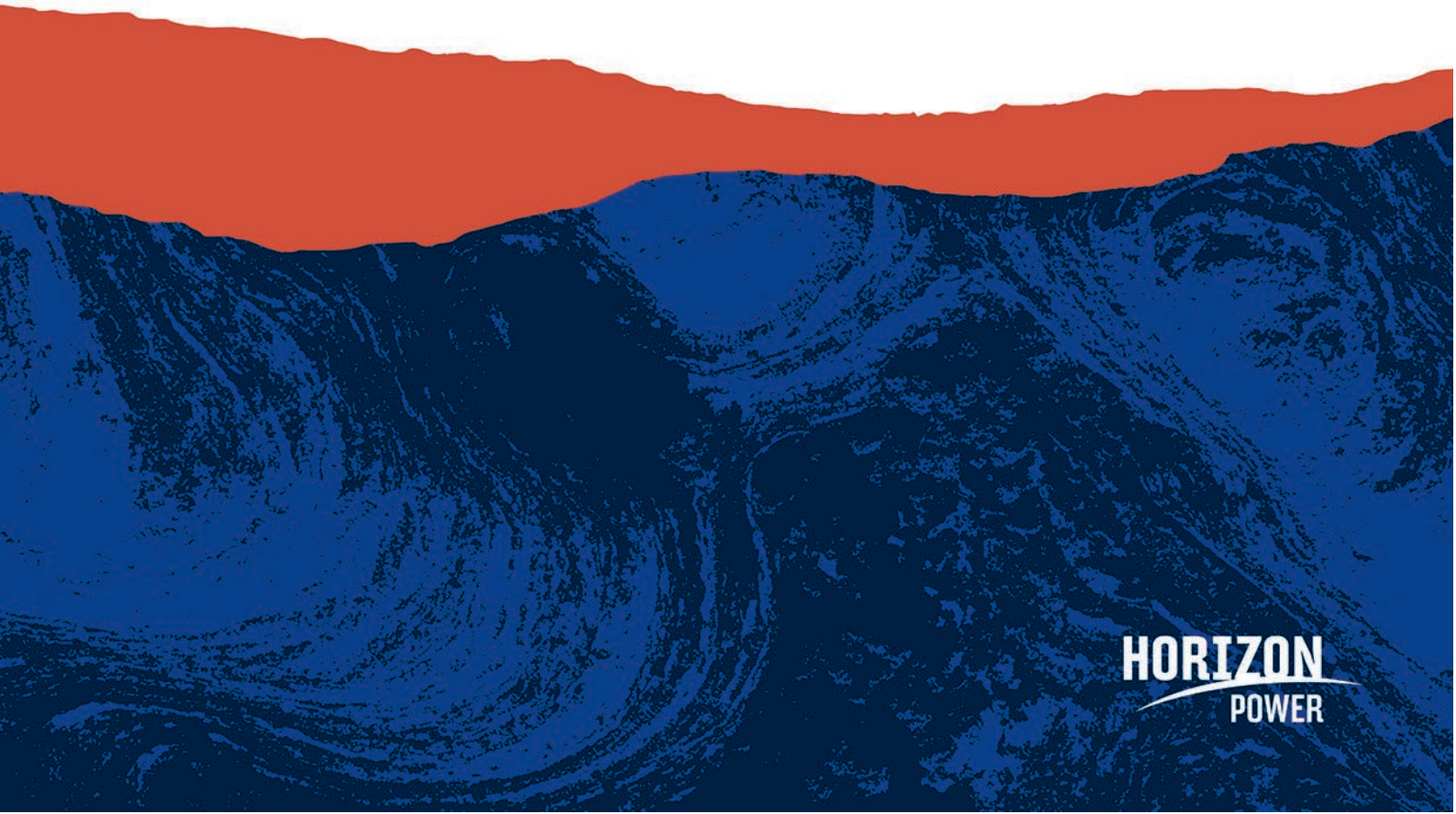
East Pilbara Connection - Native Vegetation Clearing Permit

Supporting Document

August 2024



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1 Introduction

1.1 Project Context

Regional Power Corporation, trading as (T/A) Horizon Power, is a Western Australian (WA) Government Trading Enterprise (GTE) and the state's regional and remote energy provider. Horizon Power operates under the *Electricity Corporations Act 2005* and is governed by a Board of Directors accountable to the Minister for Energy.

Horizon Power is proposing to construct a 220 kV dual circuit common use transmission line connecting the South Hedland Terminal to the proposed Atlas Ridley Magnetite Mine, in the Pilbara region in Western Australia (the Project). The estimated length of the Transmission Line is 70.2 km comprising of mono poles, with an average height of 40 m. The Project is also likely to consist of access tracks along the pole route, geotechnical investigations and laydown areas for construction.

The Project involves the following permanent elements which will require up to 60.6 ha of permanent clearing:

- Approximately 70.2 km long 220 kV overhead transmission line
- Approximately 201 poles with a 20 x 20 m clearing footprint
- Permanent cleared access tracks (approximately 4 m wide).

The Project involves the following temporary elements which will require up to 40.2 ha of temporary clearing:

- Laydown area
- Geotechnical investigations
- Sites to facilitate stringing and winching of the transmission line.

Specific detail of the proposed clearing is provided in Section 3 of this document.

A Native Vegetation Clearing Permit (NVCP) will be required from the Department of Water and Environmental Regulation (DWER) to allow for the clearing of up to 60.6 ha of permanent clearing and 40.2 ha of temporary clearing.

1.2 Scope and Purpose

This document has been prepared to support a NVCP application for the Project. Specifically, this document provides further detail regarding the proposed activities (Section 2) and related clearing (Section 3).

To support environmental approvals for the Project, an ecological survey was undertaken by SLR (2024) (Appendix A). The results of this survey, as relevant to the proposed clearing, are summarised in Section 4 of this document and have been taken into account when avoiding and mitigating Project environmental impacts (Section 6).

An assessment of the 10 Clearing Principles as outlined in '*A guide to the assessment of applications to clear native vegetation*' (DER 2014) has also been undertaken and is presented Section 8.

A Construction Environment Management Plan (CEMP) has also been prepared in support of the NVCP Application and is provided in Appendix B.

2 Description of the Activity

2.1 Project Location

The Proposal is located between South Hedland and De Grey, within the Pilbara region (Figure 1). As final design has yet to be undertaken, a Development Envelope (DE) has been applied, within which all project activities will be undertaken. The DE is described in Table 1 and shown in Figure 1.

Table 1 Development Envelope for the Project

Size of Development Envelope (ha)	Development Envelope location	Town	Neighbouring land uses
10,233.9	Reserve 33016 - Lot 273 on DP219540, LR3109/390 (managed by Minister for Water Resources)	Town of Port Hedland	Roads, crown land, crown lots, crown reserves, pastoral leases and residential
	Unallocated Crown Land - Lot 1499 on DP404497, LR3165/640 (subject to dealing)		
	Road - Lot 325 on DP220768, LR3116/935		
	Unallocated Crown Land - Lot 1507 on DP423425, LR3175/534		
	Pastoral Lease P461306 - Lot 1505 on DP423425, LR3175/532 (pastoral lessee: Alinta Dewap Pty Ltd, Alinta Dewah Pty Ltd)		
	Pastoral Lease N50445 - Lot 158 on DP407151, LR3170/570 (pastoral lessee: BHP Billiton Direct Reduced Iron Pty Ltd)		

Figure 1 | Development Envelope and Survey Area

N

0 2.5 5 10 Kilometers

Scale: 1:250,000

HORIZON POWER

2.2 Activity Overview and Timelines

The project requires geotechnical survey works, which will consist of mainly incidental clearing (driving over and parking on native vegetation) for vehicle / machinery access to test sites. The Project also requires construction of the overhead transmission line including poles and permanent access tracks which will be used for maintenance.

A five-year clearing permit is requested with clearing undertaken within 3 months of construction.

2.3 Land Access

Horizon Power will utilise the access conferred by Sections 46 and 49 of the *Energy Operators (Powers) Act 1979* (the Act) for geotechnical investigations and connection infrastructure.

3 Description of Proposed Clearing

3.1 Proposed Clearing Area

The final design and footprint required for the Project will be determined once geotechnical survey works are undertaken. All clearing will be undertaken within the DE, as described in Section 2.1.

The Project involves the following permanent elements which will require up to 60.6 ha of permanent clearing and up to 40.2 ha of temporary clearing. Total clearing for the Project (permanent and temporary) will be up to 100.8 ha.

Table 2 Clearing estimated within the DE

Proposed clearing	Clearing breakdown
100.8 ha	• Permanent clearing: 60.6 ha • Temporary clearing: 40.2 ha

3.2 Proposed Clearing Method

Temporary clearing is proposed for the geotechnical survey, stringing and winching of the transmission line and a laydown area. This will include mechanical removal and driving over vegetation.

Mechanical removal will be undertaken for the permanent infrastructure including poles and permanent maintenance access tracks.

4 Ecological Survey

To inform the Project, SLR (2024) undertook a detailed and targeted flora and vegetation survey, and basic and targeted fauna survey. The survey area covers the entire DE, and was undertaken from 1st March to 10th March 2024. The ecological survey has been appended to this document (Appendix A) and is summarised in Table 3.

Surveys have been undertaken for other projects in the region, these overlap the DE. These surveys are listed in Table 4. Results from these surveys have also been used as secondary information to inform the Project impact assessment.

Table 3 Summary of ecological survey undertaken for the Project

Survey	Vegetation type

Atlas Ridely Magnetite Project Connection Flora and Fauna Survey Technical Report (SLR, 2024)
IBSA Number: IBSA-2024-0325
	Survey date: 1st March to 10th March 2024
	Survey area: Approximately 10,363 ha
	Flora / Vegetation findings:
	• 172 flora taxa (including subspecies and varieties) representing 40 families and 94 genera were recorded in the survey area. This total comprised 164 native taxa and eight introduced flora taxon.
	• No flora listed as Threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Biodiversity Conservation Act 2016* (BC Act) were recorded within the survey area
	• Two DBCA-listed Priority species were recorded in the survey area:
	  ○ *Gymnanthera cunninghamii* (Priority 3 - DBCA) - Six individuals of *Gymnanthera cunninghamii* were recorded across four locations in the MaEc vegetation type.
	  ○ *Tephrosia rosea* subsp. Port Hedland (A.S. George 1114) (Priority 1 - DBCA) - Two individuals of *Tephrosia rosea* subsp. Port Hedland were recorded from one location in the AsTe vegetation type.
	Fourteen vegetation types were recorded within the survey area:
	• AiTe - *Triodia epactia* low hummock grassland (30 ha (0.29%))
	• AoTe - Granite and quartz outcroppings (53 ha (0.51%))
	• AspTe - Mixed Acacia (*A. inaequilatera, A. colei, A. ancistrocarpa, A. acradenia, A. bivenosa*) tall shrubland over *Triodia epactia* (*T. wiseana*) low to mid hummock grassland (5,495 ha (53.03%))
	• AsTe - *Acacia stellaticeps* mid open shrubland over *Triodia epactia* low hummock grassland (3,067 ha (29.6%))
	• At - *Acacia tumida* tall shrubland over *Triodia epactia* mid open hummock grassland (18.3 ha (0.18%))
	• CcAcTe - *Corymbia candida* low sparse woodland over *Acacia colei* and *A.tumida* tall open shrubland over *Triodia epactia* low hummock grassland and *Eulalia aurea* low open tussock grassland (123.9 ha (1.2%))
	• CfAh - *Corymbia flavescens* (Eucalyptus victrix) low sparse woodland over *Atalaya hemiglauca* (*Dolichandrone occidentalis*, *Ficus aculeata*) tall open shrubland over Eulalia aurea low sparse tussock grassland (42.5 ha (0.41%))
	• EvAcTe - *Eucalyptus victrix* low sparse woodland over *Acacia colei* tall open shrubland over *Triodia epactia* mid open hummock grassland (263.5 ha (2.54%))
	• EvEa - *Eucalyptus victrix* low sparse woodland over *Acacia colei* tall sparse shrubland over *Triodai epactia* mid sparse hummock grassland and *Eulalia aurea* mid sparse tussock grassland (24.1 ha (0.23%))
	• FspAh - Low sparse woodland of *Atalaya hemiglauca* and *Ficus brachypoda* over *Triodia epactia* low sparse hummock grassland (1.8 ha (0.02%))
	• FspTe - Mixed Acacia (A*. inaequilatera, A. ancistrocarpa*) with *Ficus brachypoda* low isolated trees over low open hummock grassland *Triodia epactia* (13.5 ha (0.13%))

	• MaEc - *Eucalyptus camaldulensis* subsp. *refulgens* (*E.victrix*), *Melaleuca argentea* low sparse woodland over tall sparse shrubs *Acacia trachycarpa*, *M. glomerata* over *Eulalia aurea* low sparse tussock grasses and *Triodia epactia* low sparse hummock grasses (165.7 ha (1.6%)) • Sh - *Sclerolaena hostilis* low sparse forbland (9.6 ha (0.09%)) • TsTe - *Triodia secunda* and *T. epactia* low hummock grassland (848.4 ha (8.19%)) • Cleared (206.26 ha (1.99%)). The vegetation condition in the survey area varied from Degraded to Very Good: • Degraded - 52.1 ha (0.50%) • Poor - 3.3 ha (0.03%) • Good - 232.4 ha (2.24%) • Very Good - 9,868.9 ha (95.23%) • Cleared – 206.26 ha (1.99%). No Threatened Ecological Communities (TEC) listed under the EPBC Act or BC Act were identified within the survey area during the field survey. Additionally, no Priority Ecological Communities (PEC) listed by DBCA were identified within the survey area during the field survey. One vegetation type, MaEc, is likely to represent groundwater dependent ecosystems (GDE) associated with some of the major drainages intersecting the survey area. This vegetation type supports known *phreatophytic* tree species such *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens*, which are reliant on access to the groundwater table. **Fauna / Fauna habitat findings:** Nine fauna habitat types were recorded within the survey area: • Closed *Acacia* Shrubland - Flat plains with red sand substrate. Vegetation consists of open *Corymbia* and *Eucalyptus* woodland over *Eucalyptus* and *Acacia* open shrubland midstory over low *Triodia* hummock grassland. Microhabitats include *Triodia* hummocks and leaf litter. This habitat contained disturbances caused by vehicle tracks (15.01 ha (0.14%)) • Low *Acacia stellaticeps* over *Triodia* - Flat plains with brown-orange clay, loam and sandy substrate. Vegetation consists of low, isolated clumps of *Acacia stellaticeps* over low *Triodia epactia* open hummock grassland. Microhabitats include *Triodia* hummocks, leaf litter and woody debris were observed. This habitat contained disturbances caused by vehicle tracks and overgrazing (3,071.26 ha (29.64%)) • Major Drainage - Flat plains with red-orange sandy substrate. Vegetation consists of open eucalypt woodland over sparse Acacia midstory and open *Triodia* hummock grassland. Microhabitats include *Triodia* hummocks, leaf litter, peeling bark, woody debris, and burrows. Tree hollows, log hollows and logs over 10 cm were also observed. This habitat contained disturbances caused by vehicle tracks, overgrazing and weeds (1100.79 ha (1.60%)) • Minor Drainage - Flat plains with red sandy substrate. Vegetation consists of open *Eucalyptus* woodland over *Eucalyptus* and *Acacia* open shrubland midstory over low *Triodia* hummock grassland. Microhabitats include *Triodia* hummocks, leaf litter, peeling bark and woody debris. This habitat contained disturbances caused by vehicle tracks (24.12 ha (0.23%)) • Mixed *Acacia* Shrubs and *Triodia* Plains - Flat plains with red-orange sandy and clay-loam substrate. Vegetation consists of open *Eucalyptus* woodland over *Acacia* open shrubland midstory with *Triodia* hummock grassland. Microhabitats include *Triodia* hummocks and leaf litter. This habitat contained disturbances caused by vehicle tracks and overgrazing (5,501.32 ha (53.09%))

	• Open *Eucalypt* Woodland - Flat plains with red sandy substrate. Vegetation consists of open *Corymbia* and Eucalyptus woodland over *Eucalyptus* and *Acacia* open shrubland midstory over low *Triodia* hummock grassland. Microhabitats include *Triodia* hummocks and leaf litter. This habitat contained disturbances caused by vehicle tracks (429.90 ha (4.15%)) • Outcrops and Breakaways - Sloped granite, ironstone and quartz ridges and outcrops with red-brown sandy-clay substrate. Vegetation consists of open Acacia shrubland midstory over sparse and open *Triodia* hummock grassland. Microhabitats include Exfoliating rock, rock crevices, *Triodia* hummocks, leaf litter, peeling bark and woody debris (43.56 ha (0.42%)) • Sparse *Triodia* Plains - Open rocky granite plains with red sandy-pebble substrate. Vegetation consists of sparse *Acacia* shrubland midstory over open hummock grassland. Microhabitats include *Triodia* hummocks and leaf litter. This habitat contained disturbances caused by vehicle tracks and overgrazing (858.02 ha (8.28%)) • Stony Hills - Undulating granite and quartz plains with red sandy substrate. Vegetation consists of sparse *Acacia* shrubland midstory over sparse *Triodia* hummock grassland. Microhabitats include *Triodia* hummocks and termite mounds. This habitat contained disturbances caused by vehicle tracks (47.82 ha (0.46%)) • Cleared - Cleared land for existing tracks/roads (206.26 ha (1.99%)). A total of 63 fauna taxa were identified in the survey area. This total comprised: • 33 birds • 14 mammals • 16 reptiles. Three introduced species (European Cattle, Cat and Domestic Pigeon/Rock Dove) were recorded and are included in this total. Two significant fauna species were recorded in the survey area: • Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* (Pilbara form)) – Vulnerable • Western Pebble-mound Mouse (*Pseudomys chapmani*) – Priority 4. Additional conservation significant fauna assessed as known to occur in the survey area are: • Northern Quoll (*Dasyurus hallucatus*) – Endangered • Bilby (*Macrotis lagotis*) – Vulnerable Conservation significant fauna assessed as likely to occur in the survey area include: • Grey Falcon (*Falco hypoleucos*) – Vulnerable • Oriental Pratincole (*Glareola maldivarum*) – Migratory • Common Greenshank (*Tringa nebularia*) – Migratory • Barn Swallow (*Hirundo rustica*) – Migratory • Little Curlew (*Numenius minutus*) – Migratory • Oriental Plover (*Charadrius veredus*) – Migratory • Osprey (*Pandion haliaetus*) – Migratory • Peregrine Falcon (*Falco peregrinus*) – Other specially protected fauna

	• Ghost Bat (*Macroderma gigas*) – Vulnerable • Brush-tailed Mulgara (*Dasycercus blythi*) – Priority 4 • Pilbara Olive Python (*Liasis olivacea barroni*) – Vulnerable Conservation significant fauna that may occur in the survey area include: • Pilbara Grasswren (*Amytornus whitei whitei*) – Priority 4 (as *Amytornis striatus striatus*, DBCA) • Glossy Ibis (*Plegadis falcinellus*) – Migratory • Fork-tailed Swift (*Apus pacificus*) – Migratory • Short-tailed Mouse (*Leggadina lakedownensis*) – Priority 4 • There were an additional 23 bird species that may occur in the survey area due to the proximity of historic records, however with limited suitable habitats within the survey area. The likelihood of occurrence assessment is provided in Appendix C.

Table 4 Additional surveys that overlap the DE

Year	Author	Survey Name	Relevance to the Project
2023	Focus Vision Consulting (FVC)	Detailed Flora and Vegetation Assessment	33,905.09 ha in size, overlaps the DE.
2022	GHD	Boodarie Solar Farm	Of the 175 ha of the Boodarie solar farm survey area, approximately 90 ha intersects the western portion of the DE.
2024	Biota Environmental Sciences	Ridley Detailed Terrestrial Vertebrate Fauna Survey	Of the 12,235 ha survey area, approximately 5 ha intersects the eastern portion of the DE.
2022	Phoenix Environmental	Detailed terrestrial fauna and targeted Bilby Survey for the Port Hedland Solar Farm Proposal	Of the 9,000 ha survey area, approximately 1,065 ha intersects the western portion of the DE.

5 Existing Environment

The existing environment of the DE is described in Table 5.

Table 5 Existing environment in the DE.

<table>
<tr><th>Environmental value</th><th>Assessment</th></tr>
<tr><td>Vegetation associations, types and condition</td><td>The Project is located within Pre-European Vegetation Associations 589, 619, 647 and 93. More than 97% of these vegetation associations remain on State, bioregion and local government levels.
<table>
<tr><th>Vegetation association</th><th>Scale</th><th>Pre-European extent (ha)</th><th>Current extent (ha)</th><th>% Remaining</th><th>% of current extent in all DBCA managed</th></tr>
<tr><td>589</td><td>State: Western Australia</td><td>807,698.58</td><td>802,713.40</td><td>99.38</td><td>1.91</td></tr>
<tr><td></td><td>IBRA bioregion: Pilbara</td><td>728,768.20</td><td>724,695.82</td><td>99.44</td><td>2.11</td></tr>
<tr><td></td><td>IBRA Subregion: Roebourne</td><td>675,391.80</td><td>671,327.48</td><td>99.40</td><td>2.14</td></tr>
<tr><td></td><td>IBRA Subregion: Chichester</td><td>53,376.40</td><td>53,368.34</td><td>99.98</td><td>1.78</td></tr>
<tr><td></td><td>LGA: Town of Port Hedland</td><td>338,269.05</td><td>335,921.21</td><td>99.31</td><td>-</td></tr>
<tr><td>619</td><td>State: Western Australia</td><td>119,373.78</td><td>118,205.01</td><td>99.02</td><td>0.20</td></tr>
<tr><td></td><td>IBRA bioregion: Pilbara</td><td>118,920.31</td><td>118,116.78</td><td>99.32</td><td>0.20</td></tr>
<tr><td></td><td>IBRA Subregion: Chichester</td><td>85,543.15</td><td>85,520.95</td><td>99.97</td><td>0.28</td></tr>
<tr><td></td><td>LGA: Town of Port Hedland</td><td>63,650.59</td><td>62,598.14</td><td>98.35</td><td>-</td></tr>
<tr><td>647</td><td>State: Western Australia</td><td>195,860.89</td><td>191,711.41</td><td>97.88</td><td>-</td></tr>
<tr><td></td><td>IBRA bioregion: Pilbara</td><td>195,859.95</td><td>191,710.92</td><td>97.88</td><td>-</td></tr>
</table>
</td></tr>
</table>

Environmental value	Assessment

	IBRA Subregion: Roebourne	188,901.32	184,774.70	97.82	-
	LGA: Town of Port Hedland	180,908.49	176,759.02	97.71	-
93	State: Western Australia	3,044,309.52	3,040,640.98	99.88	1.96
	IBRA bioregion: Pilbara	3,042,114.27	3,038,471.67	99.88	1.96
	IBRA Subregion: Chichester	2,940,348.04	2,936,731.54	99.88	2.03
	IBRA Subregion: Roebourne	46,360.53	46,334.43	99.94	-
	LGA: Town of Port Hedland	1,015,339.22	1,014,599.99	99.93	-

As described in Table 3, fourteen vegetation types were recorded within the DE (SLR, 2024):

Vegetation type	Condition	Extent (ha) within DE	Extent (%) within DE
AiTe	Very Good	30.0	0.3
AoTe	Very Good	53.0	0.5
AspTe	Very Good	5,495.0	53.7
AsTe	Very Good	2,963.1	29.0
At	Very Good	18.3	0.2
CcAcTe	Very Good	123.9	1.2
CfAh	Degraded	42.5	0.4
EvAcTe	Good to Very Good	263.5	2.6
EvEa	Very Good	24.1	0.2
FspAh	Very Good	1.8	0.0
FspTe	Very Good	13.5	0.1
MaEc	Good	165.7	1.6
Sh	Degraded	9.6	0.1
TsTe	Very Good	829.2	8.1
Cleared		200.8	2.0
Total		10,233.9	100%

As described in Table 3, the vegetation condition in the DE varied from Degraded to Very Good, with the majority in Very Good condition (SLR, 2024).

Eight introduced flora taxa were recorded in the DE (SLR, 2024):

- Kapok (**Aerva javanica*)
- Neem tree (**Azadirachta indica*)
- Calotrope (**Calotropis procera*)
- Buffel grass (**Cenchrus ciliaris*)
- **Indigofera oblongifolia*
- Spiked Malvastrum (**Malvastrum Americanum*)
- Stinking Passion Flower (**Passiflora foetida*)

<table>
<tr><th>Environmental value</th><th>Assessment</th></tr>
<tr><td></td><td>
Mimosa Bush (*Vachellia farnesiana)
None of the introduced flora species are listed as Weeds of National Significance (WoNS). One taxon (*Calotropis procera) is listed as a Declared Pest under the Biosecurity and Agriculture Management Act 2007 (BAM Act), of which approximately 144 individuals were recorded opportunistically, and another four individuals within flora sites (SLR, 2024).
</td></tr>
<tr><td>Fauna habitat</td><td>
As described in Table 3, nine fauna habitat types were recorded within the DE (SLR, 2024):
<table>
<tr><th>Fauna habitat</th><th>Extent (ha) within DE</th><th>Extent (%) within DE</th></tr>
<tr><td>Closed Acacia Shrubland</td><td>15.0</td><td>0.1</td></tr>
<tr><td>Low Acacia stellaticeps over Triodia</td><td>2966.9</td><td>29.0</td></tr>
<tr><td>Major Drainage</td><td>165.7</td><td>1.6</td></tr>
<tr><td>Minor Drainage</td><td>24.1</td><td>0.2</td></tr>
<tr><td>Mixed Acacia Shrubs and Triodia Plains</td><td>5501.3</td><td>53.8</td></tr>
<tr><td>Open Eucalypt Woodland</td><td>429.9</td><td>4.2</td></tr>
<tr><td>Outcrops and Breakaways</td><td>43.6</td><td>0.4</td></tr>
<tr><td>Sparse Triodia Plains</td><td>838.8</td><td>8.2</td></tr>
<tr><td>Stony Hills</td><td>47.8</td><td>0.5</td></tr>
<tr><td>Cleared</td><td>200.8</td><td>2.0</td></tr>
<tr><td>Total</td><td>10,233.9</td><td>100%</td></tr>
</table>
</td></tr>
<tr><td>Significant fauna</td><td>
Two significant fauna species were recorded in the DE (SLR, 2024):

Pilbara Leaf-nosed Bat (Rhinonicteris aurantia (Pilbara form)) – Vulnerable
Western Pebble-mound Mouse (Pseudomys chapmani) – Priority 4.

Additional conservation significant fauna assessed as known to occur in the DE are (SLR, 2024):

Northern Quoll (Dasyurus hallucatus) – Endangered
Bilby (Macrotis lagotis) – Vulnerable

Conservation significant fauna assessed as likely to occur in the DE are (SLR, 2024):

Grey Falcon (Falco hypoleucos) – Vulnerable
Oriental Pratincole (Glareola maldivarum) – Migratory
Common Greenshank (Tringa nebularia) – Migratory
Barn Swallow (Hirundo rustica) – Migratory
Little Curlew (Numenius minutus) – Migratory
Oriental Plover (Charadrius veredus) – Migratory
Osprey (Pandion haliaetus) – Migratory
Peregrine Falcon (Falco peregrinus) – Other specially protected fauna
Ghost Bat (Macroderma gigas) – Vulnerable
Brush-tailed Mulgara (Dasycercus blythi) – Priority 4
Pilbara Olive Python (Liasis olivacea barroni) – Vulnerable
Conservation significant fauna assessed as may occur in the DE are (SLR, 2024):
Pilbara Grasswren (Amytornus whitei whitei) – Priority 4 (as Amytornis striatus striatus, DBCA)
Glossy Ibis (Plegadis falcinellus) – Migratory
Fork-tailed Swift (Apus pacificus) – Migratory
Short-tailed Mouse (Leggadina lakedownensis) – Priority 4
There were an additional 23 bird species that were considered to may occur in the DE due to the proximity of historic records and the limited suitable habitats within the DE.

The likelihood of occurrence assessment is provided in Appendix C.
</td></tr>
</table>

Environmental value	Assessment
Significant ecological linkages	The Major Drainage and Minor Drainage habitat types play a role as ecological linkage and provides water sources for significant species such as Northern Quoll and Pilbara Olive Python.
Ecological communities	No TECs listed under the EPBC Act or BC Act were identified within the DE during the SLR (2024) field survey. Additionally, no PECs listed by DBCA were identified within the DE during the field survey. One vegetation type, MaEc, is likely to represent GDE associated with some of the major drainages intersecting the DE. This vegetation type supports known *phreatophytic* tree species such *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens*, which are reliant on access to the groundwater table (SLR, 2024).
Significant flora	Conservation significant flora that were recorded in the DE include (SLR, 2024): • *Gymnanthera cunninghamii* (Priority 3) - Six individuals of *Gymnanthera cunninghamii* were recorded across four locations in the MaEc vegetation type. • *Tephrosia rosea* subsp. Port Hedland (A.S. George 1114) (Priority 1) - Two individuals of *Tephrosia rosea* subsp. Port Hedland were recorded from one location in the AsTe vegetation type. An additional two Priority 3 species are considered likely to occur, *Eragrostis crateriformis* (Priority 3) and *Euploca mutica* (Priority 3). The likelihood of occurrence assessment is provided in Appendix D.
Wetlands and/or waterways	Two drainage habitats within the DE are connected to an important wetland, the Leslie (Port Hedland) Saltfields System approximately 6 km north of the DE.
Water resources	The Pilbara Groundwater Area (Proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act)) is present within the DE. No Public Drinking Water Source Areas (PDWSAs) are present within the DE. The De Grey River Water Reserve (Priority 1) is located approximately 2 km east of the DE. The Pilbara Surface Water Proclaimed under the RIWI Act is present within the DE. No rivers proclaimed under the RIWI Act are present within the DE.
Conservation Reserves	No DBCA managed conservation areas occur within the DE or within 20 km of the DE.
Environmentally Sensitive Areas (ESAs)	There are no ESAs within the DE.
Land and soil quality	The DE intersects the following land systems: • Uaroo System (281Ua) - Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered Acacia shrubs. • River System (281Ri) - Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of Acacia and fringing communities of eucalypts sometimes with tussock grasses or spinifex. • Boolaloo System (281Bo) - Granite hills, domes, tor fields and sandy plains supporting spinifex grasslands with scattered shrubs. • Macroy System (281Mc) - Stony plains and occasional tor fields based on granite supporting hard and soft spinifex shrubby grasslands. • Capricorn System (281Cp) - Rugged sandstone hills, ridges, stony footslopes and interfluves supporting low Acacia shrublands or hard spinifex grasslands with scattered shrubs. • Paradise System (281Pd) - Alluvial plains supporting soft spinifex grasslands and tussock grasslands. • Boolgeeda System (280Bg) - Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands. A review of Acid Sulphate Soil (ASS) risk mapping (spatial dataset DWER-048; GoWA, 2024) indicates that the northern portion of the DE overlaps an area of moderate to low risk of ASS occurring within 3 m of natural soil surface but high to moderate risk of ASS beyond 3 m of natural soil surface. The DE does not intersect any contaminated sites (spatial dataset DWER-059; GoWA, 2024). No known contaminated sites are recorded within 20 km of the DE.

Environmental value	Assessment
Environmental heritage	There are no National or World Heritage Areas mapped as overlapping the DE.

6 Avoidance, Mitigation and Management Measures

6.1 Avoidance

Initial avoidance and minimisation was undertaken during route selection and a large area was surveyed to allow for further refinement after the biological survey, to remove environmental constraints from the DE.

The following avoidance measures have been applied:

- A 20 m avoidance buffer has been placed around Priority species recorded during the SLR (2024) survey, including:
    - *Gymnanthera cunninghamii*
    - *Tephrosia rosea* var. Port Hedland (A.S. George 1114).
- Avoidance areas have been placed around Stony Hills and Rocky Outcrops and Breakaways fauna habitat types. These will be avoided for all project activities.
- Avoidance areas have been placed around the Minor Drainage and Major Drainage habitat types. These will not be impacted by permanent clearing including permanent access tracks, there may be minor temporary impacts to this habitat type in the form of vehicles driving over these habitat types during stringing. Helicopter stringing is being considered which will further reduce impacts to drainage lines, however this constructability decision can not be finalised until design is completed.
- Avoidance areas have been placed around the MaEc vegetation type, which is also associated with the major drainage fauna habitat type. There may still be minor temporary clearing in the form of vehicles driving over this vegetation type during stringing.

6.2 Mitigation and Management

6.2.1 Geotechnical works

A CEMP has been developed for the project (Appendix B), this lists the specific mitigation and management measures to be applied. Key management measures include:

- Avoidance areas will be clearly communicated prior to geotechnical investigations commencing and no more than 35.2 ha of clearing will be undertaken for geotechnical investigations.
- Works will be undertaken systematically to minimise re-run and compaction of access tracks.
- Standard weed and hygiene management practices which will be applied to these works.
- Mechanical clearing will be undertaken slowly and in a one-way direction to allow fauna to move offsite if present.
- Implementation of the standard management measures to minimise risks to vegetation and flora.
- Dust, noise and vibration management measures will be implemented during construction.

6.2.2 Project infrastructure

Key management measures detailed in the CEMP for the project infrastructure include the following:

- No clearing is permitted outside the DE.
- Clearing areas are to be checked by an Environmental Specialist or Site Supervisor prior to clearing to ensure no more than 100.8 ha of clearing is undertaken for the Project (including the 35.2 ha of clearing required for geotechnical investigations detailed above).
- Clearing impacts will be further reduced through the detailed design process, including the positioning of access tracks, poles and pole pads to minimise impacts to vegetation and flora.

- Avoidance areas are to be identified and communicated prior to clearing activities commencing.
- Where possible, pre-existing access tracks will be used.
- Clearing impacts will be further reduced through the detailed design process, including the positioning of access tracks, poles and pole pads to minimise impacts to vegetation and flora.
- Works will be undertaken systematically to minimise re-run and compaction of access tracks.
- Standard weed and hygiene management practices which will be applied to these works.
- A pre-clearing toolbox will be held so all staff are aware of their responsibilities under the permit.
- Mechanical clearing will be undertaken slowly and in a one-way direction to allow fauna to move offsite if present.
- Implementation of the standard management measures to minimise risks to vegetation and flora.
- Dust, noise and vibration management measures will be implemented during construction.

6.2.3 Restoration of Cleared Areas

Restoration of the DE following temporary clearing will be undertaken, as follows:

- Topsoil will be stockpiled separately to other excavated materials.
- On completion of test pit works for the geotechnical survey, excavated materials will be placed back into the test pits. Topsoil from the test pit will then be respread over the surface.
- Recontouring of soil within the test pit and laydown areas will be undertaken to prevent compaction.
- Any clearing required for temporary purposes, and not required for ongoing maintenance, will be rehabilitated upon completion of construction including re-laying of soil and recontouring to prevent compaction.

7 Stakeholder Engagement

Horizon Power will continue engagement with Traditional Owners, local businesses and community, the local Shire and Department of Planning, Lands and Heritage prior to undertaking this work.

8 Assessment Against the 10 Clearing Principles

An assessment against the 10 Clearing Principles has been undertaken to support the NVCP application for the Project, as presented in Table 6. The assessment found that the Project may be at variance with clearing principle b and is unlikely to be at variance with any of the other clearing principles.

Table 6 Assessment Against the 10 Clearing Principles

Principle	Assessment	Outcome
(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	Up to 100.8 ha of native vegetation is proposed to be cleared for the Project within the DE, of which 40.2 ha is temporary clearing. **Vegetation** The DE is located in the Pilbara bioregion and the Roebourne and Chichester sub-regions as described by IBRA. 14 vegetation types were identified in the DE during the SLR (2024) survey. These vegetation types are described in Table 5. The vegetation condition in the DE varied from Degraded to Very Good, with the majority of vegetation in Very Good condition (95.23% of the SLR (2024) survey area). The areas of vegetation in Good, Poor or Degraded condition were often affected by weeds such as **Cenchrus ciliaris* and **Calotropis*. These occurred in areas associated with drainagelines and floodplains, which were also impacted by livestock that act as vectors for the spread of weeds. No TECs listed under the EPBC Act or BC Act were identified within the DE during the SLR (2024) field survey. Additionally, no PECs listed by DBCA were identified within the DE during the field survey. One vegetation type, MaEc, is likely to represent GDE associated with some of the major drainage lines intersecting the DE (SLR, 2024). This vegetation type supports known *phreatophytic* tree species such *Melaleuca* argentea and *Eucalyptus camaldulensis* subsp. *refulgens*, which are reliant on access to the groundwater table. As shown in Figure 2, avoidance areas for permanent clearing have been placed around the MaEc vegetation type. There may still be temporary clearing in the form of vehicles driving over this vegetation type during stringing, which will result in a negligible impact. Examination of similarities of vegetation descriptions shows the vegetation types are representative of the vegetation associations in the region (SLR, 2024). As shown in Table 5, there is a high proportion (greater than 97%) of the pre-European extent of these vegetation associations remaining. **Flora** 172 flora taxa (including subspecies and varieties) representing 40 families and 94 genera were recorded in the DE during the SLR (2024) field survey. This total comprised 164 native taxa and eight introduced flora taxon. The below conservation significant flora that were recorded in the DE have been excluded from the DE with a 20 m buffer to avoid impacts from the Project (as shown in Figure 2): • *Gymnanthera cunninghamii (Priority 3 - DBCA)* • *Tephrosia rosea* subsp. Port Hedland *(A.S. George 1114) (Priority 1 - DBCA).* As outlined in Appendix D, an additional eight Priority flora species were considered to likely occur or may occur within the DE: • *Eragrostis crateriformis* (Priority 3) • *Euploca mutica* (Priority 3) • *Euploca parviantrum* (Priority 1) • *Euphorbia inappendiculata* var. *inappendiculate* (Priority 2) • *Abutilon* sp. *Pritzelia*num (S. van Leeuwen 5095) (Priority 3)	Proposed clearing is unlikely to be at variance to this Principle.

Principle	Assessment	Outcome
	• *Euphorbia clementii* (Priority 3) • *Rothia indica* subsp. *australis* (Priority 3) • *Bulbostylis burbidgeae* (Priority 4). Eight introduced flora taxa were recorded in the DE: • *Kapok (*Aerva javanica)* • *Neem tree (*Azadirachta indica)* • *Calotrope (*Calotropis procera)* • *Buffel grass (*Cenchrus ciliaris)* • **Indigofera oblongifolia* • *Spiked Malvastrum (*Malvastrum Americanum)* • *Stinking Passion Flower (*Passiflora foetida)* • *Mimosa Bush (*Vachellia farnesiana)* None of these introduced flora species are listed as WoNS. One taxon (**Calotropis procera*) is listed as a Declared Pest under the *Biosecurity and Agriculture Management Act 2007* (BAM Act), of which approximately 144 individuals were recorded opportunistically, and another four individuals within flora sites that were surveyed by SLR (2024). Standard weed and hygiene management practices which will be applied to mitigate the spread of weeds from the Project. The suite of flora taxa recorded during the survey is considered typical for the bioregion and aligns with the database search results obtained (SLR, 2024). **Fauna Habitat** Nine fauna habitat types were recorded within the DE during the SLR (2024) survey (Closed *Acacia* Shrubland, Low *Acacia stellaticeps* over *Triodia*, Major Drainage, Minor Drainage, Mixed *Acacia* Shrubs and *Triodia* Plains, Open Eucalypt Woodland, Outcrops and Breakaways, Sparse *Triodia* Plains and Stony Hills). These habitat types are described in Table 5. The habitat types recorded in the DE are typical of the Pilbara bioregion and consistent with habitats identified by previous studies in the region (SLR, 2024). Nearly all fauna habitat types extend outside the DE to form larger ecosystems. However, there is one pocket of Stony Hills and Closed *Acacia* Shrubland habitats, and a series of Outcrops and Breakaways habitat contained entirely within the DE which lack connectivity to similar habitats (SLR, 2024). Avoidance areas have been placed around Stony Hills and Rocky Outcrops and Breakaways habitat types to prevent impacts from the Project. The Major Drainage and Minor Drainage habitat types play a role as ecological linkages, and provide water sources for significant species such as Northern Quoll and Pilbara Olive Python. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types during stringing, which will result in a negligible impact. The avoidance areas around the Stony Hills, Rocky Outcrops and Breakaways, Major Drainage and Minor Drainage habitats are shown in Figure 2 to mitigate impacts to conservation significant fauna from clearing of important habitat. **Fauna**	

Principle	Assessment	Outcome
	A total of 63 fauna species were identified in the DE (SLR, 2024). This total comprised 33 birds, 14 mammals and 16 reptiles and included three introduced species (European Cattle, Cat and Domestic Pigeon/Rock Dove). The DE has a typical level of fauna diversity, based on comparisons of fauna diversity captured in other fauna surveys conducted in the region (See Table 3). Two significant fauna species were recorded in the DE (SLR, 2024): • Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* (Pilbara form)) – Vulnerable • Western Pebble-mound Mouse (*Pseudomys chapmani*) – Priority 4. Additional conservation significant fauna assessed as known to occur in the DE and are detailed in Principle b. The Project will mitigate impacts to biological diversity by utilising existing access tracks and degraded areas where possible, as well as the application of avoidance areas for significant aspects identified in the biological survey. Overall, the flora, vegetation and fauna values of the DE are highly represented outside the DE and surrounding vegetation typically has similar or better condition vegetation. The native vegetation within the DE is not considered to comprise high levels of biological diversity compared to the surrounding region, and as such, the proposed clearing is not considered to be at variance with this principle.	
(b) Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous Western Australia.	**Fauna Habitat** Nine fauna habitat types were recorded within the DE and are described in Table 5. The habitat types recorded in the DE are typical of the Pilbara bioregion and consistent with habitats identified by previous studies in the region (SLR, 2024). Nearly all fauna habitat types extend outside the DE to form larger ecosystems. However, there is one pocket of Stony Hills and Closed *Acacia* Shrubland habitats, and a series of Outcrops and Breakaways habitat contained entirely within the DE which lack connectivity to similar habitats (SLR, 2024). Avoidance areas have been placed around Stony Hills and Rocky Outcrops and Breakaways habitats as these were considered high value habitat for conservation significant species and are located in discrete pocket that can be excluded from the impact area. The Major Drainage and Minor Drainage habitat types play a role as ecological linkage and provides water sources for some significant species. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types during stringing, which will result in a negligible impact. The avoidance areas around the Stony Hills, Rocky Outcrops and Breakaways, Major Drainage and Minor Drainage habitats are shown in Figure 2 to mitigate impacts to conservation significant fauna from clearing of important habitat. **Fauna** The desktop assessment conducted by SLR (2024) identified the presence/potential presence of 76 significant fauna species within 50 km of the DE. This total comprised 62 birds, 11 mammals and three reptiles. A total of 63 fauna species were identified in the DE (SLR, 2024). This total comprised 33 birds, 14 mammals and 16 reptiles and included three introduced species (European Cattle, Cat and Domestic Pigeon/Rock Dove). The DE has a typical level of fauna diversity, based on comparisons of fauna diversity captured in other fauna surveys conducted in the region. The habitat preferences and suitable habitat within the DE for the conservation significant fauna that are considered known, likely or may occur within the DE are described in Appendix C. Appendix C also outlines whether habitat is considered critical to the survival of a species, according to relevant recovery plans and conservation advice. The discussion of potential impacts for these species is provided below. *Northern Quoll*	Proposed clearing may be at variance to this Principle.

Principle	Assessment	Outcome
	The Northern Quoll is listed as Endangered under the BC Act and known to occur in the DE. As described in Appendix C, the Outcrops and Breakaways and Stony Hills habitats within the DE are considered habitat critical to the survival of the Northern Quoll (Hill and Ward, 2010). Avoidance areas have been applied around these two habitat types to mitigate impacts to the Northern Quoll. Additionally, the Major Drainage and Minor Drainage habitats would provide valuable water sources for the Northern Quoll after significant rain events. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types during stringing, which will result in a negligible impact. The Northern Quoll may also utilise the Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains and Sparse *Triodia* Plains habitat types within the DE for foraging and dispersal, which is considered supporting habitat. Up to 100.8 ha may be cleared for the Project, of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing. Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Northern Quoll is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha of foraging and dispersal habitat for the Northern Quoll, represents approximately 0.03% of potential habitat available within 20 km of the DE. Up to 60.6 ha of permanent clearing of foraging and dispersal habitat for Northern Quoll is proposed, consisting predominantly of 20m x 20m pole pads and a small maintenance access track. Given the linear nature of the Project, the dispersal and foraging habitat for Northern Quoll in the region is unlikely to be significantly impacted. *Pilbara Leaf-nosed Bat* The Pilbara Leaf-nosed Bat is listed as Vulnerable under the BC Act and known to occur in the DE. As described in Appendix C, the Outcrops and Breakaways and Stony Hills habitats within the DE are considered habitat critical to the survival of the Pilbara Leaf-nosed bat (TSSC, 2016). Avoidance areas have been applied around these two habitat types to mitigate impacts to the Pilbara Leaf-nosed Bat. Additionally, the Major Drainage and Minor Drainage habitats may provide potential foraging and dispersal habitat for the species. Avoidance areas have also been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. The Pilbara Leaf-nosed Bat may also utilise the Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains and Open Eucalypt Woodland habitats for foraging and dispersal. As described in Appendix C, these habitats are considered critical to the survival of the Pilbara Leaf-nosed Bat (TSSC, 2016) and up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Pilbara Leaf-nosed Bat is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE. Given this species is aerial and Pilbara Leaf-nosed Bats can range over 20 km for foraging (Bat Call WA, 2021), the proposed clearing is not considered a significant impact on Pilbara Leaf- nosed bat foraging or dispersal habitat. *Bilby* The Bilby is listed as Vulnerable under the BC Act and known to occur in the DE. As described in Appendix C, the Low *Acacia stellaticeps* over *Triodia* and Sparse *Triodia* Plains habitats within the DE are considered habitat critical to the survival of the Bilby (DCCEEW, 2023b) due to their values for denning, foraging and dispersal. Up to 100.8 ha of these critical habitats may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing).	

Principle	Assessment	Outcome
	Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Bilby is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE. No burrows were identified for Bilby in the survey area. Up to 60.6 ha of permanent clearing of critical habitat for Bilby is proposed, consisting predominantly of 20m x 20m pole pads and a small maintenance access track. *Western Pebble-mound Mouse* The Western Pebble-mound Mouse is listed as Priority 4 by DBCA and known to occur in the DE. As described in Appendix C, the Outcrops and Breakaways and Stony Hills habitat types occur within the DE in discrete pockets, and are considered habitat critical to the survival of the Western Pebble-mound Mouse. Avoidance areas have been applied around these two habitat types to mitigate impacts to the Western Pebble-mound Mouse. The Western Pebble-mound Mouse may also utilise other habitat types within the DE for foraging and dispersal. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Western Pebble-mound Mouse is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE. The project will require the permanent clearing of up to 60.6 ha of foraging and dispersal habitat for Western Pebble Mound Mouse. Given the sporadic nature of the clearing for the poles, narrow access track, and abundance of alternative habitat in the region, this impact is not considered significant to Western Pebble Mound mouse. *Grey Falcon* The Grey Falcon is listed as Vulnerable under the BC Act and is likely to occur in the DE. As described in Appendix C, the Major Drainage and Minor Drainage habitats in the DE may be suitable nesting habitat for the Grey Falcon. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. The Grey Falcon may also utilise the Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Open Eucalypt Woodland and Sparse *Triodia* Plains habitat types within the DE for foraging and dispersal. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Grey Falcon is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE. The Grey Falcon occurs in a wide variety of habitats which are abundant in the area (Ehmann and Watson, 2008). As Grey Falcon habitat is abundant in the area and potential nesting habitat will be avoided, it is unlikely that clearing of potential foraging and dispersal habitat for the Project will significantly impact this species. *Oriental Pratincole* The Oriental Pratincole is listed as Migratory under the BC Act and is likely to occur in the DE. As described in Appendix C, the Major Drainage and Minor Drainage habitats in the DE may be suitable foraging habitat for the Oriental Pratincole. Avoidance areas have been placed around	

Principle	Assessment	Outcome
	these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. The Oriental Pratincole may also utilise other habitat types within the DE for foraging. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Oriental Pratincole is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.22% of potential habitat available within 20 km of the DE. As the Oriental Pratincole does not breed in Australia, habitat is abundant in the area and the species is likely to be transient within the DE, significant impacts to this species are considered unlikely. *Common Greenshank* The Common Greenshank is listed as Migratory under the BC Act and is likely to occur in the DE. As described in Appendix C, the Major Drainage and Minor Drainage habitats in the DE may be suitable foraging habitat for the Common Greenshank and are considered habitat critical to the species' survival (DCCEEW, 2024e). Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be some minor temporary clearing in the form of vehicles driving over these habitat types. The Common Greenshank was also considered likely to utilize *Triodia* habitat types (SLR 2024). These are also considered habitat critical to the survival of the Common Greenshank (DCCEEW, 2024e). Up to 100.8 ha may be cleared for the Project, including 60.6 ha of permanent clearing. Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Common Greenshank is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.22% of potential habitat available within 20 km of the DE. The Common Greenshank does not breed in Australia and is likely to be transient within the DE. Given the abundant habitat within the region and the sporadic nature of the permanent clearing proposed (20m x 20m pole pads connected by access track), the Project is unlikely to have a significant impact on Common Greenshank. *Barn Swallow* The Barn Swallow is listed as Migratory under the BC Act and is likely to occur in the DE. As described in Appendix C, the Major Drainage and Minor Drainage habitats in the DE may be suitable foraging, roosting and dispersal habitat for the Barn Swallow. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. The Barn Swallow may also utilise the Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, and Sparse *Triodia* Plains habitat types within the DE for foraging, roosting and dispersal. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Barn Swallow is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.22% of potential habitat available within 20 km of the DE. As the Barn Swallow does not breed in Australia, habitat is abundant in the area and the species is likely to be transient within the DE, it is unlikely that clearing would be significant.	

Principle	Assessment	Outcome
	Little Curlew The Little Curlew is listed as Migratory under the BC Act and is likely to occur in the DE. As described in Appendix C, the Major Drainage and Minor Drainage habitats in the DE may be suitable foraging habitat for the Little Curlew. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. The Little Curlew may also utilise the Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains and Open Eucalypt Woodland habitat types within the DE for foraging. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Little Curlew is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE. As the Little Curlew does not breed in Australia, habitat is abundant in the area and the species is likely to be transient within the DE, the proposed clearing is unlikely to be significant. *Oriental Plover* The Oriental Plover is listed as Migratory under the BC Act and is likely to occur in the DE. As described in Appendix C, the Major Drainage and Minor Drainage habitats in the DE may be suitable foraging habitat for the Oriental Plover. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. The Oriental Plover may also utilise the Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains and Sparse *Triodia* Plains habitat types within the DE for foraging. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Oriental Plover is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE. As the Oriental Plover does not breed in Australia, habitat is abundant in the area and the species is likely to be transient within the DE, the proposed clearing is unlikely to be significant. *Osprey* The Osprey is listed as Migratory under the BC Act and is likely to occur in the DE. As described in Appendix C, the Major Drainage and Minor Drainage habitats in the DE may be suitable foraging and dispersal habitat for the Osprey. SLR (2024) defined these habitats as critical to the survival of the species. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Osprey is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.20% of potential habitat available within 20 km of the DE.	

Principle	Assessment	Outcome
	As Osprey habitat is abundant in the area, the species is likely to be transient within the DE, and permanent clearing of critical habitat for the Project will be avoided, the proposed clearing is unlikely to be significant. *Peregrine Falcon* The Peregrine Falcon is listed as Other Specially Protected Fauna by DBCA and is likely to occur in the DE. As described in Appendix C, the Major Drainage and Minor Drainage habitats in the DE may be suitable nesting, dispersal and foraging habitat for the Peregrine Falcon. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. The Peregrine Falcon may also utilise the Open Eucalypt Woodland habitat type within the DE for nesting, dispersal and foraging. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Peregrine Falcon is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.82% of potential habitat available within 20 km of the DE. As Peregrine Falcon habitat is abundant in the area, it is unlikely that clearing would result in a significant impact to this species. *Ghost Bat* The Ghost Bat is listed as Vulnerable under the BC Act and is likely to occur in the DE. As described in Appendix C, habitat critical to the survival of the Ghost Bat isn't defined, however, Biota (2024) defined the rocky hills habitat within their survey area (which intersects the DE) as potential critical habitat for the Ghost Bat (Biota, 2024). This habitat is considered similar to the Outcrops and Breakaways habitat and is therefore considered critical habitat as well. Avoidance areas have been applied this habitat type to mitigate impacts to the Ghost Bat. The Ghost Bat may also utilise the Major Drainage and Minor Drainage habitat types within the DE for foraging and dispersal. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. Due to avoidance areas being implemented in the DE, no habitat for the Ghost Bat will be cleared for the Project (except potential minor temporary clearing of drainage lines from vehicles). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Ghost Bat is widespread within a 20 km radius of the DE. As Ghost Bat habitat is abundant in the area, and clearing of critical habitat and other potential foraging and dispersal habitat will be avoided, it is unlikely the Project will significantly impact this species. *Brush-tailed Mulgara* The Brush-tailed Mulgara is listed as Priority 4 by DBCA and is likely to occur in the DE. As described in Appendix C, the Low *Acacia stellaticeps* over *Triodia* and Mixed *Acacia* Shrubs and *Triodia* Plains habitat types may be used as burrowing, foraging and dispersal habitats by the Brush-tailed Mulgara. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Brush-tailed Mulgara is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE.	

Principle	Assessment	Outcome
	As Brush-tailed Mulgara habitat is abundant in the area, it is unlikely that clearing of potential burrowing, foraging and dispersal habitat (which is not considered critical habitat) for the Project would result in a significant impact to this species. *Pilbara Olive Python* The Pilbara Olive Python is listed as Vulnerable under the BC Act and is likely to occur in the DE. As described in Appendix C, critical habitat is not defined for this species (DEWHA, 2008). However, Biota (2024) defined the rocky hills habitat they recorded within the Atlas Iron survey area as potential critical habitat for the species. The Outcrops and Breakaway habitat is similar and therefore potentially critical habitat for the species. Avoidance areas have been applied this habitat type to mitigate impacts to the Pilbara Olive Python. The Pilbara Olive Python may also utilise the Major Drainage and Minor Drainage habitat types within the DE for foraging. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Pilbara Olive Python is widespread within a 20 km radius of the DE. As Pilbara Olive Python habitat is abundant in the area, and clearing of critical habitat and other potential foraging habitat will be avoided, it is unlikely the Project will significantly impact this species. *Pilbara Grasswren* The Pilbara Grasswren is listed as Priority 4 by DBCA and may occur in the DE. As described in Appendix C, SLR (2024) defined Stony Hills habitat in the DE as habitat critical to the survival of the Pilbara Grasswren due to its value for foraging and shelter. Avoidance areas have been applied this habitat type to mitigate impacts to the Pilbara Grasswren. The Pilbara Grasswren may also utilise the Sparse *Triodia* Plains habitat type within the DE for foraging and shelter. SLR (2024) also defined this habitat as critical to the survival of the Pilbara Grasswren. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Pilbara Grasswren is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE. The Project will result in clearing of up to 100.8 ha of critical habitat for foraging and shelter for the Pilbara Grasswren. *Short-tailed Mouse* The Short-tailed Mouse is listed as Priority 4 by DBCA and may occur in the DE. As described in Appendix C, SLR (2024) defined the Stony Hills habitat within the DE as habitat critical to the survival of the Short-tailed Mouse due to its foraging and shelter values. Avoidance areas have been applied around this habitat type to mitigate impacts to the Short-tailed Mouse. The Short-tailed Mouse may also utilise the Sparse *Triodia* Plains habitat type within the DE for foraging and shelter. SLR (2024) also defined this habitat type as habitat critical to the survival of the species. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for the Short-tailed Mouse is widespread within a 20 km radius of the DE. Clearing of up to 100.8 ha within the DE, represents approximately 0.03% of potential habitat available within 20 km of the DE.	

Principle	Assessment	Outcome
	The Project will result in clearing of up to 100.8 ha of critical foraging and shelter habitat for the Short-tailed Mouse. *Other Birds* The Glossy Ibis, Fork-tailed Swift, Curlew Sandpiper, Great Knot, Red Knot, Grey-tailed Tattler, White-winged Black Tern, Gull-billed Tern, Caspian Tern, Common Tern, Common Sandpiper, Sharp-tailed Sandpiper, Sanderling, Borad-billed Sandpiper, Pectoral Sandpiper, Ruff, Red-necked Stint, Long-toed Stint, Pin-tailed Snipe, Bar-tailed Godwit, Black-tailed Godwit, Whimbrel, Red-necked Phalarope, Wood Sandpiper and Marsh Sandpiper may occur in the DE. As described in Appendix C, the bird species may use the Major Drainage and Minor Drainage habitats within the DE for foraging and dispersal after flooding events. This is considered critical habitat for the Curlew Sandpiper, Great Knot, Red Knot, Sharp-tailed Sandpiper and Black-tailed Godwit as any foraging habitat is considered critical habitat for these species (DCCEEW, 2023a; DCCEEW, 2024a, DCCEEW, 2024b; DCCEEW, 2024c; DCCEEW, 2024d). Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types, which will result in a negligible impact. The Glossy Ibis may also utilise the Low Acacia *stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains and Sparse *Triodia* Plains habitats within the DE for foraging and breeding. Up to 100.8 ha may be cleared for the Project (of which only 60.6 ha is permanent clearing and 40.2 is temporary clearing). The Fork-tailed Swift may use the Outcrops and Breakaways and Stony Hills habitats in the DE for suitable foraging and dispersal. Avoidance areas have been applied around the Outcrops and Breakaways and Stony Hills habitat types to mitigate impacts to the Fork-tailed Swift. The Fork-tailed Swift may also utilise the Closed *Acacia* Shrubland, Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Open Eucalypt Woodland and Sparse *Triodia* Plains habitats within the DE for foraging and dispersal. Based on aerial imagery and the Native Vegetation Extent (spatial dataset DPIRD-005, GoWA 2024) and Pre-European Vegetation (spatial dataset DPIRD-006, GoWA 2024) datasets, habitat for these bird species is widespread within a 20 km radius of the DE. The main impact to these migratory species would be mortality of individuals from direct collisions with vehicles and the power line infrastructure. As the migratory species that may potentially occur would be likely utilising the habitat as temporary only during flooding events, the number of individuals killed from direct collisions is not expected to be significant. As habitat is abundant in the area, the species are likely to be transient in the DE, and clearing of critical habitat will be avoided, it is unlikely the Project will significantly impact these species. *Outcome* Avoidance areas have been applied around the majority of critical habitat for conservation significant species to minimise impacts from the project, and temporary clearing will be rehabilitated. The project is linear and sporadic in nature, with permanent clearing consisting mainly of 20m x 20m pole pads and a narrow maintenance access track connecting the poles, similar to other transmission infrastructure in the Pilbara. Given the abundance of alternative habitat in the region, significant impacts are not expected as the Project will not significantly limit dispersal or foraging habitat in the region. The project may be at variance to Principle b) due to the clearing of critical (foraging, shelter and dispersal) habitat for Pilbara Leaf-nosed Bat, Bilby, Pilbara Grasswren and Short-tailed Mouse.	
(c) Native vegetation should not be cleared if it includes, or is necessary for the	No flora species listed as Threatened under the BC Act or EPBC Act were recorded in the DE by SLR (2024) or were considered likely to occur or may occur within the DE. The proposed clearing of native vegetation for the Project is therefore unlikely to be at variance with this principle.	Proposed clearing is unlikely to be at variance to this Principle.

Principle	Assessment	Outcome
continued existence of, rare flora.		
(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.	No TECs listed under the EPBC Act or BC Act were identified within the DE during the SLR (2024) survey. As no vegetation within the DE is representative of any TEC, the proposed clearing is not at variance to this Principle.	Proposed clearing is not at variance to this Principle.
(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	14 vegetation types were identified in the DE during the SLR (2024) survey (AiTe, AoTe, AspTe, AsTe, At, CcAcTe, CfAh, EvAcTe, EvEa, FspAh, FspTe, MaEc, Sh and TsTe). These vegetation types are described in Table 5. Broad scale (1:250,000) pre-European vegetation mapping of the area was completed by Beard (1976) at an association level. Vegetation associations 589, 619, 647 and 93 are present in the DE. As shown in Table 5, there is a high proportion (greater than 97%) of the pre-European extent of these vegetation associations remaining. Examination of similarities of vegetation descriptions shows the vegetation types are representative of the vegetation associations in the region (SLR, 2024). The DE is not within an area that has been extensively cleared given is has more than 97% of pre-European extent remaining. Overall, the flora and vegetation values of the DE are highly represented outside the DE and surrounding vegetation typically has similar or better condition vegetation. The vegetation types identified during the survey are not confined to the DE and are considered well represented at the local and regional scale.	Proposed clearing is not at variance to this Principle.
(f) Native vegetation should not be cleared if it is growing in or in association with a watercourse or wetland.	One vegetation type, MaEc, is likely to represent a GDE associated with some of the major drainages intersecting the DE (SLR, 2024). This vegetation type supports known phreatophytic tree species such *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens*, which are reliant on access to the groundwater table. As shown in Figure 2, avoidance areas for permanent clearing have been placed around the MaEc vegetation type, which is associated with the drainage habitats. There may still be temporary clearing in the form of vehicles driving over this vegetation type, which will result in a negligible impact. Two drainage habitats within the DE (Major Drainage and Minor Drainage) are connected to an important wetland, the Leslie (Port Hedland) Saltfields System approximately 6 km north of the DE. There will be no permanent clearing of these habitat types for the Project, and any temporary clearing will be associated with driving over vegetation for stringing. Therefore, the impact to these drainage habitats are expected to be negligible. The proposed clearing is unlikely to be at variance with this Principle.	Proposed clearing is unlikely to be at variance to this Principle.
(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to	The DE intersects the following land systems (Van Vreeswyk et al., 2004): • Uaroo System (281Ua) - Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered *Acacia* shrubs. Occasionally some erosion and pasture decline is evident on drainage tracts, but generally the system is not susceptible to erosion or significant vegetation degradation.	Proposed clearing is unlikely to be at variance to this Principle.

Principle	Assessment	Outcome
cause appreciable land degradation.	• River System (281Ri) - Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of *Acacias* and fringing communities of eucalypts sometimes with tussock grasses or spinifex. The system is largely stabilised by buffel and spinifex and accelerated erosion is uncommon. However, susceptibility to erosion is high or very high if vegetative cover is removed. • Boolaloo System (281Bo) - Granite hills, domes, tor fields and sandy plains supporting spinifex grasslands with scattered shrubs. The spinifex vegetation is not usually prone to grazing induced degradation but is subject to fairly frequent burning. • Macroy System (281Mc) - Stony plains and occasional tor fields based on granite supporting hard and soft spinifex shrubby grasslands. The system has low or very low erosion hazard. • Capricorn System (281Cp) - Rugged sandstone hills, ridges, stony footslopes and interfluves supporting low *Acacia* shrublands or hard spinifex grasslands with scattered shrubs. The stoniness of this land system confers resistance to erosion. • Paradise System (281Pd) - Alluvial plains supporting soft spinifex grasslands and tussock grasslands. The system is prone to periodic flooding. Much of the vegetation on the system is favoured by grazing animals and is prone to degradation if overgrazed. Loamy plains and alluvial plains are highly susceptible to water and wind erosion if the vegetative cover is depleted. • Boolgeeda System (280Bg) - Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands. Vegetation is generally not prone to degradation and the system is not susceptible to erosion. The majority of the DE is covered by the Uaroo System which is generally not susceptible to erosion. The River and Paradise land systems are susceptible to erosion and land degradation if vegetation cover is depleted. The River land system aligns with Drainage habitat type which will be avoided. Some temporary clearing may be required, in the form of vehicles driving over these habitat types during stringing. The remaining land systems have low erosion and degradation hazards. The soil landscape land quality mapping (spatial dataset DPIRD-017, GoWA 2024) indicates that the DE is within the De Grey-Roebourne Lowlands Zone, which is described as 'alluvial plains and sandplains on alluvial and marine deposits over the northern Pilbara Craton with Red deep sandy duplexes, Red loamy earths, Red/brown non-cracking clays, Cracking clays, Red sandy earths and Red deep loamy duplexes'. The northeastern tip of the DE overlaps the Nullagine Hills Zone, which is described as 'hills and ranges (with some stony plains) on volcanic and sedimentary rocks of the Pilbara Craton (including the Hamersley Basin) with Stony soils and Red shallow loams and sands'. A review of ASS risk mapping (spatial dataset DWER-048; GoWA, 2024) indicates that the northern portion of the DE overlaps an area of moderate to low risk of ASS occurring within 3 m of natural soil surface but high to moderate risk of ASS beyond 3 m of natural soil surface. If digging below 3m is required, an ASS investigation will be undertaken and appropriate management will be applied. The DE does not intersect any contaminated sites (spatial dataset DWER-059; GoWA, 2024). No known contaminated sites are recorded within 20 km of the DE. The clearing proposed in the DE will be 100.8 ha in total, 40.2 ha of which will be temporary clearing that will be revegetated, and 60.6 ha of which will be permanent clearing. Any dust produced during construction will be managed through the implementation of a CEMP. Given the linear nature of the Project, it is not likely that the clearing will cause appreciable land degradation. The DE contains land systems that are generally not susceptible to erosion. It is expected that hydrological regimes will be maintained through design and that standard management practices will be implemented to prevent erosion / sedimentation. Rehabilitation post construction will	

Principle	Assessment	Outcome
	be undertaken to stabilise areas that are temporarily cleared, especially if there are slopes and exposed soil that increase the risk of erosion. The Project will incorporate standard construction management measures to reduce the risk of soil erosion and sedimentation as a result of ground disturbance and clearing (Attachment B). The clearing is not expected to cause appreciable land degradation and based on the above, the proposed clearing of native vegetation for the Project is not considered to 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.	No DBCA managed conservation areas were identified within the DE or within 20 km of the DE. The proposed clearing is not at variance to this principle.	Proposed clearing is not at variance to this Principle.
(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	The DE occurs within the Pilbara Groundwater Area. The De Grey River Water Reserve (Priority 1 PDWSA) is located approximately 2 km east of the DE (GoWA, 2024). One vegetation type, MaEc, is likely to represent a GDE associated with some of the major drainages intersecting the DE (SLR, 2024). This vegetation type supports known *phreatophytic* tree species such *Melaleuca* argentea and *Eucalyptus camaldulensis* subsp. *refulgens*, which are reliant on access to the groundwater table. As shown in Figure 2, avoidance areas for permanent clearing have been placed around the MaEc vegetation type, which is associated with the drainage habitats. There may still be temporary clearing in the form of vehicles driving over this vegetation type, which will result in a negligible impact. There will be no permanent clearing of Major Drainage and Minor Drainage habitat types. Any clearing will be temporary and associated with driving over the habitat type and is therefore considered to be a negligible impact. It is not expected that the Project will require dewatering or groundwater abstraction within the DE. The groundwater bores within the DE are drilled to depths ranging from 7.9 m to 72 m. Potential impacts to surface water quality from erosion / sedimentation / hydrocarbons will be managed by the CEMP. Clearing within the DE is unlikely to cause deterioration in the quality of surface or underground water, therefore the proposal is unlikely to be at variance to this principle.	Proposed clearing is unlikely to be at variance to this Principle.
(j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the intensity of flooding.	The nearest Bureau of Meteorology (BoM) weather station with comprehensive data collection and recent historic climate data is at Port Hedland Airport (no. 004032), approximately 8 km north of the DE. Mean annual rainfall is 313.0 mm with February recording the highest monthly mean (88.3 mm) (BoM, 2024). One vegetation type, MaEc, is likely to represent a GDE associated with some of the major drainages intersecting the DE. This vegetation type supports known *phreatophytic* tree species such *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens*, which are reliant on access to the groundwater table. As shown in Figure 2, avoidance areas for permanent clearing have been placed around the MaEc vegetation type, which is associated with the drainage habitats. There may still be temporary clearing in the form of vehicles driving over this vegetation type, which will result in a negligible impact. There will be no permanent clearing of Major Drainage and Minor Drainage habitat types. Any clearing will be temporary and associated with driving over the habitat type and is therefore considered to be a negligible impact.	Proposed clearing is unlikely to be at variance to this Principle.

Principle	Assessment	Outcome
	The scale of the DE and clearing required is not likely to have an impact on the flood regimes or increase intensity of flooding in the region. The DE is located on a variety of different landforms including broad sandy plains, flood plains, river channels, granite hills, stony plains, sandstone hills, alluvial plains and stony lower slopes and plains. It is expected that the hydrological regimes of these landforms will be maintained through design and therefore unlikely to incur flooding. Additionally, given the abundance of vegetation within the surrounding region, with over 97% pre-European vegetation remaining, the proposed clearing is not expected to increase the risk of flooding. Standard management measures for construction will be in place to mitigate against / manage erosion and associated environmental aspects. Therefore, the proposed clearing of native vegetation for the Project is not considered to be at variance with this principle.	

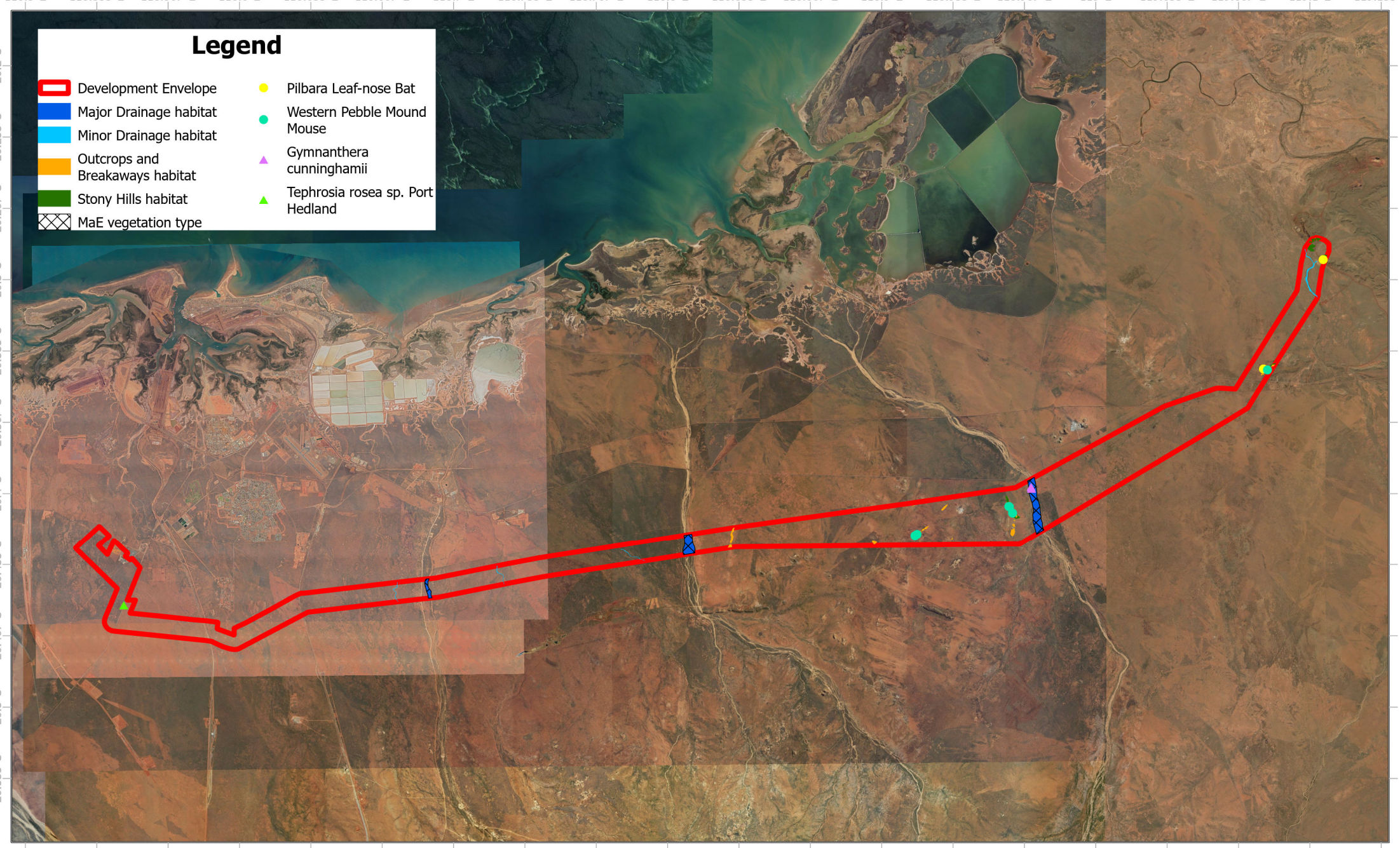


Figure 2 | Environmental Constraints

N

0 2.5 5 10 Kilometers

Scale: 1:250,000

HORIZON POWER

9 Other matters

9.1 Land Planning

9.1.1 Approvals required under the *Planning and Development Act 2005*

No approvals under the *Planning and Development Act 2005* are required for this project.

9.2 Other approvals

In considering a clearing matter under section 51O of the *Environmental Protection Act 1986* (EP Act), the DWER CEO shall have regard to any planning instrument and other relevant matters when making decisions as to clearing permits. 'Other matters' are not defined in the EP Act, and consequently are any matters the CEO considers relevant. Other matters are generally environmental issues not directly within the scope of the clearing principles, but within the object and principles of the Act. Other approvals that may apply to this Project are detailed in Table 7.

Table 7 Other approvals

Other approvals	Assessment
Referral to Environmental Protection Authority	The impact of this Proposal are only associated with vegetation clearing, and can therefore be assessed under Part V of the EP Act via a Native Vegetation Clearing Permit.
Referral to Department of Climate Change, Energy, the Environment and Water (DCCEEW)	*Threatened flora, fauna and ecological communities* No TECs were recorded in the DE. The likelihood of occurrence assessment in Appendix C shows the following species are known to occur, likely to occur or may occur within the DE: • Northern Quoll (Endangered) • Pilbara Leaf-nosed Bat (Vulnerable) • Bilby (Vulnerable) • Grey Falcon (Vulnerable) • Common Greenshank (Endangered, Migratory) • Ghost Bat (Vulnerable) • Pilbara Olive Python (Vulnerable) • Curlew Sandpiper (Critically Endangered, Migratory) • Great Knot (Vulnerable, Migratory) • Red Knot (Vulnerable, Migratory) • Sharp-tailed Sandpiper (Vulnerable, Migratory) • Black-tailed Godwit (Endangered, Migratory) As described in Table 6 (Principle b) the Project will require clearing of up to 100.8 ha of potential critical habitat for the Pilbara Leaf-nosed Bat and Bilby, and clearing of potential foraging and dispersal habitat for the Northern Quoll. Given the abundance of habitat within the region and the linear and sporadic nature of the proposed clearing, impacts are not considered significant. An assessment of Matters of National Environmental Significance identified referral to DCCEEW was not required. *Migratory fauna* The likelihood of occurrence assessment in Appendix C shows the following species are known to occur, likely to occur or may occur within the DE: • Oriental Pratincole (Migratory) • Common Greenshank (Endangered, Migratory) • Barn Swallow (Migratory) • Little Curlew (Migratory) • Oriental Plover (Migratory) • Osprey (Migratory) • Glossy Ibis (Migratory)

Other approvals	Assessment
	• Fork-tailed Swift (Migratory) • Curlew Sandpiper (Critically Endangered, Migratory) • Great Knot (Vulnerable, Migratory) • Red Knot (Vulnerable, Migratory) • Grey-tailed Tattler (Migratory) • White-winged Black Tern (Migratory) • Gull-billed Tern (Migratory) • Caspian Tern (Migratory) • Common Tern (Migratory) • Common Sandpiper (Migratory) • Sharp-tailed Sandpiper (Vulnerable, Migratory) • Sanderling (Migratory) • Broad-billed Sandpiper (Migratory) • Pectoral Sandpiper (Migratory) • Ruff (Migratory) • Red-necked Stint (Migratory) • Long-toed Stint (Migratory) • Pin-tailed Snipe (Migratory) • Bar-tailed Godwit (Migratory) • Black-tailed Godwit (Endangered, Migratory) • Whimbrel (Migratory) • Red-necked Phalarope (Migratory) • Wood Sandpiper (Migratory) • Marsh Sandpiper (Migratory) As described in Table 6 (Principle b), no significant impacts are expected to these Migratory fauna species. *National heritage* The DE does not overlap any National Heritage Areas. Aboriginal Heritage surveys have been undertaken for the Project to assess Aboriginal Heritage values within the DE in consultation with Traditional Owners. No impacts to national heritage values are expected from the proposed works. *Wetlands of international importance* The DE does not overlap any wetlands of international importance.
Works Approval or Licence under EP Act	No works approvals or licences are required for this project.
Groundwater or surface water licence under the *Rights in Water and Irrigation Act 1914*	Horizon Power is permitted to access water under Section 42 and 49 of *the Energy Operator (Powers) Act 1979*. Any licences required for construction water will be acquired by the construction contractor.
Notice of Intent to Clear system under the *Soil and Land Conservation Act 1945*	Not Applicable.
State and municipal heritage	The DE overlaps the Railway Line from Port Hedland to Newman which is on the Municipal Inventory. Aboriginal Heritage surveys are being undertaken for the Project to assess Aboriginal Heritage values within the DE in consultation with Traditional Owners.

Other approvals	Assessment
Native title	The DE intersects three separate native title determinations; • Kariyarra - WCD2018/015 – RNTBC Kariyarra Aboriginal Corporation • Ngarla Overlap Proceeding - WCD2013/001 – RNTBC Wanparta Aboriginal Corporation • Ngarla and Ngarla # 2 (Area A) - WCD2007/003 - RNTBC Wanparta Aboriginal Corporation
Aboriginal Sites of Significance under the *Aboriginal Heritage Act 1972*	The DE overlaps two Registered Aboriginal Cultural Heritage places: • Mikurrunya Hills (ACH ID: 9904): Creation / Dreaming Narrative • Kumpaja Tree (ACH ID: 729): Creation / Dreaming Narrative. The DE overlaps three Lodged Aboriginal Cultural Heritage places: • 12 Mile site (ACH ID 27412): Burial; Ritual / Ceremonial • Strelley Engravings 001, this name has been selected because the traditional name must not be used (ACH ID 37344) • PDO-43-22 (ACH ID 39654): Artefacts / scatter. Both Kariyarra and Wanparta have carried out Aboriginal Heritage surveys for the DE. Based on the findings of these surveys, heritage protection plans will be developed, in consultation with the knowledge holders. Horizon Power has an Aboriginal Cultural Heritage Management Policy, that details our commitment to *avoid impacting on Aboriginal Cultural Heritage whenever and wherever possible*. As appropriate, management measures will be implemented during activities, such as the engagement of cultural heritage monitors during ground disturbing works.

10 References

Anstee, S. (1996) “Use of External Mound Structures as Indicators of the Presence of the Pebble-Mound Mouse,” Wildlife Research, 23(4), pp. 429–434.

Bat Call WA Pty Ltd (Bat Call WA) (2021). A review of Pilbara leafnosed bat ecology, threats and survey requirements. Report prepared for the Department of Agriculture, Water and the Environment, Canberra, November. CC BY 4.0

Beard, J.S. (1976) Vegetation survey of Western Australia. Western Australia 1: 1 000 000 vegetation series. Design and cartography by Dept. of Geography, University of W.A.

Biota Environmental Sciences (Biota) (2024). Ridley Detailed Terrestrial Vertebrate Fauna Survey.

Bureau of Meteorology (BoM), 2024, Climate statistics for Australian locations. From: Climate statistics for Australian locations (bom.gov.au)

Cramer, V.A. et al. (2016) “Research priorities for the Pilbara leaf-nosed bat (Rhinonicteris aurantia Pilbara form),” Australian Mammalogy, 38(2), pp. 149–157. Available at: https://doi.org/10.1071/AM15012

DBCA (2023) DBCA Threatened and Priority Fauna Database request (Custom Search).

Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2023a). Conservation Advice for Calidris ferruginea (curlew sandpiper). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/856-conservation-advice-18122023.pdf.

DCCEEW (2023b). Recovery Plan for the Greater Bilby (Macrotis lagotis). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/greater-bilby-2023.

DCCEEW (2024a). Conservation Advice for Calidris tenuirostris (great knot). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/862-conservation-advice-05012024.pdf.

DCCEEW (2024b). Conservation Advice for Calidris canutus (red knot). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/855-conservation-advice-05012024.pdf.

DCCEEW (2024c). Conservation Advice for Calidris acuminata (sharp-tailed sandpiper). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/874-conservation-advice-05012024.pdf.

DCCEEW (2024d). Conservation Advice for Limosa limosa (black-tailed godwit). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/845-conservation-advice-05012024.pdf.

DCCEEW (2024e). Conservation Advice for Tringa nebularia (common greenshank). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/832-conservation-advice-05012024.pdf

Department of Environment Regulation (DER) (2014). A guide to the assessment of applications to clear native vegetation under Part V Division 2of the Environmental Protection Act 1986.

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2008). Approved Conservation Advice for Liasis olivaceus barroni (Olive Python - Pilbara subspecies). Canberra: Department of the

Ehmann, H. and Watson, M. (2008). Grey Falcon, Falco hypoleuca

Environment, Water, Heritage and the Arts. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/66699-conservation-advice.pdf.

Focus Vision Consulting (FVC) (2023). Detailed Flora and Vegetation Assessment

Ford, F. and Johnson, C. (2007) "Eroding abodes and vanished bridges: historical biogeography of the substrate specialist pebble-mound mice (Pseudomys)," Journal of Biogeography, 34(3), pp. 514–523.

GHD (2022). Boodarie Solar Farm survey.

Government of Western Australia (GoWA) (2024), *Data WA.* Available at: <https://data.wa.gov.au/> Accessed May 2024.

Contaminated Sites Database (DWER-059)

DBCA Statewide Vegetation Statistics

RIWI Act, Groundwater Areas (DWER-034)

Public Drinking Water Source Areas (DWER-033)

RIWI Act, Rivers (DWER-036)

RIWI Act Surface Water and Irrigation District (DWER-037)

DBCA Legislated Lands and Waters (DBCA-011)

Aboriginal Heritage Places (DPLH-001)

Heritage Council WA - State Register (DPLH-006)

Heritage Council WA - Local Heritage Survey (DPLH-008)

Acid Sulfate Soil Risk Map 100K (DWER-048)

Soil landscape land quality - Zones (DPIRD-017)

Native Vegetation Extent (DPIRD-005)

Pre-European Vegetation (DPIRD-006)

Soil Landscape Mapping - Best Available (DPIRD-027)

Soil landscape land quality - Zones (DPIRD-017)

Hill, B.M. & S.J. Ward (2010). National Recovery Plan For the Northern Quoll Dasyurus hallucatus. Department of Natural Resources, Environment, The Arts and Sport, Darwin. Available from: http://www.environment.gov.au/resource/national-recovery-plan-northern-quoll-dasyurus-hallucatus.

Phoenix Environmental (2022). Detailed terrestrial fauna and targeted Bilby Survey for the Port Hedland Solar Farm Proposal

SLR Consulting Australia (SLR) (2024), Atlas Ridley Magnetite Project Connection Flora and Fauna Survey Technical Report.

Threatened Species Scientific Committee (TSSC) (2016). Conservation Advice Rhinonicteris aurantia (Pilbara form) (Pilbara Leaf-nosed Bat). Canberra: Department of the Environment. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/82790-conservation-advice-10032016.pdf.

Van Dyck, S. and Strahan, R. (Eds) (2008). The Mammals of Australia, 3rd Edition. Reed New Holland: Chatswood, Australia.

Van Vreeswyk, A.M.E. Payne, A.L. Leighton, K.A. Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.

Appendix A: Atlas Ridley Magnetite Project Connection Flora and Fauna Survey Technical Report

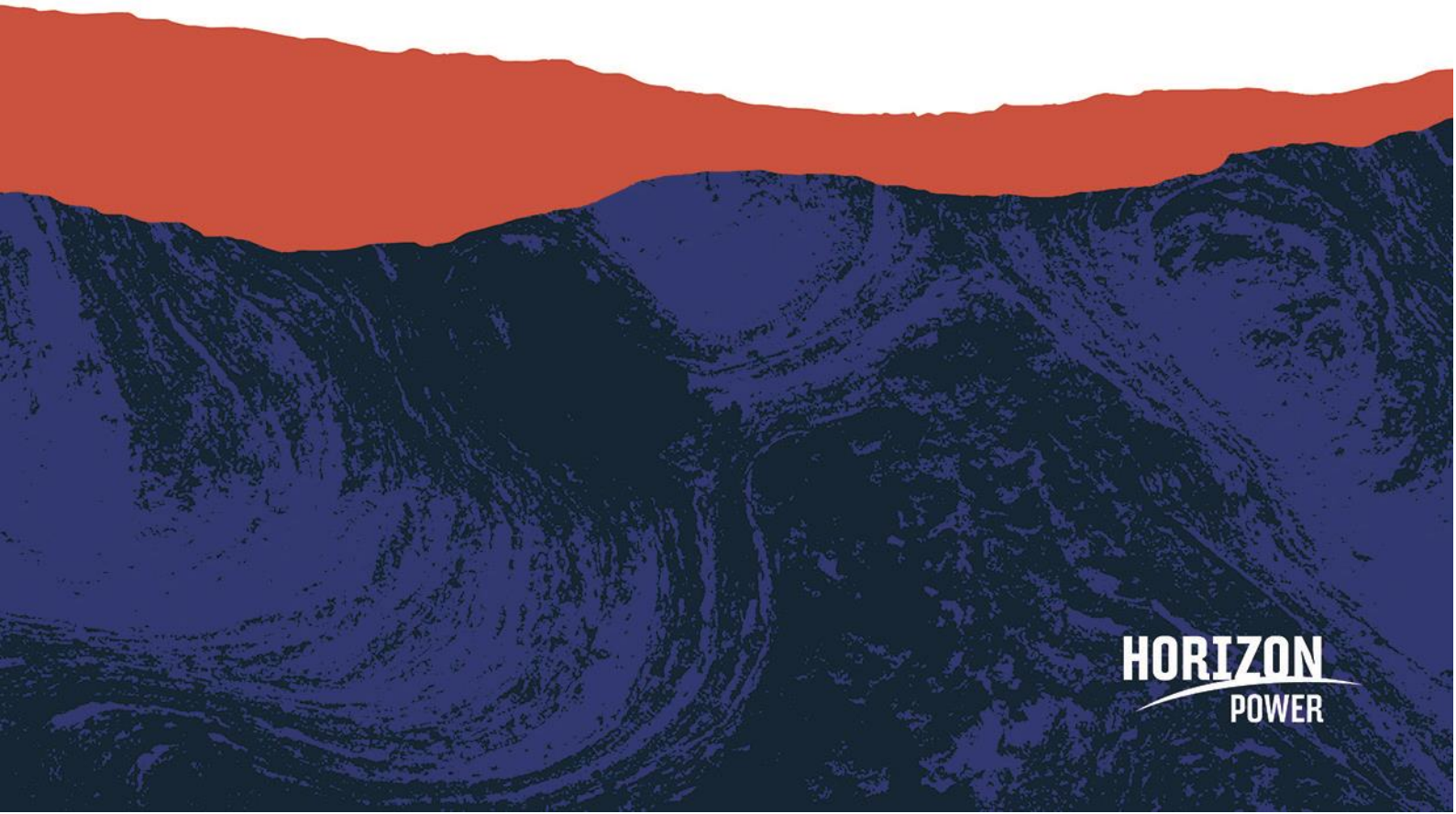
Appendix B: Construction Environmental Management Plan

PROTECTED

East Pilbara Connection Project

Construction Environmental Management Plan

August 2024



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1 Introduction

1.1 Project Context and Scope

Regional Power Corporation, trading as (T/A) Horizon Power, is a Western Australian (WA) Government Trading Enterprise (GTE) and the state's regional and remote energy provider. Horizon Power operates under the *Electricity Corporations Act 2005* and is governed by a Board of Directors accountable to the Minister for Energy.

Horizon Power is proposing to construct a 220 kV dual circuit common use transmission line connecting the South Hedland Terminal to the proposed Atlas Ridley Magnetite Mine, in the Pilbara region in Western Australia (the Project). The estimated length of the Transmission Line is 70.2 km comprising of mono poles, with an average height of 40 m. The Project is also likely to consist of access tracks along the pole route, geotechnical investigations and laydown areas for construction.

The Project involves the following permanent elements which will require up to 60.6 ha of permanent clearing:

– Approximately 70.2 km long 220 kV overhead transmission line
– Approximately 201 poles with a 20 x 20 m clearing footprint
– Permanent cleared access tracks (approximately 4 m wide).

The Project involves the following temporary elements which will require up to 40.2 ha of temporary clearing:

– Laydown area
– Geotechnical investigations
– Sites to facilitate stringing and winching of the transmission line.

1.2 Scope and purpose

This Construction Environmental Management Plan (CEMP) has been developed to outline environmental management measures to be implemented by Horizon Power and its contractors during the construction of the Project. This includes, but is not limited to, measures to manage dust, erosion and spread of weeds during clearing of native vegetation.

Figure 1 | **Project Location and Development Envelope**

N

0 2.5 5 10 Kilometers

Scale: 1:250,000

HORIZON POWER

2 Description of the Activity

2.1 Activity Overview

The project requires geotechnical survey works, which will consist of mainly incidental clearing (driving over and parking on native vegetation) for vehicle / machinery access to test sites. The Project also requires construction of the overhead transmission line including poles and permanent access tracks which will be used for maintenance.

2.2 Clearing of Native Vegetation

The proposed clearing will occur within the Development Envelope (Figure 1) which is 10,363 ha in size. No more than 100.8 ha of clearing is proposed, as shown in Table 1.

Clearing of native vegetation within the DE will only be undertaken as specified by the Clearing Permit, including the extent and method of clearing to be undertaken and any specific management measures outlined in the permit conditions.

Table 1 Clearing estimated within the DE

Proposed clearing	Clearing breakdown
100.8 ha	– Permanent clearing: 60.6 ha – Temporary clearing: 40.2 ha

3 Avoidance Measures

Initial avoidance and minimisation was undertaken during route selection and a large area was surveyed to allow for further refinement after the biological survey, to remove environmental constraints from the DE. The following avoidance measures have been applied:

- A 20 m avoidance buffer has been placed around Priority species recorded during the SLR (2024) survey, including:
  - *Gymnanthera cunninghamii*
  - *Tephrosia rosea* var. Port Hedland (A.S. George 1114).
- Avoidance areas have been placed around Stony Hills and Rocky Outcrops and Breakaways fauna habitat types. These will be avoided for all project activities.
- Avoidance areas have been placed around the Minor Drainage and Major Drainage habitat types. These will not be impacted by permanent clearing, there may be minor temporary impacts to this habitat type in the form of vehicles driving over these habitat types during stringing.
- Avoidance areas have been placed around the MaEc vegetation type, which is also associated with the major drainage fauna habitat type. There may still be minor temporary clearing in the form of vehicles driving over this vegetation type during stringing.

4 Management Measures

The management measures listed in Table 2 will be implemented during geotechnical investigations and construction of this Project. Clearing of native vegetation will occur as per the conditions in the NVCP issued by DWER.

Table 2 Management Measures to be Implemented During Geotechnical Investigations and Construction

Aspect	Management Measure
Geotechnical works	
Extent of Clearing	– No clearing is permitted outside the DE (Figure 1)

Aspect	Management Measure
	– Where possible, pre-existing access tracks will be used and vehicles and machinery will exit the DE along the same route used for access. – Avoidance areas will be clearly communicated prior to geotechnical investigations commencing and no more than 35.2 ha of clearing will be undertaken for geotechnical investigations. – Clearing will be minimised where possible through placement of geotechnical tests in existing cleared locations. – Mechanical clearing for the development of formal access tracks is not proposed during geotechnical works. – Works will be undertaken systematically to minimise re-run and compaction of access tracks. – The clearing locations are to be demarcated with flagging tape, GPS or similar prior to clearing activities. – A pre-clearing toolbox will be held so all staff are aware of their responsibilities under the permit and the application of the avoidance areas. – Clearing areas are to be checked by an Environmental Specialist or Site Supervisor prior to clearing to ensure avoidance areas are correctly applied.
Flora and vegetation	– Areas that are degraded, sparsely vegetated and/or previously cleared will be used preferentially for geotechnical tests, laydown and access. – Mechanically cleared areas will be restored, as follows: • Topsoil will be stockpiled separately to other excavated materials. • On completion of test pit works, excavated materials will be placed back into the test pits. Topsoil from the test pit will then be respread over the surface. • Recontouring of soil within the test pit and laydown areas will be undertaken to prevent compaction. – The clearing area allows for driving over vegetation to access geotechnical sites. Driving on vegetation will be kept to the minimum required to perform the works. – Movement of vehicles and machinery will be in convoy along access tracks/ routes and will not go into adjacent vegetation. – No permanent clearing in drainage lines is permitted, including permanent access tracks
Fauna	– Clearing of native vegetation will be undertaken in a slow, progressive manner in one direction to allow fauna to move away from the clearing area. – Construction personnel will not touch, feed or otherwise directly interact with fauna. – Vehicle and machinery speeds within the DE will be restricted to reduce the likelihood of fauna strike.
Weeds	– All vehicles and machinery will arrive clean on site. – Movement of vehicles and machinery will be restricted to the DE or established tracks and roads.
Soils and erosion	– Standard construction measures regarding erosion and sediment control will be implemented during clearing and geotechnical works. – Designated access tracks will be applied to prevent additional disturbance.
Dust	– Standard construction dust control and mitigation measures will be implemented during clearing. This may include the use of a water trucks, or similar. – Ground disturbance and clearing of vegetation will be restricted during high winds if dust cannot be adequately controlled. – Reduced vehicle speed limits will be applied in areas of unconsolidated soil. – Use of defined routes for machinery/ vehicles travelling on unsealed roads.
Noise	– The contractor will comply with the Environmental Protection (Noise) Regulations 1997 – Complaints regarding noise will be recorded and investigated by Horizon Power.
Waste	– Rubbish will be disposed of in appropriate containers and all waste will be removed from the site.

Aspect	Management Measure
Hydrocarbons and chemicals	– Hydrocarbons and chemicals will be appropriately managed on site to prevent spills, including maintaining equipment in good working order in accordance with manufacturers specifications. – No refuelling will be undertaken within 50 m of a waterway, drain or drainage line. – Hydrocarbons will be appropriately stored at least 50 m away from drainage lines and stored in an appropriate bunded container. – Refuelling will be undertaken on hardstand or using catch trays only. Uncontrolled refuelling is not permitted. – Chemicals will be appropriately stored.
Heritage	– Should aboriginal cultural heritage materials be uncovered during construction works, works are to stop immediately within 20 m of the find. The Contractor is to contact the Horizon Project Manager and an incident will be raised. The area will be cordoned off and no access permitted to the area by people until the incident is investigated and resolved.
Construction	
Extent of Clearing	– No clearing is permitted outside the DE (Figure 1) – Clearing will be minimised where possible through placement of assets and access tracks in existing cleared locations where possible. – The clearing locations are to be demarcated prior to clearing activities. – Clearing areas are to be checked by an Environmental Specialist or Site Supervisor prior to clearing to ensure no more than 100.8 ha of clearing is undertaken for the Project (including the 35.2 ha of clearing required for geotechnical investigations detailed above). – A pre-clearing toolbox will be held so all staff are aware of their responsibilities under the permit and application of avoidance areas. – Avoidance areas will be applied to prevent impacts to Priority flora and critical fauna habitat.
Flora and vegetation	– Areas that are degraded, sparsely vegetated and/or previously cleared will be used preferentially for laydown and access tracks. – Works will be undertaken systematically to minimise re-run and compaction of access tracks. – Any clearing required for temporary purposes, and not required for ongoing maintenance, will be rehabilitated upon completion of construction including re-laying of soil and recontouring to prevent compaction.
Fauna	– Clearing of native vegetation will be undertaken in a slow, progressive manner in one direction to allow fauna to move away from the clearing area. – Construction personnel will not touch, feed or otherwise directly interact with fauna. – Vehicle and machinery speeds within the DE will be restricted to reduce the likelihood of fauna strike.
Weeds	– The Contractor will ensure that no weed-affected soil, mulch, fill or other material is brought into the DE. – Vehicles and machinery will arrive clean, and weed control will be undertaken at the site post-construction as required. – Movement of vehicles and machinery will be restricted to the DE or established tracks and roads to prevent the spread of weeds.
Erosion and soils	– Standard construction measures regarding erosion and sediment control will be implemented during construction works. – Designated access tracks will be applied to prevent additional disturbance. – Acid sulphate soils will be managed in accordance with the ASSMP (if required pending geotechnical investigations, in accordance with the *Treatment and management of soils and water in acid sulfate soil landscapes* (DER, 2015b[1]).

[1] Department of Environment Regulation 2015b, Treatment and management of soils and water in acid sulfate soil landscapes, May 2015, Perth, Western Australia

Aspect	Management Measure
Dust	– Standard construction dust control and mitigation measures will be implemented during clearing. This may include the use of a water trucks, or similar. – Ground disturbance and clearing of vegetation will be restricted during high winds if dust cannot be adequately controlled. – Reduced vehicle speed limits will be applied in areas of unconsolidated soil.
Noise	– The contractor will comply with the Environmental Protection (Noise) Regulations 1997 – Complaints regarding noise will be recorded and investigated by Horizon Power.
Waste	– Rubbish will be disposed of in appropriate containers and all waste will be removed from the site.
Hydrocarbons and chemicals	– Hydrocarbons and chemicals will be appropriately managed on site to prevent spills, including maintaining equipment in good working order in accordance with manufacturers specifications. – No refuelling will be undertaken within 50 m of a waterway, drain or drainage line. – Hydrocarbons will be appropriately stored at least 50 m away from drainage lines and stored in an appropriate bunded container. – Refuelling will be undertaken on hardstand or using catch trays only. Uncontrolled refuelling is not permitted. – Chemicals will be appropriately stored.
Heritage	– Should aboriginal cultural heritage materials be uncovered during construction works, works are to stop immediately within 20 m of the find. The Contractor is to contact the Horizon Project Manager and an incident will be raised. The area will be cordoned off and no access permitted to the area by people until the incident is investigated and resolved.

Appendix C: Significant Fauna Likelihood of Occurrence Assessment

Table 8: Significant fauna likelihood of occurrence assessment for species that are known, likely or may occur within the Development Envelope

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
Northern Quoll (*Dasyurus hallucatus*)	Endangered under BC Act and EPBC Act	**Known to occur** The Northern Quoll favours dissected rocky escarpments, utilising a variety of den sites, including rocky crevices, tree hollows, log and termite mounds. It favours rocky areas, taking refuge in rock crevices and utilising gullies and drainage lines. This species was not recorded during the field survey (SLR, 2024). However, a recent survey that intersects the eastern section of the DE recorded the Northern Quoll (Biota, 2024). There are also abundant (1,282) previous records within the DE (DBCA, 2023), with most of the records within the Outcrops and Breakaways habitat type. Therefore, the Northern Quoll is known to occur within the DE.	1. **Outcrops and Breakaways**: This habitat may be used for denning and foraging and is considered habitat critical to the survival of the Northern Quoll as they are rocky areas that provide prime habitat for the species (Hill & Ward, 2010). Avoidance areas have been applied around this habitat type to mitigate impacts to the Northern Quoll. 2. **Stony Hills:** This habitat may be used for denning and foraging is considered habitat critical to the survival of the Northern Quoll as they are rocky areas that provide prime habitat for the species (Hill & Ward, 2010). Avoidance areas have been applied around this habitat type to mitigate impacts to the Northern Quoll. 3. **Major Drainage** and **Minor Drainage:** After significant rainfall events these habitats will provide valuable and water sources for this species. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types. 4. **Open Eucalypt Woodland, Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains and Sparse *Triodia* Plains**: This is suitable foraging and dispersal habitat for the Northern Quoll. Up to 100.8 ha may be cleared for the Project.
Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) (Pilbara form)	Vulnerable under BC Act and EPBC Act	**Known to occur** The Pilbara Leaf-nosed Bat is restricted to areas with suitable day roosts, which are typically deep caves that retain humidity or disused underground mines (Cramer et al., 2016). The Pilbara Leaf-nosed Bat was recorded seven times within the Outcrops and Breakaways and Low *Acacia stellaticeps* over *Triodia* adjacent to the Outcrops and Breakaways habitat (SLR, 2024). Further, this species was recorded in a recent survey that intersects the eastern section of the DE (Biota, 2024). Therefore the Pilbara Leaf-nosed Bat is known to occur within the DE.	5. **Outcrops and Breakaways**: The caves in the Outcrops and Breakaways provide ideal roosting habitat for the Pilbara Leaf-nosed Bat and this habitat type is considered habitat critical to the survival of the species as the conservation advice (TSSC, 2016) defines transitory diurnal roosts as critical habitat. Avoidance areas have been applied around this habitat type to mitigate impacts to the Pilbara Leaf-nosed Bat. 6. **Major Drainage** and **Minor Drainage**: the Pilbara Leaf-nosed Bat may use these habitats for foraging and dispersal. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types.

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
			7. **Stony Hills**: the Pilbara Leaf-nosed Bat may use these habitats for foraging and dispersal. Potential foraging habitat surrounding known or suspected roost sites can be critical to the survival of the Pilbara Leaf-nosed Bat (TSSC, 2016). The Stony Hills habitat type was mapped as surrounding sites where the Pilbara Leaf-nosed Bat was recorded in the SLR (2024) survey. Therefore, this is considered critical habitat for the species. Avoidance areas have been applied around these habitat types to mitigate impacts to the Pilbara Leaf-nosed Bat. 8. **Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains** and **Open Eucalypt Woodland**: the Pilbara Leaf-nosed Bat may use these habitats for foraging and dispersal. Potential foraging habitat surrounding known or suspected roost sites can be critical to the survival of the Pilbara Leaf-nosed Bat (TSSC, 2016). Each of these habitat types were mapped as surrounding sites where the Pilbara Leaf-nosed Bat was recorded in the SLR (2024) survey. Therefore, they are considered critical habitat for the species. Up to 100.8 ha of this suitable foraging and dispersal habitat may be cleared for the Project.
Bilby (*Macrotis lagotis*)	Vulnerable under BC Act and EPBC Act	**Known to occur** The Bilby is described as occupying a wide range of vegetation types, including open tussock grasslands on upland hills. Mulga woodland/shrubland growing on ridges and rises and spinifex growing on sandplains and dunes, drainage systems, salt lake systems and other alluvial areas. Targeted Bilby searches were undertaken throughout the survey (SLR, 2024) in areas of suitable Bilby habitat with no Bilbies recorded. Further, a targeted assessment for the Bilby by GHD in 2022 (which intersects the DE) did not record the species. However, Bilby have been recorded within the western portion of the DE in previous studies (Phoenix, 2022). The species was previously recorded in the Low *Acacia stellaticeps* over *Triodia* and Sparse *Triodia* Plains habitats. Therefore, the Bilby is known to occur within the DE.	9. **Low *Acacia stellaticeps* over *Triodia*** and **Sparse *Triodia* Plains**: The Bilby has been previously recorded in these habitats and may use them for denning, foraging and dispersal. Critical habitat for the Bilby includes suitable habitats where the species is likely to occupy (DCCEEW, 2023b). Therefore, these habitats are critical habitat for the Bilby and up to 100.8 ha of may be cleared. 10. **Major Drainage, Minor Drainage, Mixed *Acacia* Shrubs and *Triodia* Plains** and **Open Eucalypt Woodland:** Based on habitat preferences for the Bilby as described in their recovery plan (DCCEEW, 2023b), they may occur within these habitat types, however were not recorded here during the SLR (2024) survey.
Western Pebble-mound Mouse (*Pseudomys chapmani*)	Priority 4 under DBCA list	**Known to occur** The Western Pebble-mound Mouse is endemic to the Pilbara and their mounds are usually found on gentle slopes and spurs that are often	11. **Stony Hills**: the Western Pebble-mound mouse was recorded three times within this habitat and it is highly likely that mounds are currently occupied (SLR, 2024). This habitat is considered suitable burrowing, refuge, and foraging habitat for the Western Pebble-mound Mouse and is therefore considered critical habitat. Avoidance areas have been

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
		vegetated by hard spinifex (Ford and Johnson, 2007; Van Dyck and Strahan, 2008). Western Pebble-mound Mouse mounds were recorded three times within the Stony Hills habitat, and twice within the Outcrops and Breakaways habitat (SLR, 2024). However, studies have shown that not all mounds in an area are occupied by a Pebble-mound Mouse at any one time (Anstee, 1996). Further, given the presence of an entrance hole and the lack of debris around the entrance, it is highly unlikely that the mounds are currently occupied (SLR, 2024). This species was recorded once within the Mixed *Acacia* Shrubs and *Triodia* Plains habitat, however, the record is 40 m away from the Outcrops and Breakaways habitat, therefore it is considered dispersal habitat for the species. The Low *Acacia stellaticeps* over *Triodia* habitat, Open Eucalypt Woodland and Sparse *Triodia* Plans are also considered dispersal habitat for the species. This species was also recorded during the Atlas Ridley Mine survey, adjacent to the DE (Biota, 2024). Therefore, the Western Pebble-mound Mouse is known to occur within the DE.	applied around this habitat type to mitigate impacts to the to the Western Pebble-mound Mouse. 12. **Outcrops and Breakaways**: the Western Pebble-mound mouse was recorded twice within this habitat and it is highly likely that mounds are currently occupied (SLR, 2024). This habitat is considered suitable burrowing, refuge, and foraging habitat for the Western Pebble-mound Mouse and is therefore considered critical habitat. Avoidance areas have been applied around this habitat type to mitigate impacts to the to the Western Pebble-mound Mouse. 13. **Mixed *Acacia* Shrubs and *Triodia* Plains, Low *Acacia stellaticeps* over *Triodia,* Open Eucalypt Woodland** and **Sparse *Triodia* Plains**: Based on habitat preferences, these habitats may be used as foraging and dispersal habitat by the Western Pebble-mound Mouse. Up to 100.8 ha of this suitable foraging and dispersal habitat may be cleared for the Project.
Grey Falcon (*Falco hypoleucos*)	Vulnerable under BC Act and EPBC Act	**Likely to occur** This species favours lightly timbered and untimbered lowland plains that are crossed with tree-lined watercourses, but also can be found in grassland and sand dune habitats. The DE has two Drainage habitats with eucalypt trees along the riverbanks, which constitutes suitable nesting habitat. The plains surrounding the Major Drainage and Minor Drainage habitats is likely to supporting habitat used for foraging. Therefore, the Grey Falcon is likely to occur within the DE.	14. **Major Drainage** and **Minor Drainage**: The eucalypt trees along the drainage habitats are suitable nesting habitat for the Grey Falcon. Breeding habitat is important to the survival of a species, however critical habitat has not been defined for the Grey Falcon. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types. 15. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Open Eucalypt Woodland** and **Sparse *Triodia* Plains**: Based on habitat preferences for the Grey Falcon, these habitat types surrounding the Major and Minor Drainage habitats are suitable foraging and dispersal habitats. Up to 100.8 ha of this suitable foraging and dispersal habitat may be cleared for the Project.
Oriental Pratincole (*Glareola maldivarum*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species prefers plains, shallow wet and dry edges of open bare wetlands and tidal mudflats and beach habitat. This species does not breed in Australia.	16. **Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Major Drainage, Minor Drainage, Open Eucalypt Woodland** and **Sparse *Triodia* Plains**: These habitats are suitable foraging habitat for the Oriental Pratincole. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
		The Oriental Pratincole was previously recorded within the DE in 2004 (DBCA, 2023) within the Low *Acacia stellaticeps* over *Triodia* habitat, which has the potential to become inundated during the wet season, providing suitable habitat used for foraging. Due to the species preference for open plains and seasonal wetland habitat, it is also considered that the Oriental Pratincole may use the Mixed *Acacia* Shrubs and *Triodia* Plains, Major Drainage, Minor Drainage, Open Eucalypt Woodland and Sparse *Triodia* Plains habitats within the DE. Therefore, the Oriental Pratincole is likely to occur within the DE.	driving over these drainage habitat types. Up to 100.8 ha of the remaining suitable foraging habitat may be cleared for the Project.
Common Greenshank (*Tringa nebularia*)	Endangered under EPBC Act Migratory under BC Act and EPBC Act	**Likely to occur** This species is found in coastal areas, riverbanks and coastal to freshwater wetlands. This species has been recorded frequently and recently within the desktop study (SLR, 2024) and likely occurs within the DE. The Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage and Minor Drainage habitats constitute supporting habitat for this species. This species is considered likely to occur within the DE and if present will occur between August and March. Therefore, the Common Greenshank is likely to occur within the DE.	17. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage** and **Minor Drainage**: These habitat types have the potential to inundated after significant rain events and are therefore suitable foraging habitats. Foraging habitat is defined as habitat critical to the survival of the species (DCCEEW, 2024e). Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining critical habitat may be cleared for the Project.
Barn Swallow (*Hirundo rustica*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species is typically observed in close proximity to urban water bodies and coastal wetlands. This species has been recorded frequently within the desktop study (SLR, 2024) and likely occurs within the DE. The Major and Minor Drainage habitats constitute supporting habitat for this species for their value as foraging, roosting and dispersal habitat. Additionally, the Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains and Sparse *Triodia* Plains have the potential to inundated after significant rain events and therefore may also be suitable habitat. This species is considered likely to occur and if present will occur between Spring and Summer.	18. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage** and **Minor Drainage**: These habitat types have the potential to inundated after significant rain events and are therefore suitable foraging, roosting and dispersal habitats. Habitat critical for the survival of the Barn Swallow has not been defined. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitat types for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining potential foraging, roosting and dispersal habitats may be cleared for the Project.
Little Curlew (*Numenius minutus*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species forages within short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow	19. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage, Minor Drainage** and **Open Eucalypt Woodland:** These habitats are suitable foraging habitat

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
		freshwater pools or areas seasonally inundated. Open woodlands with grassy or burnt understorey, dry saltmarshes, coastal swamps, mudflats or sandflats of estuaries or beaches on sheltered coasts, mown lawns, gardens, recreational areas, ovals, racecourses and verges of roads, and airstrips are also used. This species has been recorded frequently and recently within the desktop study area (SLR, 2024). The Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage, Minor Drainage and Open Eucalypt Woodland habitats constitute supporting habitat for the species. If present, the species will occur in the DE between October and April. Therefore, the Little Curlew is likely to occur within the DE.	for the Little Curlew. Habitat critical for the survival of the Little Curlew has not been defined. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitat types for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining suitable foraging habitat may be cleared for the Project.
Oriental Plover (*Charadrius veredus*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species typically prefers grasslands and thinly vegetated plains, and open areas such as recently burnt country and heavily grazed pastures. This species has been recorded recently within the desktop study area (SLR, 2024). The Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage and Minor Drainage constitute supporting habitat for the species as they may become inundated after significant rain events. This species is considered likely to occur during potential flooding events, and if present, will occur within the DE between mid-September and April. Therefore, the Oriental Plover is likely to occur within the DE.	20. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage** and **Minor Drainage**: These habitat types have the potential to inundated after significant rain events and are therefore suitable foraging habitat. Habitat critical for the survival of the Oriental Plover has not been defined. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitat types for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining suitable foraging habitat may be cleared for the Project.
Osprey (*Pandion haliaetus*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species requires extensive areas of open fresh, brackish or saline water for foraging. They are mostly found in coastal areas but occasionally travel inland along major rivers. They frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes. This species has been recorded recently within the desktop study area (SLR, 2024). The Major and Minor Drainage habitats constitute critical habitat for the Osprey because of their value for hunting and dispersal. Therefore, the Osprey is likely to occur within the DE during flooding events.	21. **Major Drainage** and **Minor Drainage**: SLR (2024) defined these habitats as critical to the survival of the Osprey due to their value for hunting and dispersal. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types.

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
Peregrine Falcon (*Falco peregrinus*)	Other specially protected under DBCA list	**Likely to occur** This species mainly occurs along rivers and ranges as well as wooded watercourses and lakes. It nests primarily on cliffs and granite outcrops and quarries. This species was not observed during the field survey (SLR, 2024), however has been previously recorded twice within 3 km of the DE in recent years (DBCA, 2023). The trees in the Open Eucalypt Woodland, Major Drainage and Minor Drainage habitats within the DE and surrounds may provide suitable habitat used for nesting and hunting. Therefore, the Peregrine Falcon is likely to occur within the DE.	**22. Open Eucalypt Woodland, Major Drainage** and **Minor Drainage:** These are suitable nesting, dispersal and foraging habitat for the Peregrine Falcon. Critical habitat for the Peregrine Falcon has not been defined, however breeding habitat is considered important. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining suitable foraging, dispersal and nesting habitat may be cleared for the Project.
Ghost Bat (*Macroderma gigas*)	Vulnerable under BC Act and EPBC Act	**Likely to occur** This species requires undisturbed roost caves or mineshafts. There are suitable roosting caves for Ghost Bats in the vicinity of the DE. The species was not recorded during the field survey of the DE (SLR, 2024), however was recorded during the Biota (2024) survey outside of the transmission line DE. The Ghost Bat may utilise suitable rock fissures and boulder piles within the DE. The Major and Minor Drainage habitats also constitute moderate value habitat as they may be used as foraging and dispersal habitat. Therefore, the Ghost Bat is likely to occur within the DE.	23. **Outcrops and Breakaways:** Habitat critical to the survival of the Ghost Bat isn't defined, however, Biota (2024) defined the rocky hills habitat within their survey area (which intersects the DE) as potential critical habitat for the Ghost Bat (Biota, 2024). This habitat is considered similar to the Outcrops and Breakaways habitat and is therefore considered critical habitat as well. Avoidance areas have been applied around this habitat type to mitigate impacts to the Ghost Bat. 24. **Major Drainage** and **Minor Drainage:** the Ghost Bat may use these habitats for foraging and dispersal. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types.
Brush-tailed Mulgara (*Dasycercus blythi*)	Priority 4 under DBCA list	**Likely to occur** The Brush-tailed Mulgara is associated with hummock spinifex grasslands, but also uses other vegetation types (often sandplains, grasslands and woodlands) when mixed with or adjacent to hummock grasslands. This species was previously recorded within the DE (Biota, 2024; Phoenix, 2022). The Low *Acacia stellaticeps* over *Triodia* habitat and the Mixed *Acacia* Shrubs and *Triodia* habitat would support this species. Approximately 83% of the DE consists of these two habitat types, which indicates the species may be able to persist throughout the majority of the DE. Therefore, the Brush-tailed Mulgara is likely to occur within the DE.	25. **Low *Acacia stellaticeps* over *Triodia*** and **Mixed *Acacia* Shrubs and *Triodia* Plains**: The Brush-tailed Mulgara may use these habitat types for burrowing, foraging and dispersal. The species was not recorded in the DE and habitat critical to the survival of the species has not been defined. Therefore up to 100.8 ha of supporting habitat in the form of burrowing, foraging and dispersal habitat may be cleared for the Project.

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
Pilbara Olive Python (*Liasis olivacea barroni*)	Vulnerable under BC Act and EPBC Act	**Likely to occur** This species generally shelters under rock piles, or under spinifex and often basks on stop of rocks. This species is known to frequent water bodies. The Pilbara Olive Python has been previously recorded within the DE, however preferred habitat is not within the DE. If present, the species likely utilises the Minor and Major drainage habitats and the Outcrops and Breakaways habitat within the DE as supporting habitat. Therefore, the Pilbara Olive Python is likely to occur within the DE.	26. **Outcrops and Breakaway**: The Pilbara Olive Python may use this habitat for dispersal. Critical habitat is not defined for this species (DEWHA, 2008). However, Biota (2024) defined the rocky hills habitat they recorded within the Atlas Iron survey area as potential critical habitat for the species. The Outcrops and Breakaway habitat is similar and therefore potentially critical habitat for the species. Avoidance areas have been applied around this habitat type to mitigate impacts to the Pilbara Olive Python. 27. **Major Drainage and Minor Drainage**: The Pilbara Olive Python may use this habitat for foraging. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types.
Pilbara Grasswren (*Amytornus whitei whitei*)	Priority 4 under DBCA List	**May occur** This species is restricted to spinifex associations on rocky slopes and ridges, with or without shrubs or light tree cover, preferring areas with tall dense spinifex hummocks. This species has been recorded within the desktop study area (SLR, 2024). The Sparse *Triodia* Plains and Stony Hills habitats constitute critical habitat for this species due to their value for foraging and shelter. Therefore, the Pilbara Grasswren may occur within the DE.	28. **Sparse *Triodia* Plains** and **Stony Hills**: the Pilbara Grasswren may use these habitats for foraging and shelter. Critical habitat for this species has not been defined however SLR defined these habitats as critical habitat because of their value for foraging and shelter (SLR, 2024). Avoidance areas have been applied around the Stony Hills habitat type. However, up to 100.8 ha of critical habitat in the form of Sparse *Triodia* Plains may be cleared as a result of the Project.
Glossy Ibis (*Plegadis falcinellus*)	Migratory under BC Act and EPBC Act	**May occur** The preferred foraging and breeding habitat of this species includes freshwater marshes at the edges of lakes and rivers, lagoons, floodplains, wet meadows, swamps, reservoirs, sewage pongs, rice-fields and cultivated areas under irrigation. This species builds a platform nest of sticks in trees or shrubs above water. This species was recorded within the desktop study areas (SLR, 2024) and may occur within the DE. There are several habitats which may flood and provide suitable habitat for the species. Additionally dry grassland habitat is suitable for this species. Therefore, the Glossy Ibis may occur within the DE on a sporadic basis during flooding events.	29. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage** and **Minor Drainage**: These habitat types have the potential to inundated after significant rain events and are therefore suitable foraging and breeding habitats. There is no critical habitat defined for this species. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining potential foraging and breeding habitat may be cleared for the Project.

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
Fork-tailed Swift (*Apus pacificus*)	Migratory under BC Act and EPBC Act	**May occur** This species is almost exclusively aerial over varied habitats, ranging from rainforests to semi-deserts. This species has been recorded within the desktop study area (SLR, 2024). All habitats within the DE may potentially be utilised as supporting habitat for foraging and dispersal. Therefore, the Fork-tailed Swift may occur within the DE.	**30. Closed *Acacia* Shrubland, Low *Acacia stellaticeps* over *Triodia*, Major Drainage, Minor Drainage, Mixed *Acacia* Shrubs and *Triodia* Plains, Open Eucalypt Woodland, Outcrops and Breakaways, Sparse *Triodia* Plains** and **Stony Hills:** All habitats within the DE may be used as foraging and dispersal habitat for the Fork-tailed Swift. There is no critical habitat defined for this species. **31.** Avoidance areas have been applied around the Outcrops and Breakaways and Stony Hills habitat types. **32.** Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. **33.** Up to 100.8 ha of the remaining potential foraging and dispersal habitat may be cleared for the Project.
Short-tailed Mouse (*Leggadina lakedownensis*)	Priority 4 under DBCA List	**May occur** This species uses spinifex and *Acacia* on seasonally inundated sandy-clay soils as well as sandy soils and cracking clays to build burrows which they shelter during the day. In the Pilbara, it occurs on stony hummock grassland. This species was recorded within the desktop study area (SLR, 2024). The Sparse *Triodia* Plains and Stony Hills habitat constitute critical habitat for the species because of their value for foraging and shelter. Therefore, the Short-tailed Mouse may occur within the DE.	34. **Sparse *Triodia* Plains** and **Stony Hills**: SLR (2024) defined these habitats as critical habitat for the Short-tailed Mouse because of their value for foraging and shelter. Avoidance areas have been applied around the Stony Hills habitat type. However up to 100.8 ha of the remaining potential foraging and shelter habitat may be cleared for the Project.
Curlew Sandpiper (*Calidris ferruginea*)	Critically Endangered under the BC Act and EPBC Act Migratory under EPBC Act	**May occur** There are records of these species in proximity to the DE, however there are limited suitable habitats for the species within the DE. There are suitable tidal flats < 10 km north of the DE, and there are drainage habitats that connect these flats to the DE. Therefore, there is an opportunity for these species to occur within the DE in the Major Drainage and Minor Drainage habitats after significant rain events that would flood these habitats.	**35. Major Drainage** and **Minor Drainage**: The bird species may use this habitat for foraging and dispersal after flooding events. This is considered critical habitat for the Curlew Sandpiper, Great Knot, Red Knot, Sharp-tailed Sandpiper and Black-tailed Godwit as any foraging habitat is considered critical habitat for these species (DCCEEW, 2023; DCCEEW, 2024a, DCCEEW, 2024b; DCCEEW, 2024c; DCCEEW, 2024d). Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be
Great Knot (*Calidris tenuirostris*)	Critically Endangered under the BC Act		

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
	Vulnerable and Migratory under EPBC Act	These habitats would likely be used as foraging and dispersal habitat only, and do not constitute important habitat for any of the species. Therefore, these species may occur within the DE.	temporary clearing in the form of vehicles driving over these drainage habitat types.
Red Knot (*Calidris canutus*)	Endangered under the BC Act Vulnerable and Migratory under the EPBC Act		
Grey-tailed Tattler (*Tringa brevipes*)	Priority 4 listed by DBCA Migratory under BC Act and EPBC Act		
White-winged Black Tern *(Chlidonias leucopterus)*	Migratory under BC Act and EPBC Act		
Gull-billed Tern (*Gelochelidon nilotica*)	Migratory under BC Act and EPBC Act		
Caspian Tern (*Hydroprogne caspia*)	Migratory under BC Act and EPBC Act		
Common Tern (*Sterna hirundo*)	Migratory under BC Act and EPBC Act		
Common Sandpiper *(Actitis hypoleucos)*	Migratory under BC Act and EPBC Act		
Sharp-tailed Sandpiper (*Calidris acuminata*)	Vulnerable under EPBC Act		

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
	Migratory under BC Act and EPBC Act		
Sanderling (*Calidris alba*)	Migratory under BC Act and EPBC Act		
Broad-billed Sandpiper (*Calidris falcinellus*)	Migratory under BC Act and EPBC Act		
Pectoral Sandpiper (*Calidris melanotos*)	Migratory under BC Act and EPBC Act		
Ruff (*Calidris pugnax*)	Migratory under BC Act and EPBC Act		
Red-necked Stint (*Calidris ruficollis*)	Migratory under BC Act and EPBC Act		
Long-toed Stint (*Calidris subminuta*)	Migratory under BC Act and EPBC Act		
Pin-tailed Snipe (*Gallinago stenura*)	Migratory under BC Act and EPBC Act		
Bar-tailed Godwit (*Limosa lapponica*)	Migratory under BC Act and EPBC Act		
Black-tailed Godwit (*Limosa limosa*)	Migratory under BC Act and EPBC Act		

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
	Endangered under EPBC Act		
Whimbrel (*Numenius phaeopus*)	Migratory under BC Act and EPBC Act		
Red-necked Phalarope (*Phalaropus lobatus*)	Migratory under BC Act and EPBC Act		
Wood Sandpiper (*Tringa glareola*)	Migratory under BC Act and EPBC Act		
Marsh Sandpiper (*Tringa stagnatilis*)	Migratory under BC Act and EPBC Act		

Appendix D: Significant Flora Likelihood of Occurrence Assessment

Table 9: Significant flora likelihood of occurrence assessment for species that are known, likely or may occur within the Development Envelope

Flora Species	Status	Likelihood of occurrence
Tephrosia rosea var. Port Hedland (A.S. George 1114)	Priority 1 under DBCA list	**Known to occur** Two individuals of *Tephrosia rosea* subsp. Port Hedland were recorded opportunistically from one location in the AsTe vegetation type.
Gymnanthera cunninghamii	Priority 3 under DBCA list	**Known to occur** Six individuals of *Gymnanthera cunninghamii* across four locations were opportunistically recorded in the MaEc vegetation type.
Eragrostis crateriformis	Priority 3 under DBCA list	**Likely to occur** There are records of this species nearby to the DE, with the closest record being 0.15 km away. This species' preferred habitat is clayey loam or clay, creek banks and depressions (SLR, 2024).
Euploca mutica	Priority 3 under DBCA list	**Likely to occur** There are records of this species nearby to the DE, with the closest record being 0.08 km away. This species' preferred habitat is flat sand plains (SLR, 2024).
Euploca parviantrum	Priority 1 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 6.87 km away. This species' preferred habitat is sandy soils, flats, plains and rocky slopes (SLR, 2024).
Euphorbia inappendiculata var. *inappendiculata*	Priority 2 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 60.93 km away. This species' preferred habitat is red, brown clay or loam and plains (SLR, 2024).
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	Priority 3 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 3.03 km away. This species' preferred habitat is sandy plains (SLR, 2024).
Euphorbia clementii	Priority 3 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 6.19 km away. This species' preferred habitat is gravelly hillsides and stony grounds (SLR, 2024).
Rothia indica subsp. *australis*	Priority 3 under DBCA list	**May occur**

Flora Species	Status	Likelihood of occurrence
		This species has previously been recorded within the DE. This species' preferred habitat is sandy soils, sandhills and sandy flats (SLR, 2024).
Bulbostylis burbidgeae	Priority 4 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 5.85 km away. This species' preferred habitat is granitic soils, granite outcrops and cliff bases (SLR, 2024).