GOVERNMENT OF
WESTERN AUSTRALIA

# CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

| | |
|---|---|
| **Purpose Permit number:** | CPS 8067/1 |
| **Permit Holder:** | Regional Power Corporation TA Horizon Power |
| **Duration of Permit:** | 17 January 2020 to 17 January 2025 |

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

## PART I –CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the installation of a new power transmission line servicing Exmouth.

2. **Land on which clearing is to be done**
   Charles Knife Road Reserve (PIN 1508699), Learmonth
   Lot 1467 on Plan 41058, Exmouth
   Lot 1391 on Plan 217782, Exmouth
   Lot 505 on Plan 64832, Exmouth
   Lot 108 on Plan 181211 (Crown Reserve 33512), Exmouth
   Lot 1386 on Plan 217594, Exmouth,
   Lot 550 on Plan 72929 (Crown Reserve 34055), Exmouth
   Lot 560 on Plan 68726 (Crown Reserve 51512), North West Cape
   Lot 73 on Plan 211885 (Crown Reserve 32867), North West Cape
   Unallocated Crown Land 700525, North West Cape
   Lot 1586 on Plan 72986 (Crown Reserve 3114-996), Learmonth and Exmouth Gulf
   Lots 981 and 982 on Plan 72985 (Crown Reserve 3114-996), Learmonth
   Lots 85 and 86 on Plan 212281, Learmonth

3. **Area of Clearing**
   The Permit Holder must not clear more than 42 hectares of native vegetation within the area shaded yellow on attached Plan 8067/1 (a) to (e).

4. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. **Type of clearing authorised**
   This Permit authorises the Permit Holder to clear native vegetation for activities to the extent that the Permit Holder has the right to access land under the *Energy Operator (Power's) Act 1979* or any other written law.

## PART II –MANAGEMENT CONDITIONS

**6. Avoid, minimise and reduce the impacts and extent of clearing**

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

(a) avoid the clearing of native vegetation;
(b) minimise the amount of native vegetation to be cleared; and
(c) reduce the impact of clearing on any environmental value.

**7. Weed control**

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
(b) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

**8. Fauna management**

Clearing shall be conducted in a slow, progressive manner (i.e. west to east) to allow fauna to move out of the clearing area.

**9. Flora management**

(a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder must demarcate the priority flora identified within report '*Horizon Power Learmonth (Exmouth) Line Rebuild Flora and Flora Survey*' prepared by GHD; at the following locations:

| Species name | Conservation status | No. of plants | Easting | Northing |
|---|---|---|---|---|
| *Corchorus congener* | Priority 3 | 1 | 200038.3 | 7560220 |
| *Corchorus congener* | Priority 3 | 1 | 198651.7 | 7551941 |
| *Corchorus congener* | Priority 3 | 2 | 198430.7 | 7549516 |
| *Corchorus congener* | Priority 3 | 1 | 198886.9 | 7554621 |
| *Corchorus congener* | Priority 3 | 1 | 198878.5 | 7554608 |
| *Corchorus congener* | Priority 3 | 1 | 198878 | 7554595 |
| *Eremophila forrestii* subsp. *capensis* | Priority 3 | 1 | 198491.2 | 7550286 |
| *Eremophila forrestii* subsp. *capensis* | Priority 3 | 8 | 198886.6 | 7554620 |
| *Tephrosia* sp. North West cape (G. Marsh 81) | Priority 2 | 1 | 198272.5 | 7547806 |
| *Tinospora esiangkara* | Priority 2 | 1 | 198137 | 7545896 |
| *Tinospora esiangkara* | Priority 2 | 1 | 198129.9 | 7545799 |

(b) When undertaking any clearing authorised under this Permit, the Permit Holder shall not cause or allow:
  (i) clearing within 10 metres of the identified priority flora within condition 9(a); and
  (ii) clearing of the identified priority flora within condition 9(a).

**10. Vegetation management - watercourse**

(a) Where a watercourse is to be impacted by clearing authorised under this Permit, the Permit Holder shall maintain the existing surface flow.
(b) Where practicable, the Permit Holder shall avoid clearing riparian vegetation.

## PART III – MONITORING, RECORD KEEPING AND REPORTING

**11. Records to be kept**

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

(a) In relation to the clearing of native vegetation authorised under this Permit:
   (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
   (ii) the date that the area was cleared;
   (iii) the size of the area cleared (in hectares)
   (iv) the direction that clearing was undertaken;
   (v) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 6 of this Permit;
   (vi) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 7 of this Permit;
   (vii) evidence that the priority flora identified within report '*Horizon Power Learmonth (Exmouth) Line Rebuild Flora and Flora Survey*' prepared by GHD have been demarcated in accordance with condition 9 of this Permit; and
   (viii) actions taken to maintain the existing surface flow in accordance with condition 10 of this Permit.

**12. Reporting**

(a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
   (i) of records required under condition 11 of this Permit; and
   (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
(b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.
(c) Prior to 17 October 2024 , the Permit Holder must provide to the *CEO* a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

**DEFINITIONS**

The following meanings are given to terms used in this Permit:

***CEO:*** means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

***fill*** means material used to increase the ground level, or fill a hollow;

***mulch*** means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

***priority flora*** means those plant taxa described as priority flora classes 1, 2, 3 or 4 in the *Department of Biodiversity and Conservations Threatened and Priority Flora List for Western Australia* (as amended);

***watercourse*** has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

***weed/s*** mean any plant -

(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or

(b) published in a Department of Biodiversity, Conservation and Attractions Regional Weed Rankings Summary, regardless of ranking; or

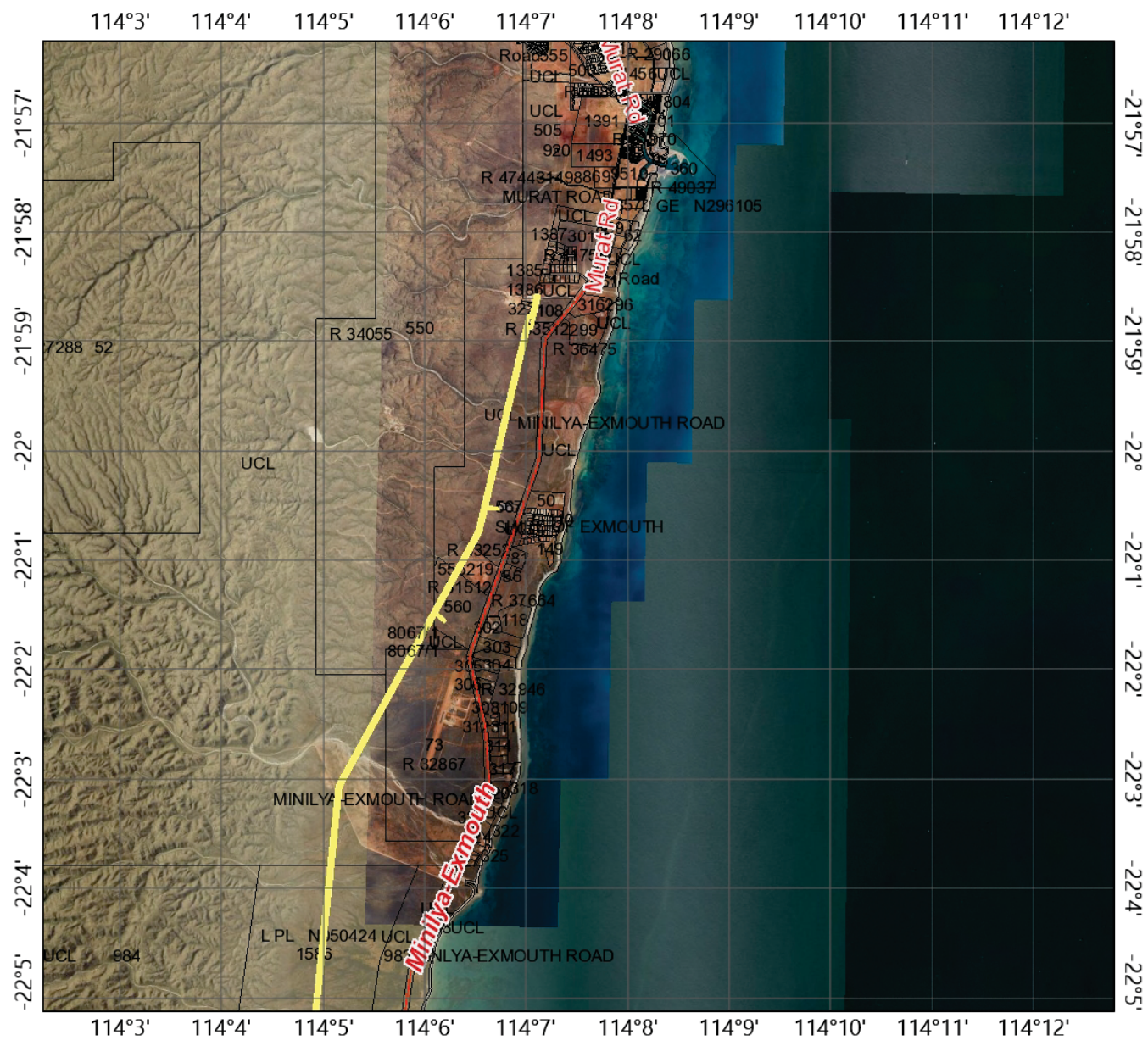
(c) not indigenous to the area concerned.

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20*
*of the Environmental Protection Act 1986*

18 December 2019

# Plan 8067/1 (a)




## Legend

- CPS areas approved to clear
- Local Government Authorities
  - LGA
  - ASHBURTON, SHIRE OF
  - EXMOUTH, SHIRE OF
- Roads - State Roads
- Roads - Major Roads

2.8 1.38 2.8 Kilometers

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Mathew Gannaway
2019.12.18 13:52:40 +08'00'

*Officer* *Date*

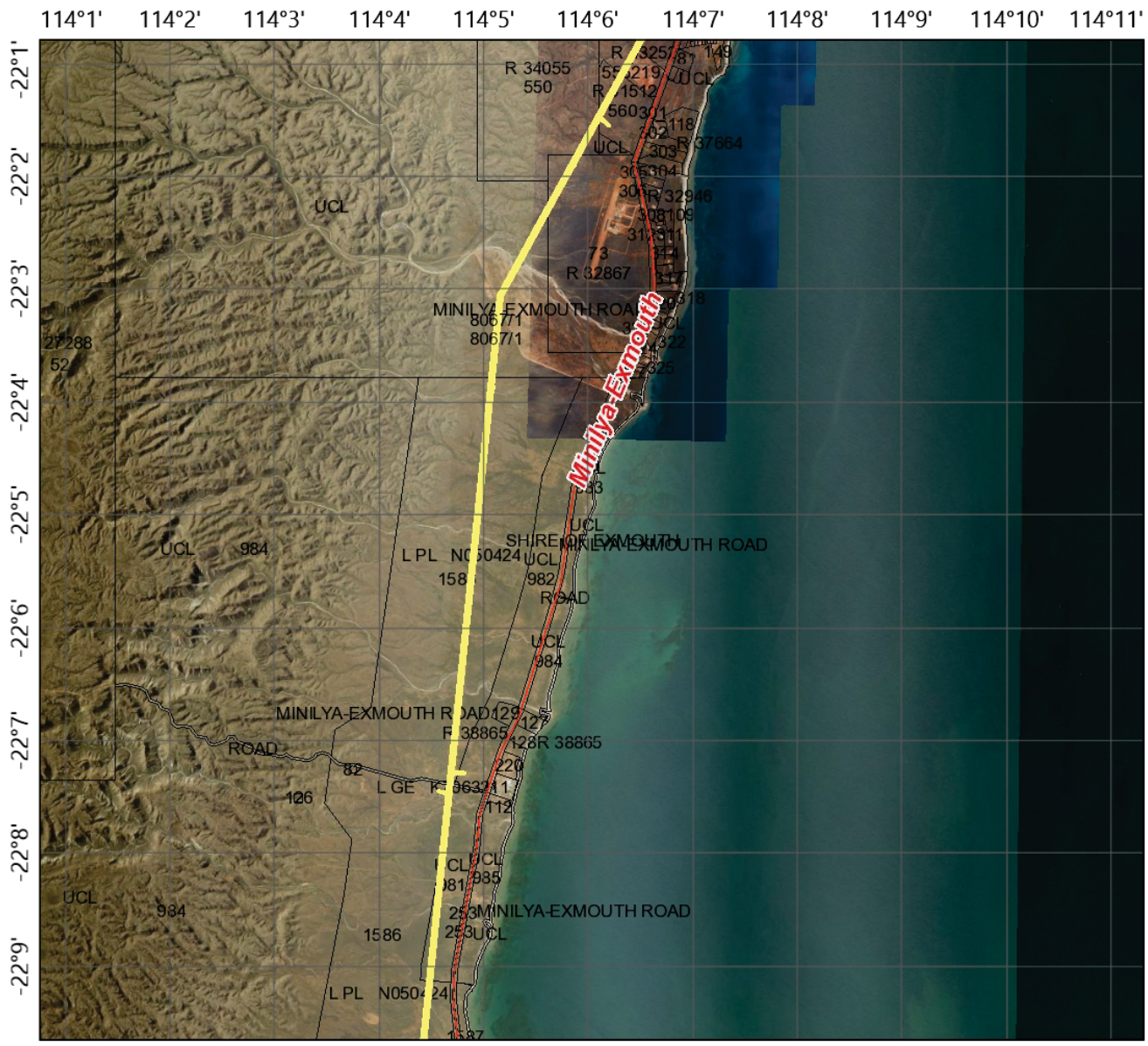
Officer with delgated authority under Section 20 of the Environmental Protection Act 1986.



## Locality Map

Government of Western Australia
Department of Water and Environmental Regulation

# Plan 8067/1 (b)




## Legend

- CPS areas approved to clear
- Local Government Authorities
  - LGA
  - ASHBURTON, SHIRE OF
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- Roads - State Roads
- Roads - Major Roads

2.8 1.38 2.8 Kilometers

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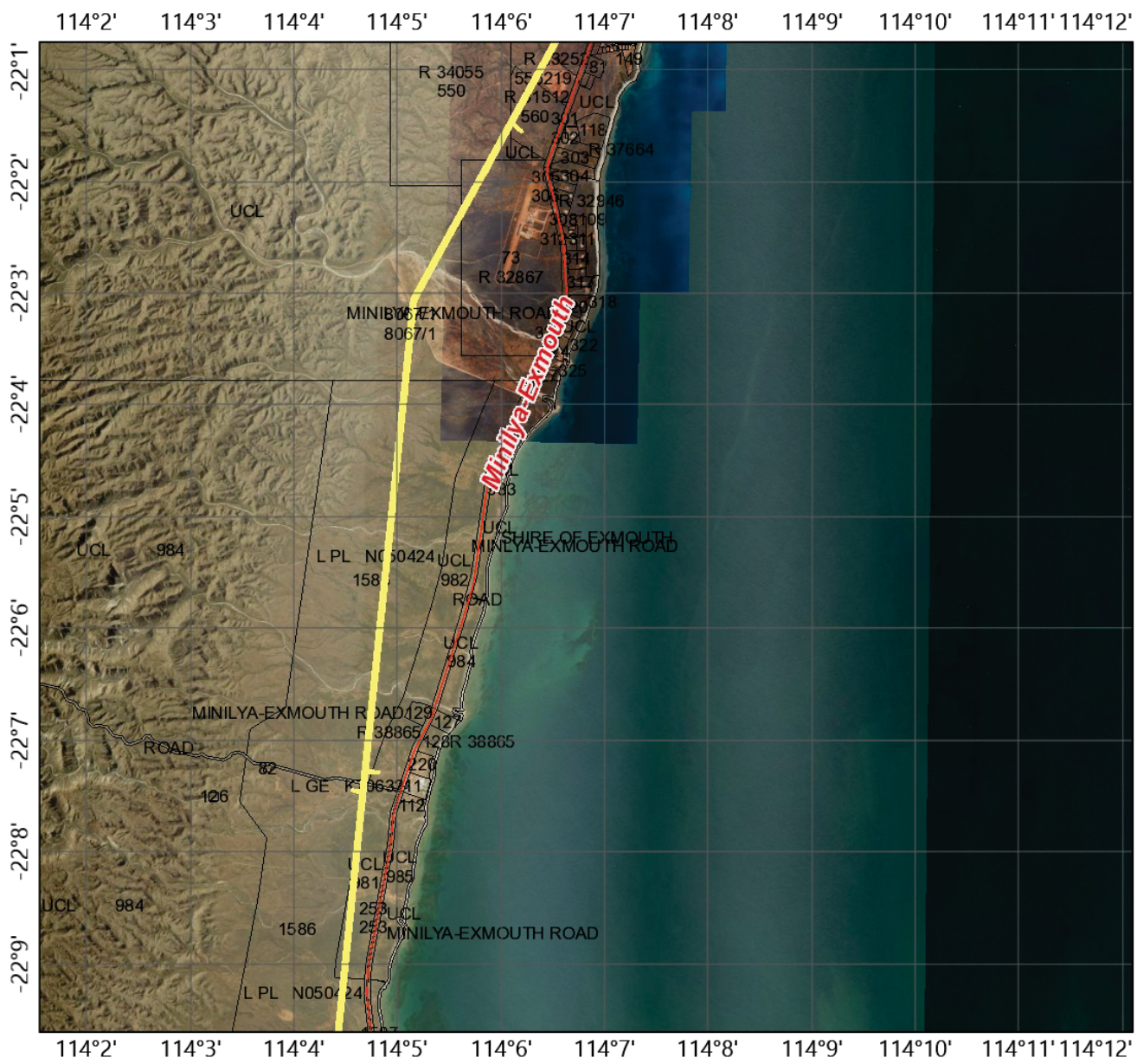
## Locality Map

Government of Western Australia
Department of Water and Environmental Regulation

# Plan 8067/1 (c)




## Legend

- CPS areas approved to clear
- Local Government Authorities
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  - ASHBURTON, SHIRE OF
  - EXMOUTH, SHIRE OF
- Roads - State Roads
- Roads - Major Roads

2.8 1.38 2.8 Kilometers

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*Officer* *Date*

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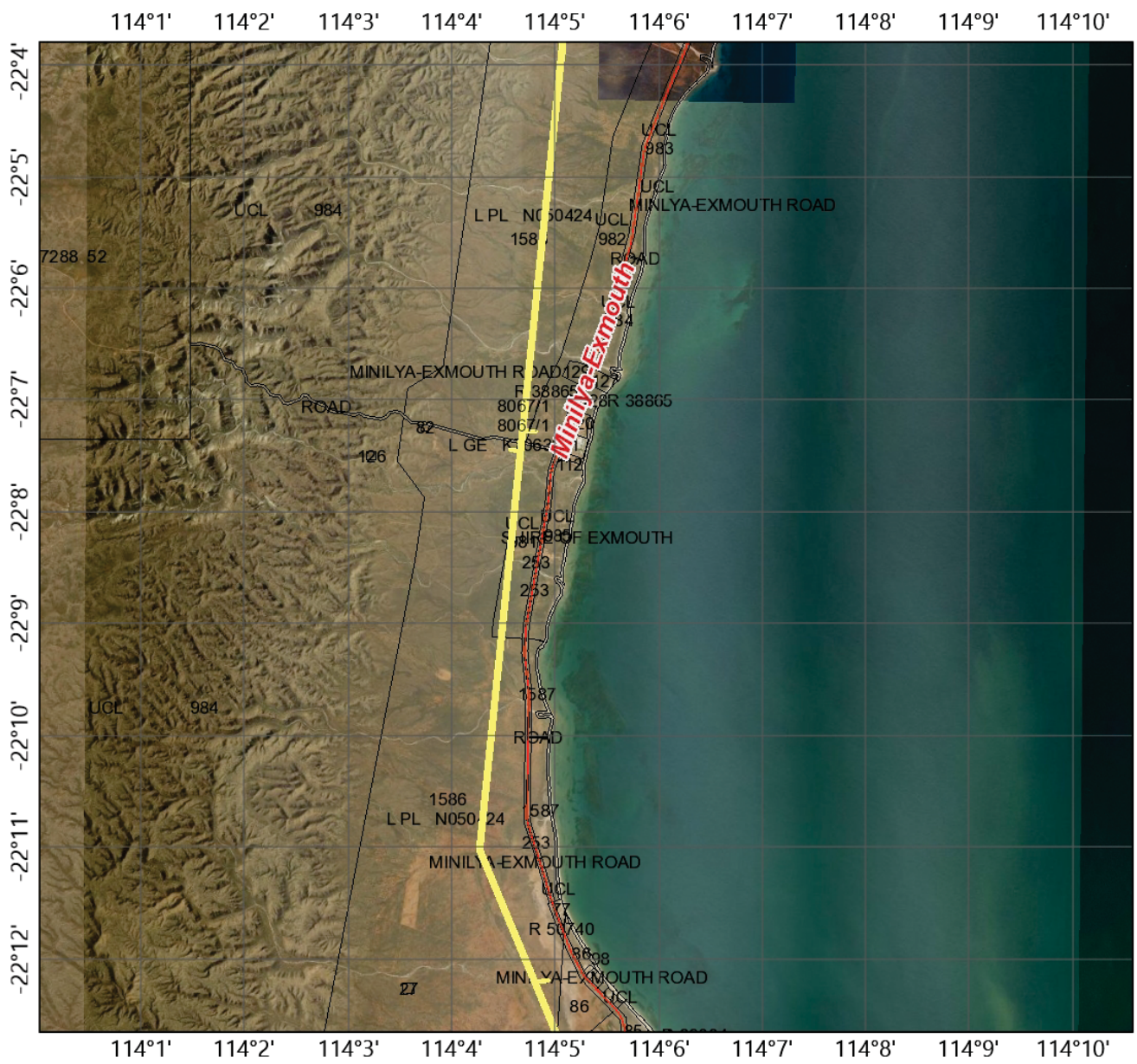
## Locality Map

Government of Western Australia
Department of Water and Environmental Regulation

# Plan 8067/1 (d)




## Legend

- CPS areas approved to clear
- Local Government Authorities
  - LGA
  - ASHBURTON, SHIRE OF
  - EXMOUTH, SHIRE OF
- Roads - State Roads
- Roads - Major Roads

2.8 1.38 2.8 Kilometers

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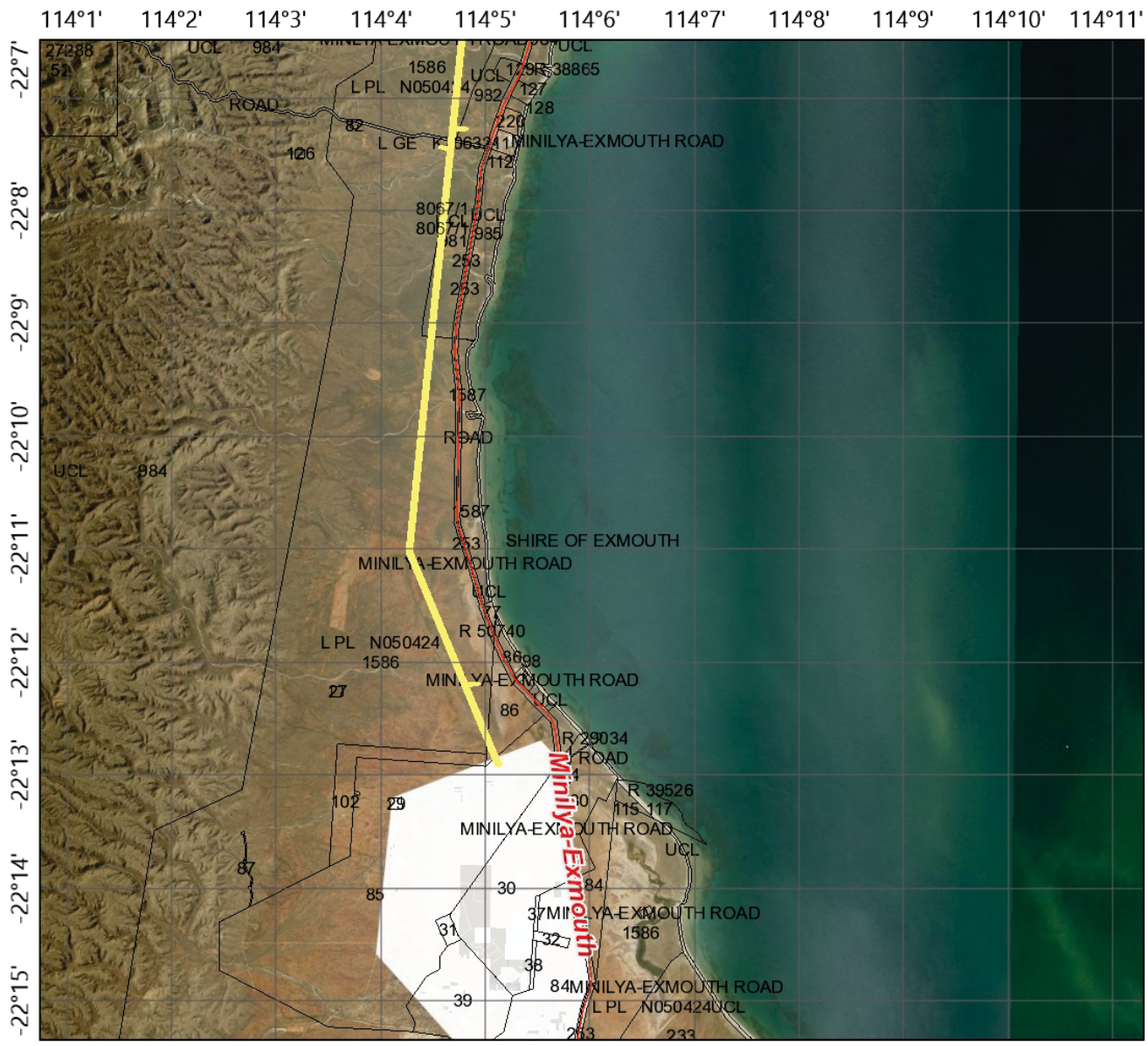
## Locality Map

Government of Western Australia
Department of Water and Environmental Regulation

# Plan 8067/1 (e)




## Legend

- CPS areas approved to clear
- Local Government Authorities
  - LGA
  - ASHBURTON, SHIRE OF
  - EXMOUTH, SHIRE OF
- Roads - State Roads
- Roads - Major Roads

2.8 1.38 2.8 Kilometers

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*Officer* *Date*

Officer with delgated authority under Section 20 of the Environmental Protection Act 1986.



## Locality Map

Government of Western Australia
Department of Water and Environmental Regulation

Government of Western Australia
Department of Water and Environmental Regulation

# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

**Permit application No.:** 8067/1
**Permit type:** Purpose Permit

### 1.2. Applicant details

**Applicant's name:** Regional Power Corporation TA Horizon Power
**Application received date:** 11 May 2018

### 1.3. Property details

**Property:** Charles Knife Road Reserve (PIN 1508699), Learmonth
Lot 1467 on Plan 41058, Exmouth
Lot 1391 on Plan 217782, Exmouth
Lot 505 on Plan 64832, Exmouth
Lot 108 on Plan 181211 (Crown Reserve 33512), Exmouth
Lot 1386 on Plan 217594, Exmouth
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Lot 1586 on Plan 72986 (Crown Reserve 3114-996), Learmonth and Exmouth Gulf
Lots 981 and 982 on Plan 72985 (Crown Reserve 3114-996), Learmonth
Lots 85 and 86 on Plan 212281, Learmonth
**Local Government Authority:** Exmouth, Shire of
**Localities:** Exmouth, Learmonth and North West Cape

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | Purpose category: |
|---|---|---|---|
| 42 | 0 | Mechanical Removal | Water/gas/cable/pipeline/power installation |

### 1.5. Decision on application

**Decision on Permit Application:** Grant
**Decision Date:** 18 December 2019
**Reasons for Decision:** The clearing permit application was received on 11 May 2018 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing is at variance with principles (a) and (f), may be at variance with principles (b), (g), (h) and (i) and is not likely to be at variance with any of the other remaining clearing principles.

The Delegated Officer noted the application area contains suitable habitat for the Cape Range stone gecko *(Diplodactylus capensis*) (listed as a Priority 2 fauna species by DBCA). To minimise impacts to this species, a condition has been placed on the permit requiring the clearing activity to be undertaken in a slow and progressive manner to allow fauna to move away from the application area.

To minimise impacts on Priority flora species, a condition has been placed on the Permit requiring the avoidance of clearing of any Priority flora species. No clearing is to occur within 10 meters of priority flora species.

The Delegated Officer determined that the sandy soils within the application area are prone to wind erosion and soils along water courses are prone to water erosion. It was determined that the risk to land degradation could be mitigated by on-site avoidance and minimisation measures.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds into adjacent vegetation. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed management measures.

In determining to grant a clearing permit subject to conditions, the Delegated Officer considered that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

## 2. Site Information

**Clearing Description**

The application is for the proposed clearing of 42 hectares of native vegetation within a linear 157.89 hectare footprint for the installation of a new power transmission line servicing Exmouth (Figure 1). The proposed clearing is to facilitate a 12 meter wide corridor along the length of the proposed alignment for construction and ongoing operational maintenance (GHD, 2018).

**Vegetation Description**

The vegetation within the application area is mapped as the following Beard vegetation associations (Government of Western Australia, 2019);

- Cape Range 162 (5% - southern section of application area): Shrublands; snakewood scrub (Shepherd et al., 2001).; and
- Cape Range 663 (95% - northern section of application area): Hummock grassland; shrub steppe; mixed acacia scrub and dwarf scrub with soft spinifex and *Triodia basedowii* (Shepherd et al., 2001).

A flora and vegetation survey (GHD, 2019) identified six vegetation types within the broader survey area:

- VT_1 described as *Corymbia hamersleyana* isolated trees over *Acacia tetragonophylla*, *Acacia bivenosa* and *Acacia synchronicia* sparse shrubland over *Triodia epactia* and *Triodia wiseana* sparse hummock grassland and **Cenchrus ciliaris* and *Enneapogon caerulescens* tussock grassland on sandy/stony plain. Other indicator species include *Senna artemisioides* subsp. *oligophylla*, *Hakea lorea* subsp. *lorea*, *Solanum diversiflorum* and *Acacia pyrifolia* var. *pyrifolia.*
- VT_2 described as *Corymbia hamersleyana* isolated trees over *Acacia tetragonophylla, Acacia bivenosa* and *Acacia pyrifolia* var. *pyrifolia* open shrubland over *Melaleuca cardiophylla, Acacia arida* and *Acacia gregorii* sparse shrubland over *Triodia wiseana* and *Triodia epactia* open hummock to hummock grassland on rocky plain to low undulating rises. Other indicator species include *Exocarpos aphyllus* and *Tephrosia rosea* var. *clementii.*
- VT_3 described as *Corymbia hamersleyana* isolated trees over *Acacia pyrifolia* var. *pyrifolia* and *Acacia tetragonophylla* open shrubland over *Corchorus crozophorifolius* and *Tephrosia rosea* var. *clementii shrubland* over *Cymbopogon ambiguus* sparse grassland and *Cleome viscosa* and *Trichodesma zeylanicum* sparse forbland on rocky drainage lines (riparian). Other indicator species include *Ipomoea costata, Eremophila longifolia, Hybanthus aurantiacus* and *Acacia arida.*
- VT_4 described as *Acacia bivenosa, Scaevola spinescens* and *Acacia synchronicia* shrubland over *Eremophila longifolia* and *Diplopeltis eriocarpa* sparse shrubland over *Triodia epactia* sparse hummock grassland and **Cenchrus ciliaris* sparse grassland on sandy loam plain.
- VT_5 described as *Acacia xiphophylla* open shrubland over *Acacia tetragonophylla, Exocarpos aphyllus* and *Alectryon oleifolius* subsp. *oleifolius* sparse shrubland over *Triodia epactia* and *Triodia wiseana* sparse hummock grassland and **Cenchrus ciliaris* sparse grassland on sandy loam plain. Other indicator species include *Eucalyptus xerothermica*, *Acacia pyrifolia* var. *pyrifolia* and *Acacia synchronicia*. More degraded areas of this vegetation type has **Cenchrus ciliaris* grassland dominant in the ground layer.
- VT_6 described as *Acacia synchronicia* and *Acacia tetragonophylla* sparse shrubland over *Maireana planifolia*, *Rhagodia eremaea* and *Sclerolaena* sp. open chenopod shrubland over **Cenchrus ciliaris* sparse grassland on clay saline drainage flats.

Where * indicates introduced species

**Vegetation Condition**

The flora and vegetation survey (GHD, 2019) determined that the vegetation ranges from excellent (Keighery, 1994) to completely degraded (Keighery, 1994) condition, as detailed in Table 1.

**Table 1: Vegetation condition and extent (Keighery, 1994 and GHD, 2019)**

| Scale | Description | Mapped extent within application area (hectares) |
|---|---|---|
| Excellent | Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species | 6.40 |
| Very good | Vegetation structure altered, obvious signs of disturbance.<br>For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing. | 108.10 |
| Good | Vegetation structure significantly altered with obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate. | 12.52 |

| | | |
|---|---|---|
| Degraded | Basic vegetation structure severely impacted by disturbance, scope for regeneration but not to a state approaching good condition without intensive management. | 16.33 |
| Completely Degraded | The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. | 14.52 |

**Soil type**

The application area has been mapped by the Department of Primary Industries and Regional Development (DPIRD, 2018) as the following soil types

- Learmonth System (Mapping unit 204Le), described as sandy outwash plains marginal to the Cape Range, supporting mainly soft spinifex hummock grasslands with scattered acacia shrubs (Schoknecht et al., 2004); and
- Range System (Mapping unit 204Ra), described as dissected limestone plateaux, hills and ridges with gorges and steep stony slopes supporting hard spinifex, sparse shrubs and eucalypts (Schoknecht et al., 2004).

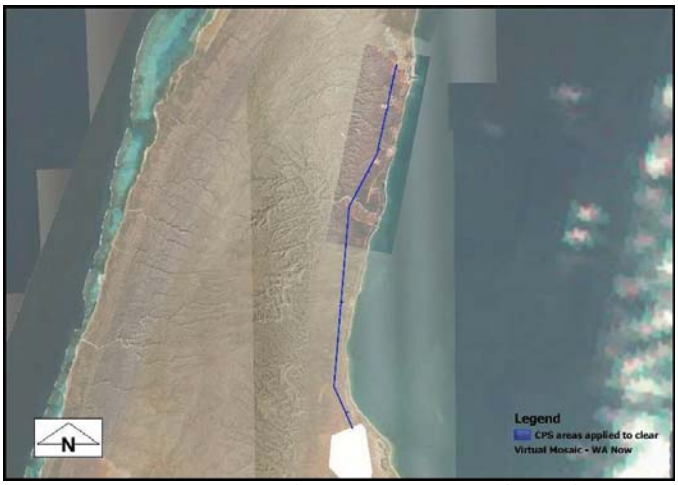


Figure 1: Location of the application area (in blue)

## 3. Minimisation and mitigation measures

The current Learmonth Line has been identified as potentially non-compliant with current Western Australian standards, in particular the overhead conductor clearance. In order to improve quality and compliance, two options were being considered; improving the existing line and rebuilding the existing line. Although the final design has not been completed, the option of rebuilding the existing line approximately 15 metres from the current line is favoured due to minimal service disruptions (GHD, 2018).

The applicant has committed to avoidance and minimisation measures (Horizon Power, 2019) including;

- No new power poles will be positioned within creek lines and minor drainage lines (where possible).
- No new access tracks will be constructed across creek lines.
- No new access tracks will be constructed across minor drainage lines (where possible).
- With the exception of pole based clearing, riparian vegetation in and around creek lines, drainage lines and on clay pans will only be cleared where it has the potential to interfere with Horizon Power assets.
- New pole locations will have maximum allowable spacing to provide the largest buffer to Cameron's cave.
- Prepare a project-specific Environmental Management Plan for spill management and chemical storage and handling to mitigate potential contamination
- Restricting the use of heavy vehicles within the Cameron's Cave Buffer Zone.

To avoid potential impacts to Priority flora, the applicant has committed to maintaining a demarcated 10 meter buffer around the identified Priority flora species *Tephrosia* sp. North West Cape (G. Marsh 81) (Priority 2(P2)), *Tinospora esiangkara* (P2) *Corchorus congener* (P3) *and Eremophila forrestii* subsp*. capensis* (P3). The permit to clear has been conditioned with measures to avoid impacts to priority flora species.

As a final design has not been developed, this assessment covers the environmental values of the 157.89 hectare footprint assuming a worst case scenario.

## 4. Assessment of application against clearing principles, planning instruments and other relevant matters

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

**Proposed clearing is at variance with this Principle**

As detailed in Section 2, the application is for the proposed clearing of 42 hectares of native vegetation within a linear 157.89 hectare footprint for installation of a new power transmission line servicing Exmouth (Figure 1). A 12 metre wide corridor along the length of the proposed alignment for construction and ongoing operational maintenance is applied for.

The vegetation within the application area is mapped within Beard vegetation associations 162 (mapped extent of five per cent within the application area) and 663 (a mapped extent of 95 per cent within the application area). As detailed in Section 2, a flora and vegetation survey provided identified six vegetation types (GHD, 2019) within the survey area.

According to available databases (Western Australian Herbarium, 1998-), 17 priority flora species and no threatened flora species have been recorded within the local area. An assessment of the habitat requirements of these species against those present within the application area determined that eight priority flora species may be present within the application area. In addition to these eight flora species, a desktop assessment undertaken by GHD determined that nine priority flora species may also occur within the application area.

The Department of Biodiversity Conservation and Attractions (DBCA) advised that flora surveys within the surrounding area identified the presence of *Tinospora esiangkara* (Priority 2) and *Acacia alexandri* (Priority 3) approximately 184 meters and 225 meters from the existing Learmonth Line respectively. These surveys were restricted to the mapped Environmentally Sensitive Areas (DBCA, 2018d).

A flora and vegetation survey (GHD, 2019) found no threatened flora species (as discussed under Principle (c)) and four priority flora species within the survey area;

- *Corchorus congener* (P3) – seven individuals were recorded from six locations within the survey area.
- *Eremophila forrestii* subsp. *capensis* (P3) – nine individuals were recorded from two locations within the survey area.
- *Tephrosia* sp. North West Cape (G. Marsh 81) (P2) – one individual was recorded within the survey area.
- *Tinospora esiangkara* (P2) – two individuals from two locations were recorded within the survey area.

*Corchorus congener* (P3) is known from 21 records, *Eremophila forrestii* subsp. *capensis* (P3) is known from eight records, *Tephrosia* sp. North West Cape (G. Marsh 81) (P2) is known from five records and *Tinospora esiangkara* (P2) is known from seven records within Western Australia. The abovementioned priority flora species have a limited known distribution, predominately only occurring in the Carnarvon Interim Biogeographic Regionalisation for Australia (IBRA) region. Any impacts to the individuals recorded during the survey could be considered significant for each of the species.

To mitigate the potential impacts to priority flora, a management condition requiring the applicant to maintain a 10 meter buffer around the priority flora species identified within the application area.

As assessed within Principle (b), the proposed clearing may include habitat for:

- Six threatened and 21 internationally significant migratory avian species; and
- the Black-flanked rock-wallaby.

The application area crosses through the mapped centre of a unique subterranean fauna community. This fauna assemblage forms part of the Threatened Ecological Community (TEC) (listed as Critically Endangered under the *Biodiversity Conservation Act 2016* (BC Act)) known as the Cameron's Cave Troglobitic Community. As the community is located underground, clearing the vegetation under application is not likely to have a direct impact on this community. The construction of the powerline and ongoing maintenance of the cleared area may however have a significant impact on the unique fauna species present beyond that of clearing native vegetation. The assessment of impacts outside the scope of the clearing assessment is discussed further within planning instruments and other relevant matters.

A fauna survey provided by the applicant (GHD, 2019) described the survey area as containing four fauna habitats that are well connected as part of a contiguous landscape. The survey recorded 43 fauna species, none of which are threatened or priority species and three of which are introduced species.

As assessed within Principle (f), the application area intersects the Cape Range Subterranean Waterways wetland which is listed under the Australian Government Directory of Important Wetlands of Australia (DIWA), formally referred to as ANCA on the western side of Exmouth Gulf. This wetland is described as a good example of a subterranean karst wetland system and the only one (apart from Barrow Island) in arid north-western Australia. The site meets two Ramsar Criteria for listing as a Wetland of International Importance (Jaensch and Watkins, 1999) and is recommended as a World Heritage site (DBCA, 2018b). The system contains a diverse, entirely endemic stygofauna and is mostly a relictual Tethys Sea fauna.

Given the above, the proposed clearing is at variance with this Principle. It is noted that the installation and ongoing maintenance of the cleared area may have impacts on Cameron's Cave Troglobitic Community and the Cape Range Subterranean Waterways wetland beyond that of clearing native vegetation. The permit to clear is conditioned with requirements to avoid and minimise disturbance and mitigate impacts to priority flora species.

It is noted that detailed designs, aligning the clearing with pre-disturbed areas, and minimising clearing where possible may alleviate potential impacts.

**(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**

**Proposed clearing may be at variance with this Principle**

A fauna survey (GHD, 2019) noted four broad habitat types were recorded within the survey area which align closely with the vegetation types as described in Section 2. The habitat types recorded within the survey area are:

- Rocky plains which is described as being associated with stony/rocky plains and low undulating rises and consists of scattered *Corymbia hamersleyana* over a sparse to open mixed *Acacia* shrubland over a *Triodia* hummock grassland/ This habitat type is represented by approximately 80 hectares within the proposed clearing footprint.
- Creeklines and minor drainage lines, which is described as; *Corymbia hamersleyana*, the occasional *Eucalyptus victrix* and mixed *Acacia* shrubs lined the edges of the drainage lines. Mixed hummock and tussock grasses and small herbs dominate the groundcover along the banks of the creeks with very few scattered plants on the rocky river beds. The creeklines/drainage lines were all generally in good condition with minimal weed invasion (some buffel grass). This habitat type is represented by approximately 8.96 hectares within the proposed clearing footprint.
- Mixed shrublands on sandy loam plains which is described as support mixed shrublands to open shrublands over open hummock grasslands of Triodia species and patches of buffel grass. This habitat type is represented by approximately 50.65 hectares within the proposed clearing footprint.
- Clay flats which is described as occurring on the low lying saline clay flats. The clay flats support a sparse mid shrubland of *Acacia* species over a low open chenopod shrubland. This habitat type consists of large areas of bare open ground and is represented by approximately 3.41 hectares within the proposed clearing footprint.

Twenty seven fauna species listed under the BC Act and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) have been recorded within the local area, including (DBCA, 2007):

- Black-footed rock-wallaby (*Petrogale lateralis* subsp. *lateralis*) (endangered under the BC Act and the EPBC Act);
- Curlew sandpiper (*Calidris ferruginea*) (critically endangered under the BC Act and the EPBC Act);
- Great knot (*Calidris tenuirostris*) (critically endangered under the BC Act and the EPBC Act);
- Lesser sand plover (*Charadrius mongolus* subsp. *mongolus*) (endangered under the BC Act and the EPBC Act);
- Eastern curlew (*Numenius madagascariensis*) (critically endangered under the BC Act and the EPBC Act);
- Fairy tern (*Sternula nereis* subsp. *nereis*) (vulnerable under the BC Act and the EPBC Act); and
- Atlantic yellow-nosed albatross (*Thalassarche chlororhynchos*) (vulnerable under the BC Act and migratory species under the EPBC Act).

Ten endemic cave species have been recorded within the local area (DBCA, 2007), including:

- Eastern cape range bamazomus (*Bamazomus subsolanus*) (endangered under the BC Act);
- Western cape range bamazomus (*Bamazomus vespertinus*) (endangered under the BC Act);
- Northern cape range draculoides (*Draculoides brooksi*) (endangered under the BC Act);
- Western cape range draculoides (*Draculoides julianneae*) (endangered under the BC Act);
- Cameron's cave pseudoscorpion (*Indohya damocles*) (critically endangered under the BC Act);
- Cave gudgeon (*Milyeringa veritas*) (vulnerable under the EPBC and the BC Act);
- Blind cave eel (*Ophisternon candidum*) (vulnerable under the EPBC and the BC Act);
- Lance-beaked cave shrimp (*Stygiocaris lancifera*) (vulnerable under the BC Act);
- Cameron's cave millipede (*Stygiochiropus peculiaris*) (critically endangered under the BC Act); and
- Stygiochiropus millipede (*Stygiochiropus sympatricus*) (vulnerable under the BC Act).

Ten marine based species or species only found on offshore islands have also been recorded within the local area (DBCA, 2007). Given the proposed clearing does not contain marine habitat, these species are not likely to be impacted by the proposed clearing.

As well as the species listed above, the following priority species have also been recorded within the local area (DBCA, 2007):

- A P3 and P4 endemic cave species; spear-beaked cave shrimp (*Stygiocaris stylifera*) and cape range blind cockroach (*Nocticola flabella*);
- 21 internationally protected and one P4 migratory avian species; and
- Two P4 species; western pebble-mound mouse (*Pseudomys chapmani*) and orange leaf-nosed bat (*Rhinonicteris aurantia*).

The curlew sandpiper, great knot, lesser sand plover, fairy tern, yellow-nosed albatross, eastern curlew and 21 internationally protected migratory species mainly occur within sheltered coastal habitats, such as intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets, lagoons, around non-tidal swamps, lakes near the coast and at the Cape Range Subterranean Waterways (DBCA, 2018c).. While the creekline and clay flat habitats may provide some habitat for these species, these habitat types are represented outside the proposed clearing area. Considering the linear shape of the proposed clearing and the representation of habitat types outside of the clearing footprint, it is unlikely that the proposed clearing will have a significant impact on these species. The impacts to surface water quality and riparian vegetation within these habitat types are discussed under Principle (f) and (i).

Black-flanked rock-wallabies occur where suitable shelter and food co-exist. During the daytime they shelter under deep shade in rocky areas such as caves, cliffs, screes and rockpiles, and emerge at dusk to feed on grasses, forbs, shrubs and occasionally seeds and fruits (TSSC, 2016). While this species has been recorded within the local area, suitable habitat for this species is not considered present within the application area.

The application area is mapped across the centre of the Critically Endangered Cameron's Cave Troglobitic Community TEC. As listed above, this underground community contains numerous unique threatened fauna species and the fauna community as a whole is unique. The system contains a diverse, entirely endemic stygofauna and is mostly a relictual Tethys Sea fauna. The fauna includes the only southern hemisphere representatives of entire classes, orders, families and genera of crustaceans.

Although clearing the proposed clearing may not have a direct impact on this fauna community, the construction and ongoing maintenance of the cleared area may have a significant impact.

The fauna survey noted observations of *Peregrine falcon* and *Pandion haliaetus (*Osprey) during the survey (GHD, 2019). It is considered that the vegetation within the application area may provide foraging habitat for these species. However, considering the extent of vegetation remaining surrounding the proposed clearing, the proposed clearing is not likely to have an impact on these species.

The Cape Range stone gecko *(Diplodactylus capensis*) (listed as P2 fauna species by DBCA) was not overserved during the survey (GHD, 2019), but it is considered that suitable habitat for this species is present within the survey area. As the local area is not extensively cleared, it is considered that significant habitat remains for this species in adjacent areas to the proposed clearing. Slow, progressive directional clearing will aid ground dwelling fauna to move into native vegetation adjacent to the application area, ahead of the clearing activity.

The applicant has committed to the avoidance and minimisation measures as detailed in Section 3 above to mitigate impacts to fauna habitat.

Considering the above, the proposed clearing is not likely to be at variance with this Principle.

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

**Proposed clearing is not likely to be at variance with this Principle**
No threatened flora species have been recorded within the local area. The flora and vegetation survey (GHD, 2019) did not record observations of any threatened flora. Therefore, the vegetation within the application area is not likely to include or be necessary for the continued existence of threatened flora.

The proposed clearing is not likely to be at variance with this Principle.

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

**Proposed clearing is not likely to be at variance with this Principle**
One TEC has been mapped within the local area, the Cameron's Cave Troglobitic Community. The application area crosses through the mapped centre of this unique subterranean community. As the community is located underground, the proposed clearing is not likely to have a direct impact on this TEC.

Given the above, the proposed clearing is not likely to be at variance with this Principle.

The construction of the powerline and ongoing maintenance of the cleared area may however have a significant impact on the TEC beyond that of clearing native vegetation. Advice received in regards to potential impacts to this TEC is detailed in Planning Instruments and other matters.

**(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 with this Principle**
The national objectives and targets for biodiversity conservation in Australia have a target to prevent clearance of ecological communities with an extent below 30 percent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The vegetation within the application area is located within the Carnarvon IBRA bioregion. This IBRA bioregion retains approximately 99.7 per cent of its pre-European vegetation extent (Government of Western Australia, 2019) (Table 2 below).

The vegetation within the application area is mapped as Beard vegetation associations 162 and 663 which retain approximately 99.7 and 89 per cent respectively of their pre-European extent within the Carnarvon IBRA bioregion (Government of Western Australia, 2019) (Table 2 below). The local area retains approximately 95 per cent native vegetation.

Whilst the application area may be considered a significant remnant due to the presence of priority flora, TEC and habitat for conservation significant fauna, given the vegetation extents remaining, the application area is not located within an area that has been extensively cleared.

Given the above, the proposed clearing is not likely to be at variance with this Principle.

Table 2: Bioregion and vegetation extent statistics (Government of Western Australia, 2019)

| | Pre-European extent (ha) | Current extent (ha) | Extent remaining (%) | Current extent in all DBCA managed lands (ha) | Extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%) |
|---|---|---|---|---|---|
| **IBRA bioregion:** | | | | | |
| Carnarvon | 8,382,890.35 | 8,360,801.46 | 99.74 | 1,020,434.08 | 12.20 |
| Beard vegetation association: | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 162 | 547,248.55 | 545,772.21 | 99.73 | 142,702.51 | 26.08 |
| 663 | 29,068.26 | 25,866.32 | 88.98 | 7,414.33 | 25.51 |
| Beard vegetation association in IBRA bioregion: | | | | | |
| 162 (within Carnarvon) | 218,936.66 | 217,754.85 | 99.46 | 142,634.17 | 65.15 |
| 663 (within Carnarvon) | 29,068.26 | 25,866.32 | 88.98 | 7,414.33 | 25.51 |

**(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 at variance with this Principle**
According to available databases, the application area intersects numerous minor, non-perennial watercourses.

A portion of the application area occurs within the Cape Range Subterranean Waterways wetland that is listed under the Australian Government DIWA, formally referred to as ANCA on the western side of Exmouth Gulf.

The proposed clearing is entirely within a site described in DIWA as subterranean waterways, sinkholes, general groundwater and artificial wells (notably Billy, Five Mile, Javis, Kubara, Kudumurra, Milyering, Mowbowra, Pilgramunna, Tantabiddi and Tulki Wells, Tantabiddi and Wobiri Rockholes, Bundera Sinkhole, and caves C-23, C-215, C-452, C-495) of the coastal plain and foothills of Cape Range north of a line between Norwegian Bay, at the foot of the peninsula on the west coast, and the Bay of Rest in Exmouth Gulf (DBCA, 2018b).

This wetland is described as a good example of a subterranean karst wetland system and the only one (apart from Barrow Island) in arid north-western Australia. The site meets two Ramsar Criteria for listing as a Wetland of International Importance (Jaensch and Watkins, 1999) and is recommended as a World Heritage site (DBCA, 2018c). The system contains a diverse, entirely endemic stygofauna and is mostly a relictual Tethys Sea fauna. The DIWA has identified contamination and clearing of native vegetation as a potential threat to the Cape Range Subterranean Waterways (DBCA, 2018c).

A report provided by the applicant noted that vegetation type 3 (VT_3) contained riparian vegetation (Regional Power Corporation TA Horizon Power, 2019).

Given the above, the proposed clearing is at variance with this principle.

As detailed in Section 3 above, the applicant has advised of avoidance and minimisation measures to mitigate impacts to riparian vegetation.

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

**Proposed clearing may be at variance with this Principle**
The application area has been mapped by DPIRD within the Learmonth System and the Range System (described in more detail within Section 2).

As assessed within Principle (f), numerous minor, non-perennial watercourses cross the application area. Salinity within the application area has been mapped as 500-1000 milligrams per litre.

Given the location of the application area, vegetation type and low mapped salinity, the proposed clearing is not likely to cause land degradation through eutrophication or increased salinity. Although minor watercourses intersect the application area, given its linear nature, the proposed clearing is not likely to cause waterlogging or flooding.

Due to the sandy soil type, the application area has a risk of wind erosion. As the area will be maintained as cleared, this risk is heightened. As the exact location and extent of clearing is yet to be determined, the extent of this risk cannot be determined.

As the proposed clearing intersects numerous watercourses, removing the vegetation may cause water erosion of river banks and increased sedimentation of waterways and onshore environments. DBCA has advised that the clearing of these areas could possibly lead to bank destabilisation and erosion during flow periods, particularly the location of any poles within the perennial water courses (DBCA, 2018c).

The applicant has committed to the avoidance and minimisation measures (detailed in Section 3 above). It is considered that these measures should mitigate the risk of the proposed clearing causing land degradation in the form or water or wind erosion.

Given the above, the proposed clearing may be at variance with this Principle.

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

**Proposed clearing may be at variance with this Principle**
Cape Range National Park is located approximately 4.2 kilometres west of the application area and Bundegi Coastal Park is located approximately 7.1 kilometres west of the application area.

As assessed within Principle (f), a portion of the application area falls within the Cape Range Subterranean Waterways wetland that is listed under the Australian Government DIWA. This wetland is a subterranean karst wetland system.

As the application area intersects a conservation area, the proposed clearing may impact on the environmental values of this area. Therefore, the proposed clearing may be at variance with this Principle.

The installation and ongoing maintenance of the cleared area may have impacts on this wetland beyond that of clearing native vegetation.

**(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 may be at variance with this Principle**

As assessed within Principle's (f) and (g), the application area intersects numerous minor watercourses and may cause land degradation through water erosion and subsequent sedimentation of surface water. Given this, the proposed clearing may impact on the quality of surface water through increased sedimentation.

The groundwater salinity within the application is mapped as being 500-1000 milligrams per litre total dissolved solids which is considered marginal. Considering the linear shape of the clearing and that the local area retains over 90 per cent remnant vegetation, it is not likely that the proposed clearing will deteriorate the quality of underground water.

As assessed within principle (f), the application area intersects the Cape Range Subterranean Waterways wetland. As the community is located underground, clearing the vegetation under application is not likely to have a direct impact on this TEC. The construction of the powerline and ongoing maintenance of the cleared area may however have a significant impact on the groundwater beyond that of clearing native vegetation. The impact of the proposed clearing on subterranean systems is further discussed within Planning and Other Matters.

Given the above, the proposed clearing may be at variance with this Principle.

**(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 with this Principle**

The mean annual rainfall of the local area is 400 millimetres per annum. Given the sandy nature and permeability of the soils within the application area and the relatively low annual rainfall of the local area, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Given the above, the proposed clearing it not likely to be at variance with this Principle.

**Planning instruments and other relevant matters.**

The DBCA has advised that:

- The proposed vegetation clearing will require the use of heavy vehicles and the subsequent installation of the powerline will require rock-breaking activities (i.e. pole borer). The proposed alignment of the vegetation clearing intercepts areas of coastal karst, including Cameron's Cave. A geotechnical assessment (or risk assessment by an appropriately qualified professional) should be undertaken for works within the buffer to confirm the feasibility of completing the proposed works without detriment to the structural integrity of the Cave (DBCA, 2018a).
- Chemicals such as insecticides and rust inhibitors should not be used around poles in the vicinity of the cave, to prevent toxic chemicals entering the cave (DBCA, 2018b).
- All access disturbance to the sites should be re-levelled to ensure surface water flow is maintained. Removal of any old power lines should be accompanied by re-levelling the track to re-establish natural flow across country rather than intercepting flow and channelling it along the track (DBCA, 2018b).
- There is risk to heavy machinery and operators from cave collapse when working in karst areas, hence also risks to the cave, especially where the cave roof is not very thick. The proponent should verify the distance between poles and how many poles are planned to be installed in the buffer (DBCA, 2018b).
- The chemicals used to treat power poles for termites in the ground (such as Bifenthrin) have the potential to cause harm and be toxic to native species, in particular to aquatic animals and insects found in wetland areas. Assessment for approval should include consideration of materials or products used to ensure there is no residual impact to flora and fauna species found within the wetland areas and non-perennial water courses (DBCA, 2018c).
- Surface water run-off issues may potentially be of concern regarding direct impact on the extended cave below the surface (DBCA, 2018b).

The advice detailed above relates to the post-clearing works and its potential impacts on the Cameron's Cave TEC. As the construction of the powerlines is secondary to the clearing, the comments above is outside of the assessment under the Clearing Principles. However, any impacts to the TEC may have implications under the BC Act. The applicant is encouraged to liaise with DBCA on the matters above.

No Aboriginal sites of significance have been mapped within the application area. The closest mapped site is within 50 meters of the proposed clearing and is known as Mowbowra Pool. It is the applicant's responsibility to comply with the requirements of the *Aboriginal Heritage Act 1972* and to ensure that no Aboriginal sites of significance are disturbed as a result of any activities

On 11 July 2018, the Yamatji Marlpa Aboriginal Corporation provided correspondence noting that the Exmouth Peninsular is rich with Aboriginal Heritage sites. The correspondence also noted that it is important for the applicant conduct Aboriginal heritage

surveys to ensure that no sites are damaged in compliance with the *Aboriginal Heritage Act 1972* and noted that the size of proposed area to be cleared is significant and invite the applicant to meet with the Gnulli working group prior to the commencement of works (Yamatji Marlpa Aboriginal Corporation, 2019).

The clearing permit application was advertised on the DWER website on 11 May 2018 with a 21 day submission period. No public submissions have been received in relation to this application.

## 5. Applicants Submissions

On the 23 October 2018, DWER wrote to the applicant inviting them to address the impacts identified during the preliminary assessment including; providing a targeted priority flora survey, a fauna survey, information on avoidance on the Cameron's Cave Troglobotic Community and avoidance and minimisation measures for areas where the proposed clearing intersects a waterbody due to the risk of bank destabilisation and erosion.

On 16 July 2019, the applicant provided a flora and fauna survey and provided management measures to minimise impacts to Cameron's Cave such as using the maximum allowable spacing of poles to provide the largest buffer to the cave, the implementation of a project-specific Environmental Management Plan for spill management and chemical storage to mitigate potential contamination and the restriction of heavy vehicles within the Cameron's Cave buffer zone. The applicant also noted that no adverse bank destabilising or erosion has been observed from the current power line and it is not expected that the proposed line would have any additional or different impacts.

On 2 October 2019, DWER wrote to the applicant inviting them to show a commitment to avoiding the Priority flora species recorded within the survey area and to provide more information on the placement of poles and extent of clearing within riparian areas and land degradation management measures.

On 28 October 2019, the applicant provided a response committing to the avoidance of Priority flora and providing a 10 meter buffer (demarcated) around the Priority species identified and where clearing is required within a 10 meter buffer, the applicant will seek approval from DWER. The applicant also noted that where possible, no new power poles will be positioned within creeklines and minor drainage lines, no new tracks will be constructed across creek lines, where possible, no new tracks will be constructed across minor drainage lines. The applicant also noted that with the exception of pole based clearing, the riparian vegetation around creeklines, drainage lines and on clay pans will only be cleared where it has the potential to interfere with Horizon Power assets.

## 6. References


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

Department of Biodiversity, Conservation and Attractions (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: http://naturemap.dpaw.wa.gov.au/.

Department of Biodiversity, Conservation and Attractions (DBCA) (2018a) Regional advice received in regards to Clearing Permit Application CPS 7946/3. Received on 31/08/2018 (DWER Ref: A1695094)

Department of Biodiversity, Conservation and Attractions (DBCA) (2018b) Wetlands advice received in regards to Clearing Permit Application CPS 7946/3. Received on 31/08/2018 (DWER Ref: A1695091).

Department of Biodiversity, Conservation and Attractions (DBCA) (2018c) TEC advice received in regards to Clearing Permit Application CPS 7946/3. Received on 31/08/2018 (DWER Ref: A1690852).

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GHD (2018) Report for Horizon Power Learmonth Line Rebuild Clearing Permit Supporting Report. DWER reference: A1671261

Government of Western Australia. (2019). 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis, (Simplified). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions, Perth.

Horizon Power (2018) Application for Clearing Permit CPS 8067/1. DWER reference: A1671221

Horizon Power (2019) Response to request for further information. DWER reference: A1835754

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Western Australian Herbarium (1998-) FloraBase-the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. https://florabase.dpaw.wa.gov.au/ (accessed November 2019).

Yamatji Marlpa Aboriginal Corporation (2018) Response received in regards to Clearing Permit Application CPS 8607/1. DWER reference: A1702525


GIS Databases:

- Groundwater salinity
- SAC Bio Datasets (Accessed November 2019)
- Hydrography, linear
- Remnant vegetation

- DBCA Tenure
- Aboriginal Sites of Significance
- Rainfall – Annual Mean
- Topographical Contours.
- Soils, Statewide
- Topographic contours
- Wetlands