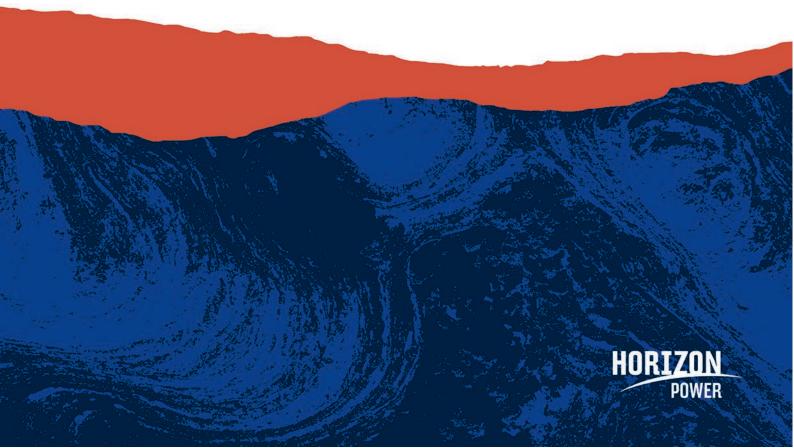
# East Pilbara Connection - Native Vegetation Clearing Permit

# **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 1Development 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,
	Unallocated Crown Land - Lot 1499 on DP404497, LR3165/640 (subject to dealing)	-	crown reserves, pastoral leases and residential
	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)		



10 5 2.5 Kilometers



Scale: 1:250,000

Ν

### 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 1<sup>st</sup> March to 10<sup>th</sup> 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	Survey date: 1 <sup>st</sup> March to 10 <sup>th</sup> March 2024
Connection Flora and Fauna	Survey area: Approximately 10,363 ha
Survey Technical Report (SLR, 2024)	Flora / Vegetation findings:
IBSA Number: IBSA-2024- 0325	• 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:
	<ul> <li>Gymnanthera cunninghamii (Priority 3 - DBCA) - Six individuals of Gymnanthera cunninghamii were recorded across four locations in the MaEc vegetation type.</li> </ul>
	• <i>Tephrosia rosea</i> subsp. Port Hedland (A.S. George 1114) (Priority 1 - DBCA) - Two individuals of <i>Tephrosia rosea</i> 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%))
	<ul> <li>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%))</li> </ul>
	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%))
	<ul> <li>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%))</li> </ul>
	• 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 <i>Triodia</i> hummock grassland. Microhabitats include Exfoliating rock, rock crevices, <i>Triodia</i> hummocks, leaf litter, peeling bark and woody debris (43.56 ha (0.42%))
• Sparse <i>Triodia</i> Plains - Open rocky granite plains with red sandy-pebble substrate. Vegetation consists of sparse <i>Acacia</i> shrubland midstory over open hummock grassland. Microhabitats include <i>Triodia</i> 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 ( <i>Rhinonicteris aurantia</i> (Pilbara form)) – Vulnerable
• Western Pebble-mound Mouse ( <i>Pseudomys chapmani</i> ) – Priority 4.
Additional conservation significant fauna assessed as known to occur in the survey area are:
Northern Quoll ( <i>Dasyurus hallucatus</i> ) – Endangered
Bilby ( <i>Macrotis lagotis</i> ) – Vulnerable
Conservation significant fauna assessed as likely to occur in the survey area include:
Grey Falcon ( <i>Falco hypoleucos</i> ) – Vulnerable
Oriental Pratincole ( <i>Glareola maldivarum</i> ) – Migratory
Common Greenshank ( <i>Tringa nebularia</i> ) – Migratory
Barn Swallow ( <i>Hirundo rustica</i> ) – Migratory
Little Curlew ( <i>Numenius minutus</i> ) – Migratory
Oriental Plover ( <i>Charadrius veredus</i> ) – Migratory
Osprey ( <i>Pandion haliaetus</i> ) – Migratory
 Peregrine Falcon (Falco peregrinus) – Other specially protected fauna

Ghost Bat ( <i>Macroderma gigas</i> ) – Vulnerable
• Brush-tailed Mulgara ( <i>Dasycercus blythi</i> ) – Priority 4
• Pilbara Olive Python ( <i>Liasis olivacea barroni</i> ) – 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 ( <i>Plegadis falcinellus</i> ) – Migratory
• Fork-tailed Swift ( <i>Apus pacificus</i> ) – 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 5Existing environment in the DE.

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

Environmental value	Asses	sment				
		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 de	scribed in Table 3, four	teen vegetation typ	es were recorded wi	thin the D	DE (SLR, 2024):
	Ve	getation type	Condition	Extent (ha) v DE	within	Extent (%) within DE
	Ai	ſe	Very Good	30.0		0.3
	Ao	Те	Very Good	53.0		0.5
	As	рТе	Very Good	5,495.0		53.7
	As	Те	Very Good	2,963.1		29.0
	At		Very Good	18.3		0.2
	Cc	AcTe	Very Good	123.9		1.2
	Cf	۹h	Degraded	42.5		0.4
	Ev	AcTe	Good to Very Good	263.5		2.6
	Ev	Ea	Very Good	24.1		0.2
	Fs	oAh	Very Good	1.8		0.0
	Fs	оТе	Very Good	13.5		0.1
	Ma	аЕс	Good	165.7		1.6
	Sh		Degraded	9.6		0.1
	Ts	Ге	Very Good	829.2		8.1
	Cle	eared		200.8		2.0
	То	tal		10,233.9		100%
	the m	scribed in Table 3, the v najority in Very Good co introduced flora taxa w Kapok (* <i>Aerva javani</i> Neem tree (* <i>Azadira</i>	ondition (SLR, 2024) vere recorded in the ica)		m Degrac	led to Very Good, wit

- Calotrope (\**Calotropis procera*)
- Buffel grass (\*Cenchrus ciliaris)
- \*Indigofera oblongifolia
- Spiked Malvastrum (\**Malvastrum Americanum*)
- Stinking Passion Flower (\*Passiflora foetida)

value	Assessment		
	Mimosa Bush (*Vachellia farnesian	a)	
	None of the introduced flora species are lis (* <i>Calotropis procera</i> ) is listed as a Declared <i>Act 2007</i> (BAM Act), of which approximate another four individuals within flora sites (	Pest under the <i>Biosecurity an</i> ly 144 individuals were record	nd Agriculture Management
auna habitat	As described in Table 3, nine fauna habitat	types were recorded within t	he DE (SLR, 2024):
	Fauna habitat	Extent (ha) within DE	Extent (%) within DE
	Closed Acacia Shrubland	15.0	0.1
	Low Acacia stellaticeps over Triodia	2966.9	29.0
	, Major Drainage	165.7	1.6
	Minor Drainage	24.1	0.2
	Mixed Acacia Shrubs and Triodia	5501.3	53.8
	Plains	5501.5	55.8
	Open Eucalypt Woodland	429.9	4.2
	Outcrops and Breakaways	43.6	0.4
	Sparse Triodia Plains	838.8	8.2
	Stony Hills	47.8	0.5
	Cleared	200.8	2.0
	Total	10,233.9	100%
Significant	Two significant fauna species were recorde		100%
auna	<ul> <li>Pilbara Leaf-nosed Bat (<i>Rhinonicter</i></li> <li>Western Pebble-mound Mouse (<i>Psi</i></li> <li>Additional conservation significant fauna a</li> <li>Northern Quoll (<i>Dasyurus hallucatu</i></li> <li>Bilby (<i>Macrotis lagotis</i>) – Vulnerabl</li> <li>Conservation significant fauna assessed as</li> <li>Grey Falcon (<i>Falco hypoleucos</i>) – Vu</li> <li>Oriental Pratincole (<i>Glareola maldin</i></li> <li>Common Greenshank (<i>Tringa nebu</i></li> <li>Barn Swallow (<i>Hirundo rustica</i>) – M</li> <li>Little Curlew (<i>Numenius minutus</i>) –</li> <li>Oriental Plover (<i>Charadrius veredus</i></li> <li>Osprey (<i>Pandion haliaetus</i>) – Migra</li> <li>Peregrine Falcon (<i>Falco peregrinus</i>)</li> <li>Ghost Bat (<i>Macroderma gigas</i>) – Vu</li> <li>Brush-tailed Mulgara (<i>Dasycercus b</i></li> <li>Pilbara Olive Python (<i>Liasis olivacea</i></li> <li>Conservation significant fauna asse</li> <li>Pilbara Grasswren (<i>Amytornus whit</i></li> <li>Glossy Ibis (<i>Plegadis falcinellus</i>) – M</li> <li>Fork-tailed Mouse (<i>Leggadina lake</i></li> <li>There were an additional 23 bird sp</li> </ul>	eudomys chapmani) – Priority ssessed as known to occur in t (s) – Endangered e likely to occur in the DE are (S ulnerable varum) – Migratory laria) – Migratory igratory Migratory tory – Other specially protected fa ulnerable lythi) – Priority 4 to barroni) – Vulnerable ssed as may occur in the DE an ei whitei) – Priority 4 (as Amyt Migratory Migratory Migratory	4. the DE are (SLR, 2024): SLR, 2024): nuna re (SLR, 2024): tornis striatus striatus, DBCA

ecological wa linkages Communities wa communities of Sum Significant flora Co Wetlands An and/or He waterways Water Th resources Ac	<ul> <li>ne Major Drainage and Minor Drainage habitat types play a role as ecological linkage and provides ater sources for significant species such as Northern Quoll and Pilbara Olive Python.</li> <li>o TECs listed under the EPBC Act or BC Act were identified within the DE during the SLR (2024) field urvey. Additionally, no PECs listed by DBCA were identified within the DE during the field survey. ne vegetation type, MaEc, is likely to represent GDE associated with some of the major drainages tersecting the DE. This vegetation type supports known <i>phreatophytic</i> tree species such <i>Melaleuca gentea</i> and <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>, which are reliant on access to the roundwater table (SLR, 2024).</li> <li>onservation significant flora that were recorded in the DE include (SLR, 2024):</li> <li><i>Gymnanthera cunninghamii</i> (Priority 3) - Six individuals of <i>Gymnanthera cunninghamii</i> were recorded across four locations in the MaEc vegetation type.</li> <li><i>Tephrosia rosea</i> subsp. Port Hedland (A.S. George 1114) (Priority 1) - Two individuals of <i>Tephrosia rosea</i> subsp. Port Hedland were recorded from one location in the AsTe vegetation type.</li> <li>n additional two Priority 3 species are considered likely to occur, <i>Eragrostis crateriformis</i> (Priority 3) and <i>Euploca mutica</i> (Priority 3). The likelihood of occurrence assessment is provided in Appendix D.</li> <li>wo drainage habitats within the DE are connected to an important wetland, the Leslie (Port edland) Saltfields System approximately 6 km north of the DE.</li> </ul>
communities sur On int arg gro Significant flora Co An an Wetlands Tw and/or He waterways Water Th resources Ac	<ul> <li>Additionally, no PECs listed by DBCA were identified within the DE during the field survey.</li> <li>ne vegetation type, MaEc, is likely to represent GDE associated with some of the major drainages tersecting the DE. This vegetation type supports known <i>phreatophytic</i> tree species such <i>Melaleuca rgentea</i> and <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>, which are reliant on access to the roundwater table (SLR, 2024).</li> <li>onservation significant flora that were recorded in the DE include (SLR, 2024):</li> <li><i>Gymnanthera cunninghamii</i> (Priority 3) - Six individuals of <i>Gymnanthera cunninghamii</i> were recorded across four locations in the MaEc vegetation type.</li> <li><i>Tephrosia rosea</i> subsp. Port Hedland (A.S. George 1114) (Priority 1) - Two individuals of <i>Tephrosia rosea</i> subsp. Port Hedland were recorded from one location in the AsTe vegetation type.</li> <li>n additional two Priority 3 species are considered likely to occur, <i>Eragrostis crateriformis</i> (Priority 3) and <i>Euploca mutica</i> (Priority 3). The likelihood of occurrence assessment is provided in Appendix D.</li> <li>wo drainage habitats within the DE are connected to an important wetland, the Leslie (Port edland) Saltfields System approximately 6 km north of the DE.</li> </ul>
Wetlands Tw and/or He waterways Water Th resources Acc No	<ul> <li>Gymnanthera cunninghamii (Priority 3) - Six individuals of Gymnanthera cunninghamii were recorded across four locations in the MaEc vegetation type.</li> <li>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.</li> <li>n additional two Priority 3 species are considered likely to occur, <i>Eragrostis crateriformis</i> (Priority 3) and <i>Euploca mutica</i> (Priority 3). The likelihood of occurrence assessment is provided in Appendix D.</li> <li>wo drainage habitats within the DE are connected to an important wetland, the Leslie (Port edland) Saltfields System approximately 6 km north of the DE.</li> </ul>
and/or He waterways He Water Th resources Ac No	edland) Saltfields System approximately 6 km north of the DE. ne Pilbara Groundwater Area (Proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI
resources Ac No	
Th	ct)) is present within the DE. o Public Drinking Water Source Areas (PDWSAs) are present within the DE. The De Grey River Water eserve (Priority 1) is located approximately 2 km east of the DE. ne Pilbara Surface Water Proclaimed under the RIWI Act is present within the DE. o rivers proclaimed under the RIWI Act are present within the DE.
Conservation No Reserves	o DBCA managed conservation areas occur within the DE or within 20 km of the DE.
Environmentally Th Sensitive Areas (ESAs)	nere are no ESAs within the DE.
quality	<ul> <li>DE intersects the following land systems:</li> <li>Uaroo System (281Ua) - Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered Acacia shrubs.</li> <li>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.</li> <li>Boolaloo System (281Bo) - Granite hills, domes, tor fields and sandy plains supporting spinifex grasslands with scattered shrubs.</li> <li>Macroy System (281Mc) - Stony plains and occasional tor fields based on granite supporting hard and soft spinifex shrubby grasslands.</li> <li>Capricorn System (281Cp) - Rugged sandstone hills, ridges, stony footslopes and interfluves supporting low Acacia shrublands or hard spinifex grasslands with scattered shrubs.</li> <li>Paradise System (281Pd) - Alluvial plains supporting soft spinifex grasslands and tussock grasslands.</li> <li>Boolgeeda System (280Bg) - Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.</li> <li>review of Acid Sulphate Soil (ASS) risk mapping (spatial dataset DWER-048; GoWA, 2024) indicates the northern portion of the DE overlaps an area of moderate to low risk of ASS occurring within m of natural soil surface but high to moderate risk of ASS beyond 3 m of natural soil surface.</li> </ul>

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

# 6 Avoidance, Mitigation and Management Measures

#### 6.1 Avoidance

heritage

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:
  - o 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 * <i>Cenchrus ciliaris</i> and * <i>Colotropis</i> . 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, MBEc; likely to represent GDE associated with some of the major drainage lines intersecting the DE (SLR, 2024). This 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 tava (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	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 (* <i>Calotropis procera</i> ) is listed as a Declared Pest under the <i>Biosecurity and Agriculture Management Act 2007</i> (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 <i>Acacia</i> 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	

Prir	nciple	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 ( <i>Rhinonicteris aurantia</i> (Pilbara form)) – Vulnerable	
		• Western Pebble-mound Mouse ( <i>Pseudomys chapmani</i> ) – 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	Fauna Habitat	Proposed
	should not be cleared if	Nine fauna habitat types were recorded within the DE and are described in Table 5.	clearing may be
	it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous	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 <i>Acacia</i> 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.	at variance to this Principle.
	Western Australia.	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. <i>Northern Quoll</i>	

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 <i>Triodia</i> and Sparse <i>Triodia</i> 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 <i>Triodia</i> 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 <i>Triodia</i> 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 <i>Triodia</i> 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.	

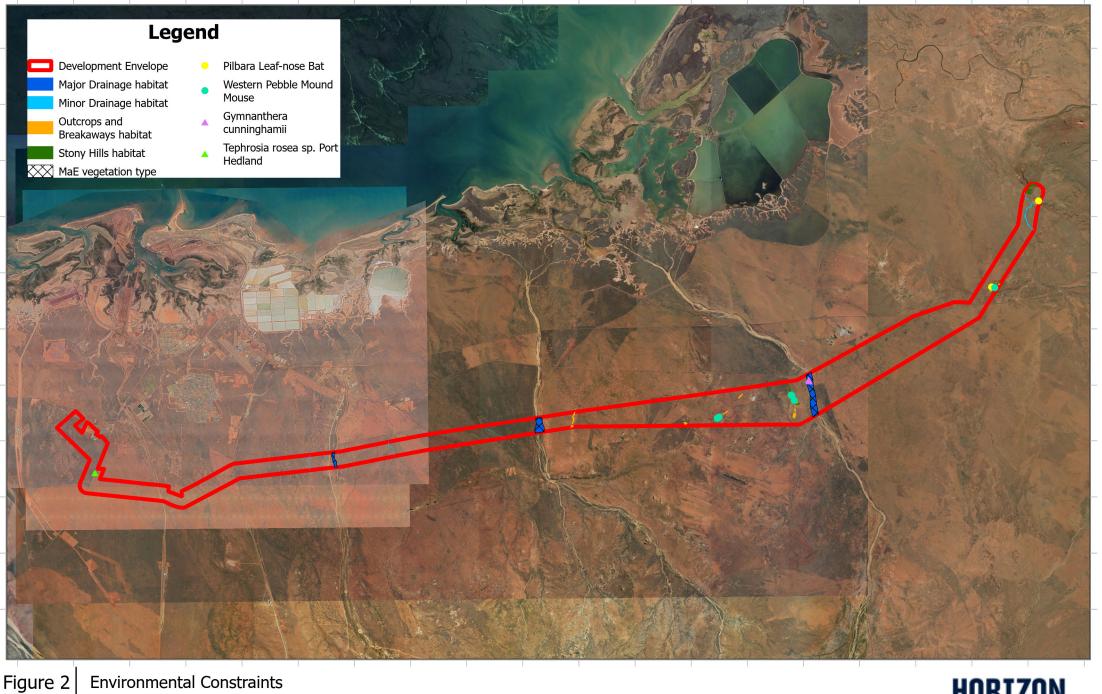
Principle	Assessment	Outcome
	The Project will result in clearing of up to 100.8 ha of critical foraging and shelter habitat for the Short-tailed Mouse. Other Birds	
	The Glossy Ibis, Fork-tailed Swift, Curlew Sandpiper, Great Knot, Red Knot, Grey-tailed Tattler, White-winged Black Tern, Gull-billed 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 <i>stellaticeps</i> over <i>Triodia</i> , Mixed <i>Acacia</i> Shrubs and <i>Triodia</i> Plains and Sparse <i>Triodia</i> 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.

Prin	ciple	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 <i>Melaleuca argentea</i> and <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , 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	<ul> <li>The DE intersects the following land systems (Van Vreeswyk et al., 2004):</li> <li>Uaroo System (281Ua) - Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered <i>Acacia</i> 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.</li> </ul>	Proposed clearing is unlikely to be at variance to this Principle.

Principle	Assessment	Outcome
cause appreciable land degradation.	<ul> <li>River System (281Ri) - Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of <i>Acacias</i> 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.</li> </ul>	
	<ul> <li>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.</li> </ul>	
	• 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.	
	<ul> <li>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.</li> </ul>	
	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	

Prir	nciple	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).	Proposed clearing is
		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 <i>phreatophytic</i> tree species such <i>Melaleuca</i> argentea and <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , 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.	unlikely to be at variance to this Principle.
		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.	
(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 <i>phreatophytic</i> tree species such <i>Melaleuca argentea</i> and <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , 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,	Proposed clearing is unlikely to be at variance to this Principle.
		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.	

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.	



Scale: 1:250,000

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HORIZON

# 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 510 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
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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.
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)         • Sharp-tailed Godwit (Endangered, Migratory)         • Sharp-tailed Sandpiper (Vulnerable, Migratory)         • Sharp-tailed Godwit (Endangered, Migratory)         • Sharp-tailed Sandpiper (Vulnerable, Migratory)         • Sharp-tailed South (Endangered, Migratory)         • Sharp-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 Natio
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)         Oriental Plover (Migratory)         Oriental Plover (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 <i>the Energy Operator</i> ( <i>Powers</i> ) <i>Act 1979</i> . 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	<ul> <li>The DE intersects three separate native title determinations;</li> <li>Kariyarra - WCD2018/015 – RNTBC Kariyarra Aboriginal Corporation</li> <li>Ngarla Overlap Proceeding - WCD2013/001 – RNTBC Wanparta Aboriginal Corporation</li> <li>Ngarla and Ngarla # 2 (Area A) - WCD2007/003 - RNTBC Wanparta Aboriginal Corporation</li> </ul>
Aboriginal Sites of Significance under the Aboriginal Heritage Act 1972	<ul> <li>The DE overlaps two Registered Aboriginal Cultural Heritage places:</li> <li>Mikurrunya Hills (ACH ID: 9904): Creation / Dreaming Narrative</li> <li>Kumpaja Tree (ACH ID: 729): Creation / Dreaming Narrative.</li> <li>The DE overlaps three Lodged Aboriginal Cultural Heritage places: <ul> <li>12 Mile site (ACH ID 27412): Burial; Ritual / Ceremonial</li> <li>Strelley Engravings 001, this name has been selected because the traditional name must not be used (ACH ID 37344)</li> <li>PDO-43-22 (ACH ID 39654): Artefacts / scatter.</li> </ul> </li> <li>Both Kariyarra and Wanparta have carried out Aboriginal Heritage surveys for the DE.</li> <li>Based on the findings of these surveys, heritage protection plans will be developed, in consultation with the knowledge holders.</li> <li>Horizon Power has an <u>Aboriginal Cultural Heritage Management Policy</u>, that details our commitment to <i>avoid impacting on Aboriginal Cultural Heritage whenever and wherever possible</i>.</li> <li>As appropriate, management measures will be implemented during activities, such as the engagement of cultural heritage monitors during ground disturbing works.</li> </ul>

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#### PROTECTED

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



# 尜SLR

## Atlas Ridley Magnetite Project Connection

## Flora and Fauna Survey Technical Report

## **Horizon Power**

18 Brodie Hall Drive Bentley, Western Australia 6102

Prepared by:

#### **SLR Consulting Australia**

Level 1, 500 Hay Street, Subiaco WA 6008, Australia

SLR Project No.: 675.072189.00001

29 July 2024

Revision: 2.0

Making Sustainability Happen

#### **Revision Record**

Revision	Date	Prepared By	Checked By	Authorised By
1.0	9 July 2024	G. Buller L. Berry Y. Li	B. Mason L. Geidans	
2.0	29 July 2024	N/A	L. Geidans	S. Walker

## **Basis of Report**

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Horizon Power (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

## **Executive Summary**

Horizon Power commissioned SLR Consulting Australia Pty Ltd to undertake a detailed flora and vegetation, targeted significant flora, basic terrestrial vertebrate fauna, and targeted significant fauna survey for the proposed Atlas Ridley Magnetite Project Connection. The Survey Area covers approximately 10,363 hectares and runs in an approximate east-west alignment from just south of South Hedland to approximately 50 km east of Port Hedland airport in the Pilbara bioregion of Western Australia.

The objective of the survey was to identify key flora, vegetation, and fauna values or other environmental features within the Survey Area as part of the environmental impact assessment process. This report presents the findings of the survey.

#### **Flora and Vegetation**

The flora desktop assessment conducted prior to the survey identified 33 conservation significant species occurring within 50 km of the Survey Area. A pre-survey likelihood of occurrence assessment determined 11 species as having a high likelihood of occurrence, none as having a medium likelihood of occurrence, and the remaining 22 species as having a low likelihood of occurrence.

The detailed flora and vegetation survey recorded the floristic composition and vegetation types from 26 quadrats, 28 relevés, 250 mapping notes, and opportunistic observations. A total of 172 taxa were recorded from 94 genera across 40 families.

No Threatened flora taxa were recorded within the Survey Area. Two Priority flora taxa, both of which had a high pre-survey likelihood of occurrence, were recorded within the Survey Area. *Tephrosia rosea* subsp. Port Hedland (A.S. George 1114) (P1) was recorded at one location within a roadside drain, and *Gymnanthera cunninghamii* (P3) was recorded in two locations within a major drainage.

Nineteen specimens could not be identified to species level due to the generally sterile and dry conditions at the time of survey. Eight introduced (weed) taxa were recorded during the survey, of which one is a Declared Pest (*\*Calotropis procera*). Weed abundance was considered standard for the region, with common Pilbara weeds such as *\*Cenchrus ciliaris*, *\*Vachellia farnesiana*, *\*Malvastrum americanum* and *\*Aerva javanica* regularly observed.

Fourteen vegetation types were described and mapped across five broad landforms (ironstone hilltops and ridges, outcroppings, plains, low lying floodplains/flats/minor drainages and major drainages), none of which were considered analogous to Threatened or Priority Ecological Communities. Vegetation condition within the Survey Area ranged from Degraded to Very Good with the majority considered to be in Very Good condition. Disturbances were widespread in the form of pastoralism/cattle, weeds, litter and historical clearing for infrastructure.

#### Vertebrate Fauna

The basic and targeted terrestrial vertebrate fauna survey recorded fauna using a variety of detection methods including opportunistic observations, ground searching, and deploying Autonomous Recording Units (ARUs). Fauna habitat mapping was based on a combination of field observations, vegetation mapping, fauna habitat assessment data, and aerial imagery. Nine fauna habitats were mapped within the Survey Area, of which the Low *Acacia stellaticeps* over Triodia, Mixed Acacia Shrubs and Triodia Plains, Outcrops and Breakaways, and Stony Hills habitats represent the most value to fauna assemblages overall.

A total of 63 fauna taxa from 34 families were recorded, comprising 33 birds, 14 mammals, and 16 reptiles. Two significant taxa were recorded during the fauna survey, Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4 (DBCA, and Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) (Pilbara form) – VU (BC Act & EPBC Act).

A further seven significant fauna taxa have been recorded within the Survey Area during previous surveys, and nine significant fauna taxa were assessed as having a high likelihood, 24 significant fauna taxa were assessed as having a medium likelihood, and 33 significant fauna taxa were assessed as having have a low likelihood of occurring within the Survey Area.

Three introduced taxa were recorded during the survey, European Cattle (\**Bos primigenius taurus*), Cat (\**Felis catus*), and Domestic Pigeon/Rock Dove (\**Columba livia*).

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## **Acronyms and Abbreviations**

°C	Degree Celeiue
	Degree Celsius
ALA	Atlas of Living Australia
BAM Act	Biosecurity and Agriculture Management Act 2007
BC Act	Biodiversity Conservation Act 2016
ВоМ	Bureau of Meteorology
CISS	Centre for Invasive Species Solutions
CR	Critically Endangered
DAWE	Department of Agriculture Water and Environment
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
Desktop Study Area	The area that was studied during the desktop assessment encompassing the Survey Area and surrounds
DMIRS	Department of Mines, Industry Regulation and Safety
DoE	Department of the Environment
DP	Declared Pest
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DWER	Department of Water and Environmental Regulation
EIA	Environmental Impact Assessment
EN	Endangered
EP Act	Environmental Protection Act 1986
EPA	Environmental Protection Authority
EPBC Act	Environment Protection Biodiversity and Conservation Act 1999
ESA	Environmentally Sensitive Area
GIS	Geographic Information System
GPS	Global Positioning System
GDE	Groundwater Dependent Ecosystem
ha	Hectare
IBRA	Interim Biogeographic Regionalisation for Australia
IBSA	Index of Biodiversity Surveys for Assessments
ILUA	Indigenous land Use Agreement
km	Kilometres
Lat	Latitude
Long	Longitude
m	Metres
	1

mm	Millimetres
mths	Months
MNES	Matters of National Environmental Significance
NVCP	Native Vegetation Clearing Permit
NVIS	National Vegetation Information System
Ρ	Priority
PEC	Priority Ecological Community
PMST	Protected Matters Search Tool
SLR	SLR Consulting Australia
Survey Area	The area that was surveyed
Т	Threatened
TEC	Threatened Ecological Community
TPFL	Threatened and Priority Flora Database
TPFRF	Threatened and Priority Flora Report Form
VU	Vulnerable
WA	Western Australia
WAH	Western Australian Herbarium
WAM	Western Australian Museum
WoNS	Weeds of National Significance

## 1.0 Introduction

#### 1.1 The Project

Horizon Power commissioned SLR Consulting Australia Pty Ltd (SLR) to undertake a detailed flora and vegetation, targeted flora, basic terrestrial vertebrate fauna, and targeted significant fauna survey for the proposed Atlas Ridley Magnetite Project Connection. The survey was undertaken within the Pilbara bioregion of Western Australia, covering 10,363 hectares from South Hedland in the west to Pardoo Iron Ore Mine in the east (the Survey Area) (**Map 1**). All maps are provided in Appendix A.

#### 1.2 Objectives and Scope

The specific objectives of the biological assessments were to:

- Carry out an initial desktop assessment to determine environmental values and significant flora, vegetation, fauna or other environmental features (such as riparian areas, wetlands) relating to the project area.
- Carry out an (in season) detailed flora and vegetation survey, basic fauna and targeted fauna survey focusing on suitable habitat likely to support conservation significant fauna.
- Prepare a technical combined flora and fauna survey report.
- Provide all spatial/mapping data collected during the survey in IBSA format.

## 2.0 Background

#### 2.1 Statutory and Regulatory Framework

Western Australian flora, vegetation, and fauna is governed by the following legislative measures:

- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). (Commonwealth of Australia, 1999).
- *Biodiversity Conservation Act 2016* (WA) (BC Act) (Biodiversity Conservation Act 2016, 2016).
- *Environmental Protection Act 1986* (WA) (EP Act) (Environmental Protection Act 1986, 1986).
- *Biosecurity and Agriculture Management Act 2007* (WA) (BAM Act) (Biosecurity and Agriculture Management Act 2007, 2007).

In addition to these legislative measures, the following non-legislative lists are considered on a case-by-case basis:

- WA Department of Biodiversity Conservation and Attractions (DBCA) Priority lists for fauna, flora, and ecological communities.
- Weeds of National Significance (WoNS).
- Recognition of locally significant populations by DBCA.

The EIA process is supported by guidance documents published by the Environmental Protection Authority (EPA), DBCA and the Department of Climate Change, Energy, the Environment and Water (DCCEEW).

#### Western Australia

- Environmental Factor Guideline Flora and Vegetation (EPA, 2016a).
- Environmental Factor Guideline Terrestrial Fauna (EPA, 2016b).
- Guidelines for surveys to detect the presence of bilbies and assess the importance of habitat in Western Australia (DBCA, 2017).
- Interim Guideline for Preliminary Surveys of Night Parrot (<u>Pezoporus occidentalis</u>) in Western Australia (DPAW, 2017).
- Technical Guidance Flora and vegetation surveys for environmental impact assessment (EPA, 2016c).
- Technical Guidance Terrestrial vertebrate fauna surveys for environmental impact assessment (Environmental Protection Authority, 2020).

#### Commonwealth

- EPBC Act Referral guideline for the endangered northern quoll <u>Dasyurus hallucatus</u> (DoE, 2016).
- *Matters of National Environmental Significance Significant Impact Guidelines 1.1* (DoE, 2013).
- Survey guidelines for Australia's threatened bats (DEWHA, 2010a).
- Survey guidelines for Australia's threatened birds (DEWHA, 2010b).

- Survey guidelines for Australia's threatened frogs (DEWHA, 2010c).
- Survey guidelines for Australia's threatened mammals (DSEWPaC, 2011a).
- Survey guidelines for Australia's threatened reptiles (DSEWPaC, 2011b).

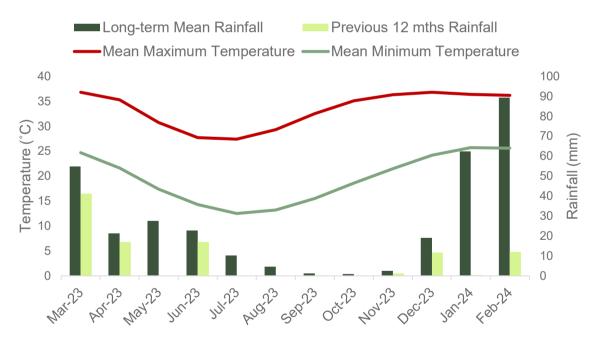
#### 2.2 Existing Environment

#### 2.2.1 Climate

The closest long-term Bureau of Meteorology weather station with a complete dataset is the Port Hedland Airport Weather Station (Station 004032), located approximately 89 km west of the Survey Area.

The long-term mean minimum temperature for Port Hedland Airport ranges from  $12.5^{\circ}C$  (July) to  $25.7^{\circ}C$  (January) (1948 to 2024) and the long-term mean maximum temperature ranges from  $27.4^{\circ}C$  (July) to  $36.8^{\circ}C$  (December and March) (1948 to 2022) (**Figure 1**) (Bureau of Meteorology, 2024).

The Port Hedland Airport weather station recorded 100.6 mm of rainfall in the 12 months prior to the survey (March 2023 to February 2024), which is 217.9 mm below the long-term average of 318.5 mm (Bureau of Meteorology, 2024). In the three months prior to the survey (December 2023 to February 2024), just 24 mm of rainfall was recorded, which is 146.6 mm below the long-term average of 170.6 mm for the same time period (Bureau of Meteorology, 2024).



#### Figure 1: Climate graph of the Port Hedland Airport Weather Station

#### 2.2.2 Interim Biogeographic Regionalisation of Australia

The Interim Biogeographic Regionalisation of Australia (IBRA) divides Australia into 89 bioregions based on major biological, geographical, and geological attributes. These bioregions are subdivided into 419 subregions as part of a refinement of the IBRA framework (DCCEEW, 2023). The Survey Area occurs within two subregions of the Pilbara bioregion: the Roebourne (PIL04) and the Chichester (PIL01) subregions (**Map 2**).

The Roebourne (PIL04) subregion is represented by quaternary alluvial and older colluvial coastal and sub-coastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera* (Kendrick & Stanley, 2001). Uplands are dominated by *Triodia* hummock grasslands. Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands (Kendrick & Stanley, 2001).

The Chichester (PIL01) subregion comprises the northern section of the Pilbara Craton and is characterised by undulating Archaean granite and basalt plains include significant areas of basaltic ranges. The subregion is represented by plains supporting a shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, and ranges supporting *Eucalyptus leucophloia* tree steppes. The climate is Semi-desert-tropical and receives 300 mm of rainfall annually, with drainage occurring to the north via numerous rivers (e.g. De Grey, Oakover, Nullagine, Shaw, Yule, Sherlock) (Kendrick & McKenzie, 2001).

#### 2.2.3 Soil Landscapes and Land Systems

Soil landscapes and land system mapping of Western Australia describes broad soil and landscape characteristics from regional to local scales, ranging from 1:20,000 to 1:250,000 (DPIRD, 2018). The Survey Area occurs within eight land systems (**Table 1, Map 3**).

Land Syste	em	Description
Name Code		(DPIRD, 2018)
Mallina System	281Ma	Sandy surfaced alluvial plains supporting soft spinifex grasslands and minor hard spinifex and tussock grasslands.
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 acacias 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.

Table 1:	Land Systems within the Survey Area
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#### 2.2.4 Hydrography

Hydrographic features intersecting, and in the vicinity of, the Survey Area are shown in **Map 4** (DWER, 2018). Three major river systems (Turner River, King Edward and Devil Creek) with associated drainage channels intersect the Survey Area, flowing in a northerly direction before discharging into the Indian Ocean east of Port Hedland.

#### 2.2.5 Broad Vegetation Types

Mapping of pre-European vegetation in Western Australia was completed on a broad scale (1:1,000,000) by Beard (1976). These vegetation types were later refined by Shepherd *et al.* (Shepherd, Beeston, and Hopkins, 2002) resulting in 819 vegetation types.

Four broad vegetation system associations are mapped over the Survey Area (**Map 5**). Representation of the system associations at a local, regional, and state level is shown in **Table 2**.

- Abydos Plain (Abydos Plain 589): Short bunch-grass savanna / Grass-steppe
- Abydos Plain (Abydos Plain 93): Hummock grasslands, shrub steppe; kanji over soft spinifex
- Abydos Plain (Abydos Plain 619): Wheatbelt; York gum, salmon gum etc. *Eucalyptus loxophleba*, *E. salmonophloia*. Goldfields; gimlet, redwood etc. *E. salubris*, *E. oleosa*. Riverine; rivergum *E. camaldulensis*.
- Abydos Plain (Abydos Plain 647): Shrub-steppe hummock grassland with scattered shrubs or mallee *Triodia* spp. *Acacia* spp., *Grevillea* spp. *Eucalyptus* spp.

Table 2:	Broad Vegetation Associations within the Survey Area and their
	Representation at the State, Regional and Local Levels (Government of
	Western Australia, 2019)

Vegetation		E	ktent	
Association	Pre-European (ha)	Current (ha)	Remaining (%)	Managed in DBCA Lands (%)
	Representat	tion across Weste	ern Australia	
Abydos Plain 589	807,698.58	802,713.40	99.38	1.91
Abydos Plain 619	119,373.78	118,205.01	99.02	0.2
Abydos Plain 647	195,860.89	191,711.41	97.88	0
Abydos Plain 93	3,044,309.52	3,040,640.98	99.88	1.96
	Representatio	on across the Pilb	ara Bioregion	
Abydos Plain 589	728,768.20	724,695.82	99.44	2.11
Abydos Plain 619	118,920.31	118,116.78	99.32	0.2
Abydos Plain 647	195,859.95	191,710.92	97.88	0
Abydos Plain 93	3,042,114.27	3,038,471.67	99.88	1.96
	Representation	across the Roebo	ourne Subregion	
Abydos Plain 589	675,391.80	671,327.48	99.40	2.14
Abydos Plain 619	33,377.16	32,595.83	97.66	n/a
Abydos Plain 647	188,901.32	184,774.70	97.82	n/a
Abydos Plain 93	46,360.53	46,334.43	99.94	n/a
Representation across the Chichester Subregion				
Abydos Plain 589	53,376.40	53,368.34	99.98	1.78
Abydos Plain 619	85,543.15	85,520.95	99.97	0.28
Abydos Plain 647	6,958.63	6,936.22	99.68	n/a

Vegetation	Extent			
Association	Pre-European (ha)	Current (ha)	Remaining (%)	Managed in DBCA Lands (%)
Abydos Plain 93	2,940,348.04	2,936,731.54	99.88	2.03
	Representation	across the Town	of Port Hedland	
Abydos Plain 589	338,269.05	335,921.21	99.31	0
Abydos Plain 619	63,650.59	62,598.14	98.35	0
Abydos Plain 647	180,908.49	176,759.02	97.71	n/a
Abydos Plain 93	1,015,339.22	1,014,599.99	99.93	n/a

\*as a portion of the current extent

#### 2.2.6 Environmentally Sensitive and Conservation Areas

Environmentally Sensitive Areas (ESAs) are declared by the Department of Water and Environmental Regulation (DWER) to prevent the degradation of important environmental values such as Threatened flora, Threatened Ecological Communities (TECs) or significant wetlands.

The Survey Area is not identified within a conservation area (**Map 6**). The closest mapped ESAs to the Survey Area is the De Grey River located approximately 9.5 kms to the east of the north-eastern end of the Survey Area and the Leslie Saltfields System located approximately 8 kms to the north at its closest point (**Map 6**) (DWER, 2023).

#### 2.2.7 Land Use

Pastoral stations and mining tenements cover almost the entirety of the Survey Area, excluding the far western end. Pippingarra pastoral station occupies majority of the western half of the Survey Area, Strelley pastoral station occupies most of the eastern half, while the far eastern end is occupied by De Grey station (DMIRS, 2024; DPLH, 2023).

### 3.0 Methods

The surveys documented in this report were undertaken in accordance with relevant EPA and DAWE guidelines (see **Section 2.1**).

#### 3.1 Desktop Assessment

#### 3.1.1 Literature Review

Background information on the Survey Area and surrounds (the Desktop Study Area) was compiled prior to the field survey. The literature review considered a selection of relevant reports detailing assessments undertaken in the region that were either publicly available from sources such as the Index of Biodiversity Surveys for Assessments (IBSA) website, the EPA Consultation Hub, or internet searches, or provided by the client. These reports are listed below and summarised in **Appendix B**.

- De Grey South Borefield Biological Surveys (SLR Consulting, 2023), 10 km east of the Survey Area.
- Detailed Flora and Vegetation Assessment, Ridley Magnetite Project (Focused Vision, 2023), encompassing current Survey Area.
- Flora and Vegetation Assessment, Port Hedland Regional, directly west of the survey area (ENV Australia Pty Ltd, 2011)

- Flora and Vegetation Assessment, Corunna Downs Intersection Works (Woodman Environmental, 2017), approximately 90 km southeast of the survey area.
- Corunna Downs Project, Level 2 Flora, and Vegetation Assessment (Woodman Environmental, 2016), approximately 90 km southeast of the survey area.
- Wodgina Gas Pipeline, Detailed Flora, and Vegetation Survey (360 Environmental Pty Ltd, 2018a), approximately 30 km southeast of the survey area.
- Roy Hill Port Facility Power Line Port Hedland, Ecological Assessment (GHD, 2016), approximately 15 km north of the survey area.
- Flora and Fauna survey Port Hedland International Airport Highway Precinct 2 (Emerge Associates, 2019), approximately 10 km north of the survey area.
- Flora and Vegetation Reconnaissance Survey of Spoilbank Marina Project Area(Strategen JBS&G, 2020), approximately 15 km north of the survey area.
- Ridley Detailed Terrestrial Vertebrate Fauna Survey (Biota, 2024), overlapping with the eastern section of the survey area.
- Ridley Services Corridors Basic and Targeted Fauna Survey (Biota, 2023), overlapping the survey area.
- Detailed terrestrial fauna and targeted Bilby survey for the Port Hedland Solar Farm Project (Phoenix Environmental, 2022), overlapping the western section of the survey area.
- Wodgina Gas Pipeline targeted Fauna Survey (360 Environmental Pty Ltd, 2018b), 20 km southwest of the Survey Area.
- Wodgina Project: Level 1 Fauna Survey, Targeted Conservation Significant Fauna Survey and Desktop Assessment (Stantec Australia Pty Ltd, 2018), 80 km south of the Survey Area.
- Pardoo Stage 3 Irrigation Project and 80 Mile Beach Ramsar Site Fauna Assessment (Bamford Consulting Ecologists, 2017b), 100 km east of the Survey Area.
- Assessment of the Bilby *Macrotis lagotis* Pardoo Station; Stage 2 areas (Bamford Consulting Ecologists, 2017a), 100 km east of the Survey Area.
- Assessment of the Bilby *Macrotis lagotis* Pardoo Station; Stage 2 and 3 project areas (Bamford Consulting Ecologists, 2016), 100 km east of the Survey Area.
- Supplementary Flora and Vegetation Survey and Terrestrial Fauna Survey for the Balla Balla Infrastructure Group Ltd (Phoenix Environmental, 2018), 100 km west of the Survey Area.
- Terrestrial Fauna Surveys for the Balla Balla Railway Project (Phoenix Environmental, 2014), 100 km west of the Survey Area.

#### 3.1.2 Database Searches

Database searches were undertaken to compile a list of flora and fauna known to occur in the Desktop Study Area and identify significant flora, fauna, and ecological communities with potential to occur within the Survey Area (Table 3).

#### Table 3: Database Search details

Database name	Date received	Search target	Buffer around the Survey Area
Threatened and Priority Ecological Communities database search (DBCA, 2024c)	26 February 2024	TECs and PECs	50 km
Threatened and Priority Flora (TPFL) database search (DBCA, 2024e)	15 January 2024	Threatened and Priority flora	50 km
Western Australian Herbarium Flora database search (DBCA, 2024f)	15 January 2024	Threatened and Priority flora	50 km
Threatened and Priority Fauna database search (DBCA, 2024d)	15 January 2024	Threatened and Priority fauna	50 km
Protected Matters Search Tool (PMST) (DCCEEW, 2024a)	16 January 2024	Threatened flora, fauna, and ecological communities	50 km
NatureMap (DBCA, 2024b)	22 January 2024	Flora and fauna	50 km

#### 3.1.3 Likelihood of Occurrence

Significant flora and fauna taxa identified during the desktop assessment were assessed to determine the likelihood of their occurrence within the Survey Area before and after the field survey. The assessment used the likelihood of occurrence criteria presented in Table 4.

Taxa listed as Marine only under the EPBC Act were not considered to be significant taxa because the Marine listing does not constitute MNES under the EPBC Act. Additionally, erroneous records (i.e. records that occur well outside a taxon's known distribution) were excluded from consideration. Only taxa that have been recorded within the Survey Area or were assessed as having a high or medium likelihood of occurrence are discussed in detail.

Table 4: Lil	kelihood of occur	rence criteria
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Rank	Criteria
Recorded	The taxon was recorded within the Survey Area during the current survey.
Previously Recorded	The taxon has been previously recorded within the Survey Area according to database search or literature review results.
High (Likely to occur)	There are existing records of the taxon near the Survey Area (within 20 km), suitable habitat is present within the Survey Area, and, for fauna, the taxon has been recorded within the Desktop Study Area in the last 15 years.
Medium (May occur)	There are existing records of the taxon within the Desktop Study Area, however, the taxon does meet the criteria for high likelihood, or suitable habitat within the Survey Area is marginal or limited in extent, or, for fauna, the taxon has not been recorded within the Desktop Study Area in the last 15 years.
Low (Unlikely to occur)	Suitable habitat is not present within the Survey Area, or the taxon is very infrequently recorded in the locality despite reasonable previous search effort, or the taxon is believed to be extinct or locally extinct.

#### 3.2 Field Survey

#### 3.2.1 Survey Timing

The biological assessments were undertaken during one trip from 1<sup>st</sup> to 10<sup>th</sup> March 2024 **Table 5**.

Table 5:	Survey	Timing	and	Personne
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Trip	0	Scope	Date	Personnel	Person Field Days
1. Flora Faun	a and na	<ul> <li>Establishment of flora sites</li> <li>Preliminary vegetation and condition mapping</li> <li>Inventory of vascular flora</li> <li>Targeted flora searches during traverses between flora sites</li> <li>Targeted fauna survey</li> <li>Basic fauna survey</li> </ul>	01/03/2024- 10/03/2024	Lukas Geidans Grant Buller Jack Hardie Lewis Berry	40

#### 3.2.2 Field Personnel and Licences

The flora and vegetation surveys were undertaken by Senior Botanist Grant Buller and Botanist Jack Hardie under flora licences FB62000321-2 and FB62000389-02, respectively. The flora field team has a combined 5.5 years' experience conducting surveys of similar scope in the Pilbara region of Western Australia.

The basic terrestrial vertebrate fauna survey was undertaken by Associate Ecologist Lukas Geidans, who has 4.5 years' experience, and Zoologist Lewis Berry who has 2 years' experience, conducting surveys of similar scope in the Pilbara. The fauna fieldwork was completed under Fauna Taking (Biological Assessment) License – Regulation 27 (BA27000816) and an authorisation to take or disturb threatened species under Section 40 of the BC Act (TFA 2223-0222). Animal ethics approval was obtained under scientific use licence number U336 / 2023 - 2025 and permit number WAEC 24-02-11.

During the survey, SLR personnel were accompanied by Traditional Owners from the Kariyarra group to the west of the King Edward River, and to the east by traditional owners from the Wanparta group.

#### 3.2.3 Weather Conditions

Weather conditions during the fauna survey are presented in Table 6. Daily temperature and rainfall data is from the Port Hedland Weather Station (Station 004032) (BoM, 2024). Weather conditions can impact potential detection of fauna taxa during a survey.

#### Table 6: Field survey weather conditions

Date	Temperature (°C)		Deinfell (mm)
	Min	Max	Rainfall (mm)
01/03/2024	28.7	35.0	0
02/03/2024	27.8	33.7	1.8
03/03/2024	26.4	34.4	0
04/03/2024	26.5	34.1	0

Date	Temperature (°C)		Poinfall (mm)	
	Min	Мах	Rainfall (mm)	
05/03/2024	25.2	34	8.4	
06/03/2024	28.3	34.7	0	
07/03/2024	27.1	35.5	0	
08/03/2024	27.4	36.2	8	
09/03/2024	27.9	35.2	0	
10/03/204	28	34.5	0	

#### 3.3 Flora and Vegetation

#### 3.3.1 Field Survey

The detailed flora and vegetation survey was undertaken from 1 - 10 March 2024. A handheld Fulcrum mobile data collection device was used to record data, and mapping notes, opportunistic flora collections and photographs were also taken where required. The survey effort showing flora site locations and GPS track logs is shown in **Map 7**.

Vegetation types were described based on their structure and species composition, and condition was assessed according to the Eremaean and Northern Botanical Provinces vegetation condition scale (EPA, 2016c). Broad vegetation and condition mapping was conducted in the field, with boundaries delineated over aerial photography, at a scale of 1:2,000. Broad vegetation units were refined based on taxonomic identification of flora collections, and mapping notes taken during the field survey. Vegetation condition mapping was refined based on site data and mapping notes. Finalised polygons were digitised and produced as electronic mapping data using GIS software.

#### 3.3.2 Establishment of Flora Sites

Indicative site selection was undertaken prior to the survey based on aerial photography and available literature. The number and locations of flora sites were then adjusted on site to achieve sites most representative of the vegetation present. Where possible, at least three flora sites were established in each vegetation type within the Survey Area. In instances where vegetation types were not large enough to accommodate three flora sites, one or two sites were established.

Flora sites consisted of either quadrats or relevés. Quadrats were 50 x 50 m with corners aligned to northwest, northeast, southeast and southwest, and were measured out using measuring tapes. Fence droppers are generally used as standard practice for marking northwest corners, however these were not used to avoid ground disturbance in accordance with traditional owner requirements. Relevés comprised unbounded sites of approximately 50 x 50 m where possible, or alternate configurations approximating 2500 m<sup>2</sup> (as required in linear areas such as drainage lines, gullies, and narrow ridge lines). A comprehensive list of the flora present at the time of sampling was recorded for both quadrat and relevé sites.

Flora site locations were recorded using a GPS-enabled handheld device, with points recorded at each corner of a quadrat, the start and finish point of linear relevés, and the central point of circular relevés. The following information was recorded at each flora site:

- Site code.
- Date and personnel.
- Landform and soil description.

- Relevant site descriptors including, slope, aspect, litter cover, bare ground cover, and fire history.
- Inventory of vascular flora including the approximate average height and percentage foliar cover for each taxon.
- Vegetation description in accordance with the National Vegetation Information System (NVIS) Level 5 'association' whereby the dominant growth form, height, cover, and species (three species) for the three traditional strata (upper, mid, and ground) are described.
- Vegetation condition in accordance with the Eremaean and Northern Botanical Provinces vegetation condition scale (EPA, 2016c).
- Evidence of disturbance (for example clearing, rubbish, feral animals, weed incursion, and evidence of feral animals and dieback) where present.
- Photograph of the vegetation occurring within the site.

A total of 54 flora sites comprising 26 quadrats and 28 relevés were established within the Survey Area. An additional approximately 250 mapping notes were completed to aid vegetation mapping. Flora site locations are shown in **Map 7**.

#### 3.3.3 Opportunistic Flora

Flora taxa observed outside flora sites were recorded opportunistically. When significant flora, Declared Pests (DPs), or WoNS were encountered opportunistically, a GPS location and count of the individuals present was recorded.

#### 3.3.4 Targeted Searching

Prior to the survey a list of significant flora taxa with the potential to occur within the Survey Area was compiled (see Section 3.1.3). Field personnel familiarised themselves with photographs, reference samples, and descriptions of these taxa before conducting the survey.

Targeted searching was undertaken within habitat suitable for Threatened and Priority flora as per standard practice in the Pilbara. The entire Survey Area was not systematically searched. Potential habitat within the proposed footprint was prioritised over areas outside the proposed footprint.

When Threatened or Priority flora were encountered in the field a GPS location was taken and a count of individuals was recorded, followed by a search in the local vicinity to determine if any other individuals were present nearby and delineate population boundaries where relevant and possible. Specimens of potential significant flora that could not be identified in the field were collected for identification and lodgement at the Western Australian Herbarium (WAH).

#### 3.3.5 Vegetation Type and Condition Mapping

Vegetation type and condition mapping was initially conducted in the field with boundaries delineated over aerial photography at a scale of 1:5,000. Vegetation types were refined based on taxonomic identification of flora collections and mapping notes taken during the field survey. Further validation of vegetation types was undertaken using multivariate analysis of data collected from the quadrats and relevés. Vegetation condition mapping was refined based on site data and mapping notes. Polygons were digitised using GIS software.

#### 3.3.6 Taxonomy and Nomenclature

Where field identification of plant taxa was not possible, specimens were collected for identification using resources of the WAH. Identification of flora collections was completed by SLR Principal Botanist Simon Colwill and WAH taxonomist Mike Hislop.

The finalised species list was checked against FloraBase (Department of Biodiversity Conservation and Attractions, 2023) to determine the conservation status and known distribution of each taxon. Introduced species were compared against the current BAM Act Declared Plants list the WoNS list to determine their control status (DAWE, 2023; DPIRD, 2023). FloraBase (DBCA, 2024a) was used to determine the conservation status and known distribution of each taxon. The control status of introduced flora was sourced from the WoNS list and declared plants list (CISS, 2024; DPIRD, 2024).

Any significant flora taxa, including potential Threatened and Priority taxa, range extensions, and potential new taxa, were submitted to the WAH for verification and lodgement. Where relevant, Threatened and Priority Flora Report Forms (TPFRFs) were submitted to DBCA.

#### 3.3.7 Statistical Analyses

#### 3.3.7.1 Vegetation Type Validation

Multivariate analysis to validate vegetation types was undertaken using PRIMER version 7. A comparison of the similarity of floristic composition between flora sites based on species presence or absence was undertaken using the Bray-Curtis similarity index. Vegetation types were defined based on approximately 40-80% similarity and distinguished visually in a dendrogram cluster analysis. The analysis was undertaken on a data matrix comprising 80 vascular flora taxa and 54 flora sites. Quadrats and relevés were included in the analysis as comprehensive species presence or absence was recorded at both site types. Singletons (flora taxa recorded at only one site) were excluded from the analysis as they can result in bias due to the Bray-Curtis coefficient and grouping properties. Unidentified or partially identified flora taxa were removed based on their ambiguity; exceptions were made for taxa that could not be identified but were confirmed to be the same across multiple sites. Introduced taxa (with the exception of dominant species, primarily Buffel Grass, \*Cenchrus ciliaris) were also excluded as their presence is typically associated with a disturbance rather than representative of a vegetation type.

#### 3.3.7.2 Species Accumulation Curve

A species accumulation curve was plotted using Primer v7 to determine the adequacy of the survey. The treatments comprised Sobs (Mao Tao), which effectively smooths the curve of observed species by simulating an infinite number of randomisations of the sample order, and richness estimators Chao 1, Chao 2, Jacknife 1, Bootstrap, and Michaelis-Menton to predict the theoretical maximum number of species that could potentially be recorded. The species accumulation curve was calculated using systematic sampling data from flora sites and does not include opportunistic flora records. All identified flora taxa, including annual and perennial, within each flora site was used to generate the species accumulation curve. Unknown flora taxa that could not be identified to a species level was excluded.

#### 3.4 Fauna

#### 3.4.1 Habitat Assessment and Mapping

Habitat assessments were undertaken in representative areas of fauna habitat within the Survey Area to record habitat values. Where possible, at least one habitat assessment was recorded within each habitat type. Habitat assessment locations are shown in **Map 7.** 



The following information was collected at each habitat assessment locations using a GPSenabled handheld device:

- Site photo.
- Landform.
- Soil type and colour.
- Rock types, surface stone cover, and size classes.
- Key habitat and microhabitat features including leaf litter, logs, burrows, rocky outcrops, rock crevices, hollows, and water sources.
- Habitat quality, fire history, and evidence of disturbance.
- General description of vegetation structure.

Fauna habitat mapping was based on a combination of field observations, habitat assessment data, aerial imagery, and, if available, vegetation type mapping. Polygons were digitised using GIS software.

#### 3.4.2 Camera Traps

A total of 49 motion sensitive camera traps were set up during the targeted survey. Site selection was based on suitable habitat features targeting the Northern Quoll. Cameras were baited with universal bait (rolled oats and peanut butter and sardines). **Table 7** shows the total camera trap survey effort, and camera trap locations are shown in **Map 7**.

Fauna Habitat	Camera ID number	Total camera trap nights
Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-52	4
Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-53	4
Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-55	4
Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-59	4
Major Drainage	675.072189-CAM-31	4
Major Drainage	675.072189-CAM-39	5
Major Drainage	675.072189-CAM-49	4
Major Drainage	675.072189-CAM-51	5
Major Drainage	675.072189-CAM-54	5
Major Drainage	675.072189-CAM-36	4
Major Drainage	675.072189-CAM-57	4
Major Drainage	675.072189-CAM-58	4
Major Drainage	675.072189-CAM-64	4
Mixed Acacia Shrubs and Triodia Plains	675.072189-CAM-22	4
Mixed Acacia Shrubs and Triodia Plains	675.072189-CAM-44	5

#### Table 7: Camera trap survey effort

Fauna Habitat	Camera ID number	Total camera trap nights
Mixed Acacia Shrubs and Triodia Plains	675.072189-CAM-56	4
Open Eucalypt Woodland	675.072189-CAM-37	4
Open Eucalypt Woodland	675.072189-CAM-41	4
Open Eucalypt Woodland	675.072189-CAM-65	4
Outcrops and Breakaways	675.072189-CAM-19	4
Outcrops and Breakaways	675.072189-CAM-20	4
Outcrops and Breakaways	675.072189-CAM-21	4
Outcrops and Breakaways	675.072189-CAM-23	4
Outcrops and Breakaways	675.072189-CAM-24	4
Outcrops and Breakaways	675.072189-CAM-25	4
Outcrops and Breakaways	675.072189-CAM-26	4
Outcrops and Breakaways	675.072189-CAM-27	4
Outcrops and Breakaways	675.072189-CAM-28	4
Outcrops and Breakaways	675.072189-CAM-29	4
Outcrops and Breakaways	675.072189-CAM-32	4
Outcrops and Breakaways	675.072189-CAM-33	4
Outcrops and Breakaways	675.072189-CAM-34	4
Outcrops and Breakaways	675.072189-CAM-35	4
Outcrops and Breakaways	675.072189-CAM-38	4
Outcrops and Breakaways	675.072189-CAM-40	4
Outcrops and Breakaways	675.072189-CAM-42	4
Outcrops and Breakaways	675.072189-CAM-43	4
Outcrops and Breakaways	675.072189-CAM-45	5
Outcrops and Breakaways	675.072189-CAM-46	4
Outcrops and Breakaways	675.072189-CAM-47	4
Outcrops and Breakaways	675.072189-CAM-48	4
Outcrops and Breakaways	675.072189-CAM-50	4
Outcrops and Breakaways	675.072189-CAM-60	4
Outcrops and Breakaways	675.072189-CAM-61	4
Outcrops and Breakaways	675.072189-CAM-62	4
Outcrops and Breakaways	675.072189-CAM-63	4
Outcrops and Breakaways	675.072189-CAM-66	4
Outcrops and Breakaways	675.072189-CAM-67	4
Stony Hills	675.072189-CAM-30	4
Total		201

#### 3.4.3 Acoustic Surveys

Autonomous recording units (ARUs) were used to passively record animal calls during the field survey.

#### 3.4.3.1 Bats

Song Meter SM4BAT ultrasonic ARUs were used to target bats with a particular focus on the Pilbara Leaf-nosed Bat and Ghost Bat. SM4BAT ARUs were deployed in habitats likely to be used by significant bat species, such as water sources or rocky areas, for a minimum of four nights at each location. The number and time of significant bat species calls was documented, whereas non-significant bat species were simply recorded as present or absent per night at each location. **Table 8** shows the total SM4BAT ARU survey effort, and locations are shown in **Map 7**.

#### Table 8: SM4BAT ARU survey effort

Habitat	Site number	Trap nights
Outcrops and Breakaways	675.072189-BAT-1	9
Outcrops and Breakaways	675.072189-BAT-2	6
Low Acacia stellaticeps over Triodia Plains	675.072189-BAT-3	5
Outcrops and Breakaways	675.072189-BAT-4	4
Major Drainage	675.072189-BAT-5	6
	Total	30

#### 3.4.3.2 Night Parrot

Song Meter SM4 ARUs were used to target Night Parrot (*Pezoporus occidentalis*). SM4 ARUs were deployed in habitats likely to be used by Night Parrot, such as water sources or long unburnt spinifex, for a minimum of six nights at each location. **Table 9** shows the total SM4 ARU survey effort, and locations are shown in **Map 7**.

#### Table 9: SM4 ARU survey effort

Habitat	Site number	Trap nights
Mixed Acacia Shrubs and Triodia Plains	675.072189-BIR-14	6
Open Eucalypt Woodland	675.072189-BIR-15	4
Major Drainage	675.072189-BIR-16	6
Open Eucalypt Woodland	675.072189-BIR-17	6
Low Acacia stellaticeps over Triodia Plains	675.072189-BIR-18	6
	Total	28

#### 3.4.4 Opportunistic Observations

Opportunistic observations of fauna were recorded throughout the Survey Area, including primary evidence (direct sightings, calls) and secondary evidence (tracks, scats, diggings, remains).

#### 3.4.5 Bilby Searches

Targeted Bilby searches were undertaken throughout the Survey Area in areas of suitable Bilby habitat and consisted of personnel conducting transect searches searching for evidence of Bilby activity, such as burrows, diggings, scats, and tracks. A total of 44 targeted Bilby searches were undertaken. **Table 10** shows the total survey effort for Bilby searches, and locations are shown in **Map 7**.

Table 10:	Targeted Bilby	y search effort
	Talgotoa Bilo	y 0001011011011011

Search Number	Habitat	Habitat Site Sheet	Search length (Kms)	
Bilby Search 1	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-59	0.26	
Bilby Search 2	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-52. 675.072189-BIR-18	0.72	
Bilby Search 3	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-55	0.59	
Bilby Search 4	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-53	2.09	
Bilby Search 5	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-HAB-71	0.69	
Bilby Search 6	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-HAB-71	3.87	
Bilby Search 7	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-HAB-70	0.77	
Bilby Search 8	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-HAB-77	1.71	
Bilby Search 9	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-HAB-76	2.03	
Bilby Search 10	Open Eucalypt Woodland	675.072189-BIL-6	1.84	
Bilby Search 11	Open Eucalypt Woodland	675.072189-HAB-74	2.39	
Bilby Search 12	Mixed Acacia Shrubs and Triodia Plains	675.072189-CAM-56	1.04	
Bilby Search 13	Open Eucalypt Woodland	675.072189-HAB-93	2.52	
Bilby Search 14	Minor Drainage	675.072189-CAM-57	0.23	
Bilby Search 15	Minor Drainage	675.072189-CAM-58	0.59	
Bilby Search 16	Major Drainage	675.072189-CAM-54	2.52	
Bilby Search 17	Mixed Acacia Shrubs and Triodia Plains	675.072189-BIL-13, 675.072189-CAM-64, 675.072189-HAB-90	1.46	
Bilby Search 18	Mixed Acacia Shrubs and Triodia Plains	675.072189-BIL-13	4.08	

Search Number	Habitat	Habitat Site Sheet	Search length (Kms)	
Bilby Search 19	Mixed Acacia Shrubs and Triodia Plains	675.072189-HAB-92	1.60	
Bilby Search 20	Major Drainage	675.072189-CAM-31	1.58	
Bilby Search 21	Major Drainage	675.072189-CAM-51	1.50	
Bilby Search 22	Outcrops and Breakaways	675.072189-CAM-20, 675.072189-CAM-25, 675.072189-CAM-21	4.09	
Bilby Search 23	Mixed Acacia Shrubs and Triodia Plains	675.072189-HAB-84	0.46	
Bilby Search 24	Mixed Acacia Shrubs and Triodia Plains	675.072189-BIL-12	15.30	
Bilby Search 25	Outcrops and Breakaways	675.072189-CAM-19	1.39	
Bilby Search 26	Mixed Acacia Shrubs and Triodia Plains	675.072189-HAB-68	5.54	
Bilby Search 27	Mixed Acacia Shrubs and Triodia Plains	675.072189-CAM-22	0.22	
Bilby Search 28	Outcrops and Breakaways	675.072189-CAM-67	4.24	
Bilby Search 29	Outcrops and Breakaways	675.072189-CAM-61	5.08	
Bilby Search 30	Mixed Acacia Shrubs and Triodia Plains	675.072189-HAB-86	1.67	
Bilby Search 31	Sparse Triodia Plains	675.072189-HAB-82	0.85	
Bilby Search 32	Sparse Triodia Plains	675.072189-HAB-82	0.76	
Bilby Search 33	Major Drainage	675.072189-HAB-81	1.89	
Bilby Search 34	Major Drainage	675.072189-HAB-81	1.18	
Bilby Search 35	Major Drainage	675.072189-CAM-39	0.56	
Bilby Search 36	Major Drainage	675.072189-CAM-49	1.25	
Bilby Search 37	Mixed Acacia Shrubs and Triodia Plains	675.072189-BIL-11	3.45	
Bilby Search 38	Outcrops and	675.072189-BIL-9	1.97	
	Breakaways	675.072189-BIL-10	1.07	
Bilby Search 39	Low <i>Acacia stellaticeps</i> over Triodia Plains	675.072189-CAM-32	3.81	
Bilby Search 40	Outcrops and Breakaways	675.072189-BIL-7	2.08	
Bilby Search 41	Sparse Triodia Plains	675.072189-CAM-36	3.35	
Bilby Search 42	Minor Drainage	675.072189-CAM-37	0.82	

Search Number	Habitat	Habitat Site Sheet	Search length (Kms)
Bilby Search 43	Open Eucalypt Woodland	675.072189-CAM-41	0.37
Bilby Search 44	Open Eucalypt Woodland	675.072189-CAM-65	0.29
	Total	94	l.7

#### 3.4.6 Identification and Taxonomy

Terrestrial vertebrate fauna taxa were identified in the field and released on site. Bat and bird calls were analysed by Robert Bullen from Bat Call WA.

Where there was doubt on a species name (through subsequent name changes or taxonomic reviews), an effort was made to determine the current scientific name for each taxon. Taxonomy and nomenclature in this report follows the Checklist of the Terrestrial Vertebrate Fauna of Western Australia (WAM, 2024) where relevant.

#### 3.5 Limitations

Limitations and constraints of the flora, vegetation, and fauna survey are detailed below in **Table 11**.

Variable	Degree of limitation	Potential constraints on survey outcomes
Availability of data and information	None	Sufficient data and information, including regional and local contextual information, was available to complete the scope of the survey.
Competency and experience of the survey team	None	<ul> <li>The survey was undertaken by a team with the following extensive experience undertaking similar scopes within the Pilbara bioregion.</li> <li>Associate Ecologist Lukas Geidans – 4.5 years' experience</li> <li>Zoologist Lewis Berry – 2.5 years' experience</li> <li>Botanist Jack Hardie – 2.5 years' experience</li> <li>Senior Botanist Grant Buller – 3 years' experience</li> </ul>
The proportion of flora and fauna identified, recorded, or collected	None	Of the 172 flora taxa recorded, 19 specimens (11%), could not be identified to species level because they were sterile at the time of the survey. The unidentified flora specimens were not analogous to significant flora taxa. All of the fauna recorded during the field survey were identified on site.
Scope of the survey	None	The scope of the survey was limited to vascular plants and terrestrial vertebrate fauna. No further exclusions were made within these groups.
Adequacy of the survey intensity and proportion of survey achieved	None	A minimum of three flora sites were installed within most vegetation types, apart from two vegetation types which were restricted in distribution, and a minimum of two fauna habitat assessment were made within each habitat type. Additional survey effort may yield additional flora and fauna taxa, however,

#### Table 11: Limitations and constraints associated with the survey

Variable	Degree of limitation	Potential constraints on survey outcomes
		sufficient time and effort was allocated to the survey given the size and complexity of the Survey Area and the expected level of survey intensity.
Access problems	None	The different vegetation types and habitats within the Survey Area were sufficiently accessed by vehicle and on foot.
Timing, weather, and season	Partial	The recommended primary survey period Eremaean Botanical Province as per the EPA Technical Guidance occurs 6-8 weeks post wet season (March to June). The flora and vegetation survey was undertaken within the recommended primary survey period, however rainfall in the 3 and 12-month periods prior to the survey was well below average.
		The recommended primary periods for fauna surveys in the Pilbara region are:
		Amphibians – immediately following rainfall
		Birds – immediately following rainfall
		Mammals – no preferred time
		Reptiles – September to April
		The fauna survey was undertaken within the recommended primary survey period for all vertebrate species.
Disturbance that may have affected the results of survey	None	Areas of disturbance associated with weeds and livestock/pastoralism were present within the Survey Area but were not a limitation on the results of the survey.
Problems with data and analysis, including sampling biases	None	Survey effort for significant flora and fauna taxa was concentrated in preferred habitats. This may introduce a bias where the use of non-preferred habitat is underrepresented, however, this is not considered a limitation on the survey outcomes.

## 4.0 Results

#### 4.1 Flora and Vegetation

#### 4.1.1 Desktop Assessment

#### 4.1.1.1 Database Searches

The database searches and literature review identified 33 significant flora taxa occurring within the Desktop Study Area, comprising:

- One Threatened taxa
- Eight Priority 1 taxa
- Two Priority 2 taxa
- 20 Priority 3 taxa
- Two Priority 4 taxa

Key findings of the literature review and database search results are summarised in **Appendix B** and presented in **Map 8**.

Three PECs were identified within the Desktop Study Area:

- Eighty Mile Land System (Priority 3), approximately 19 km north of the Survey Area.
- Gregory Land System (Priority 3), approximately 49 km south-south-west of the Survey Area.
- Horseflat Land System of the Roebourne Plains (Priority 3) approximately 75 km south west of the Survey Area.

The PECs identified by database searches are presented in **Map 8**.

#### 4.1.1.2 Likelihood of Occurrence

The pre-survey likelihood of occurrence assessment identified that of the 33 significant flora species identified by the desktop assessment:

- None had previously been recorded within the Survey Area
- 11 were considered to have a high likelihood of occurrence
- None were considered to have a medium likelihood of occurrence
- 22 were considered to have a low likelihood of occurrence.

Following the survey, the likelihood of occurrence assessment identified that:

- Two taxa were recorded within the Survey Area
- Two taxa were considered to have a high likelihood of occurrence
- Six taxa were considered to have a medium likelihood of occurrence
- 23 taxa were considered to have a low likelihood of occurrence.

The likelihood of occurrence assessment is provided in **Appendix C**.

#### 4.1.2 Field Survey

#### 4.1.2.1 Floristic Composition

The survey recorded a total of 172 taxa from 94 genera across 40 families (**Appendix D**). The dominant families were Fabaceae (45 species), Poaceae (19 species) and Malvaceae (14 species). The dominant genera were *Acacia* (18 species), *Corymbia* and *Ptilotus* (6 species each). Of the 172 taxa recorded, 15 were identified to genus and two were identified to family, however these specimens are unlikely to represent conservation significant flora.

#### 4.1.2.2 Significant Flora

#### Threatened and Priority Flora Recorded Within the Survey Area

No Threatened flora species pursuant to the Environment Protection and Biodiversity Conservation (EPBC) Act 1999 and/or gazetted as Threatened pursuant to the Biodiversity Conservation (BC) Act 2016 were recorded during the survey.

Two DBCA-listed Priority species, *Gymnanthera cunninghamii* (P3) and *Tephrosia rosea* subsp. Port Hedland (A.S. George 1114) (P1), were recorded within the Survey Area (Map 9). Six individuals of *Gymnanthera cunninghamii* (Plate 1) was recorded opportunistically in Devil Creek (vegetation type MaEc), while two individuals of *Tephrosia rosea subsp*. Port Hedland (A.S. George 1114) (Plate 2) were recorded opportunistically within vegetation type AsTe adjacent to Great Northern Highway at the western end of the survey area.

Threatened and Priority Flora Report Forms have been submitted to DBCA and are provided in **Appendix E**.



Plate 1. Gymnathera cunninghamii (P3) (Source: SLR Consulting).



#### Plate 2: *Tephrosia rosea* subsp. Port Hedland (A.S. George 1114) (Source: SLR Consulting)

#### Significant Flora Potentially Occurring Within the Survey Area

No significant flora taxa have been recorded within the Survey Area during previous surveys.

#### 4.1.3 Introduced Flora

A total of eight introduced taxa were recorded within the Survey Area, representing 4.7% of the total taxa recorded (**Table 12; Map 10**). None are listed as WoNS. One taxon (\**Calotropis procera*) is listed as a Declared Pest under the BAM Act, of which approximately 144 individuals were recorded opportunistically, and another four individuals within flora sites.

One individual of \**Azadirachta indica* (Neem Tree) was recorded opportunistically in the King Edward River drainage; this record was determined to be a range extension as its current distribution according to Florabase is within the Kimberley region (DBCA, 2024a). The specimen collected was vouchered at the request of Mike Hislop from WAH (pers. com. M Hislop, 2024). The remaining six weed species recorded are commonly found throughout the Pilbara.

Taxon	Common name	Status under BAM Act	WoNS
*Aerva javanica	Kapok	Permitted – s11	No
*Azadirachta indica	Neem tree	Permitted – s11	No
*Calotropis procera	Calotrope	Declared Pest - s22(2)	No
*Cenchrus ciliaris	Buffel grass	Permitted – s11	No
*Indigofera oblongifolia		Permitted – s11	No
*Malvastrum americanum	Spiked Malvastrum	Permitted – s11	No
*Passiflora foetida	Stinking Passion Flower	Permitted – s11	No
*Vachellia farnesiana	Mimosa Bush	Permitted – s11	No

#### Table 12: Introduced Flora Taxa Recorded within the Survey Area

#### 4.1.4 Unconfirmed Flora

Nineteen specimens (11% of the taxa recorded) could not be identified to species level because the taxa were too sterile and/or in poor condition at the time of the survey (Flora Inventory, **Appendix D**). Of these specimens, three were identified to family level, 15 were identified to genus level, and one was tentatively identified to species level. None of the unconfirmed flora taxa were analogous to significant flora taxa identified by the desktop assessment and may represent duplicates of taxa that were confirmed within the Survey Area. One of the three taxa identified to Family level (i.e. Violaceae) was only tentatively assigned a genus (i.e. ?*Afrohybanthus*) (refer to Discussion, Section **5.1.2.1**).

#### 4.1.5 Vegetation Types

Fourteen vegetation types were described and mapped across five broad landforms within the Survey Area (**Table 13**; **Map 9**).

Detailed site sheets for each quadrat are provided in Appendix F.

Table 13:	: Vegetation types recorded within the Survey	Area
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Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
Vegetation Type Code: AiTe: <i>Triodia epactia</i> low hummock grassland	Ironstone hilltops and ridges	30 ha, 0.29%	AR10, AR13, AR45	Very Good	
Vegetation Type Code: AoTe: Acacia orthocarpa tall open shrubland over Triodia epactia low open hummock grassland	Granite and quartz outcroppings	53 ha, 0.51%	AR05, AR36, AR38, AR40	Very Good	

Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
Vegetation Type Code: 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	Plains	5495 ha, 53.03%	AR15, AR18, AR23, AR34, AR32, AR49, AR52	Very Good	
Vegetation Type Code: AsTe: Acacia stellaticeps mid open shrubland over Triodia epactia low hummock grassland	Plains	3067 ha, 29.6%	AR02, AR03, AR04, AR20, AR31, AR42	Very Good	

Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
Vegetation Type Code: At: Acacia tumida tall shrubland over Triodia epactia mid open hummock grassland	Plains and foothills	18.3 ha, 0.18%	AR29, AR35, AR46	Very Good	
Vegetation Type Code: 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	Plains	123.9 ha, 1.2%	AR25, AR54, AR53	Very Good	

Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
Vegetation Type Code: 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	Low lying floodplain/minor drainages	42.5 ha, 0.41%	AR16, AR17	Degraded	
Vegetation Type Code: EvAcTe: Eucalyptus victrix low sparse woodland over Acacia colei tall open shrubland over Triodia epactia mid open hummock grassland	Minor floodplains	263.5 ha, 2.54%	AR06, AR07, AR08, AR22, AR21	Good to Very Good	

Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
Vegetation Type Code: 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	Drainage	24.1 ha, 0.23%	AR12, AR26, AR27, AR33, AR30	Very Good	
Vegetation Type Code: FspAh: Low sparse woodland of Atalaya hemiglauca and Ficus brachypoda over Triodia epactia low sparse hummock grassland	Ironstone hilltops and ridges	1.8 ha, 0.02%	AR09, AR14, AR44	Very Good	

Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
Vegetation Type Code: FspTe: Mixed Acacia (A. inaequilatera, A. ancistrocarpa) with Ficus brachypoda low isolated trees over low open hummock grassland Triodia epactia	Granite outcropping	13.5 ha, 0.13%	AR37, AR48, AR50	Very Good	
Vegetation Type Code: 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	Major drainages	165.7 ha, 1.6%	AR28, AR39, AR41, AR47	Good	

Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
Vegetation Type Code: Sh: Sclerolaena hostilis low sparse forbland	Low lying colluvial flats,	9.6 ha, 0.09%	AR11	Degraded	
<b>Vegetation Type Code:</b> <b>TsTe:</b> <i>Triodia secunda</i> and <i>T.</i> <i>epactia</i> low hummock grassland	Flats, floodplain	848.4 ha, 8.19%	AR01, AR19, AR24, AR43, AR51	Very Good	

\*Brackets indicate species that may or may not be present, but were observed as dominant at some of the sites that make up the vegetation type

# 4.1.6 Vegetation Condition

Vegetation condition within the Survey Area ranged from Degraded to Very Good, with the majority (95.2%) being in Very Good condition (**Table 14**; **Map 10**).

The remainder of the Survey Area comprised previously cleared areas (i.e. for roads, tracks, pastoralism infrastructure) and were not assigned a vegetation condition (206.3 ha / 2 %).

Evidence of disturbance included historical clearing for access tracks, cattle grazing, trampling and scats, weeds, and frequent burning.

Vegetation Condition	Area (ha)	Percentage of Survey Area (%)
Degraded	52.1	0.5
Good	232.4	2.2
Poor	3.3	0.03
Very Good	9868.9	95.2

## Table 14: Summary of Vegetation Condition within the Survey Area

# 4.1.7 Significant Vegetation

# 4.1.7.1 Threatened and Priority Ecological Communities

None of the vegetation types within the Survey Area were considered analogous to TECs or PECs.

# 4.1.8 Groundwater Dependent Ecosystems

One vegetation type, MaEc, is likely to represent groundwater dependent ecosystems (GDE) associated with some of the major drainages intersecting the survey area (i.e. King Edward River, Turner River and Devil Creek). This vegetation type supports known phreatophytic tree species such as *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens*, which are reliant on access to the groundwater table.

# 4.1.9 Statistical Analysis

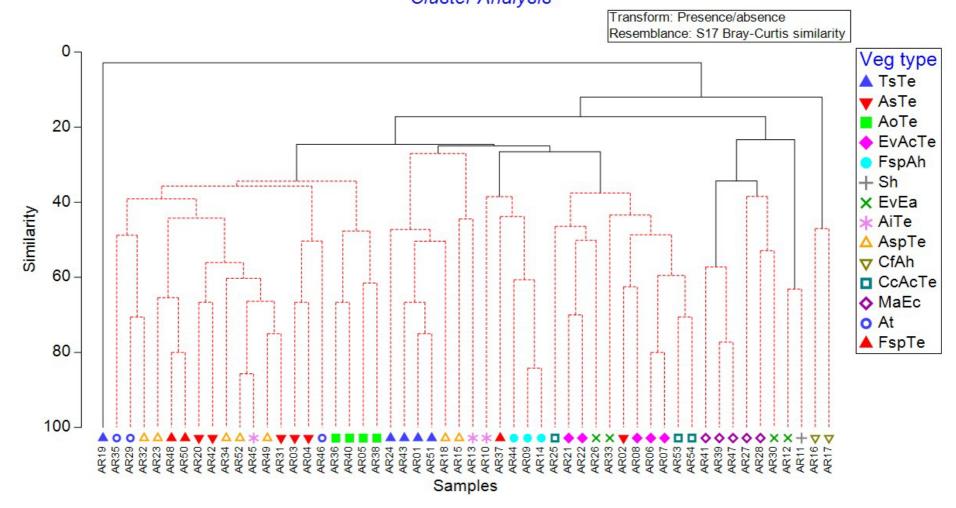
# 4.1.9.1 Floristics

Data was modified in accordance with the methodology in Section **3.3.7.1**. Selected inputs and outputs of the floristic analysis are presented in **Appendix G**. The following observations were made from the floristic analysis and the dendrogram output (**Figure 2**):

• Acacia dominated vegetation types on plains (At, AspTe, AoTe, AsTe and FspTe) grouped broadly together; these groups largely represented the Acacia plains which dominated the majority of the Survey Area (approximately 83%). While FspTe was included in this grouping, this was largely based on the shared presence of common Acacia shrubs which exist across a range of habitats and landforms (e.g. *A. inaequilatera* and *A. ancistrocarpa*). Vegetation mapping from the flora survey, however, determined the FspTe vegetation type to be separate based on the presence of *Ficus brachypoda* which is often associated with these landforms (i.e. granite outcroppings) and less so on the plains. These granite outcroppings also often represent a different suite of species to the surrounding plains, despite often sharing some common Acacias.

- The major drainage sites (MaEc) were grouped together with a shared similarity of 40 %, sharing dominant drainage/GDE-associated species such as *Melaleuca argentea*, *M. glomerata*, *Eucalyptus camaldulensis* subsp. *refulgens*, *Acacia trachycarpa*, *Cyperus vaginata* and *Eulalia aurea*. This grouping was generally consistent with mapping from the field survey.
- Low lying flats and floodplain sites associated with vegetation type TsTe grouped together, which was consistent with mapping from the survey. TsTe was often in close proximity to the widespread Acacia plains, and the analysis also grouped some AspTe sites with the four TsTe sites; this was due to some crossover of common Acacia species (e.g. *A. ancistrocarpa, A. acradenia, A. bivenosa, A. colei, A. inaequilatera*).
- One of the TsTe sites, AR19, grouped separately from the others due to the absence of *Triodia epactia*, however it was retained in TsTe by the survey vegetation mapping due to the dominant presence of *T. secunda*.
- Sites within the FspAh and AiTe vegetation types were associated with the ironstone ridge, hilltop and slopes landforms, and were generally grouped together by the analysis based on shared presence of Ficus spp. The ironstone ridge sites (FspAh) were separated from the nearby hilltop sites (AiTe) by the survey vegetation mapping due to the absence of *Ficus* spp. and *Atalaya hemiglauca* in these hilltop sites, however the close proximity of these landforms still resulted in the crossover of common species (e.g. *Acacia inaequilatera*) and therefore the floristic grouping of these sites by the analysis.
- Sites within the vegetation types EvAcTe and CcAcTe were grouped together, as well as some sites from EvEa. These vegetation types were associated with low lying plains, minor floodplains and minor drainages, and shared some similarities, particularly a low sparse overstorey of *Eucalyptus victrix* and a mid-storey of tall sparse to open shrubland of *Acacia colei* var. *colei*. EvEa was associated with a different landform (minor drainages) to EvAcTe and CcAcTe however was included in this grouping by the analysis due to presence of *Eulalia aurea* and *Eucalyptus victrix*; *E. victrix* is a facultative phreatophyte which often grows in minor drainages but also is common across low lying plains and minor floodplains, while *E. aurea* often inhabits watercourses, damp areas and floodplains though is commonly found across a range of habitats.

# Atlas Ridley Flora Cluster Analysis





# 4.1.9.2 Flora Species Accumulation

Analysis of systematic flora data for the Survey Area Analysis of systematic flora data for the Survey Area produced a Sobs curve that is approaching an asymptotic plateau (**Figure 3**). All richness estimators were at or greater than the Sobs curve, indicating that the observed species richness was lower than, or equal to, that predicted by the analysis. The observed species richness for the Survey Area was 121, whereas estimated species richness ranged from 121 (Chao 1 and 2, Jacknife 1) to 157 (MM), which suggests that approximately 77 to 100% of the theoretical maximum number of flora species was recorded during the field survey (**Table 15**).

The data used to produce the species accumulation curve was conservative because opportunistic species (which are not associated with a site), and unconfirmed flora were not included. With opportunistic and unconfirmed flora included, the number of flora taxa recorded during the survey was 153, which is 98.0% of the highest expected species richness, and 126.4% of the lowest expected species richness.

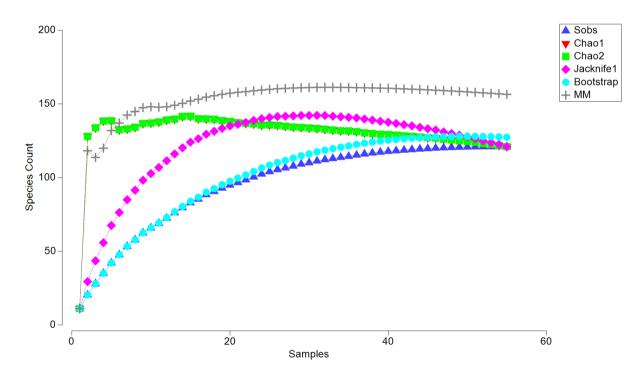


Figure 3: Flora Species Accumulation Curve

Table 15:	Flora species	richness	estimators
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Treatment	Estimated species richness	Observed species richness as a proportion of estimated species richness
Chao 1	121	100.00
Chao 2	121	100.00
Jacknife 1	121	100.00
Bootstrap	127.40	94.98
Michaelis-Menton	156.49	77.32

# 4.2 Fauna

# 4.2.1 Desktop Assessment

The database searches and literature review identified 426 terrestrial vertebrate fauna taxa occurring within the Desktop Study Area, comprising:

- 14 amphibians, of which none are significant.
- 244 birds, of which 62 are significant.
- 56 mammals, of which 11 are significant.
- 112 reptiles, of which three are significant.

Key findings of the literature review are summarised in **Appendix B**, a complete list of fauna taxa returned by the database search results is presented in **Appendix H** and displayed in **Map 11**.

# 4.2.2 Fauna Habitat

Nine fauna habitats (excluding cleared areas) were identified and mapped within the Survey Area. Fauna habitats are presented in **Map 12**, described below in **Table 16**, and site sheets for each habitat assessment are provided in **Appendix I**. Small discrepancies in fauna habitat extents (i.e., not adding up to the exact area extent of the Survey Area) are due to rounding.

# Table 16: Fauna habitats recorded within the Survey Area

Fauna habitat	Total area, percentage of Survey Area	Habitat description	Representative photograph
Closed Acacia Shrubland	15.01 ha, 0.14%	Flat plains with red sandy substrate. Vegetation consists of open <i>Corymbia</i> and <i>Eucalyptus</i> woodland over <i>Eucalyptus</i> and <i>Acacia</i> open shrubland midstory over low <i>Triodia</i> hummock grassland. Microhabitats include <i>Triodia</i> hummocks and leaf litter. This habitat contained disturbances caused by vehicle tracks.	
Low <i>Acacia</i> <i>stellaticeps</i> over Triodia	3,071.26 ha, 29.64%	Flat plains with brown-orange clay, loam and sandy substrate. Vegetation consists of low, isolated clumps of <i>Acacia stellaticeps</i> over low <i>Triodia</i> <i>epactia</i> open hummock grassland. Microhabitats include <i>Triodia</i> hummocks, leaf litter and woody debris were observed. This habitat contained disturbances caused by vehicle tracks and overgrazing. The significant Pilbara Leaf-nosed Bat was recorded within this habitat. Previous surveys have recorded the Bilby, Oriental Pratincole, and the Brush-tailed Mulgara within this habitat type.	

Fauna habitat	Total area, percentage of Survey Area	Habitat description	Representative photograph
Major Drainage	165.69 ha, 1.60%	Flat plains with red-orange sandy substrate. Vegetation consists of open eucalypt woodland over sparse acacia midstory and open <i>Triodia</i> hummock grassland. Microhabitats include <i>Triodia</i> hummocks, leaf litter, peeling bark, woody debris, and burrows. Tree hollows, log hollows and logs over 10cm were also observed. This habitat contained disturbances caused by vehicle tracks, overgrazing and weeds. The significant Grey Falcon and Barn Swallow may utilise the eucalypt trees within this habitat for nesting. The significant Ghost Bat and Osprey may utilise this habitat for foraging.	
Minor Drainage	24.12 ha, 0.23%	Flat plains with red sandy substrate. Vegetation consists of open <i>Eucalyptus</i> woodland over <i>Eucalyptus</i> and <i>Acacia</i> open shrubland midstory over low <i>Triodia</i> hummock grassland. Microhabitats include <i>Triodia</i> hummocks, leaf litter, peeling bark and woody debris. This habitat contained disturbances caused by vehicle tracks. The significant Grey Falcon and Barn Swallow may utilise the eucalypt trees within this habitat for nesting. The significant Ghost Bat and Osprey may utilise this habitat for foraging.	

Fauna habitat	Total area, percentage of Survey Area	Habitat description	Representative photograph
Mixed Acacia Shrubs and Triodia Plains	5,501.32 ha, 53.09%	Flat plains with red-orange sandy and clay-loam substrate. Vegetation consists of open <i>Eucalyptus</i> woodland over <i>Acacia</i> open shrubland midstory with <i>Triodia</i> hummock grassland. Microhabitats include <i>Triodia</i> hummocks and leaf litter. This habitat contained disturbances caused by vehicle tracks and overgrazing. The significant Western Pebble-mound Mouse was recorded within this habitat. The Marsh Sandpiper, Red-necked Phalarope, and the Sanderling have been previously recorded within this habitat type. The significant Common Greenshank, Little Curlew, Oriental Plover, and the Glossy Ibis may utilise this habitat after significant rainfall event.	
Open Eucalypt Woodland	429.90 ha, 4.15%	Flat plains with red sandy substrate. Vegetation consists of open <i>Corymbia</i> and <i>Eucalyptus</i> woodland over <i>Eucalyptus</i> and <i>Acacia</i> open shrubland midstory over low <i>Triodia</i> hummock grassland. Microhabitats include <i>Triodia</i> hummocks and leaf litter. This habitat contained disturbances caused by vehicle tracks. The significant Peregrine Falcon may utilise this habitat for nesting and hunting.	

Fauna habitat	Total area, percentage of Survey Area	Habitat description	Representative photograph
Outcrops and Breakaways	43.56 ha, 0.42%	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 <i>Triodia</i> hummock grassland. Microhabitats include Exfoliating rock, rock crevices, <i>Triodia</i> hummocks, leaf litter, peeling bark and woody debris. The significant Pilbara Leaf-nosed Bat and Western Pebble-mound Mouse were recorded within this habitat. The significant Northern Quoll has also been recorded by previous surveys within this habitat type. The significant Pilbara Olive Python may utilise this habitat for dispersal.	
Sparse Triodia Plains	858.02 ha, 8.28%	Open rocky granite plains with red sandy-pebble substrate. Vegetation consists of sparse acacia shrubland midstory over open hummock grassland. Microhabitats include <i>Triodia</i> hummocks and leaf litter. This habitat contained disturbances caused by vehicle tracks and overgrazing. The significant Western Pebble-mound Mouse was recorded within this habitat. The significant Common Greenshank, Little Curlew, Oriental Plover, and the Glossy Ibis may utilise this habitat after significant rainfall event. The Pilbara Grasswren and the Short- tailed Mouse may also utilise this habitat for foraging and shelter.	

Fauna habitat	Total area, percentage of Survey Area	Habitat description	Representative photograph		
Stony Hills	47.82 ha, 0.46%	Undulating granite and quartz plains with red sandy substrate. Vegetation consists of sparse <i>Acacia</i> shrubland midstory over sparse <i>Triodia</i> hummock grassland. Microhabitats include <i>Triodia</i> hummocks and termite mounds. This habitat contained disturbances caused by vehicle tracks. The Pilbara Grasswren and the Short-tailed Mouse may also utilise this habitat for foraging and shelter.			
Cleared	206.26 ha, 1.99%	Cleared land for existing tracks/roads. Low/negligible fauna habitat value.			
Total	10,363 ha				

# 4.2.3 Fauna Records

The fauna survey recorded a total of 63 fauna taxa from 34 families. The fauna diversity within each habitat type is summarised in **Table 17** and a full inventory of fauna taxa recorded during the field survey is provided in **Appendix J**.

Fauna habitat	Birds	Mammals	Reptiles	Total
Closed Acacia Shrubland	0	0	0	0
Low Acacia stellaticeps over Triodia	20	10*	3	33*
Major Drainage	10	7	5	22
Minor Drainage	5	1	2	8
Mixed Acacia Shrubs and Triodia Plains	15	3*	10	28*
Open Eucalypt Woodland	8	2	3	13
Outcrops and Breakaways	4	12*	5	21*
Sparse Triodia Plains	9	1	0	10
Stony Hills	1	2*	0	3*
Cleared	7	0	1	8

\*Contains significant fauna

#### Birds

A total of 33 native birds from 20 families were recorded within the Survey Area. The most abundant bird taxa were the Australian Zebra Finch (*Taeniopygia castanotis*), Spinifex Pigon (*Geophaps plumifera*), and Crested Pigon (*Ocyphaps lophotes*). The most diverse bird families were Alcedinidae (Four taxa), and Falconidae (three taxa), and Cacatuidae (three taxa).

No significant birds (see Section 4.2.4.1) and one introduced bird were recorded.

## Mammals

A total of 14 native mammals from nine families were recorded within the Survey Area, comprising four non-volant (non-flying) mammals and six volant mammals (bats). The most abundant mammal taxa were the Gould's Wattled Bat (*Chalinolobus gouldii*), Sheath-tailed Bat (*Taphozous spp*), Greater Northern Free-tailed Bat (*Chaerephon jobensis*) and Finlayson's Cave Bat (*Vespadelus finlaysoni*). The most diverse mammal families were Vespertilionidae (three taxa) and Macropodidae (two taxa).

Two significant mammals (see **Section 4.2.4.1**) and two introduced mammals were recorded.

## Reptiles

A total of 16 native reptiles from five families were recorded within the Survey Area. The most abundant reptile taxa were the Rock Ctenotus (*Ctenotus saxatilis*), Western Ring-tailed Dragon (*Ctenophorus caudicinctus*), and Spiny-tailed Goanna (*Varanus acanthurus*). The most diverse reptile families were Scincidae (five taxa), Agamidae (three taxa), and Varanidae (three taxa).

No significant reptiles (see Section 4.2.4.1) and no introduced reptiles were recorded.

# Amphibians

No amphibians were recorded within the Survey Area

# 4.2.4 Significant Fauna

# 4.2.4.1 Recorded within the Survey Area during the current survey

Two significant fauna taxa were recorded within the Survey Area:

- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) (Pilbara form), listed as Vulnerable under the BC Act and EPBC Act, was recorded seven times during the field survey. all individuals were recorded by ultrasonic ARUs within Outcrops and Breakaways (-20.2906, 119.1062) and Low Acacia stellaticeps over Triodia adjacent to Outcrops and Breakaways (-20.3417, 119.0783) (Map 12).
- Western Pebble-mound Mouse (*Pseudomys chapmani*), listed as Priority 4 by DBCA, was recorded six times during the field survey. All individuals were recorded by residual mounds within Stony Hills (-20.4059, 118.9593; -204061, 118.9596; -20.4090, 118.9611), Outcrops and Breakaways (-20.4190, 118.9164; -20.3421, 118.0801), and Mixed Acacia Shrubs and Triodia Plains adjacent to Outcrops and Breakaways (-20.4196, 118.9155) (Map 12).

# 4.2.4.2 Previously recorded within the Survey Area

Seven significant fauna taxa have been recorded within the Survey Area in recent years but were not recorded during the current survey:

- Northern Quoll (*Dasyurus hallucatus*), listed as Endangered under the BC Act and EPBC Act.
- Bilby (*Macrotis lagotis*), listed as Vulnerable under the BC Act and EPBC Act.
- Oriental Pratincole (*Glareola maldivarum*), listed as Migratory under the BC Act and EPBC Act, and Marine under the EPBC Act.
- Marsh Sandpiper (*Tringa stagnatilis*), listed as Migratory under the BC Act and EPBC Act, and Marine under the EPBC Act.
- Red-necked Phalarope (*Phalaropus lobatus*), listed as Migratory under the BC Act, and Migratory and Marine under the EPBC Act.
- Sanderling (*Calidris alba*), listed as Migratory under the BC Act, and Migratory and Marine under the EPBC Act.
- Brush-tailed Mulgara (*Dasycercus blythi*), listed as Priority 4 by DBCA.

## 4.2.4.3 High likelihood of occurrence within the Survey Area

Nine significant fauna taxa were assessed as having a high likelihood of occurring within the Survey Area:

- Grey Falcon (*Falco hypoleucos*), listed as Vulnerable under the BC Act and EPBC Act.
- Ghost Bat (*Macroderma gigas*), listed as Vulnerable under the BC Act and EPBC Act.
- Pilbara Olive Python (*Liasis olivaceus barroni*), listed as Vulnerable under the BC Act and EPBC Act.

- Common Greenshank (*Tringa nebularia*), listed as Migratory under the BC Act, and Endangered, Migratory and Marine under the EPBC Act.
- Barn Swallow (*Hirundo rustica*), listed as Migratory under the BC Act, and Migratory and Marine under the EPBC Act.
- Little Curlew (*Numenius minutus*), listed as Migratory under the BC Act, and Migratory and Marine under the EPBC Act.
- Oriental Plover (*Charadrius veredus*), listed as Migratory under the BC Act, and Migratory and Marine under the EPBC Act.
- Osprey (*Pandion haliaetus*), listed as Migratory under the BC Act, and Migratory and Marine under the EPBC Act.
- Peregrine Falcon (*Falco peregrinus*), listed as Other Specially protected species under the BC Act.

# 4.2.4.4 Medium likelihood of occurrence within the Survey Area

A total of 25 significant fauna taxa were assessed as having a medium likelihood of occurring within the Survey Area, including:

- Glossy Ibis (*Plegadis falcinellus*), listed as Migratory under the BC Act, and Migratory and Marine under the EPBC Act.
- Pacific Swift/Fork-tailed Swift (*Apus pacificus*), listed as Migratory under the BC Act, and Migratory and Marine under the EPBC Act.
- Pilbara Grasswren (*Amytornis whitei whitei*), listed as P4 (as *A. striatus striatus*) by DBCA.
- Short-tailed Mouse (Leggadina lakedownensis), listed as Priority 4 by DBCA.

A further 21 shorebird species were also assessed as having a medium likelihood of occurring within the Survey Area (**Appendix K**). These species will be discussed as a group due to the similarities of their habitat requirement within the Survey Area.

A total of 33 significant fauna taxa were assessed as having a low likelihood of occurring within the Survey Area. The complete results of the significant fauna likelihood of occurrence assessment including justification for the assessment outcome for each taxon is provided in **Appendix K**.

# 5.0 Discussion

# 5.1 Flora and Vegetation

# 5.1.1 Floristic Composition

The suite of flora taxa recorded during the survey is considered typical for the respective areas (Beard 1976) and aligns with the database search results obtained.

Rainfall in the three month and 12-month periods prior to the survey was well below average. This likely resulted in a lower than expected floristic diversity when considering other surveys undertaken in the region and the timing of the survey undertaken. The lack of rainfall also likely contributed to several small herbs and grasses that could not be identified to species level due the poor and/or sterile nature of these specimens. Had rainfall totals in the 3 and 12 months prior to the survey been closer to the long-term average for these periods, the survey results may have shown fewer sterile species and a higher floristic diversity, including more annuals and ephemerals.

# 5.1.2 Significant Flora

The two DBCA-listed Priority species recorded, *Gymnanthera cunninghamii* (P3) and *Tephrosia rosea subsp*. Port Hedland (A.S. George 1114) (P1), were each determined by the pre-survey desktop assessment to be of high likelihood of occurrence.

*Gymnanthera cunninghamii* is an erect shrub that grows from 1 to 2 metres high with cream-yellow-green flowers from January to December (Department of Biodiversity Conservation and Attractions, 2020). The species grows in sandy soils (Department of Biodiversity Conservation and Attractions, 2023) and often favours creek beds, river systems and major drainage lines.

*Tephrosia rosea subsp.* Port Hedland (A.S. George 1114) is an erect, spindly shrub that has been recorded from only a few locations in the Pilbara, mostly on pale red-yellow-brown sand on sand plains (Western Australian Herbarium, 2023).

Focused Vision (2023) recorded one individual of *Tephrosia rosea* subsp. Port Hedland (A.S. George 1114) within their 2023 survey, located approximately 6.5 km to the north of the far western end of the current survey area.

# 5.1.2.1 Other Species of Interest

One flora collection from the survey, *?Afrohybanthus*, could not be positively identified to Genus level, however it was noted by WAH taxonomist Mike Hislop as an interesting collection with some vegetative characters shared between the *Afrohybanthus* and *Pigea* genera (both in the Violaceae family). While this specimen has a generally similar vegetative morphology to a WAH specimen referred to as *A*. aff. *aurantiacus* from the PH area (Loudon, B.; Henshaw, N. BLNH-036), it differs from the WAH specimen which has hairy branchlets. A better specimen collected during a season with higher rainfall may yield a positive identification.

# 5.1.3 Vegetation Types and Condition

Mapping reliability ranged from very high, in areas where flora sites and mapping notes were completed within intact vegetation, to moderate in areas that were not traversed. The majority of the survey area (approximately 86.5%) comprised plains consisting of *Acacia stellaticeps* and mixed *Acacia* spp. with isolated patches of *Eucalyptus victrix* and *Corymbia* spp. woodland. Some areas, particularly in the AsTe vegetation type, were heavily fire affected, however sufficient intact vegetation remained to reliably inform vegetation mapping.

Five broad landforms – ironstone hilltops and ridges, outcroppings, plains, low lying floodplains/flats/minor drainages and major drainages – were recorded within the Survey Area.

Based on examining similarities in vegetation descriptions, vegetation within the survey area was largely representative of existing broad scale vegetation and soil and land system mapping for the area (Beard, 1976, Shepherd et al., 2002).

The vegetation throughout the majority of the survey area was in 'Very Good' condition. With many pastoral stations situated in the Port Hedland region, disturbances from livestock and weeds in this region are widespread; as such, these disturbances automatically downgrades any vegetation condition below that of 'Excellent' (EPA, 2016c). Areas in Good, Poor or Degraded condition were often affected by the presence of more aggressive and/or declared pest species of weeds such as \**Cenchrus ciliaris* and \**Calotropis procera* (DP). These areas were often associated with drainages and floodplains frequented by livestock, which often act as vectors for the spread of these weeds, as well as other weeds such as \**Vachellia farnesiana* and \**Malvastrum americanum*. Areas that had been cleared of vegetation for roads, tracks and infrastructure were not assigned a vegetation condition.

# 5.1.4 Significant Vegetation

# 5.1.4.1 Groundwater Dependent Ecosystems

Vegetation type MaEc is likely to be representative of groundwater dependent ecosystems. This is indicated by the presence of known phreatophytic vegetation, specifically *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens. Melaleuca argentea* is an obligate phreatophyte and is almost exclusively dependent on groundwater for its water requirements while *Eucalyptus camaldulensis* subsp. *refulgens* is a facultative phreatophyte and utilises groundwater as well as water from other sources (Rio Tinto, 2017).

Whilst the MaEc vegetation type comprised a small proportion of the Survey Area (1.6%), it was mapped in three different locations, each one traversing the full width of the Survey Area corridor (see **Map 9**). These locations correspond to the three major drainages (from west to east): Turner River, King Edward River and Devil Creek.

Previous surveys conducted by Focused Vision in 2023 mapped the King Edward and Devil Creek as potentially representative of GDV due to a dominant overstorey of facultative phreatophytes *Eucalyptus camaldulensis* subsp. *refulgens* and *Eucalyptus victrix*.

# 5.1.5 Survey Adequacy

The flora and vegetation survey were conducted in accordance with the scope of works, and appropriate for a detailed flora and vegetation survey in the Pilbara. Fifty-four flora sites were sampled across the Survey Area, comprising 26 quadrats and 28 relevés. The inventory of vascular flora and records of significant and weed species was compiled using flora site data and opportunistic observations made during traverses between sites and targeted searches of habitat likely to support significant flora (e.g. drainages).

A minimum of three flora sites were sampled in each vegetation type, except for vegetation types Sh and CfAh which were each too restricted in distribution to accommodate three sites. Vegetation type FspAh comprised the smallest proportion of the total survey area (0.02%), however the ironstone ridges with which the vegetation type was associated with were distributed adequately enough to incorporate three flora sites.

When a curve approaches an asymptote, it indicates sampling effort has been sufficient to adequately collect the species comprising the floral assemblage at the locations sampled. The value at which the curve asymptotes can also be used as an approximate measure of the total size of the species complement at that location.

The species accumulation curve and the richness estimators approached asymptote and plateaued, indicating that additional surveys would be unlikely to record many additional vascular flora taxa. This in turn is indicative of the paucity of flora taxa throughout the Atlas Ridley Survey Area as a result of very dry conditions in the 3- and 12-month periods prior to the survey. The presence of ephemeral and annual herbs was very low, and even perennial grasses such as *Triodia* spp., *Eulalia aurea*, *Eragrostis* spp. and \**Cenchrus ciliaris* (Buffel grass) were often observed either dead or sterile.

# 5.1.6 Regional Representation

According to the EPA (2000), the threshold level below which species loss appears to accelerate exponentially at an ecosystem level is regarded as being 30% of the preclearing extent of the vegetation type. Proposals that would affect a vegetation association with 30% or less of its pre-clearing extent remaining are likely to be formally assessed by the EPA (2006).

Each of the four Abydos Plain vegetation associations within the Survey Area are above the threshold level of 30% of the pre-clearing extent set by the EPA for protecting biological diversity.

# 5.2 Fauna

# 5.2.1 Fauna habitat

The nine broad fauna habitats (excluding cleared areas) identified within the Survey Area are typical of the Pilbara bioregion and consistent with habitats identified by previous studies in the region (Appendix B). At least one habitat assessment was conducted within each habitat type. Multiple assessments were conducted within the fauna habitats with the highest value to significant fauna (e.g. Outcrops and Breakaways) and overall fauna assemblages (e.g. Low *Acacia stellaticeps* over Triodia). Nearly all identified fauna habitats extend outside the Survey Area 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 Survey Area which lack connectivity to similar habitats.

Four fauna habitats: Outcrops and Breakaways; Stony Hills; Low *Acacia stellaticeps* over Triodia and Mixed Acacia Shrubs; and Triodia Plains habitats, represent the highest value to overall fauna assemblages and the highest value to significant fauna.

The Outcrops and Breakaways habitats are of value to significant fauna species such as Northern Quoll, Pilbara Leaf-nosed Bat, and Western Pebble-mound Mouse. The caves and rock crevices found throughout the habitats provide roosting, denning, and refuge habitat. The hills and valleys within these habitats may also occasionally flood, providing a temporary water source for fauna species.

The Stony Hill habitat is of value to significant species such as the Western Pebblemound Mouse as it provides suitable burrowing, refuge, and foraging habitat. This habitat can also provide suitable hunting habitat for Northern Quoll and Pilbara Leafnosed Bat in areas adjacent to Outcrops and Breakaways. The Low *Acacia stellaticeps* over Triodia habitat had the highest number of fauna species recorded of all fauna habitats and supports significant fauna species such as Brush Tailed Mulgara, Bilby, and Western Pebble-mound Mouse. This habitat can also provide suitable hunting habitat for Northern Quoll and Pilbara Leaf-nosed Bat in areas adjacent to Outcrops and Breakaways.

Mixed Acacia Shrubs and Triodia Plains habitats recorded the second highest number of species of all fauna habitats. In addition, they support significant species that favours plains habitats, such as Brush-tailed Mulgara and Western Pebble-mound Mouse. When adjacent to Outcrops and Breakaways habitat they can also support significant fauna such as Northern Quoll and Pilbara Leaf-nosed Bat.

The Major and Minor Drainage Line habitats represent moderate value to significant fauna due to dense fringing shrubland which provide suitable foraging habitat and plays a role as an ecological linkage. These habitats may also contain ephemeral pools after significant rain events, providing valuable water sources for significant species such as Northern Quoll and Pilbara Olive Python.

Habitat condition varied throughout the Survey Area. Large portions of the Survey Area had been recently cleared for mining activity, drill pads, and associated access tracks. Weeds and degradation caused by cattle and historic settlement were observed throughout all habitats.

# 5.2.2 Significant Fauna

# 5.2.2.1 Recorded within the Survey Area during the current survey

# Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) (Pilbara form) – VU (BC Act); VU (EPBC Act)

The Pilbara Leaf-nosed Bat was originally considered to be the same species as the Orange Leaf-nosed Bat, which occurs in the Kimberley region, Northern Territory, and northwest Queensland. It is now considered to be a separate form based on morphology; however, formal reclassification has not yet been undertaken (Cramer et al., 2016). The taxon 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 once within the Outcrops and Breakaways habitat, and one was recorded by an ARU 10 m away from the mapped boundary of an Outcrops and Breakaways habitat. The caves in this habitat provide ideal roosting habitat for the taxon.

## Western Pebble-mound Mouse (Pseudomys chapmani) – P4 (DBCA)

The Western Pebble-mound Mouse is endemic to the Pilbara, where it builds pebble mounds from small stones. These pebble mounds typically cover areas from 0.5 – 9.0m<sup>2</sup> and are characteristic of this species. Pebble mounds are restricted to suitable-class stones and are usually found on gentle slopes and spurs that are often vegetated by hard spinifex (Ford & Johnson, 2007; Van Dyck & Strahan, 2008). Active mounds are characterised by the conical shape of the mound with clear, distinct entrance holes (Anstee, 1996). Pebble mounds constructed by the Western Pebble-mound Mouse are found throughout the Pilbara; however, studies have shown that not all mounds in an area are occupied by a Pebble-mound Mouse at any one time (Anstee, 1996).

Western Pebble-mound Mouse mound was recorded three times within the Stony Hills habitat, and twice within the Outcrops and Breakaways habitat. Given the presence of an entrance hole and the lack of debris around the entrance, it is highly likely that the mounds are currently occupied. This species was recorded once within the Mixed Acacia Shrubs and Triodia Plains habitat, however, the record is < 40 m away from the mapped boundary of an Outcrops and Breakaways habitat, therefore it is considered an ecotone of the Outcrops and Breakaways habitat.

# 5.2.2.2 Previously recorded within the Survey Area

### Northern Quoll (Dasyurus hallucatus) - EN (BC Act); EN (EPBC Act)

The range of the Northern Quoll has contracted across northern Australia since European settlement, and it now occurs as several disjunct populations (Braithwaite & Griffiths, 1994). The Northern Quoll can be locally common, but its former range has retracted considerably (Van Dyck & Strahan, 2008). The Northern Quoll is found in dissected rocky escarpments, utilising a variety of den sites, including rock crevices, tree hollows, logs, and termite mounds. It favours rocky areas, taking refuge in rock crevices, and utilises gullies and drainage lines.

It is important to note that much of the ecological information for the Northern Quoll comes from studies in the Top End of the Northern Territory (e.g. (Begg, 1981); (Oakwood, 2000). Much of their ecology is likely to be similar in the Pilbara; however, differences in genetic structure and some demographic parameters have been observed (How et al., 2009).

The Northern Quoll has a relatively large home-range size of up to 150 ha for males (35 ha for females). Movements between den sites on consecutive nights can be up to 1.85 km for males (Oakwood, 2000). In the Northern Territory, mating occurs in late May to June and all males die after the mating season and females rear the young alone (Oakwood, 2000). The young spend about two months in the pouch and are then left in a succession of nursery dens for the next three months for periods at night while the mother forages (Oakwood, 2000). In the Kimberley region, Schmitt et al. (1989) found that breeding occurred in July and August. However, at Woodstock Station in the Pilbara, breeding occurred in September, a month later than the Kimberley (How et al., 2009). This variation in time of breeding across three distinct populations indicates some reproductive flexibility in the species.

There is an abundant (1,282) amount of previous Northern Quoll records within and around the Survey Area (DBCA, 2023). Most of the previous records of the Northern Quoll are in the Outcrops and Breakaways habitat, except for one record less than 1 km away. This is expected as the Outcrops and Breakaways, as well as the surrounding habitats constitute core habitat for the Northern Quoll because of their value for denning and foraging. In addition, the records range from early 1980 to the current days, which shows that the species occupies the Survey Area consistently.

# Bilby (Macrotis lagotis) – VU (BC Act); VU (EPBC Act)

The Bilby is a solitary and nocturnal type of bandicoot, characterised by its distinct rabbit-like ears and long face with a pointed snout (Department of Biodiversity Conservation and Attractions, 2017a). The range of the Bilby has declined northwards, with wild subpopulations now restricted predominantly to the Tanami Desert in the Northern Territory and the Gibson, Little Sandy and Great Sandy Deserts as well as parts of the Pilbara region in Western Australia (Dziminski & Carpenter, 2017; Southgate, 1990). The Bilby is described as occupying a wide range of vegetation types, including open tussock grassland 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 (Dziminski & Carpenter, 2017; Pavey, 2006).

This species was recorded in large numbers within the Survey Area during a previous survey (Phoenix Environmental, 2022). They were previously recorded in the Low *Acacia stellaticeps* over Triodia and Sparse Triodia Plains habitats. The field survey did not identify evidence of the species within the Survey Area. These habitats constitute core habitat for the Bilby because of their value for denning, foraging, and dispersal.

### Oriental Pratincole (Glareola maldivarum) - MI (BC Act); MI, MA (EPBC Act)

The Oriental Pratincole typically prefers plains, shallow wet and dry edges of open bare wetlands and tidal mudflats and beaches for habitat (Pizzey & Knight, 2013). However, as this species breeds in Pakistan, India, and parts of south-east Asia, the Survey Area would be used for foraging only (Pizzey & Knight, 2013).

The Oriental Pratincole was previously recorded within the Survey Area in 2004 (DBCA, 2023), within the Low *Acacia stellaticeps* over Triodia habitat, which have the potential to become inundated during the wet season, providing the taxon with foraging habitat.

#### Brush-tailed Mulgara (Dasycercus blythi) - P4 (DBCA)

The Brush-tailed Mulgara is distributed widely across inland Australia with a population that fluctuates somewhat in response to seasonal conditions, although is probably substantially greater than 10,000 individuals even at its lowest point (Woinarski et al., 2014). Brush-tailed Mulgara habitat is bounded broadly by the Tanami Desert in the north, the Simpson Desert in the east, the Great Victoria Desert in the south and the Carnarvon, Murchison and Pilbara IBRA regions in the west (Woinarski et al., 2014). It 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. It is mainly nocturnal and shelters during the day in burrow systems. Brush-tailed Mulgara burrows typically contain between two and nine entrances, tunnels are mostly on a single level and to a depth of about 300 mm (Thompson & Thompson, 2007). The diet of the Brush-tailed Mulgara comprises a broad range of invertebrates and small vertebrates (Woinarski et al., 2014).

The Brush-tailed Mulgara was previously recorded in the Low *Acacia stellaticeps* over Triodia habitat within the Survey Area (DBCA, 2023), which is the preferred habitat of the taxa. These records are concentrated to the western portion of the Survey Area, however, 83% of the Survey Area consists of Low *Acacia stellaticeps* over Triodia & Mixed Acacia Shrubs and Triodia Plains habitats, which indicates the species may be able to persist throughout the majority of the Survey Area.

### **Other Previously Recorded Species**

There are three historical (1981) records of Marsh Sandpiper (*Tringa stagnatilis*), Rednecked Phalarope (*Phalaropus lobatus*), and Sanderling (*Calidris alba*) within the Survey Area (DBCA, 2023). All three records are associated with vouchered specimens by the Western Australian Museum and have the same coordinate.

The records of the three taxa are located in the Mixed Acacia Shrubs and Triodia Plains habitat, which is not the typical habitat preferred by these taxa (Menkhorst et al., 2019; Pizzey & Knight, 2013). Therefore, considering the age of the records, it is reasonable to assume the coordinates are inaccurate, and the specimens were likely vouched north of the Survey Area near the coast, where most of the recent records of these species are located.

The Sanderling (*Calidris alba*) seldomly ventures away from the coast (Menkhorst et al., 2019; Pizzey & Knight, 2013), but the Marsh Sandpiper (*Tringa stagnatilis*) and the Red-necked Phalarope (*Phalaropus lobatus*) are able to utilize freshwater wetland habitat (Menkhorst et al., 2019; Pizzey & Knight, 2013). Considering there are tidal flats < 10 km to the north of the Survey Area, and major drainage habitat connecting these tidal flats to the Survey Area, it is possible for these species occupy the Survey Area after significant rain events. However, if we consider the records inside the Survey Area to be inaccurate, then their adjusted likelihood would be Low, as there are minimal recent or nearby records and limited suitable habitat.

## 5.2.2.3 High likelihood of occurrence within the Survey Area

## Grey Falcon (Falco hypoleucos) – VU (BC Act); VU (EPBC Act)

The Grey Falcon is an elusive and endemic bird of the arid interior (Schoenjahn et al., 2019). It distributed sparsely over Australia's arid and semi-arid zones and is absent from Cape York Peninsula, south of the Great Dividing Range in Victoria, and south of 26°S in Western Australia (BirdLife International, 2016a; Johnstone & Storr, 2004). The Grey Falcon is restricted largely to areas of the highest annual average temperatures where there is average annual rainfall of less than 500 mm. It favours lightly timbered and untimbered lowland plains that are crossed by tree-lined watercourses, but frequents other habitats, including grassland and sand dune habitats (BirdLife International, 2016a; Johnstone & Storr, 2004).

The Survey Area has three Major Drainage habitats with eucalypt trees along the riverbanks, which constitute suitable nesting habitat for the Grey Falcon. The plains surrounding Major Drainage habitats are likely to be utilised by this taxon for hunting.

## Ghost Bat (Macroderma gigas) – VU (BC Act); VU (EPBC Act)

The Ghost Bat is patchily distributed in small colonies in three areas of northern Australia, including the Pilbara and Kimberley in WA, the Northern Territory, and the northeast of QLD. The species requires undisturbed roost caves or mineshafts, usually complex systems with several openings (Van Dyck & Strahan, 2008). The species eats large insects, geckoes, frogs, small birds, and mammals including other bats. The kills are made on the ground or in the air and then taken to a feeding perch, which is usually a rocky overhang or small cave (Van Dyck & Strahan, 2008). The presence of other bat species in the Survey Area indicates that there are suitable roosting caves for Ghost bat in the vicinity of the Survey Area. Ghost Bat also predate heavily on other bat species, particularly Pilbara Leaf-nosed Bat, which were recorded during the field survey. The Major and Minor Drainage habitats constitute moderate value habitat as the taxon may use these habitats for foraging and dispersal.

# Pilbara Olive Python (Liasis olivacea barroni) - VU (BC Act); VU (EPBC Act)

The Olive Python occurs in the ranges of the Pilbara, typically in escarpments and gorges where water is present. It generally shelters under rock piles, or under spinifex and often basks on top of rocks (Pearson, 1993, 2003). This large python is threatened due to its relatively small distribution, low population densities and may be affected by habitat disturbance such as grazing and fire. This species is known to frequent water bodies where it ambushes prey (Pearson, 1993). During a systematic survey of a large series of quadrats in the Pilbara, the Olive Python was only recorded in one quadrat (Doughty et al., 2011). This species is extremely cryptic given its method of hunting and nocturnality.

The Pilbara Olive Python was recorded frequently and recently throughout the Desktop Study Area. Preferred habitat is not present within the Survey Area; however, several water source occur throughout the desktop study area which have recorded the species that are linked to the Survey Area. The taxon is likely to use Outcrops and Breakaways habitats for dispersal and the Major and Minor Drainages provide supporting habitat.

## Common Greenshank (Tringa nebularia) – MI (BC Act); MI, MA (EPBC Act)

The Common Greenshank is a migratory species to Australia that typically breeds in the boreal forest zone from sea level to 1,200 m in Norway (BirdLife International, 2016b). Common Greenshanks are present in the North-west Marine Region in internationally significant numbers, with approximately 1% of the flyway population visiting Ashmore Reef between September and March (Bamford et al., 2008). The species is found in coastal areas, riverbanks and coastal to freshwater wetlands, where it wades in shallow water foraging for prey, often lunging or probing for fish and invertebrates (BirdLife International, 2016b; Menkhorst et al., 2017; Pizzey & Knight, 2001). It is generally absent from the Western Deserts although there are a few records from the Great Sandy Desert and the Nullarbor Plain. It occurs around most of the coast from Cape Arid in the south to Carnarvon in the north-west. In the Kimberley it is recorded in the south-west and the north-east (Pizzey & Knight, 2001).

The Common Greenshank has been recorded frequently and recently within the Desktop Study Area and likely occurs within the Survey Area. Within the Survey Area, the Mixed Acacia Shrubs and Triodia Plains, and Sparse Triodia Plains habitats constitute supporting habitat for the Common Greenshank as they may become flooded after significant rain events. The taxon is likely to be transient within the Survey Area and, if present, will occur within the Survey Area between August and March.

## Barn Swallow (Hirundo rustica) - MI (BC Act); MI, MA (EPBC Act)

The Barn Swallow is a casual visitor primarily to coastal areas from the Gascoyne north, although the species may appear as a vagrant in inland areas on an irregular basis (Johnstone & Storr, 1998). After breeding in the temperate and subtropical regions of North America, Europe, northern Africa and Asia it migrates to the southern hemisphere where it spends the boreal winter (Johnstone & Storr, 1998). It is typically observed in the vicinity of urban water bodies and coastal wetlands.

The Barn Swallow has been recorded frequently within the Desktop Study Area and likely occurs within the Survey Area. Within the Survey Area, the Major and Minor Drainage habitats constitute supporting habitat for the Barn Swallow because of their value for roosting, foraging, and dispersal. The taxon is likely to be transient within the Survey Area and, if present, will occur within the Survey Area between Spring and Summer.

# Little Curlew (Numenius minutus) - MI (BC Act); MI, MA (EPBC Act)

The Little Curlew is the smallest curlew, and generally spend the non-breeding season in northern Australia from Port Hedland in Western Australia to the Queensland coast. The Little Curlew is most often found feeding in short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow freshwater pools or areas seasonally inundated. Open woodlands with a 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. Foraging sites are usually within 5 km of daytime roosting sites, as birds move between grassland and wetland, most feeding in drier grassland occurring during the first few hours after dawn and the late afternoon (DAWE, 2022).

The Little Curlew has been recorded frequently and recently within the Desktop Study Area and likely occurs within the Survey Area. Within the Survey Area, the Mixed Acacia Shrubs and Triodia Plains, and Sparse Triodia Plains habitats constitute supporting habitat for the Little Curlew as they may become flooded after significant rain events. The taxon is likely to be transient within the Survey Area and, if present, will occur within the Survey Area between October and April.

## Oriental Plover (Charadrius veredus) - MI (BC Act); MI, MA (EPBC Act)

The Oriental Plover typically prefers grasslands and thinly vegetated plains, and open areas such as recently burnt country and heavily grazed pastures. During the hottest times of the day large flocks can be found on areas of wet ground associated with wetlands (Menkhorst et al., 2017). As this species breeds in China and Mongolia, the Survey Area would be used for foraging only.

The Oriental Plover has been recorded recently within the Desktop Study Area and likely occurs within the Survey Area. Within the Survey Area, the Mixed Acacia Shrubs and Triodia Plains, and Sparse Triodia Plains habitats constitute supporting habitat for the Oriental Plover as they may become flooded after significant rain events. The taxon is likely to be transient within the Survey Area during these flooding events and, if present, will occur within the Survey Area between mid-September and April.

## Osprey (Pandion haliaetus) – MI (DBCA); MI, MA (EPBC Act)

The Osprey is considered to be moderately common in Australia (P. Olsen, 1998). The species is most abundant in northern Australia, where high population densities occur in remote areas (Johnstone & Storr, 1998). They require extensive areas of open fresh, brackish, or saline water for foraging (Marchant and Higgins, 1993). They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia (Johnstone & Storr, 1998; P. Olsen, 1998). 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 (Johnstone & Storr, 1998; P. Olsen, 1998).

The Osprey has been recorded recently within the Desktop Study Area and is likely to occur within the Survey Area. Within the Survey Area, the Major and Minor Drainage habitats constitute critical habitat for the Osprey because of their value for hunting and dispersal. The taxon is likely to be transient within the Survey Area during flooding events.

# Peregrine Falcon (Falco peregrinus) – OS (DBCA)

The Peregrine Falcon is an uncommon but wide-ranging bird across Australia (Barrett et al., 2003). It occurs mainly along rivers and ranges as well as wooded watercourses and lakes. It nests primarily on cliffs, granite outcrops and quarries, although is also known to occupy existing raptor and corvid stick nests (Menkhorst et al., 2019). The diet of the Peregrine Falcon has been well studied and primarily includes flocking species such as parrots, pigeons and on the east coast, European Starlings (J. Olsen & Fuentes, 2008).

Peregrine Falcon was not observed during the survey; however, this species has been previously recorded twice within 3 km of the Survey Area in recent years (DBCA, 2023). In the absence of cliff ledges, Peregrine Falcons will use trees for nesting (Morcombe & Stewart, 2013). The Open Eucalypt Woodland habitat within the Survey Area and surrounds may provide suitable nesting and hunting habitat to support this species.

# 5.2.2.4 Medium likelihood of occurrence within the Survey Area

## Glossy Ibis (Plegadis falcinellus) - MI (BC Act); MI, MA (EPBC Act)

The preferred foraging and breeding habitat of the Glossy Ibis includes freshwater marshes at the edges of lakes and rivers, lagoons, floodplains, wet meadows, swamps, reservoirs, sewage ponds, rice-fields and cultivated areas under irrigation (del Hoyo et al., 1992; Marchant & Higgins, 1990). The Glossy Ibis builds a platform nest of sticks in trees or shrubs above water and typically nests in colonies (Pizzey & Knight, 2013). The distribution of the Glossy Ibis is generally east of the Kimberley in Western Australia and Eyre Peninsula in South Australia. The species is also known to be patchily distributed in the rest of Western Australia (DEE, 2020).

The Glossy Ibis has been recorded within the Desktop Study Area and may occur within the Survey Area. Within the Survey Area, there are several habitats which may flood during significant rain events and provide suitable habitat for the Glossy Ibis. The taxon may be transient within the Survey Area during these flooding events.

## Pacific Swift/Fork-tailed Swift (Apus pacificus) – MI (BC Act); MI, MA (EPBC Act)

The Pacific Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. The Pacific Swift occupies a large airspace range (i.e. low to very high) over varied habitats, ranging from rainforests to semi-deserts (Morcombe, 2003).

The Pacific Swift has been recorded within the Desktop Study Area and may occur within the Survey Area. Within the Survey Area, all habitats within the Survey Area may be utilised for foraging and dispersal.

# Pilbara Grasswren (*Amytornis whitei whitei*) – P4 (as *Amytornis striatus striatus*, DBCA)

Restricted to spinifex associations on rocky slopes and ridges, with or without shrubs or light tree cover, preferring areas with tall dense spinifex hummocks (Menkhorst et al., 2019). Its distribution across the ironstone Chichester, Hamersley, Ophthalmia and Parry Ranges is bisected by the Fortescue River, with an outlying population south of the Ashburton River in the Barlee Range. It is widely but patchily distributed and generally uncommon (Johnstone et al., 2013; Johnstone & Storr, 2004).

The Pilbara Grasswren has been recorded within the Desktop Study Area and may occur within the Survey Area. Within the Survey Area, the Sparse Triodia Plains and Stony Hills habitats constitute critical habitat for the Pilbara Grasswren because of their value for foraging and shelter.

### Short-tailed Mouse (Leggadina lakedownensis) – P4 (DBCA)

The Short-tailed Mouse has a broad distribution across much of northern Australia and occurs in a range of habitat types. This includes spinifex and Acacia on seasonally inundated sandy-clay soils as well as sandy soils and cracking clays to build burrows which they shelter in during the day (Van Dyck & Strahan, 2008). In the Pilbara it occurs on stony hummock grassland. It is generally rare, with scattered populations, and very little is known of its biology (Van Dyck & Strahan, 2008).

The Short-tailed Mouse has been recorded within the Desktop Study Area and may occur within the Survey Area. Within the Survey Area, the Sparse Triodia Plains and Stony Hills habitats constitute critical habitat for the Short-tailed Mouse because of their value for foraging and shelter.

#### Other species with medium likelihood of occurrence within the Survey Area

There were an additional 20 shorebird species that were considered to have a medium likelihood of occurrence due to the proximity of historic records and the limited suitable habitats within the Survey Area. As there are suitable tidal flats < 10 km north of the Survey Area, and there are drainage habitats that connect these flats to the Survey Area, there presents an opportunity for these species to occur within the Survey Area after significant rain events that would flood these habitats.

# 6.0 Conclusion

### Flora and Vegetation

- No Threatened flora species pursuant to the EPBC Act 1999 and/or gazetted as Threatened/Declared Rare Flora pursuant to the BC Act 2016 were recorded during the survey.
- Two DBCA listed Priority flora are considered to have been recorded; *Tephrosia rosea* subsp. Port Hedland (A.S. George 1114) (P1) and *Gymnanthera cunninghamii* (P3).
- Eight introduced species were recorded during the survey, including \**Calotropis procera* which is listed by the State Department of Primary Industries and Regional Development as a Declared Pest.
- Fourteen vegetation types were mapped within the Survey Area, one of which likely represents GDEs. Vegetation condition throughout the Survey Area was largely in Very Good condition, with drainages and some low-lying floodplain areas in Good to Degraded condition, primarily due to Buffel Grass (\**Cenchrus ciliaris*) and livestock/pastoralism.
- No TECs or PECs were recorded within the Survey Area.

### Vertebrate Fauna

- Nine fauna habitats were mapped within the Survey Area, of which the Low Acacia stellaticeps over Triodia, Mixed Acacia Shrubs and Triodia Plains, Outcrops and Breakaways, and Stony Hills habitats represent the most value to fauna assemblages overall.
- Two significant fauna species were recorded during the fauna survey.
- Seven significant fauna species were previously recorded within the Survey Area.
- Nine significant fauna species had a high likelihood of occurrence, 24 had a medium likelihood of occurrence, and 33 species had a low likelihood of occurrence.
- Three introduced species were recorded during the survey, European Cattle (\**Bos primigenius taurus*), Cat (\**Felis catus*), and Domestic Pigeon/Rock Dove (*Columba livia*).

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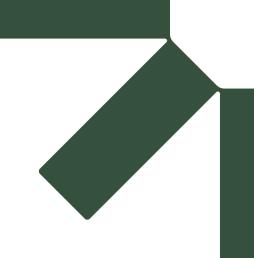
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# Appendix A Maps

# **Atlas Ridley Magnetite Project Connection**

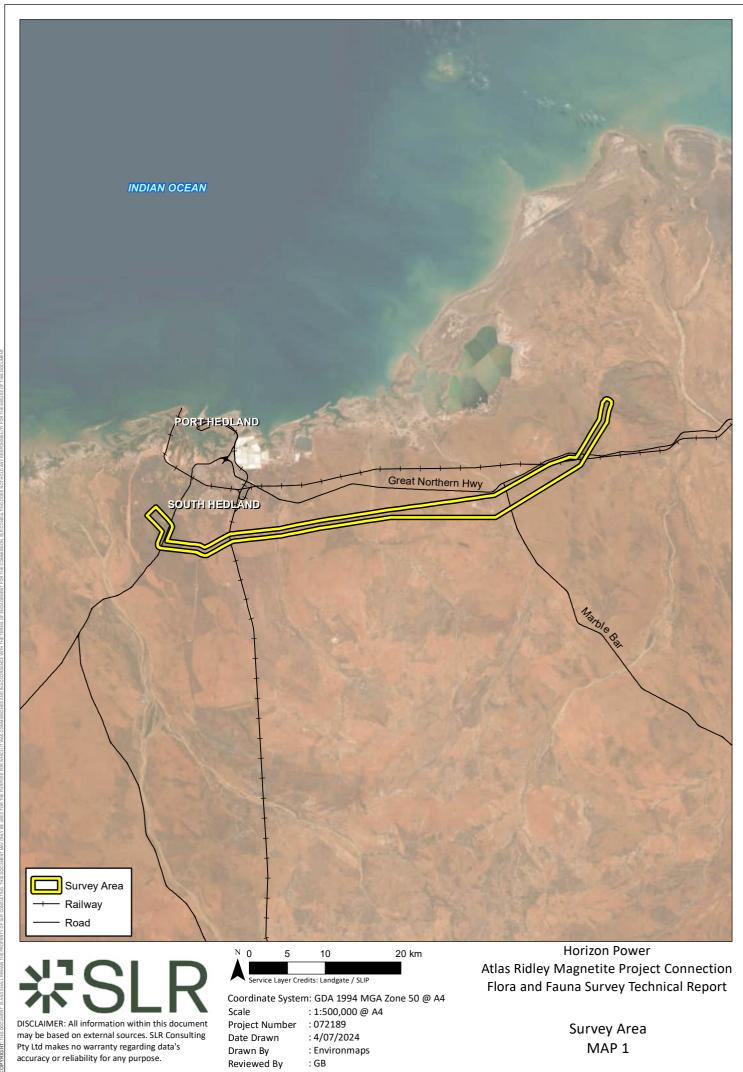
# Flora and Fauna Survey Technical Report

**Horizon Power** 

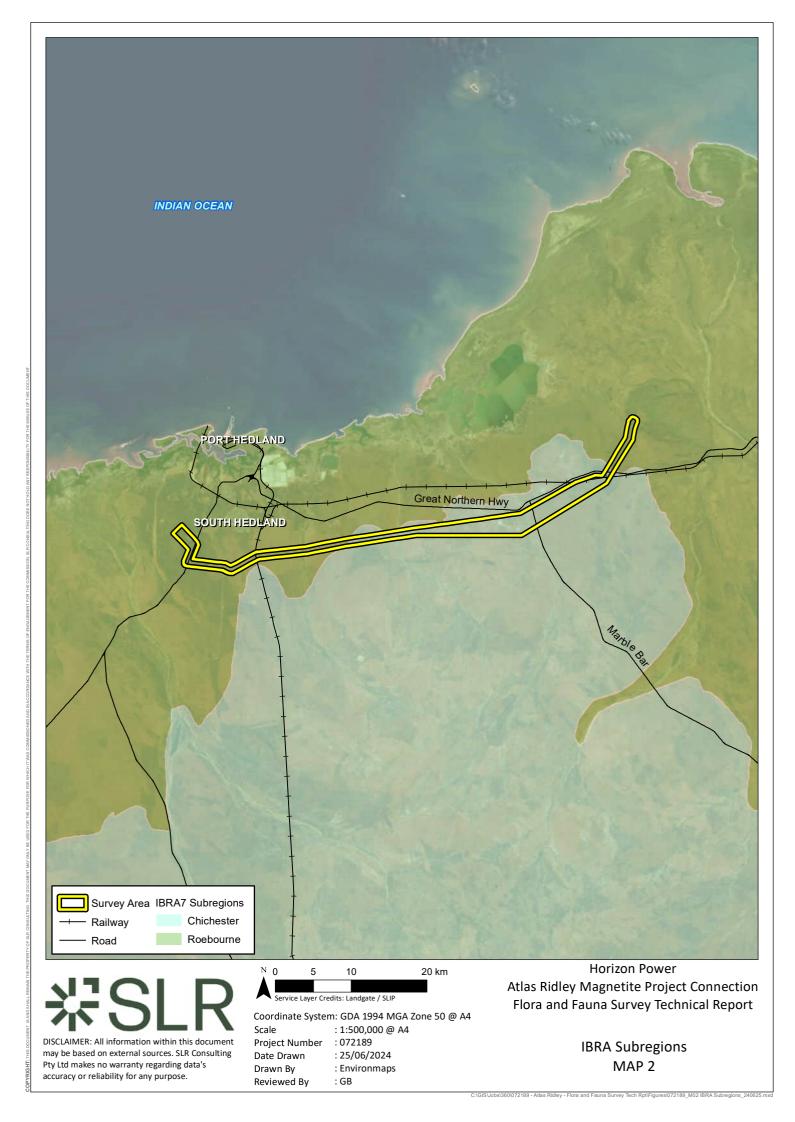
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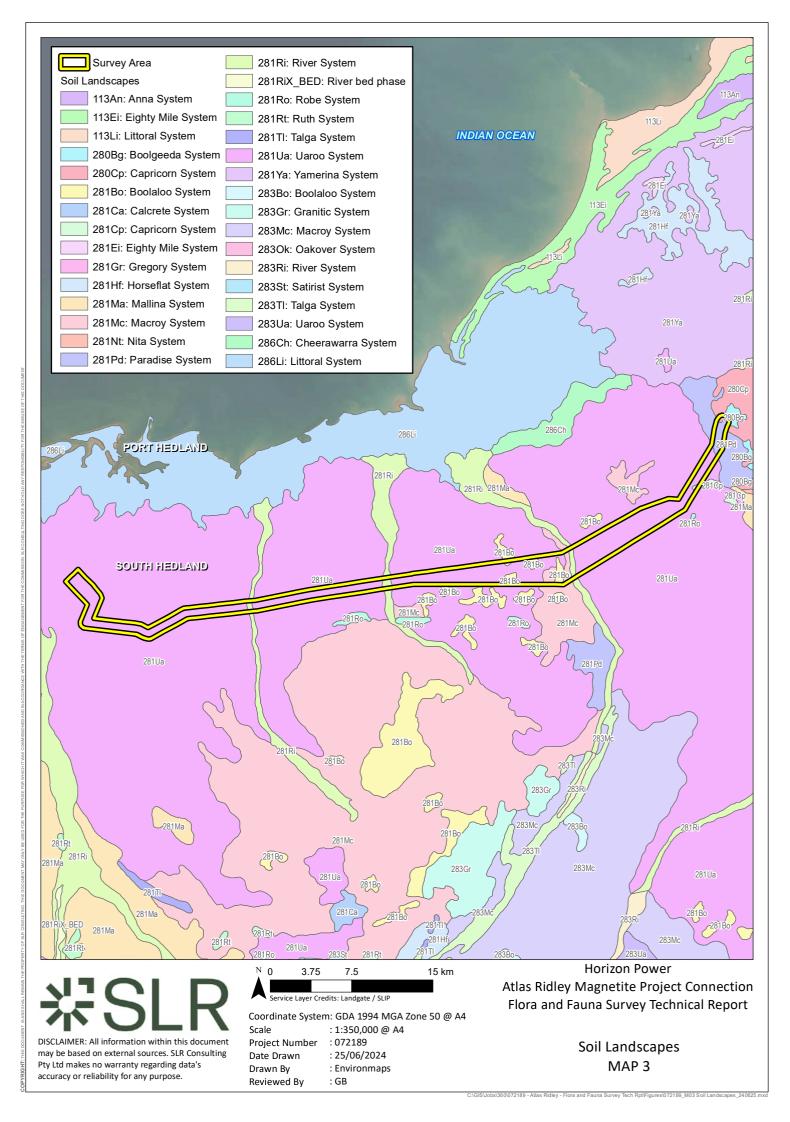
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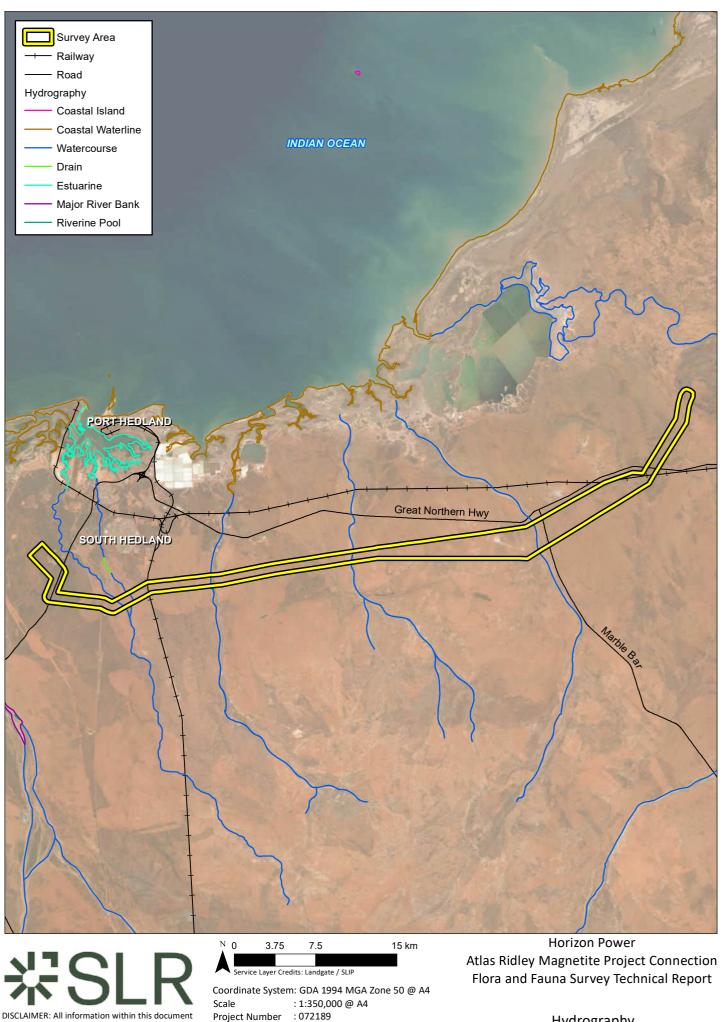




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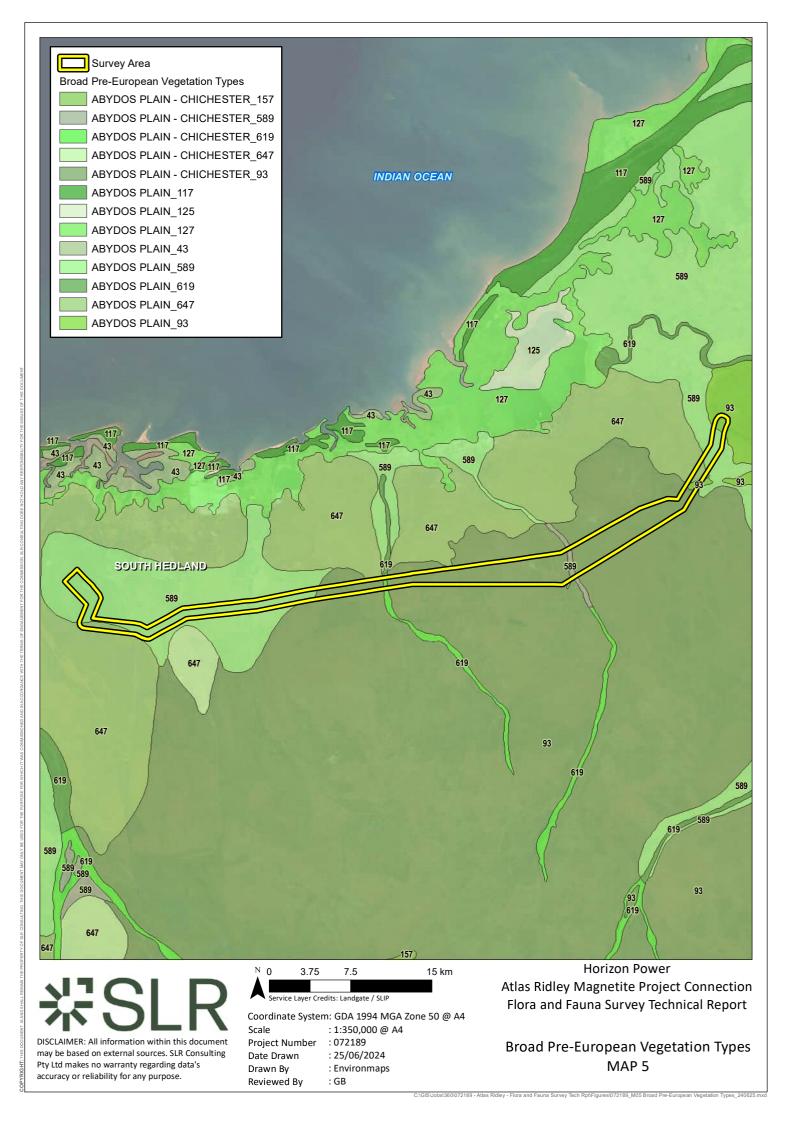


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Hydrography MAP 4

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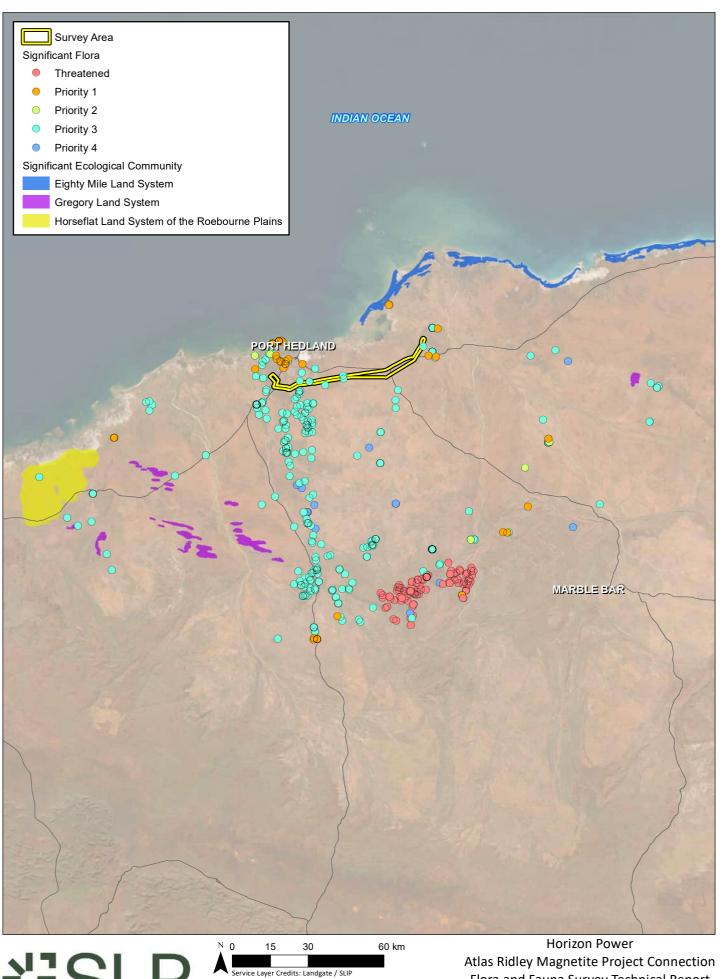


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> ESAs and Conservation Areas MAP 6

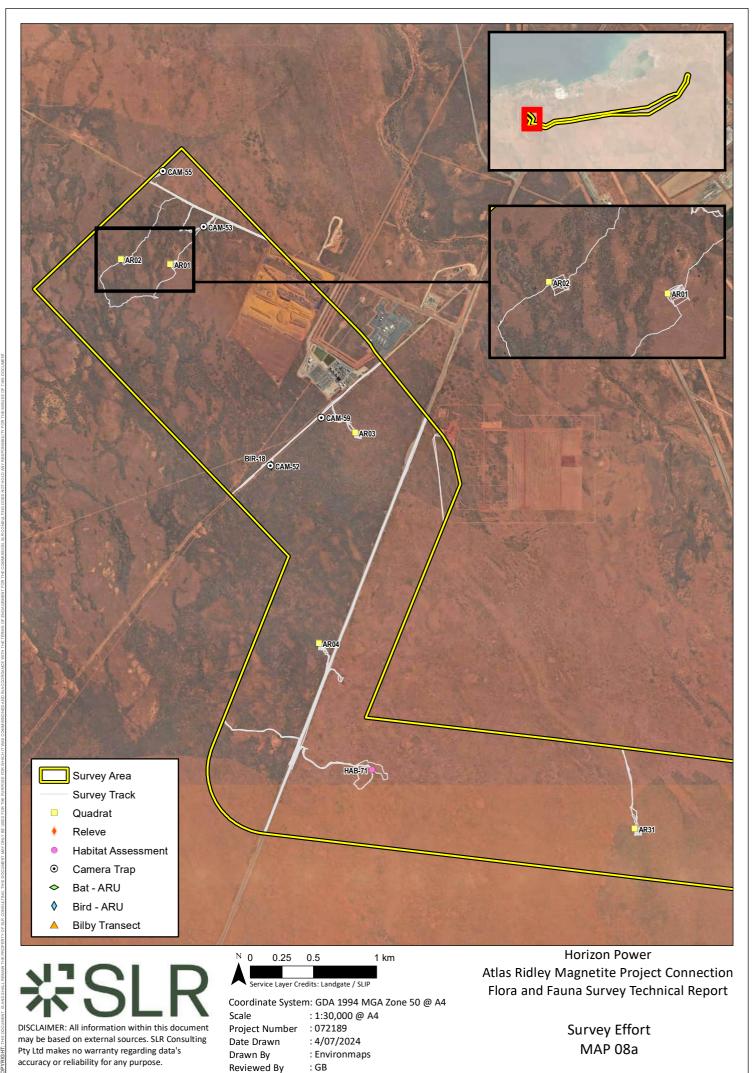
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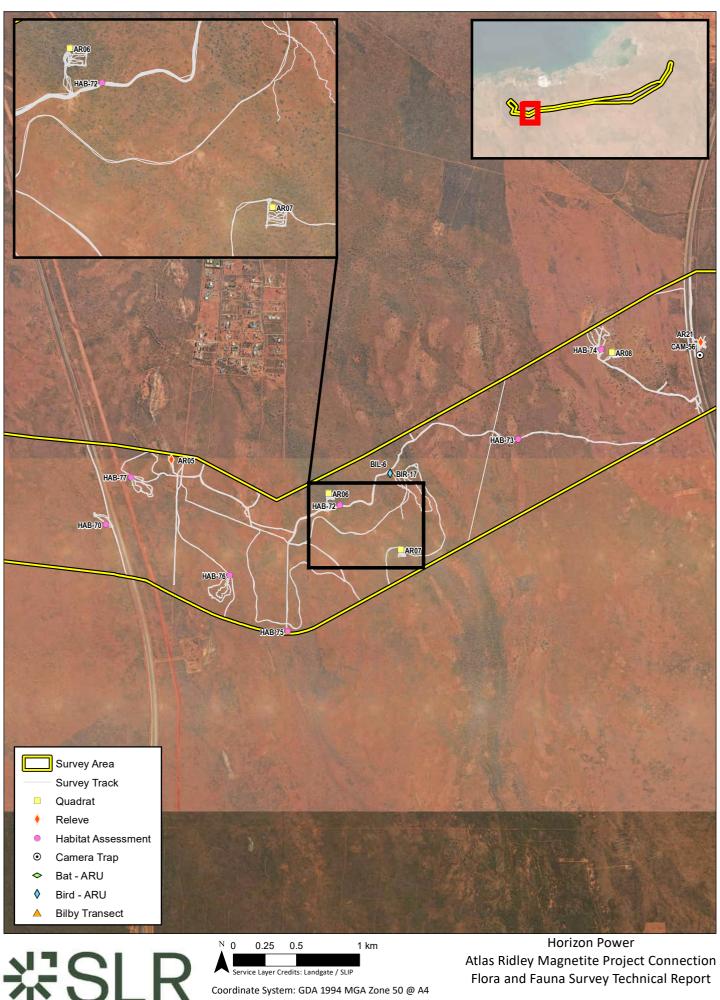
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Flora and Fauna Survey Technical Report

Significant Flora and Ecological Community Database Search Results MAP 7



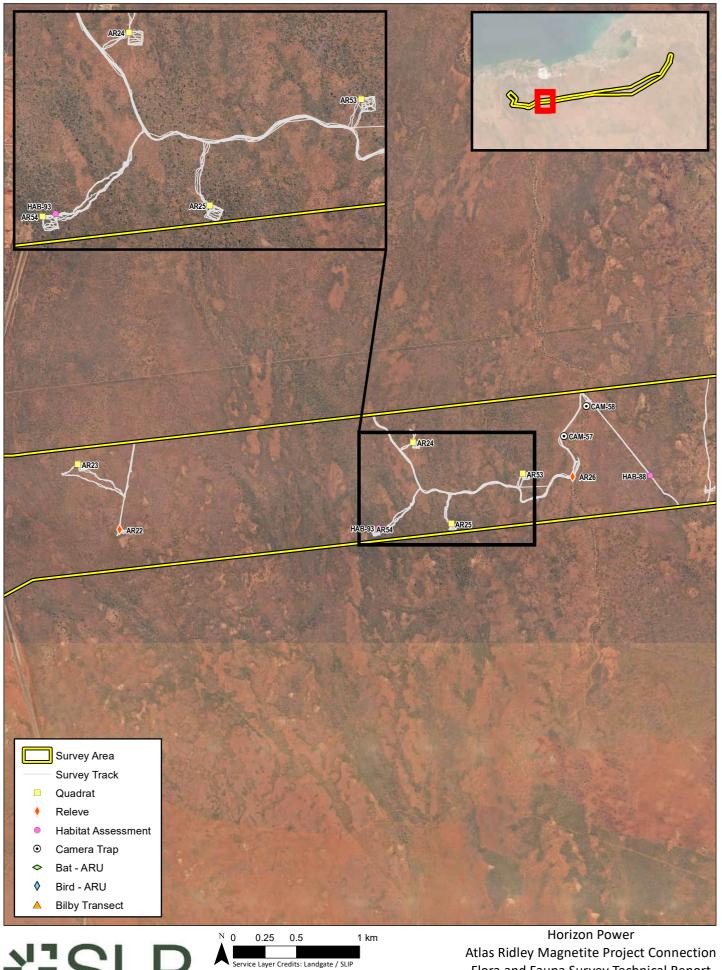
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Survey Effort MAP 08b

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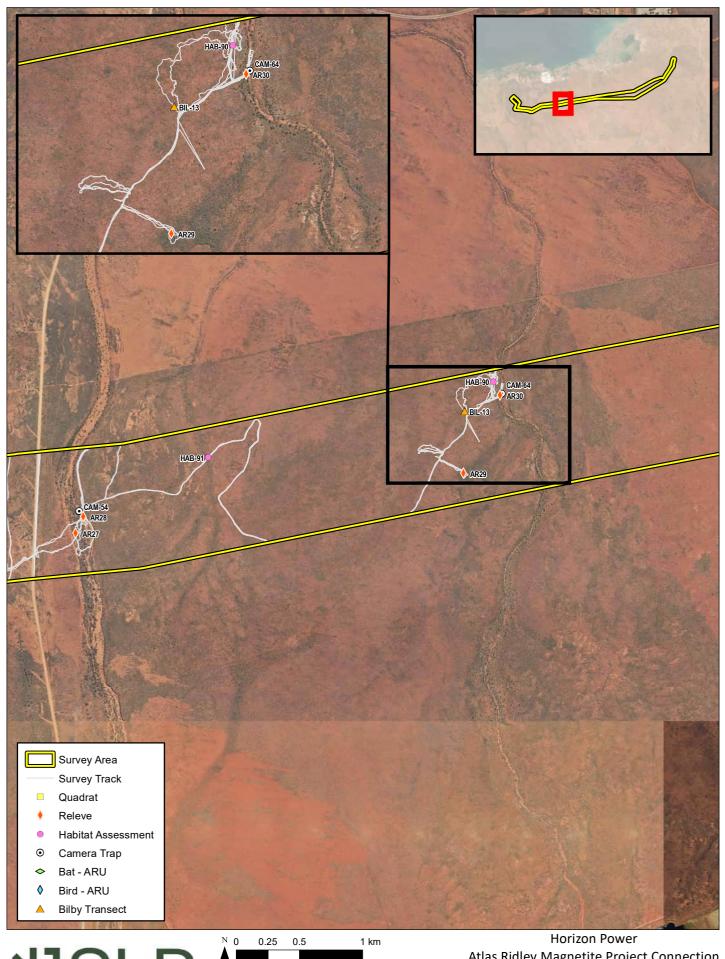
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Flora and Fauna Survey Technical Report

Survey Effort MAP 08c

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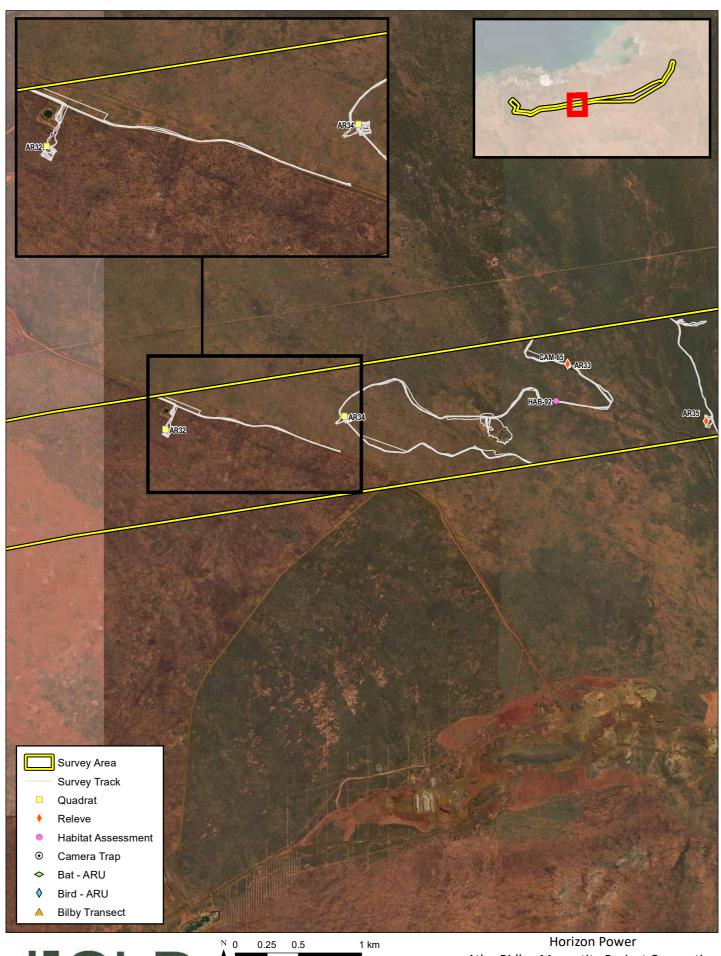
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Atlas Ridley Magnetite Project Connection Flora and Fauna Survey Technical Report

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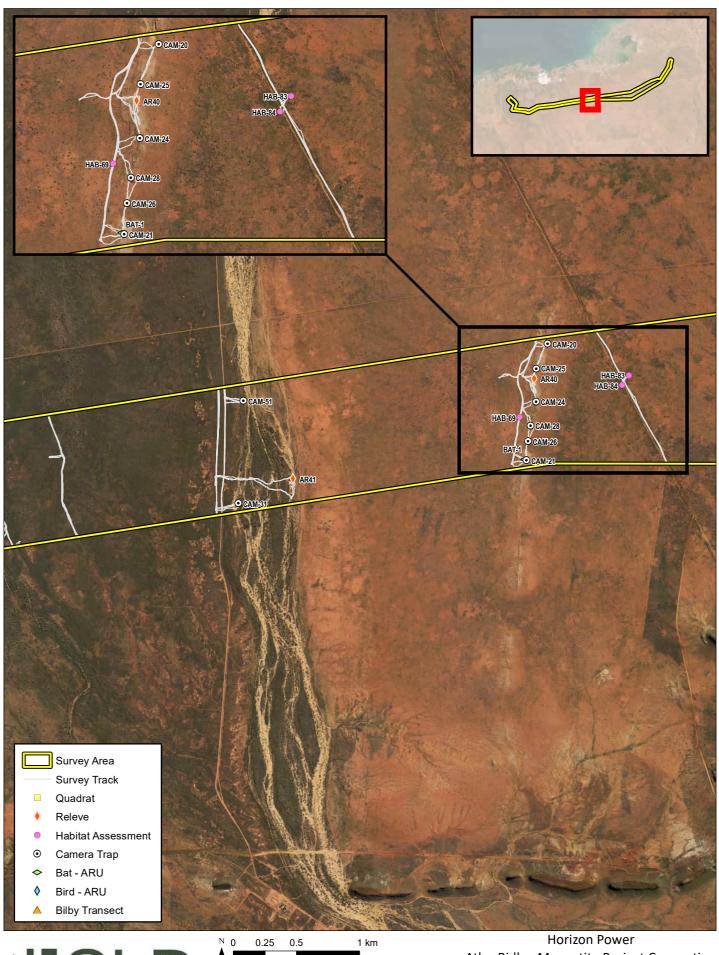


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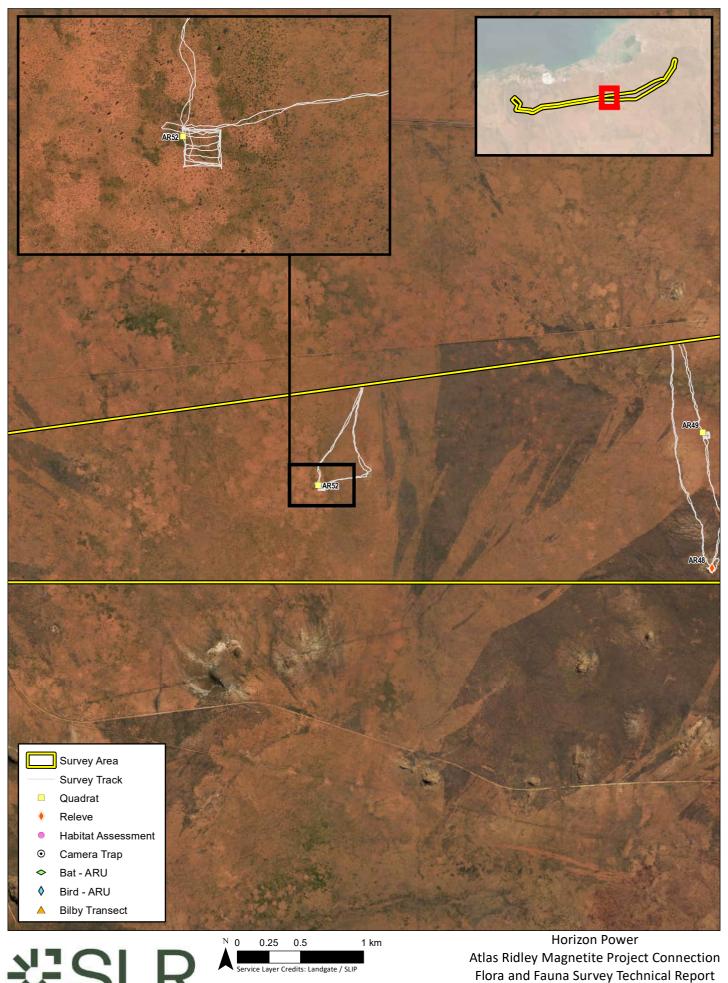


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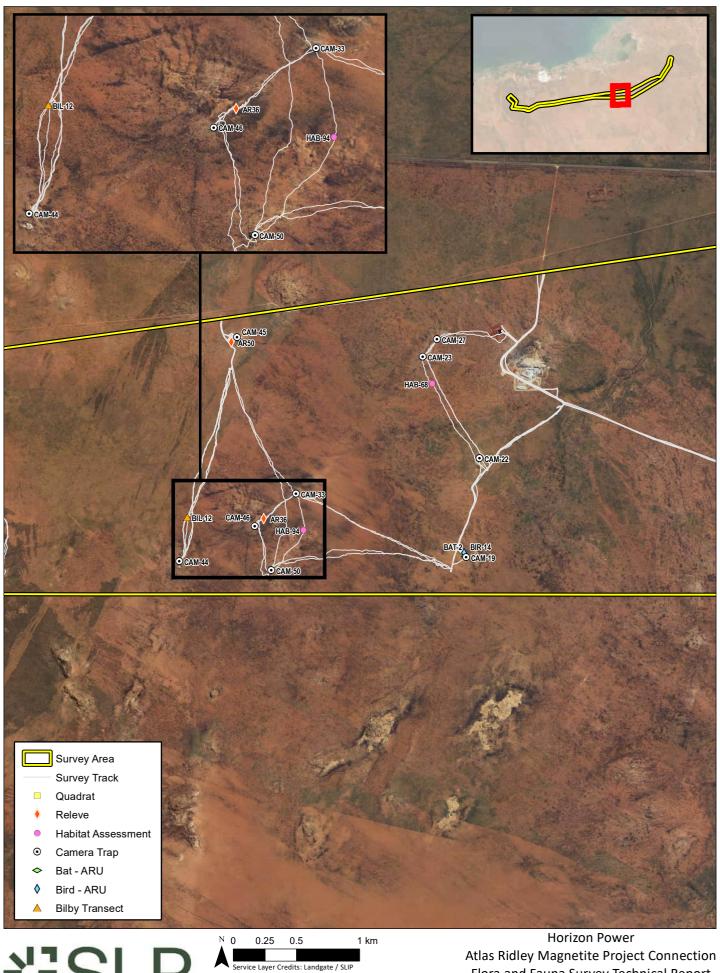
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Survey Effort MAP 08g

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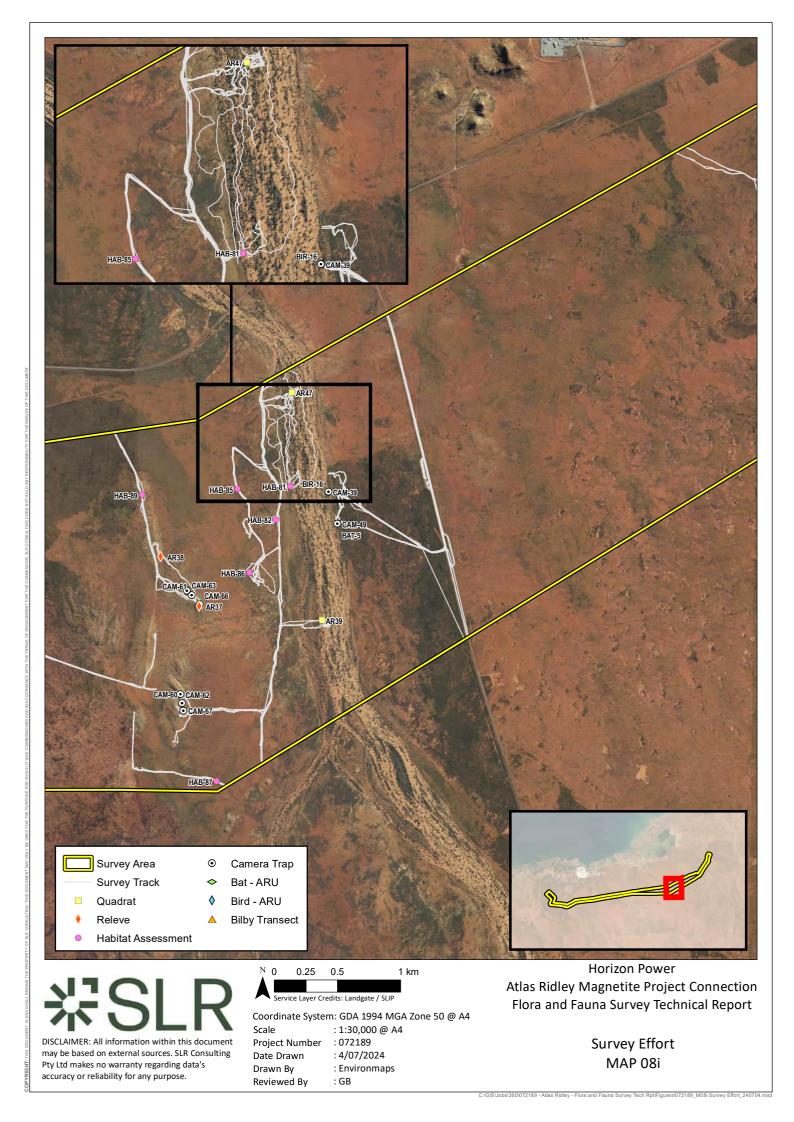
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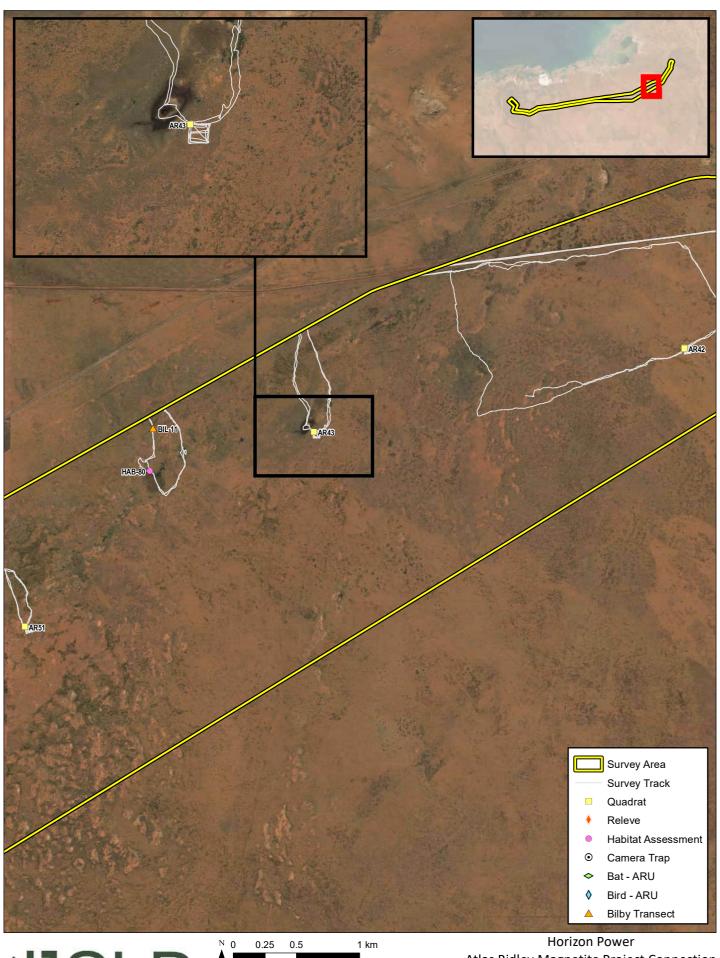
Flora and Fauna Survey Technical Report

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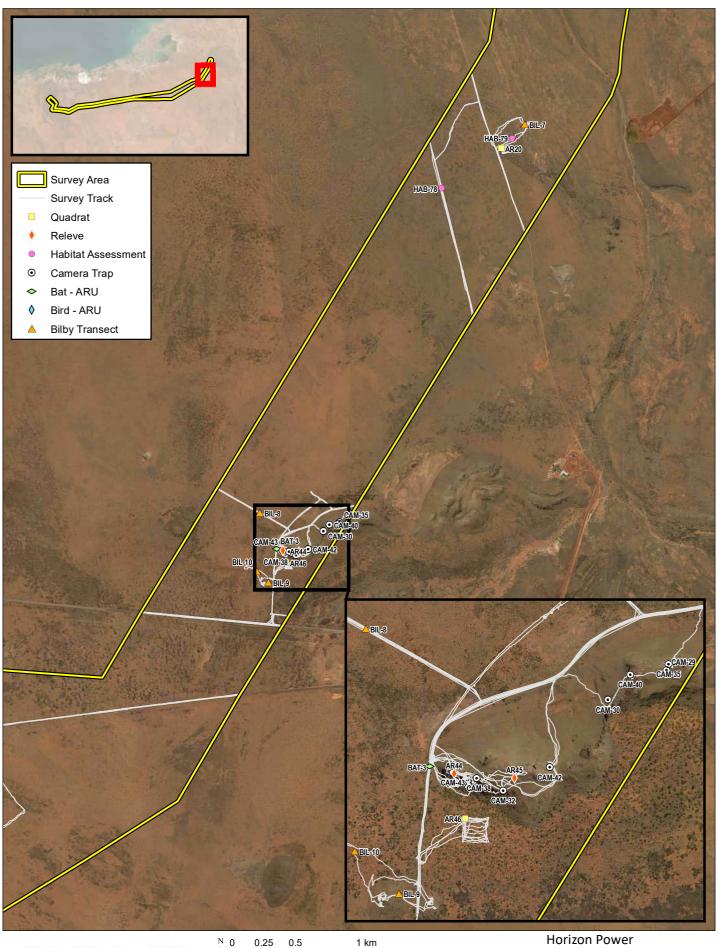
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> Survey Effort MAP 08j

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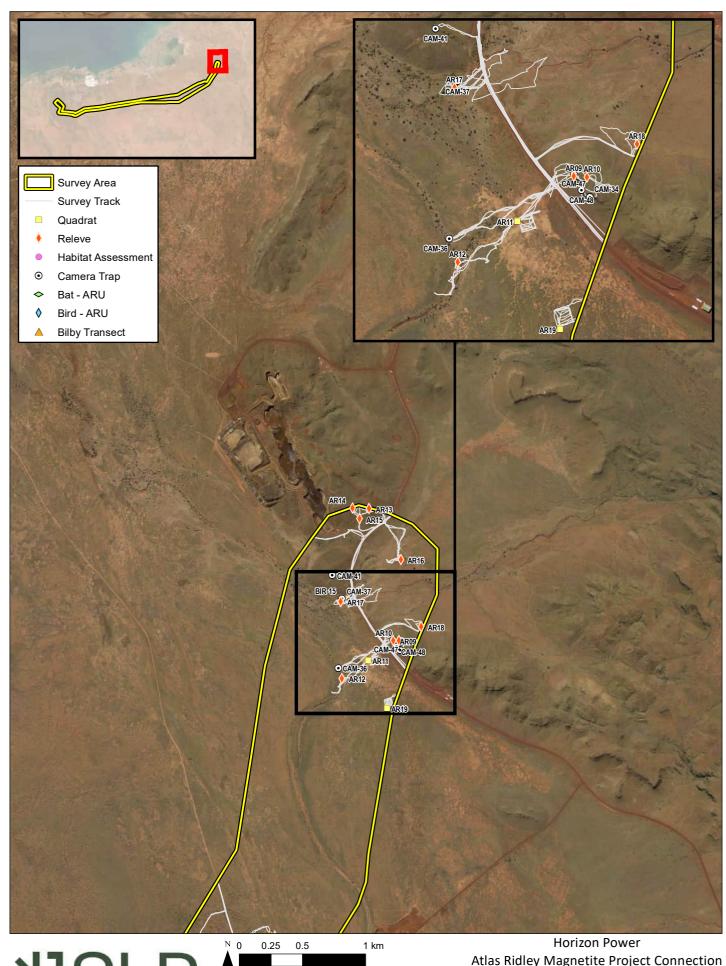
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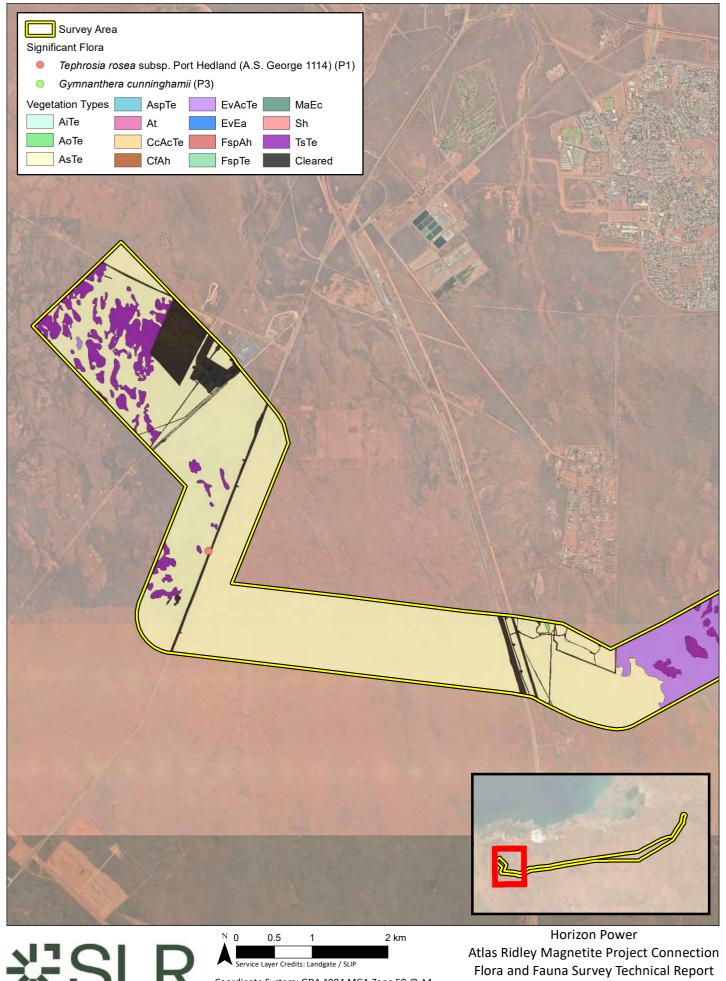


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Atlas Ridley Magnetite Project Connection Flora and Fauna Survey Technical Report

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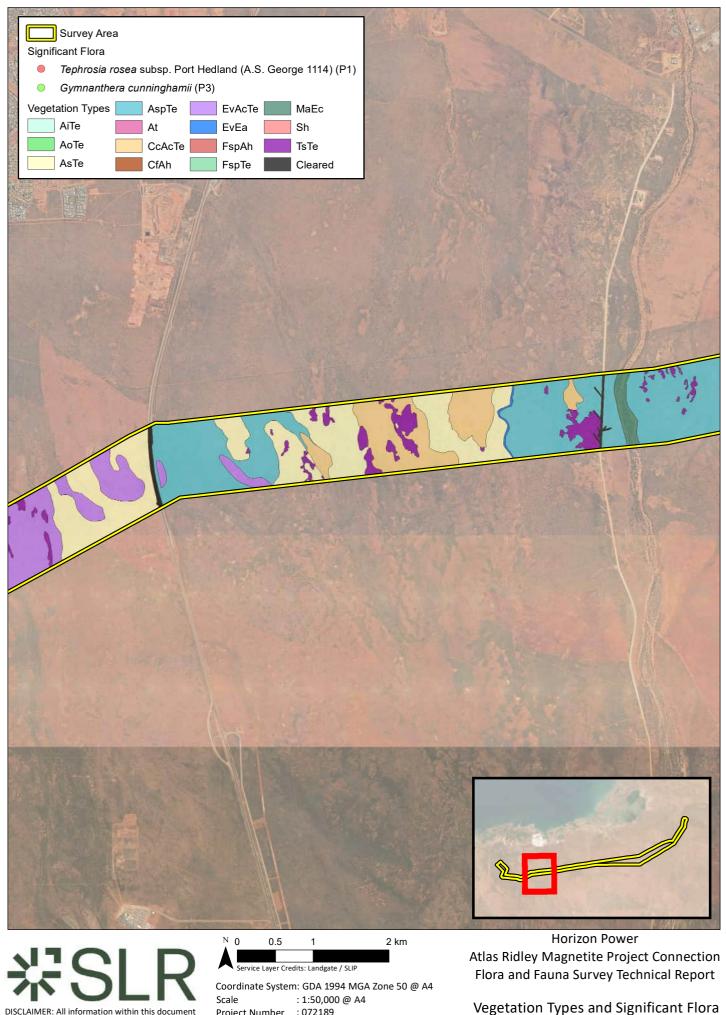
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Vegetation Types and Significant Flora in the Survey Area MAP 09a

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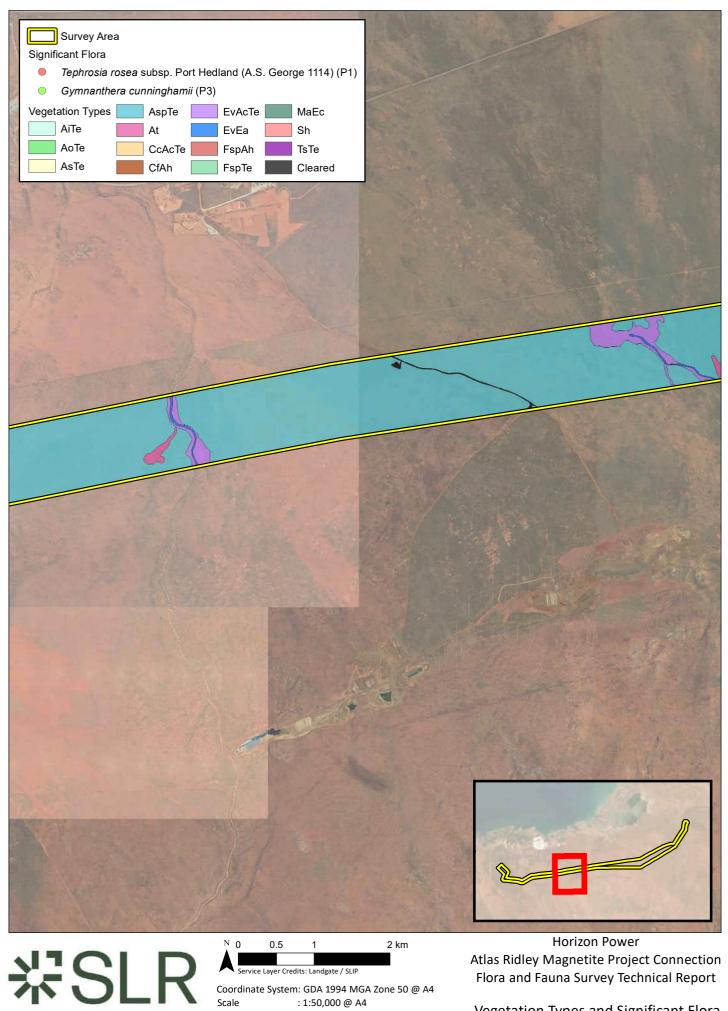
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Vegetation Types and Significant Flora in the Survey Area

MAP 09b

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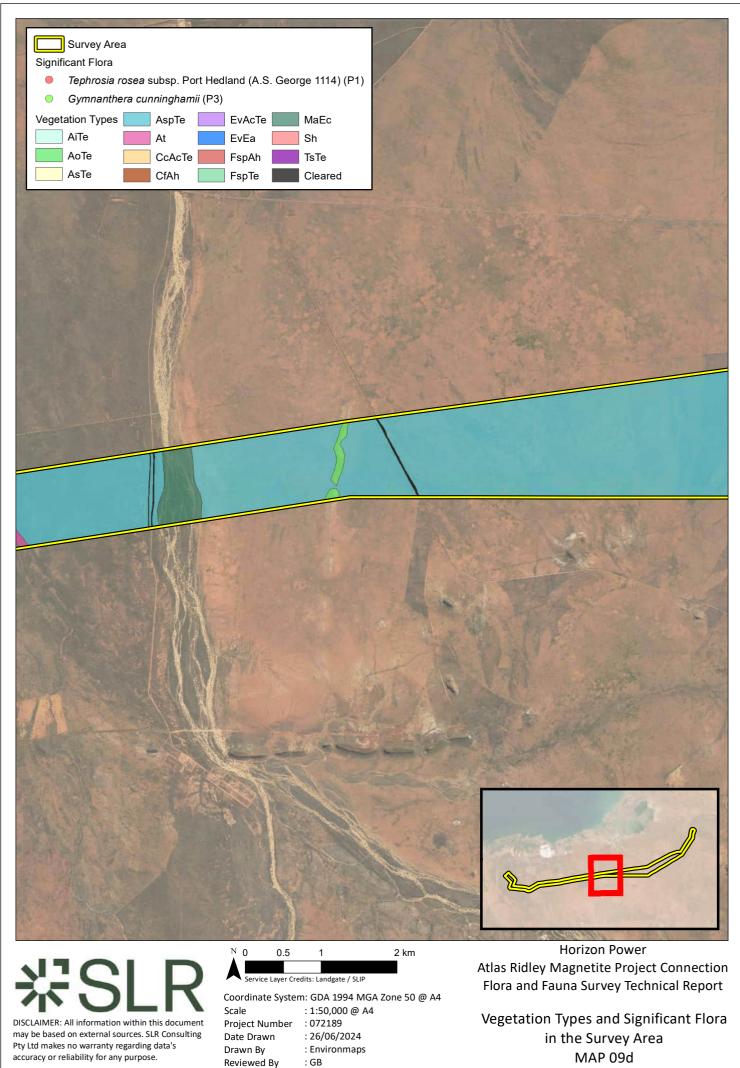
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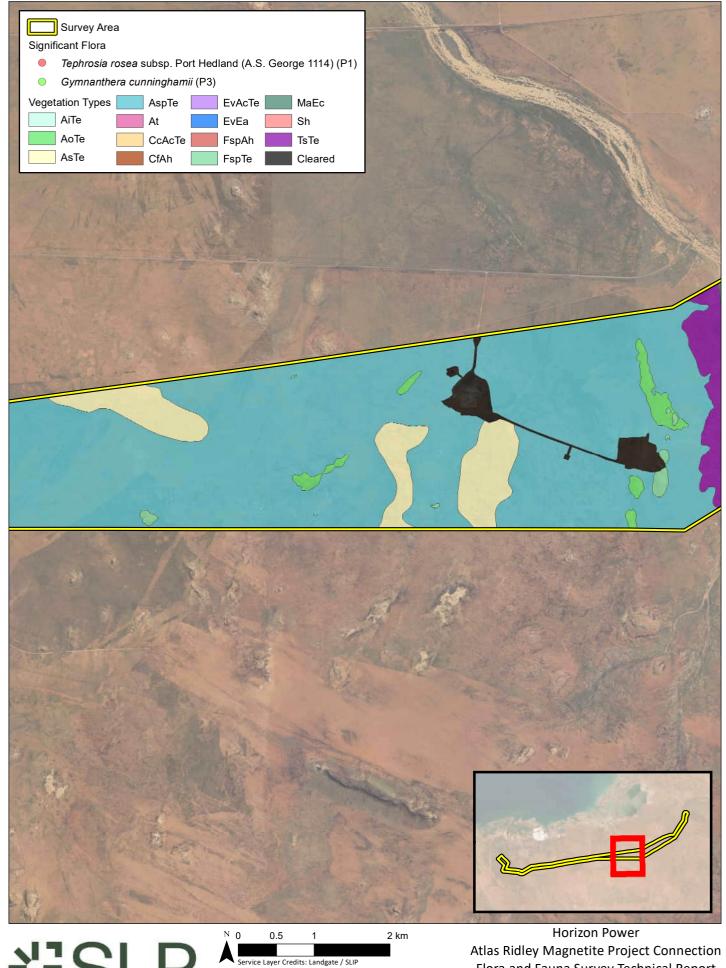
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Vegetation Types and Significant Flora in the Survey Area MAP 09c

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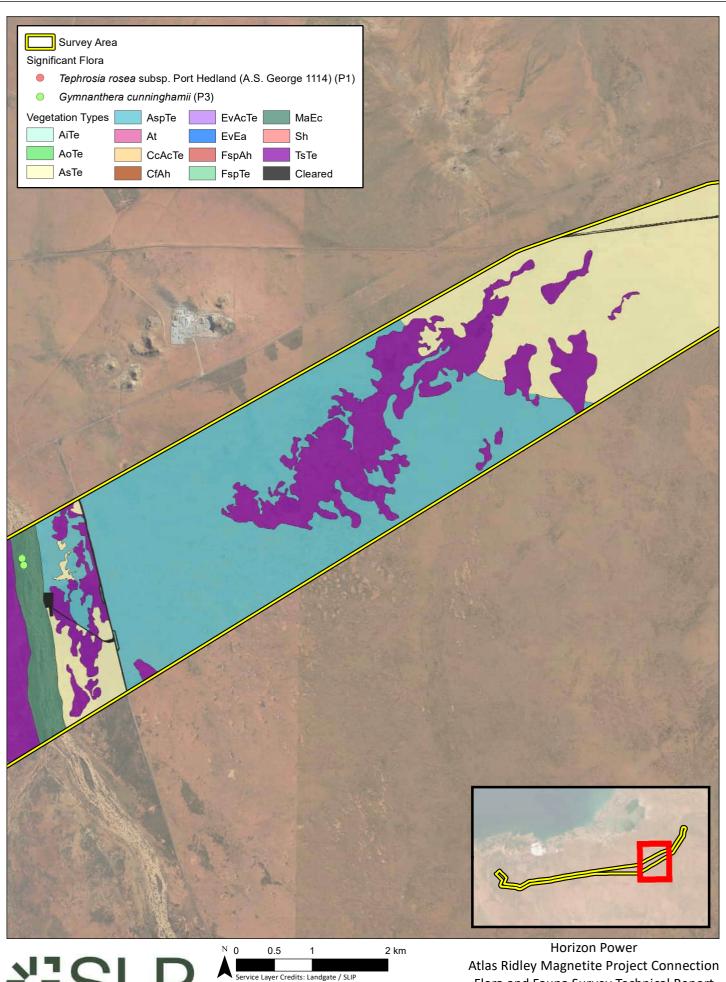


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Flora and Fauna Survey Technical Report Vegetation Types and Significant Flora in the Survey Area

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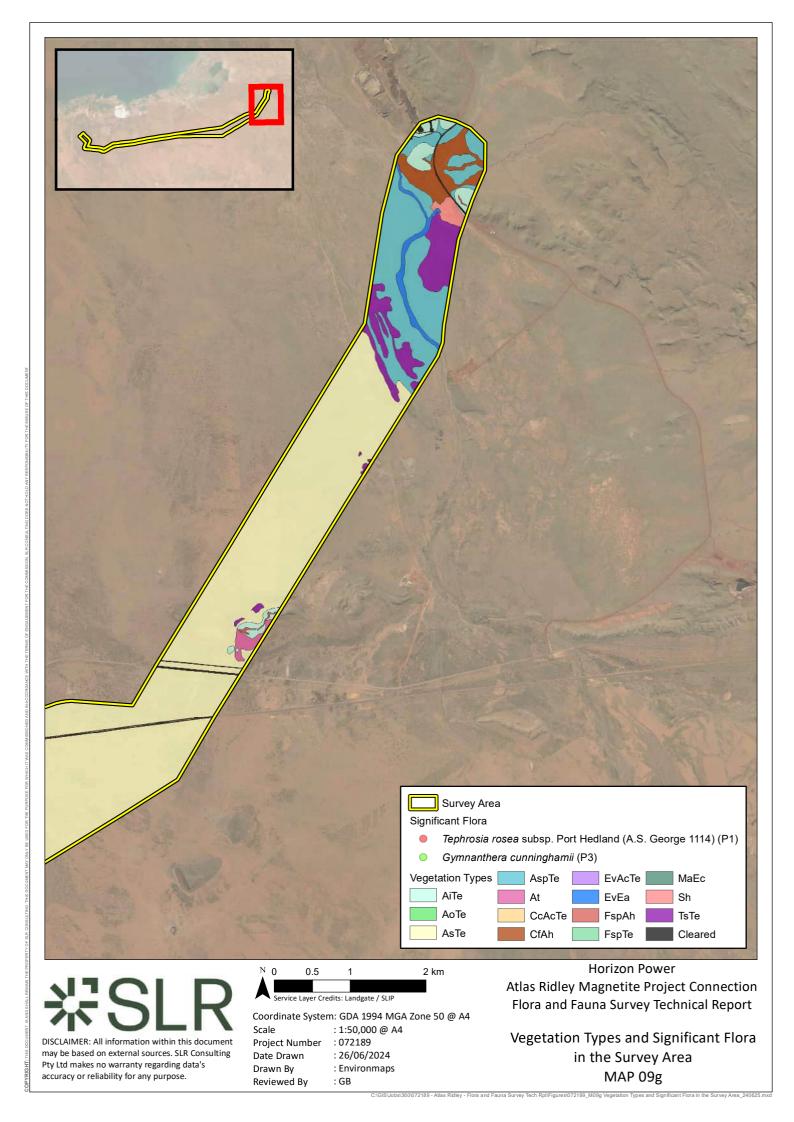
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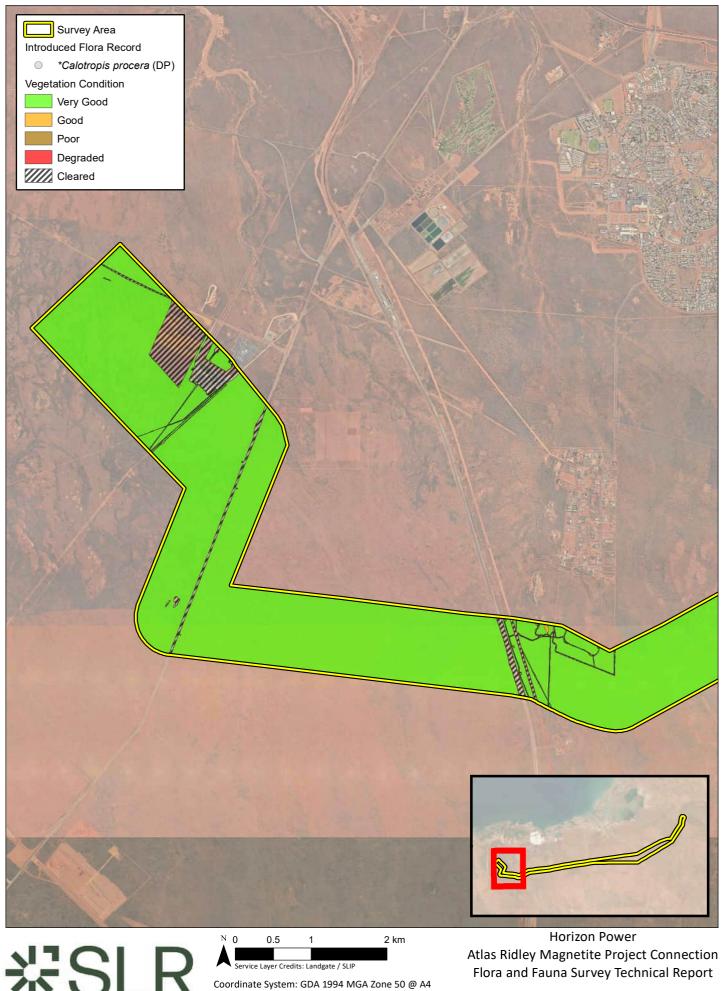
Vegetation Types and Significant Flora in the Survey Area MAP 09f

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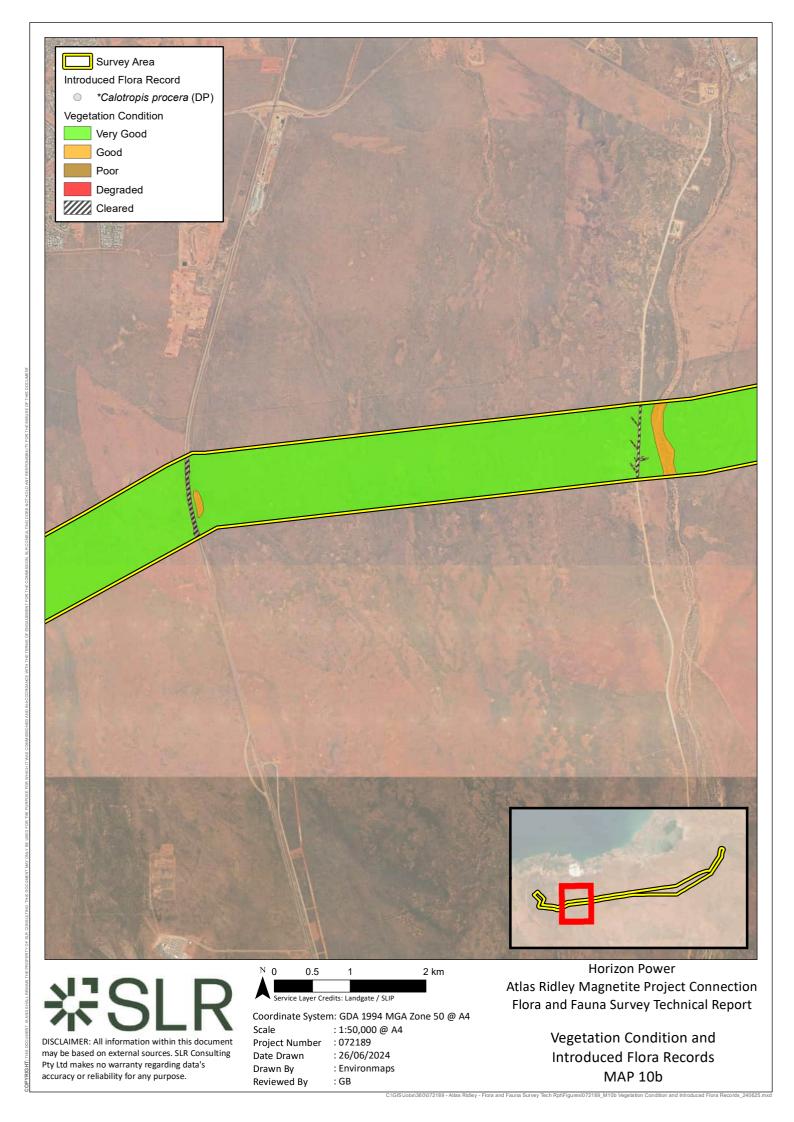


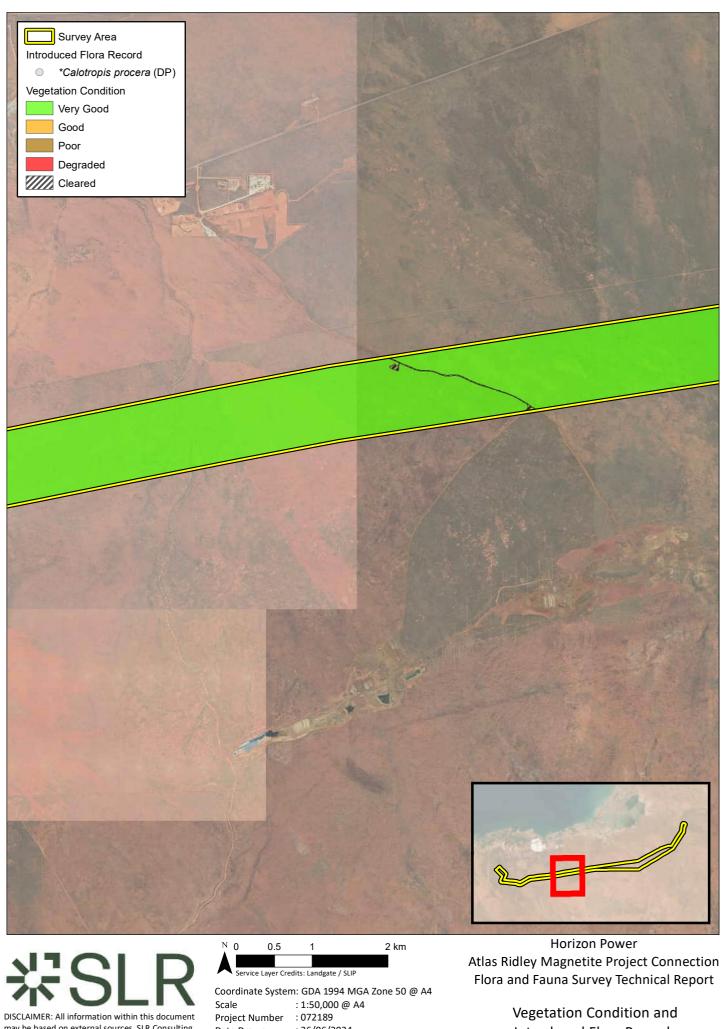


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Vegetation Condition and Introduced Flora Records MAP 10a

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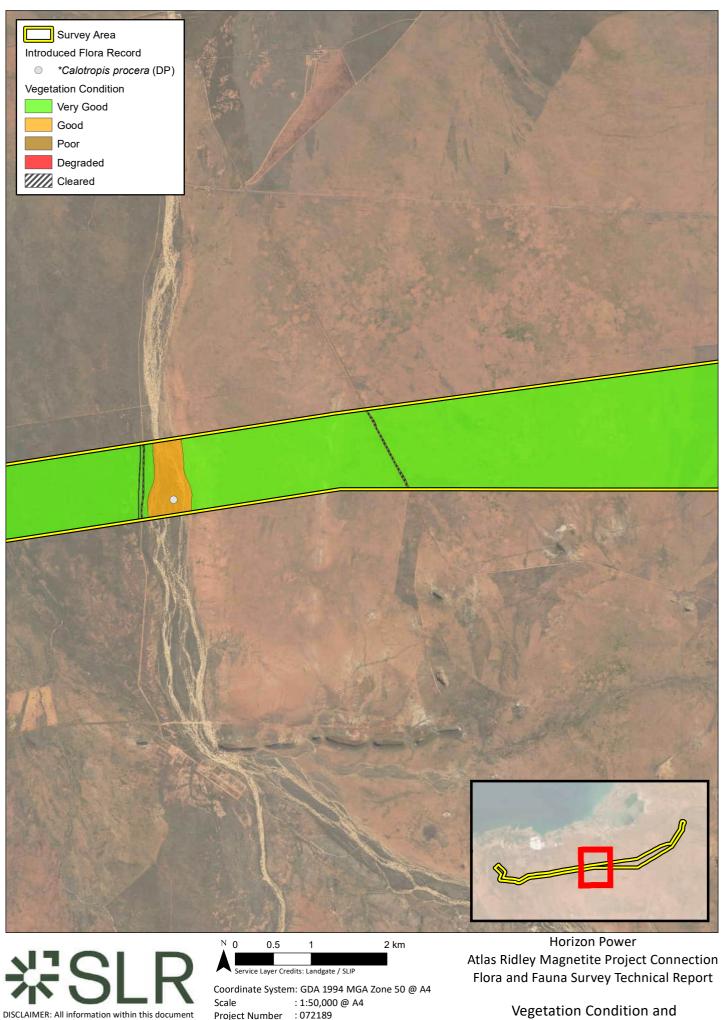


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Introduced Flora Records MAP 10c

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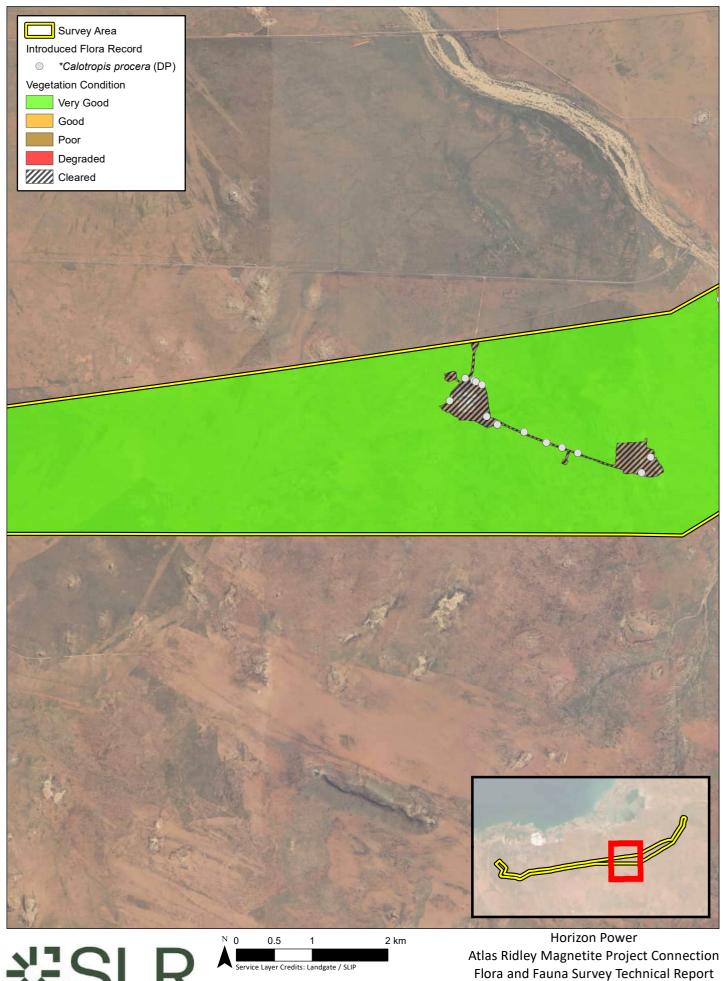


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Introduced Flora Records MAP 10d

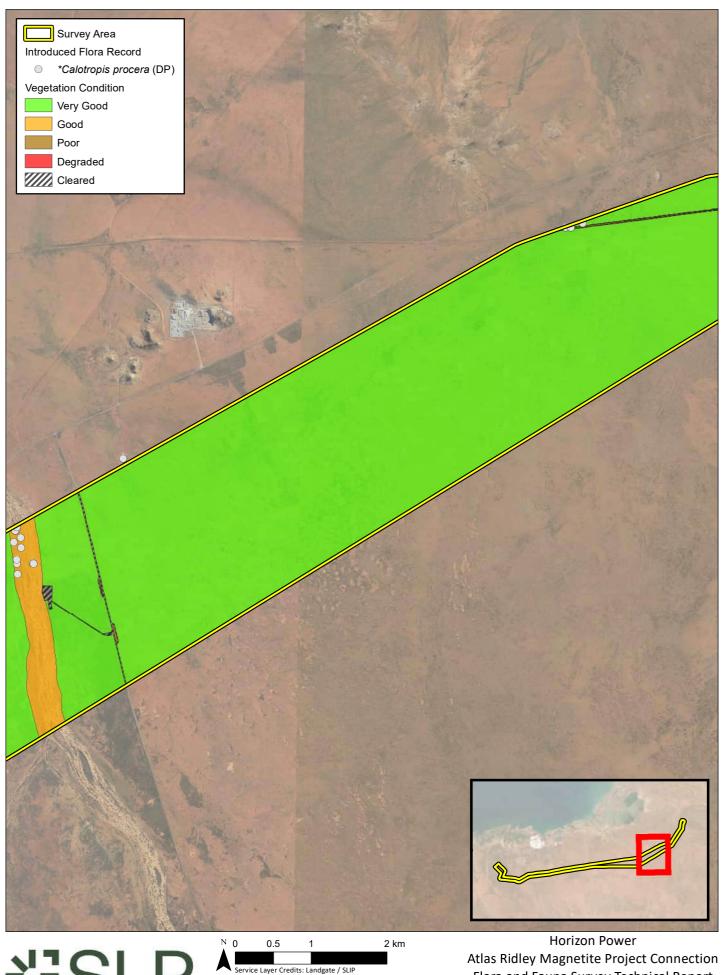
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Vegetation Condition and Introduced Flora Records MAP 10e

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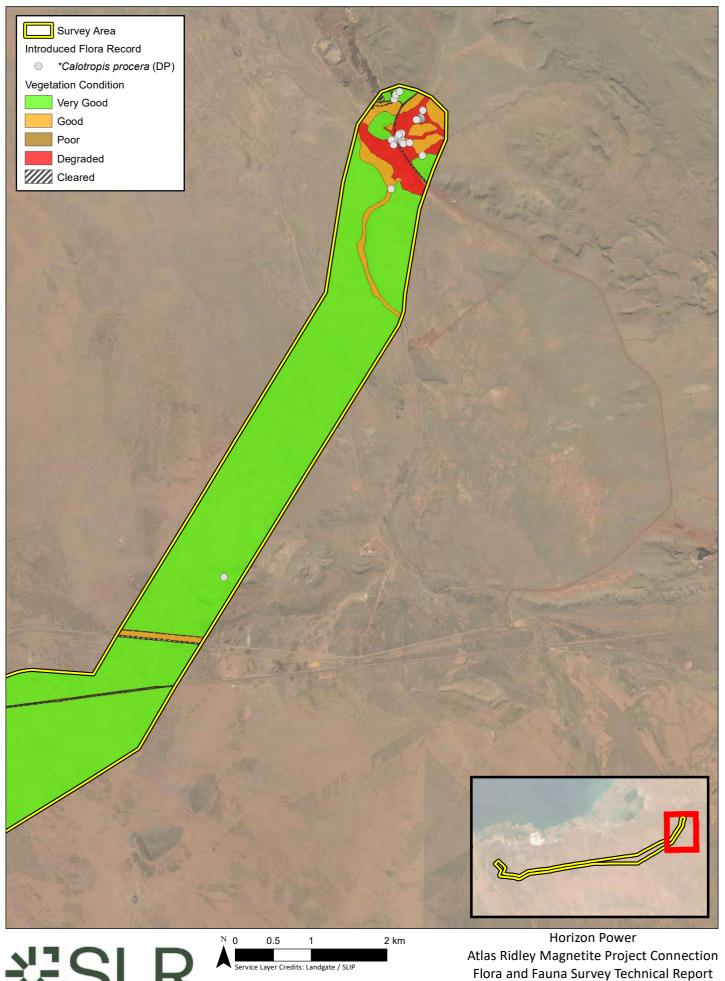


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Flora and Fauna Survey Technical Report

Vegetation Condition and Introduced Flora Records MAP 10f

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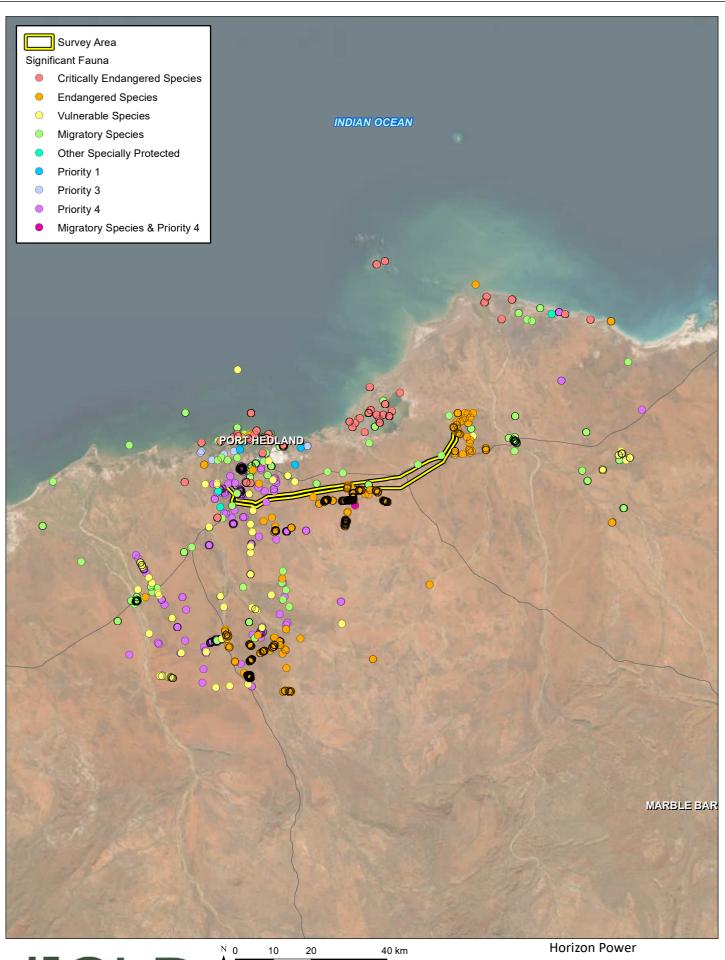
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Vegetation Condition and Introduced Flora Records MAP 10g

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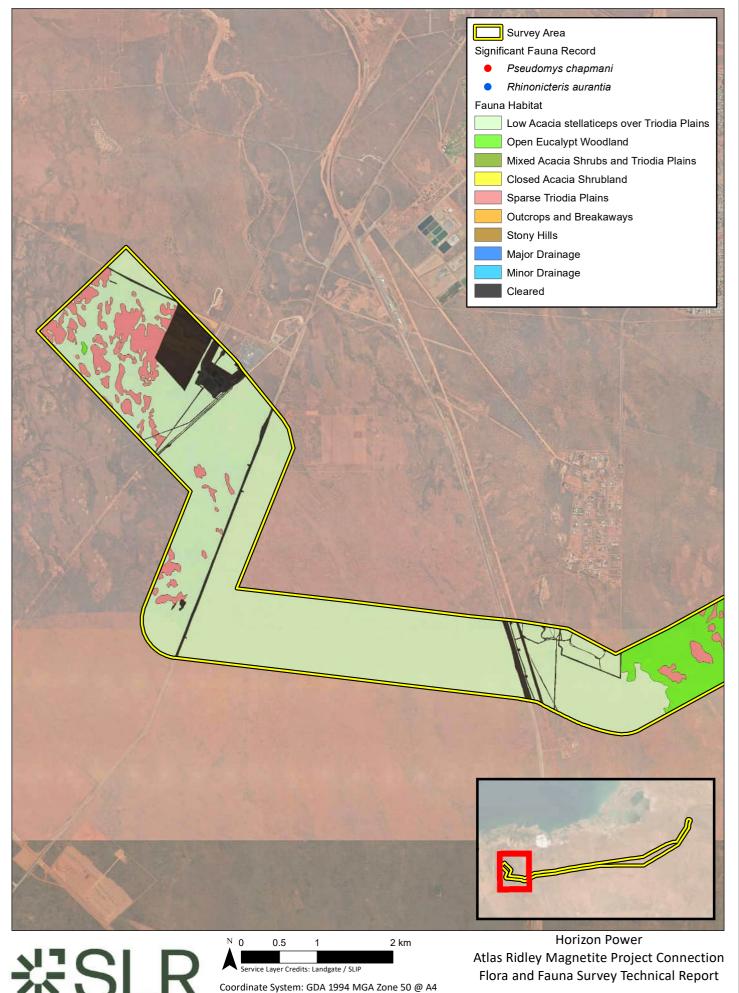
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> Significant Fauna Database Search Results MAP 11

> > N72189 M11 Significant Fa



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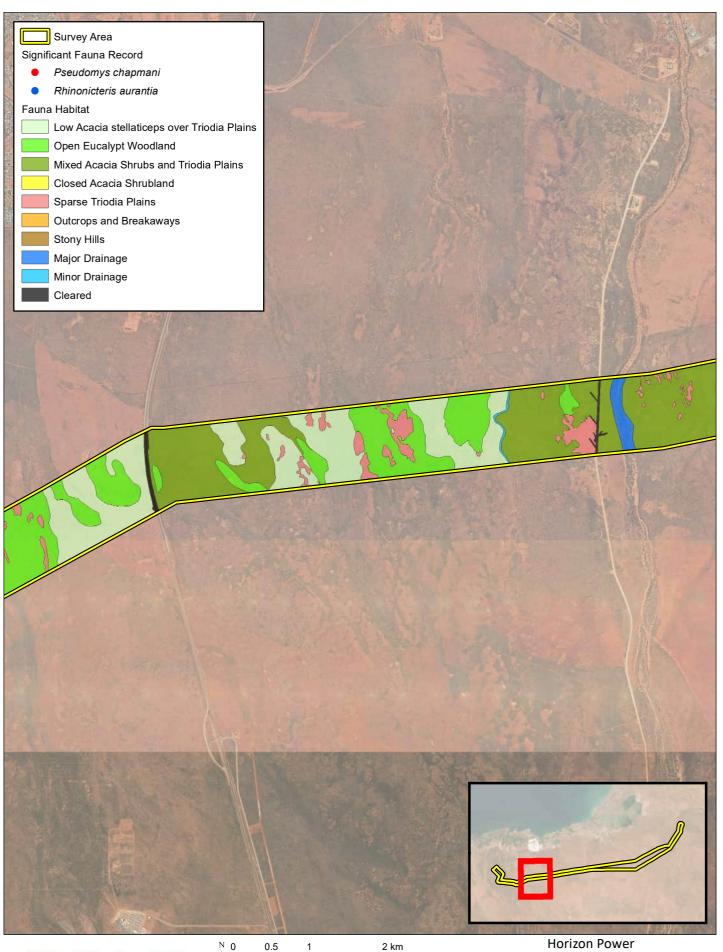
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Fauna Habitat and Significant Fauna Records MAP 12a

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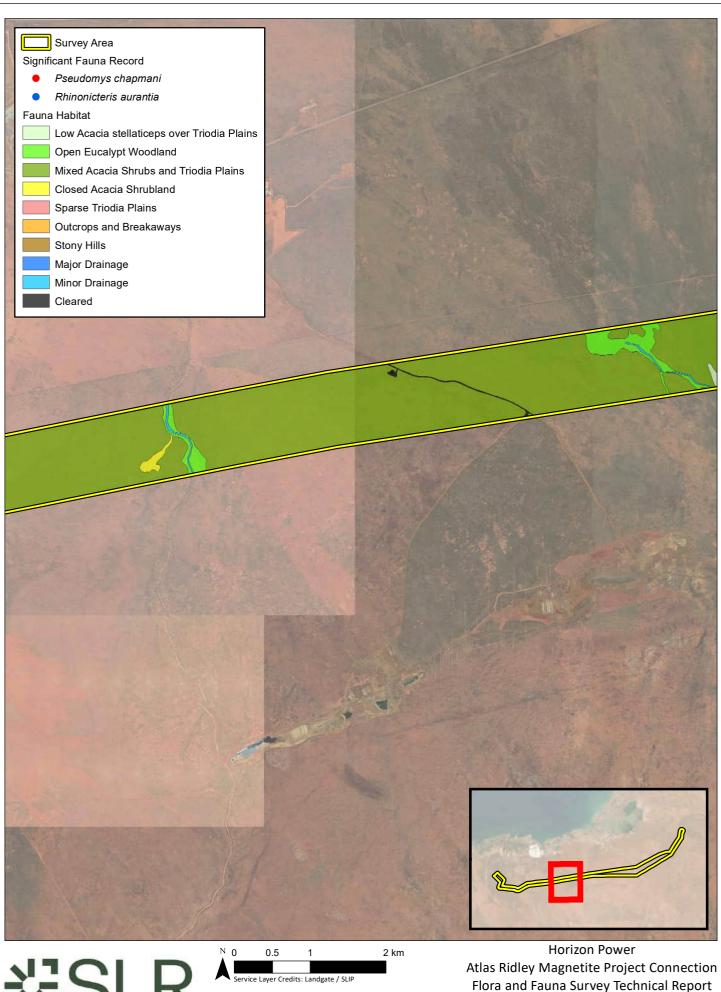
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> Fauna Habitat and Significant Fauna Records MAP 12b

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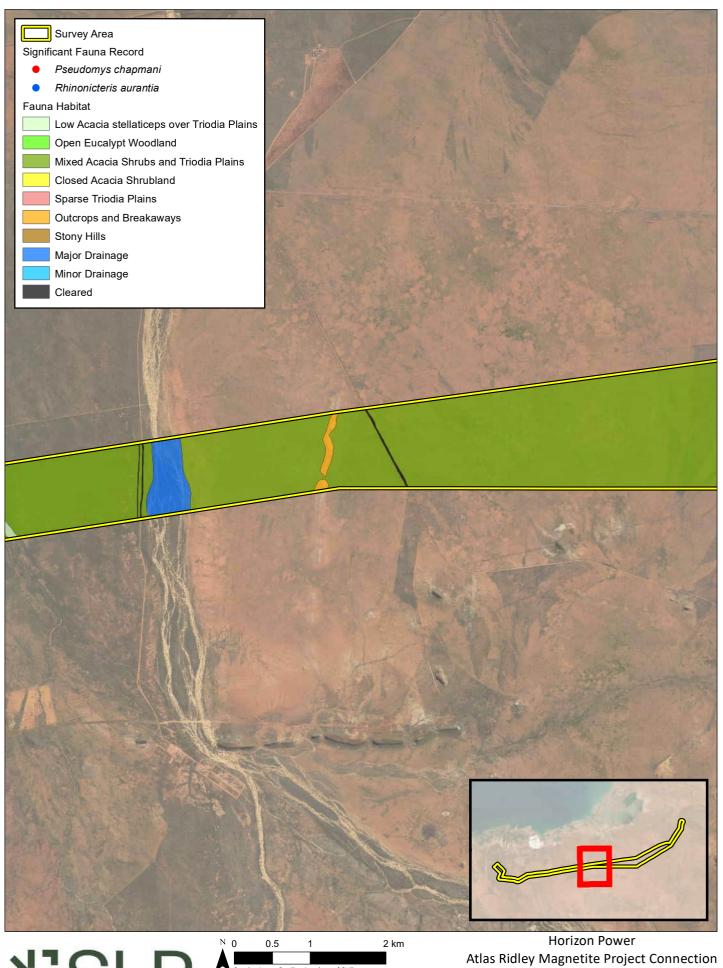


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Fauna Habitat and Significant Fauna Records MAP 12c

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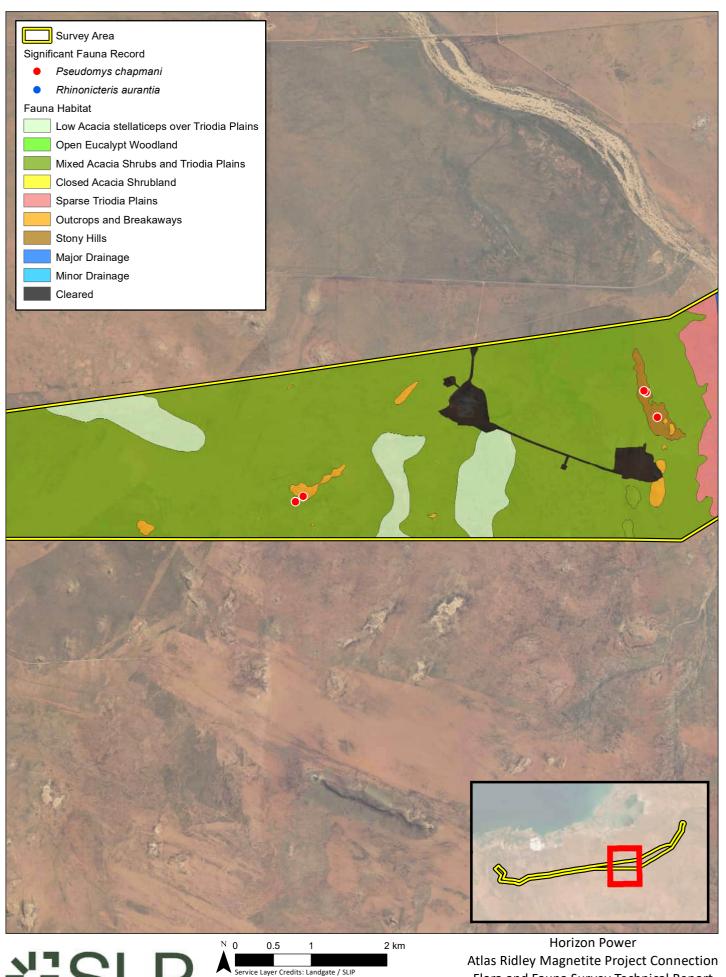
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Flora and Fauna Survey Technical Report

Fauna Habitat and Significant Fauna Records MAP 12d

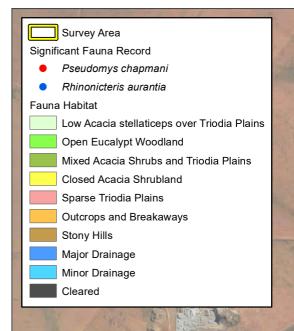
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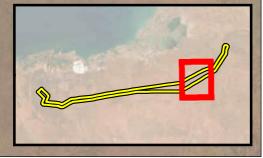


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MAP 12e





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> Fauna Habitat and Significant Fauna Records MAP 12f

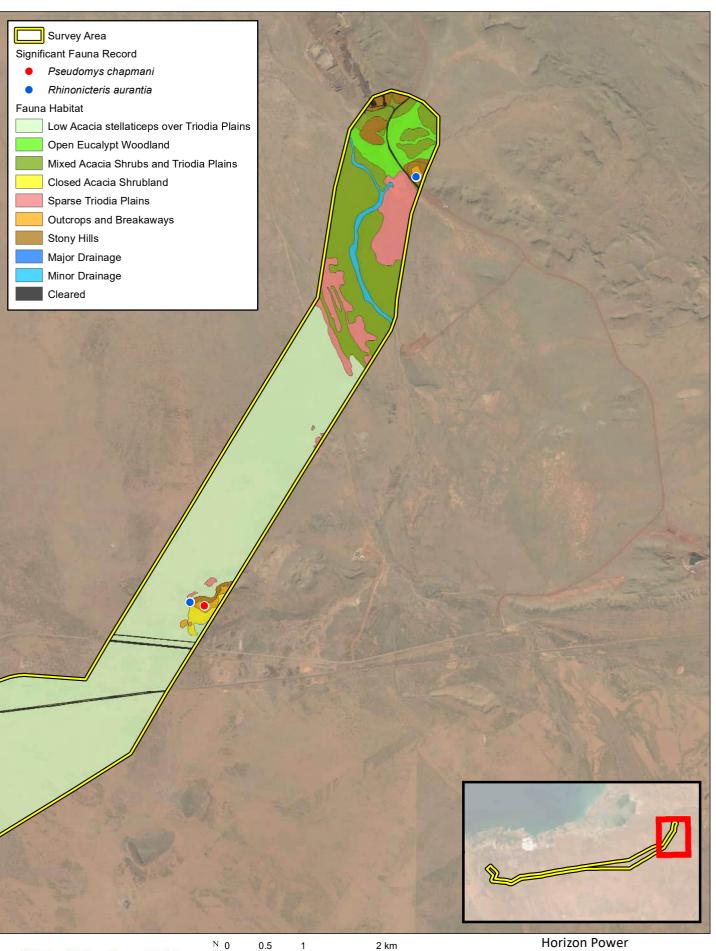
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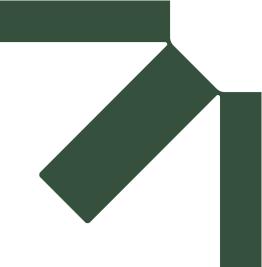


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> Fauna Habitat and Significant Fauna Records MAP 12g

> > s\072189\_M12g Fauna Habits



## Appendix B Literature Review Summary

## **Atlas Ridley Magnetite Project Connection**

#### Flora and Fauna Survey Technical Report

**Horizon Power** 

SLR Project No.: 675.072189.00001



Report	Project Area	Survey Timing	Survey Effort	Conservation Significant Ecological Communities	Conservation Significant Flora	Introduced Flora
Detailed Flora and Vegetation Assessment, Ridley Magnetite Project (Focused Vision 2023)	Assessment intersects the current survey area	May, June, July 2022, and June, August 2023	Detailed flora and vegetation assessment	Presence of the Eighty Mile Land System PEC (P3)	<ul> <li>Atriplex eremitis (P1)</li> <li>Tephrosia rosea var. Port Hedland (A.S. George 1114) (P1)</li> <li>Euphorbia inappendiculata var. queenslandica (P2)</li> <li>Rothia indica subsp. australis (P3)</li> </ul>	<ul> <li>*Calotropis procera</li> <li>*Parkinsonia aculeata</li> </ul>
De Grey South Borefield Biological Surveys (SLR Consulting, 2023),	10 km east of the Survey Area.	July 2023	Detailed flora and basic fauna vegetation assessment	None recorded	None recorded	<ul> <li>*Calotropis procera</li> <li>*Cenchrus ciliaris</li> <li>*Cenchrus setiger</li> <li>*Chloris barbata</li> <li>*Vachellia farnesiana</li> </ul>
Flora and Vegetation Assessment, Port Hedland Regional (ENV Australia 2011)	Directly west of the current survey area	April – May 2011, June – July 2011	Detailed flora and vegetation assessment	None recorded	<ul> <li>Abutilon sp. Pritzelianum (S. van Leeuwen 5095) (P3)</li> <li>Euploca muticum (P3)</li> <li>Tephrosia rosea var. Port Headland (A.S. George 1114)</li> <li>Gomphrena pusilla (P2)</li> </ul>	<ul> <li>*Aerva javinica</li> <li>*Cenchrus ciliaris</li> <li>*Citrulus colocynthis</li> <li>*Cucumis melo subsp. agrestis</li> <li>*Eragrostis curvula</li> <li>*Flaveria trinerva</li> <li>*Indigofera sessiliflora</li> <li>*Physalis angulate</li> <li>*Portulaca oleracea</li> <li>*Stylosanthes hamata</li> <li>Vaccaria hispanica</li> <li>*Vachellia farnesiana</li> </ul>
Flora and Vegetation Assessment, Corunna Downs Intersection Works (Woodman Environmental 2017)	Approximately 90 km southeast of the survey area	April 2017	Reconnaissance Flora and Vegetation Survey	None recorded	None recorded	<ul> <li>*Aerva javanica</li> <li>*Cenchrus ciliaris</li> </ul>

Report	Project Area	Survey Timing	Survey Effort	Conservation Significant Ecological Communities	Conservation Significant Flora	Introduced Flora
Corunna Downs Project, Level 2 Flora and Vegetation Assessment (Woodman Environmental 2016)	Approximately 90 km southeast of the survey area	March – April 2014, April – May 2014, and May 2016	Detailed Flora and Vegetation Survey	None recorded	<ul> <li>Cochlospermum macnamarae (P1)</li> <li>Rothia indica subsp. australis (P3)</li> <li>Schoenus coultasii (P1)</li> <li>Stylidium weeliwolli (P3)</li> <li>Acacia levata (P3)</li> <li>Eragrostis crateriformis (P3)</li> <li>Heliotropium murinum (P3)</li> <li>Nicotiana umbratical(P3)</li> <li>Rostellularia adscendens var. latifolia (P3)</li> <li>Swainsona thompsoniana (P3)</li> <li>Ptilotus mollis (P4)</li> </ul>	<ul> <li>*Aerva javanica</li> <li>*Argemone ochrileuca subsp. ochroleuca</li> <li>*Calotropis procera</li> <li>*Cenchrus ciliaris</li> <li>*Cenchrus setiger</li> <li>*Chloris barbata</li> <li>*Cynodon dactylon</li> <li>*Echonochloa colona</li> <li>*Flaveria trinerva</li> <li>*Malvastrum Americanum</li> <li>*Passiflora foetida var. hispida</li> <li>*Portulaca pilosa</li> <li>*Setaria verticillata</li> <li>*Sonchus oleraceus</li> <li>*Tribulus terrestris</li> <li>*Vachellia farnesiana</li> </ul>
Wodgina Gas Pipeline, Detailed Flora and Vegetation Survey (360 Environmental 2018)	Approximately 30 km southeast of the survey area	June 2018	Detailed Flora and Vegetation Survey	None recorded	• Euphorbia clementii (P3)	<ul> <li>*Aerva javanica</li> <li>*Malvastrum americanum</li> <li>*Cenchrus ciliaris</li> </ul>
Roy Hill Port Facility Power Line Port Hedland, Ecological Assessment (GHD 2016)	Approximately 15 km north of the survey area	June 2016	Reconnaissance Flora and Vegetation Survey	None recorded	None recorded	<ul> <li>*Aerva javanica</li> <li>*Cenchrus ciliaris</li> </ul>
Flora and Fauna survey Port Hedland International Airport – Highway Precinct	Approximately 10 km north of the survey area	November 2018	Reconnaissance Flora and Vegetation Survey	None recorded	Gomphrena leptophylla (P3)	<ul> <li>*Washingtonia filifera</li> <li>*Aerva javanica</li> <li>*Calatropis procera</li> <li>*Cenchrus ciliaris</li> </ul>

Report	Project Area	Survey Timing	Survey Effort	Conservation Significant Ecological Communities	Conservation Significant Flora	Introduced Flora
2 (Emerge Associates 2019)						*Cenchrus setiger
Flora and Vegetation Reconnaissance Survey of Spoilbank Marina Project Area (Strategen-JBS&G 2020)	Approximately 15 km north of the survey area		Reconnaissance Flora and Vegetation Survey	None recorded	None recorded	<ul> <li>*Aerva javanica</li> <li>*Calatropis procera</li> <li>*Cenchrus ciliaris</li> <li>*Spathodea campanulate</li> <li>*Stylosanthes hamata</li> <li>*Tamarix aphylla</li> </ul>

ID	Report	Project Area	Survey Timing	Survey Effort	Significant Fauna Recorded Fauna Habitats Onsite
Lit A	Ridley Detailed Terrestrial Vertebrate Fauna Survey (Biota, 2024)	Overlaps with the eastern section of the Survey Area	June 2022 – June 2023	Detailed fauna survey	<ul> <li>Far Eastern Curlew (<i>Numenius</i> madagascariensis) – CR (BC Act &amp; EPBC); MI (EPBC Act)</li> <li>Northern Quoll (<i>Dasyurus</i> hallucatus) – EN (BC &amp; EPBC Act)</li> <li>Nothern Quoll (<i>Dasyurus</i> hallucatus) – EN (BC &amp; EPBC Act)</li> <li>Pilbara Leaf-nosed Bat (<i>Rhinonicteris aurantia</i> Pilbara form) – VU (BC &amp; EPBC Act)</li> <li>Ghost Bat (<i>Macroderma</i> gigas) – VU (BC &amp; EPBC Act)</li> <li>Pilbara Olive Python (<i>Liasis</i> olivaceus barroni) – VU (BC &amp; EPBC Act)</li> <li>Brush-tailed Mulgara (<i>Dasycercus blythi</i>) – P4 (DBCA)</li> <li>Western Pebble-mound Mouse (<i>Pseudomys</i> chapmani) – P4 (DBCA)</li> <li>Pacific Switt (<i>Apus</i> pacificus) – MI (BC &amp; EPBC)</li> <li>Australian Tern (<i>Gelochelidon macrotarsa</i>) – Mi (BC &amp; EPBC Act)</li> <li>Peregrine Falcon (<i>Falco</i> peregrinus) – OS (BC Act)</li> </ul>

ID	Report	Project Area	Survey Timing	Survey Effort	Significant Fauna Recorded Fauna Habitats Onsite
Lit B	Ridley Services Corridors Basic and Targeted Fauna Survey (Biota, 2023)	Overlaps the Survey Area	June 2023	Basic and Targeted fauna survey	<ul> <li>Bar-tailed Godwit (<i>Limosa</i> <i>lapponica</i>) – CR (BC Act &amp; EPBC Act); MI (EPBC Act)</li> <li>Northern Quoll (<i>Dasyurus</i> <i>hallucatus</i>) – EN (BC &amp; EPBC Act)</li> <li>Brush-tailed Mulgara (<i>Dasycercus blythi</i>) – P4 (DBCA)</li> <li>Western Pebble-mound Mouse (<i>Pseudomys</i> <i>chapmani</i>) – P4 (DBCA)</li> <li>Eurasian Whimbrel (<i>Numenius phaeopus</i>) – MI (BC &amp; EPBC Act)</li> <li>Sanderling (<i>Calidris alba</i>) – MI (BC &amp; EPBC Act)</li> <li>Sanderling (<i>Calidris alba</i>) – MI (BC &amp; EPBC Act)</li> <li>Common Gull-billed Tern (<i>Gelochelidon marotarsa</i>) – MI (BC &amp; EPBC Act)</li> <li>Caspian Tern (<i>Hydroprogne</i> <i>caspia</i>) – MI (BC &amp; EPBC Act)</li> <li>Greater Crested Tern (<i>Thalasseus bergii</i>) – MI (BC &amp; EPBC Act)</li> <li>Little Tern (<i>Sternula</i> <i>albifrons</i>) – MI (BC &amp; EPBC Act)</li> <li>Little Tern (<i>Sternula</i> <i>albifrons</i>) – MI (BC &amp; EPBC Act)</li> </ul>

ID	Report	Project Area	Survey Timing	Survey Effort		Significant Fauna Recorded Onsite	Fauna Habitats
Lit C	Detailed terrestrial fauna and targeted Bilby survey for the Port Hedland Solar Farm Project (Pheonix Environmental, 2022)	Overlaps the western section of the Survey Area	March – October, 2021	Detailed fauna, Targeted Bilby, and SRE survey	•	Bilby ( <i>Macrotis lagotis</i> ) – VU (BC Act & EPBC Act) Brush-tailed Mulgara (Dasycercus blythi) – P4 (DBCA)	Eleven fauna habitats were identified: Beach/Dune Tidal Flats Mangroves Riverine Sandplain Billabong Low Hill Granite Tor/Isolated Rockpile Quartz Hill Ocean Disturbed
Lit D	Wodgina Gas Pipeline targeted Fauna Survey (360 Environmental Pty Ltd, 2018)	Approx. 20 km southwest of the Survey Area	June 2018	Targeted fauna survey	•	Bilby ( <i>Macrotis lagotis</i> ) – VU (BC Act & EPBC Act) Pilbara Leaf-nosed Bat ( <i>Rhinonicteris aurantia</i> Pilbara form) – VU (BC Act & EPBC Act)	<ul> <li>Five fauna habitats were identified:</li> <li>Grassland</li> <li>Low woodland</li> <li>Low-lying habitat</li> <li>Major drainage lines</li> </ul>
Lit E	Wodgina Project: Level 1 Fauna Survey, Targeted Conservation Significant Fauna Survey and Desktop Assessment (Stantec Australia Pty Ltd, 2018)	Approx 80 km south of the Survey Area	July 2018	Basic Fauna Survey Targeted Fauna Survey	•	Northern Quoll ( <i>Dasyurus</i> <i>hallucatus</i> ) – EN (BC Act & EPBC Act) Pilbara Leaf-nosed Bat ( <i>Rhinonicteris aurantia</i> Pilbara form) – VU (BC Act & EPBC Act)	Six fauna habitats were identified: Ironstone ridge top Rocky ridge and gorge Rocky foothills Stony Rise Spinifex stony plain Drainage line

ID	Report	Project Area	Survey Timing	Survey Effort	Significant Fauna Recorded Onsite	Fauna Habitats
					<ul> <li>Ghost Bat (<i>Macroderma</i> gigas) – VU (BC Act &amp; EPBC Act)</li> <li>Western Pebble-mound Mouse (<i>Pseudomys</i> chapmani) – P4 (BC Act)</li> </ul>	
Lit F	Pardoo Stage 3 Irrigation Project and 80 Mile Beach Ramsar Site Fauna Assessment (Bamford Consulting Ecologists, 2017b)	Approx. 100 km east of Survey Area	12 -14 July 2016, 18 - 21 Sept 2017	Basic fauna survey Targeted fauna survey	<ul> <li>pacificus) - MI (BC Act), MI</li> <li>&amp; MA (EPBC Act)</li> <li>Oriental Plover (<i>Charadrius</i> veredus) - MI (BC Act), MI</li> <li>&amp; MA (EPBC Act)</li> <li>Brush-tailed Mulgara (<i>Dasycercus blythi</i>) - P4 (DBCA)</li> <li>Bilby (Macrotis lagotis) - VU (BC Act &amp; EPBC Act)</li> <li>Current Action of the second se</li></ul>	una habitats were fied: indan shrublands oastal plain thickets and nrublands oastal plain grasslands nd low shrublands alt pans ow limestone ridges ompletely degraded area ssociated with agricultural ructures.
Lit G	Assessment of the Bilby Macrotis lagotis Pardoo Station; Stage 2 areas (Bamford Consulting Ecologists, 2017a)	Approx. 100 km east of Survey Area	28 - 30 June 2017	Targeted fauna survey	VU (BC Act & EPBC Act) identif	auna habitat was fied: indan shrublands
Lit H	Supplementary Flora and Vegetation Survey and Terrestrial Fauna Survey for the Balla Balla Infrastructure Group Ltd (Phoenix Environmental, 2018)	Approx 100 km west of the Survey Area	June 2017	Basic Fauna Survey Targeted Fauna Survey	hallucatus) – EN (BC Act & EPBC Act) • Bilby (Macrotis lagotis) – VU (BC Act & EPBC Act) • M lir • O	ummock and tussock rassland linor creek and drainage

ID	Report	Project Area	Survey Timing	Survey Effort		Significant Fauna Recorded Onsite	Fauna Habitats
Lit I	Assessment of the Bilby Macrotis lagotis Pardoo Station; Stage 2 and 3 project areas (Bamford	Approx. 100 km east of Survey	12 - 14 July 2016	Targeted fauna survey	•	Brush-Tailed Mulgara ( <i>Dasycercus blythi</i> ) – P4 (BC Act)	<ul> <li>Woodland</li> <li>Gully</li> <li>Sandplain</li> <li>One fauna habitat was identified:</li> <li>Pindan shrublands</li> </ul>
	Consulting Ecologists, 2016)	Area					
Lit J	Terrestrial Fauna Surveys for the Balla	Approx 100 km	June – July 2014	Targeted Fauna Survey	•	Northern Quoll (Dasyurus hallucatus) – EN (BC Act &	Eight fauna habitats were identified:
	Balla Railway Project (Phoenix Environmental, 2014)	west of the			•	EPBC Act) Western Pebble-mound	<ul> <li>Hummock and tussock grassland</li> </ul>
	2014)	Survey Area				mouse (Pseudomys chapmani) – P4 (BC Act))	Open and closed shrubland
							Rocky hill slope
							Minor creek and drainage line
							Woodland
							• Gully
							<ul> <li>Isolated sand dunes</li> </ul>

## Appendix C Flora Desktop Assessment Results and Likelihood of Occurrence

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Summary of results of the database searches (numbers represent counts of records within 50 km of the Survey Area).

Т	NatureMap	TPFL <sup>^</sup>	WAH⁺	
uoya zonalis		71	22	
P1				
cacia cyperophylla var. omearana			1	
cacia leeuweniana		1	7	
triplex eremitis	$\checkmark$	1	1	
orchorus sp. Yarrie (J. Bull & D. Roberts CAL 01.05)			3	
uploca parviantrum	$\checkmark$		1	
phrosia rosea var. Port Hedland (A.S. George 1114)	$\checkmark$		27	
hemeda sp. Panorama (J. Nelson et al. NS 102)			3	
iodia degreyensis			1	
riodia sp. De Grey River (M.D. Barrett & B.M. Anderson IDB 4432)			1	
P2				
uphorbia inappendiculata var. inappendiculata			3	
omphrena pusilla	$\checkmark$		5	
P3			-	
butilon sp. Pritzelianum (S. van Leeuwen 5095)	$\checkmark$	1	37	
cacia levata		1	2	
olichocarpa sp. Hamersley Station (A.A. Mitchell PRP			1	
479)				
ragrostis crateriformis	$\checkmark$	2	22	
uphorbia clementii	$\checkmark$	5	25	
uploca mutica	$\checkmark$		71	
omphrena cucullata	$\checkmark$	1	1	
omphrena leptophylla	$\checkmark$		2	
oodenia obscurata			1	
ymnanthera cunninghamii	$\checkmark$	2	12	
eliotropium murinum			3	
digofera ammobia		1	1	
icotiana umbratica			7	
hyllanthus hebecarpus			4	
othia indica subsp. australis	$\checkmark$		14	
ylidium weeliwolli			2	
erminalia supranitifolia			5	
iodia basitricha			3	
riodia chichesterensis	$\checkmark$		28	
igna triodiophila		1	5	
P4			1	
ulbostylis burbidgeae	$\checkmark$	2	17	
tilotus mollis	$\checkmark$		4	

<sup>^</sup>Department of Biodiversity Conservation and Attractions. (2024e). Threatened and Priority Flora List (TPFL) database request (custom search). <sup>+</sup>Department of Biodiversity Conservation and Attractions. (2024f). Western Australia Herbarium Flora Database (custom search).

Community*	TEC/PEC			
P3				
Eighty Mile Land System	15			
Gregory Land System	21			
Horseflat Land System of the Roebourne Plains	3			

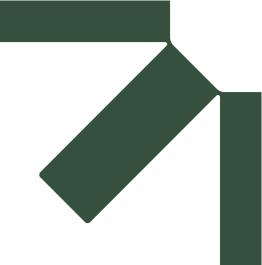
\*Department of Biodiversity Conservation and Attractions. (2024c). Threatened and Priority Ecological Communities database request (custom search).

#### Appendix C: Assessment of the Likelihood of Occurrence of Threatened and Priority Flora as per Desktop Assessment Database Searches surrounding the Survey Area

gained from the survey effort during ground truthin								survey based on knowledge of the Survey Area, nearest known https://florabase.dpaw.wa.gov.au/			Riowiedge
Species	Conservation Status		Source		Distance to Nearest	Flowering	Prefered Habitat	Pre-Survey Likelihood		Post-Survey Likelihood of	
	DBCA	EPBC	NatureMap	PMST	DBCA	Record (km)	Period		of Occurrence	in Survey Area?	Occurrence
						Threa	atened				
Quoya zonalis	т	EN			х	77.53	Aug	Rocky ironstone or granite or conglomerate steep hill slopes. <sup>1</sup>	Low	No	Low
						Prio	rity 1				
Acacia cyperophylla var. omearana	P1				х	73.40	Mar - Apr	Stony and gritty alluvium. Along drainage lines. <sup>1</sup>	Low	No	Low
Acacia leeuweniana	P1				х	91.78	Apr - May	Gritty, skeletal red-grey sandy loarn, light orange-brown gravelly sand, granite. In rock fissures in outcrops, among boulders. <sup>1</sup>	Low	No	Low
Atriplex eremitis	P1		х		х	18.78	Aug	Tussock grassland associated with <i>Eragrostis xerophila</i> and the introduced <i>Cenchrus ciliaris</i> occurring as a component of a sub-unit of the Anna land system composed of level sand plains and a mosaic of saline plains. <sup>1</sup>	Low	No	Low
Corchorus sp. Yarrie (J. Bull & D. Roberts CAL 01.05)	P1				х	61.34	Jun	Drainage line, ironstone, loamy soil. <sup>1</sup>	Low	Yes	Low
Euploca parviantrum	P1		х		х	6.87	-	Sandy soils. Flats, plains, rocky slopes. <sup>1</sup>	High	Yes	Medium
<i>Tephrosia rosea</i> var. Port Hedland (A.S. George 1114)	P1		х		х	3.83	Jul - Sep	Pale red/yellow/brown sand. Sand plains. <sup>1</sup>	High	Yes	Recorded
<i>Themeda</i> sp. Panorama (J. Nelson et al. NS 102)	P1				х	85.41	-	Skeletal soils, red clay loam. Rock gullies, steep rocky slopes, high in the landscape. <sup>1</sup>	Low	No	Low
Triodia degreyensis	P1				х	6.18	-	Skeletal soils, ironstone outcropping. <sup>1</sup>	Low	Yes	Low
						Prio	rity 2				
Euphorbia inappendiculata var. inappendiculata	P2				х	60.93	May, Aug	Red, brown clay or loam. Plains. <sup>1</sup>	Low	Yes	Medium
Gomphrena pusilla	P2		х		х	8.05	Mar - Apr	Fine beach sand. Behind foredune, on limestone. <sup>1</sup>	Low	No	Low
						Drio	rity 3				

Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	P3	Х	х	3.03	Jun, Aug - Sep	Sandy plains. <sup>1</sup>	High	Yes	Medium
Acacia levata	P3		х	98.73	Мау	Sand or sandy loam over granite. Hillslopes. <sup>1</sup>	Low	Yes	Low
<i>Dolichocarpa</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3		Х	72.70	May - Jul or Sep	Brown sandy clay, or medium clay. Claypans, drainage lines, cracking clays, crabhole plains. <sup>1</sup>	Low	No	Low
Eragrostis crateriformis	P3	х	х	0.15	Jan - May or Jul	Clayey loam or clay. Creek banks, depressions.1	High	Yes	High
Euphorbia clementii	P3	х	х	6.19	Jun	Gravelly hillsides, stony grounds.1	High	Yes	Medium
Euploca mutica	P3	х	х	0.08	Aug	Flat sand plains. <sup>1</sup>	High	Yes	High
Gomphrena cucullata	P3	х	х	47.87	Feb - Apr	Red sandy loam, clayey sand. Open floodplains. <sup>1</sup>	Low	Yes	Low
Gomphrena leptophylla	P3	Х	х	6.31	Mar - Sep	Sand, sandy to clayey loam, granite, quartzite. Open flats, sandy creek beds, edges salt pans and marshes, stony hillsides. <sup>1</sup>	High	No	Low
Goodenia obscurata	P3		х	75.95	-	Stony soils on hills.1	Low	Yes	Low
Gymnanthera cunninghamii	P3	х	х	6.87	Jan - Dec	Sandy soils. <sup>1</sup>	High	Yes	Recorded
Heliotropium murinum	P3		х	55.50	May or Sep	Red sand. Plains. <sup>1</sup>	Low	Yes	Low
Indigofera ammobia	P3		х	94.15	Sep	Red sand. Sand dunes. <sup>1</sup>	Low	No	Low
Nicotiana umbratica	P3		х	72.04	Apr - Jun	Shallow soils. Rocky outcrops. <sup>1</sup>	Low	Yes	Low
Phyllanthus hebecarpus	P3		х	86.93	-	Granite boulders, granite outcrop, rock land, slopes. <sup>1</sup>	Low	Yes	Low
Rothia indica subsp. australis	P3	х	х	Occurs within survey boundary	Apr - Aug	Sandy soils. Sandhills and sandy flats. <sup>1</sup>	High	Yes	Medium
Stylidium weeliwolli	P3		х	53.32	Aug - Sep	Gritty sand soil, sandy clay. Edge of watercourses. <sup>1</sup>	Low	Yes	Low
Terminalia supranitifolia	P3		х	76.29	May or Jul or Dec	Sand. Among basalt rocks. Hill tops. <sup>1</sup>	Low	No	Low
Triodia basitricha	P3		Х	77.78	-	Stony ground, gravelly hill, crests, hills, in gorges. <sup>1</sup>	Low	Yes	Low
Triodia chichesterensis	P3	Х	х	9.67	Feb - Apr, Aug	Flat plains, light sandy soil, hill slopes, stony soil. <sup>1</sup>	High	Yes	Low
Vigna triodiophila	P3		х	66.94	Mar - May	Stony red-brown clay loam. Among boulders, steep slopes. <sup>1</sup>	Low	No	Low
				Prio	ority 4				

Bulbostylis burbidgeae	P4	х	х	5.85	Mar or Jun - Aug	Granitic soils. Granite outcrops, cliff bases. <sup>1</sup>	High	Yes	Medium
Ptilotus mollis	P4	х	х	20.05	May or Sep	Stony hills and screes. <sup>1</sup>	Low	No	Low



## Appendix D Flora Recorded During the Survey

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Family	Таха	Status
Aizoaceae	Trianthema triquetrum	
	Aerva javanica	Weed
	Alternanthera nana	
	Ptilotus astrolasius	
Americanthecese	Ptilotus axillaris	
Amaranthaceae	Ptilotus exaltatus	
	Ptilotus fusiformis	
	Ptilotus murrayi	
	Ptilotus sp.	
	Calotropis procera	Weed (DP)
	Carissa lanceolata	
Apocynaceae	Cynanchum floribundum	
	Cynanchum viminale subsp. australe	
	Gymnanthera cunninghamii	P3
	Pluchea dentex	
A	Pluchea ferdinandi-muelleri	
Asteraceae	Pluchea rubelliflora	
	Streptoglossa sp.	
Bignoniaceae	Dolichandrone occidentalis	
	Euploca cunninghamii	
Boraginaceae	Trichodesma zeylanicum var. zeylanicum	
Campanulaceae	Wahlenbergia tumidifructa	
Commonso	Capparis spinosa subsp. nummularia	
Capparaceae	Capparis umbonata	
	Maireana melanocoma	
Chenopodiaceae	Salsola australis	
	Sclerolaena hostilis	
Cleomaceae	Arivela viscosa	
Combretaceae	Terminalia circumulata	
	Bonamia alatisemina	
	Bonamia erecta	
	Bonamia linearis	
Convolvulaceae	Bonamia pilbarensis	
Convolvulaceae	Evolvulus sp.	
	Ipomoea muelleri	
	Operculina aequisepala	
	Polymeria ambigua	
Cucurbitaceae	Cucumis variabilis	
	Bulbostylis barbata	
	Cyperus conicus	
Cyperaceae	Cyperus sp.	
	Cyperus vaginatus	
Elatinaceae	Bergia trimera	
	Euphorbia australis var. subtomentosa	
Even hande te e	Euphorbia tannensis subsp. eremophila	
Euphorbiaceae	Euphorbia trigonosperma	
	Microstachys chamaelea	

Family	Таха	Status
	Acacia acradenia	
	Acacia adoxa var. adoxa	
	Acacia ampliceps	
	Acacia ancistrocarpa	
	Acacia bivenosa	
	Acacia colei var. colei	
	Acacia coriacea subsp. pendens	
	Acacia inaequilatera	
	Acacia orthocarpa	
	Acacia pyrifolia var. pyrifolia	
	Acacia sericophylla	
	Acacia sp.	
	Acacia sphaerostachya	
	Acacia stellaticeps	
	Acacia synchronicia	
	Acacia trachycarpa	
	Acacia trachycarpa x tumida var. pilbarensis	
	Acacia tumida var. pilbarensis	
	Cajanus pubescens	
	Crotalaria cunninghamii subsp. sturtii	
	Crotalaria ramosissima	
	Cullen leucanthum	
Fabaceae	Indigofera hirsuta	
	Indigofera linnaei	
	Indigofera monophylla	
	Indigofera oblongifolia	Weed
	Isotropis atropurpurea	
	Neptunia dimorphantha	
	Neptunia sp.	
	Petalostylis cassioides	
	Petalostylis labicheoides	
	Rhynchosia minima	
	Senna artemisioides subsp. helmsii	
	Senna glutinosa subsp. glutinosa	
	Senna notabilis	
	Senna symonii	
	Senna venusta	
	Sesbania formosa	
	Tephrosia ?supina	
	Tephrosia rosea subsp. Port Hedland (A.S. George 1114)	P1
	Tephrosia rosea var. clementii	
	Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	
	Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	
	Vachellia farnesiana	Weed
	Vigna lanceolata var. lanceolata	
Goodeniaceae	Goodenia lamprosperma	
	Goodenia muelleriana	

Family	Таха	Status
	Goodenia stobbsiana	
Goodeniaceae	Scaevola browniana	
	Scaevola spinescens	
Gyrostemonaceae	Codonocarpus cotinifolius	
Gyrostemonaceae	Gyrostemon tepperi	
Hemerocallidaceae	Corynotheca sp.	
Lauraceae	Cassytha capillaris	
	Abutilon lepidum	
	Corchorus incanus subsp. incanus	
	Corchorus laniflorus	
	Corchorus sp.	
	Hibiscus austrinus var. austrinus	
	Malvaceae sp.	
	Malvastrum americanum	Weed
Malvaceae	Sida clementii	
	Sida sp.	
	Sida sp. Pilbara (A.A. Mitchell PRP 1543)	
	Sida sp. Pindan (B.G. Thomson 3398)	
	Triumfetta clementii	
	Triumfetta sp.	
	Waltheria indica	
	Azadirachta indica	Weed
Meliaceae	Owenia reticulata	
Menispermaceae	Tinospora smilacina	
Molluginaceae	Glinus lotoides	
	Ficus aculeata var. indecora	
Moraceae	Ficus brachypoda	
	Ficus aculeata	
	Corymbia candida subsp. candida	
	Corymbia candida subsp. indet.	
	Corymbia deserticola	
	Corymbia flavescens	
	Corymbia hamersleyana	
Myrtaceae	Corymbia zygophylla	
	Eucalyptus camaldulensis subsp. refulgens	
	Eucalyptus victrix	
	Melaleuca argentea	
	Melaleuca glomerata	
	Boerhavia repleta	
Nyctaginaceae	Boerhavia sp.	
Passifloraceae	Passiflora foetida	Weed
	Nellica maderaspatensis	, , , , , , , , , , , , , , , , , , ,
Phyllanthaceae	Notoleptopus decaisnei	
	Stemodia grossa	
Plantaginaceae	Stemodia viscosa	
Plantaginaceae	Stemodia viscosa Aristida holathera var. holathera	

Family	Таха	Status
	Chrysopogon fallax	
	Cymbopogon ambiguus	
	Cymbopogon sp.	
	Eragrostis eriopoda	
	Eragrostis speciosa	
	Eriachne lanata	
	Eriachne mucronata	
	Eriachne obtusa	
Poaceae	Eulalia aurea	
	Paraneurachne muelleri	
	Poaceae sp.	
	Sporobolus australasicus	
	Themeda triandra	
	Triodia epactia	
	Triodia secunda	
	Triodia sp.	
	Triodia wiseana	
	Grevillea pyramidalis subsp. leucadendron	
Proteaceae	Grevillea wickhamii subsp. hispidula	
	Hakea lorea subsp. lorea	
Pteridaceae	Cheilanthes sp.	
Rubiaceae	Dentella asperata	
Santalaceae	Santalum lanceolatum	
Sapindaceae	Atalaya hemiglauca	
Scrophulariaceae	Eremophila longifolia	
	Solanum diversiflorum	
Solanaceae	Solanum horridum	
	Solanum lasiophyllum	
	Solanum sp.	
Violaceae	?Afrohybanthus sp.	
	Afrohybanthus aurantiacus	



## Appendix E Threatened and Priority Flora Report Forms

## **Atlas Ridley Magnetite Project Connection**

### Flora and Fauna Survey Technical Report

**Horizon Power** 

SLR Project No.: 675.072189.00001





Department of **Biodiversity**, Conservation and Attractions

## Threatened and Priority Flora Report Form

Version 1.3 August 2017

TAXON: Gymnanthera	cunninghamii					TPF	FL Pop	o. No:	
OBSERVATION DATE:	10/03/2024	CONS	ERVATION	STATUS:	_P3			v populat	ion 🗌
OBSERVER/S: Jack ⊢	lardie, Grant I	Buller				PHONE :			
ROLE: Botanists		ORGAN	IISATION:	SLR Cons	ulting				
DESCRIPTION OF LOCATION	N (Provide at least	nearest town/named locality,	and the distance a	and direction to	o that place	e):			
Devil Creek, 37km east of S	South Hedland	d							
							rve No		
DBCA DISTRICT: Pilbara		LGA: Port He				id manage	r presen	nt: 🗌	
	RDINATES: (If Degrees	UTM coords provided, Zone i DegMinSec U	s also required) ITMs 🛛	METHC GPS		D: Differenti	ial GPS	6 🗆 м	lap 🗌
GDA94 / MGA94 🖾	-	705557		No. sat	ellites:		Мар	used:	
AGD84 / AMG84 WGS84 Lond	g / Easting: 7	7743392			ry polyg	on	Мар	scale:	
				capture	d:				
LAND TENURE:		50		-					
	Timber reserve	Private prope	rty 🗖	Rai	l reserve			Shire road	reserve
National park	State forest		·	MRWA road	l reserve		0	ther Crown	reserve [
Conservation park	Water reserve [			LK/Pole	to		Spec	cify other:	
	pent surveying	(minutes):	Ill survey [] No. o Estimate [	f minutes s	served spent / 1 ount met	00 m²: _		ount in	dividuala
	pent surveying	· —	No. o	f minutes s	spent / 1 ount met	00 m²: _ hod:	.ctual c	count - ind	dividuals
EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED:	pent surveying Actual ⊠ Plants ⊠	(minutes): Extrapolation	No. o Estimate [ Clonal sterr	f minutes s	spent / 1 ount met I manual fo	00 m <sup>2</sup> : hod: A		count - ind of pop (m²)	
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EFFORT: Time s POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead	pent surveying Actual ⊠ Plants ⊠	(minutes): Extrapolation [] Clumps [] Juveniles: 3	No. o Estimate [ Clonal stem Seedlings	f minutes s C(Refer to field s f f f f f f f f f f f f f f f f f f	spent / 1 ount met I manual fo	00 m <sup>2</sup> : hod: A	Area o Note: Pla (not perc	of pop (m²) s record cour centages) for	t as number database.
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Please return completed form to Species And Communities Branch DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au **RECORDS**: Please forward to **Flora Administrative Officer**. Species and Communities Branch.



## Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATIO	ON:				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest 🗌	Granite	(on soil surface; eg	Sand 🛛	Red 🗌	Well drained 🗌
Hill 🗌	Dolerite	gravel, quartz fields)	Sandy loam 🔲	Brown	Seasonally
Ridge 🗌	Laterite		Loam 🗌	Yellow 🛛	inundated
Outcrop	Ironstone	0-10%	Clay loam 🗌	White 🗌	Permanently inundated
Slope	Limestone	10-30%	Light clay 🗌	Grey 🗌	Tidal
Flat 🖂	Quartz 🗌	30-50%	Peat	Black 🔲	
Open depression	Specify other:	50-100% 🗌	Specify other:	Specify other:	
Drainage line					
Closed depression					
Wetland	Specific Landforn (Refer to field manual for a				
CONDITION OF SOIL:		Moist	Waterlogged	Inundated	
	-	dulensis subsp. refulg			land
VEGETATION CLASSIFICATION*:					
Eg: 1. Banksia woodiand (B.	2. Acacia trachycarpa				
attenuata, B. ilicifolia); 2. Open shrubland	3. Eulalia aurea, *Ce	nchrus ciliaris low iso	lated clumps of gras	Ses	
(Hibbertia sp., Acacia spp.); 3. Isolated clumps of	4.		s		
sedges (Mesomelaena tetragona)					
ASSOCIATED					
SPECIES: Other (non-dominant) spp					
* Please record up to four of the m	nost representative vegetation la	ayers (with up to three domina	nt species in each layer). Str	uctural Formations should foll	ow 2009 Australian Soil
and Land Survey Field Handbook	guidelines – refer to field manu	al for further information and s	tructural formation table.	_	
CONDITION OF HABITAT	F: Pristine 🗌 I	Excellent 📋 Very go	od 🗌 🛛 Good 🖾	Degraded 🗌 Con	npletely degraded
		Veer	Fire Intensity: Hi	ah 🗔 Madium 🗔 🛛 aw [	No signs of fire
	st Fire: Season/Month:				gth req'd:
	Not required		ce / repair 🔲	. —	intity req'd:
ROADSIDE MARKERS:	Not required				
	(Please include recomme Is of additional data avai			ted actions - include	
date. Also include detai		able, and now to locate	,,		
DRF PERMIT/ LICENC information on permit and licer be recorded above in the OTH	ning requirements see the Three	ly observing plants (i.e. no spe atened Flora and Wildlife Lice	cimens or plant matieral is tansing pages on DBCA's web	aken) then no permit/licence site. Any actions carried out u	is required. For further inder licence/permit should
		WA Herb. 🗌 Region	nal Herb. 🗌 District	Herb. Other:	
ATTACHED: Man	Mudmap	Photo 🗌 GIS data	Field notes	Other:	
COPY SENT TO: Re	egional Office	District Office	Other:		
Submitter of Record: Gra	nt Buller Role: Ser	nior Botanist Signe	d:	Date: 8/07/2024	

Please return completed form to **Species And Communities Branch** DBCA, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au **RECORDS**: Please forward to **Flora Administrative Officer**. Species and Communities Branch.



Department of Blodiversity, **Conservation and Attractions** 

### **Threatened and Priority Flora Report Form** Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete

Version 1.3 August 2017

TAXON: Tephrosia ros	ea subsp. Port He	edland (A.S. G	eorge 1114)			16	FL Pop. No:	
OBSERVATION DATE:	2/03/2024	CO	NSERVATION	STATUS	<b>5:</b> P1		New pop	ulation
OBSERVER/S: Jack	Hardie, Grant Bulle	er				PHONE :	Ε	
ROLE: Botanists		ORG	ANISATION:	SLR Cor	nsulting			
DESCRIPTION OF LOCATIO	N (Provide at least near	est town/named loca	lity, and the distance	and directior	to that pla	ice):		
Road verge, Great Norther	n Highway, south	of Boodarie/Se	outh Hedland					
							erve No:	
DBCA DISTRICT: Pilbara		LGA: Port	Hedland				er present:	
De	CDegrees Degrees Degrees	coords provided, Zo	ne is also required) UTMs		iod US S 🛛		tial GPS 🔲	Мар 🗌
GDA94 / MGA94 🖾 AGD84 / AMG84 🗌	/ Northing: 6612	261		No. sa	atellites:		Map used:	
	g / Easting: 7737	7710		Bound captur	lary poly	/gon	Map scale:	
Unknown	<b>ZONE</b> : 50			_ 04ptu				
LAND TENURE:								
Nature reserve	Timber reserve	Private pro	operty 🗌		ail reserv			oad reserve
National park	State forest	Pastoral		MRWA ro			Other Cr Specify othe	own reserve [
Conservation park	Water reserve		UCL 🗌 🥵	SLK/Pole 1	595 10	590	Specily of the	J
AREA ASSESSMENT: Edg		tial survey 🗌	Full survey		bserve	• •		
EFFORT: Time	spent surveying (mir	nutes):	No. c	of minutes	spent /	100 m <sup>2</sup> : _		
	spent surveying (mir		No. c	of minutes	spent / Count m	100 m²: _ ethod: _	Actual count -	individuals
EFFORT: Time : POP'N COUNT ACCURACY:	spent surveying (mir	nutes):	No. c	of minutes	spent / Count m	100 m²: _ ethod: _	Actual count -	· individuals
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EFFORT: Time : POP'N COUNT ACCURACY: WHAT COUNTED: TOTAL POP'N STRUCTURE: Alive Dead QUADRATS PRESENT:	spent surveying (mir Actual ⊠ Plants ⊠ Mature:	Tutes): Extrapolation [ Clumps [] Juveniles:	No. c Estimate   Clonal sten Seedlings	of minutes	Spent / Count m eld manua <b>Totals:</b> 2	100 m <sup>2</sup> : _ ethod: _	Area of pop ( Note: Pls record (not percentages	m <sup>2</sup> ): count as numbe s) for database.
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Please return completed form to Species And Communities Branch DBCA,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au RECORDS: Please forward to Flora Administrative Officer. Species and Communities Branch.



## Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATIO	ON:				
LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite 📋	(on soil surface; eg	Sand 🖂	Red 🗌	Well drained 🔲
Hill 🗔	Dolerite	gravel, quartz fields)	Sandy loam 🗌	Brown 🛛	Seasonally
Ridge 🗌	Laterite 🗌	0.40%	Loam 🗌	Yellow 🛛	inundated
Outcrop	Ironstone	0-10%	Clay loam 🔲	White 🗌	Permanently inundated
Slope	Limestone	10-30%	Light clay 🔲	Grey 🗌	Tidal
Flat 🖂	Quartz 🗌	30-50% 🗌	Peat	Black 🗌	
Open depression	Specify other:	50-100% 🗌	Specify other:	Specify other:	
Drainage line					
Closed depression					
Wetland	Specific Landforn (Refer to field manual for a				
CONDITION OF SOIL:		Moist	Waterlogged	Inundated	
VEGETATION	1 Acacia stellaticens	low open shrubland			
CLASSIFICATION*:		v hummock grassland			
Eg: 1. Banksia woodland (B. attenuata, B. ilicifolia);		r Hammook grassiane			
2. Open shrubland (Hibbertia sp., Acacia spp.);	3				
3. Isolated clumps of sedges (Mesomelaena tetragona)	4.				
ASSOCIATED					
SPECIES:					
Other (non-dominant) spp * Please record up to four of the m	nost representative vegetation I	ayers (with up to three domina	nt species in each layer). St	ructural Formations should for	llow 2009 Australian Soil
and Land Survey Field Handbook	guidelines - refer to field manu	al for further information and s	structural formation table.		
CONDITION OF HABITAT		Excellent Very go		- <b>J</b>	mpletely degraded
	ted in roadside drain,				
FIRE HISTORY: La	st Fire: Season/Month:				No signs of fire
FENCING:	Not required		ce / repair 🔲		igth req'd:
ROADSIDE MARKERS:	Not required	Present Replac	ce / reposition	Required 🛛 Qua	antity req'd:
	(Please include recomm			ted actions - include	
date. Also include detai	Is of additional data avai	liable, and now to locate	÷ IL.)		
DRF PERMIT/ LICENC information on permit and licer be recorded above in the OTH	ning requirements see the Thre	ly observing plants (i.e. no spe atened Flora and Wildlife Lice	ecimens or plant matieral is t nsing pages on DBCA's wet	aken) then no permit/licence site. Any actions carried out	is required. For further under licence/permit should
	ors No:	WA Herb. 🗌 Regio	nal Herb. 🔲 Distric	Herb. 🗌 Other: _	
ATTACHED: Map	Mudmap	Photo 🗌 GIS data	Field notes	Other:	
COPY SENT TO: Re	egional Office	District Office	Other:		
Submitter of Record: Gra	nt Buller Role: Ser	nior Botanist Signe	d: <u>Little</u>	Date: 8/07/2024	

Please return completed form to **Species And Communities Branch** DBCA, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au **RECORDS**: Please forward to **Flora Administrative Officer**. Species and Communities Branch.



# Appendix F Flora Site Sheets

### **Atlas Ridley Magnetite Project Connection**

#### Flora and Fauna Survey Technical Report

**Horizon Power** 

SLR Project No.: 675.072189.00001



			FLORA SITE	SHEET			
roject Name	Atlas Ridley I	Biological Survey	/				
ite:	AR01						
ocation	MGA 50	660017 <b>mE</b>	7740884 <b>mN</b>		- Charles		Carrow Concernance
escribed by:	GB,JH			Marine Stratege		LIN FRANK	and the second
ate:	1-03-2024			The set of succession	And States	The Part of State	and Tailord and the second
ype:	QUADRAT						AND A REAL PROPERTY OF
ype:	QUADRAT				all they		
andform:	PlainFlat			Section as as	AND DALLS	A SALAS	
lope:	N/A						A CONTRACTOR
ock Type:	N/A			Contraction of the	and the second s	ALL A	AN ANTING AND
oil Type:	Sand			A COLOR OF A	A State State		AND REAL OF
oil Colour:	Orange			Children The State	The second second	al and	The Top of the
	-					4	
egetation:	Pluchea ferd hummock gr	linandi-muelleri a assland.	nd P. dentex low isolated	l shrubs over Triodi	a epactia and T.	secunda low o	pen
ondition:	Very Good		Disturbance Type:	Infrastructure			
ire Age:	>10 years						
PECIES LIST							
axon			Height (cm)	Cover (%)	Notes		
luchea dentex			20	0.1			
luchea ferdinandi-	-muelleri		50	0.1			
riodia epactia			30	40			
riodia secunda			30	5			

			FLORA SITI	E SHEET		
roject Name	Atlas Ridley	Biological Survey				
ite:	AR02					
ocation	MGA 50	659628 mE	7740921 <b>mN</b>			
				A State of the	the second se	The Aller and the second
escribed by:	GB,JH			Contraction of	States and a state of the state	Martin Contraction
ate:	1-03-2024				A THE A DECK	AND IN THE REAL PROPERTY OF
ype:	QUADRAT			A STATE OF A	A PATT & APA	Contraction of the second
andform:	PlainsFlat			The second	- Allar	and the second second
lope:	N/A			10 5 4	and selle all and	The second second
ock Type:	N/A					The standard
				Talent in the	Marsh - physical -	A Designation of the
oil Type:	Sand			Carl Son and	A CONTRACTOR OF	No. 2 Carlos Maria
oil Colour:	Orange			Barrow on Philas	The second second	
					14 N	
egetation:					ees over Acacia stellatic epactia low open humme	
ondition:	Excellent		Disturbance Type:	None		
ire Age:	>10 years		Distuibance Type.	None		
PECIES LIST						
axon			Height (cm)	Cover (%)	Notes	
	- 1				NULES	
cacia colei var. col	91		160	0.1		
cacia stellaticeps			45	20		
assytha capillaris			10	0.1		
orymbia candida si	ubsp. candida		250	0.1		
ucalyptus victrix			500	0.1		
akea lorea subsp.	lorea		60	0.1		
luchea dentex	loica			0.1		
			30			
ida sp. Pilbara (A.A	A. Mitchell PRP 1	543)	30	0.1		
riodia epactia			30	31		

			FLORA SITE	E SHEET	
Project Name	Atlas Ridley E	Biological Survey	/		
Site:	AR03				1
Location	MGA 50	661481 <b>mE</b>	7739545 <b>mN</b>	and the second	When Aud
escribed by:	GB,JH			Stand of Standard Standard Standard	
ate:	2-03-2024			-	1. 20
ype:	QUADRAT			A COMPANY AND	ull in the set
ype.	QUADITAT				
andform:	Plains Flat				A MARCH
Slope:	N/A				man Parks
Rock Type:	N/A				
Soil Type:	Sand				
Soil Colour:	Orange				
Vegetation:		la var. pilbarensi hummock grass	s mid sparse shrubland o sland.	over Acacia stellatic	eps low sp
Condition:	Very Good		Disturbance Type:	Infrastructure	
Fire Age:	>10 years		Distandarios Type.	millionadaro	
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia stellaticeps			60	10	
Acacia tumida var. j	oilbarensis		170	10	
Cassytha capillaris			30	0.1	
Corchorus sp.			30	0.1	
Cymbopogon sp.			50	0.1	
Eragrostis eriopoda			20	0.1	
Hakea lorea subsp.			140	0.1	
Paraneurachne mu	elleri		30	0.1	
Poaceae sp.			30	2	
Sida sp.			30	0.1	
, Solanum sp.			20	0.1	
Triodia epactia			40	29	

			FLORA SITE	SHEET	
Project Name	Atlas Ridlay	Biological Survey			
Site:	AR04	Siological Sulvey			
Location	MGA 50	661194 <b>mE</b>	7737874 <b>mN</b>	Constant of	
Described by:	GB,JH				and the second second second
Date:	2-03-2024			The second	A Sector of the
Туре:	QUADRAT			Contraction of the second	
Landform:	PlainsFlat				
Slope:	N/A				
Rock Type:	N/A				
Soil Type:	Sand			N. Robert and	
Soil Colour:	Orange				
Vegetation:	Acacia stellat	ticeps low sparse	shrubland over Triodia e	pactia and Triodia	a sp. low open hummock grassland.
Condition:	Very Good		Disturbance Type:	Fauna tracks/se	cats,Infrastructure
Fire Age:	>10 years				
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia stellaticeps			60	20	
Acacia tumida var. p	ilbarensis		200	0.1	
Eragrostis eriopoda			20	0.1	
Poaceae sp.			20	0.1	
Sida sp. Pilbara (A.A	. Mitchell PRP 1	543)	20	0.1	
Triodia epactia Triodia sp.			40 20	31 0.5	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley	Biological Survey			
Site:	AR05	<u> </u>			
ocation	MGA 50	665737 <b>mE</b>	7736737 <b>mN</b>		
escribed by:	GB,JH				A Company of the second se
ate:	2-03-2024			0	
ype:	RELEVE				
ype.	RELEVE				A CARDY REAL CONTRACT
andform:	Low hill cres	tGentle			A A A A A A A A A A A A A A A A A A A
lope:	N/A				
ock Type:	Quartzite				
oil Type:	Clay,Loam				
oil Colour:	Brown,Orang	ge			
egetation:	Acacia ortho grassland.	pcarpa and A. tum	ida var. pilbarensis Mid o	pen shrubland ov	ver Triodia epactia low open hummock
	0		Distant and Taxa		
ondition: ire Age:	Good >10 years		Disturbance Type:	Vehicle tracks,	Litter, Infrastructure
ire Age.					
PECIES LIST					
axon			Height (cm)	Cover (%)	Notes
cacia ancistrocarpa	1		180	0.1	
cacia inaequilatera			160	0.1	
cacia orthocarpa			200	25	
cacia sp			200	0.1	
cacia tumida var. p	ilbarensis		200	0.5	
riachne lanata			20	0.1	
Goodenia stobbsiana			20	0.1	
irevillea pyramidalis		endron	250	0.1	
lakea lorea subsp. l Triodia epactia	lorea		20 30	0.1 25	

			FLORA SITE	SHEET	
Project Name Site: Location	Atlas Ridley Bi AR06 MGA 50	ological Survey 666981 <b>mE</b>	7736472 mN		
Described by: Date: Type:	GB,JH 2-03-2024 QUADRAT				
Landform: Slope: Rock Type: Soil Type: Soil Colour:	PlainsFlat N/A N/A Clay,Loam Brown,Orange				
Vegetation:	Corymbia ham mid sparse sh	ersleyana and E rubland over Eula	ucalyptus victrix low ope alia aurea low open tuss	en woodland over ock grassland.	Acacia colei var. colei and A. synchronicia
Condition: Fire Age:	Very Good >10 years	D	isturbance Type:	Litter	
SPECIES LIST Taxon Eucalyptus victrix Acacia colei var. colei Cassytha capillaris Corymbia hamersleyai	าล		Height (cm) 500 250 20 200	<b>Cover (%)</b> 3 15 0.1 15	Notes
Acacia synchronicia Eulalia aurea Triodia epactia			50 30 30	0.5 40 0.5	

			FLORA SITE	SHEET			
Project Name	Atlas Ridley Bi	iological Survey	,				
Site: Location	AR07 MGA 50	667553 <b>mE</b>	7736022 mN	A.	1A	The second second	1
Described by: Date: Type:	GB,JH 2-03-2024 QUADRAT				the a		1-1
Landform: Slope: Rock Type: Soil Type: Soil Colour:	PlainFlat N/A N/A Clay,Loam,Sa Brown,Orange						
Vegetation:	Eucalyptus vic open tussock	strix low open w grassland.	oodland over Triodia epac	ctia mid sparse hi	ummock grasslan	d over Eulalia aurea	a low
Condition: Fire Age:	Very Good > 15 years		Disturbance Type:	None			
SPECIES LIST Taxon			Height (cm)	Cover (%)	Notes		
Acacia colei var. colei Acacia synchronicia Acacia tumida var. pilb Cassytha capillaris Eucalyptus victrix	arensis		250 140 140 50 550	3 0.1 0.1 0.1 10			
Eulalia aurea Pluchea dentex Triodia epactia			30 30 50	20 0.1 20			

			FLORA SITE	SHEET	
Project Name	Atlas Ridley Bi	ological Survey	/		
Site:	AR08				
Location	MGA 50	669224 <b>mE</b>	7737589 <b>mN</b>		
Described by:	GB,JH				
Date:	2-03-2024				
Туре:	QUADRAT				
Landform:	PlainsFlat				
Slope:	N/A			Ph	oto: unavailable
Rock Type:	N/A				
Soil Type:	Clay,Loam,Sa	nd			
Soil Colour:	Beige				
Vegetation:	Eucalyptus vic aurea low isola	trix mid isolated ated clumps of	d clumps of trees over Tri tussock grasses.	odia epactia low o	open hummock grassland over Eulalia
Condition:	Very Good		Disturbance Type:	Litter	
Fire Age:	1-5 years				
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia colei var. colei			50	0.1	
Acacia stellaticeps			10	0.1	
Corchorus sp.			20	0.1	
Eucalyptus victrix			1000	5	
Eulalia aurea			20	0.5	
Senna notabilis		(0)	20	0.1	
Sida sp. Pilbara (A.A. I Triodia epactia	Viltonell PRP 154	43)	20 30	0.1 25	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley	Biological Survey			
Site:	AR09	0 ,			
Location	MGA 50	719898 <b>mE</b>	7755031 <b>mN</b>	AL BRANK	
Described by:	GB,JH			and the second	
Date:	3-03-2024			States in the	
Туре:	RELEVE				
Landform:	Ironstone rid	geSteep		A. C.R.	
Slope:	N/A				
Rock Type:	Ironstone				Land Well Cold Trade
Soil Type:	Clay			VIE IN	
Soil Colour:	Brown,Red				
Vegetation:	Afrohybanth		w isolated clumps of shru		a, Acacia colei var. colei and ıs ciliaris, Triodia epactia and Cymbopogon
Condition:	Very Good		Disturbance Type:	Weeds	
Fire Age:	>10 years				
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia colei var. colei			100	0.1	
Afrohybanthus auranti	acus		20	0.1	
Atalaya hemiglauca Boerhavia sp.			350 2	3 0.1	
*Cenchrus ciliaris			30	4	
Cucumis variabilis			20	0.1	
Cymbopogon ambiguu	IS		40	0.1	
Eriachne mucronata			20	0.1	
Ficus brachypoda			170	1	
Notoleptopus decaisne	ei		5	0.1	
Ptilotus sp. Senna venusta			20 25	0.1 0.1	
Triodia epactia			25 30	4	
moula opuolia			00	·	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley	Biological Survey			
Site:	AR10				
Location	MGA 50	719944 <b>mE</b>	7755028 <b>mN</b>		
Described by:	GB,JH			The sea	Area start an
Date:	3-03-2024			VII S A MARSH	
ype:	RELEVE			The series	and a state of the
_andform:	Ironstone hill	topGentle			Contraction of the
Slope:	N/A				and the second
Rock Type:	Ironstone				a the second second second
Soil Type: Soil Colour:	Clay Brown,Red			and the second second	
legetation:	Triodia epact	tia low open humm	ock grassland.		
Condition:	Very Good	n	isturbance Type:	Weeds,Fauna	tracke/ecate
Fire Age:	>10 years	U	istaisance Type.	vvecus,i aulia	114010/30413
	, io jouro				
SPECIES LIST					
Faxon			Height (cm)	Cover (%)	Notes
Cenchrus ciliaris			20	0.1	
Ptilotus sp.			5	0.1	
riodia epactia			20	50	

			FLORA SITE	SHEET	
roject Name	Atlas Ridley Bi	ological Survey			
lite:	AR11	- ,		Ser and	
ocation	MGA 50	719701 <b>mE</b>	7754874 <b>mN</b>		
escribed by:	GB,JH			and an and	A share a share a share
ate:	3-03-2024			and the second	the same from the same to be
ype:	QUADRAT				and the second
ype.	QUADRAT				
andform:	FloodplainFlat				
lope:	N/A			Contraction of the second	
ock Type:	N/A				the second s
oil Type:	Clay,Sand			X	and sent of the sent sent to
oil Colour:	Brown				
	brown				
egetation:	Cyperus sp. L	ow isolated clun	nps of sedges over Scler	olaena hostilis lov	v sparse forbland.
Condition:	Degraded		Disturbance Type:	Weeds,Grazing	g,Litter,Fauna tracks/scats
ire Age:	Unknown				
PECIES LIST					
axon			Height (cm)	Cover (%)	Notes
Boerhavia repleta			30	0.1	
Calotropis procera			50	0.1	
Crotalaria ramosissima	1		30	0.1	
yperus conicus			20	0.1	
yperus sp.			50	1	
Goodenia lamprosperr	na		20	0.1	
omoea muelleri			20	0.1	
leptunia sp.			5	0.1	
Poaceae sp.			20	0.1	
Polymeria ambigua			5	0.1	
Sclerolaena hostilis			30	10	
rianthema triquetrum			2	0.1	
riodia epactia			20	0.1	
			_0	0.1	

\_\_\_\_\_

			FLORA SITE	SHEET	
Project Name	Atlas Ridley Bi	ological Survey			
Site: Location	AR12 MGA 50	719492 <b>mE</b>	7754730 <b>mN</b>		
Described by:	GB,JH				Att a state to an
Date: Type:	3-03-2024 RELEVE				
Landform:	DrainageFlat				
Slope:	N/A			and the second	
Rock Type: Soil Type:	N/A Sand			and a second	and the second second
Soil Colour:	Brown,Orange				
Vegetation:			l clumps of trees over Ac nps of tussock grasses.	aciea colei var. c	olei tall isolated clumps of shrubs over
Condition: Fire Age:	Good >10 years		Disturbance Type:	Weeds,Grazin	g,Fauna tracks/scats
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia colei var. cole			300 10	0.5	
Afrohybanthus aurant Boerhavia repleta	llacus		10	0.1 0.1	
*Calotropis procera			80	0.1	
Corchorus incanus su	ıbsp. incanus		30	0.1	
Cyperus conicus			20	0.1	
Cyperus vaginatus			50	1	
Eucalyptus victrix Eulalia aurea			900 30	5 2	
Euploca cunninghami	ï		10	0.1	
Goodenia lamprosper			30	0.1	
Ipomoea muelleri			10	0.1	
Poaceae sp.			20	0.1	
Polymeria ambigua	iau a		10	0.1	
Sporobolus australas Triodia epactia	ICUS		20 30	0.1 0.1	
*Vachellia farnesiana			180	0.1	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley B	iological Survey			
Site:	AR13				The second se
Location	MGA 50	719707 <b>mE</b>	7756078 <b>mN</b>		and a second on the Vanchard and and a second
Described by:	GB,JH			A set and the set	a the second survey and the second
Date:	3-03-2024			Engine Marsh	The second s
Туре:	RELEVE			and the second second	TE STATE
Landform:	Ironstone Hillt	opGentle			
Slope:	N/A				
Rock Type:	Ironstone			and the second second	the second s
Soil Type:	Clay			AL POINT	A CALL AND A
Soil Colour:	Brown				
Vegetation:	Triodia epactia	a low open hummo	ck grassland.		
Condition:	Very Good	Dis	sturbance Type:	Infrastructure	
Fire Age:	>10 years				
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Bonamia pilbarensi	S		2	0.1	
Isotropis atropurpu	rea		5	0.1	
Sida sp. Pilbara (A.	A. Mitchell PRP 15	543)	60	0.1	
Solanum diversiflor	um		30	0.1	
Triodia epactia			20	40	

			FLORA SITE	E SHEET	
		Biological Survey	/		
	AR14				
ocation	MGA 50	719576 <b>mE</b>	7756081 <b>mN</b>		
Described by:	GB,JH				
	3-03-2024				a to a to
	RELEVE				
	Ironstone ridg	geSteep			
	N/A			Course of the second	- 18 San 194 142
	Ironstone			Maria I.	- 47 St. 19 2 14
	Clay			A Charles of the	
	Brown				
/egetation:	Ficus brachy mid isolated o	ooda, Ficus acul clumps of shrubs	eata and Atalaya hemigi s over Triodia epactia lov	lauca low isolated cl v isolated clumps of	lumps of trees over Acacia colei var. colei hummock grasses.
Condition:	Very Good		Disturbance Type:	Weeds, Grazing	
	>10 years		Distandance Type.	Weeds, Orazing	
SPECIES LIST			Hoight ()	Cover (0/)	Notoo
axon			Height (cm)	Cover (%)	Notes
cacia colei var. colei talaya hemiglauca			200 250	0.5 2	
talaya nemigiauca oerhavia sp.			250	2 0.1	
cenchrus ciliaris			3 20	0.1	
enchrus cilians mbopogon ambiguus			20 30	0.5	
iachne mucronata			30 20	0.1	
cus brachypoda			300	0.1	
cus aculeata			200	0.5	
enna venusta			30	0.5	
iodia epactia			30	5	
			30	5	

			FLORA SITE	SHEET			
Project Name	Atlas Ridley B	iological Survey	/				
Site:	AR15					TA	C. LANGAR
Location	MGA 50	719631 <b>mE</b>	7755998 <b>mN</b>			3	AL MALE
Described by:	GB,JH					North 2	Ser And
Date:	3-03-2024				and the second second	to a subject of	HEAL REAL MAIL
Гуре:	RELEVE			AT TANK A	a starting the second		
Landform:	Between two I	hillsGentle		and the second se		- WAR	A A A A A A
Slope:	N/A			State State State	and the second second	AL AL	VILAN
	Ironstone			Contraction of the	and the second	at a significant	- 外国 -
Rock Type:				and the second	and the second	To the de up	AN STALL
Soil Type:	Clay			and the second	The state of the set	Super States - St	and the second second
Soil Colour:	Brown						
Vegetation:			arse shrubland over Acac	ia bivenosa mid is	olated clumps of	f shrubs over T	riodia
		oarse hummock					
Condition: Fire Age:	Very Good >10 years		Disturbance Type:	Grazing,Fauna	tracks/scats		
SPECIES LIST							
Taxon			Height (cm)	Cover (%)	Notes		
Acacia acradenia			100	0.1			
Acacia bivenosa			120	0.5			
Acacia colei var. colei			300	20			
Boerhavia repleta			10	0.1			
Indigofera monophylla			30	0.1			
Isotropis atropurpurea			10	0.1			
Rhynchosia minima			10	0.1			
Triodia epactia			30	30			
Triumfetta clementii			5	0.1			

			FLORA SITE	SHEET	
Project Name	Atlas Ridley B	iological Survey			
Site:	AR16	. <u>.</u>			
Location	MGA 50	719958 <b>mE</b>	7755674 <b>mN</b>		
Described by:	GB,JH			bellever.	
Date:	3-03-2024			Te Standard on	
Туре:	RELEVE				- ARALLINE
Landform:		d plain (look up l	petter word)Flat		a state of the second s
Slope: Book Type:	N/A N/A			STORE -	
Rock Type: Soil Type:	Clay,Sand			and the second s	the state of the second second
Soil Colour:	Brown,Orange	9			
	2.com, crange				
Vegetation:	Corymbia flav and *Indigofer grasses.	escens, Atalaya a oblongifolia ta	hemiglauca and Ficus a Il isolated clumps of shru	culeata low open bs over Eulalia au	woodland over Dolichandrone occidentalis urea low isolated clumps of tussock
Condition: Fire Age:	Degraded >10 years		Disturbance Type:	Weeds,Grazin	g,Fauna tracks/scats
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia bivenosa			200	0.1	
Corymbia flavescens			700	5	
Boerhavia repleta			10	0.1 0.1	
*Calotropis procera Atalaya hemiglauca			300 400	1	
Dolichandrone occider	otalis		400	2	
Ficus aculeata	itano		300	1	
*Indigofera oblongifolia	1		200	2	
Eulalia aurea			30	2	
Pluchea dentex			20	0.1	
Terminalia circumulata			300	0.1	

Site:	Atlas Ridley Bi AR17	ological Survey			
			/		
	MGA 50	719480 <b>mE</b>	7755341 <b>mN</b>		
Date:	GB,JH 3-03-2024 RELEVE				
Slope:   Rock Type:   Soil Type:	Drainage and s N/A N/A Clay,Loam Brown,Orange	shoulder Flat			
			calyptus victrix low open v d clumps of tussock grass		acia colei var. colei tall sparse shrubland
	Degraded >10 years		Disturbance Type:	Weeds,Grazing	g,Fauna tracks/scats
SPECIES LIST Taxon			Height (cm)	Cover (%)	Notes
Atalaya hemiglauca *Calotropis procera Carissa lanceolata *Cenchrus ciliaris Corymbia flavescens Cyperus sp. Eucalyptus victrix Eulalia aurea Ficus aculeata Vigna lanceolata var. lar	nceolata		200 200 30 700 20 700 40 200 20	0.1 0.1 2 4 0.1 2 2 0.1 0.1	

			<b>FLORA SITE</b>	SHEET	
Decident Marrie					
Project Name Site:	Atlas Ridley Bi AR18	ological Survey		N	
Location	MGA 50	720119 <b>mE</b>	7755143 <b>mN</b>		
Described by:	GB,JH			The Aspen	A MARCHAR MARCHAR
Date: Type:	3-03-2024 RELEVE				
Landform:	Edge of foothil	Flat		Santa 1/1	洲市 化 中学 1949年代
Slope:	N/A N/A				Well and the first of the
Rock Type: Soil Type:	Clay,Sand				Philade I and search and
Soil Colour:	Brown,Orange			1 Second State	
	. ,				
Vegetation:	Acacia colei va epactia low op	r. colei tall spar en hummock gr	se shrubland over Acacia assland.	inequilatera low	isolated clumps of shrubs over Triodia
Condition: Fire Age:	Very Good >10 years	I	Disturbance Type:	Grazing,Fauna	tracks/scats
Fire Age:	>10 years				
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia colei var. colei			250	20	
Acacia inaequilatera Pluchea dentex			200 20	4 0.1	
Pluchea ferdinandi-mu	elleri		40	0.1	
Triodia epactia	Cherr		40	30	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley Bio	ological Surve	/		
Site:	AR19				
Location	MGA 50	719850 <b>mE</b>	7754495 <b>mN</b>	PAR THE REAL	
Described by:	GB,JH				and the lot
Date:	3-03-2024			and a strength	Driver Stante
Туре:	QUADRAT				And the part of the second
Landform:	FloodplainFlat				
Slope:	N/A				
Rock Type:	N/A			No. 1	the second
Soil Type:	Clay,Loam,San	d			and the second
Soil Colour:	Beige,Brown				
				- Aller	
1					PAC -
Vegetation:	Sclerolaena hos	stilis low isola	ed clumps of shrubs over	Triodia secunda l	ow hummock
Condition:	Good		Disturbance Type:	Grazing,Fauna	tracks/scats
Fire Age:	>10 years			<u>,</u>	
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Maireana melanocoma	1		10	0.1	
Sclerolaena hostilis Triodia secunda			20 20	1 71	
Thoula Securida			20	71	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley	Biological Surve	y		
ite:	AR20				
ocation	MGA 50	718747 <b>mE</b>	7752516 <b>mN</b>	The state of the state of the	
escribed by:	GB,JH			and many saw	
ate:	3-03-2024			and the second second	
/pe:	QUADRAT			T LAND	
				And the Action	A CONTRACTOR OF A CONTRACTOR
andform:	PlainsFlat			Call Stranger	M. The Said Said Contract
lope: lock Type:	N/A N/A			A PROPERTY	
oil Type:	Sand			AWARE ST.	TAK IN THE REAL PARTY IN THE REAL
oil Colour:	Orange			No the second	
	-				
egetation:	Acacia stella	ticeps low closed	d shrubland over Triodia e	pactia low sparse	hummock grassland
ondition:	Very Good		Disturbance Type:	Litter,Fauna tra	acks/scats
ire Age:	>10 years				
PECIES LIST					
axon			Height (cm)	Cover (%)	Notes
cacia stellaticeps			50	85	
assytha capillaris			30	0.1	
riodia epactia			30	8	

\_\_\_\_\_

			FLORA SITE	SHEET	
Project Name	Atlas Ridley Bi	ological Survey			
Site:	AR21			A Stands	
Location	MGA 50	669928 <b>mE</b>	7737669 <b>mN</b>	Jack Black	V . Mr. white we the
Described by:	GB,JH				and the second second
Date:	4-03-2024			Carles A.	
Туре:	RELEVE			and the second second	A state of the sta
Landform:	Plains				
Slope:	Flat			and the second	The second se
Rock Type:	N/A				
Soil Type:	Loam,Sand				
Soil Colour:	Brown,Orange				
				Sector States	
Vegetation:				var. colei tall isol	lated clumps of shrubs over Triodia
		arse hummock			
Condition: Fire Age:	Good >10 years		Disturbance Type:	Grazing,Litter,I	Fauna tracks/scats
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia ampliceps			350	0.1	
Eucalyptus victrix Acacia coriacea subsp	nendens		900 200	7 0.1	
Carissa lanceolata	. pendens		160	0.1	
Acacia colei var. colei			250	0.5	
Cyperus sp.			20	0.1	
Triodia epactia			60	15	
Hakea lorea subsp. lo Ruchea dantau	rea		150 30	0.1 0.1	
Pluchea dentex Chrysopogon fallax			30 40	2	
onrysopogon railax			40	2	

			FLORA SITE SHEET					
Project Name	Atlas Ridley Bi	ological Survey						
Site:	AR22	0 ,		Sec.				
ocation	MGA 50	670914 <b>mE</b>	7737642 <b>mN</b>					
Described by:	GB,JH			r stratering				
Date:	4-03-2024			Jan State	March March March March March March 201			
Гуре:	RELEVE							
.andform: Slope:	Plains Flat			North Party and	and the second of the second o			
	N/A							
Rock Type:				ALCON NO. 41	- and the second second second			
Soil Type:	Loam,Sand				A second to the second se			
Soil Colour:	Brown,Orange	1						
/egetation:			oodland over Acacia cole hummock grassland.	i var. colei tall isol	lated clumps of shrubs over Triodia			
Condition: Fire Age:	Very Good >10 years		Disturbance Type:	Grazing,Fauna	tracks/scats, Infrastructure			
SPECIES LIST								
Taxon			Height (cm)	Cover (%)	Notes			
Acacia ancistrocarpa	1		140	0.1				
Eucalyptus victrix			900	7				
Acacia inaequilatera			200	0.1				
Acacia tumida var. p	ilbarensis		150	0.1				
Carissa lanceolata			160	0.1				
Acacia colei var. cole	ei		250	0.5				
Corchorus sp.			20	0.1				
Corymbia candida su	ıbsp. indet.		250	0.1				
Triodia epactia			60	15				
lakea lorea subsp. l			150	0.1				
Melaleuca glomerata	1		140	0.1				
Pluchea dentex			30	0.1				
Chrysopogon fallax			40	2				
Triodia sp.			20	3				

			FLORA SITE	SHEET		
Project Name	Atlas Ridlev B	iological Surve	v			
Site:	AR23		,			197 V Martina
Location	MGA 50	670584 mE	7738164 <b>mN</b>	THE WEAK		V Lesser
Jogation		070304 IIIE	1130104 IIIN		Setting and	ALS ME
escribed by:	GB,JH			and the second		
ate:	4-03-2024				A Contraction	to the standy server
				T I A A A A A A A A A A A A A A A A A A		and the second
/pe:	QUADRAT			The second second second	Carl Carl	
	Distant			Constant of the		
andform:	Plains				A AND	a share and
ope:	Flat					A STATE STATE
ock Type:	N/A					
oil Type:	Clay,Sand			and the second second second	and the second	
oil Colour:	Brown,Orange	е		AND IN AND	and the same of the second	
				A STATE OF THE REAL PROPERTY O	and the second second	
					A A A A A A A A A A A A A A A A A A A	
				5 14. 14 mar		State of the second
					教堂のため	- 1000/
				The second		
getation:	Corymbia han	nersleyana low	open woodland over Mel	aleuca glomerata,	Acacia colei var. colei a	nd Carissa
-	lanceolata mic	d sparse shrubi	and over Triodia epactia	and T. sp. low spar	rse hummock grassland	<i>l</i> .
ondition:	Very Good		Disturbance Type:	Infrastructure		
ire Age:	> 5 years,>10	years				
PECIES LIST						
axon			Height (cm)	Cover (%)	Notes	
					NOLES	
cacia ancistrocarpa			150	0.1		
cacia colei var. colei			200	0.5		
cacia coriacea subsp.	pendens		140	0.1		
cacia inaequilatera			170	0.1		
arissa lanceolata			200	0.5		
orymbia hamersleyan	а		200	9		
elaleuca glomerata			200	5		
akea lorea subsp. lore	a		40	0.1		
cacia stellaticeps			40	1		
riodia epactia			30	12		
riodia sp.			20	8		

			FLORA SITE	SHEET	
roject Name ite:	Atlas Ridley Bio AR24				
ocation	MGA 50	673238 <b>mE</b>	7738339 <b>mN</b>		
escribed by:	GB,JH				
ate:	4-03-2024			A TRACTOR OF THE STATE	
ype:	QUADRAT			internation of	
andform:	Alluvial flat			The state	A STATE OF THE STATE OF
lope:	Flat				
ock Type:	N/A			and the second s	
oil Type: oil Colour:	Loam,Sand Brown,Orange				A A A A A A A A A A A A A A A A A A A
	biown,orange				
egetation:	Triodia epactia	and T. secunda	low open hummock gra	ssland.	
ondition: ire Age:	Very Good >10 years	[	Disturbance Type:	Fauna tracks/s	cats
PECIES LIST				<b>2</b> (94)	N -
axon cacia colei var. colei			Height (cm) 170	Cover (%) 0.1	Notes
cacia coler var. coler hrysopogon fallax			5	0.1	
riodia epactia			40	30	
riodia secunda			20	10	

Project Name       Attas Ridley Biological Survey         Site:       AR25         Location       MGA 50       673541 mE       7737691 mN         Described by:       GB,JH       Transport       Galaxie         Date:       403-2024       Galaxie       Galaxie         Type:       QUADRAT       Control of the subsport       Galaxie         Landform:       Pains       Fat       Fock Type:       NA         Soil Tope:       Cary,Sand       Soil Tope:       Cary,Sand         Soil Colour:       Brown,Orange       Disturbance Type:       Weeds,Fauna tracks/scats         Yegetation:       Corymbia candida subsp. candida low isolated olumps of trees over Acacia colei var. colei tall sparse shruble over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         SPECIES LIST       Taxon       Height (cm)       Cover (%)       Notes         Acadia colei var. colei       160       0.1       Carsis lancoelata       170       0.1         Carsisa lancoelata       170       0.1       Carsis lancoelata       10       0.1         Corymbia candida subsp. candida       900       5       0.1       Corrysopogon falax       250       0.1	
Site: AR25 Location MGA 50 673541 mE 7737691 mN Described by: GB,JH Date: 4-03-2024 Type: QUADRAT	
Described by: GB,JH Date: 4-03-2024 Type: QUADRAT Landform: Plains Slope: Flat Rock Type: N/A Soil Type: Clay,Sand Soil Type: Clay,Sand Soil Type: Clay,Sand Soil Type: Clay,Sand Soil Colour: Brown,Orange Wegetation: Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shrubla over Triodia epactia low open hummock grassland. Condition: Very Good Disturbance Type: Weeds,Fauna tracks/scats Fire Age: > 15 years SPECIES LIST Taxon Height (cm) Cover (%) Notes Acacia inaequilatera 160 0.1 Carissa lanceolata 170 0.1 'Cenchrus ciliaris 20 0.1 Chrysopogon fallax 20 0.1 Malvacee sp. 10 0.1	
Date: 4-03-2024 Type: QUADRAT Landform: Plains Slope: Fiat Rock Type: NA Soil Type: Clay,Sand Soil Colour: Brown,Orange Vegetation: Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shruble over Triodia epactia low open hummock grassland. Condition: Very Good Disturbance Type: Weeds,Fauna tracks/scats Fire Age: > 15 years SPECIES LIST Taxon Height (cm) Cover (%) Notes Acacia colei var. colei 400 12 Acacia inaequilatera 160 0.1 Carissa lancelatara 170 0.4 Carissa inaequilatera 160 0.1 Carissa inaequilatera 20 0.1 "Cenchrus ciliaris 20 0.1 "Cenchrus ciliaris 20 0.1 Chrysopogon fallax 20 0.1 Malvaceae sp. 10 0.1	
Type:       QUADRAT         Landform:       Plains         Slope:       Flat         Rock Type:       N/A         Soil Type:       Clay,Sand         Soil Type:       Clay,Sand         Soil Colour:       Brown,Orange         Vegetation:       Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shruble over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         Fire Age:       > 15 years       SepectES LIST         Faxon       Height (cm)       Cover (%)       Notes         Acacia inaequilatera       160       0.1         Carisas lanceolata       170       0.1         Chrypogogon fallas       20       0.1         Corymbia candida subsp. candida       900       5         Dolichandrone occidentalis       30       0.1         Corymbia candida subsp. candida       900       5         Dolichandrone occidentalis       30       0.1         Chrygogogon fallas       20       0.1         Paraneurachme muelleri       10       0.1	
Landform: Plains Sibpe: Flat Rock Type: NA Soil Type: Clay,Sand Soil Colour: Brown,Orange Vegetation: Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shrubla over Triodia epactia low open hummock grassland. Condition: Very Good Disturbance Type: Weeds,Fauna tracks/scats Fire Age: > 15 years SPECIES LIST Faxon Height (cm) Cover (%) Notes Acacia icolei var. colei 400 12 Acacia icolei var. colei 400 12 Acacia icolei var. colei 400 12 Acacia inaequilatera 160 0.1 Carissa lanceolata 170 0.1 Chrysopogon fallax 20 0.1 Chrysopogon fallax 20 0.1 Chrysopogon fallax 30 0.1 Weateleuca giomerata 250 0.1 Paraneurachne muelleri 10 0.1	
Shope:       Flat Rock Type:       N/A         Soil Type:       Clay,Sand         Soil Colour:       Brown,Orange         //egetation:       Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shrubla over Triodia epactia low open hummock grassland.         /condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         SPECIES LIST       Height (cm)       Cover (%)       Notes         Acacia colei var. colei       400       12         Acacia ionaequilatera       160       0.1         Carissa lanceolata       170       0.1         Conyopogon fallax       20       0.1         Conyopogon fallax       20       0.1         Conyopogon fallax       30       0.1         Velvaceae sp.       10       0.1	
Shope:       Flat Rock Type:       N/A         Soil Type:       Clay,Sand         Soil Colour:       Brown,Orange         //egetation:       Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shrubla over Triodia epactia low open hummock grassland.         /condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         SPECIES LIST       Height (cm)       Cover (%)       Notes         Acacia colei var. colei       400       12         Acacia ionaequilatera       160       0.1         Carissa lanceolata       170       0.1         Conyopogon fallax       20       0.1         Conyopogon fallax       20       0.1         Conyopogon fallax       30       0.1         Velvaceae sp.       10       0.1	
Rock Type:       N/A         Soil Type:       Clay,Sand         Soil Colour:       Brown,Orange         Vegetation:       Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shrubla over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         Fire Age:       > 15 years         SPECIES LIST       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         SPECIES LIST       Very Good       Disturbance Type:       Veeds,Fauna tracks/scats         Condition:       Very Good       0.1       12         Acacia colei var. colei       400       12         Acacia inaequilatera       160       0.1         Carissa lanceolata       170       0.1         Chrysopogon fallax       20       0.1         Corymbia candida subsp. candida       900       5         Dolichandrone occidentalis       30       0.1         Walvaceae sp.       10       0.1         Wealevecae glonmerata       250       0.1         Paraneurachne muelleri       10       0.1	
Soil Type:       Clay,Sand         Soil Colour:       Brown,Orange         Argetation:       Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shrubla over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         SPECIES LIST       Very Good       Disturbance Type:       Veeds,Fauna tracks/scats         SPECIES LIST       Variation:       15 years       Over (%)       Notes         Caccia colei var. colei       400       12         Acacia inaequilatera       160       0.1         Carriss lanceolata       170       0.1         Chrysopogon fallax       20       0.1         Conymbia candida subsp. candida       900       5         Oolichandrone occidentalis       30       0.1         Alavaceae sp.       10       0.1         Alavaceae sp.       10       0.1         Paraneurachne muelleri       250       0.1	
Soil Colour:       Brown,Orange       Section:       Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shrubla over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         SPECIES LIST       Faxon       Height (cm)       Cover (%)       Notes         Acacia colei var. colei       400       12         Acacia inaequilatera       160       0.1         Carrissa lanceolata       170       0.1         Charliss candida subsp. candida       900       5         Columnation cocidentalis       30       0.1         Valvaceae sp.       10       0.1         Velaluac gliomerati       250       0.1	
Vegetation:       Corymbia candida subsp. candida low isolated clumps of trees over Acacia colei var. colei tall sparse shrubla over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         SPECIES LIST       Height (cm)       Cover (%)       Notes         Acacia colei var. colei       400       12         Acacia inaequilatera       160       0.1         Conchrus ciliaris       20       0.1         Chrysopogon fallax       20       0.1         Concidendic subsp. candida       900       5         Colichandrone occidentalis       30       0.1         Velaviacea sp.       10       0.1         Paraneurachne muelleri       10       0.1	
over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         Fire Age:       > 15 years       SPECIES LIST         Faxon       Height (cm)       Cover (%)       Notes         Acacia colei var. colei       400       12         Acacia inaequilatera       160       0.1         Carissa lanceolata       170       0.1         Chenchrus ciliaris       20       0.1         Corymbia candida subsp. candida       900       5         Dolichandrone occidentalis       30       0.1         Walvaceae sp.       10       0.1         Paraneurachne muelleri       10       0.1	Cherry Col
over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         Fire Age:       > 15 years       SPECIES LIST         Faxon       Height (cm)       Cover (%)       Notes         Acacia colei var. colei       400       12         Acacia inaequilatera       160       0.1         Carissa lanceolata       170       0.1         Chenchrus ciliaris       20       0.1         Corymbia candida subsp. candida       900       5         Dolichandrone occidentalis       30       0.1         Walvaceae sp.       10       0.1         Paraneurachne muelleri       10       0.1	
over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         Fire Age:       > 15 years       SPECIES LIST         Faxon       Height (cm)       Cover (%)       Notes         Acacia colei var. colei       400       12         Acacia inaequilatera       160       0.1         Carissa lanceolata       170       0.1         Chenchrus ciliaris       20       0.1         Corymbia candida subsp. candida       900       5         Dolichandrone occidentalis       30       0.1         Walvaceae sp.       10       0.1         Paraneurachne muelleri       10       0.1	THE REAL
Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         Fire Age:       > 15 years         SPECIES LIST	
Very Good       Disturbance Type:       Weeds,Fauna tracks/scats         Fire Age:       > 15 years         SPECIES LIST	and
Fire Age:       > 15 years         SPECIES LIST       Height (cm)       Cover (%)       Notes         Acacia colei var. colei       400       12         Acacia inaequilatera       160       0.1         Carissa lanceolata       170       0.1         Corentrus ciliaris       20       0.1         Chrysopogon fallax       20       0.1         Corymbia candida subsp. candida       900       5         Dolichandrone occidentalis       30       0.1         Walvaceae sp.       10       0.1         Velaleuca glomerata       250       0.1         Paraneurachne muelleri       10       0.1	
SPECIES LIST TaxonCover (%)NotesAcacia colei var. colei40012Acacia inaequilatera1600.1Carissa lanceolata1700.1"Cenchrus ciliaris200.1Chrysopogon fallax200.1Corymbia candida subsp. candida9005Dolichandrone occidentalis300.1Malvaceae sp.100.1Paraneurachne muelleri100.1	
FaxonHeight (cm)Cover (%)NotesAcacia colei var. colei40012Acacia inaequilatera1600.1Carissa lanceolata1700.1Chrysopogon fallax200.1Corymbia candida subsp. candida9005Dolichandrone occidentalis300.1Malvaceae sp.100.1Paraneurachne muelleri100.1	
Acacia colei var. colei40012Acacia inaequilatera1600.1Carissa lanceolata1700.1Conchrus ciliaris200.1Chrysopogon fallax200.1Corymbia candida subsp. candida9005Dolichandrone occidentalis300.1Malvaceae sp.100.1Paraneurachne muelleri100.1	
Acacia inaequilatera1600.1Carissa lanceolata1700.1Cenchrus ciliaris200.1Chrysopogon fallax200.1Corymbia candida subsp. candida9005Dolichandrone occidentalis300.1Malvaceae sp.100.1Velaleuca glomerata2500.1Paraneurachne muelleri100.1	
Carissa lanceolata1700.1'Cenchrus ciliaris200.1Chrysopogon fallax200.1Corymbia candida subsp. candida9005Dolichandrone occidentalis300.1Malvaceae sp.100.1Velaleuca glomerata2500.1Paraneurachne muelleri100.1	
"Cenchrus ciliaris200.1Chrysopogon fallax200.1Corymbia candida subsp. candida9005Dolichandrone occidentalis300.1Malvaceae sp.100.1Velaleuca glomerata2500.1Paraneurachne muelleri100.1	
Chrysopogon fallax200.1Corymbia candida subsp. candida9005Dolichandrone occidentalis300.1Malvaceae sp.100.1Melaleuca glomerata2500.1Paraneurachne muelleri100.1	
Corymbia candida subsp. candida9005Dolichandrone occidentalis300.1Malvaceae sp.100.1Melaleuca glomerata2500.1Paraneurachne muelleri100.1	
Dolichandrone occidentalis300.1Malvaceae sp.100.1Melaleuca glomerata2500.1Paraneurachne muelleri100.1	
Malvaceae sp.100.1Melaleuca glomerata2500.1Paraneurachne muelleri100.1	
Melaleuca glomerata     250     0.1       Paraneurachne muelleri     10     0.1	
Paraneurachne muelleri 10 0.1	
Triodia epactia 40 31	

			FLORA SITE	SHEET	
roject Name	Atlas Ridley B	iological Survey			
ite:	AR26				- Aline
ocation	MGA 50	674502 <b>mE</b>	7738067 <b>mN</b>	-	
escribed by:	GB,JH				AND
ate:	4-03-2024			A. an	MARKED IN SPRING IN
ype:	RELEVE				
				and the second second	-06
andform:	Minor drainag	e			
lope:	Flat			leton and the	
ock Type:	N/A				ALS PROVE SAL
ioil Type: ioil Colour:	Sand			and the second s	and the second second
	Beige				ther -
egetation:			l clumps of trees over Aca mmock grassland.	acia colei var. cole	ei mid isolated clumps of shrubs over
condition: ire Age:	Very Good >10 years		Disturbance Type:	Litter	
PECIES LIST					
axon			Height (cm)	Cover (%)	Notes
cacia colei var. colei			250	0.5	
frohybanthus aurantia	acus		5	0.1	
Bonamia linearis			5	0.1	
Carissa lanceolata Cassytha capillaris			120 10	0.1 0.1	
Chrysopogon fallax			20	0.5	
Corchorus incanus sub	osp incanus		30	0.0	
Eucalyptus victrix	opt inteande		800	5	
inospora smilacina			30	0.1	
riodia epactia			30	10	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley B	iological Survey			
Site:	AR27				ANK AN
_ocation	MGA 50	676097 <b>mE</b>	7738235 <b>mN</b>	ale - Ale	
Described by:	GB,JH				A CARLON AND A CAR
Date:	4-03-2024			No. of the second	
Гуре:	RELEVE				
					and the second second
_andform: Slope:	Drainage shou Flat	ulder		and the first first	
Rock Type:	N/A				
Soil Type:	Clay,Sand			S A A	
Soil Colour:	Brown,Orange	9		Sec. 1	
	,			Ser level	The second s
				Mary Jan P	
					The second se
/egetation:	Melaleuca glo	merata and Aca	cia trachycarpa tall open	shrubland over *	Cenchrus ciliaris low sparse tussock
-			low isolated clumps of h		
Condition:	Degraded		Disturbance Type:	Weeds, Grazing	g,Litter,Fauna tracks/scats
Fire Age:	>10 years				
SPECIES LIST Faxon			Height (cm)	Cover (%)	Notes
Acacia trachycarpa			250	3	
*Aerva javanica			30	0.1	
Afrohybanthus aurant	iacus		10	0.1	
Carissa lanceolata			200	0.1	
*Cenchrus ciliaris			40	20	
Corchorus incanus su	bsp. incanus		20	0.1	
Cucumis variabilis			30	0.1	
Melaleuca glomerata			300	20	
Triodia epactia			40	3	
Naltheria indica			10	0.1	

		FLORA SIT	ESHEEI	
Project Name	Atlas Ridley Biolog	gical Survey		
Site:	AR28		and the second s	That A sheet
Location	MGA 50 67	76159 mE 7738365 mM	A CONTRACT	
			and the second second	
Described by:	GB,JH			
Date:	4-03-2024		and the second s	in a set i for
Туре:	RELEVE		Contraine .	
	Designed			A A A A A A A A A A A A A A A A A A A
Landform:	Drainage			
Slope:	Flat N/A			
Rock Type: Soil Type:	Sand		and the second	
Soil Colour:	Orange			
	Orange		A second state	a for the second second
			Sale and	and the second second
			STAN VE	
			JI-VI	
Vegetation:				a and Crotalaria cunninghamii subsp. sturtii
	mid isolated clum	os of shrubs over Triodia epactia lo	w isolated clumps	of hummock grasses.
Condition:	Good	Disturbance Type:	Weeds, Grazin	ng,Fauna tracks/scats
Fire Age:	>10 years			
SPECIES LIST				
Taxon		Height (cm)	Cover (%)	Notes
Afrohybanthus aura	antiacus	20	0.1	Notes
Arivela viscosa	anuacus	30	0.1	
Cajanus pubescen	\$	80	0.1	
*Cenchrus ciliaris	-	30	0.1	
Corchorus incanus	subsp. incanus	20	0.1	
Crotalaria cunningh		100	0.5	
Cynanchum floribu		30	0.1	
Eucalyptus victrix		900	4	
Euphorbia tannens	is subsp. eremophila	20	0.1	
Euphorbia trigonos	perma	40	0.1	
Evolvulus sp.		5	0.1	
Ipomoea muelleri		20	0.1	
Melaleuca glomera		180	1	
Polymeria ambigua		2	0.1	
Rhynchosia minima	3	20	0.1	
Senna notabilis		20	0.1	
	r. Fortescue creeks (M		0.1	
Tinospora smilacina Triodia epactia	a	20 40	0.1 1	
тпоціа ерасца		40	I	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley F	Biological Survey			
Site:	AR29				
Location	MGA 50	679167 <b>mE</b>	7738712 <b>mN</b>		
Described by:	GB,JH			alanda.	Ar and a second
Date:	4-03-2024			Constant in	
Гуре:	RELEVE				
Landform:	Plains				
Slope:	Flat				
Rock Type:	N/A				
Soil Type:	Clay,Loam				WIT TO BE AN AND A COMPANY
Soil Colour:	Orange				
Vegetation:	Acacia tumid stellaticeps lo	a var. pilbarensis ow isolated clump	and Grevillea wickhamii Is of shrubs over Triodia	subsp. hispidula t epactia low spars	tall open shrubland over Acacia e hummock grassland.
Condition:	Very Good		Disturbance Type:	Fauna tracks/s	cats
Fire Age:	>10 years				
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia inaequilatera			200	0.1	
Grevillea wickhamii s			400	4	
Acacia trachycarpa >		arensis	300	0.1	
Acacia tumida var. p	ilbarensis		300	30	
Acacia stellaticeps			40	0.5	
Eulalia aurea			40	0.5	
Hakea lorea subsp. l	lorea		200	0.1	
Pluchea dentex			30	0.1	
Triodia epactia			40	10	

			<b>FLORA SITE</b>	SHEET	
Project Name	Atlas Ridlev B	iological Survey			
Site:	AR30	lological ourvey			
Location	MGA 50	679457 <b>mE</b>	7739332 <b>mN</b>	Ma a	L. LAA MARKE
Described by:	GB,JH			Fan Astronom	A CONTRACT OF A CONTRACT.
Date:	4-03-2024				
Туре:	RELEVE				Charles Mars
Landform:	Minor drainag	e			
Slope:	Flat				
Rock Type:	N/A				
Soil Type:	Sand				AND AND AND AND AND
Soil Colour:	Brown			e de la	
Vegetation:		ctrix low open wo nmock grasses.	odland over Acacia traci	hycarpa tall spars	e shrubland over Triodia epactia isolated
Condition:	Very Good		Disturbance Type:	Grazing,Fauna	a tracks/scats
Fire Age:	>10 years		Disturbance Type.	Grazing,i auna	
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia colei var. colei			200	0.1	
Acacia trachycarpa			350	6	
Afrohybanthus auranti	acus		20	0.1	
Cajanus pubescens			20	0.1	
Carissa lanceolata			140	0.1	
Cassytha capillaris			20	0.1	
Corymbia hamersleya	na		200	0.1	
Crotalaria cunningham			20	0.1	
Cynanchum floribundu	ım		20	0.1	
Eucalyptus victrix			800	5	
Eulalia aurea			40	0.5	
Euphorbia trigonosper	ma		20	0.1	
Ficus aculeata var. inc	lecora		200	0.1	
Grevillea wickhamii su	bsp. hispidula		180	0.1	
Hakea lorea subsp. lo	rea		200	0.1	
Melaleuca glomerata			300	0.1	
Tephrosia rosea var. I	Fortescue creek	s (M.I.H. Brooke	20	0.1	
Themeda triandra			30	0.1	
Triodia epactia			30	1	
l					

			FLORA SITE	SHEET		
Project Name Site: Location	Atlas Ridley E AR31 MGA 50	Biological Survey 663695 <b>mE</b>	7736402 <b>mN</b>			-
Described by: Date: Type:	GB,JH 5-03-2024 QUADRAT					Marine Carlos
Landform: Slope: Rock Type: Soil Type:	Plains Flat N/A Sand					
Soil Colour:	Orange					
Vegetation:	Acacia stellat	iceps low open s	hrubland over Triodia epa	actia low sparse h	nummock grassland.	
Condition: Fire Age:	Very Good >10 years	I	Disturbance Type:	None		
SPECIES LIST Taxon			Height (cm)	Cover (%)	Notes	
Acacia ancistrocarpa Acacia stellaticeps Triodia epactia			180 50 40	0.1 31 20		

			FLORA SITE	SHEET	
Project Name	Atlas Ridley E	Biological Survey			
Site:	AR32			-	and the second se
Location	MGA 50	682436 <b>mE</b>	7739814 <b>mN</b>		
	05			and the second	Bulling and a start of the
Described by:	GB,JH				
Date:	5-03-2024 QUADRAT			the states of the	
уре:	QUADRAT				
andform:	Plains				
Slope:	Flat			1 Section 1	
lock Type:	N/A				
oil Type:	Clay,Sand			Care - Maria	Contractor and the second second
Soil Colour:	Orange			and the second second	
/egetation:		uilatera tall isolate ia low open humm		Acacia stellatice	ps mid isolated clumps of shrubs over
Condition: Fire Age:	Good >10 years	ſ	Disturbance Type:	Litter,Fauna tra	acks/scats,Infrastructure
SPECIES LIST Taxon			Height (cm)	Cover (%)	Notes
Acacia inaequilatera			250	3	Notes
Acacia sericophylla			170	0.1	
Acacia stellaticeps			150	0.5	
, Acacia tumida var. pill	barensis		70	0.1	
Bonamia erecta			20	0.1	
Chrysopogon fallax			20	0.5	
lakea lorea subsp. lo	rea		30	0.1	
Pluchea dentex			30	0.1	
Triodia epactia			40	31	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley B	iological Survey			
Site:	AR33	о ,		and the second se	ant
Location	MGA 50	685620 <b>mE</b>	7740326 <b>mN</b>		
Described by:	GB,JH				A Contraction of the second se
Date:	5-03-2024			S. OR Y MAR	
Туре:	RELEVE				
Landform:	Minor drainag	۵		South States	
Slope:	Flat	c			
Rock Type:	N/A				and the second second
Soil Type:	Sand			A CALL TON	and the second sec
Soil Colour:	Brown,Orange	9		Contraction of the second	3 at the - Repair - Repair - Repair
				and the second s	
Vegetation:			bia candida subsp. candid sover Triodia epactia low		imps of trees over Acacia colei var. colei « grassland.
Condition:	Very Good		Disturbance Type:	Vehicle tracks,	Fauna tracks/scats
Fire Age:	>10 years				
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia colei var. cole	əi		350	0.5	
Acacia pyrifolia var.			180	0.1	
Aristida holathera va			10	0.1	
Atalaya hemiglauca			450	0.1	
Carissa lanceolata			180	0.1	
Cassytha capillaris			100	0.1	
Corchorus laniflorus			40	0.1	
Corchorus sp.			40	0.1	
Corymbia candida su			700	0.5	
Eremophila longifolia	3		100	0.1	
Eucalyptus victrix Eulalia aurea			900 30	1 8	
Euphorbia australis \	var subtomentos	•	10	o 0.1	
Indigofera linnaei	var. subtomentose	2	10	0.1	
lpomoea muelleri			10	0.1	
Nellica maderaspate	ensis		20	0.1	
, Triodia epactia			30	10	

			FLORA SITE	SHEET	
Project Name Site: Location	Atlas Ridley B AR34 MGA 50	iological Survey 683853 <b>mE</b>	7739914 mN		
Jocation	WGA 50	003033 IIIE	7759914 IIIN		
Described by:	GB,JH			「「「「	
Date:	5-03-2024			Land and the second	
Гуре:	QUADRAT			the second	
				To a mouter	
Landform:	Plains			A MARINE CA	
Slope:	Flat				
Rock Type:	N/A				
Soil Type:	Loam,Sand				
Soil Colour:	Orange			X	
/egetation:	Acacia inaequ over Triodia e	uilatera and A. bi pactia and T. sp	venosa mid sparse shrub . low open hummock gra	land over Acacia sses.	stellaticeps low isolated clumps of shrubs
Condition: Fire Age:	Very Good >10 years		Disturbance Type:	Infrastructure	
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia ancistrocarpa			160	0.1	
Acacia bivenosa			160	4	
Acacia inaequilatera			180	4	
Acacia stellaticeps			50	1	
Bonamia erecta			20	0.1	
Hakea lorea subsp. lo	rea		50	0.1	
Triodia epactia			40	31	

Site: Location Described by:				SHEET		
Location Described by:		iological Survey				
Described by:	AR35					No Frank
	MGA 50	686718 <b>mE</b>	7739877 <b>mN</b>		- news	
<b>n</b> /	GB,JH			-22 1000	atten a	CALL CONTRACTOR
Date:	5-03-2024				A Salar	A REAL PROPERTY AND
Туре:	RELEVE					A CARACT
Landform:	Plains				ACC A STR	A CHARLEN SONTEN
	Flat			THE REAL VE	Versien Versien	A REAL PROPERTY OF
	N/A					
	Clay,Loam,Sa	nd			ALC: ALC: ALC: ALC: ALC: ALC: ALC: ALC:	A Low Contract
Soil Colour:	Brown			1612	EAN P	
						THE ARMAN
						A started and
			and A. ancistrocarpa tall nd Chrysopogon fallax lo			w sparse hummock
	Very Good		Disturbance Type:	Fauna tracks/s	scats	
Fire Age:	>10 years					
SPECIES LIST						
Taxon			Height (cm)	Cover (%)	Notes	
Acacia ancistrocarpa			300	2		
Acacia inaequilatera			250	0.1		
Acacia tumida var. pilba	arensis		350	20		
Chrysopogon fallax			50	1		
Corymbia flavescens Dolichandrone occident	talia		350 140	0.1 0.1		
Eulalia aurea	alls		40	5		
Goodenia lamprosperm	12		10	0.1		
Pluchea dentex			30	0.1		
Sida sp. Pilbara (A.A. N	litchell PRP 15	43)	50	0.1		
Stemodia grossa		/	30	0.5		
Triodia epactia			30	10		
-						

			FLORA SITE	SHEET		
Project Name		Biological Surve	/			
Site:	AR36			100 million (1997)		
Location	MGA 50	700023 <b>mE</b>	7741014 <b>mN</b>	-		
Described by:	GB,JH			Super- Long Street Super-		
Date:	6-03-2024			-	- Marine	
Гуре:	RELEVE				and the state	and they
Landform:		tz outcropping		and the	an stand	- Alexandre
Slope:	Moderate					
Rock Type:	Granite,Qua	rtzite		and the second	Martine Charles	
Soil Type:	Clay,Loam			and the second	Contraction of the second	1 25
Soil Colour:	Brown					
Vegetation:		nps of shrubs ov			on and G. wickhamii subsp. i s of shrubs over Triodia epac	
Condition:	Excellent		Disturbance Type:	None		
Fire Age:	>10 years		Disturbance Type.	None		
				<b>.</b>		
Taxon			Height (cm)	Cover (%)	Notes	
Acacia ancistrocarpa			100	0.5		
Acacia pyrifolia var.	pyrifolia		50	0.1		
Acacia tumida var. p	ilbarensis		200	0.5		
acaicia adoxa var ad	loxa		20	0.1		
			170	0.1		
orymbia hamersleyana revillea pyramidalis subsp. leucadendron		ndron	170	0.5		
	acia pyrifolia var. pyrifolia acia tumida var. pilbarensis nicia adoxa var adoxa rymbia hamersleyana					
	subsp. nispiaula		150	0.5		
riodia epactia			30	25		

			FLORA SITE	SHEET	
Project Name	Atlas Ridlev F	Biological Surve			
Site:	AR37	Slological Ourve	y	And in case of the local division of the loc	
Location	MGA 50	704815 <b>mE</b>	7741870 <b>mN</b>		
Location	MGA 50	704815 IIIE	7741070 1111	Sec. Sec.	
Described by:	GB,JH				20 C
Date:	6-03-2024				ALC: No
Гуре:	RELEVE			Maria A	and the second second
andform:	Granite outcr	opping			ain .
Slope:	Moderate	opping			A Company
Rock Type:	Orange				and the second
Soil Type:	Gravel				and the second
Soil Colour:	Orange			C. A. Marriella	
Vegetation:			mophila longifolia mid iso	lated clumps of sh	rubs over Triod
1	hummock gra	assland.			
Condition:	Very Good		Disturbance Type:	Weeds, Infrastr	ucture
Fire Age:	>10 years				
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Abutilon lepidum			30	0.1	
cacia colei var. cole			30	0.1	
Acacia inaequilatera			150	0.5	
Cajanus pubescens			60	0.1	
*Cenchrus ciliaris			20	0.1	
Eremophila longifolia	9		150	0.5	
Senna artemisioides	subsp. helmsii		50	0.1	
Senna venusta			30	0.1	
Solanum sp.			20	0.1	
Tinospora smilacina			180	0.1	
Triodia epactia			15	15	
Triumfetta sp.			30	0.1	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley E	Biological Surve	y		
Site:	AR38	5			State of the second
Location	MGA 50	704511 <b>mE</b>	7742260 <b>mN</b>		
Described by:	GB,JH			t y	V. Kartan
Date:	6-03-2024			- Al Silling	I want to a state of the state
Туре:	RELEVE				and the second second second
Landform:	Quartz ridge			and the second	
Slope:	Gentle Granite,Quar				
Rock Type:		Izite			
Soil Type: Soil Colour:	Gravel Orange			the work	
Son Colour.	Urange				
Vegetation:		uilatera mid isol parse hummock		er A. orthocarpa lo	w isolated clumps of shrubs over Triodia
Condition: Fire Age:	Very Good 1-5 years		Disturbance Type:	Infrastructure	
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia inaequilatera			180	2	
Acacia orthocarpa			50	2	
Grevillea pyramidalis		ndron	70	0.1	
Petalostylis labicheoid		- (0)	30	0.1	
Sida sp. Pilbara (A.A. Triodia epactia	Mitchell PRP 1	543)	30 20	0.1 20	

	7741757 mN ubsp. refulgens and Melak		
0 705789 mE 124 RAT Irainage btus camaldulensis su arpa and A. colei var. bod	ubsp. refulgens and Melak colei tall sparse shrublar Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
124 RAT Irainage btus camaldulensis su arpa and A. colei var.	ubsp. refulgens and Melalo colei tall sparse shrublar Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
RAT Irainage btus camaldulensis su arpa and A. colei var. pod	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
RAT Irainage btus camaldulensis su arpa and A. colei var. pod	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
Irainage otus camaldulensis su arpa and A. colei var. ood	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
otus camaldulensis su arpa and A. colei var.	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
arpa and A. colei var. ood	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
arpa and A. colei var. ood	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
arpa and A. colei var. ood	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
arpa and A. colei var. ood	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
arpa and A. colei var. ood	colei tall sparse shrublan Disturbance Type: Height (cm) 250	nd over Triodia epa Litter,Fauna tra <b>Cover (%)</b>	actia low isolated clumps of grasses. acks/scats
	Height (cm) 250	Cover (%)	
ars	250		
	250		
	250		
		0.5	Notes
	350		
		6	
	100	0.1	
	30	0.1	
sturtii	120	0.1	
	30	0.1	
	50	0.1	
	50	0.1	
p. refulgens			
nentosa			
	50	0.1	
		0.1	
	20	0.1	
	o. refulgens entosa	p. refulgens 900 70 ientosa 10 50 20 20 700 40	b. refulgens 900 1 70 0.1 entosa 10 0.1 50 0.1 20 0.1 20 0.1 20 0.1 40 0.1 50 0.1 30 0.1 40 0.5

			FLORA SITE	SHEET		
Project Name		Biological Survey				
Site: Location	AR40 MGA 50	690947 mE	7741096 <b>mN</b>		the second s	
Location	MGA 50	090947 IIIE	7741090 1111	and the second		
Described by:	GB,JH				-	
Date:	6-03-2024			All Tank in all the set	The state of the state of the state	
Туре:	RELEVE			a more thanks		
					CONTRACTOR OF THE	
_andform:	Quartz ridge			Carl Carl Mart	and the second sec	
Slope:	Moderate			and the second		Contraction Services
Rock Type:	Quartzite				A A A A A A A A A A A A A A A A A A A	day a ser
Soil Type:	Gravel				A LAND THE THE	Sale .
Soil Colour:	Orange			a trans a st	The second of the second	A B LANG
					1 1 1× 1 1 1 2 4	1. See 2.
						Latter - Mar
				L'ANT SKY	Martin Care Martin	S. A. M.
					A STATE OF	
Vegetation:	Acacia ortho hummock gr		da var. pilbarensis mid is	solated clumps of s	shrubs over Triodia epactia low open	
Condition:	Very Good		Disturbance Type:	Infrastructure		
Fire Age:	>10 years	L	visiurbance Type:	mnastructure		
	210 years					
SPECIES LIST						
Taxon			Height (cm)	Cover (%)	Notes	
Acacia adoxa var. a	doxa		30	0.1		
Acacia ancistrocarp			200	0.1		
Acacia inaequilatera			180	0.1		
Acacia orthocarpa			140	3		
, Acacia sericophylla			60	0.1		
Acacia tumida var. pilbarensis			100	0.5		
Bulbostylis barbata			10	0.1		
Corymbia hamersle	yana		150	0.1		
Corymbia zygophyll			100	0.1		
Grevillea wickhamii			180	0.1		
Petalostylis labiched	oides		50	0.1		
Triodia epactia			20	25		

### **FLORA SITE SHEET** Atlas Ridley Biological Survey Project Name AR41 MGA 50 Site: Location 689036 mE 7740301 mN Described by: GB,JH 6-03-2024 Date: RELEVE Type: Major drainage Landform: Slope: Flat Rock Type: N/A Soil Type: Soil Colour: Sand Beige Eucalyptus victrix, E. camaldulensis subsp. refulgens and Melaleuca argentea low isolated clumps of trees over Acacia trachycarpa and M. glomerata tall isolated clumps of shrubs over Triodia epactia low isolated clumps of Vegetation: hummock grasses. Condition: Good Disturbance Type: Grazing,Litter,Fauna tracks/scats >10 years Fire Age: SPECIES LIST Taxon Height (cm) Cover (%) Notes Acacia ampliceps 100 0.1 Acacia pyrifolia var. pyrifolia 100 0.1 Eucalyptus camaldulensis subsp. refulgens 800 0.5 Cassytha capillaris 100 0.1 Cyperus vaginatus 50 0.1 Eucalyptus victrix 800 1 Melaleuca argentea 450 1 Eulalia aurea 50 0.1 250 Acacia trachycarpa 1 Melaleuca glomerata 250 1 Microstachys chamaelea 30 0.1 Stemodia viscosa 40 0.1 Triodia epactia 40 1

Project Name       Altes Ridly Biological Survey         Stet:       AR2         Lecation       MGA 50       714592 mE       7747015 mN         Described by:       GB,H-H       Dist:       7-03-2024         Type:       QUADRAT       Image: State Sta				FLORA SITE	SHEET	
Location       MGA 50       714592 mE       7747015 mN         Described by:       GB,JH         Date:       7-03-2024         Type:       QUADRAT         Landform:       Plains         Slope:       Flat         Rock Type:       N/A         Soil Type:       Clay,Loam,Sand         Soil Colour:       Brown,Orange         Vegetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         Condition:       Very Good         Fire Age:       1-5 years         SPECIES LIST       Taxon         Acacia stellaticeps       50         Sonamia alatissemina       10         Height (cm)       Cover (%)         Notes         Bonamia alatissemina       10			Biological Survey			
Described by:       GB,JH         Date:       7-03-2024         Type:       QUADRAT         andform:       Plains         Shope:       Flat         Acck Type:       N/A         Soil Type:       Clay,Loam,Sand         Soil Type:       Clay,Loam,Sand         Soil Type:       Clay,Loam,Sand         Soil Colour:       Brown,Orange         Wegetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         Condition:       Very Good       Disturbance Type:       Grazing,Fauna tracks/scats         Fire Age:       1-5 years       Soil Soil Soil Soil Soil Soil Soil Soil			71/502	7747045		
ate: 7-03-2024 ype: QUADRAT andform: Plains iope: Flat ock Type: N/A pil Type: Clay,Loam,Sand pil Colour: Brown,Orange agetation: Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. PECIES LIST axon Height (cm) Cover (%) Notes cacia stellatisemina 10 0.1 huchea ferdinandi-muelleri 60 0.1	Juanon	UC ADIVI	/ 14092 <b>ME</b>	//4/015 <b>MN</b>		and the second second
pe: QUADRAT Indform: Plains pope: Flat bokh Type: N/A pil Type: Clay,Loam,Sand pil Colour: Brown,Orange Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over triodia epactia low open hummock grassland. Acacia stellaticeps low isolated clumps of shrubs over triodia epactia low open hummock grassland. Acacia stellaticeps low isolated cl	scribed by:					The second second second second
andform:       Plains ope:       Flat bock Type:       N/A         bil Type:       N/A         bil Type:       Clay,Loam,Sand         bil Colour:       Brown,Orange         egetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         egetation:       Very Good         re Age:       1-5 years         Grazing,Fauna tracks/scats         1-5 years         Solated tellaticeps         bil Colour:         Height (cm)         Cover (%)         Notes         prantia abtisemina         10         0.1	ate:				and the second second	
ppe:       Flat         pck Type:       N/A         il Type:       Clay,Loam,Sand         il Type:       Clay,Loam,Sand         il Colour:       Brown,Orange         regetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         regetation:       Very Good       Disturbance Type:       Grazing,Fauna tracks/scats         re Age:       1-5 years       Fleipht (cm)       Cover (%)       Notes         re Age:       50       5         namia alatisemina uchea ferdinandi-muelleri       10       0.1	pe:	QUADRAT			Salah Call	
ope:       Flat         ock Type:       N/A         oil Type:       Clay,Loam,Sand         oil Type:       Clay,Loam,Sand         oil Colour:       Brown,Orange         egetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         egetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         ondition:       Very Good       Disturbance Type:       Grazing,Fauna tracks/scats         PECIES LIST       Kon       Height (cm)       Cover (%)       Notes         sacia stellaticeps       50       5         onarnia alatisemina uuchea ferdinandi-muelleri       10       0.1	undform:	Plaine			5 A.	A
Dick Type:       N/A         Dil Type:       Clay,Loam,Sand         Dil Type:       Clay,Loam,Sand         Dil Colour:       Brown,Orange         Agetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         Agetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         Ondition:       Very Good       Disturbance Type:       Grazing,Fauna tracks/scats         PECIES LIST       Konon       Height (cm)       Cover (%)       Notes         scacia stellaticeps       50       5       5         onamia alatisemina       10       0.1         uchea ferdinandi-muelleri       60       0.1					-	ATTAN SECTION
If Type:       Clay,Loam,Sand Brown,Orange       Eventsion         regetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         regetation:       Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         rendition:       Very Good       Disturbance Type:       Grazing,Fauna tracks/scats         re Age:       1-5 years       Feeles List         xon       Height (cm)       Cover (%)       Notes         narria alatisemina       10       0.1         uchea ferdinandi-muelleri       60       0.1	ock Type:					
Acacia stellaticeps low isolated clumps of shrubs over Triodia epactia low open hummock grassland.         Andition:       Very Good       Disturbance Type:       Grazing,Fauna tracks/scats         PECIES LIST       Height (cm)       Cover (%)       Notes         vacia stellaticeps       50       5         onarria alatisernina uchea ferdinandi-muelleri       10       0.1	oil Type:					
Periodition:     Very Good     Disturbance Type:     Grazing,Fauna tracks/scats       re Age:     1-5 years     Grazing,Fauna tracks/scats       PECIES LIST     Height (cm)     Cover (%)       txxon     Height (cm)     Cover (%)       sacia stellaticeps     50     5       onamia alatisemina     10     0.1       uchea ferdinandi-muelleri     60     0.1	oil Colour:	Brown,Orang	е		and a second	
Ondition:     Very Good     Disturbance Type:     Grazing, Fauna tracks/scats       re Age:     1-5 years     PECIES LIST       txon     Height (cm)     Cover (%)       vacia stellaticeps     50     5       onamia alatisemina     10     0.1       uchea ferdinandi-muelleri     60     0.1					1	C. C. Martin
re Age:       1-5 years         PECIES LIST       Height (cm)       Cover (%)       Notes         axon       50       5         cacia stellaticeps       50       5         onamia alatisemina       10       0.1         luchea ferdinandi-muelleri       60       0.1	egetation:	Acacia stellat	ticeps low isolate	d clumps of shrubs over	Triodia epactia lov	w open hummock grassland.
re Age:       1-5 years         PECIES LIST       Height (cm)       Cover (%)       Notes         axon       Height (cm)       5       5         cacia stellaticeps       50       5         onamia alatisemina       10       0.1         tuchea ferdinandi-muelleri       60       0.1						
PECIES LISTaxonHeight (cm)Cover (%)Notescacia stellaticeps505onamia alatisemina100.1luchea ferdinandi-muelleri600.1				Disturbance Type:	Grazing,Fauna	a tracks/scats
AxonHeight (cm)Cover (%)Notescacia stellaticeps505onamia alatisemina100.1luchea ferdinandi-muelleri600.1		10 years				
AxonHeight (cm)Cover (%)Notescacia stellaticeps505onamia alatisemina100.1luchea ferdinandi-muelleri600.1	PECIES LIST					
onamia alatisemina 10 0.1 luchea ferdinandi-muelleri 60 0.1	axon					Notes
luchea ferdinandi-muelleri 60 0.1						
		allari				
		elleri				

			FLORA SITE	SHEET		
roject Name	Atlas Ridley E	Biological Survey				
ite:	AR43					
ocation	MGA 50	711657 <b>mE</b>	7746351 <b>mN</b>		A CONTRACTOR AND A CONTRACTOR	-
escribed by:	GB,JH			A REAL PROPERTY.	Allowing and the second s	
ate:	7-03-2024			and the second second second		and a street
ype:	QUADRAT					
andform:	Alluvial flat					
lope:	Flat					
ock Type:	N/A			Ser State	and the same of the same of the	No.
oil Type: oil Colour:	Clay,Sand Brown,Orang	0			and the second sec	
	2.0, e.ug	-				
egetation:	Pluchea ferdi grassland.	nandi-muelleri lo	w isolated shrubs over Tr	iodia secunda an	d T. epactia low open hummock	
ondition:	Good		Disturbance Type:	Grazing, Fauna	tracks/scats,Infrastructure	
ire Age:	1-5 years			erazing,r aana		
PECIES LIST						
axon			Height (cm)	Cover (%)	Notes	
onamia linearis			20	0.1		
riachne obtusa luchea ferdinandi-r	muelleri		10 50	0.5 0.5		
riodia epactia	nuellen		20	0.5		
riodia secunda			20	40		

			FLORA SITE	SHEET	
Project Name Site:	Atlas Ridley Bi AR44	ological Survey		CO. Marco	
_ocation	MGA 50	717019 <b>mE</b>	7749321 <b>mN</b>	-	and the states of the states o
Described by: Date: Type:	GB,JH 7-03-2024 RELEVE				- Stranger - Albert -
Landform: Slope: Rock Type: Soil Type: Soil Colour:	Ironstone ridge Steep Ironstone Gravel Brown	3			
/egetation:	Ficus brachyp	oda low isolated	clumps of trees over Tri	odia epactia low s	sparse hummock grassland.
Condition: Fire Age:	Very Good >10 years	I	Disturbance Type:	Weeds	
SPECIES LIST Taxon Acacia colei var. colei Acacia tumida var. pilb Carissa lanceolata "Cenchrus ciliaris Cheilanthes sp. Eriachne mucronata Ficus brachypoda Solanum horridum Triodia epactia	arensis		Height (cm) 200 200 30 10 350 30 30 30	Cover (%) 0.1 0.1 0.1 0.1 0.5 0.1 15	Notes

			FLORA SITE	SHEET	
Project Name	Atlas Ridlev E	Biological Survey			
Site:	AR45	<u> </u>		AL HAL	
ocation	MGA 50	717145 <b>mE</b>	7749312 <b>mN</b>	N.Y.	
Described by:	GB,JH				a contraction of the second se
Date:	7-03-2024				
Гуре:	RELEVE				
_andform:	Ironstone hillt	юр			
Slope:	Moderate	•			
Rock Type:	Ironstone			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Soil Type:	Gravel				A MARTIN AND A SECURITY
Soil Colour:	Orange				
/egetation:		uilatera tall isolate pen hummock gra		A. stellaticeps lov	w isolated clumps of shrubs over Triodia
Condition:	Very Good		Disturbance Type:	Infrastructure	
Fire Age:	>10 years				
SPECIES LIST					
Faxon			Height (cm)	Cover (%)	Notes
Acacia inaequilatera			350	0.5	
Acacia stellaticeps Acacia tumida var. pill	haronsis		30 100	0.5 0.1	
Acacia turnida var. pili Triodia epactia	barensis		30	29	

			FLORA SITE	SHEET	
Project Name	Atlas Ridlev F	Biological Survey	1		
Site:	AR46		Ŷ		
Location	MGA 50	717042 <b>mE</b>	7749227 <b>mN</b>		
Described by:	GB,JH				
Date:	7-03-2024				
Туре:	QUADRAT				
Landform:	Foothills				
Slope:	Gentle			Phot	to: unavailable
Rock Type:	N/A				
Soil Type:	Clay,Sand				
Soil Colour:	Orange				
Vegetation:	Acacia tumida	a var. pilbarensi	s mid sparse shrubland o	ver Triodia epactia	low sparse hummock grassland.
Condition: Fire Age:	Very Good 1-5 years		Disturbance Type:	Infrastructure	
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Acacia tumida var. pil	lbarensis		200	15	
Bonamia erecta			20	0.1	
Corynotheca sp.			30	0.1	
Eragrostis eriopoda ?Afrohybanthus sp			30 10	0.1 0.1	
Grevillea pyramidalis	subsp. leucadei	ndron	20	0.1	
Ipomoea muelleri			10	0.1	
Triodia epactia			30	20	

Site:       AR4         Location       MG/         Described by:       GB,         Date:       7-03         Type:       QUA         Landform:       Majo         Slope:       Flat         Rock Type:       N/A         Soil Type:       Sand         Soil Colour:       Beig         Vegetation:       Mela         A. tr       isola         Condition:       Goo         Fire Age:       >10         SPECIES LIST       Taxon         Acacia ampliceps       Acacia colei var. colei         Acacia colei var. colei       Acacia trachycarpa         Aristida holathera var. holath       Arivela viscosa         Cassytha capillaris       "Cenchrus ciliaris         "Conchorus laniflorus"       Gradition:	A 50 705551 m JH -2024 ADRAT or drainage d ge aleuca argentea and E rachycarpa and M. glo ated clumps of tussock	nE 7743565 mN	of shrubs over Eu	Arrise         Arrise         Notes
Site: AR4 Location MG/ Described by: GB, Date: 7-03 Type: QUA Landform: Majo Slope: Flat Rock Type: N/A Soil Type: Sand Soil Colour: Beig Vegetation: Mela A. tr isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus	7 A 50 705551 m JH J-2024 ADRAT or drainage d ge aleuca argentea and E achycarpa and M. glo ated clumps of tussock d	nE 7743565 mN	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Location MG/ Described by: GB, Date: 7-03 Type: QUA Landform: Majo Slope: Flat Rock Type: N/A Soil Type: Sand Soil Colour: Beig Vegetation: Mela A. tr isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus	A 50 705551 m JH I-2024 ADRAT or drainage d ge aleuca argentea and E rachycarpa and M. gloi ated clumps of tussock d	Eucalyptus camaldulensis su merata mid isolated clumps c grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Date: 7-03 Type: QUA Landform: Majo Slope: Flat Rock Type: N/A Soil Type: Sanu Soil Colour: Beig Vegetation: Mela A. tr isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus	3-2024 ADRAT or drainage d le aleuca argentea and E achycarpa and M. glou ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Type:     QUA       Landform:     Majo       Slope:     Flat       Rock Type:     NA       Soil Type:     Sand       Soil Colour:     Beig       Vegetation:     Mela       A. tr     isola       Condition:     Goo       Fire Age:     >10       SPECIES LIST     Faxon       Acacia ampliceps     Acacia trachycarpa       Aristida holathera var. holath     Arivela viscosa       Cassytha capillaris     "Cenchrus ciliaris       Corchorus laniflorus     Soi	ADRAT or drainage d ge aleuca argentea and E achycarpa and M. glou ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Landform: Majo Slope: Flat Rock Type: N/A Soil Type: Sand Soil Colour: Beig Vegetation: Melé A. tr isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus	or drainage d je aleuca argentea and E achycarpa and M. glou ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Slope:       Flat         Rock Type:       N/A         Soil Type:       Sand         Soil Colour:       Beig         Vegetation:       Mela         A. tr       isola         Condition:       Goo         Fire Age:       >10         SPECIES LIST       Taxon         Acacia ampliceps       Acacia trachycarpa         Aristida holathera var. holath       Arivela viscosa         Cassytha capillaris       "Cenchrus ciliaris         "Conchorus laniflorus       Soo	d je aleuca argentea and E rachycarpa and M. glor ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Slope:       Flat         Rock Type:       N/A         Soil Type:       Sand         Soil Colour:       Beig         Vegetation:       Mela         A. tr       isola         Condition:       Goo         Fire Age:       >10         SPECIES LIST       Taxon         Acacia ampliceps       Acacia trachycarpa         Aristida holathera var. holath       Arivela viscosa         Cassytha capillaris       "Cenchrus ciliaris         Corchorus laniflorus       Soo	d je aleuca argentea and E rachycarpa and M. glor ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Rock Type: N/A Soil Type: Sand Soil Colour: Beig Vegetation: Mela A. tr isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus	d je aleuca argentea and E rachycarpa and M. gloi ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Soil Type: Sand Soil Colour: Beig Vegetation: Mela A. tr isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus	d je aleuca argentea and E rachycarpa and M. gloi ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Soil Colour: Beig Vegetation: Mela A. tr isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus	e aleuca argentea and E rachycarpa and M. gloi ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Vegetation: Mela A. tr isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus	aleuca argentea and E rachycarpa and M. gloi ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
A. tr. isola Condition: Goo Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus	achycarpa and M. gloi ated clumps of tussock d	merata mid isolated clumps grasses. Disturbance Type: Height (cm) 200	of shrubs over Eul Weeds,Grazing Cover (%)	lalia aurea and *Cenchrus ciliaris low
Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia colei var. colei Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris "Cenchrus ciliaris Corchorus laniflorus		Height (cm) 200	Cover (%)	
Fire Age: >10 SPECIES LIST Taxon Acacia ampliceps Acacia colei var. colei Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus		Height (cm) 200	Cover (%)	
Taxon Acacia ampliceps Acacia colei var. colei Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus		200		Notes
Taxon Acacia ampliceps Acacia colei var. colei Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus		200		Notes
Acacia ampliceps Acacia colei var. colei Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus		200		
Acacia colei var. colei Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus				
Acacia trachycarpa Aristida holathera var. holath Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus			0.0	
Aristida holathera var. holath Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus		200	0.5	
Arivela viscosa Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus	nora	15	0.5	
Cassytha capillaris *Cenchrus ciliaris Corchorus laniflorus	icia	20	0.1	
*Cenchrus ciliaris Corchorus laniflorus		30	0.5	
Corchorus laniflorus		30	2	
		50	0.1	
Crotalaria cunninghamii cuhi	on oturtii	70	0.1	
Crotalaria cunninghamii subs Cynanchum floribundum	sp. sturii	30	0.1	
Cyperus vaginatus		30	0.1	
Eucalyptus camaldulensis si	uhen refulgene	900	1	
Eulalia aurea	ubsp. reiuigens	50	2	
	tomontosa	10	0.1	
Euphorbia australis var. subi Euphorbia trigonoconormo	lomeniosa			
Euphorbia trigonosperma Bonamia linearis		10	0.1	
		10	0.1	
Goodenia lamprosperma		30	0.1	
Indigofera linnaei		10	0.1	
Melaleuca argentea		500	15	
Melaleuca glomerata		200	0.5	
Microstachys chamaelea		40	0.1	
Operculina aequisepala		30	0.1	
*Passiflora foetida		30	0.1	
Ptilotus fusiformis		30	0.1	
Rhynchosia minima		30	0.1	
Stemodia viscosa		30	0.1	
Tinospora smilacina		5	0.1	
Trichodesma zeylanicum vai Triadia anagtia	r. zeylanicum	70	0.1	
Triodia epactia	1-1-	30	1	
Vigna lanceolata var. lanceo	nata	20	0.1	
Wahlenbergia tumidifructa		10	0.1	
Waltheria indica		40	0.1	

			FLORA SITE	E SHEET		
Project Name	Atlas Ridley Bi	ological Survey				
Site:	AR48					
Location	MGA 50	697923 <b>mE</b>	7740531 <b>mN</b>			
Described by:	GB.JH					at the se
Date:	8-03-2024				the second second second	the second of the
Туре:	RELEVE			AND STREET	All all and a	
Landform:	Outcropping				and the second	
Slope:	Moderate				THE WE WANTED	1
Rock Type:	Granite					1 And
Soil Type:	Gravel			ALE STREET	A HAS MADE	C. Sta
Soil Colour:	Brown,Orange				and the second second	ALL AND
	Drown, Orango					Sec. 1
				20/20/	Carl Carl	1
						NSIL .
					THE AREA	
Vegetation:	Acacia ancistro	ocarpa and A.ir	aequilatera mid isolated	clumps of shrubs	over Triodia epactia low open hu	mmock
	grassland.					
Condition:	Excellent		Disturbance Type:	None		
Fire Age:	>10 years					
SPECIES LIST						
Taxon			Height (cm)	Cover (%)	Notes	
Acacia ancistrocarpa			200	0.5		
Acacia colei var. colei			200	0.1		
Acacia inaequilatera			200	0.5		
Acacia stellaticeps			30	0.1		
Capparis spinosa sub			50	0.1		
Corymbia hamersleya	na		200	0.1		
			200	0.1		
			150	0.1		
Hakea lorea subsp. lo	rea		400	0.1		
Hakea lorea subsp. lo Scaevola spinescens			100	0.1		
Hakea lorea subsp. lo Scaevola spinescens Senna glutinosa subs			50	0.1		
Ficus brachypoda Hakea lorea subsp. lo Scaevola spinescens Senna glutinosa subs Senna symonii Triodia epactia						

Site:       A         Location       M         Described by:       G         Date:       8-         Type:       Q         Landform:       P         Slope:       FI         Rock Type:       N         Soil Type:       C         Soil Colour:       B         Vegetation:       A         Sil       Colour:         Super:       S         Soil Colour:       B         Vegetation:       F         Fire Age:       >         SPECIES LIST       Taxon         Acacia adoxa var. adoxa       Acacia ancistrocarpa         Acacia inaequilatera       Acacia stellaticeps	AR49 MGA 50 GB,JH 8-03-2024 QUADRAT Plains Flat N/A Clay,Sand Brown,Orange Acacia inaequil shrubs over Tri Excellent >10 years	latera and A. anc. iodia wiseana and	7741607 mN sistrocarpa mid isolated d T.epactia low open h isturbance Type:	None		s low isolated clump
Site:       A         Location       M         Described by:       G         Date:       8-         Type:       Q         Landform:       P         Slope:       FI         Rock Type:       N         Soil Type:       C         Soil Colour:       B         Vegetation:       A         Sil       Soil Colour:         Supe:       S         Soil Colour:       B         Vegetation:       E         Fire Age:       >         SPECIES LIST       Taxon         Acacia adoxa var. adoxa       Acacia ancistrocarpa         Acacia inaequilatera       Acacia stellaticeps	AR49 MGA 50 GB,JH 8-03-2024 QUADRAT Plains Flat N/A Clay,Sand Brown,Orange Acacia inaequil shrubs over Tri Excellent >10 years	697849 mE latera and A. anco iodia wiseana and	istrocarpa mid isolated d T.epactia low open h isturbance Type:	None		s low isolated clump
Location M Described by: G Date: 8 Type: Q Landform: P Slope: Fi Rock Type: N Soil Type: C Soil Colour: B Vegetation: B Vegetation: E Fire Age: > SPECIES LIST Taxon Acacia adoxa var. adoxa Acacia inaequilatera Acacia inaequilatera Acacia inaequilatera	MGA 50 GB,JH 8-03-2024 QUADRAT Plains Flat N/A Clay,Sand Brown,Orange Acacia inaequil shrubs over Tri Excellent >10 years	latera and A. anc iodia wiseana and	istrocarpa mid isolated d T.epactia low open h isturbance Type:	None		s low isolated clump
Described by: G Date: 8 Type: Q Landform: P Slope: Fi Rock Type: N Soil Type: C Soil Colour: B Vegetation: A Si Condition: E Fire Age: > SPECIES LIST Taxon Acacia adoxa var. adoxa Acacia inaequilatera Acacia inaequilatera Acacia stellaticeps	GB,JH 8-03-2024 QUADRAT Plains Flat N/A Clay,Sand Brown,Orange <i>Acacia inaequil</i> <i>shrubs over Tri</i> Excellent >10 years	latera and A. anc iodia wiseana and	istrocarpa mid isolated d T.epactia low open h isturbance Type:	None		s low isolated clump
Date:       8-         Type:       Q         Landform:       P         Slope:       FI         Rock Type:       N         Soil Type:       C         Soil Type:       C         Soil Colour:       B         Vegetation:       A         Sil       Sil         Condition:       E         Fire Age:       >         SPECIES LIST       Taxon         Acacaia adoxa var. adoxa       Acacaia inaequilatera         Acacais stellaticeps       Sil	8-03-2024 QUADRAT Plains Flat N/A Clay,Sand Brown,Orange <i>Acacia inaequil</i> <i>shrubs over Tri</i> Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
Date:       8-         Supe:       Q         Landform:       P         Solope:       FI         Rock Type:       N         Soil Type:       C         Soil Colour:       B         //egetation:       A         Soil Colour:       E         Soil Colour:       E	8-03-2024 QUADRAT Plains Flat N/A Clay,Sand Brown,Orange <i>Acacia inaequil</i> <i>shrubs over Tri</i> Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
Landform: P Slope: Fi Rock Type: N Soil Type: C Soil Colour: B Vegetation: A Si Condition: E Fire Age: > SPECIES LIST Taxon Acacia adoxa var. adoxa Acacia adoxa var. adoxa Acacia inaequilatera Acacia stellaticeps	Plains Flat N/A Clay,Sand Brown,Orange <i>Acacia inaequil</i> <i>shrubs over Tri</i> Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
Landform: P Slope: Fi Rock Type: N Soil Type: C Soil Colour: B Vegetation: A Si Condition: E Fire Age: > SPECIES LIST Taxon Acacia adoxa var. adoxa Acacia adoxa var. adoxa Acacia inaequilatera Acacia stellaticeps	Flat N/A Clay,Sand Brown,Orange <i>Acacia inaequil</i> <i>shrubs over Tri</i> Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
Slope:       FI         Rock Type:       N         Soil Type:       C         Soil Colour:       B         //egetation:       A         Sondition:       E         Fire Age:       >         SPECIES LIST       Faxon         Acacia ancistrocarpa         Acacia inaequilatera         Acacia stellaticeps	Flat N/A Clay,Sand Brown,Orange <i>Acacia inaequil</i> <i>shrubs over Tri</i> Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
Rock Type:       N         Soil Type:       C         Soil Colour:       B         Vegetation:       A         Solution:       E         Fire Age:       >         SPECIES LIST       Taxon         Acacaia ancistrocarpa         Acacaia inaequilatera         Acacia stellaticeps	N/A Clay,Sand Brown,Orange <i>Acacia inaequil</i> <i>shrubs over Tri</i> Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
Soil Type: C Soil Colour: B Vegetation: A Su Condition: E Fire Age: > SPECIES LIST Faxon Acacia adoxa var. adoxa Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	Clay,Sand Brown,Orange <i>Acacia inaequil</i> <i>shrubs over Tri</i> Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
Soil Colour: B //egetation: A SI Condition: E Fire Age: > SPECIES LIST Faxon Acacia adoxa var. adoxa Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	Brown,Orange Acacia inaequil shrubs over Tri Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
/egetation: A SI Condition: E Fire Age: > SPECIES LIST Faxon Acacia adoxa var. adoxa Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	Acacia inaequil shrubs over Tri Excellent >10 years	latera and A. anc. iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
SI Condition: E Fire Age: > SPECIES LIST Taxon Acacia adoxa var. adoxa Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	shrubs over Tri Excellent >10 years	iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
SI Condition: E Fire Age: > SPECIES LIST Taxon Acacia adoxa var. adoxa Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	shrubs over Tri Excellent >10 years	iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
SI Condition: E Fire Age: > SPECIES LIST Taxon Acacia adoxa var. adoxa Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	shrubs over Tri Excellent >10 years	iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
SI Condition: E Fire Age: > SPECIES LIST Taxon Acacia adoxa var. adoxa Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	shrubs over Tri Excellent >10 years	iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
SPECIES LIST axon Acacia adoxa var. adoxa Acacia inaequilatera Acacia stellaticeps	shrubs over Tri Excellent >10 years	iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clump
Sondition: E ire Age: > SPECIES LIST axon kcacia adoxa var. adoxa kcacia inaequilatera kcacia inaequilatera kcacia stellaticeps	shrubs over Tri Excellent >10 years	iodia wiseana and	d T.epactia low open h isturbance Type:	None		s low isolated clum;
re Age: > PECIES LIST axon cacia adoxa var. adoxa cacia inaequilatera cacia stellaticeps	Excellent >10 years		isturbance Type:	None	u.	
re Age: > PECIES LIST axon cacia adoxa var. adoxa cacia inaequilatera cacia inaequilatera cacia stellaticeps	>10 years	Di				
Fire Age: > FPECIES LIST Caxon Acacia adoxa var. adoxa Acacia inaequilatera Acacia inaequilatera Acacia stellaticeps	>10 years					
PECIES LIST axon Icacia adoxa var. adoxa Icacia ancistrocarpa Icacia inaequilatera Icacia stellaticeps						
axon cacia adoxa var. adoxa cacia ancistrocarpa cacia inaequilatera cacia stellaticeps	a					
<b>Faxon</b> Acacia adoxa var. adoxa Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	9					
Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps	э		Height (cm)	Cover (%)	Notes	
Acacia ancistrocarpa Acacia inaequilatera Acacia stellaticeps			30	0.1		
Acacia inaequilatera Acacia stellaticeps			150	2		
Acacia stellaticeps			180	3		
			30	0.5		
Triodia epactia			30	3		
Triodia wiseana			30	28		

			FLORA SITE	SHEET	
roject Name	Atlas Ridlev F	Biological Survey			
te:	AR50	Siciogical Currey		Statistics and states	
ocation	MGA 50	699765 <b>mE</b>	7742416 <b>mN</b>		
escribed by:	GB,JH			Laster Contract	
ate:	8-03-2024			Children Children	
/pe:	RELEVE			- Contraction	
				12 2	the second second
andform:	Granite outcr	ор		2 martin	- m in the last
ope:	Steep				
ock Type:	Granite				
oil Type:	Gravel				Contract of the
oil Colour:	Beige			1 3 Cm	
egetation:	Atalaya hemi	iglauca mid isolat	ted clumps of shrubs ove	er Triodia epactia le	ow open hummock grassland.
ondition:	Excellent		Disturbance Type:	None	
re Age:	>10 years				
PECIES LIST					
axon			Height (cm)	Cover (%)	Notes
cacia ancistrocarpa			200	0.1	
acia colei var. colei			200	0.1	
acia inaequilatera			200	0.5	
cacia orthocarpa			170	0.1	
cacia stellaticeps			40	0.1	
alaya hemiglauca			140	1	
apparis umbonata			120	0.1	
/perus sp.			20	0.1	
cus brachypoda			200	0.1	
akea lorea subsp. lo			140	0.1	
enna glutinosa subs	o. glutinosa		170	0.1	
nospora smilacina			20	0.1	
odia epactia			30	28	

			FLORA SITE	SHEET	
Project Name Site: Location	Atlas Ridley I AR51 MGA 50	Biological Survey 709368 <b>mE</b>	7744803 <b>mN</b>	an at the second	
Described by: Date: Гуре:	GB,JH 8-03-2024 QUADRAT				
Landform: Slope: Rock Type: Soil Type: Soil Colour:	Alluvial flat Flat N/A Clay,Sand Orange				
Vegetation:	Triodia epact tussock gras	ia and T. secunda ses.	a low open hummock gra	assland over Eriad	chne obtusa low isolated clumps of
Condition: Fire Age:	Very Good 1-5 years		Disturbance Type:	Grazing,Fauna	tracks/scats
SPECIES LIST Taxon			Height (cm)	Cover (%)	Notes
Eriachne obtusa Pluchea dentex Triodia epactia Triodia secunda			10 30 20 20	1 0.1 19 10	

			FLORA SITE	SHEET	
Project Name	Atlas Ridley	Biological Survey			
Site:	AR52				
ocation	MGA 50	694803 <b>mE</b>	7741190 <b>mN</b>	and the second diversion of	
Described by:	GB,JH			South State	the strange of the second
Date:	9-03-2024				* * * * * * * * *
Гуре:	QUADRAT			- HE -	and the second
andform:	Plains				
Slope:	Flat				and the second
Rock Type:	N/A			Carlos and	CARL & CARL
Soil Type:	Clay,Sand			$\lambda_{i} \in \mathbb{R}^{n}$	A STATE AND A STATE OF A
Soil Colour:	Orange				
/egetation:	Acacia inaeq epactia low o	uilatera mid isolat pen hummock gr	ed clumps of shrubs ove assland.	r A. stellaticeps lo	ow isolated clumps of shrubs over Triodia
Condition: Fire Age:	Very Good > 5 years	I	Disturbance Type:	Grazing,Fauna	tracks/scats
SPECIES LIST				0	Mataa
Taxon			Height (cm)	Cover (%)	Notes
Acacia inaequilatera			190	1 0.5	
Acacia stellaticeps Triodia epactia			50 30	0.5 31	
noula epactia			30	51	

			FLORA SITE	SHEET	
Project Name	Atlas Ridlev B	Biological Survey			
Site:	AR53			4-27 10 10	AL AND THE ACCOUNTS OF A DAY OF A DAY
Location	MGA 50	674107 <b>mE</b>	7738089 <b>mN</b>	A.F. WA	中的物质的方法。
Described by:	GB,JH			CA STANK	
Date:	9-03-2024			的现在分词 法利益	
Гуре:	QUADRAT				
Landform:	Plains				
Slope:	Flat				
Rock Type:	N/A			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Soil Type:	Clay,Sand				
Soil Colour:	Brown,Orang	e			
Vegetation:					lland over Acacia tumida var. pilbarensis rse hummock grassland.
Condition:					-
Fire Age:	Very Good >10 years		Disturbance Type:	Grazing,Fauna	a ITACKS/SCAIS
SPECIES LIST					
Taxon			Height (cm)	Cover (%)	Notes
Corymbia candida s			600	3	
Acacia inaequilatera	1		150	0.1	
Acacia sericophylla			200	0.1	
Corymbia hamersley			400	3 5	
Acacia tumida var. p Cassytha capillaris	Dilbarerisis		300 100	5 0.1	
Corchorus sp.			20	0.1	
Acacia colei var. col	ei		200	5	
Carissa lanceolata			180	0.5	
Eulalia aurea			40	5	
Triodia epactia			40	15	

Project Name				SHEET	
	Atlas Ridlev E	Biological Survey			
Site:	AR54			MANA ANAL	HATY WATER
_ocation	MGA 50	672915 <b>mE</b>	7737650 <b>mN</b>		
Described by:	GB,JH			自己主义 计外	The way of the state of the
Date:	9-03-2024			P. C. Star	17 小学校 第一个 19
Гуре:	QUADRAT			Meter A	
_andform:	Plains				
Slope:	Flat				
Rock Type:	N/A				
Soil Type:	Clay,Sand				
Soil Colour:	Brown,Orang	e			the second s
				and the second	
				既に小家	
/egetation:					ncia colei var. colei and A. tumida var.
	pilbarensis ta	ll sparse shrubla	nd over Triodia epactia lo	ow open hummoc	k grassland.
Condition:	Very Good		Disturbance Type:	Grazing,Fauna	a tracks/scats
Fire Age:	>10 years				
SPECIES LIST					
FECIES LIST			Height (cm)	Cover (%)	Notes
Acacia colei var. co	lei		200	10	
Acacia tumida var.			300	3	
Cassytha capillaris			30	0.1	
Corchorus sp.			20	0.1	
Corymbia candida s	subsp. candida		600	2	
Eulalia aurea	auhan hianidula		40	5	
Grevillea wickhamii Triodia epactia	subsp. nispidula		250 40	0.1 35	



## Appendix G Flora Statistical Analysis

### **Atlas Ridley Magnetite Project Connection**

#### Flora and Fauna Survey Technical Report

**Horizon Power** 

SLR Project No.: 675.072189.00001

29 July 2024



Selected inputs and outputs of the floristic cluster analysis: taxa omitted from analysis.

Taxon	Site Count	Status
?Afrohybanthus sp.		Omitted: Singleton
Abutilon lepidum		Omitted: Singleton
Acacia acradenia		Omitted: Singleton
Acacia sp.		Omitted: Singleton; may represent multiple species
Acacia trachycarpa x tumida var. pilbarensis		
Aerva javanica		Omitted: Singleton
Boerhavia sp.		Omitted: May represent multiple species
Bonamia alatisemina		Omitted: Singleton
Bonamia pilbarensis		Omitted: Singleton
Bulbostylis barbata		Omitted: Singleton
Calotropis procera		Omitted: Introduced taxon
Capparis spinosa subsp. nummularia		Omitted: Singleton
Capparis umbonata		Omitted: Singleton
Cheilanthes sp.		Omitted: Singleton
Corchorus sp.		Omitted: May represent multiple species
Corymbia candida subsp. indet.		Omitted: Singleton; may represent multiple species
Corymbia zygophylla		
Corynotheca sp.	1	
Crotalaria ramosissima	1	Omitted: Singleton
Cymbopogon sp.		
Cyperus sp.		Omitted: May represent multiple species
Eriachne lanata		Omitted: Singleton
Euphorbia tannensis subsp. eremophila		Omitted: Singleton
Euploca cunninghamii	1	Omitted: Singleton
Evolvulus sp.	1	Omitted: Singleton
Ficus aculeata var. indecora	1	Omitted: Singleton
Goodenia muelleriana	1	Omitted: Singleton
Goodenia stobbsiana	1	Omitted: Singleton
Indigofera monophylla	1	Omitted: Singleton
Indigofera oblongifolia	1	Omitted: Singleton; introduced species
Maireana melanocoma	1	Omitted: Singleton
Malvaceae sp.	1	Omitted: Singleton
Nellica maderaspatensis	1	Omitted: Singleton
Neptunia sp.		Omitted: Singleton
Notoleptopus decaisnei		Omitted: Singleton
Operculina aeguisepala		Omitted: Singleton
Passiflora foetida		Omitted: Introduced taxon
Poaceae sp.		Omitted: May represent multiple species
Ptilotus fusiformis		Omitted: Singleton
Ptilotus sp.		Omitted: May represent multiple species
Scaevola spinescens		Omitted: Singleton
Senna artemisioides subsp. helmsii	1	Omitted: Singleton
Senna symonii	1	Omitted: Singleton
Sida sp.		Omitted: Singleton
Solanum diversiflorum	1	Omitted: Singleton
Solanum horridum	1	Omitted: Singleton
Solanum sp.		Omitted: May represent multiple species
Sporobolus australasicus		Omitted: Singleton
		Omitted: Singleton
Stemodia grossa	1	
Terminalia circumulata	1	Omitted: Singleton
Themeda triandra	1	Omitted: Singleton
Trianthema triquetrum		Omitted: Singleton
Trichodesma zeylanicum var. zeylanicum		Omitted: Singleton
Triodia sp.	4	Omitted: May represent multiple species
Triodia wiseana	1	Omitted: Singleton
Triumfetta clementii	1	Omitted: Singleton
Triumfetta sp.	1	Omitted: Singleton
Vachellia farnesiana		Omitted: Singleton; introduced species
Wahlenbergia tumidifructa	1	Omitted: Singleton



## Appendix H Fauna Database Search Results

## **Atlas Ridley Magnetite Project Connection**

#### Flora and Fauna Survey Technical Report

**Horizon Power** 

SLR Project No.: 675.072189.00001

29 July 2024



Conservation Status: State - Listed under Biodiversity Conservation Act 2016 or Department of Biodiversity, Conservation and Attractions Conservation, Commonwealth - Listed under Environmental Protection and Biodiversity Conservation Act 1999. CR - Critically Endangered, EN - Endangered, VU - Vulnerable, MI - Migratory, CD - Conservation Dependent fauna, OS - Other Specially Protected fauna, MA - Marine, P - Listed as Priority by DBCA.

Database: NM - NatureMap, PMST - EPBC Protected Matters Search Tool, DBCA - DBCA Threatened and Priority Fauna database search, Field - Recorded during the current field survey. Literature: A - Ridley Detailed Terrestrial Vertebrate Fauna Survey (Biota, 2024)

Literature: B - Ridley Services Corridors Basic and Targeted Fauna Survey (Biota, 2023)

Literature: C - Detailed terrestrial fauna and targeted Bilby survey for the Port Hedland Solar Farm Project (Pheonix Environmental, 2022)

Literature: D - Wodgina Gas Pipeline targeted Fauna Survey (360 Environmental Pty Ltd, 2018)

Literature: E - Wodgina Project: Level 1 Fauna Survey, Targeted Conservation Significant Fauna Survey and Desktop Assessment (Stantec Australia Pty Ltd, 2018)

Literature: F - Pardoo Stage 3 Irrigation Project and 80 Mile Beach Ramsar Site Fauna Assessment (Bamford Consulting Ecologists, 2017b)

Literature: G - Assessment of the Bilby Macrotis lagotis Pardoo Station; Stage 2 areas (Bamford Consulting Ecologists, 2017a)

Literature: H - Supplementary Flora and Vegetation Survey and Terrestrial Fauna Survey for the Balla Balla Infrastructure Group Ltd (Phoenix Environmental, 2018)

Literature: I - Assessment of the Bilby Macrotis lagotis Pardoo Station; Stage 2 and 3 project areas (Bamford Consulting Ecologists, 2016)

Literature: J - Terrestrial Fauna Surveys for the Balla Balla Railway Project (Phoenix Environmental, 2014)

				rvation Status	D	ataba	ise	_					Liter	ature	;			
Family	Scientific Name	Common Name	State	Commonwealth	MN	PMST	DBCA	Field	A	В	С	D	E	F	G	н	I	J
Amphibia	•	· · · · ·																
Limnodynastidae	Neobatrachus aquilonius	Northern Burrowing Frog	-	-	х				х		х							
Limnodynastidae	Neobatrachus sutor	Shoemaker Frog	-	-	х													$\square$
Limnodynastidae	Notaden nichollsi	Desert Spadefoot	-	-	х				х		х							$\square$
Limnodynastidae	Platyplectrum spenceri	Centralian Burrowing Frog	-	-	х				х		х							$\square$
Myobatrachidae	Uperoleia glandulosa	Glandular Toadlet	-	-	х						х							$\square$
Myobatrachidae	Uperoleia micromeles	Tanami Toadlet	-	-	х													$\square$
Myobatrachidae	Uperoleia russelli	Northwest Toadlet	-	-	х													
Myobatrachidae	Uperoleia saxatilis	Pilbara Toadlet	-	-	х													$\square$
Myobatrachidae	Uperoleia talpa	Ratcheting Toadlet	-	-	х													$\square$
Pelodryadidae	Cyclorana australis	Giant Frog	-	-	х				х									$\square$
Pelodryadidae	Cyclorana maini	Sheep Frog	-	-	х				х		х							$\square$
Pelodryadidae	Litoria caerulea	Green Tree Frog	-	-	х													$\square$
Pelodryadidae	Litoria ridibunda	Western Laughing Tree Frog	-	-	х													$\square$
Pelodryadidae	Litoria rubella	Little Red Tree Frog	-	-	х				х		х							х
Aves				•													_	
Acanthizidae	Acanthiza chrysorrhoa	Yellow-rumped Thornbill	-	-	x													
Acanthizidae	Gerygone fusca	Western Gerygone	-	-	х				х	х								$\square$
Acanthizidae	Gerygone tenebrosa	Dusky Gerygone	-	-	х													$\square$
Acanthizidae	Smicrornis brevirostris	Weebill	-	-	х				х									х
Accipitridae	Accipiter cirrocephalus	Collared Sparrowhawk	-	-	х				х	х								$\square$
Accipitridae	Accipiter fasciatus	Brown Goshawk	-	MA	х				х									х
Accipitridae	Aquila audax	Wedge-tailed Eagle	-	-	х			х	х	х			х					х
Accipitridae	Circus approximans	Swamp Harrier	-	MA	х													х
Accipitridae	Circus assimilis	Spotted Harrier	-	-	х				х	х								х
Accipitridae	Elanus axillaris	Black-shouldered Kite	-	-	х				х									
Accipitridae	Erythrotriorchis radiatus	Red Goshawk	VU	EN		х												
Accipitridae	Haliaeetus leucogaster	White-bellied Sea-eagle	-	MA	х	Х			х	х								
Accipitridae	Haliastur indus	Brahminy Kite	-	MA	х				х		х							
Accipitridae	Haliastur sphenurus	Whistling Kite	-	MA	х				х	х			х					
Accipitridae	Hamirostra melanosternon	Black-breasted Buzzard	-	-	х				х				х					
Accipitridae	Hieraaetus morphnoides	Little Eagle	-	-	х				х									х
Accipitridae	Lophoictinia isura	Square-tailed Kite	-	-	х													
Accipitridae	Milvus migrans	Black Kite	-	-	х			х		1			х					х
Acrocephalidae	Acrocephalus australis	Australian Reed Warbler	-	MA	х													
Aegothelidae	Aegotheles cristatus	Australian Owlet-nightjar	-	-	х				х	х								х
Alaudidae	Mirafra javanica	Horsfield's Bush Lark	-	-	х			х	х	х	х		1					х

Alcedinidae	Dacelo leachii	Blue-winged Kookaburra		_	x				x			¥	
	Todiramphus chloris (Wallacea	-	-	-	^				×			~	
Alcedinidae	transition point from T. sordidus)	Collared Kingfisher	-	-	х								
Alcedinidae	Todiramphus pyrrhopygius	Red-backed Kingfisher	-	-	х				х	х		Х	
Alcedinidae	Todiramphus sanctus	Sacred Kingfisher	-	MA	х			х	х				
Alcedinidae	Todiramphus sordidus pilbara	Pilbara Collared Kingfisher	-	_	х								
Anatidae	Anas gracilis	Grey Teal	-	_	х				х	х			
Anatidae	Anas superciliosa	Pacific Black Duck	-	-	х				х	х			
Anatidae	Aythya australis	Hardhead	-	_	х					х			
		Australian Wood Duck, Wood											
Anatidae	Chenonetta jubata	Duck, Maned Duck	-	-	х								
Anatidae	Cygnus atratus	Black Swan	-	-	х								
Anatidae	Dendrocygna arcuata	Wandering Whistling Duck, Chestnut Whistling Duck	-	MA	x								
Anatidae	Dendrocygna eytoni	Plumed Whistling Duck	-	-	х					х			
Anatidae	Malacorhynchus membranaceus	Pink-eared Duck	-	-	х								
Anatidae	Spatula rhynchotis	Australasian Shoveler	-	-	х								
Anatidae	Tadorna tadornoides	Australian Shelduck, Mountain											
		Duck	-	-						x			
Anhingidae	Anhinga melanogaster	Oriental Darter	-	-	х			<u> </u>			<u> </u>		
Anhingidae	Anhinga novaehollandiae	Australasian Darter	-	-	Х				Х				
Apodidae	Apus pacificus	Pacific Swift, Fork-tailed Swift	MI	MI, MA	Х	Х	х		Х				Х
Ardeidae	Ardea alba	Great Egret, Eastern Great Egret	-	MA	х					х			
Ardeidae	Ardea intermedia	Intermediate Egret	-	MA	х								
Ardeidae	Ardea pacifica	White-necked Heron	-	-	х				х			Х	
Ardeidae	Bubulcus coromandus	Eastern Cattle Egret	-	-	х	х							
Ardeidae	Butorides striata	Striated Heron Mangrove Heron	-	-	x								
Ardeidae	Egretta garzetta	Little Egret	-	MA	х								
Ardeidae	Egretta novaehollandiae	White-faced Heron	-	-	х				х	х			
Ardeidae	Egretta sacra	Eastern Reef Heron, Pacific Reef Heron	-	MA	x								
Ardeidae	Nycticorax caledonicus	Nankeen Night Heron, Rufous Night Heron	-	MA	x								
Artamidae	Artamus cinereus	Black-faced Woodswallow	-		x			х	x	х	x	х	
Artamidae	Artamus cyanopterus	Dusky Woodswallow	-		x			X		X	~	X	
Artamidae	Artamus leucorynchus	White-breasted Woodswallow	-	-	x				x	x			
Artamidae	Artamus minor	Little Woodswallow	_	-	v								
Artamidae	Artamus personatus	Masked Woodswallow	-	-	x x				X				
Artamidae	Artamus superciliosus	White-browed Woodswallow	-	-	x				X				
Artamidae	Cracticus nigrogularis	Pied Butcherbird	-	-	x			x	x	x			
Artamidae	Cracticus torquatus	Grey Butcherbird	-	-	x			<u>^</u>		^			
Artamidae	Gymnorhina tibicen	Australian Magpie	-	-	x			x					
Burhinidae	Burhinus grallarius	Bush Stone-curlew, Bush Thick-		-	x			^					
Burhinidae	Esacus magnirostris	knee Beach Stone-curlew, Beach	_	MA	x								
Cacatuidae	Cacatua galerita	Thick-knee Sulphur-crested Cockatoo											+
Cacatuidae	Cacatua galerita Cacatua sanguinea	Little Corella	-	-	X			X					
Cacatuidae	Eolophus roseicapilla	Galah			X			X	X	X		X	
		Cockatiel	-	-	X			Х	X	X	X	Х	
Cacatuidae	Nymphicus hollandicus Coracina novaehollandiae	Black-faced Cuckooshrike	-	- MA	X				X	X	X		-+
Campephagidae Campephagidae	Lalage tricolor	White-winged Triller	-	- MA	X			X	X	X	X	Х	
		Spotted Nightjar	-	- MA	X				X				
Caprimulgidae Casuariidae	Eurostopodus argus	Emu		IVIA	X				X			Х	-+
	Dromaius novaehollandiae Charadrius leschenaultii	Emu Greater Sand Plover	- VU	- VU, MI, MA	X			X	<u> </u>				
Charadriidae		Lesser Sand Plover	EN	EN, MI, MA	X	X	X						$\rightarrow$
Charadriidae	Charadrius mongolus Charadrius ruficapillus			MA	X	X	X						-+
Charadriidae	Charaunus runcapinus	Red-capped Plover	-	IVIA	Х	х				Х			

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Charadriidae	Charadrius veredus	Oriental Plover	MI	MI, MA	Х	Х	Х							Х	ł
Charadriidae	Elseyornis melanops	Black-fronted Dotterel	-	-	Х				Х	Х				'	Ļ
Charadriidae	Erythrogonys cinctus	Red-kneed Dotterel	-	-	Х					Х				<u> </u>	Ļ
Charadriidae	Pluvialis fulva	Pacific Golden Plover	MI	MI, MA	х	Х	Х							<u> </u>	L
Charadriidae	Pluvialis squatarola	Grey Plover	MI	VU, MI, MA	х	Х	Х							<u> </u>	L
Charadriidae	Vanellus miles	Masked Lapwing	-	-	х					Х					L
Charadriidae	Vanellus tricolor	Banded Lapwing	-	-	х				х	х					L
Ciconiidae	Ephippiorhynchus asiaticus	Black-necked Stork	-	-	х				х	х	х				L
Cinclosomatidae	Cinclosoma marginatum	Western Quail-thrush	-	-	х										
Climacteridae	Climacteris melanurus	Black-tailed Treecreeper	-	-	х				х						L
Columbidae	Columba livia	Domestic Pigeon, Rock Dove	-	-	х			х							L
Columbidae	Geopelia cuneata	Diamond Dove	-	-	х			х	х	х	х		х		
Columbidae	Geopelia humeralis	Bar-shouldered Dove	-	-	х										
Columbidae	Geopelia striata	Zebra Dove	-	-	х										L
Columbidae	Geophaps plumifera	Spinifex Pigeon	-	-	х			х	х	х			Х		
Columbidae	Ocyphaps lophotes	Crested Pigeon	-	-	х			х	х	х	х		х		Г
Columbidae	Phaps chalcoptera	Common Bronzewing	-	-	х						х				Г
Columbidae	Phaps histrionica	Flock Bronzewing, Flock Pigeon	-	-	x				x	х					Γ
Corvidae	Corvus bennetti	Little Crow	-	-	x				x	х					F
Corvidae	Corvus coronoides	Australian Raven	-	-	x										F
Corvidae	Corvus orru	Torresian Crow	-	-	х			х	х	х	х		х		F
Cuculidae	Centropus phasianinus	Pheasant Coucal	_	-	x				X						t
Cuculidae	Chalcites basalis	Horsfield's Bronze Cuckoo	-	MA	x				X	х					F
Cuculidae	Chalcites osculans	Black-eared Cuckoo	-	MA	x	х				~					F
Cuculidae	Cuculus saturatus optatus	Horsfield's Cuckoo	MI (as C. optatus)	MI (C. saturatus MA)		x								<sup> </sup>	F
Cuculidae	Heteroscenes pallidus	Pallid Cuckoo	-	MA	x	~			x	x				'	F
Dicaeidae	Dicaeum hirundinaceum	Mistletoebird	-	-	x					~				'	H
Estrildidae	Emblema pictum	Painted Finch	-	-	x				x	x			х	'	H
Estrildidae	Heteromunia pectoralis	Pictorella Mannikin	-	-	x				^	^			^	'	H
Estrildidae	Neochmia ruficauda	Star Finch	-		x				x	x				'	┢
Estrildidae	Taeniopygia castanotis	Australian Zebra Finch			x			x	x	x	х		х	'	⊢
Falconidae	Falco berigora	Brown Falcon	-	-				x	x	x	x		~	'	┢
Falconidae	Falco cenchroides	Nankeen Kestral	-	MA	X			x	x	x	x		×	'	┝
Falconidae		Grey Falcon	VU	VU	X	v	v	X	X	X	X		Х	'	┝
Falconidae	Falco hypoleucos Falco longipennis	Australian Hobby	VU	v0	X	Х	Х			~				'	┝
Falconidae		Peregrine Falcon	OS	-	X		~		X	X				'	┝
	Falco peregrinus	Lesser Frigatebird	MI	-	X		X		X					'	┝
Fregatidae	Fregata ariel	·		MI, MA	х	X	Х							'	┝
Fregatidae Glareolidae	Fregata minor Glareola maldivarum	Greater Frigatebird	MI	MI, MA		X			<u> </u>					'	┝
		Oriental Pratincole	MI	MI, MA	X	X	х							'	┞
Glareolidae	Stiltia isabella	Australian Pratincole	-	MA	X	X			X	X				'	┞
Gruidae	Antigone rubicunda	Brolga	-	-	X					Х				┝───┘	┡
Haematopodidae	Haematopus fuliginosus	Sooty Oystercatcher	-	-	Х				<u> </u>					'	F
Haematopodidae	Haematopus longirostris	Pied Oystercatcher	-	-	х					Х				<u> '</u>	┡
Hirundinidae	Cheramoeca leucosterna	White-backed Swallow	-	-	Х				X					<u> '</u>	┡
Hirundinidae	Hirundo neoxena	Welcome Swallow	-	MA	х				Х					<u> </u>	Ł
Hirundinidae	Hirundo rustica	Barn Swallow	MI	MI, MA	х	х	х		<u> </u>					<u>                                     </u>	┡
Hirundinidae	Petrochelidon ariel	Fairy Martin	-	-	х				х	х	х			<u> </u>	┡
Hirundinidae	Petrochelidon nigricans	Tree Martin	-	MA	х				х	х				<u> </u>	L
Laridae	Anous stolidus	Common Noddy, Brown Noddy	MI	MI, MA		х									
Laridae	Chlidonias hybrida	Whiskered Tern	-	MA	х										L
Laridae	Chlidonias leucopterus	White-winged Black Tern	MI	MI, MA	х		х								Ĺ
Laridae	Chroicocephalus novaehollandiae	Silver Gull	-	-	x					x					ſ
Laridae	Gelochelidon macrotarsa	Australian Gull-billed Tern	-	-	х				х	х					Γ
Laridae	Gelochelidon nilotica	Gull-billed Tern	MI	MI, MA	х		х			х					Γ
Laridae	Hydroprogne caspia	Caspian Tern	MI	MI, MA	х	х	х			х					F
Laridae	Onychoprion anaethetus	Bridled Tern	MI	MI, MA	x		x								F
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Laridae	Sterna dougallii	Roseate Tern	MI	MI, MA		v	v							<u> </u>
Laridae	Sterna hirundo	Common Tern	MI	MI, MA	x	Х	X X							├──
Laridae	Sternula albifrons	Little Tern	MI	MI, MA		x			<u> </u>	Y				<u> </u>
Laridae	Sternula nereis nereis	Fairy Tern	VU	VU, MA	X	X	X X			Х				<u> </u>
Laridae	Thalasseus bengalensis	Lesser Crested Tern	VU	MA	x	v	×			v				
Lanuae		Greater Crested Tern, Crested	-	IVIA	X	Х				х				
Laridae	Thalasseus bergii	Tern	MI	MI, MA	х		х			х				
Locustellidae	Cincloramphus cruralis	Brown Songlark	-	-	х				х	х				
Locustellidae	Cincloramphus mathewsi	Rufous Songlark	-	-	х				х	Х			х	
Locustellidae	Poodytes carteri	Spinifexbird	-	-	х				х	х	х		х	
Maluridae	Amytornis whitei	Rufous Grasswren	-	-	х									
Maluridae	Malurus assimilis	Purple-backed Fairywren	-	-	х			х	х	х				
Maluridae	Malurus leucopterus	White-winged Fairywren	-	-	х			х	х	х	х			
Maluridae	Stipiturus ruficeps	Rufous-crowned Emu-wren	-	-	х									
Meliphagidae	Acanthagenys rufogularis	Spiny-cheeked Honeyeater	-	-	х									
Meliphagidae	Certhionyx variegatus	Pied Honeyeater	-	-	х				х					
Meliphagidae	Epthianura aurifrons	Orange Chat	-	-	х									
Meliphagidae	Epthianura tricolor	Crimson Chat	-	-	х				х					
Meliphagidae	Gavicalis virescens	Singing Honeyeater	-	-	х			х	х	х	х		х	
Meliphagidae	Lichmera indistincta	Brown Honeyeater	-	-	х			х	x	х		1	х	
Meliphagidae	Manorina flavigula	Yellow-throated Miner	-	-	х			х	х	х	х		х	
Meliphagidae	Melithreptus gularis	Black-chinned Honeyeater	-	-	х				х					
Meliphagidae	Philemon citreogularis	Little Friarbird	-	-	х									
Meliphagidae	Ptilotula keartlandi	Grey-headed Honeyeater	-	-	x				x				х	
Meliphagidae	Ptilotula penicillata	White-plumed Honeyeater	-	-	x			х	x	х	x		X	
Meliphagidae	Sugomel nigrum	Black Honeyeater	-	-	X			~		~			~	<u> </u>
Meropidae	Merops ornatus	Rainbow Bee-eater	-	MA	x	x		х	x	x	x		х	
Monarchidae	Grallina cyanoleuca	Magpie-lark	-	MA	x			x	x	x	x		x	
				MA (as A.					Ê				^	
Motacillidae	Anthus australis	Australian Pipit	-	novaeseelandiae)	х			х	х	х				
Motacillidae	Motacilla cinerea	Grey Wagtail	MI	MI, MA		х								
Motacillidae	Motacilla tschutschensis	Eastern Yellow Wagtail	MI	MI, MA	х	х	х							
Neosittidae	Daphoenositta chrysoptera	Varied Sittella	-	-	х									
Oceanitidae	Oceanites oceanicus	Wilson's Storm Petrel	MI	MI, MA	х		х							
Oreoicidae	Oreoica gutturalis	Crested Bellbird	-	-	х					х				
Otididae	Ardeotis australis	Australian Bustard	-	-	х			х	х	х				
Pachycephalidae	Colluricincla harmonica	Grey Shrikethrush	-	-	х				х					
Pachycephalidae	Pachycephala lanioides	White-breasted Whistler	-	-	х									
Pachycephalidae	Pachycephala melanura	Mangrove Golden Whistler	-	-	х									
Pachycephalidae	Pachycephala rufiventris	Rufous Whistler	-	-	х									
Pandionidae	Pandion haliaetus	Osprey	MI	MI, MA	х	х	х							
Pardalotidae	Pardalotus rubricatus	Red-browed Pardalote	-	-	x				х	х				
Pardalotidae	Pardalotus striatus	Striated Pardalote	-	-	x									
Passeridae	Passer montanus	Eurasian Tree Sparrow	-	-	x									
Pelecanidae	Pelecanus conspicillatus	Australian Pelican	_	MA	x				x	x	1	1		<u> </u>
Petroicidae	Melanodryas cucullata	Hooded Robin	-	-	x									<u> </u>
Petroicidae	Peneothello pulverulenta	Mangrove Robin	-	-	x	<u> </u>			<u> </u>					<u> </u>
Petroicidae	Petroica goodenovii	Red-capped Robin	-	-	x	<u> </u>	<u> </u>		<u> </u>		<u> </u>			<u> </u>
Phaethontidae	Phaethon lepturus	White-tailed Tropicbird	MI	 MI, MA	<u>^</u>	x					-			<u> </u>
Phaethontidae	Phaethon rubricauda	Red-tailed Tropicbird	MI, P4	MI, MA		1	-		-		-	-		
	Microcarbo melanoleucos	Little Pied Cormorant		IVII, IVIA	~	1 I								<u> </u>
			-	-	X						<u> </u>			──
	Phalacrocorax carbo	Great Cormorant	-	-	X						<u> </u>			──
Phalacrocoracidae	Phalacrocorax sulcirostris	Little Black Cormorant	-	-	Х		<u> </u>		<u> </u>		<u> </u>			—
Phalacrocoracidae	Phalacrocorax varius	Pied Cormorant, Australian Pied Cormorant	-	-	х					х				
				MA	х				x	х				
Phasianidae	Coturnix pectoralis	Stubble Quail	-	IVIA	×				^	^				
Phasianidae Phasianidae	Coturnix pectoralis Synoicus ypsilophorus	Stubble Quail Brown Quail	-	NA	x				x	x				+
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Podicipedidae	Poliocephalus poliocephalus	Hoary-headed Grebe		_	х				1					<u> </u>	Т
•		Australasian Grebe, Black-	-		^									<u> </u>	ł
Podicipedidae	Tachybaptus novaehollandiae	throated Grebe	-	-	х			x	x	х					l
Pomatostomidae	Pomatostomus superciliosus	White-browed Babbler	-	-	х										ſ
Pomatostomidae	Pomatostomus temporalis	Grey-crowned Babbler	-	-	х				х				х		ſ
Procellariidae	Calonectris leucomelas	Streaked Shearwater	MI	MI, MA		х									t
Procellariidae	Macronectes giganteus	Southern Giant Petrel	MI	EN, MI, MA		х									t
Psittaculidae	Barnardius zonarius	Australian Ringneck	-	-	х			х	х	х					t
Psittaculidae	Melopsittacus undulatus	Budgerigar	-	-	х				х	х	х		х		t
Psittaculidae	Pezoporus occidentalis	Night Parrot	CR	EN		х									t
Psittaculidae	Purpureicephalus spurius	Red-capped Parrot	-	-	х										t
Ptilonorhynchidae	Chlamydera guttata	Western Bowerbird	-	-	х				х	х					t
	Chlamydera maculata	Spotted Bowerbird	-	-	х										t
Rallidae	Fulica atra	Eurasian Coot	-	-	х										t
Rallidae	Hypotaenidia philippensis	Buff-banded Rail	-	MA	х										t
Rallidae	Porphyrio melanotus	Australasian Swamphen	-	MA	х										t
		Australian Spotted Crake,													t
Rallidae	Porzana fluminea	Australian Crake	-	-	х										L
Rallidae	Tribonyx ventralis	Black-tailed Native-hen	-	-	х										Γ
Recurvirostridae	Cladorhynchus leucocephalus	Banded Stilt	-	-	х										Γ
Recurvirostridae	Himantopus himantopus	Black-winged Stilt	-	MA	х	х				х					Γ
Recurvirostridae	Recurvirostra novaehollandiae	Red-necked Avocet	-	MA	х	х									Γ
Rhipiduridae	Rhipidura albiscapa	Grey Fantail	-	-	х										Γ
Rhipiduridae	Rhipidura leucophrys	Willie Wagtail	-	-	х			х	х	х	х		х		Γ
Rhipiduridae	Rhipidura phasiana	Mangrove Grey Fantail, Mangrove Fantail	-	-	х										Γ
Rostratulidae	Rostratula australis	Australian Painted Snipe	EN	EN, MA	х	х									F
Scolopacidae	Actitis hypoleucos	Common Sandpiper	MI	MI, MA	х	х	х								t
Scolopacidae	Arenaria interpres	Ruddy Turnstone	MI	VU, MI, MA	х	х	х								t
Scolopacidae	Calidris acuminata	Sharp-tailed Sandpiper	MI	VU, MI, MA	х	х	х								t
Scolopacidae	Calidris alba	Sanderling	MI	MI, MA	х	х	х			х					t
Scolopacidae	Calidris canutus	Red Knot	EN	VU, MI, MA	х	х	х								t
Scolopacidae	Calidris falcinellus	Broad-billed Sandpiper	MI	MI, MA	х	х	х								t
Scolopacidae	Calidris ferruginea	Curlew Sandpiper	CR	CE, MI, MA	х	х	х								t
Scolopacidae	Calidris melanotos	Pectoral Sandpiper	MI	MI, MA	х	х	х								t
	Calidris pugnax	Ruff	MI	MI, MA (as <i>P. pugnax</i> )	х		х								t
Scolopacidae	Calidris ruficollis	Red-necked Stint	MI	MI, MA	х	х	х								t
Scolopacidae	Calidris subminuta	Long-toed Stint	MI	MI, MA	X	x	x								t
Scolopacidae	Calidris tenuirostris	Great Knot	CR	VU, MI, MA	x	x	x								t
Scolopacidae	Gallinago megala	Swinhoe's Snipe	MI	MI, MA	x		x								t
Scolopacidae	Gallinago stenura	Pin-tailed Snipe	MI	MI, MA	x		x								t
Scolopacidae	Limnodromus semipalmatus	Asian Dowitcher	MI	VU, MI, MA	х	х	х								t
Scolopacidae	Limosa lapponica	Bar-tailed Godwit	MI ( <i>L. I. bauerii</i> VU; <i>L. I. menzbieri</i> CR)	MI, MA ( <i>L. lapponica bauerii</i> Chris. Is. EN; <i>L. lapponica</i> <i>menzbieri</i> EN)	x	x	x			x					
Scolopacidae	Limosa limosa	Black-tailed Godwit	MI	EN, MI, MA	х	х	х								F
	Numenius madagascariensis	Far Eastern Curlew, Eastern Curlew	CR	CE, MI, MA	х	x	x		x						ſ
Scolopacidae	Numenius minutus	Little Curlew	MI	MI, MA	х	х	х								t
Scolopacidae	Numenius phaeopus	Whimbrel	MI	MI, MA	x	X	x			х					t
Scolopacidae	Phalaropus lobatus	Red-necked Phalarope	MI	MI, MA	x	x	x								t
Scolopacidae	Tringa brevipes	Grey-tailed Tattler	MI, P4	MI, MA	x	x	x		1						t
Scolopacidae	Tringa glareola	Wood Sandpiper	MI	MI, MA	x	x	x		1						t
Scolopacidae	Tringa nebularia	Common Greenshank	MI	EN, MI, MA	x	x	x		1						t
Scolopacidae	Tringa stagnatilis	Marsh Sandpiper	MI	MI, MA	x	x	x		1						t
Scolopacidae	Xenus cinereus	Terek Sandpiper	MI	VU, MI, MA	x	x	x		1						t
Strigidae	Ninox boobook	Boobook Owl	-	(N. boobook boobook MA)	x				x				x		t
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r	T	-																<b></b>
			(N. connivens															
Strigidae	Ninox connivens	Barking Owl	connivens SW subpop.	-	х													
			P3)															$\vdash$
Sulidae	Sula leucogaster	Brown Booby	MI	MI, MA	Х	Х	Х											$\square$
Threskiornithidae	Platalea flavipes	Yellow-billed Spoonbill	-	-	Х													
Threskiornithidae	Platalea regia	Royal Spoonbill	-	-	х													
Threskiornithidae	Plegadis falcinellus	Glossy Ibis	MI	MI, MA	х		х											
Threskiornithidae	Threskiornis molucca	Australian White Ibis	-	MA	х													
Threskiornithidae	Threskiornis spinicollis	Straw-necked Ibis	-	MA	х					х								
Turnicidae	Turnix pyrrhothorax	Red-chested Buttonquail	-	-	х													
Turnicidae	Turnix velox	Little Buttonquail	-	-	х				Х	х	х		х					
Tytonidae	Tyto javanica	Eastern Barn Owl	-	-	х				Х									
		Yellow White-eye, Canary White-																
Zosteropidae	Zosterops luteus	eye	-	-	x				Х	Х								
Mammalia	•															· · · ·		
Bovidae	Bos primigenius taurus	European Cattle	_	-	х			x	х	х	x	1	x					
Bovidae	Capra aegagrus hircus	Goat	-		x			L ^	^	^	^		^					
Bovidae	Ovis aries	Sheep	-		^					X								╂───┦
Camelidae	Camelus dromedarius	Dromedary Camel		-						X								
		-	-	-			<u> </u>			Х				<u> </u>				Х
Canidae	Canis familiaris	Dingo / Dog	-	-	X				Х	х	X		Х			├ -		┢──┦
Canidae	Vulpes vulpes	Red Fox	-	-	x				Х		х		Х					Х
Dasyuridae	Antechinomys laniger	Kultarr	-	-	X													$\square$
Dasyuridae	Dasycercus blythi	Brush-tailed Mulgara, Ampurta	P4	-	x		x		х	х	x	x		x	х		х	
Dasyuridae	Dasycercus cristicauda	Crest-tailed Mulgara	P4	-	х		х											
Dasyuridae	Dasykaluta rosamondae	Kaluta	-	-	х				Х		х	х	х					
Dasyuridae	Dasyurus hallucatus	Northern Quoll	EN	EN	х	х	х		х	х			х			х		х
Dasyuridae	Ningaui timealeyi	Pilbara Ningaui	-	-	X			х	X									x
Dasyuridae	Planigale ingrami	Long-tailed Planigale	-	-	x			~	~									
		Orange-headed Pilbara			~													$\vdash$
Dasyuridae	Planigale kendricki	Planigale	-	-					Х									
Dasyuridae	Planigale tealei	Cracking-clay Pilbara Planigale	-	-	x													
Dasyuridae	Pseudantechinus roryi	Rory's False Antechinus	-	-	х													
Dasyuridae	Pseudantechinus woolleyae	Woolley's Pseudantechinus	-	-	х				Х									
Dasyuridae	Sminthopsis macroura	Stripe-faced Dunnart	-	-	х			x	х				х					
Dasyuridae	Sminthopsis youngsoni	Lesser Hairy-footed Dunnart	-	-	х				х		x							
Emballonuridae	Saccolaimus flaviventris	Yellow-bellied Sheath-tailed Bat	-	-	x				х	x								x
Emballonuridae	Tenhezeus georgienus	Common Sheath-tailed Bat						2										
	Taphozous georgianus		-	-	X			ſ	Х	х			Х					Х
Equidae	Equus ferus caballus	Horse	-	-	х													+
Felidae	Felis catus	Cat	-	-	x			x	Х	Х	Х	Х	Х					х
Leporidae	Oryctolagus cuniculus	Rabbit	-	-	X													$\square$
Macropodidae	Lagostrophus fasciatus fasciatus	Banded Hare-wallaby	VU	VU	Х		Х											$\square$
Macropodidae	Osphranter robustus	Common Wallaroo	-	-	Х			х	Х	Х			Х					х
Macropodidae	Osphranter rufus	Red Kangaroo, Marlu	-	-	Х			х	Х	х	Х							
Macropodidae	Petrogale rothschildi	Rothschild's Rock-wallaby	-	-	х								х					х
Megadermatidae	Macroderma gigas	Ghost Bat	VU	VU	х	х	х		Х				х					
Molossidae	Austronomus australis	White-striped Free-tailed Bat	-	-	х				Х	х			х					
Molossidae	Chaerephon jobensis colonicus	Greater Northern Free-tailed Bat	-	-	x			x	х	x	x							x
Molossidae	Ozimops cobourgianus	Northern Coastal Free-tailed Bat	P1	-	x		x											
Molossidae	Ozimops lumsdenae	Northern Free-tailed Bat	-	_					х		<u> </u>	<u> </u>		<u> </u>				+
Muridae	· · · · · · · · · · · · · · · · · · ·	Short-tailed Mouse	- P4						X							╞──┤		┥
	Leggadina lakedownensis			-	X		X	$\left  \right $								├ -		──┦
Muridae Muridae	Mus musculus	House Mouse	-	-	X											├ -		┟──┦
Muridae	Notomys alexis alexis	Spinifex Hopping-mouse	-	-	X				Х		X	Х	Х					Х
Muridae	Pseudomys chapmani	Western Pebble-mound Mouse	P4	-	x		x	x	х	х			x					x
Muridae	Pseudomys delicatulus	Delicate Mouse																

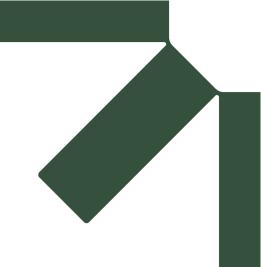
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Muridae	Pseudomys desertor	Desert Mouse	-	-	Х			Х	х					
Muridae	Pseudomys hermannsburgensis	Sandy Inland Mouse	-	-	х				Х		Х			
Muridae	Pseudomys nanus nanus	Western Chestnut Mouse	-	-	х									
Muridae	Rattus rattus	Black Rat	-	-	х									
Muridae	Zyzomys argurus	Common Rock-rat	-	-	х				Х				Х	
Pteropodidae	Pteropus alecto gouldii	Black Flying-fox	-	-					Х					
Pteropodidae	Pteropus scapulatus	Little Red Flying-fox	-	-	х				Х					
Rhinonycteridae	Rhinonicteris aurantia Pilbara form	Pilbara Leaf-nosed Bat	VU	VU	х	х	x	х	x			х	х	
Suidae	Sus scrofa	Pig	-	-					х					
Tachyglossidae	Tachyglossus aculeatus acanthion	Short-beaked Echidna	-	-	x				x				х	
Thylacomyidae	Macrotis lagotis	Bilby, Dalgyte	VU	VU	х	х	х		х		х	х		х
Vespertilionidae	Chalinolobus gouldii	Gould's Wattled Bat	-	-	х			Х	х	х	х		х	
Vespertilionidae	Nyctophilus arnhemensis	Arnhem Long-eared Bat	-	-	х									
Vespertilionidae	Nyctophilus geoffroyi geoffroyi	Lesser Long-eared Bat	-	-	х				х	х				
Vespertilionidae	Scotorepens greyii	Little Broad-nosed Bat	-	-	х			Х	х	х	х		х	
Vespertilionidae	Vespadelus finlaysoni	Finlayson's Cave Bat	-	-	х			Х	х	х	х		х	
Reptilia														
Agamidae	Ctenophorus caudicinctus	Western Ring-tailed Dragon	-	-	х			х	х	х			х	
Agamidae	Ctenophorus isolepis	Central Military Dragon	-	-	х			х	х	х	х		х	
Agamidae	Ctenophorus nuchalis	Central Netted Dragon	-	-	х				х	х	х			
Agamidae	Ctenophorus reticulatus	Western Netted Dragon	-	_	x									
Agamidae	Diporiphora paraconvergens	Grey-striped Western Desert Dragon	-	-	x									
Agamidae	Diporiphora pindan	Pindan Dragon	-	-	х									
Agamidae	Diporiphora valens	Southern Pilbara Tree Dragon	-	-	x									
Agamidae	Diporiphora vescus	Northern Pilbara Tree Dragon	-	-	x									
Agamidae	Gowidon longirostris	Long-nosed Dragon	-	-	х			х	х	х	х			
Agamidae	Lophognathus gilberti	Top End Ta-ta Dragon	-	-	х									
Agamidae	Pogona minor	Western Bearded Dragon	-	-	х				х					
Agamidae	Tympanocryptis cephalus	Coastal Pebble-mimic Dragons	-	-										
Carphodactylidae	Nephrurus levis	Smooth knob-tailed gecko	-	-	х						х			
Chelidae	Chelodina steindachneri	Flat-shelled Turtle	-	-	х				х					
Diplodactylidae	Diplodactylus bilybara	Western Fat-tailed Gecko	-	-	1				х		х			
Diplodactylidae	Diplodactylus conspicillatus	Variable Fat-tailed Gecko	-	-	х									
Diplodactylidae	Diplodactylus laevis	Desert Fat-tailed Gecko	-	-	1				х					
Diplodactylidae	Lucasium woodwardi	Pilbara Ground Gecko	-	-	х				х		х			
Diplodactylidae	Oedura fimbria	Western Marbled Velvet Gecko	-	-										
Diplodactylidae	Rhynchoedura ornata	Western Beaked Gecko	-	_	х				х		х			
Diplodactylidae	Strophurus ciliaris aberrans	-	-	-	х									
Diplodactylidae	Strophurus ciliaris ciliaris	_	-	_	x				х		х			
Diplodactylidae	Strophurus elderi	Jewelled Gecko	-	-	X									
Diplodactylidae	Strophurus jeanae	Southern Phasmid Gecko	-	-	X									
Elapidae	Acanthophis pyrrhus	Desert Death Adder	-	-	X				х	х				
Elapidae	Acanthophis wellsi	Pilbara Death Adder	-	-	X									
		North-western Shovel-nosed												
Elapidae Elapidae	Brachyurophis approximans Demansia reticulata	Snake Reticulated Whipsnake	-	-	x			x	x					
Elapidae	Demansia reliculata Demansia rufescens	Rufous Whipsnake	-	-		<u> </u>		^	x		v			
Elapidae	Furina ornata	Moon Snake	-	-	X						X			├──
	Pseudechis australis	Mulga Snake	-	-	X			~	X					├──
Elapidae		Wulga Shake Western Brown Snake	-	-	X			X	X		X			┣──
Elapidae Elapidae	Pseudonaja mengdeni Pseudonaja modesta	Ringed Brown Snake	-	-	x x			X	X X		X			├──
-			_						^					<u> </u>
Elapidae	Pseudonaja nuchalis	Gwardar; Northern Brown Snake	-	-	х									

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Elapidae	Simoselaps anomalus	Desert Banded Snake			x				v	<u> </u>				1	1
Elapidae	Suta punctata	Spotted Snake	-	-	x				X X			┼──			-
· · ·			-	-	X				×			<u> </u>			1
Gekkonidae	Gehyra incognita	Northern Pilbara Crytpic Gehyra	-	-					х						
Gekkonidae	Gehyra macra	Large Pilbara Rock Gehyra	-	-					х			<u> </u>			4
Gekkonidae	Gehyra media	Medium Pilbara Spotted Rock Gehyra	-	-					x	x					
Gekkonidae	Gehyra montium	-	-	-					х						I
Gekkonidae	Gehyra pilbara	Pilbara Dtella	-	-	х				х						
Gekkonidae	Gehyra punctata	Spotted Pilbara Rock Dtella	-	-	х										Ι
Gekkonidae	Gehyra purpurascens	-	-	-	х										I
Gekkonidae	Gehyra variegata	Variegated Gehyra	-	-	х				х		х				I
Gekkonidae	Hemidactylus frenatus	Asian House Gecko	-	-	х										I
Gekkonidae	Heteronotia binoei	Bynoe's Gecko	-	-	х				х		х				I
Gekkonidae	Heteronotia spelea	Pilbara Cave Gecko	-	-	х										Ī
Homalopsidae	Fordonia leucobalia	White-bellied Mangrove Snake	-	-	x										I
Pygopodidae	Delma borea	Rusty-topped Delma	-	-	х										1
Pygopodidae	Delma butleri	Spinifex Delma	-	-	х				х			<u> </u>		1	t
Pygopodidae	Delma desmosa	-	-	-	х				х			<u> </u>		1	t
Pygopodidae	Delma nasuta	Sharp-snouted Delma	-	-	x										t
Pygopodidae	Delma pax	Peaceful Delma	-	-	x				х		х				t
Pygopodidae	Delma tincta	Excitable Delma	-	-	x				х		х				t
Pygopodidae	Lialis burtonis	Burton's Snake-lizard	-	-	x			х	х						t
Pygopodidae	Pygopus nigriceps	Western Hooded Scaly-foot	-	-	х				х			<u> </u>			t
Pythonidae	Antaresia childreni	Children's Python	-	-	х				х			<u> </u>			t
Pythonidae	Antaresia perthensis	Pygmy Python	-	-	X				x			<u> </u>			t
Pythonidae	Aspidites melanocephalus	Black-headed Python	-	-	x				x	x	х	<u> </u>			t
Pythonidae	Aspidites ramsayi	Woma	P1 (southwest subpop.)	-	x				~	~	~				t
Pythonidae	Liasis olivaceus barroni	Pilbara Olive Python	VU	VU	x	х	x		x			<u> </u>			ł
Scincidae	Carlia munda	Shaded-litter Rainbow-skink	-	-	x	^	^		^			<u> </u>			ł
Scincidae	Carlia triacantha	Desert Rainbow Skink	-	-	x				x		x	<u> </u>			ł
Scincidae	Cryptoblepharus buchananii	Buchanan's Snake-eyed Skink		-	x						~				ł
Cainaidea	Cryptoblophory on plasic conholy o											──			╉
Scincidae	Cryptoblepharus plagiocephalus	Péron's Snake-eyed Skink	-	-	Х							──			╉
Scincidae Scincidae	Cryptoblepharus ustulatus Ctenotus angusticeps	Russet Snake-eyed Skink Northwestern Coastal Ctenotus	- P3	-	x		x								ł
Scincidae	Ctenotus duricola	Eastern Pilbara Lined Ctenotus			x				x	x	x				ł
	Ctenotus dux		_	-					^	^	^	<u> </u>			╁
Scincidae		-	-	-	X							┣──			$\frac{1}{2}$
Scincidae	Ctenotus grandis	Grand Ctenotus	-	-	Х			Х	Х	Х	Х	──			┦
Scincidae	Ctenotus hanloni	Nimble Ctenotus	-	-	Х				X		Х	──			╉
Scincidae	Ctenotus helenae	Clay-soil Ctenotus	-	-	Х				Х		Х	—			ł
Scincidae	Ctenotus pantherinus	Leopard Ctenotus	-	-	Х				Х	х	Х	──			ł
Scincidae	Ctenotus piankai	Coarse Sands Ctenotus	-	-	х				Х		Х	┣──			ł
Scincidae	Ctenotus rufescens	Rufous Finesnout Ctenotus	-	-	Х						Х	—		<u> </u>	ł
Scincidae	Ctenotus saxatilis	Rock Ctenotus	-	-	Х			Х	Х	Х	Х	—			4
Scincidae	Ctenotus schomburgkii	Barred Wedge-snouted Ctenotus	-	-					x						
Scincidae	Ctenotus serventyi	North-western Sandy-loam Ctenotus	-	-	x			x	x		х				
Scincidae	Ctenotus superciliaris	Sharp-browed Ctenotus	-	-					х						ſ
Scincidae	Cyclodomorphus melanops	Spinifex Slender Blue-tongue	-	-					х						J
Scincidae	Egernia cygnitos	Western Pilbara Spiny-tailed Skink	-	-	x										ĺ
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Scincidae	Egernia epsisolus	Eastern Pilbara Spiny-tailed	_	_	x		x	x				
	<b>•</b> .	Skink		_	^		^	^				
Scincidae	Eremiascincus isolepis	Northern Bar-lipped Skink	-	-	х							
Scincidae	Eremiascincus musivus	Mosaic Desert Skink	-	-	х							
Scincidae	Eremiascincus pallidus	Western Narrow-banded Skink	-	-	x							
Scincidae	Eremiascincus richardsonii	Broad-banded Sand Swimmer	-	-	x							
Scincidae	Lerista bipes	North-western Sandslider	-	-	х		х		х			х
Scincidae	Lerista clara	Sharp-blazed Three-toed Slider	-	-	x		x					
Scincidae	Lerista jacksoni	Jackson's Three-toed Slider	-	-	х							
Scincidae	Lerista muelleri	Wood Mulch-slider	-	-	х							х
Scincidae	Lerista timida	Timid Slider	-	-			х					
Scincidae	Menetia greyii	Common Dwarf Skink	-	-	х		х		х			х
Scincidae	Menetia surda	Western Dwarf Skink	-	-			х					
Scincidae	Morethia ruficauda exquisita	Lined Fire-tailed Skink	-	-	х							х
Scincidae	Morethia ruficauda ruficauda	Lined Fire-tailed Skink	-	-	х	)	x		х	х		
Scincidae	Notoscincus butleri	Lined Soil-crevice Skink	P4	-								х
Scincidae	Notoscincus ornatus ornatus	Ornate Soil-crevice Skink	-	-	х							х
Scincidae	Proablepharus reginae	Western Soil-crevice Skink	-	-	х							х
Scincidae	Tiliqua multifasciata	Central Blue-tongue	-	-	х	)	x	х				х
Typhlopidae	Anilios ammodytes	Pilbara Blind Snake	-	-	х		х					
Typhlopidae	Anilios grypus	Long-beaked Blind Snake	-	-	х		х		х			
Typhlopidae	Anilios pilbarensis	Pilbara Hook-snouted Blind Snake	-	-	x				x			
Varanidae	Varanus acanthurus	Spiny-tailed Goanna	-	-	х	)	x		х			х
Varanidae	Varanus brevicauda	Short-tailed Pygmy Goanna	-	-	х		x		х			х
Varanidae	Varanus bushi	Pilbara Mulga Goanna	-	-	х							
Varanidae	Varanus eremius	Pygmy Desert Goanna	-	-	х		х		х			х
Varanidae	Varanus giganteus	Perentie	-	-	х		x			х		
Varanidae	Varanus gouldii	Bungarra Or Sand Goanna	-	-	х	)	x		х			х
Varanidae	Varanus panoptes	Yellow-Spotted Monitor	-	-	х	)			х	İ		х
Varanidae	Varanus pilbarensis	Northern Pilbara Rock Goanna	-	-	x		x					x
Varanidae	Varanus tristis	Racehorse Goanna	-	-								x



# Appendix I Fauna Site Sheets

### **Atlas Ridley Magnetite Project Connection**

#### Flora and Fauna Survey Technical Report

**Horizon Power** 

SLR Project No.: 675.072189.00001

29 July 2024



				675 <u>.07</u>	'2189-BAT-1		
Project:	675.072189					- Anter	
Date	1-03-2024		Sample Type	ARU		Se Sim	A A A A A A A A A A A A A A A A A A A
Zone 50	Easting	690876		Northing	7740452	ALC: NOT	
·	Landform and Soil	·		Roc	<	alt is	and the first and the second
andform	Outcrop/breakaway		Rock type/s	Quartz			
Aspect	West		Surface stone cover	75 - 100%		and Allower	and the second second
Soil type	Sand				all Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small	The sense	
Soil colour	Red		present	Rocks (6 - 20 cm), Roc Boulders (>2 m)	ks (20 - 60 cm), Big Rocks (60 cm - 2 m),	1. 2. C.	and the second
	Condition			Habitat Fe	atures	A strange	
Quality	Very good		Water Source	Absent			A RESOLUTION
Fire History	Little or no fire evidence	e (>5 years)	Microhabitats	Exfoliating rock, Humr	nocks Rock crevices	10000	
Disturbance	None observed			-			
ntroduced fauna	None observed		Ground Cover	76-100%			
			Vegetation				
Upper stratum	Absent					<b>月</b> 月	XA23-24
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or	neathland (0.25-20%)	Acacia colei			
Ground stratum	Low (>0.5 m)	Sparse hummock grasslar	d (0.25-20%)	Triodia sp.		Fulcrum photo ID	3e20cbbb-6a6b-4f2b-8d6a-e7865c62b5f0

				675.07	72189-BAT-2		
Project:	675.072189						
Date	1-03-2024		Sample Type	ARU		ALP AL LA	
Zone 50	Easting	701623		Northing	7740708.5		
	Landform and Soil			Roc	k		A CHART COLON
Landform	Plain		Rock type/s	Granite			
Aspect	Negligible		Surface stone cover	75 - 100%		No. (No. / No. / C	
Soil type	Sand		Surface stone size classes	Pebbles (<0.6 cm), Sm	nall Stones (0.6 - 2 cm), Stones (2 - 6 cm), Rocks		
Soil colour	Orange		present	(20 - 60 cm), Big Rock (6 - 20 cm)	s (60 cm - 2 m), Boulders (>2 m), Small Rocks		A A A A A A
	Condition		Habitat Features				
Quality	High quality		Water Source	Absent		A State of the	A CONTRACT OF A
Fire History	Burnt (1-5 years)		Microhabitats	Exfoliating rock, Hum	mocks, Leaf litter, Rock crevices, Termite		
Disturbance	None observed		Wher of abitats	mounds, Woody debr	is	and the start of the start	
Introduced fauna	None observed		Ground Cover	26-50%			
			Vegetation				
Upper stratum	Absent						
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or	heathland (0.25-20%)	Acacia sp.			
Ground stratum	Low (>0.5 m)	Closed hummock grassla	nd (>80%)	Triodia epactia		Fulcrum photo ID 62	505859-d69d-424a-b438-073c23ab4962

				675.072	189-BAT-3		
Project:	675.072189					XAL XI	
Date	2-03-2024		Sample Type	ARU			
Zone 50	Easting	716968		Northing	7749334	X	
	Landform and Soil			Rock			
Landform	Outcrop/breakaway		Rock type/s	Granite, Ironstone, Quartz	Z	Start & STELLON	
Aspect	North		Surface stone cover	50 - 75%			ALANK, COMPANY
Soil type	Sand		Surface stone size classes		Stones (2 - 6 cm), Small Rocks (6 - 20 cm),		
Soil colour	Red		present	Rocks (20 - 60 cm), Big Ro			
	Condition			Habitat Featu	ures	XPAST	
Quality	Good		Water Source	Absent		12 Alton	
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Caves, Exfoliating rock, Hu	immocks. Rock crevices	K STA	A CALL ANY
Disturbance	Overgrazing			;g;		AURISIA	
Introduced fauna	Cattle		Ground Cover				
		1	Vegetation	T			A STATE OF THE STA
Upper stratum	Absent					1 SAS	
Mid stratum	Absent						
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	86a89a3c-39c7-47cb-9440-9df6551d1eea

				675.072189-BAT-4		
Project:	675.072189					
Date	2-03-2024		Sample Type	ARU		
Zone 50	Easting	719953		Northing 7754956.3	1 the	
	Landform and Soi	il		Rock		A A A A A A A A A A A A A A A A A A A
Landform	Outcrop/breakaway		Rock type/s	Granite		
Aspect	West		Surface stone cover	75 - 100%		
Soil type	Rock		Surface stone size classes Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2			
Soil colour	Orange		present	(20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m), Small Rocks (6 20 cm)		
	Condition Habitat Features					
Quality	High quality		Water Source	Absent		A A A A A A A A A A A A A A A A A A A
Fire History	Burnt (1-5 years)		Microhabitats	Caves, Exfoliating rock, Hummocks, Leaf litter, Peeling bark, Rock	N. C. Star	Contraction of the second seco
Disturbance	None observed		Wher of labitats	crevices, Woody debris	AND THE PARTY	
Introduced fauna	None observed		Ground Cover	11-25%		A CONTRACT OF
			Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)		Atalaya hemiglauca and Ficus brachypoda		
Mid stratum	Low (0.5-1 m)	Open shrubland and/or he	athland (20-50%)	Atalaya hemiglauca and Ficus brachypoda	Carl Hall	
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	1 (0.25-20%)	Triodia sp.	Fulcrum photo ID	7b5335c9-98ff-40b2-8b96-9c27e29db566

G	RF	3	
env	inor	11710	ental
	•		

				675.072	189-BAT-5		
Project:	675.072189						
Date	2-03-2024		Sample Type	ARU			an its
Zone 50	Easting	705	916	Northing	7742518		
	Landform and Soil	I		Rock			
Landform	Drainage line		Rock type/s	None			
Aspect	Negligible		Surface stone cover	r			1.044
Soil type	Sand		Surface stone size c	lasses		and the second sec	Internet in
Soil colour	Red		present				
	Condition			Habitat Featu	ires		
Quality	Good		Water Source	Absent			
Fire History	Little or no fire evidend	ce (>5 years)	Microhabitats	Hummocks, Leaf litter			
Disturbance	None observed						
Introduced fauna	None observed		Ground Cover			and the second sec	Arie W
			Vegetation	I			
Upper stratum	Low (<10 m)	Open woodland (0	).25-20%)	Eucalyptus melaleuca		Contraction of the second seco	
Mid stratum	Mid (1-2 m)	Open shrubland ar	nd/or heathland (20-50%)	Acacia sp.			100
Ground stratum	Low (>0.5 m)	Open hummock gr	rassland (20-50%)	Triodia epactia		Fulcrum photo ID         39731cc9-60a3-4bcd-936c-6e4f11664eb3	

				675.07	72189-BIL-6		
Project:	675.072189						
Date	3-03-2024		Sample Type	Bilby Search			
Zone 50	Easting	667478		Northing	7736632.3		the second se
	Landform and Soil			Rock		and the second	
Landform	Plain		Rock type/s	None		4. 我的人们是是	1 Alter Bern Mathinson
Aspect	Negligible		Surface stone cover				and the second second
Soil type	Sandy loam		Surface stone size classes				
Soil colour	Orange		present			the second second second	
	Condition		Habitat Features				and the second sec
Quality	Very good		Water Source	Absent			
Fire History	Little or no fire evidence (>	∘5 years)			ollows - trees, Hummocks, Leaf litter, Peeling	ALL AND ALL AN	State of the state
Disturbance	Vehicle tracks		initionabitats	bark, Woody debris		and the second	
Introduced fauna	None observed		Ground Cover	51-75%			AN ANTING THE AND
			Vegetation				
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)		Eucalyptus victrix		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or he	eathland (0.25-20%)	Eucalyptus victrix		and and	A ANY ANY ANY ANY ANY
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	3ac6a6bf-cb3f-4392-8979-f6ce998c7fe5

				6	675.072 <sup>-</sup>	189-BIL-7	
Project:	675.072189						
Date	4-03-2024		Sample Type	Bilby Search	l		
Zone 50	Easting	718934	-	Northing		7752705	
	Landform and Soil			•	Rock		
Landform	Plain		Rock type/s	None			
Aspect	Negligible		Surface stone cover				
Soil type	Sand		Surface stone size classes				
Soil colour	Red		present				and the second sec
	Condition			H	labitat Featur	es	and the second
Quality	Good		Water Source	Present			and the second
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Hummocks			
Disturbance	None observed		Wile on abitats	Thurninocks			
Introduced fauna	Cattle		Ground Cover	51-75%			
		-	Vegetation				
Upper stratum	Absent						all and a state of the second state of the
Mid stratum	Absent						and the second
Ground stratum	Low (>0.5 m)	Hummock grassland (50-8	0%)	Triodia secun	da Acacia stel	laticeps	Fulcrum photo ID 107d370e-5367-4d15-b434-84d3e61495b5,e61fe2c6-8666-467b-

				675.07	72189-BIL-8		
Project:	675.072189						
Date	4-03-2024		Sample Type	Bilby Search		Statement and the statement of the state	
Zone 50	Easting	716835		Northing	7749621.6		
	Landform and Soil			Rock			
Landform	Plain		Rock type/s	None			
Aspect	Negligible		Surface stone cover				
Soil type	Sand		Surface stone size classes				
Soil colour	Red		present				
	Condition		Habitat Features	_			
Quality	Disturbed		Water Source	Absent			
Fire History	Little or no fire evidence	(>5 years)	Microhabitats Hummocks, Leaf litter			and the second s	
Disturbance	Overgrazing,Vehicle track	s					
Introduced fauna	Cattle		Ground Cover	51-75%			
			Vegetation				
Upper stratum	Absent						
Mid stratum	Absent					La contra trace serie	
Ground stratum	Mid (0.5-1 m)	Open hummock grassland	(20-50%)	Triodia epactia and Aca	cia stellaticeps	Fulcrum photo ID 12fabc39-ac9a-4cd9-9c9c-242da5192f05,3955ed23-f85c-41	87-8

				675.0	72189-BIL-9	
Project:	675.072189					
Date	4-03-2024		Sample Type	Bilby Search		A HI WAS A HISTORY
Zone 50	Easting	716904		Northing	7749069	and the second se
	Landform and Soil			Rock	<	A THE PART OF THE STREET
Landform	Outcrop/breakaway		Rock type/s	Ironstone		A PARTY AND A PART
Aspect	North		Surface stone cover	50 - 75%		and the second second second second second
Soil type	Rock		Surface stone size classes	Pebbles (<0.6 cm) Sma	III Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small	
Soil colour	Black, Brown, Red		present		s (20 - 60 cm), Big Rocks (60 cm - 2 m)	and the second of the second of the second of the
	Condition				atures	
Quality	Good		Water Source	Absent		
Fire History	Little or no fire evidence (>	>5 years)	Microhabitats	Hummocks, Rock crevi	201	and the second
Disturbance	None observed		Inici on abitats	nummocks, Nock crew		A REAL PROPERTY AND A REAL
Introduced fauna	None observed		Ground Cover			
			Vegetation			
Upper stratum	Absent					AND
Mid stratum	Mid (1-2 m)	n) Sparse shrubland and/or heathland (0.25-20%)		Grevillea sp. or Hakea sp., and Acacia inaequilatera		
Ground stratum	Low (>0.5 m)	.ow (>0.5 m) Open hummock grassland (20-50%)		Triodia sp.		Fulcrum photo ID         63b1a5ff-a1c5-400b-ae5e-a1fe522158e7,a7ed4d92-313f-4e46-a1ae-

				675.072	2189-BIL-10		
Project:	675.072189						
Date	4-03-2024		Sample Type	Bilby Search			the second se
Zone 50	Easting	716811		Northing	7749157.6		the second se
	Landform and Soil			Rock		Concernant State	and the second se
Landform	Dune crest		Rock type/s	None			the second se
Aspect	North		Surface stone cover			-	
Soil type	Sand		Surface stone size classes			the state of the state of the	
Soil colour	Red		present			The second second second	A DESCRIPTION OF THE OWNER OF THE
	Condition		Habitat Features			and a fair the street	REAL AND A CONTRACT OF A CONTRACT
Quality	Good		Water Source	Absent			A DESCRIPTION OF THE OWNER OF THE OWNER OF
Fire History	Little or no fire evidence (>	5 years)	Microhabitats Hummocks, Leaf litter			about the second second	
Disturbance	Overgrazing					the second second	
Introduced fauna	Cattle		Ground Cover				
		1	Vegetation	1		State State	
Upper stratum	Absent						
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		Acacia colei			
Ground stratum	Low (>0.5 m)	Open hummock grassland	1 (20-50%)	Triodia epactia and Acac	ia stellaticeps	Fulcrum photo ID	e559afca-a53d-4f53-9bd2-3252e55333f8,6be2d548-40a0-4677-9f99-

				67	5.072189-BIL-11	1	
Project:	675.072189						
Date	4-03-2024		Sample Type	Bilby Search			
Zone 50	Easting	710384		Northing	7746378		
	Landform and Soil			-	Rock		
Landform	Plain		Rock type/s	None			the state of the s
Aspect	Negligible		Surface stone cover				And the second s
Soil type	Sand		Surface stone size classes				A STATE OF A MARKED AND A STATE OF A STATE
Soil colour	Red		present				
	Condition			Hal	bitat Features		
Quality	Disturbed		Water Source	Present			
Fire History	Recently burnt (<1 year)		Microhabitats	Hummocks			and the second of the second o
Disturbance	None observed		Which of labitats	Hummocks			
Introduced fauna	None observed		Ground Cover	<10%			The All Contraction of the second sec
			Vegetation				the second s
Upper stratum	Absent						and the second
Mid stratum	Absent						
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia			Fulcrum photo ID         2ea4fc1c-d3b8-4425-890f-c342fa984582,6cb20729-91ad-4f24-9955-

				675.07	2189-BIL-12		
Project:	675.072189						
Date	7-03-2024		Sample Type	Bilby Search			
Zone 50	Easting	699416		Northing	7741024.8		
	Landform and Soil			Rock			
andform	Plain		Rock type/s	None		A STREET	
Aspect	Negligible		Surface stone cover			C. C. C. C.	Contraction of Contra
Soil type	Sand		Surface stone size classes				and the second
Soil colour	Red		present				The second se
	Condition		Habitat Features			For State and A	THE REAL PROPERTY AND ADDRESS OF
Duality	Very good		Water Source	Absent		a Man Maria	the suit of the prover when
ire History	Little or no fire evidence	(>5 years)	Microhabitats Hummocks			and the second second second	and the second des where the
Disturbance	None observed						and eventing a strength of the second
ntroduced fauna	None observed		Ground Cover	51-75%		and the second	Constant of the second se
		-	Vegetation	1		A REAL PROPERTY AND	and the second s
Upper stratum	Absent						the day of the
Mid stratum	Low (0.5-1 m)	Isolated shrubs and/or hea	ath shrubs (<0.25%)	Acacia Inaequilatera			A DE MARK
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	b0f6bf39-7835-4d22-9e57-6830de2458c4

				675.07	2189-BIL-13	
Project:	675.072189					
Date	9-03-2024		Sample Type	Bilby Search		
Zone 50	Easting	679178		Northing	7739203	
	Landform and Soi	I		Rock		
Landform	Plain		Rock type/s	None		<ul> <li>Contracts (Contracts) in Contracts (Contracts)</li> </ul>
Aspect	Negligible		Surface stone cover			The second se
Soil type	Sand		Surface stone size classes			
Soil colour	Red					No. in construction of the second second
	Condition			Habitat Fe	atures	Contraction of the Article State of the Stat
Quality	Very good		Water Source	Absent		and the second se
Fire History	Little or no fire eviden	ce (>5 years)	Microhabitats Hummocks, Termite mounds		ounds	
Disturbance	None observed					
Introduced fauna	None observed		Ground Cover	51-75%		the second of the second s
			Vegetation			CREATE AND A CONTRACT OF A DESCRIPTION OF A
Upper stratum	Absent					and the second se
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or h	Sparse shrubland and/or heathland (0.25-20%)			
Ground stratum	Low (>0.5 m)	Open hummock grassland	20-50%)	Triodia epactia		Fulcrum photo ID 06ed5988-2a43-4f6c-8520-577b3d99220f,c5972ade-3dd7-4efd-9645

				675.072189-BIR-14	
Project:	675.072189				
Date	1-03-2024 Sample Type		Sample Type	ARU	The second R
Zone 50	Easting	701609		Northing 7740740.9	
	Landform and Soil			Rock	
Landform	Plain		Rock type/s	Granite	
Aspect	Negligible		Surface stone cover	75 - 100%	ANT THE DIT AND
Soil type	Sand		Surface stone size classes	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Rocks	
Soil colour	Orange		present	(20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m), Small Rocks (6 20 cm)	
	Condition		Habitat Features		
Quality	High quality		Water Source	Absent	
Fire History	Burnt (1-5 years)		Microhabitats	Exfoliating rock, Hummocks, Leaf litter, Rock crevices, Termite	the second
Disturbance	None observed		inition of habitrato	mounds, Woody debris	
Introduced fauna	None observed		Ground Cover	26-50%	
			Vegetation		
Upper stratum	Absent				
Mid stratum	Mid (1-2 m)	Aid (1-2 m) Sparse shrubland and/or heathland (0.25-20%)		Acacia sp.	
Ground stratum	Low (>0.5 m)	Closed hummock grassland	1 (>80%)	Triodia epactia	Fulcrum photo ID         918fae2c-2e93-42c0-89df-a62a9f546241

				675.072	189-BIR-15	
Project:	675.072189					
Date	2-03-2024		Sample Type	ARU		
Zone 50	Easting	719490	*	Northing	7755363	
	Landform and Soil			Rock		
Landform	Drainage line		Rock type/s	None		
Aspect	Negligible		Surface stone cover			
Soil type	Sand		Surface stone size classes			
Soil colour	Red		present			
	Condition			Habitat Feat	tures	
Quality	Disturbed		Water Source	Absent		
Fire History	Little or no fire evidence (	(>5 years)	Microhabitats	Hummocks, Leaf litter, Peeling bark, Woody debris		And the second second second
Disturbance	Overgrazing,Weeds				с ў	
Introduced fauna	Cattle		Ground Cover			
	_	1	Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%	)	Corymbia flavescens		AND
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or h	shrubland and/or heathland (0.25-20%)			
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID         8dc6f329-c8be-45ac-bace-216d4a90a599

				675.072	2189-BIR-16			
Project:	675.072189						VAR AND	MA MARKEN AND AND
Date	2-03-2024		Sample Type	ARU				KX NX XX
Zone 50	Easting	705845		Northing	7742778.4			
	Landform and Soil			Rock			A KIT AN	
Landform	Drainage line		Rock type/s	None				
Aspect	North		Surface stone cover				NX HATE // /	
Soil type	Sand		Surface stone size classes			A AN		
Soil colour	White, Yellow		present					
	Condition		Habitat Features				When the loss of	
Quality	Disturbed		Water Source					N. M. Contraction
Fire History	Unknown		Microhabitats	Hollows - logs Hollows	- trees, Hummocks, Leaf litter, Woody debris	NOT N	CARDEN PORT	
Disturbance	Vehicle tracks		inition of identicate	nonows logs, nonows	trees, nummooks, Loui inter, Woody dobits			
Introduced fauna	None observed		Ground Cover	26-50%				CONCERCIAL.
			Vegetation				A CONTRACTOR	
Upper stratum	Low (<10 m)	Woodland (20-50%)	Voodland (20-50%)		Acacia cyperophylla, Paper bark		and and the	
Mid stratum	Mid (1-2 m)	Open shrubland and/or he	Open shrubland and/or heathland (20-50%)		Acacia sp.			
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	c196bc9b-894b-419b-ae7d-936	e67e56c67d

Ξ	BE	60
envi	ronn	ental

				675.072	2189-BIR-17		
Project:	675.072189					West water and the second	
Date	3-03-2024	2024 S		ARU		A STATE OF THE REAL PROPERTY OF	a start and a start a start and a start a start a start a start
Zone 50	Easting	667469	-	Northing	7736627		the second of the second
	Landform and Soil			Rock		Contraction of the	
Landform	Plain		Rock type/s	None		a seal in the seal	
Aspect	Negligible		Surface stone cover				
Soil type	Sandy loam		Surface stone size classes				
Soil colour	Orange		present				
	Condition			Habitat Feat	tures	and the second s	
Quality	Very good		Water Source	Absent			
Fire History	Little or no fire evidence	(>5 years)	Microhabitats	Caves, Hollows - logs, Hollows - trees, Hummocks, Leaf litter, Peeling		alter and a second	
Disturbance	Vehicle tracks			bark, Woody debris			
Introduced fauna	None observed		Ground Cover	51-75%			A A A A A A A A A A A A A A A A A A A
		-	Vegetation	1			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%	Open woodland (0.25-20%)		Eucalyptus victrix		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or h	Sparse shrubland and/or heathland (0.25-20%)		Eucalyptus victrix		
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	8a790cc8-8976-4ae5-86e2-5d4a357a349a,e210a7b2-e529-4ea1-ae00-

				675.0	)72189-BIR-18	
Project:	675.072189					
Date	3-03-2024		Sample Type ARU			
Zone 50	Easting	660818		Northing	7739279.4	
	Landform and Soil			Ro	ock	
Landform	Plain		Rock type/s None			
Aspect	Negligible			tone cover		
Soil type	Sand		Surface stone size classes			
Soil colour	Orange		1	present		
	Condition		Habitat Features			
Quality	Good		Water Source	Absent		
Fire History		Little or no fire evidence (>5 years)		Hummocks, Leaf litter, Woody debris, Logs > 10 cm		
Disturbance	Litter, Vehicle tracks					
Introduced fauna	None observed		Ground Cover 51-75%			
			Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20	Open woodland (0.25-20%)		Eucalyptus sp.	
Mid stratum	Low (0.5-1 m)	Open shrubland and/or h	eathland (20-50%)	Acacia stellaticeps		
Ground stratum	Low (>0.5 m)	Open hummock grassland	1 (20-50%)	Triodia epactia		



					675.072	2189-CAM-19				
Project:	675.072189									
Date	1-03-2024		Sample Type	Camera Trap			Carlo Carlos Ta	CONSIDER 1		
Zone 50	Easting 701625		701625		Northing 7740707		The second second			and a start of the second
	Landform and Soil				Roc	<		ANTON	1 1 A	
Landform	Plain			Rock type/s	Granite				1 Main	
Aspect	Negligible		Surface stone cover	75 - 100%						
Soil type	Sand Orange		Surface stone size classes	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Rocks					All and Barrier	
Soil colour			present	(20 - 60 cm), Big Rocks 20 cm)	(60 cm - 2 m), Boulders (>2 m), Small Rocks (6					
	Condition			Habitat Features			and the second second	NID STATE		
Quality	High quality		Water Source	Absent			A State N	E States		
Fire History	Burnt (1-5 years)	Burnt (1-5 years)		Microhabitats	Exfoliating rock, Hummocks, Leaf litter, Rock crevices, Termite				24	- THE MARK
Disturbance	None observed	None observed		Wild Ondortato	mounds, Woody debri	S				
Introduced fauna	None observed		Ground Cover	26-50%		1 - 7		6		
				Vegetation	-			Bint 1 4		Pro Parks
Upper stratum	Absent									
Mid stratum	Mid (1-2 m)			thland (0.25-20%) Acacia sp.						
Ground stratum	Low (>0.5 m) Closed hummock grassland			l (>80%)	Triodia epactia		Fulcrum photo ID	cc87c3e1-4dc6-48a	17-af7f-47c76f0b4aa	a2

				675.07	72189-CAM-20					
Project:						117				
Date	1-03-2024		Sample Type	Camera Trap			a water	Car KA Deale		ALL ALL
Zone 50	Easting	691054		Northing	7741368.9			Steades ///	Ator.	
	Landform and Soil	l		R	ock		LYN ALS T			A A A A
Landform	Outcrop/breakaway		Rock type/s	Quartz			ALL FROM	57/10 CO	18 A. P.	MAR ALAD
Aspect	Negligible		Surface stone cover	75 - 100%					ALL ALL	CONTRACTOR AND
Soil type	Sand		Surface stone size classes		ebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small					R. Contraction
Soil colour	Orange		present	Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)					<b>秋</b> 港下	
	Condition		Habitat Features					6. 187		
Quality	High quality		Water Source	Absent				AND AN AN		
Fire History	Burnt (1-5 years)		Microhabitats	Exfoliating rock, Hummocks, Leaf litter, Peeling bark, Rock crevices, Woody debris				A Greet CON		
Disturbance	None observed		Iviici oriabitats					SEL CARA		A BUSE
Introduced fauna	None observed		Ground Cover	26-50%			VAL JAN			A State of the second s
			Vegetation				VA . No.		NT-Y	Stor Alle
Upper stratum	Absent							Carl L	<b>ENA</b>	
Mid stratum	Low (0.5-1 m)	Open shrubland and/or h	eathland (20-50%)	Acacia orthocarpa						
Ground stratum	Low (>0.5 m)	Sparse hummock grasslar	nd (0.25-20%)	0.25-20%) Triodia epactia		Ful	crum photo ID	14c27e77-be77-4ef	4-8hc9-2727770	ca30h

				675.072 <sup>°</sup>	189-CAM-21		
Project:	675.072189						
Date	1-03-2024		Sample Type	Camera Trap		Total Contractory of	the second se
Zone 50	Easting	690886	690886		7740445	The Real Property of the	AND AND A DOWN OF THE OWNER
	Landform and Soil			Rock		The water of	The second se
Landform	Outcrop/breakaway		Rock type/s	Quartz		The Art and	the water and a manufacture of the second
Aspect	East		Surface stone cover	75 - 100%		「ある」はないます	
Soil type	Sand		Surface stone size classes		Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small	in on	and the state of the
Soil colour			present	Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)		and the second	A PARA PARA
	Condition			Habitat Feat	tures	A DATE	
Quality	Very good		Water Source	Absent			A share a final share a share
Fire History	Little or no fire evidence (>	>5 years)	Microhabitats	Exfoliating rock, Hummocks, Rock crevices			a state of the state of the
Disturbance	None observed		inition of habitrato				
Introduced fauna	None observed		Ground Cover	76-100%		2 CROCK	
			Vegetation	-		Carlo Carlo	AND
Upper stratum	Absent						E V R R
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or h	eathland (0.25-20%)	Acacia orthocarpa			
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	I (0.25-20%)	Triodia epactia		Fulcrum photo ID	5094ed45-c28f-4cae-b618-0ad0a297cc6c

				675.072	2189-CAM-22		
Project:	675.072189						
Date	1-03-2024		Sample Type	Camera Trap			
Zone 50	Easting	701732		Northing	7741492.9	White Sold	
	Landform and Soil			Rock			Denter a second second
andform	Plain		Rock type/s	Granite		VIAC	
Aspect	Negligible		Surface stone cover	75 - 100%		The Carl Park	A ANA CORE
Soil type	Rock		Surface stone size classes	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small		No see Story	
oil colour Orange		present	Rocks (6 - 20 cm), Rock Boulders (>2 m)	s (20 - 60 cm), Big Rocks (60 cm - 2 m),			
	Condition		Habitat Features				
Quality	High quality		Water Source	Absent			
Fire History	Burnt (1-5 years)		Microhabitats Exfoliating rock, Hummocks, Leaf litter, Peeling bark, Rock crevices, Woody debris				
Disturbance	None observed						
Introduced fauna	None observed		Ground Cover	26-50%			
			Vegetation				
Upper stratum	Absent						
Mid stratum	tum Mid (1-2 m) Open shrubland and/or heathland (20-50%)		thland (20-50%)	Acacia sp.		EN PLANE	
Ground stratum	Low (>0.5 m)	Open hummock grassland (2	20-50%)	Triodia epactia		Fulcrum photo ID	914e5902-fb78-4ed0-81cc-ac92a6fa6136

				675.072189-CAM-23	
Project:	675.072189				
Date	1-03-2024 Sample Type			Camera Trap	
Zone 50	Easting	701282	-	Northing 7742299	
	Landform and Soil	•		Rock	
Landform	Outcrop/breakaway		Rock type/s	Quartz	
Aspect	North		Surface stone cover	75 - 100%	And the second s
Soil type	Sand		Surface stone size classes	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), S	Small
Soil colour	Red		present	Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
	Condition			Habitat Features	the stand of the second se
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (:	>5 years)	Microhabitats	Exfoliating rock, Hummocks, Rock crevices	Star Start Can and Start Start
Disturbance	None observed				
Introduced fauna	None observed			51-75%	
	-		Vegetation	_	
Upper stratum	Absent				
Mid stratum	m Low (0.5-1 m) Isolated shrubs and/or heath shrubs (<0.25%)		Acacia colei, and Acacia ancistrocarpa		
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia	Fulcrum photo ID         ac269577-2f11-472c-9570-873aea8b91ea,986ce288-c86b-4447-a998-

				675.072	189-CAM-24		
Project:	675.072189						
Date	1-03-2024		Sample Type	Camera Trap			
Zone 50	Easting	690962		Northing	7740912.2		
	Landform and Soil			Rock		And the second second	
andform	Outcrop/breakaway		Rock type/s	Quartz			
Aspect	Negligible		Surface stone cover	75 - 100%		and the second s	
Soil type	Sand		present	Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m),			and the second second
Soil colour	colour Orange		•	Boulders (>2 m)			
	Condition		Habitat Features				A CONTRACTOR AND A CONTRACT
Quality	High quality		Water Source	Absent			and the second second second second
Fire History	Burnt (1-5 years)		Microhabitats Exfoliating rock, Hummocks, Leaf litter, Peeling bark, Rock crevices,		Service and the service of the servi		
Disturbance	None observed		Wher of abitats	Woody debris			A CARLEND AND A CARLEND
Introduced fauna	None observed		Ground Cover	26-50%			
			Vegetation				
Jpper stratum	Absent						
Mid stratum	Low (0.5-1 m)	Open shrubland and/or hea	athland (20-50%)	Acacia orthocarpa			
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	(0.25-20%)	Triodia epactia		Fulcrum photo ID	38f0ec07-46bc-44c3-8048-cfd5aaa24ef9

					675.0721	89-CAM-25			
Project:	675.0721	89							
Date	1-03-202	1-03-2024 Sample Type			Camera Trap		AL CONTRACT	Start A	
Zone 5	50	Easting	690965		Northing	7741174	A STREET		A SIL STORE MARK
	Landi	orm and Soil			Rock	-	ALL BOTHER		Carlos of the Start
Landform	Outcrop/I	oreakaway		Rock type/s	Quartz				The states
Aspect	Negligible			Surface stone cover	75 - 100%				
Soil type	Sand			Surface stone size classes	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m),			- AND	
Soil colour	Orange	present		Boulders (>2 m)		A A A	Walter A MA	A AL	
	C	ondition			Habitat Featu	ires			And the second
Quality	High qual	ty		Water Source	Absent		SALE DALLAYS		
Fire History	Burnt (1-5	years)		Microhabitats	Exfoliating rock, Hummocks, Leaf litter, Peeling bark, Rock crevices, Woody debris			A BAR I	A DECEMBER OF
Disturbance	None obs	erved		When on abitats				N.C.R	
Introduced fau	una None obs	erved		Ground Cover	26-50%				U and U and U
				Vegetation			495	ALC: NO DECIMAL	
Upper stratum	n Absent								
Mid stratum	Low (0.5-	v (0.5-1 m) Open shrubland and/or heathland (20-50%)		Acacia orthocarpa					
Ground stratur	m Low (>0.5	m)	Sparse hummock grassland	(0.25-20%)	Triodia epactia		Fulcrum photo ID	cc62e386-69ff-4ac8-bdcb-	d03ae4b940a7

				675.0721	89-CAM-26		
Project:	675.072189						
Date	1-03-2024		Sample Type	Camera Trap		TO THE	Second Taria and Anna and
Zone 50	Eastin	ig 690899		Northing	7740597.4	A MAR APPER	States and and the states
	Landform and So	oil		Rock			Passa a la sal F
Landform	Outcrop/breakaway		Rock type/s	Quartz		Martin -	
Aspect	West		Surface stone cover	75 - 100%			TO PROVIDE THE ST
Soil type Sand		Surface stone size classes		Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small 20 - 60 cm), Big Rocks (60 cm - 2 m),	and the second	aller the second	
Soil colour Red			Boulders (>2 m)				
	Condition		Habitat Features			States and	
Quality	Very good		Water Source	Absent		and the second	
Fire History	Little or no fire evide	nce (>5 years)	Microbabitats	Aicrohabitats Exfoliating rock, Hummocks, Rock crevices		The state	
Disturbance	None observed		Will bliabitats			NOCK CLEVICES	
Introduced fauna	None observed		Ground Cover	76-100%		Cost a state	
			Vegetation				
Upper stratum	Absent						AND AND AND
Mid stratum Low (0.5-1 m) Sparse shrubland and/or he		eathland (0.25-20%)	Acacia orthocarpa				
Ground stratum	Low (>0.5 m)	Sparse hummock grasslan	d (0.25-20%)	Triodia epactia		Fulcrum photo ID	21c18e9a-8324-4f4f-b97f-febc0b456b88



environment	1	R	-	1	
	envi	ror	1/1	e	nte

				675.072189-CAM-27	
Project:	675.072189				
Date	1-03-2024 Sample Type			Camera Trap	
Zone 50	50 Easting 701393		·	Northing 7742438	The distance of the local sector of the sect
	Landform and Soil	·		Rock	
Landform	Outcrop/breakaway		Rock type/s	Quartz	The second s
Aspect	Negligible		Surface stone cover	75 - 100%	
Soil type Soil colour			Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m Boulders (>2 m)	
	Condition			Habitat Features	
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>	>5 years)	Microhabitats	Exfoliating rock, Hummocks, Rock crevices	
Disturbance	None observed				
Introduced fauna	None observed		Ground Cover	51-75%	
			Vegetation		
Upper stratum	Absent				
Mid stratum	Absent				
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia	Fulcrum photo ID 137a23d4-2c27-43c5-a596-c06dc20abb81

				6 <u>75</u> .	072189-CAM-28		
Project:	675.072189						
Date	1-03-2024		Sample Type	Camera Trap			
Zone 50	Easting	6	90919	Northing	7740721.9		
	Landform and Soil	I			Rock		
Landform	Outcrop/breakaway		Rock type/s	Quartz	Quartz		
Aspect	East		Surface stone cover	75 - 100%			
Soil type	Sand		Surface stone size class		Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Smal Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m),		
Soil colour	Red		present	Boulders (>2 m)			
	Condition		Habitat Features				
Quality	Very good		Water Source	Absent	Absent		
Fire History	Little or no fire evidence	ce (>5 years)	Microhabitats	Vierobabitate Exfediating rock Hummocks Bock crovicos			
Disturbance	None observed		Wile of abitats	Extollating fock, I	Exfoliating rock, Hummocks, Rock crevices		
Introduced fauna	None observed		Ground Cover	76-100%			
			Vegetation				
Upper stratum	Absent						
Mid stratum	Low (0.5-1 m)	Sparse shrublar	nd and/or heathland (0.25-20%)	heathland (0.25-20%) Acacia orthocarpa			
Ground stratum	Low (>0.5 m)	Snarse hummo	rk arassland (A 25-20%)	Triodia enactia			



Ground Stratum	LOW (20.0 m)		Fulcrum photo ID	687c





## 675.072189-CAM-29

Project:	675.072189							
Date	2-03-2024			Sample Type	Camera Trap			
Zone 50	Eastir	ng	717460	•	Northing	7749535	A Party Method	AND TO REAL REAL
	Landform and S	Soil			Rock	-		
Landform	Outcrop/breakaway		Rock type/s	Granite		A STAN		
Aspect	North			Surface stone cover	75 - 100%		Contraction of the second	A CONTRACTOR OF
Soil type	Sand		Surface stone size classes	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m), Pebbles		ST SECOND	Station Proves	
Soil colour	Orange			present	(<0.6 cm)		Shart and	
Condition				Habitat Featur	es			
Quality	Very good		Water Source					
Fire History	Little or no fire evide	ence (>5 years)		Microhabitats Caves, Exfoliating rock, Hummocks, Leaf litter, Rock crevices, Woody		States and the states		
Disturbance	Vehicle tracks			Inicionabitats	debris, Peeling bark		and the second second	
Introduced fauna	Cattle			Ground Cover	11-25%		And the second second	
				Vegetation			STREET, STREET	and the second
Upper stratum	Absent						See MA	
Mid stratum	Mid (1-2 m) Isolated shrubs and/or heath shrubs (<0.25%)		Atalaya hemiglauca and Ficus brachypoda		STATE AND STATE			
Ground stratum	Ground stratum Low (>0.5 m) Sparse hummock grassland (0.2			I (0.25-20%)	25-20%) Triodia epactia			fcd9014c-e753-4a9c-9f78-cc1eacee77a7



				675.072	189-CAM-30		
Project:	675.072189						
Date	ate 2-03-2024		Sample Type Camera Trap			T. P. A. S. A.	A VOID A
Zone 50	one 50 Easting 717338		-	Northing	7749473.6		
	Landform and Soil			Rock		A REAL PROPERTY	
Landform	Outcrop/breakaway		Rock type/s	Granite		「「「「「「「「「」」」	A TOTAL SALES
Aspect	North		Surface stone cover	75 - 100%			
Soil type Sand		Surface stone size classes	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m), Pebbles				
Soil colour Orange		present	(<0.6 cm)		Contraction of the second		
	Condition		Habitat Features			- ALANA	
Quality	Very good		Water Source			计学 化学学	A CALL AND A CALL
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Caves, Exfoliating rock, H	Caves, Exfoliating rock, Hummocks, Leaf litter, Rock crevices, Woody		Contract Parts
Disturbance	Vehicle tracks		Wher of abitats	debris, Peeling bark		- 14 - Parts	
Introduced fauna	a Cattle		Ground Cover	11-25%		the state of a	
			Vegetation				
Upper stratum	Absent						
Mid stratum	Mid stratum Mid (1-2 m) Isolated shrubs and/or heath		th shrubs (<0.25%)	shrubs (<0.25%) Acacia sp.			
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	(0.25-20%)	Triodia epactia		Fulcrum photo ID	d0f9985a-ea40-45dd-a604-b9fa9ecaec25



					675.072	2189-CAM-31		
Project:	675.072189						CANALLY 2	A A A A A A A A A A A A A A A A A A A
Date	2-03-2024			Sample Type	Camera Trap			
Zone 50	Eastin	ıg	688604		Northing	7740105	173	
	Landform and S	oil			Roc	<	and the state	
Landform	Drainage line			Rock type/s	None			
Aspect	North			Surface stone cover				
Soil type	Sand			Surface stone size classes				
Soil colour	Orange			present			Constant of the second	
	Condition				Habitat Fe	atures	- The server	
Quality	Very good			Water Source	Absent			
Fire History	Little or no fire evide	nce (>5 years)		Microhabitats		s - trees, Hummocks, Leaf litter, Peeling bark,	THE HE	
Disturbance	None observed			Inici onabitata	Woody debris		- in the second	
Introduced fauna	Cattle				51-75%		the Frid	- AND
				Vegetation			and an and a start of the	and the set of the set
Upper stratum	Low (<10 m)	Open wood	land (0.25-20%)	)	Melaleuca argentea			
Mid stratum	Mid (1-2 m)	Open shrub	land and/or he	athland (20-50%)	Acacia colei			CALL IN THE STATE
Ground stratum	Low (>0.5 m)	Sparse hum	mock grasslanc	1 (0.25-20%)	Triodia epactia		Fulcrum photo ID	2b6ed36d-8b93-49c0-96a3-53c4a052bd72

				675.0721	189-CAM-32
Project:	675.072189				
Date	2-03-2024		Sample Type	Camera Trap	
Zone 50	Easting	717120		Northing	7749284.4
	Landform and Soil			Rock	
Landform	Outcrop/breakaway		Rock type/s	Granite, Ironstone, Quar	tz
Aspect	North		Surface stone cover	50 - 75%	
Soil type	Sand				, Stones (2 - 6 cm), Small Rocks (6 - 20 cm),
Soil colour	Red			Rocks (20 - 60 cm), Big Ro	ocks (60 cm - 2 m)
	Condition		Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>	>5 years)	Microhabitats	Caves, Exfoliating rock, H	lummocks Rock crevices
Disturbance	Overgrazing			our cor Enronating Foot, F	
Introduced fauna	Cattle		Ground Cover	L	
			Vegetation		
Upper stratum	Absent				
Mid stratum	Absent				
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia	

				675.0721	89-CAM-33		
Project:	675.072189						
Date	2-03-2024		Sample Type	Camera Trap			the second se
Zone 50	Easting	700279	-	Northing	7741209		CONTRACTOR DESIGNATION OF THE OWNER.
	Landform and Soil			Rock		And the State of the State of the	Design of the second se
Landform	Outcrop/breakaway		Rock type/s	Quartz		and the second line of	
Aspect	South		Surface stone cover	75 - 100%		and the second second	
Soil type	Sand		Surface stone size classes		Stones (2 - 6 cm), Small Rocks (6 - 20 cm),	There are the	AND Little gurant
Soil colour	Red		present	Rocks (20 - 60 cm), Big Ro		1 de services	Les some set of the
	Condition			Habitat Featu	ires	y +	
Quality	Very good		Water Source	Absent		and the second second	
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	icrohabitats Exfoliating rock, Hummocks, Rock crevices			
Disturbance	None observed						
Introduced fauna	None observed			26-50%		at the stand	
	1	1	Vegetation	1		A de mar.	BAT ALL AND
Upper stratum	Absent					TR.	the set of the second
Mid stratum	Absent						
Ground stratum		Sparse hummock grassland	(0.25-20%)	Triodia epactia		Fulcrum photo ID	035e4c7c-491f-40f4-8188-f9d8d8800288

					675.07	72189-CAM-34				
Project:		675.072189						and the second second		
Date	ate 2-03-2024			Sample Type	Camera Trap			Party State		
Zone 5	50	Easting	719953		Northing	7754955.9		All and the		Alle mane
		Landform and Soil			R	ock	Station -			Will Colours Street
Landform		Outcrop/breakaway		Rock type/s	Granite		Carel	STORES		en under
Aspect		West		Surface stone cover	75 - 100%			Second Magnes	Mar and a	THE WELL
Soil type		Rock		Surface stone size classes present		mall Stones (0.6 - 2 cm), Stones (2 - 6 cm), Rocks ks (60 cm - 2 m), Boulders (>2 m), Small Rocks (6		AL		
Soil colour		Orange		present	20 cm)		PAR LESSING	Section 1		
		Condition		Habitat Features			AN TOTAL			
Quality		High quality		Water Source	Absent					
Fire History		Burnt (1-5 years)		Microhabitats		ck, Hummocks, Leaf litter, Peeling bark, Rock				
Disturbance		None observed		Which of labitats	crevices, Woody deb	pris			AND A	
Introduced faur	ina	None observed		Ground Cover	11-25%					
				Vegetation				A A A		
Upper stratum	I	Low (<10 m)	Isolated trees (<0.25%)		Atalaya hemiglauca	and Ficus brachypoda				
Mid stratum		Low (0.5-1 m)	Open shrubland and/or he	athland (20-50%)	Atalaya hemiglauca	and Ficus brachypoda				1000-1072
Ground stratum	m	Low (>0.5 m)	Sparse hummock grassland	1 (0.25-20%)	Triodia sp.		Fulcrum photo ID	9e49a70e-39b9-465b-8	b41-210a96dbe7b8,f	f149b68-2dae-46d8-

				675.072189-CAM-35	
Project:	675.072189				
Date	2-03-2024		Sample Type	Camera Trap	
Zone 50	Easting	717464	-	Northing 7749547	
	Landform and Soil			Rock	
Landform	Outcrop/breakaway		Rock type/s	Granite	ATTACK THE
Aspect	North		Surface stone cover	75 - 100%	STATE STATE
Soil type	Sand		Surface stone size classes	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm),	
Soil colour	Orange		present	Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m), Pebbles (<0.6 cm)	
	Condition			Habitat Features	
Quality	Very good		Water Source		
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Caves, Exfoliating rock, Hummocks, Leaf litter, Rock crevices, Woody	
Disturbance	Vehicle tracks		debris, Peeling bark		
Introduced fauna	Cattle		Ground Cover	11-25%	
			Vegetation		
Upper stratum	Absent				the set of the set of the
Mid stratum	Mid (1-2 m)	Isolated shrubs and/or hea	th shrubs (<0.25%)	Atalaya hemiglauca and Ficus brachypoda	
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	I (0.25-20%)	Triodia epactia	Fulcrum photo ID         733fb305-7279-411f-91a1-1b42b3359bd6,e4896b6a-3a8b-4bac-b0b1

				675.07	2189-CAM-36	
Project:	675.072189					
Date	2-03-2024		Sample Type	Camera Trap		A CONTRACT OF
Zone 50	Easting	719462		Northing	7754811.4	
	Landform and So	il		Ro	ck	
andform	Drainage line		Rock type/s	None		
Aspect	Negligible		Surface stone cover			
Soil type	Sand		Surface stone size classes			
Soil colour	Red		present			
	Condition		Habitat Features			
Quality	Disturbed		Water Source	Absent		
Fire History	Little or no fire eviden	nce (>5 years)	Microhabitats	Hummocks, Leaf litte	r, Logs > 10 cm, Peeling bark	and the second se
Disturbance	Overgrazing,Weeds				,,	and the second s
ntroduced fauna	Cattle		Ground Cover	51-75%		
			Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-	20%)	Eucalyptus victrix		and the second sec
Mid stratum	Mid (1-2 m)	Sparse shrubland and/	or heathland (0.25-20%)	Acacia colei		
Ground stratum	Low (>0.5 m)	Open hummock grassl	and (20-50%)	Triodia epactia and E	ulalia aurea	Fulcrum photo ID 4e0eaea2-878e-4141-b397-3151d77f0f17



## 675.072189-CAM-37

Project:		675.072189	/2189						
Date		2-03-2024		Sample Type	Camera Trap				
Zone	50	East	ing	719490	•	Northing	7755363		
	•	Landform and	Soil			Rock	•		IN STATES A MARY
Landform		Drainage line			Rock type/s	None			A LAND A LAND
Aspect		Negligible			Surface stone cover				A LANDER CARACTER
Soil type		Sand			Surface stone size classes			Con A the second	
Soil colour		Red			present				
		Conditior	1			Habitat Featur	es	The state of the	
Quality		Disturbed			Water Source	Absent		The state of the s	A CALLER MAIL AND
Fire History		Little or no fire evi	dence (>5 years)		Microhabitats	Hummocks, Leaf litter, Peel	ing bark Woody debris		
Disturbance		Overgrazing,Weed	S		When of labitats	Hummocks, Lear litter, Teel	ing bark, woody debits		A State of the sta
Introduced fa	auna	Cattle			Ground Cover				
		_			Vegetation			in the set	A REAL PROPERTY OF
Upper stratu	ım	Low (<10 m)	Open woodl	and (0.25-20%)		Corymbia flavescens			1. 版 2 卷
Mid stratum	1	Mid (1-2 m)	Sparse shrub	bland and/or he	eathland (0.25-20%)	Acacia colei		No and	VI SALS
Ground strat	tum	Low (>0.5 m)	Open humm	ock grassland (	20-50%)	Triodia epactia		Fulcrum photo ID	f177ae7e-15f1-4550-af34-ef6b7519d370

				675.0721	89-CAM-38		
Project:	675.072189					The same	
Date	2-03-2024		Sample Type	Camera Trap			
Zone 50	Easting	717065		Northing	7749310.3	and the second s	
	Landform and Soil			Rock		and the second second	
Landform	Outcrop/breakaway		Rock type/s	Granite, Ironstone, Quart	Z		A DE ALL AND A DE AL
Aspect	North		Surface stone cover	50 - 75%		14 14 MAR	
Soil type	Sand				Stones (2 - 6 cm), Small Rocks (6 - 20 cm),	1 - A CONTRACT	
Soil colour	Red			Rocks (20 - 60 cm), Big Ro	ocks (60 cm - 2 m)	and the second s	
	Condition		Habitat Features			JON - THE PLAN	
Quality	Good		Water Source	Absent		a contraction of the second	A State of the second sec
Fire History	Little or no fire evidence (>	5 years)	Microhabitats Caves, Exfoliating rock, Hummocks, Rock crevices		A State Line Line	A CONTRACTOR OF THE OWNER	
Disturbance	Overgrazing		inition of habitatio	ouves, Extending rock, ric		The second second second	
Introduced fauna	Cattle		Ground Cover				
			Vegetation			A A A A A A A A A A A A A A A A A A A	and the second second
Upper stratum	Absent						Ban The State
Mid stratum	Absent					A State of the second s	
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	88ac542d-9fc3-4340-9fb7-7e5f6f50eef1

				environment
			675.072189-CAM-39	
675.072189				
2-03-2024		Sample Type	Camera Trap	
Easting	705838		Northing 7742778	XVA VALE AVE
Landform and Soil	•		Rock	
Drainage line		Rock type/s	None	
North		Surface stone cover		
Sand		Surface stone size classes		
White, Yellow		present		
Condition			Habitat Features	
Disturbed		Water Source		
Unknown		Microhabitats	Hollows - logs, Hollows - trees, Hummocks, Leaf litter, Woody debris	
Vehicle tracks				
None observed		Ground Cover	26-50%	
		Vegetation		
Low (<10 m)	Woodland (20-50%)		Acacia cyperophylla, Paper bark	
Mid (1-2 m)	Open shrubland and/or he	athland (20-50%)	Acacia sp.	
Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia	Fulcrum photo ID         2259cceb-db1c-4f76-869e-73319d6085c0

Project: Date

Zone

Landform Aspect Soil type Soil colour

Quality Fire History Disturbance Introduced fauna

Upper stratum

Mid stratum

Ground stratum

50

360

				675.07218	39-CAM-40	
Project:	675.072189					
Date	2-03-2024		Sample Type	Camera Trap		
Zone 50	Easting	717385		Northing	7749526.3	
	Landform and Soil			Rock		
Landform	Outcrop/breakaway		Rock type/s	Granite		
Aspect	North		Surface stone cover	75 - 100%		
Soil type	e Sand		Surface stone size classes		tones (2 - 6 cm), Small Rocks (6 - 20 cm), ks (60 cm - 2 m), Boulders (>2 m), Pebbles	
Soil colour	I colour Orange		•	(<0.6 cm)		
	Condition		Habitat Features			
Quality	Very good		Water Source	/ater Source		
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Caves, Exfoliating rock, Hummocks, Leaf litter, Rock crevices, Woody		
Disturbance	Vehicle tracks		debris, Peeling bark			
Introduced fauna	Cattle		Ground Cover 11-25%			A CONTRACTOR OF A CONTRACTOR O
		_	Vegetation			
Upper stratum	Absent					
Mid stratum	Mid (1-2 m)	Isolated shrubs and/or hea	ath shrubs (<0.25%)	Atalaya hemiglauca and Fic	sus brachypoda	
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	d (0.25-20%)	Triodia epactia		Fulcrum photo ID         e3ce36af-bbbc-48db-ae7a-c6ca62b1e724

				675.072	2189-CAM-41			
Project:	675.072189							
Date	2-03-2024		Sample Type	Camera Trap		Stall I		THE THE THE
Zone 50	Easting	719414	-	Northing	7755547			A South Ask
·	Landform and Soil			Rock	k .	2 m Contain		· · · · · · · · · · · · · · · · · · ·
andform	Drainage line		Rock type/s	Granite				XIII SAN
Aspect	East		Surface stone cover	0 - 5%		CONS. D	MX Y W/ J/	WAPAUS
Soil type	Clay loam		Surface stone size classes	Pebbles (<0.6 cm) Sma	all Stones (0.6 - 2 cm), Stones (2 - 6 cm)			WALLAT A
Soil colour	Orange		present	. ,		The second state	NAME AND AND AND	1 ALAL
	Condition			Habitat Fe	eatures		AND AND AND A	1147 2011
Quality	Good		Water Source	Absent				
ire History	Burnt (1-5 years)		Microhabitats	Hummocks, Leaf litter,	Logs > 10 cm, Peeling bark, Woody debris			
Disturbance	Vehicle tracks							V Is Marine 1
ntroduced fauna	Cattle		Ground Cover	26-50%				CALL AND
			Vegetation				Cors Kal	
Jpper stratum	Low (<10 m)	Woodland (20-50%)		Acacia sp.		Sec. As	La Sa	
Vid stratum	Mid (1-2 m)	Open shrubland and/or he	athland (20-50%)	Acacia sp.			AN AN	
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	8c6ce9d3-f756-46c1-a2fb-2e	f3762f9c68,dbbb467d-7fe1-466c-9

				675.0721	89-CAM-42		
Project:	675.072189					Reason in the local days	
Date	2-03-2024 Sample Type			Camera Trap		and the second se	in the second second second second second
Zone 50	Easting	717217		Northing	7749332.8	Alter Start	a second and the second states
	Landform and Soil			Rock		and the second s	a the second
Landform	Outcrop/breakaway		Rock type/s	Granite, Ironstone, Quartz	Z		and the second sec
Aspect	North		Surface stone cover	50 - 75%			and the second second second second
Soil type	Sand		Surface stone size classes		Stones (2 - 6 cm), Small Rocks (6 - 20 cm),	the state of the state	
Soil colour	Red		present	Rocks (20 - 60 cm), Big Ro	ocks (60 cm - 2 m)		
	Condition		Habitat Features	-		COMPANY SE	A STATE OF A STATE OF
Quality	Good		Water Source	Absent			
Fire History	Little or no fire evidence (>	5 years)	Microhabitats Caves, Exfoliating rock, Hummocks, Rock crevices				
Disturbance	Overgrazing			duves, Explicitly rock, hummocks, kock devices			
Introduced fauna	Cattle		Ground Cover				En la
			Vegetation				The second se
Upper stratum	Absent						A LAND AND AND AND AND AND AND AND AND AND
Mid stratum	Absent						The Carlinson and Carl
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	75932079-4849-4db7-8de1-078b9c1ba833

				675.0721	89-CAM-43	
Project:	675.072189					
Date	2-03-2024		Sample Type	Camera Trap		
Zone 50	Easting	717016		Northing	7749322	
	Landform and Soil	•		Rock		a standard and an
Landform	Outcrop/breakaway		Rock type/s	Granite, Ironstone, Quartz		
Aspect	North		Surface stone cover	50 - 75%		A TANK WE WE
Soil type	Sand				Stones (2 - 6 cm), Small Rocks (6 - 20 cm),	CALL STAR
Soil colour	Red		present	nt Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)		
	Condition		Habitat Features		res	
Quality	Good		Water Source	Absent		
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Caves, Exfoliating rock, Hu	mmocks. Rock crevices	A PARK STATES
Disturbance	Overgrazing			·····; ····; ····;		The second states and the second seco
Introduced fauna	Cattle		Ground Cover			
			Vegetation			
Upper stratum	Absent					
Mid stratum	Absent					R- Jack Anno
Ground stratum	Low (>0.5 m)	Open hummock grassland	20-50%)	Cenchrus ciliaris and Triodi	ia sp.	Fulcrum photo ID         38ebb745-6181-4852-aaca-db0cd870262e

				675.072	189-CAM-44	
Project:	675.072189					
Date	2-03-2024	2-03-2024 Samp		Camera Trap		
Zone 50	Easting	699355		Northing	7740673.2	
	Landform and Soil			Rock		
Landform	Outcrop/breakaway		Rock type/s	Unknown		and the line of the second sec
Aspect	West		Surface stone cover	25 - 50%		and the second state of th
Soil type	Sand		Surface stone size classes	Boulders (>2 m), Small F	Pocks (6 - 20 cm)	
Soil colour	Orange, Grey	ge, Grey		boulders (>2 m), smail r		A A A A A A A A A A A A A A A A A A A
	Condition		Habitat Features			The state of the s
Quality	Good		Water Source	Absent		A CONTRACTOR MALE AND A CONTRACTOR OF A CONTRACTOR
Fire History	Recently burnt (<1 year)		Microhabitats	Exfoliating rock, Hummocks, Leaf litter, Peeling bark, Woody debris,		
Disturbance	None observed			Rock crevices		
Introduced fauna	None observed		Ground Cover	51-75%		
		-	Vegetation			
Upper stratum	Low (<10 m)			Acacia Inaequilatera		
Mid stratum	Absent					
Ground stratum	Mid (0.5-1 m)	Hummock grassland (50-80	0%)	Triodia epactia		Fulcrum photo ID c33ec222-b009-4b8c-abcb-18e83bfb6c8d

E	36	-	30	
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	٠	٠	٠	

				675.072	189-CAM-45		
Project:	675.072189						
Date	2-03-2024		Sample Type	Camera Trap		and the second second	and the second
Zone 50	Easting	699811		Northing	7742455	123 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	A Reality and the second second
	Landform and Soil	•		Rock			
Landform	Outcrop/breakaway		Rock type/s	Laterite		HERE AND	AND DECIMAL AND A DECIMAL AND
Aspect	North		Surface stone cover	50 - 75%			
Soil type	Sand		Surface stone size classes		n), Stones (2 - 6 cm), Small Rocks (6 - 20 cm),	All second in the	the second se
Soil colour	Red		present	Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)		and the second second	
	Condition		Habitat Features			ALC: NO.	
Quality	Good		Water Source	Absent		STREET, CONTRACT	THE REAL PROPERTY OF A DESCRIPTION OF A
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Vicrohabitats Exfoliating rock, Hummocks, Rock cre		cks. Rock crevices	
Disturbance	None observed			-		1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The second s
Introduced fauna	Cat		Ground Cover	11-25%		198 To The	
		1	Vegetation	1			
Upper stratum	Absent						A POR ANTIN
Mid stratum	Absent						A DECEMBER OF
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	l (0.25-20%)	Triodia epactia		Fulcrum photo ID	59f639d9-84d6-4d1d-a4de-78789c5fa00d

				675.072	2189-CAM-46	
Project:	675.072189					
Date	2-03-2024		Sample Type	Camera Trap		
Zone 50	Easting	699950		Northing	7740952.4	
	Landform and Soil			Rock		
andform	Outcrop/breakaway		Rock type/s	Quartz		
Aspect	North		Surface stone cover	75 - 100%		
Soil type	Sand				n), Stones (2 - 6 cm), Small Rocks (6 - 20 cm),	
Soil colour	Red			Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)		
	Condition		Habitat Features			
Quality	Very good		Water Source	Absent		
ire History	Little or no fire evidence (>	5 years)	Vicrohabitats Exfoliating rock, Hummocks, Rock crevices		nocks. Rock crevices	
Disturbance	None observed			ů		
ntroduced fauna	None observed			26-50%		
		1	Vegetation	r		
Jpper stratum	Absent					
Mid stratum	Absent					
Ground stratum		Sparse hummock grassland	1 (0.25-20%)	Triodia epactia		Fulcrum photo ID 6e392ed3-6d9b-4f9b-b747-180ea692fc5b



				675.07	2189-CAM-47			
Project:	675.072189						SPOR NUMBER	
Date	2-03-2024		Sample Type	Camera Trap		I A A A A A A A A A A A A A A A A A A A	A LES P	S ALL SALE ALL SALES
Zone 50	Easting	719897		Northing	7755038			
	Landform and Soi	I		Roc	k	Sec. 1	1003 8	
Landform	Outcrop/breakaway		Rock type/s	Granite		and the second	A DESCRIPTION OF THE	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Aspect	West		Surface stone cover	75 - 100%		AND IN THE REAL	P ACHER S	
Soil type	Rock		Surface stone size classes		all Stones (0.6 - 2 cm), Stones (2 - 6 cm), Rocks s (60 cm - 2 m), Boulders (>2 m), Small Rocks (6		AN AN	21 States
Soil colour	Orange		present	20 cm)		The want of	E the second	A CONTRACTOR
	Condition			Habitat Fe	eatures	They to be	27 1 1	and the second second
Quality	High quality		Water Source	Absent		STATE STATES	THE REAL	
Fire History	Burnt (1-5 years)		Microhabitats	0	, Hummocks, Leaf litter, Peeling bark, Rock		- And March	A Soft Barrisky
Disturbance	None observed		IVIICI ON ADITATS	crevices, Woody debri	S	and the second s	Contra la	A The second
Introduced fauna	None observed		Ground Cover	11-25%		10000	ATEL STUDIO	
			Vegetation			State of State		ALL HARDER
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)		Atalaya hemiglauca a	nd Ficus brachypoda	and the second	A.	S James and S and
Mid stratum	Low (0.5-1 m)	Open shrubland and/or he	eathland (20-50%)	Atalaya hemiglauca a	nd Ficus brachypoda			
Ground stratum	Low (>0.5 m)	Sparse hummock grasslan	d (0.25-20%)	Triodia sp.		Fulcrum photo ID	26a50f4a-3047-4a39-	a0b5-f88901e8ac73

				675.072189-CAM-48
Project:	675.072189			
Date	2-03-2024		Sample Type	Camera Trap
Zone 50	Easting	719924		Northing 7754981.1
	Landform and So	il		Rock
Landform	Outcrop/breakaway		Rock type/s	Granite
Aspect	West		Surface stone cover	75 - 100%
Soil type	Rock		Surface stone size classes	Peobles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m), Small Rocks (6
Soil colour	Orange		present	20 cm)
	Condition		Habitat Features	
Quality	High quality		Water Source	Absent
Fire History	Burnt (1-5 years)		Microhabitats	Caves, Exfoliating rock, Hummocks, Leaf litter, Peeling bark, Rock
Disturbance	None observed			crevices, Woody debris
Introduced fauna	None observed		Ground Cover	11-25%
			Vegetation	
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)		Atalaya hemiglauca and Ficus brachypoda
Mid stratum	Low (0.5-1 m)	Open shrubland and/or	heathland (20-50%)	Atalaya hemiglauca and Ficus brachypoda
Ground stratum	Low (>0.5 m)	Sparse hummock grassl	and (0.25-20%)	Triodia sp.

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envi	ronn	ental

				675.0721	89-CAM-49		
Project:	675.072189						
Date	2-03-2024		Sample Type	Camera Trap		A Y BANK AND	
Zone 50	Easting	705911	-	Northing	7742520		
	Landform and Soil			Rock			
Landform	Drainage line		Rock type/s	None			
Aspect	Negligible		Surface stone cover				
Soil type	Sand		Surface stone size classes				
Soil colour	Red		present				
	Condition			Habitat Featu	ires		
Quality	Good		Water Source	Absent			
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Hummocks, Leaf litter			
Disturbance	None observed						
Introduced fauna	None observed		Ground Cover				
		1	Vegetation	l			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)		Eucalyptus Melaleuca			
Mid stratum	Mid (1-2 m)	Open shrubland and/or hea	athland (20-50%)	Acacia sp.			
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	d5f208b1-8392-402d-99db-2c93a19190b1

				675. <u>07</u> 2	2189-CAM-50		
Project:	675.072189						
Date	2-03-2024		Sample Type	Camera Trap			
Zone 50	Easting	700083		Northing	7740603.2		
	Landform and Soil			Rocl	k		
Landform	Outcrop/breakaway		Rock type/s	Granite, Quartz			
Aspect	South		Surface stone cover	75 - 100%			
Soil type	Sand		Surface stone size classes		n), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (60 cm - 2 m), Boulders (>2 m)		
Soil colour	Red		present	100K3 (20 - 00 CITI), BIG			
	Condition		Habitat Features				
Quality	Very good		Water Source	Absent			
Fire History	Little or no fire evidence	(>5 years)	Microhabitats	Exfoliating rock, Hummocks, Rock crevices			
Disturbance	None observed		IVIICI OFIADITATS	Extonating rock, numin	nocks, nock crevices		
Introduced fauna	None observed		Ground Cover				
			Vegetation				
Upper stratum	Absent						
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/o	r heathland (0.25-20%)	Acacia colei			
Ground stratum	Low (>0.5 m)	Open hummock grassla	nd (20-50%)	Triodia epactia			

				675.072189-CAM-51	
Project:	675.072189				
Date	2-03-2024		Sample Type	Camera Trap	
Zone 50	Easting	688646		Northing 7740917	
	Landform and Soil			Rock	91
Landform	Drainage line		Rock type/s	Granite, Quartz	make a site with a me
Aspect	Negligible		Surface stone cover	5 - 25%	and the second of the second o
Soil type	Sand		Surface stone size classes	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones	(2 - 6 cm), Small
Soil colour	Red		present	Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
	Condition			Habitat Features	
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>	•5 years)	Microhabitats	Exfoliating rock, Hummocks, Leaf litter, Logs > 10 cm	Prock crevices
Disturbance	None observed		inici onabitats		
Introduced fauna	None observed		Ground Cover		
			Vegetation		
Upper stratum	Absent				
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or h	eathland (0.25-20%)	Eucalyptus camaldulensis, Melaleuca argentea	
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia	Fulcrum photo ID         0eec3229-f671-4024-bd6a-abca79c89446

				675.072189-CAM-52	
Project:	675.072189				
Date	3-03-2024		Sample Type	Camera Trap	
Zone 50	Easting	660811		Northing 7739282.7	A TRANS
	Landform and Soi	l .		Rock	
Landform	Plain		Rock type/s	None	
Aspect	Negligible		Surface stone cover		
Soil type	Sand		Surface stone size classes		
Soil colour	Orange		present		
	Condition		Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire eviden	ce (>5 years)	Microhabitats	Hummocks, Leaf litter, Woody debris, Logs > 10 cm	
Disturbance	Litter,Vehicle tracks				
Introduced fauna	None observed		Ground Cover	51-75%	
			Vegetation	_	
Upper stratum	Low (<10 m)	Open woodland (0.25-20%	)	Eucalyptus sp.	
Mid stratum	Low (0.5-1 m)	Open shrubland and/or he	athland (20-50%)	Acacia stellaticeps	
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia	Fulcrum photo ID bff234e9-d528-446b-bca8-7a22918c02e3



					675.07	2189-CAM-53			
Project:	675.072189							365 - <b>6</b> 55 - 665	
Date	3-03-2024		Sample Ty	)e	Camera Trap				
Zone 50	Easting	g 66	0281		Northing	7741179		a in the second	
	Landform and Sc	bil			Ro	ock		the list	
Landform	Plain		Rock type/s		None			ALL ALL AND	A Provide State of the State of
Aspect	Negligible		Surface stor	e cover					AND THE REAL PROPERTY OF THE PARTY OF THE PA
Soil type	Sand		Surface stor	e size classes				Martin States	
Soil colour	Red		present						
	Condition				Habitat	Features			
Quality	Good		Water Sour	e	Absent				
Fire History	Little or no fire evider		Microhabita	ts	Hummocks, Leaf litte	er, Peeling bark, Woody debris		Company of the	
Disturbance	Vehicle tracks,Weeds					······································		the second states	
Introduced fauna	None observed		Ground Cov		51-75%			Martin Martin	Proceeding 1
			Vegetatior		1			The Province	
Upper stratum	Low (<10 m)	Open woodland (	(0.25-20%)		Eucalyptus sp.			Cart	
Mid stratum	Mid (1-2 m)	Sparse shrubland	d and/or heathland (0.2	i-20%)	Acacia stellaticeps			Le Maria	
Ground stratum	Low (>0.5 m)	Open hummock g	grassland (20-50%)		Triodia epactia and <i>i</i>	Acacia stellaticeps	Fu	Ilcrum photo ID	2aee6c94-03d3-45cd-9f0b-887bd5cb9ba6

					675.0	72189-CAM-54	
Project:	675.072189						Concernance of the second
Date	5-03-2024			Sample Type	Camera Trap		
Zone 50	Easti	Easting 676125			Northing	7738409.0	
	Landform and S	Soil			R	lock	a little and
andform	Drainage line		Rock type/s	None			
Aspect	North	North		Surface stone cover			Margar Star Margar
Soil type	Sand		Surface stone size classes				
oil colour Orange, Grey			present				
Condition			Habitat Features				
Quality				Water Source	Absent		
Fire History	Little or no fire evid	ence (>5 years)		Microhabitats Burrows, Peeling bark, Leaf litter, Hummocks, Woody debris		and the second second	
Disturbance	None observed					ink, lear inter, naminocks, woody debris	The second second
ntroduced fauna	Cattle			Ground Cover	26-50%	and the second second	
				Vegetation			
Upper stratum	Low (<10 m)	Open wood	dland (0.25-20%	)	Eucalyptus camaldulensis		1 1 1 A
Vid stratum	Mid (1-2 m)	Open shruk	bland and/or he	athland (20-50%)	Acacia trachycarpa		
Ground stratum	round stratum Low (>0.5 m) Hummock grassland (50-		grassland (50-80	0%)	Triodia epactia		Fulcrum photo ID





				675.07	2189-CAM-55		
Project:	675.072189						
Date	5-03-2024		Sample Type	Camera Trap			APPENDING CONTRACTOR OF CONTRACTOR
Zone 50	Easting	659959	-	Northing	7741619		
	Landform and Soi			Rc	ock		
Landform	Plain		Rock type/s	None		and the second	and the second sec
Aspect	Negligible		Surface stone cover				
Soil type	Sandy loam		Surface stone size classes	Surface stone size classes		and the states	Contraction of the second
Soil colour	Orange		present			The second second	
	Condition			Habitat	Features	State State State State	
Quality	Very good		Water Source	Water Source Absent		Contraction of the second	
Fire History	Little or no fire eviden	ce (>5 years)	Microhabitats	Burrows, Hummocks, Leaf litter, Peeling bark, Woody debris		Million States	Company of the Area and the Area and
Disturbance	None observed				,,,,,,,,,	In the state of the state	and the second
Introduced fauna	None observed		Ground Cover	51-75%		A CARE A LAND AND AND A	
		I	Vegetation	1			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)		Eucalyptus camaldulensis			
Mid stratum	Low (0.5-1 m)	Isolated shrubs and/or he	ath shrubs (<0.25%)	25%) Eucalyptus camaldulensis		Stephen 1	
Ground stratum	Low (>0.5 m)	Hummock grassland (50-8	0%)	Triodia epactia and A	Acacia stellaticeps	Fulcrum photo ID	1bcb9feb-46a2-4c8c-90af-55a580050845

				675.072 <sup>°</sup>	189-CAM-56	
Project:	675.072189					
Date	5-03-2024		Sample Type	Camera Trap		at a straight a the second straight of the
Zone 50	Easting	669924		Northing	7737566.3	
	Landform and Soil			Rock		
andform	Plain		Rock type/s	None		
spect	Negligible		Surface stone cover			
oil type	Sandy loam		Surface stone size classes	5		and the second state of th
oil colour	Orange		present			and a second sec
	Condition		Habitat Features	·		
Quality	Good		Water Source			
ire History	Little or no fire evidence		Microhabitats			
isturbance	Vehicle tracks,Clearing	Infrastructure				a second s
ntroduced fauna	None observed		Ground Cover	26-50%		
			Vegetation			
Jpper stratum	Low (<10 m)	Open woodland (0.25-209	5)	Eucalyptus victrix		
Aid stratum	Absent					
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia and Acad	cia stellaticeps	Fulcrum photo ID bb2a0241-da1c-46c4-b2f4-1c8a572272f8

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				675.072	189-CAM-57		
Project:	675.072189						
Date	5-03-2024		Sample Type	Camera Trap			
Zone 50	Easting	674434		Northing	7738387		
	Landform and So	il		Rock			and the second second second second
Landform	Drainage line		Rock type/s			er vister ver i AMUSZO/A	WWWWWWWWWWWWWWWWWWWWWWWWWWWW
Aspect	West Surface stone cover		25 - 50%			MILLA HE ARRANGE AND AND AND	
Soil type	Sand	Surface stone size classes		Pebbles (<0.6 cm) Sma	II Stones (0.6 - 2 cm), Stones (2 - 6 cm)	Research Called	
Soil colour	Red		present	, ,			
Condition				Habitat Fea	atures		
Quality	Very good		Water Source	Absent			
Fire History	Little or no fire eviden	ice (>5 years)	Microhabitats	Hummocks, Leaf litter, Logs > 10 cm			
Disturbance	None observed						
Introduced fauna	None observed		Ground Cover				
		-	Vegetation	1			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%	)	Eucalyptus victrix			I TABLE TO AND A CO
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or h	eathland (0.25-20%)	Eucalyptus victrix and Acacia colei			
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	571cfc56-b200-4dab-a59d-b9ab5757ad46

				675.072189-CAM-58		
Project:	675.072189					
Date	5-03-2024		Sample Type	Camera Trap		
Zone 50	Easting	g 674	4610	Northing 7738626.1		
	Landform and Sc	bil		Rock		
Landform	Drainage line		Rock type/s	Other		
Aspect	West		Surface stone cover	25 - 50%		
Soil type	Sand		Surface stone size classes	bbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)		
Soil colour	Red present		•			
	Condition		Habitat Features			
Quality	Very good		Water Source	Absent		
Fire History	Little or no fire evider	nce (>5 years)	Microhabitats	Hummocks, Leaf litter, Logs > 10 cm		
Disturbance	None observed					
Introduced fauna	None observed		Ground Cover			
			Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0	0.25-20%)	Eucalyptus victrix		
Mid stratum	Mid (1-2 m)	Sparse shrubland	and/or heathland (0.25-20%)	Eucalyptus victrix, Acacia colei		
Ground stratum	Low (>0.5 m)	Open hummock g	grassland (20-50%)	Triodia epactia		



				675.07	2189-CAM-59		
Project:	675.072189					AT CASE LOANER	
Date	5-03-2024		Sample Type	Camera Trap			
Zone 50	Easting	661215		Northing	7739665	A Start Street	
	Landform and Soil	l		Roc	ck		The first of the
Landform	Plain		Rock type/s	None		to all the	
Aspect	Negligible		Surface stone cover				
Soil type	Sand		Surface stone size classes			lan Parta	MALL AND AND AND
Soil colour	Orange		present			1 - 1 - 1 -	PERSONAL PROPERTY OF A DESCRIPTION OF A
	Condition			Habitat F	eatures	and the	and the second second second
Quality	Good		Water Source	Absent		Contraction of the	and the second sec
Fire History	Little or no fire evidence	ce (>5 years)	Microhabitats	Hummocks, Leaf litter	, Woody debris, Logs > 10 cm	2000	
Disturbance	Litter, Vehicle tracks						
Introduced fauna	None observed		Ground Cover	51-75%		Sala Li Lines	
			Vegetation			A State	and the second se
Upper stratum	Low (<10 m)	Open woodland (0.25-20%	)	Eucalyptus sp.			Carlos Maria Maria
Mid stratum	Low (0.5-1 m)	Open shrubland and/or he	athland (20-50%)	Acacia stellaticeps			
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	e7e80357-8660-41be-b5bd-a825c9839883

				675.072189-CAM-60				
Project:	675.072189							
Date	6-03-2024		Sample Type	Camera Trap		79-2-11		
Zone 50	Easting	704681		Northing 7741098.3				
	Landform and Soil			Rock	Contraction of the local division	Sector Brief The Alexandra Sector Sector Sector Sector		
Landform	Outcrop/breakaway		Rock type/s	Granite				
Aspect	East		Surface stone cover	75 - 100%		and the former and the second of the		
Soil type	Sand Surf		Surface stone size classes	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Sma				
Soil colour	Red present			Rocks (6 - 20 cm), Boulders (>2 m)	and the second			
	Condition Habitat Features							
Quality	Good		Water Source	Absent				
Fire History	Little or no fire evidence (>	• •	Microhabitats	bitats Exfoliating rock, Hummocks, Rock crevices				
Disturbance	Infrastructure, Vehicle track	ks	Which of labitats	Extending rock, Hummoeks, Neek erevices	CONTRACT.	Contraction of the second s		
Introduced fauna	None observed		Ground Cover					
			Vegetation					
Upper stratum	Absent							
Mid stratum	Absent							
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	d (0.25-20%)	Triodia epactia	Fulcrum photo ID	82216676-483d-41d4-9a66-14081df56566		

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				675.072 <sup>°</sup>	189-CAM-61		
Project:	675.072189						Sector Sector Sector
Date	6-03-2024		Sample Type	Camera Trap			
Zone 50	Easting	704756	·	Northing	7741958		In the Astronomy and
	Landform and Soil			Rock			
Landform	Outcrop/breakaway		Rock type/s	Granite		Station of the state	
Aspect	Negligible		Surface stone cover	75 - 100%			
Soil type	Peat		Surface stone size classes		ks (60 cm - 2 m), Rocks (20 - 60 cm), Pebbles	and the second	
Soil colour	Orange		present	(<0.6 cm), Small Stones (0.6 - 2 cm), Small Rocks (6 - 20 cm), Stones (2 - 6 cm)			
	Condition			Habitat Fea	tures		
Quality	Good		Water Source	Absent			
Fire History	Burnt (1-5 years)		Microhabitats	crohabitats Caves, Exfoliating rock, Hummocks, Leaf litter, Rock crevices			
Disturbance	Vehicle tracks		Which of labitatio				S Start And A Start
Introduced fauna	None observed		Ground Cover	11-25%			
		_	Vegetation			End a Par	
Upper stratum	Absent						The los
Mid stratum	Absent						
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	d (0.25-20%)	Triodia epactia		Fulcrum photo ID	a7158cd1-c512-4eef-8979-1a6a2a060a49

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Project:		675.072189							
Date		6-03-2024			Sample Type	Camera Trap	Camera Trap		
Zone	50	Easting		704668		Northing	7741169.1		
		Landform and Soil				Rock			
Landform Outcrop/breakaway		Rock type/s	Granite						
Aspect	Aspect East		Surface stone cover	75 - 100%					
Soil type		Sand			Surface stone size classes	Pebbles (<0.6 cm), Small S	tones (0.6 - 2 cm), Stones (2 - 6 cm), Small		
Soil colour		Red			present	Rocks (6 - 20 cm), Boulder	s (>2 m)		
		Condition			Habitat Features				
Quality		Good			Water Source	Absent			
Fire History		Little or no fire evidence	e (>5 years)		Microhabitats Exfoliating rock, Hummocks, Rock crevices		ve Dock growinge		
Disturbance		Infrastructure,Vehicle t	acks		IVIICI UTIADITATS	Exfoliating rock, Hummocks, Rock crevices			
Introduced f	auna	None observed			Ground Cover				
					Vegetation				
Upper stratu	um	Absent							
Mid stratum	١	Absent							
Ground strat	tum	Low (>0.5 m)	Sparse humn	nock grassland	d (0.25-20%)	Triodia epactia			



ulcrum photo ID f228013c-d7c9-4663-a671-8d5e4ce882cd



				675.072	2189-CAM-63				
Project:	675.072189								
Date	6-03-2024		Sample Type	Camera Trap		and the state of the second		and the states	
Zone 50	Easting	704720		Northing	7741989	and the second	month all	Star Date and	
	Landform and Soil			Roc	k	I. m		ALL THE ALL AND A	
Landform	Outcrop/breakaway		Rock type/s	Granite			Laurent and	A Supervised of the second	and the second state
Aspect	Negligible		Surface stone cover	75 - 100%		The second	Charles I	the second second	10 2011
Soil type	Peat		Surface stone size classes		ocks (60 cm - 2 m), Rocks (20 - 60 cm), Pebbles s (0.6 - 2 cm), Small Rocks (6 - 20 cm), Stones	al Kall	a start -	Cart was shown in	2 de la
Soil colour	Orange		present	(< 0.0 cm), smail stone (2 - 6 cm)			La Planting	the said the	
	Condition			Habitat Fe	eatures				3
Quality	Good		Water Source	Absent			CAR AS	A HAR AND AND	2 APR V
Fire History	Burnt (1-5 years)		Microhabitats	Caves Exfoliating rock	, Hummocks, Leaf litter, Rock crevices	States and	K BE	A CALL AND A CALL	Martin Carling
Disturbance	Vehicle tracks		Wher of labitats	Caves, Externating rock	, Hummocks, Lear Inter, Nock Crevices	1 建筑铁石		the states in	
Introduced fauna	None observed		Ground Cover	11-25%		<b>这个人都是</b> 在北	CAR Manager	S. Carton	the sector
			Vegetation			Soll and	KWF	yest fre	and the second
Upper stratum	Absent					C-4			
Mid stratum	Absent					A of a		C D D D D	AL AL
Ground stratum	Low (>0.5 m)	Sparse hummock grassla	nd (0.25-20%)	Triodia epactia		Fulcrum photo ID	48ee0618-4efc-4a5f-8	3222-fc06022a9b57	

				675.0	72189-CAM-64	
Project:	675.072189					1
Date	6-03-2024		Sample Type	Camera Trap		2
Zone 50	Easting	679471		Northing	7739344.0	
	Landform and Soil			F	Rock	2.6
andform	Drainage line		Rock type/s	Granite, Quartz		
Aspect	North		Surface stone cover	5 - 25%		1
Soil type	Sand		Surface stone size classes	Small Stopes (0.6	2 cm), Stones (2 - 6 cm), Pebbles (<0.6 cm)	1
Soil colour	Orange	range				
	Condition		Habitat Features			1
Quality	Good		Water Source	Absent		1. A.
Fire History	Unknown		Microhabitats			
Disturbance	Vehicle tracks		initio oridoritato			
ntroduced fauna	Cattle	Cattle		Ground Cover 26-50%		
			Vegetation			E.
Upper stratum	Low (<10 m)	Open woodland (0.25-209	%)	Eucalyptus victrix		
Vid stratum	Mid (1-2 m)	Open shrubland and/or h	eathland (20-50%)	Acacia trachycarpa	·	4
Ground stratum	Low (>0.5 m)	Sparse hummock grasslar	nd (0.25-20%)	Triodia epactia and	l Eulalia aurea	Fulcr



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				675.072189-CAM	-65	
Project:	675.072189					
Date	6-03-2024		Sample Type	Camera Trap		
Zone 50	Easting	685627		Northing 7740314		
	Landform and Soil			Rock		
Landform	Drainage line		Rock type/s	None		
Aspect	Negligible		Surface stone cover			
Soil type	Sand		Surface stone size classes			TAT BARE STREET
Soil colour	Red		present			
	Condition			Habitat Features		
Quality	Very good		Water Source	Absent		
Fire History	Little or no fire evidenc	e (>5 years)	Microhabitats	Hummocks, Leaf litter, Peeling bark, Woo	ody debris	
Disturbance	Vehicle tracks			Than models, Eeur inter, recoming bark, wee		
Introduced fauna	None observed		Ground Cover	76-100%		
			Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%	)	Eucalyptus victrix		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or h	eathland (0.25-20%)	Acacia colei		
Ground stratum	Low (>0.5 m)	Hummock grassland (50-8	0%)	Triodia epactia		Fulcrum photo ID 85812315-bd62-428d-871f-6697e215792a

				675.072	2189-CAM-66	
Project:	675.072189					
Date	6-03-2024		Sample Type	Camera Trap		
Zone 50	Easting	704820		Northing	7741885.2	
	Landform and Soil			Roc	k	
Landform	Outcrop/breakaway		Rock type/s	Granite		
Aspect	Negligible		Surface stone cover	75 - 100%		
Soil type	Peat		Surface stone size classes	Boulders (>2 m), Big R	ocks (60 cm - 2 m), Rocks (20 - 60 cm), Pebbles	
Soil colour	oil colour Orange		present	(<0.6 cm). Small Stones (0.6 - 2 cm). Small Rocks (6 - 20 cm). Stones (2		
	Condition		Habitat Features			
Quality	Good		Water Source	Absent		
Fire History	Burnt (1-5 years)		Microhabitats	Caves Exfoliating rock	, Hummocks, Leaf litter, Rock crevices	
Disturbance	Vehicle tracks		WICI ON ADITALS	caves, Extollating fock	, Hummocks, Lear Itter, Nock Crevices	
Introduced fauna	None observed		Ground Cover	11-25%		
			Vegetation			
Upper stratum	Absent					
Mid stratum	Absent					
Ground stratum	Low (>0.5 m)	Sparse hummock grasslan	d (0.25-20%)	Triodia epactia		

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				675.072	189-CAM-67		
Project:	675.072189						
Date	6-03-2024		Sample Type	Camera Trap		- and the second se	Allow the second second
Zone 50	Easting	704691	-	Northing	7741038		All little to all the
	Landform and Soil			Rock			
Landform	Outcrop/breakaway		Rock type/s	Granite			A A A A A A A A A A A A A A A A A A A
Aspect	East		Surface stone cover	75 - 100%		AND DESCRIPTION OF TAXABLE	and a second
Soil type	Sand		Surface stone size classes		Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small	And the state	2 2 4 1
Soil colour	Red		present	Rocks (6 - 20 cm), Bould		Month of por	1 A GARAGE CONTRACT
	Condition			Habitat Fea	tures		1 Martin Constant
Quality	Good		Water Source	Absent		Not all Carl	
Fire History	Little or no fire evidence (>		Microhabitats	Exfoliating rock, Hummo	icks Rock crevices	Non All	
Disturbance	Infrastructure, Vehicle track	<s< td=""><td></td><td>Entonating Foot, Framme</td><td></td><td>a state</td><td>The state of the state</td></s<>		Entonating Foot, Framme		a state	The state of the state
Introduced fauna	None observed		Ground Cover			AT STATE	1
		-	Vegetation			the fairs	Sattant of the
Upper stratum	Absent						ACTING THE
Mid stratum	Absent					the set of the	and the second and a
Ground stratum	Low (>0.5 m)	Sparse hummock grasslan	d (0.25-20%)	Triodia epactia		Fulcrum photo ID	34fa4921-e688-4e88-bdea-9e4f6569a9d6

				675.072	2189-HAB-68		
Project:	675.072189						
Date	1-03-2024		Sample Type	Habitat Assessment			
Zone 50	Easting	701356		Northing	7742084.8	28	
	Landform and Soil			Rock	<	and the second s	an your with the state of the
Landform	Plain		Rock type/s	Quartz			the English of the second second second
Aspect	Negligible		Surface stone cover	5 - 25%			
Soil type	Sand		Surface stone size classes	Pebbles (<0.6 cm), Sma	all Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small	and the second sec	Taylor Barry Brown and Taylor Barry Barry
Soil colour	Red		present	Rocks (6 - 20 cm), Rock	is (20 - 60 cm)	a state of the	Contraction of the second s
	Condition		Habitat Features			- 2 - 2 - 2 - 2 -	
Quality	Very good		Water Source	Absent			a service a
Fire History	Little or no fire evidence	(>5 years)	Microhabitats	Exfoliating rock		Color	
Disturbance	None observed		Will Onabitats	Externating fock		and the second sec	
Introduced fauna	None observed		Ground Cover			之子的是我	And the second s
			Vegetation				
Upper stratum	Absent						Contraction of the second
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or h	neathland (0.25-20%)	Acacia colei, and Acaci	a ancistrocarpa		
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	c50509c0-8cd5-4de2-af2e-6da2faa7e947

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				675.072	189-HAB-69		
Project:	675.072189						
Date	1-03-2024		Sample Type	Habitat Assessment		a deserve a serve	and the second se
Zone 50	Easting	690832	-	Northing	7740789		and the second se
	Landform and Soil			Rock			
Landform	Plain		Rock type/s	None		the war to be a	the second second second second second
Aspect	Negligible		Surface stone cover			all and a start of the second	and the second
Soil type	Sand		Surface stone size classes				
Soil colour	Red		present			THE TELL . A THE	a start and a start of the start of the
	Condition			Habitat Fea	itures	An Barris	With the state of the second state of the
Quality	Good		Water Source	Absent			and the second s
Fire History	Unknown		Microhabitats	Hummocks, Leaf litter		and a set of the	ALT - ALT - ALT - ALT - ALT - ALT -
Disturbance	Vehicle tracks					A Carlos - A Carlos	State of the state
Introduced fauna			Ground Cover			Martin State	the states where an interest the
		1	Vegetation	1			Casher 1 - Million Review
Upper stratum	Absent					Alexand A	
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or he	eathland (0.25-20%)	Acacia orthocarpa		UNER A REAL	
Ground stratum	Low (>0.5 m)	Hummock grassland (50-80	)%)	Triodia epactia		Fulcrum photo ID	ef75bb0c-759a-4764-95c7-25ccffca6fa7

				675.072	2189-HAB-70	
Project:	675.072189					
Date	3-03-2024		Sample Type	Habitat Assessment		
Zone 50	Easting	665218		Northing	7736221.6	
	Landform and Soi	I		Rocl		
andform	Plain		Rock type/s	None		and the second sec
Aspect	Negligible		Surface stone cover			and the second second second second second second
Soil type	Sandy clay		Surface stone size classes			
Soil colour	Red		present			the second se
	Condition		Habitat Features			
Quality	Good		Water Source	Absent		
Fire History	Little or no fire evidend	ce (>5 years)	Microhabitats	Hummocks		A DESCRIPTION OF A DESC
Disturbance	Vehicle tracks					and the second
ntroduced fauna	None observed		Ground Cover	51-75%		
			Vegetation			HE HANDER THE REAL PROPERTY OF THE REAL PROPERTY OF
Jpper stratum	Absent					
Vid stratum	Low (0.5-1 m)	Open shrubland and/or h	neathland (20-50%)	Acacia stellaticeps		
Ground stratum	Low (>0.5 m)	Open hummock grasslan	d (20-50%)	Triodia epactia		Fulcrum photo ID 07de4620-1d52-4e86-98b7-2accbf3dacd3



				675.072	2189-HAB-71	ł
Project:	675.072189			010.012		
Date	3-03-2024		Sample Type	Habitat Assessment		
Zone 50	Easting	661616	•	Northing	7736868	
	Landform and Soil			Rock		
Landform	Plain		Rock type/s	None		
Aspect	Negligible		Surface stone cover			
Soil type	Sand		Surface stone size classes			
Soil colour	Red		present			
	Condition			Habitat Fe	atures	
Quality	Disturbed		Water Source	Absent		
Fire History	Burnt (1-5 years)		Microhabitats	Leaf litter		
Disturbance	Vehicle tracks					
Introduced fauna	None observed		Ground Cover			
			Vegetation			
Upper stratum	Absent					
Mid stratum	Absent					
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	d (0.25-20%)	Acacia stellaticeps		

				675.07	72189-HAB-72	
Project:	675.072189					
Date	3-03-2024		Sample Type	Habitat Assessmen	t	
Zone 50	Easting	667071		Northing	7736372.8	
	Landform and Soil			Ro	ock	
Landform	Plain		Rock type/s	None		7.
Aspect	North		Surface stone cover			The material adverse and when
Soil type	Sandy clay		Surface stone size classes			
Soil colour	Red		present			
	Condition		Habitat Features			
Quality	Good		Water Source	Absent		
Fire History	Little or no fire evidence	e (>5 years)	Microhabitats	Hummocks, Leaf litte	ar Woody debris	
Disturbance	Vehicle tracks		Which of labitatis	Hummocks, Lear litte		
Introduced fauna	None observed		Ground Cover	51-75%		
			Vegetation			
Upper stratum	Absent					
Mid stratum	Tall (>2 m)	Shrubland and/or heathlar	nd (50-80%)	Eucalyptus victrix and	d Acacia colei	
Ground stratum	Mid (0.5-1 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID         a247a3af-beb6-4d0c-99b1-8a09dce8cadb,89dab242-cff0-4f60-86eb

				675.07	2189-HAB-73	
Project:	675.072189					
Date	3-03-2024		Sample Type	Habitat Assessment	t	
Zone 50	Easting	668481		Northing	7736896	
	Landform and Soil			Ro	ck	
Landform	Plain		Rock type/s	None		
Aspect	Negligible		Surface stone cover			
Soil type	Sand		Surface stone size classes			the second share in the second second
Soil colour	Red		present			
	Condition			Habitat F	eatures	
Quality	Disturbed		Water Source	Absent		
Fire History	Little or no fire evidence		Microhabitats	Hummocks, Leaf litte	r Woody debris	A STATE OF THE OWNER WATER AND
Disturbance	Overgrazing, Vehicle track	<s< td=""><td></td><td></td><td>17 H 00 4 J 40 5 10</td><td></td></s<>			17 H 00 4 J 40 5 10	
Introduced fauna	Cattle		Ground Cover	51-75%		
			Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)		Eucalyptus victrix		Difference and the second second
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or	heathland (0.25-20%)	Acacia stellaticeps		
Ground stratum	Low (>0.5 m)	Open hummock grassland	l (20-50%)	Triodia epactia		Fulcrum photo ID b6d8fe73-2ebd-46f2-8e68-3e9c88129d1a,f76312c

				675. <u>07</u> 2	2189-HAB-74	
Project:	675.072189					
Date	3-03-2024		Sample Type	Habitat Assessment		
Zone 50	Easting	669140		Northing	7737612.4	
	Landform and So	il		Rock	<	
andform	Plain		Rock type/s	None		20Å -
Aspect	Negligible		Surface stone cover			and the second state of the second se
Soil type	Sand		Surface stone size classes			Elsen and the start was a start of the
Soil colour	Red, White		present			
	Condition		Habitat Features			
Quality	Disturbed		Water Source	Absent		
Fire History	Burnt (1-5 years)		Microhabitats	Hummocks, Woody de	hris	A REAL PROPERTY AND A REAL
Disturbance	Litter, Overgrazing, Vel	nicle tracks	Wild of abitats	numinocks, woody uc	013	and the second of the second s
ntroduced fauna	None observed		Ground Cover			a same the the suma in the second
			Vegetation			a a strange and a strange at the strange at the strange at
Upper stratum	Mid (10-30 m)	Open woodland (0.25-209	6)	Eucalyptus victrix		The stream and the second of the second of the
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or I	neathland (0.25-20%)	Eucalyptus sp.		
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID d0e91653-48e9-48dd-9fdc-336960fb95f8

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				675.07218	39-HAB-75			
Project:	675.072189					243		
Date	3-03-2024		Sample Type	Habitat Assessment			and the second se	
Zone 50	Easting	666659		Northing	7735372		and the second se	
	Landform and Soil			Rock		100-1		
Landform	Plain		Rock type/s	None		S. S.		
Aspect	Negligible		Surface stone cover			25 V	a free	
Soil type	Sandy clay		Surface stone size classes			The start	and the second	
Soil colour	Red		present			CE CALLY?	and the Martine	
	Condition			Habitat Feature	es			
Quality	Disturbed		Water Source	Absent				
Fire History	Little or no fire evidence (>	5 years)	Microhabitats Hummocks, Leaf litter, Woody debris			and the second second		
Disturbance	Litter, Vehicle tracks					A STATISTICS AND		
Introduced fauna	None observed		Ground Cover	51-75%				
			Vegetation					
Upper stratum	Absent					the second		
Mid stratum	Tall (>2 m)	Open shrubland and/or he	athland (20-50%)	Acacia colei		The providence	the second se	
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID	e7b3cc6d-2a22-4db7-8442-7e977a24141e,fe44216f-a511-43a7-91b9-	

					675.07	72189-HAB-76										
Project:	675.072189						ł									
Date	3-03-2024			Sample Type	Habitat Assessmen	ıt	 ļ									
Zone 50	Easting	]	666199		Northing	7735818.3	l									
	Landform and So	bil			Ro	ock										
Landform	Plain			Rock type/s	None		1	- 1943	-2642:	-295	-2632	264 ·	- 2892 -	- 2692 -	. 290	289.
Aspect	Negligible			Surface stone cover			_	and and	and the second second	and the second second second	and the second second second second	and the second s	and the second s		and the second s	and the second second second second
Soil type	Sand			Surface stone size classes			ł	- BUT - A	- The second to		and the second s		- And - All			
Soil colour	Red			present			 			and the second	and the second s	all the same in the same	all the second s		and the second sec	
	Condition			Habitat Features	-		J	and the second s		Design of the second			Contraction of the second s			and the second
Quality	Very good			Water Source	Absent		 _	All and a state of the								
Fire History	Little or no fire eviden	nce (>5 years)		Microhabitats	Hummocks		ł	THEAT	ALL	CONTRACTOR OF THE PARTY OF THE						
Disturbance	Vehicle tracks							and the second second	A DESCRIPTION OF THE PARTY OF T	A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER	and the second se	and the second se	and the second		A REAL PROPERTY AND A REAL PROPERTY A REAL PRO	A REAL PROPERTY OF A REAL PROPER
Introduced fauna	None observed			Ground Cover			 l	Section and in								
	_			Vegetation				Bellung - all	Columb . and the second	And the second se	And the second se	A CONTRACTOR OF	And the second		And the second	
Upper stratum	Absent															
Mid stratum	Mid (1-2 m)	Sparse shrub	oland and/or he	eathland (0.25-20%)	Acacia inaequilatera			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								
Ground stratum	Low (>0.5 m)	Open humm	iock grassland (	20-50%)	Triodia epactia		 F	ulcrum photo ID	ulcrum photo ID 3d37cc13-4576	ulcrum photo ID 3d37cc13-4576-4865-9762-127	ulcrum photo ID 3d37cc13-4576-4865-9762-127dec7d92f1	ulcrum photo ID 3d37cc13-4576-4865-9762-127dec7d92f1	ulcrum photo ID 3d37cc13-4576-4865-9762-127dec7d92f1	ulcrum photo ID 3d37cc13-4576-4865-9762-127dec7d92f1	ulcrum photo ID 3d37cc13-4576-4865-9762-127dec7d92f1	ulcrum photo ID 3d37cc13-4576-4865-9762-127dec7d92f1

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				675.072	2189-HAB-77		
Project:	675.072189						
Date	3-03-2024		Sample Type	Habitat Assessment			
Zone 50	Easting	665425		Northing	7736606		
	Landform and Soil			Rock			
Landform	Plain		Rock type/s	None		the second second	The second secon
Aspect	Negligible		Surface stone cover			and the second s	a second second second of the second second
Soil type	Sand		Surface stone size classes			and the second second	observed the second second second
Soil colour	Red		present			S. T. S. Martin	and the second second and the second se
	Condition			Habitat Fea	atures	Mar main all	and the same standing and the same
Quality	Very good		Water Source	Absent			
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Hummocks, Leaf litter		The state of the second	
Disturbance	Vehicle tracks						
ntroduced fauna	None observed		Ground Cover	76-100%			
		1	Vegetation				
Upper stratum	Absent						Contraction of the second
Mid stratum	Mid (1-2 m)	Open shrubland and/or he	eathland (20-50%)	Acacia Inaequilatera		N MARKEN	
Ground stratum	Low (>0.5 m)	Hummock grassland (50-8	0%)	Triodia sp. and Acacia s	stellaticeps	Fulcrum photo ID	99f98150-3f3a-4280-84c1-945d78d4c716,204ca89d-0

				675.072189-HAB-78	
Project:	675.072189				
Date	4-03-2024		Sample Type	Habitat Assessment	in an age S
Zone 50	Easting	71	8275	Northing 7752198.4	
	Landform and Soil			Rock	
andform	Plain		Rock type/s	None	the second se
spect	Negligible		Surface stone cover		and the second sec
oil type	Sandy loam		Surface stone size cla	asses	
oil colour	Orange		present		
	Condition		Habitat Features		
Duality	Disturbed		Water Source	Absent	
ire History	Burnt (1-5 years)		Microhabitats	Hummocks, Woody debris, Leaf litter	A STATE PARTY AND A DECIMAL AN
isturbance	Overgrazing, Vehicle trac	cks,Infrastructure	Iviici onabitats	Hummocks, woody debris, Lear inter	
ntroduced fauna	Cattle		Ground Cover	51-75%	
			Vegetation		
Jpper stratum	Absent				
/lid stratum	Absent				
Ground stratum	Low (>0.5 m)	Hummock grassl	and (50-80%)	Triodia epactia and Acacia stellaticeps	Fulcrum photo ID 195f0c46-5f59-4828-b746-1620954b17e8

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				675.072 <sup>2</sup>	189-HAB-79		
Project:	675.072189						
Date	4-03-2024		Sample Type	Habitat Assessment			
Zone 50	Easting	718832		Northing	7752593		
	Landform and Soil			Rock			
Landform	Plain		Rock type/s	None			the second se
Aspect	Negligible		Surface stone cover				
Soil type	Sand		Surface stone size classes				
Soil colour	Red		present			And the second second	The second se
	Condition			Habitat Feat	ures	7 111 - 1 2 200	and the second sec
Quality	Very good		Water Source	Absent		AND IN COLUMN THE OWNER	the second s
Fire History	Little or no fire evidence (>	5 years)	Microhabitats Hummocks, Leaf litter		AND AN AND AND COMPANY	and the second second second	
Disturbance	None observed		Which of labitats			Fills and the same	AND CONTRACTOR AND
Introduced fauna	None observed		Ground Cover	76-100%		All Parties of Manual D	
	-		Vegetation			The Party of the P	the second se
Upper stratum	Absent					S. A.	State of the second sec
Mid stratum	Absent					State of the	A CARLER AND A CARLES
Ground stratum	Low (>0.5 m)	Hummock grassland (50-8)	0%)	Triodia epactia and Acac	ia stellaticeps	Fulcrum photo ID	ef609770-6009-4211-a976-92a3de6f130f,234034f5-7be2-43e4-9acb-

				675.07218	89-HAB-80		
Project:	675.072189						
Date	4-03-2024		Sample Type	Habitat Assessment			N KINK
Zone 50	Easting	710356		Northing	7746038.1		
	Landform and Soil			Rock		an Borney	AN Y Y
andform	Plain		Rock type/s	None		a the	
Aspect	Negligible		Surface stone cover			A AND	
Soil type	Sand		Surface stone size classes	rface stone size classes		and the provent	
Soil colour	Red	Red present					
	Condition Habitat Features						
Duality	Disturbed		Water Source	Present		A A A A A A A A A A A A A A A A A A A	
ire History	Recently burnt (<1 year)		Microhabitats	Microhabitats Hummocks			A SAME STOLLER I AND
Disturbance	None observed		INICI ON ADITALS				
ntroduced fauna	None observed		Ground Cover	11-25%			
		-	Vegetation			and the second second	
Jpper stratum	Absent					· Jak	
vlid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)		Acacia colei		the paper and a second	
Ground stratum	Low (>0.5 m)	Sparse hummock grasslan	d (0.25-20%)	Triodia epactia and Acacia	stellaticeps	Fulcrum photo ID	611ef857-d727-424d-a700-26128af248d3,79a8c89e-68ba-40d3

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					675.072	189-HAB-81		
Project:	675.072189							
Date	4-03-2024		Sample Ty	rpe	Habitat Assessment			10 alling
Zone 50	Easting	7	705537		Northing	7742821	See.	
	Landform and Soil				Rock		200	a second and the second s
Landform	Drainage line		Rock type/	S			at the second	
Aspect	Negligible		Surface sto	ne cover	0 - 5%			
Soil type	Sand		Surface sto	ne size classes	Pebbles (<0.6 cm)			
Soil colour	Red		present	present				
	Condition			Habitat Features			1 - fare -	
Quality	Disturbed		Water Sou	се	Absent			
Fire History	Little or no fire evidence	e (>5 years)	Microhabit	ats	Hollows - logs, Hollows - trees, Leaf litter, Woody debris			
Disturbance	Vehicle tracks					- Barrow -		
Introduced fauna	Cattle		Ground Co		26-50%			the second se
			Vegetatio	n	1		and the second	and the second se
Upper stratum	Mid (10-30 m)	(10-30 m) Woodland (20-50%)		Eucalyprtus camaldulensis or Eucalyptus victrix				
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)		Acacia sp.	Acacia sp.			
Ground stratum	Low (>0.5 m)	>0.5 m) Sparse hummock grassland (0.25-20%)		Triodia epactia		Fulcrum photo ID	1b92d4e6-66cd-409f-8dec-f08a1eab90f3,0d1ed0b0-d8f7-4830-bac0-	

				675.072189-HAI	B-82	
Project:	675.072189					
Date	4-03-2024		Sample Type	Habitat Assessment		
Zone 50	Easting	705422		Northing 7742554.	.8	CAPPORT AND A DESCRIPTION OF THE OWNER OF THE
•	Landform and Soil			Rock		
andform	Plain		Rock type/s	Granite		
Aspect	Negligible		Surface stone cover	75 - 100%		And the ball of the second state and the second
Soil type	Rock		Surface stone size classes	classes Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)		and the second se
Soil colour	Red		present			
	Condition		Habitat Features			
Duality	Disturbed		Water Source	Absent		and the second and the second second
ire History	Little or no fire evidence (>		Microhabitats Hummocks, Leaf litter			and the all the second in the fail of
Disturbance	Overgrazing, Vehicle tracks					and the second second second second
ntroduced fauna	Cattle		Ground Cover			
	_		Vegetation			and the second sec
Jpper stratum	Absent					1 the second sec
Vid stratum	Absent					
Ground stratum	Low (>0.5 m)	Sparse hummock grassland	1 (0.25-20%)	Triodia sp.		Fulcrum photo ID b7032231-71ca-4a0e-865f-9a336edd1e68



				675.07	72189-HAB-83		
Project:	675.072189						
Date	5-03-2024		Sample Type	Habitat Assessmen	t	Strate 1	and the second second
Zone 50	Eastin	g 691697		Northing	7741118		Real Print Carl
	Landform and So	bil		Rc	ck		
Landform	Plain		Rock type/s	None		And the second second second second	and the second s
Aspect	Negligible		Surface stone cover				
Soil type	Clay loam	Clay loam		Surface stone size classes			a second s
Soil colour	Orange		present			1 - Carl	and the second s
	Condition			Habitat	Features	and the California is	and the second second second second
Quality	Very good		Water Source	Absent			
Fire History	Little or no fire evide	nce (>5 years)	Microhabitats	Microhabitats Termite mounds, Woody debris, Peeling bark, Logs > 10 cm, Hummocks, Burrows			
Disturbance	Vehicle tracks						
Introduced fauna	None observed		Ground Cover	26-50%		No. of Contraction	
			Vegetation			A CALL AND AND	
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	olated trees (<0.25%)		Eucalyptus sp.		Part Salahu and Salahu
Mid stratum	Mid (1-2 m)	d (1-2 m) Sparse shrubland and/or heathland (0.25-20%)		Acacia sp.			
Ground stratum	atum Absent Open hummock grassland (20-50%)		Triodia epactia and A	Acacia stellaticeps	Fulcrum photo ID	4134a2fe-344e-4d09-808c-aac01b61eb87	

					675.072189-HAB-84	
Project:		675.072189				
Date		5-03-2024		Sample Type	Habitat Assessment	
Zone	50	Easting	691	642	Northing 7741041.5	
		Landform and Soil			Rock	
Landform		Plain		Rock type/s	None	
Aspect		Negligible		Surface stone cover		
Soil type		Sand		Surface stone size c	lasses	
Soil colour		Red		present		
		Condition		Habitat Features		
Quality		Good		Water Source	Absent	
Fire History		Little or no fire evidence	e (>5 years)	Microhabitats	rohabitats Hummocks, Leaf litter	
Disturbance		Vehicle tracks		Crewerd Crewer	27 500	
Introduced f	Tauna	None observed		Ground Cover	26-50%	
				Vegetation		
Upper stratu	um	Absent				
Mid stratum	n	Mid (1-2 m)	Sparse shrubland	and/or heathland (0.25-20%)	Acacia sp.	
Ground stra	atum	Mid (0.5-1 m)	Open hummock g	rassland (20-50%)	Triodia epactia and Acacia stellaticeps	

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				675.0721	189-HAB-85		
Project:	675.072189						
Date	5-03-2024		Sample Type	Habitat Assessment		1.0	and the second second
Zone 50	Easting	705117	-	Northing	7742798		
	Landform and Soil			Rock		and the same	
Landform	Plain		Rock type/s	Granite			the second s
Aspect	Negligible		Surface stone cover	0 - 5%		and the second se	and the second se
Soil type	Sand Surf		Surface stone size classes	e classes Stones (2 - 6 cm), Small Rocks (6 - 20 cm)		Statistic Lines	and the second sec
Soil colour	Red		present			STREET, STREET	of the second seco
	Condition			Habitat Featu	ures	Contraction of the second	and the second residence and
Quality	Very good		Water Source	Present		THE WERE ARE .	A PROPERTY OF A
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Microhabitats Hummocks, Rock crevices		Contra Contra	A CONTRACTOR OF THE OWNER
Disturbance	None observed		initio on abritato				CARDINAL PROPERTY AND INCOMENTS OF
Introduced fauna	None observed		Ground Cover	26-50%		ALC: NOT THE REAL PROPERTY OF	
		-	Vegetation	-		a martin	and the second second second second
Upper stratum	Absent					State State	A CONTRACT OF STREET
Mid stratum	Mid (1-2 m) Sparse shrubland and/or heathland (0.25-20%)		Acacia Inaequilatera		Tel State		
Ground stratum	Low (>0.5 m)	Open hummock grassla	nd (20-50%)	Triodia secunda		Fulcrum photo ID	0a608e4d-4291-4c1f-9b20-83715219d02b,ff897837-e14a-4972-902a-

				675.072	189-HAB-86	
Project:	675.072189					
Date	5-03-2024		Sample Type	Habitat Assessment		
Zone 50	Easting	705211		Northing	7742135.1	
	Landform and Soil			Rock	•	
Landform	Outcrop/breakaway		Rock type/s	Granite		
Aspect	Negligible		Surface stone cover	75 - 100%		
Soil type	Sandy clay		Surface stone size classes present	Rocks (6 - 20 cm), Rocks	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m),	
Soil colour	Red		•	Boulders (>2 m)		
	Condition		Habitat Features			
Quality	Very good		Water Source	Absent		
Fire History	Little or no fire evidence	e (>5 years)	Microbabitats	crohabitats Exfoliating rock, Hummocks, Rock crevices		
Disturbance	None observed		When on a official s			
Introduced fauna	None observed		Ground Cover	11-25%		
			Vegetation			
Upper stratum	Absent					
Mid stratum	Mid (1-2 m) Sparse shrubland and/or heathland (0.25-20%)		Acacia Inaequilatera			
Ground stratum	Low (>0.5 m)	Open hummock grassland (	20-50%)	Triodia epactia		

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				675.072	189-HAB-87		
Project:	675.072189						the second se
Date	5-03-2024		Sample Type	Habitat Assessment			The second se
Zone 50	Easting	704953		Northing	7740478		and the second
	Landform and Soil			Rock			
Landform	Plain		Rock type/s	None		States of the second	-
Aspect	Negligible		Surface stone cover			and the second se	
Soil type	Sand		Surface stone size classes	Surface stone size classes		market and a second	And the second sec
Soil colour	Red		present			the stand of the s	a delite proprio a seconda delite
	Condition			Habitat Fea	tures	A series of the second second second	
Quality	Good		Water Source	Present			
Fire History	Unknown		Microhabitats Hummocks				
Disturbance	Vehicle tracks						
Introduced fauna	None observed		Ground Cover	51-75%			
		_	Vegetation				
Upper stratum	Absent						
Mid stratum	Mid (1-2 m)	Mid (1-2 m) Open shrubland and/or heathland		Acacia Inaequilatera		Mar Alter	Sector Alexander
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia		Fulcrum photo ID 34cd996e-a	ee1-4dde-841e-f06e1997b8e0,2a0032c7-b59d-471e-b5a1

				675.072 <sup>°</sup>	189-HAB-88	
Project:	675.072189					
Date	5-03-2024		Sample Type	Habitat Assessment		And a second
Zone 50	Easting	675117		Northing	7738072.3	- the state of the second s
	Landform and Soil			Rock		
Landform	Plain		Rock type/s	None		
Aspect	Negligible		Surface stone cover			
Soil type	Sand		Surface stone size classes			
Soil colour	Red		present			
	Condition		Habitat Features			
Quality	Very good		Water Source	Present		
Fire History	Unknown		Microhabitats Hummocks, Leaf litter			
Disturbance	None observed					
Introduced fauna	None observed			51-75%		A CARACTER STATE OF A CARA
		T	Vegetation	1		
Upper stratum	Absent					
Mid stratum	Tall (>2 m)	m) Open shrubland and/or heathland		Eucalyptus sp.		
Ground stratum	Low (>0.5 m)	Hummock grassland (50-8	0%)	Triodia epactia and Acac	sia stellaticeps	Fulcrum photo ID         7060878e-b139-4f8b-a60a-bc28c44f1e23,4c7dd966-0377-4479-a764-

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				675.0721	189-HAB-89		
Project:	675.072189						and the second second
Date	6-03-2024		Sample Type Habitat Assessment				
Zone 50	Easting 704362			Northing	7742751	and the second sec	in the second second
	Landform and Soil			Rock		and the second	and the second sec
Landform	Undulating plain		Rock type/s	Granite, Quartz			and the second s
Aspect	Negligible		Surface stone cover	75 - 100%			and the second second second second
Soil type	Sand		Surface stone size classes		Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small	and the particular	and the second sec
Soil colour	Red		present	Rocks (6 - 20 cm)		allow was	and a second and the second of the second of the second se
	Condition		Habitat Features			STATISTICS.	A STATE OF THE OWNER OF THE OWNER OF THE OWNER OF
Quality	Good		Water Source	Present		1998年1月1日	the freedom is the state of the state of the state of the
Fire History	Burnt (1-5 years)	urnt (1-5 years)		Microhabitats Hummocks, Termite mounds			
Disturbance		Vehicle tracks				<b>建国际,此间在</b> 外	and the second
Introduced fauna	None observed		Ground Cover	11-25%			
		1	Vegetation	1			A STATISTICS AND A STATISTICS
Upper stratum	Absent					and the	
Mid stratum	Low (0.5-1 m) Sparse shrubland and/or heathla		eathland (0.25-20%)	Acacia Inaequilatera		the sea	
Ground stratum	Low (>0.5 m)	Low (>0.5 m) Sparse hummock grassland (0.25-20%)		Triodia epactia		Fulcrum photo ID	834a9930-49b9-499c-aaf1-bb053e9db2d9,a4c77984-9b15-4a74-a417

						675.072 <sup>-</sup>	189-HAB-90		
Project:		675.072189							
Date		6-03-2024 Sample Type		Habitat Assessment					
Zone	50	Easting		679404		Northing	7739440.1	Acres 100	
	:	Landform and Soil				Rock		diana and	the second and the
Landform		Plain			Rock type/s Limestone, Quartz		the state of the state		
Aspect		Negligible			Surface stone cover 75 - 100%			Carlo and and a state	
Soil type		Sand			Surface stone size classes	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small		and the second second	The same set of the same set in the same
Soil colour		Red			present Rocks (6 - 20 cm)		A MARINE AND	A REAL PROPERTY OF THE OWNER.	
		Condition	Habitat Features					Normal Street Street	A DESCRIPTION OF THE OWNER OF THE OWNER OF THE
Quality		Good			Water Source Absent		and the second second		
Fire History		Little or no fire evidence (>	re evidence (>5 years) Microbabitats		Microhabitats	Hummocks		and the second second	
Disturbance		Vehicle tracks						as the plan on when	All the second second
Introduced fa	auna	None observed			Ground Cover 51-75%		Care and the second	A REAL PROPERTY AND A REAL	
		1	T		Vegetation	1		State State	
Upper stratur	m	Absent							and the second sec
Mid stratum		Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		Acacia Inaequilatera		March 1997		
Ground stratu	um	Low (>0.5 m)	ow (>0.5 m) Open hummock grassland (20-50%)		Triodia epactia		Fulcrum photo ID	5b7b119e-1d32-4d8a-91db-bad4e76792b3,3ba5136a-8e32-4406-	

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				675.072	189-HAB-91	
Project:	675.072189					
Date	6-03-2024		Sample Type	Habitat Assessment		
Zone 50	Easting	677145		Northing	7738837	
·	Landform and Soil			Rock		
Landform	Drainage line		Rock type/s			
Aspect	Negligible		Surface stone cover	0 - 5%		and the second se
Soil type	Sand		Surface stone size classes			A Decided
Soil colour	Red		present	Pebbles (<0.6 cm), Small	Stones (0.6 - 2 cm), Stones (2 - 6 cm)	The state of the state of the second state of
	Condition			Habitat Feat	tures	
Quality	Very good		Water Source	Absent		
Fire History	Little or no fire evidence	ce (>5 years)	Microhabitats	Hummocks, Leaf litter		A SALE AND AND A SALE
Disturbance	None observed		Iviici on abitats	Hummbers, Lear Inter		
Introduced fauna	None observed		Ground Cover	51-75%		
			Vegetation			Windows and a set of the set of t
Upper stratum	Low (<10 m)	Open woodland (0.25-20%	)	Eucalyptus victrix		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or h	eathland (0.25-20%)	Eucalyptus sp.		
Ground stratum	Mid (0.5-1 m)	Hummock grassland (50-80	0%)	Triodia epactia		Fulcrum photo ID         c3a16e9e-7c1b-4dbf-bc6b-de14f56f4f25,ced3c877-84ea-45e7-9429-

					675.07	72189-HAB-92			
Project:	675.072189						and the second second		7
Date	8-03-2024		Sai	nple Type	Habitat Assessmen	t			
Zone 50	Easting		685527		Northing	7740034.9	and the second	-	
	Landform and Soi	I			Ro	ock	1000		
Landform	Plain		Rod	ck type/s	None				-
Aspect	Negligible		Sur	face stone cover					
Soil type	Sand		Sur	face stone size classes			- A	St the	
oil colour	Red		pre	sent			1. 1. 1.	All in the	NO.5
	Condition		Hal	oitat Features				En 2	1
Duality	Very good		Wa	ter Source	Absent		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E.L.	
Fire History	Little or no fire eviden	ce (>5 years)	Mi	crohabitats	Hummocks, Leaf litte	ar .		Start?	
Disturbance	None observed					1	30/1-1	and the	-
Introduced fauna	None observed			ound Cover	26-50%		A 19		
			Ve	egetation	-		S. Sec.	The Alter	Ser. 1
Jpper stratum	Absent							at any	
Vid stratum	Mid (1-2 m)	Open shrub	bland and/or heathla	nd (20-50%)	Acacia inaequilatera,	and Acacia colei			
Ground stratum	Low (>0.5 m)	Open humr	mock grassland (20-5	0%)	Triodia epactia and A	Acacia stellaticeps	Fulcrum photo		0b422a7

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				675.072 <sup>°</sup>	189-HAB-93		
Project:	675.072189						
Date	9-03-2024		Sample Type	Habitat Assessment			
Zone 50	Easting	672963	-	Northing	7737657		
	Landform and Soil			Rock		in an al	the second and the second second second
Landform	Plain		Rock type/s	None		GR. 1998. W.	Strategic - Annalise State State of
Aspect	Negligible		Surface stone cover				
Soil type	Sand		Surface stone size classes			All and the second second	
Soil colour	Red		present			of the second second	A DESCRIPTION OF THE OWNER OF THE
	Condition			Habitat Feat	ures	A STATE OF	and the second second second
Quality	Very good		Water Source	Absent		at the state of the	A STREET, CALLER & CALLER AND A
Fire History	Little or no fire evidence (>	5 years)	Microhabitats	Hummocks, Leaf litter		AL LON	Martin Martin Contraction of the State
Disturbance	None observed		Wher on a briad			A STATE OF THE STATE OF	AND MARKED AND ADDRESS OF THE OWNER OWNE
Introduced fauna	None observed		Ground Cover	51-75%		San Street	
	1		Vegetation				ALL THE REAL PROPERTY OF THE
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	)	Corymbia candida		and the second s	the the the second is
Mid stratum	Tall (>2 m)	Shrubland and/or heathlan	d (50-80%)	Acaica colei			
Ground stratum	Low (>0.5 m)	Open hummock grassland	(20-50%)	Triodia epactia, Eulalia sp	0.	Fulcrum photo ID	9ede5cf7-3991-448c-af54-15bb8bea5c0d,76baa306-8dc5-40bb-9d7f-

				675.07	2189-HAB-94		
Project:	675.072189						
Date	0-01-1900		Sample Type	Habitat Assessment			
Zone 50	Easting	700338		Northing	7740919.7		
	Landform and Soil			Ro	:k	Querry and a state of the	and the second second second second
Landform	Plain		Rock type/s	None		1. Cliffer and States	And the second
Aspect	Negligible		Surface stone cover				a second and the second and the second second
Soil type	Sand		Surface stone size classes				
Soil colour	Red		present			The second of	and the second s
	Condition		Habitat Features	_		A CARD AND A PARTY OF	All and a second s
Quality	Very good		Water Source	Absent			THE REAL PROPERTY AND ADDRESS OF THE REAL PROPERTY ADDRESS OF THE REAL PROP
Fire History	Little or no fire evidence	(>5 years)	Microhabitats	Hummocks		and a second	the second second second
Disturbance	None observed						The water was all there are all the
Introduced fauna	None observed		Ground Cover	51-75%		A State of the second s	
			Vegetation	1		A A A A A A A A A A A A A A A A A A A	
Upper stratum	Absent					CALORINA M	
Mid stratum	Low (0.5-1 m)	Isolated shrubs and/or he	ath shrubs (<0.25%)	Acacia Inaequilatera			
Ground stratum	Low (>0.5 m)	Open hummock grassland	l (20-50%)	Triodia epactia		Fulcrum photo ID	cff17ceb-7bc8-4bbb-ae8d-dd119bd8296c



# Appendix J Fauna Recorded During the Survey

## **Atlas Ridley Magnetite Project Connection**

### Flora and Fauna Survey Technical Report

**Horizon Power** 

SLR Project No.: 675.072189.00001

29 July 2024



Conservation Status: State - Listed under Biodiversity Conservation Act 2016, Federal - Listed under Environmental Protection and Biodiversity Conservation Act 1999. CR - Critically Endangered, EN - Endangered, VU - Vulnerable, MI/IA - Migratory, CD - Conservation Dependent fauna, OS - Other Specially Protected fauna, MA - Marine, P - Listed as Priority by DBCA.

			Conse	rvation tus				Me	ethod			
Family	Scientific Name	Common Name	State	Federal	Call	Sighting	Scat	Tracks	Remains	Mound	ARU	Camera Trap
Aves												
Accipitridae	Aquila audax	Wedge-tailed Eagle				1						
Alaudidae	Mirafra javanica	Horsfield's Bush Lark				1						1
Alcedinidae	Todiramphus sanctus	Sacred Kingfisher		MA		1						
Artamidae	Gymnorhina tibicen	Australian Magpie				1						
Artamidae	Artamus cinereus	Black-faced Woodswallow				3	1					
Artamidae	Cracticus nigrogularis	Pied Butcherbird				1						
Cacatuidae	Eolophus roseicapilla	Galah				4						
Cacatuidae	Cacatua sanguinea	Little Corella				2						
Cacatuidae	Cacatua galerita	Sulphur-crested Cockatoo				1						
Campephagidae	Coracina novaehollandiae	Black-faced Cuckooshrike		MA		4						1
Casuariidae	Dromaius novaehollandiae	Emu						1				
Columbidae	Ocyphaps lophotes	Crested Pigeon				6						1
Columbidae	Geophaps plumifera	Spinifex Pigeon				7						4
Columbidae	Geopelia cuneata	Diamond Dove				1						6
Corvidae	Corvus orru	Torresian Crow			1	3						4
Estrildidae	Taeniopygia castanotis	Australian Zebra Finch			4	6						3
Falconidae	Falco berigora	Brown Falcon				3						
Falconidae	Falco cenchroides	Nankeen Kestral		MA		4						
Maluridae	Malurus leucopterus	White-winged Fairywren		MA		2						
Meliphagidae	Gavicalis virescens	Singing Honeyeater			1	4						
Meliphagidae	Lichmera indistincta	Brown Honeyeater				1						
Meliphagidae	Ptilotula penicillata	White-plumed Honeyeater				1						
Meliphagidae	Manorina flavigula	Yellow-throated Miner										2
Meropidae	Merops ornatus	Rainbow Bee-eater	MA		1	4						
Monarchidae	Grallina cyanoleuca	Magpie-lark	MA			1						2
Motacillidae	Anthus australis	Australian Pipit	MA			3						
Otididae	Ardeotis australis	Australian Bustard				1			1			
Podicipedidae	Tachybaptus novaehollandiae	Australasian Grebe, Black- throated Grebe				1						

				rvation atus				Me	ethod			
Family	Scientific Name	Common Name	State	Federal	Call	Sighting	Scat	Tracks	Remains	Mound	ARU	Camera Trap
Psittaculidae	Barnardius zonarius	Australian Ringneck				1						
Rhipiduridae	Rhipidura leucophrys	Willie Wagtail			3							
Mammalia												
Bovidae	Bos primigenius taurus	European Cattle				3	9	3	1			2
Dasyuridae	Sminthopsis macroura	Stripe-faced Dunnart										2
Felidae	Felis catus	Cat				1		2				1
Macropodidae	Osphranter rufus	Red Kangaroo, Marlu				4						2
Macropodidae	Osphranter robustus	Common Wallaroo										2
Molossidae	Chaerephon jobensis colonicus	Greater Northern Free-tailed Bat									23	
Muridae	Pseudomys chapmani	Western Pebble-mound Mouse	P4							6		
Rhinonycteridae	Rhinonicteris aurantia Pilbrara Form	Pilbara Leaf-nosed Bat	VU	VU							7	
Vespertilionidae	Chalinolobus gouldii	Gould's Wattled Bat									29	
Vespertilionidae	Scotorepens greyii	Little Broad-nosed Bat									14	
Vespertilionidae	Vespadelus finlaysoni	Finlayson's Cave Bat									23	
Reptilia												
Agamidae	Gowidon longirostris	Long-nosed Dragon										1
Agamidae	Ctenophorus caudicinctus	Western Ring-tailed Dragon				3						2
Agamidae	Ctenophorus isolepis	Central Military Dragon										1
Elapidae	Pseudonaja mengdeni	Western Brown Snake										2
Scincidae	Ctenotus saxatilis	Rock Ctenotus										29
Scincidae	Egernia epsisolus	Eastern Pilbara Spiny-tailed Skink										5
Scincidae	Tiliqua multifasciata	Central Blue-tongue										1
Scincidae	Morethia ruficauda	Lined Fire-tailed Skink										1
Varanidae	Varanus gouldii	Bungarra Or Sand Goanna				1						4
Varanidae	Varanus panoptes	Argus Monitor										3
Varanidae	Varanus acanthurus	Spiny-tailed Goanna										9



# Appendix K Significant Fauna Likelihood of Occurrence

## **Atlas Ridley Magnetite Project Connection**

### Flora and Fauna Survey Technical Report

**Horizon Power** 

SLR Project No.: 675.072189.00001

29 July 2024



		Conser	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
Birds						
	Erythrotriorchis radiatus			Tropical and subtropical open- forests and woodlands		Low
Accipitridae	Red Goshawk	VU	EN	dominated by eucalypts and paperbarks along streams and near wetlands (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	No nearby records.
	Apus pacificus				The DBCA database identified six records within 50 km of the	Medium
Apodidae	Pacific Swift, Fork- tailed Swift	MI	MI, MA	Low to very high airspace over varied habitat (Pizzey and Knight, 2012).	Survey Area, including one record 3.5 km east in 2007 and two records approximately 38 km south in 2022 (DBCA, 2024d).	Multiple historic records. Taxon may utilise airspace over the Survey Area.
	Charadrius Ieschenaultii			Wide, sandy, or shelly beaches; sandspits, tidal mudflats, reefs,	The DBCA database identified 55 records	Low
Charadriidae	Greater Sand Plover	VU	VU, MI, MA	sand cays, mangroves, saltmarsh, dune wilderness, bare paddocks; seldom far inland (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including two records 15 km north in 2016 and 2017 (DBCA, 2024d).	No suitable habitat within the Survey Area.

		Consei	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Charadrius mongolus			Tidal mudflats and sandflats; gently sloping sandy and	The DBCA database	Low
Charadriidae	Lesser Sand Plover	EN	EN, MI, MA	shelly beaches; saltmarsh, estuaries, atolls, reefs, mangroves, airfield. Occasionally inland on freshwater lakes, swamps, bore drains (Pizzey and Knight, 2012).	identified 34 records within 50 km of the Survey Area, including two records 15 km north in 2016 and 2017 (DBCA, 2024d).	No suitable habitat within the Survey Area.
	Charadrius veredus		Open plains; bare, rolling country, often far from water;		The DBCA database	High
Charadriidae	Oriental Plover	MI	MI, MA	ploughed land; muddy or sandy wastes near inland swamps or tidal flats; bare claypans; margins of coastal marshes; grassy airfields, sports fields, lawns (Pizzey and Knight, 2012).	identified 18 records within 50 km of the Survey Area, including two records 14 km north in 2015 and 2016 (DBCA, 2024d).	Nearby records, and suitable habitat within the Survey Area.

		Conse	rvation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Pluvialis fulva			Estuaries, mudflats, saltmarshes, mangroves; rocky		Low
Charadriidae	Pacific Golden Plover	MI	MI, MA	reefs and stranded seaweed on ocean shores; margins of shallow open inland swamps; sewage ponds, short-grass paddocks, sportsground, airfield, ploughed land (Pizzey and Knight, 2012).	The DBCA database identified 24 records within 50 km of Survey Area, including two records 15 km north in 2016 and 2017 (DBCA, 2024d).	No suitable habitat within the Survey Area.
	Pluvialis squatarola			Mudflats, saltmarsh; tidal reefs and	The DBCA database identified 30 records within 50 km of the	Low
Charadriidae	Grey Plover	MI	VU, MI, MA	estuaries, rarely inland (Pizzey and Knight, 2012).	Survey Area, including two records 15 km north in 2016 and 2017 (DBCA, 2024d).	No suitable habitat within the Survey Area.
Cuculidae	Cuculus saturatus optatus			Monsoon forest, rainforest edges; leafy trees in paddocks;	No nearby records	Low
	Horsfield's Cuckoo	MI	MI, MA	river flats, roadsides, mangroves, islands (Pizzey and Knight, 2012).	identified from the database searches or literature.	No nearby records.

		Consei	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Falco hypoleucos				The DBCA database identified nine records	High
Falconidae	onidae VU Grey Falcon		VU	Open plains with treed watercourses in arid inland (Menkhorst et al., 2017).	within 50 km of the Survey Area, including 2.9 km north in 2016 and 9 km southwest in 2018 (DBCA, 2024d).	Nearby records, and suitable treed waterourses in arid inland habitat within the Survey Area
	Falco peregrinus			Most environments with suitable nest	The DBCA database	High
Falconidae	Peregrine Falcon	OS	_	sites: cliff faces preferred, including man-made ones, commonly uses stick nests built by other species (Menkhorst et al., 2017).	identified seven records within 50 km of the Survey Area, including two records 2.5 and 3 km west in 2012 (DBCA, 2024d).	Nearby Records, and suitable habitat within the Survey Area. May use Survey Area for Hunting.
	Fregata ariel				The DBCA database identified 17 records	Low
Fregatidae	Lesser Frigatebird	MI	MI, MA	Oceanic, breed on islands (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including two records 13 and 15 km north in 2016 (DBCA, 2024d).	No suitable habitat within the Survey Area.
Fregatidae	Fregata minor			Oceanic, breed on	No nearby records	Low
	Greater Frigatebird	MI	MI, MA	islands (Pizzey and Knight, 2012).	identified from the database searches or literature.	No nearby records and no suitable habitat within the Survey Area.

		Conser	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Glareola maldivarum			Plains; shallow wet	The DBCA database identified 29 records within 50 km of the	Previously Recorded
Glareolidae	Oriental Pratincole	MI	MI, MA	and dry edges of open bare wetlands; tidal mudflats, beaches (Pizzey and Knight, 2012).	Survey Area, including one record within the Survey Area in 2004 and 0.2 km from the Survey area in 2013 (DBCA, 2024d).	Recorded within the Survey Area in 2004 and limited suitable open plains and seasonal wetland habitat within the Survey Area.
	Hirundo rustica Hirundinidae Barn Swallow	MI MI, MA		Open country;	The DBCA database identified 20 records	High
Hirundinidae			agricultural land, especially near water; railyards, towns, overhead wires (Pizzey and Knight).	within 50 km of the Survey Area, including 14 km north in 2015 and 8 km north in 2014 (DBCA, 2024d).	Nearby records, and suitable open country and seasonal wetland habitat within the Survey Area.	
	Anous stolidus			Oceanic; cays, reefs,	No nearby records	Low
Laridae	Common Noddy, Brown Noddy	MI	MI, MA	buoys and piles (Pizzey and Knight, 2012).	identified from the database searches or literature.	No nearby records and no suitable habitat within the Survey Area.
	Chlidonias leucopterus			Large coastal and inland wetland;	The DBCA database identified 44 records	Medium
Laridae	White-winged Black Tern	MI	MI, MA	saltfields, sewage ponds, estuaries, coastal waters (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including 15 km north in 2016 and 3 km north in 2010 (DBCA, 2024d).	Nearby records and limited seasonal wetland habitat within the Survey Area.

		Conse	rvation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Gelochelidon nilotica			Coastal, offshore waters; beaches,	The DBCA database identified 45 records	Medium
Laridae	Laridae Gull-billed Tern	MI MI, MA		mudflats, estuaries, larger rivers, reserviors, lakes (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including 0.7 km south in 2004 and 15 km north in 2017 (DBCA, 2024d).	Limited major drainage habitat within the Survey Area.
	Hydroprogne caspia Laridae Caspian Tern			Coastal, offshore waters; beaches,	The DBCA database identified 119 records	Medium
Laridae		MI MI, MA		mudflats, estuaries, larger rivers, reservoirs, lakes. Sometimes found inland (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including two records 3 km north in 2007 and 15 km north in 2017 (DBCA, 2024d).	Limited major drainage habitat within the Survey Area.
	Onychoprion anaethetus			Oceanic, rarely coastal (Pizzey and Knight, 2012).	The DBCA database identified two records	Low
Laridae	Bridled Tern	MI	MI, MA		within 50 km of the Survey Area, 11.3 km north in 1995 and 13.1 km north in 1995 (DBCA, 2024d).	No suitable habitat within the Survey Area.
	Sterna dougallii			Offshore waters,	The DBCA database identified one record	Low
Laridae	Roseate Tern	MI	MI, MA	islands, coral reefs, sand cays, beaches, tidal inlets (Pizzey and Knight).	within 50 km of the Survey Area, including 18 km north in 2015 and 12 km north in 2014 (DBCA, 2024d).	No suitable habitat within the Survey Area.

		Consei	rvation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Sterna hirundo			Offshore waters, beaches, reefs, bays,	The DBCA database identified 12 records	Medium
Laridae	Common Tern	МІ	MI, MA	estuaries, sandflats, saltfields, sewage ponds, freshwater wetlands (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including 12.3 km north in 2014 and 12.7 km north in 2004 (DBCA, 2024d).	Limited seasonal wetland habitat within the Survey Area.
	Sternula albifrons	albifrons		Coastal waters, bays, inlets, saline or	The DBCA database identified 28 records	Low
Laridae	MI Little Tern	MI	MI, MA	brackish lakes, saltfields, sewage ponds near coast (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including two records 15 km north in 2016 and 2017 (DBCA, 2024d).	No suitable habitat within the Survey Area.
	Sternula nereis nereis		VU, MA	Coastal, bays, inlets, beaches, salt ponds and lakes (Morcombe, 2003).	The DBCA database identified two records within 50 km of the Survey Area, including 11.3 km north in 1995 and 12.6 km north in 2008 (DBCA, 2024d).	Low
Laridae	Laridae VU Fairy Tern	VU				No suitable habitat within the Survey Area.
	Thalasseus bergii			Coastal, offshore	The DBCA database identified 37 records	Low
Laridae	Greater Crested Tern, Crested Tern	MI	MI, MA	waters; beaches, bays, inlets, tidal rivers, salt swamps, lakes, larger rivers (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including two records 15 km north in 2016 and 2017, and 3 km east in 2007 (DBCA, 2024d).	No suitable habitat within the Survey Area.

		Consei	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Amytornis whitei whitei			Spinifex associated with mallee, acacias, though prefer tall		Medium
Maluridae	Rufous Grasswren	P4	_	dense spinifex hummocks; rocky slopes, and ridges; <i>A.</i> <i>whitei whitei</i> also inhabit coastal shrubs (Pizzey and Knight, 2012; Menkhorst et al. 2017).	Two NatureMap records were identified (DBCA, 2024b).	Two records within desktop study area. Suitable habitat present within the Survey Area.
	Motacilla cinerea		MI, MA	Running water near disused quarries;		Low
Motacillidae	Motacillidae Grey Wagtail	MI		sandy, rocky streams in escarpments; sewage ponds, ploughed fields, airfields (Pizzey and Knight 2012).	No nearby records identified from the database searches or literature.	Limited seasonal damp grassland habitat within the Survey Area but no recent record.
	Motacilla tschutschensis		MI, MA	Short grass and bare ground; swamp	The DBCA databse identified two records	Low
Motacillidae	Eastern Yellow Wagtail	MI		margins, sewage ponds, saltmarshes, ploughed fields, airfields, lawns (Pizzey and Knight, 2012).	within 50 km of the Survey Area, both 13.7 km north in 1982 (DBCA, 2024d).	Limited seasonal damp grassland habitat within the Survey Area but no recent record.

		Consei	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
Pano	Pandion haliaetus			Coasts, estuaries, bays, inlets; islands	The DBCA database identified 87 records	High
Pandionidae	Pandionidae MI Osprey	MI	MI, MA	and surrounding waters; coral atolls, reefs, lagoons, rock cliffs, stacks; larger rivers (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including 15 km north in 2017 and 5.0 km north in 2013 (DBCA, 2024d).	Nearby and recent records and suitable major drainage line habitat within the Survey Area.
	Pezoporus occidentalis			Seeding spinifex on stony rises, breakaway country, sandy		Low
Psittaculidae	Night Parrot	CR	EN	lowlands; shrubby glasswort, chenopods; succulents on flats around salt lakes; flooded claypans, saltbush, bluebush, bassia associations (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	No suitable habitat within the Survey Area.

		Conservation Status				
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Actitis hypoleucos			Shallow, pebbly, muddy, or sandy		Medium
Scolopacidae	Common Sandpiper	MI	MI, MA	sedges of rivers and streams, coastal to far inland; dams, lakes, sewage ponds; margins of tidal rivers; waterways in mangroves or saltmarsh; mudflats; rocky or sandy beaches; causeways, riverside lawns, drains, street gutters (Pizzey and Knight, 2012).	The DBCA database identified 90 records within 50 km of the Survey Area, including two records 15 km north in 2017 and 3 km north in 2014 (DBCA, 2024d).	Nearby records and limited seasonal wetland habitat within the Survey Area.
	Arenaria interpres			Tidal reefs and pools; weed-covered rocks; pebbly, shelly and		Low
Scolopacidae	Ruddy Turnstone	MI	VU, MI, MA	sandy shores with stranded seaweed; mudflats; occasionally inland on shallow waters; sewage ponds, commercial saltflats, open or ploughed ground (Pizzey and Knight, 2012).	The DBCA database identified 104 records within 50 km of the Survey Area, including two records 3 km north in 2010 and 15 km north in 2017 (DBCA, 2024d).	No suitable habitat within the Survey Area.

		Consei	rvation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Calidris acuminata			Tidal mudflats, saltmarshes, mangroves; shallow		Medium
Scolopacidae	Sharp-tailed Sandpiper	MI	VU, MI, MA	fresh, brackish or saline inland wetlands; muddy edges of lagoons, swamps, lakes, floodwaters, dams, irrigated patures and crops; sewage ponds, saltfields (Morcombe, 2003; Pizzey and Knight, 2012).	The DBCA database identified 48 records within 50 km of the Survey Area, including two records 3 km north in 2014, and 15 km north in 2017 (DBCA, 2024d).	Nearby records and limited suitable habitat present within the Survey Area.
	Calidris alba			Broad ocean beaches	The DBCA database identified 24 records	Previously Recorded
Scolopacidae	Sanderling	MI	MI, MA	of firm sand with seaweed; often near river mouths; also, inlets, tidal mudflats, coastal lagoons (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including one record within the Survey Area in 1981 and 15 km north in 2017 (DBCA, 2024d).	One historic record inside the Survey Area and nearby recent records. Suitable tidal mudflat habitats 10 km north have connectivity to the Survey Area.

Family		Conservation Status				
	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
Calidris canutus			Tidal mudflats,	The DBCA database identified 20 records	Medium	
Scolopacidae	Red Knot	EN	VU, MI, MA	sandflats, beaches, saltmarshes, flooded pastures, ploughed lands (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including three records 13 km north in 2014 and 15 km north in 2016 (DBCA, 2024d).	Limited seasonal floodwater habitat within the Survey Area.
	Calidris falcinellus			Tidal mudflats, estuaries, reefs,	The DBCA database	Medium
Scolopacidae	Broad-billed Sandpiper	MI	MI, MA	saltmarsh, freshwater wetlands and lakes, near-coastal salt lakes; sewage ponds; favours muddy ooze (Morcombe, 2003; Pizzey and Knight, 2012).	identified 24 records within 50 km of the Survey Area, including two records 15 km north in 2016 and 2017(DBCA, 2024d).	Limited seasonal wetland habitat within the Survey Area.

		Consei	rvation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Calidris ferruginea			Inter-tidal mudflats of estuaries, lagoons,		Medium
Scolopacidae	Curlew Sandpiper	CR	CR, MI, MA	mangrove channel; saltmarsh, saltfields; fresh, brackish, or saline wetlands; flooded saltbush surrounds of inland lakes; dams, floodwaters, sewage ponds (Morcombe, 2003; Pizzey and Knight, 2012).	The DBCA database identified 47 records within 50 km of the Survey Area, including two records 3 km north in 2010, and two records 15 km north in 2016 and 2017 (DBCA, 2024d).	Nearby records and limited seasonal floodwater habitat within the Survey Area.
	Calidris melanotos			Shallow fresh waters, often with low grass or other herbage; swamp margins, flooded pastures, sewage ponds; occasionally tidal areas, saltmarshes (Pizzey and Knight, 2012).	The DBCA database identified two records within 50 km of the Survey Area, including 7.5 km north in 2014 and 17.2 km north in 1988 (DBCA, 2024d).	Medium
Scolopacidae	Scolopacidae Pectoral Sandpiper	MI	MI, MA			Nearby record and limited seasonal floodwater habitat within the Survey Area.
	Calidris pugnax		MI, MA	Fresh, brackish, and	The DBCA database identified two records	Medium
Scolopacidae	Ruff	ff		saline wetlands; tidal mudflats, saltfields, sewage farms (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including 5.5 km south in 1979 and 15.0 km north in 2017 (DBCA, 2024d).	Limited seasonal wetland habitat within the Survey Area.

		Conser	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Calidris ruficollis			Tidal mudflats, saltmarshes, sandy or	The DBCA database identified 84 records	Medium
Scolopacidae	Red-necked Stint	MI	MI, MA	shelly beaches; saline and freshwater wetlands, salt fields, sewage ponds (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including 3 km north in 2014 and two records 15 km north in 2016 and 2017 (DBCA, 2024d).	Nearby record and limited seasonal wetland habitat within the Survey Area.
	Calidris subminuta		MI, MA	Tussocky, weedy margins of shallow wetlands, coastal and inland; sewage ponds, weed on tideline, tidal mudflats (Pizzey and Knight, 2012).	The DBCA database identified 13 records within 50 km of the Survey Area, including two records 3 km north in 2010 and one record 15 km north in 2015 (DBCA, 2024d).	Medium
Scolopacidae	Long-toed Stint	МІ				Nearby record and limited seasonal wetland habitat within the Survey Area.
	Calidris tenuirostris			Tidal mudflats; sandy	The DBCA database identified 38 records within 50 km of the Survey Area, including two records 15 km north in 2016 and 2017, and one record 12 km north in 2014 (DBCA, 2024d).	Medium
Scolopacidae Great Kno	Great Knot	CR	VU, MI, MA	ocean and bay shores; estuaries; shallow saline and freshwater wetlands (Pizzey and Knight, 2012).		Limited seasonal wetland habitat within the Survey Area.
	Gallinago megala		MI, MA	Wet grassy ground; edges of reedy swamps (Pizzey and Knight, 2012).	The DBCA database identified one record	Low
Scolopacidae	Swinhoe's Snipe	MI			within 50 km of the Survey Area, 43.0 km east in 1977 (DBCA, 2024d).	No suitable habitat within the Survey Area.

		Conser	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Gallinago stenura			Boggy edges of vegetated wetlands;	The DBCA database	Medium
Scolopacidae	Pin-tailed Snipe	MI	MI, MA	sewage and other ponds; stubbles, grasslands with shrubs, pastures (Pizzey and Knight, 2012).	identified three records within 50 km of the Survey Area, including 6.8 km north in 2014 and 13.7 km north in 1976 (DBCA, 2024d).	Limited seasonal floodwater habitat within the Survey Area.
	Limnodromus semipalmatus		VU, MI, MA	Beaches, mudflats, commercial saltfields, and sewage ponds (Pizzey and Knight, 2012).	The DBCA database identified 15 records	Low
Scolopacidae	Asian Dowitcher	MI			within 50 km of the Survey Area, including 12.8 km north in 1994 and 15.0 km north in 2017 (DBCA, 2024d).	No suitable habitat within the Survey Area.
	Limosa lapponica		MI, MA	Tidal mudflats, estuaries, sewage ponds, shallow river margins, brackish or saline inland lakes, flooded pastures, airfields (Pizzey and Knight, 2012).	The DBCA database identified 71 records within 50 km of the	Medium
Scolopacidae	Bar-tailed Godwit	МІ			Survey Area, including two records 12 km north in 2014, and two records 15 km north in 2016 and 2017 (DBCA, 2024d).	Limited seasonal flooded paddock and river margin habitat within the Survey Area.

		Consei	rvation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Limosa limosa			Tidal mudflats, estuaries, sandspits,	The DBCA database identified 12 records	Medium
Scolopacidae	Scolopacidae Black-tailed Godwit	MI	MI EN, MI, MA	shallow river margins, sewage ponds; inland on large shallow fresh or brackish waters (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including two records 15 km north in 2013 and 2016 (DBCA, 2024d).	Nearby records, and seasonal wetland habitat within the Survey Area.
	Numenius madagascariensis			Estuaries, tidal mudflats, sandspits, saltmarshes, mangroves; occasionally fresh or brackish lakes; bare grasslands near water (Pizzey and Knight, 2012).	The DBCA database identified 49 records within 50 km of the Survey Area, including 12 km north in 2014 and 13 km north in 2017 (DBCA, 2024d).	Low
Scolopacidae		CR	CR, MI, MA			No suitable habitat within the Survey Area.
	Numenius minutus		MI, MA	Dry grasslands, floodplains, margins of	The DBCA database identified 30 records	High
Scolopacidae	Little Curlew	МІ		drying swamps; tidal mudflats, airfields, playing fields, crops, commercial saltfields, sewage ponds (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including two records 3 km north in 2010, and one record 14 km north in 2016 (DBCA, 2024d).	Nearby records, and suitable dry grassland plains within the Survey Area

		Consei	vation Status		Previous Records	
Family	Scientific Name	State	Commonwealth	Habitat		Likelihood of Occurrence
	Numenius phaeopus			Estuaries, mangroves, tidal flats, coral cays, exposed reefs, flooded	The DBCA database identified 80 records	Medium
Scolopacidae	Whimbrel	MI	MI, MA	paddocks, sewage ponds, bare grasslands, sport grounds, lawns (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including 12 km north in 2015 and 13 km north in 2017 (DBCA, 2024d).	Limited seasonal flooded paddock habitat within the Survey Area.
	Phalaropus lobatus	MI	MI, MA	Shallow pools, tidal mudflats, beaches, saltmarshes, freshwater wetlands; commercial saltfields (Pizzey and Knight, 2012).	The DBCA database identified 11 records within 50 km of the Survey Area, including four records within the Survey Area in 1981 and 15 km north in 2017 (DBCA, 2024d).	Previously Recorded
Scolopacidae	Red-necked Phalarope					Limited seasonal wetland habitat within the Survey Area.
Scolopacidae	Tringa brevipes		MI, MA	Estuaries, tidal mudflats, mangroves; wave-washed rocks and reefs; shallow margins of coastal or inland rivers (Pizzey and Knight, 2012).	The DBCA database identified 74 records	Medium
	Grey-tailed Tattler	MI, P4			within 50 km of the Survey Area, including two records 15 km north in 2016 and 2017, and one record 11 km north in 2014 (DBCA, 2024d).	Limited minor and major drainage habitats within the Survey Area.

		Conservation Status				
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Tringa glareola			Muddy margins of wetlands with		Medium
Scolopacidae	Wood Sandpiper		MI, MA	emergent sedges and taller fringing vegetation; tidal mangroves; margins of tidal mudflats; saltmarshes, sewage pond (Pizzey and Knight, 2012; Menkhorst et al., 2017).	The DBCA database identified 37 records within 50 km of the Survey Area, including one record 3 km north and four records 8 km north in 2014 (DBCA, 2024d).	Nearby records and limited seasonal wetland habitat within the Survey Area.
Scolopacidae	Tringa nebularia		EN, MI, MA	Mudflats, estuaries, saltmarshes, swamps, margins of lakes,	The DBCA database	High
	Common Greenshank	MI		muddy shallows of lagoons; permanent and temporary wetlands, claypans; commercial saltfield, irrigated crops, sewage ponds (Morcombe, 2003; Pizzey and Knight, 2012).	identified 92 records within 50 km of the Survey Area, including two records 3 km north in 2010, and two records15 km north in 2016 and 2017 (DBCA, 2024d).	Nearby records and suitable habitat within the Survey Area.

		Consei	rvation Status		Previous Records	
Family	Scientific Name	State	Commonwealth	Habitat		Likelihood of Occurrence
	Tringa stagnatilis			Fresh, brackish, and saline wetlands;	The DBCA database identified 35 records	Previously Recorded
Scolopacidae	Marsh Sandpiper	МІ	MI, MA	sewage ponds, commercial saltfields, bore drains, mangroves, tidal mudflats, estuaries (Pizzey and Knight, 2012).	within 50 km of the Survey Area, including one record within the Survey Area in 1981 and 12 km north in 2014 (DBCA, 2024d).	Limited seasonal wetland habitat within the Survey Area.
	Xenus cinereus	MI	VU, MI, MA	Tidal mudflats, estuaries; shores and reefs of islands; coastal swamps, commercial saltfields (Pizzey and Knight, 2012).	The DBCA database identified 32 records within 50 km of the Survey Area, including 13 km north in 2015 and 15 km north in 2017 (DBCA, 2024d).	Low
Scolopacidae	Terek Sandpiper					No suitable habitat within the Survey Area.
Sulidae	Sula leucogaster	MI	MI, MA	Nests on islands. Rarely on shoreline, only to perch on pylons/piers (Menkhorst et al., 2017).	The DBCA database identified two records within 50 km of the Survey Area, including 19.2 km north in 1979 and 45.5 km north in 1984 (DBCA, 2024d).	Low
	Brown Booby					No suitable habitat within the Survey Area.

		Conser	vation Status			
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Plegadis falcinellus			Well-vegetated wetlands, wet	The DBCA database	Medium
Threskiornithidae	Glossy Ibis	MI	MI, MA	pastures, ricefields, flooded waters, floodplains; brackish or occasionally saline wetlands, mangroves, mudflats, occasionally dry grasslands (Pizzey and Knight, 2012).	identified 13 records within 50 km of the Survey Area, including 14 km north in 2013 and 15 km east in 2011 (DBCA, 2024d).	Nearby records, and seasonal wetland and dry grassland habitat within the Survey Area.
Mammals						
	Dasycercus blythi	P4	_	Hummock grasslands (e.g. <i>Triodia</i> spp.) and shrublands on sandy soils (Menkhorst and Knight, 2010).	The DBCA database identified 287 records within 50 km of the Survey Area, including 15 records within the Survey Area in 2012 (DBCA, 2024d).	Previously Recorded
Dasyuridae	Brush-tailed Mulgara, Ampurta					Recorded within the Survey Area in 2012, and suitable habitat within the Survey Area.
	Dasycercus cristicauda					Low
Dasyuridae	Crest-tailed Mulgara	P4	_	Outside the distribution of the species.	The DBCA database identified three records within 50 km of the Survey Area in 2009 (DBCA, 2024d).	The records are most likely the result of misidentification, as the Survey Area is well outside of the species' historical and extant distribution.

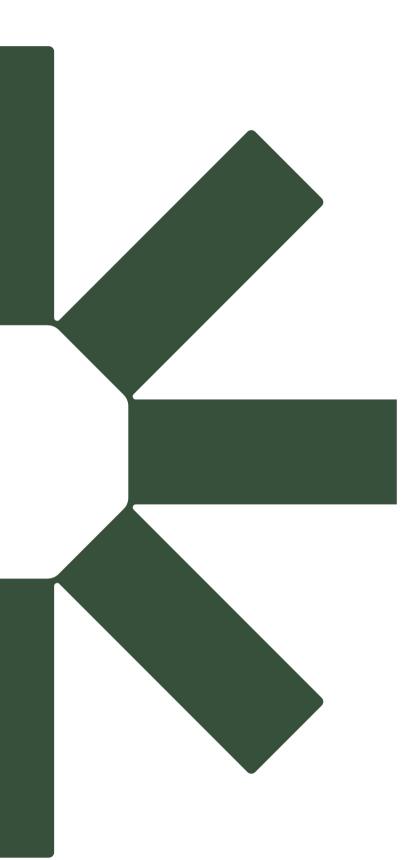
		Conser	vation Status				
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence	
	Dasyurus hallucatus			Dissected rocky escarpments; eucalypt forest and woodland;	The DBCA database identified 1282 records	Previously Recorded	
Dasyuridae	Northern Quoll	EN EN	EN	human settlements; occasionally in rainforest patches or on beaches (Van Dyck, Gynther and Baker, 2013).	within 50 km of the Survey Area, including nine records within the Survey Area in 2012 and 2014 (DBCA, 2024d).	Recorded within the Survey Area in 2012, and suitable habitat within the Survey Area.	
Macropodidae	Lagostrophus fasciatus fasciatus	VU	VU	Dense thickets of Acacia and Alectryon scrub on the sandplains, and Diplolaena and Acacia on the dunes (Van Dyck, Gynther and Baker, 2013).	The DBCA database identified one historical record 8.5 km north of the Survey Area (DBCA, 2024d).	Low	
	Banded Hare- wallaby					No recent records, outside known distribution.	
	Macroderma gigas		VU	Deep caves and mines, and occasionally rock fissures and boulder piles occurring within a widespread but patchy distribution across northern Australia from the arid Pilbara to the lush rainforests of north Queensland (Baker and Gynther, 2023).	The DBCA database identified 65 records within 50 km of the Survey Area, including 38 km south in 2022, 3 km south in 2017, and 63 records less than 4.0 km south in 2009 (DBCA, 2024d).	High	
Megadermatidae	Ghost Bat	VU				Recent and nearby records. Suitable rock fissures and boulder piles within the Survey Area.	

Family		Conservation Status				
	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Ozimops cobourgianus			Mangroves, monsoon and paperbark forests,		Low
Molossidae	Northern Coastal Free-tailed Bat	P1	_	eucalypt forests and woodland. Use hollows and crevices in mangroves as nesting sits (Van Dyck, Gynther and Baker, 2013). Restricted to mangrove habitat in north-west coastal WA (McKenzie, Bullen and Gibson, 2020).	The DBCA database identified seven records within 50 km of the Survey Area, including two records 13 km north in 2008 and 2009 (DBCA, 2024d).	No suitable habitats within the Survey Area.
Muridae	Leggadina Iakedownensis		_	Monsoon tropical coast to semiarid areas in spinifex and tussock grasslands, samphire, sedgelands, Acacia shrublands, tropical eucalypt and Melaleuca woodlands and stony ranges (Van Dyck, Gynther and Baker, 2013).	The DBCA database identified 10 records within 50 km of the Survey Area, including two records 30.4 km east in 2006 (DBCA, 2024d).	Medium
	Short-tailed Mouse	P4				Multiple historic records. Suitable habitats present within the Survey Area.

Family		Conservation Status				
	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Pseudomys chapmani			Gentler slopes of rocky ranges covered	The DBCA database	Recorded
Muridae	Western Pebble- mound Mouse	Ρ4	_	by stony mulch and hard spinifex, often with a sparse overstorey of eucalypts and scattered shrubs (Van Dyck, Gynther and Baker, 2013).	identified 93 records within 50 km of the Survey Area, including 27 records within 36 km in 2022, and 4 records 3 km south in 2009 (DBCA, 2024d).	Recorded during the field survey.
Rhinonycteridae	Rhinonicteris aurantia Pilbara form		VU	Most easily observed foraging in gorges and gullies, often over pools, also spinifex hummock grasslands. Roosts in relatively deep, warm, and humid caves and mine adits (Van Dyck, Gynther and Baker, 2013).	The DBCA database identified 12 records within 50 km of the Survey Area, including 3 records 3 km south in 2009, and one record 35 km south in 2019 (DBCA, 2024d).	Recorded
	Pilbara Leaf-nosed Bat	VU				Recorded during the field survey.

		Conservation Status				
Family	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
	Macrotis lagotis			Mitchell grass and stony downs country	A total of 95 DBCA records were identified.	Previously Recorded
Thylacomyidae	VU Bilby, Dalgyte	VU	VU VU	of cracking clays, desert sandplains and dune fields sometimes containing laterite, hummock grassland and massive red earths with <i>Acacia</i> shrubland (Van Dyck, Gynther and Baker, 2013).	records were identified. These include 3 records within 2 km of the Survey Area from 2018 to 2019; 4 records within 10 km of the Survey Area from 2010 to 2019, and a further 19 records within 50 km of the Survey Area from 2021 to 2022 (DBCA, 2024d).	Previous records identified from the literature review occur inside the Survey Area. Suitable habitat is present.
Reptiles						
	Liasis olivaceus barroni			Associated with open water, watercourses, and rock pools especially those close to rocky areas. Often found in rocky hills, escarpments, and plains dominated by dense grassy vegetation such as <i>Triodia</i> (Wilson and Swan, 2021).	The DBCA database identified five records within 50 km of the Survey Area, including 1.5 km east in 2013 and 3.5 km east in 2007 (DBCA, 2024d).	High
Pythonidae	Pilbara Olive Python	VU	VU			Nearby records, and limited watercourses close to rocky areas within the Survey Area. May travel through the Survey Area along Drainage Line habitats.

Family		Conservation Status				
	Scientific Name	State	Commonwealth	Habitat	Previous Records	Likelihood of Occurrence
Scincidae	Ctenotus angusticeps		_	Mainland population inhabits coastal mudflats vegetated with samphire, sometimes sheltering in crab holes on intertidal zone (Wilson and Swan, 2021).	The DBCA database identified 16 records	Low
	Northwestern Coastal Ctenotus	Р3			within 50 km of the Survey Area, including two records 7.8 km north in 2012 (DBCA, 2024d).	No suitable habitat within the Survey Area.
Scincidae	Notoscincus butleri		_	Arid, rocky, near coastal Pilbara. Associated with spinifex-dominated areas near creek and river margins (Wilson and Swan, 2021).	One record from literature, 100 km west of the Survey Area in 2014 (Phoenix Environmental Sciences, 2014).	Low
	Lined Soil-crevice Skink	P4				No nearby records, and limited spinifex- dominated areas near river margin habitat within the Survey Area.



Making Sustainability Happen

### PROTECTED

Appendix B: Construction Environmental Management Plan



## East Pilbara Connection Project Construction Environmental Management Plan

August 2024



### PROTECTED

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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.

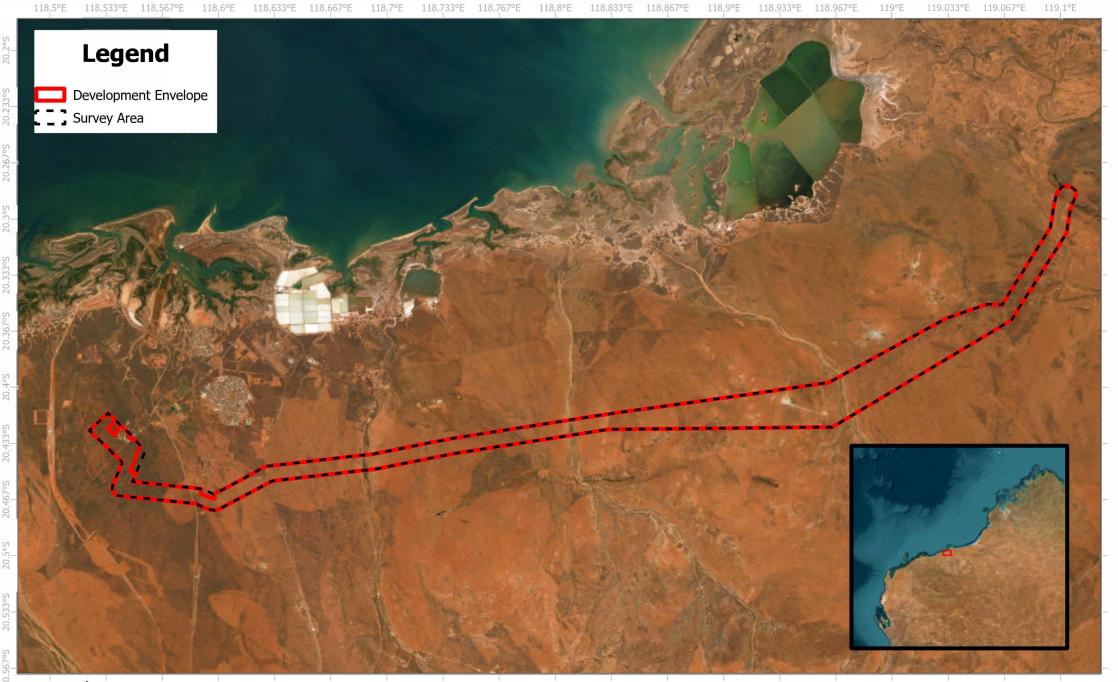
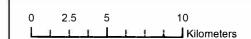


Figure 1

N



Scale: 1:250,000

Project Location and Development Envelope

HORIZON

# 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	<ul> <li>Permanent clearing: 60.6 ha</li> </ul>
	<ul> <li>Temporary clearing: 40.2 ha</li> </ul>

### 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	<ul> <li>No clearing is permitted outside the DE (Figure 1)</li> </ul>	

Aspect	Management Measure
	<ul> <li>Where possible, pre-existing access tracks will be used and vehicles and machinery will exit the DE along the same route used for access.</li> </ul>
	<ul> <li>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.</li> </ul>
	<ul> <li>Clearing will be minimised where possible through placement of geotechnical tests in existing cleared locations.</li> </ul>
	<ul> <li>Mechanical clearing for the development of formal access tracks is not proposed during geotechnical works.</li> </ul>
	- Works will be undertaken systematically to minimise re-run and compaction of access tracks.
	<ul> <li>The clearing locations are to be demarcated with flagging tape, GPS or similar prior to clearing activities.</li> </ul>
	<ul> <li>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.</li> </ul>
	<ul> <li>Clearing areas are to be checked by an Environmental Specialist or Site Supervisor prior to clearing to ensure avoidance areas are correctly applied.</li> </ul>
Flora and vegetation	<ul> <li>Areas that are degraded, sparsely vegetated and/or previously cleared will be used preferentially for geotechnical tests, laydown and access.</li> </ul>
	<ul> <li>Mechanically cleared areas will be restored, as follows:</li> </ul>
	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.
	<ul> <li>Recontouring of soil within the test pit and laydown areas will be undertaken to prevent compaction.</li> </ul>
	<ul> <li>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.</li> </ul>
	<ul> <li>Movement of vehicles and machinery will be in convoy along access tracks/ routes and will not go into adjacent vegetation.</li> </ul>
	- No permanent clearing in drainage lines is permitted, including permanent access tracks
Fauna	<ul> <li>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.</li> </ul>
	- Construction personnel will not touch, feed or otherwise directly interact with fauna.
	<ul> <li>Vehicle and machinery speeds within the DE will be restricted to reduce the likelihood of fauna strike.</li> </ul>
Weeds	<ul> <li>All vehicles and machinery will arrive clean on site.</li> </ul>
	<ul> <li>Movement of vehicles and machinery will be restricted to the DE or established tracks and roads.</li> </ul>
Soils and erosion	<ul> <li>Standard construction measures regarding erosion and sediment control will be implemented during clearing and geotechnical works.</li> </ul>
	<ul> <li>Designated access tracks will be applied to prevent additional disturbance.</li> </ul>
Dust	<ul> <li>Standard construction dust control and mitigation measures will be implemented during clearing. This may include the use of a water trucks, or similar.</li> </ul>
	<ul> <li>Ground disturbance and clearing of vegetation will be restricted during high winds if dust cannot be adequately controlled.</li> </ul>
	<ul> <li>Reduced vehicle speed limits will be applied in areas of unconsolidated soil.</li> </ul>
	<ul> <li>Use of defined routes for machinery/ vehicles travelling on unsealed roads.</li> </ul>
Noise	- The contractor will comply with the Environmental Protection (Noise) Regulations 1997
	<ul> <li>Complaints regarding noise will be recorded and investigated by Horizon Power.</li> </ul>
Waste	<ul> <li>Rubbish will be disposed of in appropriate containers and all waste will be removed from the site.</li> </ul>
	<u> </u>

Aspect	Management Measure
Hydrocarbons and chemicals	<ul> <li>Hydrocarbons and chemicals will be appropriately managed on site to prevent spills, including maintaining equipment in good working order in accordance with manufacturers specifications.</li> </ul>
	– No refuelling will be undertaken within 50 m of a waterway, drain or drainage line.
	<ul> <li>Hydrocarbons will be appropriately stored at least 50 m away from drainage lines and stored in an appropriate bunded container.</li> </ul>
	<ul> <li>Refuelling will be undertaken on hardstand or using catch trays only. Uncontrolled refuelling is not permitted.</li> </ul>
	<ul> <li>Chemicals will be appropriately stored.</li> </ul>
Heritage	<ul> <li>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.</li> </ul>
Construction	
Extent of Clearing	<ul> <li>No clearing is permitted outside the DE (Figure 1)</li> </ul>
	<ul> <li>Clearing will be minimised where possible through placement of assets and access tracks in existing cleared locations where possible.</li> </ul>
	<ul> <li>The clearing locations are to be demarcated prior to clearing activities.</li> </ul>
	<ul> <li>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).</li> </ul>
	<ul> <li>A pre-clearing toolbox will be held so all staff are aware of their responsibilities under the permit and application of avoidance areas.</li> </ul>
	<ul> <li>Avoidance areas will be applied to prevent impacts to Priority flora and critical fauna habitat.</li> </ul>
Flora and vegetation	<ul> <li>Areas that are degraded, sparsely vegetated and/or previously cleared will be used preferentially for laydown and access tracks.</li> </ul>
	- Works will be undertaken systematically to minimise re-run and compaction of access tracks.
	<ul> <li>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.</li> </ul>
Fauna	<ul> <li>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.</li> </ul>
	- Construction personnel will not touch, feed or otherwise directly interact with fauna.
	<ul> <li>Vehicle and machinery speeds within the DE will be restricted to reduce the likelihood of fauna strike.</li> </ul>
Weeds	<ul> <li>The Contractor will ensure that no weed-affected soil, mulch, fill or other material is brought into the DE.</li> </ul>
	<ul> <li>Vehicles and machinery will arrive clean, and weed control will be undertaken at the site post- construction as required.</li> </ul>
	<ul> <li>Movement of vehicles and machinery will be restricted to the DE or established tracks and roads to prevent the spread of weeds.</li> </ul>
Erosion and soils	<ul> <li>Standard construction measures regarding erosion and sediment control will be implemented during construction works.</li> </ul>
	<ul> <li>Designated access tracks will be applied to prevent additional disturbance.</li> </ul>
	<ul> <li>Acid sulphate soils will be managed in accordance with the ASSMP (if required pending geotechnical investigations, in accordance with the <i>Treatment and management of soils and</i> water in acid sulfate soil landscapes (DER, 2015b<sup>1</sup>).</li> </ul>

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<sup>&</sup>lt;sup>1</sup> 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	<ul> <li>Standard construction dust control and mitigation measures will be implemented during clearing. This may include the use of a water trucks, or similar.</li> </ul>
	<ul> <li>Ground disturbance and clearing of vegetation will be restricted during high winds if dust cannot be adequately controlled.</li> </ul>
	<ul> <li>Reduced vehicle speed limits will be applied in areas of unconsolidated soil.</li> </ul>
Noise	- The contractor will comply with the Environmental Protection (Noise) Regulations 1997
	<ul> <li>Complaints regarding noise will be recorded and investigated by Horizon Power.</li> </ul>
Waste	<ul> <li>Rubbish will be disposed of in appropriate containers and all waste will be removed from the site.</li> </ul>
Hydrocarbons and chemicals	<ul> <li>Hydrocarbons and chemicals will be appropriately managed on site to prevent spills, including maintaining equipment in good working order in accordance with manufacturers specifications.</li> </ul>
	– No refuelling will be undertaken within 50 m of a waterway, drain or drainage line.
	<ul> <li>Hydrocarbons will be appropriately stored at least 50 m away from drainage lines and stored in an appropriate bunded container.</li> </ul>
	<ul> <li>Refuelling will be undertaken on hardstand or using catch trays only. Uncontrolled refuelling is not permitted.</li> </ul>
	<ul> <li>Chemicals will be appropriately stored.</li> </ul>
Heritage	<ul> <li>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.</li> </ul>

# 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 ( <i>Dasyurus</i> <i>hallucatus</i> )	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.	<ol> <li>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 &amp; Ward, 2010). Avoidance areas have been applied around this habitat type to mitigate impacts to the Northern Quoll.</li> <li>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 &amp; Ward, 2010). Avoidance areas have been applied around this habitat critical to the survival of the Northern Quoll as they are rocky areas that provide prime habitat for the species (Hill &amp; Ward, 2010). Avoidance areas have been applied around this habitat type to mitigate impacts to the Northern Quoll.</li> <li>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.</li> <li>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.</li> </ol>
Pilbara Leaf- nosed Bat ( <i>Rhinonicteris</i> <i>aurantia</i> ) (Pilbara form)	Vulnerable under BC Act and EPBC Act	<ul> <li>Known to occur</li> <li>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).</li> <li>The Pilbara Leaf-nosed Bat was recorded seven times within the Outcrops and Breakaways and Low <i>Acacia stellaticeps</i> over <i>Triodia</i> 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).</li> <li>Therefore the Pilbara Leaf-nosed Bat is known to occur within the DE.</li> </ul>	<ol> <li>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.</li> <li>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.</li> </ol>

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 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.	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.
		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 <i>Acacia stellaticeps</i> over <i>Triodia</i> and Sparse <i>Triodia</i> Plains habitats. Therefore, the Bilby is known to occur within the DE.	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. <b>Stony Hills</b> : 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).	applied around this habitat type to mitigate impacts to the to the Western Pebble-mound Mouse.
		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 <i>Acacia</i> Shrubs and <i>Triodia</i> 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 <i>Acacia stellaticeps</i> over <i>Triodia</i> habitat, Open Eucalypt Woodland and Sparse <i>Triodia</i> 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	<ol> <li>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.</li> <li>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.</li> </ol>
		the DE.	
Grey Falcon ( <i>Falco</i> <i>hypoleucos</i> )	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.	<ul> <li>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.</li> <li>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.</li> </ul>
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 <i>Acacia stellaticeps</i> over <i>Triodia</i> 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 <i>Acacia</i> Shrubs and <i>Triodia</i> Plains, Major Drainage, Minor Drainage, Open Eucalypt Woodland and Sparse <i>Triodia</i> 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 ( <i>Tringa nebularia</i> )	Endangered under EPBC Act Migratory under BC Act and EPBC Act	Likely to occurThis 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 ( <i>Hirundo rustica</i> )	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 <i>Acacia stellaticeps</i> over <i>Triodia</i> , Mixed <i>Acacia</i> Shrubs and <i>Triodia</i> Plains, Sparse <i>Triodia</i> 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 ( <i>Charadrius</i> <i>veredus</i> )	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. <b>Major Drainage</b> and <b>Minor Drainage</b> : 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 ( <i>Falco peregrinus</i> )	Other specially protected under DBCA list	<ul> <li>Likely to occur</li> <li>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.</li> <li>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.</li> <li>Therefore, the Peregrine Falcon is likely to occur within the DE.</li> </ul>	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.	<ul> <li>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.</li> <li>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.</li> </ul>
Brush-tailed Mulgara ( <i>Dasycercus</i> <i>blythi</i> )	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 ( <i>Liasis</i> 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.	<ul> <li>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.</li> <li>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.</li> </ul>
Pilbara Grasswren ( <i>Amytornus</i> 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 <i>Triodia</i> 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 ( <i>Apus pacificus</i> )	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.	<ol> <li>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.</li> <li>31. Avoidance areas have been applied around the Outcrops and Breakaways and Stony Hills habitat types.</li> <li>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.</li> <li>33. Up to 100.8 ha of the remaining potential foraging and dispersal habitat may be cleared for the Project.</li> </ol>
Short-tailed Mouse ( <i>Leggadina</i> <i>lakedownensis</i> )	Priority 4 under DBCA List	May occurThis 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. <b>Sparse Triodia Plains</b> and <b>Stony Hills</b> : 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 ( <i>Calidris</i> <i>ferruginea</i> )	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	<b>35. Major Drainage</b> and <b>Minor Drainage</b> : 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).
Great Knot (Calidris tenuirostris)	Critically Endangered under the BC Act	Drainage and Minor Drainage habitats after significant rain events that would flood these habitats.	Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be

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 ( <i>Calidris</i> <i>canutus</i> )	Endangered under the BC Act Vulnerable and Migratory under the EPBC Act		
Grey-tailed Tattler ( <i>Tringa</i> brevipes)	Priority 4 listed by DBCA Migratory under BC Act and EPBC Act		
White-winged Black Tern (Chlidonias Ieucopterus)	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 ( <i>Calidris</i> 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 ( <i>Calidris</i> falcinellus)	Migratory under BC Act and EPBC Act		
Pectoral Sandpiper ( <i>Calidris</i> <i>melanotos</i> )	Migratory under BC Act and EPBC Act		
Ruff ( <i>Calidris</i> pugnax)	Migratory under BC Act and EPBC Act		
Red-necked Stint (Calidris ruficollis)	Migratory under BC Act and EPBC Act		
Long-toed Stint ( <i>Calidris</i> subminuta)	Migratory under BC Act and EPBC Act		
Pin-tailed Snipe (Gallinago stenura)	Migratory under BC Act and EPBC Act		
Bar-tailed Godwit ( <i>Limosa</i> <i>lapponica</i> )	Migratory under BC Act and EPBC Act		
Black-tailed Godwit ( <i>Limosa</i> <i>limosa</i> )	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 ( <i>Phalaropus</i> <i>lobatus</i> )	Migratory under BC Act and EPBC Act		
Wood Sandpiper ( <i>Tringa glareola</i> )	Migratory under BC Act and EPBC Act		
Marsh Sandpiper ( <i>Tringa</i> 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
<i>Tephrosia rosea</i> var. Port Hedland (A.S. George 1114)	Priority 1 under DBCA list	<b>Known to occur</b> Two individuals of <i>Tephrosia rosea</i> 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 <i>Gymnanthera cunninghamii</i> 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).