Vegetation, Flora, Fauna and Environmental Considerations Report

Government Dams Purpose Permit

No. 18 Dam – Swann Road, Salmon Gums

Report compiled by:

[redacted]

Shire of Esperance

Together, we make it happen!

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.

Copyright

Disclaimer

The Shire of Esperance has utilised information and data supplied sourced from government databases, literature, departments and agencies in the preparation of this report. The Shire of Esperance has compiled this report on the basis that any supplied or sourced information and data was accurate at the time of publication. The Shire of Esperance accepts no liability or responsibility whatsoever for the use of, or reliance upon, the whole or any part of this report by any third party.

Citation

Waters, J and Walkerden K (2025) Vegetation, Flora, Fauna and Environmental Considerations Report, Government Dams Purpose Permit, No. 18 Dam – Swann Road, Salmon Gums, Shire of Esperance

Revision No.	Date	File Name
1 Draft	29/1/2025	\\domain\dfs\PARKS & RESERVES\Environment Services\Document Control Project\No 18 Tank Project Vegetation, Flora, Fauna and Environmental Considerations Report
2 Final	18/7/2025	\\domain\dfs\PARKS & RESERVES\Environment Services\Clearing permits\Applications\To finish\Government Dams - Bruce\No. 18 Tank Swann Road - 24-SWNN-01\ No 18 Tank - Project Vegetation, Flora, Fauna and Environmental Considerations Report

Contents

LIST OF TABLES

LIST OF FIGURES

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 No. 18 Dam Survey Area
4. Threatened and Priority Fauna Species with the Potential to occur within the No. 18 Dam Survey Area
5. EPBC Act Protected Matters Report
6. BC Act Threatened and Priority Flora and Fauna definitions
7. EPBC Act Definition of Threatened Flora and Fauna Species
8. BC Act Threatened Ecological Community definitions
9. BC Act Definition of Priority Ecological Communities
10. EPBC Act Definition of Threatened Ecological Communities
11. BAM Act Categories and Control Measures of Declared Pest (Plant) Organisms in Western Australia
12. Definitions of Vegetation Condition Scale

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

Executive Summary

The Shire of Esperance (SOE) Environmental Team was commissioned by the Shire of Esperance Asset Management department to undertake a review of the vegetation, flora, fauna and environmental values on a number of Government Dams in the north of the Esperance Shire over 2024. The eleven sites will be applied for under the Shire of Esperance's Government Dams Purpose Permit.

The proposed development involves the clearing of 5.427ha of native vegetation for the purpose of dam catchment upgrade.

This report details the results from the Environmental Impact Assessment completed by Shire of Esperance Environmental Services team over spring 2024.

The site contained a single vegetation community described as: "Regenerating mixed mallee woodland over mixed shrubland".

Vegetation Condition varied between Good condition in the more recently cleared western part of the catchment and Very Good condition in the eastern portion of the catchment.

A total of 90 vascular plant taxa, representative of 57 genera and 25 families, were recorded within No. 18 Dam survey area. Of these 81 were native species and 9 were introduced.

No threatened and two priority flora species were recorded within the No. 18 Dam survey area. No Threatened or Priority Ecological Communities occurred within the project area.

Suitable habitat for four threatened fauna species identified in the desktop survey was also present in the project area.

1 Introduction

The Shire of Esperance is the responsible land manager for a number of government dams. There are over 50 government dams within the Esperance Shire. The dams were constructed from 1910-1930 by the Public Works Department to provide water for new settlers as they arrived in Salmon Gums, Scaddan, Cascade and Grass Patch districts, where there were no large natural freshwater sources. Most of the dams include a graded catchment, with a dam (sometimes roofed). The dams provide valuable water for road construction, firefighting and can often be used as drought relief dams for stock when farm dams become dry.

All of the dam sites applied for under the Shires Government Dams Purpose Permit have been previously cleared, however due to many of them previously being in the Shire of Dundas, there was not a periodical maintenance program to regrade the catchments and many of the catchments have become overgrown. The dam catchments applied for under this strategic purpose permit would not be exempt under Regulation 5, Item 15, of the Clearing Regulations as these sections have not been cleared in the last 10 years.

1.1 Location and Scope of Project

The proposed works are located 14km north east of the Salmon Gums townsite, within the western portion of SOE managed Reserve 20296. Specifically, it is located on Lot 1451 on Plan 152877 Swann Road, Salmon Gums. A point within the proposed clearing permit area is 32.87°S, 121.71°E.

No. 18 Dam project is required for drought relief, road construction and firefighting purposes. The project involves clearing and grading the previously cleared catchment. On 18 September 2024, the dam contained some water, however re-clearing the catchment should ensure water runoff into the dam is again restored and this water source maintained.

The Shire of Esperance has attempted to avoid, reduce, minimise impacts by keeping as much as possible to existing cleared areas. Due to the results of the flora survey, the clearing permit area was further reduced from the planned 10.186ha site to 5.427ha of clearing to minimise impacts to Priority flora.

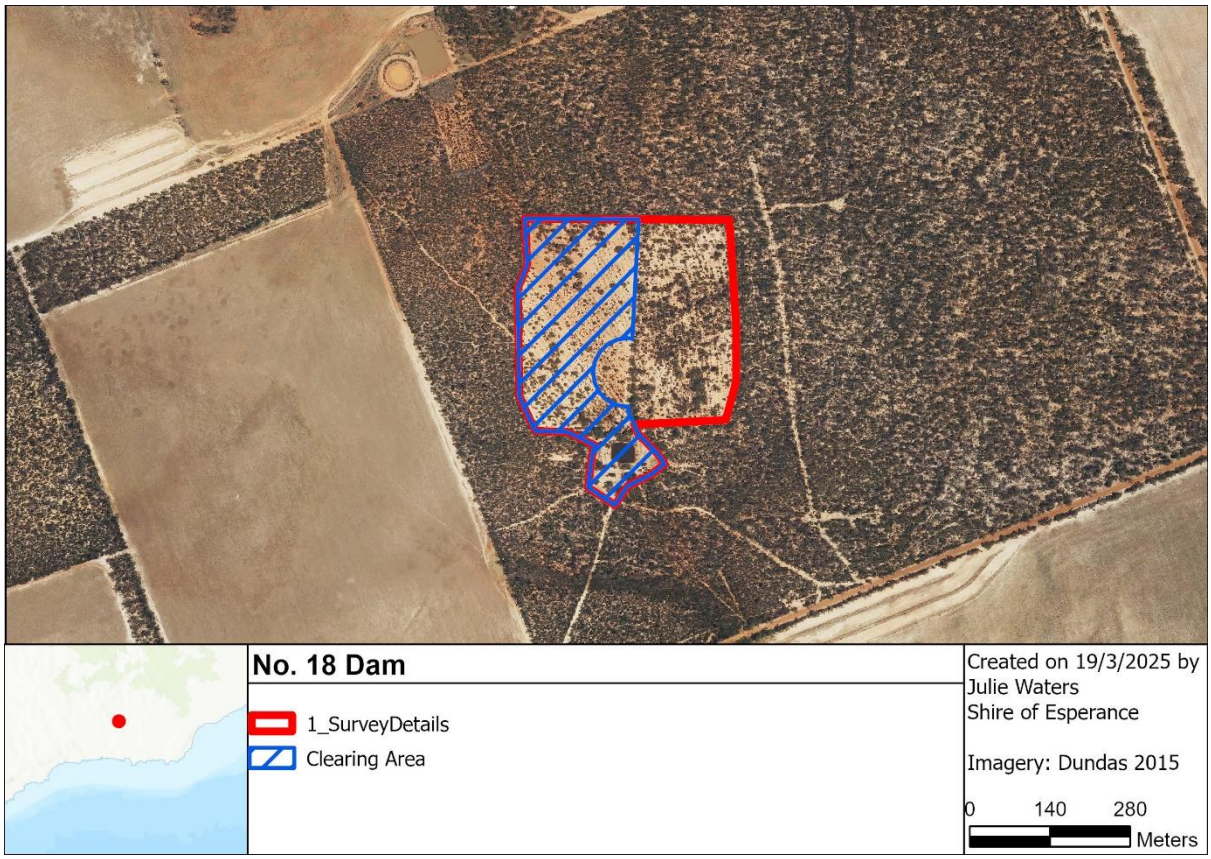

Figure 1. Location of No. 18 Dam and clearing area.

1.2 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).

2 OBJECTIVES

The objective of this survey was to undertake a vegetation, flora, fauna and environmental assessment of the No. 18 Dam 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 No. 18 Dam 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 No. 18 Dam survey area;
- Undertake a field survey of the No. 18 Dam survey area, and collect and identify the vascular plant species present;
- Define and map the vegetation communities present and their condition in the No. 18 Dam 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 No. 18 Dam 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.

3 METHODS

3.1 Desktop Assessment

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

- Threatened and Priority Flora Database (TPFL; DBCA 2024a);
- Western Australian Herbarium data (DBCA 2024b)

- DBCA's Esperance District Threatened Flora spatial dataset (DBCA 2024c);
- Threatened and Priority Ecological Communities (TECs & PECs; DBCA 2024d);
- Threatened, Specially Protected and Priority Fauna (DBCA 2024e); and
- Black cockatoo / Carnaby's cockatoo roost and breeding sites (DBCA 2024e).

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 No. 18 Dam area. Search parameters were 'by polygon' and a 20km buffer was applied to the search area; 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; (2024)
- 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 (2024);
- Existing site digital orthophotos (Scaddan 2015);
- Atlas of Living Australia database (2024)
- Hydrographic Catchments (DWER-028); and
- Crown Reserves (Landgate-227).
- RAMSAR sites (DBCA-010)
- Directory of Important Wetlands (DBCA-045)

3.2 Field Survey

The site was initially inspected on 6 December 2023, by Julie Waters (SOE Environmental Coordinator). 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 No. 18 Dam survey area was undertaken by SOE botanists Julie Waters and Katherine Walkerden on 18 September 2024 in accordance with

methods outlined in Technical Guidance – Flora and vegetation surveys for environmental impact assessment (EPA 2016). All botanists held valid collection licences to collect flora for scientific purposes, issued under the BC Act.

The methodology for assessing threatened and priority flora consisted of traversing by foot the entire No. 18 Dam survey area. Botanists used handheld Garmin GPS units loaded with the No. 18 Dam survey area boundary, walking every second graded row to cover the entire area 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. During the survey, a field herbarium for No. 18 Dam was also constructed.

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 No. 18 Dam were assessed for the presence a TEC or PEC (DBCA 2023, 2024d) 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 No. 18 Dam for any fauna species identified in the desktop survey.

3.3 Survey Timing

According to Table 3 in the Technical Guidance – Flora and vegetation surveys for Environmental Impact Assessment (EPA 2016), the primary survey timing for the South-west and Interzone Botanical Province is Spring (September-November), which is the peak flowering period for this region. As all surveys at No. 18 Dam were conducted in September, survey timing falls within this period.

3.4 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) 10 Clearing Principles were inspected and evaluated.

3.5 Survey Limitations

A general assessment was made of the survey against a range of factors that may have limited the outcomes and conclusions of this report (Table 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:** Botanists had extensive experience working within the Shire of Esperance and wider areas. Two of the botanists have consistently worked within this bioregion for more than 15 years. Botanists were familiar with flora in the area. Any unknown or potential threatened or priority flora species were collected and identified, utilising resources available at the Western Australian Herbarium and consultation with expert taxonomists.
Proportion of flora collected and identification issues	**Potential limitation:** While many plants were in flower during the survey, a small proportion of plants encountered during the survey were not able to be identified to species level. One *Cyathostemon* specimen that was sent off came back from WA Herbarium as *Cyathostemon* sp. and a poor specimen of a *Senna* could be one of two options (Neither priority or threatened flora). 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. 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 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 South – West Botanical Province be conducted in Spring (September-November). All surveys have been conducted in September which falls within this period.
Disturbances (fire/flood/clearing)	**Not a limitation:** The No. 18 Dam survey area has no history of fire.

4 DESKTOP ASSESSMENT RESULTS

4.1 Climate

The Salmon Gums climate is described as Mediterranean, characterised by cool wet winters and dry warm summers (BoM 2024). The Salmon Gums locality receives an average annual rainfall of 350 mm.

4.2 Catchment

No. 18 Dam is high in the landscape occurring approximately 280m above sea level.

No. 18 Dam project is mapped as being present within the Bandy Creek catchment area, however it is more likely to be internally drained rather than draining to the coast.

4.3 Geology, Soils and Topography

A single geological unit was identified by Schoknecht et al. (2004). This was described as: “Thin tertiary sediments with additions of calcareous aeolian material over weathered bedrock”.

Within the area, the soil has been described by Schoknecht et al. (2004) as: “Alkaline grey shallow sandy duplex soils and calcareous loamy earths with minor non-cracking clays and bare rock”.

Within the area, the landform unit has been described by Schoknecht et al. (2004) as: “Very gently inclined scarp with external drainage via a well developed network of incipient streams”.

4.4 Regional Vegetation

The site is located within the Eastern Mallee (Mal01) Interim Biogeographic Regionalisation of Australia (Thackway & Cresswell 1995) 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 a single vegetation association (VA) within the No. 18 Dam area – Salmon Gums 486. (Table 2). 58.6% of this vegetation type is remaining, however it is poorly reserved with only 3.93% in IUCN reserves.

Table 2. Vegetation associations mapped by Beard (1973) within the No. 18 Dam area, and statistics on pre-European remaining areas.

Vegetation Association	Salmon Gums_486
Description	Mosaic: Medium woodland; Salmon gum & red mallee / Shrublands; mallee scrub *Eucalyptus eremophila*
Pre-European extent in IBRA sub-region Mal01 (%)	48.71
Pre-European extent in LGA (%)	39.38
Current extent conserved in IUCN area (%)	3.93

4.5 Surrounding Land Use

The area directly included in the clearing permit application No. 18 Dam is a previously cleared catchment and dam surrounded by an area of less recently recleared dam catchment and intact and vegetated 'water tank' reserve, managed by SOE. The surrounding land use private property zoned agriculture, used primarily for broad acre agriculture but includes some large uncleared patches. Large salt lake systems occur 5km to the east of the site. The project area is in a highly/ cleared area with 9.26% of vegetation within 5km of the project remaining.

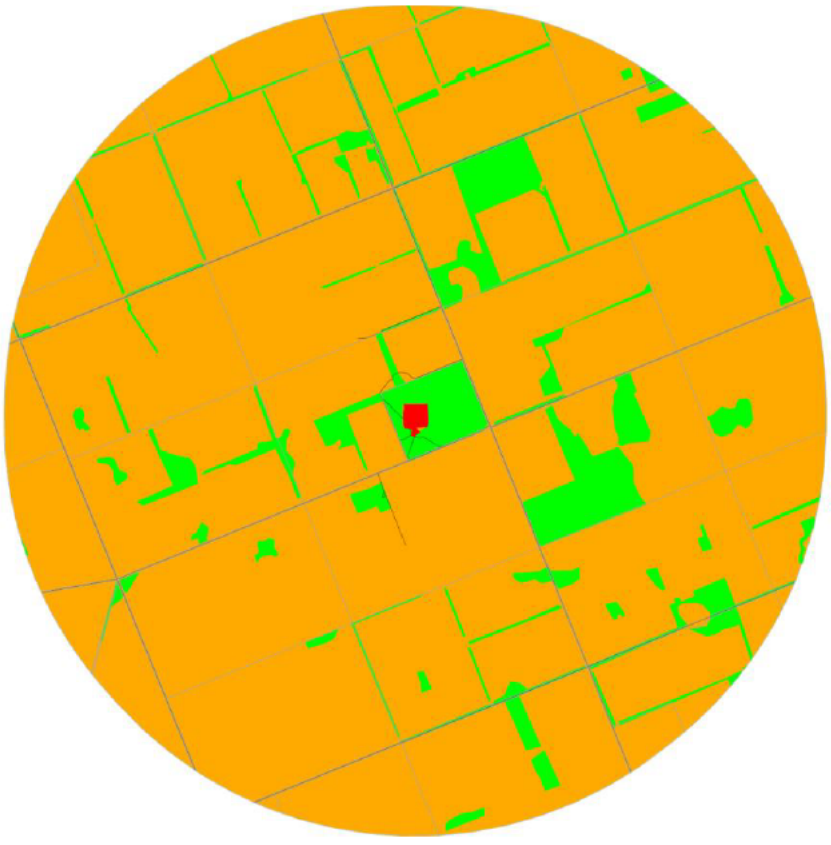

Figure 2. Map of remnant vegetation within a 5km buffer produced by DEISIP. Survey area is highlighted in red, remnant vegetation is in green and cleared vegetation is in orange, road centrelines are in black and cadastre boundaries are in grey.

The site was 7.7km north west from Unnamed Nature Reserve 33113, the closest conservation reserve. Conservation reserve 33501 was also within 10km of the site.

4.6 Potential Threatened and Priority Flora

One threatened flora (TF) and 31 priority flora (PF) were recorded within a 20km radius of the proposed impact site (Appendix 3)). Of these, no TF species and 12 PF species had suitable known associated habitat that corresponded with vegetation communities and soil type of No. 18 Dam project.

4.7 Potential Threatened and Priority Ecological Communities

The desktop study did not identify any Threatened or Priority Ecological Communities within 20km of the site.

The Protected Matters Search Tool 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)' may occur within the buffer of No. 18 Dam project area.

4.8 Potential Threatened and Priority Fauna

Two threatened fauna, and one specially protected fauna species were recorded within a 20km radius of the proposed No. 18 Dam project area (Appendix 4). In addition, the Protected Matters Search Tool identified an additional 11 species.

4.9 *Phytophthora* Dieback

Dieback Information Delivery and Management System (DIDMS; GAIA Resources, SCNRM & State NRM 2024) data shows no *Phytophthora cinnamomi* or other *Phytophthora* sp. sample results in the immediate area. The Department of Biodiversity, Conservation and Attractions defines the vulnerable zone for Dieback as areas with over 400mm of annual rainfall. Some positive Dieback samples have been retrieved from areas within the 300 - 400mm rainfall zone if they receive high summer rainfall. The rainfall in the area of No. 18 Dam is probably too low.

5 FIELD SURVEY RESULTS AND DISCUSSION

5.1 Vegetation Communities

A single vegetation community was identified within the No. 18 Dam Site, as defined by structure and composition (Table 3). It is believed that the Beard (1973) vegetation associations identified in Section 4.4 are an appropriate match for the vegetation type observed.

Table 3. Vegetation communities identified within proposed No. 18 Dam project area.

Type	Description	Figures	Closest Matching Beard Vegetation Association	Area (ha)	Diversity (native species)
A	Regenerating mixed mallee woodland over mixed shrubland	3	Salmon Gums 486	5.427	81

Figure 3. Vegetation type A identified in No. 18 Dam project area, described as: "Regenerating mixed mallee woodland over mixed shrubland".

5.2 Vegetation Condition

Vegetation condition ranged from Good to Very Good over the site. The western portion of the catchment had been more recently cleared and hence obtained a vegetation condition rating of Good.

5.2.1 Weeds

There was minimal weed invasion across the entirety of the proposed No. 18 Dam area. Only 9 introduced plant species were identified. None of these were Weed of National Significance (WONS) species, Declared Pest under the Biosecurity and Agriculture Management (BAM) Act, 2007 or priority environmental weeds in the Shire of Esperance's Environmental Weed Strategy 2009-2018.

5.2.2 Phytophthora Dieback

Surveyors were unable to detect any signs of *Phytophthora cinnamomi* dieback disease within the clearing permit area.

5.3 Threatened Ecological Communities

The Protected Matters Search Tool 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)' may occur within the buffer of No. 18 Dam project area. Only two proteaceous species were recorded within the

survey area; *Grevillea plurijuga* and *Grevillea acuaria.* Neither of these were dominant or are diagnostic species as per the approved conservation advice for this community.

5.4 Flora

A total of 90 vascular plant taxa, representative of 57 genera and 25 families, were recorded within No. 18 Dam survey area. Of these 81 were native species and 9 were introduced. The majority of taxa recorded were representative of the Myrtaceae (19 taxa), Fabaceae (15 taxa) and Asteraceae (13 taxa) families (see Appendix 1 for the complete incidental species list). One species could only be identified to genus (*Cyathostemon* sp. despite a specimen (KSW05024, Accession 11153) being sent to the WA Herbarium due to difficulties in taxonomy with this genus.

5.4.1 Flora Range Extensions

Specimen's that resulted in a range extension were sent to WAH.

Myoporum montanum (Accession 11153; KSW04924)

This specimen which was retained is a new record to the Shire of Esperance, a 50km southern range extension and a new record for the Eastern Mallee IBRA subregion.

Figure 4. *Myoporum montanum* specimen KSW04924.

5.5 Threatened and Priority Flora

The targeted flora survey identified two priority species and no threatened species, within the No. 18 Dam survey area. Queries of spatial datasets were requested specifically for these species, to interrogate impact of proposed works on species sustainability (DBCA 2024a; DBCA 2024b; DBCA 2024c).

Table 4: Summary of Priority flora species recorded in No. 18 Dam project area.

Taxon	BC Act Conservation Status	Total plants counted in population	Total plants impacted
Eutaxia andocada	P1	1	0
Acacia diminuta	P1	600	16

5.5.1 *Eutaxia andocada*, Priority 1

A specimen of *Eutaxia andocada* was sent to the WA Herbarium for identification confirmation (KSW04824; Accession 11153 with specimen retained). The identification was confirmed by Mike Hislop on 27 November 2024. The single *Eutaxia andocada* plant was located within the western portion of the site.

Figure 5. Flowering Priority 1 species *Eutaxia andocada*.

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 3 February 2025 (Appendix 2).

Eutaxia andocada is very poorly known and has been the subject to recent surveys to relocate and find new populations. There are only three herbarium specimens attributed to this species. With an additional two populations found in 2024 by Shire of Esperance which are confirmed but yet to be databased. The record south of Peak Elanora has not been relocated despite over 30 hours of survey effort by Esperance Wildflower Society (EWS), Wildflower Society of WA and DBCA. The Holt Road population was not able to be relocated despite numerous hours resurveying by Shire of Esperance, after it was collected and was likely graded by routine road maintenance.

Table 5. Population details from Department of Biodiversity Conservation and Attraction's Threatened and Priority species database and Shire of Esperance records.

Locality	Tenure	Date	Frequency
7 km NE of Peak Charles camping ground on road	National Park	2022	2 plants found by Esperance Wildflower Society / WSWA
17 km SSE of Peak Eleanora, intersection of Rolland and Cups Roads	UCL	1984	Site thoroughly searched by EWS Volunteers in 2024 no plants located
Holt Road Salmon Gums	Road Reserve	2021	1 plant. Population cannot be relocated, probably graded
No. 18 Dam (KSW04824; Accession 11153)	Shire Reserve	2024	1 plant only
No 16. Dam (KSW06924; Accession 11229)	Shire Reserve	2024	2 live plants

The Shire of Esperance has liaised with Department of Biodiversity Conservation and Attractions Esperance District Conservation Officer Emma Adams in regards to an appropriate buffer zone and received a response on 6 February 2025 that "an appropriate buffer of ideally 50m would be preferable to ensure protection of any seed bank material in case the species doesn't respond favourably to disturbance". A non-disturbance buffer will be placed around the single plant to protect the species.

5.5.2 *Acacia diminuta*, Priority 1

A specimen of *Acacia diminuta* was sent to the WA Herbarium for identification confirmation (KSW04724; Accession 11153 with specimen retained). The identification was confirmed by Mike Hislop on 27 November 2024. *Acacia diminuta* had the highest concentration (97% of plants) in the eastern portion of the catchment that was longer uncleared and mapped as in Very Good condition (Figure 8).

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 14 March 2025 (Appendix 2).

Acacia diminuta is a poorly known species that has not been well surveyed or documented. This new population is a significant find as it extends the range north and east from its previously known location and accounts for 98% of the total known population of the species.

Acacia diminuta previously had a total of six known populations. Only three of these populations have populations counts, with 8, 3 and 1 plants recorded for these populations. A single population was located 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 sandy to sandy clay, being in line with the soil present at the site. The vegetation in prior populations had been described as mixed Mallee over mixed Melaleuca, matching the vegetation at some parts of the project.

Table 6. Compiled population data of Priority 1 species, *Acacia diminuta*.

Site Description	Population Count and date	Sheet no. / Pop no.	Year collected	Tenure
In southern road reserve of Rollond Road, 400m East of Cascade Road intersection. 100m into road reserve, SE corner 111km NW of Esperance townsite / 2km NW of Cascade townsite	3 plants 2/09/2020	9396241	2020	Road Reserve
45km NNE of Munglinup on north side of Rollond Road, 800m SW of intersection with Edwards Road	rare, 8 plants.	9359125	2019	Shire road reserve
Griffith Road, 500m north of Edwards Road. Plant found within the road reserve adjacent to Griffiths Nature Reserve	one plant.	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 6. Flower buds on Priority 1 species *Acacia diminuta.*

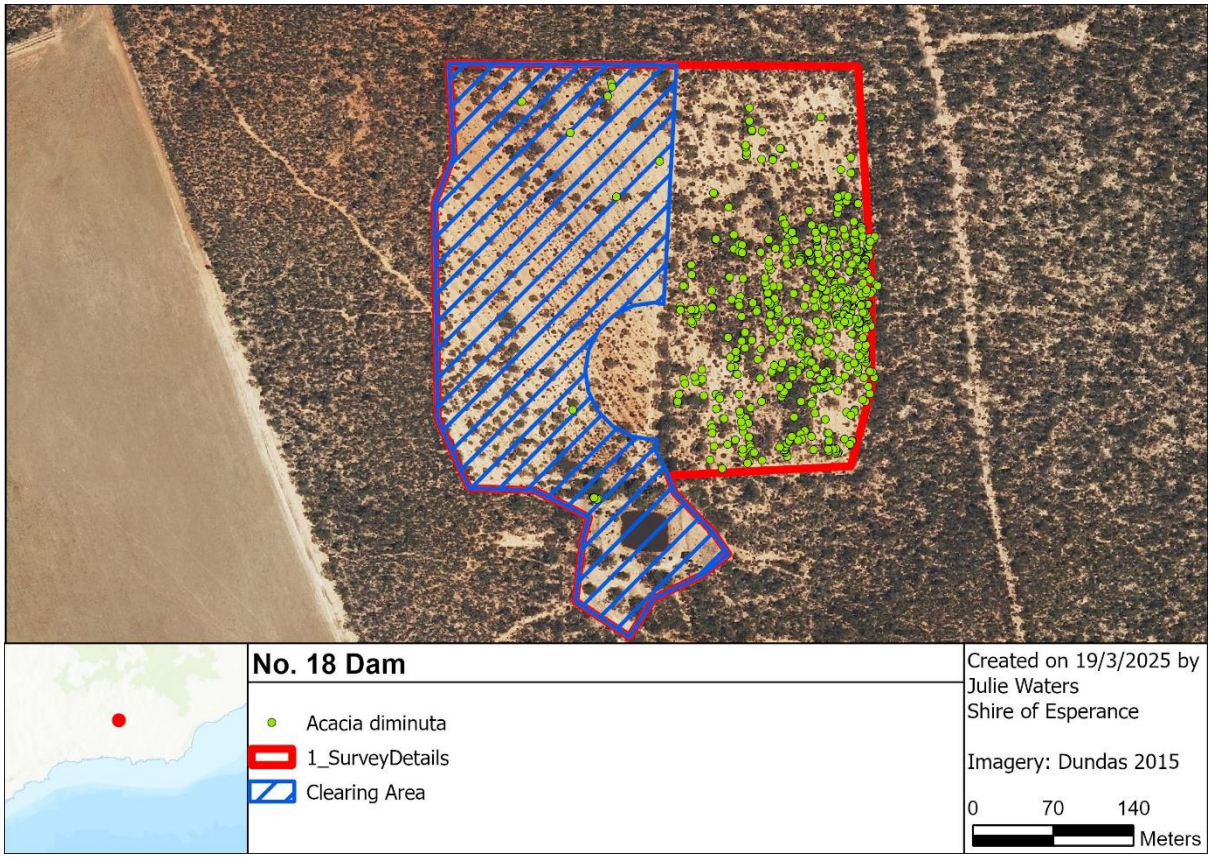

Figure 7. Location of Priority 1 species *Acacia diminuta* within the No.18 Dam project area and proposed clearing area.

Given the conservation significance of this population, the Shire of Esperance has considered the following avoidance and mitigation measures (Table 7) Option iii allows some water to still flow into the dam whilst conserving this Priority flora species.

Table 7. Avoidance options for Priority 1 species *Acacia diminuta*.

Option	Details	Number of plants impacted upon	% of total population at site
i	Whole catchment cleared	590	96%
ii	Whole catchment excluding *Eutaxia andocada* 50m exclusion zone	574	93.79%
iii	Only the western portion (The portion of the site mapped as in Good condition) including *Eutaxia andocada* 50m exclusion zone was cleared	16	2.614%
iv	No clearing at all	0	0%

5.6 Fauna

Of the three species identified as occurring within 20km of the site within the desktop survey, only the Peregrine falcon and Chuditch, have suitable habitat within the proposed clearing permit area. There is no enough vegetative cover or leaf litter at the site for malleefowl.

Of the additional species identified in the Protected Matters Search Tool, there is suitable habitat for the non-threatened Rainbow bee-eater and Black-eared cuckoo as well as the threatened Southern whiteface and Grey falcon.

6 REVIEW OF 10 CLEARING PRINCIPLES FOR NATIVE VEGETATION

The No. 18 Dam project may be at variance to some of the clearing principles that the Department of Water and Environmental Regulations (DWER) assess applications, as listed under Schedule 5 of the Environmental Protection Act 1986 (DWER 2019).

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

Likely at Variance: Biodiversity at this site is high with 81 native flora species recorded over a single vegetation community.

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

Not at Variance: The site provided suitable habitat for Peregrine falcon, Chuditch, Southern whiteface and Grey falcon. Given the large habitat ranges of all of these species there is likely to be minimal impact to any of these species.

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

May be at Variance: Two priority species were observed in the area. The *Eutaxia andocada* plant can be adequately managed to avoid being disturbed by the inclusion of a 50m buffer as recommended by DBCA. If the whole catchment was recleared, there would be a significant impact to *Acacia diminuta*. Due to the poor knowledge of this species, this could be significant and as a result the Shire of Esperance has reduced the clearing footprint to 5.427ha avoiding 97.386% of the population.

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

Not at Variance: No TEC's or PEC's were relevant to the study area.

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

Likely at Variance: There was 9.26% native vegetation within 5km of the project site.

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

Not at Variance: Vegetation in this area was not growing in association with a natural watercourses or wetland.

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

Not at Variance: Vegetation within this area will be providing limited function as windbreaks and erosion control for the agricultural areas surrounding it, as it is fully enclosed within a vegetated reserve.

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

Not at Variance: The project is within 10km of two conservation reserves. The closest conservation reserve Reserve 33113 was 7.7km south east from the site. Conservation reserve 33501 was also within 10km of the site. These two reserves are unlikely to be impacted upon.

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

Not at Variance: Clearing of the catchment will enable more runoff to enter the dam providing a valuable water source in a semi-arid environment.

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

Not at Variance: The clearing all feeds into a dam and the area in not susceptible to flooding.

7 RECOMMENDATIONS

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

- Permit boundaries and buffer around *Eutaxia andocada* will be accurately marked out by surveyors prior to clearing.
- All vehicles and construction equipment to be cleaned prior to start of the project to prevent weed introduction into the site.

8 LIST OF PERSONNEL

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

Name	Julie Waters
Position	Environmental Coordinator
Project Involvement	Desktop and Field Survey, Specimen Identification, GIS Mapping Data Interpretation and Report Writing
Qualifications	BEnvSc (Hons)
Experience	20 years working in environmental field including Flora Conservation Officer for previous DBCA, and 15 years' experience as a botanist in the region
Scientific Licence	FT61000787-2

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	3.5 years' experience as a Botanist in the region
Scientific Licence	FT61000788-2

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

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 (2012), *EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered)* Calyptorhynchus latirostris*; Baudin's cockatoo (vulnerable)*

Calyptorhynchus baudinii; and Forest red-tailed black cockatoo (vulnerable) Calyptorhynchus banksii naso. Prepared for the Australian Government by the Department of Sustainability, Environment, Water, Population and Communities, Canberra ACT. https://www.agriculture.gov.au/sites/default/files/documents/referral-guidelines-wa-black-cockatoo.pdf.

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 (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), *Threatened and Priority Flora Database (TPFL) spatial dataset, 36-0624FL,* Government of Western Australia. [13/6/2024]

Department of Biodiversity, Conservation and Attractions (2024b), *Western Australia Herbarium spatial dataset, 36-0624FL,* Government of Western Australia. [13/6/2024]

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

Department of Biodiversity, Conservation and Attractions (2024d), *Threatened Ecological Communities and Priority Ecological Communities Search Results, for Boundaries and Buffers,* 12-0624EC Government of Western Australia. [11/06/2024].

Department of Biodiversity, Conservation and Attractions (2024e), *Threatened and Priority Fauna Search Results,* 13-0624FA Government of Western Australia. [10/06/2024].

Department of Biodiversity, Conservation and Attractions (2024f) Black cockatoo / Carnaby's cockatoo roost and breeding sites [13-0624FA(BC) & 13-0624FA(WTBC)

Department of Biodiversity, Conservation and Attractions (2024g) 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 (2025), *Euxtaxia andocada and Acacia diminuta, Western Australian Herbarium and Threatened and Priority Reporting (TPFL) spatial extracts, 29-1224FLFL,* Government of Western Australia. 20/2/2025

Department of Climate Change, Energy, the Environment and Water (2024), *EPBC Act Protected Matters Search Tool* <pmst.environment.gov.au> [17/12/2024]

Department of Climate Change, Energy, the Environment and Water (2024), *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 (2024), *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 (2024), *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 (2022), *National Recovery Plan for the Australasian Bittern, Botaurus poiciloptilus*, Commonwealth Government of Australia < https://www.dcceew.gov.au/sites/default/files/documents/national-recovery-plan-australasian-bittern.pdf>

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 (2013) *Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan*. Western Australian Wildlife Management Program No. 52. Department of Parks and Wildlife, Perth, Western Australia.

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*.

Ecoscape (2015), State Barrier Fence biological surveys: Conservation significant flora, <https://www.epa.wa.gov.au/sites/default/files/Referral_Documentation/Attachment%207.zip>

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/>

Groom, C (2011) *Plants used by Carnaby's Black Cockatoo,* Department of Environment and Conservation

Main Roads of Western Australia (2024), *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
Aizoaceae	*Carpobrotus modestus*			
Aizoaceae	*Mesembryanthemum nodiflorum*	x		
Amaranthaceae	*Ptilotus holosericeus*			
Amaranthaceae	*Ptilotus spathulatus*			
Asparagaceae	*Thysanotus patersonii*			
Asphodelaceae	*Bulbine semibarbata*			
Asteraceae	*Arctotheca calendula*	x		
Asteraceae	*Asteridea athrixioides*			
Asteraceae	*Monoculus monstrosus*	x		
Asteraceae	*Olearia exiguifolia*			
Asteraceae	*Olearia muelleri*			
Asteraceae	*Olearia sp. Eremicola*			
Asteraceae	*Pogonolepis muelleriana*			
Asteraceae	*Rhodanthe laevis*			
Asteraceae	*Rhodanthe pygmaea*			
Asteraceae	*Senecio glossanthus*			
Asteraceae	*Siemssenia capillaris*			
Asteraceae	*Sonchus oleraceus*	x		
Asteraceae	*Vittadinia humerata*			KSW09024 Acc 11315
Boraginaceae	*Halgania andromedifolia*			
Brassicaceae	*Carrichtera annua*	x		
Chenopodiaceae	*Rhagodia preissii* ssp. *preissii*			
Chenopodiaceae	*Sclerolaena drummondii*			
Chenopodiaceae	*Enchylaena tomentosa*			
Chenopodiaceae	*Maireana trichoptera*			
Convolvulaceae	*Wilsonia humilis*			
Dilleniaceae	*Hibbertia psilocarpa*			
Fabaceae	*Acacia deficiens*			
Fabaceae	*Acacia camptoclada*			
Fabaceae	*Acacia crassuloides*			
Fabaceae	*Acacia diminuta*		P1	KSW04724 Acc 11153
Fabaceae	*Acacia evenulosa*			
Fabaceae	*Acacia hadrophylla*			
Fabaceae	*Acacia lachnophylla*			
Fabaceae	*Acacia pachypoda*			
Fabaceae	*Acacia sulcata* var *platyphylla*			
Fabaceae	*Daviesia aphylla*			
Fabaceae	*Dillwynia* sp. Mallee			
Fabaceae	*Eutaxia andocada*		P1	KSW04824

				Acc 11153
Fabaceae	*Pultenaea arida*			
Fabaceae	*Pultenaea elachista*			
Fabaceae	*Senna cardiosperma* or sp. Pallinup River			
Goodeniaceae	*Coopernookia strophiolata*			
Goodeniaceae	*Scaevola spinescens*			
Lamiaceae	*Prostanthera serpyllifolia*			
Lamiaceae	*Westringia cephalantha* var *caterva*			
Lauraceae	*Cassytha melantha*			
Montiaceae	*Calandrinia eremaea*			
Myrtaceae	*Cyathostemon* sp.			KSW05024 Acc 11153
Myrtaceae	*Melaleuca acuminata* ssp. *acuminata*			
Myrtaceae	*Melaleuca bromelioides*			
Myrtaceae	*Melaleuca brophyi*			
Myrtaceae	*Melaleuca glaberrima*			
Myrtaceae	*Melaleuca hamata*			
Myrtaceae	*Melaleuca johnsonii*			
Myrtaceae	*Melaleuca lateriflora*			
Myrtaceae	*Melaleuca podiocarpa*			
Myrtaceae	*Melaleuca sapientes*			
Myrtaceae	*Melaleuca sparsiflora*			
Myrtaceae	*Melaleuca teuthidoides*			
Myrtaceae	*Eucalyptus calycogona* ssp. *calycogona*			
Myrtaceae	*Eucalyptus cylindriflora*			
Myrtaceae	*Eucalyptus eremophila*			
Myrtaceae	*Eucalyptus flocktoniae*			
Myrtaceae	*Eucalyptus occidentalis*			
Myrtaceae	*Eucalyptus rigidula*			
Myrtaceae	*Eucalyptus tumida*			
Orchidaceae	*Thelymitra vulgaris*			
Orchidaceae	*Pterostylis mutica*			
Poaceae	*Festuca rubra*	x		
Poaceae	*Rytidosperma acerosum*			
Poaceae	*Austrostipa scabra*			
Poaceae	*Austrostipa elegantissima*			
Poaceae	*Hordeum leporinum*	x		
Poaceae	*Pentaschistis airoides*	x		
Primulaceae	*Lysimachia arvensis*	x		
Proteaceae	*Grevillea acuaria*			
Proteaceae	*Grevillea plurijuga*			
Rhamnaceae	*Cryptandra minutifolia* var *brevistyla*			
Rhamnaceae	*Spyridium minutum*			
Rhamnaceae	*Trymalium myrtillus* ssp. *myrtillus*			

Rutaceae	*Cyanothamnus fabianoides* ssp. *fabianoides*			
Rutaceae	*Geijera linearifolia*			
Santalaceae	*Exocarpos capnodioides*			
Santalaceae	*Santalum acuminatum*			
Sapindaceae	*Dodonaea stenozyga*			
Scrophulariaceae	*Myoporum montanum*			KSW04924 Acc 11153
Scrophulariaceae	*Eremophila decipiens*			
Scrophulariaceae	*Eremophila dichroantha*			
Scrophulariaceae	*Eremophila violacea*			

Appendix 2: Threatened and Priority Flora Report Forms

Eutaxia andocada

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: *Eutaxia andocada* **TPFL Pop. No:** NEW

OBSERVATION DATE: 18/09/2024 **CONSERVATION STATUS:** P1 **New population** ☐

OBSERVER/S: Julie Waters and Katherine Walkerden **PHONE** 90831519

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

EMAIL: Julie.waters@esperance.wa.gov.au

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

Government Dam No. 18. Reserve 20296, 14 km north east of the Salmon Gums townsite.

Lot 1451 on Plan 152877 Swann Road, Salmon Gums

Reserve No: 20296

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: 6362735.5

Long / Easting: 379245.7

ZONE: 51H

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): 10 ha

EFFORT: Time spent surveying (minutes): 3 hours 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	1			
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: 100%

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)**
• Reclearing catchment	L	E	S
•			
•			

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. Regenerating mixed mallee woodland over mixed shrubland
2.
3.
4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

Melaeuca lateriflora, Olearia erimocola, Acacia hadrophylla, Melaleuca podiocarpa, Eremophila dichronantha

Dodenea stenogyza, Scaevola spinescens, Eucalyptus eremophila

* 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.)

Growing in the "more recently" cleared portion of the catchment (still cleared way before 2009, unsure when)

Entire dam catchment searched however only 1 plant found

The identification of KSW04824 was confirmed by Mike Hislop on 27/11/2024

FLORA AUTHORISATION / LICENCE No: FT61000787-2 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: KSW04824 Collectors No: WA Herb. ☒ Regional Herb. ☐ District Herb. ☐ Other:

LODGEMENT: WA Herb Lodgement No: ACC 11153

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

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

Submitter of Record: Julie Waters Role: Environmental Coordinator Signed: JWATERS Date: 03/02/2025

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 ☐

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:** NEW

OBSERVATION DATE: 18/09/2024 **CONSERVATION STATUS:** P1 **New population** ☐

OBSERVER/S: Julie Waters and Katherine Walkerden **PHONE** 90831519

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

EMAIL: Julie.waters@esperance.wa.gov.au

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

Government Dam No. 18. Reserve 20296, 14 km north east of the Salmon Gums townsite.

Lot 1451 on Plan 152877 Swann Road, Salmon Gums

Reserve No: 20296

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: 6362870.38

Long / Easting: 379456.11

ZONE: 51H

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): 10 ha

EFFORT: Time spent surveying (minutes): 3 hours 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	600			
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: 0%

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)**
• Reclearing catchment	L	E	S
•			
•			

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** ☐

No. 18 Dam - Vegetation, Flora, Fauna and Environmental Considerations Report

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. Regenerating mixed mallee woodland over mixed shrubland
2.
3.
4.

ASSOCIATED SPECIES: Melaeuca lateriflora, Olearia erimocola, Acacia hadrophylla, Melaleuca podiocarpa, Eremophila dichronantha

Other (non-dominant) spp: Dodenea stenogyza, Scaevola spinescens, Eucalyptus eremophila

* 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: More plants in the older vegetaion in the catchment (east side)

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.)

Higher numbers of plants growing in the "less recently" cleared (eastern) portion of the catchment (still cleared way before 2009, unsure when)

The identification of KSW04724 was confirmed by Mike Hislop on 27/11/2024

FLORA AUTHORISATION / LICENCE No: FT61000787-2 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: KSW04724 Collectors No: WA Herb. ☒ Regional Herb. ☐ District Herb. ☐ Other:

LODGEMENT: WA Herb Lodgement No: ACC 11153

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

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

Submitter of Record: Julie Waters Role: Environmental Coordinator Signed: JWATERS Date: 14/03/2025

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 No. 18 Dam Survey Area

Threatened or priority flora identified by the desktop study to be present within a 20 km radius of No. 18 Dam project area, using Threatened and Priority Flora Reporting (TPFL; DBCA 2024a), WA Herbarium (DBCA 2024b) and Esperance District Threatened Flora (DBCA 2024c).
Nt. Acronyms used in the table include priority flora (P), threatened flora (TF), Biodiversity Conservation (BC) Act 2018, 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	3.99
Acacia bartlei	P3	Flat or gently undulating landscapes, waterlogged depression in brown/grey sandy loam or clay loam. Commonly associated with *Eucalyptus occidentalis*	No	14.21
Acacia dissona var. *indoloria*	P3	Open mallee in undulating plains in sand, sandy loam and loam.	Yes	19.89
Acacia glaucissima	P3 (has since been delisted)	Open mallee woodland or Eucalyptus (tree) woodland. Frequently associated with fire or mechanical disturbance.	Yes	12.10
Adenanthos ileticos	P4	Mallee over myrtaceous shrubland in white, yellow or brown sand. Often in association with *Eucalyptus merrickiae*.	No	11.47
Angianthus sp. Salmon Gums	P1	Red-brown loam, salt lakes and granite outcrops.	No	11.53
Aotus lanea	P1	Salt-lakes, sandplains, disturbed areas. Grey clayey sand, yellow clay, deep siliceous sand.	Yes	11.75
Aotus sp. Dundas	P2	Open mallee woodlands and margins of salt lakes on sand, Sandy-loam and loam. Associated with fire and chained firebreaks.	No	9.04
Bossiaea flexuosa	P3	Deep sandy soil. Edges of salt lakes. Associated with fire.	No	12.33
Bossiaea spinosa	P3	Gravelly, sandy soils on undulating plains.	Yes	13.35
Caladenia voigtii	P4	Tall shrubland on the margins of salt lakes and in shallow soil pockets on granite outcrops	No	2.88

Conostephium marchantiorum	P3	Sand. Plains, creek lines, edges of salt lakes.	No	10.71
Conostephium uncinatum	P2	Sand, Sandy loam. Margins of salt lakes, Eucalyptus woodlands.	No	10.52
Cyathostemon sp. Dowak	P1	Mallee woodland in open shrubland, saline depression. Margin of salt lake	No	10.43
Cyathostemon sp. Esperance	P1	Salt lakes, saline watercourse. Sandy gravel	No	10.42
Cyathostemon sp. Salmon Gums	P3	Various soils - orange sand, white sandy, sandy clay over granite, light brown clay, saline soils. Various habitats – flats, dry river beds, claypans.	Yes	10.51
Eremophila chamaephila	P3	Open mallee woodland with limestone.	Yes	10.14
Eremophila compressa	P3	Mallee woodland. Clay or clay loam, sandy loam, sand. Undulating plains. Often in disturbed areas	Yes	6.29
Eremophila serpens	P4	Winter-wet depressions, sub-saline flats, drainage lines, salt lakes	No	17.27
Eucalyptus creta	P3	Eucalyptus dominated woodland with understory of melaleuca. Sandy clay or loam. Calcareous plains	Yes	9.42
Eucalyptus dissimulata ssp. *plauta*	P1	Mallee shrubland or mixed Mallee woodland. Sandy to Loamy soil.	Yes	13.35
Eucalyptus dolichorhyncha	P4	Flats or slightly rising ground with whitish to yellowish sandy clay soil.	No	13.04
Eucalyptus histophylla	P3	Mallee scrub, clay loam, near outcroppping granite and in gravelly soils.	No	8.72
Eucalyptus merrickiae	TF (VU)	Margins of salt lakes or near salt lakes.	No	10.36
Eutaxia andocada	P1	White sand or brown sandy-clay over granite	No	2.90
Frankenia glomerata	P4	Margins of salt lakes	No	11.99
Lepidium fasciculatum	P1	Cracking clays and red loams on plains, dry lake beds, flats and low shrublands.	Yes	13.34
Micromyrtus elobata ssp. *scopula*	P3	Sand, loam, sandy loam, sandy clay. Mallee woodland over tall shrubland or heath, shrublands.	Yes	17.35
Pimelea halophila	P2	Margins of salt lakes	No	9.94
Ptilotus seminudus	P3	Plain near salt lakes. Eucalyptus spp. open Low Woodland	No	19.23
Ricinocarpos trichophorus	TF (EN)	Breakaways, among sandstone rocks, granite. Mallee scrub over heath	No	PMST
Thysanotus brachyantherus	P2 (has since been delisted)	Grey sand on sandplain.	No	12.51

Appendix 4: Description of Threatened and Priority Fauna Species with the Potential to occur within the No. 18 Dam Survey Area

Threatened or priority fauna identified by the desktop study to be present within a 20 km radius of No. 18 Dam project area, using Threatened and Priority Fauna dataset (DBCA 2024e) and species identified by the EPBC protected matters search tool.

Nt. Acronyms used in the table include priority flora (P), threatened flora (TF), Biodiversity Conservation (BC) Act 2018, EPBC Act (1999), Extinct (EX), Critically Endangered (CR) endangered (EN) and Vulnerable (VU).

Taxon	Common Name	BC Act Status	EPBC Status	Associated Habitat	Likely to occur	Distance from site (km)	EPBC Protected Matters Tool
Dasyurus geoffroii	Chuditch	VU	VU	Wide habitat range, requiring dense understorey for ambush hunting and an abundance of small to medium-sized mammalian, avian, amphibian and invertebrate prey.	Possible	13.72	In feature area
Falco peregrinus	Peregrine falcon	OS		Requires abundance of medium-sized birds such as waterfowl, doves, pigeons, parrots and passerines as prey. Requires open space for hunting, preferring to hunt over marshes, open water bodies, valleys, fields and grasslands. Utilising high perches, such as bare eucalypt stags, to surveil for potential prey.	Possible	11.09	
Leipoa ocellata	Malleefowl	VU	VU	Long-unburnt mallee woodland with abundant leaf litter and debris to build nest mounds and forage for seeds, small invertebrates and lerps. Semi-arid regions across southern Australia.	Unlikely	16.78	In feature area
Zanda latirostris	Carnaby's black cockatoo	EN	EN	Nomadic, breeding in old-growth (> 250 yrs old) eucalypt woodland along south coast and throughout wheatbelt to Kalbarri, nesting in deep hollows of Salmon Gum, York Gum, Red River Gum, Marri, Jarrah, Karri, Red Morrell and Tuart. Feeds on proteaceous shrubs and heath and adjacent eucalypt woodland; eats seeds of *Banksia, Hakea, Grevillea, Allocasuarina* and introduced pines, as well as flowers of *Eucalyptus, Banksia, Hakea, Melaleuca,*	Unlikely		In buffer area

				*Calothamnus, Callistemo*n, etc. Also known to roost in Swamp Yate (*E. occidentalis*). In non-breeding season most flocks migrate to coastal feeding territories along the south coast, midwest, and south-west; this is the period when most Carnaby's are sighted in Esperance, with numerous roosts known in Tuart, Maritime Pine, and Swamp Yate trees in the region. Not known to breed east of Cocanarup Timber Reserve.			
Apehlocephala leucopsis	Southern whiteface	Not listed	VU	Open woodlands and shrublands usually dominated by Acacia or Eucalyptus with an understorey of grasses and/or shrubs. Feed exclusively on the ground and favour open habitats with herbs in the litter. Nesting birds build bulky domed nests of grass, bark and roots in a hollow, crevice or low bush.	Possible		In feature area
Falco hypoleucos	Grey falcon	VU	VU	Semi-arid and arid areas where it hunts over timbered lowland plains of mulga scrub and treed watercourses. Favours tussock grasslands and open woodland where it predates on birds such as doves, ducks, finches, small parrots and small mammals. Nests in largest trees in the landscape, usually mature *E. camaldulensis* and telecommunication towers.	Possible		In feature area
Botaurus poiciloptilus	Australasian bittern	EN	EN	Feed and breed in generally large, fresh to moderately brackish wetlands with pH levels ranging from 5.5 to 8.5. Extensive areas of water plants, especially rushes, reeds and sedges, provide habitat for the bitterns and support abundant prey. Shallow water, less than 30cm deep with a low to medium density of water plants mixed with, or near short fine sedges are favoured for foraging while higher density emergent vegetation is preferred for nesting.	Unlikely		In buffer area only
Calidris ferruginea	Curlew sandpiper	CR	CR	Occasionally occurs in suitable inland wetland environments. Widespread in coastal and subcoastal plains, especially around the Esperance Lakes area.	Unlikely		In feature area

Appendix 5: EPBC Act Protected Matters Report

Listed Threatened Ecological Communities

		Presence	
Community Name	Threatened Category	Rank	Text
Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	May	In feature area

Listed Threatened Species

Scientific Name	Common Name	Simple Presence	Threatened Category	Migratory Status
Aphelocephala leucopsis	Southern whiteface	May	Vulnerable	
Botaurus poiciloptilus	Australasian bittern	May	Endangered	
Calidris ferruginea	Curlew sandpiper	Known	Critically Endangered	Migratory
Falco hypoleucos	Grey falcon	May	Vulnerable	
Leipoa ocellata	Malleefowl	Likely	Vulnerable	
Zandra latirostris	Carnaby's black cockatoo	Likely	Endangered	
Dasyurus geoffroii	Chuditch, Western quoll	May	Vulnerable	
Calidris ferruginea	Curlew sandpiper	May	Critically Endangered	Migratory

Appendix 6: BC Act 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 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 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 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: BAM Act 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 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.	In relation to a category 3 declared pest, the owner or occupier of land in an area for which an organism is a declared pest or a person who is conducting an activity on the land must take such of the control measures specified in subregulation (1) as are reasonable and necessary to — (a) alleviate the harmful impact of the declared pest in the area for which it is declared; or (b) reduce the number or distribution of the declared pest in the area for which it is declared; or (c) prevent or contain the spread of the declared pest in the area for which it is declared.

Appendix 12: Definition of Vegetation Condition Scale

For the south west and interzone botanical provinces

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