Clearing Desktop Report – CPS 818

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GEH Walgoolan to Southern Cross

Package 7 – Laydown and Site Office Area

September 2022

EOS 1773

D22#946388

Contents

Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	A/Senior Environment Officer	Draft v1	23/08/2022
Reviewer:	Senior Environment Officer	Rev 0	01/09/2022

1 PURPOSE

This Clearing Desktop Report (CDR) is a desktop assessment of native vegetation clearing that is proposed to be cleared using the Statewide Clearing Permit CPS 818 issued to Main Roads Western Australia (Main Roads).

2 SCOPE

2.1 Project Scope

Project Name: Great Eastern Hwy Walgoolan to Southern Cross Package 7 – Additional Site Office and Laydown Area

Project Purpose / Components: Main Roads Wheatbelt Region is currently delivering Package 7 of the Great Eastern Hwy (GEH) Walgoolan to Southern Cross Upgrade Project, which comprises the replacement and widening of Bridge 0630, widening and reconstruction of approaches and upgrade of drainage and safety barriers.

The Contractor has identified the need for an open area to place a site office, toilets, and store materials. There is insufficient space in the existing clearing boundary, and the nearest cleared farmland is not practicable due to the distance. A sparsely vegetated area has been identified close to the project, which will be cleared and formalised into a site office area.

The area will be rehabilitated following completion of the project.

The proposed clearing under CPS 818 is: 0.03 ha.

The proposed temporary clearing under CPS 818 is: 0.03 ha.

Project Location(s): The project area is located on GEH near Straight Line Kilometre (SLK) 340.35, approximately 4.1 km west of Moorine Rock in the Shire of Yilgarn, as shown in Figure 1.

Long: 119.08380
Lat: -31.314171

The location of the proposed works is at Figure 1.

2.2 Desktop Assessment Scope

The assessment area is confined to a local area of a 20 km radius, as shown in Figure 2.

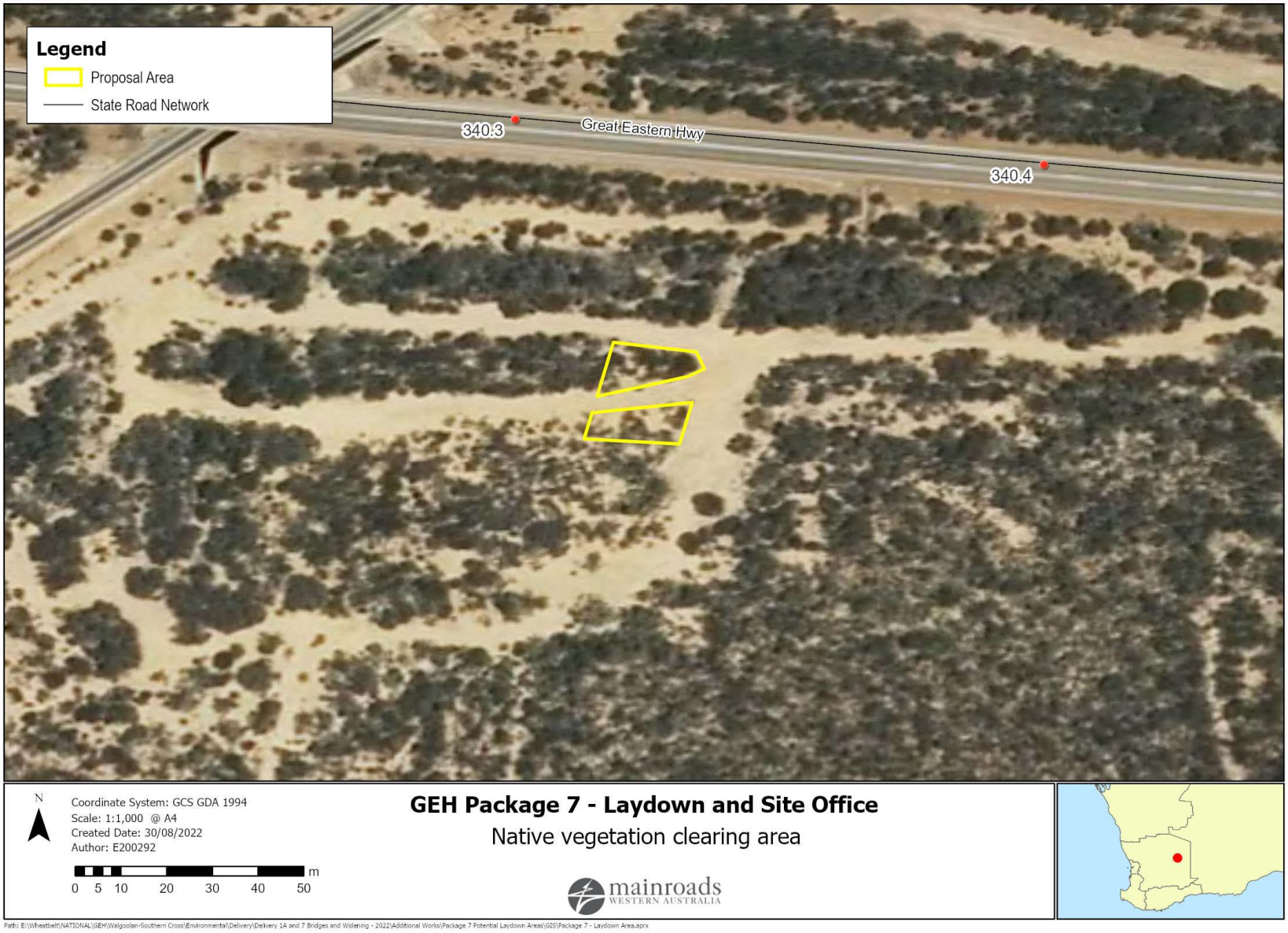

Figure 1. Project Area

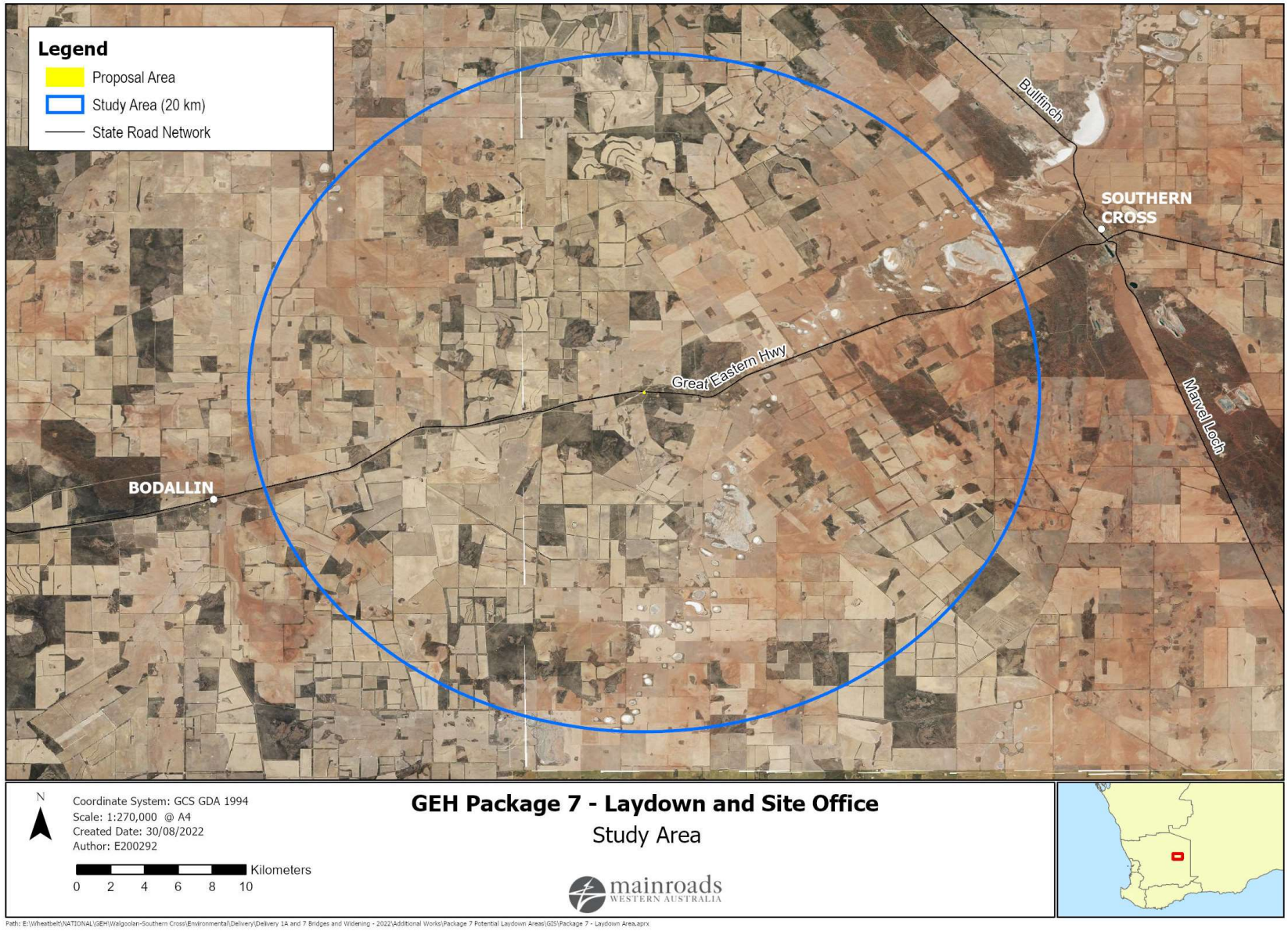

Figure 2. Project Location and Study Area

2.3 Alternatives to Clearing

The Contractor has considered a number of alternatives to clearing in this location.

The scope of the project is to replace a bridge over a live rail corridor, as such, there is limited space available within the existing clearing boundary due to safety requirements of working near the rail line. Similarly, a site office cannot be placed next to the road due to security risks.

Nearby cleared farmland was investigated however it was found the distances were not practicable for placing construction materials and facilities.

The area chosen utilises an existing cleared area, with only some minor temporary clearing required. Historical imagery shows this area was previously cleared; therefore, the vegetation primarily comprises regrowth.

2.4 Measures to Avoid, Minimise, Mitigate and Manage Project Clearing Impacts

The following measures have been implemented to avoid, minimise etc. clearing:

- The location nominated avoids clearing by utilising an existing cleared area.
- The clearing will be temporary, and the area will be rehabilitated following completion of the project.
- Most of the vegetation has been previously cleared and comprises regrowth.
- The area of clearing has been minimised as much as possible.

2.5 Approved Policies and Planning Instruments

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), Main Roads has also had regard to

EPPs

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992;
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011

Relevant other policies and guidance documents:

- The Western Australian Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (DWER, December 2014)
- Procedure: Native vegetation clearing permits (DWER, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, August 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities
- Approved Recovery Plans for threatened species
- EPBC Act Referral guidelines for the three threatened black cockatoo species
- Strategic advice - EPA

Other Legislation of relevance for assessment of clearing and planning/other matters

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)
- *Rights in Water and Irrigation Act 1914*
- *Aboriginal Heritage Act 1972* (WA)

3 Methodology

3.1 Desktop Study

A desktop assessment of the project area and an assessment of native vegetation clearing were undertaken by reviewing a number of government agency managed databases, viewing GIS shapefiles and consulting with relevant stakeholders where necessary. Results from searches can be found in the relevant Appendix.

GIS layer viewing and mapping is done using ArcGIS Pro and / or Main Roads iMaps. Referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. Government managed databases were searched to locate additional information, these are referenced in Section 7.

The desktop assessment has also reviewed biological surveys undertaken for the GEH Walgoolan to Southern Cross project, including the following:

- Great Eastern Highway – Merredin to Southern Cross SLK 258.5–365.5 Biological Assessment – GHD, 2016.
- Great Eastern Highway – Merredin to Southern Cross SLK 258.5 – 365.5 Biological Assessment – Astron, 2018.
- Great Eastern Highway 327 – 365.8 Slk Desktop Assessment – Ecologia, 2019.
- Great Eastern Highway Walgoolan To Southern Cross Package 6 To 8: SLK 327 To 365.8 Targeted Flora Survey – Ecologia, 2020.

4 VEGETATION DETAILS

4.1.1 Project Site Vegetation Description

The vegetation comprises one vegetation type, described as the following (GHD, 2016):

- VT03 *Allocasuarina* tall shrubland: *Allocasuarina corniculata, Allocasuarina spinosissima* and *Allocasuarina campestris* tall shrubland with *Eucalyptus burracoppinensis* isolated mallees over *Chamelaucium pauciflorum* subsp. Perenjori (B.J. Conn 2181)*, Euryomyrtus maidenii and Melaleuca conothamnoides* low open shrubland over *Amphipogon caricinus* var. *caricinus* isolated grasses over *Waitzia acuminata* var. *acuminata* and *Drosera* sp. isolated herbs.

The vegetation has been mapped as Excellent condition. Historical aerial imagery shows the area has been previously partly cleared, as shown below:

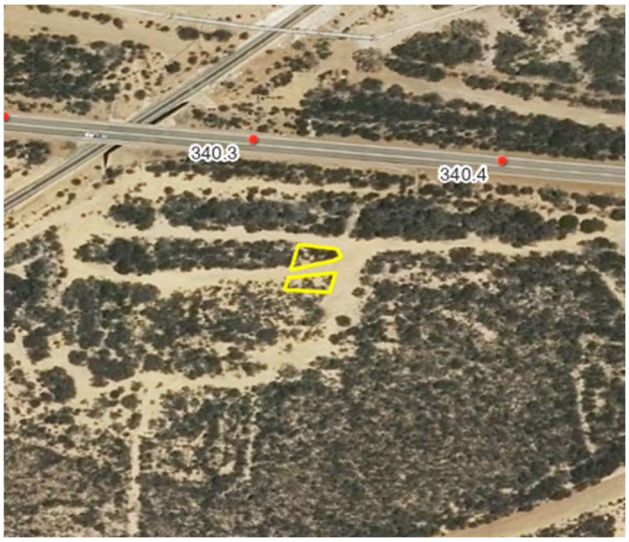

Figure 3 – 2017 aerial

Figure 4 – 1999 aerial

Tables 3 and 4 provide details of the Pre-European Vegetation Associations with the project area and the remaining extents of these associations.

For a full description of the existing vegetation, refer to the biological assessment report (GHD, 2016).

Table 2. Summary of Project Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 8 described as Medium woodland; salmon gum & gimlet	Clearing up to 0.03 ha for site office and laydown area on Great Eastern Hwy, Moorine Rock.	Excellent (EPA 2016)	Vegetation description and condition determined from biological survey (GHD, 2016)

Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 8	**Statewide**	694,638.14	346,425.77	49.87	6.77
	IBRA Bioregion Avon Wheatbelt	356,571.81	50,340.31	14.12	1.22
	IBRA Sub-region Merredin	353,871.79	49,941.57	14.11	1.23
	Local Government Authority Shire of Yilgarn	163,920.73	59,992.64	36.60	6.51

5 Assessment Against the Ten Clearing Principles

In assessing whether the project's proposed clearing is likely to have a significant impact on the environment, the project was assessed against the ten Clearing Principles (*Environmental Protection Act 1986* (EP Act), Schedule 5).

Each principle has been assessed in accordance with DWER's 'A Guide to the Assessment of Applications to Clear Native Vegetation'.

The proposed clearing is not likely to be at variance with the 10 Clearing Principles.

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

Proposed clearing is not likely to be at variance to this Principle

Comments

The proposal requires the temporary clearing of 0.03 ha of native vegetation for the purpose of constructing a site office and laydown area. The vegetation comprises *Allocasuarina* tall shrublands in excellent condition. Historical aerial imagery shows the area comprises a mix of remnant vegetation and regrowth from previous clearing. While the vegetation has been mapped as excellent condition, current aerial imagery shows vegetation in local area has been impacted by numerous access tracks and clearing for the nearby Perth-Kalgoorlie rail corridor.

A desktop assessment identified the following Priority Ecological Community (PEC) intersecting the proposal area:

- Eucalypt Woodlands of the Western Australian Wheatbelt (P3).

This PEC is synonymous with the EPBC Act-listed Threatened Ecological Community (TEC) of the same name. This community has not been recorded in the proposal area (GHD, 2016; Astron, 2018). No other TECs or PECs were identified as occurring in the study area or recorded in the biological assessments.

A search of flora databases has identified the following significant flora species in the study area:

- *Eucalyptus crucis* subsp. *crucis* (T)
- *Glossostigma trichodes* (P1)
- *Verticordia pulchella* (P2)
- *Acacia crenulata* (P3)
- *Acacia filifolia* (P3)
- *Lepidosperma* sp. Pigeon Rocks (H. Pringle 30237) (P3)
- *Rinzia triplex* (P3)
- *Stylidium choreanthum* (P3)
- *Verticordia mitodes* (P3)
- *Myriophyllum petraeum* (P4)

None of the records from the desktop assessment occur in the proposal area. The biological assessment did not record any significant species in the proposal area (GHD, 2016). The proposal area is not covered by the Ecologia (2020) targeted flora survey along GEH, however it is noted that the survey did not record significant flora species in similar vegetation habitat for this section of GEH.

Five Priority flora are considered possible to occur, being *Acacia filifolia*, *Lepidosperma* sp. Pigeon Rocks, *Rinzia triplex*, *Stylidium choreanthum* and *Verticordia mitodes* (Ecologia, 2019; WA Herbarium, 2022). While the proposal area may provide suitable habitat for these species, the temporary and minor scale of clearing in an area that has been previously cleared is not likely to impact on these species.

According to GHD (2016), the proposal area comprises one fauna habitat type which is described as *Allocasuarina* tall shrublands. The vegetation to be cleared is small in scale and includes some previously cleared areas. It is noted the vegetation forms part of a large remnant patch of native vegetation (<1,700 ha). As such, the vegetation proposed to be cleared is unlikely to contain a relatively higher level of fauna diversity. Two significant fauna species are known to occur in the study area, being *Leipoa ocellata* (Malleefowl – Vulnerable) and *Parartemia contracta* (a brine shrimp – Priority 1). No Malleefowl individuals or breeding mounds have been recorded in the proposal area (GHD, 2016) and there is no suitable habitat for *Parartemia contracta*.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

Astron (2018)
Ecologia (2019)
Ecologia (2020)
GHD (2016)
GIS Database:

- Threatened and Priority Flora
- Threatened and Priority Fauna
- Threatened Ecological Communities
- WA Herbarium Flora

(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.

Proposed clearing is not likely to be at variance to this Principle

Comments

GHD (2016) recorded one fauna habitat type in the proposal area, described as *Allocasuarina* tall shrublands.

The fauna survey did not record any significant fauna in the proposal area at the time of the survey (GHD, 2016). GHD considered the *Allocasuarina* tall shrublands habitat type suitable for the following significant species listed under the BC Act or Priority by DBCA:

- *Leipoa ocellata* (Malleefowl – Vulnerable)
- *Dasyurus geoffroii* (Chuditch – Vulnerable)
- *Phascogale calura* (Red-tailed phascogale – Conservation Dependant).

The desktop assessment also identified one other significant fauna species known to occur in the study area:

- *Parartemia contracta* (P1).

No evidence of Malleefowl or nesting activity (ie. mounds) was recorded within the proposal area at the time of survey (GHD, 2016). One Malleefowl individual was recorded as roadkill during the fauna survey approximately 35 km west of the proposal area (GHD, 2016). The nearest historical record of Malleefowl is an opportunistic sighting from 1999 approximately 10 m from the proposal area (GIS Database).

The *Allocasuarina* tall shrublands habitat type may be suitable for Malleefowl. Given the occurrence of substantial areas of similar or better quality habitat in nearby areas, the temporary clearing of 0.03 ha of native vegetation is unlikely to significantly impact this species.

While GHD (2016) considered Chuditch and Red-tailed phascogale possible to occur in the survey area, neither species have been recorded in the study area and are unlikely to occur in the proposal area. There is no suitable habitat for *Parartemia contracta* in the proposal area.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Methodology
GHD (2016)
GIS Database:
- Threatened and Priority Fauna

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

Proposal is not likely to be at variance to this Principle

Comments
The desktop assessment identified one Threatened flora taxa in the study area, being *Eucalyptus crucis* subsp. *crucis*. This species grows in association with granite outcrops (WA Herbarium, 2022). Suitable habitat for this species is not present in the proposal area, therefore this species is not likely to occur.

The biological assessment did not record any Threatened flora (GHD, 2016) in the survey area and a targeted significant flora survey of nearby vegetation along GEH also did not record any Threatened flora (Ecologia, 2020).

The vegetation to be cleared is minor in scale and comprises some previously cleared areas. The vegetation is not considered necessary for the continued existence of Threatened (rare) flora.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Methodology
Ecologia (2020)
GHD (2016)
WA Herbarium (2022)
GIS Database:
- Threatened and Priority flora
- WA Herbarium flora

(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.

Proposed clearing is not at variance to this Principle

Comments
No TECs listed under the BC Act are known to occur in the study area (GIS Database). The biological survey and targeted TEC assessment did not record any TECs in the proposal area (GHD, 2016; Astron, 2018).

Based on the above, the proposed clearing is not at variance with this principle.

Methodology
Astron (2018)
GHD (2016)
GIS Database:

- Threatened Ecological Communities

(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.

Proposed clearing is not likely to be at variance to this Principle

Comments

The project area is located within the Avon Wheatbelt IBRA region. Approximately 19% of pre-European vegetation remains in the IBRA region (Government of Western Australia, 2019).

The vegetation of the project area has been broadly mapped as the following pre-European vegetation association:

- 8: Medium woodland; salmon gum & gimlet.

The National Objectives and Targets for Biodiversity Conservation recognise that the retention of 30 per cent or more of the pre-clearing extent of each ecological community is necessary if Australia's biological diversity is to be protected (Commonwealth of Australia, 2001). With regard to the vegetation association mapped within the proposal area, vegetation association 8 retains over 30% of the pre-European extent in the state and in the Shire of Yilgarn, but less than 30% in the Avon Wheatbelt bioregion and Merredin sub region.

According to GHD (2016), the vegetation of the proposal area comprises *Allocasuarina* tall shrublands, which does not represent vegetation association 8. Pre-European vegetation mapping shows vegetation association 1413 present within 40 m of the proposal area, which is described as Wattle, casuarina and teatree *Acacia-Allocasuarina-Melaleuca* alliance. This vegetation association is considered more representative of the vegetation to be cleared. This vegetation association retains over 30% pre-European extent at all scales (Government of Western Australia, 2019).

While the eastern Wheatbelt has been extensively cleared, aerial imagery shows the clearing area is located within a large remnant patch of native vegetation approximately 1,700 ha in area, situated around the bridge and extending north of Moorine Rock townsite. Given the extent of nearby vegetation and noting the clearing is temporary and will remove a small area (0.03 ha) of regrowth vegetation, the vegetation is not considered significant remnant vegetation.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Summary of Project Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 8 described as Medium woodland; salmon gum & gimlet	Clearing up to 0.03 ha for site office and laydown area on Great Eastern Hwy, Moorine Rock.	Excellent (EPA 2016)	Vegetation description and condition determined from biological survey (GHD, 2016)

Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
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	IBRA Sub-region Merredin	353,871.79	49,941.57	14.11	1.23
	Local Government Authority Shire of Yilgarn	163,920.73	59,992.64	36.60	6.51

Methodology
Commonwealth of Australia (2001)
Government of Western Australia (2019)
GIS Database:
- Pre-European Vegetation

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

Proposed clearing is not at variance to this Principle

Comments
According to the desktop assessment, no watercourses or wetlands occur in the proposal area. The vegetation proposed to be cleared does not comprise riparian vegetation (GHD, 2016).

Based on the above, the proposed clearing is not at variance to this principle.

Methodology
GHD (2016)
GIS Database:
- Directory of Nationally Important Wetlands
- Hydology South
- RAMSAR Wetlands
- Watercourses

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

Proposed clearing is not likely to be at variance to this Principle

Comments
According to DPIRD risk mapping, the proposal area has a low or very low risk of land degradation from water erosion, waterlogging and salinity but over 70% of the soil unit has a high to extreme wind erosion risk. Given the minor temporary nature of the clearing and extent of nearby native vegetation surrounding the proposal area, the proposed clearing is not likely to cause appreciable land degradation.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Methodology
GIS Database:
- DPIRD Risk Mapping

(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.

Proposed clearing is not at variance to this Principle
Comments The proposal area is located within the Great Easter Hwy road reserve. The nearest conservation area is approximately 14 km south-west of the proposal area. The clearing will not have an impact on any adjacent or nearby conservation areas. Based on the above, the proposed clearing is not at variance to this principle.
Methodology GIS Database: - DBCA legislated Lands and Waters

(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.

Proposed clearing is not likely to be at variance to this Principle
Comments According to the desktop assessment, no watercourses or wetlands are mapped in the proposal area. As discussed in principle (g), the proposal area has a low risk of land degradation from water erosion and salinity. Noting the extent of nearby vegetation, and the minor and temporary nature of the clearing, the proposed clearing is unlikely to cause deterioration of surface or groundwater quality. As such, the proposed clearing is not likely to be at variance to this principle.
Methodology GIS databse: - Hydrology South

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

Proposed clearing is not likely to be at variance to this Principle
Comments The proposal area has a low to extremely low flood risk. The small area of clearing (0.03 ha) is not likely to cause, or exacerbate, the incidence or intensity of flooding.
Methodology GIS Database: - DPIRD Risk Mapping

6 ADDITIONAL ACTIONS REQUIRED

The clearing associated with the proposal is not likely to be or not at variance with the Clearing Principles. Additional management actions under CPS 818 are detailed in Table 6.

Table 6. Summary of Additional Management Actions Required by Permit CPS 818

Impact of Clearing	Yes/No or NA	*Further Action Required*
1. The project involves clearing for temporary works (as defined by CPS 818).	**Y**	Implement CPS 818 Condition 9 Revegetation and Rehabilitation requirements. Conditions 9(c)(v)-(ix) are not applicable.
2 a. Project is within Region that: - Has rainfall greater than 400mm and - Is South of the 26th parallel and - Works are in 'Other than dry conditions' and - Works have potential for **uninfested** areas to be impacted	**N**	Proceed with standard Vehicle and Plant management actions from PEMR's and Vehicle and Plant Hygiene Checklists.
3. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback	**N**	No further action required.
4. The vegetation within the area to be cleared and/or the surrounding vegetation in a good or better condition and weeds likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition	**N**	No further action required.

7 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum. Vegetation will be managed in accordance with the Principal Environmental Management Requirements (PEMR's).

8 REFERENCES

Astron (2018) Great Eastern Highway – Merredin to Southern Cross SLK 258.5 – 365.5 Biological Assessment, September 2018. Report prepared for Main Roads WA, by Astron Environmental Services.

Benshemesh, J. (2007). National Recovery Plan for Malleefowl. Department for Environment and Heritage, South Australia.

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001 – 2005. Commonwealth of Australia, Canberra.

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Ecologia (2020) Great Eastern Highway Walgoolan to Southern Cross Package 6 to 8: SLK 327 to 365.8 Targeted Flora Survey. Unpublished report prepared for Main Roads Western Australia, by Ecologia Environment.

GHD (2016) Great Eastern Highway – Merredin to Southern Cross SLK 258.5–365.5 Biological Assessment. Report prepared for Main Roads WA, by GHD.

Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. Available online from: https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics.

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