals: Totals: Total Percession Rely to be signifi): m ² : d:	a of pop (m²) : Pis record cour percentages; for adrats (m²): : : : : : : : : : : : : :	Potential Threat (3-L)
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT \$ PRE SENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immatu CONDITION OF PLANT 8: F COMMENT: Only a very sma THREAT \$ - type, agent and a Eg dearing, too frequent fire, weed, das Rate current and potential threat in Estimate time to potential impact: • Road widening	Plants Plants	Artial survey Funinutes): 70 Extrapolation Clumps Juveniles: Juveniles: Size Vegetative Fruit Moderate And block was survey mation: nual for ist of threats & age And the survey	Ill survey Area No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Dehisced fruit Poor red, total population is to ens. Speoty agent where or eme	observed (m² es spent / 100 Count method field manual for le Totals: Totals: Total Percession Rely to be signifi): m ² : d:	a of pop (m²) : Pis record cour percentages; for adrats (m²): : : : : : : : : : : : : :	Potentia Threat Onset (3-L)

Please return completed form to Species And Communities Program DBCA,

Conservati		tractions	Threatened a	narnonty		
CONTRACTOR AUTOALIA			Flora Repo	ort Form	Ven	sion 1.4 March 202
ABITAT INFORMA	ATION:					
LANDFORM:		ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest		Granite 🔲	(on soil surface; eg	Sand 📓	Red 🔲	Well drained
Hill		Dolerite	gravel, quartz fields)	Sandy loam 🔲	Brown 🔲	Seasonally
Ridge		Laterite 🔲	0-10% 🔲	Loam 🔲	Yellow 🗖	inundated
Outcrop		Ironstone	10-30%	Clay loam 🔲	White 🗖	Permanently inundated
Slope		Limestone 🔲	30-50%	Light clay 🔲	Grey 🗖	Tidal
Flat		Quartz 🔲	50-100%	Peat 🔲	Black 🔲	
Open depression		Specify other:	00-100 /s 🖬	Specify other:	Specify other:	
Drainage line						-
Closed depression		Specific Landfor	m Element:	_		
Wetland	•	Refer to field manual for				
ONDITION OF SOIL	:	Dry 🗖	Moist 🗖	Waterlogged 🗖	inundated 🗖	
EGETATION		Calothmanus quad	rifidus dominated shrub	land with mixed Myrt	aceous, Proteacous an	nd Fabaceae shrub
:LASSIFICATION*: g: 1. Banksia woodland (-	sociated species inc	clude Calothamnus grac	ilis, Melaleuca glaberri	ima, Persoonia helix, B	Beyeria sulcata
g: 1: barrista woodand (tenuata, B. Ilicitolia); . Open shrubland	2.					
Ibbertia sp., Acada spp.); 3.					
 Isolated clumps of sedg (tietragona) 	es					
	4.					
PECIES: ther (non-dominant) spp lease record up to four of			n layers (with up to three domin		ructural Formations should fo	ollow 2009 Australian So
PECIES: ther (non-dominant) spp lease record up to four of ad Survey Field Handboo ONDITION OF HABI	vr guidelin		n layes (with up to three domin for further information and stru Excellent M Very go	ctural formation table.	_	
PECIE 8: ther (non-dominant) spp lease record up to four of od Survey Field Handboo ONDITION OF HABI COMMENT:	krguideln TAT:	es – refer to field manual Pristine	for further information and stru Excellent M Very go	ctural formation table.	Degraded Co	mpletely degraded
EPECIES: ther (non-dominant) spp lease record up to four of ad Survey Field Handboo CONDITION OF HABI COMMENT: IRE HISTORY:	krguideln TAT:	es – refer to field manual Pristine 🔲	For further information and stru Excellent Very go	ctural formation table. and Good Good Fire intensity: His	Degraded 🔲 Co gh 🔲 Medium 🛄 Low	mpletely degraded
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EPECIE S: ther (non-dominant) spp lease record up to four of d Survey Field Handboo CONDITION OF HABR CONDENT: IRE HISTORY: ENCING: COAD BIDE MARKER THER COMMENT ICLUDE date. Also in HER COMMENT	ATION /	IFICENCE NO:	Iterfuther Information and stru Excellent Very go : Year: Present Repla Present Repla Present Repla tended management ac data available, and how Note If only observing requirements see the Threate e OTHER COMMENTS section	ctural tomation table Fire intensity: He of repair freposition to locate it.) plants (i.e. no specimens or ned Rora and Wild ife Licens	Degraded Co gh Medium Low Required Ler Required Qu ted actions -	In pathorisation/licence
EPECIE S: ther (non-dominant) spp lease record up to four of d Survey Field Handboo CONDITION OF HABR CONDENT: IRE HISTORY: ENCING: COAD BIDE MARKER THER COMMENT ICLUDE date. Also in HER COMMENT	ATION /	IFICENCE NO:	Iterfuther Information and stru Excellent Very go : Year: Present Repla Present Repla Present Repla tended management ac data available, and how	ctural tomation table Fire intensity: He of repair freposition to locate it.) plants (i.e. no specimens or ned Rora and Wild ife Licens	Degraded Co gh Medium Low Required Ler Required Qu ted actions -	In pathorisation/licence
PECIES: ther (non-dominant) spp lease record up to four of d Survey Field Handboo ONDITION OF HABI COMMENT: IRE HISTORY: ENCING: INCOMENT: COAD BIDE MARKER THER COMMENT Clude date. Also in COAD BIDE MARKER THER COMMENT Clude date. Also in COAD BIDE MARKER THER COMMENT Clude date. Also in COAD BIDE MARKER COMMENT: COAD BIDE COMMENT COMMENT: COAD BIDE COMMENT COMMENT: W	ATION /	IFC: Season/Month Not required Not required see include recommetails of additional of ALICENCE No: authorisation and learning the recorded above in the No: WA H	Iterfuther Information and stru Excellent Very go : Year: Present Repla Present Repla Present Repla tended management ac data available, and how Note If only observing requirements see the Threate e OTHER COMMENTS section	ctural tomation table Fire intensity: He of repair freposition to locate it.) plants (i.e. no specimens or ned Rora and Wild ife Licens	Degraded Co gh Medium Low Required Ler Required Qu ted actions -	In pathorisation/icence
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Please return completed form to Species And Communities Program DBCA,

Appendix 2.15 *Eucalyptus dolichorhyncha* – P4 - Eastern population

Department of Biodiversity, Conservation and Astractions Threatened and Priority			
Flora Report Form	Ve	rsion 1.4 Ma	rch 2021
Please complexe as much of the form as possible, with emphasis on those sections bordered in the form please refer to the Threatened & Priority Flora Report Form (TFRF) manual on the DBCA website at your description or you'd	black. For int	formation on how	w to complete
TAXON: Eucalyptus dolichorhyncha	TPFL F	op. No:	
OBSERVATION DATE: 31/08/2022 CONSERVATION STATUS: P4		ew popula	tion 🖂
OBSERVER/S: Katherine Walkerden, Julie Waters		041655877	_
ROLE: Environemntal Officer ORGANISATION: Shire of Esperar	ice –		
EMAIL: Katherine.Walkerden@esperance.wa.gov.au			
DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)?			
Rollond road at SLK 5.09-5.96			
Narrow road reserve, Clay-loam soil. No signs of fire.			
	Reserve		
	i manager pre	sent: 🗖	
DATUM: COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED DecDegrees DegMinSec UTMs GPS GPS	r: Differential G	PS D	Map 🔲
GDA94 / MGA94 A Lat / Northing: 374620 42		(ap used:	nup 🖬
AGD84 / AMG84	20		_
WG584 III 000 / Fasting: 6330404 38		ap scale:	
ZONE: 51			
LAND TENURE:	_		_
National park State forest E Private property Rail reserve			d reserve 📓 n reserve 🔲
National park State forest Pastoral lease MRWA road reserve Conservation park Water reserve UCL SLK/Pole		ity other:	n reserve
AREA A \$ SE \$ SMENT: Edge survey Partial survey Full survey Area observed (r	· · · =		
EFFORT: Time spent surveying (minutes): No. of minutes spent / 10 POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count meth			
(Refer to field manual for			
WHAT COUNTED: Plants Clumps Clumps Clonal stems			
TOTAL POP'N STRUCTURE: Mature: Juveniles: Seedlings: Totals:			
Alive 11	Are	a of pop (m²):
Dead		Pis record cou	
QUADRATS PRESENT: No. Size Data attached D Tot	al area of qu	percentages) for adicats (m²):	
3ummary Quad. Totals: Alive			
REPRODUCTIVE STATE: Cional Vegetative Flowerbud	Flower		
	roentage in fi	ower:9	ý.
CONDITION OF PLANTS: Healthy Moderate D Poor D	Senescent		
COMMENT:			
THREATS - type, agent and supporting information:	Current	Potential	Potential
Eg clearing, too frequent fire, weed, disease. Refer to field manual for 1st of threats & agents. 8peolfy agent where relevant.	Impaot	Impaot	Threat Onset
Rate current and potential threat impact: N=NII, L=Low, M=Medium, H=High, E=Extreme Entire to a the state of the state	(N-E)	(L-E)	(8-L)
Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
Road widening	N	E	S-M

Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORD S: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:______ Sheet No.:_____ Record Entered In Database D

Conse	ment of Biodiversity, rvation and Attractions	Threater	ned and F	Priority		
GOVERNMENT OF MALES.		Flora	Report F	orm	Ver	sion 1.4 March 2021
ABITAT INFOR	MATION:					
LANDFORM Cre Fid Outon Slo	A: ROCK T est Gran fill Doler ge Later op Ironsto pe Limesto lat Qua on Specify on ne Specify on ne Specific	ite (on soil surf. gravel, quart. ite 0 0-1 ne 0 10-3 ntz 0 30-5	ace; eg z fields) Sau 10% C C 30% L L 50% C L	DIL TYPE: Sand Indy loam I Loam I Clay loam I ight clay I Peat I ecify other:	SOIL COLOUR: Red Brawn Yellow White Grey Black Specify other:	DRAINAGE: Well drained Seasonally inundated Permanently inundated Tidal
ONDITION OF 8	DIL: Dry	Moist D	Water	logged 🗖	inundated 🗖	
(EGETATION CLASSIFICATIO g: 1. Banksla wooda tenuata, B. Ilicitolia); Open shrubland Hobertia sp., Acacla Isolated clumps of s Vitetragona)	N*: Enchylaena t nd (8. 2	ee woodland with scatte omentosa, Pultenaea ar 				
A \$ \$OCIATED \$PECIE \$:						
Other (non-dominant)		e vegetation layers (with up to)	thana daminani an cir	e in each brook 194	with and Energy from size of the	low 2000 Australian Collin
COMMENT: FIRE HISTORY: FENCING: ROAD 8IDE MARK	Last Fire: Seasc Not require ER 8: Not require	d 📓 Present 🗖	ar: Fir Replace / repa Replace / repo	ir 🗖	Required Ler	No signs of fire gth req'd:
		recommended manage ditional data available,			ed actions -	
uthorisation/licence is	RISATION / LICENCE required. For further infor-	No: FT61000788 nation on authorisation and ion	ening requirements se	e the Threatened FI	mens or plant matienal is take ora and Wild the Licensing pa	
SPECIMEN:	Collectors No:	WA Herb. 🛛 Regi	onal Herb. 🔲	District Herb.	Other:	
ODGEMENT:	WA Herb Lodgement No:	KSW12222 ACC 977	70			_
TTACHED:	Map Mudmap	Photo GIS data	Field notes		Other:	
OPY SENT TO:	Regional Office	District Office	Other:			
I	Bag 104, BENTLI	mpleted form to S	pecies And	3 OR email	ties Program Df	a.wa.gov.au

Appendix 2.16 Eucalyptus dolichorhyncha - P4 - Western population

Conservation and Attra	sity, actions	Threatened	and Priority	1			
CONTRACTOR AND TAKEN		Flora Rep	oort Form		Ve	rsion 1.4 Ma	rch 2021
Please complete as much of		sible, with emphasi	s on those sections b		CK. Forin	formation on how	v to complete
the form please refer to the Threatened communities/threatened-clants	& Priority Flora Report	Form (TPRF) manual on th	e DBCA website at <u>www.doa</u>	ir wa ooy au/olants	and-animal	slineatened-sce	cics-and-
TAXON: Eucalyptus do	olichorhyncha				TPFL F	Pop. No:	
OBSERVATION DATE:	13/07/2022	CONS	SERVATION STATU	S: P4		ew populat	tion 🕅
OBSERVER/S: Kathe	rine Walkerden.	Julie Waters		PH	ONE	0416558774	4 -
ROLE: Environemntal O	fficer	ORG	ANISATION: Shire	of Esperance	-		
EMAIL: Katherine.Walke	rden@esperanc	e.wa.gov.au					
DESCRIPTION OF LOCATIO	N (Provide at least ne	arest town/named locality, a	and the distance and direction	n to that place);			
Rollond Road SLK 8.01 and 14	1			. ,			
					Reserve	No:	
DBCA DISTRICT: Esperance		LGA: Espera			anager pro	isent: 📓	
		M coards provided, Zone i DegMinSec 🔲 U	·	HODUSED: PS 🖬 Diff	erential G	200 E A	Aap 🗖
GDA94 / MGA94 関			_	_		_	лар 🛄
AGD84 / AMG84	t / Northing: 37	0040		satellites:	N	Map used:	
	g/Easting: 63	30450		ured:	Ν	Map scale:	
Unknown 🔲	ZONE: 51						
LAND TENURE:							
Nature reserve	Timber reserve	· · · · · · · · · · · · · · · ·		Rail reserve 🔲			i reserve 📓
National park	State forest		ese 🔲 MRWAr CL 🖬 SLK/Pole 🔜	oad reserve	5.000	Other Crown	n reserve
Conservation park	Trater reactive and	5			apec	aty other:	
					_		
	/=	/ _		observed (m ²):			
EFFORT: Time :	spent surveying (n	ninutes):	No. of minute	s spent / 100 n			
	spent surveying (n	/ _	No. of minute Estimate		1 ² :		
EFFORT: Time :	spent surveying (n	ninutes):	No. of minute Estimate	s spent / 100 n Count method:	1 ² :		
EFFORT: Times POP'N COUNT ACCURACY:	spent surveying (r Actual	ninutes):	No. of minute Estimate (Refer to	s spent / 100 n Count method:	1 ² :		
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED:	Plants	ninutes):	No. of minute Estimate (Refer to Clonal stems	s spent / 100 n Count method: field manual for list)	1 ² :	a of pop (m²)):
EFFORT: Time = POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive	spent surveying (n Actual Plants Mature:	ninutes):	No. of minute Estimate (Refer to Clonal stems	s spent / 100 n Count method: field manual for list)	Are	: Pls record cour	nt as numbers
EFFORT: Time = POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead	Plants Mature: 132	Lininutes): Extrapolation Clumps Clumps I	No. of minute Estimate (Refer to Clonal stems Seedlings:	s spent / 100 n Count method: field manual for list; Totals:	Are Note	: Pls record cour percentages) for	nt as numbers database.
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT S PRESENT:	spent surveying (n Actual Plants Mature:	ninutes):	No. of minute Estimate (Refer to Clonal stems Seedlings:	s spent / 100 n Count method: field manual for list; Totals:	Are Note	: Pls record cour	nt as numbers database.
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N 8TRUCTURE: Alive Dead QUADRAT S PRESENT: 8ummary Quad. Totals: Alive	Plants Mature: 132 No.	Clumps Clumps Size	No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached	s spent / 100 n Count method: field manual for list; Totals:	Are Note (not	:: Pls record cour percentages) for radrats (m ²):	nt as numbers database.
EFFORT: Time is POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRAT S PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE:	Plants Mature: 132	Lininutes): Extrapolation Clumps Clumps I	No. of minute Estimate (Refer to Clonal stems Seediings:	s spent / 100 n Count method: field manual for list; Totalis:	Are Are Nok Intea of qu	:: Pls record cour percentages) for radrats (m ²):	nt as numbers database.
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EFFORT: Time is POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N 8TRUCTURE: Alive Dead QUADRAT S PRESENT: 8ummary Quad. Totals: Alive REPRODUCTIVE STATE: Immate CONDITION OF PLANT 8: COMMENT: THREAT S - type, agent and Eg dearing, too trequent fire, weed, dis Rate current and potential threat is	spent surveying (n Actual Plants Mature: 132 No. Clonal ure fruit Healthy supporting infor sease. Rafer to field ma impact N=NII, L=Low, 1	ninutes): Extrapolation Clumps Juveniles: Juveniles: Size Size Vegetative Fruit Moderate mation: mation the fit of threats & ag	No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Flowerbud Poor Poor ents. Speoify agent where reference	s spent / 100 n Count method: field manual for list; Totalis: Total a Perce Se	Are Nok Nok Flower ntage in fi enescent	Pls record cour percentages) for radirats (m ²): ower: <u>90%</u> Potential	Potential Threat Onset
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EFFORT: Time is POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N 8TRUCTURE: Alive Dead QUADRAT S PRESENT: 8ummary Quad. Totals: Alive REPRODUCTIVE STATE: Immate CONDITION OF PLANT 8: COMMENT: THREAT S - type, agent and Eg dearing, too frequent fire, weed, do Rate current and potential threat is Estimate time to potential impact	spent surveying (n Actual Plants Mature: 132 No. Clonal ure fruit Healthy supporting infor sease. Rafer to field ma impact N=NII, L=Low, 1	ninutes): Extrapolation Clumps Juveniles: Juveniles: Size Size Vegetative Fruit Moderate mation: mation the fit of threats & ag	No. of minute Estimate (Refer to Clonal stems Seedlings: Data attached Data attached Flowerbud Poor Poor ents. Speoify agent where reference	s spent / 100 n Count method: field manual for list; Totalis: Total a Perce Se	Are Note (not rea of qu Flower ntage in fl mescent Current Impaot (N-E)	Potential Impaot (L-E)	Potential Threat (8-L)
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Please return completed form to Species And Communities Program DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au RECORD S: Please forward to Flora Administrative Officer, Species and Communities Program. Record entered by:_________ Sheet No.:______ Record Entered In Database □

HABITAT INFORMATION LANDFORM: Crest I Hill I Ridge I Outcrop I Slope I Fiat I	N: ROCK TYPE: Granite D Dolerite D	Flora Repo	SOIL TYPE:		on 1.4 March 2021
LANDFORM: Crest Hill Ridge Outcrop Slope	ROCK TYPE: Granite		SOIL TYPE:		
Crest Hill Crest Hill Crest Cr	Granite 🔲		SOIL TYPE:		
Hill C Ridge C Outcrop C Slope C		(on soil surface; eq		SOIL COLOUR:	DRAINAGE:
Ridge Cutcrop Slope	Dolerite 🔲		Sand 🔲	Red 🔲	Well drained 🔲
Outcrop		gravel, quartz fields)	Sandy loam 🔲	Brown	Seasonally
Slope 🔲	Laterite	0-10% 🔲	Loam 🗖	Yellow 🗖	inundated
	Ironstone	10-30%	Clay loam 🔲	White 🗖	Permanently inundated
Flat	Limestone 🔲	30-50%	Light clay 🔲	Grey 🗖	Tidal 🗖
	Quartz 🔲	50-100%	Peat 🗖	Black	
Open depression 🔲	Specify other:	00-100/e L	Specify other:	Specify other:	
Drainage line					
Closed depression	Specific Landform	n Element:	_		
Wetland	(Refer to field manual for a				
CONDITION OF SOIL:	Dry 🗖	Moist 🗖	Waterlogged 🗖	inundated 🗖	
	1. Mixed Mallee over I	Melaleuca uncinata and	mixed understorey shr	ubs. Associated specie	es include:
The 4. Deschola support and 40.		olia, Lissanthe rubicund	a, Pimelea cracens,		
atienuata, B. Ilicitolia);	lalgania sp. Peak Elea	nor			
(Hibbertia sp., Acadia spp.);	2.				
 Isolated clumps of sedges (Mietragona) 	3.				
4	1				
ASSOCIATED	_				
SPECIES:					
Other (non-dominant) spp					
CONDITION OF HABITAT: COMMENT: FIRE HISTORY: Last	Pristine	Excellent Very go Year:	od 📓 Good 📓		No signs of fire
FENCING:	Not required				th regid:
ROAD SIDE MARKER S:	Not required	_	·		itty req'd:
OTHER COMMENTS: (Pi include date. Also include	details of additional d	ata available, and how a a stand how a stand how a standard how a sta	to locate it.)	ens or plant matterial is taken	
Any actions carried out under aufi SPECIMEN: Collecto	horisations/licences should b ins. No:	e recorded above in the OTHE	R COMMENTS section.		
LODGEMENT: WA Her	rb Kow		District Herb.	Other:	
Lodgem	Mudmap Photo	8822 ACC 9839 - PERT			
ATTACHED: Regi	anal Office	_		ther:	
	Distric	_	ther:		
Submitter of Record: Kath	erine Walkerden	Role: Environemntal off	icer Signed:	Date: 30	01/2023
Please	return complete	d form to Species	And Communiti	ies Program DB(CA,
Locked Bag 10	4, BENTLEY DEL ORDS: Please forward	IVERY CENTRE W	A 6983 OR email to e Officer, Species and	o: flora.data@dbca Communities Program	.wa.gov.au

Appendix 3: Description of Threatened and Priority Flora Species with the Potential to occur within the 'Rollond Road, SLK 0-15.9' Survey Area

Threatened or priority flora identified by the desktop study to be present within a 20 km radius of 'Site C – Rollond Road, SLK 0-15.9' project area, using Threatened and Priority Flora Reporting (TPFL; DBCA 2022c), WA Herbarium (DBCA 2022d) and Esperance District Threatened Flora (DBCA 2022a). Nt. Acronyms used in the table include priority flora (P), threatened flora (TF), Biodiversity Conservation (BC) Act 2018, Environmental Protection and Biodiversity Conservation (EPBC) Act 1999, critically endangered (CN) and endangered (EN).

Species	Cons Status	Associated Habitat	Likely to occur	Distance from site (km)
Acacia diaphana	P1	Salmon Gums area, waterlogged depressions in brown/grey sandy clay. Tolerates low level salinity	Unlikely	16681.09591
Aotus lanea	P1	Grey clayey sand, yellow clay, deep sand. Edge of salt lakes and valleys	Unlikely	17544.20569
Cyathostemon sp. Esperance (A. Fairall 2431)	P1	Only two records – salt lake and sandy gravel.	Unlikely	14088.88883
Dicrastylis archeri	P1	Associated with open Mallee woodland.	Potentially	11891.92478
Lepidium fasciculatum	P1	Scattered distribution all over Southern Australia. Semi-arid areas	Potentially	18463.05921
Leucopogon rugulosus (sp. Roberts Swamp)	P1	Recorded along Rollonds Rd and Fields Rd area. Associated with open Mallee.	Potentially	14594.49889
Acacia amyctica	P2	Salmon Gums area on well-drained loams and sandy clay plains with Eucalyptus flocktoniae low woodland.	Potentially	10794.85394
Aotus sp. Dundas (M.A. Burgman 2835)	P2	Recorded across a variety of habitats, including open Mallee woodlands, clay, loam, limestone and on the periphery of salt lakes.	Potentially	6301.616765
Stenanthera lacsilaria	P2	Grey-white fine sand over clay on the margins of salt lakes, associated w myrtaceous shrubs and halophytes	Unlikely	7449.95346
Conospermum sigmoideum	P2	Eucalyptus pleurocarpa woodlands. Associated with sand. Originally only known in Frank Hann, but recently found in Cascade area. Has been recorded in burnt areas.	Potentially	10887.50684
Conostephium uncinatum	P2	Various habits - Deep sandy soils, edge of salt lakes, undulating plains, claypans. Most records associated with salt lakes.	Unlikely	12337.20717
<i>Halgania</i> sp. Peak Eleanora	P2	Salmon Gums area. Loamy sand. Undulating plains.	Specimens collected prior to flora surveys	7340.998393

Persoonia spathulata	P2	Grows in deep sandy soils, with other Proteaceae species.	Potentially	11864.40245
Acacia bartlei	P3	Small, localised populations, flat or gently undulating landscapes (mostly cleared for ag) often in waterlogged depressions in brown or grey sandy loam or clay loam often with E. occidentalis	Potentially, Author had previously accessioned a population further along Rollond Road.	8362.512229
Acacia glaucissima	P3	Salmon Gums on open low/Mallee woodland with dwarf scrub or low heath. Common within the Salmon Gums & grass patch area	Likely. Species is locally common throughout Salmon Gums	184.1587336
Acacia improcera	P3	Sand, loamy clay on undulating plains & flats	Potentially	11817.23087
Bossiaea flexuosa	P3	"Recorded in Salmon Gums region – grows after fire in soil over gravel or deep sands. Mostly recorded to the west in north- grass patch area and Bremer Ranges."	Unlikely	19322.25559
Conostephium marchantiorum	P3	White/grey sand. Plains, creeklines, edges of salt lakes.	Unlikely	2608.873861
<i>Cyathostemon</i> sp. Salmon Gums (<i>B. Archer</i> 769)	P3	Various soils - orange sand, white sandy, sandy clay over granite, light brown clay, saline soils. Various habitats – flats, dry river beds, claypans	Unlikely	16574.62305
Daviesia pauciflora	P3	White or grey sand over laterite or limestone. Flats.	Potentially	9845.479222
Eremophila chamaephila	P3	Grows on light brown sandy clay loams in Eucalypt or Mallee woodland.	Potentially	9644.653445
Eremophila compressa	P3	Grass Patch area, open woodland with red brown clay, clay loam, sandy lam on undulating plains	Potentially	1926.98625
Eucalyptus histophylla	P3	Dec. Sandy loam on granite or laterite. Granite outcrops. Dundas, Northern Salmon Gums area.	Unlikely. To far south.	18095.77215
Goodenia laevis ssp. laevis	P3	Woodland with Melaleuca shrubland. Prefers limestone or white clay loam. Associated with disturbance. Grows on most road shoulder in Grass Patch, Salmon Gums area.	Likely	8277.497284

Kunzea salina	P3	White sand over clay at the margins of salt lakes. Typically found at the bottom of sand dune rises gently from lake floor between a community of Tecticornia and	Unlikely	16497.75457
Persoonia cymbifolia	P3	Melaleuca /Eucalyptus shrubland. Grass Patch, Salmon Gums and Cascade area. Sandy soils. On flats or in rock crevices.	Potentially	16557.99958
Pityrodia chrysocalyx	P3	Salmon Gums area. Sandplains with yellow sands. Associated with Eucalyptus Mallee woodlands with Banksia media and Hakea sp.	Possible	4391.12619
Adenanthos ileticos	P4	Grows on sandy soil with open Eucalyptus woodland. Eastern Salmon Gums area and Grass Patch area.	Potentially	4378.42465
Caladenia voigtii	P4	Wide variety of habitats, from granite, salt lakes and shrubland.	Potentially	9628.08355
Darwinia polycephala	P4	Flats, near salt lakes. Sand and clay soils. Eastern Salmon Gums to Scaddan area.	Unlikely	8488.815717
Eucalyptus dolichorhyncha	P4	Small areas south of Salmon gums flats or slightly rising ground with whitish to yellowish sandy clay soil	Specimens collected prior to flora survey	1249.149206
Grevillea aneura	P4	Grows in heath or Mallee scrub, in yellow sand or sandy loam over laterite. Mostly recorded on rises.	Potentially	1704.931372
Grevillea baxteri	P4	Prefers shrubby heathland with an acid sandy soil usually overlaying heavier soils. Associated with highly diverse Proteaceous shrublands.	Potentially	13100.82349
Melaleuca fissurata	P4	White/grey sand, sandy loam. Samphire flats, salt pans.	Unlikely	13046.3697
Eremophila lactea	Т	Grass Patch area. White sandy clay loam. Open disturbed road verge. Mass germination after fire	Unlikely	5384.652767
Eucalyptus merrickiae	Т	Associated with margin of salt lakes	Unlikely	5931.742996
Marianthus aquilonaris	Т	Near Lake Hope & Johnston.	Unlikely	16857.66619

Appendix 4: Description of Threatened and Priority Fauna Species with the Potential to occur within the 'Rollond Road, SLK 0-15.9' Survey Area

Threatened or priority Fauna identified by the desktop study to be present within a 20 km radius of 'Site C – Rollond Road, SLK 0-15.9' project area using the DBCA Threatened and Priority Fauna dataset (DBCA, 2022e) or using the EPBC Act Protected Matters Report

Nt. Acronyms used in the table include critically endangered (CR) and endangered (EN), Vulnerable (VU), other specially protected (OS), Priority (P).

Taxon	Common name	WA Constat	Habitat Description	Likely to occur
Botaurus	Australasian Bittern		Densely vegetated wetlands.	No
poiciloptilus		EN		
Calidris	Curlew Sandpiper		Intertidal mudflats in sheltered coastal	No
ferruginea			areas, such as estuaries, bays, inlets and	
			lagoons, and also around non-tidal swamps,	
			lakes and lagoons near the coast, and	
		CR	ponds in saltworks and sewage farms.	
Calyptorhynchus	Carnaby's Cockatoo		Uncleared and remnant areas of	Potentially
latirostris			woodland, shrubland and kwongan heath	
			dominated by proteaceous species. They	
			breed in the semiarid and subhumid interior	
			eucalypt woodlands, principally dominated	
			by Salmon Gum Eucalyptus salmonophloia	
		EN	or Wandoo Eucalyptus wandoo.	
Cereopsis	Recherche Cape		It occurs on offshore islands and rocks, and	No
novaehollandiae	Barren Goose		at adjacent sites on the mainland. It inhabits	
grisea			grasslands and low fields of succulent herbs	
			(comprised of Carpobrotus sp.), and	
		1.01	occasionally occurs in open areas in taller	
D		VU	and denser vegetation.	
Dasyurus geoffroii	Chuditch, Western		Historically inhabited a wide range of	Potentially
	Quoll		habitats, but today it survives mostly in	
			Jarrah Eucalyptus marginata forests and	
		N/LL	woodlands, mallee shrublands and	
		VU	heathlands.	Detentially
Falco hypoleucos	Grey Falcon		The distribution of this species is restricted	Potentially
			largely to areas of the highest annual	
			average temperatures where there is an	
			average annual rainfall of less than 500 mm.	
			It favours lightly timbered and untimbered	
			lowland plains that are crossed by tree-lined	
		1.4.1	watercourses. It uses the abandoned nests	
		VU	of other bird species, particularly corvids.	

Falco peregrinus	Peregrine Falcon	OS	most habitats, from rainforests to the arid zone, and at most altitudes, from the coast to alpine areas. It requires abundant prey and secure nest sites, and prefers coastal and inland cliffs or open woodlands near water, and may even be found nesting on high city buildings.	Unlikely
Leipoa ocellata	Malleefowl	VU	Malleefowl are found in arid and semi-arid areas dominated by mallee eucalypts on sandy soils. They are known to also occur in Mulga (Acacia aneura), Broombush (Melaleuca uncinata), Scrub Pine (Callitris verrucosa), Eucalyptus woodlands and coastal heathlands. Malleefowl require abundant leaf litter and a sandy substrate for the successful construction of nest mounds.	Potentially
Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew	CR	Coastal mudflats and estuaries.	No
Pezoporus occidentalis	Night Parrot	CR	Spinifex grasslands in stony or sandy areas and samphire and chenopod associations on floodplains, salt lakes and clay pans. Suitable habitat is characterized by the presence of large and dense clumps of Spinifex, and it may prefer mature spinifex that is long and unburnt.	No
Platycercus icterotis xanthogenys	Western Rosella (inland)	P4	Open eucalypt forest and timbered areas, including cultivated land and orchards. The xanthogenys subspecies is found in drier woodland, with a heath understorey.	Potentially
Thinornis rubricollis	Hooded Plover	P4	Freshwater lakes, freshwater marshes, coastal saline lagoons, and sandy beaches.	No

Appendix 5: State Threatened and Priority Flora and Fauna Definitions

Category	Definition
T – Threatened	Taxa that have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such (Schedules 1 to 4 of the Wildlife Conservation (Rare Flora) Notice under the WC Act). Threatened flora are further ranked by the DBCA to align with IUCN Red List categories and criteria: CR: Critically Endangered – considered to be facing an extremely high risk of
	extinction in the wild (Schedule 1); EN: Endangered – considered to be facing a very high risk of extinction in the wild
	(Schedule 2); or VU: Vulnerable – considered to be facing a high risk of extinction in the wild (Schedule 3).
	EX: Presumed Extinct – taxa that have been adequately searched for and there is no reasonable doubt that the last individual has died (Schedule 4)
P1 – Priority 1 (Poorly known taxa)	Taxa that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Taxa may be included if they are comparatively well known from one or more
	localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
P2 – Priority 2 (Poorly known taxa)	Taxa that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
P3 – Priority 3 (Poorly known taxa)	Taxa that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Taxa may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
P4 – Priority 4 (Rare, Near Threatened and other taxa in need of monitoring)	 Rare - Taxa 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. Near Threatened - Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.

3. Taxa that have been removed from the list of threatened species during the
past five years for reasons other than taxonomy

Appendix 6: Commonwealth Definition of Threatened Flora and Fauna Species (Environment Protection and Biodiversity Conservation, EPBC Act 1999)

Category Code	Category
Ex	Extinct
	Taxa which at a particular time if, at that time, there is no reasonable doubt that
	the last member of the species has died.
ExW	Extinct in the Wild
	Taxa which is known only to survive in cultivation, in captivity or as a naturalised
	population well outside its past range; or 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.
CE	Critically Endangered
02	Taxa which 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.
E	Endangered
	Taxa which is not critically endangered and it is facing a very high risk of
	extinction in the wild in the immediate or near future, as determined in accordance
	with the prescribed criteria.
V	Vulnerable
	Taxa which is not critically endangered or endangered and is facing a high risk of
	extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
CD	Conservation Dependent
	Taxa which 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.

Category Code	Category
PTD	Presumed Totally Destroyed An ecological community will be listed as Presumed Totally Destroyed if there are no recent records of the community being extant and either of the following applies: (i) records within the last 50 years have not been confirmed despite thorough searches or known likely habitats or; (ii) all occurrences recorded within the last 50 years have since been destroyed.
CE	Critically Endangered An ecological community will be listed as Critically Endangered when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future, meeting any one of the following criteria: (i) The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification; (ii) The current distribution is limited ie. highly restricted, having very few small or isolated occurrences, or covering a small area; (iii) The ecological community is highly modified with potential of being rehabilitated in the immediate future.
E	 Endangered An ecological community will be listed as Endangered when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. The ecological community must meet any one of the following criteria: (i) The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short term future, or is unlikely to be substantially rehabilitated in the short term future due to modification; (ii) The current distribution is limited ie. highly restricted, having very few small or isolated occurrences, or covering a small area; (iii) The ecological community is highly modified with potential of being rehabilitated in the short term future.
V	Vulnerable An ecological community will be listed as Vulnerable when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet any one of the following criteria: (i) The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated; (ii) The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution;

Appendix 7: State Definition of Threatened Ecological Communities

(iii) The ecological community may be widespread but has potential to move to a higher
threat category due to existing or impending threatening processes.

Category Code	Category
P1	Poorly-known ecological communities
	Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist.
P2	Poorly-known ecological communities
	Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation.
P3	Poorly known ecological communities
	 (i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: (ii) Communities known from a few widespread occurrences, which are either large or within Significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;
	(iii) Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	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.
P5	Conservation Dependent ecological communities
	Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Appendix 8: State Definition of Priority Ecological Communities

Appendix 9: Commonwealth Definition of Threatened Ecological Communities

Three categories exist for listing threatened ecological communities under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

Listing Category Code	Explanation of Category
Critically	If, at that time, it is facing an extremely high risk of extinction in the wild in
endangered	the immediate future.
Endangered	If, at that time, it is not critically endangered and is facing a very high risk of extinction in the wild in the near future.
Vulnerable	If, at that time, it is not critically endangered or endangered, and is facing a high risk of extinction in the wild in the medium term future.

Appendix 10: Categories and Control of Declared (Plant) Pests in Western Australia

Control Category	Control Measures
C1 (Exclusion)	In relation to a category 1 declared pest, the
'(a) Category 1 (C1) — Exclusion: if in the opinion	owner or occupier of land in an area for which
of the Minister introduction of the declared pest into	an
an area or part of an area for which it is declared	organism is a declared pest or a person who is
should be prevented'	conducting an activity on the land must take
Pests will be assigned to this category if they are	such
not established in Western Australia and control	of the control measures specified in
measures are to be taken, including border	subregulation
checks, in order to prevent them entering and	(1) as are reasonable and necessary to
establishing in the State.	destroy,
	prevent or eradicate the declared pest.
C2 (Eradication)	In relation to a category 2 declared pest, the
(b) Category 2 (C2) — Eradication: if in the opinion	owner or occupier of land in an area for which
of the Minister eradication of the declared pest	an
from an area or part of an area for which it is	organism is a declared pest or a person who is
declared is feasible'.	conducting an activity on the land must take
Pests will be assigned to this category if they are	such
present in Western Australia in low enough	of the control measures specified in
numbers or in sufficiently limited areas that their	subregulation
eradication is still a possibility.	(1) as are reasonable and necessary to
	destroy,
	prevent or eradicate the declared pest.
C3 (Management)	In relation to a category 3 declared pest, the
(c) Category 3 (C3) — Management: if in the	owner or occupier of land in an area for which
opinion of the Minister eradication of the declared	an organism is a declared pest or a person
pest from an area or part of an area for which it is	who is conducting an activity on the land must
declared is not feasible but that it is necessary to	take such of the control measures specified in
(i) allowing the however live next of the declared	subregulation
(i) alleviate the harmful impact of the declared	(1) as are reasonable and necessary to —
pest in the area; or	(a) alleviate the harmful impact of the
(ii) reduce the number or distribution of the	declared pest in the area for which it is
declared pest in the area; or	declared; or (b) reduce the number or distribution of the
(iii) prevent or contain the spread of the declared pest in the area.'	(b) reduce the number or distribution of the declared pest in the area for which it is
Pests will be assigned to this category if they are	declared pest in the area for which it is declared; or
established in Western Australia but it is feasible,	(c) prevent or contain the spread of the
or desirable, to manage them in order to limit	declared pest in the area for which it is
their damage. Control measures can prevent a C3	declared pest in the area for which it is declared.
pest from increasing in population size or density	
or moving from an area in which it is established	
into an area which currently is free of that pest.	
into an area which currently is nee of that pest.	

Appendix 11: Definition of Vegetation Condition Scale For the south west and interzone botanical provinces

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

Appendix 12: Carnaby's Cockatoo foraging habitat scoring template

Adapted from Tables A1 and A2 of Department of Agriculture, Water and the Environment (2022)

Starting score	Carnaby's Cockatoo							
10	Start at a score of 10 if your site is native shrubland, kwongan heathland or woodland, dominated by proteaceous plant species such as <i>Banksia</i> spp. (including <i>Dryandra</i> spp.), <i>Hakea</i> spp. and <i>Grevillea</i> spp., as well as native eucalypt woodland and forest that contains foraging species, within the range of the species, including along roadsides and parkland cleared areas. Also includes planted native vegetation. *This tool only applies to sites equal to or larger than 1 hectare in size.							
Attribute	Subtractions	Context adjustor (attributes reducing functionality of foraging habitat)						
Foraging potential	-2	Subtract 2 from your score if there is no evidence of feeding debris on your site.						
Connectivity	-2	-2 Subtract 2 from your score if you have evidence to conclude that there is no other foraging habitat within 1km of your site.						
Proximity to breeding	-2 Subtract 2 if you have evidence to conclude that your site is more than 12km from breeding habitat.							
Proximity to roosting	-1 Subtract 1 if you have evidence to conclude that your site is more than 20km from a known night roosting habitat.							
Impact from significant plant disease	-1 Subtract 1 if your site has disease present (e.g. <i>Phytophthora</i> spp. or Marri canker) and the disease is preferred food plants present.							
Total score	Enter score							
Other considerations for assessment of foraging habitat	 The presence, extent and density (including foliage cover and flowering density) of all plant species that provide foraging, including non-native food sources used The distribution and size of foraging habitat in proximity (e.g. up to 12 km) to the impact site. Site degradation (such as cleared, disturbed or degraded areas). The fire history of the impact site. Landscape characteristics around the impact site, including details of roosting and breeding habitat in proximity (e.g. up to 20km for roosting and 12km for breeding); and The location and details of watering points that could support the use of the foraging habitat. 							
Appraisal	To support your habitat score, you should provide an overall appraisal of the habitat on the impact site and within 20km of the impact area to clearly explain and justify the score. It should include discussion on the foraging habitat's proximity to other resources (e.g. exact distance to proximate resources), frequency of use of proximate sites, the degree of evidence and description of vegetation type and condition.							

Appendix 13: EPBC Act Protected Matters Report

Listed Threatened Ecological Communities:

			Presence	
Community Name	Threatened Category	Rank	Text	Buffer Status
Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	Likely	Community likely to occur within area	In feature area

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Listed Threatened Species:

Scientific Name	Common Name	Class	Simple Presence	Presence Text	Threatened Category	Migratory Status
Thunnus maccoyii	Southern Bluefin Tuna	Fish	Likely	Species or species habitat likely to occur within area	Conservation Dependent	
Galeorhinus galeus	School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark	Shark	Мау	Species or species habitat may occur within area	Conservation Dependent	
Limosa lapponica menzbieri	Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit	Bird	Мау	Species or species habitat may occur within area	Critically Endangered	
Calidris ferruginea	Curlew Sandpiper	Bird	Known	Species or species habitat known to occur within area	Critically Endangered	Migratory
Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew	Bird	Likely	Species or species habitat likely to occur within area	Critically Endangered	Migratory
Rhizanthella johnstonii	South Coast Underground Orchid	Plant	Known	Species or species habitat known to occur within area	Critically Endangered	
Balaenoptera musculus	Blue Whale	Mammal	Мау	Species or species habitat may occur within area	Endangered	Migratory

Diomedea sanfordi	Northern Royal Albatross	Bird	Мау	Species or species habitat may occur within area	Endangered	Migratory
Conostylis lepidospermoides	Sedge Conostylis	Plant	Known	Species or species habitat known to occur within area	Endangered	
Neophoca cinerea	Australian Sea-lion, Australian Sea Lion	Mammal	Likely	Species or species habitat likely to occur within area	Endangered	
Macronectes Southern Giant- giganteus Petrel, Southern Giant Petrel Giant Petrel		Bird	May	Species or species habitat may occur within area	Endangered	Migratory
Diomedea dabbenena Tristan Albatross		Bird	May	Species or species habitat may occur within area	Endangered	Migratory
Caretta caretta Loggerhead Turtle		Reptile	Likely	Breeding likely to occur within area	Endangered	Migratory
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth		Reptile	Likely	Breeding likely to occur within area	Endangered	Migratory
Eubalaena australis Southern Right Whale		Mammal	Known	Breeding known to occur within area	Endangered	Migratory (as Balaena glacialis australis)
Anigozanthos bicolor subsp. minor Little Kangaroo Paw, Two-coloured Kangaroo Paw, Small Two-colour Kangaroo Paw		Plant	Likely	Species or species habitat likely to occur within area	Endangered	
Pseudomys Heath Mouse, shortridgei Dayang, Heath Rat		Mammal	May	Species or species habitat may occur within area	Endangered	
Thalassarche cauta	Shy Albatross	Bird	Likely	Foraging, feeding or related behaviour likely to occur within area	Endangered	Migratory

Pezoporus occidentalis	Night Parrot	Bird	Мау	Species or species habitat may occur within area	Endangered	
Ricinocarpos trichophorus	Barrens Wedding Bush	Plant	Мау	Species or species habitat may occur within area	Endangered	
Calidris canutus Red Knot, Knot		Bird	Мау	Species or species habitat may occur within area	Endangered	Migratory
Botaurus poiciloptilus	Australasian Bittern	Bird	Мау	Species or species habitat may occur within area	Endangered	
Zanda latirostris	Carnaby's Black Cockatoo, Short- billed Black-cockatoo	Bird	Known	Breeding known to occur within area	Endangered (listed as Calyptorhynchus latirostris)	
Thalassarche Campbell Albatross, impavida Campbell Black- browed Albatross		Bird	Мау	Species or species habitat may occur within area	Vulnerable	Migratory
Diomedea antipodensis	Antipodean Albatross	Bird	Likely	Foraging, feeding or related behaviour likely to occur within area	Vulnerable	Migratory
Pachyptila turtur subantarctica	Fairy Prion (southern)	Bird	Мау	Species or species habitat may occur within area	Vulnerable	
Carcharodon carcharias	White Shark, Great White Shark	Shark	Known	Foraging, feeding or related behaviour known to occur within area	Vulnerable	Migratory
Phoebetria fusca	Sooty Albatross	Bird	Мау	Species or species habitat may	Vulnerable	Migratory

				occur within		
Falco hypoleucos	Grey Falcon	Bird	Likely	area Species or species habitat likely to occur within area	Vulnerable	
Macronectes halli	Northern Giant Petrel	Bird	Likely	Foraging, feeding or related behaviour likely to occur within area	Vulnerable	Migratory
Thalassarche Black-browed melanophris Albatross		Bird	Likely	Foraging, feeding or related behaviour likely to occur within area	Vulnerable	Migratory
Chelonia mydas Green Turtle		Reptile	Мау	Species or species habitat may occur within area	Vulnerable	Migratory
Halobaena caerulea	Blue Petrel	Bird	Мау	Species or species habitat may occur within area	Vulnerable	
Leipoa ocellata	Malleefowl	Bird	Known	Species or species habitat known to occur within area	Vulnerable	
Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover	Bird	Мау	Species or species habitat may occur within area	Vulnerable	Migratory
Thalassarche steadi	White-capped Albatross	Bird	Мау	Species or species habitat may occur within area	Vulnerable	Migratory
Thalassarche carteri	Indian Yellow-nosed Albatross	Bird	Likely	Species or species habitat likely to occur within area	Vulnerable	Migratory
Diomedea exulans	Wandering Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory

Diomedea epomophora	Southern Royal Albatross	Bird	Мау	related behaviour likely to occur within area Species or species habitat may occur within area	Vulnerable	Migratory
Cereopsis novaehollandiae grisea	Cape Barren Goose (south-western), Recherche Cape Barren Goose	Bird	Likely	Species or species habitat likely to occur within area	Vulnerable	
Rhincodon typus	Whale Shark	Shark	Мау	Species or species habitat may occur within area	Vulnerable	Migratory
Pterodroma mollis	Soft-plumaged Petrel	Bird	Мау	Species or species habitat may occur within area	Vulnerable	
Sternula nereis nereis	Australian Fairy Tern	Bird	Known	Foraging, feeding or related behaviour known to occur within area	Vulnerable	
Carcharias taurus (west coast population)	Grey Nurse Shark (west coast population)	Shark	Likely	Species or species habitat likely to occur within area	Vulnerable	
Dasyurus geoffroii	Chuditch, Western Quoll	Mammal	Likely	Species or species habitat likely to occur within area	Vulnerable	

Appendix 14: Swamp Yate (*Eucalyptus occidentalis*) woodland in seasonallyinundated basins - Community Description

Description obtained from: Ecologia for Grange Resources Limited (2008) Southdown Magnetite Proposal. Regional Flora and vegetation assessment. Unpublished Report

Swamp Yate (Eucalyptus occidentalis) woodland in seasonally-inundated basins

Community Description

The centre of these sumplands was usually inhabited by Swamp Yate (*Eucalyptus occidentalis*) low woodland often with an understorey of the Saltwater Paperbark (*Melaleuca cuticularis*). Peripheral to the central seasonally-inundated basin of these wetlands there was often a waterlogged zone of E. occidentalis associated with *Kunzea recurva* heath to open scrub and/or the small trees *Melaleuca preissiana* and *Banksia littoralis* and a number of mallees (primarily *Eucalyptus decipiens subsp. adesmophloia*). Fringing the wetland there was usually an *Anarthria laevis* sedgeland. However in the wetlands where there was shallow laterite, the sedgeland was usually replaced with a Pericalymma ellipticum heath.

The understorey shrubs of this vegetation were typically very open. Melaleuca cuticularis, Kunzea recurva and Hakea nitida generally formed an open tall shrub layer. Hakea denticulata, Hakea laurina, Hakea varia, Exocarpos sparteus, Agonis theiformis, Lambertia inermis and Nuytsia floribunda were also sometimes present in the seasonally waterlogged areas fringing the sumplands. Other common shrub taxa, recorded at low density across the sampled sites were Isopogon trilobus, Acacia pulchella var. glaberrima, Taxandria spathulata, Astartea glomerosa, Astartea aspera, Beaufortia empetrifolia, Melaleuca concinna and Conothamnus aureus. Other mid and low shrub species recorded at lower abundance included Acacia biflora, Acacia luteola, A. subcaerulea, Adenanthos cuneatus, Banksia baueri, Banksia dryandroides, Bossiaea praetermissa, Daviesia inflata, Dryandra falcata, Dryandra mucronulata subsp. mucronulata, Dryandra tenuifolia var. tenuifolia, Gompholobium confertum, Hibbertia lineata, Leucopogon conostephioides, Melaleuca subtrigona, Petrophile squamata subsp. squamata, Petrophile media, Spyridium majoranifolium, Stirlingia anethifolia and Thomasia stelligera. The perennial herbs Villarsia parnassifolia, Anthotium humile, Stylidium corymbosum, Goodenia filiformis and Velleia trinervis were abundant in the wetlands in good condition. These herbs inhabited the shallowly-inundated zone of the wetland and were most apparent when the water receded and the herbs were in flower in late summer. A dense ground layer was generally present in the seasonally waterlogged fringe of the sumplands and this was dominated by rushes and sedges including Anarthria laevis, Baumea juncea, Gahnia ancistrophylla, Lepidosperma striatum, Schoenus laevigatus, Schoenus subfascicularis and Tricostularia compressa. A suite of native grasses was also recorded including Amphipogon amphipogonoides, Austrostipa hemipogon, Cyperochloa hirsuta, Deyeuxia quadriseta and Neurachne alopecuroidea. Naturalised alien grasses and herbs were prevalent in the more disturbed wetlands and these included *Aira caryophyllea, *Cirsium vulgare, *Conyza parva, *Conyza sumatrensis, *Hordeum leporinum, *Hypochaeris glabra, Juncus pallidus, *Lagurus ovatus, *Pennisetum clandestinum, *Pseudognaphalium luteoalbum, *Rumex crispus, *Solanum nigrum and *Vulpia myuros var. megalura

Appendix 15: Traffic Count Data – Rollond Road

MetroCount Traffic Executive Daily Classes

DailyClass-172 -- English (ENA)

<u>Datasets:</u>	
Site:	[604_000240_000200] Rolland Road West of Highway
Attribute:	RURAL
Direction:	8 - East bound A>B, West bound B>A. Lane: 0
Survey Duration:	0:00 Wednesday, 6 November 2019 => 11:32 Friday, 6 December 2019,
Zone:	
File:	604_000240_000200 0 2019-12-06 1131.EC0 (Plus)
Identifier:	GP311BX6 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v5.02)
Data type:	Axle sensors - Paired (Class/Speed/Count)
<u>Profile:</u>	
Filter time:	0:00 Wednesday, 6 November 2019 => 11:32 Friday, 6 December 2019
Filter time: (30.4808)	
Filter time: (30.4808) Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Filter time: (30.4808) Included classes: Speed range:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 10 - 160 km/h.
Filter time: (30.4808) Included classes: Speed range: Direction:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 10 - 160 km/h. North, East, South, West (bound), P = <u>East</u> , Lane = 0-16
Filter time: (30.4808) Included classes: Speed range:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 10 - 160 km/h. North, East, South, West (bound), P = <u>East</u> , Lane = 0-16 Headway > 0 sec, Span 0 - 100 metre
Filter time: (30.4808) Included classes: Speed range: Direction:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 10 - 160 km/h. North, East, South, West (bound), P = <u>East</u> , Lane = 0-16
Filter time: (30.4808) Included classes: Speed range: Direction: Separation:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 10 - 160 km/h. North, East, South, West (bound), P = <u>East</u> , Lane = 0-16 Headway > 0 sec, Span 0 - 100 metre Default Profile Vehicle classification (AustRoads94)
Filter time: (30.4808) Included classes: Speed range: Direction: Separation: Name:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 10 - 160 km/h. North, East, South, West (bound), P = <u>East</u> , Lane = 0-16 Headway > 0 sec, Span 0 - 100 metre Default Profile
Filter time: (30.4808) Included classes: Speed range: Direction: Separation: Name: Scheme:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 10 - 160 km/h. North, East, South, West (bound), P = <u>East</u> , Lane = 0-16 Headway > 0 sec, Span 0 - 100 metre Default Profile Vehicle classification (AustRoads94)

Daily Classes

DailyClass-172	
Site:	604_000240_000200.0.1EW
Description:	Rolland Road West of Highway
Filter time:	0:00 Wednesday, 6 November 2019 => 11:32 Friday, 6 December 2019
Scheme:	Vehicle classification (AustRoads94)
Filter:	Cls(1-12) Dir(NESW) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

1	2	3	4	5	6	7	8	9	10	11	12
10	0	1	0	0	0	0	0	5	0	11	0
37.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	18.5	0.0	40.7	0.0
4	1	1	1	0	0	0	0	4	0	8	0
21.1	5.3	5.3	5.3	0.0	0.0	0.0	0.0	21.1	0.0	42.1	0.0
7	1	3	0	0	0	0	0	2	0	13	0
26.9	3.8	11.5	0.0	0.0	0.0	0.0	0.0	7.7	0.0	50.0	0.0
8	0	5	0	0	0	0	0	0	0	16	0
27.6	0.0	17.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.2	0.0
2	0	2	1	0	0	0	0	0	0	7	0
16.7	0.0	16.7	8.3	0.0	0.0	0.0	0.0	0.0	0.0	58.3	0.0
4	0	1	0	0	0	0	0	4	1	2	0
33.3	0.0	8.3	0.0	0.0	0.0	0.0	0.0	33.3	8.3	16.7	0.0
5	1	1	0	0	0	0	0	0	1	0	0
62.5	12.5	12.5	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0
		ume									
		2	0	0	0	0	0	2	0	Q	0
0	0	2	0	0	0	0	0	2	0	0	0
30.1	2.3	10.5	1.5	0.0	0.0	0.0	0.0	11.3	1.5	42.9	0.0
lays	0	2	0	0	0	0	0	2	0	11	0
21.4	1.0	10.0	1.0	0.0	0.0	0.0	0.0	9.1	0.0	40./	0.0
end 5	1	1	0	0	0	0	0	0	1	1	~
5	Ţ	Ţ	U	U	U	U	U	Z	Ţ	T	0
45.0	5.0	10.0	0.0	0.0	0.0	0.0	0.0	20.0	10.0	10.0	0.0
	10 37.0 4 21.1 7 26.9 8 27.6 2 16.7 4 33.3 5 62.5 ege dai ce week 6 30.1 lays 6 27.4 end 5	10 0 37.0 0.0 4 1 21.1 5.3 7 1 26.9 3.8 8 0 27.6 0.0 2 0 16.7 0.0 4 0 33.3 0.0 5 1 62.5 12.5 nge daily vol 0 30.1 2.3 ays 0 27.4 1.8 and 5 1	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	10 0 1 0 37.0 0.0 3.7 0.0 4 1 1 1 21.1 5.3 5.3 5.3 7 1 3 0 26.9 3.8 11.5 0.0 8 0 5 0 26.9 3.8 11.5 0.0 8 0 5 0 26.9 3.8 11.5 0.0 8 0 5 0 26.9 3.8 11.5 0.0 26.9 3.8 11.5 0.0 27.6 0.0 16.7 8.3 4 0 1 0 33.3 0.0 8.3 0.0 5 1 1 0 6 0 2 0 30.1 2.3 10.5 1.5 6 0 2 0 27.4 1.8 10.6 1.8	10 0 1 0 0 37.0 0.0 3.7 0.0 0.0 4 1 1 1 0 21.1 5.3 5.3 5.3 0.0 7 1 3 0 0 26.9 3.8 11.5 0.0 0.0 8 0 5 0 0 26.9 3.8 11.5 0.0 0.0 26.9 3.8 11.5 0.0 0.0 26.9 3.8 17.2 0.0 0.0 26.9 0.0 17.2 0.0 0.0 27.6 0.0 16.7 8.3 0.0 16.7 0.0 16.7 8.3 0.0 33.3 0.0 8.3 0.0 0.0 33.3 0.0 8.3 0.0 0.0 see week 0 2 0 0 30.1 2.3 10.5 1.5 0.0 33.3 0.0 2 0 0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10 0 1 0 0 0 0 37.0 0.0 3.7 0.0 0.0 0.0 0.0 4 1 1 1 0 0 0 21.1 5.3 5.3 5.3 0.0 0.0 0.0 7 1 3 0 0 0 0 26.9 3.8 11.5 0.0 0.0 0.0 0 2 0 2 1 0 0 0 0 27.6 0.0 17.2 0.0 0.0 0.0 0 0 2 0 2 1 0 0 0 0 4 0 1 0 0 0 0 0 33.3 0.0 8.3 0.0 0.0 0.0 0 0 6 0 2 0 0 0 0 0 30.1 2.3 10.5 1.5 0.0 0.0 0 0 27.4	10 0 1 0 0 0 0 0 37.0 0.0 3.7 0.0 0.0 0.0 0.0 0.0 4 1 1 1 0 0 0 0 21.1 5.3 5.3 5.3 0.0 0.0 0.0 0.0 7 1 3 0 0 0 0 0 0 26.9 3.8 11.5 0.0 0.0 0.0 0.0 0.0 2 0 2 1 0 0 0 0 0 2 0 2 1 0 0.0 0.0 0.0 0.0 16.7 0.0 16.7 8.3 0.0 0.0 0.0 0.0 33.3 0.0 8.3 0.0 0.0 0.0 0.0 0.0 5 1 1 0 0 0 0.0 0.0 0.0 33.3 0.0 2 0 0 0 0.0 0.0	10 0 1 0 0 0 0 0 0 0 1 37.0 0.0 3.7 0.0 0.0 0.0 0.0 0.0 0.0 18.5 4 1 1 1 0 0 0 0 0 4 21.1 5.3 5.3 5.3 0.0 0.0 0.0 0.0 21.1 7 1 3 0 0 0 0 0 0 21.1 7 1 3 0 0 0 0 0 0 21.1 8 0 5 0 0 0 0 0 0 0 0 0 0 2 0 2 1 0 0 0 0 0 0 0 0 0 16.7 0.0 1.0 0 0 0 0 0 0 0	10 0 1 0 0 0 0 0 0 5 0 37.0 0.0 3.7 0.0 0.0 0.0 0.0 0.0 0.0 18.5 0.0 4 1 1 1 0 0 0 0.0 0.0 21.1 0.0 7 1 3 0.0 0.0 0.0 0.0 0.0 0.0 21.1 0.0 26.9 3.8 11.5 0.0 0.0 0.0 0.0 0.0 0.0 7 0.0 8 0 5 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 0 2 1 0 0.0 0.0 0.0 0.0 0.0 0.0 16.7 0.0 16.7 8.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 33.3 0.0 8.3 0.0 0.0 0.0 0.0 0.0 0.0 12.5 age 6	10 0 1 0 0 0 0 0 5 0 11 37.0 0.0 3.7 0.0 0.0 0.0 0.0 0.0 18.5 0.0 40.7 4 1 1 1 0 0 0.0 0.0 4 0 8 21.1 5.3 5.3 5.3 0.0 0.0 0.0 0.0 21.1 0.0 42.1 7 1 3 0 0 0 0.0 1.0 1.1 0.0 42.1 26.9 3.8 11.5 0.0 0.0 0.0 0.0 0.0 0.0 1.6 8 0 5 0 0.0 0.0 0.0 0.0 0.0 1.6 16.7 0.0 17.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.7 16.7 0.0 16.7 8.3 0.0 0.0 0.0 0.0 0.0 1.1 1.2 33.3 0.0 8.3

* - Incomplete

Site C – Rollond Road, SLK 0-15.9 - Vegetation, Flora, Fauna and Environmental Considerations Report