

# Vegetation, Flora, Fauna and Environmental Considerations, and Targeted Flora Report

Shire of Esperance Strategic Purpose Permit 2021/22 Site T – Dempster Road SLK 28.48-37.63



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## 1 Executive Summary

This 'Vegetation, Flora, Fauna and Environmental Considerations and Targeted Flora Report' has been undertaken in accordance with the 'Environmental Protection Authority (EPA) Technical Guidance, Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (2016)' as part of the application to the Department of Water and Environmental Regulations (DWER) to clear 4.77 ha of native vegetation for the purpose of road widening.

#### 2 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 'Dempster Road SLK 28.48-37.63' project as Site T under the '2021 Strategic Purpose Permit' (Figure 1), for the purpose of road widening.

The proposed works are located approximately 50 km north of Esperance, within the Shire of Esperance managed road reserve of Dempster Road. Specifically, it is located from to Scaddan Road to Norwood Road, at straight line kilometre (SLK) 28.48 to 37.63 (Main Roads 2021). A point within the proposed clearing permit area is -33.458916S, 122.016031E or 408488 m N, 6297489 mE (UTM Zone 51 H, GDA94).

This project involves the re sheeting of an unsealed section of Dempster Road. This road is classified as a local distributor servicing the inner north eastern agricultural region, and is also a school bus route. This section of road has a traffic composition of up to 28% heavy vehicles during peak periods. Aerial photo measurements indicate the current clear width varies from 18 to 20m. The preferred road profile to be utilised is STD00023 A (Appendix 8.3) (22m envelope desirable). In order to minimise clearing required it is believed that the desired improvement can be achieved by reducing the clearing required to 1m either side of the road.

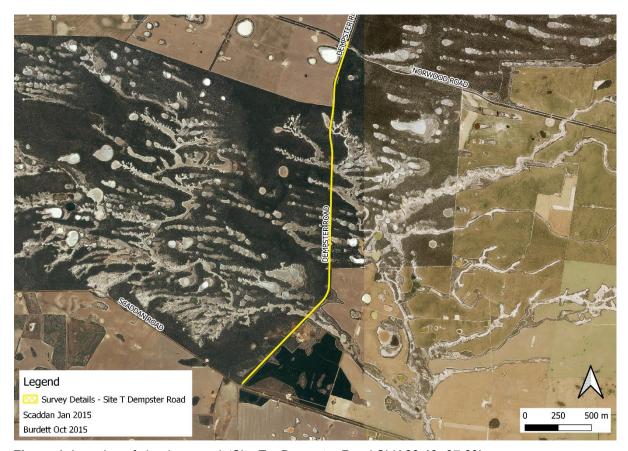


Figure 1. Location of clearing permit 'Site T – Dempster Road SLK 28.48 -37.63'

## 3 Environmental Background

#### 3.1 Scope

The removal of native vegetation to widen roads has the potential to affect a multiple environmental factors.

Possible impacts include;

- Threatened Flora (TF) and Priority Flora (PF).
- Threatened fauna, specifically, potential feeding, nesting and roosting habitat of endangered Carnaby's Black Cockatoo, Calyptorhynchus latirostris.
- Threatened Ecological communities (TEC) and Priority Ecological Communities (PEC), specifically the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 listed 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Kwongkan) TEC.

Assessing these impacts involves two approaches; desktop study and field survey. The desktop study gathered background information on the target area. The field survey allows for detailed understanding of vegetation communities, targeted flora surveys for possible TF or PF, environmental condition, presence of PEC and TEC, and overall potential impact of clearing.

#### 3.2 Catchment

'Site T – Dempster Road SLK 28.48 -37.63' is present within the Bandy Creek catchment area. It is

located approximately 37km from the coast.

#### 3.3 Climate

The Esperance climate is described as Mediterranean, characterised by cool wet winters and dry warm summers (BoM 2020). The area receives an average annual rainfall of 618 mm.

## 3.4 Geology

Three geological units were identified within 'Site T – Dempster Road SLK 28.48 -37.63', by Schoknecht et al. (2004). They are described as:

- "Tertiary marine sediments of the Pallinup formation over granite and gneiss bedrock",
- "Tertiary marine sediments of the Palinup formation" and
- "Tertiary sediments. Lacustrine sediments with gypsum and salt in lakes. Bedrock is deep."

#### 3.5 Soils

The soil of 'Site T – Dempster Road SLK 28.48 -37.63' is broadly defined as sandy duplex soil (Schnoknecht et al. 2004). Within the area, there has been three soil types recorded. These include:

- Grey deep sandy duplex (gravelly) soils, associated salt lake soils and calcareous loamy earths. Some signs of secondary salinity,
- Grey deep sandy duplex (gravelly) soils with associated pale deep sands and minor grey shallow sandy duplex soils, and
- Alkaline grey deep and shallow sandy duplex soils with associated salt lake soils, pale deep sands and calcareous loamy earths.

## 3.6 Topography

During the field survey, topography was observed to be dominated by Level plain with small playa lakes along incipient saline drainage lines. Using Schnoknect et al. (2004), the project topography is mapped at a fine scale, traversing 5 topographic areas. These include:

- Gently undulating to undulating plain with many small playas. Lunettes and sand dunes are common on eastern side of lakes
- Level to gently undulating plain with areas of gilgai microrelief. Drainage is generally poorly developed and usually internal
- Gently undulating to undulating plain with few to common small playas
- Level to gently undulating sandplain with sand sheets, internally drained to swamps externally via incipient saline drainage lines

#### 3.7 Vegetation

The site is located at the border between two Interim Biogeographic Regionalisation for Australia regions (IBRA; Thackway & Cresswell 1995). The south of the site sits within the Esperance Plains region (Esp2) and Recherche sub-region. The Esperance Plains 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 north of the site is located within the Eastern Mallee (Mal01) Interim Biogeographic Regionalisation of Australia (Thackway & Cresswell 1995) region. The Eastern Mallee 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 T – Dempster Road SLK 28.48 - 37.63' area (Table 1). Both are well represented within the cionservation reserve system.

**Table 1.** Vegetation associations mapped by Beard (1973) within the 'Site T – Dempster Road SLK 28.48 -37.63', and statistics on pre-European remaining areas.

Nt. Acronyms used include Interim Biogeographic Regionalisation of Australia (IBRA), Eastern Mallee bioregion (Mal01), Esperance Plains bioregion (Esp2), local government area (LGA) and International Union of Conservation Nature (IUCN).

Vegetation Association		
Name	Ridely_1516	Esperance_47
Description	Shrublands; mallee scrub, black marlock & Forrest's marlock	Shrublands; tallerack mallee-heath: Eucalyptus open mallee shrubland, Lambertia mixed shrubland and Andersonia mixed heath.
Area mapped within site (ha)	4.32ha	0.45ha
Pre-European extent in IBRA region Mal01 (%)	26.48%	43.58%
Pre-European extent in IBRA region Esp2 (%)	47.34%	15.06%
Pre-European extent in LGA (%)	47.15%	13.42%
Current extent conserved in IUCN area (%)	18.91%	17.68%

#### 3.8 Land use

The area directly included in the clearing permit application 'Site T – Dempster Road SLK 28.48 -37.63' is currently intact and vegetated 100m wide (and wider) road reserve, managed by the Shire of Esperance. The current road footprint occupies 18-20m. The surrounding land use is mostly crown land and Mt Ridley Nature Reserve, but also includes Forest Products Commission managed pine plantation, a small gravel reserve and some agricultural land used for cropping. The area is within rural and environmental conservation zoning.

# 4 Methodology

## 4.1 Desktop study

A desktop study was completed prior to any site visit. Geographical Information System (GIS) review existing

- Existing site digital orthophotos, as sourced from LandGate (Scaddan 2015).
- Western Australian Local Government Association's (WALGA) 'Local Government Mapping

- (LGMap 2020)' program was used to assess spatial information of geology, topography, soil profiles, native and planted vegetation, water bodies and Interim Biogeographical Regionalisation for Australia (IBRA; Thackway & Cresswell 1995) classification system.
- Data provided by Department of Biodiversity, Conservation and Attractions (DBCA) and Western Australian Herbarium in July/August 2020 was used to assess threatened flora (TF), priority flora (PF), and threatened (TEC) and priority (PEC) ecological communities within 20 km radius of the site. Specifically, spatial data included;
  - WAHerb extract (DBCA 2021f).
  - Threatened and Priority Reporting (TPFL; DBCA 2021d).
  - o Esperance District Threatened Flora (DBCA 2021a).
  - o TEC and PEC 'Likely to Occur' buffer and boundary areas (DBCA 2021e).
  - o Department of Agriculture, Water and the Environment Protected Matters Search Tool
  - Index of Biodiversity Surveys for Assessment (IBSA).
- To assess fauna, the following databases were searched with a 20km buffer from the center of the site (-33.464912, 122.0161597);
  - Department of Biodiversity, Conservation and Attractions (DBCA) and Western Australian Museum (WAM) NatureMap data portal
  - o DBCA Threatened and Priority Fauna database
  - o BirdLife Australia's Atlas and Birdata datasets
  - Department of Agriculture, Water and the Environment Protected Matters Search Tool
  - Atlas of Living Australia database
  - o Index of Biodiversity Surveys for Assessment (IBSA).

## 4.2 Field investigation: possible ecological impacts

The site was initially inspected on 3/9/2020, by the Shire of Esperance's Environmental Coordinator, Julie Waters and Field Assistant Sophie Wilsher. An assessment of possible ecological impacts included historical clearing, artificial water way constructions, impact of fire regimes, regeneration from disturbance, waterlogging, senescence, weeds, erosion, sedimentation, invasive fauna, *Phytophthora cinnamomi* Dieback, and illegal dumping of rubbish.

Vegetation community was also assessed during the field survey. Broad vegetation types defined by structure and composition were recorded and described. Condition of vegetation was assessed using Keighery (1994) categories, as 'Excellent', 'Very Good', 'Good', 'Degraded' or 'Completely Degraded'. This illustrates how healthy vegetation is, determined by number of dead or dying plants, weed cover and other forms of degradation. 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.

Only a very basic fauna survey was conducted as per EPA (2020) guidelines. Observations of fauna presence, such as call sounds, footprints and scats were also noted, and the area assessed for suitability of endangered Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) feeding, roosting and nesting habitat. Additionally, species that corresponded with suitable habitat within 'Site T – Dempster Road SLK 28.48 -37.63' identified in the desktop 20 km radius search were assessed, including Mallee fowl, Carnaby's cockatoo and Hoooded Plovers. Field investigation: Assessing Threatened and Priority Ecological Communities

The vegetation communities of 'Site T – Dempster Road SLK 28.48 -37.63' was assessed for the presence a TEC or PEC, specifically 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 32 (DBCA 2021b)' definitions.

## 4.3 Field Investigation: Targeted flora survey

The targeted flora survey was undertaken following the Environmental Protection Authority's (EPA) 'Technical Guidance, Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (2016)'. The entirety of the proposed impact area was surveyed on foot in mid-spring over four days, between 15/10/2020 and 23/10/2020 by Julie Waters, Shire of Esperance's Environmental Coordinator and Sophie Wilsher and Danika Penson, Field Assistants. Due to the timing, the majority of species were flowering, decreasing the likelihood of missing species. The road was used as a continuous transect. Vegetation up to 3 meters from the edge of the existing road's back-slope was assessed to accurately cover the 22 m width proposed clearing permit area. Suitable associated habitat for TF or PF identified in the desktop study were particularly focused on, and extensively searched. A follow up survey was conducted on 10/9/2022 to specifically target the identification and counting of priority flora including *Astroloma* sp. Grass Patch and *Darwinia* sp. Gibson, and to get another sample of an acacia that was unable to be identified from the poor specimen in 2020. Further follow up counts of PF were undertaken on 21/12/2021 and 7/1/2022 by Shire of Esperance Environmental Officers. Julie Waters and Katherine Walkerden.

Due to the high diversity and complexity of Esperance's flora, all species were recorded to compile an incidental species list (Appendix 8.1). All species unknown in the field were collected and identified exsitu, using keys, WA Herbarium's Florabase (DBCA 2020c), manuals and Esperance District Herbarium, to ensure no TF or PF were missed. Material was collected under Julie Waters' Regulation 61, Biodiversity Conservation Regulations 2018 Licence for Flora Taking, FT61000787. Any species that were unable to be identified were submitted to the WA Herbarium for identification.

Over the course of the 2020 wildflower season, surveyors re-familiarised themselves with key taxonomic indicators and associated habitat, by visiting verified populations of *Stachystemon venosus*, *Conostephium marchoriatum*, *Darwinia* sp. Gibson, *Hydrocotyle astrocarpa*, and *Astroloma* sp. Grass Patch. For other PF or TF species identified in the desktop survey as possible to occur, scans of pressed specimens from the local Esperance District Herbarium were taken into the field. Any flora thought to be TF or PF was formally collected, counted and mapped using a Panasonic FS-G1 Toughpad with the program ROAM or a GPS Garmin GPS64. Specimens were then lodged with the WA Herbarium for formal verification. When PF were confirmed, TPFL forms were completed and submitted to the DBCA's district Conservation Officer, and Species and Communities Branch.

### 5 Results and Discussion

## 5.1 Ecological Impact

### 5.1.1 Vegetation Communities

Ten vegetation communities were identified within the 'Site T – Dempster Road SLK 28.48 -37.63', as defined by structure and composition (Table 2). The incidental flora list identified a total of 287 species (272 native species) across all vegetation communities. It is believed that the Beard (1973) vegetation associations identified in Section 3.6 are an appropriate match for seven of the vegetation types observed. Two of the nine vegetation communities did not have an appropriate Beard Vegetation Association.

**Table 2.** Vegetation communities identified within proposed 'Site T – Dempster Road SLK 28.48 -37.63' project area.

Description Type **Figure Beard Vegetation Association** Area (ha) Diversity (species) 0.052 Open Eucalyptus pleurocarpa 8 VA 47 - Shrublands; tallerack mallee-84 Α woodland over diverse Proteaceous heath shrubland 9 В Banksia speciosa open woodland, VA 4048 - Shrublands: scrub-heath in 0.150 93 over mixed proteaceous shrubland the Esperance Plains including Mt Ragged scrub-heath Open Eucalyptus occidentalis and 10 931 - Medium woodland yate C 0.100 40 Melaleuca cuticularis woodland over dense Melaleuca shrubland over sedges Eucalypts conferruminata woodland 11 D 0.011 40 No Beard vegetation association over Leptospermum / Rinzia matching shrubland 12 E Open Eucalyptus pleurocarpa VA 47 - Shrublands: tallerack mallee-0.050 54 woodland over Banksia armata low heath shrubland (Note most of this vegetation type is rehabilitated gravel pit) F Eucalyptus (mallee) semi closed 13 0.871 106 VA 1516 - Shrublands; mallee scrub, woodland over Banksia media and black marlock & Forrest's marlock melaleuca shrubland 14 G Closed melaleuca shrubland VA 41 - Shrublands: teatree scrub 0.300 63 fringing lakes with scattered mallee GH Closed melaleuca shrubland 0.198 51 fringing lakes with scattered mallee & samphire Η Low samphire shrubland 15 No Beard vegetation association 0.072 21 matching VA 519 - Shrublands; mallee scrub, Dense Eucalyptus (mallee) 16 92 I 1.551 woodland over melaleuca Eucalyptus eremophila shrubland



**Figure 2.** Vegetation types within the 'Site T – Dempster Road SLK 28.48 -37.63' area, from SLK 28.48 to 30.52 along Dempster Road.



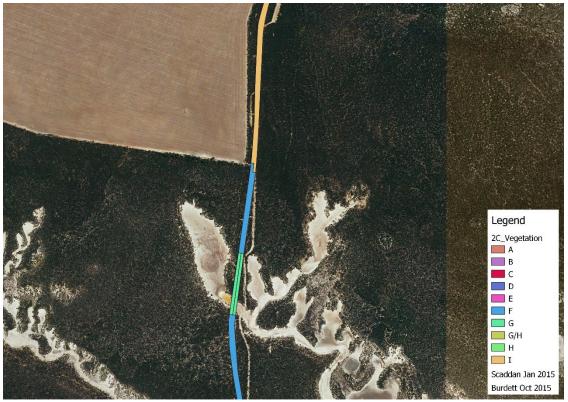
**Figure 3.** Vegetation types within the 'Site T – Dempster Road SLK 28.48 -37.63' area, from SLK 30.52 km to 32.16 along Dempster Road.



**Figure 4.** Vegetation types within the 'Site T – Dempster Road SLK 28.48 -37.63' area, from SLK 32.16 km to 33.54 along Dempster Road.



**Figure 5.** Vegetation types within the 'Site T – Dempster Road SLK 28.48 -37.63' area, from SLK 33.54 km to 34.82 along Dempster Road.



**Figure 6.** Vegetation types within the 'Site T – Dempster Road SLK 28.48 -37.63' area, from SLK 34.82 km to 36.24 along Dempster Road.



**Figure 7.** Vegetation types within the 'Site T – Dempster Road SLK 28.48 -37.63' area, from SLK 36.24 to 37.63 along Dempster Road.



**Figure 8.** Vegetation type A identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as 'Open *Eucalyptus pleurocarpa* woodland over diverse Proteaceous shrubland'.



**Figure 9.** Vegetation type B identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as 'Banksia speciosa open woodland, over mixed proteaceous shrubland'.



**Figure 10.** Vegetation type C identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as 'Open *Eucalyptus occidentalis* and *Melaleuca cuticularis* woodland over dense Melaleuca shrubland over sedges'.



**Figure 11.** Vegetation type D identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as '*Eucalypts conferruminata* woodland over Leptospermum/Rinzia shrubland'.



**Figure 12.** Vegetation type E identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as 'Open *Eucalyptus pleurocarpa* woodland over *Banksia armata* low shrubland'. Most of this vegetation type is rehabilitated gravel pit.



**Figure 13.** Vegetation type F identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as 'Eucalyptus (mallee) semi closed woodland over *Banksia media* and melaleuca shrubland'.



**Figure 14.** Vegetation type G identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as 'Closed melaleuca shrubland fringing lakes with scattered mallee'.



**Figure 15.** Vegetation type H identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as 'Low samphire shrubland'.



**Figure 16.** Vegetation type I identified in 'Site T – Dempster Road SLK 28.48 -37.63' project, described as 'Dense Eucalyptus (mallee) woodland over melaleuca shrubland'.

## **5.2 Vegetation Condition**

The majority of 'Site T – Dempster Road SLK 28.48 -37.63' was in excellent condition with only a couple of smaller degraded areas from previous disturbance including chaining and gravel extraction activities. Whilst the works do pass over a number of lakes and are likely to have temporary impacts on these lakes, the fact that they already have a road and drainage infrastructure at these sites is unlikely increase the disturbance to natural hydrological regimes of the area. It is also highly unlikely acid sulphate soils will develop, being the incorrect soil type present. 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. The entire area is long unburnt with no recorded fire in the area.



Figure 17 – Chained firebreak within Vegetation type I.

Quantifying vegetation condition, there is:

- 4.60 ha of vegetation within a 4.77 ha footprint (96.50%) is in Excellent condition,
- 0.138 ha of vegetation within a 4.77 ha footprint (2.95%) is in Very Good condition
- 0.0164 ha of vegetation within a 4.77 ha footprint (0.35%) is in Degraded condition
- 0.024 ha of vegetation within a 4.77 ha footprint (0.51%) is in Completely Degraded condition



**Figure 18.** Vegetation condition across 'Site T – Dempster Road SLK 28.48 -37.63' project, ranging from Excellent to Degraded condition, due to primarily to degradation from gravel extraction and chaining.



**Figure 19.** Vegetation condition across 'Site T – Dempster Road SLK 28.48 -37.63' project, ranging from Excellent to Completely Degraded condition, due to primarily to degradation from gravel extraction and chaining.



**Figure 20.** Vegetation condition across 'Site T – Dempster Road SLK 28.48 -37.63' project, ranging from Excellent to Very Good condition, due to primarily to degradation from gravel extraction and

There was minimal weed invasion across the entirety of the proposed 'Site T – Dempster Road SLK 28.48 -37.63' area. Overall, 15 invasive species were identified within the project area (Appendix 8.1). Most of these were agricultural weeds at low densities. The most concerning weed was *Leptospermum laevigatum* (Victorian Tea tree) which was present in vegetation type A. This single large plant will be removed prior to works occurring. Due to the relatively weed free area, the Shire of Esperance will follow best practice weed management. Weed management strategies are currently being discussed operationally by the Shire of Esperance include, spraying material stockpiles in agricultural private property prior to use and periodic spraying of road verges for a twelve month period after road construction.



**Figure 21.** This single large plant of *Leptospermum laevigatum* (Victorian Tea tree) which was present in vegetation type A will be removed prior to works occurring within the Site T – Dempster Rd' project area.

Dieback Information Delivery and Management System (DIDMS; GAIA Resources, SCNRM & State NRM 2021) data shows no *Phytophthora cinnamomi* or other *Phytophthora* sp. Dieback sample results

in the immediate area. There were no visual signs of dieback in the project or surrounding area. There were some very old senescing *Banksia speciosa*, but many healthy younger ones. Vegetation types A, B and E are the most susceptible to dieback due to the high number of Proteaceae and Ericaceae species within them. Based on Dieback Management Plans prepared for Shire of Esperance road construction and management projects. 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. However, there is always a possibility that proposed works could spread *P. cinnamomi* dieback along Dempster road.

## 5.3 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 T – Dempster Road SLK 28.48 -37.63' project area. No other TEC's or priority ecological communities (PEC) were identified by the desktop study as being within Site T – Dempster Rd' or within a 20 km buffer of the site.

Three vegetation communities, described as; 'A - Open *Eucalyptus pleurocarpa* woodland over diverse Proteaceous shrubland'; 'B – *Banksia speciosa* open woodland, over mixed proteaceous shrubland' and 'E - Open *Eucalyptus pleurocarpa* woodland over *Banksia armata* low shrubland met criteria to be considered as Kwongkan TEC. However, due to degrading factors, only areas within these vegetation communities in excellent and very good condition were considered as Kwongkan TEC (Figure 22). In total, a maximum of 0.213 ha of vegetation within 'Site T – Dempster Road SLK 28.48 -37.63' will be cleared.

The vegetation community described as 'Swamp Yate, *Eucalyptus occidentalis*, woodlands in seasonally inundated clay basins in the South Coast of Western Australia' is listed as a PEC (DBCA 2021b). Within the 'Site T – Dempster Road SLK 28.48 -37.63' project area, vegetation type C was described as 'Open Eucalyptus occidentalis and Melaleuca cuticularis woodland over dense Melaleuca shrubland over sedges'. Scattered *E. occidentalis* were present but did not form a continuous dominant Swamp Yate woodland. A review of all historical aerials also did not show this area containing water. Thus, it is believed vegetation type C is unlikely to meet criteria for this PEC.



**Figure 22.** Vegetation communities of vegetation types A, B and E in very good and excellent condition at the southern end of the 'Site T – Dempster Road SLK 28.48 -37.63' project area met threatened ecological community (TEC) 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan)'.

### 5.4 Threatened and Priority Flora

Four threatened flora (TF) and 53 priority flora (PF) were recorded within a 20 km radius of the proposed impact site (Table 3; DBCA 2021f, DBCA 2021d, and DBCA 2021a. Of these, 45 species had suitable known associated habitat that corresponded with vegetation communities and soil type of 'Site T – Dempster Road SLK 28.48 -37.63' project. Confirmed records, indicating known populations, of *Astroloma* sp. Grass Patch, *Darwinia* sp Gibson. *Kunzea salina, Austrobaeckea uncinella*, and *Hydrocotyle astrocarpa* were directly located within the clearing permit area.

**Table 3.** Threatened or priority flora identified by the desktop study to be present within a 20 km radius of 'Site T – Dempster Road SLK 28.48 -37.63' project area, using Threatened and Priority Flora Reporting (TPFL; DBCA 2021d), WA Herbarium (DBCA 2021f) and Esperance District Threatened Flora (DBCA 2021a).

Nt. Acronyms used in the table include priority flora (P), threatened flora (TF), and Biodiversity Conservation (BC) Act 2018, Environmental Protection and Biodiversity Conservation (EPBC) Act 1999.

Species Conservation (BC) Act 20	Cons	Associated Habitat	Flowering	Likely to
•	Status		Time	occur
Anigozanthos bicolor subsp. minor	TF	Sandy, well-watered sites	Aug-Oct	No
Eremophila glabra ssp. Scaddan	TF	Open mallee woodland on grey/brown clay soils – only in the Scaddan area	June & Nov	Yes, known location 568m from project area
Eucalyptus dolichorhyncha	TF	Small area south of Salmon Gums – flats, or slightly rising ground with whitish/yellowish sandy clay soil	Aug – April	Possible
Eucalyptus merrickiae	TF	Sandy, loamy depressions around salt lakes and saline flats – open mallee shrubland with dense scrub underneath	Aug- Dec	Yes
Baeckea sp. Gibson	P1	Brown sandy loam over laterite & granite on moderately exposure hills or cleared bushland	Nov - Dec	Possible
Beyeria physaphylla	P1	Mallee woodlands – only known to Scaddan	July – Aug	Possible
Cyanothamnus baeckeaceus subsp. patulus	P1	Clay-loam in mallee	Mar – Dec	Possible
Darwinia sp. Gibson	P1	Margins of salt lakes and road verges on grey-brown sandy loan and white sand	June-July	Yes
Eucalyptus misella	P1	Away from salt lakes, in heath on white sandplain with gravel high in the profile	November	Unlikely
Eucalyptus sp. Esperance	P1	Only known in four locations – growing on grey, brown sandy loam	Unknown	Unlikely
Goodenia turleyae				
Pimelea pelinos	P1	Sandy clay, salt lakes	Jun-July	Yes
Scaevola archeriana	P1	Sand and sandy clay loam soils, on sandplains and road verges	Dec	Yes
Astroloma sp. Grass Patch	P2	Grey-white fine sand over clay on the margins of salt lakes, associated w myrtaceous shrubs and halophytes	June – Aug	Yes occurs within area
Conostephium uncinatum	P2	Deep sandy soils on the edges of salt lakes, undulating plains and claypans		Yes
Eucalyptus sweedmaniana	P2	Coastal areas (cape Arid), 3 WAHerb records inland	Sporadic – fruit retained so no issue	Possible
Hibbertia turleyana	P2	Sandy soil maybe seasonally inundated in banksia heathland or mallee shrubland (recorded at Helms Arboretum and Gibson, Speddingup East Rd)	July – Sept	Unlikely

Hydrocotyle asterocarpa	P2	Sandy loam soils surrounding margins of salt lakes in low open shrubland in sheltered positions	Winter annual (sept-Nov)	Possibly
Hydrocotyle tuberculata (previously Hydrocotyle decipiens)	P2	Damp, sandy loam soils associated with winter-moist creeklines & drainage areas associated with inland saline lakes	Winter annual (Sept - Nov)	Possibly
Melaleuca eximia	P2	5 locations from the Mt Burdett area, east to Mt Buraminya & Clyde Hill. Sandy soils associated with granite outcrops	Oct – Nov & June	Unlikely
Melaleuca viminea ssp. appressa	P2	Near creeks or wet depressions in clayey soils, possibly associated with granite	Sep/Oct	Unlikely
Pterostylis zebrina	P2	Associated with mallee regions	Sept	Possible
Tecticornia indefessa	P2	Margin of a salt lake in conservation reserve north of Esperance. White to brown/grey sand near the edge of a salt lake	Sep – Oct fruits forming Dec – Jan	Possible
Acacia improcera	P3	Sand, loamy clay on undulating plains & flats	August	Possible
Acacia bartlei	P3	Flat or gently undulating landscape in waterlogged depressions – brown or grey sandy loam or clay loam	Late June – Mid Oct	Possible
Acacia euthyphylla	P3	Grey/white sand or clay loam on the margins of salt lakes, marshes & seasonal swamps	Aug – Sep	Yes
Acacia glaucissima	P3	Sand or clay in flat low-lying areas		Possible
Austrobaeckea uncinella	P3	Yellow or white sand, clay loam. Edges of salt lakes, salt creeks, sandplains.	Oct to Nov	Possible, WA herb record in vicinity
Brachyloma mogin	P3	Grey, clayed sand and swamp flats	June	Possible
Comesperma calcicola	P3	Calcareous or semi-saline clay loams & limestones, around saline water	Oct – Dec/Jan	Yes
Conostephium marchantiorum	P3	Grey or light yellow sandy soil in open mallee and shrub heath communities	March, July, Nov	Possible
Dampiera sericantha	P3	Sand, sometimes gravel. Plains. Kwongkan Shrubland	May or Aug to Dec	Yes
Daviesia pauciflora	P3	White or grey sand over laterite or limestone on flats	Oct – Dec/Jan	Yes
Desmocladus biformis	P3	Sand – clay on lateritic soils. dry sites	Sep or Oct	Possible
Eucalyptus foliosa	P3	Sandplain, above saline winter depressions	March – June	Yes
Goodenia laevis ssp. laevis	P3	Scaddan north – Norseman, west to peak Charles & Bremer range ares, east to Mt Haywood	Aug – Dec	Yes
Isopogon alcicornis	P3	Grey/brown sandy loams in mallee shrubland.	Oct – Dec & Feb	Possible
Kunzea salina	P3	White sand over clay at margins of salt playa lakes on sand dune rises	Dec – Feb	Yes
Styphelia rotundifolia (was Leucopogon rotundifolius)	P3	Styphelia rotundifolia	Jan – Aug & Nov	Possible

Melaleuca dempta	P3	Dense scrub in sandy soils, swampy areas & on edges of clay pans	Aug	Possible
Microseris scapigera	P3	Sandy soils. Margins of salt lakes, granite rock areas, samphire flats.	Sept-Oct	According to Florabase: This taxon does not occur in WA.
Microseris walteri	P3	Most common Dry open forests – widespread habitat range	Spring – summer	Unlikely
Persoonia cymbifolia	P3	Sandy soils on flats or in rock crevices	Dec – Jan	Possible
Persoonia scabra	P3	Granite or limestone shrublands	Nov – Jan	Possible
Trachymene anisocarpa var. trichocarpa	P3	Fire opportunist, fine windblown clay, mixed with sand often windblown or of larger alluvial grains eroded from granite outcrops	Oct – Dec	Unlikely
Adenanthos ileticos	P4	Sandy rises to the N and NE of Esperance	March, July – Oct, Dec	Possible
Darwinia polycephala	P4	Sand & clay on flats near salt lakes	March/May - July/Sep	Yes
Darwinia sp. Mount Burdett	P4	Open shrub mallee on sandy loams	March or August	Yes
Eremophila serpens	P4	White/grey sand, alluvium, loam. Winter-wet depressions, sub-saline flats, drainage lines, salt lakes.	Sep to Dec or Mar to May	Yes
Eucalyptus dolichorhyncha	P4	Flats or slightly rising ground with whitish to yellowish sandy clay soil. Distribution centred around Grass Patch Salmon Gums area.		Possible
Grevillea baxteri	P4	Sand, sandy loam and granitic loam in low heath to tall open shrubland and open mallee	May – Dec	Yes
Gyrostemon ditrigynus	P4	Sandy/clay loams over limestone, commonly under burnt upper story. Highly adaptable & widespread	Nov– or any time before summer	Yes
Melaleuca fissurata	P4	Shrub mallee or woodland on sand or sandy loam usually over clay or clay loam	July- August	Possible
Myoporum turbinatum	P4	Sandy soils in moist areas – along creeks & rivers, near pools, margins of saline depressions	Jan/Apr – May/Aug – Dec	Possible
Stachystemon vinosus	P4	Sandy duplex and gravelly soils in scrub heath with associated sp, eucalyptus, <i>Hakea</i> <i>cinerea, Banksia media</i>	Sept-Nov	Possible
Thysanotus parviflorus	P4	Grey sand	Oct – Nov	Possible

No TF species were identified within the 'Site T – Dempster Road SLK 28.48 -37.63' clearing footprint. However, the targeted flora survey identified eight PF species, *Astroloma* sp. Grass Patch (P1), *Darwinia* sp. Gibson (P1), *Austrobaeckea uncinella* (P3), *Dampiera sericantha* (P3), *Daviesia pauciflora* (P3), Kunzea salina (P3), *Persoonia scabra* (P3) and *Darwinia polycephela* (P4) within the proposed clearing permit footprint. Queries of spatial datasets were requested specifically for these species, to

interrogate impact of proposed works on species sustainability (DBCA 2022a; DBCA 2021f, 2021d, 2021a). Dampiera sericantha and *Austrobaeckea uncinella* were not recorded on the TPFL database. DBCA do not actively manage or monitor the majority of low priority species, due to their prevalence in the landscape relative to TF. There are 136 species recorded as priority three or four conservation status within the Shire of Esperance boundaries (DBCA 2021f).

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

- Tecticornia monoformis KSW0721 Accession 9116
- Schoenus brevisetis, KSW0221 Accession 9116
- Acacia dermatophylla, KSW2421 Accession 9133
- Jacksonia racemosa, KSW0321 Accession 9116
- Chordifex sphacelatus, KSW0821 & KSW0521, Accession 9116

One species of *Tecticornia* could not be determined as it was a sterile specimen (KSW0621 Accession 9116), however this specimen was different to P2, *Tecticornia indefessa* (which was the only priority Tecticornia identified in the desktop flora survey and unlikely to be this species).



**Figure 23.** Priority 2, *Tecticornia indefessa* (insert) verses Chenopod sp 9. Collected from 'Site T – Dempster Road SLK 28.48 -37.63' project.

An incidental collection of a new population of *Isopogon alcicornis* was made outside the clearing permit area whilst surveying for another priority species. This specimen was sent to the WA Herbarium (JW03521) Accession 9371 and was confirmed as *Isopogon alcicornis* by Mike Hislop on 1/2/2022. No plants were within clearing permit area.

The known population of *Eremophila glabra* subsp. Scaddan on Dempster Road was also visited during the survey. This population is well outside the clearing footprint area and no additional *Eremophila glabra* subsp. Scaddan plants were found within the flora survey.

#### PERTH 08273804

Eremophila glabra subsp. Scaddan (C. Turley s.n. 10/11/2005)

Scrophulariaceae

**Plant Description, Notes:** Erect, perennial shrub 1.8 m high x 1.6 m wide. Flowers green - yellow. **Vegetation:** Low trees, tall shrubland. Eucalyptus occidentalis, Euc. uncinata, Euc. leptocalyx, Acacia redolens, Pimelea cracens, Callitris roei, Exocarpos sparteus, Lomandra effusa.

Site Description: Wetland, bordering wet depression. Brown loam. Damp with good layer of leaf litter.

Frequency: 6-20 plants.

Locality: VCL on Dempster Road, ca 2 km N of Scaddan Road junction, access from a gravel pit W

side Dempster Road, to edge of lake, Scaddan **Location:** <u>-33.489°</u>, <u>121.995°</u> (GDA94)

**Location (DMS):** 33° 29' 21.0" S 121° 59' 41.0" E (GDA94)

State: WA

Collector: Turley, C.D.; Hoggart, R.M. Coll No: 1/7-10

Collection Date: 31 July 2010

**Conservation Code:** T

#### 5.4.1 Astroloma sp Grass Patch, Priority 1

Three specimens of *Astroloma* sp Grass Patch were sent to the WA Herbarium for identification confirmation

- KW120; Accession 8652 (Specimen not retained) It was confirmed as A. sp Grass Patch by Mike Hislop on 10/12/2020
- KSW 2121; Accession 9133 It was confirmed as A. sp Grass Patch by Mike Hislop on 6/10/2021
- KSW 2321; Accession 9133 It was confirmed as A. sp Grass Patch by Mike Hislop on 6/10/2021

Two Threatened and Priority Reporting Forms (TPFL) were completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 15/1/21 and 7/2/2022 (Appendix 8.2). In total four populations were recorded during the survey; three from fringing lake vegetation in Vegetation type G, and one in *Banksia speciosa* woodland Vegetation type B. If proposed works occur, a total of 3 plants will be impacted upon, from a population total of four populations of at least 200 plants.

**Table 4:** Location and impacts to populations of *Astroloma* sp Grass Patch within 'Site T – Dempster

Road SLK 28.48 -37.63' project.

Specimen	Location	Total population	Impact of clearing permit
WA Herb 8366349, 8366330	1.8 km south of Norwood Rd Fringing lake vegetation	Not counted but described on WA herb specimens as "Locally common".	Taking 3 plants
KSW02321	3.3km South of Norwood Rd on Dempster Rd	100+ plants	No plants in impact zone
DBCA(EspTF)	Fringing lake vegetation		Zone
KW120 and KSW2121	In Banksia speciosa woodland – 700m N of Scaddan/Dempster intersection on Dempster rd	1 plant outside clearing permit area	No plants in impact zone
DBCA(EspTF)	2.7km south of Norwood rd on Dempster Rd Fringing lake vegetation	50 plants. 1 GPS point outside clearing permit area	No plants in impact zone



**Figure 24.** Priority 1, *Astroloma* sp Grass Patch from fringing lake vegetation type G in the northern part of 'Site T – Dempster Road SLK 28.48 -37.63' project.

Prior to this survey, *Astroloma* sp Grass Patch only had two records on TPFL database (DBCA 2022) and six populations in Florabase, (24 records but many duplicates from same populations) a total of eight populations. The Shire of Esperance's additional three populations discovered during these surveys are significant additions. Only two of the previously known populations were in Nature reserves (two of the new populations extend into Nature reserve 27384). It is difficult to know exactly what the

total population size is as much of the population information is old data. It is interesting to note that in all previously recorded instances *Astroloma* sp Grass Patch plantsgrow in or near fringing salt lake vegetation. The new population corresponding to KW120 and KSW2121 was in *Banksia speciosa* woodland over 400m from the closest lake. According to Annette Wilson (Craig & Coates, 2001) who made a comprehensive survey of salt lakes in the Scaddan-Grass patch region in 1988 Astroloma sp. Grass Patch has "both specific habitat requirements and a very restricted range; the sandy lake shores on which this species has been found are rare in the area and it is likely that the populations discovered represent much of the range". Given the distinctive flowers and length of time the fruit/flowers remain on the plants it is not an easily overlooked species. The species also likely be effected by clearing, salinity and waterlogging. One of the TPFL populations near dam 1km west of the intersection of Dempster and Scaddan Rd describes the location of the plants as being "where it appears the bush may have been scrub rolled a few years ago, or is regenerating following on from the construction of the dam. They were just outside the margin of the mature bush". It can be inferred from this comment that some disturbance may be beneficial to the recruitment of the species.

**Table 5.** Previously known records of priority 3 species *Astroloma* sp Grass Patch across a 85km geographic range (DBCA 2021f, 2021d, 2021a, 2021c, 2022)

Locality	Tenure	Date	Frequency
Dempster Road, 2 km S of Norwood Road (Reserve A	Nature	9/05/2012	locally common.
27384), East of Scaddan (2 Herbarium specimens)	reserve		
Cleared line extended off Kau Rock Road. Salt lake 10 km N	Nature	8/11/2009	2-5 plants.
up cleared Line, Kau Rock Nature Reserve (Multiple WA	reserve		
Herb records)			
South edge of unnamed salt lake 400m-1km N of Ridley	UCL	8/10/2007	locally frequent / 500+
Road, 16 km E of Grass Patch. via Starcevich and Ridley			plants
Roads			
5 km NE of Gibson, 6.2 km E along De Grussa from junction	Shire Road	29/06/2006	Occasional.
of Coolgardie/Esperance Highway	Reserve		
UCL approximately 5.5 km east of Demspter road along	UCL	21/12/2018	9
gravel road, 24km north of the intersection of Dempster and			
Scaddan road. Plants found north of the road			
UCL north west of the intersection of Dempster and Sacddan	UCL	21/12/2018	3
roads, approximately 40km nor-north west of Esperance.			
Plants found east of the dam in the UCL which is 1km west			
of the intersection of Dempster and Scaddan roads.			
Coobidge Creek catchment, on private property N of	Private	22/06/1990	
Boydell's Road, 2.5 km E of Coobidge Creek proper	property		
Lake S of Kent road, which is E of Grass Patch	Private	20/09/1988	200 plants
	property		

#### 5.4.2 Darwinia sp. Gibson, Priority 1

Three specimens from two locations of *Darwinia* sp. Gibson was sent to the WA Herbarium for identification confirmation. Location 1 (KW116; Accession 8652 (specimen retained WA Herb 9375481) & KSW 2221; Accession 9133) and Location 2 (KSW 2521; Accession 9133).

The southern one of these populations was a new record and the northern one coincided with PERTH

09375481 At both populations there were 100+ plants. At the northern population 3 plants will be taken as part of the clearing for 'Site T – Dempster Road SLK 28.48 -37.63' project. At the southern population 1 plant will be taken as part of the clearing for 'Site T – Dempster Road SLK 28.48 -37.63' project. A Threatened and Priority Reporting Forms (TPFL) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 15/1/21 for the new population (Appendix 8.2).

*Darwinia* sp. Gibson is known from 20 populations spread out over a range of approximately 40 km. It grows on the margins of salt lakes.

**Table 6:** Known populations of Priority 1 species, *Darwinia* sp. Gibson

Locality	Date	Frequency
1 km N along Yates Road from Fleming Grove, E side of road, on shire		
road verge extending into private property, Esperance	26/07/2010	50+ plants.
2.1km N along Yates Road from Fleming Grove, W side of road	6/7/2006	3 plants
Private Property, Lot 1809. 5.2km W along Fleming Grove rd from junction		
of Dempster rd.	6/7/2006	20 plants
		over 50
Scaddan Road, Scaddan	30/06/2012	plants.
2.4km E of Styles rd on Scaddan Rd	27/7/2010	2 plants
100 m NE along Karl Berg Road, around salt lake on N side of the road,		21 - 50
from the intersection of Heywood and Karl Berg Roads	29/05/2013	plants.
3 miles N of Gibson	10/08/1951	
5.6 km N of Scaddan Road on Dempster Road, on N side of lake, E side of		
road	16/10/2020	10 plants.
20 km SSE of Scaddan, 1.5 km N along Styles Road from junction of		
Scaddan Road	27/7/2010	40 plants
3.1km north along Styles Rd from Scaddan Rd	27/7/2010	1000+
Styles Rd. 2.6km S along Styles Rd from Norwood Rd intersection	15/10/2020	10 plants
2.1km north along Styles Rd from Scaddan Rd	27/7/2010	50 plants
		occasional,
15 km SE of Scaddan, 10 km W along Speddingup Road from junction of		ca 20
Dempster Road	21/06/2006	plants.
		locally
12 km NE of Gibson, road verge, 1 km N along Yates Road from junction of		frequent ca
Fleming Grove Road	27/06/2006	40 plants.
W side of rail line, between and adjacent to track, 10.5 km NNW of Gibson	4.07.0000	
by rail	1/07/2003	
22.8 km NW along Scaddan Road from junction of Backmans Road, part of	00/05/0005	
Bandy Creek catchment, ca 50 km NW of Condingup	26/05/2005	occasional.
Southern road reserve, c. 500 m W of Coolgardie-Esperance Highway on	7/40/0000	45
Boydell Road, 35 km N of Esperance	7/10/2020	15 plants.
On eastern road reserve, c. 51 km N of Esperance townsite, on Styles	15/10/2020	10 plants
Road 2.6 km S of Norwood Road	15/10/2020	10 plants
3km W along Griffiths rd from junction of Coolgardie-Esperance rd	6/7/2006	50 plants

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].		100's of
Shire of Esperance	6/7/2006	plants



Figure 25. Priority 1, Darwinia sp. Gibson 'Site T – Dempster Road SLK 28.48 -37.63' project.

## 5.4.3 *Hydrocotyle asterocarpa* – Priority 2

A known population of *Hydrocotyle asterocarpa* exists on the east side of Dempster road 4.4km north of Scaddan rd. This population was visited on by Julie Waters and Katie White on 23/10/2020. The population was located directly on the lake bed and no plants are within the clearing footprint area. No other new populations of *Hydrocotyle asterocarpa* were discovered during flora surveys. A Threatened and Priority Reporting Form (TPFL) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 19/11/2020 (Appendix 8.2).

#### PERTH 06818951

Hydrocotyle asterocarpa

Araliaceae

**Vegetation:** Halosarcia syncarpa, Disphyma crassifolium, Frankenia cinerea low heath D, over Parapholis incurva very open low grass, over Hydrocotyle sp. Truselove, Isotoma scapigera open horbs

**Site Description:** Topography: Samphire flat. Soil: Gypsum.

Locality: On E side of Dempster Road, 4.4 km N of Scadden Road. Un-named Nature Reserve, c. 22.5

km SW of Mount Ridley. [Plot - ES06] **Location:** -33.469°, 122.015° (GDA94)

Location (DMS): 33° 28' 6.8" \$ 122° 0' 55.4" E (GDA94)

State: WA

Collector: Keighery, G.J.; Gibson, N. Coll No: 5362

Collection Date: 11 October 2000

**Conservation Code: 2** 

**Figure 26.** Existing WAHerb record of *Hydrocotyle asterocarpa* outside clearing permit area off Dempster Road

### 5.4.4 Austrobaeckea uncinella, Priority 3

The Florabase record from 2012 was confirmed. Three additional new populations were also recorded during the survey from fringing lake vegetation in Vegetation type G in salt lakes further south than this known population. These were sent to the WA Herbarium for identification confirmation (JW03621, JW03721 & JW03821; Accession 9371) with specimen not retained. They were confirmed as *Austrobaeckea uncinella* by Mike Hislop on 1/2/2022. A Threatened and Priority report form was sent to sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 18/2/2021 (Appendix 8.2).

#### PERTH 08489432

Austrobaeckea uncinella

Myrtaceae

**Plant Description, Notes:** Erect shrub, 1.5 m high x 1.2 m wide. Plants fruit.

Vegetation: Edges of dense heath. With Melaleuca hnatiukii, Austrobaeckea uncinella, Leucopogon

canaliculatus, Dielsiodoxa oligarrhenoides.

**Site Description:** Edges of saline drainage line. Dry white sand.

Frequency: Locally common.

Locality: Dempster Road, 2 km S of Norwood Road (Reserve A 27384), E of Scaddan

**Location**: -33.441°, 122.019° (GDA94)

**Location (DMS):** 33° 26′ 28.4″ S 122° 1′ 7.3″ E (GDA94)

State: WA

Collector: Hislop, M. Coll No: 4192 Collection Date: 9 May 2012

**Conservation Code:** 3



**Figure 26.** Priority 3, *Austrobaeckea uncinella* common in fringing lake vegetation type G in the northern part of 'Site T – Dempster Road SLK 28.48 -37.63' project.

There are no TPFL records for *Austrobaeckea uncinella* however 19 recorded locations on Florabase and all of these apart from one which describes abundance lists it as "locally common", "common" or "over 50 plants". *Austrobaeckea uncinella* has a range of around 200km and is likely to be a poorly collected species, rather than a rare one.

Only 2 specimens will be impacted upon of a total of at least 200 plants spread over 4 populations. It is worth noting that the suitable habitat extended for kilometres and a full count of population size was not done as part of this survey.

**Table 7.** Known records of priority 3 species *Austrobaeckea uncinella* across a 200km geographic range (DBCA 2021c, 2021f).

Locality	Tenure	Date	Frequency
Speddingup Reserve, 90 m NW of causeway on Robins Road	Nature		locally
	reserve	22/11/2016	common; 5
		22/11/2010	plants per
			100 sq m.
Dempster Road, 2 km S of Norwood Road (Reserve A 27384), E	Nature	9/05/2012	locally
of Scaddan	Reserve	3/03/2012	common.
Helms Arboretum Maintenance track, sandy sector (about 2 km	Forestry	9/01/2004	over 50
further on from gravel), Gibson	Reserve	9/01/2004	plants.
Lort River crossing on South Coast Highway	State Road	12/12/2003	
	Reserve	12/12/2003	

Maintenance Track, Helms Arboretum	Forestry Reserve	10/12/2003	
L1999-28. 4.2 km SE of Esperance, Lake Mullet Nature Reserve,	Nature Reserve	23/11/1999	
100 m N of Mount Ney Road, ca 1 km W of Kau Rock Road, NE of Esperance	Nature Reserve	20/11/1998	locally common.
Corner of Lagoon Road and Kendall Road, Scaddan,	UCL or Shire road Reserve	21/10/1997	uncommon.
11.5 km NW from Mount Ney Road on track to Sheoak Hill (c. 13.5 km NW of Mount Heywood) S side of salt lake on N side of track	UCL	22/05/1993	
19.5 km E of Mount Ridley	Uncertain	9/11/1991	
Location 1800 - Bush ? Scaddan	Uncertain	10/12/1984	
Esperance area, along Fishereies road, c. 8 km NE of Esperance	Uncertain	6/11/1982	
11 miles from Esperance towards Norseman	Uncertain	2/11/1968	
Northern portion of Locality 894, c. 15 km NNW of Young River crossing on Ravensthorpe - Esperance main road (Young River is c. 70 km W of Esperance) Eucla Division, Esperance District	Uncertain	18/10/1968	
2 km Norwood road on Dempster road, Reserve 27386	Nature Reserve	10/1984	locally common; 5 plants per 100 sq m.

#### 5.4.5 Daviesia pauciflora, Priority 3

A specimen of *Daviesia pauciflora* was sent to the WA Herbarium for identification confirmation (KW117; Accession 8652 with specimen retained (PERTH 09375511). It was confirmed as *Daviesia pauciflora* by Mike Hislop on 10/12/2020. *Daviesia pauciflora* occurs in two populations within 'Site T – Dempster Road SLK 28.48 -37.63'. The first from the intersection of Scaddan rd for 800m north contained 15 plants of which 10 will be impacted upon by road widening operations. The second population occurred between 1.4-1.7 km north of Scaddan rd and contained 29 plants of which 21 will be impacted upon by road widening operations. Both populations were new records. The majority of plants were in vegetation type A however some were also recorded within vegetation type B. The population counts did not extend into the large tracts of bushland adjacent to the area and due to previous surveys by the Shire north of Scaddan rd, it can be confirmed that these populations are much larger and extend into surrounding bushland.

Two Threatened and Priority Reporting Forms (TPFL) were completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 15 January 2021 (Appendix 8.2). If proposed works occur, a total of 31 plants will be impacted upon, from a population total of at least 44 spread over two populations.



**Figure 27.** Priority 3, *Daviesia pauciflora* at 'Site T – Dempster Road SLK 28.48 -37.63' project.

Daviesia pauciflora whilst listed as a Priority 3 species, has 25 known populations over a range of 200km. It grows in sandy soils, and when not flowering is very inconspicuous. In the opinion of Julie Waters, it is most likely a poorly collected species rather than a rare one.

**Table 8.** Known records of priority 3 species *Daviesia pauciflora* across a 200km geographic range (DBCA 2020C, 2020B, 2020A, 2021C).

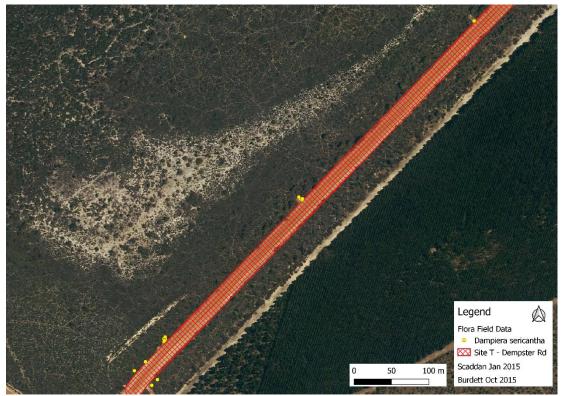
Locality	Date	Frequency
24 miles E of Esperance	24/11/1964	
Location 1110, ca 40 km ENE of the coast at Stokes		
Inlet, near western border of Shire of Esperance, Eucla		
Division	16/10/1968	
Eyre district; 100 km from Esperance along road to		
Ravensthorpe, 6 km E of Munglinup River crossing	8/01/1979	
62 km W of Esperance along road to Ravensthorpe, 9 km		
NNE of Barker Inlet	8/01/1979	
2.9 km E of Neds Corner Road on Cascades Road,		
reserve 31745. ENE of Ravensthorpe.	9/10/1984	
		Scattered small colonies
1.5 km SW of Mount Merivale, Eyre Botanical District,	2/12/1990	(collectively common).
Mount Merivale region, Esperance Loc. 2051, 20 km E of		
Esperance	21/10/1995	Scattered small colonies.
Esperance	28/12/1997	
Esperance	28/12/1997	
Remnant vegetation northern boundary Loc.1878,	21/09/1998	
Windbreak Loc. 1878 (lot 1) ca 1 km SE junction Rhinds		
Road and Dalyup Road continuation, Quadrat 4, No 34,		
adj. Q4,	1/10/1998	
E side of Parmango Road, 11.5 km NNE of Condingup,		
Eyre,	13/10/1998	Scattered.
2 km E of Condingup and 500 m S of Fisheries Road in		Frequent (100's) occurring
VCL to W of gravel road to Condingup Peak	11/04/2002	in ca 1.5 ha.
0.9 km W along Paterson Road from junction of		
Coolgardie - Esperance roads, 50 m along service track,		
ca 10 km N of Esperance	24/05/2005	Frequent.
4.2 km E along northern farm boundary at N end of		
Wittenoom Hills Road, 9.5 km NE of Mt Burdett	8/11/2009	2-5 plants.
Helms Arboretum Bushland	7/03/2011	2-5 plants.
NW corner, Helms Arboretum, Gibson	21/04/2011	One only.
Speddingup East Road, E of Coolgardie - Esperance		
Highway	7/10/2011	2-5 plants.
Helms Forestry Reserve 23527, Gibson	4/12/2011	One only.
C. 3.8 km E along a firebreak track from the end of		
Wittenoom Road, 12 km NW from the boundary of Kau		
Rock Nature Reserve	4/11/2013	10+ plants.
Neds Corner Road, 1 km N of Mills Road	12/10/2017	10 plants.
Neds Corner Road, 3 km S of Cascades townsite	12/10/2017	2 plants
81 km NE of Esperance town site, 18.6 km NE of		
Condingup satellite town, 520 m NW of Howick -		
Ridgeland [road] intersection on Howick Road	1/10/2019	1 plant observed.
S side of Merrivale Road, c. 15 km E of Esperance	12/11/2020	3 plants
Dempster Rd North of Scaddan Road	23/10/2020	44 plants

#### 5.4.6 Dampiera sericantha, Priority 3

A specimen of *Dampiera sericantha* was sent to the WA Herbarium for identification confirmation (KW119; Accession 8652 with specimen retained (PERTH 09375546). It was confirmed as *D. sericantha* on 10/12/20 by Michael Hislop. Within 'Site T – Dempster Road SLK 28.48 -37.63', *D. sericantha* occurs from 100 - 750 m north of Dempster Road and Scaddan Road intersection on Dempster Road, on both sides of the road reserve. The plants were in vegetation types A and B. The population counts did not extend into the large tracts of bushland adjacent to the area and it is possible that the population is much larger and extends into surrounding bushland. A Threatened and Priority Reporting Form (TPFL) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 15/1/2021 (Appendix 8.2). If proposed works occur, a total of 10 plants will be impacted upon, from a population total of at least 20 plants, these are all located within an existing spoon drain, and are likely to be impacted upon by routine maintenance activities.



**Figure 28.** Priority 3, *Dampiera sericantha* growing in existing spoon drain of 'Site T – Dempster Road SLK 28.48 -37.63' project.



**Figure 29.** Eighteen Priority 3, *Dampiera sericantha* specimens were found to be growing in existing spoon drain within the southern end of the 'Site T – Dempster Road SLK 28.48 -37.63' project area.

*D. sericantha* has a distribution range over 250km. It is only identifiable during spring and early summer when it is flowering, resulting in a short time period it can be recorded. The remainder of the time it is a non-descript herb similar to many other non-threatened species. This has likely contributed to lack of records, being a small window to identify, and the low priority to collect during a time frame when the majority of the south-west is flowering.

It is evident from local observations that *D. sericantha* is a disturbance opportunist and colonizer. Most of the plants located here were in disturbed spoon drains and It is therefore highly likely that after the road reconstruction, it will persist in the newly disturbed back-slope and spoon drains following completion of road works. This is supported by 15 of the 23 locations in the WA Herbarium database record *D. sericantha* being located on road reserves, fence lines, pipe lines or coastal 4WD tracks where disturbance has occurred.

No data was available on *D. sericantha* from the TPFL database, so all records refer to the WA Herbarium database. *D. sericantha* has been recorded 31 times across 23 different locations. Tenure is poorly described with five locations being uninterpretable of conservation security. Three recorded locations are described as being in mining tenements are possibly been lost. Three locations are present in nature reserves and are likely to still be intact populations. The remaining 15 populations are present in road reserves, fence lines, pipe lines or coastal 4WDing tracks, and are therefore possible lost via road developments or maintenance. Nine records of *D. sericantha* were prior to 2000, with two locations in nature reserves been verified as existing since then.

#### 5.4.7 Kunzea salina, Priority 3

Three previously recorded populations of *Kunzea salina* were recorded from 'Site T – Dempster Road SLK 28.48 -37.63' project.

#### PERTH 03026620

Kunzea salina

Myrtaceae

**Plant Description, Notes:** Spreading shrub, 15cm tall x 60cm broad. Frequent.

Vegetation: N side of salt pan, 200m W of road. Frequent in narrow band between Halosarcia zone

and dense heath (0.5m) with Melaleuca acuminata.

Site Description: Loamy sand over clay.

Locality: 2.5 km N of Scaddan East Rd on Dempster Rd; ESE of Scaddan.

**Location:** <u>-33.492°</u>, <u>122.000°</u> (GDA94)

**Location (DMS):** 33° 29′ 30.0″ S 122° 0′ 0.0″ E (GDA94)

State: WA

Collector: Craig, G.F. Coll No: 2220 Collection Date: 25 September 1992

**Conservation Code:** 3

#### PERTH 03026523

Kunzea salina

Myrtaceae

Plant Description, Notes: Abundant; 1,000+ plants.

**Vegetation:** Low heath and tall grass (<0.8m). Associated with *Melaleuca acuminata*.

**Site Description:** Dark grey loamy sand over clay; moist. N side of salt lake on E side of road. **Locality:** 5.7 km N of Scaddan East Rd on Dempster Rd; E of Scaddan. Nature Reserve.

**Location:** -33.454°, 122.017° (GDA94)

**Location (DMS):** 33° 27' 15.0" S 122° 1' 0.0" E (GDA94)

State: WA

Collector: Craig, G.F. Coll No: 2224 Collection Date: 25 September 1992

**Conservation Code: 3** 

#### PERTH 01019325

Kunzea salina

Myrtaceae

**Vegetation:** Shrub mallee 1.5-2 m (10-30%) and shrubs <0.5 m (30-70%).

Site Description: Intermittent salt creek, deep sand on edges, sand on clay in creek bed.

Locality: 2 km south of Norwoods road on Dempster road, reserve 27386 [Ca 28 km E of Scaddan].

**Location:** -33.436°, 122.005° (GDA94)

**Location (DMS):** 33° 26′ 10.8″ S 122° 0′ 19.8″ E (GDA94)

State: WA

Collector: Burgman, M.A. Coll No: 4355

Collection Date: Oct 1984 Conservation Code: 3

In addition to these three locations, *Kunzea salina* was recorded from four new locations during the flora survey. Given the proximity of these to the existing populations no specimens were sent to WA Herbarium. If proposed works occur, a total of 8 plants will be impacted upon out of a total population

size of over 1000 plants.



**Figure 30.** Priority 3, *Kunzea salina* within 'Site T – Dempster Road SLK 28.48 -37.63' with WA Herbarium data showing pre-existing populations and specimens found during the flora survey.

Kunzea salina has a wide distribution over a 100km range. Most of the population data is old and it's difficult to know an exact population size. There are extensive chains of lake systems which are poorly surveyed, especially in the eastern parts of its range. Due to the similarity of Kunzea salina to other Myrtaceous species it is likely to be a poorly collected species, rather than a rare one. Kunzea salina is likely to be very common throughout these lake systems and impacting eight individual plants is unlikely to be significant.

Table 8: Known records of Priority 3, Kunzea salina from a 100km range

Locality	Date	Frequency
S of Truslove on reserve 27983 (8.6 km from N end, along central track) [Near Truslove]	8/02/1977	
10 km W of Wittenoom Hills, NE Esperance.	15/01/1978	Common in band around edges dry salt lake.
At junction of Lagoon and Kendall Roads, Scaddan	10/11/1992	
2 km S of Norwood road on Dempster road, reserve 27386 [Ca 28 km E of Scaddan].	Oct 1984	
6 km NE of Mount Heywood, ca 90 km NE of Esperance	9/11/1980	Scattered.

10 km N of Gibson	12/12/1985	Frequent in patches.
6.6 km S of Logans Road on Dingo Rock - Mount Ridley track, c. 16 km S of Dingo Rock	22/05/1993	1000+ plants.
1 km S of Truslove Road on Swan Lagoon Road, Truslove Nature Reserve	22/09/1992	
Corner of Norseman Road and Boydells Road, ca 10 m km N of Gibson, Roe District,	21/10/1997	locally common.
Corner of Lagoon Road and Kendall Road, Scaddan, Roe District,	21/10/1997	common.
Corner Boydells Road and Esperance to Coolgardie Highway, N of Esperance, SW corner	15/01/2004	ca 30 plants.
24.1 km SW of Clyde Rd on Mt Ney Rd (ca. 5 km NNE of Mt Heywood).	21/05/1993	Abundant, 1,000+ seedlings post-fire Jan.1991.
Corner of Lagoon and Kendall Roads on E side of junction at N side of small salt lake	15/01/2004	50+ plants.
Helms Arboretum maintenance track, 10 m across track from 8/104	9/01/2004	
Helms Forestry Reserve 23527, NW of population on maintenance track, Gibson	4/12/2011	6-20 plants.
Ridley Nature Reserve by salt lake, ca 17 km E of Grass Patch	16/01/2004	1000's plants.
Helms Arboretum maintenance track, ca 2 km beyond gravel surface track (10 m across from 5/104 collection)	9/01/2004	2-5 plants.
Maintenance Track, Helms Arboretum	10/12/2003	
Speddingup Reserve, 90 m NW of causeway on Robins Road	22/11/2016	locally common.
5.7 km N of Scaddan East Rd on Dempster Rd; E of Scaddan. Nature Reserve.	25/09/1992	1,000+ plants.
2.5 km N of Scaddan East Rd on Dempster Rd; ESE of Scaddan.	25/09/1992	Frequent.
24.1 km SW of Clyde Rd on Mount Ney Rd (ca 5 km NNE of Mount Heywood)	21/05/1993	Abundant, 1,000+ plants.



**Figure 31.** Priority 3, *Kunzea salina* growing in fringing lake vegetation of 'Site T – Dempster Road SLK 28.48 -37.63' project.

### 5.4.8 Persoonia scabra, Priority 3

Three specimens of *Persoonia scabra* were sent to the WA Herbarium for identification confirmation (KW121, KW122, KW124 Accession 8652 with one specimen retained). All were confirmed as *Persoonia scabra* by Mike Hislop on 10/12/2021. Three Threatened and Priority Reporting Forms (TPFL) were completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) District Flora Conservation Officer and Species and Communities Branch on 15/1/2021. If proposed works occur, 8 plants will be impacted upon, from a population total of 13. There was a total of 5 small populations found within the site, all with at least 800 metres separating them.

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.



**Figure 32.** Thirteen Priority 3, *Persoonia scabra* specimens were found to be growing along the 'Site T – Dempster Road SLK 28.48 -37.63' project area



Figure 33. Priority 3, Persoonia scabra growing in 'Site T – Dempster Road SLK 28.48 -37.63' project.

 Table 9: Known records of Priority 3, Persoonia scabra from a 100km range

Locality	Tenure	Date	Frequency
86 km E of Esperance, 24 km E of Condingup on Henkes Road,	Shire Road	8/10/2020	
c. 4.3 km E of Howick Road intersection	Reserve		
44-290 m W of Coolgardie-Esperance Highway on Boydell Road,	Shire Road	7/10/2020	5 plants.
southern road reserve, 35 km N of Esperance	Reserve		
On Norwood Road from intersection of Dempster Road to 20 m	Shire Road	10/09/2019	> 3 plants.
E, 28 km E of Scaddan, c. 50 km NNE of Esperance townsite	Reserve		
Cape Le Grand National Park, proposed Lucky Bay	National Park	15/09/2014	
redevelopment site		0/44/0040	4 1 1
3.4 km NW from the northwestern boundary of Kau Rock Nature	UCL	3/11/2013	1 plant.
Reserve	·	0/04/0040	0.5.1.1
Helms Forestry Reserve 23527, bushland slashed access track	Timber	2/01/2012	2-5 plants.
travelling SE to S boundary	Reserve	00/44/0044	
New Island Bay, 2.3 km W of Hellfire Bay carpark, 1.9 km SE of	National Park	26/11/2011	occasional, 1
Mt Le Grand summit, 7.1 km WSW of Lucky Bay campsite, Cape			plant seen.
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 Grand	National Park	26/11/2011	occasional, 1
summit, 7.0 km WSW of Lucky Bay campsite, Cape Le Grand	INALIONAL PAIK	20/11/2011	plant seen.
National Park, 29 km SE of Esperance township, Esperance			piant seen.
Plains IBRA bioregion			
New Island Bay, 2.5 km WSW of Hellfire Bay carpark, 1.8 km SE	National Park	21/10/2011	occasional, 4
of Mt Le Grand summit, 7.4 km WSW of Lucky Bay campsite,	Trational Lank	21/10/2011	plants and 2
Cape Le Grand National Park, 28 km SE of Esperance township,			seedlings
Esperance Plains IBRA bioregion			seen.
86.8 km E of Lake King General Store along Norseman Lake	National Park	31/12/2001	15 plants
King track. Roe District			noted.
26.5 km N of Condingup. Corner of Coolinup Road and Howick	Shire Road	31/12/1995	
Road, NE of Esperance,	reserve		
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	30/09/1984	
Melaleuca Road on West Point Road	Reserve		
23.5 km due SSE of Kau Rocks, 3.1 km NE of intersection 3 on	Shire Road	2/09/1984	
Condingup Road	Reserve		
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 83 km	National Park	21/08/1980	
NE of Lake King			
32 km NE of Swallow Rock, Frank Hann National Park, ca 84 km	National Park	1/08/1980	
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	

#### 5.5 Fauna

Within a 20 km radius of the 'Site T – Dempster Road SLK 28.48 -37.63', three species of threatened fauna or priority fauna have been recorded (Table 10). All three species have suitable habitat within the proposed clearing permit area.

**Table 10.** Potential threatened, priority and protected under international agreement fauna recorded within a 20 km radius of the proposed 'Site T – Dempster Road SLK 28.48 -37.63'.

Nt. Acronyms used include priority (P), Endangered (EN) and Vulnerable (VU).

Scientific Name	Common Name	Conservation Status	Likelihood of occurring	Associated habitat
Calyptorhynchus latirostris	Carnaby's cockatoo	EN	Possible Foraging	Inhabits native woodlands dominated by eucalypts such as Wandoo and Salmon Gum, as well as nearby heathlands.
Leipoa ocellata	Malleefowl	VU	Possible	Semi-arid shrublands and low woodlands dominated by mallee and/or acacia
Thinornis rubricollis	Hooded plover, hooded dotterel	P4	Possible	Beaches with large amounts of beach-washed seaweed. They also occur on inland salt lakes.



**Figure 34.** Ctenophorus maculatus seen in the field during flora surveys at 'Site T – Dempster Road SLK 28.48 -37.63'

#### 5.5.1 Carnaby's Black Cockatoo, Calyptorhynchus latirostris, Threatened Fauna

Carnaby's Black Cockatoo's are unlikely to nest or roost within the 'Site T – Dempster Road SLK 28.48 -37.63' project area, as there are no large trees are present with hollows. A large well established *Pinus pinaster* plantation exists to the east of the southern portion of 'Site T – Dempster Road SLK 28.48 - 37.63'. Carnaby's are likely to use this area for roosting and feeding and may also opportunistically feed in the southern portions of 'Site T – Dempster Road SLK 28.48 -37.63' in vegetation A, B and E which contain high numbers of proteaceous species.

#### 5.5.2 Malleefowl, *Leipoa ocellata*, Threatened fauna

Malleefowl are known to require thick Mallee shrubland and woodlands dominated by Melaleuca or Acacia understorey. Sandy area with large amounts of leaf litter are required for breeding. Vegetation type F and I likely provide suitable habitat for the Malleefowl. These areas are unburned and would provide suitable organic material for Malleefowl breeding mounds. However no evidence of use by Malleefowl were seen (i.e. breeding mounds) and foxes which have contributed to the decline of the Malleefowl were present at the site, leaving the project less suitable for use.

#### 5.5.3 Hooded plover, *Thinornis rubricollis*, Priority Four Fauna

The western subspecies of the Hooded Plover breeds on the shores of inland salt lakes and in coastal habitats. On salt lakes, Hooded Plovers mainly feed on sand and shell banks, open mud, salt-covered mud and areas covered in shallow water. It is possible that Hooded Plovers inhabit the salt lakes that 'Site T – Dempster Road SLK 28.48 -37.63' intersects, however no Hooded Plovers were observed during the surveys.

# 6 Conclusion; assessment of Department of Water and Environmental Regulations clearing principles

The 'Site T – Dempster Road SLK 28.48 -37.63' 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).

**Table 11.** Shire of Esperance Assessment against Clearing Principles of the proposed 'Site T – Dempster Road SLK 28.48 -37.63'.

Assessment against Clearing Principles	Conclusion
Principle (a) Native vegetation should not be	Biodiversity at this site is high with 276 native species
cleared if it comprises a high level of biological	recorded over nine vegetation types.
diversity.	

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.	The southern portion of the site contains vegetation used as opportunistic foraging habitat for Carnaby's Black Cockatoo due to the presence of Proteaceous species. No nesting or roosting habitat is present.  The Hooded Plover had suitable habitat within and immediately surrounding the survey area. Large areas of pristine salt lakes will remain untouched surrounding the survey area.  The Malleefowl had potentially suitable habitat within vegetation types F and I, however large swathes of this vegetation will remain untouched by the project.
	None of these species were observed during the surveys.
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 observed in the project area. In all cases clearing only effects a small portion of the population and there is plenty of unsurveyed habitat outside the surveyed distribution where more plant are likely to exist.
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.	Vegetation types A, B and E contained the Proteaceae Dominated Kwongkan Shrubland TEC, constituting a maximum of 0.213ha being cleared. No other TEC or PEC were present in the area.
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 intact and vegetated 100m wide (and wider) Dempster Road reserve is adjacent to crown land and Mt Ridley Nature Reserve and as such is well represented outside the clearing permit footprint.
Principle (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	The permit crosses numerous salt lakes and winter wet areas of Yates ( <i>Eucalyptus occidentalis</i> ). These areas are already disturbed by the existing road and the additional impact to these riparian and wetland areas is negligible.
Principle (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	Due to the large extent of pristine and excellent condition native vegetation surrounding the project area the project is unlikely to have any significant impact.
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 closest conservation reserve is Mount Ridley Nature Reserve (27386). This project is unlikely to have any additional impacts to this reserve.
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.	Due to the large extent of pristine and excellent condition native vegetation surrounding the project area the project is unlikely to have any significant impact. There may be temporary impacts to water quality during construction when culverts over salt lakes are being upgraded.
Principle (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	Due to the large extent of pristine and excellent condition native vegetation surrounding the project area the project is unlikely to have any significant impact.

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# 8 Appendix

8.1 Incidental species list

Fa!h.	0	Currier	Common Nama	Wasal	Cons				Veg	etat	ion 1	Гуре			
Family	Genus	Species	Common Name	Weed	Stat	Α	В	С	D	Ε	F	G	G/H	Н	ı
Aizoaceae	Carpobrotus	modestus	Pigface				Х				Χ				Χ
Aizoaceae	Disphyma	crassifolium ssp. clavellatum	Round-leaved Pigface										Х		
Amaranthaceae	Ptilotus	spathulatus	1 igiacc										Х		
Apiaceae	Platysace	effusa	Youlk, Native Carrot				Х								
Araliaceae	Trachymene	pilosa											Х		
Asparagaceae	Laxmannia	brachyphylla	Stilted Paper-lily			Х			Χ						
Asparagaceae	Lomandra	hastilis				Х	Χ								
Asparagaceae	Lomandra	mucronata									Χ		Χ		
Asparagaceae	Lomandra	micrantha	Small-flower Mat- rush								Х	Х			
Asparagaceae	Thysanotus	patersonii											Х		Χ
Asparagaceae	Thysanotus	parviflorus						Х							
Asparagaceae	Thysanotus	sparteus									Χ				
Asteraceae	Arctotheca	calendula	Cape Weed, Cape Dandelion	Х		Х	Х	Х		Χ					Х
Asteraceae	Argentipallium	tephrodes										Χ		Χ	
Asteraceae	Brachyscome	perpusilla													Χ
Asteraceae	Conyza	bonariensis	Fleabane	Х										Χ	Χ
Asteraceae	Cotula	coronopifolia	Waterbuttons	Х											
Asteraceae	Hypochaeris	radicata	Flat Weed	Х		Х							Х		
Asteraceae	Podolepis	capillaris	Wiry Podolepis,					Х							

Asteraceae F	Pogonolepis	muelleriana										Х		
Asteraceae F	Pseudognaphalium	luteoalbum	Jersey Cudweed	Х										Χ
Asteraceae S	Senecio	spanomerus										Х		
Asteraceae S	Sonchus	oleraceus			Χ					Χ	Χ	Χ		
Asteraceae (	Ursinia	anthemoides	Solar Fire	Х	Х	Х	Х							
Asteraceae \	Vittadinia	dissecta var. hirta												Χ
Boraginaceae F	Halgania	andromedifolia								Χ				Χ
Brassicaceae F	Raphanus	raphanistrum	Wild Radish	Х										Χ
Campanulaceae I	Isotoma	scapigera	Long-scaped Isotome									Х		
Casuarinaceae A	Allocasuarina	acuaria				Х								
Casuarinaceae A	Allocasuarina	humilis	Dwarf Sheoak						Χ	Χ				
Casuarinaceae A	Allocasuarina	acutivalvis							Χ					
Casuarinaceae A	Allocasuarina	thyoides			Х					Χ				
Chenopodiaceae A	Atriplex	semibaccata	Berry Saltbush			Х								
Chenopodiaceae L	Didymanthus	roei										Х		
Chenopodiaceae E	Enchylaena	tomentosa	Barrier Saltbush				Х				Χ			
Chenopodiaceae /	Maireana	oppositifolia									Χ		Х	
Chenopodiaceae F	Rhagodia	crassifolia												Χ
Chenopodiaceae F	Rhagodia	preissii										Х		
Chenopodiaceae 7	Tecticornia	lylei									Χ	Х		
Chenopodiaceae 7	Tecticornia	syncarpa					Х				Χ	Х		
Chenopodiaceae 7	Tecticornia	sp.								Χ	Χ	Х	Х	
Chenopodiaceae	Threlkeldia	diffusa	Coast Bonefruit				Х					Х		
Convolvulaceae V	Wilsonia	humilis	Silky Wilsonia				Х					Χ	Χ	
Crassulaceae (	Crassula	exserta										Х		
Cupressaceae (	Callitris	roei	Roe's Cypress Pine						Χ					
Cyperaceae (	Caustis	dioica	Puzzle Grass		 Х	Х		Χ	Χ					
Cyperaceae (	Gahnia	ancistrophylla	Hooked-leaf Saw			Χ				Χ	Χ	Χ		Χ

			Sedge											
Cyperaceae	Lepidosperma	squamatum					Χ				Χ			
Cyperaceae	Lepidosperma	sp.			Х	Χ	Χ		Χ	Χ	Χ			Χ
Cyperaceae	Mesomelaena	stygia ssp. stygia				Χ			Χ	Χ				
Cyperaceae	Schoenus	caespititius			Х			Χ						
Cyperaceae	Schoenus	sesquispiculus				Χ			Χ			Х		
Dilleniaceae	Hibbertia	exasperata								Χ			Х	Χ
Dilleniaceae	Hibbertia	oligantha				Χ		Χ	Χ	Χ	Χ			Χ
Dilleniaceae	Hibbertia	pungens									Χ			
Dilleniaceae	Hibbertia	gracilipes			Х	Χ			Χ					
Ericaceae	Andersonia	macranthera			Х									
Ericaceae	Andersonia	parvifolia						Χ	Χ					
Ericaceae	Astroloma	sp. Grass Patch		P1		Χ					Χ			
Ericaceae	Conostephium	papillosum			Х		Χ	Χ		Χ		Х		Χ
Ericaceae	Conostephium	drummondii				Χ								
Ericaceae	Dielsiodoxa	oligarrhenoides												
Ericaceae	Leucopogon	obtusatus												Χ
Ericaceae	Leucopogon	canaliculatus									Χ			Χ
Ericaceae	Leucopogon	sp. Mt Heywood									Χ	Х		
Ericaceae	Leucopogon	sp. Coujinup			Х				Χ					
Ericaceae	Lissanthe	rubicunda												Χ
Ericaceae	Lysinema	ciliatum			Х	Χ		Χ	Χ	Χ				
Ericaceae	Styphelia	lissanthoides			Х									
Ericaceae	Styphelia	subulata									Χ			Х
Ericaceae	Styphelia	sp. South Coast			Х	Χ								
Ericaceae	Styphelia	intertexta												Χ
Euphorbiaceae	Monotaxis	рахіі				Х								
Euphorbiaceae	Stachystemon	polyandrus			X			Χ						
Fabaceae	Acacia	mutabilis												Χ

Fabaceae	Acacia	saligna	Orange Wattle		Х	Х	Χ							
Fabaceae	Acacia	gonophylla				Х	Χ	Χ	Χ	Χ	Χ		Х	Х
Fabaceae	Acacia	maxwellii								Χ	Χ			Χ
Fabaceae	Acacia	patagiata								Χ	Χ	Х	Х	Χ
Fabaceae	Acacia	crispula				Х		Χ						
Fabaceae	Acacia	fragilis							Χ	Χ				
Fabaceae	Acacia	mutabilis subsp. mutabilis										Х		Х
Fabaceae	Acacia	pachyphylla								Χ				
Fabaceae	Acacia	pritzeliana				Х				Χ				Χ
Fabaceae	Acacia	sorophylla								Χ				
Fabaceae	Acacia	cyclops	Coastal Wattle		Х	Х								Χ
Fabaceae	Acacia	lasiocarpa var. bracteolata					Х							
Fabaceae	Aotus	sp. Esperance			Х	Х	Χ	Χ		Χ		Χ		
Fabaceae	Bossiaea	leptacantha								Χ				Χ
Fabaceae	Chorizema	obtusifolium			Х	Х		Χ						
Fabaceae	Daviesia	teretifolia			Х		Χ	Χ	Χ	Χ				
Fabaceae	Daviesia	aphylla								Χ				Χ
Fabaceae	Daviesia	pauciflora		P3	Х	Х								
Fabaceae	Dillwynia	sp. Mallee												Χ
Fabaceae	Gastrolobium	parviflorum					Χ			Χ				
Fabaceae	Gastrolobium	spinosum	Prickly Poison											Χ
Fabaceae	Gompholobium	baxteri					Χ			Χ	Χ			Χ
Fabaceae	Gompholobium	knightianum						Χ						
Fabaceae	Jacksonia	nematoclada			Х									
Fabaceae	Jacksonia	alata							Χ					
Fabaceae	Jacksonia	venosa			Х									
Fabaceae	Jacksonia	condensata								Χ		Χ		

Fabaceae	Pultenaea	barbata				Х	Х								
Fabaceae	Pultenaea	elachista									Χ				
Fabaceae	Pultenaea	purpurea										Χ			
Fabaceae	Templetonia	sulcata	Centipede Bush								Χ				
Frankeniaceae	Frankenia	tetrapetala	Four Petaled Frankenia										Х		
Goodeniaceae	Coopernookia	strophiolata						Х			Χ	Χ		Х	Χ
Goodeniaceae	Dampiera	parvifolia	Many-bracted Dampiera				Х				Х				
Goodeniaceae	Dampiera	sericantha	,		P3	Х	Х		Χ						
Goodeniaceae	Dampiera	lavandulacea									Χ				
Goodeniaceae	Goodenia	concinna	Elegant Goodenia								Χ				
Goodeniaceae	Goodenia	incana	Hoary Goodenia			Х	Х		Χ				Χ		
Goodeniaceae	Goodenia	pterigosperma					Х			Χ	Χ				
Goodeniaceae	Goodenia	scapigera	White Goodenia			Х			Χ	Χ	Χ				
Goodeniaceae	Lechenaultia	formosa	Red Devil, Red Lechenaultia										Х		
Goodeniaceae	Scaevola	archeriana									Χ				
Goodeniaceae	Scaevola	strophiolata													Χ
Haemodoraceae	Conostylis	phathyrantha							Χ						
Haloragaceae	Glischrocaryon	angustifolium				Х	Х	Х			Χ	Χ			Χ
Hemerocallidaceae	Dianella	brevicaulis											Χ		Χ
Hemerocallidaceae	Dianella	revoluta	Flax Lilly					Х							
Iridaceae	Moraea	setifolia		Χ									Χ		
Iridaceae	Patersonia	occidentalis	Smooth Purple Flag										Χ		
Iridaceae	Patersonia	lantana	Woolly Patersonia			Х	Х			Χ					
Juncaginaceae	Triglochin	mucronata											Х		
Lamiaceae	Microcorys	subcanescens					Х		Χ						
Lamiaceae	Westringia	rigida	Stiff Westringia												Χ

Lauraceae	Cassytha	melantha	Large Dodder-laurel							Х				Χ
Lauraceae	Cassytha	racemosa	Dodder Laurel							Х				
Loganiaceae	Logania	micrantha				Х								
Loganiaceae	Logania	stenophylla												Χ
Malvaceae	Lasiopetalum	sp. Mt Ragged								Χ	Χ			Χ
Malvaceae	Lawrencia	squamata										Х	Х	
Myrtaceae	Baeckea	latens					Х		Χ	Х	Χ			
Myrtaceae	Austrobaeckea	uncinella		P3						Χ	Χ			
Myrtaceae	Beaufortia	empetrifolia	South Coast Beaufortia		Х	Х		Х						
Myrtaceae	Beaufortia	micrantha	Little Bottlebrush		Х	Х		Χ	Χ					
Myrtaceae	Calothamnus	gracilis	One-sided Bottle Bush		Х	Х	Х			Х				
Myrtaceae	Calytrix	duplistipulata								Χ				
Myrtaceae	Calytrix	leschenaultii								Χ				
Myrtaceae	Calytrix	decandra	Pink Starflower		Х	Х		Χ						
Myrtaceae	Chamelaucium	megalopetalum	Large Waxflower		Х	Х		Χ	Χ					
Myrtaceae	Conothamnus	aureus			Х	Х								
Myrtaceae	Cyathostemon	blackettii									Х			Χ
Myrtaceae	Cyathostemon	ambiguus			Х	Х	Х		Χ	Χ	Χ			Χ
Myrtaceae	Darwinia	vestita	Pom-pom Darwinia							Χ	Χ	Х		Χ
Myrtaceae	Darwinia	sp. Gibson		P1						Х		Х		
Myrtaceae	Eucalyptus	halophila			X									Χ
Myrtaceae	Eucalyptus	platypus	Moort			Х								
Myrtaceae	Eucalyptus	tumida							Χ					
Myrtaceae	Eucalyptus	conglobata ssp. conglobata												Х
Myrtaceae	Eucalyptus	forrestiana	Fuschia Gum							Χ				Χ
Myrtaceae	Eucalyptus	angulosa	Ridge-fruited Mallee			Х					Χ			

Myrtaceae	Eucalyptus	aspratilis									Χ				
Myrtaceae	Eucalyptus	lehmannii	Bushy Yate						Χ						
Myrtaceae	Eucalyptus	occidentalis	Swamp yate					Χ							
Myrtaceae	Eucalyptus	pleurocarpa	Tallerack			Х	Х		Χ	Χ	Χ				Х
Myrtaceae	Eucalyptus	rigens	Saltlake Mallee				Х			Χ	Χ	Χ	Х		Х
Myrtaceae	Eucalyptus	conglobata ssp. conglobata									Χ				
Myrtaceae	Eucalyptus	incrassata	Ridge-fruited Mallee								Χ				Х
Myrtaceae	Eucalyptus	kessellii ssp. kessellii					Х			Χ	Χ				
Myrtaceae	Eucalyptus	leptocalyx	Hopetoun Mallee								Χ		Х		Х
Myrtaceae	Eucalyptus	quadrans	Cascade Mallee												Х
Myrtaceae	Eucalyptus	tumida					Х				Χ				Х
Myrtaceae	Eucalyptus	uncinata	Hook-leaved Mallee				Х				Χ				Х
Myrtaceae	Eucalyptus	utilis	Coastal Moort				Х								
Myrtaceae	Kunzea	salina			P3						Χ	Χ		Х	
Myrtaceae	Leptospermum	oligandrum				Х	Х		Χ	Χ					
Myrtaceae	Leptospermum	spinescens	Spiny Tea Tree			Х	Х								
Myrtaceae	Leptospermum	laevigatum	Victorian Tea Tree	Χ		Х									
Myrtaceae	Melaleuca	pulchella	Crab Claw Melaleuca				Х	Х		Х	Χ	Х			Х
Myrtaceae	Melaleuca	brevifolia						Χ			Χ	Χ	Х	Х	
Myrtaceae	Melaleuca	plumosa				Х	Х	Χ			Χ	Χ		Х	Х
Myrtaceae	Melaleuca	pentagona var. latifolia				Х				Χ	Χ		Х		
Myrtaceae	Melaleuca	rigidifolia									Χ				
Myrtaceae	Melaleuca	glaberrima					Х				Χ				Х
Myrtaceae	Melaleuca	johnsonii						Χ							
Myrtaceae	Melaleuca	tuberculata var macrophylla								Х					
Myrtaceae	Melaleuca	brophyi									Χ	Χ			Х

Myrtaceae	Melaleuca	cuticularis	Saltwater Paper Bark			Х	Х						
Myrtaceae	Melaleuca	calycina											Х
Myrtaceae	Melaleuca	calcicola								Χ	Χ		Х
Myrtaceae	Melaleuca	hnatiukii								Χ	Χ		
Myrtaceae	Melaleuca	podiocarpa								Χ			Х
Myrtaceae	Melaleuca	linguiformis									Χ		
Myrtaceae	Melaleuca	striata			Χ	Х			Χ				
Myrtaceae	Melaleuca	uncinata								Χ			Х
Myrtaceae	Melaleuca	undulata								Χ			Х
Myrtaceae	Melaleuca	thyoides									Χ	Х	
Myrtaceae	Melaleuca	pentagona var latifolia											
Myrtaceae	Oxymyrrhine	gracilis				Х							
Myrtaceae	Phymatocarpus	maxwellii				Х	Х			Χ	Χ		Х
Myrtaceae	Rinzia	icosandra	Recherche Mainland Rinzia		Χ			Χ		Χ	Х		
Myrtaceae	Rinzia	dimorphandra	Esperance Rinzia		Χ								
Myrtaceae	Taxandria	spathulata			Χ								
Myrtaceae	Verticordia	inclusa			Χ								
Myrtaceae	Verticordia	eriocephala	Common Cauliflower			Х							
Myrtaceae	Verticordia	minutiflora							Χ				
Myrtaceae	Verticordia	roei ssp. roei			Χ	Х		Χ	Χ	Χ			
Myrtaceae	Verticordia	plumosa var. grandiflora			Χ					Х	Х	Х	Х
Orchidaceae	Microtis	media	Tall Mignonette Orchid									Х	
Pittosporaceae	Billardiera	lehmanniana	Kurup		Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X
Pittosporaceae	Billardiera	coriacea									Χ		
Pittosporaceae	Cheiranthera	filifolia											Х

Poaceae	Austrostipa	acrociliata									Χ		X	
Poaceae	Austrostipa	sp.			X				Χ			Χ		
Poaceae	Avena	fatua	Wild Oats	X	X	Х	Х							
Poaceae	Ehrharta	calycina	Perennial Veldt Grass	Х		Х								
Poaceae	Eragrostis	curvula	Love Grass	X		Х								
Poaceae	Eragrostis	dielsii	Mallee Lovegrass										Х	
Poaceae	Hordeum	murinum	Barley Grass	Х			Х							Χ
Poaceae	Lolium	perenne	Perennial Ryegrass	Х	X	Х						Χ		Χ
Poaceae	Neurachne	alopecuroidea	Foxtail Mulga Grass		Х	Х		Χ	Χ	Χ				
Poaceae	Parapholis	incurva		Х	X									
Poaceae	Rytidosperma	acerosum								Χ	Χ			Χ
Poaceae	Triticum	aestivum	Wheat									Χ		
Polygalaceae	Comesperma	spinosum	Spiny Milkwort							Χ				Χ
Polygalaceae	Comesperma	integerrimum			X		Х				Χ		Х	Χ
Polygonaceae	Muehlenbeckia	adpressa	Climbing Ilignum								Χ			
Primulaceae	Lysimachia	arvensis	Scarlet Pimpernel		X	Х								Χ
Proteaceae	Adenanthos	cuneatus	Jug Flower		X	Х		Χ						
Proteaceae	Banksia	repens	Creeping Banksia		Х	Х		Χ	Χ					
Proteaceae	Banksia	nutans	Nodding Banksia		X	Х			Χ					
Proteaceae	Banksia	armata	Prickly Dryandra			Х			Χ					
Proteaceae	Banksia	media	Sandplain Banksia		Х				Χ	Χ				
Proteaceae	Banksia	obtusa	Shining Honeypot		X					Χ				
Proteaceae	Banksia	speciosa	Showy Banksia, Esperance Banksia			Х								
Proteaceae	Banksia	pulchella	Teasle Banksia		X	Х								
Proteaceae	Banksia	obovata	Wedge leaf Dryandra		X	Х		Х	Х					
Proteaceae	Banksia	pteridifolia	Tangled Honeypot		X	Х								

Proteaceae	Conospermum	leianthum			Х	Х							
Proteaceae	Grevillea	plurijuga ssp. superba	Comb Leaf Grevillea			Х				Χ			Χ
Proteaceae	Grevillea	pauciflora subsp.				Х		Χ	Χ	Χ	Χ		Χ
		psilophylla											
Proteaceae	Grevillea	unknown							Χ				
Proteaceae	Hakea	cinerea	Ashy Hakea		Χ		Χ	Χ	Χ	Χ	Χ		Χ
Proteaceae	Hakea	corymbosa	Cauliflower Hakea		Χ				Χ				
Proteaceae	Hakea	pandanicarpa	Cricket Ball Hakea		Χ				Χ				
Proteaceae	Hakea	nitida	Frog Hakea			Х							
Proteaceae	Hakea	lissocarpha	Honey Bush			Х							
Proteaceae	Hakea	prostrata	Harsh Hakea		Х								
Proteaceae	Hakea	obliqua	Needles and corks		Х	Х			Χ				
Proteaceae	Hakea	laurina	Pin Cushion Hakea			Х							Χ
Proteaceae	Hakea	adnata					Χ			Χ	Χ	Χ	Χ
Proteaceae	Hakea	commutata											Χ
Proteaceae	Hakea	nitida	Frog Hakea							Χ			
Proteaceae	Isopogon	polycephalus	Clustered Conehead		Х	Х			Χ	Χ			
Proteaceae	Persoonia	scabra		P3 - KW121, Accession 8652.		Х							Χ
Proteaceae	Petrophile	teretifolia	Pixie Mops		Х	Х		Χ		Χ			
Proteaceae	Petrophile	fastigiata							Χ				
Proteaceae	Petrophile	squamata ssp. Northern							Х				
Proteaceae	Petrophile	teretifolia								Χ			
Proteaceae	Stirlingia	anethifolia			Х	Х							
Proteaceae	Synaphea	oligantha			Х				Χ				
Restionaceae	Chordifex	sphacelatus				Х		Χ					
Restionaceae	Desmocladus	myriocladus					Х						

Restionaceae	Hypolaena	humilis					Χ			Χ	Χ	Х	Х	
Restionaceae	Lepidobolus	chaetocephalus	Bristle-headed Chaff Rush		Х	Х		Χ	Х					
Restionaceae	Chordifex	sphacelatus			Χ	Χ				Χ				
Rhamnaceae	Pomaderris	rotundifolia								Χ				Χ
Rhamnaceae	Spyridium	minutum												Χ
Rhamnaceae	Spyridium	mucronatum ssp. mucronatum								Х				Х
Rutaceae	Boronia	fabianoides ssp. fabianoides												Х
Rutaceae	Boronia	inornata	Desert Boronia							Χ	Χ			Χ
Rutaceae	Boronia	crassifolia								Χ				
Rutaceae	Cyanothamnus	ramosus ssp. anethifolius			Х									
Rutaceae	Cyanothamnus	baeckeaceus ssp. baeckeaceus								Χ				Χ
Rutaceae	Microcybe	pauciflora								Χ				Χ
Rutaceae	Microcybe	multiflora ssp. multiflora								Χ	Х			
Rutaceae	Nematolepis	phebalioides									Χ			Χ
Rutaceae	Phebalium	lepidotum								Χ				Χ
Santalaceae	Exocarpos	sparteus	Native Cherry			Χ				Χ	Χ			Χ
Santalaceae	Exocarpos	aphyllus	Leafless Ballart											Χ
Santalaceae	Leptomeria	pachyclada								Χ				Χ
Santalaceae	Santalum	acuminatum	Quandong				Χ							
Sapindaceae	Dodonaea	caespitosa										Х		
Sapindaceae	Dodonaea	amblyophylla								Χ			Х	Χ
Stylidiaceae	Stylidium	repens	Matted Triggerplant		Χ									
Thymelaeaceae	Pimelea	brevifolia ssp. brevifolia								Χ		Х		

Thymelaeaceae	Pimelea	cracens						Χ		
Thymelaeaceae	Pimelea	angustifolia				Χ			·	

# 8.2 TPFL 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://dipaw.wa.gov.au/ under Standard Report Forms

TAXON: Astroloma sp.	. Grass Patch				TPFL I	Pop. No:	
OBSERVATION DATE:	30/10/20	CONS	SERVATION STAT	US: P2		New popula	tion 🖾
OBSERVER/S: Julie	Waters and Soph	ie Willsher		PH	ONE:	9083 1518	
ROLE: Environmental O	fficers	ORGA	NISATION: Shire	of Esperance			
DESCRIPTION OF LOCATIO	(Provide at least near	rest town/named locality,	and the distance and direct	ion to that place):	~47 kn	n north of E	sperance
townsite. ~20 km east of S	caddan townsite.	On Dempster Rd	, located 700 m of	Scaddan Rd an	d Demp	ster Rd inte	rsection
On eastern side of road res	serve						
					Reserve		
DBCA DISTRICT: Suth Coa		LGA: _Espera			anager pre	esent:	
1		M coords provided, Zone I DegMinSec   U		ETHODUSED: GPS 🔲 Diffe	orontial C	2DC - 1	ton 🖽
GDA94 / MGA94 🕅	. –	93472 m N		. satellites:	erential G	Map used:	Лар 🔲
AGD84 / AMG84	· —		-	undary polygon	"	map useu.	_
WGS84 Lon	ng / Easting: 406	6900 m E		ptured:	N	/lap scale:	
_	ZONE: 51	H					
LAND TENURE:						Shire mar	d reserve 🔯
Nature reserve  National park	Timber reserve  State forest	Private prope Pastoral lea	. —	Rail reserve			reserve 🔲
Conservation park	Water reserve		_	to	s	pecify other:	
AREA ASSESSMENT: Edg	. —		. —	a observed (m²):	. =		
EFFORT: Time : POP'N COUNT ACCURACY:	spent surveying (m : Actual 🗖	Extrapolation	No. of minu Estimate	tes spent / 100 n Count method:			
TO N COUNT ACCUMACT	. Actual 2	Extrapolation [	_	to field manual for list)		1	
WHAT COUNTED:	Plants 🔲	Clumps 🔲	Clonal stems				
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:			
Alive	1				Are	a of pop (m²	):
Dead					Note	e: Pis record cou	nt as numbers
QUADRATS PRESENT:	No.	Size	Data attached	Tot		percentages) for f quadrats (r	
Summary Quad. Totals: Alive	140:	Size	Data attacried	100	ar area o	i quadrats (i	
		11 12 =				_	
REPRODUCTIVE STATE:	Clonal 🔲 ure fruit 🔲	Vegetative  Fruit	Flowerbud   Dehisced fruit		Flower ntage in fl	_	6
CONDITION OF PLANTS:	Healthy	Moderate	Poor E	1 %	enescent		
COMMENT:	ricality 🗖	moderate 🗖				_	
						54.51	54 61
THREATS - type, agent and Eg clearing, too frequent fire, weed, dis			ante. Spenific speni utano	1	Current impact	Potential Impact	Potential Threat
Rate current and potential threat				TOO WILL	(N-E)	(L-E)	Onset
Estimate time to potential impact:							(S-L)
Proposed road widening:		•	nger occurring. If to	o occur	?H	н	S
in future than the single p	iant will be taken						
•							
•							
						1	

LANDFORM: ROCK TYPE: LOOSE ROCK: SOIL TYPE: SOIL COLOUR: DRAINAGE:  Crest   Granite   Granite   Granite   Gravel, quart fields  Sandy loam   Red   Weldrained   Seasonally gravel, quart fields  Sandy loam   White   Gravel   Gravel, quart fields  Sandy loam   White   Gravel   Gravel	HABITAT INFORMATI	ON:				
Hill   Dolerite   gravel, quartz fields)   Sandy loam   Brown   Inundated   Inundated   Permanently inundated   In	LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Ridge Laterite	Crest 🔲	Granite 🔲		Sand 🛛	Red 🔲	Well drained 🛛
Outrop   Ironstone   0-10%   Clay loam   White   Permanently inundated   10-30%   Eight clay   Grey   Tidal   Tidal   Tidal   Peat   Black   Tidal   T	Hill 🔲	Dolerite 🔲	gravel, quartz fields)	Sandy Ioam 🔲	Brown 🔲	
Cutorop   Ironstone   10-30%   Clay loam   White   Clay loam   Cla	Ridge 🔲	Laterite 🔲	0.400/ 🗖	Loam 🔲	Yellow 🔲	_
Slope   Limestone   30-50%   Eight clay   Grey   Tidal	Outcrop 🔲	Ironstone 🔲	_	Clay loam 🔲	White 🛛	
Peat Black Open depression   Specify other:   Specify oth	Slope 🔲	Limestone 🔲	_	Light clay 🔲	Grey 🔲	_
Open depression   Specify other:   Speci	Flat 🔲	Quartz 🔲	_	Pest 🔲	Black 🔲	
Closed depression   Specific Landform Element:   Deep sandplain	Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Wetland	Drainage line 🔲					
Refer to field manual for additional values    Deep satisfying	Closed depression 🔲	Specific Landford	m Flement:			
VEGETATION CLASSIFICATION:  Eg: 1. Banksia woodland (B. 2. )  I. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  II. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland over mixed Proteaceous shrubland (B. 3. )  III. Banksia speciosa open woodland (B. 2. )  III. Banksia speciosa open woodland (B. 2. )  III. Banksia speciosa open woodland (B. 2. )  III. Banksia speciosa open woodlands (B. 2. )  III. Banksia speciosa	Wetland 🔲		Deep	sandplain		
Eg: 1. Banksia woodland (B. attenuata, B. licifola); 2. Open shrubland (Hibbria sp. Acadis sp.); 3. Bollated clumps of sedges (Mesonaleans therapons) 4. ASSOCIATED SPECIES: Cither (pon-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 Sol and structural formation table.  CONDITION OF HABITAT: Pristine   Excellent   Very good   Good   Degraded   Completely degraded   COMMENT:   Fire HISTORY: Last Fire: Season/Month:   Year:   Fire Intensity: High   Medium   Low   No signs of fire   FENCING:   Not required   Present   Replace / repair   Required   Length req'd:   ROAD SIDE MARKERS:   Not required   Present   Replace / reposition   Required   Quantity req'd:   OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)  EXEMPLIFY COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)  EXEMPLIFY COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)  EXEMPLIFY COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)  EXEMPLIFY COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include data. So include details of additional data available, and how to locate it.)  EXEMPLIFY COMMENTS: (Please include recommended management actions and/or implemented actions - include data. Also include data. Solve the provided in the provided included in the provided included included in the provided included included included included included included included included included i	CONDITION OF SOIL:	Dry 🛛	Moist 🔳	Waterlogged 🔲	Inundated 🔲	
Eg. 1. Bankala woodland (8. afternata, 8. litefolia); 2. Cypen simulations of particles (1. cypen simulations of particles); 3. soliated clumps of sofges (Mesomeliaena tetragona); 4. ASSOCIATED SPECIES:  Other (non-dominant) spp  Please record up to but of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 AustraNan Soil and structural formation table.  CONDITION OF HABITAT: Pristine   Excellent   Very good   Good   Degraded   Completely degraded   COMMENT:    FIRE HISTORY: Last Fire: Season/Month:   Year:   Fire Intensity: High   Medium   Low   No signs of fire    FENCING: Not required   Present   Replace / repair   Required   Length req'd:    FOAD SIDE MARKERS: Not required   Present   Replace / reposition   Required   Quantity req'd:    OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)  KW120, Accession 8652. Specimen confirmed by WA Herbarium on 10/12/20. Specimen not retained.		1. Banksia speciosa	open woodland over	mixed Proteaceous :	shrubland	
2. Open shrubland (Hibberia sp. Acadia spp.); 3. Isolated clumps of sedges (Mesomelanes tortagena) 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). Situctural Formations should follow 2009 Australian Soil and Land Survey Pield Handbook guidelines — refer to field manual for further information and structural formation table.  CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded FIRE HISTORY: Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No signs of fire FIRE HISTORY: Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No signs of fire ROAD SIDE MARKERS: Not required Present Replace / repair Required Countity req'd: William Stable include details of additional data available, and how to locate it.)  KW120, Accession 8652. Specimen confirmed by WA Herbarium on 10/12/20. Specimen not retained.  DRF PERMIT/ LICENCE No: FB62000139 Note if only observing plants (i.e. no specimens or plant matieral is taken) then no permithicence is required. For	Eg: 1. Banksia woodland (B.	2.				
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 Intensity: High   Medium   Low   No signs of fire   FENCING:   Not required   Present   Replace / repair   Required   Length req'd:   FENCING:   Not required   Present   Replace / reposition   Required   Quantity req'd:    OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)  KW120, Accession 8652. Specimen confirmed by WA Herbarium on 10/12/20. Specimen not retained.  DRF PERMIT/ LICENCE No: FB62000139   Note if only observing plants (i.e. no specimens or plant material is taken) then no permitticence is required. For	<ol><li>Open shrubland</li></ol>	3.				
Adenanthos cuneatus, Banksia speciosa, Calothamnus gracilis, Beaufortia micrantha    Presentation   Presentatio	3. Isolated clumps of sedges	4.				
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 Austrelian Soil and Survey Field Hendbook guidelines – refer to field manual for further information and structural formation table.  CONDITION OF HABITAT: Pristine		Adenanthos cuneatu	ıs. Banksia speciosa.	Calothamnus gracili	s. Beaufortia micrant	tha
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 Austrelian Sof and Survey Pield Handbook guidelines - refer to field manual for further information and structural formation table.  CONDITION OF HABITAT: Pristine	SPECIES:					
Land Survey Fleid 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 Intensity: High   Medium   Low   No signs of fire   FIRE HISTORY: Last Fire: Season/Month:   Year:   Fire Intensity: High   Medium   Low   No signs of fire   FENCING:   Not required   Present   Replace / repair   Required   Length req'd:   ROAD SIDE MARKERS:   Not required   Present   Replace / reposition   Required   Quantity req'd:   OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)  KW120, Accession 8652. Specimen confirmed by WA Herbarium on 10/12/20. Specimen not retained.  DRF PERMIT/ LICENCE No: FB62000139   Note if only observing plants (i.e. no specimens or plant materal is taken) then no permittilicence is required. For		most representative vegetation	lavers (with up to those domina	ant species in each laver). Str	uctural Formations should follow	ow 2009 Australian Soli and
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DRF PERMIT/ LICENCE No: FB62000139 Note if only observing plants (i.e. no specimens or plant matieral is taken) then no permit/licence is required. For				,		
	KW120, Accession 8	652. Specimen confir	ned by WA Herbariun	n on 10/12/20. Speci	men not retained.	
should be recorded above in the OTHER COMMENTS section.	should be recorded above in the	ne OTHER COMMENTS section	n			
		ors INO:	www.nero. 🔼 Region	iai neib. 🔲 - District	neib. U Other: _	
ATTACHED: Map Mudmap Photo GIS data Field notes Other:	Map				Other:	
COPY SENT TO: Regional Office ☑ District Office ☑ Other:  Submitter of Record: Katie White Role: Environmental Officer Signed: KW Date: 15/01/21					Date: 15/01/21	



# Threatened and Priority

# Flora Report Form

Version 1,3 August 2017

Please complete as much of is fam please refer to the Threatened !	S Priority Flora Report F		c 10-1-1				
OBSERVATION DATE:	10/9/ he hate	ers /	Kat Wal		HONE: 9	Pop. No: New populai 1083/S	
DESCRIPTION OF LOCATION SO	IN (Provide at least res SVH 9 SIDL (	1 N 1- 1	by boo	on to thet place):		PSTER	2 RD
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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:

Record Entered in: Database D

CANADA CA		Flora Repo	rt Form	Version	on 1.3 August 2017
ABITAT INFORMATION					
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red □	Well drained
Hill 🗀	Dolerite 🔲	gravel, quartz fields)	Sandy loam	Brown 🗆	Seasonally
Ridge 🔲	Laterite	0.400	Loam 🗀	Yellow	inundated 🛄
Outcrop	Ironstone	0-10%	Clay loam	White [	Permanently Inundated
Slope 🖂	Limestone	10-30%	Light clay	Grey □	Tidal [
Flat 🗆	Quartz	30-50%	Pest	Black [	
Open depression 🕡	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line					
losed depression 🗌	Specific Landforn	m Floment			
Wetland [	(Refer to field manual for				
DNDITION OF SOIL;	Dry 🗆	Moist 🗆	Waterlogged	Inundated	
EGETATION 1	Meleleu	ca clans	bland	Pulsaine	salt
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Open shrubland 3 lbberta sp., Acada spp.);					
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#### Threatened and Priority

Flora Report Form

Version 1.3 August 2017

Please complete at much of the form as possible, with amphasis on those sections bordered in black. For internetor unlow to consists, the form please rate is the Treatment & Pricely Pleas Report Form 1997, more all on the DECA valuable of the Displace Appendix Standard Report Form

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2.7 KM	NOVW			mpste		
GDAS4/MGAS4 Lat AGD84/AMG84 Lat	ORDINATES: (FL CDegrees   L/ Northing:	] Pastoral ina:	of to required. MEY  TIME C G  No. :  Bour  capt	Land manag HOD USED: PS Differer actatities: Indexy polygon used:  Ptail meaner Di cod receive D	Map used:	ű reserve □
AREA ASSESSMENT: Edg EFFORT: Time POP'N GOUNT ACCURACY WHAT COUNTED: TOTAL POP'N STRUCTURE:	spent surveying	Partial survey Fi (minutes): Extrapolation C	No. of minute Estimate	observed (m²); ss spent / 100 m²; Count method: feb messi for bit) Totels;		
Alive Dead	50				Area of pop (m) Note: Ple secural cos (not perceyrages) for	ni sa randera
QUADRATS PRESENT: Summary Quart. Totals: Alice REPRODUCTIVE STATE:	Clonel	Vapatative []	Flowerbud D	п	erea of quadrata	(m²):
Turker was at any one of	tteathy a	Moderwar 🗆	Poor [	17257783	icent. 🗆	7-1
THREATS - type, agent and Eg clearing, loc liegent fire, weed, d Role current and potential threat Extresis time is potential impact	locone . Refer to first: tripast: N=NX, L=Loc	reason for list of thomas & op v. W-Madken, 19-15gh, C-Cal	Ne'tsi	Gun Imp (N	act Impact	Potential Threat Onset (S-L)
· None						_

Please return completed form to Species And Communities Branch DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flore.data@dbca.wa.gov.au
RECORDS: Please furnant to Flore Administrative Officer, Species and Communities Branch.

Committee and		Eloso Dana	of English		
		Flora Repo	n, rom	Vensi	on 1.3 August 2017
(ABITAT INFORMATIO)			SALE STORES	Annual most more	BECOME SEE
LANDFORM:	ROCK TYPE:	LOOSE ROCK	SOIL TYPE:	SOIL COLDUR:	DRAMAGE
Creet  HII	Granile [	(on soil surface, eg- gravel, quartz fields)	Sand 🗆	Red 🗆	Well drained 🖃
Ridge []	Dolonte □ Laterite □		Sandy loam  Loam	Brown □ Yellow □	Seasonally inundated [5
Outcop [	frontsone	0-10%	Clay loam	White	Permanently
Stope	Limeatone	10-30%	Light day	Grey 🖸	Inundated []
Flat []	Quartz:	30-50%	Peat [	Black []	Tidal [
Open depression Z	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line	shoulf waren		about area.	or conf. com	
Closed depression [	77.5		-		
Wetland [	Specific Landford				
DINDITION OF SOIL:	(Refer to feld manual fail	Motest	Waterlogged	Intentivisti 🖂	
EGETATION			lake.		
LASSIFICATION: -	tringio	g salt	lare.		
g. 1. Birnisla woudand (B	2. 0	8000			
	3.				
	4.				
ASSOCIATED V	Not. In	atinukii			
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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 <a href="https://doi.org/10.1007/j.com/nature/na

TAXON: Dampiera sericantha			TPFL I	Pop. No:	
OBSERVATION DATE: 30/10/	20 CONSER	RVATION STATUS: P3		New popula	tion 🗵
OBSERVER/S: Julie Waters a	nd Sophie Willsher		PHONE:	9083 1518	
ROLE: Environmental Officer	ORGANIS	ATION: Shire of Esperan	ce		
DESCRIPTION OF LOCATION (Provide	at least nearest town/named locality, and ti	he distance and direction to that place	: ~47 kr	n north of E	sperance
townsite. ~20 km east of Scaddan t	ownsite. on Dempster Rd, 10	0 to 750 m north of intersec	ction with De	empster Rd	and
Scaddan Rd. On Both sides of road	reserve.				
			Reserve	No:	
DBCA DISTRICT: south Coast	LGA: Esperance		nd manager pre	esent:	
DATUM: COORDINATI DecDegrees	ES: (If UTM coords provided, Zone is als  DegMinSec UTM				. –
GDA94 / MGA94 🕅		_ 0.00	Differential G		Map 🔲
AGD84 / AMG84 Lat / Northin	ng: 6293107 m N	No. satellites:		/lap used:	_
WGS84 Long / Eastin	ng: 406515 m E	Boundary polyg captured:	, I	/lap scale:	
Unknown ZON	IE: 51 H				
LAND TENURE:				OL:	
Nature reserve Timber re		_	_		reserve 🔲
	forest Pastoral lease   serve UCL	_	_	pecify other:	
				pecy ce	
AREA ASSESSMENT: Edge survey		survey 🔲 Area observed			
1	veying (minutes):	No. of minutes spent / 1			
POP'N COUNT ACCURACY: Actus	Extrapolation 🔲	Estimate Count met (Refer to field manual fi		l .	
WHAT COUNTED: Plants	Clumps C	Clonal stems			
TOTAL POP'N STRUCTURE: Mature	1	Seedlings: Totals:			
Alive Not co	unted		Are	a of pop (m²	):
				: Pls record cou	_
Dead				percentages) for	
QUADRATS PRESENT: No.	Size	Data attached 🔲	Total area o	f quadrats (r	m²):
Summary Quad. Totals: Alive					
REPRODUCTIVE STATE: Clonal	Vegetative □	Flowerbud	Flower		
Immature fruit	Fruit 🗖	Dehisced fruit 🔲 F	ercentage in fl	ower. 9	6
CONDITION OF PLANTS: Healthy	Moderate ■	Poor	Senescent		
COMMENT:					
THREATS - type, agent and supporti	ng information:		Current	Potential	Potential
Eg clearing, too frequent fire, weed, disease. Refer	-	Specify agent where relevant.	impact	Impact	Threat Onset
Rate current and potential threat impact: N=N			(N-E)	(L-E)	(S-L)
Road widening - was proposed to	, tr, vt,	<u>'</u>			
Population was not counted and to		year. No longer occurring	?L	L-M	S
Opulation was not counted and to	an impact not occinion				
•					

HABITAT INFORMATION	ON:				
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 Ioam 🔲	Brown 🔲	Seasonally
Ridge 🔲	Laterite 🔲	0.40%	Loam	Yellow 🔲	inundated
Outcrop	Ironstone 🔲	0-10%	Clay loam 🔲	White 🛛	Permanently inundated
Slope 🔲	Limestone 🔲	10-30% 30-50%	Light clay 🔲	Grey 🔲	Tidal
Flat 🔲	Quartz 🔲	_	Pest 🔲	Black 🔲	
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🔲					
Closed depression 🔲	Secrific Landfor	m Flomost:		_	
Wetland 🔲	Specific Landfor (Refer to field manual for	Deep	sandplain		
CONDITION OF SOIL:	Dry 🔲	Moist	Waterlogged	Inundated 🔲	
VEGETATION	<ol> <li>Banksia speciosa</li> </ol>	open woodland over	mixed Proteaceous s	shrubland	
CLASSIFICATION*:	2.				
Eg: 1. Banksia woodland (B. attenuata, B. Ilicifolia);	2				
<ol><li>Open shrubland (Hibbertia sp., Acacia spp.);</li></ol>	3.				
<ol> <li>Isolated clumps of sedges (Mesomelaena tetragona)</li> </ol>	4.				
ASSOCIATED SPECIES:	Banksia speciosa, E	Beaufortia empetrifolia	, Banksia repens, Iso	pogon polycephalus	, Melaleuca striatus
Other (non-dominant) spp					
* Please record up to four of the Land Survey Field Handbook gu				uctural Formations should follo	ow 2009 Australian Soll and
CONDITION OF HABITAT	Γ: Pristine	Excellent   Very go	ood 🔲 Good 🗖	Degraded 🔲 Com	pletely degraded 🔲
COMMENT:					
FIRE HISTORY: La	ast Fire: Season/Month	Year:	Fire Intensity: Hig	gh 🔲 Medium 🔲 🗆 Low 🛭	No signs of fire   ■
FENCING:	Not required 🛛	Present 🔲 Repla	ce / repair 🔲	Required 🔲 Leng	th req'd:
ROAD SIDE MARKERS:	Not required 🛛	Present 🔲 Repla	ce / reposition 🔲	Required 🔲 Quar	ntity req'd:
		nended management ac		ed actions - include	
		ailable, and how to locat	e it.)		
Almost all plants pres					
KW119, Accession 8	652. Confirmed by W.	A herbarium on 10/12	/20. Specimen retain	ed.	
DRF PERMIT/ LICENC	E No: FB62000139	Note if only observing plants	(i.e. no specimens or plant m	atieral is taken) then no perm	it/licence is required. For
further information on permit at should be recorded above in the	nd licening requirements see the OTHER COMMENTS section	ne Threatened Flora and Wildlif n.	e Licensing pages on DBCA's	website. Any actions carried	out under licence/permit
SPECIMEN: Collect	ors No:	WA Herb. 🛛 Regio	nal Herb. 🔲 🛮 District	Herb. 🔲 Other:	
ATTACHED: Map	■ Mudmap ■	Photo  GIS data	Field notes	Other:	
	egional Office 🛛	District Office	Other:		
Submitter of Record: Ka	atie White Role:	_Environmental Office	er Signed: KW	Date: 15/01/21	

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://depaw.wa.gov.au/...under Standard Report Forms

TAXON: Darwinia	sp. Gibson						TPFL	Pop. No:	
OBSERVATION DATI	E: 16/10/20		CONSE	RVATION S	TATUS:	P1		New popula	ition 🗵
OBSERVER/S:	ulie Waters and	Sophie Willshe	er			PI	HONE:	9083 1518	
ROLE: Environment	tal Officer		ORGANI	SATION: SI	hire of Es	perance			
DESCRIPTION OF LOC	ATION (Provide at lease	st nearest town/nam	ed locality, and	the distance and	direction to t	hat place):	~47 kr	m north of E	sperance
townsite. ~20 km east	of Scaddan town	site. On Demp	oster Rd, ~	5.6 km north	of Scad	dan Rd. (	On northe	ern side of s	alt lake
on eastern road reserv	/e								
							Reserve		
DBCA DISTRICT: Sout	th Coast	LGA:	Esperan			Land n	nanager pre	esent: 🔲	
DATUM:	COORDINATES: DecDegrees	(# UTM coords prov DegMinSec		iso required) Ms 🔯	METHO GPS	DUSED:	fferential (	SPS 🗖 N	Map 🔳
GDA94 / MGA94 🖸	Lat / Northing:	629786.2 m		_	No. sate			Map used:	
AGD84 / AMG84 🔲 WGS84 🔲	Long / Easting:	408644 m E			Boundar captured	y polygon	. 1	Map scale:	
Unknown 🔲	ZONE:	51 H			captured		•		_
LAND TENURE:		0111							
Nature reserve 🔳	Timber reserve	e 🔲 Pri	vate property		Rail	reserve 🔲			d reserve 🛛
National park	State fores	_	astoral lease	_		reserve 🔲			n reserve 🔲
Conservation park	Water reserve	: 0	UCL	. SLK/Po	ne	to		Specify other:	
AREA ASSESSMENT:	Edge survey 🔲	Partial survey	/ 🛛 Full	survey 🔲	Area obs	erved (m²	):		
EFFORT: T	ime spent surveyin	ng (minutes):				ent / 100	m²: 30		
POP'N COUNT ACCUR	ACY: Actual	Extrapola	tion 🔲	Estimate 🖾		unt method manual for its			
WHAT COUNTED:	Plants 🛛	Clumps		Clonal stems	_	manual for is			
TOTAL POP'N STRUCTUR	RE: Mature:	Juveni	les:	Seedlings:	То	tals:			
Alive	e 10 plants						Are	ea of pop (m²	):
Dead	d							e: Pis record cou t percentages) for	
QUADRATS PRESENT:	No.	Size		Data atta	ched 🔲	т		of quadrats (i	
Summary Quad. Totals: A	live								_
REPRODUCTIVE STATE:	Clonal 🗖	Vegetativ	еП	Flowerbu	ud 🗖		Flower	п	
Ir	mmature fruit 🔲	Fruit	_	Dehisced fro	_	Pero	entage in f	_	6
CONDITION OF PLANTS:	Healthy 🔲	Moderate	= 🗆	Po	or 🔲	9	Senescent		
COMMENT:									
THREATS - type, agent	and supporting it	nformation:				$\overline{}$	Current	Potential	Potential
Eg clearing, too frequent fire, we			hreats & agent	s. Specify agent v	where relevan	st.	impact	Impact	Threat Onset
Rate current and potential t			-				(N-E)	(L-E)	(S-L)
Estimate time to potential in					itiand \//	20			(,
<ul> <li>Originally surveyed a not counted how man</li> </ul>			•			as	?M	М-Н	s
•	, , , , , , , , , , , , , , , , , , , ,		,,,,,,,,,,		31				
•									

HABITAT INFORMATI	ON:				
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 Ioam 🔲	Brown 🗵	Seasonally
Ridge 🔲	Laterite 🔲	=	Loam 🔲	Yellow 🔲	inundated 🛛
Outcrop	Ironstone 🔲	0-10%	Clay loam 🔲	White	Permanently inundated
Slope 🔲	Limestone	10-30%	Light clay 🛛	Grey 🔲	Tidal 🗖
Flat 🔲	Quartz 🔲	30-50%	Peat 🔲	Black 🔲	III I
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🔲					
Closed depression 🛛			_	_	
Wetland	Specific Landfo (Refer to field manual fo	Oll De	riphery of salt lake		
CONDITION OF SOIL:	Dry 🔳	Moist 🗵	Waterlogged	Inundated 🔲	
VEGETATION	1. Present in dense	shrub layer directly or	n perophery of salt la	ke. Closed Melaleud	a shrubland
CLASSIFICATION*:	2. fringing salt lake	with scattered Mallee			
Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia); 2. Open shrubland	3.				
(Hibbertia sp., Acada spp.); 3. Isolated clumps of sedges	4				
(Mesomelaena tetragona)	4.				
ASSOCIATED SPECIES:	Nematolepis pheba	aloides, Eucalyptus sp.	, Melaleuca hnatiukii		
Other (non-dominant) spp					
		on layers (with up to three domin of for further information and stru-		ructural Formations should for	llow 2009 Australian Soll and
CONDITION OF HABITAT			ood Good G	Degraded  Co	mpletely degraded
COMMENT:		Enderters & Tory &		219,0025 🚨 00	presery originates [
FIRE HISTORY: La	st Fire: Season/Month	n: Year:	Fire Intensity: Hi	gh 🔲 Medium 🔲 Low	■ No signs of fire ■
FENCING:	Not required 🛛	Present 🔳 Repla	ce / repair 🔲	Required  Ler	ngth req'd:
ROAD SIDE MARKERS:	Not required 🛛	Present 🔲 Repla	ce / reposition 🔳	Required 🔲 Qu	antity req'd:
OTHER COMMENTS:	Please include recom-	mended management ac	tions and/or implement	ted actions - include	_
		ailable, and how to locat		ied dollorid moldde	
KW116, Accession 8	652. Confirmed by W	/A Herbarium on 10/12	2/20. Specimen retair	ned by WA herbariu	m
DRF PERMIT/ LICENC			(i.e. no specimens or plant n		
further information on permit a should be recorded above in the		the Threatened Flora and Wildlif on.	'e Licensing pages on DBCA's	s website. Any actions carried	d out under licence/permit
SPECIMEN: Collect	ors No:	WA Herb. 🛛 Regio	nal Herb. 🔲 🛮 District	Herb. 🔲 Other: _	
ATTACHED: Map	■ Mudmap ■	Photo GIS data	Field notes	Other:	
<u>'</u>	egional Office 🛛	District Office 🛛	Other:		
Submitter of Record: Ka	tie White Role:	Environmental officer	Signed: KW_	Date: 15/01/21	



## 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 at http://dxaw.ee.gov.au/under Standard Report Forms

TAXON: Austrobaeckea uncinella	TPFL	Pop. No:	
OBSERVATION DATE: 21/12/21 CONSERVATION STATUS: P3		New popula	tion 🛛
OBSERVER/S: Julie Waters		9083 1518	_
ROLE: Environmental Officer ORGANI SATION: Shire of Esperar	nce		
DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place	e):		
On Dempster Rd, located @ 3 separate lakes; 3.3km, 4.0km and 4.7km south of Norwood	Rd / Demps	ter rd inters	ection on
Dempter Rd			
	Reserve	No:	
	and manager pr	esent: 🔲	
DATUM: COORDINATES: (If UTM coords provided, Zone is also required) METHOD USI  DecDegrees DegMinSec UTMs GPS GPS		one E	fap 🗖
GDA94 / MGA94 🕷	Differential (		иар 🗖
AGD84 / AMG84  Boundary note	mon	Map used:	= 1
WGS84 Long / Easting: Boundary poly Unknown Captured:		Map scale:	_
ZONE:			
LAND TENURE:	-	Shire soo	reserve 🗷
Nature reserve Timber reserve Private property Rail reserve National park State forest Pastoral lease MRWA road reserve			reserve
Conservation park  Water reserve UCL SLK/Pole to	_	Specify other:	
AREA A\$\$E\$\$MENT: Edge survey □ Partial survey ▼ Full survey □ Area observed	/ma2/s	_	
EFFORT: Time spent surveying (minutes): 120 No. of minutes spent /	` ' =		
POP'N COUNT ACCURACY: Actual Extrapolation  Estimate  Count me			
(Refer to field manual			
WHAT COUNTED: Plants Clumps Clonal stems			
TOTAL POP'N STRUCTURE: Mature: Juveniles: Seedlings: Totals:			
Alive 100's of plants	Are	ea of pop (m²	):
Dead		e: Pls record cou	
QUADRAT S PRESENT: No. Size Data attached		t percentages) for of quadrats (r	
	Total alea c	or quadrats (i	
Summary Quad. Totals: Alive			
REPRODUCTIVE STATE: Cional Vegetative Flowerbud Flowerbud Fruit Fruit Dehisced fruit	Flower Percentage in f		.
	Senescent		,
CONDITION OF PLANTS: Healthy ■ Moderate □ Poor □  COMMENT:	senescent	_	
		n-14-1	Potential
THREATS - type, agent and supporting information:  Egidearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant.	Current	Potential Impact	Threat
Rate current and potential threat impact. N=Nii, L=Low, M=Medium, H=High, E=Extreme	(N-E)	(L-E)	Onset
Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			(8-L)
Proposed road widening will impact on 2 plants	- u	i i	s
		_	
•			
	+		$\vdash$
•			
	1		
Please return completed form to Species And Communities	Branch D	BCA.	
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flo		-	r.au
RECORDS: Please forward to Flora Administrative Officer, Species and Con Record entered by: Sheet No.:		nch. ord Entered Ir	Defebers C
Reduct entered by: sheet NO.:	H00	our cureted II	i paranare H



## Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION	ON:				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite 🔲	(on soil surface; eg	Sand 🔲	Red 🔲	Well drained
Hill 🔲	Dolerite 🔲	gravel, quartz fields)	Sandy loam 🔲	Brown 🔲	Seasonally _
Ridge 🔲	Laterite	0.40%	Loam 🔲	Yellow 🔲	inundated 🛭
Outcrop 🔲	Ironstone	0-10%	Clay loam 📓	White	Permanently inundated
Slope 🔲	Limestone	10-30%	Light clay 🔲	Grey 🛭	Tidal 🔲
Flat 🔲	Quartz 🔲	30-50%	Peat 🔲	Black 🔲	
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🔲					
Closed depression 🛮					
Wetland	Specific Landform (Refer to field manual for a	Deep s	andplain		
CONDITION OF SOIL:	Dry 🗖	Moist 🗖	Waterlogged 🔲	Inundated 🔲	
VEGETATION	1. Fringing salt lake v	regetation			
CLASSIFICATION*:	2.	-g-iation			
Eg: 1. Banksia woodland (B. afterupta B. Hoffelia):	2.				
attenuata, B. Ilidfolia); 2. Open shrubland (Hibbertia sp., Acadia spp.);	3.				
<ol><li>Isolated clumps of sedges</li></ol>	4.				
(Mesomelaena tetragona) ASSOCIATED	Melaleauca hnatiukii,	Cysetostem ambiguu	is Astroloma so Gi	race Patch Meleuca	uncinata
SPECIES:	Welaleadoa IIIIabakii,	Cyastostem ambigut	as, Astroionna sp. Oi	ass I atoli, Meledoa	anomata
Other (non-dominant) spp					
	most representative vegetation i idelines – refer to field manual fo			ructural Formations should folio	w/2009 Australian Soll and
CONDITION OF HABITAT	T: Pristine 🗖 E	Excellent  Very go	od 🗖 Good 🗖	Degraded	pletely degraded
COMMENT:					,,, =
FIRE HISTORY: LE	st Fire: Season/Month:	Year:	Fire intensity: Hig	ph 🔲 Medium 🔲 🗆 Low 🕻	No signs of fire ■
FENCING:	Not required	Present Replac	e / repair 🗖	Required Leng	gth reg'd:
ROAD SIDE MARKERS:	Not required	=	e / reposition		ntity reg'd:
TOAD VIDE MARKETO.	rest required as	result in respino	e / repuseon 🔤	reduies E Qua	saxy red a.
	Please include recomme ls of additional data avail			ed actions - include	
	I, JW03821, Accessio			barium on 1/2/2021. 9	Specimens not
retained.	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,		
	- W FT+000707				
DRF PERMIT/ LICENC further information on permit as	E NO: F11000787 N nd licening requirements see the	Note if only observing plants (i.e. Threatened Flora and Wildlife			
should be recorded above in the	ne OTHER COMMENTS section.		0.0		
SPECIMEN: Collect	ors No:	WA Herb. 📓 Region	al Herb. District	Herb.  Other:	
ATTACHED: Map		Photo 🔲 GIS data	_	Other:	
	egional Office 🛭	District Office	Other:		
Submitter of Record: Ju	ile vvaters Role: _t	Environmental Coordi	nator_ Signed: J\	N Date: 18/02	722
Plea	se return complete	d form to Species	And Commun	ities Branch DB0	CA,
Locked Bag 1	104, BENTLEY DELI	VERY CENTRE W.	A 6983 OR email	to: flora.data@dbcs	a.wa.gov.au
	CORDS: Please forward				

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 <a href="http://dipaw.wa.gov.au/">http://dipaw.wa.gov.au/</a> under Standard Report Forms

TAXON: Daviesi	a pauciflora					TPFL	Pop. No:	
OBSERVATION DA	TE: 23/10/20		CONSERVATION	ON STATUS	: P3	_	New popula	ation 🛛
OBSERVER/S:	Julie Waters and I	Danika Penson			PH	IONE:	9083 1518	
ROLE: Environme	ntal Officers		ORGANISATION:	Shire of E	Esperance			
DESCRIPTION OF LO	CATION (Provide at lea	st nearest town/named	l locality, and the distant	ce and direction to	that place):	~47 ki	m north of E	sperance
~20 km east of Scad	dan townsite. On [	Dempster Rd, Sc	cattered regularly	/ between 1.	4 and 1.7 k	m north	of Scaddan	Rd and
Dempster Rd interse	ction.							
						Reserve		
	uth Coast		Esperance			nanager pr	esent:	
DATUM:	COORDINATES: DecDegrees	(If UTM coords provide DegMinSec			OD USED:	ferential (	ene <b>m</b>	Map 🔳
GDA94 / MGA94 🔯	Lat / Northing:	6294146 m N	_ 05 _		tellites:		Map used:	wap 🔲
AGD84 / AMG84	•				ary polygon			_
WGS84 Unknown	Long / Easting:	407573 m E		captur			Map scale:	
_	ZONE:	51 H						
LAND TENURE:	Ti-sh	E Die		n-			Shire ma	d reserve 🛛
Nature reserve  National park	Timber reserve State fores	_	ite property 🔲 storal lease 🔲		ail reserve 🔲 ad reserve 🔲			n reserve 🔲
Conservation park	Water reserve	_	_	LK/Pole	_	5	Specify other:	
AREA ASSESSMENT:		Partial survey		_	bserved (m²)			
EFFORT: POP'N COUNT ACCU	Time spent surveyir RACY: Actual	ng (minutes): Extrapolation	_	o. of minutes	ount method			
1 01 11 000111 71000	7,000.	Daropolatio		_	ld manual for list			
WHAT COUNTED:	Plants 🛛	Clumps [	Clonal s	tems 🔲				
TOTAL POP'N STRUCTU	JRE: Mature:	Juvenile	es: Seedli	ngs: T	otals:			
Ali	ve 29					An	ea of pop (m²	²):
De	ad						e: Pis record cou t percentages) fo	
OHADDATE DDECEN	T. No.	Di	D-4					
QUADRATS PRESENT		Size	Data	a attached	1 10	tai area d	of quadrats (	m²):
Summary Quad. Totals:	Alive							
REPRODUCTIVE STATE		Vegetative		owerbud 🔲	D	Flower	_	r
	Immature fruit	Fruit	_	ced fruit 🔲		entage in f		10
CONDITION OF PLANTS	6: Healthy 🔲	Moderate		Poor 🔲	S	enescent		
COMMENT:								
THREATS - type, ager	nt and supporting i	nformation:				Current	Potential	Potential Threat
Eg clearing, too frequent fire,				agent where relev	rant.	impact (N-E)	Impact (L-E)	Onset
	al threat impact: N=NII, L=L I impact: S=Short (<12mth		-			(11-2)	(2-2)	(S-L)
Road widening - wa				ting in the c	oming	-		_
financial year. Not o						?M	M-H	s
•						_		
•								
-							-	-

HABITAT INFORMATION	ON:				
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 Ioam 🔲	Brown 🗵	Seasonally
Ridge 🔲	Laterite		Loam 🔲	Yellow 🔲	inundated 🔲
Outcrop 🔲	Ironstone 🔲	0-10%	Clay loam	White	Permanently inundated
Slope 🔲	Limestone	10-30%	Light clay	Grey 🔲	Tidal
Flat 🛛	Quartz 🔲	30-50%	Pest 🔲	Black 🔲	ildai 🔲
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🔲			Sand over Gravel		
Closed depression		51			
Wetland 🔲	Specific Landfor (Refer to field manual for				
CONDITION OF SOIL:	Dry 🗵	Moist	Waterlogged	Inundated	
VEGETATION CLASSIFICATION*:	1. Open Eucalyptus	pleurocarpa woodla	nd over diverse Prote	aceous shrubland	
Eg: 1. Banksia woodland (B.	2.				
attenuata, B. ilicifolia); 2. Open shrubland	3.				
(Hibbertia sp., Acacia spp.); 3. Isolated clumps of sedges (Mesomelaena tetragona)	4.				
ASSOCIATED SPECIES:					
Other (non-dominant) spp	Eucalyptus pleuroca	arpa, Hakea pandano	ocarpa, Hakea prostra	ata, Lysinema ciliatur	n, Dampiera
	sericantha				
* Please record up to four of the Land Survey Fleld Handbook gu				ructural Formations should to	IOW 2009 Australian Soli and
CONDITION OF HABITAT	T: Pristine	Excellent Very	good 🔲 Good 🔲	Degraded 🔲 Co	mpletely degraded 🔲
COMMENT:	_			-	
FIRE HISTORY: La	st Fire: Season/Month:	: Year:	Fire Intensity: Hi	gh 🔲 Medium 🔲 Low	■ No signs of fire
FENCING:	Not required 🛛	Present 🔲 Repl	ace / repair 🔳	Required 🔲 Ler	ngth req'd:
ROAD SIDE MARKERS:	Not required 🗵	Present 🔲 Repi	ace / reposition	Required 🔲 Qui	antity req'd:
OTHER COMMENTS: (				ted actions - include	
KW117, Accession 8			·	ned by WA herbariur	m
TTTTT, ACCUSSION OF	302. Committee by VV	A HOIDAHAIII OII 1071	2/20. Opcomici retail	ned by WA nerbandi	
_					
DRF PERMIT/ LICENC			ts (i.e. no specimens or plant n		
further information on permit ar should be recorded above in th	e OTHER COMMENTS section	n.			con under reeneerperrint
SPECIMEN: Collect	ors No:	WA Herb. 🛛 Regi	onal Herb. 🔲 District	Herb. Other: _	
ATTACHED: Map		Photo GIS da		Other:	
	egional Office 🛛	District Office	Other:		
Submitter of Record: Ka	tie White Role:	Environmental Offi	cer_ Signed: KW_	Date: 15/01/21	

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 <a href="http://dipaw.wa.gov.au/">http://dipaw.wa.gov.au/</a> under Standard Report Forms

TAXON: Daviesia paud	iflora				TPFL	POD. NO:	See comment
OBSERVATION DATE:	23/10/20	CONS	ERVATION STATE	JS: P3		New popula	tion 🔲
OBSERVER/S: Julie \	Waters and Da	nika Penson		PH	IONE:	9083 1518	
ROLE: Environmental O	fficers	ORGAN	ISATION: Shire of	f Esperance			
DESCRIPTION OF LOCATIO	N (Provide at least re	nearest town/named locality, a	nd the distance and direction	n to that place):	~47 kr	m north of E	sperance
~20 km east of Scaddan to	wnsite. On Der	mpster Rd, Scattered	regularly between	intersection o	of Demps	ster Rd Scar	ddan Rd
for 800 m north.							
					Reserve		
DBCA DISTRICT: South Co		LGA: Espera			anager pre	esent:	
1	ORDINATES: (ru cDegrees 🔲	UTM coords provided, <b>Zone</b> is DegMinSec  U		THOD USED: PS 🔲 Dif	ferential (	SPS 🔳 N	Лар 🔲
GDA94 / MGA94 ☑ Lat	/ Northing: 6	6293257.5 m N		satellites:		Map used:	
	g / Easting: 4	106667.5 m E		ndary polygon		Map scale:	
Unknown 🔲	ZONE: 5	51H	сар	ured:			
LAND TENURE:							
Nature reserve	Timber reserve [			Rail reserve 🔲			d reserve 🗵
National park	State forest [	_	_	road reserve 🔲	_		reserve 🔲
Conservation park	Water reserve [	] 00	L SLK/Pole	to		pecify other:	
AREA ASSESSMENT: Edg	. —		. —	observed (m²)			
	spent surveying	·		s spent / 100			
POP'N COUNT ACCURACY:	Actual 🛛	Extrapolation	Estimate (Refer to	Count method field manual for its			
WHAT COUNTED:	Plants 🛛	Clumps 🔲	Clonal stems	THE STREET IS NOT THE	,		
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:			
Alive	15				Are	ea of pop (m²	):
Dead					Not	e: Pis record cou	nt as numbers
			5	-		percentages) for	
QUADRATS PRESENT:	No.	Size	Data attached	10	tal area o	of quadrats (	m²):
Summary Quad. Totals: Alive							
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud 🔲		Flower		
Immatu	ure fruit 🔲	Fruit 🔲	Dehisced fruit 🔳	Pero	entage in f	lower: 95%	
CONDITION OF PLANTS:	Healthy 🔲	Moderate	Poor 🗖	S	enescent		
COMMENT:							
THREATS - type, agent and	supporting info	ormation:			Current	Potential	Potential
Eg clearing, too frequent fire, weed, dis	ease. Refer to field n	manual for list of threats & age	nts. Specify agent where re	elevant.	impact	Impact	Threat Onset
Rate current and potential threat in Estimate time to potential impact:					(N-E)	(L-E)	(S-L)
Road widening - was original repair.				coming			
financial year. Not counte				coming	?M	М-Н	S
•							
•							
				1			

HABITAT INFORMATI	ON:					
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 Ioam 🔲	Brown 🗵	Seasonally	
Ridge 🔲	Laterite 🔲	0.400/ 🗖	Loam 🔲	Yellow 🔲	inundated 🔲	
Outcrop	Ironstone 🔲	0-10%	Clay loam 🔲	White 🔲	Permanently inundated	
Slope 🔲	Limestone 🔲	10-30%	Light clay 🔲	Grey 🔲	Tidal	
Flat 🗵	Quartz 🔲	30-50%	Peat 🔲	Black 🔲		
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:		
Drainage line 🔲			Sand over Gravel			
Closed depression 🔲	Casaifa I andfa	Flament				
Wetland 🔲	Specific Landfor (Refer to field manual for					
CONDITION OF SOIL:	Dry ⊠	Moist	Waterlogged	Inundated		
VEGETATION	1. Open Eucalyptus	pleurocarpa woodlar	nd over diverse Protea	aceous shrubland		
CLASSIFICATION*: Eg: 1. Banksia woodland (B.	2.					
attenuata, B. ilicifolia); 2. Open shrubland	3.					
(Hibbertia sp., Acacia spp.); 3. Isolated clumps of sedges (Mesomelaena tetragona)	4.					
ASSOCIATED SPECIES:						
Other (non-dominant) spp	Eucalyptus pleuroc sericantha	arpa, Hakea pandano	carpa, Hakea prostra	ta, Lysinema ciliatum	ı, Dampiera	
* Please record up to four of the Land Survey Field Handbook gu			nant species in each layer). Str	uctural Formations should follow	ow 2009 Australian Soil and	
CONDITION OF HABITAT	Γ: Pristine	Excellent 🛛 Very (	good Good G	Degraded 🔲 Con	npletely degraded 🔲	
COMMENT:	st Fire: Season/Month	n: Year:	Fire Intensity: Hi	h 🗖 Medium 🗖 . Low E	No signs of fire   ■	
FENCING:	_				gth req'd:	
	Not required	_	ace / repair		_	
ROADSIDE MARKERS:	Not required 🛛	Present 🔲 Repl	ace / reposition 🔲	Required 🔲 Qua	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.)						
No specimen collecte	d as previous popula	ation				
Recorded on Esperar	nce threatened firoa	shapefile as existing.	No TPFL population r	umber, recorded as	new.	
				·		
DRF PERMIT/ LICENC further information on permit a	nd licening requirements see t	the Threatened Flora and Wild	ts (i.e. no specimens or plant m			
further information on permit a should be recorded above in the	nd licening requirements see to be OTHER COMMENTS section	the Threatened Flora and Wild on.	Ife Licensing pages on DBCA's	website. Any actions carried		
further information on permit a should be recorded above in th SPECIMEN: Collect	nd licening requirements see t	the Threatened Flora and Wild on.	Ife Licensing pages on DBCA's			
turther information on permit a should be recorded above in the SPECIMEN: Collect ATTACHED: Map	nd licening requirements see to the OTHER COMMENTS sections No:	the Threatened Flora and Wild on.	onal Herb. District	website. Any actions carried Herb. Other:		

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 <a href="http://dipaw.wa.gov.au/">http://dipaw.wa.gov.au/</a> under Standard Report Forms

TAXON: Persoonia scabra		т	PFL Pop. No:	
OBSERVATION DATE: 30/10/20	CONSERVATIO	N STATUS: P3	New popular	tion 🔲
OBSERVER/S: Julie Waters and So	ophie Willsher	PHON	IE: 9083 1518	
ROLE: Environmental Officer	ORGANISATION:	Shire of Esperance		
DESCRIPTION OF LOCATION (Provide at least r	nearest town/named locality, and the distance	and direction to that place):	50 km north of E	sperance
townsite. ~20 km eastr of Scaddan towns	ite. On Dempster Rd, sporadica	ally scattered between 400	m north oto 2.4	km
north of Scaddan Rd and Dempster Rd in	itersection.			
		Re	serve No:	
DBCA DISTRICT: Soth Coast	LGA: Espernce		ger present:	
DecDegrees	UTM coords provided, <b>Zone</b> is also required) DegMinSec  UTMs		ntial GPS 🔲 N	Map 🔲
GDA94 / MGA94 Lat / Northing:	6294400 m N	No. satellites:	Map used:	
WGS84 Long / Easting: 4	407799 m E	Boundary polygon captured:	Map scale:	
Unknown ZONE:	51 H			
LAND TENURE:		<del></del>		
Nature reserve Timber reserve		Rail reserve		reserve 🖾
National park State forest Conservation park Water reserve		MRWA road reserve	Specify other:	
. –				
	Partial survey Tull survey			
EFFORT: Time spent surveying POP'N COUNT ACCURACY: Actual □	(minutes): No.  Extrapolation Estimate	of minutes spent / 100 m <sup>2</sup> : Count method:	30	
POP N COUNT ACCURACY: Accusi	Extrapolation   Estimate	(Refer to field manual for list)		
WHAT COUNTED: Plants	Clumps 🔲 Clonal ste	ems 🔲		
TOTAL POP'N STRUCTURE: Mature:	Juveniles: Seedlin	gs: Totals:		
Alive Not counted			Area of pop (m²)	):
Dead			Note: Pls record cour (not percentages) for	
QUADRATS PRESENT: No.	Size Data	attached T Total	area of quadrats (r	
Summary Quad. Totals: Alive			]	,. —
	Mantelia E	and and an analysis		
REPRODUCTIVE STATE: Clonal  Immature fruit	· =	_	ower 🔲 ge in flower:%	6
CONDITION OF PLANTS: Healthy	Moderate	Poor Sene	scent 🗖	
COMMENT:				
				5 4 2 1
THREATS - type, agent and supporting info Eg clearing, too frequent fire, weed, disease. Refer to field r		ime	rent Potential	Potential Threat
Rate current and potential threat impact: N=NII, L=Low			-E) (L-E)	Onset
Estimate time to potential impact: S=Short (<12mths),				(S-L)
<ul> <li>Road widening was proposed for 20/21 occurring. Was not counted to determin</li> </ul>		d. Now no longer	12Н Н	S
•				
			-	
•				
			_	

HABITAT INFORMATI	ION:				
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 Ioam 🔲	Brown 🔲	Seasonally _
Ridge 🔲	Laterite 🔲	0.40%	Loam 🔲	Yellow 🔲	inundated
Outcrop 🔲	Ironstone 🔲	0-10%	Clay loam 🔲	White 🔲	Permanently inundated
Slope 🛛	Limestone 🔲	10-30%	Light clay 🔲	Grey 🔲	Tidal
Flat 🔲	Quartz 🔲	30-50%	Peat 🔲	Black 🔲	
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🔲			Sand over gravel		
Closed depression 🔲	Specific Landfor	m Flomont:		_	
Wetland 🔲	(Refer to field manual for				
CONDITION OF SOIL:	Dry 🛮	Moist 🔳	Waterlogged	Inundated	
VEGETATION	<ol> <li>Open Eucalyptus</li> </ol>	pleurocarpa shrublan	d over Banksia arma	ta low shrubland	
CLASSIFICATION*: Eg: 1. Banksia woodland (B.	2.				
attenuata, B. ilicifolia); 2. Open shrubland	3.				
(Hibbertia sp., Acacia spp.); 3. Isolated clumps of sedges					
(Mesomelaena tetragona)	4.				
ASSOCIATED SPECIES:	Acacia gonophylla,	Goodenia scapigera, I	Hakea corymbosa, V	'erticordia sp.	
Other (non-dominant) spp					
Please record up to four of the Land Survey Field Handbook gu		n layers (with up to three domination and structure)		ructural Formations should for	low 2009 Australian Soil and
CONDITION OF HABITA	T: Pristine	Excellent   Very go	ood Good G	Degraded 🔲 Co	mpletely degraded 🔳
COMMENT:					
FIRE HISTORY: La	ast Fire: Season/Month	Year:	Fire Intensity: His	gh 🔲 Medium 🔲 🛮 Low	No signs of fire
FENCING:	Not required	Present 🔲 Repla	ce / repair 🔲	Required 🔲 Ler	ngth req'd:
ROAD SIDE MARKERS:	Not required	Present 🔲 Repla	ce / reposition 🔲	Required 🔲 Qua	antity req'd:
		nended management ac		ted actions - include	_
		ilable, and how to locate	•	h	
	•	cted from the extreme			
Specimens confirme	d ID by WA Herbariun	n 10/12/20 by Michael	Hislop. Specimen re	tained for KW122 a	nd not for KW124
DRF PERMIT/ LICENC		Note if only observing plants to Threatened Flora and Wildlif	(i.e. no specimens or plant m		
should be recorded above in the	he OTHER COMMENTS section	n			out drider riceros permit
	tors No:	WA Herb. 🛛 Regio	nal Herb. 🔲 District	Herb. Other: _	
ATTACHED: Map		Photo GIS data		Other:	
	egional Office 🛛	District Office	Other:		
Submitter of Record:	Katie White Role:	Environmental Office	er Signed: KW	Date: 15/01/21	

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 <a href="http://depaw.wa.gov.au/">http://depaw.wa.gov.au/</a> under Standard Report Forms

OBSERVATION DATE: 30/10/20 CONSERVATION STATUS: P3 New population   OBSERVER/S: Julie Waters and Sophie Willsher PHONE: 9083 1518  ROLE: Environmental Officer ORGANISATION: Shire of Esperance  DESCRIPTION OF LOCATION (Provide at least nearest townhammed localty, and the distance and direction to that place): ~50 km north of Esperance townsite. ~20 km eastr of Scaddan townsite. On Dempster Rd, ~3.1 km south of Norwood Rd on Dempster Rd. On  Eastern side of road reserve    Passerve No:
ROLE: Environmental Officer
DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
townsite. ~20 km eastr of Scaddan townsite. On Dempster Rd, ~3.1 km south of Norwood Rd on Dempster Rd. On  Eastern side of road reserve    Reserve No:
Eastern side of road reserve    Reserve No:
DBCA DISTRICT:   Soth Coast   LGA:   Espernce   Land manager present:
DBCA DISTRICT: Soth Coast
DATUM: COORDINATES: (# UTM coords provided, Zone is also required) DecDegrees DegMinSec UTMs GPS Differential GPS Map GPS Differential GPS Map GPS GPS Differential GPS Map GPS GPS GPS Differential GPS Map GPS Map GPS GPS GPS Map G
DecDegrees DegMinSec UTMs GPS Differential GPS Map GPS AGD84 / MG894 Lat / Northing: 6298150 m N No. satellites: Map used: Map
GDA94 / MGA94 AGD84 / AMG84 Lat / Northing: 6298150 m N No. satellites: Map used: Boundary polygon captured: Map scale: Long / Easting: 408647 m E Boundary polygon captured: Map scale: LAND TENURE:  Nature reserve Timber reserve Private property Rail reserve Other Crown reserve MRWA road reserve Other Crown reserve UCL SLK/Pole MRWA road reserve Specify other: Specify other: FFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²: 30
AGD84 / AMG84   Long / Easting: 408647 m E
Unknown ZONE: 51 H  LAND TENURE: Nature reserve Timber reserve Private property Rail reserve Other Crown reserve MRWA road reserve Other Crown 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: 30
LAND TENURE:  Nature reserve □ Timber reserve □ Private property □ Rail 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:  AREA ASSESSMENT: Edge survey □ Partial survey ☑ Full survey □ Area observed (m²):  EFFORT: Time spent surveying (minutes): □ No. of minutes spent / 100 m²: 30
Nature reserve
National park State forest Pastoral lease MRWA road reserve Specify other:  Conservation park Water reserve UCL SLK/Pole Specify other:  AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²):  EFFORT: Time spent surveying (minutes):  No. of minutes spent / 100 m²: 30
AREA ASSESSMENT: Edge survey ☐ Partial survey ☑ Full survey ☐ Area observed (m²): ☐ EFFORT: Time spent surveying (minutes): ☐ No. of minutes spent / 100 m²: 30
EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m <sup>2</sup> : 30
POP'N COUNT ACCURACY: Actual Extrapolation Estimate Count method:
(Refer to field manual for list)  WHAT COUNTED: Plants Clumps Clonal stems
TOTAL POP'N STRUCTURE: Mature: Juveniles: Seedlings: Totals:
Alive Not counted Area of pop (m²):
Note: Pis 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 Vegetative Flowerbud Flower Flower Dehisced fruit Percentage in flower.
CONDITION OF PLANTS: Healthy ☑ Moderate ☐ Poor ☐ Senescent ☐
COMMENT:
THREATS - type, agent and supporting information:  Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant.  Current impact impact Threat  Threat
Rate current and potential threat impact: N=NI, L=Low, M=Medium, H=High, E=Extreme (N-E) (L-E) Onset
Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)  (S-L)
Road widening was proposed for 20/21 financial year alng Dempster Rd. Now no longer     Road widening was proposed for 20/21 financial year alng Dempster Rd. Now no longer     Road widening was proposed for 20/21 financial year alng Dempster Rd. Now no longer
occurring. Was not counted to determine imapct to plants
·

HABITAT INFORMATI	ON:				
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 Ioam 🔲	Brown 🔲	Seasonally _
Ridge 🔲	Laterite 🔲	0.40%	Loam 🔲	Yellow 🔲	inundated
Outcrop 🔲	Ironstone 🔲	0-10%	Clay Ioam 🔲	White 🔲	Permanently inundated
Slope 🔲	Limestone 🛚	10-30%	Light clay 🔲	Grey 🛛	Tidal
Flat 🛛	Quartz 🔲	30-50%	Peat 🔲	Black 🔲	
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🔲			1		
Closed depression 🔲	Specific Landfor	m Flomont:		_	
Wetland 🔲	(Refer to field manual for				
CONDITION OF SOIL:	Dry 🖸	Moist 🔲	Waterlogged	Inundated	
VEGETATION	<ol> <li>Dense Eucalyptus</li> </ol>	s mallee woodland ov	er Melaleuca shrubla	nd	
CLASSIFICATION*: Eg: 1. Banksia woodland (B.	2.				
attenuata, B. ilicifolia); 2. Open shrubland	3.				
(Hibbertia sp., Acacia spp.); 3. Isolated clumps of sedges (Mesomelaena tetragona)	4.				
ASSOCIATED SPECIES:	Nematolepis phebal superba	loides, Westringia rigi	da, Comesperma spi	inosum, Grevillea plu	ırijuga subsp
Other (non-dominant) spp	Superba				
* Please record up to four of the	most representative vegetation	n lavers (with up to three domin	ant species in each laver). Str	actural Formations should fol	ow 2009 Australian Soli and
Land Survey Field Handbook gu					
CONDITION OF HABITA	T: Pristine	Excellent 🔲 Very g	ood 🔲 Good 🔲	Degraded 🔲 Cor	npletely degraded 🔲
COMMENT:					
FIRE HISTORY: La	ast Fire: Season/Month	: Year:	Fire Intensity: Hi	gh 🔲 Medium 🔲 Low	No signs of fire 🔲
FENCING:	Not required 🔲	Present 🔲 Repla	ce / repair 🔲	Required 🔲 Len	gth req'd:
ROAD SIDE MARKERS:	Not required 🔳	Present 🔲 Repla	ce / reposition 🔳	Required 🔲 Qua	antity req'd:
	(Please include recommils of additional data ava			ted actions - include	
KW121 Accession 86		silable, and now to locat	= 11.)		
	d ID by WA Herbariun	n 10/12/20 by Michael	Hielan Specimen p	nt retained	
Specimens committee	u ID by WA Herbanun	I To/ 12/20 by Michael	riisiop. Specimen iii	ot retained	
DRF PERMIT/ LICENC	F No: FB62000139	Note if only observing plants	(i.e. no specimens or plant m	rational is taken), then no near	nitilizance is required. For
further information on permit a	and licening requirements see the OTHER COMMENTS section	ne Threatened Flora and Wildlif			
SPECIMEN: Collect	tors No:	WA Herb. 🛛 Regio	nal Herb. 🔲 District	Herb. 🔲 Other: _	
ATTACHED: Map		Photo GIS data	Field notes	Other:	
	egional Office 🛛	District Office 🛛	Other:		
Submitter of Record:	Katie White Role	Environmental Office	er Signed: KW	Date: 15/01/21	



## 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 at http://docume.com.gr/under Standard Report Forms

TAXON: Hydrocotyle	asterocarpa				TPFL F	Pop. No:	
OBSERVATION DATE:	23/10/2020	CONS	ERVATION STAT			New popula	tion 🗵
	e White and Julie V				PHONE:	9083 1518	
ROLE: Environmental	Officers	ORGAN	ISATION: Shire o	of Esperance	e		
DESCRIPTION OF LOCAT	ON (Provide at least near	rest town/named locality, a	nd the distance and direction	on to that place)3	On De	mpster Rd,	4.4 km
north of Scaddan Rd. Jus	t off from road rese	erve on western si	de of road.				
						_	_
	S				Reserve		
DBCA DISTRICT: South (	ORDINATES: (If UT)	LGA: Espera		THOD USED	i manager pre	sent:	
_ D				_	Differential G	SPS 🗖 N	Map 🔲
GDA94 / MGA94  AGD84 / AMG84	at / Northing: 408	568.1 m N	No.	satellites:	N.	Map used: Q	GIS
=	ng / Easting: 629	6361.6 m E	Воц	ındary polygo	on ,	Map scale: 1:	
Unknown 🔲	ZONE: 51		cap	tured:		map searc.	
LAND TENURE:	20AC. 911						
Nature reserve	Timber reserve	Private proper	rty 🗖	Rail reserve			reserve 🛮
National park	State forest	Pastoral lead		road reserve			reserve 🗖
Conservation park	Water reserve	U	CL SLK/Pole	10	_ s	pecify other:	
AREA ASSESSMENT: Ed	ge survey 🛛 🏻 Pa	rtial survey 🔲 🛮 Fu	II survey 🔲 🛚 Area	a observed (n	n²):		
	spent surveying (m			es spent / 10		l	
POP'N COUNT ACCURAC	f: Actual	Extrapolation 🔲	Estimate	Count meth field manual for			
WHAT COUNTED:	Plants 🖾	Clumps	Clonal stems	THE RESERVE TO	rae,		
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:			
Alive	50 - 100				Are	a of pop (m²)	):
		_				: Pls record cour	_
Dead						percentages) for	
QUADRATS PRESENT:	No.	Size	Data attached		Total area o	f quadrats (r	n²):
Summary Quad. Totals: Alive							
REPRODUCTIVE STATE:	Clonal 🔲	Vegetative 🔲	Flowerbud		Flower	8	
Imm	iture fruit 🔲	Fruit 🗖	Dehisced fruit	Pe	roentage in fi	ower: 90%	
CONDITION OF PLANT8:	Healthy 🗖	Moderate 🔲	Poor 🗖	1	Senescent		
COMMENT:							
THREATS - type, agent an	d supporting inform	nation:			Current	Potential	Potential Threat
Eg dearing, too frequent fire, weed, Rate current and potential three		-		relevant.	impaot (N-E)	Impaot (L-E)	Onset
Estimate time to potential impa							(8-L)
<ul> <li>Road widening - propos</li> </ul>							
will not impact population shedding may	n but changes to h	ydrological regime	through drainage	and water	?	М-Н	S
Changes in hydrolgical	regime - effect of d	ecreased rainfall v	vith cliamte change		2	н	100
	egime - effect of d	ecreased rainfall v	vith cliamte change		2	В	<b>I</b> S
Changes in hydrolgical	egime - effect of d	ecreased rainfall v	vith cliamte change		2	н	5

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

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

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



## Department of Biodiversity, Conservation and Attractions Threatened and Priority

SCHOOLSECH OF MICHIGAN AND TRACK		Flora Repo	ort Form	Vers	sion 1.3 August 2017
HABITAT INFORMAT	ION:				
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 🛭	Tidal
Flat 🗖	Quartz 🔲	30-50%	Peat 🔲	Black 🔲	113121
Open depression 🔲	Specify other:	50-100%	Specify other:	Specify other:	
Drainage line 🔲	1				
Closed depression		Tiomani.			
Wetland	Specific Landform (Refer to field manual for a				
CONDITION OF SOIL:	Dry 🗖	Moist 🖾	Waterlogged 🔲	inundated	
VEGETATION	1. Open salt lake con	mmunity			
CLASSIFICATION*:	2.				
Eg: 1. Banksia woodland (B. attenuata, B. ilidfolia);	_				
Open shrubland (Hibbertia sp., Acada spp.);	3.				
<ol><li>Isolated clumps of sedges</li></ol>	4.				
(Mesomelaena tetragona) ASSOCIATED	Overhanging Eucaly	ntus halonhila			
SPECIES:	Overnanging Eddary	pido Halopillo			
Other (non-dominant) spp	e most representative vegetation	le en leith en te there desse	ant annulus in annih lavani. Pit	and and Francisco about 44.6	No. 1999 Australia Palland
	uidelines – refer to field manual f			DOUGH FORMADORS SHOULD IN	NUM 2000 AUSTRAIN OUT BID
CONDITION OF HABITA	T: Pristine	Excellent 🔲 Very go	ood 🔲 Good 🗖	Degraded 🔲 Co	impletely degraded 🔲
COMMENT:					
FIRE HISTORY: L	ast Fire: Season/Month:	Year:	Fire intensity: He	gh 🔲 Medium 🔲 🛮 Low	☐ No signs of fire 🖾
FENCING:	Not required	Present 🔲 Repla	oe / repair 🔲	Required 🔲 Le	ngth req'd:
ROAD SIDE MARKER 8:	Not required	Present 🔲 Repla	ce / reposition 🔲	Required 🔲 Qu	antity req'd:
OTHER COMMENTS:	(Please include recomme	ended management ac	tions and/or implement	ted actions - include	
	ils of additional data avai				
	rb database (PERTH 0				
	all clustered patch und	er a tree. Only check	ed population was pr	resent and did not s	urvey entire
population/around th	e sait iake				
DRF PERMIT/ LICENC			(i.e. no specimens or plant m		
	and licening requirements see the he OTHER COMMENTS section		e Licensing pages on DBCA:	s weesite. Any actions came	d out under licence/permit
SPECIMEN: Collec	tors No:	WA Herb. Regio	nal Herb. 🔲 District	Herb. Other:	
ATTACHED: Map	■ Mudmap ■	Photo GIS data	Field notes	Other:	
	egional Office 🛮	District Office	Other:		-
Submitter of Record:	Katie White	Role: _Environmental	Officer_ Signed:	KW Date	e: 19/11/20
Plea	ase return complete	ed form to Specie	s And Commun	ities Branch DE	BCA,
	104, BENTLEY DEL	_			
	ECORDS: Please forward				

## 8.3 Road Design – STD00023

