Vegetation, Flora, Fauna and Environmental Considerations Report

[redacted]

Shire of Esperance

Together, we make it happen!

December 2025

Contents

Acknowledgement of Country

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

Citation

Waters, J and Walkerden K (2025) Vegetation, Flora, Fauna and Environmental Considerations Report, Shire of Esperance 2025-26 Strategic Purpose Permit, Site C - Edwards and Griffiths Intersection Upgrade

List of Tables

List of Figures

Table 6. Completion criteria following the SMART (specific, measurable, achievable, relevant, time-bound) principles for the rehabilitation of the West Point Road gravel pit.

Appendices

1. Incidental species list
2. Threatened and priority flora report forms
3. Threatened and priority flora species with the potential to occur within the Edwards and Griffiths Intersection Upgrade survey area
4. Threatened and priority fauna species with the potential to occur within the Edwards and Griffiths Intersection Upgrade survey area
5. EPBC Act protected matters search tool report
6. BC Act (2016) Threatened and priority flora and fauna definitions
7. EPBC Act (1999) Definition of threatened flora and fauna species
8. BC Act (2016) Threatened ecological community definitions
9. BC Act (2016) Definition of priority ecological communities
10. EPBC Act (1999) Definition of threatened ecological communities
11. Biosecurity and Agriculture (BAM) Act 2007 Categories and control measures of Declared Pest (Plant) organisms in Western Australia
12. Definitions of vegetation condition scale
13. Road Designs

List of Abbreviations

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

TF: Threatened Flora (Under BC Act)
TPFL: Threatened and Priority Flora Database (DBCA)
TPRF: Threatened and Priority Flora Report Form
WAH: Western Australian Herbarium (PERTH)
WAOL: Western Australian Organism List
WONS: Weeds of National Significance

1. Executive Summary

The Shire of Esperance (SOE) Environmental Services Team was commissioned by the Shire of Esperance Asset Management Department to undertake a review of the vegetation, flora, fauna and environmental values on the proposed Edwards and Griffiths Intersection Upgrade project in 2025-26 as part of their Strategic Purpose Permit application.

The proposed development involves the clearing of 0.44ha of native vegetation for the purpose of road intersection upgrades to meet Australian road standards.

This report details the results from the environmental impact assessment completed by SOE Environmental Services Team over spring 2025.

The site contained three vegetation communities these were:

A. Open mallee over low mixed Melaleuca shrubland over *Gahnia ancistrophylla*.
B. *Allocasuarina huegeliana* over *Melaleuca uncinata* & *Calothamnus quadrifidus* tall shrubland.
C. *Eucalyptus platypus* closed woodland with mixed *Melaleuca* shrubland.

All vegetation was in an excellent condition.

One threatened ecological community occurred within the 20km buffer of the project site; however no vegetation in the survey area meets the requisite criteria for this community.

A total of 123 vascular plant taxa, representative of 66 genera and 30 families, were recorded within Edwards and Griffiths Intersection Upgrade survey area. No weeds were recorded during the survey.

Three priority flora species were recorded within the Edwards and Griffiths Intersection Upgrade survey area. Additional TF and PF species were recorded near the clearing area.

Potentially suitable habitat for three fauna species identified in the desktop survey was also present in the project area.

2. Introduction

The Shire of Esperance endeavors to maintain a high level of road safety, aiming to be proactive in identifying high-risk roads, reviewing designs and progressively upgrading these. The Shire of Esperance manages the largest road network of any local government in Western Australia, encompassing a total of 4,593km of roads.

The Shire of Esperance is submitting Edwards and Griffiths Intersection Upgrade project as Site C under their 2025-26 Strategic Purpose Permit (Figure 1).

The project is required to meet Australian Road Standards. The project involves realignment of the Edwards and Griffiths intersection. The proposed development involves the clearing of 0.44ha of native vegetation.

The SOE has attempted to avoid, reduce, minimise impacts of the project. The Shire of Esperance had designed the project to avoid impacting the nearby threatened flora species, *Hypocalymma magnificum* (Endangered) limiting the project to the south of the *Hypocalyma magnificum* population. The previous road alignment will also be revegetated, totalling 0.54ha of revegetation being conducted.

2.1. Location and Scope of Project

The proposed works are located 14 km NNW of the Cascade Townsite, within the SOE managed road reserves of Edwards and Griffiths Roads. Specifically, it is located from at the intersection of Edwards and Griffiths Road. A point within the proposed clearing permit area is 6308589m N, 315010m E (UTM Zone 51 H, GDA94).

The current intersection at Edward and Griffiths Road does not meet current Australian Road standards and is being upgraded to meet these standards. The project involves realignment of the intersection. To mitigate impact of clearing vegetation, clearing will not occur to the full permitted width to conserve native vegetation where reasonably practicable.

Figure 1. Location of Edwards and Griffiths Intersection Upgrade.

2.2. Environmental Legislation and Guidelines

The following legislation is relevant to this survey:

Commonwealth (Federal) –

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Western Australian (State) –

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

Western Australian (State) guidelines relevant to this survey are –

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

3. Objectives

The objective of this survey was to undertake a vegetation, flora, fauna and environmental assessment of the Edwards and Griffiths Intersection Upgrade survey area to enable an informed decision to be made in respect to the potential environmental impacts of the project. This is inclusive of the following;

- Undertake a desktop study of the vegetation, flora, fauna, threatened ecological communities, soils, geology, landform, aboriginal heritage, cadastre, important wetlands, soils of the Edwards and Griffiths Intersection Upgrade survey area using all available resources. This includes spatial interrogation using the Shire of Esperance's Desktop Environmental Impacts Spatial Interrogation Program (DEISIP), aerial photography interpretation and the Commonwealth Protected Matters Search Tool;
- Review available historical literature of the Edwards and Griffiths Intersection Upgrade survey area;
- Undertake a field survey of the Edwards and Griffiths Intersection Upgrade survey area, and collect and identify the vascular plant species present;
- Define and map the vegetation communities present and their condition in the Edwards and Griffiths Intersection Upgrade survey area;
- Define and map the location of any threatened flora (TF) and priority flora (PF), TECs, fauna and priority fauna habitat located within the Edwards and Griffiths Intersection Upgrade survey area;
- Provide recommendations on the local and regional significance of the vegetation communities;
- Define any management issues related to any environmental values; and
- Provide recommendations to the Shire of Esperance asset management department in relation to environmental management of the project.

4. Methods

4.1. Desktop Assessment

Desktop information was collated for all areas within a 20km buffer zone of the site using DBCA datasets sourced under agreement. These data sources are listed below:

- Threatened and Priority Flora Database (TPFL; DBCA 2025a);
- Western Australian Herbarium data (DBCA 2025b);
- DBCA's Esperance District Threatened Flora spatial dataset (DBCA 2024a);
- Threatened and Priority Ecological Communities (TECs & PECs; DBCA 2025c);
- Threatened, Specially Protected and Priority Fauna (DBCA 2025d); and
- Carnaby's black-cockatoo roost and breeding sites (DBCA 2025e).

Additionally, the EPBC Act Protected Matters Search Tool (PMST), was also checked to identify the possible occurrence of Threatened and Priority flora, fauna and ecological communities within the Edwards and Griffiths Intersection Upgrade area. Search parameters were 'by polygon' and a 20km buffer was applied to the search area; the standard used in this IBRA subregion.

Historical and State documentation and datasets consulted include:

- Vegetation mapping of the region, principally the coarse-scale vegetation associations of Beard (1973) (DDIRP-006);
- Vegetation Extent by Statewide Pre-European mapping statistics (Department of Parks and Wildlife, 2018);
- Soil landscape mapping (Schoknecht, et al 2004);
- EPBC Act list of TECs; (2025)
- Priority Ecological Communities for Western Australia Version 35 (DBCA 2023c);
- Nomination or listing descriptions of TECs or PECs, where available and relevant (State and Federal);
- Recovery Plans, Approved Conservation Advices, Significant Impact Guidelines and / or other relevant reports or documentation relating to the preferred habitats / distributions of TECs / PECs, Threatened flora and fauna;
- Dieback Information Data Management System (DIDMS 2024; Gaia Resources);
- Shire of Esperance Weed Mapping Data (2025);
- Existing site digital orthophotos (Lort 2015);
- Atlas of Living Australia database (2025)
- Hydrographic Catchments (DWER-028); and
- Crown Reserves (Landgate-227).
- RAMSAR sites (DBCA-010)
- Directory of Important Wetlands (DBCA-045)

4.2. Field Survey

A targeted survey of *Hypocalymma magnificum* was conducted on 14 August 2025 by Julie Waters (SOE Environmental Coordinator), Katherine Walkerden (SOE Environmental Officer) and Emma Adams (DBCA Conservation Officer) to map distribution and count *Hypocalymma magnificum* (Endangered) within the road reserve. The data from the survey was provided to the Shire of Esperance design team to inform the design of the project.

The site was inspected on 4 September 2025, by Julie Waters (SOE Environmental Coordinator) and Katherine Walkerden (SOE Environmental Officer). A general assessment of possible ecological impacts included historical clearing, impact of fire regimes, regeneration from disturbance, waterlogging, senescence, weeds, erosion, sedimentation, invasive fauna, *Phytophthora* Dieback, and illegal dumping of rubbish.

A detailed field assessment of the flora and vegetation of the Edwards and Griffiths Intersection Upgrade survey area was undertaken by SOE 4 September 2025 in accordance with methods outlined in Technical guidance – Flora and vegetation surveys for environmental impact assessment (EPA 2016). All botanists held valid collection licences to collect flora for scientific purposes, issued under the BC Act.

A targeted flora survey was conducted on the 25 November 2025 to map distribution and count the Priority 4 *Eucalyptus stoatei*, by Katherine Walkerden and Julie Waters.

The methodology for assessing threatened and priority flora consisted of traversing by foot the entire Edwards and Griffiths Intersection Upgrade survey area. The road was used as a continuous transect. Vegetation up to 5m from the edge of the existing road's back-slope, recording all species, and collecting all but the very common, well-known species.

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

All species unknown in the field were collected, pressed and dressed in accordance with WAH instructions, and later identified by the SOE's three botanists, using keys,

WA Herbarium's Florabase, literature and reference material from the Esperance district herbarium. Any species that were unable to be identified were submitted to the WAH for identification.

The vegetation communities of Site C – Edwards and Griffiths Intersection Upgrade was assessed for the presence a TEC or PEC (DBCA 2023, 2025c) comparing that to descriptions in approved conservation advice for these communities. PEC's do not have published approved conservation advice. Comparison of the vegetation community occurred using 'Priority Ecological Communities for Western Australia, Version 35 (DBCA 2023)' definitions, and other relevant documentation.

Only a basic fauna survey was conducted as per EPA (2020) guidelines. Observations of fauna presence, such as call sounds, footprints and scats were noted, and the area assessed for suitability of habitat within Site C – Edwards and Griffiths Intersection Upgrade for any fauna species identified in the desktop survey.

4.3. Survey Timing

According to Table 3 in the Technical Guidance – Flora and vegetation surveys for Environmental Impact Assessment (EPA 2016), the primary survey timing for the South-west and Interzone Botanical Province is Spring (September-November), which is the peak flowering period for this region. As all surveys at Edwards and Griffiths Intersection Upgrade were conducted in September- November, survey timing falls within this period.

4.4. Vegetation Descriptions

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

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

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

4.5. Survey Limitations

A general assessment was made of the survey against a range of factors that may have limited the outcomes and conclusions of this report (Table 1). Based on this assessment, the present survey has not been subject to constraints which would affect the thoroughness of the survey, and the conclusions which have been formed.

Table 1: Potential limitations affecting the conclusions made in this report

Potential survey limitation	Impact on current survey
Availability of contextual information at a regional and local scale	**Not a limitation:** Reference resources such as Beard's mapping, together with online flora and vegetation information, have provided an appropriate level of information for the current survey. The vegetation of the Esperance Shire has previously been mapped by Beard (1973).
Resources (i.e. were there adequate resources to complete the survey to the required standard).	**Not a constraint:** Adequate resources were made available by SOE to complete the surveys.
Competency/experience of team carrying out survey; experience in the bioregion surveyed	**Not a limitation:** All botanists have good knowledge and extensive experience working within the Shire of Esperance and wider areas. Two of the botanists have consistently worked within this bioregion for more than 15 years. Botanists were familiar with flora in the area. Any unknown or potential threatened or priority flora species were collected and identified, utilising resources available at the Western Australian Herbarium and consultation with expert taxonomists.
Proportion of flora collected and identification issues	**Potential limitation:** While many plants were in flower during the survey, a proportion of plants encountered during the survey were sterile and may impact the chance of identification of some specimens to species level. Orchid species may not emerge each year if conditions are not favourable. Although these may affect the completeness of the species list, it is not expected to have a significant effect on mapping reliability, nor on the identification of threatened and priority species in the area as the majority were

	perennial species. Surveys were only undertaken in one year
Effort and extent of survey	**Potential limitation:** The survey area was thoroughly covered. The threatened and priority flora search undertaken by botanists by means of foot-traverse between vegetation quadrat sites ensured thorough coverage of the survey area. Flora that was unknown or resembled threatened or priority flora were collected, the location and habitat noted, and the number of plants counted.
Mapping reliability	**Not a constraint.** Handheld GPS units were used for the survey, which for a majority of field conditions have an accuracy level of ± 5m.
Survey timing, rainfall, season of survey	**Not a limitation:** The EPA (2016a) recommends that flora and vegetation surveys in the Southwest Botanical Province be conducted in Spring (September-November). All surveys have been conducted in September-Novemeber which falls within this period.
Disturbances (fire/flood/clearing)	**Not a limitation:** The Edwards and Griffiths Intersection Upgrade survey area exhibits minimal levels of disturbance, mainly from historical road construction and extractive activities.

5. Desktop Assessment Results

5.1. Climate

The Esperance climate is described as Mediterranean, characterised by cool wet winters and dry warm summers (BoM 2022). The closest weather station was the Munglinup locality which receives an average annual rainfall of 513mm.

5.2. Catchment

The project is present within the Young River sub-catchment area.

5.3. Geology, soils and topography

A single geological unit was identified by Schoknecht et al. (2004). This was: "Archean granite and gneiss deeply weathered and eroded, occasional small duricrust remnants".

Within the area, there has been one soil type recorded by Schoknecht et al. (2004). This was: "Alkaline grey shallow sandy duplex soils, minor grey shallow sandy duplex soils, duplex sandy gravels, and reddish brown non-cracking clays".

Within the area, there has been one landform unit recorded by Schoknecht et al. (2004). This was: "Undulating rises and plains in places increasing to rolling rises with incised ephemeral streams ".

The area is mapped as high wind erosion risk DPIRD-016 (50-70% of map unit has a high to extreme wind erosion risk).

5.4. Regional vegetation

The site is located within the Eastern Mallee (Mal01) Interim Biogeographic Regionalisation of Australia (Thackway & Cresswell 1995) region. The Mal01 is described as: "the south-eastern of Yilgarn Craton is gently undulating, with partially occluded drainage. Mainly Mallee over Myrtaceous-Proteaceous heaths on duplex (sand over clay) soils. Melaleuca shrublands characterize alluvia, and Halosarcia low shrublands occur on saline alluvium. A mosaic of mixed Eucalypt woodlands and Mallee occur on calcareous earth plans, and sandplains overlying the Eocene Limestone strata in the East. Semi-arid (dry) and warm Mediterranean".

Beard (1973) mapped Oldfield 519 vegetation association (VA) within the Site C – Edwards and Griffiths Intersection Upgrade area. (Table 2). Oldfield 519 was well conserved with 87% of its pre-European extent remaining within the IBRA subregion and 89% remaining within the Shire of Esperance.

Table 2. Vegetation associations mapped by Beard (1973) within the Site C – Edwards and Griffiths Intersection Upgrade, and statistics on pre-European remaining areas.

Vegetation association	Oldfield 519
Description	Shrublands; mallee scrub, *Eucalyptus eremophila*
Pre-European extent in IBRA sub-region Mal01 (%)	86.75
Pre-European extent in LGA (%)	88.86

Current extent conserved in IUCN area (%)	10.42

5.5. Surrounding land use

The area directly included in the clearing permit application Site C – Edwards and Griffiths Intersection Upgrade is currently intact and vegetated 200m wide road reserves, managed by SOE. The surrounding land use is agricultural and Nature Reserve. The area is within rural zoning. The project area is in a moderately cleared area with 50.44% of vegetation within 5km of the project remaining.

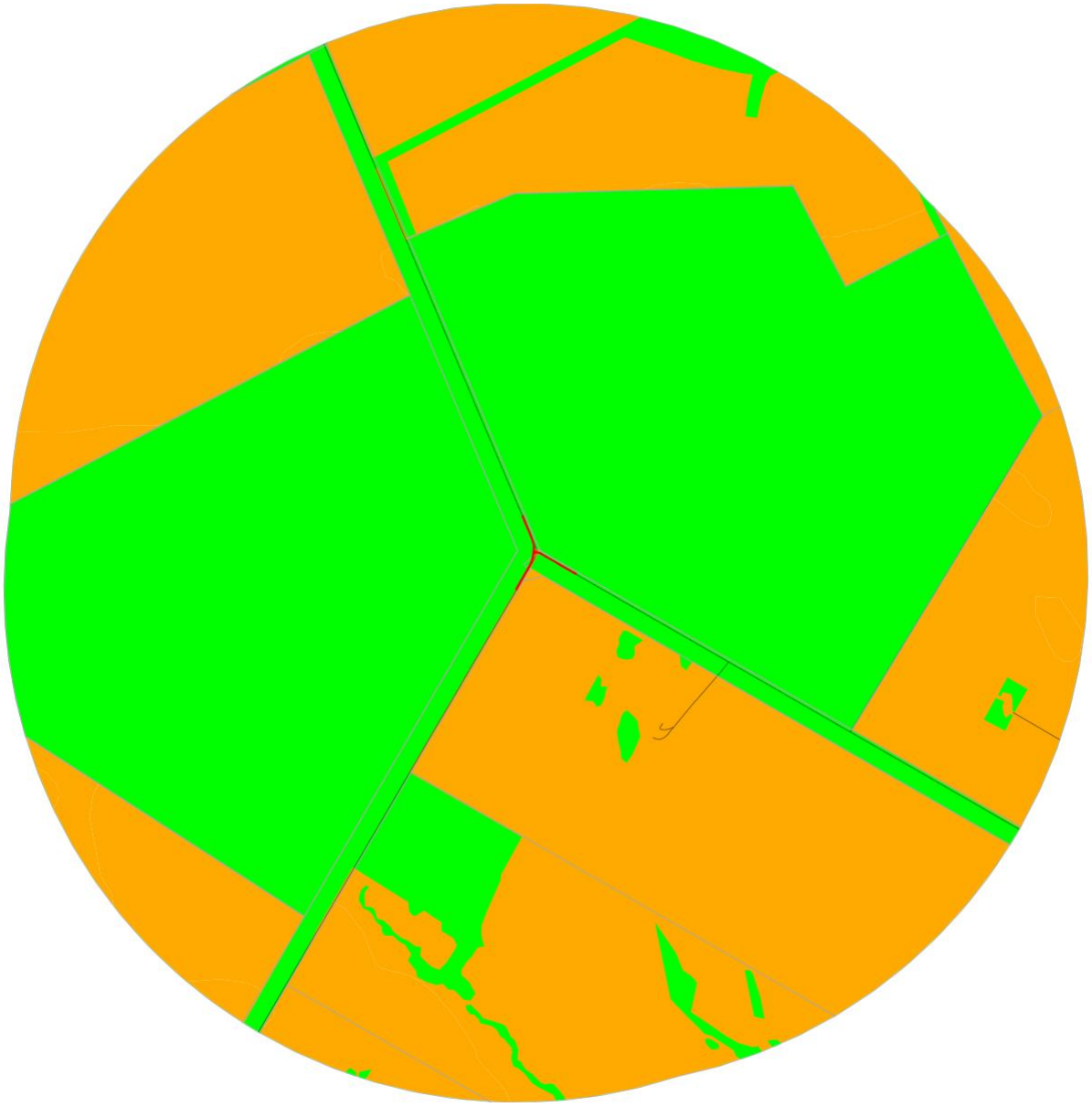


Figure 2. Map of remnant vegetation within a 5km buffer produced by DEISIP. Project area is highlighted in red, remnant vegetation is in green and cleared vegetation is in orange, road centerlines are in black and cadastre boundaries are in grey.

The site was 11m from Reserve 30583 the closest conservation reserve. No other conservation vested reserves were within 5km of the site.

5.6. Potential threatened and priority flora

3 threatened flora (TF) and 30 priority flora (PF) were recorded within a 20km radius of the proposed impact site (Appendix 3)). Of these, 2 TF species and 16 PF species had suitable known associated habitat that corresponded with vegetation communities and soil type of Site C – Edwards and Griffiths Intersection Upgrade project.

5.7. Potential threatened and priority ecological communities

The desktop study identified the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 listed threatened ecological community (TEC) Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan) 5.88km from Site C – Edwards and Griffiths Intersection Upgrade project area. No other TEC's or priority ecological communities (PEC) were identified by the desktop study as being within Site C – Edwards and Griffiths Intersection Upgrade or within a 20km buffer of the site.

5.8. Potential threatened and priority fauna

One threatened fauna species (Malleefowl) was recorded within a 20km radius of the proposed impact site (Appendix 4)). An additional six species were identified by the Protected Matters Search Tool.

6. Field Survey Results and Discussion

6.1. Vegetation communities

Three vegetation communities were identified within the Site C – Edwards and Griffiths Intersection Upgrade, as defined by structure and composition (Table 3). It is believed that the Beard (1973) vegetation association Oldfield 519 is an appropriate match for vegetation type A and C. Vegetation type B was not an appropriate match for Oldfield 519, the Beard vegetation associations were mapped at a broad scale and does not account for fine scale vegetation associations such as Vegetation type B.

Table 3. Vegetation communities identified within proposed Site C – Edwards and Griffiths Intersection Upgrade project area.

Type	Description	Figure	Closest matching Beard vegetation association	Clearing area (ha)

A	Open mallee over low mixed Melaleuca shrubland over *Gahnia ancistrophylla*.	4	Oldfield 519	0.40
B	*Allocasuarina huegeliana* over *Melaleuca uncinata* and *Calothamnus quadrifidus* tall shrubland.	5		0.03
C	*Eucalyptus platypus* closed woodland with mixed M*elaleuca* shrubland.	6	Oldfield 519	0.01

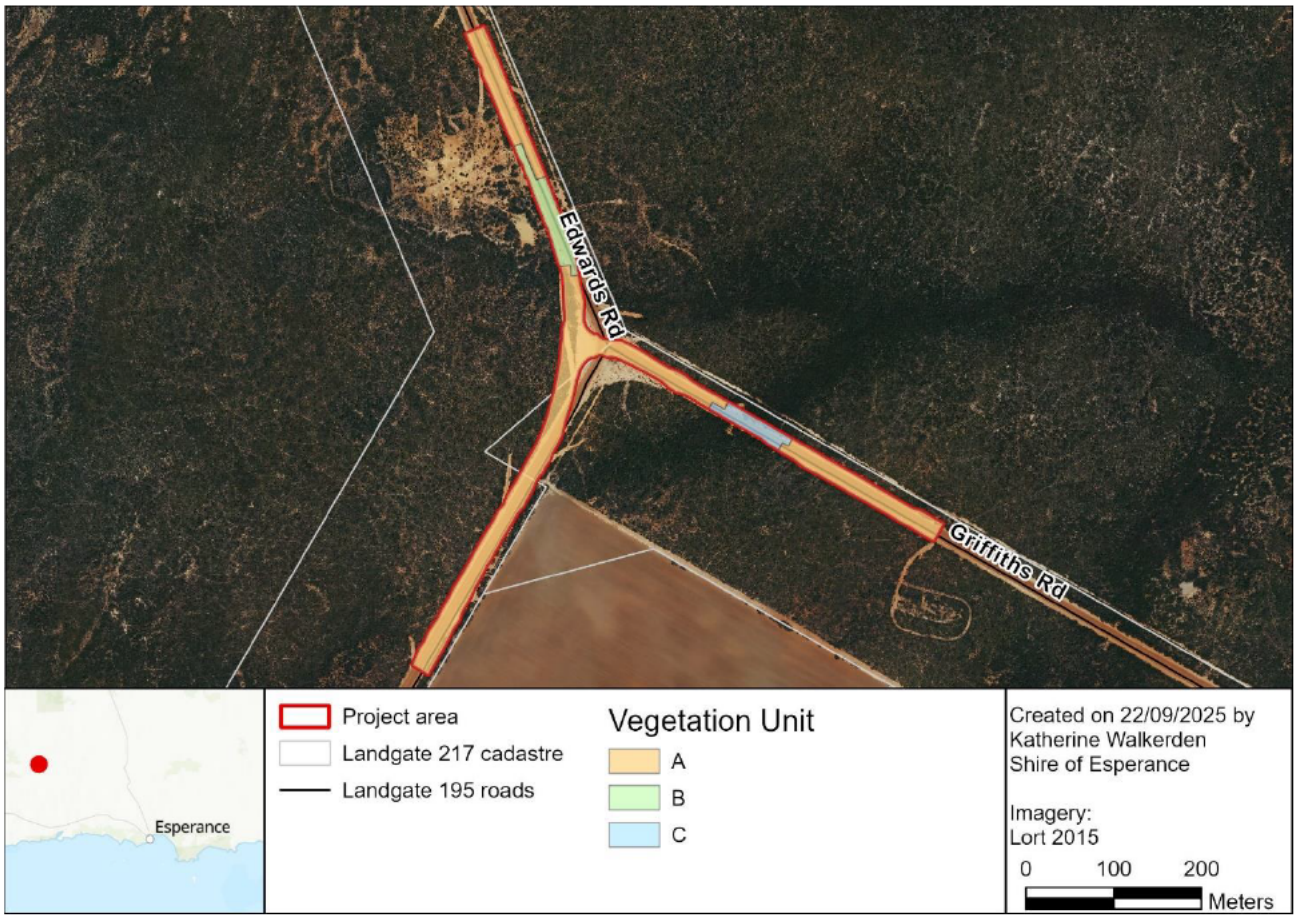


Figure 3. Vegetation types within the Site C – Edwards and Griffiths Intersection Upgrade area.

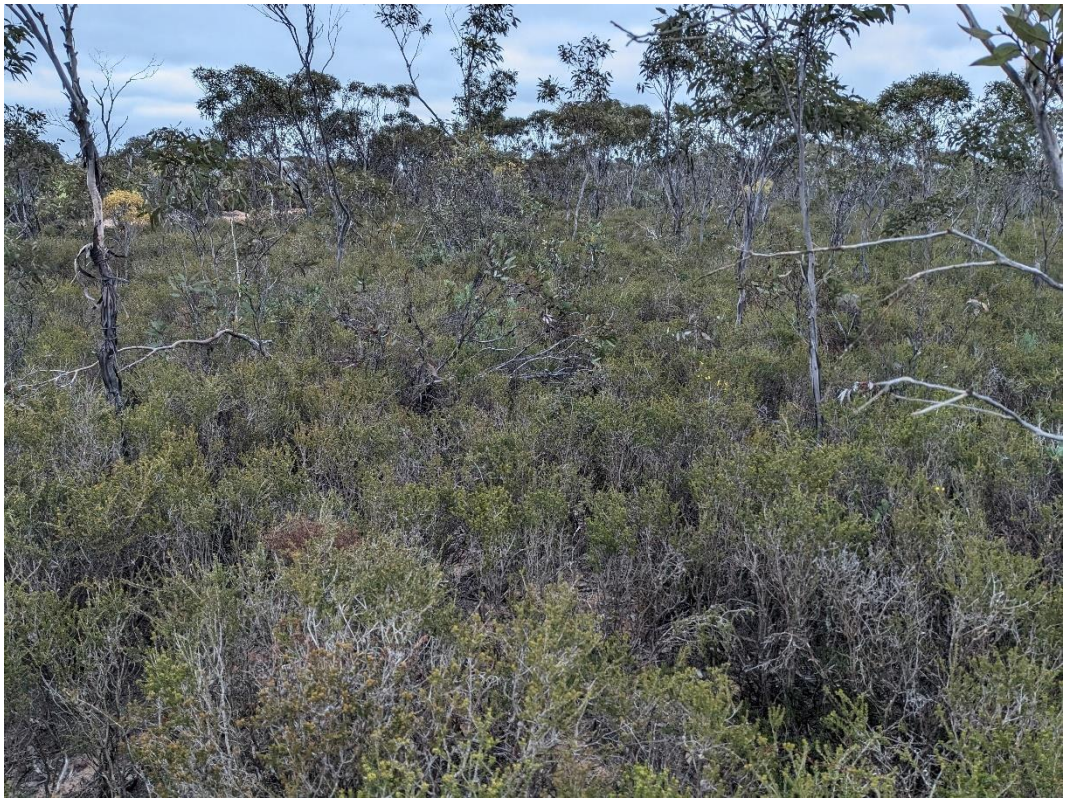


Figure 4. Vegetation type A identified in Site C – Edwards and Griffiths Intersection Upgrade project, described as: “Open mallee over low mixed Melaleuca shrubland over *Gahnia ancistrophylla*”.

Figure 5. Vegetation type B identified in Site C – Edwards and Griffiths Intersection Upgrade project, described as: “*Allocasuarina huegeliana* over *Melaleuca uncinata* and *Calothamnus quadrifidus* tall shrubland”.

Figure 6. Vegetation type C identified in Site C – Edwards and Griffiths Intersection Upgrade project, described as: "*Eucalyptus platypus* closed woodland with mixed *Melaleuca* shrubland".

6.2. Vegetation condition

All vegetation within the clearing permit area was in excellent condition, with no obvious disturbance through a large majority of the site. Some disturbance was present in vegetation type B due to historical gravel extraction, however due to vegetation structure remaining intact, a high diversity of species and a complete lack of weed species this area was also considered to be in excellent condition.

6.2.1. Weeds

No weed species were recorded during the survey.

6.2.2. Phytophthora dieback

There were no signs of dieback present within the site, there was no dieback susceptible vegetation within vegetation types A & C, however there was some dieback susceptible vegetation within Vegetation type B. 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.

6.3. Threatened ecological communities

The EPBC Act listed TEC, Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan) was recorded as occurring 5.88km from the project area. In each of the vegetation types proteaceous plants were significantly below 30% of vegetation cover at all vegetation strata, and could therefore not be considered Kwongkan TEC.

6.4. Flora

A total of 123 vascular plant taxa, representative of 66 genera and 30 families, were recorded within Edwards and Griffiths Intersection Upgrade survey area. No weeds were recorded during the survey. The plurality of taxa recorded were representative of the Myrtaceae (35 taxa), Proteaceae (13 taxa) and Fabaceae (15 taxa) families (see Appendix 1 for the complete incidental species list).

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

- Plant material was sterile or lacked sufficient taxonomic features to permit accurate identification to species level. In these cases, the species is identified as, for example, *Pterostylis* sp.

6.5. Threatened and priority flora

The targeted flora survey identified three PF within the Edwards and Griffiths Intersection Upgrade survey area. In addition *Grevillea aneura* (P4) and *Hypocalymma magnificum* (EN) were nearby the clearing area. Queries of spatial datasets were requested specifically for these species, to interrogate impact of proposed works on species sustainability (DBCA 2024b).

Table 4: Summary of priority flora species recorded in Site C – Edwards and Griffiths Intersection Upgrade project area.

Taxon	BC Act conservation status	Total plants	Total plants in maintenance zone	Total plants impacted
Hypocalymma magnificum	EN	1056	0	0
Acacia diminuta	P1	40	37	3
Eucalyptus stoatei	P4	89	0	31
Grevillea aneura	P4	Not counted	0	0
Melaleuca fissurata	P4	147	50	63

6.5.1. *Hypocalymma magnificum*, Endangered

A targeted survey of the known population of *Hypocalymma magnificum* was conducted on the 14th of August 2025 by Julie Waters, Katherine Walkerden and Emma Adams. A total of 982 plants were counted within the known population of *Hypocalymma magnificum*. Data from this survey was provided to the Shire of Esperance design team and all plants can be avoided. No plants will be impacted by the project, the closest plant was located 22m from the project area.

An additional 74 plants were counted in a second population of *Hypocalymma magnificum* which had not been formally reported prior to the survey. This population was located along Edwards Road at SLK 9.68 (Main Roads, 2025) on both sides of the road.

A specimen was sent to the WA Herbarium for identification confirmation (KSW01125; Accession 11814 with specimen retained). The identification was confirmed by Mike Hislop on 1 October 2025.

Figure 7. Photo of *Hypocalymma magnificum*. Photo taken by Katherine Walkerden on 14/08/2025.

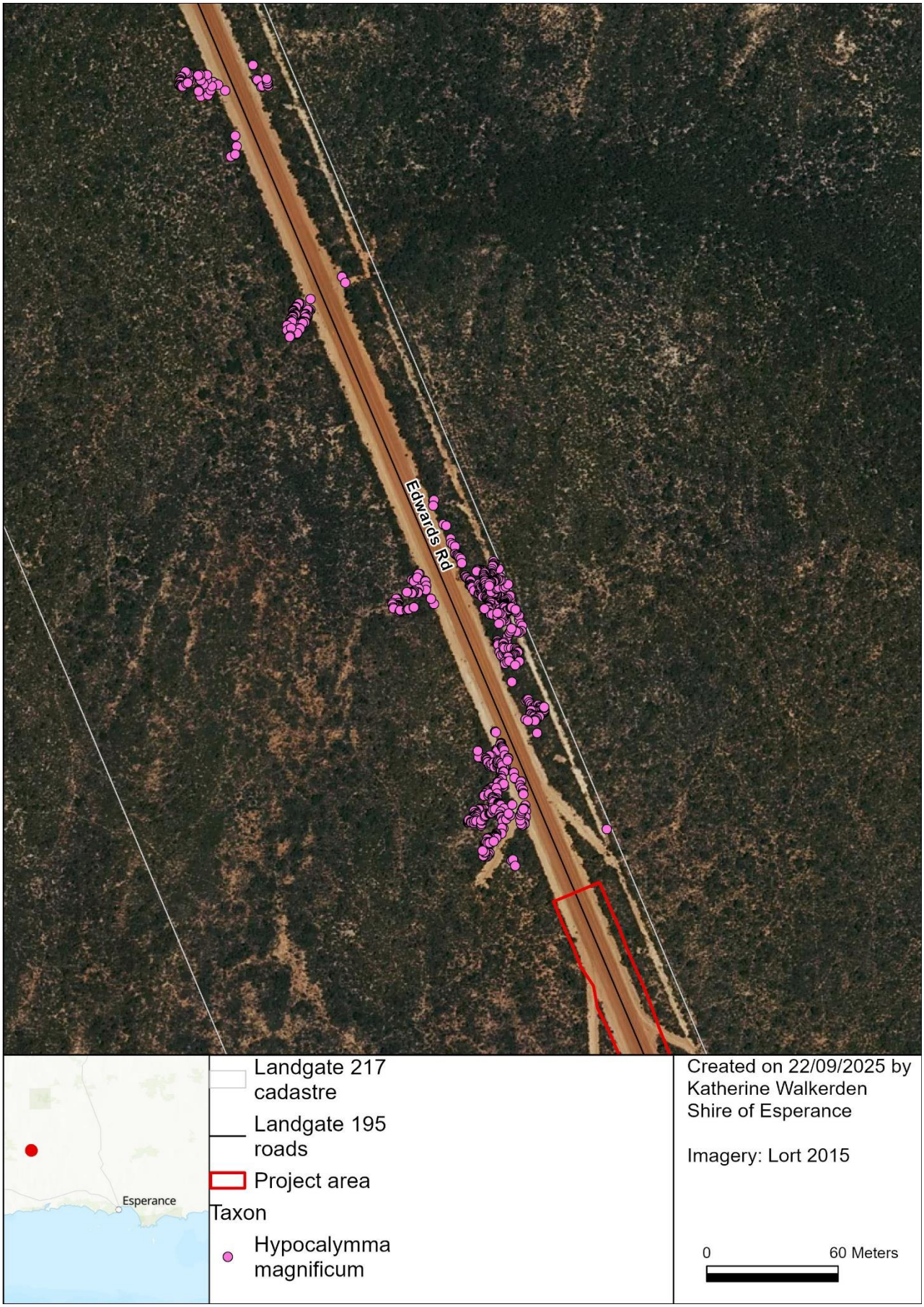


Figure 8. Map of *Hypocalymma magnificum* distribution on Edwards Road with

project area in the south (note: this does not include new population north of the site at SLK 9.68).

6.5.2. *Acacia diminuta*, Priority 1

A specimen of *Acacia diminuta* was sent to the WA Herbarium for identification confirmation (KSW03225; Accession 11822 with specimen retained). The identification was confirmed by Michael Hislop on 8 October 2025. If proposed works occur, three plants will be cleared. An additional 37 plants were present within the maintenance zone, from a population total of 40.

A Threatened and Priority Flora Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) Esperance District Flora Conservation Officer and Species and Communities Branch on 26 November 2025 (Appendix 2).

Acacia diminuta is a poorly known species that has not been well surveyed or documented. *The species* previously had a total of seven known populations. Only four of these populations have populations counts, with 600, 8, 3 and 1 plants recorded for these populations. The largest of these populations was located by the Shire of Esperance staff in 2024.

A single population was in Griffiths nature reserve, all other population were either located in shire road reserves or lacked specific location data, preventing assessment of tenure. The species had a range of 200km east to west and 50km north to south, with five populations in the Shire of Esperance and one in the Shire of Ravensthorpe. The species was described in previous herbarium collections as growing in a range of soil types from sand to sandy clay, being in line with the soil present at the site.

The largest of the known populations was associated with the cleared area within a historic dam catchment, in addition the plants present within this project were primarily within the maintenance zone, suggesting that the species germination benefits from mechanical disturbance.

Table 5. Compiled population data of Priority 1 species, *Acacia diminuta.*

Site Description	Population Count	Sheet no. / Pop no.	Year collected	Tenure
Reserve 20296. No. 18 Tank. 800m NW of Hobby and Swann Road intersection.	600	Pending	2024	Shire Reserve
In southern road reserve of Rollond Road, 400m East of Cascade Road intersection. 100m into road	3	9396241	2020	Road Reserve

reserve, SE corner 111km NW of Esperance townsite / 2km NW of Cascade townsite				
45km NNE of Munglinup on north side of Rollond Road, 800m SW of intersection with Edwards Road	8	9359125	2019	Shire road reserve
Griffiths Road, 500m north of Edwards Road. Plant found within the road reserve adjacent to Griffiths Nature Reserve	1	8656932	2015	Shire road reserve
9.1km north of Griffiths road on Field road, 0.8km north of Field road, Reserve 30583 46km due west of Scaddan Townsite		346896 Pop 1	1984	Nature Reserve
58km from Esperance towards Norseman		704288	1968	Lacked location data
27 miles west of Ravensthorpe and 18 miles north of Ravensthorpe-Ongerup Road 45km due WNW of Ravensthorpe		175188 & 729604	1965	Lacked location data

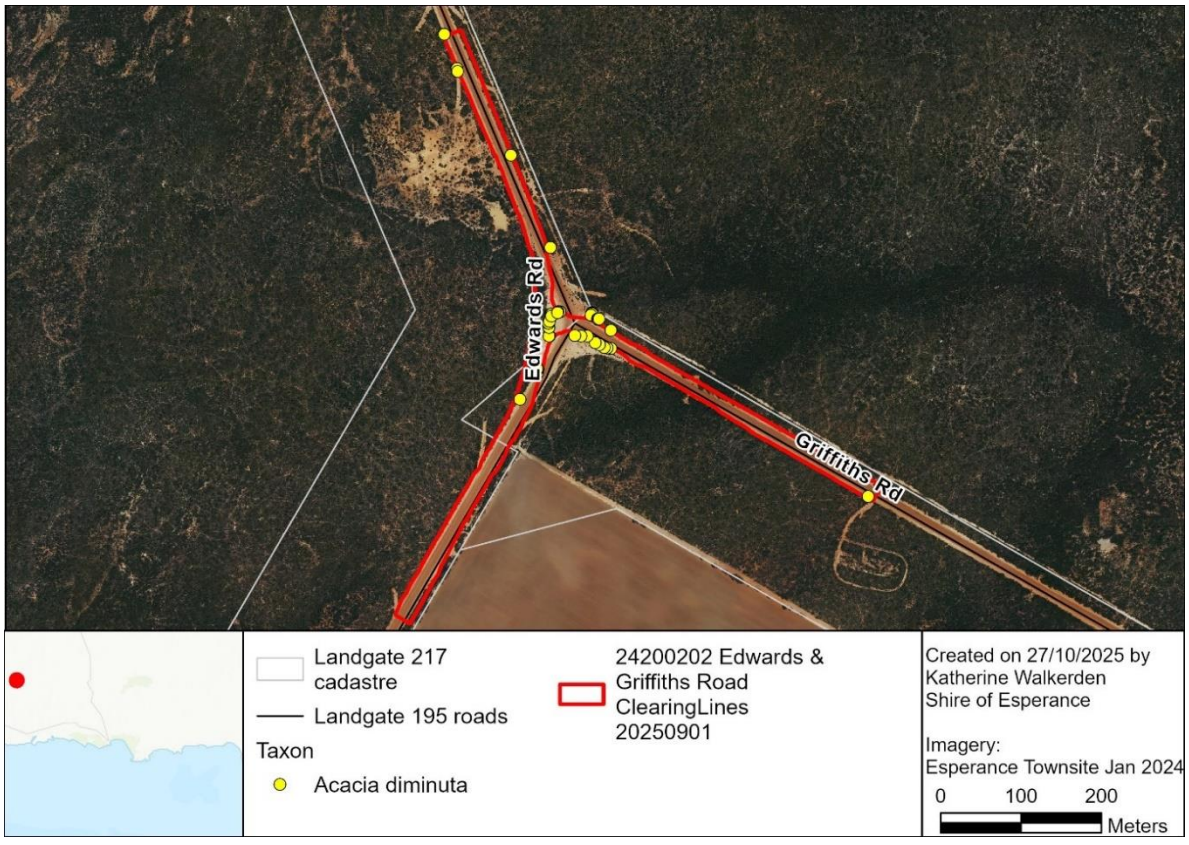


Figure 9. Location of Priority 1 species *Acacia diminuta* within the Site C – Edwards and Griffiths Intersection Upgrade project.

6.5.3. *Melaleuca fissurata*, Priority 4

A specimen of *Melaleuca fissurata* was sent to the WA Herbarium for identification confirmation (KSW01225; Accession 11814 with specimen retained). The identification was confirmed by Mike Hislop on 1 October 2025. If proposed works occur, 63 plants will be impacted upon, from a population total of 147.

A Threatened and Priority Flora Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) Esperance District Flora Conservation Officer and Species and Communities Branch on 26 November 2025 (Appendix 2).

There were 5 TPFL records and 33 WAHerb records for this species. Many of these records mention the species being locally common, with one record stating there was 1000's of plants. A total of 11 new populations had been found by the Shire of Esperance staff. Ecoscape recorded 19 new populations totalling 1605 plants. In total there were 66 known populations of *Melaleuca fissurata*.

Melaleuca fissurata is widespread located from north of the Stirling Range north to Hyden eastwards to north of Beaumont Nature Reserve; a north-south range of 170km and an east-west range of over 450km. The species is present in three IBRA subregions (Eastern Mallee, Western Mallee and Recherche) and five local government areas (Shires of Esperance, Lake Grace, Kent, Gnowangerup, and Kulin). Given the wide distribution and large number of populations, the project is unlikely to pose any significant impact to the species.

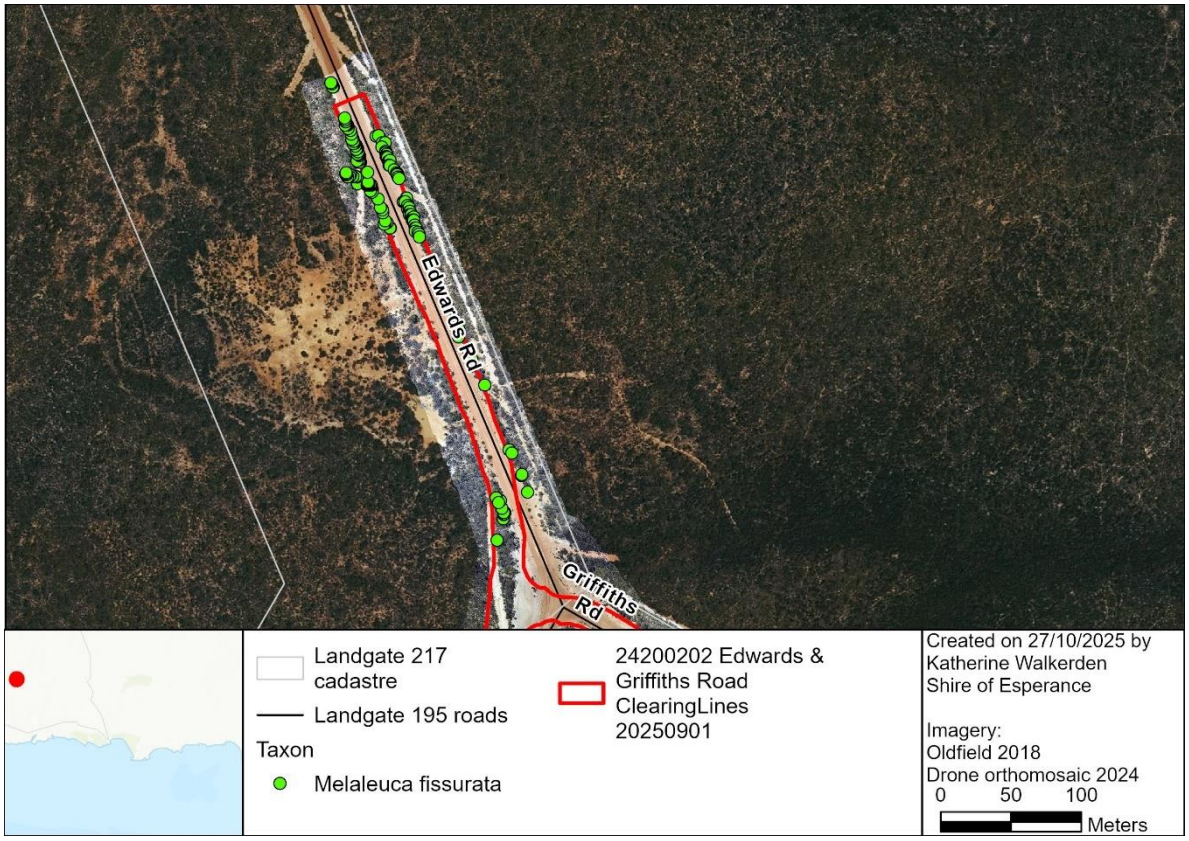


Figure 10. Location of Priority 3 species *Melaleuca fissurata* within the Site C – Edwards and Griffiths Intersection Upgrade project.

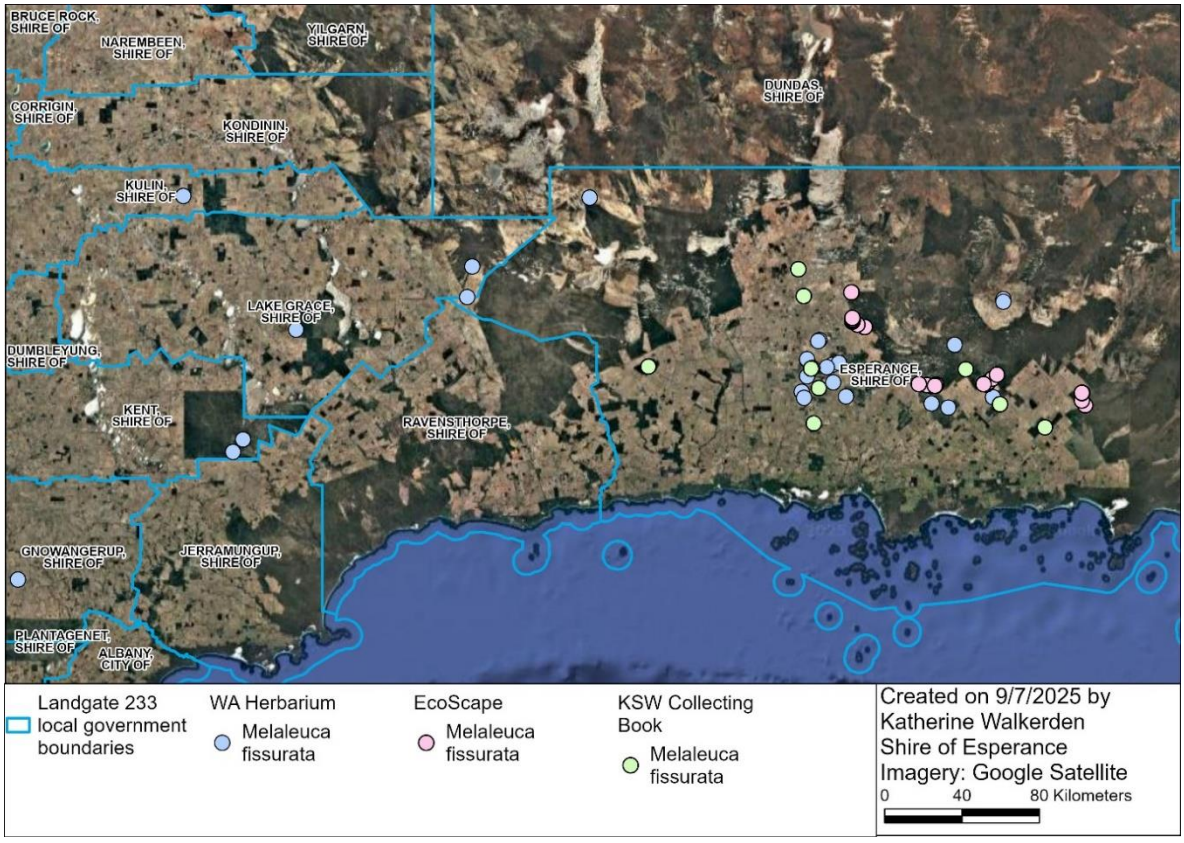


Figure 11. Known populations of Priority 4 species *Melaleuca fissurata*.

6.5.4. *Grevillea aneura*, Priority 4

A specimen of *Grevillea aneura* was sent to the WA Herbarium for identification confirmation (KSW02425; Accession 11822 with specimen retained). The identification was confirmed by Michael Hislop on 8 October 2025. All *Grevillea aneura* plants were outside the project area and no plants will be impacted by the project.

A Threatened and Priority Flora Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) Esperance District Flora Conservation Officer and Species and Communities Branch on 26 November 2025 (Appendix 2).

6.5.5. *Eucalyptus stoatei*, Priority 4

A specimen of *Eucalyptus stoatei* was sent to the WA Herbarium for identification confirmation (KSW03725; Accession TR0075 with specimen retained). A total of 31 plants from a total population greater than 89 plants will be impacted. The population survey only counted plants within the clearing area and on the edge of the roadside, and the total population was significantly larger than 89 plants.

A Threatened and Priority Flora Reporting Form (TPRF) was completed and sent to Department of Biodiversity, Conservation and Attractions (DBCA) Esperance District Flora Conservation Officer and Species and Communities Branch on 26 November 2025 (Appendix 2).

There were 51 herbarium records for this species, 50 of which were present within the Shire of Ravensthorpe. A large majority of these records lacked any population estimates, however based on the records that did have population estimates there were 7900 plants. In addition, Ecoscape had recorded 2164 plants during the State Barrier Fence surveys.

The species has a large geographic range with a 91km east to west range and a 74km north to south range.

Given the large number of populations, and population size being over 10000 plants and large range the species is likely suitable for delisting.

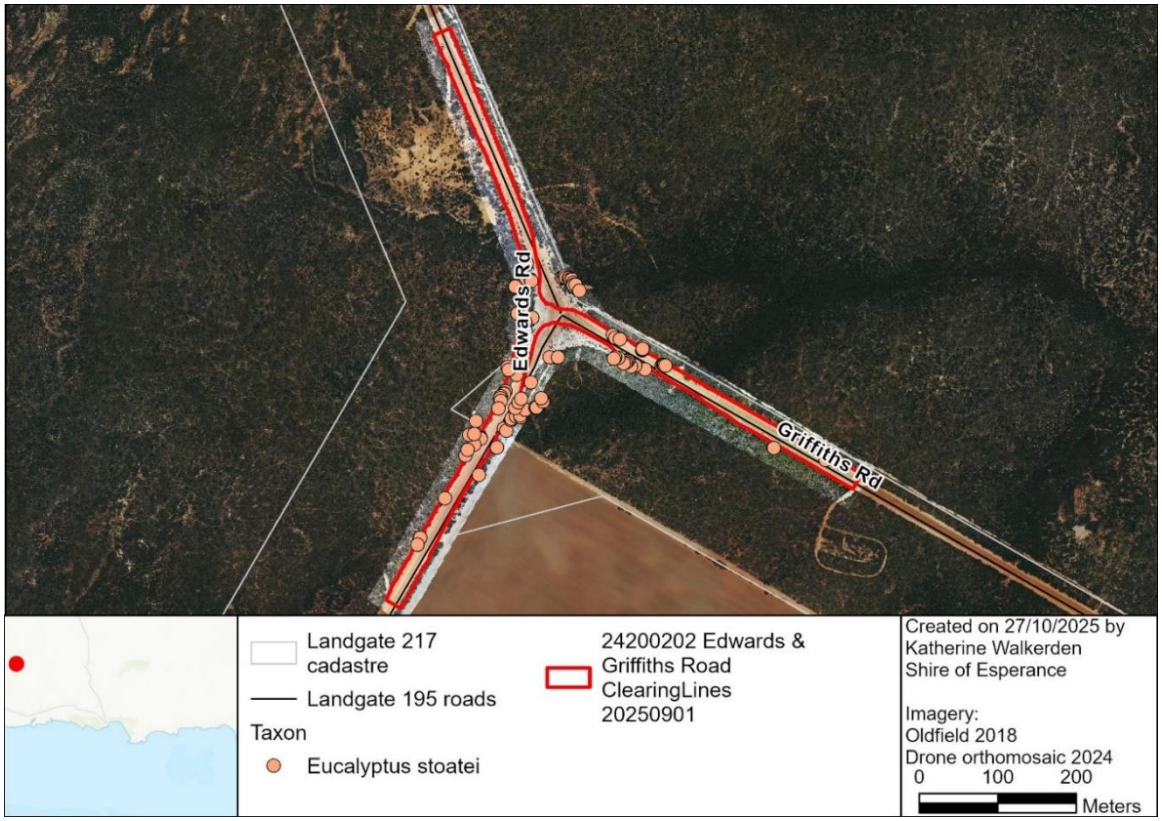


Figure 12. Location of Priority 4 species *Eucalyptus stoatei* within the Site C – Edwards and Griffiths Intersection Upgrade project.

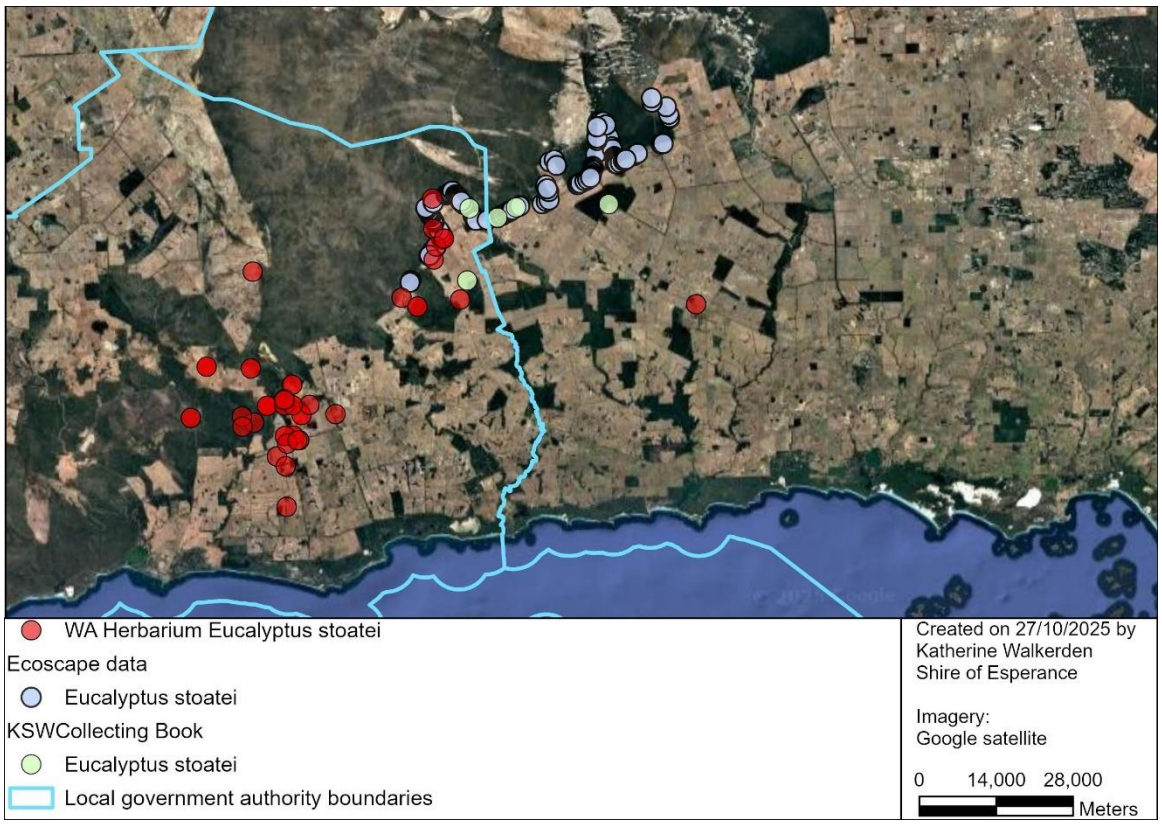


Figure 13. Map of Eucalyptus stoatei distribution within the Shire of Esperance and Shire of Ravensthorpe.

6.6. Fauna

Of the species identified within the Desktop survey, only Malleefowl, Grey Falcon and Chuditch have suitable habitat within the proposed clearing permit area.

6.6.1. Malleefowl, *Leipoa ocellata,* Vulnerable

The Malleefowls habitat is described as “Semi-arid to arid, long-unburnt mallee-dominated areas with sandy (can be sandy gravel) substrate and abundant leaf-litter for nest mound building.”

Vegetation Type A & C provide potentially suitable habitat for this species. Vegetation Type B lacked adequate leaf litter presence. Vegetation within the project area may also provide some limited habitat connectivity between Griffiths Nature Reserve and a large area of unallocated crown land and national parks (containing Pyramid Lake, Lake Mends, Lake Tay and Peach Charles) to the north of the project area.

6.6.2. Grey Falcon, *Falco hypoleucos,* Vulnerable

There were no records of this species within 20km of the project area
The Grey Falcons habitat is described as “restricted largely to areas of the highest annual average temperatures where there is an average annual rainfall of less than 500 mm. It favours lightly timbered and untimbered lowland plains that are crossed by tree-lined watercourses. It uses the abandoned nests of other bird species, particularly corvids.

Vegetation within the project area provided potentially suitable habitat for the Grey Falcon.

6.6.3. Chuditch, *Dasyurus geoffroii,* Vulnerable

Currently restricted to south-western WA, with population strongholds in dry sclerophyll forest and dry woodland and mallee-heath, namely in Lake Magenta NR, Southern Forests, Julimar State Forest, and Fitzgerald River NP. Chuditch require hollow logs, earth burrows, and occasionally hollowed-out termite mounds for daytime shelter / nesting. Hollow tree bases are occasionally used.

Vegetation within the project area provided potentially suitable habitat for the Chuditch.

7. Review of the Ten Clearing Principles

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

Likely at variance: Biodiversity at this site is high with 123 native species recorded over three vegetation communities.

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

Likely at variance: The site provided potentially suitable habitat for the Malleefowl, Grey Falcon and Chuditch.

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

Likely at variance: Four priority species were observed in the area, and one threatened species was near the project. However, *Melaleuca fissurata* and *Eucalyptus stoatei are* relatively widespread throughout the region, *Grevillea aneura* and *Hypocalymma magnificum* will not be impacted by the project. *Acacia diminuta* was mostly present within the existing maintenance zone with only three plants being impacted by the clearing activities.

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

Not at variance: No TEC's or PEC's were present within the study area.

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

Not at variance: There was 50.44% native vegetation within 5km of the project site. Vegetation within the project area likely contributed to habitat connectivity, with the vegetated road reserve providing habitat connectivity between Griffiths Nature Reserve and a large area of UCL and national parks to the north of the project area. However the location being cleared is nested in the middle of Griffiths Nature Reserve and clearing of the proposed project area is unlikely to reduce habitat connectivity due to the large area of native vegetation surrounding it.

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

Not at variance: Vegetation in this area was not growing in association with a watercourse or wetland.

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

Not at variance: The area was mapped as high wind erosion risk. Given the large area of native vegetation present surrounding the project area, the small amount of clearing occurring is unlikely to cause appreciable land degradation.

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

Likely/Not at variance: The project is 11 metres away from Griffiths Nature Reserve. The relatively low amount of native vegetation cleared will have little effect on the ecological linkages to this reserve.

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

Not at variance: Given the minimal amount of clearing and lack of wetlands in the area there is unlikely to be any significant impacts.

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

Not at variance: Given the minimal amount of clearing being conducted there is unlikely to have any significant impacts.

8. Recommendations

As the Shire of Esperance Environmental Coordinator signs off on project work packs, the following recommendations will be included within the internal SOE approval process for the road project:

- All vehicles and construction equipment to be cleaned prior to start of the project.
- Regular washdowns to occur during the project to reduce spread of weed and pathogens within the project area.
- Works to be carried out in the dry (summer) months to minimise spread of dieback.
- Follow up spraying of emergent roadside weeds where gravel has been sourced from farmland to prevent weeds coming into the weed free areas.
- Revegetation of old road alignment (Section 8.1).

8.1. Revegetation plan

To meet the objectives of a successful scientific-based Revegetation Plan for Edwards and Griffiths Intersection Upgrade, numerous factors need to be considered and will be implemented, including the reference site, weed control, pest and disease hygiene practices, site preparation, species selection, completion criteria, monitoring and adaptive management practices in the need of contingency measures. These are outlined in sections 8.1.1 to 8.1.7, with key points highlighted below:

- Revegetation works will consist of ripping the site and spreading the separately stockpiled cleared vegetation and topsoil containing the natural stored soil seed bank directly back over the site.
- Revegetation works will be carried out over in Autumn to early Winter (April - June) prior to the onset of the main winter rains in the year post clearing.
- Multispectral drone aerials will be conducted prior to clearing so that vegetation planned to be cleared can be used as reference vegetation.

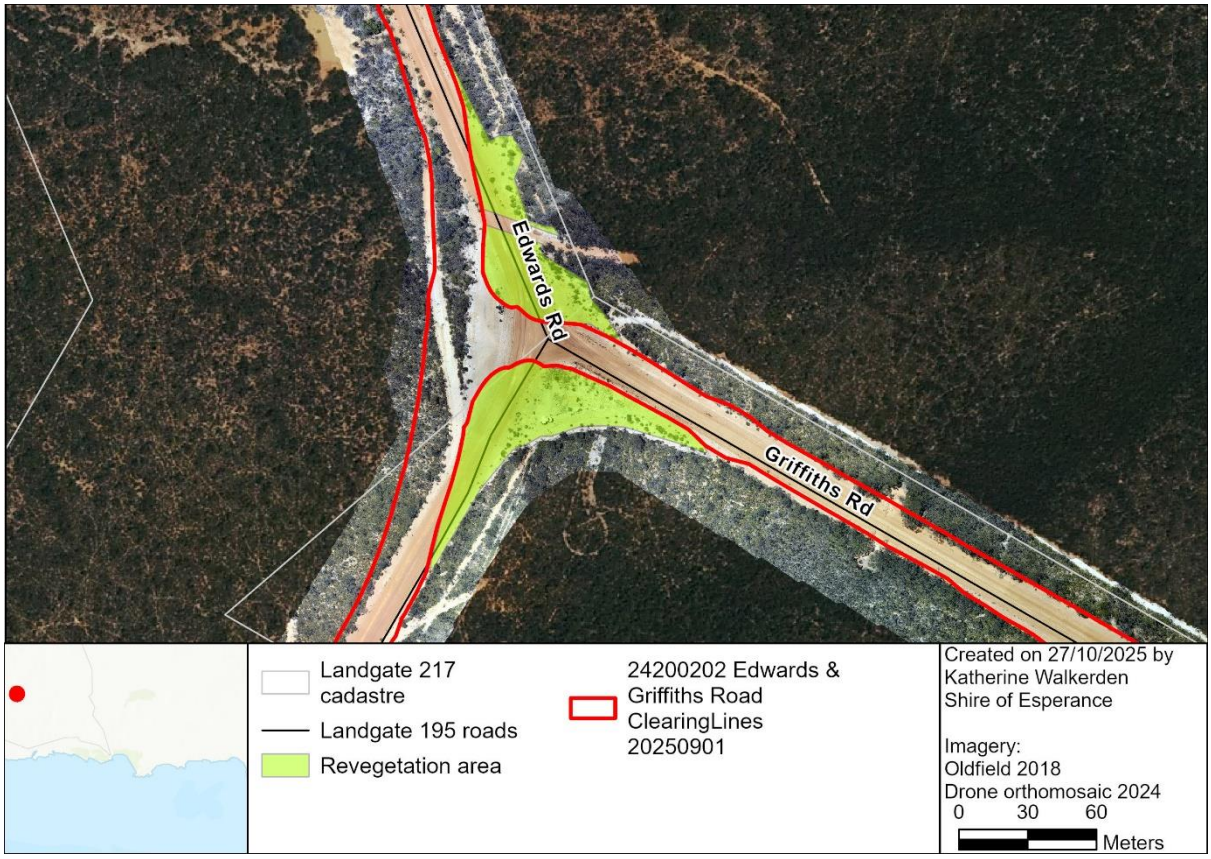


Figure 14. Revegetation area within the Site C – Edwards and Griffiths Intersection Upgrade area.

8.1.1. Rehabilitation methodology

A dozer will be used to remove vegetation, topsoil and the overburden (consisting of approximately 300mm deep of soil). This valuable topsoil layer that contains large reservoirs of the soil seed bank and live clonal tissue will be stockpiled separately for rehabilitation of the previous road alignment.

Rehabilitation works will commence at the site during construction of the project. This will involve spreading the stockpiled topsoil containing the soil seed bank from prior to clearing evenly across the rehabilitation area. The site will be ripped to a depth of 200-350mm, any overburden returned and then topsoil spread over the area. No direct tube stock planting or direct seeding will occur immediately, and this will only be used as a contingency measure if the initial method fails.

Due to the presence of Acacia diminuta within the existing maintenance zone there will likely be some temporary impacts to this species because of the rehabilitation activities, however due to the species abundance in disturbed areas it is likely that the species will benefit from this disturbance.

8.1.2. Weed control

Monitoring of weed presence will also be required, control may be required, appropriate control methods will depend on scope of weed presence.

8.1.3. Disease hygiene management

There are many plant pathogens that can be spread by moving infected soil and plant material. Specifically, of focus is *Phytophthora* dieback, such as *P. cinnamomi* or *P. pseudocryptogea*. Hygiene measures to minimise the risk of diseases are a standard part of Shire of Esperance's practices when clearing vegetation, including:

- All machinery, plant and equipment shall be free of soil and vegetative matter prior to entering and leaving the site.
- Soil will only be moved during dry conditions.

8.1.4. Completion criteria

A high species richness was present at the site, due to a detailed flora survey being completed the 2025 survey can be used as a baseline for species richness. Multispectral drone aerials will be used to assess vegetation density; a drone aerial will be flown prior to the clearing to serve as a baseline for vegetation cover.

Table 6. Completion criteria following the SMART (specific, measurable, achievable, relevant, time-bound) principles for the rehabilitation of the West Point Road gravel pit.

Criterion	Baseline floristic data	Completion target	Completion criteria

1	Diversity was high within project area.	A majority of species richness has returned when compared to adjacent uncleared vegetation in a 10m x 10m quadrat.	80% of species diversity is present within revegetation quadrat 10m x 10m
4	Vegetation cover in pre-clearing drone aerials.	A majority of vegetation cover has returned within the entire site	Drone aerial showing 60% of pre-clearing vegetative coverage throughout the site.
5	Vegetation was Excellent condition.	Vegetation condition of revegetation area is comparable to pre-clearing condition.	80% of revegetation area is in an Excellent or better condition

8.1.5. Monitoring

Monitoring of the rehabilitated area following gravel extraction will determine if completion criteria have been successful and if contingency measures are required (Section 8.1.6). The methodology for monitoring will involve onsite visual assessments to determine whether revegetation has been implemented as planned and that completion criteria have been met, as outlined in Table 6. Monitoring will occur biennially by the Shire of Esperance's Environmental Officers.

Baseline drone aerials will be taken prior to clearing and drone aerials will begin two years after revegetation has occurred. This will continue until rehabilitation has been deemed successful.

8.1.6. Contingency measures

Where the rehabilitation is deemed unsuccessful by comparison to the completion criteria (Section 8.1.4), contingency measures will be undertaken, until the completion criteria are met sufficiently. This is an adaptive process and dependent on what completion criteria has failed. A few standard techniques are outlined below:

- If the composition of species does not meet criteria, then specific species will be infill planted and/or seeded during the next revegetation season from April to August.
- If the density of cover does not meet criteria, then the area will be infill planted and/or seeded with species from the preclearing species list (Appendix 1) during the next revegetation season from April to August.
- If environmental weeds occur at the site, then herbicide and or manual control will be applied to affected areas.

8.1.7. Species selection

Keystone and dominant species will be selected as a contingency measure if respreading topsoil and stockpiled vegetation has unsuccessful germination and does not meet the completion criteria. The incidental species list from the 2025 survey (Appendix 1) will be the basis for determining species selection for seed and tubestock seedlings, based on availability. Seed can also be collected from the surrounding road reserve.

9. List of Personnel

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

Name	Julie Waters
Position	Environmental Coordinator
Project Involvement	Desktop and Field Survey, Specimen Identification, GIS Mapping Data Interpretation and Report Writing
Qualifications	BEnvSc (Hons)
Experience	25 years working in environmental field including Flora Conservation Officer for previous DBCA, and 15 years' experience as a botanist in the region
Scientific Licence	FT61000787-2

Name	Katherine Walkerden
Position	Environmental Officer
Project Involvement	Desktop and Field Survey, Specimen Identification, GIS Mapping, Data Interpretation and Report Writing
Qualifications	BSc, MEnvSc
Experience	Four years' experience as a botanist in the region
Scientific Licence	FT61000788-2

Name	Rosamund Mary Hoggart
Position	Environmental Assistant
Project Involvement	Specimen Identification
Qualifications	BSc (Hons)Ag
Experience	20 years' experience as a botanist in the region and is highly regarded by Esperance Wildflower Society and her peers in Esperance as one of the best botanists in Esperance.
Scientific Licence	N/A

10. References

Atlas of Living Australia database (2024), < https://www.ala.org.au/>

Beard J.S. (1973), *The vegetation of the Esperance and Malcom areas, Western Australia, 1:250 000 series*, Vegmap Publications Perth

Bureau of Meteorology (2024), Climate statistics for Australian sites.http://www.bom.gov.au/climate/averages/tables/ca_wa_names.shtml

Commonwealth of Australia, *Environmental Protection and Biodiversity Conservation Act 1999* (Cth), <https://www.legislation.gov.au/Details/C2022C00214>

Commonwealth of Australia (2014), *Approved Conservation Advice for Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia*, Department of the Environment, http://www.environment.gov.au/biodiversity/threatened/communities/pubs/126-conservation-advice.pdf>

Commonwealth of Australia (2021), *Approved Conservation Advice for Subtropical and Temperate Coastal Saltmarsh*, Department of Agriculture, Water and the Environment, https://www.dcceew.gov.au/environment/biodiversity/threatened/conservation-advices/subtropical-temperate-coastal-saltmarsh

Commonwealth of Australia (2024), *National Recovery Plan for the Malleefowl (Leipoa ocellata)* Department of Climate change, Energy the Environment and Water

Department of Agriculture, Water and the Environment (2022) *Referral guideline for 3 WA threatened black cockatoo species, Carnaby's Cockatoo (Zanda latirostris), Baudin's Cockatoo (Zanda baudinii) and the Forest Red-tailed Black-cockatoo (Calyptorhynchus banksii naso)* <https://www.dcceew.gov.au/sites/default/files/documents/referral-guideline-3-wa-threatened-black-cockatoo-species-2022.pdf>

Department of Biodiversity, Conservation and Attractions (2023a) *List of Threatened Ecological Communities Endorsed by the Western Australian Minister for Environment* <https://www.dbca.wa.gov.au/wildlife-and-ecosystems/threatened-ecological-communities/list-threatened-ecological-communities>

Department of Biodiversity, Conservation and Attractions (2023b), Conservation codes for Western Australian flora and fauna, Government of Western Australia. <https://www.dbca.wa.gov.au/media/792/download >

Department of Biodiversity, Conservation and Attractions (2023c), *Priority Ecological Communities for Western Australia Version 35,* Government of Western Australia

Department of Biodiversity, Conservation and Attractions (2024a), *Esperance District Threatened and Priority Flora spatial dataset,* Government of Western Australia [February 2024]

Department of Biodiversity, Conservation and Attractions (2024b), *Melaleuca fissurata, Acacia diminuta, Western Australian Herbarium and Threatened and Priority Reporting (TPFL) spatial extracts, 29-1224FL,* Government of Western Australia. [17/12/2024]

Department of Biodiversity, Conservation and Attractions (2025a), *Threatened and Priority Flora Database (TPFL) spatial dataset, 31-0525FL,* Government of Western Australia. [13/5/2025]

Department of Biodiversity, Conservation and Attractions (2025b), *Western Australia Herbarium spatial dataset, 36-0624FL,* Government of Western Australia. [13/5/2025]

Department of Biodiversity, Conservation and Attractions (2025c), *Threatened Ecological Communities and Priority Ecological Communities Search Results, for Boundaries and Buffers, 33-0625EC,* Government of Western Australia. [23/6/2025]

Department of Biodiversity, Conservation and Attractions (2025d), *Threatened and Priority Fauna Search Results,* 30-0525FA Government of Western Australia. [14/05/2025].

Department of Biodiversity, Conservation and Attractions (2025e) *Black cockatoo / Carnaby's cockatoo roost and breeding sites,* 30-0525FA Government of Western Australia. [14/05/2025].

Department of Biodiversity, Conservation and Attractions (2025g) *Florabase, The Flora of Western Australia Online* (and collections housed at the WA Herbarium).<https://florabase.dpaw.wa.gov.au/search/advanced.>

Department of Biodiversity, Conservation and Attractions (2025h), *Threatened and Priority Ecological Communities Search Results,* 33-0625EC Government of Western Australia. [26/06/2025].

Department of Biodiversity, Conservation and Attractions (2025i), *Eucalyptus stoatei, Western Australian spatial extract, 20-1225FL,* Government of Western Australia. [17/12/2024]

Department of Climate Change, Energy, the Environment and Water (2025), *EPBC Act Protected Matters Search Tool* <pmst.environment.gov.au> [22.09.2025]

Department of Climate Change, Energy, the Environment and Water (2025), *EPBC Act List of Threatened Ecological Communities*. < https://www.environment.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl>

Department of Climate Change, Energy, the Environment and Water (2025), *EPBC Act List of Threatened Fauna*, < https://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna >

Department of Climate Change, Energy, the Environment and Water (2025), *EPBC Act List of Threatened Flora*. < https://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora>

Department of Environment and Conservation (2021) *Chuditch (Dasyurus geoffroii) National Recovery Plan,* Western Australian Wildlife Management Program No. 54

Department of Environment and Energy (2017), *Australian Vegetation Attribute Manual Version 7.0* <https://www.dcceew.gov.au/sites/default/files/documents/australian-vegetation-attribute-manual-v70.pdf>

Department of Parks and Wildlife (2018), *2018 Statewide Vegetation Statistics (formerly the CAR Reserve Analysis – Full Report',* Government of Western Australia

Department of Primary Industries and Regional Development (2024), *Western Australian Organism List*. <https://www.agric.wa.gov.au/organisms>

Department of Water and Environmental Regulation (2014) *A guide to the assessment of applications to clear native vegetation, Under Part V Division 2 of the Environmental Protection Act 1986*.

Environmental Protection Authority (2016), *Technical Guidance, Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western*

Australia, Government of Western Australia. <http://www.epa.wa.gov.au/policies-guidance/technical-guidance-flora-and-vegetation-surveys-environmental-impact-assessment>

Environmental Protection Authority (2020), *Technical Guidance – Terrestrial vertebrate fauna surveys for Environmental Impact Assessment*, EPA, Western Australia. <https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA-Technical-Guidance-Vertebrate-Fauna-Surveys.pdf>

Environmental Protection Authority, (2016*) Environmental Factor Guideline: Flora and Vegetation,* EPA, Western Australia.

Field, C (2009) *Environmental Weed Strategy 2009-2018*, Shire of Esperance

GAIA Resources, State NRM and South Coast Natural Resource Management (2024), *Dieback Information Delivery and Management Service, DIDMS*. < https://didms.gaiaresources.com.au/>

Main Roads of Western Australia (2025), *Standard Line Kilometres online application*, Government of Western Australia. < https://mrapps.mainroads.wa.gov.au/gpsslk>

Schoknecht, N., Tille, P. and Purdie, B. (2004) *Soil Landscape Mapping in south-western Australia*, Resource Management Technical Report 20, Department of Agriculture WA.

Thackway R, Cresswell ID, Shorthouse D, Ferrier S, Hagar T, Pressey T, Wilson P, Fleming M, Howe D, Morgon G, Young P, Copley P, Peters D, Wells P, Miles I, Parkes D, McKenzie N, Kitchin M & Bullen F (1995), *Interim Biodigeographic Regionalisation for Australia: A framework for setting priorities in the National Reserves System Cooperative Program, Australia Nature Conservation Agency*. < https://www.environment.gov.au/system/files/resources/4263c26f-f2a7-4a07-9a29-b1a81ac85acc/files/ibra-framework-setting-priorities-nrs-cooperative-program.pdf >

Western Australian Government, Biosecurity and Agriculture Management Act 2007, <https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_2736_homepage.html>

Western Australian Government, *Biodiversity Conservation Act 2016* https://www.legislation.wa.gov.au/legislation/statutes.nsf/law_a147120.html

Western Australian Government, *Biodiversity Conservation Act 2016 Biodiversity Conservation (Species) Order 2022*, Government Gazette, WA, 30 September 2022, <https://www.dpaw.wa.gov.au/images/Biodiversity%20Conservation%20Listing%20of%20Native%20Species%20Flora%20Order%202022.pdf>

Western Australian Government, *Biodiversity Conservation Regulations 2018*. <https://www.legislation.wa.gov.au/legislation/statutes.nsf/law_s50938.html>

Appendix 1: Incidental species list

Family	Taxon	Weed	BC Act (EPBC) conservation status	Herbarium reference
Apiaceae	*Platysace effusa*			
Asparagaceae	*Lomandra micrantha* ssp *teretifolia*			
Asparagaceae	*Thysanotus patersonii*			
Boraginaceae	*Halgania andromedifolia*			
Casuarinaceae	*Allocasuarina huegeliana*			
Chenopodiaceae	*Enchylaena tomentosa*			
Cupressaceae	*Callitris roei*			
Cyperaceae	*Gahnia ancistrophylla*			
Cyperaceae	*Lepidosperma* sp.			
Dilleniaceae	*Hibbertia gracilipes*			
Dilleniaceae	*Hibbertia psilocarpa*			
Dilleniaceae	*Hibbertia pungens*			
Dilleniaceae	*Hibbertia rostellata*			
Ericaceae	*Leucopogon obtusatus*			
Ericaceae	*Leucopogon* sp. *Coujinup*			
Ericaceae	*Lissanthe rubicunda*			
Ericaceae	*Styphelia intertexta*			KSW02225
Ericaceae	*Styphelia lissanthoides*			
Euphorbiaceae	*Beyeria sulcata*			
Fabaceae	*Acacia assimilis* ssp *assimilis*			KSW03625
Fabaceae	*Acacia dermatophylla*			
Fabaceae	*Acacia diminuta*		P1	KSW02325
Fabaceae	*Acacia gonophylla*			
Fabaceae	*Acacia lasiocarpa* var *bracteolata*			
Fabaceae	*Acacia pritzeliana*			
Fabaceae	*Acacia profusa*			
Fabaceae	*Aotus* sp. Southern Wheatbelt			
Fabaceae	*Chorizema aciculare*			
Fabaceae	*Daviesia campephylla*			
Fabaceae	*Daviesia lancifolia*			
Fabaceae	*Dillwynia* sp. Mallee			
Fabaceae	*Euchilus purpureus*			
Fabaceae	*Gastrolobium musaceum*			
Fabaceae	*Templetonia rossii*			

Goodeniaceae	*Anthotium humile*			
Goodeniaceae	*Coopernookia polygalaceae*			
Goodeniaceae	*Coopernookia strophiolata*			
Goodeniaceae	*Dampiera lavandulacea*			
Goodeniaceae	*Dampiera sacculata*			
Goodeniaceae	*Goodenia laevis* ssp *laevis*			
Goodeniaceae	*Goodenia scapigera* ssp *scapigera*			
Hemerocallidaceae	*Dianella revoluta*			
Iridaceae	*Patersonia* sp.			
Lamiaceae	*Hemigenia teretiuscula*			
Lamiaceae	*Microcorys obovata*			
Lamiaceae	*Prostanthera serpyllifolia*			
Lamiaceae	*Westringia rigida*			
Lauraceae	*Cassytha melantha*			
Lauraceae	*Cassytha nodiflora*			
Loganiaceae	*Logania stenophylla*			
Malvaceae	*Thomasia microphylla*			KSW02525
Myrtaceae	*Austrobaeckea latens*			
Myrtaceae	*Beaufortia schaueri*			
Myrtaceae	*Calothamnus quadrifidus*			
Myrtaceae	*Cyathostemon ambiguus*			
Myrtaceae	*Darwinia* sp. Lake Cobham			
Myrtaceae	*Eucalyptus calycogona* ssp *calycogona*			
Myrtaceae	*Eucalyptus cylindrocarpa*			
Myrtaceae	*Eucalyptus eremophila*			
Myrtaceae	*Eucalyptus flocktoniae* ssp *flocktoniae*			
Myrtaceae	*Eucalyptus kessellii* ssp *kessellii*			
Myrtaceae	*Eucalyptus perangusta*			
Myrtaceae	*Eucalyptus phaenophylla*			
Myrtaceae	*Eucalyptus platypus*			
Myrtaceae	*Eucalyptus stoatei*		P4	KSW03725
Myrtaceae	*Eucalyptus uncinata*			
Myrtaceae	*Leptospermopsis nitens*			
Myrtaceae	*Melaleuca bromelioides*			
Myrtaceae	*Melaleuca fissurata*		P4	KSW01225
Myrtaceae	*Melaleuca glaberrima*			
Myrtaceae	*Melaleuca hamata*			
Myrtaceae	*Melaleuca johnsonii*			
Myrtaceae	*Melaleuca lanceolata*			

Myrtaceae	*Melaleuca lateriflora*			
Myrtaceae	*Melaleuca pauperiflora*			
Myrtaceae	*Melaleuca podiocarpa*			
Myrtaceae	*Melaleuca rigidifolia*			
Myrtaceae	*Melaleuca sapientes*			
Myrtaceae	*Melaleuca subfalcata*			
Myrtaceae	*Melaleuca thyoides*			
Myrtaceae	*Melaleuca uncinata*			
Myrtaceae	*Melaleuca undulata*			
Myrtaceae	*Rinzia communis*			
Orchidaceae	*Cyanicula aperta*			
Orchidaceae	*Ericksonella saccharata*			
Orchidaceae	*Pterostylis sanguinea*			
Orchidaceae	*Pterostylis* sp.			
Poaceae	*Neurachne alopecuroidea*			
Polygalaceae	*Comesperma spinosa*			
Polygalaceae	*Comesperma volubile*			
Proteaceae	*Grevillea aneura*		P4	KSW02425
Proteaceae	*Grevillea disjuncta*			
Proteaceae	*Grevillea huegeliana*			
Proteaceae	*Grevillea oligantha*			
Proteaceae	*Grevillea pectinata*			
Proteaceae	*Grevillea teretifolia*			
Proteaceae	*Hakea commutata*			
Proteaceae	*Hakea laurina*			
Proteaceae	*Hakea newbeyana*			
Proteaceae	*Isopogon spathulatus* ssp *elongatus*			
Proteaceae	*Persoonia helix*			
Proteaceae	*Persoonia teretifolia*			
Proteaceae	*Petrophile fastigiata*			
Rhamnaceae	*Cryptandra recurva*			
Rhamnaceae	*Spyridium minutum*			
Rhamnaceae	*Spyridium mucronatum* ssp *mucronatum*			
Rutaceae	*Boronia inornata* ssp *inornata*			
Rutaceae	*Cyanothamnus baeckeaceus* ssp *baeckeaceus*			
Rutaceae	*Cyanothamnus inconspicuus*			
Rutaceae	*Phebalium lepidotum*			

Rutaceae	*Phebalium pauciflorum* ssp *pauciflorum*			
Santalaceae	*Exocarpos sparteus*			
Santalaceae	*Leptomeria pachyclada*			
Santalaceae	*Santalum acuminatum*			
Sapindaceae	*Dodonaea caespitosa*			
Sapindaceae	*Dodonaea concinna*			
Sapindaceae	*Dodonaea stenozyga*			
Stylidiaceae	*Stylidium repens*			
Thymelaeaceae	*Pimelea aeruginosa*			
Thymelaeaceae	*Pimelea erecta*			

Appendix 2: Threatened and priority flora report forms

Acacia diminuta

Department of Biodiversity, Conservation and Attractions

Threatened and Priority Flora Report Form

Version 1.4 March 2021

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

TAXON: Acacia diminuta **TPFL Pop. No:**

OBSERVATION DATE: 04/09/2025 **CONSERVATION STATUS:** P1 **New population** ☐

OBSERVER/S: Katherine Walkerden, Julie waters **PHONE** 90831518

ROLE: Environmental Team **ORGANISATION:** Shire of Esperance

EMAIL: katherine.walkerden@esperance.wa.gov.au

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

Intersection of Edwards and Griffiths Road. Growing in road maintenance zone.

Reserve No:

DBCA DISTRICT: Esperance **LGA:** Esperance Land manager present: ☒

DATUM: GDA94 / MGA94 ☒ AGD84 / AMG84 ☐ WGS84 ☐ Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required) DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 6308512

Long / Easting: 315093

ZONE: 51

METHOD USED: GPS ☒ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐ Timber reserve ☐ Private property ☐ Rail reserve ☐ Shire road reserve ☒
National park ☐ State forest ☐ Pastoral lease ☐ MRWA road reserve ☐ Other Crown reserve ☐
Conservation park ☐ Water reserve ☐ UCL ☐ SLK/Pole to Specify other:

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

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

POP'N COUNT ACCURACY: Actual ☒ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	40			
Dead				

Area of pop (m²):

Note: Pls record count as numbers (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 ☐
Immature fruit ☐ Fruit ☐ 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. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme. Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current Impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
•			
•			
•			

Please return completed form to **Species And Communities Program** DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au
RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Program.
Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of Biodiversity, Conservation and Attractions

Threatened and Priority Flora Report Form

Version 1.4 March 2021

HABITAT INFORMATION:

LANDFORM: Crest ☐ Hill ☐ Ridge ☐ Outcrop ☐ Slope ☐ Flat ☐ Open depression ☐ Drainage line ☐ Closed depression ☐ Wetland ☐

ROCK TYPE: Granite ☐ Dolerite ☐ Laterite ☐ Ironstone ☐ Limestone ☐ Quartz ☐ Specify other: ____

LOOSE ROCK: (on soil surface; eg gravel, quartz fields) 0-10% ☐ 10-30% ☐ 30-50% ☐ 50-100% ☐

SOIL TYPE: Sand ☐ Sandy loam ☐ Loam ☐ Clay loam ☐ Light clay ☐ Peat ☐ Specify other: ____

SOIL COLOUR: Red ☐ Brown ☐ Yellow ☐ White ☐ Grey ☐ Black ☐ Specify other: ____

DRAINAGE: Well drained ☐ Seasonally inundated ☐ Permanently inundated ☐ Tidal ☐

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

CONDITION OF SOIL: Dry ☐ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia); 2. Open shrubland (Hibbertia sp., Acacia spp.); 3. Isolated clumps of sedges (M.tetragona)

1. Neighbouring vegetation was: Open mallee over low mixed Melaleuca shrubland over Gahnia ancistrophylla.
2. ____
3. ____
4. ____

ASSOCIATED SPECIES: ____

Other (non-dominant) spp: ____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: ____

FIRE HISTORY: **Last Fire:** Season/Month: ____ Year: ____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: ____

ROADSIDE 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.) ____

Plant was exclusively going within road maintenance zone, likely benefiting from the routine disturbance activities.

____

Known record (PERTH 8656932) was located 460m from the collected plants (KSW03225; Accession 11822)

____

____

____

____

FLORA AUTHORISATION / LICENCE No: FT6100788-2 Note if only observing plants (i.e. no specimens or plant material is taken) then no authorisation/licence is required. For further information on authorisation and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under authorisations/licences should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: KSW03225; Accession 11822 WA Herb. ☒ Regional Herb. ☐ District Herb. ☐ Other: ____

LODGEMENT: WA Herb Lodgement No: PERTH 8656932

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☒ Field notes ☐ Other: ____

COPY SENT TO: Regional Office ☐ District Office ☒ Other: ____

Submitter of Record: Katherine Walkerden Role: Environmental Officer Signed: KW Date: 26/11/25

Please return completed form to **Species And Communities Program** DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au
RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Program.
Record entered by:____ **Sheet No.:**____ **Record Entered in Database** ☐

Eucalyptus stoatei

Department of Biodiversity, Conservation and Attractions

Threatened and Priority Flora Report Form

Version 1.4 March 2021

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

TAXON: Eucalyptus stoatei **TPFL Pop. No:**

OBSERVATION DATE: 25/11/2025 **CONSERVATION STATUS:** P4 **New population** ☒

OBSERVER/S: Katherine Walkerden, Julie Waters **PHONE** 90831518

ROLE: Environental Officer, Environmental Coordinator **ORGANISATION:** Shire of Esperance

EMAIL: katherinew@esperance.wa.gov.au

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

Intersection of Edwards and Griffths Road

Reserve No:

DBCA DISTRICT: Esperance **LGA:** Esperance Land manager present: ☒

DATUM: GDA94 / MGA94 ☒ AGD84 / AMG84 ☐ WGS84 ☐ Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required) DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 6308479

Long / Easting: 315183

ZONE: 51

METHOD USED: GPS ☐ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☒
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other:

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

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

POP'N COUNT ACCURACY: Actual ☒ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive	89			
Dead				

Area of pop (m²):

Note: Pls record count as numbers (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 ☒

Immature fruit ☐ Fruit ☒ 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. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme. Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current Impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Road upgrade	N	L	M
•			
•			

Please return completed form to **Species And Communities Program** DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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

Record entered by:_____ Sheet No.:_____ Record Entered in Database ☐

Department of Biodiversity, Conservation and Attractions

Threatened and Priority Flora Report Form

Version 1.4 March 2021

HABITAT INFORMATION:

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

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

CONDITION OF SOIL: Dry ☐ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia); 2. Open shrubland (Hibbertia sp., Acacia spp.); 3. Isolated clumps of sedges (M.tetragona)

1. Open mallee over low mixed *Melaleuca* shrubland over *Gahnia ancistrophylla*.
2.
3.
4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☒ Present ☐ Replace / repair ☐ Required ☐ Length req'd:

ROADSIDE 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.)

FLORA AUTHORISATION / LICENCE No: FT6100788-2 Note if only observing plants (i.e. no specimens or plant material is taken) then no authorisation/licence is required. For further information on authorisation and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under authorisations/licences should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: KSW03725 TR0075 WA Herb. ☒ Regional Herb. ☐ District Herb. ☐ Other:

LODGEMENT: WA Herb Lodgement No: TR0075

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☒ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☒ Other:

Submitter of Record: Katherine walkerden Role: Environmental Officer Signed: Date: 25/11/2025

Please return completed form to **Species And Communities Program** DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au
RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Program.
Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Grevillea aneura

Department of Biodiversity, Conservation and Attractions

Threatened and Priority Flora Report Form

Version 1.4 March 2021

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

TAXON: Grevillea aneura **TPFL Pop. No:**

OBSERVATION DATE: 04/09/2025 **CONSERVATION STATUS:** P4 **New population** ☒

OBSERVER/S: Katherine Walkerden, Julie Waters **PHONE**

ROLE: Environmental Officer **ORGANISATION:** Shire of Esperance

EMAIL: Katherine.Walkerden@esperance.wa.gov.au

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

Edwards Road and Griffiths Road intersection

Reserve No:

DBCA DISTRICT: Esperance **LGA:** Esperance Land manager present: ☒

DATUM: GDA94 / MGA94 ☒ AGD84 / AMG84 ☐ WGS84 ☐ Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required) DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 6308637

Long / Easting: 315029

ZONE: 51

METHOD USED: GPS ☐ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐ Timber reserve ☐ Private property ☐ Rail reserve ☐ Shire road reserve ☐
National park ☐ State forest ☐ Pastoral lease ☐ MRWA road reserve ☐ Other Crown reserve ☐
Conservation park ☐ Water reserve ☐ UCL ☐ SLK/Pole to Specify other:

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

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

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☐ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				
Dead				

Area of pop (m²):

Note: Pls record count as numbers (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 ☒
Immature fruit ☐ Fruit ☒ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT: No count was conducted, plants outside survey area.

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. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current Impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
•			
•			
•			

Please return completed form to **Species And Communities Program** DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au
RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Program.
Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of Biodiversity, Conservation and Attractions

Threatened and Priority Flora Report Form

Version 1.4 March 2021

HABITAT INFORMATION:

LANDFORM: Crest ☐ Hill ☐ Ridge ☐ Outcrop ☐ Slope ☐ Flat ☐ Open depression ☐ Drainage line ☐ Closed depression ☐ Wetland ☐

ROCK TYPE: Granite ☐ Dolerite ☐ Laterite ☐ Ironstone ☐ Limestone ☐ Quartz ☐ Specify other:

LOOSE ROCK: (on soil surface; eg gravel, quartz fields) 0-10% ☐ 10-30% ☐ 30-50% ☒ 50-100% ☐

SOIL TYPE: Sand ☐ Sandy loam ☐ Loam ☐ Clay loam ☐ Light clay ☐ Peat ☐ Specify other:

SOIL COLOUR: Red ☐ Brown ☐ Yellow ☐ White ☐ Grey ☐ Black ☐ Specify other:

DRAINAGE: Well drained ☒ Seasonally inundated ☐ Permanently inundated ☐ Tidal ☐

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

CONDITION OF SOIL: Dry ☐ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.); **3**. Isolated clumps of sedges (M.tetragona)

1. *Allocasuarina huegeliana* over *Melaleuca uncinata* & *Calothamnus quadrifidus* tall shrubland
2.
3.
4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☒ Present ☐ Replace / repair ☐ Required ☐ Length req'd:

ROADSIDE 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.)

Plants were locally common within rehabilitated gravel pit.

FLORA AUTHORISATION / LICENCE No: FT6100788-2 Note if only observing plants (i.e. no specimens or plant material is taken) then no authorisation/licence is required. For further information on authorisation and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under authorisations/licences should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: KSW02425_11822 WA Herb. ☒ Regional Herb. ☐ District Herb. ☐ Other:

LODGEMENT: WA Herb Lodgement No:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☒ Field notes ☐ Other:

COPY SENT TO: Regional Office ☒ District Office ☐ Other:

Submitter of Record: Katherine Walkerden Role: Environmental Officer Signed: Date: 26/11/2025

Please return completed form to **Species And Communities Program** DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au
RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Program.
Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Melaleuca fissurata

Department of Biodiversity, Conservation and Attractions

Threatened and Priority Flora Report Form

Version 1.4 March 2021

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

TAXON: Melaleuca fissurata **TPFL Pop. No:**

OBSERVATION DATE: 04/09/2025 **CONSERVATION STATUS:** P3 **New population** ☒

OBSERVER/S: Katherine Walkerden, Julie Waters **PHONE** 90831518

ROLE: Environemntal Officer, Environmental Coordinator **ORGANISATION:** Shire of Esperance

EMAIL: katherinew@esperance.wa.gov.au

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

Edwards Road and Griffiths Road intersection.

Reserve No:

DBCA DISTRICT: Esperance **LGA:** Esperance Land manager present: ☒

DATUM: GDA94 / MGA94 ☒ AGD84 / AMG84 ☐ WGS84 ☐ Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required) DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 6308625

Long / Easting: 315027

ZONE: 51

METHOD USED: GPS ☒ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☒
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other:

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

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

POP'N COUNT ACCURACY: Actual ☒ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☐ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive	147			
Dead				

Area of pop (m²):

Note: Pls record count as numbers (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 ☒

Immature fruit ☐ Fruit ☒ 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. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme. Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current Impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Road upgrade	N	L	M
•			
•			

Please return completed form to **Species And Communities Program** DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au
RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Program.
Record entered by:_____ Sheet No.:_____ Record Entered in Database ☐

Department of Biodiversity, Conservation and Attractions

Threatened and Priority Flora Report Form

Version 1.4 March 2021

HABITAT INFORMATION:

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

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

CONDITION OF SOIL: Dry ☐ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia); 2. Open shrubland (Hibbertia sp., Acacia spp.); 3. Isolated clumps of sedges (M.tetragona)

1. Open mallee over low mixed Melaleuca shrubland over Gahnia ancistrophylla.
2. Allocasuarina huegeliana over Melaleuca uncinata & Calothamnus quadrifidus tall shrubland
3.
4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☒ Present ☐ Replace / repair ☐ Required ☐ Length req'd:

ROADSIDE 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.)

FLORA AUTHORISATION / LICENCE No: FT61000788-2 Note if only observing plants (i.e. no specimens or plant material is taken) then no authorisation/licence is required. For further information on authorisation and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website. Any actions carried out under authorisations/licences should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: KSW01225; Accession 11814 WA Herb. ☒ Regional Herb. ☐ District Herb. ☐ Other:

LODGEMENT: WA Herb Lodgement No:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☒ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☒ Other:

Submitter of Record: Katherine Walkerden Role: Environmental Officer Signed: KW Date: 25/11/2025

Please return completed form to **Species And Communities Program** DBCA,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au
RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Program.
Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Appendix 3: Description of threatened and priority flora species with the potential to occur within the Edwards and Griffiths Intersection Upgrade survey area

Threatened or priority flora identified by the desktop study to be present within a 20km radius of Site C – Edwards and Griffiths Intersection Upgrade project area, using Threatened and Priority Flora Reporting (TPFL; DBCA 2025a), WA Herbarium (DBCA 2025b) and Esperance District Threatened Flora (DBCA 2024c).
Nt. Acronyms used in the table include priority flora (P), threatened flora (TF), critically endangered (CR) endangered (EN) and vulnerable (VU).

Taxon	BC Act (EPBC) Conservation Status	Associated Habitat	Likely to occur	Distance from site (km)
Acacia amyctica	P2	Loamy and sandy clay plains in low woodland, mallee and open shrubland.	Yes	9.06
Acacia bartlei	P3	Sandy loam or clay-loam in or near waterlogged depressions, often in association with Swamp Yate (E. occidentalis). Also found in mallee over mixed melaleuca and thryptomene with samphires.	No	14.01
Acacia diminuta	P1	Sandy clay soils. Frequently associated with fire.	Yes	0.11
Acacia singula	P3	Gravelly sand or clay associated with lateritic hills and gravelly ridges within heath, scrub and mallee.	Yes	16.45
Banksia xylothemelia	P3	Disturbed gravel areas. Low shrubland with Melaleuca and Mallee woodland.	Yes	18.62
Bentleya diminuta	P2	Open mallee woodland and mallee scrub flat plains. White to brown sandy clay, shallow sandy loam.	Yes	10.54
Brachyloma nguba	P1	Open mallee woodland or mallee scrub on flat plains in white to brown sandy clay or shallow sandy loam.	Yes	10.95

Comesperma calcicola	P3	Salt lake margins, wet depressions. Gravel, rehabilitated gravel pits.	Yes	13.85
Conostylis lepidospermoides	T	Low heath or sedge communities with scattered shrubs, usually in yellow or grey sand over lateritic clay.	Yes	18.29
Cryptandra polyclada ssp *polyclada*	P3	Sandplains. Mallee with shrubland-heath species. Recorded in disturbed areas.	Yes	12.46
Daviesia pauciflora	P3	Deep white or grey sand over limestone or laterite on flats.	No	16.94
Eremophila chamaephila	P3	Open mallee woodland with limestone.	No	3.28
Eremophila serpens	P4	Winter-wet depressions, sub-saline flats, drainage lines, salt lakes	No	12.59
Eucalyptus famelica	P3	Calcareous sand, sandy clay loam & stones. Leeward of primary dunes, around salt lakes.	No	9.06
Eucalyptus stoatei	P4	Gravelly sand or clay and sandy loam. Flats and rises.	Yes	7.81
Frankenia brachyphylla	P2	Margins of salt lakes	No	18.33
Frankenia glomerata	P4	Margins of salt lakes	No	13.88
Grevillea aneura	P4	Grows in heath or mallee scrub in gravelly sand or sandy loam over laterite.	Yes	0.51
Guichenotia asteriskos	P2	Gravelly soils with overlying sand.	Yes	10.30
Gyrostemon ditrigynus	P4	Sand, sandy clay, loam. Plains, low ironstone ridges. Associated with fire.	No	8.05
Hydrocotyle decorata	P2	Sandy loam soils surrounding the margins of inland salt lakes.	No	18.36
Hypocalymma magnificum	T	Sandy loam.	Yes	0.04
Levenhookia pulcherrima	P3	Sand.	Yes	9.06
Melaleuca similis	P1	Grows on margins of saline drainage lines in grey sand.	No	9.06
Philotheca gardneri ssp *globosa*	P1	Associated with heathland and sandy soils.	No	14.55
Scaevola archeriana	P1	Sand, sandy loam. Sandplains. Road verges.	Yes	14.32

Stenanthera lacsalaria	P2	Margins salt lakes, saline watercourses and saline drainage lines. Sandy soil. (TPFL record likely to be misidentified Stenanthera localis)	No	14.22
Stenanthera localis	T	Sand. Open Mallee with Banksia media over mixed heath.	No	12.11
Streptoglossa sp. South Coast	P2	Recently-burnt vegetation on sandy loam.	No	10.73
Styphelia microcardia	P3	Plain. Mallee woodland.	Yes	12.57
Thysanotus parviflorus	P4	Grey sand.	No	12.70

Appendix 4: Description of threatened and priority fauna species with the potential to occur within the Edwards and Griffiths Intersection Upgrade survey area

Threatened or priority fauna identified by the desktop study to be present within a 20km radius of Site C – Edwards and Griffiths Intersection Upgrade project area, using threatened and priority fauna dataset (DBCA 2025d) and species identified by the EPBC protected matters search tool (PMST).

Nt. Acronyms used in the table include: Extinct (EX), Critically Endangered (CR) endangered (EN) and Vulnerable (VU).

Taxon	Common Name	WA Cons Status	EPBC Status	Associated Habitat	Likely to occur	Distance from site (km)	PMST
Leipoa ocellata	Malleefowl	VU	VU	Semi-arid to arid, long-unburnt mallee-dominated areas with sandy (can be sandy gravel) substrate and abundant leaf-litter for nest mound building. Diet consists of Acacia seeds, flower blossoms, buds, fruit and lerps, and soil invertebrates. Construct distinctive nest mounds that can exceed 4m across and 1m high. Threatened by habitat fragmentation, degradation of habitat by feral ungulates and rabbits, altered fire regimes, vehicle strike, and feral predators.	Yes	9.79km	Likely
Calidris ferruginea	Curlew Sandpiper		CR	Intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually	No		May

				with bare edges of mud or sand. They occur in both fresh and brackish waters.			
Parantechinus apicalis	Dibbler		EN	Crepuscular carnivore feeding primarily on ground-dwelling insects, small lizards, birds and mammals. Prefers long-unburnt habitat. Requires dense leaf litter under dense low shrubland dominated by genera such as Banksia, where it also drinks nectar and berries. Diurnal, resting in raised dray of twigs and grasses. Population in Fitzgerald River NP.	No		Likely
Aphelocephala leucopsis	Southern Whiteface		VU	Wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains. Southern whiteface forage almost exclusively on the ground, favouring habitat with low tree densities and an herbaceous understorey litter cover. Birds mainly feed on insects, spiders, and seeds, largely gleaned from the bare ground or leaf litter. Only a single record off this species is present within the Esperance region, near Peak Charles National Park.	No		May
Falco hypoleucos	Grey Falcon		VU	The distribution of this species is restricted largely to areas of the highest annual average temperatures where there is an average annual rainfall of less than 500mm. It favours lightly timbered and untimbered lowland plains that are	Yes		May

				crossed by tree-lined watercourses. It uses the abandoned nests of other bird species, particularly corvids.			
Dasyurus geoffroii	Chuditch, Western Quoll		VU	Currently restricted to south-western WA, with population strongholds in dry sclerophyll forest and dry woodland and mallee-heath, namely in Lake Magenta NR, Southern Forests, Julimar State Forest, and Fitzgerald River NP. Require hollow logs, earth burrows, and occasionally hollowed-out termite mounds for daytime shelter / nesting. Hollow tree bases occasionally used. Although meso-predator, chuditch threatened by raptor and feral fox predation, drowning in dam nets, injury in traps set-up for foxes or rabbits, and previously deliberate shooting by landholders. Recently re-introduced to AWC Mt Gibson Sanctuary (2022).	Yes		May
Calidris acuminata	Sharp-tailed Sandpiper		VU	Widespread in both inland and coastal locations of fresh and saline habitats. Widespread from Cape Arid to Carnarvon. Utilises fresh to hypersaline aquatic environments; edges of mudflats, sewage ponds, wetlands, and inundated pastures. Roosts on rocky and sandy beaches, and wetland vegetation. Omnivorous; diet of seeds, worms, molluscs, crustaceans, and insects.	No		May

Appendix 5: EPBC Protected matters search tool report

Listed threatened ecological communities

Community name	Threatened Category	Presence Rank	Text
Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	May	Community may occur within area

Listed Threatened Species

Scientific name	Common name	Simple presence	Threatened category	Migratory status
Calidris ferruginea	Curlew Sandpiper	May	Critically Endangered	MI
Conostylis lepidospermoides	Sedge Conostylis	Likely	Endangered	
Anigozanthos bicolor subsp. minor	Little Kangaroo Paw, Two-coloured Kangaroo Paw, Small Two-colour Kangaroo Paw	Likely	Endangered	
Ricinocarpos trichophorus	Barrens Wedding Bush	May	Endangered	
Parantechinus apicalis	Dibbler	Likely	Endangered	
Hypocalymma magnificum	Superb Myrtle	Known	Endangered (listed as Hypocalymma sp. Cascade)	
Leipoa ocellata	Malleefowl	Likely	Vulnerable	
Aphelocephala leucopsis	Southern Whiteface	May	Vulnerable	
Falco hypoleucos	Grey Falcon	May	Vulnerable	
Dasyurus geoffroii	Chuditch, Western Quoll	May	Vulnerable	
Calidris acuminata	Sharp-tailed Sandpiper	May	Vulnerable	MI

Appendix 6: BC Act (2016) Threatened and priority flora and fauna definitions

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

	Taxa may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
P4 – Priority 4 (Rare, Near Threatened and other taxa in need of monitoring)	1. Rare - Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. 2. Near Threatened - Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. 3. Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy

Appendix 7: EPBC Act (1999) definition of threatened flora and fauna species

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

Appendix 8: BC Act (2016) Definition of threatened ecological communities

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

future. The ecological community must meet any one of the following criteria:
(i) The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated;
(ii) The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution;
(iii) The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.

Appendix 9: BC Act (2016) definition of priority ecological communities

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

Appendix 10: EPBC Act (1999) Definition of threatened ecological communities

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

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

Appendix 11: Biosecurity and Agriculture (BAM) Act 2007 Categories and control of Declared (plant) pests in Western Australia

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

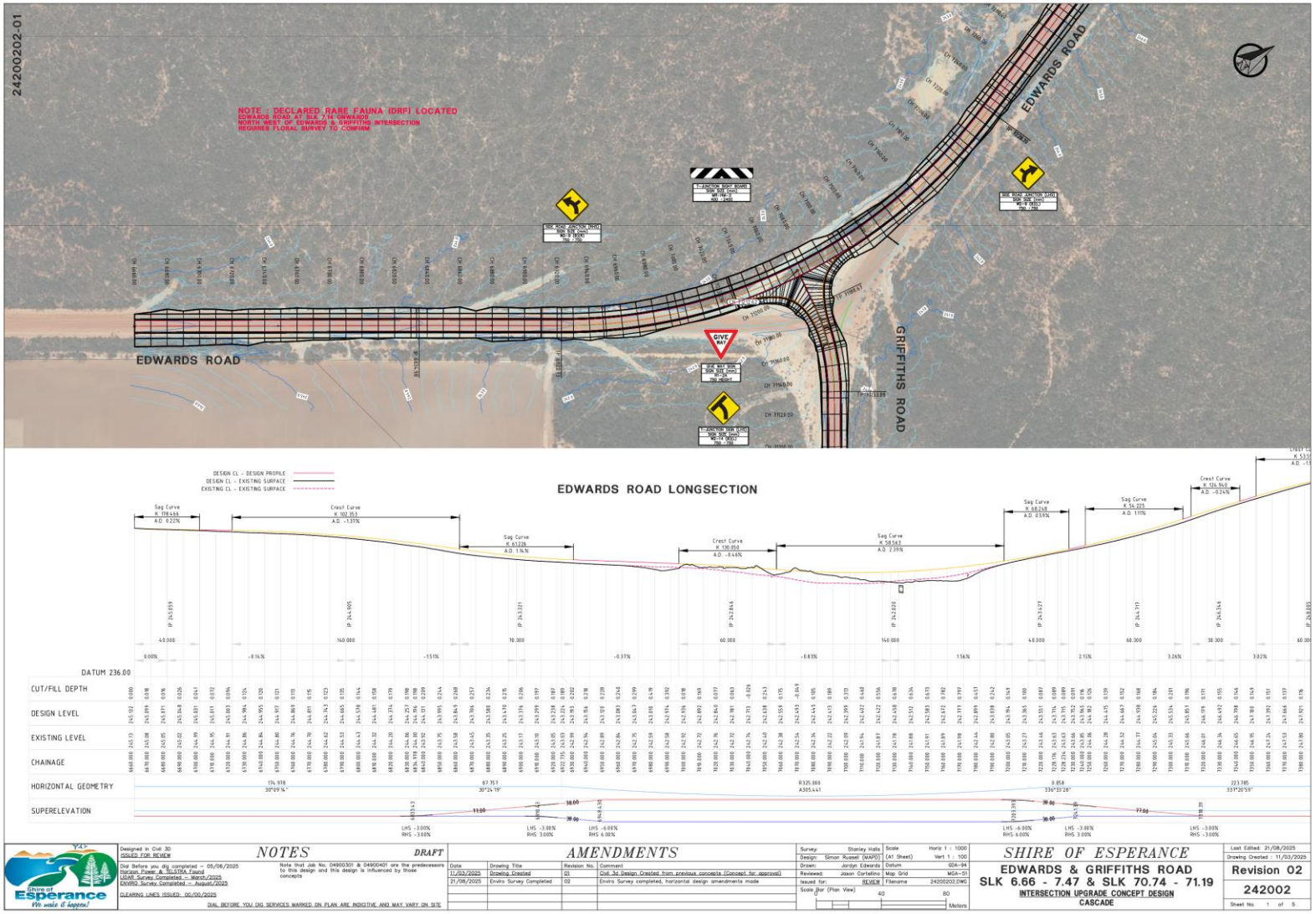
their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.	declared pest in the area for which it is declared; or (c) prevent or contain the spread of the declared pest in the area for which it is declared.

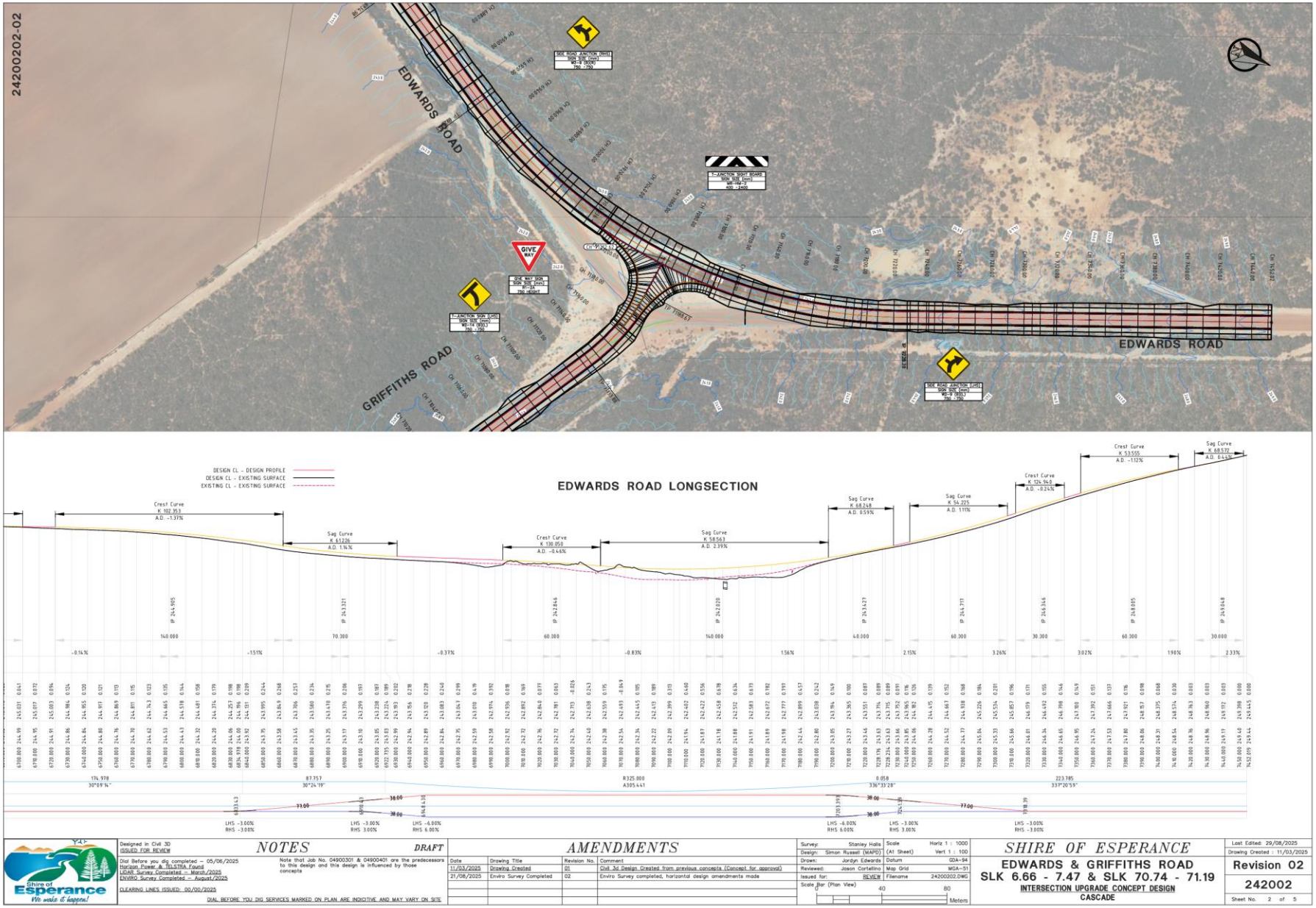
Appendix 12: Definition of vegetation condition scale

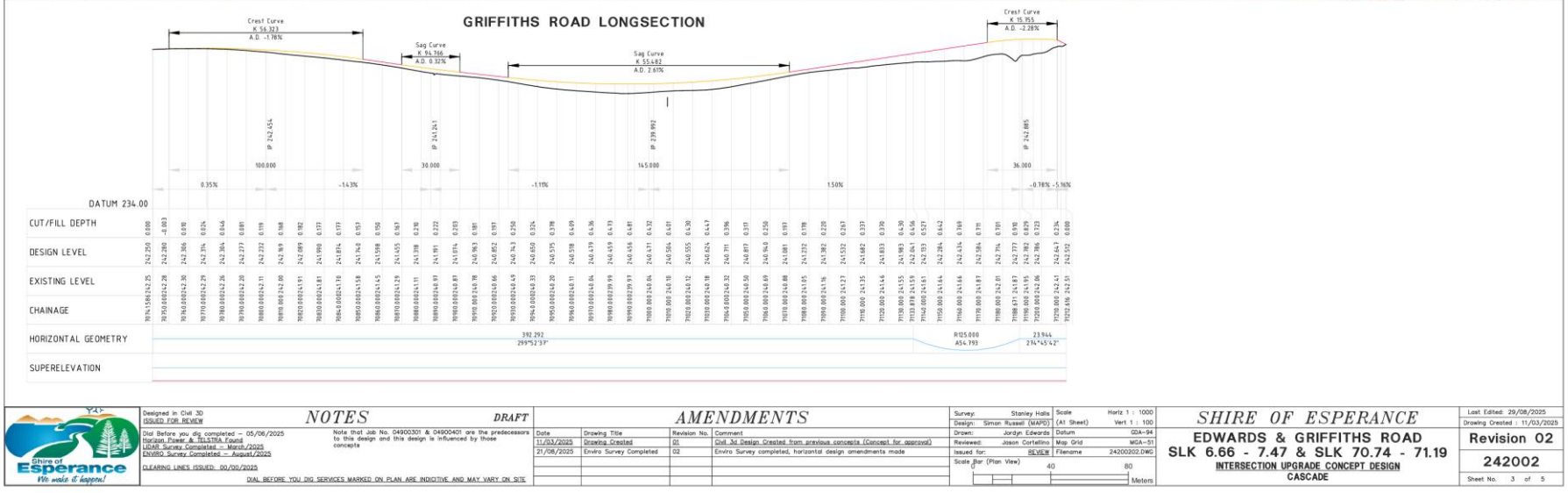
For the south west and interzone botanical provinces

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

Appendix 13 – Road Designs




24200202-02
EDWARDS ROAD
GRIFFITHS ROAD
EDWARDS ROAD
GIVE WAY
EDWARDS ROAD LONGSECTION
DESIGN CL - DESIGN PROFILE
DESIGN CL - EXISTING SURFACE
EXISTING CL - EXISTING SURFACE
NOTES
DRAFT
AMENDMENTS
SHIRE OF ESPERANCE
EDWARDS & GRIFFITHS ROAD
SLK 6.66 - 7.47 & SLK 70.74 - 71.19
INTERSECTION UPGRADE CONCEPT DESIGN
CASCADE
Revision 02
242002



NOTES	DRAFT
Designed in Civil 3D	
ISSUED FOR REVIEW	
Dial Before you dig completed – 05/06/2025	
Horizon Power & TELSTRA Found	
LIDAR Survey Completed – March/2025	
EnviRO Survey Completed – August/2025	
CLEARING LINES ISSUED: 00/00/2025	
DIAL BEFORE YOU DIG SERVICES MARKED ON PLAN ARE INDICITIVE AND MAY VARY ON SITE	

Note that Job No. 04900301 & 04900401 are the predecessors to this design and this design is influenced by those concepts

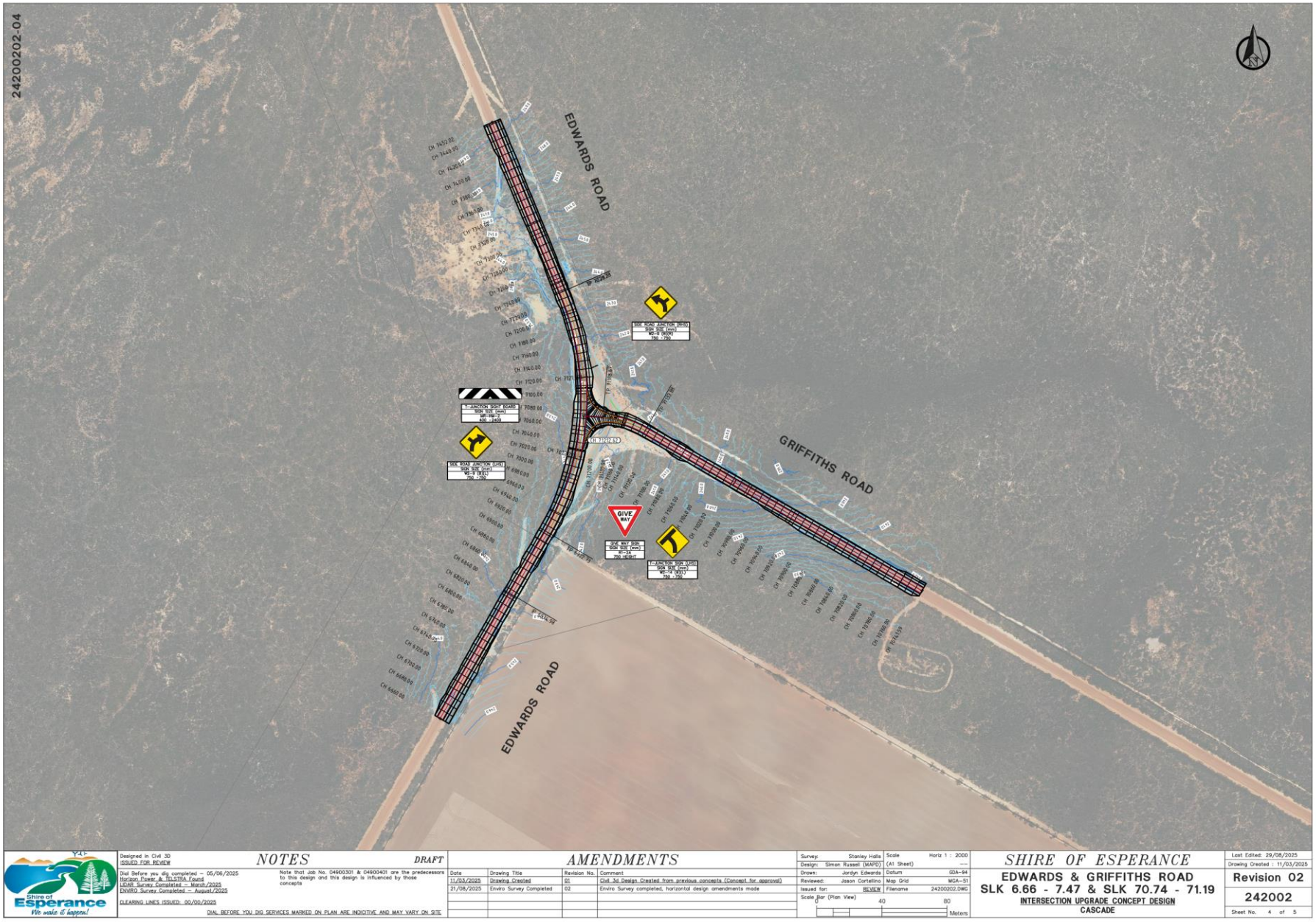
AMENDMENTS			
Date	Drawing Title	Revision No.	Comment
11/03/2025	Drawing Created	01	Civil 3d Design Created from previous concepts (Concept for approval)
21/08/2025	Enviro Survey Completed	02	Enviro Survey completed, horizontal design amendments made

Survey:	Stanley Halls	Scale (A1 Sheet)	Horiz 1 : 1000
Design:	Simon Russell (MAPD)		Vert 1 : 100
Drawn:	Jordyn Edwards	Datum	GDA–94
Reviewed:	Jason Cortellino	Map Grid	MGA–51
Issued for:	REVIEW	Filename	24200202.DWG
Scale Bar (Plan View)	0 40 80 Meters		

SHIRE OF ESPERANCE

EDWARDS & GRIFFITHS ROAD
SLK 6.66 - 7.47 & SLK 70.74 - 71.19
INTERSECTION UPGRADE CONCEPT DESIGN
CASCADE

Last Edited:	29/08/2025
Drawing Created :	11/03/2025
Revision 02	
242002	
Sheet No.	3 of 5


24200202-04
EDWARDS ROAD
GRIFFITHS ROAD
EDWARDS ROAD
GIVE WAY
NOTES
DRAFT
AMENDMENTS
SHIRE OF ESPERANCE
EDWARDS & GRIFFITHS ROAD
SLK 6.66 - 7.47 & SLK 70.74 - 71.19
INTERSECTION UPGRADE CONCEPT DESIGN
CASCADE
Revision 02
242002