Clearing Desktop Report – CPS 818

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TOTAL HYBRID SOLAR ECLIPSE – ADDITIONAL CARPARK AREA, MINILYA-EXMOUTH ROAD

REGION: MIDWEST GASCOYNE
EOS: 2933

D23#324988
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Contents

List of Figures

List of Tables

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PROPOSAL

1.1 Purpose and Justification

The Ningaloo Eclipse will occur on 20 April 2023 and involves a Hybrid Solar Eclipse. In Exmouth, the eclipse will present as a Total Solar Eclipse as the sun, moon and earth align in unison for a period of 62 seconds (Tourism WA, 2022). This type of event is rare, and Exmouth provides a land-based opportunity to view the eclipse for a 3-hour period on the day (Tourism WA, 2022).

1

The event has been widely publicised by the Western Australian government, including announcements by Premier Mark McGowan, with the aim of attracting local and international visitors. It is anticipated that 2,500 – 4,000 people may attend the event for a maximum duration of 7 hours (8 am – 3 pm) on 20 April 2023.

To support the event, Main Roads requires to establish a 440-bay car park for the viewing of the 2023 solar eclipse. The car park is required to prevent congestion and associated safety risks during the viewing of the event, ensuring the proper management of the roads within the region is maintained.

1.1.1 Main Roads Approach to Road Safety and the Environment

Main Roads is committed to minimising the environmental impacts of all of its activities and manages the State road network to achieve balanced economic, social, safety and environmental benefits for the community. Main Roads recognises that Western Australia's environment is significant from a global perspective and the unique conservation values that are contained within its road reserve. Main Roads road network often adjoins natural areas and, in some locations, the reserve itself hosts remnant vegetation with high environmental values. Although the reserves were not established for this purpose, Main Roads recognises that it has a responsibility to conserve the environmental values that occur within the State's road network and minimise the impact its proposals have on the environment. In addition to providing a safe and efficient road network for all people using the roads under its control, Main Roads is also committed to protecting and enhancing the natural environment.

In accordance with National and State Government road safety policies, Main Roads is also committed to substantially reducing road trauma on the road network through Safe System principles. The Safe System approach acknowledges that more than two thirds of all serious crashes are due to human error rather than deliberate risk taking (e.g. speeding or drink driving) and seeks to improve behaviour through education and enforcement while managing the safety of vehicles, speeds and the road and road infrastructure. It is shown that improving sub-optimal road formation will substantially reduce the likelihood and severity of road crashes. For example, according to the Road Safety Management Guideline, increasing the sealed shoulder from 0.5 m to 2 m will reduce Killed and Seriously Injured numbers by more than 50%.

As the statutory authority responsible for providing and managing a safe and efficient main road network in Western Australia, Main Roads focuses on improving road safety by thoroughly considering all environmental, economic and community benefits and impacts. It operates on a hierarchy of avoiding, minimising, reducing and then, if required, offsetting our environmental impacts. This has been achieved through changes in proposal scope and design. Main Roads regularly reduces its clearing footprint by restricting earthworks limits for proposals, steepening batters, installing barriers, establishing borrow pits in cleared paddocks and avoiding temporary clearing for storage, stockpiles and turn around bays to avoid and minimise its impacts.

Further details on measures to avoid, minimise and reduce are provided in Section 1.5.

1.2 Proposal Scope

Main Roads proposes to clear Lot 220, a 1.6ha area for use as a carpark area for the solar eclipse. These works and the cleared area are required to enable safe establishment and operation of facilities and access for the 'Kailis Viewing Event".

The "Kailis Viewing Event" is located on Minilya-Exmouth Road, Exmouth, with the Proposed clearing for a 440-bay car park area on Lot 220 (SLK 194.10 to 194.55)

1.3 Proposal Location

The Clearing Area is located on Lot 220, Minilya-Exmouth Road, Learmonth Exmouth between 194.10 to 194.55 Straight Line Kilometre (SLK) in the Shire of Exmouth as shown in Figure 1, and the 20 km Study Area is shown in Figure 2.

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818:

Up to 1.60 hectares (ha)

Areas of Native Vegetation Clearing:

The areas of native vegetation to be cleared are shown in Figure 1.

Type of Native Vegetation:

Type of vegetation to be cleared under this Proposal is predominantly Low Open Shrubland of *Acacia synchronicia* and/or *Maireana polypterygia* over Tussock Grassland. A number of introduced weed species are present within the understorey vegetation. Native vegetation types of the full project area.

Figure 1: Clearing Area

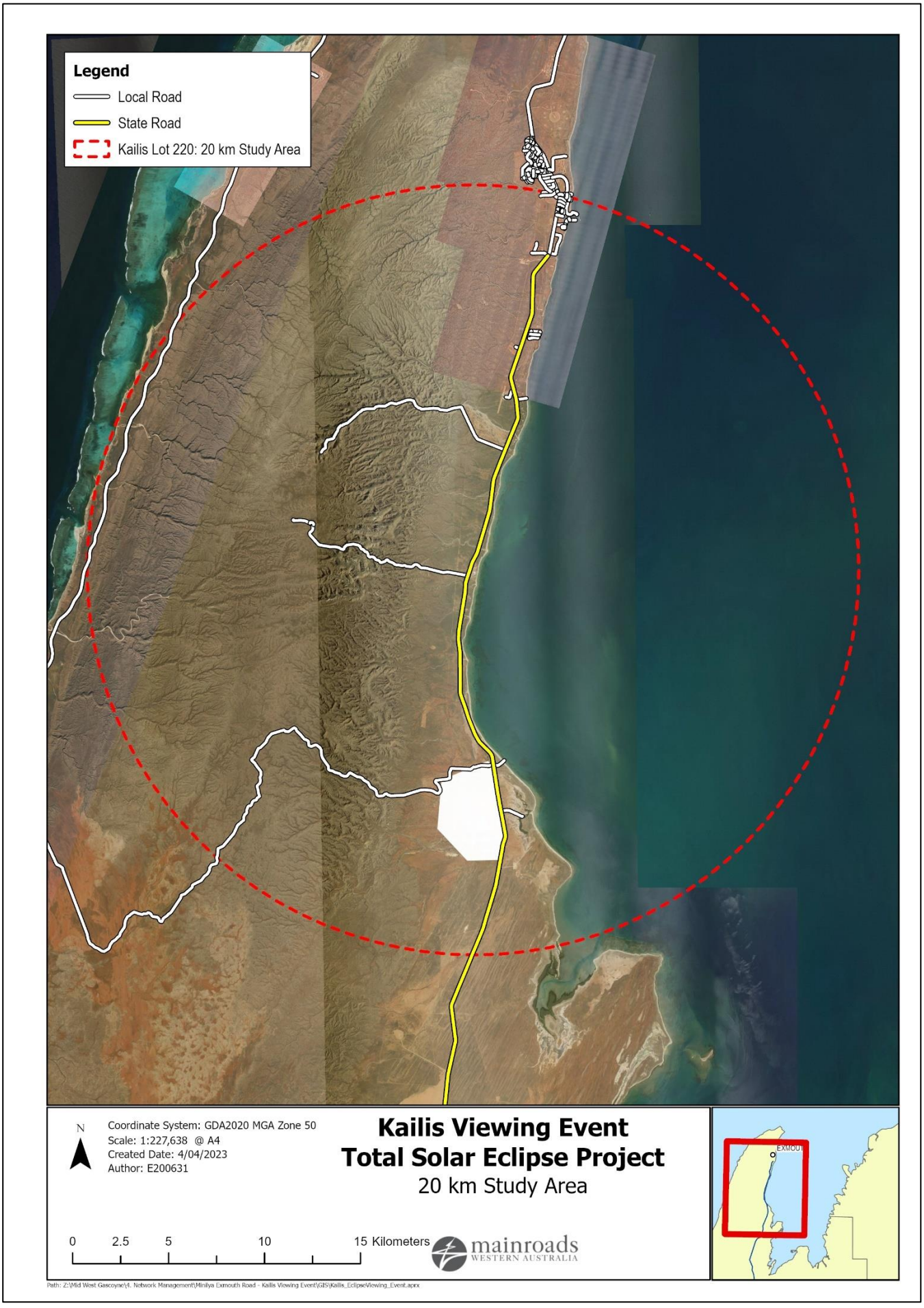

Figure 2. Study Area

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

No alternatives exist to achieve the project outcome.

1.6 Measures to Avoid, Minimise, Reduce and Manage Proposal Clearing Impacts

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

Table 1. Measures Undertaken to Avoid, Minimise, Reduce and Manage the Proposal Clearing Impacts

Design or Management Measure	Discussion and Justification
Use of existing cleared areas for access tracks, construction storage and stockpiling	The use of existing roads and previously cleared areas have been utilised to facilitate access to and within the site to avoid the need for any additional vegetation impacts. The location of the carpark has been selected to utilise an area that is void of vegetation or contains vegetation in a Degraded to Completely Degraded condition, and that has been subject to previous disturbance to minimise impacts to the environment.

1.7 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, Main Roads has also had regard to the below instruments where relevant.

Other Legislation potentially relevant 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).

Environmental Protection Policies:

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

Other relevant policies and guidance documents:

- Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (Government of WA, December 2014)
- Procedure: Native vegetation clearing permits (Government of WA, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, 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.

SCOPE AND METHODOLOGY OF CLEARING DESKTOP

Native vegetation will be cleared to accommodate this Proposal. This clearing will be undertaken using the Main Roads Statewide Clearing Permit CPS 818.

To comply with CPS 818, Main Roads must prepare a Clearing Desktop Report (CDR).

2

The CDR outlines the key activities associated with the Proposal, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the Proposal using the ten Clearing Principles listed under s51 of the *Environmental Protection Act 1986* (EP Act) and strategies used to manage vegetation clearing.

2.1 Report Terminology and Sources

The following terms are used in this Clearing Report:

- **Native Vegetation Clearing Area** – The maximum amount of native vegetation to be cleared for the Proposal that will accommodate the designed earthworks and, typically, a nominal buffer to allow for the safe movement of machinery during construction.

- **Proposal Area** – The total footprint of the Proposal including both cleared and uncleared areas. This is based on the current design and is less than the development envelope. It usually includes a buffer to allow for constructability and the movement of machinery during construction.

- **Study Area** – Area covered by the Desktop Assessment. The Study Area for the Proposal is confined to a local area of a 20km radius.

- **Survey Area** – Area covered by the Biological Survey, which is typically larger that the Development Envelope.

2.2 Desktop Assessment

A desktop assessment of the Development Envelope was undertaken by viewing internal datasets and other government agency managed databases, and consulting with relevant stakeholders where necessary. Results from searches can be found in Appendix 1.

GIS layer viewing and mapping is done using ArcMap and/or Main Roads corporate mapping system known as 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, which are found under References in Section 7.

2.3 Surveys and Assessments

The following assessments were undertaken to inform this CDR:

- "*Native Vegetation Clearing Referral (2022)*" - D23#30441

SUMMARY OF SURVEYS

3.1 Overview of Surveys

Coterra Environment undertook a site visit in September 2020 to assess the vegetation condition and biological values of the proposal and wider area. A summary of the findings from the site investigation is presented in Sections 3.2.

3

3.2 Summary of Flora and Vegetation Surveys

A site inspection of Lots 1, 101, 112 and 230 Minilya-Exmouth Road, Learmonth, located approximately 22 kilometres (km) to the south of the Exmouth townsite was conducted by Coterra in September 2022. The site inspection extended over approximately 27.88 ha and falls within the Beard Vegetation Association 663 of the Cape Range vegetation system. The vegetation association is described as 'hummock grasslands, shrub steppe; waterwood over soft spinifex.

Vegetation was considered to be in 'Degraded' to 'Completely Degraded' condition based on the Keighery (1994) condition scale, due to historic impacts from site works, weed invasion, stock grazing and vegetation removal.

No Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) were recorded within the site and no flora species protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Wildlife Conservation Act 1950* (WC Act) were recorded.

4 VEGETATION DETAILS

4.1 Proposal Site Vegetation Description

The vegetation in the Proposal area has been mapped as previously cleared land with pastoral weeds and/or planted species, or consists of vegetation type: V5 (Low Open Shrubland of *Acacia synchronicia* and/or *Maireana polypterygia* over Tussock Grassland of **Cenchrus ciliaris* and *Triodia pungens*). Vegetation within the proposal area is mapped in a Completely Degraded condition based on the Keighery (1994) condition scale, with evidence of historical clearing and disturbance. Vegetation in the project area is contiguous with surrounding vegetation and not confined within the Proposal area (Coterra, 2022).

Table 2 provides details of the vegetation types and the remaining extents of these associations.

Table 2: Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land (proportion of pre-European Extent)
Veg Assoc No. 663	**Statewide**	30,474.41	25,976.66	85.24	28.93
	IBRA Bioregion *Carnarvon*	29,068.26	25,866.32	88.98	28.53
	IBRA Sub-region *Cape Range*	29,068.26	25,866.32	88.98	28.53
	Local Government Authority *Shire of Exmouth*	30,474.41	25,976.66	85.24	28.93

ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

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

5 Each principle has been assessed in accordance with the former Department of Environment Regulation (now Department of Water and Environmental Regulation (DWER) '*A Guide to the Assessment of Applications to Clear Native Vegetation*' (Department of Environment Regulation, 2014) and other relevant clearing permit application decision reports prepared by DWER.

The proposed clearing is not likely to be at variance with the ten 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.

The proposal area requires clearing of 1.6ha of native vegetation and is located adjacent to Manilya-Exmouth Road. The proposal area consists of Vegetation Association 663, described as Hummock grasslands, shrub-steppe and water wood over soft spinifex (Government of Western Australia, 2019), with over 85% of this vegetation association still intact in Western Australia. The vegetation type is consistent with the vegetation type found directly adjacent to the proposal area (Coterra, 2022).

The vegetation type within the proposal area was recorded by Coterra (2022) as V5 (Low Open Shrubland of *Acacia synchronicia* and/or *Maireana polypterygia* over Tussock Grassland of **Cenchrus ciliaris* and *Triodia pungens*) or cleared area consisting of pastoral weeds and/or planted species and is a Completely Degraded condition (Coterra, 2022). The vegetation within the proposal and wider study area is considered to be of low diversity, with the majority of the area invaded by *Cenchrus ciliaris* (Buffel Grass), **Cynodon dactylon* (Couch) and **Aerva javanica* (Kapok Bush) (Coterra, 2022).

No Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) were recorded within the proposal area (Coterra, 2022). No flora species protected under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) or Wildlife Conservation Act 1950 (WC Act) were recorded in the proposal area (Coterra, 2022). No conservation significant flora species were recorded within the proposal area. The nearest priority species *Corchorus Congener* and *Gymnanthera Cunninghamii,* both Priority 3 flora species, were located to the north of the proposal area and subsequently will not be impacted by the works (Coterra, 2022).

A Main Roads desktop search of DBCA Significant Fauna layers identified 62 State significant species within the 20 km Study area. Of these, 54 species are associated with marine, coastal and/or wetland habitats or are avian species and will not be affected by the project. Following a likelihood-of-Occurrence assessment of the remaining eight species (*Dasyurus hallucatus, Diplodactylus capensis*, *Lerista allochira, Mesembriomys macrurus, Petrogale lateralis lateralis, Pseudomys fieldi, Sminthopsis longicaudata* and *Zyzomys pedunculatus*), it was declared the species were unlikely to occur based on the absence of suitable habitat and poor vegetation condition.

The vegetation within the proposal area does not form part of an ecological link. The habitat within the proposal area is not unique and is similar to that found within the Exmouth area (Coterra, 2022). Noting this, and the absence of conservation flora and fauna individuals and habitat, the vegetation within the proposal area was not considered to be unique to the region, is in a Degraded Condition; it is therefore not considered to comprise of a high level of biodiversity.

Accordingly, the proposed clearing **is not likely at** to be at variance to this Principle.

Methodology

- Coterra (2022)
- DCCEEW Protected Matters Search Tool Report
- Government GIS Shapefiles:
  - DBCA Threatened and Priority Ecological Community database search (Accessed 03/04/2023
  - DBCA Threatened and Priority flora database search (Accessed 03/04/2023)
  - DBCA Threatened and Priority fauna database search (Accessed 03/04/2023)
  - WA Herbarium Threatened and Priority flora database search (Accessed 03/04/2023)
- Statewide Vegetation Statistics (Government of Western Australia 2019)

(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 at variance to this Principle.

According to available databases, 62 State significant fauna species occur within the study area (20 kilometres of the proposal area). Of these, 54 species are associated with marine, coastal and/or wetland habitats or are avian species and will not be affected by the project. The remaining species and the likelihood of occurrence are detailed below. In determining the likelihood of conservation significant fauna occurring within the proposal area (Table 3), considerations were given to number of records in the local area, preferred habitat types and typical home ranges, proximity of records to the proposal area, the type and condition of the vegetation within the proposal area and historical nature of the records.

Table 3: Fauna Likelihood of Occurrence

Species	Information
Northern quoll (*Dasyurus hallucatus*) (EN)	The Northern Quoll prefers rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and deserts. Lot 220 (Exmouth) is Completely Degraded does not contain habitat suitable for the species and therefore is unlikely to occur within the 1.60 ha area. The closest known record of the species is approximately 10.26 km south-west of the Proposal area.
Cape Range stone gecko (*Diplodactylus capensis*) (P2)	This terrestrial species is found under debris, logs and rocks on limestone hills with spinifex and low shrubs and trees. Lot 220 is a Completely Degraded area, with 1.60 ha being historically cleared, with few remaining trees primarily dominated by introduced weeds and grasses. Therefore, it is unlikely that the species will occur within the area. The closest known record of the species is approximately 7.0 km north-west of the Proposal area.
Cape Range slider (*Lerista allochira*) (P3)	This species is presumed to be a burrowing species and has been reported from dissected limestone gorges and plateaus, preferring sparsely vegetated areas. Lot 220 is a Completely Degraded area, with 1.60- ha being historically cleared. Therefore, given the history and vegetation condition within the Proposal area, it is highly unlikely that the species will be present. The closest known record of the species is approximately 9.40 km west of the Proposal area (1997).

golden-backed tree-rat (*Mesembriomys macrurus*) (P4)	The species occurs in rainforest patches on volcanic, lateritic, sandstone and floodplain surfaces, eucalypt-dominated savannah woodlands, and rugged sandstone plateaux and screes which is absent from the proposal area. Lot 220 is a Completely Degraded area, holding no habitat value the species requires and therefore is unlikely to be present. The closest known record of the species is approximately 9.60 km south-west of the Proposal area.
black-flanked rock-wallaby (*Petrogale lateralis lateralis*) (EN)	They occur on a wide variety of rock types but require complex caves and crevices as opposed to large, smooth surfaces. Permanent water does appear to be an essential component of rock-wallaby habitat. Lot 220 is a Completely Degraded area and holds no caves, crevices or rocky areas which are suitable for the species and therefore is unlikely to occur in this area. The closest known record of the species is approximately 14.0 km south of the Proposal area (2001).
Shark Bay mouse (*Pseudomys fieldi*) (VU)	The species inhabits coastal dune vegetation dominated by Beach Spinifex *Spinifex longifolius* and Coastal Daisybush *Olearia axillaris. Lot 220 holds no* coastal dune vegetation species which the Shark-Bay mouse requires for shelter or foraging due to the area being historically cleared. Therefore, it is unlikely the species will be present. The closest known record of the species is approximately 8.70 km west of the Proposal area.
long-tailed dunnart (*Sminthopsis longicaudata*) (P4) central rock-rat, antina (*Zyzomys pedunculatus*) (CR)	Both species occur in similar habitats comprising of rocky scree and plateau areas, generally with little vegetation or of spinifex hummock grassland, shrubs, and open woodland. Lot 220 is a Completely Degraded area and holds no rocky areas suitable for the species or any spinifex hummock grasses. Therefore, is unlikely to occur in this area. The closest known record of the species is approximately 9.50 km southwest (*Sminthopsis longicaudata)* and 9.50 km southwest (*Zyzomys pedunculatus*) of the Proposal area (2001).

Coterra (2022) site investigation of the proposal area noted that habitat values were consistent with the surrounding vegetation and not unique. Furthermore, no significant fauna habitat features were observed (e.g. mounds, caves, gullies, outcrops etc). Noting the absence of conservation flora and fauna records, the absence of suitable habitat and the Completely Degraded condition of the vegetation, it is therefore considered that the proposal area does not contain vegetation necessary for the maintenance of significant habitat for fauna indigenous to Western Australia.

Given the above, clearing for the parking bays **is not likely** to be at variance to this principle.

Methodology

- Coterra (2022)
- DCCEEW Protected Matters Search Tool Report
- Government GIS Shapefiles:
  - DBCA Threatened and Priority fauna database search (Accessed 03/04/2023)

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

Proposal is not likely to be at variance to this Principle.

No records of threatened flora occur within the local area nor were any threatened flora species recorded during the Coterra 2022 site investigation. Given this and the condition of the vegetation, the proposal area is considered unlikely to contain habitat necessary for the continued existence of Threatened flora species.

Given the above, clearing for the parking bays **is not likely** to be at variance to this principle.

Methodology

- Coterra (2022)
- DCCEEW Protected Matters Search Tool Report
- Government GIS Shapefiles:
  - DBCA Threatened and Priority flora database search (Accessed 03/04/2023)
  - WA Herbarium Threatened and Priority flora database search (Accessed 03/04/2023)

(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.

Main Roads desktop assessment and the Coterra 2022 site investigation both confirmed no TECs occur within or in the vicinity of the project areas. Project activities will not be at variance to this principle.

Given the above, clearing for the parking bays **is at** variance to this principle.

Methodology

- Coterra (2022)
- DCCEEW Protected Matters Search Tool Report
- Government GIS Shapefiles:
  - DBCA Threatened and Priority Ecological Community database search (Accessed 03/04/2023

(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.

The extent of the mapped vegetation type and the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (30%).

The project involves the clearing of 1.60 ha of vegetation association type 663 (Table 4 and Table 5).

Table 4: Summary of Project Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition
Vegetation Association 663 described as Hummock grasslands, shrub steppe; water wood over soft spinifex (Government of Western Australia, 2019)	Clearing of up to 1.60 ha for a 440-car bay within Lot 220	Completely Degraded

Table 5: Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 663	**Statewide**	30,474.41	25,976.66	85.24	28.93
	IBRA Bioregion *Carnarvon*	29,068.26	25,866.32	88.98	28.53
	IBRA Sub-region *Cape Range*	29,068.26	25,866.32	88.98	28.53
	Local Government Authority *Shire of Exmouth*	30,474.41	25,976.66	85.24	28.93

The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area and is adjacent to existing roads (Minilya Exmouth Rd). Given the scale nature of clearing (1.60ha), and the large extent of the vegetation association within the region (25,976.66 ha), the proposed clearing is not considered to have a significant impact on areas containing remnant vegetation.

Given the above, clearing for the parking bays **is at** variance to this principle.

Methodology

- Aerial photography
- Government GIS shapefiles:
  - Pre-European vegetation (Accessed 03/04/2023)
  - Vegetation complexes (Accessed 03/04/2023)
- Statewide Vegetation Statistics (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 likely to be at variance to this Principle.

The proposal area is located in the Gascoyne Proclaimed Groundwater Area. No water extraction, dewatering or drainage modifications are required, hence no change to groundwater level or quality is anticipated.

The Proposal area is located within the Pilbara Surface Water Area, a Proclaimed area under the RIWI Act. Two ephemeral drainage lines run on either side of the Proposal area, the closest being 150m to the north. No modifications to the drainage or waterflow will be undertaken and therefore is unlikely to impact the surface water area.

A search of ArcGIS shapefiles indicates the Proposal area lies within One wetlands of National Importance (Cape Range Subterranean Waterways). This wetland was listed because of its known or potential value for subterranean fauna. However, given no excavation or subsurface activities are proposed, the clearing of 1.6ha within the proposal area will not impact any subterranean species or values of the wetland of national importance.

Given the above, clearing for the parking bays **is not likely** to be at variance to this principle.

Methodology

- Government GIS shapefiles:
  - Geomorphic Wetlands (Accessed 03/04/2023)
  - Important Wetlands (Accessed 03/04/2023)

- Watercourses (Accessed 03/04/2023)
- RIWI Act Rivers (Accessed 03/04/2023)

(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.

The project is an area of low rainfall (Learmonth mean annual rainfall is 254 mm [BoM 2023]); as such, it is unlikely that water erosion or waterlogging will be significantly increased as a result of this clearing and it is not expected that car bays at these locations will significantly interrupt natural drainage any further than the current disturbance.

As the proposal area is located in an area that has undergone previous disturbance previously disturbed areas that are surrounded by remnant vegetation the project is unlikely to increase wind erosion near the project areas.

The area is located within the Learmonth soil system and mapped as having a high susceptibility to wind and water erosion and moderate to high risk of flooding, due to numerous occurrences of non-perennial watercourses in the local area. However, no watercourses occur within the proposed clearing area for the crossover, with the nearest non-perennial water course located over 150 m north of the proposed clearing.

DPIRD mapping indicates that the Proposal areas is located with the following land degradation risk.

Risk Percentage	Information
99%	Very high to extreme water erosion hazard
99%	High to extreme wind erosion hazard
99%	Very poor to poor site drainage potential
99%	Moderate salinity hazard

The CSIRO Australian Soil Resource Information System (ASRIS) has been used to determine the likelihood of Acid Sulphate Soils (ASS) occurring within the Proposal Area. The ASRIS database indicates there is a extremely low probability of occurrence of ASS occurring within the proposal area. No dewatering or excavation below the water table is proposed.

Given the area of clearing (1.60 ha) is of a Completely Degraded condition and undergone previous disturbance, the clearing of the Proposal area for a car-park construction is not likely to lead to an appreciable increase in land degradation. Standard erosion and dust management control measures will be implemented during construction to reduce the incidence of wind erosion.

Therefore, the clearing for the parking bays **is not likely** to be at variance to this principle.

Methodology

- Bureau of Meteorology Australia (2023)
- CSIRO (Accessed 03/04/2023)
- Government GIS Shapefiles:
  - Acid Sulphate Soil Risk Map (Accessed 03/04/2023)
  - Soil landscape land quality – Water Erosion Risk (Accessed 03/04/2023)
  - Soil landscape land quality – Wind Erosion Risk (Accessed 03/04/2023)
  - Soil landscape land quality – Salinity Risk (Accessed 03/04/2023)

(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 likely to be at variance to this Principle.

A search of ArcGIS shapefiles indicates no nature reserves, conservation areas or Bush Forever Sites are located within the vicinity of the proposal area. The nearest conservation area is located 2.3 km west of the proposed clearing. As such, the project clearing of 1.60 ha is unlikely to impact values of the conservation area and is considered **to not likely** be at variance to this principle.

Methodology

- Coterra (2022)
- Government GIS Shapefiles:
  - DBCA Legislated Lands and Waters & Lands of Interest (Accessed 03/04/2023)
  - Geomorphic Wetlands (conservation category wetlands only) (Accessed 03/04/2023)
  - Important Wetlands (Accessed 03/04/2023)

(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.

The project does not occur in any Public Drinking Water Source Areas. No waterways are recorded within or immediately adjacent to the proposed clearing area.

The area proposed to be cleared intersects the mapped nationally important wetland "Cape Range Subterranean Waterways", defined on the basis of its known or potential value for subterranean fauna. In the Department of Water, and Environmental Regulation (DWER) assessment of a clearing permit immediately adjacent to the proposal area (CPS9963/1), DWER determined that the presence of subterranean fauna within the application area was unlikely due to the lack of suitable micro-habitats. Additionally, the application area for CPS9963/1 was not considered to contain any surface water or vegetation associated with a watercourse or wetland. The proposed clearing of 1.60 ha within the proposal is a contiguous extension of the vegetation assessed under CPS9963/1 and as such the same justification applies.

Given the proposed works will not intersect surface water or groundwater, it is considered unlikely for the proposed clearing to impact surface or groundwater quality. Clearing of 1.60 ha is considered **to not likely** be at variance to this principle.

Methodology

- Coterra (2022)
- Government GIS Shapefiles:
  - RIWI Act, Surface Water Areas and Irrigation Districts (Accessed 03/04/2023)
  - CAWSA Part 2A Clearing Control Catchments (Accessed 03/04/2023)
  - RIWI Act, Groundwater Areas (Accessed 03/04/2023)

(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.

The mapped soil type has a moderate to high risk of flooding. These occurrences are aligned with the numerous non-perennial watercourses in the local area (of which none intersect the proposal area) that may flood after high rainfall events.

The average rainfall for the month of April and May is 62 mm

DPIRD mapping indicates that the Proposal areas is located with the following land degradation risk

Risk Percentage	Information
99%	Moderate to high flooding hazard
99%	Moderate to very high waterlogging hazard

The nearest non-perennial watercourse is located 150 m north of the proposed clearing envelope. It is unlikely for the clearing of 1.60 ha will exacerbate or increase in frequency or magnitude of flooding events associated with this watercourse. Therefore, the proposed clearing is considered **to not likely** to be at variance to this principle.

Methodology

- Bureau of Meteorology Australia (2023)
- Government GIS Shapefiles:
  - Soil landscape land quality - Waterlogging Risk (Accessed 03/04/2023)
  - Soil landscape land quality - Flood Risk (Accessed 03/04/2023)

6 COMPLIANCE WITH CPS 818

The clearing associated with the proposal is unlikely 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 CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CDR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	**No**	No further action required
2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality **or** (j) the incidence of flooding.	**No**	No further action required
3. Clearing is at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality **and** (j) the incidence of flooding.	**No**	No further action required
4a. Proposal is within a Region that: • has rainfall greater than 400mm; and, • is South of the 26th parallel; and, • works are necessary in 'Other than dry conditions'; and, • works have potential for **uninfested** areas to be impacted.	**No**	Standard Vehicle and Plant management actions from Principal Environmental Management Requirements (PEMRs) and Hygiene Checklists will be applied.
4b. Do the proposed works require clearing within or adjacent to DBCA managed lands in non-dry conditions?	**No**	No further action required
5. 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.	**No**	No further action required
6. Weeds are likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.	**No**	No further action required
7. Did an environmental specialist conduct the survey or field assessment?	**Yes**	The Environmental Specialist undertaking the biological assessments was suitably qualified and had more than three years' experience.

Impact of Clearing	Yes/No or NA	Further Action Required
8. Did an environmental specialist prepare the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal?	**Yes**	The Environmental Specialist preparing the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal was suitably qualified and had more than three years' experience.

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