Clearing Desktop Report – CPS 818

We're working for Western Australia.

Material Laydown Site

Marble Bar Road

September 2022

EOS#2825

D22#945784

Contents

Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	Environment Officer	Draft v2	08/09/2022
Reviewer:	Senior Environment Officer	Rev 0	09/09/2022

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: Marble Bar Road Material Laydown Area

Project Purpose / Components:
Stockpile resources for future use, specifically the upcoming Great Northern Highway overtaking lanes. The proposal will involve the clearing of 0.05 ha native vegetation within a 2.84 ha footprint which will be conducted under CPS 818.

The project footprint consists of approximately:

- 1.17 ha of sealed road formation and adjacent rest area
- 1.67 ha of open/degraded land – unsealed surface which contains degraded vegetation
- 0.05 ha of vegetation to be cleared for material stockpiling

Proposal details:

- Water will be drawn from existing, local BHP bores for the purposes of dust suppression
- Entry and exit tracks will be graded out from the existing parking bay hardstand
- Turnaround location shall be within the nominated area

The proposed clearing under CPS 818 is: 0.05 ha

The proposed temporary clearing under CPS 818 is: 0.05 ha

Project Location(s): The project area is located on Marble Bar Road (M030), SLK 0.3-0.5, Shire of East Pilbara as shown in Figure 1. Proposal is approximately 3.20km from the edge of Newman.

- Latitude: 23°22'14.62"S
- Longitude: 119°46'52.39"

The location of the proposed works is at Figure 1.

2.2 Desktop Assessment Scope

The study area is confined to a local area of a 40 km radius, as shown in Figure 2.

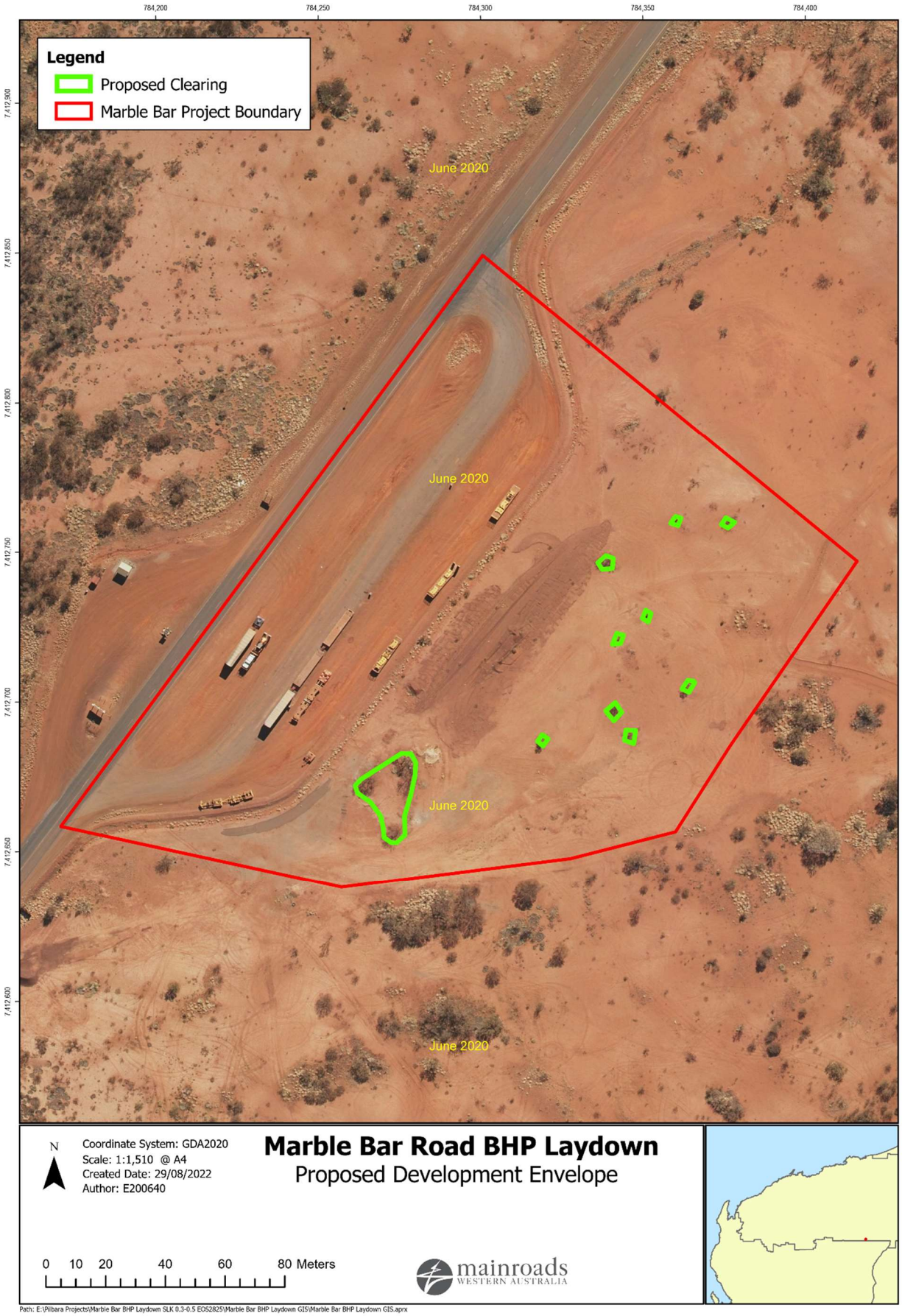

Figure 1. Project Area

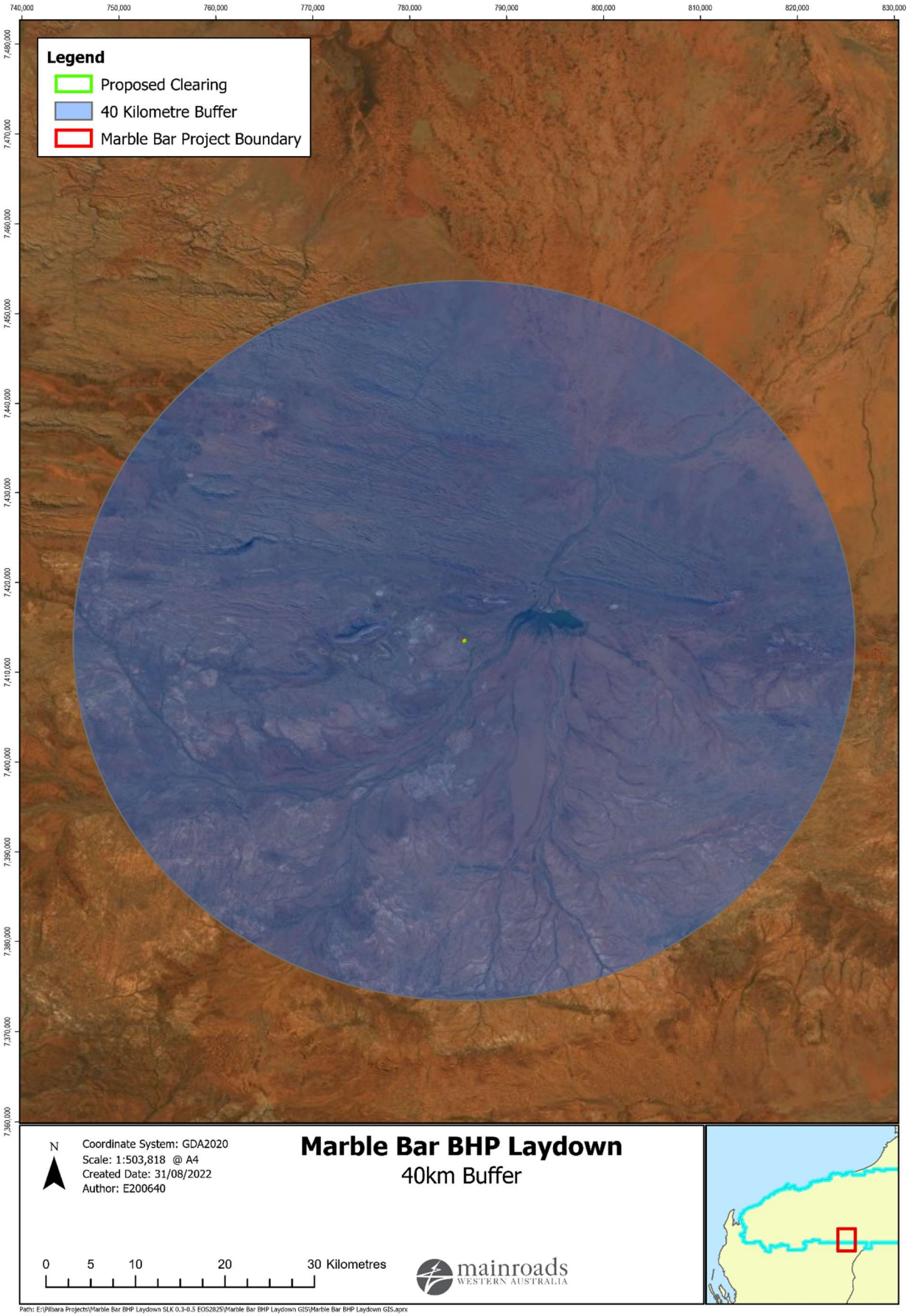

Figure 2: Project Location and Study Area

2.3 Alternatives to Clearing

The proposed clearing area contains very small pockets of fractured remnant vegetation and consideration was given to leaving all vegetation. However, the frequency in which stockpiling and carting of materials is required, increases the risk of vegetation being disturbed without prior approvals in place. Removal of the small area (0.05 ha) of vegetation in a highly disturbed area primarily caused by third party vehicle access, was deemed favourable, as it improves access and subsequently traffic flow, and maximises capacity for materials storage. Additionally, clearing of this disturbed area may reduce the risk of third party access to areas outside of this clearing area.

Rather than clearing high quality vegetation for a gravel pit, the proposal utilises an area that requires minimal clearing of vegetation in Degraded condition and subjected to previous disturbance, for the stockpiling of mine waste from BHP to be utilised for future road works. The proposal decreases clearing requirements for establishing a gravel pit, a material stockpile area, and maintains surrounding high-quality vegetation.

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

The design and management measures implemented to avoid and minimise the project clearing impacts are provided in Table 1.

Table 1. Justification of Avoiding, Minimising, Mitigating and Managing Project Clearing Impacts

Design or Management Measure	Discussion and Justification
Steepen batter slopes	Not Applicable.
Installation of safety barriers	Not Applicable.
Alignment to one side of existing road	Not Applicable.
Alternative alignment to follow existing road (or) to preferentially locate within pasture or a degraded areas	Not Applicable.
Installation of kerbing	Not Applicable.
Simplification of design to reduce number of lanes and/or complexity of intersections	Not Applicable.

Design or Management Measure	Discussion and Justification
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	The proposal will secure an area to stockpile material from BHP's Jimblebar mine for roadworks. Rather than clearing high quality vegetation for the construction of a gravel pit, the proposal will utilise mine waste from BHP and stockpile the material in an area containing only very small pockets of fractured remnant vegetation in Degraded condition and in an area subject to prior and ongoing disturbance. The proposal decreases clearing requirements by avoiding having to establish a gravel pit, stockpiling material in an area of higher-quality vegetation, and maintains the surrounding higher-quality vegetation. The proposed footprint for material stockpiles has been limited to degraded and fractured vegetation, avoiding clearing of surrounding undisturbed vegetation. The project area is adjacent to a rest area which is subject to regular noise and vibrations from traffic on Marble Bar Rd and has been accessed by third parties causing direct disturbance. Remnant vegetation to be cleared equates to 0.05 hectares. Initial proposal designs have been refined to avoid clearing areas skirting vegetation that was undisturbed.
Drainage modification	Not Applicable.

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
- 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)
- Town Planning and Development Act 1928

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 Integrated Mapping System (IMS). 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.

4 VEGETATION DETAILS

4.1.1 Project Site Vegetation Description

The vegetation proposed to be cleared is in Degraded condition, and is listed as Pre-European Hammersley 82 which is described as Hummock grassland with scattered bloodwoods & snappy gum *Triodia spp., Corymbia dichromophloia, Eucalyptus leucophloia*. There is a lack of ground cover, middle story, and canopy cover, with over 98% of the proposal footprint being bare ground. The largest pocket of remnant vegetation no greater than 0.03 hectares which includes large unvegetated space in-between vegetation.

The site was significantly disturbed in 2010 by unauthorized third party vehicle use, and further disturbance occurred in 2012 with the development of an adjacent rest area and access to the proposal area by third party vehicles. Satellite imagery suggests the area remains cleared with little to no vegetation within the project area. Remnant vegetation consists of 1.76% of the total footprint for the project area (0.05 ha of a total area of 2.84ha). The immediate surrounding vegetation has been impacted by fringing effects, however, beyond this fringe impact, vegetation is of significantly higher quality as indicated by satellite imagery (Fig. 1).

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

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

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Pre-European HAMMERSLEY_82 which is described as Hummock grassland with scattered bloodwoods & snappy gum *Triodia spp., Corymbia dichromophloia, Eucalyptus leucophloia*	Clearing of 0.05 hectares to stockpile material for Main Roads Jimblebar material carting.	Degraded	Vegetation description and condition determined from aerial imagery since 2012 indicating largely cleared area with little remnant vegetation.

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. 82	**Statewide** *Veg. Association 82*	2,565,901.28	2,553,206.19	99.51	11.51
	IBRA Bioregion *Pilbara*	2,563,583.23	2,550,888.14	99.50	11.52
	IBRA Sub-region *Chichester*	360,666.90	360,322.69	99.90	0
	Local Government Authority *City of Karratha*	13,946.45	13,946.45	100.00	0

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 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 at variance to this Principle

Comments

The vegetation is listed as Pre-European HAMMERSLEY_82 which is described as Hummock grassland with scattered bloodwoods & snappy gum *Triodia spp.*, *Corymbia dichromophloia*, *Eucalyptus leucophloia*. Vegetation unit 82 has a Pre-European extent of 2,565,901.28 hectares with over 99% remaining at state, Pilbara, Bioregion (Pil01) and LGA East Pilbara levels. Remnant pockets of vegetation in a disturbed area and Degraded condition are unlikely to provide significant habitat to any fauna, with the largest pocket no greater than 0.03 hectares which includes large unvegetated space in-between vegetation.

The site was subject to significant disturbance from third party use until a heavy vehicle rest area was installed in 2012 which also contributed to vegetation degradation from development activities. Additionally, areas abutting the heavy vehicle rest area are still being utilised by third party vehicles and contributing to vegetation degradation. Satellite imagery suggests the area remains Degraded with little to no vegetation within the project area. Remnant vegetation consists of 1.76% of the total footprint for the project area (0.05 ha of a total area of 2.84ha). The immediate surrounding vegetation has been impacted by fringing effects, however, beyond this fringe impact, vegetation is of significantly higher quality as indicated by satellite imagery as seen in Figure 1.

A desktop likelihood assessment determined that one (1) Threatened flora species may occur within the proposal area:
Mt Augustus Foxglove, *Pityrodia augustensis* (VU)

The Mt Augustus Foxglove is typically found on rocky hillsides in the Mt Augustus area, north-east of Carnarvon, and Mt Fraser in the Robinson Range, north of Meekatharra in the Geraldton district of Western Australia (Brown et al., 1998). The proposal area does not contain these features and therefore, it is unlikely that the Mt Augustus Foxglove would be present. Due to the limited clearing, the Degraded condition of the vegetation proposed to be cleared, and absence of habitat features, no impact to this species is anticipated.

Following EPA's Vegetation Condition Scale (2016) vegetation is classified from Degraded . As such, the native vegetation proposed to be cleared is not considered to comprise a high level of biological diversity due to its largely degraded condition, lack of native understory, and the low likelihood of significant fauna species dependent on isolated remnant vegetation.

It is unlikely that the removal of small pockets of remnant vegetation totalling 0.05 ha of vegetation clearing in Degraded condition within a highly disturbed area, will impact biodiversity in this area noting the adjacent high-quality vegetation will not be impacted from the proposed works.

The proposed clearing is not at variance to this principle.

Methodology
DBCA shapefiles
EPA (2016, 2020)
Main Roads GIS Shapefiles
Landgate Imagery (2010 to Present)

(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 at variance to this Principle

Comments
The area provides very little habitat if any for fauna to inhabit with very little understory and canopy cover. Satellite imagery suggests very little to no resources for shelter for birds or reptiles; with little ground detritus or vegetation. It is unlikely that the removal of 0.05 ha of disturbed, Degraded condition vegetation over a 2.84 hectare total footprint will impact local species populations, when over 99% of the (pre-European Hamersley) vegetation type remains intact at all levels of assessment as seen in Table 3. Additionally, vegetation outside of this area serves as superior and suitable habitat for species present within the area and will not be impacted by these works.

A desktop likelihood assessment determined that eleven (11) Threatened fauna species may occur within the proposal area, however the absence of critical habitat features important for supporting the presence of species makes it unlikely the following will be present and therefore no impact is anticipated:

- Curlew Sandpiper, *Calidris ferruginea* (CR),
- Australian Painted Snipe, *Rostratula australis* (EN),
- Black-Flanked Rock-Wallaby, Black-Footed Rock-Wallaby, Mororong, *Petrogale lateralis lateralis* (EN),
- Pilbara Leaf-nosed Bat, *Rhinonicteris aurantia* (Pilbara) (VU),
- Pilbara Olive Python, *Liasis olivaceus barroni* (VU),
- Ghost Bat, *Macroderma gigas* (VU),
- Grey Falcon, *Falco hypoleucos* (VU),
- Night Parrot, *Pezoporus occidentalis* (CR),
- Mt. Augustus Foxglove, *Pityrodia augustensis Munir* (VU).

The following threatened species are likely to occur dependent on habitat present in the proposal area:

Greater Bilby, *Macrotis lagotis* (VU)

The Greater Bilby occupies three main habitats; open tussock grassland on uplands and hills, Acacia aneura (mulga) woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas (Woinarski et al., 2014). Whilst the vegetation unit of this area includes hummock grassland; the proposal habitat is Degraded in condition with poor understory cover, regularly impacted by traffic noise and vibration, and is adjacent to preferable high-quality vegetation. It is unlikely that the Greater Bilby would inhabit the proposal area over the better-quality, undisturbed adjacent habitat. No impact to this species is anticipated.

Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu], *Dasyurus hallucatus* (EN)

The Northern Quoll inhabits rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert (Threatened Species Scientific Committee 2005aq). The regular noise and vibration disturbance from traffic in the proposal area, and absence of material for alternative den methods, makes it unlikely that this species will occur. No impact to this species is anticipated.

Great Desert Skink, Tjakura, Warrarna, Mulyamiji, *Liopholis kintorei* (VU)

The Great Desert Skink generally inhabits areas of red sandplains and sand ridges, where sites in WA are dominated by *Triodia basedowii and Triodia schinzii* with some *Eremophila leucophylla* shrubs (Cogger et al. 1993)(Pearson et al. 2001). Preferred habitat has at least 50% bare ground (McAlpin 1998). Whilst the vegetation unit of this area includes grasslands and the proposal area is largely bare ground; the proposal habitat is Degraded in condition with poor understory cover, regularly impacted by traffic noise and vibration, and is adjacent to more preferable high-quality vegetation. It is unlikely the Great Desert Skink would inhabit the proposal area over the better-quality, undisturbed adjacent habitat. No impact to this species is anticipated.

Grey Falcon, *Falco hypoleucos* (VU)

The Grey Falcon occurs in arid and semi-arid Australia, including the Murray-Darling Basin, Eyre Basin, central Australia and Western Australia (Marchant and Higgins 1993). The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses (Garnett et al. 2011; Watson 2011; Schoenjahn 2013, 2018; Janse et al. 2015; Ley and Tynan 2016). The species has been observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter (Olsen and Olsen 1986; Schoenjahn 2018). Prey species including but not strictly limited to various species of birds (Marchant and Higgins 1993, Hollands 1984; Debus and Rose 2000; Schoenjahn 2013, Cook 2014, Fisher 2015), reptiles (Czechura 1981) and small mammal species (Schoenjahn 2013, Moore 2016). Being highly mobile species and little to no habitat for nesting or vegetation to support prey species, it is unlikely the Grey Falcon would frequent the proposal area. The proposal area is not considered to provide significant habitat value and therefore, no impact to these species is anticipated.

All results from DBCA's Threatened species registered within a 40km radius of the proposal boundary can be seen in Appendix 2.

The proposal area is not considered to provide significant fauna habitat.
The proposed clearing is not at variance to this principle.

Methodology
DBCA Shapefiles
DBCA website
EPA (2016, 2020)

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

Proposal is not at variance to this Principle

Comments

The site underwent significant disturbance in 2010, and further disturbance occurred in 2012 with the development of a heavy vehicle rest area and access by third party vehicles. Satellite imagery suggests the area remains cleared with little to no vegetation within the project area. Remnant vegetation consists of 1.76% of the total footprint of the project area (0.05 ha of a total area of 2.84ha). The immediate surrounding vegetation has been impacted by fringing effects, however, beyond this fringe impact, vegetation is of significantly higher quality as indicated by satellite imagery as seen in Figure 1. It is unlikely that the proposal will have an impact on local native flora with an abundance of high-quality vegetation present in adjacent undisturbed landscape.

Habitat for Mt. Augustus Foxglove (*Pityrodia augustensis* (VU)) was listed as likely to occur within the proposal area. The Mt Augustus Foxglove typically occurs on rocky hillsides in the Mt Augustus area, north-east of Carnarvon, and Mt Fraser in the Robinson Range, north of Meekatharra in the Geraldton district of Western Australia (Brown et al., 1998). The proposal area does not contain these features and therefore, it is unlikely that the Mt Augustus Foxglove would be present. Due to the limited clearing, the Degraded condition of the vegetation proposed to be cleared, and absence of habitat features, no impact to this species is anticipated.

Five (5) flora species are found within a 40km radius that are listed as threatened by DBCA. The closest instances being over 10.5km (*Gymnanthera cunninghamii)* and 13km (*Lepidium catapycnon*) away. These species are unlikely to be impacted with their communities occurring a significant distance from the proposal area. See Table 4 for more information and Figure 9 for distribution.

No species were identified as likely to be impacted by the proposal.
The proposed clearing is not at variance to this Principle.

Methodology

DBCA shapefiles
Florabase (Accessed 28/08/2022)
EPA (2016, 2020)

(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

The proposal resides within the Ethel Gorge aquifer stygobiont community (TEC1141). This is a subterranean community that is not associated with vegetation or fauna and clearing for the proposed works will not impact the aquifer. The proposal does not present a risk to contaminating local surface, or ground hydrology as no excavation or extraction activities will occur.

Collier Range National Park is the nearest listed reserve, which is over 119km away and will not be impacted by the proposal.

The TEC will not be impacted by the project activities as disturbance activities will not be at depth nor will they impact groundwater systems. The project will not impact any TECs.

The proposed clearing is not at variance to this principle.

Methodology

DBCA shapefiles

(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 at **variance to this Principle**

Comments

The vegetation of the project area has been broadly mapped as Pre-European Hammersley 82 which is described as Hummock grassland with scattered bloodwoods and snappy gum *Triodia spp.*, *Corymbia dichromophloia*, *Eucalyptus leucophloia*. The project footprint has been largely disturbed since 2012 with the development of a heavy vehicle rest area, with only small pockets of remnant vegetation residing within the proposal footprint (Fig. 1).

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

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Pre-European HAMMERSLEY_82 which is described as Hummock grassland with scattered bloodwoods & snappy gum *Triodia spp.*, *Corymbia dichromophloia*, *Eucalyptus leucophloia*	Clearing of 0.05 hectares to stockpile material for Main Roads Jimblebar material carting.	Degraded	Vegetation description and condition determined from aerial imagery from 2012 indicating largely cleared area with little remnant vegetation.

The remaining extent of the vegetation association is summarised in the below Table.

Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 82	**Statewide** *Veg. Association 82*	2,565,901.28	2,553,206.19	99.51	11.51
	IBRA Bioregion *Pilbara*	2,563,583.23	2,550,888.14	99.50	11.52
	IBRA Sub-region *Chichester*	360,666.90	360,322.69	99.90	0-
	Local Government Authority *City of Karratha*	13,946.45	13,946.45	100.00	0-

Vegetation unit 82 has greater than 99% of its pre-European extent at Statewide, IBRA Bioregion, Subregion and LGA. As this percentage is almost 100%, and significantly greater than the 30% maintenance threshold, this proposal poses little to no risk of impacting local flora biodiversity or resource abundance. Additionally, remnant vegetation is represented as Degraded and is unlikely to be of significance to local populations.

Due to the Degraded condition of the vegetation, the small footprint, history of disturbance, and high percentage of extent, it is unlikely the vegetation is of significance to local communities.

The proposed clearing is not at variance to this Principle.

Methodology

Aerial photography
EPA (2016)
Government of Western Australia (2019)

(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

No wetlands (Ramsar, geomorphic, etc.) are located within 100 metres of the proposal area.
The nearest:

- watercourse (295343) is 0.18km from the project, where it intersects with Marble Bar Road;
- wetland is Fortescue Marshes which are located over 82km from the project; and
- lake is over 47km away (FID 100244).

The proposal area does not include any riparian vegetation as it is not immediately adjacent to or contain any waterways.

The proposed clearing is not at variance to this Principle.

Methodology

DWER and DBCA shapefiles

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

Proposed clearing is not at variance to this Principle

Comments

The proposed clearing lies within the Elimunna Landscape System, which is described as stony plains on basalt supporting sparse acacia and cassia shrublands and patchy tussock grasslands.

The DWER/ASRIS Acid Sulphate Soil risk mapping indicates that the area is classified as extremely low probability of occurrence (1-5% chance of occurrence in mapping unit with any occurrences in small, localised areas). Additionally, as the proposal does not include excavation of soils it is unlikely that acid sulphate soils will be a risk.

The proposal area is largely previously disturbed (less than 2% of the footprint has vegetation cover) with satellite imagery indicating the area has been highly disturbed since 2012. The topography is flat and there will be little to no changes to this except for material stockpiles. It is unlikely the proposal will impact existing risk levels of flooding, waterlogging or wind erosion.

The proposed clearing of native vegetation is not at variance to this principle.

Methodology

Natural Resource Management SLIP Soil Systems (Accessed 26/08/2022)

(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 lies within an Environmentally Sensitive Area (4848) (Fig. 3) being a subterranean ESA, the Ethel Gorge aquifer stygobiont community, that is not associated with vegetation or terrestrial fauna. The ESA will not be impacted by the proposal activities as the proposal will not involve the excavation of material or intersect groundwater.

The total proposal footprint is limited to 2.84 hectares with only 0.05 ha of native vegetation proposed to be cleared.

Collier Range National Park is the nearest Conservation Reserve which is over 119km away and as such will not be impacted by the proposal.

The proposal will not have any significant impact on conservation areas given the distance of separation.

The proposed clearing is not at variance to this principle.

Methodology
DBCA shapefiles
EPA (2016)

(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 at variance to this Principle

Comments
Existing BHP bores will be utilised as sources of water for the purpose of dust suppression (BHP bore at MB SLK 21, BHP bore on GNH SLK 1167). Proposal works will have no direct significant impact on the groundwater table given no excavation is proposed and works will not intersect groundwater.

The nearest:

- watercourse is 0.18km from the project, where it intersects with Marble Bar Road;
- wetland is Fortescue Marshes are located over 82km from the project; and
- lake is over 47km away (FID 100244).

The Project is within a PDWSA and a Surface water catchment area. These include the Newman Water Reserve (FID 208), which is a groundwater reserve, and the Proclaimed Pilbara Surface Water Area. The proposal includes limited surface clearing of native vegetation and grading which will not intersectgroundwater, alter water courses, or pollute water sources given there are no surface water bodies within the proposal area.

The proposal is not at variance to this principle.

Methodology
DWER and DBCA shapefiles
EPA (2016)
RIWI Act (1914)

(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 at variance to this Principle

Comments
Newman Aero Weather station (007176) receives a mean of 324.4mm of rainfall annually, the majority of which falls in February (72.3mm) with a mean of 27mm per month each year. An existing drain is adjacent to the proposal area which controls run off from an existing rest area. The proposal will not disturb this drain or negatively impact its ability to manage runoff.

The proposal area is elevated at 525m above sea level, with surrounding low and flat terrain of equal elevation or up to 531m in the surrounding kilometre. The area has not been identified as a significant risk of flooding, waterlogging or erosion from soil landscape land quality analyses.

The project does not intersect with any bodies of water and will not impact any surrounding water bodies. The nearest:

- watercourse is 0.18km from the project, where it intersects with Marble Bar Road;
- wetland is Fortescue Marshes are located over 82km from the project; and
- lake is non-perennial and is over 47km away (FID 100244).

The proposal area is largely previously disturbed (less than 2% of the footprint has vegetation cover) with satellite imagery indicating the proposal area has been highly disturbed since 2012. The topography is flat and there will be little to no changes to this except for the addition of material stockpiles. It is unlikely the proposed works will impact existing risk levels of flooding, waterlogging or wind erosion by clearing the small amount of remnant fractured vegetation.

The proposed clearing is not at variance to this Principle.

Methodology

Natural Resource Management SLIP Soil Systems (Accessed 26/08/2022)
Bureau of Meteorology Australia (Accessed 31/08/2022)
GIS Database:

- Soil landscape land quality - Flood Risk
- Soil landscape land quality - Water Erosion Risk
- Soil landscape land quality - Waterlogging Risk

6 ADDITIONAL ACTIONS REQUIRED

The clearing associated with the proposal is not at variance to 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.
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**	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

Beeston, G.R., Hopkins, A.J.M. and Shepherd, D.P. (2002). Land-use and vegetation in Western Australia. Department of Agriculture, Western Australia, Resource Management Technical Report 250.

Brown, A, Thomson-Dans, C & Marchant, N (eds) 1998, Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia

Bureau of Meteorology Australia. (2022). Climate Averages for Australian Sites – Newman Aero (007176) – Available online from http://www.bom.gov.au/climate/data/index.shtml Accessed 31/08/2022

Cogger, H.G., E.E. Cameron, R.A. Sadlier & P. Eggler (1993). *The Action Plan for Australian Reptiles*. Canberra, ACT: Australian Nature Conservation Agency. Available from: http://www.environment.gov.au/biodiversity/threatened/action/reptiles/index.html.

CSIRO. (2014). Australian Soil Resource Information System (ASRIS) Database. Available online from http://www.asris.csiro.au Accessed 2022.

Department of Natural Resources and Environment (2002). Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

Environmental Protection Authority (2020). Technical Guidance – Terrestrial vertebrate fauna surveys for Environmental Impact Assessment. Perth, Western Australia.

Environmental Protection Authority (2016). *Technical Guide – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment* (eds. K Freeman, G Stack, S Thomas and N Woolfrey). Perth, Western Australia.

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

Government of Western Australia (2019). Native Vegetation Clearing Permits. Application, assessment, and management requirements under Part V Division 2 of the Environmental Protection Act 1986. Department of Water and Environmental Regulation.

Government of Western Australia (2014). A guide to the assessment of applications to clear native vegetation Under Part V Division 2 of the Environmental Protection Act 1986. Department of Environmental Regulation.

McAlpin, S. (1998). *Establishing a surveillance and monitoring program for Tjakura,* Egernia kintorei*, at Uluru - Kata Tjuta National Park*. Page(s) 1-19. Canberra: Environment Australia.

Natural Resource Management in WA. (2022). SLIP portal, Soil-Landscape Mapping. Available online from: http://maps.agric.wa.gov.au/nrminfo/framesetup.asp. Accessed 26/08/2022.

Pearson, D., P. Davies, N. Carnegie & J. Ward (2001). The Great Desert Skink *(Egernia kintorei)* in western Australia: distribution, reproduction and ethno-zoological observations. *Herpetofauna*. 31(1):64-68.

Threatened Species Scientific Committee (2005aq). *NON-APPROVED Conservation Advice on Northern Quoll (Dasyurus hallucatus)*. Available from: http://www.environment.gov.au/biodiversity/threatened/species/dasyurushallucatus.html#conservation.

Western Australian Herbarium. 1998- *FloraBase* - The Western Australian Flora. Department of Biodiversity, Conservation and Attractions. Available online from: https://florabase.dpaw.wa.gov.au/ Accessed 29/08/2022.

Woinarski, J., Burbidge, A. & Harrison, P. (2014). The Action Plan for Australian Mammals 2012. (pp. 203-207). CSIRO Publishing.

9 APPENDICES

Appendix	Title
Appendix 1	Site Representative Images
Appendix 2	DBCA Threatened Flora and Fauna Database Searches

Appendix 1: Site Representative Images

Below images (Fig 3-5) were taken on the 31st of August 2022. Take note that large bodies of vegetation have been excluded from the project design, which does not include clearing more than individual trees as seen in Figures 3-5.

Figure 3. Marble Bar Road within the project area facing South-east (120°).

Figure 4. Marble Bar Road SLK 0.5 facing North (20°).

Figure 5: Facing North-east (55°) in the project area. .

Below images (Fig. 6 - 8) are representative of vegetation quality in the project area from SLK 0.3 to 0.5 respectively. Take into consideration this imagery is older (2010) and does not reflect further infrastructure disturbance as seen in Figure 1 from 2020.

Figure 6. Marble Bar Road SLK 0.30 vegetation in proposed project area. Project boundary is represented by the red line and clearing will stay within/below this boundary. Not to scale.

Figure 7. Marble Bar Road SLK 0.40 vegetation in proposed project area. Project boundary is represented by the red line and clearing will stay within/below this boundary. Not to scale.

Figure 8. Marble Bar Road SLK 0.50 vegetation in proposed project area. Project boundary is represented by the red line and clearing will stay within/below this boundary. Not to scale.

Appendix 2: DBCA Threatened Flora and Fauna Database

DBCA flora and fauna observations within a 40km radius of the proposal can be seen in Figure 9 below and species are listed in Table 4.

REDACTED

Table 4: Species identified by DBCA observation data within a 40km radius of the project area (sorted by conservation status).

SCIENTIFIC NAME	COMMON NAME	CLASS	CONSERVATION CODE
Calidris ferruginea	Curlew Sandpiper	BIRD	CR
Petrogale lateralis lateralis	Black-flanked Rock-wallaby, Black-footed Rock-wallaby, Moororong	MAMMAL	EN
Rhinonicteris aurantia (Pilbara)	Pilbara Leaf-nosed Bat	MAMMAL	VU
Macrotis lagotis	Bilby, Dalgyte, Ninu	MAMMAL	VU
Liasis olivaceus barroni	Pilbara Olive Python	REPTILE	VU
Macroderma gigas	Ghost Bat	MAMMAL	VU
Actitis hypoleucos	Common Sandpiper	BIRD	MI
Tringa glareola	Wood Sandpiper	BIRD	MI
Tringa nebularia	Common Greenshank, Greenshank	BIRD	MI
Tringa totanus	Common Redshank, Redshank	BIRD	MI
Plegadis falcinellus	Glossy Ibis	BIRD	MI
Actitis hypoleucos	Common Sandpiper	BIRD	MI
Calidris acuminata	Sharp-tailed Sandpiper	BIRD	MI
Calidris melanotos	Pectoral Sandpiper	BIRD	MI
Calidris ruficollis	Red-necked Stint	BIRD	MI
Calidris subminuta	Long-toed Stint	BIRD	MI
Charadrius veredus	Oriental Plover	BIRD	MI
Gelochelidon nilotica	Gull-billed Tern	BIRD	MI
Hydroprogne caspia	Caspian Tern	BIRD	MI
Falco peregrinus	Peregrine Falcon	BIRD	OS
Anilios ganei	Gane's Blind Snake (Pilbara)	REPTILE	P1
Ctenotus uber johnstonei	Spotted Ctenotus (northeast)	REPTILE	P2
Goodenia hartiana	-	PLANT	P2
Gymnanthera cunninghamii	-	PLANT	P3
Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	-	PLANT	P3
Acacia subtiliformis	-	PLANT	P3
Sminthopsis longicaudata	Long-tailed Dunnart	MAMMAL	P4
Pseudomys chapmani	Western Pebble-mound Mouse, Ngadji	MAMMAL	P4
Dasycercus blythi	Brush-tailed Mulgara	MAMMAL	P4
Lepidium catapycnon	Hamersley Lepidium	PLANT	P4