

Vegetation, Flora, Fauna and Environmental Considerations Report

Shire of Esperance 2022-23 Strategic Purpose Permit Site H – Boydell Road, SLK 0 - 11.83



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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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LIST OF ABBREVIATIONS

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)

SLK: Straight Line Kilometres (Main Roads WA)

SOE: Shire of Esperance

TEC: Threatened Ecological Community **TF:** Threatened Flora (Under BC Act)

TPFL: Threatened and Priority Flora Database (DBCA) **TPRF:** Threatened and Priority Flora Report Form

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 'Boydell Road, SLK 0 - 11.83' project in 2022-23 as part of their 2023 Strategic Purpose Permit application.

The Shire of Esperance endeavours 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 4593 km of road. The Shire of Esperance is submitting 'Boydell Road SLK 0.00 to SLK 11.83' project as Site H under the '2023 Strategic Purpose Permit' (Figure 1), for the purpose of road widening during a road reconstruction.

Boydell Road is particularly narrow resulting in safety issues during harvest season. Boydell Road requires widening to maintain the safety of road users during harvest. This road is classified as a rural access road on Shire road network providing vital link to properties and other access roads in north west region of Esperance. Traffic counts showing a major impact of heavy vehicle occupied during harvesting season and it is an approved RAV and Bus route.

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 1.743 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 40 km north west of Esperance, within the Shire of Esperance managed road reserve of Boydell Road. Specifically, it is starting from Coolgardie Esperance Highway at straight line kilometre (SLK) 332 (Main Roads, 2022). A point within the proposed clearing permit area is 6284651.8m N, 3837553.4m E (UTM Zone 51 H, GDA94).

The Shire of Esperance's two Environmental Scientists completed the site assessment on Boydell Road, SLK 0 - 11.83 over two years between the 5th and 7th of October 2020, and 25th of October to 14th of November, 2022.

A total of 366 vascular plant taxa from 197 plant genera and 57 plant families were recorded within the Boydell Road, SLK 0 - 11.83 survey area during the 2020-2022 survey. The majority of taxa was recorded within the Myrtaceae (58 taxa), Fabaceae (57 taxa), Proteaceae (32), Poaceae (24 taxa) and Asteraceae (23 taxa) families (Appendix 1). This total included 318 native species and 51 introduced (weed) species.

Seven 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 'Boydell Road, SLK 0 - 11.83' 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 Boydell Road, SLK 0 - 11.83 survey area.

Table 1. Summary of Priority flora species recorded in Site H – Boydell Road, SLK 0 - 11.83 project area.

Species	Conservation Code	Total Plants	Total taking
Darwinia sp. Gibson	P1	44	4
Austrobaeckea uncinella	P3	1	0
Brachyloma mogin	P3	5	0
Daviesia pauciflora	P3	3	0
Kunzea salina	P3	69	0
Persoonia scabra	P3	16	3
Grevillea baxteri	P4	3	1

A total of 0.049 ha of the EBPC listed 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan)' Threatened Ecological Community (TEC) was present within Site H - Boydell Road, SLK 0 - 11.83. There was also one vegetation unit that was consistent with 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 H - Boydell Road, SLK 0 - 11.83'.

The site contains suitable foraging habitat for the EPBC listed Carnaby's cockatoo (*Calyptorhynchus latirostis*). Approximately 0.049 ha of high quality native foraging Habitat. Several other conservation listed species had potentially suitable habitat within the project area.

Should the development of Boydell Road, SLK 0 - 11.83 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 (larger trees and trees with hollows) 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 'Boydell Road, SLK 0 - 11.83' project area;
- Implement a management plan to prevent the spread of *Acacia pycnantha* a declared pest species; and
- Minimize all threatening processes to native vegetation.

These have been addressed in the attached Weed and Dieback plan and, and provided these measures are implemented, there should be no impediments to the widening of Boydell Road, SLK 0 - 11.83.

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 'Boydell Road, SLK 0 - 11.83' project as Site H under the '2023 Strategic Purpose Permit' (Figure 1), for the purpose of road widening.

1.1 Location and Scope of Project

The proposed works are located 40 km north west of Esperance, within the Shire of Esperance managed road reserve of Boydell Road. Specifically, it is starting from Coolgardie Esperance Hwy at straight line kilometre (SLK) 332 (Main Roads, 2022). A point within the proposed clearing permit area is 6284651.8m N, 3837553.4m E (UTM Zone 51 H, GDA94).

Boydell Road is particularly narrow resulting in safety issues during harvest season and requires widening to maintain the safety of road users during harvest. To complete these works, native vegetation up to 2 m from the current road footprint on both sides of the road is required to be cleared, increasing the active road footprint to 15 m. To mitigate impact of clearing vegetation, where feasible clearing will not occur to the full permitted width, conserving vegetation.



Figure 1. Location of Site H – Boydell Road, SLK 0 - 11.83.

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 'Boydell Road, SLK 0 - 11.83' survey area including:

- Undertake a desktop study of the flora, fauna and vegetation of the 'Boydell Road, SLK 0 -11.83' 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 'Boydell Road, SLK 0 11.83' survey area;
- Undertake a detailed survey of the 'Boydell Road, SLK 0 11.83' 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 'Boydell Road, SLK 0 11.83' survey area;
- Define and map the location of any threatened and priority flora located within the 'Boydell Road, SLK 0 - 11.83' 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) 2022d
- Threatened and Priority Flora Database (TPFL) 2022c
- DBCA's Esperance District Threatened Flora spatial dataset 2021a
- Threatened and Priority Ecological Communities 2022b
- Threatened, specially protected and priority fauna 2022e
- Black cockatoo roost and breeding sites 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 Boydell Road, SLK 0 - 11.83 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 Statewide 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 (Esperance 2018)
- Atlas of Living Australia database

- Hydrographic Catchments (DWER)
- Crown Reserves (Landgate)

3.2 Field Survey

Boydell Road SLK 0-6 was initially inspected on the 26th of August 2020 by Julie Waters and Katie White the SOE's Environmental Coordinator and previous Environmental Officer. SLK 6-11.83 was initially inspected on the 25th of October 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.

Two detailed field assessments of the flora and vegetation of the Boydell Road, SLK 0 - 11.83 survey area was undertaken by Shire of Esperance botanists:

- Section 1 SLK 0-6 was conducted between the 5th and 7th of October 2020
- Section 2 -SLK 6-11.83 was conducted over the 25th October to 2nd November 2022 Both surveys were carried out 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 'Boydell Road, SLK 0 - 11.83' 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 2 m width proposed clearing permit area. recording all species, and collecting 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 'Boydell Road, SLK 0 - 11.83' was also constructed.

All species unknown in the field were collected, pressed and dressed 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.

A follow up survey was conducted on 14th of November 2022 by Katherine Walkerden and Julie Waters to specifically target the identification and counting of *Kunzea salina*, *Darwinia* sp. Gibson and *Persoonia scabra*.

The vegetation communities of 'Site H – Boydell Road, SLK 0 - 11.83' was assessed for the presence of 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 H – Boydell Road, SLK 0 - 11.83' is a long linear site, quadrant-based data was not used to determine if the site meet the Kwongkan 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.

To determine if there were any occurances of the State listed 'Swamp Yate, *Eucalyptus occidentalis*, woodlands in seasonally inundated clay basins in the South Coast of Western Australia' PEC, potential matching vegetation types were assessed against the original vegetation community description used for nominating the 'Swamp Yate, *Eucalyptus occidentalis*, woodlands in seasonally inundated clay basins in the South Coast of Western Australia' PEC (Table 10).

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 H – Boydell Road, SLK 0 - 11.83' 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 'Boydell Road, SLK 0 - 11.83' were conducted in October and November, 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 'Boydell Road, SLK 0 - 11.83' 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.

Table 2. Potential limitations affecting the conclusions made in this report.

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. Part of Section 1 (0-1.19 SLK) was resurveyed in 2022 as the original survey was done using inexperienced staff (Danika Penson). This was the only part of Section 1 that contained good quality vegetation.
Proportion of flora collected and	Potential limitation: While many plants were in flower
identification issues	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 between vegetation quadrat sites 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 conducted in Spring (September-November). All surveys have been conducted in October and November which falls within this period. Rainfall in 2022 was above average, and continued well into December.
Disturbances (fire/flood/clearing)	Not a limitation: The Boydell Road, SLK 0 - 11.83 survey area has not been impacted by any recent fire or flooding events.

4 DESKTOP ASSESSMENT RESULTS

4.1 Climate

The Esperance climate is described as Mediterranean, characterised by cool wet winters and dry warm summers (BoM 2022). The area receives an average annual rainfall of 618 mm. The Shire of Esperance received an unusually high level of rainfall in 2022 resulting in an extended flowering period.

4.2 Catchment

'Site H – Boydell Road, SLK 0 - 11.83' is present within the Lake Gore catchment area. It is located approximately 32km from the coast.

4.3 Geology, Soils and Topography

Five geological units were identified within 'Site H – Boydell Road, SLK 0 - 11.83', by Schoknecht et al. (2004). They are:

- Tertiary marine sediments of the Pallinup formation
- Tertiary marine sediments of the Pallinup formation over granite and gneiss bedrock
- Tertiary marine sediments with aeolian carbonate rich deposits in places
- Tertiary sediments with colluvium and alluvium deposits. Patches of granitic rock and Aeolia

Within the area, there has been six soil types recorded. These are:

- Complex of yellow, yellow solonetzic and red duplex soils
- salt affected soils with surface salt crusting
- Solonetzic, yellow sodic, alkaline, duplex soil
- Duplex red-brown columnar soil complex
- Red, sodic, alkaline, gradational soil, with crabhole gilgai microrelief
- Red, sodic, alkaline, gradational soil

Within the area, there has been five soil types recorded. These are:

- Gently undulating, 1-3% slope
- Gently undulating plain, 1-3% slope
- Level plain, <1% slope
- Open depressions and ephemeral water courses
- Valley slopes, 2-15% slope

4.4 Regional Vegetation

'Site H – Boydell Road, SLK 0 - 11.83' is located on the boundary between two Interim Biogeographic Regionalisation for Australia (IBRA; Thackway & Cresswell 1995) regions; the Recherche subregion (Esp2) and the Eastern Mallee (Mal01) subregion.

The Esp2 region is described as "Proteaceae Scrub and Mallee heaths on sandplain overlying Eocene sediments, rich in endemics. Herbfields and heaths (rich in endemics) on abrupt granite and quartzite ranges that rise from the plan. Eucalyptus woodlands occur in gullies and alluvial foot-slopes".

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 H – Boydell Road, SLK 0 - 11.83' (Table 3). Vegetation association 47 has been highly cleared having 13% of its original extent remaining within the Shire of Esperance, Ridley_516 has had significantly less clearance with 45% of its original extent remaining.

Table 3. Vegetation associations mapped by Beard (1973) within the 'Site H – Boydell Road, SLK 0 -

11.83', and statistics on pre-European remaining areas.

Vegetation Association		
Name	Ridley_516	Esperance_47
Description	Eucalypt shrubland Eucalyptus eremophila, E. redunca, E. spp.	Mixed heath with scattered mallee e.g. tallerack Eucalyptus tetragona
Total remaining	54.80	35.86
Pre-European extent in IBRA sub-region (%)	48.68	15.06
Pre-European extent in LGA (%)	44.92	13.43
Current extent conserved in IUCN area (%)	24.00	17.68

4.5 Surrounding Land Use

The area directly included in the clearing permit application 'Site H – Boydell Road, SLK 0 - 11.83' is currently intact and vegetated 40 m wide road reserve, managed by the Shire of Esperance. The current road footprint occupies 15 m. The surrounding land use is agricultural. The area is within rural zoning.

The site was 5.98km from Speddingup Nature Reserve (Reserve 25958) closest conservation reserve. No other conservation vested reserves were within 10 km of the site.

4.6 Potential Threatened and Priority Flora

5 threatened flora (TF) and 54 priority flora (PF) were recorded within a 20 km radius of the proposed impact site (Appendix 3)). Of these, no TF species and 37 PF species had suitable known associated habitat that corresponded with vegetation communities and soil type of 'Site H – Boydell Road, SLK 0 - 11.83' project.

4.7 Potential Threatened and Priority Ecological Communities

The desktop study identified the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 listed threatened ecological community (TEC) 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan)' within 'Site H – Boydell Road, SLK 0 - 11.83' project area. No other TEC's or priority ecological communities (PEC) were identified by the desktop study as being within 'Site H – Boydell Road, SLK 0 - 11.83' or within a 20 km buffer of the site.

4.8 Potential Threatened and Priority Fauna

30 conservation listed fauna were recorded within a 20 km radius of the proposed impact site, an additional 6 species were recorded on the EPBC protected matters tool (Appendix 4)).

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 sampling in the immediate area.

5 FIELD SURVEY RESULTS AND DISCUSSION

5.1 Flora

A total of 366 vascular plant taxa from 197 plant genera and 57 plant families were recorded within the 'Boydell Road, SLK 0 - 11.83' survey area during the 2020-2022 survey. The majority of taxa was recorded within the Myrtaceae (58 taxa), Fabaceae (57 taxa), Proteaceae (32), Poaceae (24 taxa) and Asteraceae (23 taxa) families. This total included 318 native species and 51 introduced (weed) species. (see Appendix 1 for the complete incidental species list).

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

- Schoenus subflavus (Accession 8652; KW115, Specimen not retained)
- Leucopogon assimilis s. lat (Accession 10048; KSW23122, Specimen retained)
- Brachyscome iberidifolia (Accession 10048; KSW23222, Specimen retained)
- Frankenia sessilis (Accession 9857; KSW17022, Specimen retained)
- Hyparrhenia hirta (Accession 9874; KSW20222, 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, *Tecticornia* sp.; and
- The plant material collected could not be determined to a known taxon. For example, Lepidosperma sp. (as species are 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 7 PF species, 3, 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 2022c; DBCA 2022d; DBCA 2021a). There are 136 species recorded as priority three or four conservation status within the Shire of Esperance boundaries (DBCA 2022a). It was noted that additional information on *Persoonia scabra* and *Grevillea baxteri* was located on file.

Table 4. Summary of Priority flora species recorded in Site H – Boydell Road, SLK 0 - 11.83 project area.

Species	Conservation Code	Total Plants	Total taking
Darwinia sp. Gibson	P1	44	4
Austrobaeckea uncinella	P3	1	0
Brachyloma mogin	P3	5	0
Daviesia pauciflora	P3	3	0
Kunzea salina	P3	69	0
Persoonia scabra	P3	16	3
Grevillea baxteri	P4	3	1

5.2.1 Darwinia sp. Gibson, Priority 1

A specimen of *Darwinia* sp. Gibson was sent to the WA Herbarium for identification confirmation (KW091; Accession 8652; PERTH 09375430). It was confirmed as *Darwinia* sp. Gibson by Mike Hislop on the 10th of December 2020. 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 29/03/2023 (Appendix 2). If proposed works occur, 4 plants will be impacted upon, from a population total of 44.

Darwinia sp. Gibson has a total of 15 herbarium records and 14 TPFL records, with a total of 17 populations. A majority of records were within road reserves (14), two records were within private property, two records were within Reserve 35302 with its purpose currently being for gravel, this reserve is set to have its purpose changed to conservation. The species currently known to occur within an 89km east to west range and 27km north to south range.

Table 5. Known Herbarium records of Priority 1 species *Darwinia* sp. Gibson, detailing location details, frequency, tenure and collection date (DBCA, 2023).

Sheet number/ TPFL population number	Location	Frequency	Tenure	Record date
1288784	3 miles N of Gibson		Unclear	10/08/1951
6466710	W side of rail line, between and		Rail reserve	1/07/2003
Population 10	adjacent to track, 10.5 km NNW of Gibson by rail			
6796850 Population 9	22.8 km NW along Scaddan Road from junction of Backman Road, part of Bandy Creek catchment, ca	Occasional.	Road reserve	26/05/2005
	50 km NW of Condingup			

Population 3	Private Property, Lot 102. 3km W along Griffiths rd from junction of Coolgardie-Esperance rd, Ca. 20km NNW of Gibson. [Ca. 5km SW of Scaddan]. Shire of Esperance.	50 plants	Private property	06/07/2006
Population 7	Private Property, Lot 1809. 5.2km W along Fleming Grove rd from junction of Dempster rd. [Ca. 14km NE of Gibson]. [Ca. 23km SE of Scaddan]. Shire of Esperance.	20 plants	Private property	06/07/2006
Population 5	Yates Road. 2.1km N along Yates rd from junction of Fleming Grove rd. [Ca. 14km NE of Gibson]. [Ca. 20km SE of Scaddan]. Shire of Esperance.		Road reserve	06/07/2006
Population 8	Mount Ridley Nature Reserve (27386), Lot 271. 'Norwood Nature Reserve'. 1.8km S along Dempster rd from junction of Norwood rd, 32km NE of Gibson. [Ca. 27km E of Scaddan]. Shire of Esperance.	100 plants	Nature reserve	06/07/2006
7362145 Population 4	15 km SE of Scaddan, 10 km W along Speddingup Road from junction of Dempster Road	occasional, ca 20 plants.	Road reserve	21/06/2006
7362250 Population 6	12 km NE of Gibson, road verge, 1 km N along Yates Road from junction of Fleming Grove Road	locally frequent ca 40 plants.	Road reserve	27/06/2006
7362080 Population 2	20 km SSE of Scaddan, 1.5 km N along Styles Road from junction of Scaddan Road	occasional, ca 30 plants.	Road reserve	6/07/2006
8273928	1 km N along Yates Road from Fleming Grove, E side of road, on shire road verge extending into private property, Esperance	50+ plants.	Road reserve	26/07/2010
8379777 Population 13	Scaddan Road, Scaddan	over 50 plants.	Road reserve	30/06/2012
8796750	100 m NE along Karl Berg Road, around salt lake on N side of the road, from the intersection of Heywood and Karl Berg Roads	21 - 50 plants.	Road reserve	29/05/2013
9375368	On eastern road reserve, c. 51 km N of Esperance townsite, on Styles Road 2.6 km S of Norwood Road	10 plants (3 will be taken with road reconstruction activity).	Road reserve	15/10/2020

9375481 Population 12	5.6 km N of Scaddan Road on Dempster Road, on N side of lake, E side of road	10 plants.	Road reserve	16/10/2020
Population 1	UCL, Lot 1992. 3.5km N along Styles rd from junction with Scaddan rd. [Ca. 19km E of Scaddan]. Shire of Esperance.	1600 plants	Road reserve	06/07/2006
Population 15	Shire Road Reserve, along Styles Rd. Ca 3.4km N along Styles Rd from Scaddan Rd intersection. Along Eastern verge of road	10 plants	Road reserve	15/10/2020
Population 14	Shire Road Reserve, along Styles Rd. Ca 2.6km S along Styles Rd from Norwood Rd intersection. Along Eastern verge of road	10 plants	Road reserve	15/10/2020
9511059	Northern section of Reserve 35302, 550 m N of Fleming Grove Road and 70 m W of freight line	locally common, surrounding each salt lake.	Shire reserve (Land use currently changing from gravel to conservation)	8/06/2022
9511105	Reserve 35302, off access track, 750 m S of Fleming Grove Road, 900 m W of Freight line	locally common on embankment and access track.	Shire reserve (Land use currently changing from gravel to conservation)	22/06/2022
9518193	Karl Berg Road		Road reserve	9/10/2022
9518304	Mount Ridley Nature Reserve		Nature reserve	10/10/2022

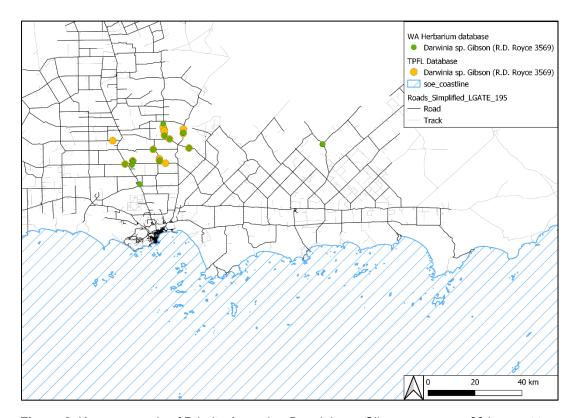


Figure 2. Known records of Priority 1 species *Darwinia* sp. Gibson across an 89 km east to west geographic range (DBCA 2022).



Figure 3. Location of Priority 1 species *Darwinia sp. Gibson* within the 'Site H – Boydell Road, SLK 0 - 11.83' project.

5.2.2 Austrobaeckea uncinella, Priority 3

A specimen of *Austrobaeckea uncinella* was sent to the WA Herbarium for identification confirmation (KSW20622; Accession 9874; PERTH 09375430). It was confirmed as *Austrobaeckea uncinella* by Mike Hislop on the 23rd of January 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 29/03/2023 (Appendix 2). If proposed works occur, no plants will be impacted upon.



Figure 4. Location of Priority 3 species *Austrobaeckea uncinella* within the 'Site H – Boydell Road, SLK 0 - 11.83' project.

5.2.3 Brachyloma mogin, Priority 3

A specimen of *Brachyloma mogin* was sent to the WA Herbarium for identification confirmation (KW1121; Accession 9116; specimen not retained). It was confirmed as *Darwinia* sp. Gibson by Mike Hislop on the 23rd of September 2021. 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 29/03/2023 (Appendix 2). There was a total of 5 plants found during the survey. No plants will be impacted upon.



Figure 5. Location of Priority 3 species *Brachyloma mogin* within the 'Site H – Boydell Road, SLK 0 - 11.83' project.

5.2.4 Daviesia pauciflora, Priority 3

A specimen of *Daviesia pauciflora* was sent to the WA Herbarium for identification confirmation (KSW16922; Accession 9857; specimen retained). It was confirmed as *Daviesia pauciflora* by Mike Hislop on the 10th of January 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 29/03/2023 (Appendix 2). There was a total of 3 plants found during the survey. No plants will be impacted upon.



Figure 6. Location of Priority 3 species *Daviesia pauciflora* within the 'Site H – Boydell Road, SLK 0 - 11.83' project.

5.2.5 Kunzea salina, Priority 3

A specimen of *Kunzea salina* was sent to the WA Herbarium for identification confirmation (KSW21222; Accession 9874; specimen retained). It was confirmed as *Kunzea salina* by Mike Hislop on the 23rd of January 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 29/03/2023 (Appendix 2). There was a total population of 69 plants. No plants will be taken during the survey.



Figure 7. Location of priority 3 species *Kunzea salina* within the 'Site H – Boydell Road, SLK 0 - 11.83' project.

Confirmati

5.2.6 Persoonia scabra Priority 3

Herbarium

ACC 9713

Location

side of road.

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

- Eastern population (SLK 0-0.24) (KW092; Accession 8652; PERTH 09375449). It was confirmed as *Persoonia scabra* by Michael Hislop on 10/12/2020.
- Eastern Central population (SLK 3.49-3.51) (KW094; Accession 8652 with specimen not retained). It was confirmed as *Persoonia scabra* by Michael Hislop on 10/12/2020.
- Western Central population (SLK 6.29-6.71) (KSW20322; Accession 9874 with specimen not retained). It was confirmed as *Persoonia scabra* by Michael Hislop on 23/01/23.
- Western population (SLK 7.94) (KSW20322; Accession 9874 with specimen retained). It was confirmed as *Persoonia scabra* by Michael Hislop on 23/01/23.

Threatened and Priority Reporting Forms (TPRF) were completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 29/03/2023 (Appendix 2). If proposed works occur, 3 plants will be impacted upon, from a population total of 16.

There was a total of 20 prior Herbarium records for this species, nine of these records were secure in National Parks. *Persoonia scabra* has a wide range spaning over 250km east to west, with populations recorded in the Shire of Esperance and Ravensthorpe. The largest population had a total of 15 plants listed with most populations having between 1-5 plants, similar to that seen within the survey area. Soil in the previous records were frequently sand or sand over gravel with several specimens in rehabilitated gravel pits. Previous records were also frequently for Mixed Mallee shrublands consistent with parts of the site.

An additional 8 populations have been found by shire of Esperance staff throughout 2022, all of these populations were found within shire road reserves.

Table 6. Confirmed records of Priority 3 species, *Persoonia scabra* found by Julie Waters and Katherine Walkerden during 2022.

reference date 15 seen scattered Western side of Salt lake 7.5km 29/05/2022 Rob Davis KSW039-p Road ACC 9604 throughout reserve. north of Dempster Road and reserve Ridley Road intersection. Population likely higher KSW9522 Loop road at SLK 2.48 single specimen Road 22/07/2022 Mike Hislop ACC 9690 found reserve KSW132-p Wittenoom road at SLK 9.03, on 3 plants Road 5/08/2022 Rob Davis ACC 9713 both sides of road. reserve KSW137-p Burdett Road SLK 4.27, North 05/08/2021 Rob Davis 5 plants seen. Road

Frequency

Tenure

reserve

Record

KSW16622	Heywood road at SLK 0.75.	2 plants seen, area	Road	10/10/2022	Mike Hislop
ACC 9841	Eastern side of road.	not searched.	reserve		
KSW16722	Heywood road SLK 4.75.	1 Plant found during	Road	12/10/2022	Mike Hislop
ACC 9841	Eastern side of road.	survey.	reserve		
KSW20322	Boydell road, Northern side of	5 plants found during	Road	25/10/2022	Mike Hislop
ACC 9874	road, 6.27km West of Boydell	survey.	reserve		
	road and Coolgardie-Esperance				
	Highway Intersection. 13.4km				
	North West of Gibson Townsite.				
KSW20422	Boydell road, Northern side of	3 plants in	Road	25/10/2022	Mike Hislop
ACC 9874	road, 7.92km West of Boydell	population. 2 plants	reserve		
	road and Coolgardie-Esperance	in close proximity, 3rd			
	Highway Intersection. 14.8km	plant 400 m West of			
	North West of Gibson Townsite.	collected specimen.			

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

Locality	Tenure	Date	Frequency
SW portion of reserve 35302, off access track, S of	Shire reserve	08/06/2022	15 plants
Fleming Grove Road, W of freight line	(Land use currently		scattered
	changing from gravel		throu7ghout
	to conservation)		reserve
86 km E of Esperance, 24 km E of Condingup on Henkes	Shire Road Reserve	8/10/2020	
Road, c. 4.3 km E of Howick Road intersection			
44-290 m W of Coolgardie-Esperance Highway on Boydell	Shire Road Reserve	7/10/2020	5 plants.
Road, southern road reserve, 35 km N of Esperance			
On Norwood Road from intersection of Dempster Road to	Shire Road Reserve	10/09/2019	> 3 plants.
20 m E, 28 km E of Scaddan, c. 50 km NNE of Esperance			
townsite			
Cape Le Grand National Park, proposed Lucky Bay	National Park	15/09/2014	
redevelopment site			
3.4 km NW from the northwestern boundary of Kau Rock	UCL	3/11/2013	1 plant.
Nature Reserve			
Helms Forestry Reserve 23527, bushland slashed access	Timber Reserve	2/01/2012	2-5 plants.
track travelling SE to S boundary			
New Island Bay, 2.3 km W of Hellfire Bay carpark, 1.9 km	National Park	26/11/2011	occasional, 1
SE of Mt Le Grand summit, 7.1 km WSW of Lucky Bay			plant seen.
campsite, Cape Le Grand National Park, 29 km SE of			
Esperance township, Esperance Plains IBRA bioregion			
2.1 km W of Hellfire Bay carpark, 1.9 km SE of Mt Le	National Park	26/11/2011	occasional, 1
Grand summit, 7.0 km WSW of Lucky Bay campsite, Cape			plant seen.
Le Grand National Park, 29 km SE of Esperance township,			
Esperance Plains IBRA bioregion			

	T	T =	
New Island Bay, 2.5 km WSW of Hellfire Bay carpark, 1.8	National Park	21/10/2011	occasional, 4
km SE of Mt Le Grand summit, 7.4 km WSW of Lucky Bay			plants and 2
campsite, Cape Le Grand National Park, 28 km SE of			seedlings
Esperance township, Esperance Plains IBRA bioregion			seen.
86.8 km E of Lake King General Store along Norseman	National Park	31/12/2001	15 plants
Lake King track. Roe District			noted.
26.5 km N of Condingup. Corner of Coolinup Road and	Shire Road reserve	31/12/1995	
Howick Road, NE of Esperance,			
W end of Dunns beach	National Park	2/12/1992	
5.5 km SW of Mount Ridley	UCL	7/12/1991	
35.5 km due ENE of Muckinwobert Rock 6.21 km NE of	Shire Road Reserve	30/09/1984	
Melaleuca Road on West Point Road			
23.5 km due SSE of Kau Rocks, 3.1 km NE of intersection	Shire Road Reserve	2/09/1984	
3 on Condingup Road			
12 km SW of Mount Buraminya, ca 40 km WNW of Mount	UCL	8/11/1980	a single
Ragged			plant.
42 km NE of Swallow Rock, Frank Hann National Park, ca	National Park	21/08/1980	
83 km NE of Lake King			
32 km NE of Swallow Rock, Frank Hann National Park, ca	National Park	1/08/1980	
84 km ENE of Lake King			
72 km W of Salmon Gums	Uncertain, no	11/11/1979	
	accurate geographic		
	details		
Frank Hann National Park	National Park	4/08/1978	
	•	•	



Figure 8. Location of Priority 3 species *Persoonia scabra* within the 'Site H – Boydell Road, SLK 0 - 11.83' project.

5.2.7 Grevillea baxteri, Priority 4

A specimen of *Grevillea baxteri* was sent to the WA Herbarium for identification confirmation (KSW1221 Accession 9116). It was confirmed as *Grevillea baxteri* by Mike Hislop on the 23rd of September 2021. 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 29/03/2023 (Appendix 2). If proposed works occur, 1 plant will be impacted upon, from a population total of 3.

Grevillea baxteri is a widespread species with a 219km east to west and an 81km north to south range. The species has numerous known populations with a total of 47 herbarium records, 3 TPFL records. An additional 6 populations have recently been found by Shire of Esperance staff. *Grevillea baxteri* has numerous populations within Cape Arid National Park, Nuytsland Nature Reserve and surrounding unallocated crown land.



Figure 9. Location of Priority 4 species *Grevillea baxteri* within the 'Site H – Boydell Road, SLK 0 - 11.83' project.

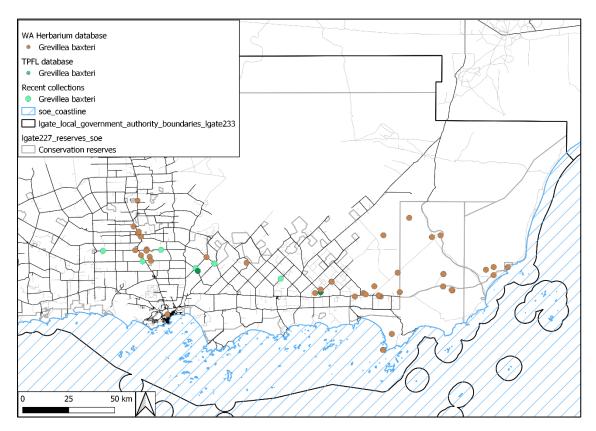


Figure 10. Known records of Priority 4 species *Grevillea baxteri* across a 219km east to west and a 81km north to south geographic range (DBCA 2022) including recently discovered populations by the Shire of Esperance.

5.3 Weeds

There was significant weed invasion across the entirety of the proposed 'Site H – Boydell Road, SLK 0 - 11.83' area. Overall, 51 invasive species were identified within the project area (Appendix 8.1). Of these, the most extensive and of serious concern were *Acacia pycnantha* and *Leptospermum laevigatum*, both weeds are priority environmental weeds in the Shire of Esperance's Environmental Weed Strategy 2009-2018. Ideally, regular wash downs during the course of works to remove weed seeds or follow up herbicide control of invasive species needs to occur.

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.



Figure 11. Acacia pycnantha present in high numbers between SLK 6-11.83 within 'Site H – Boydell Road, SLK 0 - 11.83'.

5.4 Dieback

No signs of dieback presence were obvious within the project area, proteaceous species were present though not in high quantities, the proteaceous plant within the project area were healthy. 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.

5.7 Vegetation Communities

Seven vegetation communities were identified within the 'Site H – Boydell Road, SLK 0 - 11.83', as defined by structure and composition (Table 8). It is believed that the Beard (1973) vegetation associations identified in Section 4.4 are an appropriate match for 4 vegetation types observed. Vegetation association Ridley_516 and Esperance_47 both matched two of the vegetation types present within the project area, other vegetation types were to fine scale to have been mapped by Beard vegetation associations.

 $\textbf{Table 8.} \ \ \textbf{Vegetation communities identified within proposed 'Site H-Boydell Road, SLK 0-11.83'}$

project area.

Туре	Description	Figure	Closest Matching Beard Vegetation Association	Area (ha)
A	Melaleuca cuticularis and M. brevifolia over mixed samphire's, Austrostipa juncifolia, Disphyma crassifolium.	14	-	0.069
В	Mallee woodland with <i>Hakea laurina</i> over mixed <i>Melaleuca</i> shrubland.	15	Ridley_516	1.067
С	Eucalyptus occidentalis woodland in valley floor.	16	-	0.134
D	Eucalyptus occidentalis and Eucalyptus rigens woodland.	17	Ridley_516	0.159
Е	Mallee and Eucalyptus pleurocarpa over mixed shrubland with Calothamnus quadrifidus, Melaleuca glaberrima, Allocasuarina spp.	18	Esperance_47	0.092
F	Eucalyptus occidentalis over Melaleuca cuticularis wetland with mixed samphire's.	19	-	0.065
G	Eucalyptus pleurocarpa over mixed heath	20	Esperance_47	0.049



Figure 12. Vegetation types within the 'Site H – Boydell Road, SLK 0 - 11.83' area, from SLK 0 – 6.26.

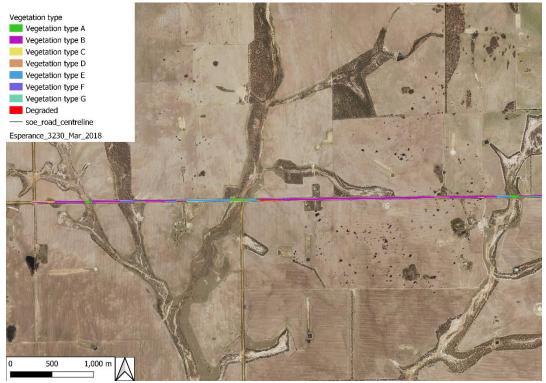


Figure 13. Vegetation types within the 'Site H – Boydell Road, SLK 0 - 11.83' area, from SLK 5.75 to 11.83.



Figure 14. Vegetation type A identified in 'Site H – Boydell Road, SLK 0 - 11.83' project, described as 'Melaleuca cuticularis and M. brevifolia over mixed samphire's, Austrostipa juncifolia, Disphyma crassifolium'.



Figure 15. Vegetation type B identified in 'Site H – Boydell Road, SLK 0 - 11.83' project, described as 'Mallee woodland with *Hakea laurina* over mixed *Melaleuca* shrubland'.



Figure 16. Vegetation type C identified in 'Site H – Boydell Road, SLK 0 - 11.83' project, described as 'Eucalyptus occidentalis woodland in valley floor.'



Figure 17. Vegetation type D identified in 'Site H – Boydell Road, SLK 0 - 11.83' project, described as 'Eucalyptus occidentalis and Eucalyptus rigens woodland.'



Figure 18. Vegetation type E identified in 'Site H – Boydell Road, SLK 0 - 11.83' project, described as 'Mallee and *Eucalyptus pleurocarpa* over mixed shrubland with *Calothamnus quadrifidus, Melaleuca glaberrima, Allocasuarina* spp.'



Figure 19. Vegetation type F identified in 'Site H – Boydell Road, SLK 0 - 11.83' project, described as 'Eucalyptus occidentalis over Melaleuca cuticularis wetland with mixed samphire's.'



Figure 20. Vegetation type G identified in 'Site H – Boydell Road, SLK 0 - 11.83' project, described as 'Eucalyptus pleurocarpa over mixed heath.'

5.8 Vegetation Condition

Vegetation condition varies dramatically within the project area varies dramatically (Table 9). Large sections of the site had seen complete or near complete loss of vegetation structure, due to historical, weed invasion and spray drift. Vegetation condition was best in the area bordering remnant vegetation historical clearing was not evident.

Table 9. Quantifying vegetation to be cleared by vegetation type and condition

Vegetation Type	Excellent	Very Good	Good	Degraded	Completely Degraded	Total
Α	0.015	0.051	0.0112	0.017	-	0.093
В	-	0.856	0.211	0.001	-	1.067
С	-	-	0.110	-	-	0.110
D	-	0.086	0.073	-	-	0.159
Е	-	0.062	0.030	-	-	0.092
F	-	-	0.066	-	-	0.066
G	0.005	0.028	0.003	0.014	-	0.049
-	-	-	-	0.022	0.084	0.105
Total	0.020	1.082	0.504	0.053	0.084	1.743



Figure 21. Vegetation condition across 'Site H –Boydell Road, SLK 0 - 11.83' project, from SLK 0 to 6.26

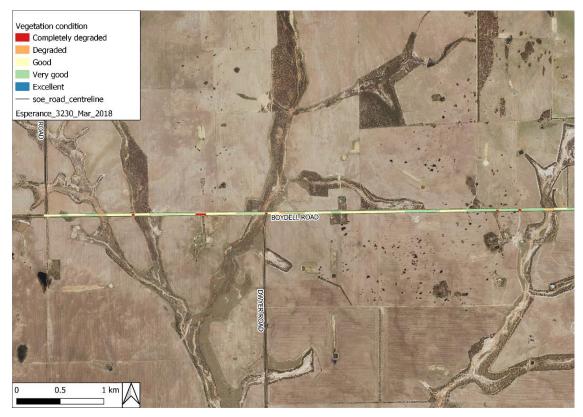


Figure 22. Vegetation condition across 'Site H –Boydell Road, SLK 0 - 11.83' project, from SLK 5.75 to 11.83.

5.9 Threatened Ecological Communities

Vegetation type G described as 'Eucalyptus pleurocarpa over mixed heath' met criteria to be considered as the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 listed threatened ecological community (TEC) 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan)'. However, only areas within Vegetation type G in good condition or better were considered as Kwongkan TEC (Figure 23). In total, 0.036 ha of vegetation was considered as Kwongkan TEC present within 'Site H – Boydell Road, SLK 0 - 11.83' area.

Three vegetation types dominated by *Eucalyptus occidentalis* were present within Boydell road, these vegetation types were assessed against the original vegetation community description used for nominating the State listed 'Swamp Yate, *Eucalyptus occidentalis*, woodlands in seasonally inundated clay basins in the South Coast of Western Australia' PEC (Table 10). Vegetation type C was consistent with the PEC but one of its occurrences lacked an intact understorey, 0.043 ha of this vegetation type with an intact understorey was being cleared. Vegetation type F was somewhat consistent with the vegetation type differing in that it was surrounding a creek line and lacked a dense sedge layer 0.065 ha of this vegetation type will be cleared.

No other TECs o PECs were relevant to the site.

Table 10. Comparison between potential occurrences 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).

Occurrence	Criterion 1: Abiotic Factors i) Occurs on valley floor; ii) Basin is more or less circular; iii) Seasonally inundated.	Criterion 2: Centre of basin inhabited by Eucalyptus occidentalis low woodland (often with an understory of Melaleuca cuticularis).	Criterion 3: Fringing the wetland is dense rushes and sedges.	Criterion 4: Peripheral to the central basin is a waterlogged zone of <i>E. occidentalis</i> associated with heath to open scrub and/or small trees. Melaleuca calycina, M. glaberrima, M. incana, M. pulchella, Taxandria callistachys;	Swamp Yate PEC (Yes / No) Area (ha) within Site
Veg type C- Eucalyptus occidentalis woodland in valley floor. SLK 4.99 - 4.77 (Southern side of road)	i) Not on valley floor ii) Within a roughly circular basin iii) Seasonally waterlogged	Basin was dominated by Eucalyptus occidentalis.	Occurrence had a degraded understorey and lacked any sedges.	Melaleuca calycina was the dominant shrub within this vegetation type. No other Melaleucas were present.	No, understorey was not intact 0.067ha
Veg type C- Eucalyptus occidentalis woodland in valley floor. SLK 4.47 - 4.32 (Southern side of road)	iv) On Valley floor v) Within a clay basin vi) Seasonally waterlogged	Basin was dominated by Eucalyptus occidentalis.	High number of sedges were present within vegetation type.	Melaleuca calycina was the dominant shrub within the vegetation type. Remaining vegetation was mixture of wetland and non-wetland associated plants.	Consistent 0.043ha
Veg type D - Eucalyptus occidentalis and Eucalyptus rigens woodland.	i)Does not occur on valley floor ii)Does not occur on a basin iii)Is not seasonally inundated	Vegetation type did not occur on basins.	No dense sedge layers.	No wetland associated midstorey species were present	No 0.159ha
Veg type F - Eucalyptus occidentalis over Melaleuca cuticularis wetland with mixed samphire's.	i)Vegetation type occurs on valley floor ii) Vegetation type occurs along saline drainage line iii)Vegetation type is seasonally inundated	Centre of creekline was dominated by Eucalyptus occidentals and Melaleuca cuticularis.	No dense sedge layer was present, some Ficinia nodosa and Lepidosperma were present.	Melaleuca cuticularis is the dominant midstorey species.	No 0.065ha



Figure 23. Mapped occurrences of PECs and TECs within 'Site H - Boydell Road, SLK 0 - 11.83'.

5.10 Fauna

Of the species identified within the desktop survey, only seven had potentially suitable habitat within the proposed clearing permit area.

During the field survey the various bird calls were heard. No evidence of invasive fauna, such as scats or digging, were observed. However, it is highly likely that foxes, rabbits and feral cats are extensive throughout the area.

5.10.1 Sharp-tailed sandpiper, *Calidris acuminata*, Migratory

The closest known record of this species was 14.2km from the project area.

The Sharp-tailed sandpiper habitat is described as the muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland.

The salt lake and saline watercourse associated vegetation potentially provides suitable habitat for this species. Clearing for vegetation type A and F which were associated with salt lakes and watercourses totals 0.134ha.

5.10.2 Chuditch, Dasyurus geoffroii, Vulnerable

The Chuditch was listed on the EPBC protected matter search tool. There were no known records of this species within 20km of the survey area. The closest record to the project area was 43km from the survey site.

The species habitat is described as scrubby, often swampy, vegetation with dense cover up to 1 m high, often feeds in adjacent forest and woodland that is burnt on a regular basis and in areas of pasture and cropland lying close to dense cover. Populations inhabiting Jarrah and Wandoo forests are usually associated with watercourses. Quenda will thrive in more open habitat subject to introduced predator control.

All of the good or better-quality vegetation within this project area provides potentially suitable habitat for this species, this includes a total of 1.606 ha of vegetation. In addition, the vegetation within this project likely provides important habitat connectivity to nearby remnant vegetation.

5.10.3 Grey Falcon, Falco hypoleucos, Vulnerable

The Grey falcon was listed on the EPBC protected matter search tool. There were no known records of this species within 20km of the survey area. The closest record to the project area was 121km 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.

The site provides potentially suitable nesting habitat in Vegetation types B, C, D, F both of which have Eucalyptus trees suitable for nesting, though no nests were observed within during the survey. Clearing within these vegetation types includes a total of 1.401ha of clearing.

5.10.4 Peregrine falcon, *Falco peregrinus*, Other Specially Protected

The closest known record of this species was 14.2km from the project area.

The Peregrine Falcon is listed as occurring in 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. It is likely that the entire project area has potentially suitable hunting grounds.

The Peregrine Falcon is listed as nesting in recesses of cliff faces, tree hollows or in the large abandoned nests of other birds. The site provides potentially suitable nesting habitat in Vegetation types B, C, D, and F, all of which have Eucalyptus trees suitable for nesting, though no nests were observed within during the survey. Clearing within these vegetation types includes a total of 1.401ha of clearing.

5.10.5 Caspian Tern, *Hydroprogne caspia*, Migratory

The closest known record of this species was 14.2km from the project area.

Sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs

The salt lake and saline watercourse associated vegetation potentially provides suitable habitat for this species. Clearing for vegetation type A and F which were associated with salt lakes and watercourses totals 0.142 ha.

5.10.6 Spectacled hooded snake (Esperance), Parasuta spectabilis bushi, P1

Maryan, Brennan, Hutchinson and Geidans (2020) found that the taxon was a synonym of the non-threatened *Suta gouldii*, so this species was not discussed further.

5.10.7 Carnaby's Black Cockatoo, Calyptorhynchus latirostris, Endangered

The Shire of Esperance Black Cockatoo assessment was conducted in accordance with the EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's Cockatoo *Calyptorhynchus latirostris* (Endangered), Baudin's Cockatoo *Calyptorhynchus baudinii* (Endangered) and Forest Redtailed Black Cockatoo *Calyptorhynchus banksii naso* (Vulnerable) (Department of Agriculture, Water and the Environment, 2022).

Vegetation type G contained potential foraging habitat due to a high proportion of proteaceous species. The foraging quality scoring tool was not undertaken due to the total clearing of 0.049 ha of vegetation within these vegetation types being a fraction of the 1ha threshold used for use of the tool.

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 significantly less than 1 ha;
- had low quality (1-4) habitat under 10ha

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

6 REVIEW OF 10 CLEARING PRINCIPLES FOR NATIVE VEGETATION

The 'Site H – Boydell Road, SLK 0 - 11.83' 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 was very high with 318 native species recorded over 7 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 G contained potential foraging for the Carnaby's Black Cockatoo this includes a total clearing of 0.049ha.

Several other fauna species including the sharp-tailed sandpiper, chuditch, grey falcon, peregrine falcon, caspian tern, spectacled hooded snake had potentially suitable habitat within the project area.

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

Seven priority species were found during the survey. Of these only *Darwinia sp. Gibson* (P1), *Persoonia scabra* (P3) and *Grevillea baxteri* (P4) will be taken, only a very small number of each of these plants will be taken and there is unlikely to be any significant impact on the Boydell road populations of these species.

Additionally, Persoonia scabra (P3) and Grevillea baxteri (P4) are both widespread species.

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.

0.049 hectares of vegetation met the definition of the EPBC listed Kwongkan TEC, other areas within the site failed to meet the definition of Kwongkan TEC.

Vegetation type C was consistent with the 'Swamp Yate, *Eucalyptus occidentalis*, woodlands in seasonally inundated clay basins in the South Coast of Western Australia' PEC but one of its occurrences lacked an intact understorey, 0.043ha of this vegetation type with an intact understorey was being cleared.

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.

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.

Vegetation type A (0.069 ha) and Vegetation types F (0.065 ha) were growing in association with salt lakes and winter wet areas, Vegetation type C was a winter wet area.

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

The immediate surroundings of the site were highly cleared agricultural land, with Vegetation within this project providing limited function as windbreaks and erosion control for the agricultural areas surrounding it.

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 site was 5.98 km from Speddingup Nature Reserve (Reserve 25958) the closest conservation reserve. Given the relatively low amount of native vegetation cleared there will, be no significant impact to ecological linkages to the 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.

Given the relatively low amount of clearing there is unlikely to be any significant impacts on water 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.

Given the relatively low amount of clearing there is unlikely to be any significant impacts 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 (larger trees and trees with hollows) 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 'Boydell Road, SLK 0 - 11.83' project area;
- Implement a management plan to prevent the spread of *Acacia pycnantha* a declared pest species; and
 - 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

Name	Katie White
Position	Environmental Officer (former)
Project Involvement	Desktop Survey, GIS Mapping
Qualifications and Experience	BSc (Hons)
	2 years' experience (at time of involvement)
Scientific Licence	FT61000029

Name	Danika Penson
Position	Environmental Assistant (former)
Project Involvement	Field Survey
Qualifications and Experience	BSc
Scientific Licence	FB62000276

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10 APPENDICES

Appendix 1: Incidental species list

Family	Genus	Species	Weed	WA Conservation	Herbarium Reference
Aizonono	Dianhuma	crassifolium		Status	
Arianaa	Disphyma				
Apiaceae	Platysace	effusa			
Apiaceae	Trachymene	pilosa			
Asparagaceae	Asparagus	asparagoides	Х		
Asparagaceae	Laxmannia	minor			
Asparagaceae	Laxmannia	omnifertilis			
Asparagaceae	Lomandra	micrantha ss teretifolia			
Asparagaceae	Lomandra	mucronata			
Asparagaceae	Thysanotus	patersonii			
Asphodelaceae	Asphodelus	fistulosus	Х		
Asteraceae	Arctotheca	calendula	Х		
Asteraceae	Argentipallium	niveum			
Asteraceae	Argentipallium	tephrodes			
Asteraceae	Blennospora	drummondii			
Asteraceae	Brachyscome	Iberidifolia			KSW23222 Acc 10048
Asteraceae	Brachyscome	pusilla			
Asteraceae	Brachyscome	eyrensis			
Asteraceae	Centaurea	melitensis	Х		
Asteraceae	Cirsium	vulgare	Х		
Asteraceae	Cotula	coronopifolia	Х		
Asteraceae	Erigeron	bonariensis	Х		
Asteraceae	Gazania	linearis			
Asteraceae	Gnephosis	drummondii			
Asteraceae	Hypochaeris	radicata	Х		
Asteraceae	Osteospermum	ecklonis	Х		
Asteraceae	Podolepis	capillaris			
Asteraceae	Pogonolepis -	muelleriana			
Asteraceae	Pseudognaphalium	luteoalbum	Х		
Asteraceae	Pterochaeta	paniculata			
Asteraceae	Sonchus	oleraceus	х		
Asteraceae	Ursinia	anthemoides	Х		
Asteraceae	Vittadinia	gracilis			
Asteraceae	Waitzia	suaveolens var flava			

Boraginaceae	Halgania	anagalloides var Southern		
Brassicaceae	Lepidium	africanum	Х	
Brassicaceae	Raphanus	raphanistrum	Х	
Brassicaceae	Rapistrum	rugosum	Х	
Campanulaceae	Monopsis	debilis var depressa	Х	
Campanulaceae	Wahlenbergia	capensis	Х	
Casuarinaceae	Allocasuarina	humilis		
Casuarinaceae	Allocasuarina	lehmanniana ssp ecarinata		
Casuarinaceae	Allocasuarina	thuyoides		
Casuarinaceae	Casuarina	obesa	Х	
Celastraceae	Stackhousia	monogyna		
Centrolepidaceae	Centrolepis	polygyna		
Chenopodiaceae	Atriplex	semibaccata		
Chenopodiaceae	Atriplex	sp.		
Chenopodiaceae	Enchylaena	tomentosa		
Chenopodiaceae	Maireana	oppositifolia		
Chenopodiaceae	Rhagodia	baccata		
Chenopodiaceae	Salicornia	quinqueflora ssp quinqueflora		
Chenopodiaceae	Suaeda	australis		
Chenopodiaceae	Tecticornia	halocnemoides ssp caudata		
Chenopodiaceae	Tecticornia	lylei		
Chenopodiaceae	Tecticornia	pergranulata ssp pergranulata		
Chenopodiaceae	Tecticornia	sp.		
Chenopodiaceae	Tecticornia	indica ssp bidens		
Convolvulaceae	Wilsonia	humilis		
Convolvulaceae	Convolvulus	remotus		
Cupressaceae	Callitris	roei		
Cyperaceae	Caustis	dioica		
Cyperaceae	Ficinia	nodosa		
Cyperaceae	Gahnia	aristata		
Cyperaceae	Gahnia	sp. South West		
Cyperaceae	Gahnia	ancistrophylla		
Cyperaceae	Lepidosperma	carphoides		
Cyperaceae	Lepidosperma	leptostachyum		
Cyperaceae	Lepidosperma	sp.		
Cyperaceae	Lepidosperma	sp.		
Cyperaceae	Lepidosperma	squamatum		
Cyperaceae	Mesomelaena	stygia ss stygia		

Cyperaceae	Netrostylis	sp. Mt Madden		
Cyperaceae	Schoenus	breviculmis		
Cyperaceae	Schoenus	laevigatus		
Cyperaceae	Schoenus	subflavus		
Dilleniaceae	Hibbertia	exasperata		
Dilleniaceae	Hibbertia	gracilipes		
Dilleniaceae	Hibbertia	inclusa		
Dilleniaceae	Hibbertia	racemosa		
Droseraceae	Drosera	drummondii		
Droseraceae	Drosera	glanduligera		
Droseraceae	Drosera	moorei		
Droseraceae	Drosera	neesii		
Droseraceae	Drosera	ramellosa		
Droseraceae	Drosera	sp Branched styles		
Ericaceae	Andersonia	parvifolia		
Ericaceae	Acrotriche	cordata		
Ericaceae	Brachyloma	mogin	P3	KSW1121
211000000	Braonyroma	mogin		Acc 9116
Ericaceae	Conostephium	drummondii		
Ericaceae	Dielsiodoxa	oligarrhenoides		
Ericaceae	Leucopogon	assimilis s. lat		KSW23122
				Acc 10048
Ericaceae	Leucopogon	fimbriatus		
Ericaceae	Leucopogon	sp. Mount Heywood		
Ericaceae	Leucopogon	sp. Newdegate		
Ericaceae	Lysinema	ciliatum		
Ericaceae	Styphelia	intertexta		
Ericaceae	Styphelia	sp. Cascades		
Ericaceae	Styphelia	sp. Coujinup		
Ericaceae	Styphelia	sp. Newdegate		
Euphorbiaceae	Stachystemon	virgatus		
Euphorbiaceae	Euphorbia	terracina		
Fabaceae	Acacia	biflora		
Fabaceae	Acacia	brachyclada		
Fabaceae	Acacia	chrysocephala		
Fabaceae	Acacia	crassuloides		
Fabaceae	Acacia	crispula		
Fabaceae	Acacia	cupularis		
Fabaceae	Acacia	curvata		
Fabaceae	Acacia	cyclops		
Fabaceae	Acacia	fragilis		
Fabaceae	Acacia	glaucoptera		

Fabaceae	Acacia	gonophylla			
Fabaceae	Acacia	lasiocalyx			
Fabaceae	Acacia	lasiocarpa var			
		bracteolata			
Fabaceae	Acacia	latipes subsp. Latipes			
Fabaceae	Acacia	maxwellii			
Fabaceae	Acacia	mutabilis subsp. mutabilis			
Fabaceae	Acacia	myrtifolia			
Fabaceae	Acacia	patagiata			
Fabaceae	Acacia	pritzeliana			
Fabaceae	Acacia	pycnantha	Х		
Fabaceae	Acacia	saligna			
Fabaceae	Acacia	sulcata var			
		planoconvexa			
Fabaceae	Chamaecytisus	palmensis	Х		
Fabaceae	Chorizema	aciculare			
Fabaceae	Chorizema	nervosum			
Fabaceae	Daviesia	lancifolia			
Fabaceae	Daviesia	teretifolia			
Fabaceae	Daviesia	aphylla			
Fabaceae	Daviesia	pauciflora		P3	KSW16922 Acc 9857
Fabaceae	Eutaxia	inuncta			
Fabaceae	Eutaxia	parvifolia			
Fabaceae	Gastrolobium	discolor			
Fabaceae	Gastrolobium	musaceum			
Fabaceae	Gastrolobium	spinosum			
Fabaceae	Gompholobium	marginatum			
Fabaceae	Gompholobium	tomentosum			
Fabaceae	Gompholobium	viscidulum			
Fabaceae	Hovea	pungens			
Fabaceae	Isotropis	cuneifolia			
Fabaceae	Jacksonia	alata			
Fabaceae	Jacksonia	condensata			
Fabaceae	Jacksonia	venosa			
Fabaceae	Kennedia	sp. South Coast			
Fabaceae	Medicago	polymorpha	Х		
Fabaceae	Ornithopus	compressus	Х		
Fabaceae	Ornithopus	sativus	Х		
Fabaceae	Pultenaea	indira ss indira			
Fabaceae	Pultenaea	spinulosa			
Fabaceae	Senna	sp Pallinup River			

Fabaceae	Templetonia	retusa		
Fabaceae	Templetonia	sulcata		
Fabaceae	Trifolium	arvense	Х	
Fabaceae	Trifolium	campestre		
Fabaceae	Trifolium	hirtum	Х	
Fabaceae	Trifolium	repens	Х	
Fabaceae	Vicia	benghalensis	Х	
Fabaceae	Eutaxia	parvifolia		
Frankeniaceae	Frankenia	sessilis var. sessilis		KSW17022 Acc 9857
Frankeniaceae	Frankenia	tetrapetala		
Geraniaceae	Erodium	cicutarium	Х	
Geraniaceae	Pelargonium	capitatum	Х	
Goodeniaceae	Anthotium	humilis		
Goodeniaceae	Coopernookia	polygalaceae		
Goodeniaceae	Coopernookia	strophiolata		
Goodeniaceae	Dampiera	angulata subsp. angulata		
Goodeniaceae	Dampiera	fasciculata		
Goodeniaceae	Dampiera	lavandulacea		
Goodeniaceae	Dampiera	sacculata		
Goodeniaceae	Goodenia	concinna		
Goodeniaceae	Goodenia	incana		
Goodeniaceae	Goodenia	pterigosperma		
Goodeniaceae	Goodenia	scapigera		
Goodeniaceae	Goodenia	trinervis		
Goodeniaceae	Lechenaultia	formosa		
Goodeniaceae	Scaevola	thesioides subsp. Filifolia		
Haemodoraceae	Conostylis	bealiana		
Haemodoraceae	Conostylis	seorsiflora subsp. Seorsifolia		
Haemodoraceae	Haemodorum	discolor		
Haloragaceae	Glischrocaryon	angustifolium		
Haloragaceae	Glischrocaryon	roei		
Hemerocallidaceae	Chamaescilla	corymbosa		
Hemerocallidaceae	Cheiranthera	filifolia		
Hemerocallidaceae	Dianella	brevicaulis		
Hemerocallidaceae	Dianella	revoluta var. revoluta		
Hemerocallidaceae	Tricoryne	elatior		
Iridaceae	Freesia	x alba	Х	
Iridaceae	Patersonia	juncea		
Iridaceae	Patersonia	lantana		

Iridaceae Romulea rosea x Juncaceae Juncus kraussii ssp australiensis Juncaceae Juncus sp. Lamiaceae Hemigenia teretiuscula Lamiaceae Microcorys glabra Lauraceae Cassytha glabella Lauraceae Cassytha melantha Lauraceae Cassytha racemosa Loganiaceae Logania buxifolia Malvaceae Alyogyne sp. Hutt River Malvaceae Thomasia angustifolia Myrtaceae Astus tetragonus Myrtaceae Austrobaeckea latens Myrtaceae Austrobaeckea uncinella P3 KSW20622 Acc 9874	Iridaceae	Patersonia	occidentalis			
Juncaceae Juncus kraussii ssp australiensis Juncaceae Juncus sp. Lamiaceae Hemigenia teretiuscula Lamiaceae Microcorys glabra Lauraceae Cassytha glabella Lauraceae Cassytha melantha Lauraceae Cassytha racemosa Loganiaceae Logania buxifolia Malvaceae Alyogyne sp. Hutt River Malvaceae Alyogyne sp. Hutt River Malvaceae Asius tetragonus Myrtaceae Asius tetragonus Myrtaceae Austrobaeckea latens Myrtaceae Austrobaeckea uncinella Myrtaceae Beaufortia micrantha Myrtaceae Beaufortia micrantha Myrtaceae Calothamnus gracilis Myrtaceae Calothamnus quadrifidus Myrtaceae Calothamnus quadrifidus Myrtaceae Calothamnus aureus Myrtaceae Conothamnus aureus Myrtaceae Darwinia diosmoides Myrtaceae Darwinia vestita Myrtaceae Darwinia vestita Myrtaceae Eucalyptus canglobata Myrtaceae Eucalyptus econglobata Myrtaceae Eucalyptus leptocalyx Myrtaceae Eucalyptus econglobata Myrtaceae Eucalyptus leptocalyx Myrtaceae Eucalyptus micranthera				Х		
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Lauraceae Cassytha glabella Lauraceae Cassytha melantha Lauraceae Cassytha melantha Lauraceae Cassytha racemosa Loganiaceae Logania buxifolia Malvaceae Alyogyne sp. Hutt River Malvaceae Lasiopetalum rosmarinifolium Malvaceae Thomasia angustifolia Myrtaceae Astus tetragonus Myrtaceae Austrobaeckea latens Myrtaceae Austrobaeckea uncinella P3 KSW20622 Acc 9874 Myrtaceae Beaufortia micrantha Myrtaceae Beaufortia schaueri Myrtaceae Calothamnus gracilis Myrtaceae Calothamnus quadrifidus Myrtaceae Calothamnus quadrifidus Myrtaceae Chamelaucium ciliatum Myrtaceae Conothamnus aureus Myrtaceae Conothamnus aureus Myrtaceae Darwinia diosmoides Myrtaceae Darwinia sp. Gibson P1 PERTH 09375368 Myrtaceae Eucalyptus camaldulensis x Myrtaceae Eucalyptus conglobata Myrtaceae Eucalyptus conglobata Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus desellii Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus leptocalyx Myrtaceae Eucalyptus leptocalyx Myrtaceae Eucalyptus desellii Myrtaceae Eucalyptus desellii Myrtaceae Eucalyptus conglobata Myrtaceae Eucalyptus desellii Myrtaceae Eucalyptus micranthera	Lamiaceae	Hemigenia	teretiuscula			
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Loganiaceae Logania buxifolia Malvaceae Alyogyne sp. Hutt River Malvaceae Lasiopetalum rosmarinifolium Malvaceae Thomasia angustifolia Myrtaceae Astus tetragonus Myrtaceae Austrobaeckea latens Myrtaceae Austrobaeckea uncinella P3 KSW20622 Acc 9874 Myrtaceae Beaufortia micrantha Myrtaceae Beaufortia schaueri Myrtaceae Calothamnus gracilis Myrtaceae Calothamnus quadrifidus Myrtaceae Calothamnus quadrifidus Myrtaceae Chamelaucium ciliatum Myrtaceae Chamelaucium ciliatum Myrtaceae Conothamnus aureus Myrtaceae Calothostemon ambiguus Myrtaceae Darwinia diosmoides Myrtaceae Darwinia vestita Myrtaceae Darwinia vestita Myrtaceae Darwinia vestita Myrtaceae Eucalyptus canglobata Myrtaceae Eucalyptus ecostata Myrtaceae Eucalyptus ecostata Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus Ressellii Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus Ressellii Myrtaceae Eucalyptus Myrtaceae Eucalyptus Ressellii Myrtaceae Eucalyptus Myrtaceae Eu	Lauraceae	Cassytha	melantha			
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Myrtaceae Astus tetragonus Myrtaceae Austrobaeckea latens Myrtaceae Austrobaeckea uncinella Myrtaceae Beaufortia micrantha Myrtaceae Beaufortia schaueri Myrtaceae Calothamnus gracilis Myrtaceae Calothamnus quadrifidus Myrtaceae Calytrix leschenaultii Myrtaceae Chamelaucium ciliatum Myrtaceae Conothamnus aureus Myrtaceae Conothamnus aureus Myrtaceae Conothamnus aureus Myrtaceae Darwinia diosmoides Myrtaceae Darwinia vestita Myrtaceae Ericomyrtus drummondii Myrtaceae Eucalyptus calycogona Myrtaceae Eucalyptus conglobata Myrtaceae Eucalyptus ecostata Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus flocktoniae Myrtaceae Eucalyptus kessellii Myrtaceae Eucalyptus kessellii Myrtaceae Eucalyptus kessellii Myrtaceae Eucalyptus leptocalyx Myrtaceae Eucalyptus kessellii Myrtaceae Eucalyptus leptocalyx Myrtaceae Eucalyptus micranthera	Malvaceae	Lasiopetalum	rosmarinifolium			
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Myrtaceae	Myrtaceae	Astus	tetragonus			
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Myrtaceae Calothamnus gracilis Myrtaceae Calothamnus quadrifidus Myrtaceae Calytrix leschenaultii Myrtaceae Chamelaucium ciliatum Myrtaceae Conothamnus aureus Myrtaceae Cyathostemon ambiguus Myrtaceae Darwinia diosmoides Myrtaceae Darwinia sp. Gibson P1 PERTH 09375368 Myrtaceae Darwinia vestita Myrtaceae Ericomyrtus drummondii Myrtaceae Eucalyptus calycogona Myrtaceae Eucalyptus conglobata Myrtaceae Eucalyptus conglobata Myrtaceae Eucalyptus ecostata Myrtaceae Eucalyptus eremophila Myrtaceae Eucalyptus deptocalyx Myrtaceae Eucalyptus heptocalyx Myrtaceae Eucalyptus micranthera	Myrtaceae	Beaufortia	micrantha			
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Myrtaceae Eucalyptus micranthera	Myrtaceae		leptocalyx			
	Myrtaceae		occidentalis			

Murtagogg	Eucolyptus	nlourocorno			
Myrtaceae	Eucalyptus	pleurocarpa			
Myrtaceae	Eucalyptus	suggrandis ss suggrandis			
Myrtaceae	Eucalyptus	tumida			
Myrtaceae	Eucalyptus	uncinata			
Myrtaceae	Eucalyptus	valens			
Myrtaceae	Kunzea	preissiana			
Myrtaceae	Kunzea	salina		P3	KSW21222 Acc 9874
Myrtaceae	Leptospermum	laevigatum	Х		
Myrtaceae	Leptospermum	maxwellii			
Myrtaceae	Melaleuca	armillaris	Х		
Myrtaceae	Melaleuca	brevifolia			
Myrtaceae	Melaleuca	bromelioides			
Myrtaceae	Melaleuca	calycina			
Myrtaceae	Melaleuca	cuticularis			
Myrtaceae	Melaleuca	glaberrima			
Myrtaceae	Melaleuca	hamata			
Myrtaceae	Melaleuca	incana subsp. tenella			
Myrtaceae	Melaleuca	linguiformis			
Myrtaceae	Melaleuca	plumea			
Myrtaceae	Melaleuca	pulchella			
Myrtaceae	Melaleuca	rigidifolia			
Myrtaceae	Melaleuca	scabra			
Myrtaceae	Melaleuca	societatis			
Myrtaceae	Melaleuca	thyoides			
Myrtaceae	Melaleuca	undulata			
Myrtaceae	Micromyrtus	elobata			
Myrtaceae	Micromyrtus	imbricata			
Myrtaceae	Oxymyrrhine	gracilis			
Myrtaceae	Phymatocarpus	maxwellii			
Myrtaceae	Verticordia	eriocephala			
Myrtaceae	Verticordia	plumosa var grandiflora			
Myrtaceae	Verticordia	roei			
Olacaceae	Olax	benthamiana			
Onagraceae	Oenothera	stricta	Х		
Orchidaceae	Caladenia	decora			
Orchidaceae	Caladenia	flava			
Orchidaceae	Disa	bracteata	Х		
Orchidaceae	Diuris	laxiflora			
Orchidaceae	Microtis	media			

Orchidaceae	Pyrorchis	nigricans		
Orchidaceae	Thelymitra	graminea		
Orobanchaceae	Orobanche	minor	Х	
Phyllanthaceae	Lysiandra	calycina		
Pittosporaceae	Billardiera	fusiformis		
Pittosporaceae	Cheiranthera	filifolia		
Poaceae	Austrostipa	elegantissima		
Poaceae	Austrostipa	hemipogon		
Poaceae	Austrostipa	mollis		
Poaceae	Austrostipa	scabra		
Poaceae	Avena	barbata	х	
Poaceae	Avena	sativa	х	
Poaceae	Briza	maxima	х	
Poaceae	Bromus	catharticus		
Poaceae	Bromus	diandrus	х	
Poaceae	Bromus	hordeaceus	х	
Poaceae	Cynodon	dactylon		
Poaceae	Ehrharta	calycina	Х	
Poaceae	Ehrharta	longifolia	х	
Poaceae	Eragrostis	curvula	Х	
Poaceae	Holcus	sp.		
Poaceae	Hordeum	sp.	Х	
Poaceae	Hyparrhenia	hirta		KSW20222 Acc 9874
Poaceae	Lolium	sp.		
Poaceae	Neurachne	alopecuroidea		
Poaceae	Parapholis	incurva		
Poaceae	Rytidosperma	caespitosa		
Poaceae	Rytidosperma	setaceum		
Poaceae	Triticum	aestivum		
Poaceae	Vulpia	sp.	Х	
Polygalaceae	Comesperma	ciliatum		
Polygalaceae	Comesperma	integerrimum		
Polygalaceae	Comesperma	polygaloides		
Polygalaceae	Comesperma	volubile		
Polygonaceae	Muehlenbeckia	adpressa		
Polygonaceae	Rumex	acetosella	Х	
Primulaceae	Lysimachia	arvensis	Х	
Proteaceae	Adenanthos	cuneatus		
Proteaceae	Banksia	armata		
Proteaceae	Banksia	media		
Proteaceae	Banksia	obtusa		

Proteaceae	Banksia	pulchella			
Proteaceae	Banksia	repens			
Proteaceae	Conospermum	leianthum			
Proteaceae	Grevillea	baxteri	F	P4	KSW1221 Acc 9116
Proteaceae	Grevillea	nudiflora			
Proteaceae	Grevillea	oligantha			
Proteaceae	Grevillea	pectinata			
Proteaceae	Grevillea	plurijuga			
Proteaceae	Grevillea	teretifolia			
Proteaceae	Hakea	cinerea			
Proteaceae	Hakea	corymbosa			
Proteaceae	Hakea	denticulata			
Proteaceae	Hakea	laurina			
Proteaceae	Hakea	lissocarpha			
Proteaceae	Hakea	marginata			
Proteaceae	Hakea	nitida			
Proteaceae	Hakea	pandanicarpa			
Proteaceae	Hakea	prostrata			
Proteaceae	Hakea	trifurcata			
Proteaceae	Hakea	varia			
Proteaceae	Hakea	obliqua			
Proteaceae	Isopogon	polycephalus			
Proteaceae	Persoonia	scabra	F	93	KW092 & KW094 Acc 8652, KSW20322 & KSW20422 Acc 9874
Proteaceae	Persoonia	teretifolia			KW094 Acc 8652
Proteaceae	Petrophile	fastigiata			
Proteaceae	Petrophile	squamata subsp. northern			
Proteaceae	Synaphea	media			
Proteaceae	Synaphea	petiolaris			
Restionaceae	Hypolaena	humilis			
Restionaceae	Lepidobolus	chaetocephalus			
Rhamnaceae	Cryptandra	myriantha			
Rhamnaceae	Cryptandra	pungens			
Rhamnaceae	Pomaderris	brevifolia			
Rhamnaceae	Spyridium	mucronatum			
Rhamnaceae	Stenanthemum	notiale			

D. I.	10 11			
Rubiaceae	Opercularia	vaginata		
Rutaceae	Boronia	inornata		
Rutaceae	Cyanothamnus	inconspicuus		
Rutaceae	Cyanothamnus	ramosus		
Rutaceae	Nematolepis	phebalioides		
Santalaceae	Leptomeria	pachyclada		
Santalaceae	Leptomeria	pauciflora		
Santalaceae	Santalum	acuminatum		
Sapindaceae	Dodonaea	caespitosa		
Sapindaceae	Dodonaea	concinna		
Sapindaceae	Dodonaea	stenozyga		
Scrophulariaceae	Eremophila	dichroantha		
Solanaceae	Solanum	hoplopetalum	Х	
Solanaceae	Solanum	nigricans	Х	
Stylidiaceae	Stylidium	repens		
Stylidiaceae	Stylidium	rupestre		
Thymelaeaceae	Pimelea	argentea		
Thymelaeaceae	Pimelea	brachyphylla		
Thymelaeaceae	Pimelea	brevifolia ssp.		
		brevifolia		
Thymelaeaceae	Pimelea	imbricata var piligera		
Thymelaeaceae	Pimelea	argentea		
Violaceae	Hybanthus	epacroides		

Appendix 2: Threatened and Priority Flora Report Forms

Darwinia sp. Gibson - Priority One

Department of Biodiversity. Threatened and Priority Flora Report Form Version 1.3 August 2017 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 of http://documen.com/un/under Standard Report Forms TAXON: Darwinia sp. Gibson TPFL Pop. No: 11
Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at http://dicaw.we.gov.au under Standard Report Forms
Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at http://doaw.we.gov.au under Standard Report Forms
the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at http://documes.com/au/under Standard Report Forms
TAYON: Danwining of Cibons
TAXON. Dalwilla Sp. Glosoff
OBSERVATION DATE: 14/11/22 CONSERVATION STATUS: P1 New population 🗵
OB SERVER/S: Katherine Walkerden, Julie Waters PHONE: 9083 1518
ROLE: Environmental Officer, Environmental ORGANISATION: Shire of Esperance
DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): ~38 km north-west of
Esperance townsite. On Boydells Rd, ~500 m west of Coolgardie-Esperance Hwy. Plants on southern road reserve only
Reserve No:
DBCA DISTRICT: South Coast LGA: Esperance Land manager present:
DATUM: COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED: DecDegrees DegMinSec UTMs GPS Differential GPS Map D
GDA94 / MGA94 🕷
AGD84 / AMG84 Lat / Northing: 6284642.1 No. satellites: Map used: Secondary setup.
WGS84 Long / Easting: 384250.7 Boundary polygon captured: Map scale:
Unknown ZONE: 51
LAND TENURE:
Nature reserve Timber reserve Private property Rail reserve Shire road reserve
National park State forest Pastoral lease MRWA road reserve Other Crown reserve
National park State forest Pastoral lease MRWA road reserve Other Crown reserve Conservation park Water reserve UCL SLK/Pole to Specify other:
Conservation park Water reserve UCL SLK/Pole to Specify other: AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²):
Conservation park □ Water reserve □ UCL □ SLK/Pole 10 Specify other: AREA A\$\$E\$\$MENT: Edge survey □ Partial survey ▼ Full survey □ Area observed (m²): EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:
Conservation park Water reserve UCL SLK/Pole to Specify other: AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²: POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method:
Conservation park Water reserve UCL SLK/Pole to Specify other: AREA A\$\$E\$\$MENT: Edge survey Partial survey Full survey Area observed (m²): EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²: POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method: (Refer to field manual for list)
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Conservation park Water reserve UCL SLK/Pole to Specify other: AREA A\$\$E\$\$MENT: Edge survey Partial survey Full survey Area observed (m²): EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²: POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method: (Refer to field manual for list) WHAT COUNTED: Plants Clumps Clonal stems Total POP'N \$TRUCTURE: Mature: Juvenilles: Seedlings: Totals: Alive 44 Area of pop (m²): Note: Pis record count as number
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AREA A\$\$E\$\$MENT: Edge survey Partial survey Full survey Area observed (m²): EFFORT: Time spent surveying (minutes): POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method: (Refer to field manual for list) WHAT COUNTED: Plants Clumps Clonal stems Total Pop'N structure: Alive Afaire Alive Afaire: Juvenilles: Seedlings: Totals: Area of pop (m²): Note: Pis record count as number (not percentages) for distabase. QUADRAT\$ PRESENT: No. Size Data attached Total area of quadrats (m²):
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Conservation park
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AREA A\$\$E\$\$MENT: Edge survey Partial survey Full survey Area observed (m²): EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²: POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method: (Refer to field manual for list) WHAT COUNTED: Plants Clumps Clonal stems Totals: Alive 44 Area of pop (m²): Dead Note: Pis record count as number (not percentages) for distalses. QUADRAT\$ PRESENT: No. Size Data attached Total area of quadrats (m²): Bummary Quad. Totals: Alive Flowerout Flower Flowerout Flowers F
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AREA A \$SE\$ \$MENT: Edge survey Partial survey Full survey Area observed (m²): EFFORT: Time spent surveying (minutes): POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method: WHAT COUNTED: Plants Clumps Clonal stems Mature: Juveniles: Seedlings: Totals: Alive 44 Area of pop (m²): Noic: Ps record count as numbe (not percentages) for dislabase. QUADRAT\$ PRESENT: No. Size Data attached Total area of quadrats (m²): 8 ummary Quad. Totals: Alive Found Found Flower: Flower Full Percentage in flower: 40% CONDITION OF PLANT8: Healthy Moderate Poor Senescent Flower: 40% COMMENT: THREAT\$ - type, agent and supporting information: Estimate time to potential threat impact N=NI, L=Low, M=Medium, H=Hgh, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (=0ys;), L=Long (\$ys**) Road widening - no longer scheduled for road widening due to environmental values.
AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): EFFORT: Time spent surveying (minutes): POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method: (Refer to field manual for list) WHAT COUNTED: Plants Clumps Clonal stems Totals: Alive 44 Assessment: Seedlings: Totals: Alive 44 Area of pop (m²): Dead Cuappear in footer Partial in field in
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Please return completed form to Species And Communities Branch DBCA,

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

RECORDS: Please forward to Flora Administrative Officer, Species and Communities Branch.

Record entered by:_______ \$heet No.:______ Record Entered in Database C

#ABITAT INFORMATION: LANDFORM: ROCK TYPE: LOOSE ROCK: SOIL TYPE: SOIL COLOUR: DRAINAGE: Crest	ABITAT INFORMATION: LANDFORM: ROCK TYPE: LOOSE ROCK: SOIL TYPE: SOIL COLOUR: DRAINAGE Crest Granite (or soil surface; eg Sand Red Well drained Hill Defrite gravel; quarte fields) Sandy loam Brown Seasonally Ridge Laterite O-10% Clay loam White Inundated Outcrop Ironstone 0-10% Clay loam White Inundated Flat Quartz So-50% Peat Black Grey Tidal Specify other: S	CONCREDENT OF MICETURE AND TAKES		Flora Rend	ort Form	Verni	on 4 3 Assessed 204
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Austrobaeckea uncinella - Priority Three

Department of Biodivers Conservation and Attrac	ity, ctions	hreatened	and Priorit	y			
SCHOOLSENS OF SECURITY		Flora Rep	ort Form			Version 1.4 Mar	rch 2021
Austrobaeckea uncinellaPlea information on how to complete the form	ise complete as i	nuch of the form as	possible, with emp	phasis on the	se secul	ons bordered li	n black. Fo
animals/threatened-species-and-commu			port Porting FPTO-ymanicae	OTTER DOOR WILL	ONC ME STORY	ALAM MELLEY MELLEY	ile-ii ile
TAXON: Austrobaecke					TPFI	L Pop. No:	
OBSERVATION DATE:	26/10/2022	CONS	ERVATION STAT			New populati	
	rine Walkerden				HONE	0416558774	1
ROLE: Environmental Of EMAIL: Katherine.Walker			ANISATION: Shire	e of Esperanc	e		
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Boydell road, Northern side					n Wost	of Boudoll and	
Coolgardie-Esperance High					II TVEST	oi boyueli aliu	
Boydell road SLK 9.37							
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DBCA DISTRICT: Esperance DATUM: COO		LGA: Esperar M coords provided, Zone is		THOD USED:	manager	present: 🖼	
Dec	_ `				ifferentia	IGPS 🔲 M	tap 🔲
GDA94 / MGA94 Lat	/ Northing: 628	34554.9	No	satellites:		Map used:	
_	g / Easting: 379	6049.2		undary polygor	n	Map scale:	
Unknown 🔲	ZONE: 51		cap	tured:		_	
LAND TENURE:	20112.						
Nature reserve	Timber reserve	Private proper	rty 🗖	Rail reserve	1		reserve 🛭
National park Conservation park	State forest Water reserve	Pastoral leas		road reserve		Other Crown	reserve 🗖
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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 □

SECURIOR AUSTRALIA		Flora Repo	rt Form	Versi	on 1.4 March 2021
ABITAT INFORMAT	ION:				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest		(on soil surface; eg	Sand	Red	Well drained
Hill	_	gravel, quartz fields)	Sandy loam	Brown	Seasonally
Ridge	Laterite	_	Loam	Yellow 🔲	inundated
Outcrop	Ironstone	0-10%	Clay loam	White	Permanently
Slope	Limestone 🔲	10-30%	Light clay	Grey 🗖	inundated Tidal
Flat	Quartz 🔲	30-50%	Peat	Black 🔲	ridai 🚨
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🗵					
losed depression 🔲	Specific Landfor	- Florent			
Wetland	Specific Landform (Refer to field manual for				
ONDITION OF SOIL:	Dry 🗖	Moist 🖾	Waterlogged	inundated 🔲	
EGETATION	1.				
LASSIFICATION*:		over mixed samphires wi	th Disphyma crassifoli	um and Frankenia tetra	apetala.
; 1. Banksia woodland (B. eruata, B. Iliofolia);	2.	'			
Open shrubland ibbertia sp., Acadia spp.);	2				
isolated clumps of sedges	3.				
.tetragona)	4.				
SSOCIATED					
PECIES:					
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of Survey Field Handbook () ONDITION OF HABITA OMMENT: IRE HISTORY: L ENCING: OAD SIDE MARKERS: THER COMMENTS:	T: Pristine ast Fire: Season/Month Not required Not required (Please include recomm	Excellent Very go	tural formation table. od Good Fire intensity: Hig e / repair e / reposition ions and/or implement	Degraded Com Medium Low Required Leng Required Quar	pletely degraded No signs of fire
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Brachyloma mogin – Priority Three

TAXON: Brachyloma n	nogin				T	PFL Pop. No:	
OBSERVATION DATE:	14/11/2022	CO	NSERVATION ST	TATUS:	P3 "	New popula	tion 🔯
OBSERVER/S: Kathe	erine Walkerde	n, Julie Waters		-	PHON		_
ROLE: Environmental of	fficer, Environn	nental OR	GANISATION: S	Shire of Es	nerance		
coordinator			_		peranoe		
EMAIL: Katherine.Walkerd							
DESCRIPTION OF LOCATIO	-		ty, and the distance and d	direction to that	place)C		
Boydell Road Reserve. Bo	ydell road at St	.K. U.40.					
					Res	erve No:	
DBCA DISTRICT: Esperance	e	LGA: Espe	rance		Land manag	ger present:	
	_ `	UTM coords provided, Zon		METHOD	_	_	_
GDA94 / MGA94 M	cDegrees 🔲	DegMinSec	UTMs 🔲	GPS [_		Map 🔲
AGD84 / AMG84	t / Northing: _3	83976.5		No. satelli Boundary		Map used:	
_	ig/Easting: 6	284631.9		captured:	polygon	Map scale:	
Unknown 🔲	ZONE: 5	1					
			_		_		
Nature reserve	Timber reserve		=		serve		
Nature reserve National park Conservation	State forest Water reserve e survey	Pastoral Partial survey	Full survey No. of m	RWA road re	serve 🗖		
Nature reserve National park Conservation	State forest Water reserve e survey	Pastoral Partial survey (minutes):	lease MF UCL SLK/Pol Full survey No. of m Estimate	Area obser	rved (m²): nt / 100 m²: t method:	Other Crow	n reserve
Nature reserve National park Conservation park C	State forest Water reserve	Partial survey (minutes):	Full survey No. of m	Area obser	rved (m²): nt / 100 m²: t method: anual for list)	Other Crow	
Nature reserve National park Conservation park C	State forest Water reserve	Partial survey (minutes): Extrapolation	Full survey No. of m Estimate R Clonal stems	Area observation of field ma	rved (m²): nt / 100 m²: t method: anual for list)	Other Grow Specify other:	n reserve
Nature reserve National park Conservation Conservation park Conservation Conservat	State forest Water reserve e survey spent surveying Actual Plants Mature:	Partial survey (minutes): Extrapolation	Full survey No. of m Estimate R Clonal stems	Area observation of field ma	rved (m²): nt / 100 m²: t method: anual for list)	Other Grow	reserve
Nature reserve National park Conservation C	State forest Water reserve e survey spent surveying Actual Plants Mature:	Partial survey (minutes): Extrapolation	Full survey No. of m Estimate R Clonal stems	Area observation for the country of	serve	Other Crow Specify other: Area of pop (m) Note: Pis record oc	n reserve
Nature reserve National park Conservation park Conservation park POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT: Summary Quad. Totals: Alive	State forest Water reserve se survey spent surveying: Actual Plants Mature:	Partial survey (minutes): Extrapolation Clumps Juveniles:	Full survey Full survey No. of m Estimate (R) Clonal stems Seedlings:	Area observantes per constitution of the const	rved (m²): nt / 100 m²: t method: nual tor lst) Total area	Other Crow Specify other: Area of pop (m Note: Pis record co (not percentages) to of quadrats (m²)	n reserve
Nature reserve National park Conservation Count Accuracy: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE:	State forest Water reserve e survey spent surveying : Actual Plants Mature: 5	Partial survey (minutes): Extrapolation Clumps Juveniles:	Full survey No. of m Estimate (R) Clonal stems Seedlings:	Area obserninutes spe Coun Tota	serve nved (m²): nt / 100 m²: t method: nual for list) lia: Total area	Other Crow Specify other: Area of pop (m) Note: Pis record oo (not percentages) fix	n reserve
National park Conservation park AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT: 3ummary Quad. Totals: Alive REPRODUCTIVE STATE: Immat	State forest Water reserve e survey spent surveying Actual Plants Mature: 5	Partial survey (minutes): Extrapolation Clumps Juveniles: Size Vegetative	Full survey No. of m Estimate (R) Clonal stems Seedlings: Data attac	Area obserninutes spe Coun Tota	rved (m²): nt / 100 m²: t method: anual for list) Total area	Other Grow Specify other: Area of pop (m Note: Pis record on (not percentages) % of quadrats (m²)	n reserve
Nature reserve National park Conservation Conservation park Conservation Conservation park Conservation Conservation park Conservation par	State forest Water reserve e survey spent surveying Actual Plants Mature: 5 No. Clonal une fruit Mealthy	Pastoral Partial survey (minutes): Extrapolation Clumps Juveniles: Size Vegetative Fruit Moderate	Full survey No. of m Estimate (R) Clonal stems Seedlings: Data attac	Area obserninutes spe Countries to field matched Countries and Countries are Countries to field matched Countries are countries and Countries are countries are countries are countries are countries are countries are considered Countries are consi	rved (m²): nt / 100 m²: t method: anual for list) Total area	Other Crow Specify other: Area of pop (m Note: Pis record or (not percentages) for of quadrats (m²) ower pe in flower:	n reserve
Nature reserve National park Conservation C	State forest Water reserve e survey spent surveying Actual Plants Mature: 5 No. Clonal ure fruit Healthy Mature	Pastoral Partial survey (minutes): Extrapolation Clumps Juveniles: Size Vegetative Fruit Moderate	For Processing Seedings:	Area observante de la transferior de la transfer	rved (m²): nt / 100 m²: t method: anual for list) lis: Total area Fic Percentag Senes Curr Imp	Area of pop (m Note: Pis record on (not percentages) is of quadrats (m²) over pe in flower:	2):unt as number database.
Nature reserve National park Conservation Conservat	State forest Water reserve se survey spent surveying Actual Plants Plants Mature: 5 No. Clonel ure fruit Healthy sease. Refer to field impact N=NII, L=Low	Partial survey (minutes):	Full survey SEX/Pol Full survey Full survey Full survey Full Survey Full Survey Full Sex Ful	Area observante de la transferior de la transfer	rved (m²): nt / 100 m²: t method: nual for list) lia: Total area Fic Percentag Senes	Area of pop (m Note: Pis record on (not percentages) to of quadrats (m²) pe in flower:	2):unt as number database.
Nature reserve National park Conservation C	State forest Water reserve se survey spent surveying Actual Plants Plants Mature: 5 No. Clonel ure fruit Healthy sease. Refer to field impact N=NII, L=Low	Partial survey (minutes):	Full survey SEX/Pol Full survey Full survey Full survey Full Survey Full Survey Full Sex Ful	Area observante de la transferior de la transfer	rved (m²): nt / 100 m²: t method: anual for list) lis: Total area Fic Percentag Senes Curr Imp	Area of pop (m Note: Pis record on (not percentages) is of quadrats (m²) over pe in flower:	2):
Nature reserve National park Conservation C	State forest Water reserve se survey spent surveying Actual Plants Plants Mature: 5 No. Clonel ure fruit Healthy	Partial survey (minutes):	Full survey SEX/Pol Full survey Full survey Full survey Full Survey Full Survey Full Sex Ful	Area observante de la transferior de la transfer	rved (m²): nt / 100 m²: t method: anual for list) lis: Total area Fic Percentag Senes Curr Imp	Area of pop (m Note: Pis record on (not percentages) is of quadrats (m²) over pe in flower:	2):
Nature reserve National park Conservation C	State forest Water reserve se survey spent surveying Actual Plants Plants Mature: 5 No. Clonel ure fruit Healthy	Partial survey (minutes):	Full survey SEX/Pol Full survey Full survey Full survey Full Survey Full Survey Full Sex Ful	Area observante de la transferior de la transfer	rved (m²): nt / 100 m²: t method: anual for list) lis: Total area Fic Percentag Senes Curr Imp	Area of pop (m Note: Pis record on (not percentages) is of quadrats (m²) over pe in flower:	2):
Nature reserve National park Conservation C	State forest Water reserve se survey spent surveying Actual Plants Plants Mature: 5 No. Clonel ure fruit Healthy	Partial survey (minutes):	Full survey SEX/Pol Full survey Full survey Full survey Full Survey Full Survey Full Sex Ful	Area observante de la transferior de la transfer	rved (m²): nt / 100 m²: t method: anual for list) lis: Total area Fic Percentag Senes Curr Imp	Area of pop (m Note: Pis record on (not percentages) is of quadrats (m²) over pe in flower:	2):

CONTRACT OF			Flora Re	port Form		Vere	ion 1.4 March 2021
IABITAT INFORMA	TION:			po		VOIS	1011 1.4 IIIIII 011 2021
LANDFORM:	ROCK 1	IVDE-	LOOSE ROCK	: SOIL TYP	F· SOII	COLOUR:	DRAINAGE:
Crest	_	nite 🔲	(on soil surface; e			Red 🗖	Well drained
Hill	_	rite 🔲	gravel, quartz field		_	Brown 🗖	Seasonally
Ridge	_	rite 🔲		Loan		Yellow	inundated B
Outcrop	_	one 🔲	0-10%		_	White	Permanently
Slope	_	_	10-30%	Light clar		Grey 🗖	inundated
Flat	_	artz 🔲	30-50%		t O	Black	Tidal 🔲
Open depression	_		50-100%		_	cify other:	
Drainage line		ourei.		Specify our	ет. Орс	ony onten.	
Closed depression							
	Specific	Landform	Element:				
Wetland	(Refer to field		dditional values)		_	_	
ONDITION OF SOIL:	Dry		Moist 🔤	Waterlogged	inunc	dated 🔲	
EGETATION Lassification*:			ris and M. brevifo	olia over mixed sar	mphire's, Austr	rostipa juncifo	olia, Disphyma
; 1. Banksia woodland (В.			hth			
tenuata, B. Ilidfolia); Open shrubland	2. Eucalypti	s pieuroc	arpa over mixed	neath			
libbertia sp., Acadia spp.: Isolated clumps of sedg							
(tetragona)	4.						
consigning	4.						
	4.	_					
\$ SOCIATED PECIE \$: her (non-dominant) spp		ve vegetation	layers (with up to three o	dominant species in each i	layer), Structural For	mations should foli	ow 2009 Australian Soli i
SSOCIATED PECIES: ther (non-dominant) spp ease record up to four of d/Survey Fleid Handboo	the most representati it guidelines – refer to	field manual fo	or further information an	d structural formation table		_	ow 2009 Australian Soil o
S SOCIATED PECIE S: ther (non-dominant) spp ease record up to four of d Survey Field Handboo ONDITION OF HABI' OMMENT:	the most representative guidelines – refer to	field manual fo	r further information an	d structural formation table ery good 🖾 Goo	e. od 🗖 Degra	ded 🔲 Con	npletely degraded
S SOCIATED PECIES: ther (non-dominant) spp ease record up to four of	the most representati guidelines – refer to FAT: Pristine Last Fire: Seas	feld manual for E	r further information an Excellent Year:	d structural formation table ary good Goo	e. od 🗖 Degra Bity: High 🗖 Med	ded Con	npletely degraded
S SOCIATED PECIES: ther (non-dominant) spp lease record up to four of of Survey Field Handboo ONDITION OF HABI' OMMENT: IRE HISTORY: ENGING: OAD SIDE MARKER: THER COMMENT	the most representati guidelines – refer to FAT: Pristine Last Fire: Seas Not requin 3: Not requin	on/Month:	Present Fresent Fresen	d structural formation table ery good Goo Fire Intense Replace / repair Replace / reposition at actions and/or imp	e. d	ded Con	npletely degraded
SSOCIATED PECIES: ther (non-dominant) spp case record up to four of of Survey Field Handboo ONDITION OF HABIT OMMENT: IRE HISTORY: ENCING: OAD SIDE MARKER	the most representati guidelines – refer to FAT: Pristine Last Fire: Seas Not requin 3: Not requin	on/Month:	Present Fresent Fresen	d structural formation table ery good Goo Fire Intense Replace / repair Replace / reposition at actions and/or imp	e. d	ded Con	npletely degraded No signs of fire gth req'd:
S SOCIATED PECIES: ther (non-dominant) spp passe record up to four of d Survey Field Handboo ONDITION OF HABI OMMENT: IRE HISTORY: ENCING: OAD SIDE MARKER! THER COMMENT: clude date. Also in	the most representation of guidelines – refer to FAT: Pristine Last Fire: Seas: Not require S: (Please included details of actions	eled manual fi	rfurther information an Excellent Year: Present Fresent	Fire Intene Replace / repair Replace / reposition at actions and/or implow to locate it.)	e. d	ded Confilm Low	No signs of fire
\$ SOCIATED PECIES: ther (non-dominant) spp passe record up to four of d Survey Field Handboo ONDITION OF HABI OMMENT: ENCING: OAD SIDE MARKER! THER COMMENT: clude date. Also in	the most representative guidelines – refer to FAT: Pristing Last Fire: Seas Not required: Not required: Not required: Not required: Pristing Clude details of a CATION / LICENCI Lined. For further information of the control of the c	e recommediditional da	r further information an Excellent Year: Present Fresent	d structural formation table ery good ■ Good Fire Intense Replace / repair ■ Replace / reposition ■ Int actions and/or implies how to locate it.) only observing plants (i.e. regularments see the Tire	e. d	ded Com	No signs of fire that the control of
\$ SOCIATED PECIES: ther (non-dominant) spp case record up to four of d Survey Field Handboo ONDITION OF HABIT OMMENT: IRE HISTORY: ENCING: OAD SIDE MARKER! THER COMMENT: clude date. Also in the comment of the comment	the most representative guidelines – refer to FAT: Pristing Last Fire: Seas Not required: Not required: Not required: Not required: Pristing Clude details of a CATION / LICENCI Lined. For further information of the control of the c	teld manual fit E	r further information an Excellent Year: Present Fresent	d structural formation table ery good ■ Good Fire Intense Replace / repair ■ Replace / reposition ■ nt actions and/or implicate it.) only observing plants (i.e., requirements see the Thre OTHER COMMENTS seed	e. In a Degra Bity: High Med Required Required	ded Com	No signs of fire
\$ SOCIATED PECIES: ther (non-dominant) spp case record up to four of d Survey Field Handboo ONDITION OF HABI OMMENT: IRE HISTORY: ENCING: OAD SIDE MARKER! THER COMMENT: clude date. Also in Universation/Lonce is reg by actions carried out univ PECIMEN: Co	the most representative guidelines – refer to AT: Pristing Refer Seas Not required. Not required to the details of a ATION / LICENCI uned. For further information of the result of the	e recommediditional da	Present Fresent Fresen	d structural formation table ery good ■ Good Fire Intense Replace / repair ■ Replace / reposition ■ Int actions and/or implies how to locate it.) only observing plants (i.e. regularments see the Tire	e. In a Degra Bity: High Med Required Required	ded Com	No signs of fire
S SOCIATED PECIES: ther (non-dominant) spp sase record up to four of d Survey Field Handboo ONDITION OF HABEI OMMENT: IRE HISTORY: ENCING: OAD SIDE MARKER! THER COMMENT: clude date. Also in LORA AUTHORIS, therisalorilone is up actions carried at une PECIMEN: Co DDGEMENT: W. Lo	the most representable regulations – refer to real regulations. Pristing Last Fire: Seas Not required. Not required. St. (Please include details of an authorisations/licer authorisations/licer authorisations/licer licetors No: A Hierb digement No:	E No: FT6 material accessional de E No: FT6 Materi	Present Fresent Fresen	d structural formation table ery good ■ Good Fire Intense Replace / repair ■ Replace / reposition ■ nt actions and/or implicate it.) only observing plants (i.e., requirements see the Thre OTHER COMMENTS seed	e. In a Degra Bity: High Med Required Required	ded Com	No signs of fire
S SOCIATED PECIES: ther (non-dominant) spp sase record up to four of d Survey Fibid Handboo ONDITION OF HABIT OMMENT: ENCING: OAD SIDE MARKER! THER COMMENT: clude date. Also in LORA AUTHORIS, therisation/licence is ne up actions carried out unc PECIMEN: Co DOGEMENT: W. LO TTACHED: Ma	ATION / LICENCLING Actions No: Attribute details of a	E No: FT6 mater on autoes should be WA Hert KSW11	Present Fresent Fresen	d structural formation table ery good ■ Good Fire Intense Replace / repair ■ Replace / reposition ■ nt actions and/or implicate it.) only observing plants (i.e., requirements see the Thre OTHER COMMENTS seed	e. In a Degra Bity: High Med Required Required	ded Com	No signs of fire
S SOCIATED PECIES: ther (non-dominant) spp case record up to four of d Survey Field Hendboo ONDITION OF HABI' OMMENT: IRE HISTORY: ENGING: OAD SIDE MARKER! THER COMMENT: clude date. Also in Understation/sence is req y actors carried out une PECIMEN: CO DDGEMENT: W. LO TTACHED: Ma	the most representative guidelines – refer to FAT: Pristing Last Fire: Seas Not required. Not required. St. (Please include details of a clude det	E No: FT6 mail on autors should be WA Herb KSW11 ACC91	Present Fresent Fresen	d structural formation table ery good Good Fire Intene Replace / repair Replace / reposition Int actions and/or implied to the control of	e. d	ded Com	No signs of fire
S SOCIATED PECIES: ther (non-dominant) spp case record up to four of d Survey Field Hendboo ONDITION OF HABI' OMMENT: IRE HISTORY: ENGING: OAD SIDE MARKER! THER COMMENT: clude date. Also in Understation/sence is req y actors carried out une PECIMEN: CO DDGEMENT: W. LO TTACHED: Ma	the most representative guidelines – refer to FAT: Pristing Last Fire: Seas Not required. Not required. St. (Please include details of a season of the seaso	E No: FT6 material accessional de E No: FT6 materi	Present Fresent Fresen	d structural formation table ery good ■ Good Fire Intense Replace / repair ■ Replace / reposition ■ Int actions and/or implied how to locate it.) only observing plants [i.e. requirements see the Thre OTHER COMMENTS sed Herb. ■ District H Field notes ■ Other:	e. In dead Degra Bety: High Med Required Required Required Required Required Required Required Required Other:	ded Com	No signs of fire

Daviesia pauciflora - Priority Three



Threatened and Priority

Flora Report Form

Version 1.4 March 2021

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 www.dow.wa.gov.au/olarits-and-on/mais/threatened-species-and-communifies/threatened-species-and-communifies/threatened-species-and-on-mais/threatened-species-and-communifies/threatened-species-an

CONTRACTOR DESCRIPTION OF THE PARTY OF THE P						
TAXON: Daviesia	pauciflora			TP	FL Pop. No:	
OBSERVATION DAT	E: 14/11/2022	CONS	ERVATION STAT	US: P3	New populat	tion 🛛
OBSERVER/S: K	Katherine Walkerde	n, Julie Waters		PHONE	041655877	4
ROLE: Environmen	tal officer	ORGA	NISATION: Shir	e of Esperance		
EMAIL: Katherine.W	/alkerden@esperar	nce.wa.gov.au				
DESCRIPTION OF LOC	ATION (Provide at least	nearest town/named locality, a	nd the distance and direct	ion to that place):		
Boydell road at slk 0.9	6. North side of roa	ad.		_		
					erve No:	
· —	erance	LGA: Esperan		Land manage	r present: 🖼	
DATUM:	DecDegrees O	TUTM coords provided, Zone is DegMinSec 🔲 U		ETHOD USED: GPS Different	ial GPS 🔲 🛚 N	Map 🔲
GDA94 / MGA94 🛮		6284667.29	_	. satellites:	Map used:	wap 🚨
AGD84 / AMG84	-			undary polygon		
WGS84 Unknown	Long / Easting:	383471.96		ptured:	Map scale:	
Unknown 🔲	ZONE:	51				
LAND TENURE:			_	_		_
Nature reserve	Timber reserve State forest		-	Rail reserve		d reserve 💹
Conservation park	Water reserve				Specify other:	i reserve 🖴
AREA ASSESSMENT:			. —	a observed (m²):		
EFFORT: T	Fime spent surveying ACY: Actual	(minutes):	No. of minu Estimate	tes spent / 100 m ² :		
POP N COUNT ACCUR	ACT. Actual	Extrapolation 🔲		to field manual for list)		
WHAT COUNTED:	Plants	Clumps	Clonal stems			
TOTAL POP'N STRUCTUR	RE: Mature:	Juveniles:	Seedlings:	Totals:		
Alive	e 3				Area of pop (m²)):
Dear	d				Note: Pls record cour	
QUADRAT'S PRESENT:		Size	Data attached	Total area	(not percentages) for of guadrats (m²):	
Summary Quad. Totals: A		Size	Data attached	Total alea	n quadrats (m-).	
REPRODUCTIVE STATE:	Cional 🗖	Vegetative	Flowerbud C	1 Flori	ver 🗖	
	mmature fruit	Fruit 🗖	Dehisced fruit		in flower:	6
CONDITION OF PLANTS:	Healthy 🖾	Moderate	Poor C	3 Seneso	ent 🗖	
COMMENT:					_	
				Curre	nt Potential	Potential
THREATS - type, agent Eg dearing, too frequent fire, w			nto Specify specifulness	lean		Threat
		w, M=Medium, H=High, E=Extr		(N-E) (L-E)	Onset
Estimate time to potential i	impact: S=Short (<12mths),	, M=Medium (<5yrs), L=Long (5	Syrs+)			(8-L)
•						
•						
•						
					-	

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 Enfered in Database D

Department of B	liodiversity, nd Attractions	Threatened ar	nd Priority					
Flora Report Form Version 1.4 March 20.					on 1.4 March 2021			
HABITAT INFORMATION	ON:			V-0.1 0.11	on 1.4 march 2021			
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:			
Crest	Granite 🔲	(on soil surface; eg	Sand 🛮	Red 🔲	Well drained X			
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:	_	Specify other:	Specify other:				
Drainage line								
Closed depression	Specific Landforn	n Element:						
Wetland	(Refer to field manual for							
CONDITION OF SOIL:	Dry 🛄	Moist 🗖	Waterlogged	Inundated 🔲				
VEGETATION CLASSIFICATION*: Egr. 1. Banksla woodand (8. afterwalta, B. illotola); 2. Open shrubland 1. Eucalyptus pleurocarpa over mixed heath. Associated species include: Melaleuca pulchella, Isopogon polycephalus, Calothamnus gracilis, Lomandra mucronata, Hibbertia gracilpes, Goodenia scapigera, Acacia cyclops.								
(Hibbertia sp., Acadia spp.); 2. isolated clumps of sedges								
(M.tetragona)	3.							
	4.							
ASSOCIATED								
SPECIES: Other (non-dominant) spp								
* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and								
Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.								
CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded COMMENT:								
FIRE HISTORY: LE	st Fire: Season/Month:	Year:	Fire intensity: Hig	h 🗖 Medium 🔲 🗆 Low 🖺	No signs of fire 🛭			
FENCING:	Not required		e / repair 🛄	_	th reg'd:			
ROAD SIDE MARKER 8:	Not required	Present 🔲 Replac	e / reposition 📮	Required Quan	ntity req'd:			
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)								
ELOBA AUTHORIAATI	ON A LICENCE NO. ET	04000707 FT04000700	****					
FLORA AUTHORISATION / LICENCE No: F161000787, F161000788. Note if only observing plants (i.e. no specimens or plant material is taken) then no authorisation/licence is required. For further information on authorisation and licening requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under authorisations/licences should be recorded above in the OTHER COMMENTS section.								
SPECIMEN: Collect KSW16922 ACC 9857	tors No: W	A Herb. 🛮 Regional H	lerb. District Hert	o. Other:				
LODGEMENT: WA H		(SW16922 ACC 9857						
ATTACHED: Map	Mudmap 🔲 Ph	oto 🔲 🙀	Field notes	Other:				
COPY SENT TO: Re	gional Office 🔲 D	histrict Office	Other:					
Submitter of Record: Ka	therine walkerden R	tole: Environmental offic	er Signed:	Date: 28/	03/2023			
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:								

Kunzea salina - Priority Three



Threatened and Priority

Flora Report Form

Version 1.4 March 2021

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 www.dow.wa.ov.au/blanks.and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-and-animals/threatened-absorbers-animals/th

TAYON K			TOFI	D N					
TAXON: Kunzea salin				Pop. No:					
OBSERVATION DATE:	14/11/2023	CONSERVATION S		New population 🛛					
OBSERVER/S:			PHONE	0416558774					
ROLE: Environmental of coordinator	officer, Environmental	ORGANISATION:	Shire of Esperance						
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):									
Boydell road, Southern side of road. 130m South West of Boydell road and Coolgardie-Esperance Highway intersection. 8.8km North									
West of Gibson Townsite.									
			Reserv	e No:					
DBCA DISTRICT: Esperan	ce LGA:	Esperance	Land manager p	resent: 🛮					
DATUM: CO	ORDINATES: (If UTM coords prov	vided, Zone is also required)	METHOD USED:						
	ecDegrees 🔲 DegMinSed	uTMs 🗵	GPS Differentia	GPS Map					
GDA94 / MGA94 LE	at / Northing: 6284670.5		No. satellites:	Map used:					
_	ng / Easting: 384299.9		Boundary polygon	Map scale:					
Unknown	ing / Lasuing. 354299.9		captured:	map scale.					
Olikitowii 🚨	ZONE: 51								
LAND TENURE:									
Nature reserve		rivate property 🔲	Rail reserve	Shire road reserve					
National park			RWA road reserve	Other Crown reserve					
Conservation park	Water reserve	UCL 🔲 SLK/Po	oletoSp	ecify other:					
AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²):									
EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m ² :									
POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method:									
		(F	Refer to field manual for list)	_					
WHAT COUNTED:	Plants Clumps	Clonal stems							
TOTAL POP'N STRUCTURE:	Mature: Juveni	lles: Seedlings:	Totals:						
Alive	69		A	rea of pop (m²):					
Dead				ote: Pls record count as numbers ot percentages) for database.					
QUADRAT'S PRESENT:	No. Size	Data attac		ouadrats (m²):					
Summary Quad, Totals: Alive			I Diameter	(m).					
REPRODUCTIVE STATE:	Clonal	e 🔲 Flowerbu	ed Flower	50					
		it Dehisced fru							
CONDITION OF PLANTS:	Healthy Moderat	. 1 Po	or Senescen	П					
COMMENT: Only Northern bank of salt lake was earched, population likely significantly larger									
Comment.	bank of sak lake was carcinos, po	position rively agrinous incy is	·						
THREATS - type, agent and	Current	Potential Potential							
Eg dearing, too frequent fire, weed, o	where relevant. Impact (N-E)	Impact Threat (L-E) Onset							
Rate current and potential threat Estimate time to notential impac	(N-E)	(B-L)							
Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)									
•									

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 8: Please forward to Flora Administrative Officer, Species and Communities Program.

Record entered by: ______ Sheet No.: _____ Record Entered in Detabase O

	of Biodiversity, on and Attractions	Threatened a	nd Priority		
CONTRACTOR AND TAKE		Flora Repo	ort Form	Ven	sion 1.4 March 2021
HABITAT INFORMA	TION:				
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		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 🔲	ildai 🚨
Open depression		50-100%	Specify other:	Specify other:	
Drainage line			.,,	.,,	
Closed depression		-			
Wetland	Specific Landfo				
	(Heter to held manual to				
CONDITION OF SOIL:	Dry 🗖	Moist 🔲	Waterlogged 🔲	Inundated 🔲	
VEGETATION		lia dominated salt lake fr	inge with Austrostipa	juncifolia, mixed samp	hire's, Restiads and
CLASSIFICATION*: Eg: 1. Banksia woodland (8	Frankenia tetrapetal	à.			
attenuata, B. Iliofolia);	2.				
Open shrubland (Hibbertia sp., Acadia spp.)	3.				
Isolated clumps of sedge (Mitetragona)					
,	4.				
ASSOCIATED					
SPECIES: Other (non-dominant) spp					
	the most representative vegetation	on layers (with up to three domin	ant species in each layer). Str	ructural Formations should to	llow 2009 Australian Soll and
Land Survey Fleid Handbook	rguidelines – refer to field manua	i for further information and stru	ctural formation table.		
CONDITION OF HABIT	AT: Pristine	Excellent 🖾 Very go	ood 🔲 🛮 Good 🗖	Degraded 🔲 Cor	mpletely degraded 🔲
COMMENT:					
FIRE HISTORY:	Last Fire: Season/Mont	n: Year:	Fire intensity: He	gh 🔲 Medium 🔲 🛮 Low	No signs of fire
FENCING:	Not required	Present 🔲 Repla	oe / repair 🔲	Required Len	gth req'd:
ROAD SIDE MARKERS	: Not required	Present 🔲 Repla	ce / reposition 🔲	Required 🔲 Qua	antity req'd:
OTHER COMMENTS	: (Please include recomn	mended management ac	tions and/or implement	ted actions -	
	dude details of additional			_	
FLORA AUTHORISA	TION / LICENCE No: F	T61000787 ET6100078	k-1 a Note if only observing	g plants (i.e. no specimens or	niant matieral is taken)
then no authorisation/licence	e is required. For further informa-	ition on authorisation and licenin	g requirements see the Threa	atened Flora and Wildlife Lice	nsing pages on DBCA's
	d out under authorisations/licence lectors No:	is should be recorded above in t	ne OTHER COMMENTS sec	ion.	
	WA He	erb. 🛮 Regional Herb	District Herb.	Other:	
LODGEMENT: W/	Herb				
	igement No: ACCS	874			
ATTACHED: Ma	p Mudmap Photo	GIS data 🛭 Field	notes 🔲 💢	Other:	
_	Regional Office				
то:	Distric	_	her:		
Durbon Story of Discounts	Katherine Walkerden	Role: Environemntal off	icer Signed:	Date: 2	8/03/2023

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

RECORD \$: Please forward to Flora Administrative Officer, Species and Communities Program.

Record entered by: Sheet No.: Record Entered in Database C

Persoonia scabra - Priority Three - Eastern population (SLK 0-0.24)

Department of Biodivers Conservation and Attra	sity, actions	hreatened	and Priori	ty			
CONTRACTOR AND TAKEN		Flora Rep	ort Form		Ve	ersion 1.4 Ma	rch 2021
Please complete as much of		ble, with emphasi	s on those section		black. Forin	formation on how	v to complete
the form please refer to the Threatened communities/fhreatened-plants	& Priority Flora Report Fo	rm (TPRF) manual on th	e DBCA website at www.	doaw wa doy auroi	er nægenne genninne	Martin Indoorses	olos-and-
TAXON: Persoonia sca	abra				TPFL	Pop. No:	1
OBSERVATION DATE:	14/11/2022	CONS	SERVATION STA	TUS: P3	_ N	lew populat	tion 🔲
OBSERVER/S: Kathe	erine Walkerden, J	Iulie Waters			PHONE		
ROLE: Environmental of coordinator	fficer, Environmen	tal ORG	ANISATION: Sh	ire of sperano	e		
EMAIL: Katherine.Walke	rden@esperance.	wa.gov.au					
DESCRIPTION OF LOCATIO	N (Provide at least near	est town/named locality, a	and the distance and dire	ection to that place).			
LGA Road Reserve, along	Boydells Rd. Ca 4	44m W of Coolga	rdie-Esperance H	wy intersection	n.		
SLK 0.23-0.05							
					Reserve		
DBCA DISTRICT: Esperanc		LGA: Espera			d manager pr	esent: 📟	
1	ORDINATES: (HUTM cDegrees D		salsonequired) Ni JTMs ⊠	GPS 🗷): Differential (SPS TILL	Map 🔲
GDA94 / MGA94 X	_	4644.3	_	lo. satellites:		Map used:	Top La
AGD84 / AMG84	-			oundary polygo	on.	Map scale:	
Unknown	· · —	207.7	c	aptured:		wap scale:	
_	ZONE: 51						
LAND TENURE: Nature reserve	Timber reserve	Private prope		Rail reserve		Chica sone	reserve 🖾
National park	State forest	Pastoral lea	-	/A road reserve			reserve
Conservation park	Water reserve	U	CL SLK/Pole	10	Sner	cify other:	
AREA ASSESSMENT: Edg	e survey 🛮 Par	tial survey 🔲 🛭 Fo		rea observed (r			
AREA ASSESSMENT: Edg EFFORT: Time :	spent surveying (mi	nutes):	ull survey 🔲 A		m²):		
AREA ASSESSMENT: Edg	spent surveying (mi		ull survey A	rea observed (r	m²): i0 m²: iod:		
AREA ASSESSMENT: Edg EFFORT: Time :	spent surveying (mi	nutes):	ull survey A	rea observed (r lutes spent / 10 Count meth or to field manual to	m²): i0 m²: iod:		
AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY:	spent surveying (mir : Actual 🖪	nutes):	ull survey A No. of min Estimate	rea observed (r lutes spent / 10 Count meth or to field manual to	m²): i0 m²: iod:		
AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED:	spent surveying (mi Actual ■	Extrapolation	No. of min Estimate (Rote Clonal stems (rea observed (r outes spent / 10 Count meth or to field manual for	m²): 00 m²: od: r list)	ea of pop (m²)):
AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE:	spent surveying (mi Actual Plants Mature:	Extrapolation	No. of min Estimate (Rote Clonal stems (rea observed (r outes spent / 10 Count meth or to field manual for	m²):		nt as numbers
AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive	spent surveying (mi Actual Plants Mature:	Extrapolation	No. of min Estimate (Rote Clonal stems (rea observed (r Count meth r to field manual for	m²): 10 m²: 10 m²: 10 m²: 11 Are	ea of pop (m²)	nt as numbers database.
AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead	spent surveying (mi : Actual ⊠ Plants □ Mature: 5	Extrapolation Clumps Juveniles:	No. of min Estimate (Rek Clonal stems Seedlings:	rea observed (r Count meth r to field manual for	m²): 10 m²: 10 m²: 10 m²: 11 Are	ea of pop (m²) × Pis record cour percentages) for	nt as numbers database.
AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE:	spent surveying (mi Actual Plants Mature: 5 No.	Extrapolation Clumps Juveniles:	No. of min Estimate (Rek Clonal stems Seedlings:	rea observed (r Count meth r to field manual for Totals:	n²): 0 m²: od: list) Are Not (not	ea of pop (m²) × Pis record cour percentages) for uadrats (m²):	nt as numbers database.
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AREA ASSESSMENT: Edg EFFORT: Time: POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT: Summary Quad. Totals: Alive REPRODUCTIVE STATE: Immat: CONDITION OF PLANTS: COMMENT: THREATS - type, agent and Eg dearing, too frequent fire, weed, de Rate current and potential threat Estimate time to potential impact	spent surveying (mi Actual Plants Mature: 5 No. Clonal Healthy supporting informs sease. Refer to field manuimpact N=Nil, L=Low, M=	Extrapolation Clumps Juveniles: Size Vegetative Fruit Moderate atton: ait for list of threats & ag- Medium, H=High, E=Exit	No. of min Estimate (Rek Clonal stems Seedlings: Data attache Flowerbud Dehisced fruit Poor	rea observed (r utes spent / 10 Count meth r to field manual for Totals:	n²): 0 m²: od: rist) Are Not (not al area of qu Flower excentage in fi	ea of pop (m²): E Pis record cour percentages) for uadrats (m²): Ower:	Potential Threat Onset
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RECORD \$: Please forward to Flora Administrative Officer, Species and Communities Program.

Record entered by:______ Sheet No.:_____ Record Entered in Database ©

BITAT INFO			Flora Rep	ort Form	Versi	on 1.4 March 2021
	RMATION:					
LANDFOR	м:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Cr	rest 🔲	Granite 🔲	(on soil surface; eg	Sand 🗵	Red 🔲	Well drained
	Hill 🔲	Dolerite 🔲	gravel, quartz fields)	Sandy loam	Brown 🔲	Seasonally
Ric	ige 🔲	Laterite 🔲	0.40%	Loam 🔲	Yellow 🔲	inundated
Outo	rop 🔲	Ironstone	0-10% 🗖 10-30% 🗖	Clay loam 🔲	White 🔲	Permanently inundated
Sk	оре 🛮	Limestone 🔲	30-50%	Light clay 🔲	Grey 🗖	Tidal 🔲
1	Flat 🔲	Quartz 🔲	50-100%	Peat 🔲	Black	
pen depress		Specify other:	55-155/6	Specify other:	Specify other:	
Drainage						
osed depress		Specific Landfor	m Element:	_		
		Refer to field manual for				
NDITION OF	BOIL:	Dry 🖼	Moist 🗖	Waterlogged 🔲	Inundated 🔲	
GETATION ASSIFICATION	1. E	ucalyptus pleuro	carpa over mixed he	ath		
1. Banksia wood	land (B. 2.					
nuata, B. Ilidifolia Ipen shrubland	3					
bertia sp., Acada olated clumps of	sedges					
etragona)	4.					
SOCIATED ECIES:						
er (non-dominant	() spp					
			n layers (with up to three dom) for further information and str	nant species in each layer). Str	uctural Formations should folk	ow 2009 Australian Soli a
	ENT \$: (Pleas to include de	LICENCE No:	nended management a data available, and how	ng plants (i.e. no specimens or ened Hora and Wild life Licensi	ed actions -	
aired. For further	Collectors I	No:	and the second s			
ired. For further er authorisations/	Collectors I	PER		b. District Herb.	Other:	
ired. For further er authorisations/ ECIMEN:	WA Herb Lodgemen Map Me	PER t No: 0937 udmap Photo	TH '5449		Other:	
ired. For further er authorisations/ ECIMEN: DGEMENT:	WA Herb Lodgemen	PER t No: 0937	TH 5449 GIS data ⊠ Fie			
ind. For further or authorisations! ECIMEN: DGEMENT: TACHED: PY SENT:	WA Herb Lodgemen Map Mr	PER 1No: 0937 ploto	TH 5449 GIS data ⊠ Fie	old notes Other:	Other:	3/03/2022

Persoonia scabra – Priority Three – Central Eastern population (SLK 3.49-3.51)

Department of Biodiversity, Conservation & Attractions - Threatened and Priority Flora System

RFR Summary

Report Created Date: 25/JAN/2022

Search Criteria: Taxon:2275; Fire Reports excluded

Records: 3

Taxon: 2275 Persoonia scabra Sheet: 155214 Observation Date: 07/10/2020 Pop: 2 SubPop: Consv Code: 3 Rank: Fire Rep: N NewPop: Y

GDA94Lat: -33.5716 Observer: Julie Waters and Danika Penson Lat:

Long: GDA94Long: 121.718 Role: Conservation employee

Vesting: Shire/LGA Purpose: Road Reserve Region: SOUTH COAST District: ESPERANCE

Location: LGA Road Reserve, along Boydells Rd. Ca 3.4km W of Coolgardie-Esperance Hw y intersection. Plants on

southern road reserve only

Count Method: Actual count - individuals

Plant Type: Plants

Number of Plants OR Simple Count:

Mature: 5

Juveniles: Simple Dead Count: Seedlings: Dead Calc Total:

Organisation: Land Mgr Present:

Area Assessment: Partial survey

No. of Quadrants: Area Occupied m2: In Flower: Y

Population Condition: Healthy

Population Notes: **Habitat Condition:**

Habitat notes: Open mallee over open mixed shrubland with Hakea sp. and sedges

Rock Type: Soil Type: Sandy loam

Landform: Depression - closed Drainage: Seasonally inundated

Associated Species: Hakea corymbosa, Verticordia sp., Hakea trifurcata, Eucalyptus sp.

Fire Season: Fire Year: Fire Intensity: Fencing Status: Roadside Marker:

Other Comments: Note was not counted extensively in survey - 15 GPS points recorded, so minimum amount is 15

plants present.

Confirmation by specimen KW094, Accession 8652, Confirmed by Michael Hislop 10/12/20.

Specimen KW094 not retained by WA Herbarium.

Collector no: KW 094 Voucher Location:

Barcode: Attached Doc1: Permit/Licence No.:

Attached Doc2: Veg Structure Dominant 1 Dominant 2 Veg Class:

open mallee w oodland <10m, 0.25-20% shrubland 1-2m, 50-80%

Current Potential Comments Agent Medium

Road widening - no longer scheduled for Track/firebreak maintenance Road manager road widening due to environmental values. Will work in current road footpring. Unknow n previously how many plants would be cleared as was not counted.

RPT_CQ_RFR

Page 2 of 3

Persoonia scabra – Priority Three – Central Western population (SLK 6.29-6.71)

Department of Biodiversit Conservation and Attrac	ry. Th	reatened a	and Priorit	у		
Please complete as much of the form please refer to the Threatened & communities/threatened-clarits	he form as possibl		on those sections			w to complete
Environemotal Co	bra 25/10/2022 Vaters, Katherine V	Walkerden mental	ERVATION STAT	US: P3 PHO	TPFL Pop. No: New popula ONE	ition 🛛
ROLE: Officer EMAIL: Katherine.Walker	den@esperance.w		NISATION: Shire	e of Esperance		
DESCRIPTION OF LOCATION Boydell road at SLK 6.29-6.	7				Intersection.	
					leserve No:	
DBCA DISTRICT: Esperance		LGA: Esperance			nager present: 🚨	
ı	RDINATES: (If UTM of Degrees Dec			ETHODUSED: GPS 🗖 Diffe	rential GPS	Map 🔲
GDA94 / MGA94 X Lat	/ Northing: 6284	_	_	. satellites:	Map used:	мар 🚨
AGD84 / AMG84	/ Easting: 3777		Bo	undary polygon	Map scale:	
Unknown 🗖	ZONE: 51	11	сар	ptured:		
LAND TENURE:						
Nature reserve	Timber reserve State forest	Private propert	=	Rail reserve		n reserve
Conservation park	Water reserve			toto	Specify other:	ii reserve
AREA ASSESSMENT: Edge EFFORT: Time s; POP'N COUNT ACCURACY:	pent surveying (minu		No. of minut	a observed (m²): tes spent / 100 m² Count method: to field manual for list)	2:	
WHAT COUNTED:	Plants	Clumps 🔲	Clonal stems			
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:	_	
Alive	3				Area of pop (m	
Dead					Note: Pls record on (not percentages) for	
QUADRATS PRESENT:	No.	Size	Data attached	Total ar	ea of quadrats (m²)	:
Summary Quad. Totals: Alive		_			」 _	
	Clonal 🔲 💮 re fruit 🔲	/egetative ☐ Fruit █	Flowerbud Dehisced fruit		Flower tage in flower:	%
CONDITION OF PLANT8: H	lealthy 📓	Moderate 🗖	Poor E	l Ser	nescent 🗖	
THREATS - type, agent and a Eg dearing, too frequent fire, weed, disk Rate current and potential threat in	ease. Refer to field manual npact: N=NII, L=Low, M=M	for list of threats & agent edium, H=High, E=Extrer	ne	relevant.	urrent Potential npaot Impaot (N-E) (L-E)	Potential Threat Onset (8-L)
Estimate time to potential impact: :	s-snort (<12mths), M=Me	aum (<zyrs), (5y<="" l="Long" td=""><td>15+)</td><td></td><td></td><td></td></zyrs),>	15+)			
•						
•						
Please ret	urn completed t	form to Specie	s And Comm	unities Prog	ram DBCA,	

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

RECORD 8: Please forward to Flora Administrative Officer, Species and Communities Program.

Record entered by:_______ Sheet No.:______ Record Entered in Database C

Department of Conservation	Biodiversity, and Attractions	Threatened a	nd Priority		
CONTRACT OF		Flora Repo	rt Form	Manal	
		i ioia Kepo	it i Oilli	Versi	on 1.4 March 2021
HABITAT INFORMATI					
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	_	(on soil surface; eg gravel, quartz fields)	Sand	Red 🔲	Well drained 🔲
Hill 🗖	Dolerite 🔲	graver, quarte restary	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 🗵	Quartz 🔲	50-100%	Peat 🔲	Black 🔲	
Open depression 🔲	Specify other:	55-100/6	Specify other:	Specify other:	
Drainage line 🔲					
losed depression 🔲	Specific Landfor	m Florocati			
Wetland	(Refer to field manual for				
ONDITION OF SOIL:	Dry 🗖	Moist 🗖	Waterlogged 🔲	Inundated 🔲	
EGETATION	4. Million d. Mallions and	Makes Isonian aves Asses	to do solo site di chicolate.	- d 'th - C t - h	
LASSIFICATION*:		Hakea laurina over Acad	ia dominated shrublar	nd with Santalum acum	inatum.
g. 1. Banksia woodland (B. tenuata, B. ilicifolia);	2.				
Open shrubland	3.				
libbertia sp., Acadia spp.); Isolated clumps of sedges	4.				
(tetragona)	4.				
SSOCIATED Pecies:					
her (non-dominant) spp					
		n layers (with up to three domina		uctural Formations should folio	w 2009 Australian Soli an
nd Survey Fleld Handbook g	uidelines – refer to field manual	for further information and struc	tural formation table.		
ONDITION OF HABITA	T: Pristine 🔲	Excellent Very go	od 🖾 Good 🗖	Degraded 🔲 Com	pletely degraded 🔲
OMMENT:					
	ast Fire: Season/Month		Fire intensity: Hig		No signs of fire 🛭
ENCING:	Not required	_	e / repair 🔲		th req'd:
OAD SIDE MARKER 8:	Not required	Present 🔲 Replac	e / reposition	Required Quar	itty req'd:
		nended management acti		ed actions -	
iciude date. Also inclu	de details of additional (data available, and how t	o locate it.)		
_					
LORA AUTHORISAT	ION / LICENCE No: FT	61000787, FT61000788	-1a Note if only observin	g plants (i.e. no specimens or	plant matieral is taken)
en no authorisation/licence is	s required. For further informat	ion on authorisation and licening a should be recorded above in th	requirements see the Threat	ened Flora and Wildlife Licers	
	ctore No:		E OTHER COMMENTS and		
	WA	Nerb. 🔣 Regional He	erb. 🔲 District Herb	. Other:	
SW20322_ ODGEMENT: WAT	Herb Lodgement .				
No:		ICC 9874			
TTACHED: Map	Mudman El Dh	GIS data	ald soles 🗖 💮 Or	h.org	
TTACHED.	Mudmap 🔲 Pho	oto 🔲 📓 Fi	eld notes 🔲 Ot	her:	
OPY SENT TO: R	egional Office 🔲 Di	istrict Office 🗵	Other:		
bmitter of Record: Ka	atherie Walkerden R	tole: Environmental Offic	er Signed:	Date: 29/	03/2023
		ed form to Species		_	-
		JVERY CENTRE W.			
RE	CONDS: Please forward Record emb	d to Flora Administrative ered by:	B Officer, Species and Sheet No.:_		ı. Entered in Database

Persoonia scabra – Priority Three –Western population (SLK 7.94)

Department of Biodivers	ъ. Т	hreatened	and Priority	,	
Conservation and Attrac	tions		-	,	
Diagramatica as much of		Flora Rep		handanad in black	Version 1.4 March 2021
Please complete as much of the form please refer to the Threatened a communities/firreatened-clarits					
TAXON: Persoonia sca	bra			TP	FL Pop. No:
OBSERVATION DATE:	25/10/2022	CONS	ERVATION STATE	JS: P3	New population 🛛
OBSERVER/S: Julie V	Vaters, Katherine	e Walkerden		PHONE	
ROLE: Environemntal Co Officer	oordinator, Enviro	onmental ORGA	ANISATION: Shire	of Esperance	
EMAIL: Katherine.Walker	den@esperance	.wa.gov.au			
DESCRIPTION OF LOCATIO	N (Provide at least near	rest town/named locality, a	nd the distance and direction	on to that place):	
Boydell road, Northern side North West of Gibson Town		West of Boydell re	oad and Coolgardie	-Esperance Highw	ay Intersection. 14.8km
SLK 7.94				Rese	rve No:
DBCA DISTRICT: Esperance		LGA: Esperar		Land manage	r present:
l	_ `	Miccords provided, Zone is		THOD USED:	LIOPO EL NIII E
GDA94 / MGA94 🔯	-	_			ial GPS Map
AGD84 / AMG84	/ Northing: 628	14084		ndary polygon	Map used:
	g/Easting: 376	3486		tured:	Map scale:
Unknown 🔲	ZONE: 51			_	
LAND TENURE:					
Nature reserve	Timber reserve 🔲	Private prope	rty 🗖	Rail reserve	Shire road reserve
National park	State forest	Pastoral lea		road reserve	Other Crown reserve
Conservation park	Water reserve	U	CL SLK/Pole	10	Specify other:
AREA ASSESSMENT: Edge	survey 🔲 🛮 Pa	rtial survey 🔲 🛮 Fu	ill survey 🔲 🛮 Area	observed (m²):	
EFFORT: Time s	pent surveying (m	inutes):		es spent / 100 m²:	
POP'N COUNT ACCURACY:	Actual 🔲	Extrapolation 🔲	Estimate	Count method:	
WHAT COUNTED:	Plants	Clumps	Clonal stems	ricki markai kir isa)	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:	
Alive	3			1012101	Area of pop (m²):
					Note: Pls record count as numbers
Dead					(not percentages) for database.
QUADRATS PRESENT:	No	Size	Data attached	☐ Total area	of quadrats (m²):
Summary Quad. Totals: Alive					_
REPRODUCTIVE STATE:	Clonal 🔲 re fruit 🔲	Vegetative □ Fruit	Flowerbud Dehisced fruit		rer 🛄
CONDITION OF PLANTS:	lealthy 📓	Moderate 🔲	Poor 🗖	Seneso	ent 🗖
	-			T -	
THREATS - type, agent and				Curre Impa	
Eg dearing, too frequent fire, weed, dis Rate current and potential threat in		-		elevant. (N-E) (L-E) Onset
Estimate time to potential impact:					(3-L)
•					
					-
•					
					-
•					
Dlagge					
	ura aarralat-	d form to Coc-	on And Com	unition Denner	n DPCA
Locked Bag 104, E	-	-	es And Commu	_	



Department of Biodiversity, Conservation and Attractions Threatened and Priority

MESTERN AUSTRALIA		Flora F	кероп го	rm	V	ersion 1.4 March 2021
HABITAT INFORMATI	ION:					
LANDFORM:	ROCK TYPE	LOOSERO	CK: SOI	L TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite [on soil surfac		Sand	Red	_
Hill	_	gravel, quartz	fields) Sand	ly loam	Brown	_
Ridge				Loam	Yellow E	inundated
Outcrop		- 0-10	% ■ Cla	y loam 🔲	White E	Permanently
Slope		10-30	9% 🔲	tht clay	Grey 🗖	inundated
Flat 🗷		30-50)% 🔲 ====	Peat	Black	i idai 🚨
Open depression		50-100	1% 🗖 Spec	ify other:	Specify other:	•
Drainage line				,	Spaciny canan	
Closed depression						_
Wetland	Specific Land	form Element:				
_	- (Mores to need manual	al for additional values)				
CONDITION OF SOIL:	Dry 🗖	Moist 🗖	Waterlog	gged 😐	Inundated 🔲	
VEGETATION	1. Mixed Mallees	and Hakea laurina o	ver Acacia domin	ated shrubland	with Santalum a	cuminatum.
CLASSIFICATION*: Eg: 1. Banksia woodland (B.	2.					
attenuata, B. ilicifolia); 2. Open shrubland						
(Hibbertia sp., Acadia spp.);	3.					
Isolated clumps of sedges (Mitetragona)	4.					
ASSOCIATED						
SPECIES:						
Other (non-dominant) spp	most recessariative uncer	talian laurer builb un in th	na dominant conclus i	in each launch Struct	and Engagement one observed	follow 2009 Australian Soli and
Land Survey Field Handbook g					unai Pormanonis snoulo	I ICITORI ZCICTI AUSCIGNO) SUN OTU
CONDITION OF HABITA	T: Pristine	Excellent	Very good	Good 🗖	Degraded 🔲 🔞	Completely degraded
COMMENT:	_	_			_	
FIRE HISTORY: L	ast Fire: Season/Mo	onth: Year	Fire	Intensity: High	🗖 Medium 🗖 🗆 Lo	w 🔲 No signs of fire 🖾
FENCING:	Not required	Present 🔲	Replace / repair	□ R	tequired 🔲 🛮 L	ength req'd:
ROAD SIDE MARKER 8:	Not required	Present 🔲	Replace / reposit	tion 🔲 R	Required 🔲 C	Quantity req'd:
OTHER COMMENTS:	(Please include reco	mmended manager	nent actions and	or implemented	actions -	
include date. Also inclu						
FLORA AUTHORISAT	ION / LICENCE No:	ET61000787 ET61	1000788-1a N	nte if only observious	nlants /i.e. no specimen	ns or plant matteral is taken)
then no authorisation/licence is	is required. For further info	rmation on authorisation a	and licening requireme	nts see the Threaten	ed Flora and Wildlife L	icensing pages on DBCA's
specimen: Colle	ctors No:	PROCES SPECIALISED DE PROCESSES	above in the CTHER C	CAVINEN IS SECTION		
KSW20422	CIDID 140.	WA Herb. 🔣 Re	gional Herb. 🔲	District Herb.	Other:	
-	Herb Lodgement					
No:		ACC 9874				
ATTACHED: Map	Mudmap 🔲	Photo 🔲 🙀	ta Field notes	othe	er:	
_	egional Office	District Office	Other:			
Submitter of Record: Ka		Role: Environmen	ntal Officer Si	gned:	Date:	29/03/2023
- Therefore IN						

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 C

Grevillea baxteri - Priority Four

Department of Blodh Conservation and A	rensity, thractions	hreatened		-			
SECURIOR ALIETAALIA		Flora Rep	port Form	1	Ve	rsion 1.4 Ma	rch 2021
please complete as much	of the form as poss	ible, with emphasi	s on those secti	ons bordered in	black. For in	formation on how	v to complete
the form please refer to the Threaten communities/fhreatened-clarits	ed & Priority Flora Report F	om (TPRF) manual on th	ne DBCA website at we	viir doais: wa dov au/o	ants-and-animal	stinnes terred sice	cies-and-
TAXON: Grevillea ba	xteri				TPFI F	op. No:	
OBSERVATION DATE:	14/11/2023	CON	SERVATION ST	ATUS: P4	_	ew populat	tion 🔯
	herine Walkerden,		ockernion of		PHONE	en popula	
	officer, Environem				_		
ROLE: coordinator	omber, Environem	ORG	ANISATION: S	hire of Esperar	nce		
EMAIL: Katherine.Walk	cerden@esperance	e.wa.gov.au	_				
DESCRIPTION OF LOCAT	ION (Provide at least nea	rest town/named locality,	and the distance and d	frection to that place)			
On Boydell Road SLK 1.		-					
, , , , , , , , , , , , , , , , , , , ,							
					Reserve	No:	
DBCA DISTRICT: Espera	nce	LGA: Espera	nce	Lan	d manager pre	sent 🛭	
DATUM: CO	ORDINATES: (If UT	M coords provided, Zone	is also required)	METHOD USED):		
	DecDegrees 🔲 🛚 🗓	DegMinSec 🔲	JTMs 🗵	GPS 🔲	Differential G	PS 🔲 N	Map 🔲
GDA94 / MGA94 AGD84 / AMG84 L	at / Northing: 628	4648		No. satellites:		(ap used:	
WGS84				_	_		
	ong / Easting: 383	251		Boundary polyg captured:	_ ^	tap scale:	
	ZONE: 51			captured:			
LAND TENURE:	ZONE: 51						
Nature reserve	Timber reserve	Private prope	artic El	Rail reserve		Shire roor	reserve 🖾
National park	State forest	Pastoral le	. =	RWA road reserve	=		reserve 🔲
Conservation park	Water reserve			e to	_	ify other:	
ABEA ASSESSMENT: E	dan aumoni 🖳 . Da	atial augusti	oull assessment 🗖	Assa shaarad t	2h:		
l	dge survey 🔀 🏻 Pa e spent surveying (m		. —	Area observed (i inutes spent / 10			
POP'N COUNT ACCURAC		Extrapolation	Estimate	Count meth			
				efer to field manual fo		l	
WHAT COUNTED:	Plants	Clumps 🔲	Clonal stems				
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:			
Alive	3				Are	a of pop (m²)):
Poord						: Pls record cour	
Dead			-			percentages) for	
QUADRATS PRESENT:	No	Size	Data attac	hed 🔲 Tot	al area of qu	adrats (m²):	
Summary Quad. Totals: Alive					ш,	_	
REPRODUCTIVE STATE:	Clonal ature fruit	Vegetative	Flowerbus Dehisced frui		Flower ercentage in fi		
						_	
CONDITION OF PLANTS:	Healthy 🚨	Moderate 🔲	Poo	or 🗖	Senescent	_	
COMMENT:							
THREATS - type, agent an	d supporting inform	nation:			Current	Potential	Potential
Eg clearing, too frequent fire, weed,				here relevant.	Impact	Impaot (L-E)	Threat Onset
Rate current and potential thre Estimate time to potential impa					(N-E)	(L-E)	(8-L)
Estimate une to potential impa	er american facilities (in-		(wgra-)				
•							
Please r	eturn complete	d form to Spec	ies And Com	nmunities P	rogram D	BCA,	

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 C

MOSTOR AUSTRALIA		Flora Repo	rt Form	Vers	ion 1.4 March 2021
ABITAT INFORMATI	ION-				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	_	(on soil surface; eg	Sand 🗷	Red 🗖	Well drained
Hill	_	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	1100
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🔲					
losed depression 🔲	Specific Landforn	m Floweri			
Wetland	(Refer to field manual for				
ONDITION OF SOIL:	Dry 🗖	Moist 🗖	Waterlogged 🔲	Inundated 🔲	
EGETATION	Eucalyptus pleuroca	arpa over mixed heath			
LASSIFICATION*:		arpa over mixed near			
; 1. Banksia woodland (B. enuata, B. Ilicifolia);	2.				
Open shrubland (bbertia sp., Acadia spp.) ;	3.				
isolated clumps of sedges (etragona)	4.				
S SOCIATED					
PECIES:					
her (non-dominant) spp					
d Survey Field Hendbook g ONDITION OF HABITA OMMENT:	uidelines – refer to field manual T: Pristine	for further information and struc Excellent	ctural formation table.		pletely degraded 🔲
DISTRICT OF MAINTENANCE OF MAINTENAN	tidelines - refer to field manual T: Pristine ast Fire: Season/Month. Not required	for further information and struct Excellent	ctural formation table.	Degraded ■ Con	npletely degraded No signs of fire sthree'd:
ONDITION OF HABITA' DIMMENT: RE HISTORY: LINCING: DAD SIDE MARKERS:	T: Pristine ast Fire: Season/Month: Not required Not required (Please include recomm	Excellent Very go Year: Present Replacement Replacem	ctural formation table.	Degraded Con Medium Low Required Leng Required Qua	npletely degraded
ONDITION OF HABITA OMMENT: RE HISTORY: CHOCKER CHOCKE	T: Pristine ast Fire: Season/Month: Not required Not required (Please include recommide details of additional of	Fresent Replairended management act data available, and how	ctural formation table. Good Good Good Good Good Good Good Goo	Degraded Con	No signs of fire gith req'd: Infity req'd:
ONA AUTHORISAT britsation/conce is require	T: Pristine ast Fire: Season/Month: Not required Not required (Please include recommide details of additional of the details of the details of additional of the details of the d	Fresent Fresent Replatement Re	truel formation table. Good Good Fire Intensity: High of prepair Good for the preparation Good for the preparation of the prep	Degraded Low Required Low Required Qualed actions -	No signs of fire sight regid:
ORA AUTHORISAT horisation/iganisation/icanes is require yactions carried out under VECIMENT Collections and collections are selected as a collection of the	T: Pristine ast Fire: Season/Month: Not required Not re	Fresent Fresent Replacement Re	truel formation table. Good Good Fire Intensity: High of prepair Good for the preparation Good for the preparation of the prep	Degraded Low Required Low Required Qualed actions -	No signs of fire sight regid:
ONA AUTHORISAT horisation/loence is require y actions carried out under PECIMENT: Collections Collecti	idelines – refer to field manual T: Pristine ast Fire: Season/Month: Not required Not required (Please include recomm de details of additional of additional of additional of the fire	Fresent Fresent Replacement Re	truel formation table. Good Good Fire Intensity: High of prepair Good for the preparation Good for the preparation of the prep	Degraded Low Required Low Required Qualed actions -	No signs of fire sight regid:
ORA AUTHORISAT horization/conce is require y actions carried out under PECIMENT: Collections and Collections are considered as a collection of the Collectio	T: Pristine ast Fire: Season/Month: Not required Not required (Please include recommide details of additional of additional of the season	Fresent Fresent Replacement and show Present Replacement Action Replacement and data available, and how the recorded above in the OTHE Regional Herb	treal formation table. Good Good Good Good Good Good Good Goo	Degraded Low Required Low Required Qualed actions -	No signs of fire sight regid:
ORA AUTHORISAT horisation/cence is require vactors carried out under PECIMENT COMENT: ORA AUTHORISAT horisation/cence is require vactors carried out under PECIMENT: ODGEMENT: WA I Lodg TTACHED: Map OPY SENT TO: Re	T: Pristine ast Fire: Season/Month: Not required Not required (Please include recommide details of additional of additional of the season	Fresent Fresent Replacement act data available, and how the Company of the Control of the Contro	ctural formation table. Good Good Fire intensity: Higher frepair Good	Degraded Com Nequired Low Required Qua Required Qua ed actions - mens or plant matieral is taker ora and Wild life Licensing page Other:	No signs of fire graph of the signs of the signs of the signs of DBCA's website.
ORA AUTHORISAT horse care de la company actors camed out under processes control de la company actors camed out under processes camed out under proc	T: Pristine ast Fire: Season/Month: Not required Not required (Please include recommide details of additional of additional of the season	Fresent Fresent Replacement and show Present Replacement actions available, and how the coorded above in the OTHE Replacement actions and licening requires recorded above in the OTHE Replacement Rep	ctural formation table. Good Good Fire intensity: Higher frepair Good	Degraded Com Medium Low Required Qua Required Qua ed actions - mens or plant matieral is taker ora and Wild the Licensing page	No signs of fire graph of the signs of the signs of the signs of DBCA's website.

Appendix 3: Description of Threatened and Priority Flora Species with the Potential to occur within the Boydell Road, SLK 0 - 11.83 Survey Area

Threatened or priority flora identified by the desktop study to be present within a 20 km radius of 'Site H – Boydell Road, SLK 0 - 11.83' project area, using Threatened and Priority Flora Reporting (TPFL; DBCA 2022c), WA Herbarium (DBCA 2022d) and Esperance District Threatened Flora (DBCA 2021a). 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	Conservation Status	Associated Habitat	Likely to occur	Distance from site (km)
Beyeria physaphylla	P1	Mallee woodlands – only known to Scaddan	Yes	11.74
Darwinia sp. Gibson (R.D. Royce 3569)	P1	Margins of salt lakes and road verges on grey-brown sandy loan and white sand	Collected in 2020 survey	0.01
Eucalyptus misella	P1	Restricted to field road after end of farmland. Potentially inaccurate TPFL records.	No	12.92
Goodenia turleyae	P1	White or grey-brown sand over clay, yellow-brown gravelly clay and granite. Moist sheltered areas, near salt lakes.	Yes	3.29
Leucopogon remotus	P1	Banksia media woodland and near salt lakes	No	15.31
Leucopogon sp. Lake Magenta (K.R. Newbey 3387)	P1	Undulating plains and slopes. Sand and loamy sand, sometimes over laterite.	Yes	19.33
Pimelea pelinos	P1	Grey sandy clay. Shrubland, flat ground above/beside salt lakes.	Yes	13.00
Schoenus sp. Grey Rhizome (K.L. Wilson 2922)	P1	Sandy clay, sand	Yes	17.78
Acacia diminuta	P1	Scattered populations from Jerramungup to Scaddan. Grows in sandy clay. Mallee shrubland.	Yes	19.00
Comesperma griffinii	P2	Yellow or grey sand on plains. Scattered across WA.	Yes	18.95

Darwinia sp. Mt Ragged (S. Barrett 663)	P2	Open shrub or mallee on sandy loams. Disjunct populations, one group at Cape arid National Park and another along Spedingup Road West	Yes	15.84
Fabronia hampeana	P2	Moss, only grows on trunks of large Macrozamias. Four populations throughout Southwest Australia	No	7.16
Goodenia exigua	P2	Variety of habitats, Plains, valleys & salt lakes.	Yes	16.60
Hibbertia turleyana	P2	Sandy soil maybe seasonally inundated in banksia heathland or mallee shrubland (recorded at Helms Arboretum and Gibson, Speddingup East Rd)	Yes	10.03
Hydrocotyle tuberculata	P2	Damp sandy loam soils associated with winter-moist creeklines and drainage areas associated with inland saline lake.	Yes	12.81
Leucopogon corymbiformis	P2	Scattered Nuytsia floribunda and Banksia speciosa over mixed Myrtaceous & Proteaceous heath. Sandy soil.	No	8.13
Melaleuca viminea subsp. appressa	P2	Shallow sand over clay. Near creeks or wet depressions.	No	18.42
Patersonia inaequalis	P2	Sandy clay, lateritic or granitic sand	No	10.03
Spyridium mucronatum subsp. multiflorum	P2	Gravelly loam or clay. Found in Mallee Woodland.	Yes	1.46
Tecticornia indefessa	P2	White to brown-grey sand. Edge of salt lakes.		19.12
Thysanotus brachiatus	P2	Mallee sandplain shrublands	Yes	16.11

Stenanthera lacsalaria	P2	Grey-white fine sand over clay on the margins of salt lakes, associated with Myrtaceous shrubs and halophytes.	Yes	11.11
Paracaleana parvula	P2	Deep white sands in mallee heath with Banksia media	Yes	9.45
Acacia bartlei	P3	Grows in sandy or clay loam, associated with Eucalyptus occidentalis (flat topped yate) and salt depressions between Salmon Gums and Scaddan areas.	Yes	11.49
Acacia euthyphylla	P3	Grey/white clay loam, in seasonal swamps or periphery of salt lakes and marshes, in tall myrtaceous shrubland and mallee woodland.	Yes	13.46
Austrobaeckea uncinella	P3	Yellow or white sand, clay loam. Edges of salt lakes, salt creeks, sandplains.	Yes	13.15
Bossiaea flexuosa	P3	Grows on sand and sandy loam, often near salt lakes. Associated with low open scrub, with emergent Eucalypts.	Yes	14.07
Brachyloma mogin	P3	Various soil types including brown sandy loam, grey clayey sand and swamp flats. Mostly recorded outside of Esperance Area.	Collected in 2020 survey	0.50
Comesperma calcicola	P3	Calcareous or semi- saline clay loams, limestone. Areas around saline water.	No	8.33

Commersonia rotundifolia	P3	Eucalyptus platypus woodland over Acacia shrubland. Clay Loam Soil. Esperance region specimens are geographically inaccurate.	No	10.03
Dampiera sericantha	P3	Sand sometimes with gravel. Associated with plains.	Yes	6.13
Dampiera triloba	P3	Esperance records are likely misidentified D. fasciculata	No	16.96
Daviesia pauciflora	P3	White or grey sand over laterite or limestone. Flats.	Yes	6.13
Eucalyptus foliosa	P3	Sandplain, above saline depressions	Yes	5.93
Gonocarpus pycnostachyus	P3	Associated with seasonal wet depressions and pools on granite rocks.	No	16.62
Goodenia laevis subsp. laevis	P3	Woodland with Melaleuca shrubland. Prefers limestone or white clay loam. Associated with disturbance	Yes	15.29
Isopogon alcicornis	P3	Various habitats - sandy soils, skeletal loam on granite, sandhill's, slat lakes and sandplains.	Yes	0.07
Kunzea salina	P3	White sand over clay at the margins of salt playa lakes, restricted to marginal sand dunes	Collected in 2020 survey	0.03
Melaleuca dempta	P3	Associated with Mallee shrubland. Grows near salt lakes and winter wet depressions. Soil types recorded on are clay over laterite and loam.	Yes	0.09
Persoonia cymbifolia	P3	Sandy soils. On flats or in rock crevices. Wide distribution, across the Mallee woodland area.	Yes	12.93

Persoonia scabra	P3	White sand or sandy loam. Widespread from coastal to inland Mallee. Sandy heathland environment over gravel, granite or limestone.	Collected in 2020 survey	0.00
Pityrodia chrysocalyx	P3	Salmon Gums & Grass Patch area. Sandplains with yellow sands. Associated with Eucalyptus Mallee woodlands with Banksia media and Hakea sp.	No	19.62
Pterostylis faceta	P3	Melaleuca Mallee scrubland, Granite, sandy loam	Yes	13.74
Styphelia rotundifolia	P3	Eucalyptus mallee with mixed Myrtaceous and Fabaceae shrubland. Wide variety of habitats. Often associated with gravel.	Yes. Recent collection made 500m from project area.	16.23
Conostephium marchantiorum	P3	White/grey sand. Plains, creeklines, edges of salt lakes.	Yes.	3.15
Eremophila chamaephila	P3	Open mallee woodland with limestone.	No	13.46
Eucalyptus famelica	P3	Coastal dunes on low ground, saline waterlogged soils. open Mallee community.	No	17.48
Trachymene anisocarpa var. trichocarpa	P3	Sandy soils. Recently disturbed or burnt sites, woodlands, plains. Often near granite outcrops.	No	19.56
Eucalyptus dolichorhyncha	P4	Small areas south of Salmon gums flats or slightly rising ground with whitish to yellowish sandy clay soil	No	10.52
Eucalyptus preissiana subsp. lobata	P4	Coastal limestone rises and sand dunes	No	16.26
Caladenia arrecta	P4	Grows on loam, gravel, and laterite. Associated with moist conditions.	Yes	10.52

Darwinia polycephala	P4	Sand & clay on flats near salt lakes	Yes	13.46
Grevillea baxteri	P4	Prefers shrubby heathland with an acid sandy soil usually overlaying heavier soils. Associated with highly diverse Proteaceous shrublands.	Yes	3.30
Melaleuca fissurata	P4	Mallee shrubland or woodland on sand or sandy loam usually over clay or clay loam.	Yes	11.61
Eremophila glabra subsp. Scaddan	Т	Open Mallee woodland on grey brown clayey sand.	Yes	0.12
Anigozanthos bicolor subsp. minor	Т	Granite ephemeral damp areas with Drosera and moss	No	16.23
Eucalyptus merrickiae	Т	Sandy, loamy depressions around salt lakes and saline flats – open mallee shrubland with dense scrub underneath	Yes	6.33
Conostylis lepidospermoides	Т	Grey or yellow-brown sand over laterite in heath.	Yes	17.97
Lambertia echinata subsp. echinata	Т	Restricted to Cape Le Grand National Park. Nearby record was from translocation experiment	No	16.45

Appendix 4: Description of Threatened and Priority Fauna Species with the Potential to occur within the Boydell Road, SLK 0 - 11.83 Survey Area

Scientific Name	Common Name	WA Cons Status	EPBC Status	Distance from site (km)	EPBC protected matters tool	Habitat	Likely to occur
Actitis hypoleucos	Common Sandpiper	MI	MI	14.20		Utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats	No
Ardenna carneipes	Flesh-footed Shearwater	VU	MI	14.20		Headlands and islands covered with tussocks and succulent vegetation.	No
Arenaria interpres	Ruddy turnstone	MI	MI	14.20		It is found in most coastal regions, with occasional records of inland populations. It strongly prefers rocky shores or beaches where there are large deposits of rotting seaweed	No
Botaurus poiciloptilus	Australasian Bittern		EN		X	The Australasian bittern inhabits shallow (less than 30cm deep), permanent freshwater and brackish swamps or lagoons that are densely vegetated (e.g. tall reeds, sedges, lignum). They also inhabit bore drains with tussocky vegetation and occasionally saltmarsh. They use temporary pools when population densities are high and deep swamps when breeding	No
Calidris acuminata	Sharp-tailed sandpiper	MI	MI	14.20		Muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland.	Yes

Calidris alba	Sanderling	MI	MI	14.20		Almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and amongst rotting seaweed	No
Calidris canutus	Red Knot, Knot		EN		X	intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps.	No
Calidris ferruginea	Curlew sandpiper	CR	MI	14.20	Х	Intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters.	No
Calidris ruficollis	Red-necked stint	MI	MI	14.20		Coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. Occasionally they have been recorded on exposed or ocean beaches, and sometimes on stony or rocky shores, reefs or shoals. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps, riverbanks, waterholes, bore drains, dams, soaks and pools in saltflats. They sometimes use flooded paddocks or damp grasslands. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation.	No

Calyptorhynchus latirostris	Carnaby's cockatoo	EN	EN	8.98	X	Uncleared and remnant areas of 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 or Wandoo Eucalyptus wandoo	Yes
Cereopsis novaehollandiae grisea	Recherche Cape Barren goose	VU	VU	14.20	Х	During breeding season (May-June), found in grassy areas, tussock grass of bushes. During rest of year, found on beaches, coastal pastures and on the shores of brackish lakes.	No
Charadrius bicinctus	Double- banded Plover	MI	MI	14.20		They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons, and inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs. They are occasionally recorded on near-coastal saltworks and saltlakes, including marginal saltmarsh, and on brackish swamps.	No
Dasyurus geoffroii	Chuditch, Western Quoll		Vulner able		X	Jarrah Eucalyptus marginata forests and woodlands, Mallee shrublands and heathlands	Yes
Diomedea exulans	Wandering albatross	VU	VU	14.20		Marine	No
Falco hypoleucos	Grey Falcon		Vulner able		X	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.	Yes
Falco peregrinus	Peregrine falcon	OS		14.20		Most habitats, from rainforests to the arid zone, and at most altitudes, from the coast to alpine areas	Yes

Hydroprogne caspia	Caspian Tern	MI	MI	14.20		Sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs	Yes
Leipoa ocellata	Malleefowl	VU	VU	4.11	Х	Shrublands and low woodlands dominated by mallee and are associated with Broombush, Melaleuca uncinata	No
Limosa lapponica	Bar-tailed godwit	MI	MI	14.20		Coastal areas	No
Limosa limosa	Black-tailed godwit	MI	MI	14.20		Usually found in sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. Further inland, it can also be found on mudflats and in water less than 10 cm deep, around muddy lakes and swamps.	No
Numenius madagascariensis	Eastern Curlew		Critical ly Endan gered		X	Intertidal mudflats	No
Oxyura australis	Blue-billed duck	P4		14.20		Fresh to saline, deep permanent open wetlands and deep, densely vegetated lakes.	No
Pandion haliaetus	Osprey	MI	MI	14.20		Occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers. They require extensive areas of open fresh, brackish or saline water for foraging. They may occur over atypical habitats such as heath, woodland or forest when travelling to and from foraging sites.	No

Parasuta spectabilis bushi	Spectacled hooded snake (Esperance)	P1		13.46		Scaddan area.	Yes
Pezoporus flaviventris	Western ground parrot	CR	CR	7.93		low, dry or swampy near-coastal heathland. It usually occurs in habitat that has remained unburnt for long periods of time.	No
Pluvialis squatarola	Grey plover	MI	MI	14.20		Coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons. They also occur around terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes. The species is also very occasionally recorded further inland, where they occur around wetlands or salt-lakes	No
Stercorarius antarcticus Ionnbergi	Brown Skua, Subantarctic skua	P4		14.20		Marine	No
Sterna hirundo	Common tern	MI	MI	14.20		Marine	No
Sternula nereis nereis	Australian Fairy Tern		Vulner able		Х	Marine	No
Thalassarche cauta cauta	Shy albatross	VU	MI	14.20		Marine	No
Thalassarche chlororhynchos	Atlantic yellow-nosed albatross	VU	MI	14.20		Marine	No
Thalassarche melanophris	Black-browed albatross	EN	MI	14.20		Marine species that inhabits Antarctic, subantarctic and temperate waters and occasionally enters the tropics	No
Thalasseus bergii	Crested tern	MI	MI	14.20		Coastal areas throughout Australia. They are seldom seen on inland waterways, preferring islands, beaches, lakes and inlets	No

Thinornis rubricollis	Hooded	P4		14.20	Predominantly on ocean beaches; at times on adjacent reef platforms,	No
	plover				coastal inlets and lakes	
Tringa glareola	Wood	MI	MI	14.20	Well-vegetated, shallow, freshwater wetlands, such as swamps,	No
	sandpiper				billabongs, lakes, pools and waterholes.	
Tringa nebularia	Common	MI	MI	3.72	Coastal and inland, in estuaries and mudflats, mangrove swamps and	Yes
-	greenshank				lagoons, and in billabongs, swamps, sewage farms and flooded crops.	

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
P1 – Priority 1 (Poorly known taxa)	no reasonable doubt that the last individual has died (Schedule 4) 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. 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
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.
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.
Critically Endangered
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.
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. 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.
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.

Appendix 7: State Definition of Threatened Ecological Communities

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;
05	(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.
Е	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;
	(iii) The ecological community may be widespread but has potential to move to a higher
	threat category due to existing or impending threatening processes.

Appendix 8: State Definition of Priority Ecological Communities

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 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	Explanation of Category
Code	
Critically endangered	If, at that time, it is facing an extremely high risk of extinction in the wild in 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

C1 (Exclusion)

'(a) Category 1 (C1) — Exclusion: if in the opinion of the Minister introduction of the declared pest into an area or part of an area for which it is declared should be prevented'

Pests will be assigned to this category if they are not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.

C2 (Eradication)

'(b) Category 2 (C2) — Eradication: if in the opinion of the Minister eradication of the declared pest from an area or part of an area for which it is declared is feasible'.

Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.

C3 (Management)

- '(c) Category 3 (C3) Management: if in the opinion of the Minister eradication of the declared pest from an area or part of an area for which it is declared is not feasible but that it is necessary to
 - (i) alleviate the harmful impact of the declared pest in the area; or
 - (ii) reduce the number or distribution of the declared pest in the area; or
 - (iii) prevent or contain the spread of the declared pest in the area.'

Pests will be assigned to this category if they are established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 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.

Control Measures

In relation to a category 1 declared pest, the owner or occupier of land in an area for which an

organism is a declared pest or a person who is conducting an activity on the land must take such

- of the control measures specified in subregulation
- (1) as are reasonable and necessary to destroy,

prevent or eradicate the declared pest.

In relation to a category 2 declared pest, the owner or occupier of land in an area for which an

organism is a declared pest or a person who is conducting an activity on the land must take such

- of the control measures specified in subregulation
- (1) as are reasonable and necessary to destroy,

prevent or eradicate the declared pest.

In relation to a category 3 declared pest, the owner or occupier of land in an area for which an organism is a declared pest or a person who is conducting an activity on the land must take such of the control measures specified in subregulation

- (1) as are reasonable and necessary to
 - (a) alleviate the harmful impact of the declared pest in the area for which it is declared: or
 - (b) reduce the number or distribution of the declared pest in the area for which it is declared; or
 - (c) prevent or contain the spread of the declared pest in the area for which it is declared.

Appendix 11: Definition of Vegetation Condition ScaleFor 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							
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

			Pre	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			

Listed Threatened Species

Scientific Name	Common Name	Simple Presence	Threatened Category	Buffer Status	
Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew	May	Critically Endangered	In feature area	
Calidris ferruginea	Curlew Sandpiper	Known	Critically Endangered	In feature area	
Botaurus poiciloptilus	Australasian Bittern	Likely	Endangered	In feature area	
Ricinocarpos trichophorus	Barrens Wedding Bush	May	Endangered	In feature area	
Calidris canutus	Red Knot, Knot	Likely	Endangered	In buffer area only	
Zanda latirostris	Carnaby's Black Cockatoo, Short- billed Black- cockatoo	Known	Endangered (listed as Calyptorhynchus latirostris)	In feature area	
Leipoa ocellata	Malleefowl	Likely	Vulnerable	In feature area	
Cereopsis novaehollandiae grisea	Cape Barren Goose (south- western), Recherche Cape Barren Goose	Likely	Vulnerable	In feature area	
Falco hypoleucos	Grey Falcon	Likely	Vulnerable	In feature area	
Eucalyptus merrickiae	Goblet Mallee	Known	Vulnerable	In feature area	
Dasyurus geoffroii	Chuditch, Western Quoll	May	Vulnerable	In feature area	
Sternula nereis nereis	Australian Fairy Tern	May	Vulnerable	In buffer area only	

Appendix 14: Swamp Yate (*Eucalyptus occidentalis*) woodland in seasonally-inundated 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 Data – Boydell Road

MetroCount Traffic Executive <u>Daily Classes</u>

DailyClass-185 -- English (ENA)

Datasets:

Site: [604_000017_022000] Boydell Road West of Dalyup Road

Attribute: RURAL

Direction: 8 - East bound A>B, West bound B>A. Lane: 0

Survey Duration: 0:00 Tuesday, 31 October 2017 => 10:45 Thursday, 23 November 2017,

Zone:

File: 604_000017_022000 0 2017-11-23 1046.EC0 (Plus) Identifier: HJ27RVC7 MC56-L5 [MC55] (c)Microcom 19Oct04

Algorithm: Factory default axle (v5.02)

Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 0:00 Tuesday, 31 October 2017 => 10:45 Thursday, 23 November 2017

(23.4485)

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Speed range: 10 - 160 km/h.

Direction: North, East, South, West (bound), P = East, Lane = 0-16

Separation: Headway > 0 sec, Span 0 - 100 metre

Name: Default Profile

Scheme: Vehicle classification (AustRoads94)

Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)

In profile: Vehicles = 592 / 601 (98.50%)

Daily Classes

DailyClass-185

Site: 604_000017_022000.0.1EW

Description: Boydell Road West of Dalyup Road

Filter time: 0:00 Tuesday, 31 October 2017 => 10:45 Thursday, 23 November 2017

Scheme: Vehicle classification (AustRoads94)

Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

Monda	y, 13	Novemb	er 201	7								
	1	2	3	4	5	6	7	8	9	10	11	12
Total Mon	7	4	0	0	0	0	1	0	0	0	3	0
15												
(%)	46.7	26.7	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	20.0	0.0
Tue 17	11	4	2	0	0	0	0	0	0	0	0	0
(%)	64.7	23.5	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wed 22	16	1	1	2	0	0	0	0	0	0	2	0
(%)	72.7	4.5	4.5	9.1	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0
Thu	31	7	1	0	0	1	1	0	2	0	5	0
48 (%)	64.6	14.6	2.1	0.0	0.0	2.1	2.1	0.0	4.2	0.0	10.4	0.0
Fri	34	9	2	0	0	0	1	0	2	1	2	0
51 (%)	66.7	17.6	3.9	0.0	0.0	0.0	2.0	0.0	3.9	2.0	3.9	0.0
Sat	16	3	1	0	0	1	0	0	6	0	0	0
27 (%)	59.3	11.1	3.7	0.0	0.0	3.7	0.0	0.0	22.2	0.0	0.0	0.0
Sun	15	0	2	3	0	1	0	0	3	0	1	0
25 (%)	60.0	0.0	8.0	12.0	0.0	4.0	0.0	0.0	12.0	0.0	4.0	0.0
Avera	ge dai	lly vol	ume									
Entir	e week											
29	19	4	1	1	0	0	0	0	2	0	2	0
(%)	63.4	13.7	4.4	2.4	0.0	1.5	1.5	0.0	6.3	0.5	6.3	0.0
Weekd												
31	20	5	1	0	0	0	1	0	1	0	2	0
(%)	64.7	16.3	3.9	1.3	0.0	0.7	2.0	0.0	2.6	0.7	7.8	0.0
Weeke												
26	16	2	2	2	0	1	0	0	5	0	1	0
(%)	59.6	5.8	5.8	5.8	0.0	3.8	0.0	0.0	17.3	0.0	1.9	0.0

^{* -} Incomplete