West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

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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 Rio Tinto Iron Ore (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

Rio Tinto Iron Ore commissioned SLR Consulting Australia to undertake a reconnaissance level flora and vegetation, targeted significant flora, basic terrestrial vertebrate fauna, and targeted significant fauna survey for the proposed West Angelas NVCP 2 Survey Area. The Survey Area covers 19,668.8 hectares and is located approximately 85 km west of Newman, in the Pilbara bioregion of Western Australia.

The objective of this project was for SLR to undertake a flora, vegetation and vertebrate fauna survey to ground-truth and consolidate previous survey results from Biologic (2014, 2018, 2019, 2020, 2021a;b, 2022 a-e, 2023 a-b). This report presents the amalgamated results of the key flora, vegetation, and fauna values within the Survey Area as part of the NVCP permit application process..

Flora and Vegetation

The reconnaissance flora and vegetation survey recorded the floristic composition and vegetation types from 64 relevés, 195 mapping notes, and opportunistic observations. A total of 300 taxa were recorded from 119 genera across 45 families.

No threatened flora species pursuant to the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* and/or gazetted as threatened flora pursuant to the *Biodiversity and Conservation (BC) Act 2016* had been recorded from the Survey Area.

Seringia exastia, which has been delisted from state legislation but remains listed under Commonwealth legislation, was previously recorded within the Survey Area as determined through the desktop assessment. This species has recently been incorporated into the common and widespread species, *Seringia elliptica*, and is no longer considered to be of conservation significance, despite retaining Critically Endangered status under the *Environment Protection and Biodiversity Conservation Act 1999* List of Threatened Flora.

Prior to the survey, it was identified that 29 significant flora taxa have been recorded within the Survey Area during previous surveys. Additionally, thirteen significant flora taxa were assessed as having a high likelihood, six were assessed as having a medium likelihood, and seven were assessed as having a low likelihood of occurring within the Survey Area.

A total of 13 Priority flora taxa were recorded within the Survey Area during the current survey, all of which had been previously recorded:

- Priority 2: *Eremophila pusilliflora, Eremophila* sp. West Angelas (S. van Leeuwen 4068) and *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708)
- Priority 3: *Aristida lazaridis*, *Eremophila naaykensii, Grevillea saxicola, Indigofera gilesii, Olearia mucronata*, *Rhagodia* sp. Hamersley (M. Trudgen 17794), *Solanum kentrocaule, Triodia* sp. Mt Ella (M.E. Trudgen 12739)
- Priority 4: *Acacia bromilowiana* and *Sida* sp. Barlee Range (S. van Leeuwen 1642).

Following the survey, no additional significant flora taxa were considered to have a high likelihood of occurrence. Seven taxa were considered to have a medium likelihood of occurrence, and the remainder were assessed as having a low likelihood of occurring within the Survey Area.

Twelve introduced flora species were recorded in the Survey Area. None of these species represent a Weed of National Significance as listed by the Department of Energy and Environment, or a Declared Pest by the State Department of Primary Industries and Regional Development.

Thirty-six vegetation types were described and mapped across four broad landforms (hills, plains, drainages and gorges and gullies). Vegetation condition within the Survey Area ranged from Excellent to Degraded condition, with the majority considered to be in Very Good condition. The majority of disturbances observed related to clearing for current and historical mining activities, infrastructure, and associated weed spread.

No State or Commonwealth listed Threatened Ecological Communities (TEC) were identified within the Survey Area. One State listed Priority Ecological Community (PEC), West Angelas Cracking-Clays (Priority 1), is known to occur within the Survey Area. The P15 vegetation type was considered to be representative of this PEC and comprised 423.77 ha (2.15%) of the Survey Area.

Vertebrate Fauna

The basic and targeted terrestrial vertebrate fauna survey used a variety of detection methods including camera traps, acoustic recorders, active searches, and opportunistic observations. Fauna habitat mapping was based on a combination of field observations, vegetation mapping, fauna habitat assessment data, and aerial imagery. Six fauna habitats were mapped within the Survey Area: Clay Plain, Major Drainage, Minor Drainage, Low Hills and Slopes, Gorge/Gully, Rocky Hill and Stony Plain. The Minor Drainage, Gorge/Gully and Rocky Hill habitats provide the most value for targeted taxa as they are core habitat for Northern Quolls, Ghost Bats, Pilbara Leaf-nosed Bat s, and Pilbara Olive Pythons.

A total of 71 fauna taxa from 44 families were recorded, comprising one amphibian, 26 birds, 12 mammals, and five reptiles. Two significant taxa were recorded, via secondary signs (scats, mounds) during the fauna survey; Northern Quoll (*Dasyurus hallucatus*) – Endangered under the BC and EPBC Acts, and Western Pebble-mound Mouse (*Pseudomys chapmani*) – listed as Priority4 by DBCA.

A further six significant fauna taxa have been recorded within the Survey Area during previous surveys, and one significant fauna taxon was assessed as having a high likelihood, four significant fauna taxa were assessed as having a medium likelihood, and 17 significant fauna taxa were assessed as having have a low likelihood of occurring within the Survey Area.

Five introduced taxa were recorded during the survey: European Cattle (*Bos primigenius taurus*), Donkey (*Equus africanus asinus*), Dingo/Dog (*Canis familiaris*), Cat (*Felis catus*), and Rabbit (*Oryctolagus cuniculus*). Excluding European Cattle, all of these are listed as declared pest species under the *Biosecurity and Agriculture Management Act 2007*.

The basic terrestrial vertebrate fauna, and targeted significant fauna survey was undertaken in April which falls within the primary survey periods for reptiles and mammals, but outside the primary survey periods for birds and amphibians.

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Acronyms and Abbreviations

°C	Degree Celsius
ARU	Acoustic Recording Unit
BAM Act	*Biosecurity and Agriculture Management Act 2007*
BC Act	*Biodiversity Conservation Act 2016*
BoM	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
DEE	Department of the Environment and Energy
DEWHA	Department of the Environment, Water, Heritage, and the Arts
Desktop Study Area	The area that was studied during the desktop assessment encompassing the Survey Area and surrounds
DoE	Department of the Environment
DP	Declared Pest
DPIRD	Department of Primary Industries and Regional Development
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

MA	Marine
MI	Migratory
mm	Millimetres
NNTT	National Native Title Tribunal
MNES	Matters of National Environmental Significance
NVCP	Native Vegetation Clearing Permit
NVIS	National Vegetation Information System
OS	Other Specially Protected Fauna
P	Priority
PEC	Priority Ecological Community
PMST	Protected Matters Search Tool
RTIO	Rio Tinto Iron Ore
Sp.	Species
Spp.	More than one species
SLR	SLR Consulting Australia
Survey Area	The area that was surveyed
T	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

Rio Tinto Pty Ltd commissioned SLR Consulting Australia Pty Ltd (SLR) to undertake a reconnaissance level flora and vegetation, targeted significant flora, basic terrestrial vertebrate fauna, and targeted significant fauna survey for the proposed West Angelas NVCP 2 Survey Area (herein referred to as the Survey Area). The Survey Area covers 19,668.8 hectares, is made up of polygons A, B, and C, and is located 85 km west of Newman townsite, in the Pilbara bioregion of Western Australia (**Map 1**). All maps are provided in **Appendix A**.

Rio Tinto submitted a regional purpose permit application to Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) in 2015 requesting the amalgamation of several existing Native Vegetation Clearing Permits (NVCPs) into one larger permit, covering current clearing and future clearing areas under Part V of the Environmental Protection Act 1986. The amalgamation aided in reducing the risk of non-compliance and/or reporting conditions that multiple permits across one area presented. A replacement for NVCP 6545 is now required. Due to varying levels of biological survey coverage and validity of survey data, the existing NVCP area is to be covered by three NVCPs to enable the application for areas with sufficient survey coverage to be expedited. The main purposes of the replacement NVCPs include mineral exploration and associated activities, hydrogeological, geotechnical, and environmental investigations, construction camp, and associated activities over mining tenements.

1.2 Objective and Scope

The objective of this project was for SLR to undertake a flora, vegetation and vertebrate fauna survey to ground-truth and consolidate previous survey results from Biologic (2014, 2018, 2019, 2020, 2021a;b, 2022 a-e, 2023 a-b). This report presents the amalgamated results of the key flora, vegetation, and fauna values within the Survey Area as part of the NVCP permit application process.

The following scope of work was completed:

- A desktop assessment including relevant database searches and a literature review to compile and summarise existing records of flora, vegetation, and fauna in the vicinity of the Survey Area.
- A reconnaissance flora and vegetation survey using relevés and map notes to identify and describe the vegetation and flora occurring within the Survey Area.
- A targeted survey for significant flora within the Survey Area.
- A basic and targeted survey for significant terrestrial vertebrate fauna using a variety of detection methods including camera traps, active searches, Acoustic Recording Units (ARUs), and opportunistic observations.
- A technical biological report.
- A geospatial data package prepared in accordance with Rio Tinto Data Standards.
- A separate assessment against the 10 Clearing Principals.

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* (Commonwealth) (EPBC Act). (Commonwealth of Australia, 1999).
- *Biodiversity Conservation Act 2016* (WA) (BC Act) (Government of Western Australia, 2016).
- *Environmental Protection Act 1986* (WA) (EP Act) (Government of Western Australia, 1986).
- *Biosecurity and Agriculture Management Act 2007* (WA) (BAM Act) (Government of Western Australia, 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 (Pezoporus occidentalis) 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* (EPA, 2020).

Commonwealth

- *EPBC Act Referral guideline for the endangered northern quoll Dasyurus hallucatus* (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

Kendrick (2001) describes the broader Hamersley subregion climate as semi-desert tropical, with an average annual rainfall of 300 mm, which usually falls during summer cyclonic or thunderstorm events, however, winter rain is not uncommon.

The closest long-term Bureau of Meteorology (BoM) weather station with a complete dataset is Newman Aero Weather Station (007176), located approximately 95 km east-southeast of the Survey Area.

The long-term (1996 to 2024) mean minimum temperature for Newman Aero Weather Station ranges from 6.5˚C (July) to 26.8˚C (Jan) and the long-term mean maximum temperature ranges from 21.5˚C (June) to 42˚C (Feb). BoM recommends using the median rainfall when comparing long term seasonal conditions of the Pilbara. The Newman Aero Weather Station recorded a long-term (1971 to 2024) median annual rainfall of 321.90 mm (**Figure 1**) (BoM, 2025). In the 12 months prior to the flora survey (March 2023 to February 2024) the Newman Aero Weather Station recorded 341.60 mm of rainfall, which is 19.70 mm above the long-term median (BoM, 2025) (**Figure 1**). In the three months prior to the flora survey (December 2023 to February 2024), 193.80 mm of rainfall was recorded, which is 89.00 mm above the long-term median of 104.80 mm for the same period (BoM, 2025). However, despite reasonable rainfall received at Newman Aero Weather Station preceding the survey, on ground conditions were observed to be dry, which indicates the localised nature of rainfall events in the Pilbara region.

The Newman Aero Weather Station recorded 325.20 mm of rainfall in the 12 months prior to the fauna survey (April 2023 to March 2024), which is 158.80 mm above the long-term (1971to 2024) median of 166.40 mm (BoM, 2025),(**Figure 1**). In the three months prior to the survey (January 2024 to March 2024), 291 mm of rainfall was recorded, which is 176.8 mm above the long-term median of 114.2 mm for the same period (BoM, 2025). A total of 88.4 mm of rain fell on the 6th and 7th of March 2024, which contributed to the above average rainfall received prior to the fauna survey. However, despite the rainfall received at Newman Aero Weather Station preceding the survey, on ground conditions were observed to be dry.

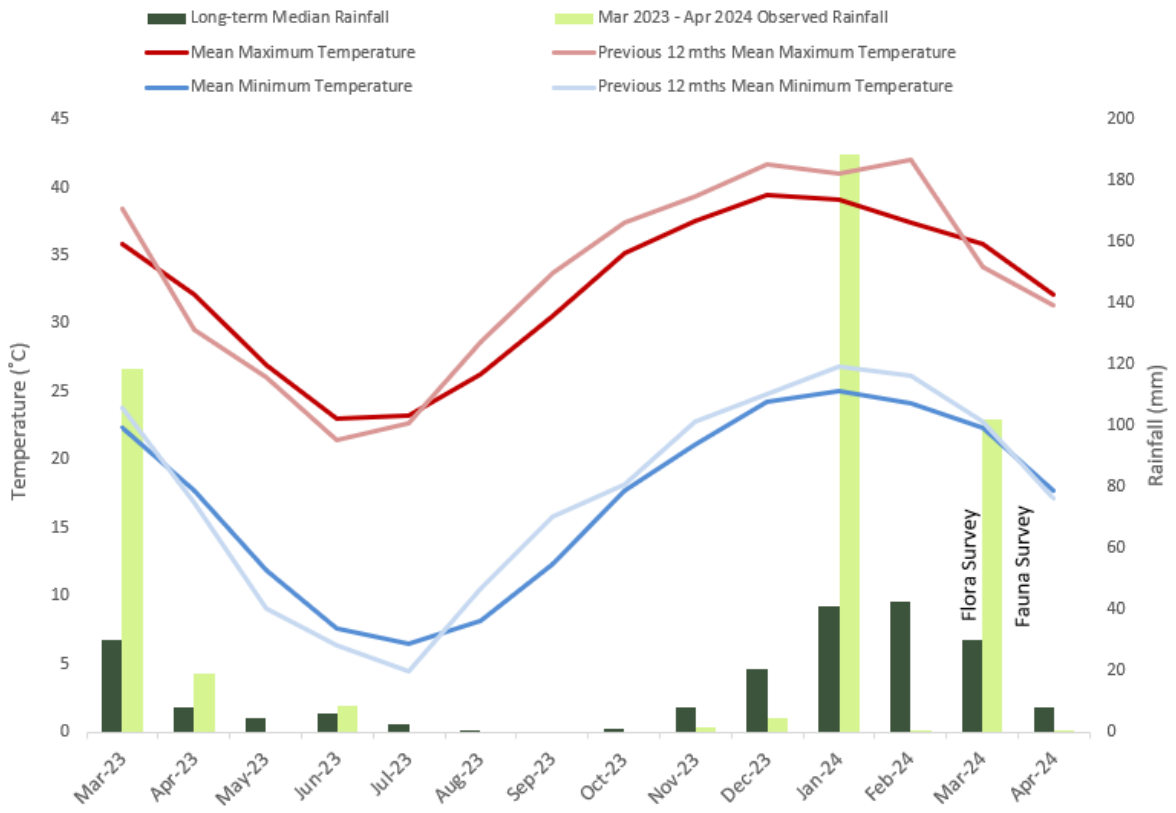


Figure 1: Climate summary of Newman Aero Weather Station for flora and fauna surveys (007176) (BoM, 2025)**.**

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 (DEE, 2016). The Survey Area occurs within the Hamersley (PIL03) subregion of the Pilbara bioregion.

The Hamersley (PIL03) subregion is the southern section of the Pilbara Craton. It is a mountainous area of Proterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale, and dolerite). The subregion is dominated by Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges. Drainage occurs into either the Fortescue to the north, the Ashburton to the south, or the Robe to the west (Kendrick, 2001).

2.2.3 Soil Landscape Mapping

Soil landscape mapping of Western Australia consists of a compilation of various surveys at different scales varying between 1:20,000 and 1:3,000,000 (DPIRD, 2022). The mapping comprises a nested hierarchy of levels, with each level a subdivision of the preceding level. Soil landscape mapping provides an indication of potential vegetation types and fauna habitats within the Survey Area and has been described below to the highest level of detail available for the Survey Area.

The Survey Area occurs across nine soil landscape systems (**Table 1**; **Map 2**).

Table 1: Soil landscape systems/subsystems/phases within the Survey Area

System/ subsystem/phase		Description	Area (ha) and percentage within Survey Area
Name	Code		
Boolgeeda System	285Bg	Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	5,575.8 ha (28.3%)
Egerton System	285Eg	Highly dissected plains and slopes with sparse mulga shrublands or shrubby hard spinifex grasslands.	85.4 ha (0.4%)
Elimunna System	284Ei	Stony plains on basalt supporting sparse acacia and cassia shrublands and patchy tussock grasslands.	202.2 ha (1.0%)
Jamindie System	285Jm	Stony hardpan plains and rises supporting groved mulga shrublands, occasionally with spinifex understorey.	36.6 ha (0.2%)
Newman System	285Ne	Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	6,594.5 ha (33.5%)
Platform System	285Pl	Dissected slopes and raised plains supporting shrubby hard spinifex grasslands.	1,598.9 ha (8.1%)
Rocklea System	285Rk	Basalt hills, plateaux, lower slopes, and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs.	4,943.5 ha (25.1%)
Spearhole System	285Sp	Gently undulating gravelly hardpan plains and dissected slopes supporting groved mulga shrublands and hard spinifex.	186.8 ha (0.9%)
Wannamunna System	285Wn	Hardpan plains and internal drainage tracts supporting mulga shrublands and woodlands and occasionally eucalypt woodlands.	445.0 ha (2.3%)

2.2.4 Hydrography

There are two discharge points within the Survey Area: one of which currently receives discharge, a local ephemeral tributary of Turee Creek East north of Deposit A and one that previously received discharge water, a local ephemeral tributary of Turee Creek East south of Deposit B (**Map 3)** (DWER, 2018). None of these tributaries are regarded as major Minor Drainages.

2.2.5 Pre-European Vegetation

The major source of data for pre-European vegetation mapping in Western Australia is the published and unpublished mapping of J. S. Beard at 1:250,000 scale (Beard *et al.*, 2013). These vegetation types were later refined by Shepherd, Beeston, and Hopkins (2002), resulting in 819 vegetation association-level units, and a subsequent reclassification resulted in the creation of over 2,175 finer-scale system associations (Beard *et al.*, 2013). Four system associations have been mapped within the Survey Area (**Table 2**; **Map 4**). Representation across the Pilbara bioregion shows all four vegetation associations have an extent greater than 99% remaining.

Representation of these vegetation associations at a state, regional, and local level is shown in **Table 3** (Government of Western Australia, 2019).

Table 2: Vegetation System Associations within the Survey Area

System Association	Description	Area (ha) and percentage within Survey Area
Hammersley 82	Low tree-steppe. Hummock grassland with scattered bloodwoods and snappy gum. *Triodia* spp., *Corymbia dichromophloia*, *Eucalyptus leucophloia*	8,820.52 (44.85%)
Hammersley 29	Low woodland, open low woodland, or sparse woodland. Mulga. *Acacia aneura* and associated species.	240.02 (1.22%)
Hammersley 18	Low woodland, open low woodland, or sparse woodland. Mulga. *Acacia aneura* and associated species.	10,478.89 (53.28%)
Hammersley 169	Scrub, open scrub or sparse scrub. Wattle, teatree and other species. *Acacia* spp. *Melaleuca* spp.	129.39 (0.66%)

Table 3: Representation of Vegetation Associations within the Survey Area at a state, regional, and local level

Vegetation Association	Extent				
	Pre-European (ha)	Current (ha)	Remaining (%)	Managed in DBCA lands (%)*	Within Survey Area (%)*
Representation across Western Australia					
18	19,892,306.46	19,843,148.07	99.75	6.64	0.05
29	7,903,991.45	7,898,973.24	99.94	6.28	0.003
82	2,565,901.28	2,553,206.19	99.51	11.57	0.35
169	430,552.94	430,540.63	100.00	7.01	0.03
Representation across the Pilbara Bioregion					
18	676,556.72	671,843.35	99.30	25.35	1.56
29	1,133,219.76	1,131,712.01	99.87	9.39	0.02
82	2,563,583.23	2,550,888.14	99.50	11.58	0.35
169	103,844.29	103,843.85	100.00	29.06	0.12
Representation across the Hamersley (PIL03) Subregion					
18	581,246.08	576,541.70	99.19	29.54	1.82
29	172,082.57	170,747.58	99.22	12.98	0.14
82	2,177,573.90	2,165,224.21	99.43	13.57	0.41
169	103,844.29	103,843.85	100.00	29.06	0.12

Vegetation Association	Extent				
	Pre-European (ha)	Current (ha)	Remaining (%)	Managed in DBCA lands (%)*	Within Survey Area (%)*
Representation across the Shire of East Pilbara					
18	359,372.12	355,446.47	98.91	1.49	2.94
29	906,243.49	905,848.35	99.96	7.74	0.03
82	927,709.76	919,072.17	99.07	0.50	0.93
Representation across the Shire of Ashburton					
18	342,205.94	341,418.22	99.77	48.33	0.01
82	1,537,076.71	1,533,313.95	99.76	18.96	0.02
169	78,040.54	78,040.54	100.00	38.67	0.17

*as a portion of the current extent

2.2.6 Conservation Areas

Conservation areas consist of areas protected for the purpose of conservation, including but not limited to National Parks, Nature Reserves, Conservation Parks, and Regional Parks. The Survey Area does not intersect any conservation areas (DBCA, 2023a, 2023b). Conservation areas within 20 km of the Survey Area are listed below and shown in **Map 5**:

- Karijini National Park (R 30082), a Class A reserve is immediately adjacent to Polygon A (**Map 5**) and is vested under the Conservation Commission of WA.
- Unallocated Crown Land proposed for conservation (LR3162/305, Ex Juna Downs Station), located 8.6 km to the north of the Survey Area and is vested under the Department of Planning, Lands and Heritage.

2.2.7 Environmentally Sensitive 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 does not intersect any mapped ESAs (DWER, 2021). ESAs within 20 km of the Survey Area are listed below and shown in **Map 5**:

- Karijini National Park 300 m north of Polygon A, and 2.5 km west of Polygon C (**Map 5**).
- Five locations of Threatened Flora between 4 and 17 km north of the Survey Area:
  - Two sites of *Thryptomene wittweri* – Threatened (BC and EPBC Act)
  - Four sites of *Lepidium catapycnon* - P4 (DBCA; previously listed as Threatened and de-listed in 2018) – these sites no longer meet the criteria for an ESA and are expected to be delisted from the DWER list of Environmentally Sensitive Areas.

2.2.8 Indigenous Land Rights

The Survey Area falls within the Yamatji Marlpa Aboriginal Corporation jurisdiction area (NNTT, 2017) and has three native title determinations over the area (Landgate, 2023a):

- Yinhawangka Aboriginal Corporation (NNTT no. WC2010/011 and WC2010/016)
- Ngarlawangga Aboriginal Corporation (NNTT no. WC2005/003).

There are four Indigenous Land Use Agreements (ILUAs) over the Survey Area (Landgate, 2023b):

- Yinhawangka and BHP project agreement initial ILUA (NNTT no. WI2016/001)
- Yinhawangka and BHP Billiton project agreement ILUA (NNTT no. WI2018/010)
- RTIO and Ngarlawangga People ILUA (NNTT no. WI2012/010)
- RTIO and Yinhawangka people ILUA (NNTT no. WI2013/001).

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, internet searches, or provided by Rio Tinto. This assessment considered a selection of biological reports detailing assessments undertaken in or within 50 km of the Survey Area. The reports are summarised in **Appendix B**, and their locations in relation to the current Survey Area are shown in **Map 6**:

- 2017 West Angelas Ghost Bat Monitoring (Biologic Environmental Survey, 2018), overlaps the Survey Area.
- Area C and Surrounds Flora and Vegetation Survey (Onshore, 2011), 17.4 km northeast of the Survey Area.
- Area C West to Yandi Flora and Vegetation Assessment (Astron Environmental Services, 2018), 13.8 km northeast of the Survey Area.
- Flora and Vegetation Surveys of Orebody A and Orebody B in the West Angelas Hill Area (M. Trudgen and Associates, 1998), overlaps the Survey Area.
- Flora, Vegetation and Fauna Habitat Assessment at Juna Downs (Rio Tinto Iron Ore, 2016a), 26.3 km north northwest of the Survey Area.
- Greater West Angelas Terrestrial Fauna Assessment (Ecologia Environment, 2014), overlaps the Survey Area.
- Greater West Angelas Vegetation and Flora Assessment (Ecologia Environment, 2013), overlaps the Survey Area.
- Hope Downs 2 Proposal – Ghost Bat Cave Characteristics February/March 2020 (Astron Environmental Services, 2020a), 6.6 km northeast of the Survey Area.
- Hope Downs 2 Proposal Fauna Survey (Astron Environmental Services, 2019a), 6.6 km northeast of the Survey Area.
- Hope Downs 2 Proposal Flora and Vegetation Survey (Astron Environmental Services, 2019b), 6.6 km northeast of the Survey Area.
- Metadata Statement – Beyond 2020 Deposit F and Deposit H Additional Areas (Rio Tinto Iron Ore, 2022), adjacent to the Survey Area.
- Rhodes Ridge Detailed Flora and Vegetation Survey (Astron Environmental Services, 2020b), 10.2 km east of the Survey Area.
- Rhodes Ridge Targeted Flora Survey (Astron Environmental Services, 2019c), 13.9 km east of the Survey Area.
- Rhodes Ridge Targeted Flora Survey (Stantec, 2021), 12.6 km east of the Survey Area.
- West Angelas – Deposit B and F Ghost Bat Assessment (Biologic Environmental Survey, 2014), overlaps the Survey Area.

- West Angelas Beyond 2020 Detailed Flora and Vegetation Survey: Phases 1 and 2 (Biota Environmental Services, 2020), adjacent to the Survey Area.
- West Angelas Beyond 2020 Infrastructure Corridors Reconnaissance and Targeted Survey (Biologic Environmental Survey, 2022b), adjacent to the Survey Area.
- West Angelas Beyond 2020 Level 2 Vertebrate Fauna, SRE Invertebrate and Fauna Assessment Phase 1 and 2 (Biologic Environmental Survey, 2019), adjacent to the Survey Area.
- West Angelas Beyond 2020 Mt Ella East and Dep J Detailed and Targeted Survey (Biologic Environmental Survey, 2022c), adjacent to the Survey Area.
- West Angelas Beyond 2020: Targeted Vertebrate Fauna Survey (Biologic Environmental Survey, 2020), adjacent to the Survey Area.
- West Angelas Deposit F North and Deposit H Areas Fauna Survey (Biologic Environmental Survey, 2022d), adjacent to the Survey Area.
- West Angelas Deposit G – Basic and Targeted Fauna Survey 2022 (Biologic Environmental Survey, 2022e), adjacent to the Survey Area.
- West Angelas Desktop Mapping December 2020 (Astron Environmental Services, 2020c), adjacent to the Survey Area.
- West Angelas Development Envelope Consolidated Vegetation Mapping (Biologic Environmental Survey, 2021a), overlaps the Survey Area.
- West Angelas Gas Pipeline Native Vegetation Clearing Permit (B-2018-007) (Biota Environmental Services, 2019), overlaps the Survey Area.
- West Angelas Managed Aquifer Targeted Flora and Fauna Survey (Biologic Environmental Survey, 2023b), adjacent to the Survey Area.

3.1.2 Database Searches

Database searches were undertaken to compile a list of flora, vegetation communities, and fauna known to occur in the surrounding area and identify significant flora, vegetation, and terrestrial vertebrate fauna species with potential to occur within the Survey Area (**Table 4**). In addition, an EPBC Protected Matters Search (PMST) was undertaken to identify the potential for species or communities listed as Matters of National Environmental Significance (MNES) to occur within the Survey Area (DCCEEW, 2024). The database search area buffer (up to 20 km) around the Survey Area is herein referred to as the Desktop Study Area. The Survey Area and Desktop Study Area together are considered to be the 'locality'.

Table 4: Database search details

Database name	Search ID	Date results received	Search target	Buffer around the Survey Area
RTIO Internal Database (Rio Tinto Iron Ore, 2023b)	NA	15 May 2024	Inventory of flora and fauna species	20 km
Threatened and Priority Ecological Communities database search (DBCA, 2025a)	21-1023EC-TomPrice-SLR	13 October 2023	TECs and PECs	20 km

Database name	Search ID	Date results received	Search target	Buffer around the Survey Area
Threatened and Priority Flora (TPFL) database search (DBCA, 2025b)	38-1023FL_TPFL	13 October 2023	Threatened and Priority flora	20 km
Western Australian Herbarium Flora (WHAERB) database search (DBCA, 2025c)	38-1023FL_WAHerb	13 October 2023	Threatened and Priority flora	20 km
Threatened and Priority Fauna database search (DBCA, 2024c)	7981 - FaunaSearch_SLR_Li7981	13 October 2023	Threatened and Priority fauna	20 km
Protected Matters Search Tool (PMST) (DCCEEW, 2024)	17-1023NMSLR	30 April 2024	Threatened flora, fauna, and ecological communities	20 km
NatureMap (DBCA, 2024b)	NA	20 May 2024	Inventory of potential flora and fauna	20 km

3.1.3 Previous Surveys

An overview of the distribution of previous vegetation sampling effort with Survey Area and the associated datafiles are summarised in **Table 5** below.

Table 5 Previous Flora and Vegetation survey effort for the NVCP2 Survey Area

Sampling Type	RTIO-HSE-0185831	RTIO-HSE-0237243	RTIO-HSE-0412330	Total
Quadrat	98	3	1	**102**
Relevé	31	-	1	**32**
Vegetation mapping note	-	-	-	**-**
Total	**129**	**3**	**2**	**134**

An overview of the distribution of fauna sampling effort within the Survey Area and the associated datafile is summarised in Section **4.3.5**.

3.1.4 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 7**.

Fauna 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 and are unlikely to be accurate) 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 6: Likelihood of occurrence criteria

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 searches or existing literature.
High (Likely to occur)	Suitable habitat is present within the Survey Area, and, for flora, the taxon has been recorded within 10 km of the Survey Area or, for fauna, the taxon has been recorded within the Desktop Study Area more than once in the last 15 years.
Medium (May occur)	There are existing records of the taxon within the Desktop Study Area, however 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 Surveys

3.2.1 Survey Timing

The field surveys were undertaken across two field trips as shown in **Table 7**.

Table 7: Survey timing

Survey trip	Tasks completed	Dates	Person field days
1	Flora and vegetation	16 – 25 March 2024	20
2	Terrestrial vertebrate fauna: basic fauna (polygon A and B of Map 1), targeted fauna (polygon A, B and C of Map 1)	12 – 21 April 2024	20

3.2.2 Field Personnel and Licences

Details of field personnel, including their level of experience, role for each field trip, and flora collection licence numbers are detailed in **Table 8**.

Fauna fieldwork was completed under Fauna Taking (Biological Assessment) License – Regulation 27 (BA27001038) and an authorisation to take or disturb threatened species under Section 40 of the BC Act (TFA 2324-0218) (**Appendix C**). Animal ethics approval was obtained under scientific use licence number U336 / 2023 - 2025 and permit number WAEC 24-02-11.

Table 8: Field personnel

Personnel	Experience	Licence	Role	Trip Number
Simon Colwill	15 years	FB62000037-2	Principle Botanist, Field Leader	1
Mathew Bell	2 years	FB62000644	Graduate Botanist	1

Personnel	Experience	Licence	Role	Trip Number
Poppy Walker	5 years	BA27001038 TFA 2324-0218	Senior Zoologist, Field Lead	2
Datta Li	3 years	BA27001038 TFA 2324-0218	Project Zoologist	2

3.2.3 Weather Conditions

Weather conditions during the fauna survey are presented in **Table 9**. Daily temperature and rainfall data is from the Newman Aero Weather Station (007176) (BoM, 2025). Weather conditions can impact potential detection of fauna taxa during a survey.

Table 9: Field survey weather conditions

Date	Temperature (°C)		Rainfall (mm)
	Min	Max	
12/04/2024	17.5	31.3	0
13/04/2024	15	33.6	0
14/04/2024	19	32.9	0
15/04/2024	18.8	34.9	0
16/04/2024	18.4	34.2	0
17/04/2024	22.2	33.2	0
18/04/2024	20	30.3	0
19/04/2024	17	29.1	0
20/04/2024	14.7	27.4	0
21/04/2024	19.8	29.3	0

3.3 Flora and Vegetation

3.3.1 Establishment of Flora Sites

Indicative flora sites were identified prior to the survey using aerial photography, and adjacent available vegetation mapping, to estimate broad vegetation patterns within the Survey Area. The location and number of flora sites completed was adjusted in the field to achieve sites most representative of the vegetation present.

Flora sites consisted of relevés, unbounded sites approximately 50 x 50 m where possible, or alternate configurations approximately equating to 2500 m^2. A record of all flora present at the time of sampling was recorded at each relevé.

A handheld Fulcrum mobile data collection device was used to record relevé data, and mapping notes, opportunistic flora collections and photographs were also taken where required. Tracks were recorded using a handheld Garmin GPS unit, in WGS 84 datum. At each flora site, the following was recorded:

- Site location (WGS 84 datum)
- 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 recorded.
- 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 Botanical Provinces vegetation condition scale (EPA, 2016a), and 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 64 relevés were established within the Survey Area, and 179 additional mapping notes were completed to aid in vegetation mapping delineation. Flora site locations are shown on **Map 7**.

3.3.2 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.

3.3.3 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.

The entire Survey Area was not systematically searched, rather, specific landforms were targeted that were more likely to support significant flora. Where Threatened or Priority flora were encountered in the field a GPS location was taken and a count of individuals was recorded. Specimens of any potential significant flora that could not be identified in the field were collected for identification and lodgement at the Western Australian Herbarium (WAH), with the Rio Tinto sponsored Botanist.

3.3.4 Vegetation Type and Condition Mapping

Vegetation mapping has been previously conducted by multiple consultancies for the West Angelas locality, between 1998 and 2023. This mapping was consolidated by Biologic Environmental Survey (Biologic) for Rio Tinto in 2021, in their *West Angelas Development Envelope Consolidated Vegetation Mapping* (Biologic Environmental Survey, 2021a). The vegetation types described and delineated by Biota Environmental Sciences (Biota) (2020), which were supported by floristic analysis, formed the basis of the consolidated mapping conducted by Biologic (2021a).

When clipped to the NVCP 2 Survey Area, Biologic's consolidated vegetation mapping provided coverage of 91.3% of Polygon C (17,966.37 ha). The Biologic mapping did not provide coverage for Polygons A or B. Some portions of the existing mapping were updated with either different Biologic vegetation types, or new SLR vegetation types, to better reflect on-ground observations. Any changes made to the existing mapping have been documented spatially.

Vegetation condition rankings were embedded within the consolidated vegetation mapping attributes. Polygons captured by Biologic (2021a) were assigned vegetation ranking codes as per the Rio Tinto Data Standards: Flora (2023) Version 11 (Rio Tinto Iron Ore, 2023a), which are in accordance with the Eremaean Botanical Provinces vegetation condition scale (EPA, 2016a). Vegetation condition mapping was updated where relevant based on site data and mapping notes observed during the current survey.

All portions of the survey that were not covered by Biologic's consolidated mapping, were mapped in the field, with boundaries delineated over aerial photography, at a scale of approximately 1:2,000. Vegetation types were aligned with the Biologic (2021b) vegetation types where possible, to ensure consistency across the Survey Area. Vegetation condition mapping was updated based on site data and mapping notes observed during the current survey.

Finalised polygons were digitised and produced as electronic mapping data using QGIS software. Finalised flora mapping for the entirety of the Survey Area was combined with current disturbance layers provided by Rio Tinto.

3.3.5 Taxonomy and Nomenclature

Where field identification of plant taxa was not possible, specimens were collected for identification using WAH resources. Identification of flora collections was completed by experienced taxonomist Pierre-Louis de Kock. Any taxa suspected of representing significant taxa, as well as difficult taxa, were submitted to Steve Dillon, Rio Tinto's specialist taxonomist.

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, 2025; DPIRD, 2025).

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.

3.4 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 GPS-enabled 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.

Biologic (2021c) previously mapped 17,966.4 ha of the Survey Area as part of the West Angelas Development Envelope Fauna Habitat Mapping (RTIO-HSE-0355392). Fauna habitat mapping for the remaining 1,702.4 ha was done in conjunction with the vegetation type mapping and was based on a combination of field observations, habitat assessment data, and aerial imagery. A portion of this 1,702.4 ha area was unable to be accessed by the SLR fauna team due to heritage constraints, and the mapping was developed based on the vegetation mapping conducted by SLR, and aerial imagery. Polygons were digitised using GIS software. Finalised habitat mapping for the entirety of the Survey Area was combined with current disturbance layers provided by Rio Tinto.

3.4.2 Camera Traps

Fifty-nine motion sensitive camera traps were set up during the field survey. Camera traps were deployed in lines of five cameras spaced approximately 100 m apart, except for opportunistic sites (CX8, CX9). Sites were selected in areas of suitable habitat for Northern Quolls and Pilbara Olive Pythons. Cameras were baited with universal bait (rolled oats, peanut butter, and sardines). **Table 10** shows the total camera trap survey effort, and camera trap locations are shown in **Map 7**.

Table 10: Camera trap survey effort

Habitat	Site number	Lat/long (WGS84)	Number of camera traps	Total camera trap nights
Gorge/Gully	A1	-23.193466, 118.545969	5	20
Gorge/Gully	A2	-23.191653, 118.560757	5	20
Minor Drainage	B1	-23.206664, 118.639115	5	20
Gorge/Gully	B2	-23.205144, 118.651548	5	20
Gorge/Gully	C1	-23.160257, 118.623041	5	20
Rocky Hill	C2	-23.152223, 118.678495	5	30
Minor Drainage	C3	-23.168793, 118.737997	5	20
Gorge/Gully	C4	-23.170988, 118.812878	5	20
Rocky Hill	C5	-23.166162, 118.842949	5	20
Minor Drainage	C6	-23.150494, 118.812602	5	20
Rocky Hill	C7	-23.122719, 118.695407	5	20
Low Hills and Slopes	CX8	-23.142493, 118.788021	3	12
Rocky Hill (Pebble Mound)	CX9	-23.1715029, 118.803815	1	2
Total			**59**	**244**

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, in conjunction with the SMM - U1 Ultrasonic Microphones, were used 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 11** shows the total SM4BAT ARU survey effort, and locations are shown in **Map 7**.

Table 11: SM4BAT Ultrasonic ARU survey effort

Habitat	Site number	Lat/long (WGS84)	Trap nights
Low Hills and Slopes	A3	-23.19441780, 118.53258880	3
Gorge/Gully	A2	-23.19114333, 118.56081840	5
Minor Drainage	B1	-23.20673280, 118.63802660	5
Rocky Hill	B2	-23.20618090, 118.64831780	3
Minor Drainage	C3	-23.16880120, 118.73643120	5
Rocky Hill	C4	-23.16992561, 118.81202772	5
Rocky Hill	C7	-23.12256170, 118.69513170	5
Total			**31**

3.4.3.2 Night Parrot

Song Meter SM4 ARUs were used to target Night Parrot (*Pezoporus occidentalis*) by recoding within the audible range up to 20kHz during peak calling time. 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 12** shows the total SM4 ARU survey effort, and locations are shown in **Map 7**.

Table 12: SM4 ARU survey effort

Habitat	Site number	Lat/long (WGS84)	Trap nights
Rocky Hill	C2	-23.15319830, 118.67961330	6
Stony Plain	C10	-23.16625080, 118.70027248	6
Total			**12**

3.4.4 Active Searches

Untimed active searches were undertaken at camera trap sites and while walking to and from sites. These searches included peeling bark, splitting dead wood, and flipping rocks in search of evidence of fauna.

3.4.5 Identification and Taxonomy

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

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.

4.0 Results

4.1 Limitations

Limitations and constraints of the flora, vegetation, and fauna survey are detailed below in **Table 13**.

Table 13: Limitations and constraints associated with the survey

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	The survey was undertaken by a team with extensive experience undertaking similar scopes within the bioregion. • Simon Colwill – Principal Botanist, 15 years' experience • Mathew Bell – Graduate Botanist, 2 years' experience • Poppy Walker – Senior Zoologist, 5 years' experience • Datta Li – Project Zoologist, 3 years' experience
The proportion of flora and fauna identified, recorded, or collected	None	Of the 300 flora taxa recorded, 35 specimens (11.7%), 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. Of the 71 fauna taxa recorded, three taxa (4.2%), could not be identified to species level due to lack of camera trap picture clarity. The unidentified fauna taxa were not analogous to significant fauna taxa.
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 total of 64 relevés and 179 mapping notes were sampled within the Survey Area during the current survey. An additional 71 quadrats had been previous sampled within the Survey Area, for a total of 314 collective sampling sites. A minimum of three sites were installed within each vegetation type where possible. Six of the 37 natural vegetation types were not represented by sampling sites within the Survey Area but had some level of survey effort within the broader West Angelas Development Envelope (D13, P1 and P4). A minimum of one fauna habitat assessment and camera trap site was installed within each targeted habitat type. Additional survey effort may yield additional flora and fauna taxa.
Access problems	None	The majority of the Survey Area was sufficiently accessed by vehicle and on foot. A total of 219.2 ha of the Survey Area was inaccessible due to heritage exclusion zones. An additional 184.7 ha of the Survey Areas eastern most extent was unable to be surveyed during the targeted fauna survey due to heritage access constraints, however this is not considered a limitation.

Variable	Degree of limitation	Potential constraints on survey outcomes
Timing, weather, and season	Partial	The recommended primary survey period for flora and vegetation within the Eremaean Botanical Province occurs between March and June. The flora and vegetation survey (16 – 25 March) was undertaken within the recommended primary survey period. The recommended primary survey periods for the Eremaean broad climatic regions are: • Amphibians – Immediately after significant rain events. • Birds – Immediately after rain events. • Mammals – No preferred time • Reptiles – September to April The fauna survey (12 – 21 April) was undertaken within the recommended primary survey period for mammals and reptiles. Despite reasonable rainfall received at Newman Aero Weather Station preceding the flora and fauna surveys, on ground conditions were observed to be very dry, which indicates the localised nature of rainfall events in the Pilbara region.
Disturbance that may have affected the results of survey	None	Areas of disturbance associated with mining activities were present within the Survey Area but were not a limitation on the results of the survey.
Fauna habitat mapping	Partial	Majority (~99%) of the fauna habitat mapping was not considered a limitation as it matched previous survey efforts. However, SLR mapped 10.64 ha of Breakaway/Cliff habitat that was previously identified as Rocky Hill habitat in previous surveys. For consistency SLR has remapped the Breakaway/Cliff habitat to Rocky Hill habitat and subsequently the critical habitat for Ghost Bats (Breakaway/Cliff habitat) has been removed from our mapping results. The 10.64 ha of removed Breakway/Cliff habitat is considered a major limitation to the report..
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.

4.2 Flora and Vegetation

4.2.1 Desktop Assessment

4.2.1.1 Literature Review

The key findings of the flora, vegetation and fauna reports reviewed are summarised in **Appendix B.**

4.2.1.2 Database Searches

Database searches (DBCA and Rio Tinto internal) and the literature review identified 56 significant flora taxa occurring within the Desktop Study Area, comprising:

- Two Threatened taxa
- Four Priority 1 taxa
- Thirteen Priority 2 taxa
- Thirty-two Priority 3 taxa
- Five Priority 4 taxa.

Database search results are summarised in **Appendix D** and presented in **Map 8**.

Five state listed PECs were identified by the database searches as occurring within 25 km of the Survey Area (**Map 11**). Each instance of the communities includes the associated buffer (500 m) and is therefore larger than the vegetation on ground. Where multiple small instances of the same community occurred in close proximity, the overlapping buffers have been merged to avoid incorrect area data.

TECs and PECs identified by database searches are presented in **Map 11**.

Table 14: Conservation significant communities within the Survey Area

Community	Status	Distance from Survey Area (km)	Total area (ha) (inc. buffer)
West Angelas Cracking-Clays	P1	**Within Survey Area**	11,607.7
Weeli Wolli Spring Community	P1	31 km northeast	26,628.4
Brockman Iron cracking clay communities of the Hamersley Range	P1	5.9 km north	261.3
Coolibah - Lignum Flats: sub type 2: Coolibah woodlands over lignum (*Duma florulenta*) over swamp wanderrie (Lake Robinson)	P1	6.4 km north	15,138.7
Coolibah - Lignum Flats: sub type 1: Coolibah and mulga woodland over lignum and tussock grasses on clay plains (Coondewanna and Wanamunna flats and Mt Bruce Flats)	P3	3.7 km north	23,204.8

4.2.1.3 Likelihood of Occurrence

The pre-survey likelihood of occurrence assessment identified that of the 56 significant flora species identified by the desktop assessment:

- Thirty taxa had previously been recorded within the Survey Area,
- Thirteen were considered to have a high likelihood of occurrence,
- Six were considered to have a medium likelihood of occurrence, and
- Seven were considered to have a low likelihood of occurrence.

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

- Thirteen priority flora were recorded during the survey, all of which had previously been recorded from the Survey Area.
- Seventeen priority flora previously recorded within the Survey Area were not recorded during the current survey.
- No taxa were considered to have a high likelihood of occurrence.
- Seven taxa were considered to have a medium likelihood of occurrence.
- The remaining 19 taxa were considered to have a low likelihood of occurrence.

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

4.2.2 Floristic Composition

The field survey recorded a total of 300 taxa from 119 genera across 45 families (**Appendix E**). The most abundant genus was *Acacia* (34 taxa). The most diverse families were Fabaceae (67 taxa), Poaceae (51 taxa), and Malvaceae (32 taxa).

4.2.3 Significant Flora

4.2.3.1 Threatened and Priority Flora Recorded Within the Survey Area

No Threatened flora taxa were recorded during the survey.

A total of 13 Priority flora taxa were recorded during the field survey (**Map 9**) and are listed below:

- Three Priority 2 flora:
  - *Eremophila pusilliflora*
  - *Eremophila* sp. West Angelas (S. van Leeuwen 4068)
  - *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708).
- Eight Priority 3 flora:
  - *Aristida lazaridis*
  - *Eremophila naaykensii*
  - *Grevillea saxicola*
  - *Indigofera gilesii*
  - *Olearia mucronata*
  - *Rhagodia* sp. Hamersley (M. Trudgen 17794)
  - *Solanum kentrocaule*
  - *Triodia* sp. Mt Ella (M.E. Trudgen 12739).
- Two Priority 4 flora
  - *Acacia bromilowiana*
  - *Sida* sp. Barlee Range (S. van Leeuwen 1642).

Threatened and Priority Flora Report Forms are presented in **Appendix G**. Detailed descriptions of each taxon are provided below, as well as photographs where available.

Eremophila pusilliflora (P2)

Eremophila pusilliflora (**Plate 1**) is a low spreading shrub 40 cm tall, 60 cm wide and known from 19 vouchered records (DBCA, 2024a).

A total of 17 individuals from five locations were recorded during the survey, from the M1 vegetation type, as well as a disturbed area.

Eremophila sp. West Angelas (S. van Leeuwen 4068) (P2)

Eremophila sp. West Angelas (S. van Leeuwen 4068) is a tall wispy shrub growing up to 3 m, found on hill slopes and steep terrain, and known from eight vouchered records in the Pilbara (DBCA, 2024a).

A total of four individuals from two locations were recorded during the survey, from the H2 vegetation type.

Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708) (P2)

A spindly shrub to 2 m tall, with large purple flowers, *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708) is known from 28 vouchered records within the Pilbara. This species is typically found on rocky slopes, gullies, breakaways and gorges (DBCA, 2024a).

During the survey, 20 individuals were recorded from six locations within the CfDvTMe and H7 vegetation types.

Aristida lazaridis (P3)

A tufted perennial grass growing 0.4-1.5 m high, with green/purple flowers, this species is typically found on sand or loam. It is known from 27 vouchered records in the Pilbara (DBCA, 2024a), and also occurs in Queensland. During the survey, two individuals were recorded from two locations within the P7 vegetation type.

Eremophila naaykensii (P3)

Eremophila naaykensii (**Plate 2)** is an erect perennial shrub growing to 2.5 m tall, with grey-green lanceolate leaves. It typically occurs in rocky slopes, gullies, breakaways and gorges of moderate hills. This species is known from 22 vouchered records from the Pilbara (DBCA, 2024a).

During the survey, a range of 0.1% to 6% cover from six relevés was recorded, as well as 1240 individuals from 58 additional locations from eight vegetation types.

Grevillea saxicola (P3)

A tall shrub or low tree growing to 7 m tall, found on scree slopes, steep rocky slopes and hillcrests. *Grevillea saxicola* is known from 40 vouchered records from the Pilbara (DBCA, 2024a).

A range of 1% to 3% cover from two relevés was recorded, in addition to 10 individuals from one location. It was recorded from the AaEnTp, H2 and H15 vegetation types within the Survey Area.

Indigofera gilesii (P3)

Indigofera gilesii is a shrub to 1.5 m high, with purple-pink flowers in May or Aug. This taxon typically occurs in pebbly loams, amongst boulders and outcrops, and on hills. It is known from 40 vouchered records from the Pilbara (DBCA, 2024a).

During the survey, five individuals were recorded from three locations, across the G3 and H7 vegetation types.

Olearia mucronata (P3)

This species is a densely branched, unpleasantly aromatic shrub growing 0.6-1 m high. It has white and yellow flowers from Aug to Dec or Jan, and occurs on schistose hills, and along drainage channels. *Olearia mucronata* is known from 14 vouchered records from the Pilbara (DBCA, 2024a).

A total of 16 individuals from two locations were recorded during the survey, from the H2 vegetation type.

Rhagodia sp. Hamersley (M. Trudgen 17794) (P3)

Rhagodia sp. Hamersley (M. Trudgen 17794) (**Plate 3)** is a spindly shrub, growing to 2 m tall, with narrow grey leaves, and typically grows in association with Mulga species. It is known from 75 vouchered records from the Pilbara (DBCA, 2024a).

During the survey, 10 individuals from nine locations were recorded, from the P1, P2 and P5 vegetation types, as well as disturbed areas.

Solanum kentrocaule (P3)

A spiny perennial shrub to 1.5 m tall, with mauve to purple flowers, *Solanum kentrocaule* inhabits hillsides and gullies. It is known from 23 vouchered records from the Pilbara (DBCA, 2024a).

A total of three individuals from three locations were recorded during the survey, across the H2 and P11 vegetation types.

Triodia sp. Mt Ella (M.E. Trudgen 12739) (P3)

Triodia sp. Mt Ella (M.E. Trudgen 12739) (**Plate 4)** is a perennial hummock grass to 0.4 m high, occurring amongst rocks, outcrops and gully slopes. It is known from 40 vouchered records from the Pilbara (DBCA, 2024a).

A coverage of 20% was recorded from WGR48, plus approximately 7400 individuals from 19 additional locations throughout the Survey Area, from four vegetation types (CfDvTMe, H7, H10 and H14).

Acacia bromilowiana (P4)

Acacia bromilowiana (***Plate 5***) is a tree or shrub growing up to 12 m high, with yellow/pink flowers from Jul to Aug. Typically preferring rocky hills, breakaways, scree slopes, gorges and creek beds. This species is known from 30 vouchered records from the Pilbara (DBCA, 2024a).

During the survey, 70 individuals from two locations were recorded within the CfDvTMe vegetation type.

Sida sp. Barlee Range (S. van Leeuwen 1642) (P4)

Sida sp. Barlee Range (S. van Leeuwen 1642) (**Plate 6)** is a low spreading shrub, to 0.5 m high, with yellow flowers. It is commonly found in skeletal red soils and steep slopes. This species is known from 60 vouchered records from the Pilbara (DBCA, 2024a).

During the survey, 165 individuals from 15 locations were recorded within the Survey Area, across four vegetation types (AaEnTp, H7, H10, H14).



Plate 1: ***Eremophila pusilliflora*** **(P2)**



Plate 2: ***Eremophila naaykensii*** **(P3)**



Plate 3: ***Rhagodia*** **sp. Hamersley (M. Trudgen 17794) (P3)**



Plate 4: ***Triodia*** **sp. Mt Ella (M.E. Trudgen 12739) (P3)**



Plate 5: ***Acacia bromilowiana*** **(P4)**



Plate 6: ***Sida*** **sp. Barlee Range (S. van Leeuwen 1642)**

4.2.3.2 Other Significant Flora Recorded Within the Survey Area

No flora taxa recorded during the field survey were considered to be significant for reasons other than Threatened or Priority status.

4.2.3.3 Significant Flora Potentially Occurring Within the Survey Area

A total of 49 significant flora were identified through the desktop assessment as either being previously recorded from the Survey Area or having some potential to occur (high or medium likelihood).

A total of 30 of these species had been previously recorded from within the Survey Area (Section **4.2.1.3, Appendix D**)**.** Following the survey, 13 of these species were re-recorded within the Survey Area (Section **4.2.1.3**). Seventeen of the 30 previously recorded significant flora were not encountered during the current survey.

No taxa retained a 'High' likelihood of occurrence ranking. However, seven taxa are considered to have a 'medium' likelihood of occurrence within the Survey Area due to the presence of suitable habitat and the close proximity of existing records:

- *Acacia effusa* (P3)
- *Eremophila magnifica* subsp. *velutina* (P3)
- *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727) (P3)
- *Rostellularia adscendens* var. *latifolia* (P3)
- *Sida* sp. Hamersley Range (K. Newbey 10692) (P3)
- *Eremophila magnifica* subsp. *magnifica* (P4)
- *Lepidium catapycnon* (P4).

The complete results of the pre-survey and post-survey significant flora likelihood of occurrence assessment are provided in **Appendix D**.

4.2.4 Introduced Flora

A total of 12 introduced taxa were recorded within the Survey Area, representing 3.90% of the total taxa recorded (**Table 15**; **Map 10**). None are listed as Declared Pests under the BAM Act or as a WoNS.

Table 15: Introduced flora taxa recorded within the Survey Area

Taxon	Common name	Status under BAM Act	WoNS
**Bidens bipinnata*	Bipinnate Beggartick	Permitted – s11	No
**Cenchrus ciliaris*	Buffel Grass	Permitted – s11	No
**Cenchrus setiger*	Birdwood Grass	Permitted – s11	No
**Datura leichhardtii* subsp. *leichhardtii*	Datura	Permitted – s11	No
**Erigeron bonariensis*	Fleabane	Permitted – s11	No
**Malvastrum americanum*	Spiked Malvastrum	Permitted – s11	No
**Portulaca oleracea*	Purslane	Permitted – s11	No
**Setaria verticillata*	Whorled Pigeon Grass	Permitted – s11	No
**Solanum nigrum*	Black Berry Nightshade	Permitted – s11	No
**Sonchus oleraceus*	Common Sowthistle	Permitted – s11	No
**Symphyotrichum squamatum*	Bushy Starwort	N/A	No
**Vachellia farnesiana* var. *farnesiana*	Mimosa Bush	Permitted – s11	No

4.2.5 Unconfirmed Flora

A total of 35 specimens (11.4% of the taxa recorded) could not be identified to species level because the taxa were sterile at the time of the survey, largely due to very dry on-ground conditions (**Appendix E**). Of these specimens, two were identified to family level, 18 were identified to genus level, and 15 were tentatively identified to species level. Some of these unconfirmed flora taxa may represent duplicates of taxa that were confirmed within the Survey Area.

None of these unconfirmed flora taxa were analogous to significant flora taxa identified by the desktop assessment.

4.2.6 Vegetation Types

A total of 37 vegetation types were identified and described for the Survey Area, across four broad landforms, including 35 vegetation types from Biologic's (2021a) consolidated vegetation mapping. Two additional types were identified and described by SLR. These vegetation types are summarised in **Table 16** below and presented in **Map 9a-c.**

Of these 37 vegetation types:

- Seven were represented by the drainages landform.
- Twelve were represented by the hills landform.
- Four were represented by the gorges and gullies landform; and
- Fourteen were represented by the plains landform.

The H4 (AiTw) vegetation type was the most common, representing 14.19% (2790.4 ha) of the Survey Area. H4 was found to occur on hillslopes and hillcrests and is described as:

> *"Acacia inaequilatera scattered tall shrubs over Triodia wiseana open hummock grassland".*

One unit mapped as 'Cleared' represented areas completely or almost completely devoid of native vegetation, which had been cleared for current and historical mining purposes. This comprised a total of 6,781.5 ha (34.48%) of the Survey Area.

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

Table 16: Vegetation types recorded within the Survey Area

Short Code	Vegetation Unit	Vegetation Description	Vegetation Condition	Extent (ha) Within Survey Area	Proportion (%) of Survey Area
Vegetation of Drainages					
D2	EvAcTErTHtTp	*Eucalyptus victrix* low open woodland over *Acacia citrinoviridis* tall open shrubland over *Tephrosia rosea* var. Fortescue Creeks (M.I.H. Brooker 2186) scattered low shrubs over *Themeda triandra* very open tussock grassland over *Triodia pungens* scattered hummock grasses to very open hummock grassland.	Excellent - Degraded	102.78	0.52%
D3	ExChPlApyTErTHtTp	*Eucalyptus xerothermica* and/or *Corymbia hamersleyana* low open woodland over *Petalostylis labicheoides, Acacia pyrifolia* tall open shrubland over *Tephrosia rosea* var. Fortescue Creeks (M.I.H. Brooker 2186) low open shrubland over *Themeda triandra* very open tussock grassland over *Triodia pungens* very open hummock grassland to scattered hummock grasses.	Excellent - Poor	62.99	0.32%
D5	ChPlAmoTErTHtTp	*Corymbia hamersleyana* low open woodland *Petalostylis labicheoides, Acacia monticola* tall shrubland over *Tephrosia rosea* var. Fortescue Creeks (M.I.H. Brooker 2186) low open shrubland over Themeda triandra very open tussock grassland over Triodia pungens very open hummock grassland.	Very Good	0.88	0.004%
D6	ChCdAanPlTp	*Corymbia hamersleyana* and/or *C. deserticola* subsp. *deserticola* low open woodland over *Acacia 'aneura', Petalostylis labicheoides* tall open shrubland over *Triodia pungens* open hummock grassland.	Excellent - Poor	181.30	0.92%
D7	ChAmoTHtTp	*Corymbia hamersleyana* low open woodland over *Acacia monticola* tall shrubland over *Themeda triandra* very open tussock grassland over *Triodia pungens* very open hummock grassland.	Excellent – Very Good	13.62	0.07%

Short Code	Vegetation Unit	Vegetation Description	Vegetation Condition	Extent (ha) Within Survey Area	Proportion (%) of Survey Area
D11	ExAanEtPlANlEUsTHtTp	*Eucalyptus xerothermica* (E. camaldulensis) and/or *Acacia 'aneura'* low open woodland over *E. trivalva* low open mallee woodland over *Petalostylis labicheoides, Androcalva luteiflora* open shrubland over *Eulalia symonii* and/or *Themeda triandra* very open tussock grassland with *Triodia pungens* very open hummock grassland.	Excellent	47.39	0.24%
D14	AcAapApyPlTpTHtEENlCYa	*Acacia citrinoviridis, A. aptaneura* isolated trees/low open woodland/woodland over *A. pyrifolia* var. *pyrifolia, Petalostylis labicheoides* tall sparse to tall open shrubland over *Indigofera georgei, Ptilotus obovatus, Solanum lasiophyllum* low isolated to low open shrubland over *Triodia pungens* sparse to open hummock grassland over *Themeda triandra, Enneapogon lindleyanus, Cymbopogon ambiguus* sparse to open tussock grassland.	Excellent - Degraded	331.46	1.69%
Vegetation of Gorges and Gullies					
G2	AanCALcCfCAPmPToERImARbTp	Acacia 'aneura', *Callitris columellaris* and/or *Corymbia ferriticola* low woodland over *Capparis mitchellii* scattered tall shrubs over Ptilotus obovatus low open shrubland over *Eriachne mucronata* and/or *Aristida burbidgeae* very open tussock grassland with *Triodia pungens* scattered hummock grasses.	Excellent	2.78	0.01%
G3	CfAmoTHtTp	*Corymbia ferriticola* low open woodland over Acacia monticola tall open shrubland over *Themeda triandra* very open tussock grassland over *Triodia pungens* scattered hummock grasses.	Excellent – Very Good	37.48	0.19%
G4	AaApCfEnTp	Acacia *aptaneura*, (A. *pruinocarpa, Corymbia ferriticola*) tall open woodland over *Eremophila naaykensii* tall sparse shrubland over *Triodia pungens* low sparse hummock grassland.	Excellent – Very Good	66.79	0.34%

Short Code	Vegetation Unit	Vegetation Description	Vegetation Condition	Extent (ha) Within Survey Area	Proportion (%) of Survey Area
G5	CfElChDvTMe	*Corymbia ferriticola*, Eucalyptus *leucophloia subsp. leucophloia* and *C. hamersleyana* low open woodland over *Dodonaea ?viscosa* subsp. *mucronata*, *Gossypium robinsonii* and *Acacia maitlandi*i tall sparse shrubland over Triodia sp. Mt Ella (M.E. Trudgen 12739), *T. pungens* and *T. wiseana* low hummock grassland.	Excellent – Very Good	31.69	0.16%
Vegetation of Hills					
H1	AanAayElERfoERlaTpTw	*Acacia 'aneura'* and/or *A. ayersiana, (Eucalyptus leucophloia* subsp. *leucophloia)* low woodland over *Eremophila forrestii* subsp. *forrestii, E. latrobei* subsp. *latrobei* scattered shrubs over *Triodia pungens, T. wiseana* very open hummock grassland.	Excellent – Very Good	7.47	0.04%
H2	AanERsppTp	*Acacia 'aneura'* low woodland over *Eremophila jucunda* subsp. *pulcherrima, E. phyllopoda* subsp. *obliqua, (E. cuneifolia, E. oppositifolia* subsp. *angustifolia)* open shrubland over *Triodia pungens* very open hummock grassland.	Excellent – Very Good	141.95	0.72%
H3	AcaElAanTp	*Acacia catenulata* subsp. *occidentalis, (Eucalyptus leucophloia* subsp. *leucophloia, A. 'aneura')* low open forest over *Triodia pungens* open hummock grassland.	Excellent	7.11	0.04%
H4	AiTw	*Acacia inaequilatera* scattered tall shrubs over *Triodia wiseana* open hummock grassland.	Excellent - Good	2,790.43	14.19%
H7	ElAmTvTp	*Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia maitlandii* scattered shrubs over *Triodia vanleeuwenii, T. pungens* open hummock grassland.	Excellent - Poor	1,887.12	9.59%
H8	ElCdApTvTp	*Eucalyptus leucophloia* subsp. *leucophloia* and/or *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia pruinocarpa* scattered tall shrubs over *Triodia vanleeuwenii* and/or *T. pungens* open hummock grassland.	Excellent - Poor	649.37	3.30%

Short Code	Vegetation Unit	Vegetation Description	Vegetation Condition	Extent (ha) Within Survey Area	Proportion (%) of Survey Area
H9	ElCdEgTv	*Eucalyptus leucophloia* subsp. *leucophloia* and/or *Corymbia deserticola* subsp. *deserticola* low open woodland over *E. gamophylla* low open mallee woodland over *Triodia vanleeuwenii* open hummock grassland.	Excellent	94.47	0.48%
H10	ElEgAmPlTvTw	*Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. gamophylla* low open mallee woodland *Acacia maitlandii, Petalostylis labicheoides* open shrubland over *Triodia vanleeuwenii, T. wiseana* open hummock grassland.	Excellent - Good	108.07	0.55%
H11	ElEkAhTvTw	*Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. kingsmillii* low open mallee woodland *Acacia hamersleyensis* scattered tall shrubs over *Triodia vanleeuwenii, T. wiseana* open hummock grassland.	Excellent	69.53	0.35%
H14	ElTbrTw	*Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Triodia brizoides, (T. wiseana)* open hummock grassland.	Excellent	28.29	0.14%
H15	ElTpTw	*Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Triodia pungens* and/or *T. wiseana* open hummock grassland.	Excellent - Very Good	791.79	4.03%
H16	ElTvTpTsm	*Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Triodia vanleeuwenii, T. pungens* and/or *T.* sp. Mt Ella (M.E. Trudgen 12739) open hummock grassland.	Excellent - Very Good	713.79	3.63%
Vegetation of Plains					
P1	AanAayApTvTp	*Acacia 'aneura', A. ayersiana, A. pruinocarpa* low open woodland over *Triodia vanleeuwenii, T. pungens* open hummock grassland.	Excellent – Very Good	59.73	0.30%
P2	AanAayERfoTm	*Acacia 'aneura', A. ayersiana* low open woodland over *Eremophila forrestii* subsp. *forrestii* open shrubland over *Triodia melvillei* open hummock grassland.	Very Good - Good	179.10	0.91%

Short Code	Vegetation Unit	Vegetation Description	Vegetation Condition	Extent (ha) Within Survey Area	Proportion (%) of Survey Area
P3	AanAcaApERfoTp	*Acacia 'aneura', A. catenulata* subsp. *occidentalis* and/or *Acacia pruinocarpa* low woodland to low open forest over *Eremophila forrestii* subsp. *forrestii* open shrubland over *Triodia pungens* very open hummock grassland.	Excellent – Poor	344.37	1.75%
P4	AanApAayTp	*Acacia 'aneura', A. pruinocarpa, A. ayersiana* woodland over *Triodia pungens* open hummock grassland.	Excellent – Very Good	25.58	0.13%
P5	AanApERfoTp	*Acacia 'aneura'* and/or *A. pruinocarpa* low woodland to low open forest over *Eremophila forrestii* subsp. *forrestii* open shrubland over *Triodia pungens* very open hummock grassland.	Excellent – Poor	263.64	1.34%
P7	AanExERfoERloTHtTwTp	*Acacia 'aneura', Eucalyptus xerothermica* scattered low trees to low open woodland over *Eremophila forrestii* subsp. *forrestii* and/or *E. longifolia* very open shrubland over *Themeda triandra* scattered tussock grasses over *Triodia wiseana* and/or *T. pungens* open hummock grassland.	Very Good - Good	962.96	4.90%
P8	AanTHtARcTp	*Acacia 'aneura'* scattered tall shrubs over *Themeda triandra* scattered tussock grasses to tussock grassland with *Aristida contorta* scattered bunch grasses to bunch grassland over *Triodia pungens* scattered hummock grasses.	Very Good - Good	26.54	0.13%
P9	ApAwTvTp	*Acacia pruinocarpa* scattered tall shrubs over *A. wanyu* open shrubland *Triodia vanleeuwenii* and/or *T. pungens* open hummock grassland.	Excellent	14.76	0.08%
P11	ElTspp	*Eucalyptus leucophloia* subsp. *leucophloia* low open woodland *Triodia longiceps* and/or *T. wiseana, T. pungens* open hummock grassland.	Very Good	267.99	1.36%
P12	EgTpTv	*Eucalyptus gamophylla* low open mallee woodland over *Triodia pungens* and/or *T. vanleeuwenii* open hummock grassland.	Excellent - Good	226.89	1.15%

Short Code	Vegetation Unit	Vegetation Description	Vegetation Condition	Extent (ha) Within Survey Area	Proportion (%) of Survey Area
P14	EtErEsTspp	*Eucalyptus trivalva, E. repullulans, E. socialis* subsp. *eucentrica* low open mallee woodland over *Triodia wiseana, (T. angusta, T. pungens, T. longiceps)* open hummock grassland.	Excellent – Very Good	101.08	0.51%
P15	ASpASeARla	*Astrebla pectinata, Astrebla elymoides* and *Aristida latifolia* open tussock grassland (West Angelas Cracking-Clays Priority 1 PEC).	Excellent - Good	423.77	2.15%
P16	AanERfoCHf	*Acacia 'aneura'* tall open shrubland over *Eremophila forrestii* subsp. *forrestii, Rhagodia eremaea* open shrubland over *Chrysopogon fallax* scattered tussock grasses.	Excellent - Good	95.25	0.48%
M1	AanApTp/AanAcaApERfoTp	*Acacia 'aneura', A. pruinocarpa* low open woodland/*A. 'aneura', A. catenulata* subsp. *occidentalis* and/or *A. pruinocarpa* low woodland to low open forest over *Eremophila forrestii* subsp. *forrestii* open shrubland over *Triodia pungens* open hummock grassland/*T. pungens* very open hummock grassland.	Excellent - Poor	1,727.12	8.78%
Other Units					
Cleared	Cleared	Devoid of vegetation.	N/A (Cleared)	6,781.50	34.48%
Total				**19,668.82**	**100%**

*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

4.2.7 Vegetation Condition

Vegetation condition within the Survey Area ranged from Excellent to Degraded condition, with the majority (31.01%) being in Very Good condition (**Table 17; Map 10**).

Evidence of disturbance was primarily associated with active and historical mining activities and associated infrastructure.

A large portion of the survey area was mapped as Completely Degraded, which represents cleared or previously disturbed areas based on the current spatial extent of disturbance, as provided by Rio Tinto, as well as on ground observations. These areas represented 34.48% of the total Survey Area.

Table 17: Summary of vegetation condition within the Survey Area

Vegetation condition	Area (ha)	Percentage of Survey Area
Excellent	5102.71	25.94%
Very Good	6099.79	31.01%
Good	1605.89	8.16%
Poor	58.94	0.30%
Degraded	19.98	0.10%
Completely Degraded	6781.50	34.48%

4.2.8 Significant Vegetation

4.2.8.1 Threatened and Priority Ecological Communities

No State or Commonwealth listed TECs were identified within the Survey Area by the database searches.

One State listed PEC, West Angelas Cracking-Clays (Priority 1), was found to intersect the Survey Area (DBCA, 2025a).

This PEC occurs throughout the West Angelas area and is described as: Open tussock grasslands of *Astrebla pectinata*, *A. elymoides, Aristida latifolia*, in combination with low scattered shrubs of *Sida fibulifera*, on basalt (Jerrinah formation) derived cracking-clay loam depressions and flowlines. Occurs throughout the central and eastern Hamersley Range from near Tom Price east to Newman. Threats: clearing for mining, infrastructure and solar farms, possible weed invasion, fragmentation and altered fire regimes.

The P15 vegetation type identified by Biologic (2021a) is considered to be representative of the West Angelas Cracking-Clays (Priority 1) PEC. A total of 423.77 ha was recorded within the Survey Area (**Table 16**). No other vegetation types mapped for the Survey Area are considered to represent PECs or TECs.

An additional four State listed PECs occur within 25 km of the Study Area (DBCA, 2025a) (**Map 11, Table 14**):

- Brockman Iron cracking clay communities of the Hamersley Range (Priority 1) – 5.9 km north of the Survey Area. While a nearby record was located, this PEC is found in conjunction with the Brockman land system and therefore would not occur in the Survey Area.

- Coolibah - Lignum flats: *Eucalyptus victrix* over lignum community in the Pilbara
    - Sub type 1: Coolibah and mulga (*Acacia aneura*) woodland over lignum and tussock grasses on clay plains (Coondewanna Flats and Wanna Munna Flats) (Priority 3) – 3.7 km north of the Survey Area. The PEC sub-community occurs is restricted to clay plains on Coondewanna Flats and Wanna Munna Flats, therefore is unlikely to occur within the Survey Area.
    - Sub type 2: Coolibah woodlands over lignum (*Duma florulenta*) over swamp wandiree (Priority 1). 6.4 km north of Survey Area. This PEC sub-community is only known to occur from Lake Robinson (DBCA, 2025a), therefore would not occur in the Survey Area.
- Weeli Wolli Spring Community (Priority 1) – 23 km north-east of the Survey Area. This PEC is restricted to Weeli Wolli Spring and would not occur in the Survey Area.

4.2.8.2 Vegetation of Other Significance

One riparian vegetation type occurring within the Survey Area (D2), was identified and assessed through the *Greater West Angelas Baseline Groundwater Dependent Ecosystem Assessment* (SLR Consulting, 2022) as having a 'low to moderate' likelihood of groundwater dependence, and a subsequent biological significance rating of 'low', and therefore is not considered to represent a Groundwater Dependant Ecosystem (GDE).

No other vegetation types were considered to represent significant vegetation within the Survey Area.

4.2.9 Consolidated Survey Effort

A total of 64 relevés were established within the Survey Area, and 179 additional mapping notes were completed to aid in vegetation mapping delineation during the current survey.

In addition, three previous flora and vegetation survey datasets as supplied by Rio Tinto, were found to intersect the Survey Area (Greater West Angelas Vegetation and Flora Assessment, (RTIO-HSE-0185831; Ecologia Environment, 2013) , which included multiple previous survey datasets, West Angelas Deposit F Native Vegetation Clearing Permit Report 2014 (RTIO-HSE-0237243, Biota Environmental Sciences, 2014), and Angelo River Flora and Vegetation Assessment (RTIO-HSE-0142330, ENV Australia, 2011).

The collective survey effort for flora sampling completed historically and currently is presented in **Table 18** below.

Including the current survey, a total of 102 quadrats, 96 relevés and 179 mapping notes have been recorded within the Survey Area, according to the data provided by Rio Tinto.

The collective survey effort for flora sampling compared to the vegetation types recognised within the Survey Area is presented in **Table 19** below.

Of the 37 natural vegetation types mapped for the Survey Area, 33 vegetation types contained some level of sampling effort, while four vegetation types within the Survey Area were not represented by any sampling sites, as they had restricted extents within the Survey Area (D5, G2, H1 and P9). However, as these vegetation types form a subset of Biologic's (2021a) *West Angelas Development Envelope Consolidated Vegetation Mapping* exercise, and considering the volume of survey effort for the Greater West Angelas area, the survey effort for all 37 natural vegetation types would be considered adequate overall (**Table 19**). Every vegetation type is represented by a minimum of 3 sampling sites, as recommended by the EPA (2016c).

The 'Cleared' unit contained 45 sampling sites within the Survey Area, which is likely a result of either disturbance occurring after the previous surveys were conducted, or that vegetation has regrown since disturbance.

Table 18: Collective flora and vegetation sampling effort for the Survey Area.

Sampling Type	Current Survey	RTIO-HSE-0185831	RTIO-HSE-0237243	RTIO-HSE-0412330	Total
Quadrat	-	98	3	1	**102**
Relevé	64	31	-	1	**96**
Vegetation mapping note	179	-	-		**179**
Total	**243**	**129**	**3**	**2**	**377**

Table 19: Collective sampling effort per vegetation type intersecting NVCP2 (including current survey) versus Rio Tinto supplied data for sampling effort outside of NVCP2.

Vegetation Type	NVCP2 Survey Area				Greater West Angelas				Grand Total
	Map Note	Quadrat	Relevé	Total	Map Note	Quadrat	Relevé	Total	
Cleared	2	30	13	**45**	28	16		44	**89**
D11	3		3	**6**	10	3	4	17	**23**
D14	2	6	3	**11**	3	3		6	**17**
D2	8		5	**13**	1	3		4	**17**
D3	2	3		**5**	2	15	2	19	**24**
D5				**0**	2	1	2	5	**5**
D6	8	4	2	**14**	2		4	6	**20**
D7			1	**1**	2	1	4	7	**8**
G2				**0**	6		9	15	**15**
G3	3		4	**7**			3	3	**10**
G4	5	1	3	**9**				0	**9**
G5	4			**4**				0	**4**
H1				**0**	4	5	4	13	**13**
H10	1			**1**	20	17	3	40	**41**
H11	2		2	**4**	5	4		9	**13**
H14	8			**8**	6	4		10	**18**
H15	6	2	5	**13**	26	11		37	**50**
H16	10	4	1	**15**	41	8	1	50	**65**

Vegetation Type	NVCP2 Survey Area				Greater West Angelas				Grand Total
	Map Note	Quadrat	Relevé	Total	Map Note	Quadrat	Relevé	Total	
H2	5	2	3	**10**	21	2	2	25	**35**
H3		2		**2**	4	1	3	8	**10**
H4	33	4	3	**40**	13	8		21	**61**
H7	11	11	10	**32**	11	8	3	22	**58**
H8	7	2	1	**10**	26	6	1	33	**43**
H9		2		**2**	16	14		30	**32**
M1	12	12	10	**34**	49	15	3	67	**101**
P1	2		1	**3**	1		1	2	**5**
P11	3		5	**8**	10	4		14	**22**
P12	3		1	**4**	8	7	1	16	**20**
P14	1			**1**	36	17		53	**54**
P15	5	6	1	**12**	-	-	-	0	**12**
P16	1		3	**4**	-	-	-	0	**4**
P2	2		4	**6**	6	5		11	**17**
P3	2	4	1	**7**		2		2	**9**
P4	2			**2**		2		2	**4**
P5	2		2	**4**		3	1	4	**8**
P7	24	6	9	**39**	8	5	1	14	**53**
P8		1		**1**	12	4		16	**17**
P9				**0**	10	4		14	**14**
Grand Total	**179**	**102**	**96**	**377**	**384**	**194**	**52**	**630**	**1007**

4.3 Fauna

4.3.1 Desktop Assessment

The database searches and literature review identified 329 terrestrial vertebrate fauna taxa occurring within the Desktop Study Area, comprising:

- Six amphibians, of which none are significant.
- One hundred and forty-nine birds, of which 19 are significant.
- Fifty-one mammals, of which six are significant.
- One hundred and twenty-three reptiles, of which five are significant.

Key findings of the literature review are summarised in **Appendix B**, a complete list of fauna taxa recorded within the Desktop Study Area is presented in **Appendix H**, and database search results are displayed in **Map 12**.

4.3.1 Fauna Habitats

Six fauna habitats (excluding disturbed areas) were identified and mapped within the Survey Area. Fauna habitats are presented in **Map 13**, described below in **Table 20**, and site sheets for each habitat assessment are provided in **Appendix I**.

Table 20: Fauna habitats recorded within the Survey Area

Fauna habitat	Sites	Habitat description	Significant Microhabitat and Significant Fauna Quality	Extent Within Survey Area (ha)	Proportion (%) of Survey Area
Clay Plain	-	Clay Plain habitat is characterised by open and sparse low vegetation with approximately half of its area being bare ground. Isolated shrubs of Salsola australis, *Boerhavia paludosa* and *Ptilotus exaltatus* occur over open tussock grass. This habitat is of little value to most significant fauna, but the tussocks may be utilised when animals are moving through the area to different landscapes. This area may also be seasonally inundated with water which will be utilised by many fauna species.	Significant microhabitat: Nil Ghost Bat: Moderate – Provides supporting foraging habitat. Night Parrot: Low Northern Quoll: Low Pilbara Leaf-nosed Bat: Moderate – Provides supporting foraging habitat. Pilbara Olive Python: Low	425.62	2.16
Minor Drainage	Cam-B1 Cam-C3 Cam-C5 Cam-C6	Minor Drainage habitat comprises densely vegetated plains occurring on low-lying alluvial plains, with a moderate-high amount of leaf litter and woody debris. Vegetation often consists of *Eucalyptus victrix* woodland over *Acacia citrinoviridis* shrublands and various sedges and grasses fringing the channel. This habitat becomes seasonally inundated with water after heavy rain events, which flows through the channels from higher altitude areas into nearby rivers, streams, and pools. This habitat may be suitable hunting areas for Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat, and Pilbara Olive Python. Many birds of prey will also utilise the airspace above this habitat for hunting.	Significant microhabitat: tree hollows, water pools Ghost Bat: Moderate– Provides supporting foraging habitat. Night Parrot: Nil Northern Quoll: Moderate – Provides water source. Pilbara Leaf-nosed Bat: Moderate – Provides supporting foraging habitat. Pilbara Olive Python: High - Provides shelter, foraging, and dispersal habitat.	204.59	1.04

Fauna habitat	Sites	Habitat description	Significant Microhabitat and Significant Fauna Quality	Extent Within Survey Area (ha)	Proportion (%) of Survey Area
Low Hills and Slopes	Cam-CX8 BAT-C3	Low Hills and Slopes habitat comprises low-lying open plains and the rolling hills below upland areas. Vegetation consists of isolated trees (*Corymbia hamersleyana*, *Eucalyptus leucophloia* subsp. *leucophloia*, and *C. deserticola*) and moderate to densely vegetated plains of spinifex grassland. This habitat may be suitable for Short-tailed Mouse, Western Pebble-mound Mouse, Pilbara barking Gecko, and many grassland bird species such as the Pilbara Grasswren.	Significant microhabitat: Nil Ghost Bat: Moderate – Provides supporting foraging habitat. Night Parrot: Low Northern Quoll: Low Pilbara Leaf-nosed Bat: Moderate – Provides supporting foraging habitat. Pilbara Olive Python: Low	4,999.88	25.42
Gorge/Gully	Cam-A1 Cam-A2 Cam-B1 Cam-B2 Cam-C2 Cam-C4	Gorges and gullies are rugged, steep-sided valleys incised into the surrounding landscape. Gorges tend to be deeply incised, with vertical cliff faces, while gullies are more open (but not as open as Drainage Area or Valleys). Caves and rock pools are present. This habitat may be suitable for Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat, Pilbara Olive Python, and Gane's Blind Snake.	Significant Microhabitat: tree hollows, water pools, caves, rock crevices Ghost Bat: High - Provides core roosting habitat (caves). Night Parrot: Nil Northern Quoll: High - Provides core habitat (shelter, denning and foraging). Pilbara Leaf-nosed Bat: High - Provides core roosting habitat (caves). Pilbara Olive Python: High - Provides core denning and shelter habitat.	273.15	1.39

Fauna habitat	Sites	Habitat description	Significant Microhabitat and Significant Fauna Quality	Extent Within Survey Area (ha)	Proportion (%) of Survey Area
Rocky Hill	Cam-C2 Cam-C7 Cam-CX9 BAT-C4 BAT-C7 BIRD-C2 Cam-C5	Rocky Hill habitat comprises hills and undulating stony plains of higher elevation, often supporting hard spinifex with a mantle of gravel and larger rocks. Scattered areas of breakaway/cliff, rock outcropping, boulders and rocks that are not associated with a Minor Drainage or Gorge/Gully habitats. They may be steep sided mesas, exposed rock faces or boulder piles. Caves and rock crevices are present. This habitat may be suitable for Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat and Western Pebble-mound Mouse.	Significant microhabitat: caves, rock crevices Ghost Bat: High - Provides scattered core roosting (caves) and foraging habitats. Night Parrot: Nil Northern Quoll: High – Provides core habtiat shelter and denning (caves) and foraging habitats. Pilbara Leaf-nosed Bat: High - Provides scattered core roosting (caves) and foraging habitats. Pilbara Olive Python: Moderate – provides scattered denning and shelter habitat.	5,683.34	28.89
Stony Plain	BIRD-C10	Stony Plain habitat is characterised by open plain with stony substrate, where vegetation is a dense mix of Acacia, with a mixture of mulga (*Acacia aneura*), *Acacia maitlandii* and *Acacia pruninocarpa* over a mixture of sparse small shrubs and grasses, such a *Triodia* and *Senna* sp. This habitat may be suitable for Western Pebble-mound Mouse, Short-tailed Mouse, Unpatterned Robust Slider, and Pilbara Barking Gecko.	Significant microhabitat: Nil Ghost Bat: Moderate – Provides supporting foraging habitat. Night Parrot: Low Northern Quoll: Low Pilbara Leaf-nosed Bat: Moderate – Provides supporting foraging habitat. Pilbara Olive Python: Low	1,300.74	6.61
Disturbed	-	-	-	6,781.50	34.48
Total				**19,668.82**	**100**

4.3.2 Fauna Records

The fauna survey recorded a total of 71 fauna taxa from 44 families (**Table 21**). The full list of taxa and observation method is shown in **Appendix J**.

Table 21: Fauna diversity captured in the current survey

Class	Family	Taxa
Amphibian	1	1
Aves	26	40
Mammalia	12	19
Reptilia	5	11

4.3.3 Significant Fauna

4.3.3.1 Recorded Within the Survey Area

Two significant fauna taxa were recorded from secondary signs within the Survey Area during the field survey. No direct sightings of significant fauna taxa were made within the Survey Area. These are listed below and presented in **Map 13** and **Table 22**:

- Northern Quoll (*Dasyurus hallucatus*) listed as Endangered under the BC and EPBC Acts: Five scats were recorded within Gorge/Gully habitat and one scat was recorded within Rocky Hill habitat.
- Western Pebble-mound Mouse (*Pseudomys chapmani*) listed as Priority 4 by DBCA: mounds were recorded 41 times during the field survey. Fourteen mounds had visible conical opening and thus appear to be currently or were recently active. The remaining 27 were deemed to be inactive based on shape of the mound and lack of conical openings. Eleven mounds were recorded within Low Hills and Slopes habitat and 30 mounds were recorded within Rocky Hills habitat (**Plate 8; Plate 9**).

Table 22: Significant fauna recorded within the Survey Area

Taxon	Lat/Long (WGS84)	Evidence type	Habitat	Polygon
Northern Quoll (*Dasyurus hallucatus*)	-23.19102746, 118.5606367	Scat. Near fig tree.	Gorge/Gully	A
Northern Quoll (*Dasyurus hallucatus*)	-23.19215541, 118.5464327	Scat.	Gorge/Gully	A
Northern Quoll (*Dasyurus hallucatus*)	-23.21476113, 118.6424943	Scat.	Gorge/Gully	B
Northern Quoll (*Dasyurus hallucatus*)	-23.2064428, 118.6442441	Scat.	Gorge/Gully	B
Northern Quoll (*Dasyurus hallucatus*)	-23.2061781, 118.6382731	Scat.	Rocky Hills	B
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.2018868, 118.746956	Mound. Active	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1714893, 118.8037976	Mound. Active	Rocky Hills	C

Taxon	Lat/Long (WGS84)	Evidence type	Habitat	Polygon
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1794904, 118.8593538	Mound. Active	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1798387, 118.859853	Mound. Active	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.2060545, 118.6492262	Mound. Active	Rocky Hill	B
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1666172, 118.8158569	Mound. Active – 1 opening	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1599921, 118.6136902	Mound. Active – 1 opening	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1688966, 118.8112075	Mound. Active – 1 opening	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1682981, 118.810751	Mound. Active – 1 opening	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1693925, 118.8099181	Mound. Active – 2 openings	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.2021819, 118.7471895	Mound. Inactive	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.2020174, 118.7474519	Mound. Inactive	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.2026067, 118.7474931	Mound. Inactive	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.2029076, 118.7475237	Mound. Inactive	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1596499, 118.6148266	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.15923041, 118.6173912	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.159545, 118.6191109	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1615914, 118.6197255	Mound. Inactive	Rocky Hill	C

Taxon	Lat/Long (WGS84)	Evidence type	Habitat	Polygon
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1682068, 118.8127506	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1679201, 118.8136394	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1695144, 118.8059597	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.17096096, 118.8046376	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.17090671, 118.802128	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1694171, 118.8076772	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1800286, 118.8598572	Mound. Inactive	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1593715, 118.6160784	Mound. Inactive – conical, no openings	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.16789526, 118.8143545	Mound. Inactive – old, not conical	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1687258, 118.8098345	Mound. Inactive – old, not conical	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1688918, 118.805227	Mound. Inactive	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1588047, 118.6186418	Mound. Inactive – conical, no openings	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1589143, 118.6193004	Mound. Potential active – one small partial opening	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1684631, 118.810624	Mound. Recently active	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1798525, 118.8577	Mound. Recently active	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.2029926, 118.7473393	Mound. Recently inactive – 2 holes visible	Low Hills and Slopes	C

Taxon	Lat/Long (WGS84)	Evidence type	Habitat	Polygon
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.2014118, 118.7475091	Mound. Recently inactive – conical openings	Low Hills and Slopes	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1590142, 118.6181092	Mound. Active – 2 openings	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1692789, 118.8068042	Mound. Inactive – very old	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1693519, 118.8056783	Mound. Inactive – very old	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1707225, 118.8016373	Mound. Inactive – very old	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1683784, 118.8133101	Mound. Inactive – very old	Rocky Hill	C
Western Pebble-mound Mouse (*Pseudomys chapmani*)	-23.1676417, 118.8135768	Mound. Inactive – very old	Rocky Hill	C



Plate 7: Presumed Northern Quoll (*Dasyurus hallucatus*) scats recorded within the Gorge/Gully habitat during the survey (-23.206442, 118.644244).





Plate 8: Western Pebble-mound Mouse (*Pseudomys chapmani*) presumed active mound recorded within Low Hills and Slopes habitat (-23.1798387, 118.859853).





Plate 9: Western Pebble-mound Mouse (*Pseudomys chapmani*) presumed active mound recorded within Rocky Hill habitat (-23.1599921, 118.6136902).

4.3.3.2 Potentially Occurring Within the Survey Area

Six significant fauna taxa have been recorded within the Survey Area during previous surveys but were not recorded during the current survey:

- Ghost Bat (*Macroderma gigas*) listed as Vulnerable under the BC Act and EPBC Act. Rio Tinto currently undertakes monitoring of four maternity caves, two night roosts, one day roosts, two potential day roosts, and two other roost sites within the Survey Area (**Map 13**; RTIO Critical Fauna Habitat Exclusion Areas).
- Grey Falcon (*Falco hypoleucos*) listed as Vulnerable under the BC Act and EPBC Act.
- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) listed as Vulnerable under the BC Act and EPBC Act.
- Pacific Swift (*Apus pacificus*) listed as Migratory under the BC Act and Migratory and Marine under the EPBC Act.
- Pilbara Barking Gecko (*Underwoodisaurus seorsus*) listed as Priority 2 by DBCA.
- Short-tailed Mouse (*Leggadina lakedownensis*) listed as Priority 4 by DBCA.

One significant fauna taxon was assessed as having a high likelihood of occurring within the Survey Area:

- Pilbara Grasswren (*Amytornis whitei whitei*) listed as Priority 4 (as *A. striatus striatus*) by DBCA.

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

- Peregrine Falcon (*Falco peregrinus*) listed as Other Specially Protected under the BC Act.
- Pilbara Olive Python (*Liasis olivaceus barroni*) listed as Vulnerable under the BC Act and EPBC Act.
- Gane's Blind Snake (*Anilios ganei*) listed as Priority 1 by DBCA.
- Unpatterned Robust Lerista (*Lerista macropisthopus remota*) listed as Priority 2 by DBCA.

A further 17 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**.

4.3.4 Consolidated Survey Effort

A total of 13 camera sites, seven bat ARUs and two bird ARUs were deployed, and 28 habitat assessments were carried out during the current survey.

In addition, the dataset of two previous baseline fauna surveys were supplied by Rio Tinto, which had survey sites contained within the current Survey Area. They are:

- RTIO-PDE-0018209: Fauna Habitats and Fauna Assemblage of Deposits E and F at West Angelas (Biota Environmental Sciences, 2005)
- RTIO-HSE-0215896: Greater West Angelas Terrestrial Fauna Assessment (Ecologia Environment, 2014)

The collective survey effort for fauna sampling completed historically and currently is presented in **Table 23**.

Table 23: Collective fauna sampling effort for the Survey Area.

Sampling Type	Current Survey	Previous Surveys		Total
		RTIO-PDE-0018209	RTIO-HSE-0215896	
Camera Site	13	-	3	**16**
ARU – Bat	7	1	11	**19**
ARU – Bird	2	-	-	**2**
Pitfall Trap (dry)	-	2	15	**17**
Funnel Trap	-	1	2	**3**
Targeted SRE searches	-	-	15	**15**
Opportunistic searches	-	-	32	**32**
Total	**22**	**4**	**78**	**104**

The collective survey effort for fauna sampling compared to the fauna habitats recognised within the Survey Area is presented in **Table 24**.

All fauna habitats mapped for the Survey Area contained some level of sampling effort (**Table 24**). The 'Disturbed' unit contained 29 sampling sites within the Survey Area, which is likely a result of disturbance occurring after the previous surveys were conducted.

Only Gorge/Gully and Low Hills and Slopes habitats have multiple detailed survey efforts (pitfall/funnel traps). Other natural habitats contain a single detailed survey site each.

All fauna habitats, except Clay Plain, had at least one targeted fauna site (camera trap, ARU). Minor Drainage and Gorge/Gully habitats, that are of higher value for Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat, and Pilbara Olive Python, had three and six camera trap sites, respectively and four bat ARU sites each.

Table 24: Collective fauna sampling effort per fauna habitat from Rio Tinto supplied data and the current survey.

Sampling Type	Camera Trap	ARU - Bat	ARU - Bird	Pitfall Trap (dry)	Funnel Trap	Targeted SRE searches	Opportunistic searches	Total
Clay Plain	-	-	-	1	-	-	-	**1**
Minor Drainage	3	4	-	1	-	1	3	**12**
Gorge/Gully	6	4	-	-	2	1	5	**18**
Low Hills and Slopes	1	3	-	3	-	4	6	**17**
Rocky Hill	5	6	1	-	1	3	9	**25**
Stony Plain	-	-	1	1	-	-	-	**2**
Disturbed	1	2	-	11	-	6	9	**29**
Total	**16**	**19**	**2**	**17**	**3**	**15**	**32**	**104**

5.0 Discussion

5.1 Flora and Vegetation

5.1.1 Floristic Composition

Floristic diversity was considered typical to slightly lower than average for the Hamersley subregion but was appropriate given the dry conditions and expected level of survey effort. It represented a subset of the typical taxa expected for the Hamersley subregion and aligned with the database search results obtained and provided.

Whilst rainfall in the three months prior to the survey was only 9.1 mm lower than the long-term average for the same period at Newman Aero Weather Station, dry conditions were observed within the Survey Area, highlighting the localized nature of rainfall within the Pilbara Region. The Newman Aero Weather Station is approximately 95 km from the Survey Area, so it is expected that observed conditions don't reflect recorded conditions. Perennial species were often in poor condition and there was a paucity of annual species observed, reflecting the dry conditions.

5.1.2 Significant Flora

No Threatened flora species pursuant to the EPBC Act 1999 and/or gazetted as Threatened Flora pursuant to the BC Act 2016 were recorded within the Survey Area.

A total of 13 priority flora taxa were recorded during the current survey, from 15 vegetation types. A total of 29 significant flora had been previously recorded from the Survey Area, from the results of database searches (**Appendix D**).

Following the survey, the likelihood of occurrence was re-assessed and seven species were considered to have a medium likelihood of occurrence within the Survey Area, due to the presence of suitable habitat and the close proximity of existing records identified through database searches.

- *Acacia effusa* (P3): was observed during the current survey 29 m south of the south-east corner of the Survey Area.
- *Eremophila magnifica* subsp. *velutina* (P3): the nearest record from database searches is 1.73 km from the Survey Area.
- *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727) (P3): the nearest record from database searches is 1.53km from the Survey Area. May not have been detectable due to dry conditions, despite appropriate search effort in suitable habitat being applied.
- *Rostellularia adscendens* var. *latifolia* (P3): the nearest record from database searches is 1.23 km from the Survey Area. May not have been detectable due to dry conditions, despite appropriate search effort in suitable habitat being applied.
- *Sida* sp. Hamersley Range (K. Newbey 10692) (P3): the nearest record from database searches is 2.74 km from the Survey Area.
- *Eremophila magnifica* subsp. *magnifica* (P4): the nearest record from database searches is 170 m from the Survey Area.
- *Lepidium catapycnon* (P4): the nearest record from database searches is 800 m from the Survey Area. May not have been detectable due to dry conditions, despite appropriate search effort in suitable habitat being applied.

5.1.3 Introduced Flora

Twelve introduced (weed) flora taxa were recorded in the Survey Area, none of which are considered to be Declared Pests or Weeds of National Significance. All twelve species (**Bidens bipinnata*, **Cenchrus ciliaris*, **Cenchrus setiger*, **Datura leichhardtii* subsp. *leichhardtii, *Malvastrum americanum, *Portulaca oleracea, *Setaria verticillata, *Solanum nigrum, *Erigeron bonariensis, *Sonchus oleraceus, *Symphyotrichum squamatum* and **Vachellia farnesiana* var. *farnesiana)* are considered to be common and widespread in the Pilbara, generally dispersed by wind, water, and cattle. Locations and numbers of the taxa were recorded when encountered, however all the introduced taxa should be considered to be more widespread than illustrated.

5.1.4 Vegetation Types and Condition

The Survey Area consisted predominantly of moderate hills and stony plains, with isolated patches of unique hills, gorges and gullies, and dissecting drainages.

Thirty-seven vegetation types were described and mapped across four broad landforms in the Survey Area. A total of 35 vegetation types were described in Biologic's (2021a) consolidated vegetation mapping. Two additional units were identified and described by SLR during the current survey. Hills and plains were the dominant landforms within the Survey Area.

Just under half of the vegetation types were restricted within the Survey Area (18 vegetation types represented less than 0.5% each), which was not unexpected given the majority of mapped vegetation represents a subset of Biologic's (2021a) consolidated vegetation mapping of the greater West Angelas area.

Vegetation condition within the Survey Area ranged from Excellent to Degraded condition, with the majority (31.01%) being in Very Good condition. Evidence of disturbance was primarily associated with active and historical mining activities and associated infrastructure. Weeds were commonly observed around infrastructure areas, in drainages and gullies.

5.1.5 Significant Vegetation

No State or Commonwealth listed TECs were identified within the Survey Area by either database searches or previous mapping.

One State listed PEC, West Angelas Cracking-Clays (Priority 1), was identified as intersecting the Survey Area (DBCA, 2025a). The consolidated mapping exercise undertaken by Biologic (2021a) identified the P15 vegetation type as being representative of this PEC. A total of 423.77 ha of P15 was mapped for the Survey Area. No other vegetation mapped for the Survey Area was considered to be analogous with any TECs or PECs.

One vegetation type (D2), representing 102.78 ha within the Survey Area, was previously reported to represent a potential GDE, dominated by *Eucalyptus victrix* (Biota Environmental Services, 2020). This vegetation type was subsequently assessed through the *Greater West Angelas Baseline Groundwater Dependent Ecosystem Assessment* (SLR Consulting, 2022) and was assigned a 'low to moderate' likelihood of groundwater dependence, and a 'low' biological significance rating, and therefore is not considered to represent a GDE.

5.1.6 Consolidated Survey Effort

A total of 243 flora sites were sampled across the Survey Area, comprising 64 relevés and 179 mapping notes. An additional 71 quadrats have been previously sampled across the same area.

Where possible, a minimum of three flora sites were sampled in each vegetation type. However, due to the nature of the survey, which was conducted with consideration for Biologic's (2021a) *West Angelas Development Envelope Consolidated Vegetation Mapping* exercise over the broader West Angelas area, it was expected that not every vegetation type within the Survey Area itself would be sampled. A total of six vegetation types were not represented by sampling sites, and 10 vegetation types contained either one or two sites. Many of these vegetation types were very restricted within the landscape, or were unable to be accessed during the survey. Despite this, these vegetation types are not considered to be of significance, and are expected to occur outside the Survey Area, with all species present occurring elsewhere in the Survey Area. The survey coverage was considered adequate for the size of the Survey Area.

5.2 Fauna

5.2.1 Fauna Habitats

Most habitats identified within the Survey Area extend outside the Survey Area to form larger ecosystems, however, the Clay Plain and Gorge/Gully Habitats are located in spatially isolated pockets that don't form continuous habitat extending outside of the Survey Area, for the most part. Despite the lack of continuity, Gorge/Gully habitats are commonly found in areas adjacent to the Survey Area, but the Clay Plain habitat is sparse outside the Survey Area. Fauna habitats are presented in **Map 13**.

The Survey Area is of low importance for regional connectivity as it occurs within an intact landscape that retains large areas of native vegetation and fauna movement can occur outside the Survey Area.

The Minor Drainage habitat is widespread and abundant at a regional scale and is important for dispersal and connectivity at a landscape scale. This habitat type comprises corridors of dense vegetation occurring on low-lying alluvial plains, with a moderate-high amount of leaf litter and woody debris. It also contains two dewatering discharge points (north of Deposit A and south of Deposit B into tributaries of Turee Creek East) (**Map 3**), which constitutes an important and relatively uncommon resource for fauna taxa during the dry season. This habitat forms core habitat for the Pilbara Olive Python due to its value as refuge and foraging habitat. This habitat forms supporting habitat for Northern Quolls, Ghost Bats, and Pilbara Leaf-nosed Bat s, as these taxa are likely to also use it for foraging and dispersal.

The Gorge/Gully habitat is widespread at a regional scale, however, within the Survey Area this habitat lack continuity and is isolated from similar habitat types due to its linear nature. Similar habitat of higher quality occurs within Karijini National Park and extends into polygon A of the Survey Area (**Map 5**). It contains caves, rock crevices, and rock pools which are particularly important as refuge for mammals. This habitat forms core habitat for Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat, Pilbara Olive Python due to its value as breeding and refuge habitat.

The Rocky Hills habitat is widespread and abundant at a regional scale and provides landscape connectivity between higher value habitats. This habitat provides scattered areas of caves and rock crevices which particularly important as refuge for mammals such as Northern Quoll, Pilbara Leaf-nosed Bat and Ghost Bat due to its value as breeding and refuge habitat. In addition, it may also support foraging habitat for Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat, Short-tailed Mouse and Western Pebble-mound Mouse but habitat doesn't constitute critical or core habitat.

The Clay Plain habitat is limited in extent and isolated from similar habitat types. This habitat is suitable for significant fauna such as the Short-tailed Mouse, and the tussocks may be utilised when animals are moving through the area to different landscapes. This area may also be seasonally inundated with water which will be utilised by many fauna species.

The Low Hills and Slopes habitat is widespread and abundant at a regional scale. This habitat does not constitute critical or core habitat for significant fauna but does provide landscape connectivity between higher value habitats. This habitat is suitable for significant fauna such as the Short-tailed Mouse, Western Pebble-mound Mouse, Pilbara barking Gecko, and many grassland bird species such as the Pilbara Grasswren.

The Stony Plain habitat is widespread and abundant at a regional scale. This habitat does not constitute critical or core habitat for significant fauna but does provide landscape connectivity between higher value habitats. This habitat is suitable for significant fauna such as the Short-tailed Mouse, Unpatterned Robust Slider, and Pilbara Barking Gecko.

5.2.2 Significant Fauna

5.2.2.1 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 and Griffiths, 1994). The Northern Quoll can be locally common, but its former range has retracted considerably (Van Dyck and 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 Minor Drainages.

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, Spencer and Schmitt, 2009). This variation in time of breeding across three distinct populations indicates some reproductive flexibility in the species.

Twelve sites were selected, and 58 motion sensing cameras were deployed in core (Gorge/Gully) and supporting (Rocky Hill and Minor Drainage) habitats within the Survey Area in order to detect the presence of Northern Quoll. Each camera was deployed for four nights (242 nights in total), which is the minimum length recommended by the referral guideline (DoE, 2016). Northern Quoll was not detected on camera. However, Northern Quoll scats were recorded within Gorge/Gully and Rocky Hill habitats during the field survey, indicating this taxon is likely to use the Survey Area for dispersal and denning during more favourable conditions. If present, this population fits the criteria of a Low Density Population according to the referral guideline (DoE, 2016). The Gorge/Gully and scattered areas of breakaway/cliff within the Rocky Hills habitat constitute core habitats for the Northern Quoll because of their value for denning and foraging. The Minor Drainage and Rocky Hill habitats constitutes supporting habitat as the Northern Quoll may use this habitat for foraging and dispersal. Under the drier conditions at the time of survey the Northern Quoll is likely to be transient within the Survey Area.

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 – 9.0 m^2 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 and Johnson, 2007; Van Dyck and 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). However, during periods of favourable conditions and population booms previously unoccupied mounds are likely to be accommodated (Baker and Gynther, 2023).

Western Pebble-mound Mouse mounds were recorded within Low Hills and Slopes and Rocky Hill habitats during the field survey. Low Hills and Slopes and Rocky Hill habitats constitute core habitat for the Western Pebble-mound Mouse because of their value for burrowing, breeding, and foraging. The Western Pebble-mound Mouse is likely to be resident within the Survey Area.

5.2.2.2 Previously Recorded within the Survey Area

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 and 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 and Strahan, 2008).

The Ghost Bat has previously been recorded within the Survey Area and is likely to use the Survey Area for breeding, roosting and foraging. Rio Tinto currently undertakes monitoring of four maternity caves, two-night roosts, one day roost, two potential day roosts, and two other roost sites within the Survey Area. The Gorge/Gully and scattered areas of rocky hills supporting caves, constitute core habitats for the Ghost Bat because of their value for breeding, and roosting. All other habitats constitute supporting habitat as the Ghost Bat may use these habitats for foraging and dispersal. The taxon is likely to be resident within the Survey Area, however, drought conditions may impact the occupancy of some maternity and roost caves.

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 the east Pilbara where it is restricted to areas with suitable day roosts, which are typically deep caves that retain humidity or disused underground mines (Cramer *et al.*, 2016). During the dry season, the Pilbara Leaf-nosed Bat roosts in deep, warm, humid caves or mines, foraging nearby; in the wet season they are more widespread and may not require caves for roosting. The Pilbara Leaf-nosed Bat forages low in open habitats, including grasslands and Minor Drainages (Menkhorst and Knight, 2010).

The Pilbara Leaf-nosed Bat has previously been recorded within the Survey Area, but no established roosting site has been discovered. The Gorge/Gully and scattered areas of breakaway/cliff in the Rocky Hills habitats within the Survey Area constitute core habitats for the Pilbara Leaf-nosed Bat because of their value for roosting. All other habitats constitute supporting habitat as the Pilbara Leaf-nosed Bat may use these habitats for foraging and dispersal. The Pilbara Leaf-nosed Bat is likely to be transient within the Survey Area.

Pacific 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. It usually travels in flocks (up to 2,000 individuals), sometimes accompanies Tree Marins and Masked Woodswallows (Johnstone and Storr, 1998). 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 species migrate to Australia from September and reaches the southern part of WA by mid-December. It is attracted to thunderstorms and often appearing before and after tropical cyclones (Johnstone and Storr, 1998).

The Pacific Swift has previously been recorded within the Survey Area and it may use the airspace over all habitat types within the Survey Area for foraging and dispersal. If present, the species will be transient within the Survey Area.

Pilbara Barking Gecko (*Underwoodisaurus seorsus*) – P2 (DBCA)

The Pilbara Barking Gecko is purplish-black to reddish-brown in colour above with many small, scattered, white or yellow tubercules and a black or brown carrot-shaped tail. It is known to shelter under rocks and other cover on arid rocky slopes and in gorges with sparse tree cover and spinifex (*Triodia* spp.) the dominant ground cover (Cogger, 2014). It is known from the Hammersley Range in the Pilbara region, from north of Tom Price to southeast of Newman (Wilson and Swan, 2021).

The Pilbara Barking Gecko has previously been recorded within the Survey Area and may occupy the Low Hills and Slopes and Stony Plain habitats within the Survey Area. The Pilbara Barking Gecko is likely to be resident within the Survey Area.

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

The Northern 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 and 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 and Strahan, 2008).

The Short-tailed Mouse has previously been recorded within the Survey Area. The Short-tailed Mouse may occupy the Low Hills and Slopes, Rocky Hill, Clay Plain and Stony Plain habitats within the Survey Area. Two DBCA database records from 1997 place the Short-tailed Mouse within the Survey Area, no other records were returned from the desktop assessment and thus the Short-tailed Mouse may no longer be present within the Survey Area.

5.2.2.3 High Likelihood of Occurrence within the Survey Area

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

Previously a member of the Striated Grasswren (*Amytornis striatus*) complex, the Rufous Grasswren (*Amytornis whitei*) was elevated to the species level in recent years, and the Pilbara Grasswren (*Amytornis whitei whitei*) to its own subspecies (Black *et al.*, 2020). DBCA has advised that the taxon should still be treated as Priority 4 species pending further updates to the DBCA Threatened and Priority Fauna List (Amy Mutton pers. comm. 2022).

The Pilbara Grasswren 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 (Menkhorst *et al.*, 2017). 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 and Storr, 2004; Johnstone, Burbidge and Darnell, 2013).

The Pilbara Grasswren has been recorded recently within the Desktop Study Area and is likely to occupy the Low Hills and Slopes and Rocky Hill habitats within the Survey Area. The Pilbara Grasswren is likely to be transient within the Survey Area.

5.2.2.4 Medium Likelihood of Occurrence within the Survey Area

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.*, 2017). 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 (Olsen and Fuentes, 2008).

The Peregrine Falcon has been recorded within the Desktop Study Area and may occupy the Minor Drainage habitat within the Survey Area. The taxon may be transient within the Survey Area.

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 has been recorded within the Desktop Study Area and may occupy the Gorge/Gully and Minor Drainage habitat within the Survey Area. The taxon may be transient within the Survey Area and its presence would be highly dependent on water availability within the Survey Area.

Gane's Blind Snake (*Anilios ganei*) – P1 (DBCA)

Gane's Blind Snake, like other blind snakes, is a burrowing, worm-like snake that feeds mostly on the larvae and pupae of ants and termites (Cogger, 2018). It is known from widely separated areas between Newman and Pannawonica, WA and is possibly associated with moist gorges and gullies (Wilson and Swan, 2017).

The Gane's Blind Snake has been recorded within the Desktop Study Area and may occupy the Gorge/Gully habitat within the Survey Area. The taxon may be a resident within the Survey Area.

Unpatterned Robust Slider (*Lerista macropisthopus remota)* – P2 (DBCA)

The Unpatterned Robust Slider is an Australian endemic species, typically found in *Acacia* shrublands and woodlands in semi-arid to arid WA located from the mid-west coast and interior. The species shelter in loose soil under leaf litter at bases of shrubs (Wilson and Swan 2017).

The Unpatterned Robust Slider has been recorded within the Desktop Study Area and may occupy the Stony Plain habitat within the Survey Area. The taxon may be a resident within the Survey Area.

5.2.3 Consolidated Survey Effort

A comprehensive terrestrial vertebrate fauna survey, the Greater West Angelas Terrestrial Fauna Assessment, has been conducted, overlapping the Survey Area (Ecologia Environment, 2014, RTIO-HSE-0215896). The consolidated survey effort indicates that all natural fauna habitats within the current Survey Area, except Gorge/Gully and Low Hills and Slopes, have only been sampled by one detailed sampling site per habitat type (pitfall trap or funnel trap). Therefore, the detailed terrestrial vertebrate fauna survey coverage is not in accordance with the *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment*, which recommends two detailed sampling sites per habitat type (EPA, 2020).

6.0 Conclusion

SLR completed a reconnaissance flora and vegetation survey, targeted flora survey and a basic and targeted vertebrate fauna survey of the West Angelas Survey Area with the objective to ground-truth and consolidate previous survey results from Biologic (2014, 2018, 2019, 2020, 2021a;b, 2022 a-e, 2023 a-b). The key outcomes from this project are:

6.1 Flora and Vegetation

- A total of 37 vegetation types were mapped across four broad landforms.
- No TECs were recorded within the Survey Area.
- One vegetation type (P15) is considered representative of the 'West Angelas Cracking-Clays (Priority 1) PEC, covering 423.77 ha (2.15% of the Survey Area).
- A total of 300 flora taxa were recorded from the Survey Area.
- No Threatened flora species pursuant to the EPBC Act 1999 and/or gazetted as Threatened pursuant to the BC Act 2016 were recorded during the survey.
- A total of 13 DBCA listed Priority flora were re-recorded during the survey, from a list of 29 significant flora known to occur within the Survey Area: *Eremophila pusilliflora* (P2), *Eremophila* sp. West Angelas (S. van Leeuwen 4068) (P2), *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708) (P2), *Aristida lazaridis* (P3), *Eremophila naaykensii* (P3), *Grevillea saxicola* (P3), *Indigofera gilesii* (P3), *Olearia mucronata*, (P3), *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3), *Solanum kentrocaule* (P3), *Triodia* sp. Mt Ella (M.E. Trudgen 12739) (P3), *Acacia bromilowiana* (P4), and *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4).
- A total of 12 introduced (weed) flora taxa were recorded from the Survey Area. None of these represent a WoNS or Declared Pest.

6.2 Fauna

Six naturally occurring fauna habitats were mapped within the Survey Area; Clay Plain, Low Hills and Slopes, Gorge/Gully, Rocky Hill, Stony Plain, and Minor Drainages. The Major and Minor Drainages, Gorge/Gully and scattered areas of breakaway/cliff in the Rocky Hills habitats provide the most value for targeted taxa as it is core habitat for Northern Quolls, Ghost Bat, Pilbara Leaf-nosed Bat, and Pilbara Olive Pythons. These habitats are typical of the Hamersley subregion and are widespread outside of the Survey Area. A seventh habitat type, Disturbed, was mapped within the Survey Area but currently provides negligible value for targeted taxa.

Two significant taxa were recorded during the survey:

- Northern Quoll (*Dasyurus hallucatus*) – EN (BC Act; EPBC Act): Four scats were recorded within Gorge/Gully habitat and one scat was recorded within Rocky Hill habitat.
- Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4 (DBCA): Forty-one mounds were recorded during the field survey. Eleven mounds were recorded within Low Hills and Slopes habitat and 30 mounds were recorded within Rocky Hill habitat. Fourteen mounds had visible conical opening and thus appear to be currently or were recently active.

Six significant fauna taxa have been recorded within the Survey Area during previous surveys but were not recorded during the current survey:

- Ghost Bat (*Macroderma gigas*) – VU (BC Act; EPBC Act). Rio Tinto currently undertakes monitoring of four maternity caves, two night roosts, one day roosts, two potential day roosts, and two other roost sites within the Survey Area.
- Grey Falcon (*Falco hypoleucos*) – VU (BC Act; EPBC Act).
- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) – VU (BC Act; EPBC Act).
- Pacific Swift (*Apus pacificus*) – MI (BC Act), MI and MA (EPBC Act).
- Pilbara Barking Gecko (*Underwoodisaurus seorsus*) – P2 (DBCA).
- Short-tailed Mouse (*Leggadina lakedownensis*) – P4 (DBCA).

One significant fauna taxon was assessed as having a high likelihood, four significant fauna taxa were assessed as having a medium likelihood, and 17 significant fauna taxa were assessed as having have a low likelihood of occurring within the Survey Area.

Five introduced taxa were recorded during the survey: European Cattle (*Bos primigenius taurus*), Donkey (*Equus africanus asinus*), Dingo/Dog (*Canis familiaris*), Cat (*Felis catus*), and Rabbit (*Oryctolagus cuniculus*).

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Appendix A Maps

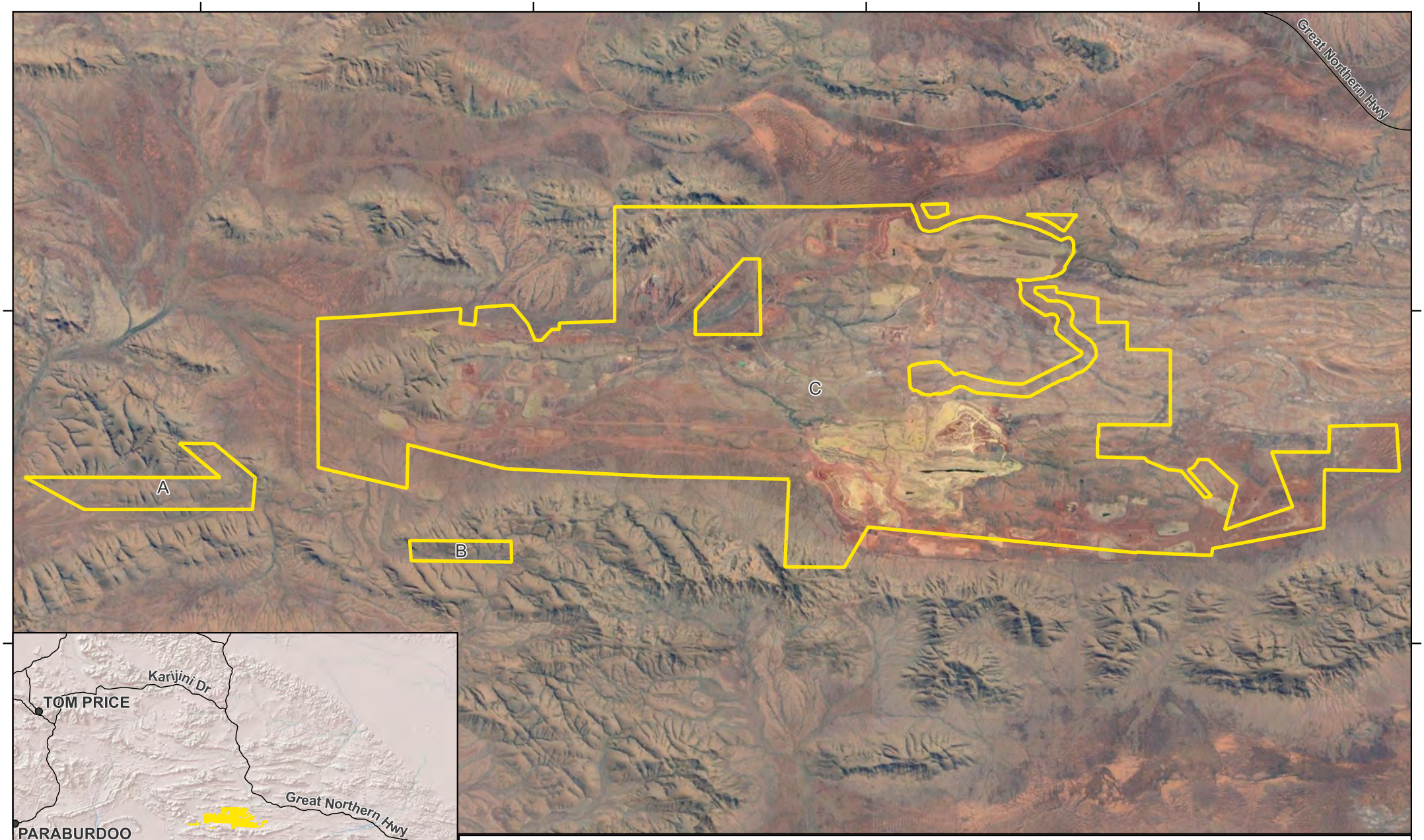
West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025



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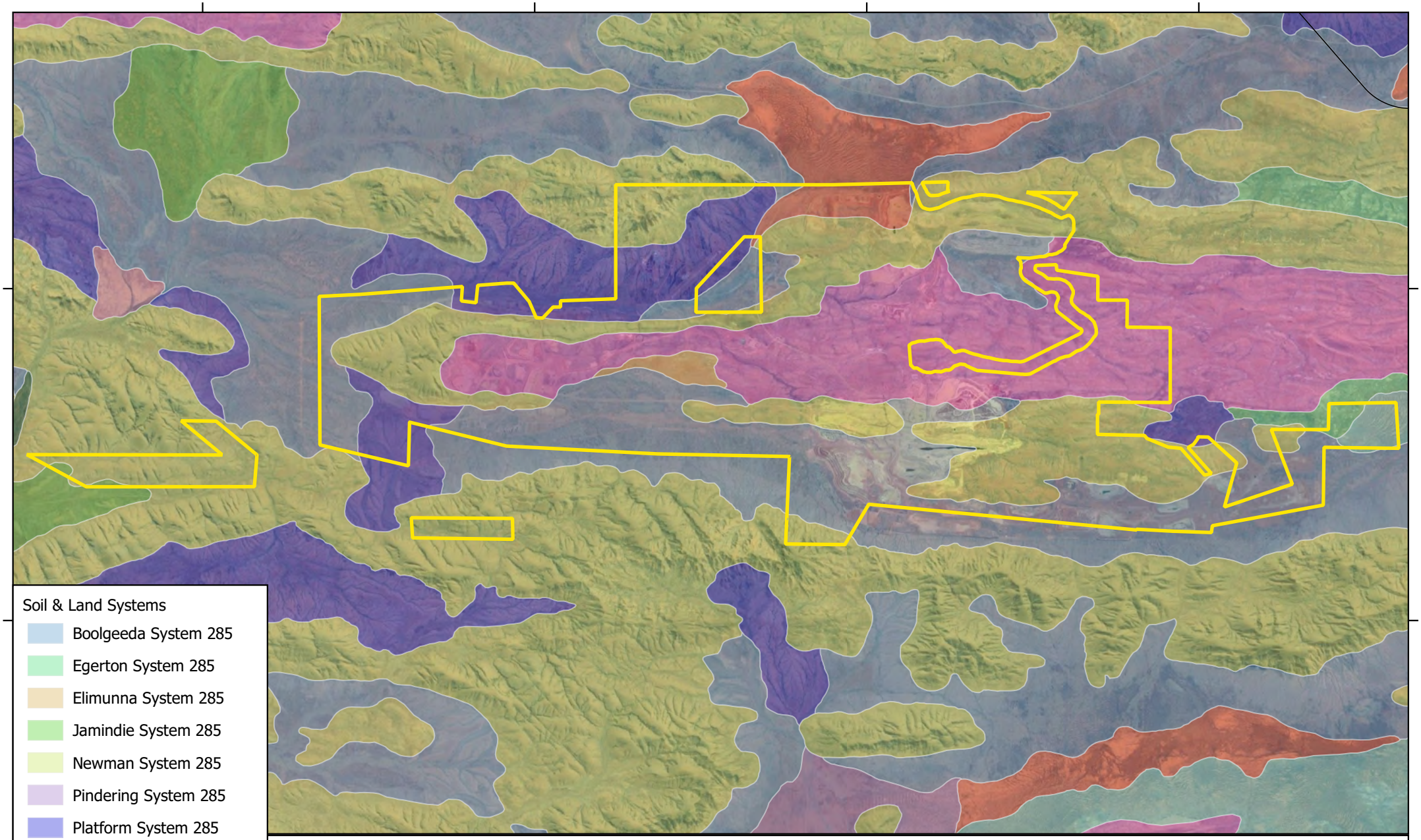
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Reviewed By:	BM

Rio Tinto Iron Ore
West Angelas NVCP 2

Survey Area
MAP 1



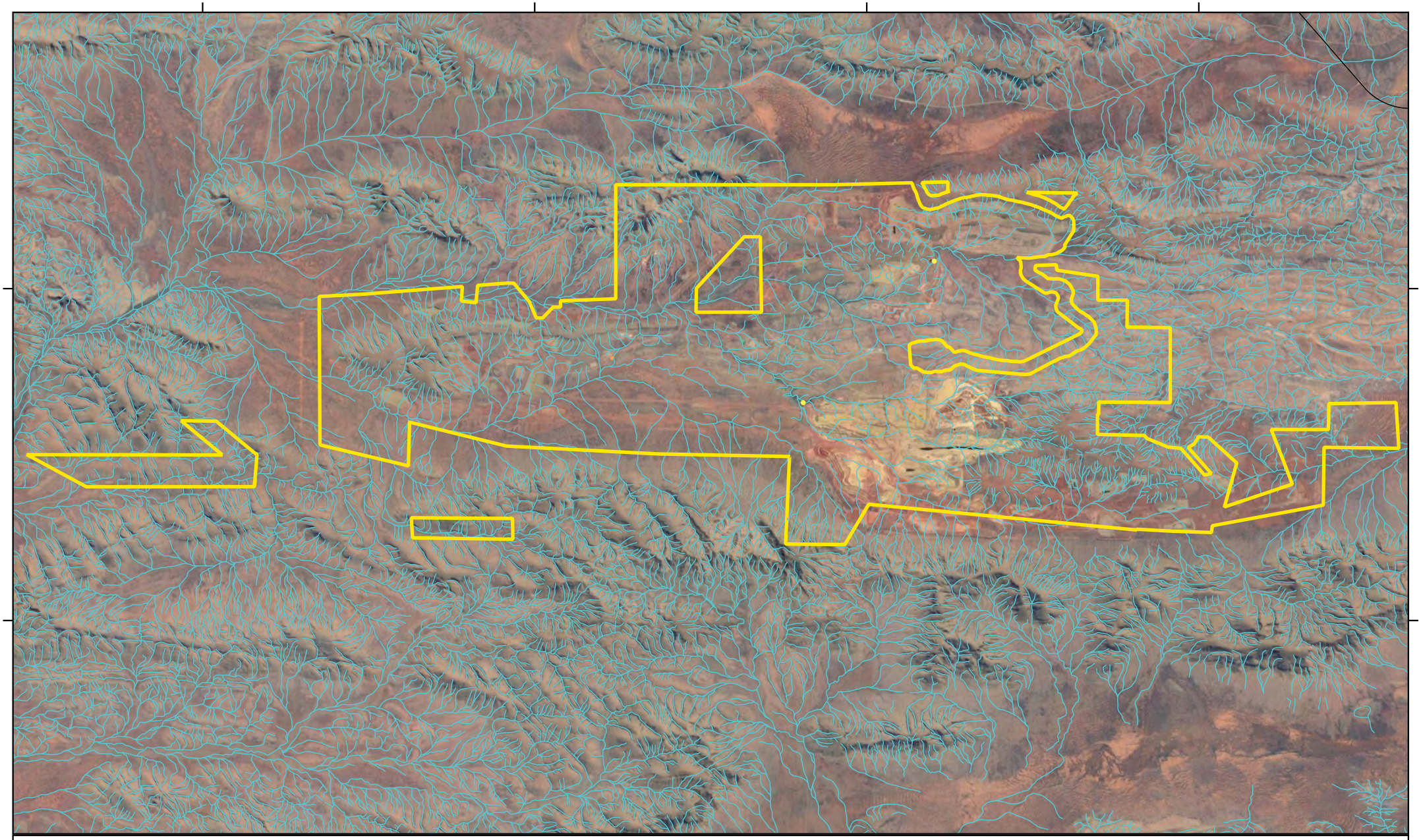
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Soil & Land Systems MAP 2



Hydrography

- Watercourse - minor, non-perennial
- Dewatering Discharge

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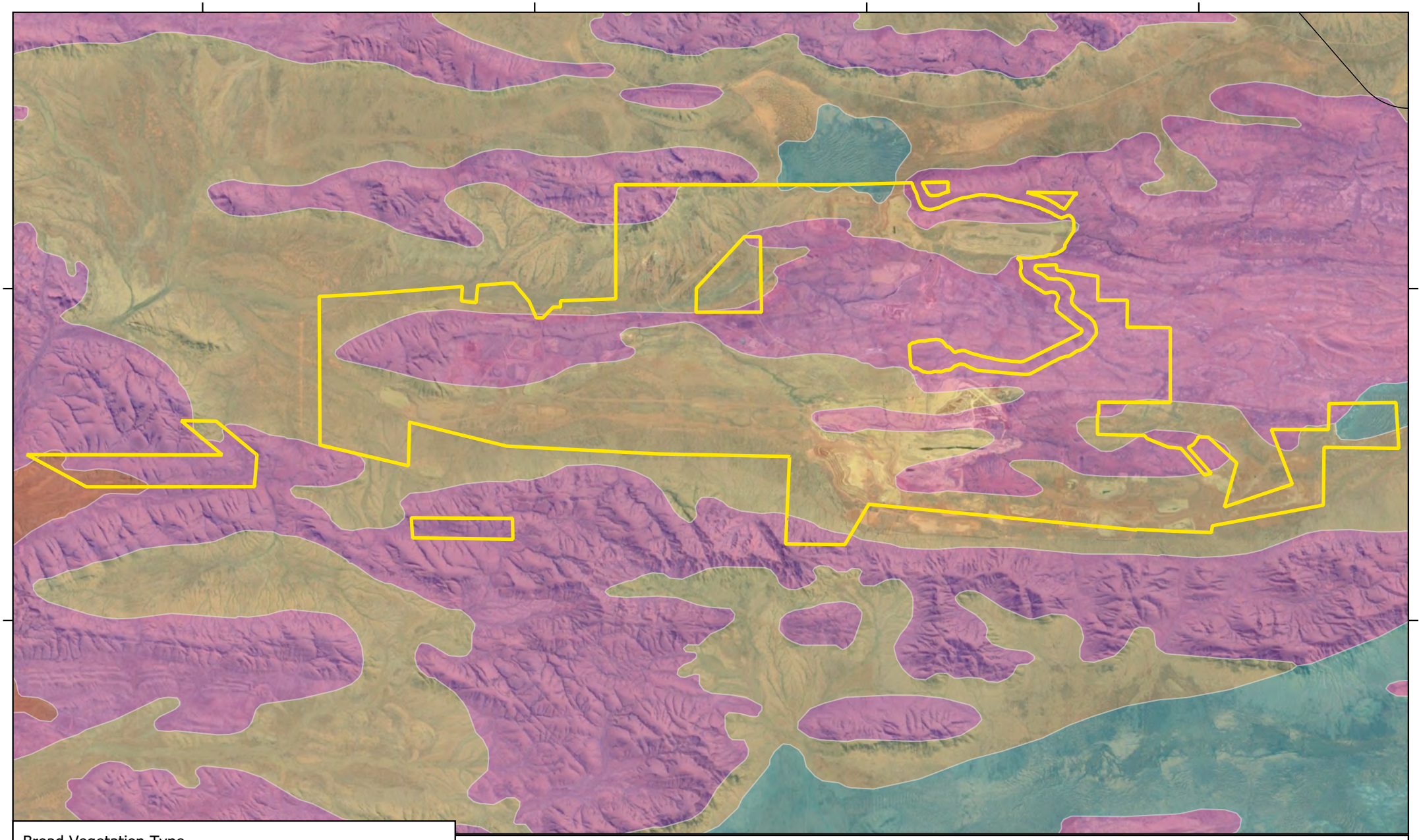
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West Angelas NVCP 2

Hydrography
MAP 3



Broad Vegetation Type

- Hammersley 18: Low woodland, open low woodland or sparse woodland
- Hammersley 29: Low woodland, open low woodland or sparse woodland
- Hammersley 82: Low tree-steppe
- Hammersley 169: Scrub, open scrub or sparse scrub

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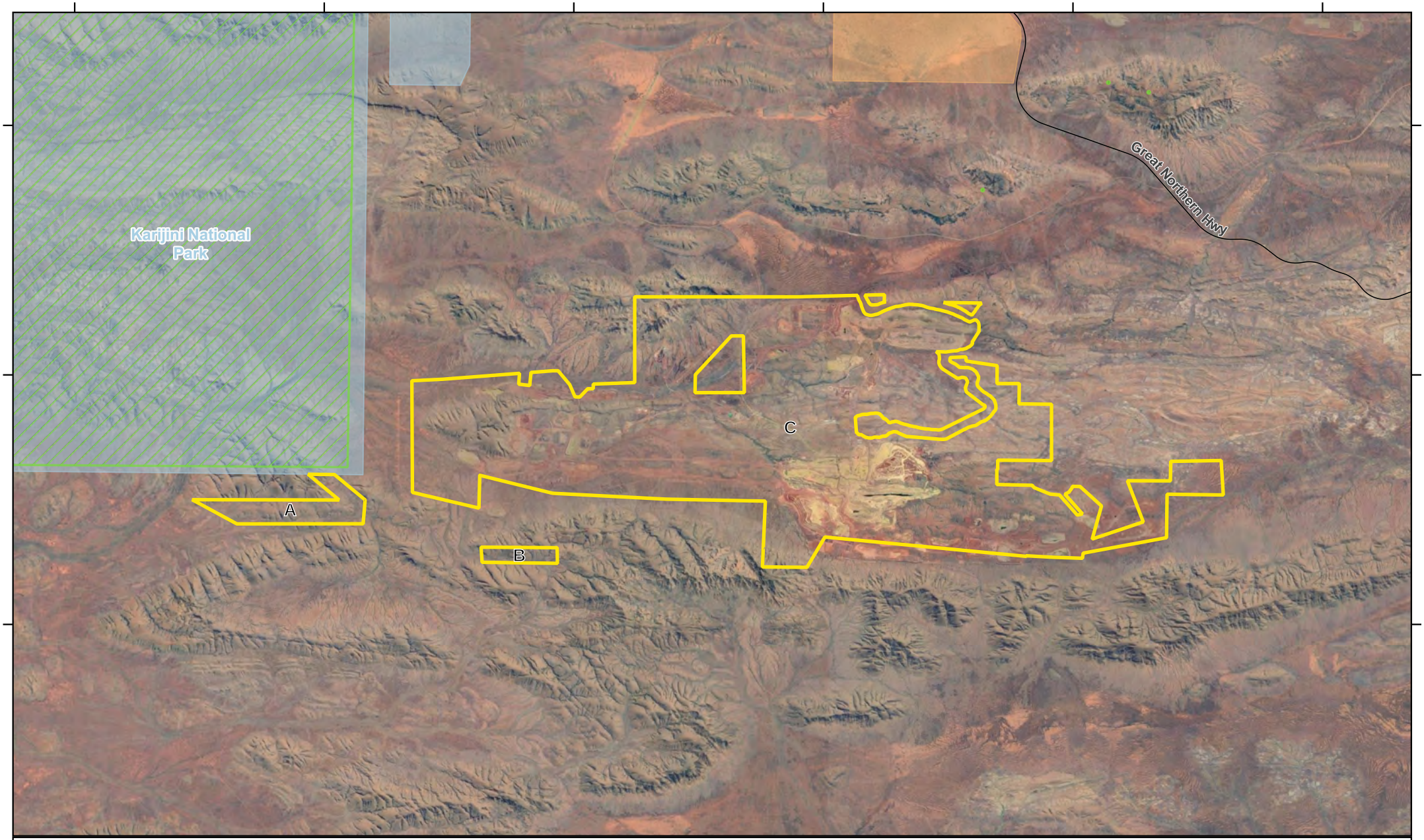
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Broad Vegetation Types
MAP 4



Lands of Interest

Legislated Lands and Waters

Environmentally Sensitive Areas

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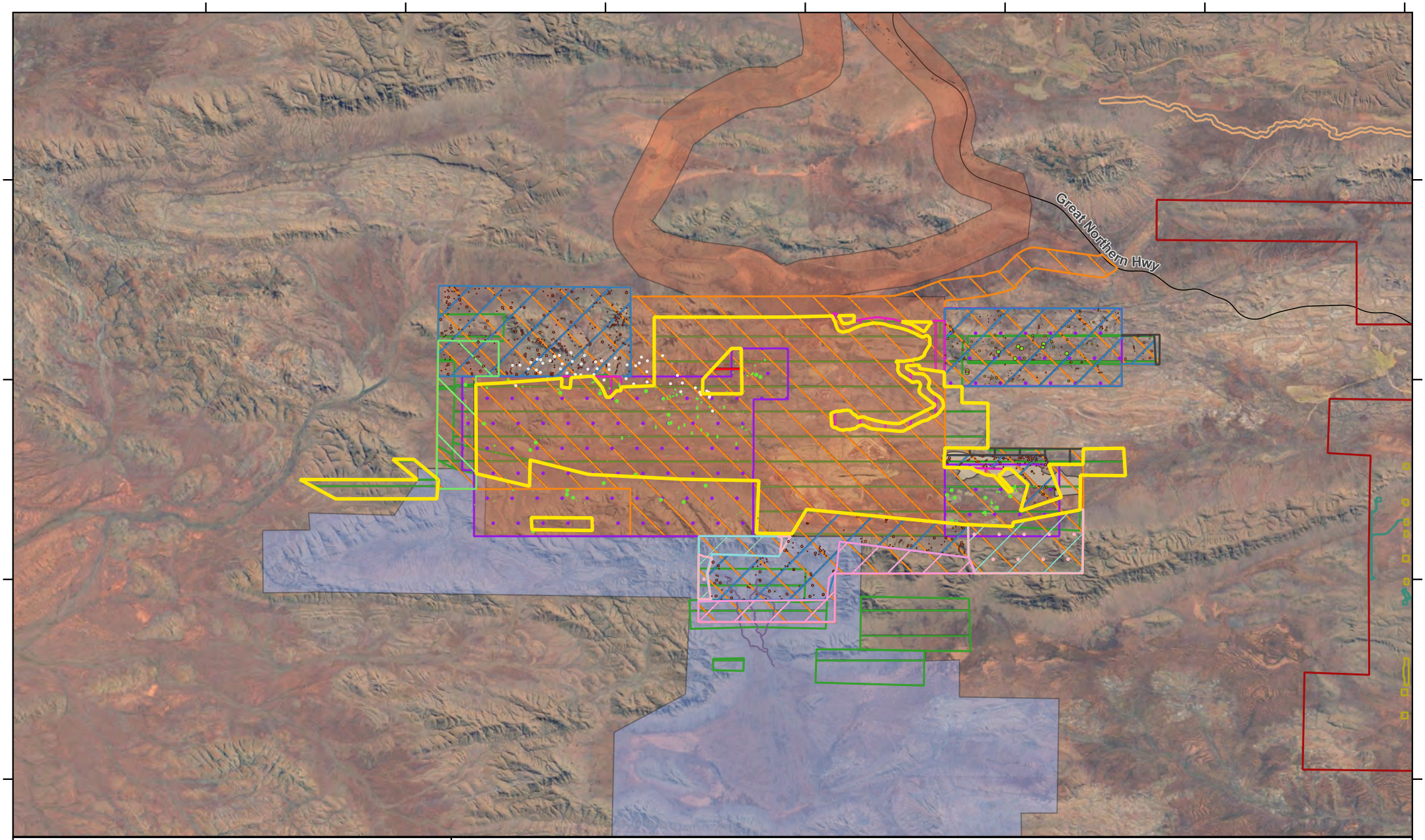
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Environmentally Sensitive and Conservation Areas MAP 5



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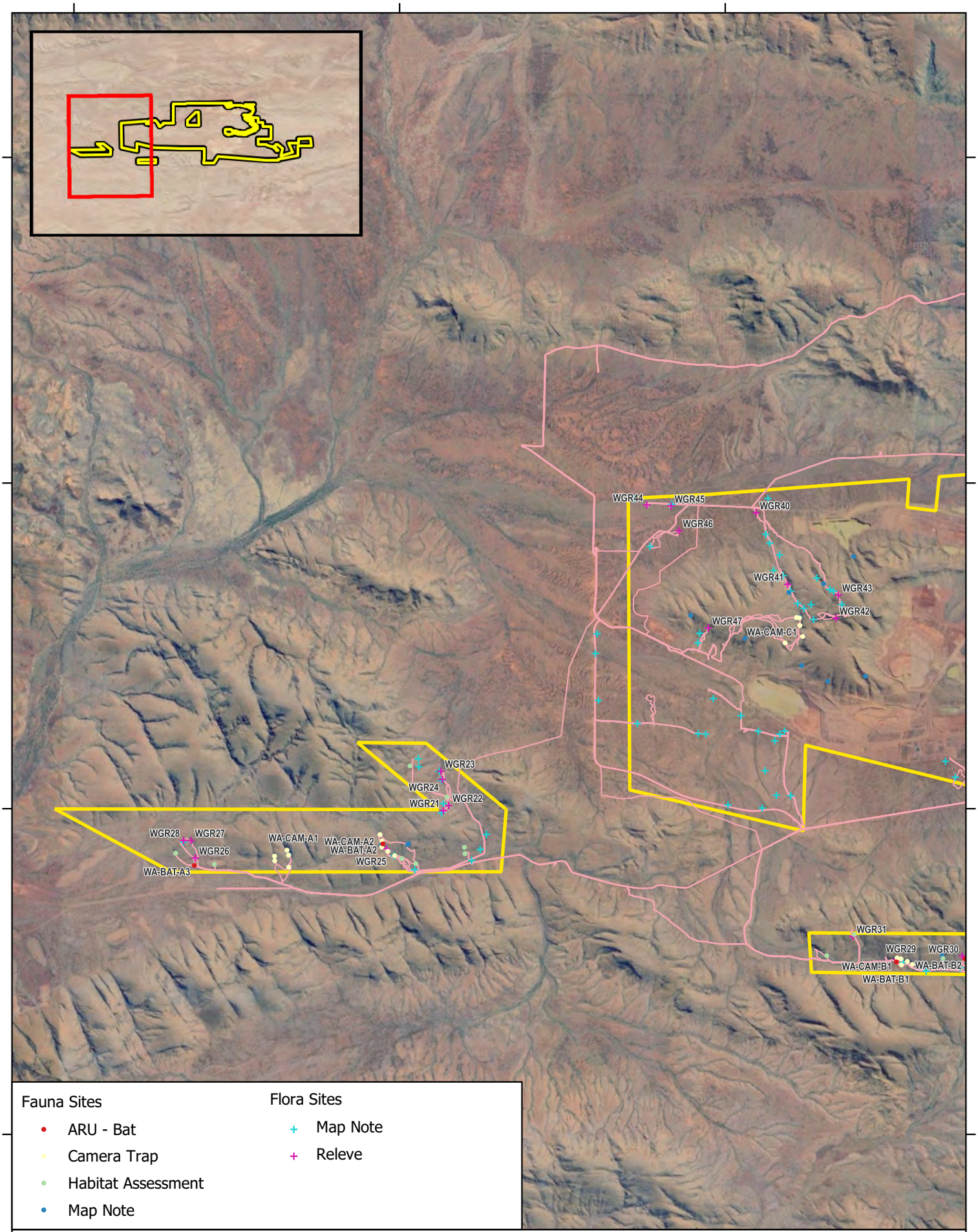
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Previous Survey Areas
MAP 6

Previous Survey Areas





Fauna Sites
- ARU - Bat
- Camera Trap
- Habitat Assessment
- Map Note

Flora Sites
- Map Note
- Releve

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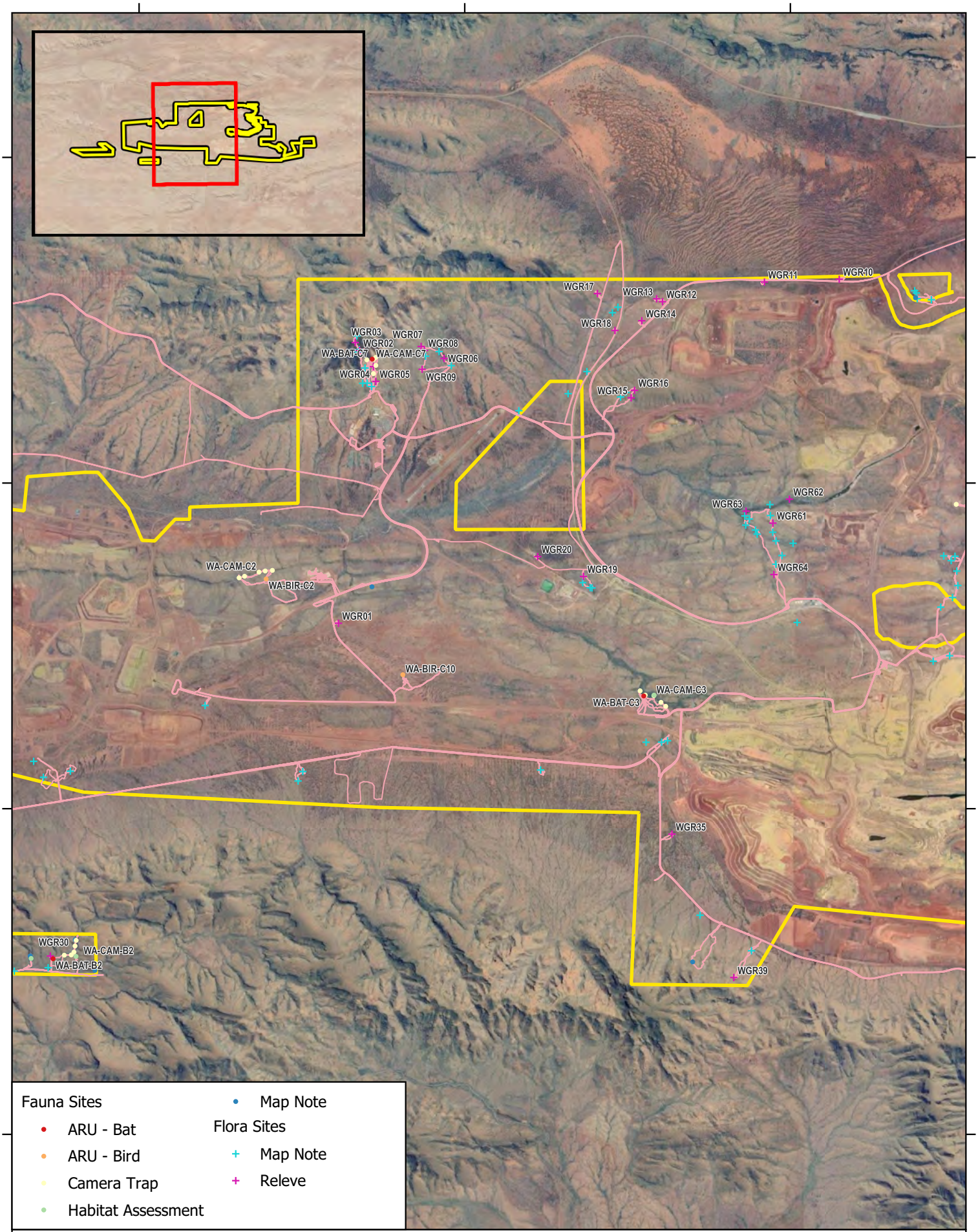
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Rio Tinto Iron Ore
West Angelas NVCP 2

Field Survey Effort
MAP 7a



Fauna Sites
- ARU - Bat
- ARU - Bird
- Camera Trap
- Habitat Assessment
- Map Note

Flora Sites
- Map Note
- Releve

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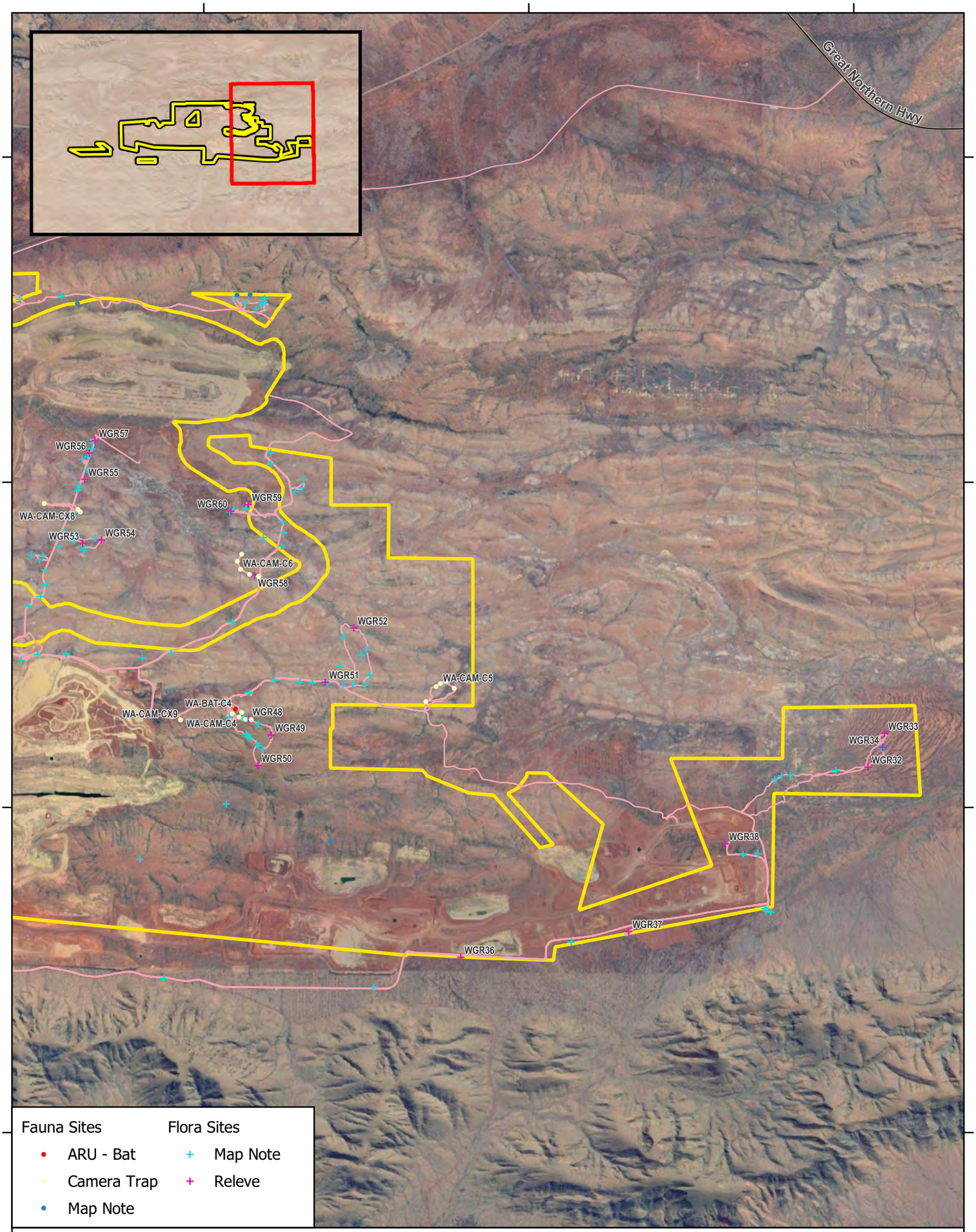
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Field Survey Effort
MAP 7b



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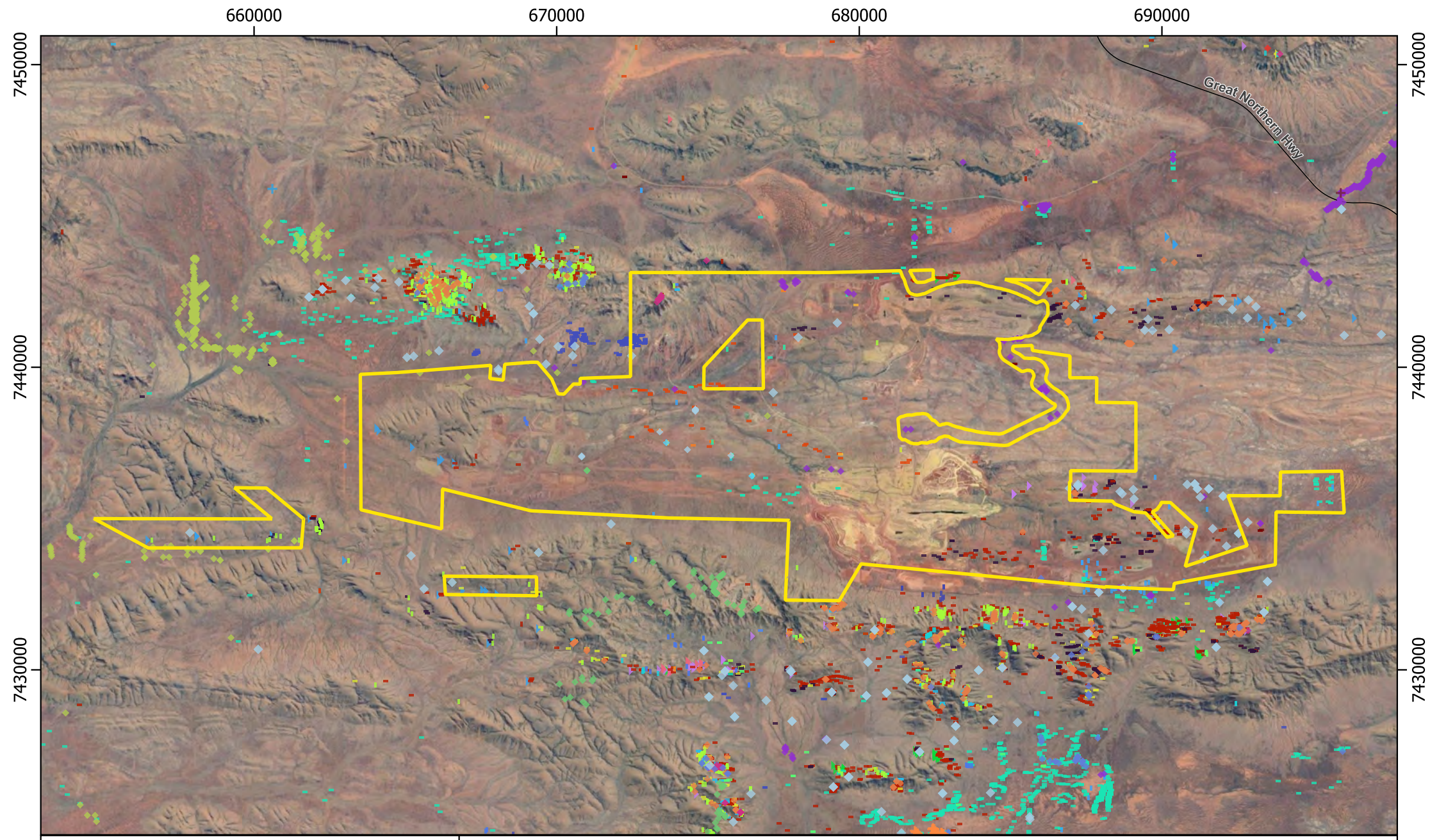
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West Angelas NVCP 2

Field Survey Effort
MAP 7c



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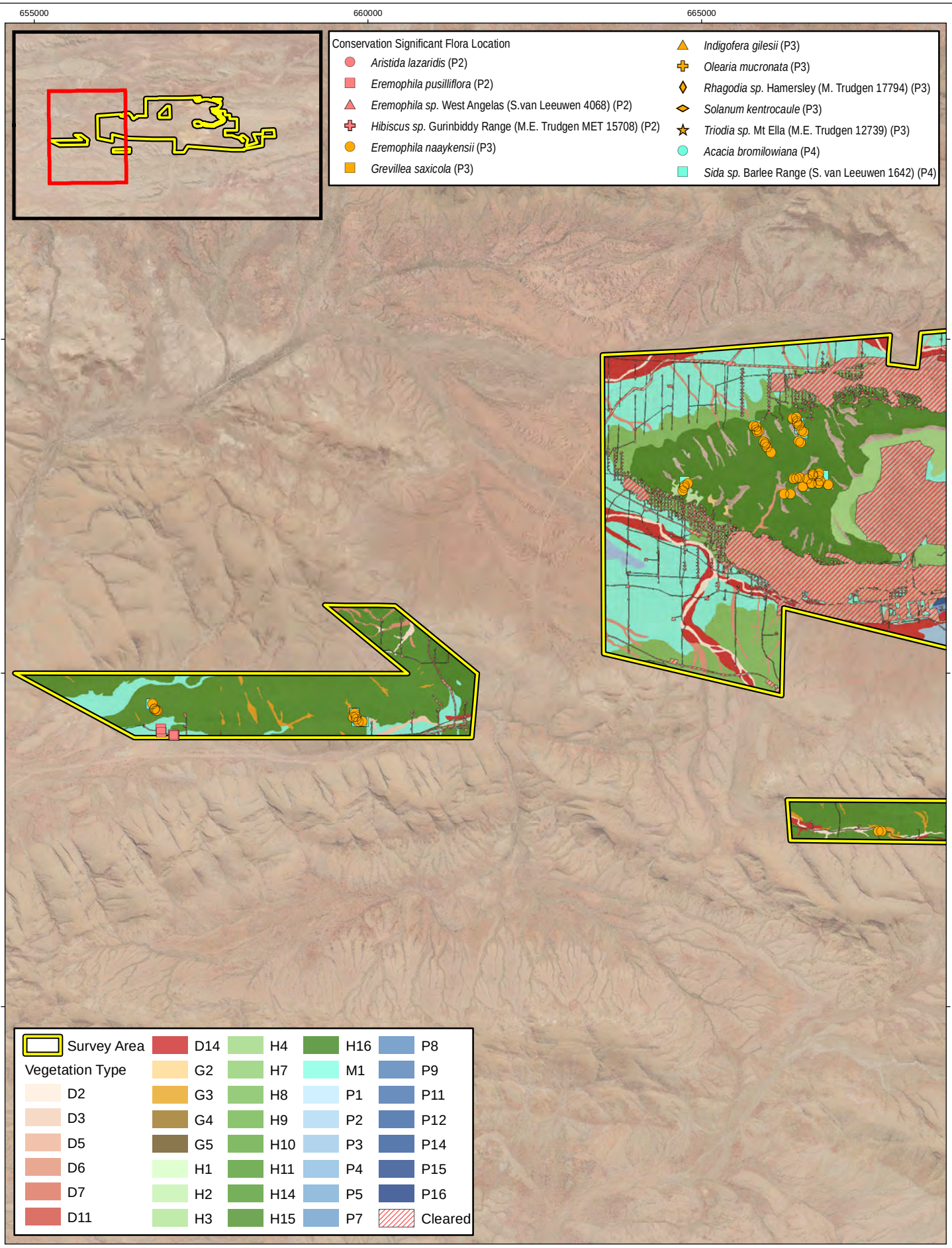
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Rio Tinto Iron Ore
West Angelas NVCP 2

Threatened and Priority Flora Records (DBCA and RTIO) MAP 8

Threatened and Priority Flora Records (DBCA and RTIO)

- *Seringia exastia, VU*
- *Thryptomene wittweri, T*
- *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354), *P1*
- *Isotropis forrestii, P1*
- *Rhodanthe ascendens, P1*
- *Sida* sp. Turee Creek (P.-L.de Kock PLDK1116), *P1*
- *Aristida lazaridis, P3*
- *Eragrostis* sp. Mt Robinson (S. van Leeuwen 4109), *P2*
- *Eremophila pusilliflora, P2*
- *Eremophila* sp. West Angelas (S. van Leeuwen 4068), *P2*
- *Euphorbia inappendiculata* var. *inappendiculata, P2*
- *Euphorbia inappendiculata* var. *queenslandica, P2*
- *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708), *P2*
- *Ipomoea racemigera, P2*
- *Neptunia longipila, P2*
- *Oxalis* sp. Pilbara (M.E. Trudgen 12725), *P2*
- *Pentalepis trichodesmoides* subsp. *hispida, P2*
- *Tetratheca fordiana, P2*
- *Triodia karijini, P2*
- *Acacia daweana, P3*
- *Acacia effusa, P3*
- *Acacia subtiliformis, P3*
- *Aristida jerichoensis* var. *subspinulifera, P3*
- *Dampiera metallorum, P3*
- *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479), *P3*
- *Eremophila magnifica* subsp. *velutina, P3*
- *Eremophila naaykensii, P3*
- *Euphorbia clementii, P3*
- *Euphorbia stevenii, P3*
- *Geijera salicifolia, P3*
- *Goodenia lyrata, P3*
- *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727), *P3*
- *Grevillea saxicola, P3*
- *Gymnanthera cunninghamii, P3*
- *Indigofera gilesii, P3*
- *Isotropis parviflora, P3*
- *Olearia mucronata, P3*
- *Pilbara trudgenii, P3*
- *Rhagodia* sp. Hamersley (M. Trudgen 17794), *P3*
- *Rostellularia adscendens* var. *latifolia, P3*
- *Sida* sp. Hamersley Range (K. Newbey 10692), *P3*
- *Solanum kentrocaule, P3*
- *Streptoglossa* sp. Cracking clays (S. van Leeuwen et al. PBS 7353), *P3*
- *Swainsona thompsoniana, P3*
- *Themeda* sp. Hamersley Station (M.E. Trudgen 11431), *P3*
- *Triodia* sp. Mt Ella (M.E. Trudgen 12739), *P3*
- *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684), *P3*
- *Acacia bromilowiana, P4*
- *Eremophila magnifica* subsp. *magnifica, P4*
- *Lepidium catapycnon, P4*
- *Ptilotus mollis, P4*
- *Sida* sp. Barlee Range (S. van Leeuwen 1642), *P4*



N 0 1 2 4 km

Service Layer Credits: Landgate / SLIP

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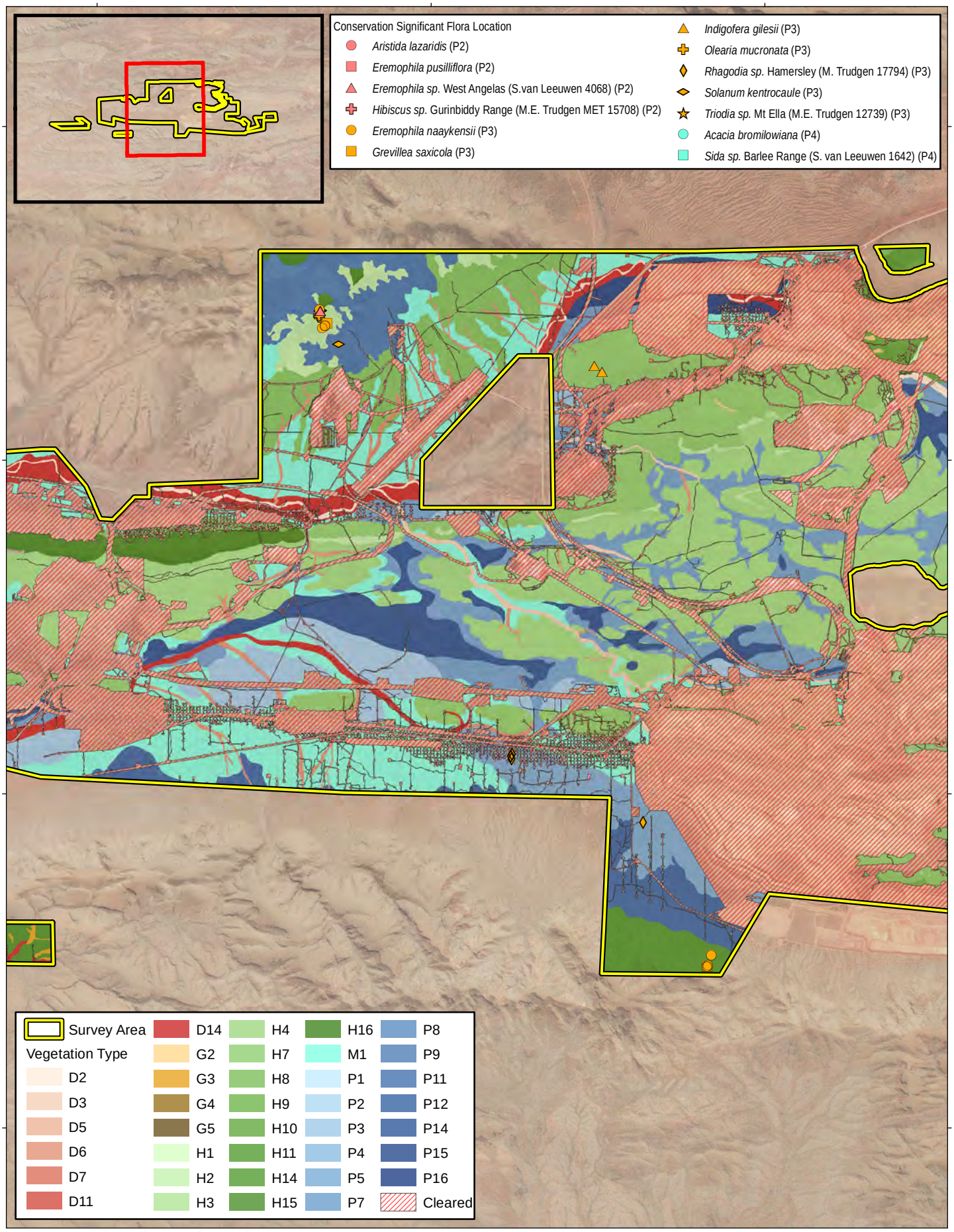
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Reviewed By	: LB

Rio Tinto Iron Ore
West Angelas NVCP 2

Vegetation Types and Conservation Significant Flora Locations
MAP 9a

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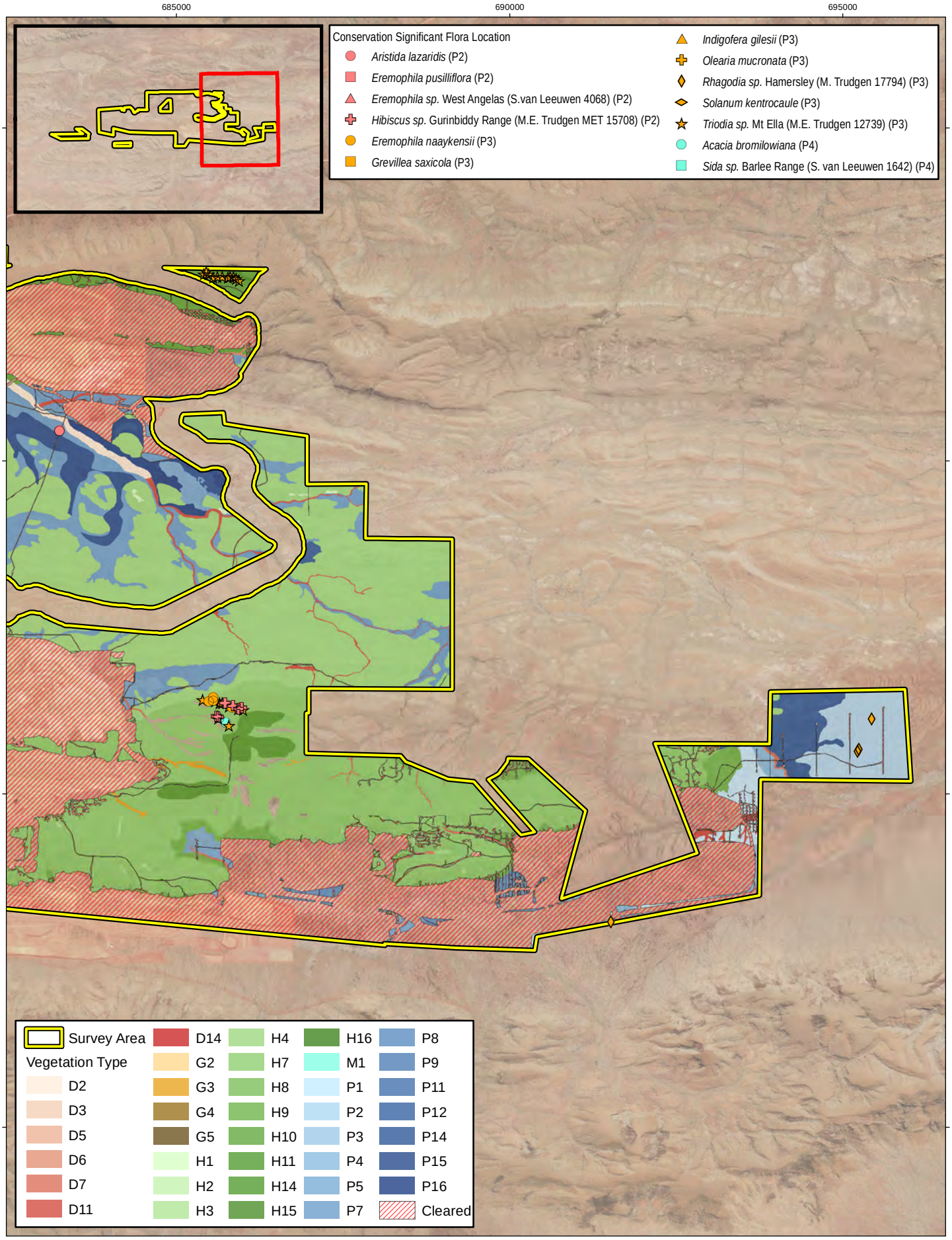
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Rio Tinto Iron Ore
West Angelas NVCP 2

Vegetation Types and Conservation Significant Flora Locations MAP 9b

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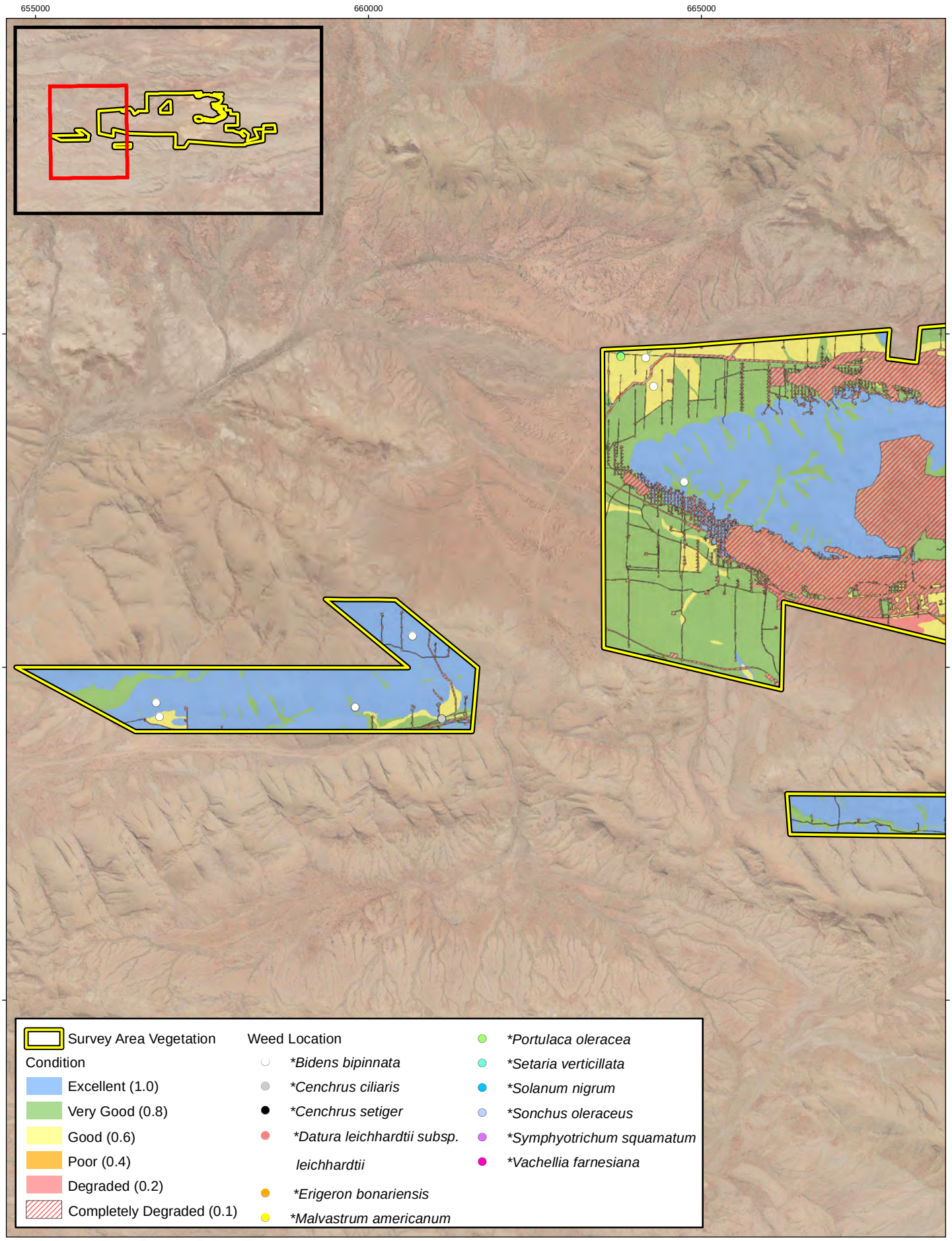
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Project Number	: 675.072156.00002
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Drawn By	: Environmaps
Reviewed By	: LB

Rio Tinto Iron Ore
West Angelas NVCP 2

Vegetation Types and Conservation Significant Flora Locations MAP 9c

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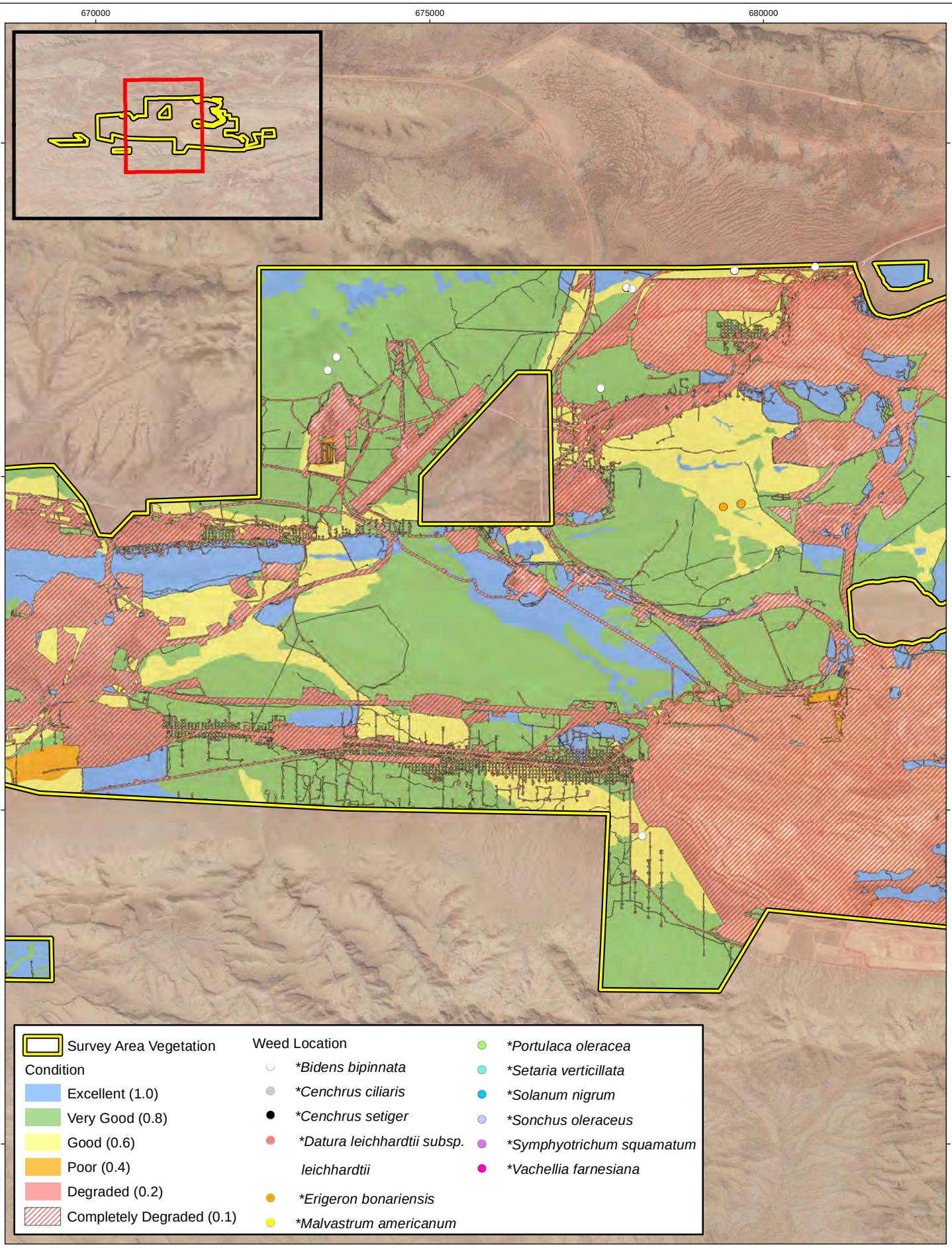
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Rio Tinto Iron Ore
West Angelas NVCP 2

Vegetation Condition and Weed Locations MAP 10a

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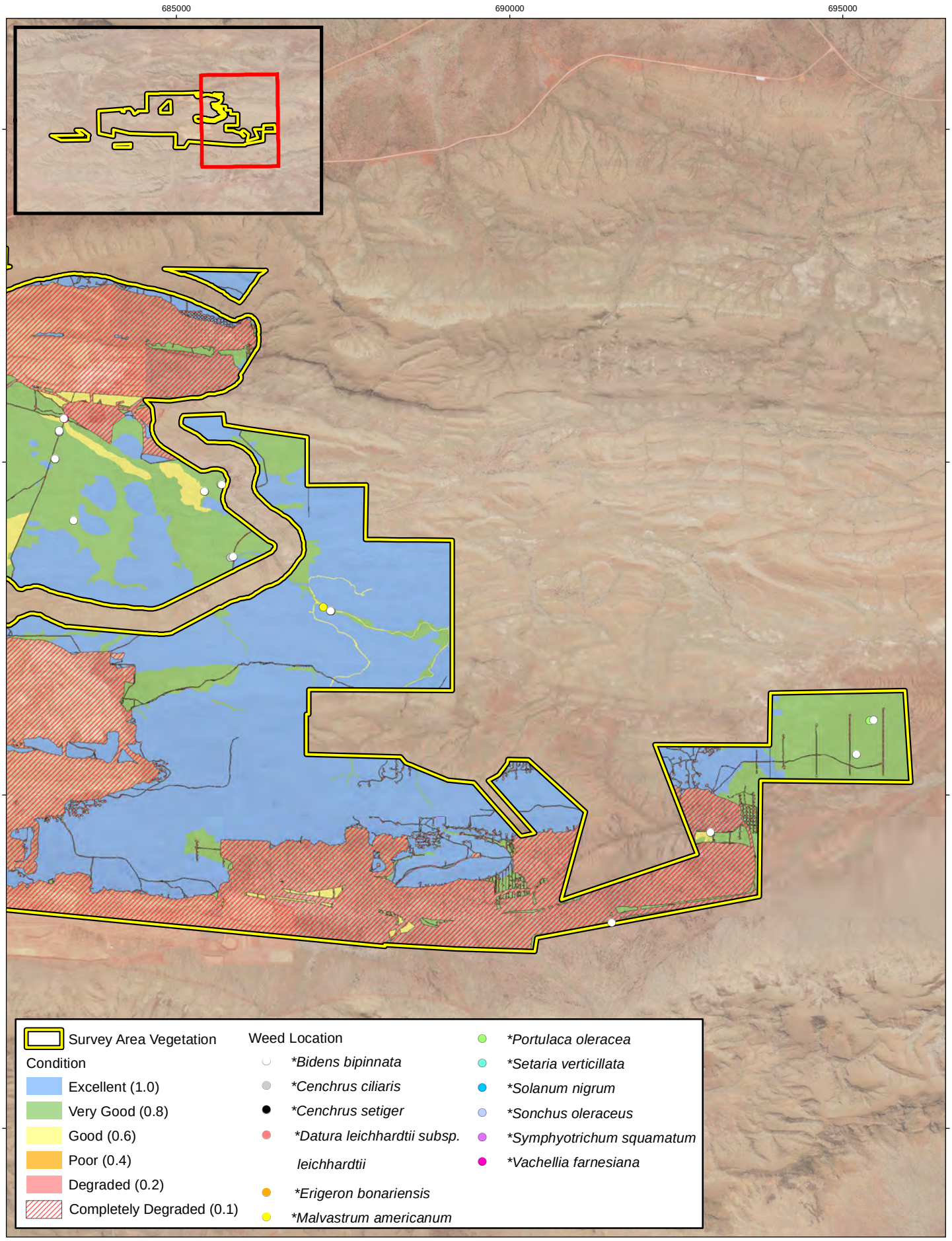
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Project Number	: 675.072156.00002
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Rio Tinto Iron Ore
West Angelas NVCP 2

Vegetation Condition and Weed Locations MAP 10b

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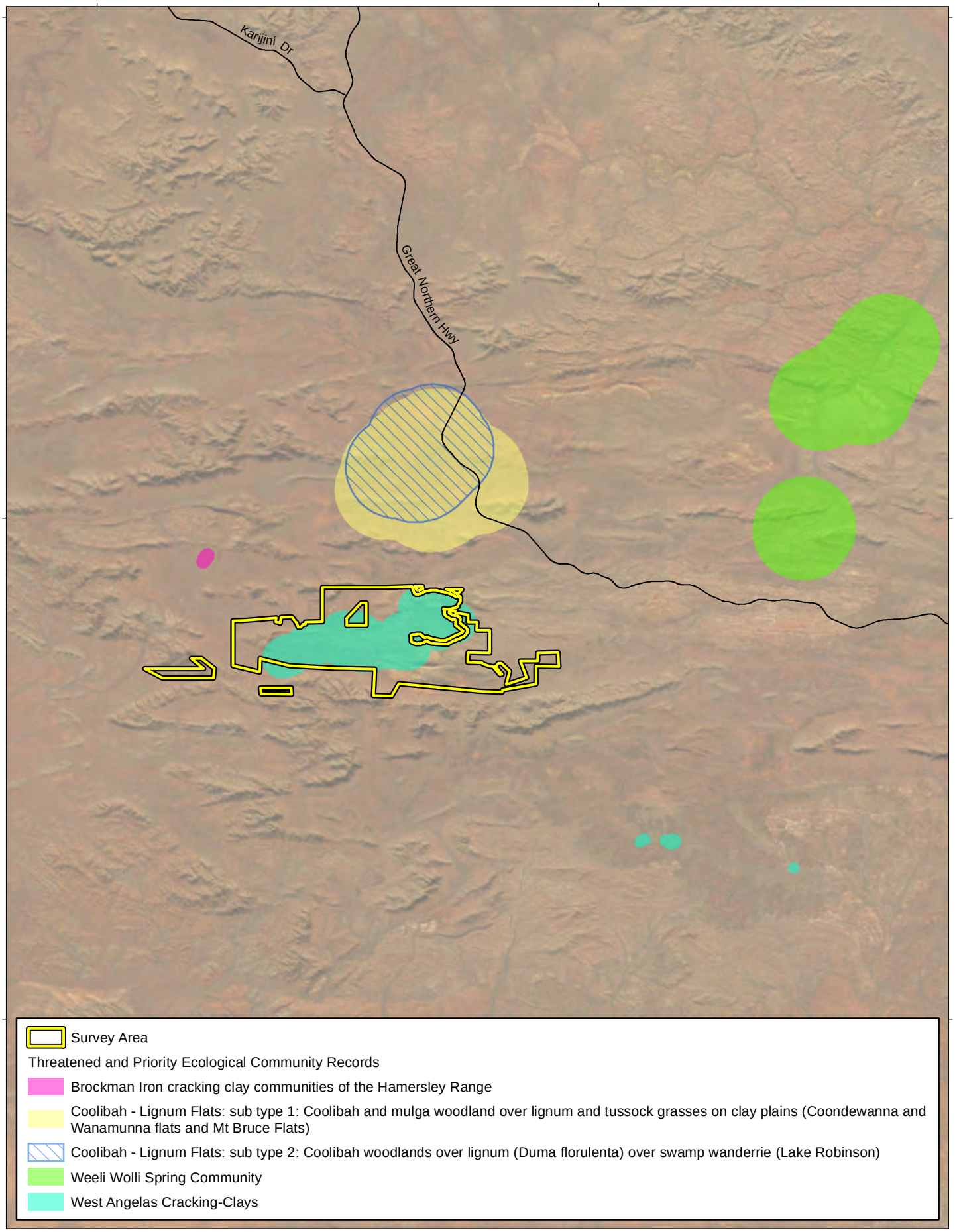
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Date Drawn	: 11/10/2024
Drawn By	: Environmaps
Reviewed By	: LB

Rio Tinto Iron Ore
West Angelas NVCP 2

Vegetation Condition and Weed Locations MAP 10c

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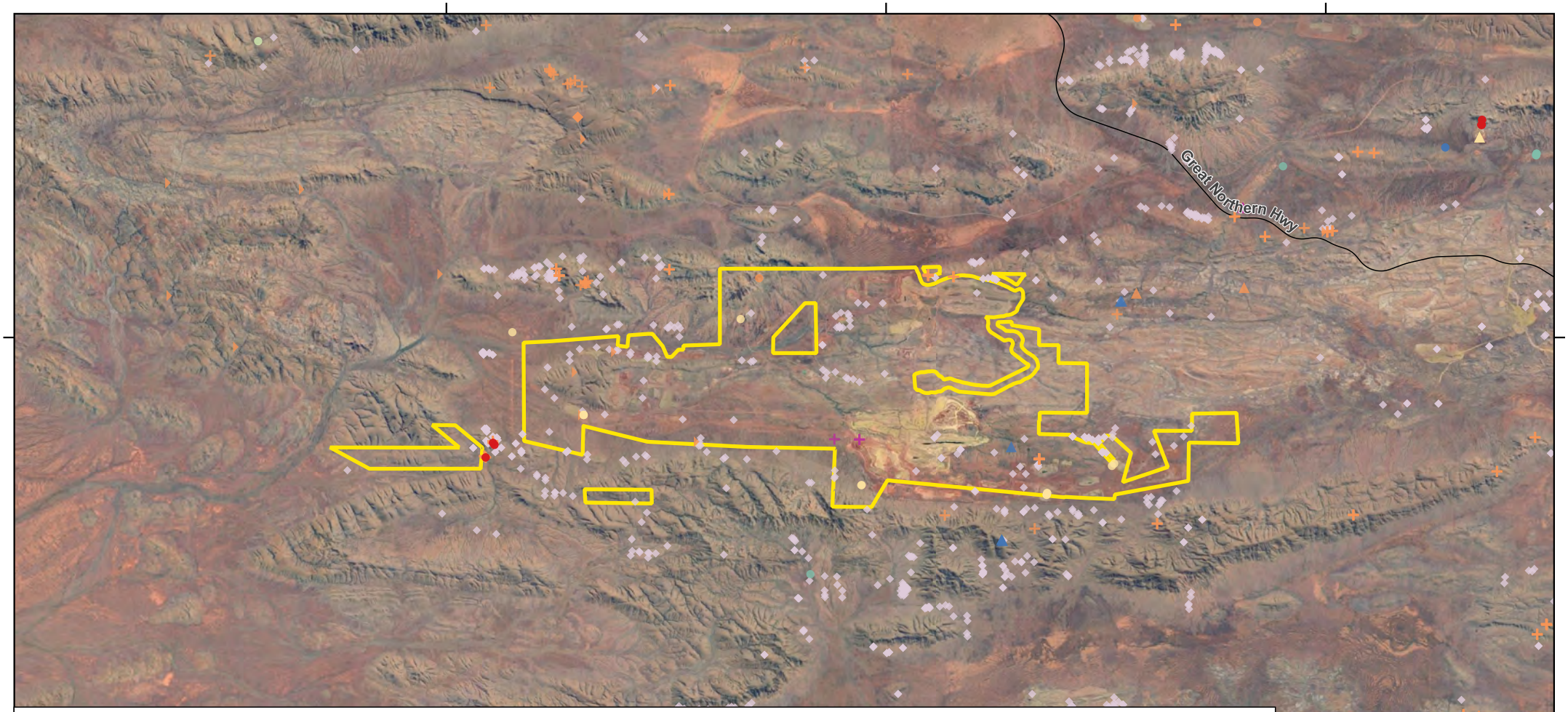
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Rio Tinto Iron Ore
West Angelas NVCP 2

Threatened and Priority Ecological Community Records MAP 11

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Threatened and Priority Fauna Records

- *Dasyurus hallucatus, EN*
- *Falco hypoleucos, VU*
- *Liasis olivaceus barroni, VU*
- *Macroderma gigas, VU*
- *Macrotis lagotis, VU*
- *Rhinonicteris aurantia (Pilbara form), VU*
- *Apus pacificus, MI*
- *Charadrius veredus, MI*
- *Falco peregrinus, OS*
- *Anilios ganei, P1*
- *Lerista macropisthopus remota, P2*
- *Underwoodisaurus seorsus, P2*
- *Dasycercus blythi, P4*
- *Elanus scriptus, P4*
- *Leggadina lakedownensis, P4*
- *Pseudomys chapmani, P4*
- *Amytornis whitei whitei, P4*

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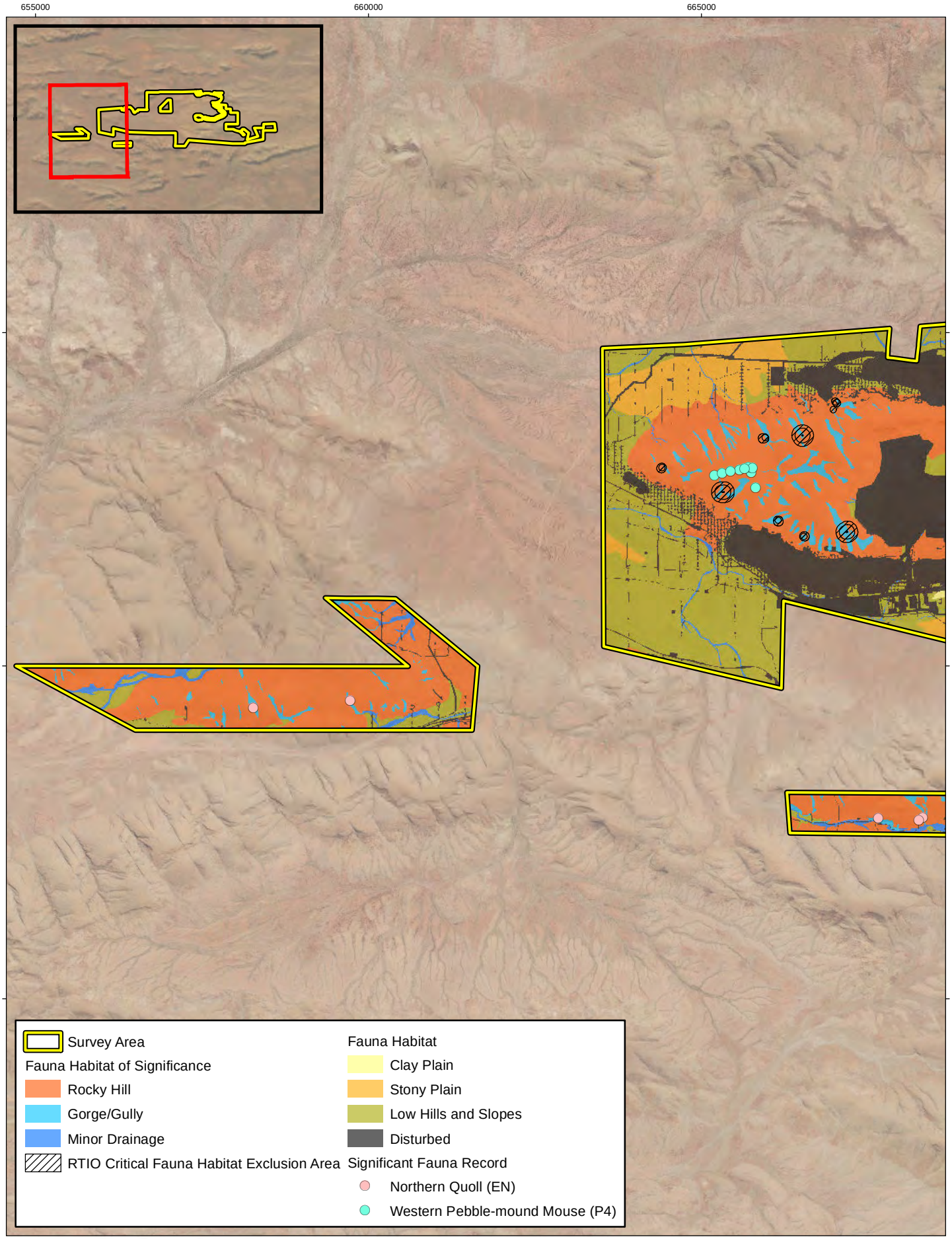
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Project Number:	675.072156
Date Drawn:	31-Jul-2024
Drawn By:	PW
Reviewed By:	BM

Rio Tinto Iron Ore
West Angelas NVCP 2

Threatened and Priority Fauna Records (DBCA and RTIO)
MAP 12



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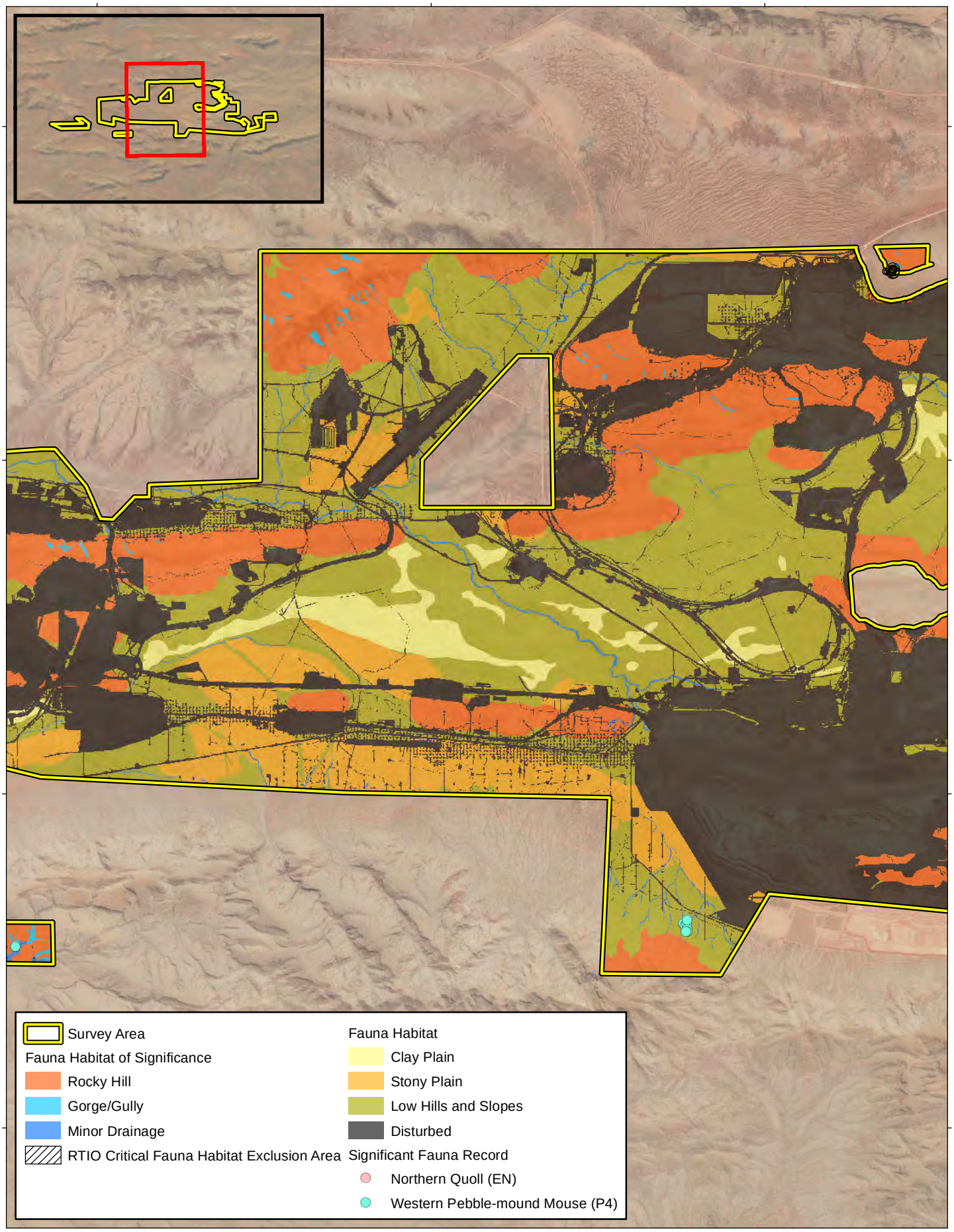
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Project Number	: 675.072156.00002
Date Drawn	: 28/02/2025
Drawn By	: Environmaps
Reviewed By	: LB

Rio Tinto Iron Ore
West Angelas NVCP 2

Fauna Habitat and Significant Fauna Records MAP 13a

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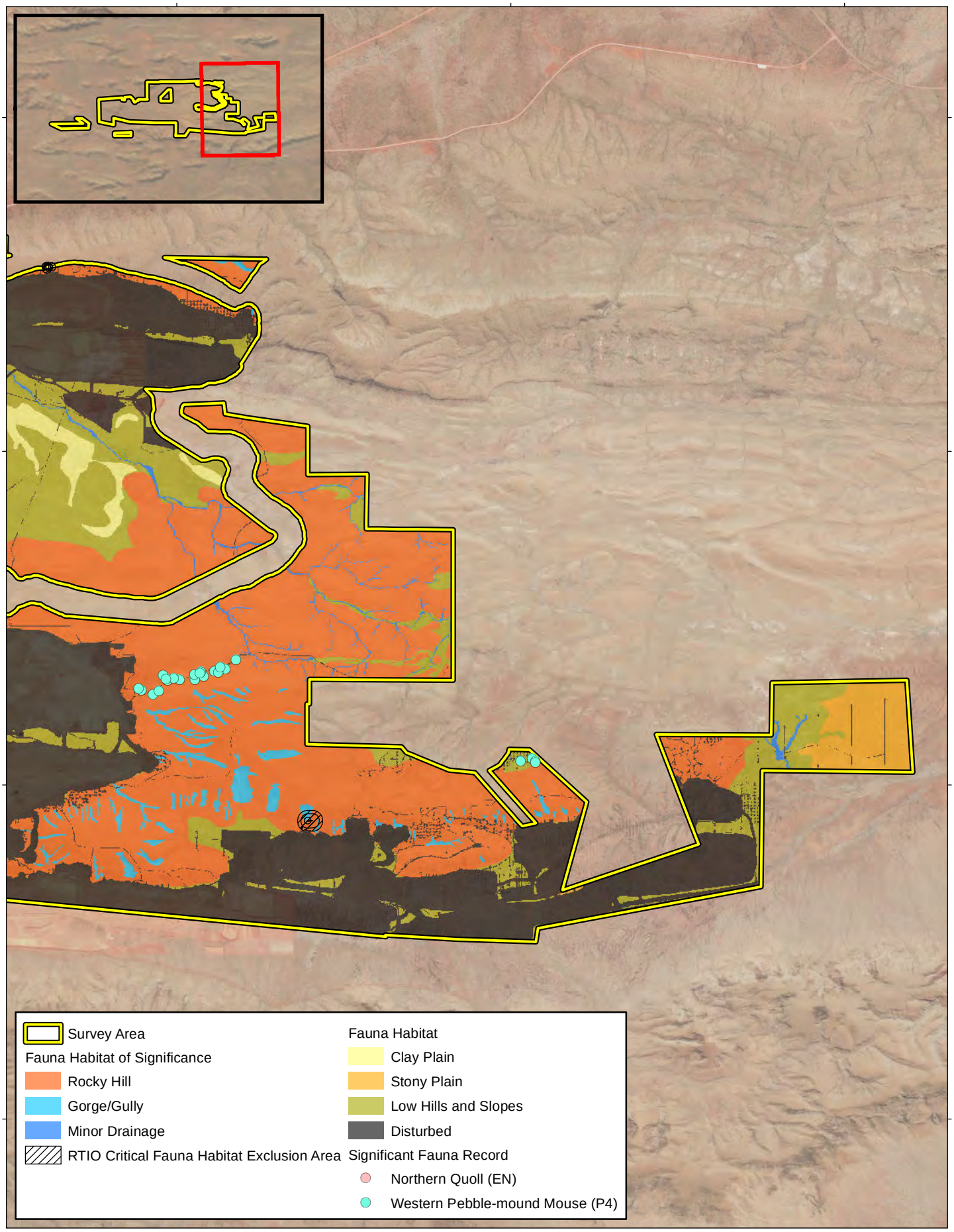
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Project Number	: 675.072156.00002
Date Drawn	: 28/02/2025
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Rio Tinto Iron Ore
West Angelas NVCP 2

Fauna Habitat and Significant Fauna Records MAP 13b

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Project Number	: 675.072156.00002
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Rio Tinto Iron Ore
West Angelas NVCP 2

Fauna Habitat and Significant Fauna Records MAP 13c

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Appendix B Literature Review Summary

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

Flora Literature Review

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
Area C and Surrounds Flora and Vegetation Survey (Onshore, 2011)	17.4km northeast of the Survey Area	Nov – Dec 2009 Feb 2010 June 2010	Detailed Flora and Vegetation survey	• Timing / weather / season / cycle – Minor • Disturbances, eg fire, flood – Minor • Completeness – Minor • Access problems – Minor	Priority 1 'Weeli Wolli Spring Community' Priority Ecological Community (PEC).	479 taxa	• *Aristida lazaridi*s (P3) • *Acacia subtiliformis* (P3) • *Aristida jerichoensis var. subspinulifera* (P3) • *Fimbristylis sieberiana* (P3) • *Goodenia sp*. East Pilbara (A.A. Mitchell PRP 727) (P3) • *Nicotiana umbratica* (P3) • *Rhagodia sp*. Hamersley (M. Trudgen 17794) (P3) • *Rostellularia adscendens var. latifolia* (P3) • *Stylidium weeliwolli* (P3) • *Vittadinia sp. Coondewanna Flats* (S. van Leeuwin 4684) (P3) • *Eremophila magnifica subsp. magnifica* (P4) • *Lepidium catapycnon* (P4)	No WoNS or DP

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
							• *Sida sp. Barlee Range* (S. van Leeuwen 1642) (P4)	
Area C West to Yandi Flora and Vegetation Assessment (Astron Environmental Services, 2018)	13.8 km Northeast of Survey Area	Nov 2018	Reconnaissance Survey	• Timing / weather / season / cycle – Moderate • Access problems – Minor • Disturbances - Minor	None	102 taxa	• *Eremophila naaykensii* (P3)	No WoNS or DP
Flora and Vegetation Surveys of Orebody A and Orebody B in the West Angelas Hill Area (M. Trudgen and Associates, 1998)	Overlaps the Survey Area	Apr 1997 May – Jun 1997 Jun – Jul 1997 Sept 1997	Detailed Flora and Vegetation survey	• Mapping – Moderate	None	635 taxa	• *Lepidium catapycnon* (P4) • *Olearia mucronata* (P3) • *Dampiera metallorum* (P3) • *Indigofera gilesii* (P3)	No WoNS or DP
Flora, Vegetation and Fauna Habitat Assessment at Juna Downs (Rio Tinto Iron Ore, 2016a)	26.3 km northwest of Survey Area	Oct 2014 Nov 2014 Apr 2015	Reconnaissance Survey	• Resources – Minor	None	186 taxa	• *Tetratheca fordiana* (P2) • *Eremophila naaykensii* (P3) • *Rostellularia adscendens var. latifolia* (P3) • *Solanum kentrocaule* (P3) • Trio*dia sp. Mt Ella* (M.E. Trudgen 12739) (P3)	No WoNS or DP

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
							• *Acacia bromilowiana* (P4) • *Eremophila magnifica subsp. magnifica* (P4) • *Sida sp. Barlee Range* (S. van Leeuwen 1642) (P4)	
Hope Downs 2 Proposal Flora and Vegetation Survey (Astron Environmental Services, 2019b)	6.6 km northeast of Survey Area	Nov 2017 May 2018 May 2019	Multiple-phase detailed survey	• Proportion of flora identified, recorded and/or collected – Minor • Completeness – Minor • Timing – Minor • Disturbance – Minor • Access – Minor	None	411 taxa	• *Aristida lazaridis* (P3) • *Eremophila sp. West Angelas* (S. van Leeuwen 4068) (P2) • *Hibiscus sp. Gurinbiddy Range* (M.E. Trudgen MET 15708) (P2) • *Eremophila naaykensii* (P3) • *Grevillea saxicola* (P3) • *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3) • *Triodia sp. Mt Ella* (M.E. Trudgen 12739) (P3) • *Acacia bromilowiana* (P4) • *Eremophila magnifica subsp. magnifica* (P4) • *Lepidium catapycnon* (P4)	No WoNS or DP

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
							• *Ptilotus mollis* (P4)	
Metadata Statement – Beyond 2020 Deposit F and Deposit H Additional Areas (Rio Tinto Iron Ore, 2022)	Directly adjacent Survey Area	Nov - 2021	Detailed flora and vegetation survey	• Timing, weather, season, cycle - Minor	None	116 taxa	• *Aristida jerichoensis var. subspinulifera* (P3)	No WoNS or DP
Rhodes Ridge Detailed Flora and Vegetation Survey (Astron Environmental Services, 2020b)	10.2 km East of Survey Area	July 2019	Targeted flora survey	• Timing / weather / • season / cycle – Minor • Disturbances - Minor	None	191	• *Aristida lazaridis* (P3) • *Grevillea saxicola* (P3) • *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3)	No WoNS or DP
Rhodes Ridge Targeted Flora Survey (Astron Environmental Services, 2019c)	13.9 km East of Survey Area	July – Aug 2019	Targeted flora survey	• Timing / weather / • season / cycle – Minor • Access problems – Minor	None	N/A	• *Aristida lazaridis* (P3) • *Oxalis sp. Pilbara* (M.E. Trudgen 12725)(P2) • *Acacia subtiliformis* (P3) • *Aristida jerichoensis var. subspinulifera* (P3) • *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3)	No WoNS or DP
Rhodes Ridge Targeted Flora Survey (Stantec, 2021)	12.6 km East of Survey Area	June 2021	Targeted flora survey	• No Limitations	None	N/A	• *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3)	No WoNS or DP

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
Rio Tinto Greater West Angelas Vegetation and Flora Assessment (Ecologia Environment, 2013)	Overlaps Survey Area	Jul 2012 Aug 2012	Multiple-phase detailed survey	• Sources of information and availability of contextual information • Proportion of flora collected and identified • Completeness • Further work which might be needed • Mapping reliability • Timing/weather/ season • Intensity • Access problems	Priority 1 'West Angelas cracking clays' Priority Ecological Community (PEC).	441 taxa	• *Aristida lazaridis* (P3) • *Eremophila pusilliflora* (P2) • *Aristida jerichoensis var. subspinulifera* (P3) • *Indigofera gilesii* (P3) • *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3) • *Themeda sp. Hamersley Station* (M.E. Trudgen 11431) (P3) • *Triodia sp. Mt Ella* (M.E. Trudgen 12739) (P3) • *Lepidium catapycnon* (P4) • *Sida sp. Barlee Range* (S. van Leeuwen 1642) (P4)	No WoNS or DP
West Angelas Beyond 2020 Deposit G Reconnaissance and Targeted Survey (Biologic Environmental Survey, 2022b)	Directly Adjacent Survey Area	Feb 2022	Targeted flora and vegetation survey	• No Limitations	None	N/A	• None	No WoNS or DP

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
West Angelas Beyond 2020 Detailed Flora and Vegetation Survey: Phases 1 and 2 (Biota Environmental Services, 2020)	Adjacent to the Survey Area	Aug - Sep 2018 Apr 2019	Detailed Flora and Vegetation survey	• No Limitations	None	542 taxa	• *Aristida lazaridis* (P3) • *Eremophila pusilliflora* (P2) • *Hibiscus sp. Gurinbiddy Range* (M.E. Trudgen MET 15708) (P2) • *Isotropis parviflora* (P3) • *Oxalis sp. Pilbara* (M.E. Trudgen 12725) (P2) • *Aristida jerichoensis var. subspinulifera* (P3) • *Eremophila naaykensii* (P3) • *Grevillea saxicola* (P3) • *Indigofera gilesii* (P3) • *Pilbara trudgenii* (P3) • *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3) • *Rostellularia adscendens var. latifolia* (P3) • *Solanum kentrocaule* (P3)	No WoNS or DP

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
							• *Triodia sp. Mt Ella* (M.E. Trudgen 12739) (P3) • *Acacia bromilowiana* (P4) • *Lepidium catapycnon* (P4) • *Sida sp. Barlee Range* (S. van Leeuwen 1642) (P4)	
West Angelas Beyond 2020 Mt Ella East and Dep J Detailed and Targeted Survey (Biologic Environmental Survey, 2022d)	Adjacent to Survey Area	May 2022 Aug 2022	Reconnaissance and targeted flora and vegetation survey	• Access problems - Significant	None	239 taxa	• *Eremophila sp. West Angelas* (S. van Leeuwen 4068) (P2) • *Hibiscus sp. Gurinbiddy Range* (M.E. Trudgen MET 15708) (P2) • *Oxalis sp. Pilbara* (M. E. Trudgen 12725) (P2) • *Acacia subtiliformis* (P3) • *Eremophila magnifica subsp. velutina* (P3) • *Eremophila naaykensii* (P3) • *Indigofera gilesii* (P3) • *Pilbara trudgenii* (P3)	No WoNS or DP

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
							• *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3) • *Solanum kentrocaule* (P3) • *Triodia sp. Mt Ella* (M.E. Trudgen 12739) (P3) • *Acacia bromilowiana* (P4) • *Eremophila magnifica subsp. magnifica* (P4)	
West Angelas Desktop Mapping December 2020 (Astron Environmental Services, 2020)	Adjacent to the Survey Area	Dec 2020	Desktop Mapping	• Disturbances – Minor • Sources of information and availability of contextual information - Minor	None	N/A	• N/A	N/A
West Angelas Development Envelope Consolidated Vegetation Mapping (Biologic Environmental Survey, 2021b)	Overlaps Survey Area	Aug 2021	Desktop Mapping	• Sources of information and availability of contextual information – Minor • Mapping reliability - Minor	Priority 1 'West Angelas cracking clays' Priority Ecological Community (PEC).	N/A	• N/A	N/A

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
West Angelas Gas Pipeline Native Vegetation Clearing Permit (B-2018-007) (Biota Environmental Services, 2019)	Overlaps the Survey Area	Oct 2016	Desktop assessment	• No Limitations	Priority 1 'West Angelas cracking clays' Priority Ecological Community (PEC).	343 taxa	• *Aristida lazaridis* (P3) • *Eremophila pusilliflora* (P2) • *Isotropis parviflora* (P3) • *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3) • *Themeda sp. Hamersley Station* (M.E. Trudgen 11431) (P3)	No WoNS or DP
West Angelas Infrastructure Reconnaissance Flora and Vegetation Survey (Biologic Environmental Survey, 2023a)	Adjacent to Survey Area	Feb 2022	Reconnaissance and targeted flora and vegetation survey	• No Limitations	None	147 taxa	• *Eremophila pusilliflora* (P2) • *Indigofera gilesii* (P3) • *Triodia sp. Mt Ella* (M.E. Trudgen 12739) (P3)	No WoNS or DP
West Angelas Managed Aquifer Targeted Flora and Fauna Survey (Biologic Environmental Survey, 2023b)	Adjacent to Survey Area	Feb - 2021	Targeted flora survey	• No Limitations	N/A	5 taxa	• *Eremophila pusilliflora* (P2) • *Eremophila naaykensii* (P3) • *Indigofera gilesii* (P3) • *Rhagodia sp. Hamersley* (M. Trudgen 17794) (P3) • *Triodia sp. Mt Ella* (M.E. Trudgen 12739) (P3)	No WoNS or DP

Report	Location	Survey Timing	Survey Type	Limitations	Significant Ecological Communities	Flora Composition	Significant Flora	Introduced Flora
West Angelas Vegetation Condition Assessment (Biologic Environmental Survey, 2022)	Overlaps Survey Area	Oct 2022	Desktop Mapping	• Sources of information and availability of contextual information – Minor	N/A	N/A	• N/A	N/A

Fauna Literature Review

Report	Project Area	Survey Timing	Survey Effort	Significant Terrestrial Vertebrate Fauna Recorded Onsite	Fauna Habitats
2017 West Angelas Ghost Bat Monitoring (Biologic Environmental Survey, 2018)	Overlaps the Survey Area	October 2017	Ghost Bat Monitoring Survey	• Ghost Bat (*Macroderma gigas*) - VU	Five confirmed Ghost Bat roost caves.
Flora, Vegetation and Fauna Habitat Assessment at Juna Downs Native Vegetation Clearing Permit – Supporting Report (Rio Tinto Iron Ore, 2016)	26.3 km north northwest of the Survey Area	October, November 2014 April 2015	Flora and Vegetation Assessment Fauna Habitat Assessment	• Northern quoll (*Dasyurus hallucatus*) - EN • Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4	Six fauna habitats were identified: • Rocky slopes • Undulating slopes • Minor Minor Drainage
Greater West Angelas Terrestrial Fauna Assessment (Ecologia Environment, 2014)	Overlaps the Survey Area	September – October 2012 March 2013	Two-phase Detailed Vertebrate Fauna assessment Invertebrate SRE Assessment	• Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) – VU • Fork-tailed Swift (*Apus pacificus*) – MI, MA • Pilbara Barking Gecko (*Underwoodisaurus serosus*) – P2 • Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4	Eight fauna habitats were identified: • Cracking Clay • Footslope or Plain • Hilltop, Hillslope, Ridge, or Cliff • Major Drainage • Major Gorge or Gully • Mesa Top • Mixed Acacia Woodland • Mulga Woodland
Hope Downs 2 Proposal – Ghost Bat Cave Characteristics, February/March 2020 (Astron Environmental Services, 2020)	6.6 km northeast of the Survey Area	February, March 2020	Ghost Bat Cave Assessment	• Northern quoll (*Dasyurus hallucatus*) - EN • Ghost Bat (*Macroderma gigas*) - VU	Four confirmed Ghost Bat roost caves. Three potential Ghost Bat roost caves.

Report	Project Area	Survey Timing	Survey Effort	Significant Terrestrial Vertebrate Fauna Recorded Onsite	Fauna Habitats
Hope Downs 2 Proposal Fauna Survey (Astron Environmental Services, 2019)	6.6 km northeast of the Survey Area	November-December 2017 May 2018 March 2019	Detailed Fauna Assessment Invertebrate SRE Assessment	• Northern quoll (*Dasyurus hallucatus*) - EN • Ghost Bat (*Macroderma gigas*) - VU • Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) - VU • Oriental Plover (*Charadrius veredus*) – MI, MA • Unpatterned Robust Lerista (*Lerista Macropisthopus remota*) – P2 • Letter-wing Kite (*Elanus scriptus*) – P4 • Pilbara Grasswren (*Amytornis whitei whitei*) – P4 (listed as A. s. striatus) • Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4	Eight fauna habitats were identified: • Minor Drainage • Gorge/Gully • Breakaway • Rocky Hill • Low Hill and Slopes • Alluvial Plain • Mulga Woodland • Stony Plain
Metadata Statement – Beyond 2020 Deposit F and Deposit H Additional Areas (Rio Tinto Iron Ore, 2022)	Adjacent to the Survey Area	November 2021	Fauna Habitat Assessment	• nil	Four fauna habitats identified: • Rocky Hill • Gorge/gully • Footslopes and plain • Minor Drainage
West Angelas - Deposit B and F Ghost Bat Assessment (Biologic Environmental Survey, 2014)	Overlaps the Survey Area	November 2023	Ghost Bat Monitoring Survey	• Ghost Bat (*Macroderma gigas*) – VU	Four confirmed Ghost Bat roost caves.

Report	Project Area	Survey Timing	Survey Effort	Significant Terrestrial Vertebrate Fauna Recorded Onsite	Fauna Habitats
West Angelas Beyond 2020 Infrastructure Corridors Reconnaissance and Targeted Survey (Biologic Environmental Survey, 2022a)	Adjacent to the Survey Area	February 2022	Fauna Habitat Assessment Targeted Significant Fauna Survey	• Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4	Six fauna habitats identified: • Footslope and plain • Rocky Hill • Gorge/gully • Mixed acacia woodland • Minor Drainage • PEC cracking clay
West Angelas Beyond 2020 Level 2 Vertebrate Fauna, SRE Invertebrate and Fauna Assessment Phase 1 and 2 (Biologic Environmental Survey, 2019)	Adjacent to the Survey Area	October 2018 March 2019	Two-phase Detailed Vertebrate Fauna assessment Invertebrate SRE Assessment	• Northern Quoll (*Dasyurus hallucatus*) – EN • Ghost Bat (*Macroderma gigas*) – VU • Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) – VU • Pilbara Olive Python (*Liasis olivaceus barroni*) - VU • Fork-tailed Swift (*Apus pacificus*) – MI, MA • Gane's Blind Snake (*Anilios ganei*) – P1 • Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4	Seven fauna habitats were identified: • Hilltop, hillslope, ridge, or cliff • Footslope and plain • Mulga spinifex woodland • Minor drainage • Gorge or gully • Drainage Area • Mixed acacia woodland
West Angelas Beyond 2020 Mt Ella East and Dep J Detailed and Targeted Survey (Biologic Environmental Survey, 2022b)	Adjacent to the Survey Area	July 2022	Detailed Fauna Assessment Targeted Fauna Survey	• Ghost Bat (*Macroderma gigas*) – VU • Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4	Five fauna habitats identified: • Rocky Hill • Footslopes and plain • Gorge/gully • Mixed acacia woodland • Minor Drainage

Report	Project Area	Survey Timing	Survey Effort	Significant Terrestrial Vertebrate Fauna Recorded Onsite	Fauna Habitats
West Angelas Beyond 2020: Targeted Vertebrate Fauna Survey (Biologic Environmental Survey, 2020)	Adjacent to the Survey Area	June – July 2019	Targeted Fauna Surveys	• Ghost Bat (*Macroderma gigas*) – VU • Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) – VU	Three additional Ghost Bat roost caves.
West Angelas Deposit F North and Deposit H Areas Fauna Survey (Biologic Environmental Survey, 2022c)	Adjacent to the Survey Area	July 2022	Fauna Habitat Assessment Targeted Significant Fauna Survey	• nil	Four fauna habitats identified: • Rocky Hill • Gorge/gully • Mixed acacia woodland • Minor Drainage
West Angelas Deposit G – Basic and Targeted Fauna Survey 2022 (Biologic Environmental Survey, 2022d)	Adjacent to the Survey Area	February 2022	Fauna Habitat Assessment Targeted Significant Fauna Survey	• N/A	Four fauna habitats were identified: • Footslopes and plain • Major Minor Drainage • Rocky Hill • Mixed acacia woodland
West Angelas Gas Pipeline Native Vegetation Clearing Permit (B-2018-007) (Biota Environmental Services, 2019)	Overlaps the Survey Area	October 2016	Flora and Vegetation Assessment Fauna Habitat Assessment	• Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4	Six fauna habitats were identified: • Hill slopes and colluvial slopes • Mulga groves • Plains • Minor Minor Drainages • Major creeks
West Angelas Managed Aquifer Targeted Flora and Fauna Survey (Biologic Environmental Survey, 2023)	Adjacent to the Survey Area	February 2021	Fauna Habitat Assessment Targeted Significant Fauna Survey	• Northern Quoll (*Dasyurus hallucatus*) – EN • Ghost Bat (*Macroderma gigas*) – VU	Four fauna habitats identified: • Footslope or plain • Hilltop, hillslope, ridge, or cliff • Mixed acacia woodland



Report	Project Area	Survey Timing	Survey Effort	Significant Terrestrial Vertebrate Fauna Recorded Onsite	Fauna Habitats
				• Western Pebble-mound Mouse (*Pseudomys chapmani*) – P4	• Major Drainage

Appendix C Licences and Permits

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

GOVERNMENT OF WESTERN AUSTRALIA

Department of **Biodiversity, Conservation and Attractions**

AUTHORISATION TO TAKE OR DISTURB THREATENED SPECIES

Section 40 of the Biodiversity Conservation Act 2016

AUTHORISATION DETAILS

Authorisation number: TFA 2324-0218

Authorisation duration: From date signed by Minister's delegate below until 30 April 2025.

AUTHORISATION HOLDER

Yanlin Li

SLR Consulting

Level 1/500 Hay St

Subiaco, Perth WA 6008

AREA TO WHICH THIS AUTHORISATION APPLIES

West Angelas survey area, approximately 110 km southeast of Tom Price (DBCA Pilbara region).

AUTHORISED ACTIVITY

Purpose of taking/disturbance:

Terrestrial fauna survey to determine the presence of conservation significant species recorded within the survey area. Findings may inform project planning and environmental impact assessment processes.

Threatened species authorised to be taken/disturbed (including conservation status):

Bilby, *Macrotis lagotis* (Vulnerable)

Ghost Bat, *Macroderma gigas* (Vulnerable)

Night Parrot, *Pezoporus occidentalis* (Critically Endangered)

Northern Quoll, *Dasyurus hallucatus* (Endangered)

Pilbara leaf-nosed bat, *Rhinonicteris aurantia* (Pilbara) (Vulnerable)

Pilbara Olive Python, *Liasis olivaceus* subsp. *barroni* (Vulnerable)

Quantity of threatened species authorised to be taken/disturbed:

Any number of individual animals of the above listed threatened fauna species may be captured and released during the trapping program and/or disturbed by the survey activities.

Authorised taking/disturbance methodology:

Disturb threatened fauna through the deployment of remote cameras with a consumable lure that may be replenished.

Disturb ghost bats and Pilbara leaf-nosed bats when entering caves to deploy (install and retrieve) ultrasonic bat detectors.

Disturb night parrots through the deployment (installation and retrieval) of acoustic recording devices within areas of potential night parrot nesting and roosting habitat.

Disturb threatened fauna during spotlighting surveys undertaken on consecutive nights.

All proposed activities will be conducted in accordance with DBCA Standard Operating Procedures (SOPs) for fauna survey and monitoring techniques.

Dates within which taking/disturbance authorised:

From date signed by Minister's Delegate below until 30 April 2025

AUTHORISED PERSONS

Yanlin Li Christina Walker

Additional personnel who are suitably qualified and experienced in the Authorised Activities working under the direction of the Authorisation Holder.

Field assistants working under the direct supervision of the Authorisation Holder or suitably qualified and experienced named Authorised Persons.

CONDITIONS

1. The written authorisation of the person in possession or occupation of the land accessed and upon which threatened fauna is taken or disturbed must:
    a. state location details (including lot or location number, street/road, suburb and local government authority);
    b. state land owner or occupier name, and contact phone number;
    c. specify the time period that the authorisation is valid for;
    d. be signed and dated; and
    e. be attached to this Authorisation to take or disturb threatened species at all times.
2. This Authorisation to take or disturb threatened species, and any other written authorisation or lawful authority which authorises the take or disturbance of fauna on specified locations for the Authorised Activities must be carried at all times while conducting Authorised Activities and be produced on demand by a wildlife officer.
3. Authorised Persons who are not suitably qualified and experienced in the Authorised Activities, and field assistants assisting with the Authorised Activities, must be working under direct supervision of experienced and competent named Authorised Persons.
4. Any inadvertently captured species of non-target threatened fauna or non-threatened fauna (threatened fauna as defined in *Biodiversity Conservation Act 2016* Section 19) is to be released immediately at the point of capture. Details of such fauna must be included in the fauna taking/disturbance return as required under this Authorisation.

5. The Authorisation Holder, unless specified in the Authorised Activities, must not:
    a. release any threatened fauna in any area where it does not naturally occur;
    b. transfer threatened fauna to any other person or authority (other than the Western Australian Museum) unless the fauna is injured or abandoned fauna (condition 6); or
    c. dispose of the remains of threatened fauna in any manner likely to confuse the natural or present-day distribution of the species.
6. All threatened fauna injuries, unexpected deaths, unplanned euthanasia, and abandoned young or eggs, must be reported by the Authorisation Holder to the DBCA Wildlife Protection Branch, Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au) to notify of the incident and for advice on treatment or disposal. All deceased threatened fauna must be offered to the Western Australian Museum.
7. The Authorisation Holder must create, compile and maintain records and information as required in a DBCA approved "Return of Fauna Taken/Disturbed" of all fauna taking/disturbance activities as they occur.
8. A DBCA approved "Return of Fauna Taken/Disturbed" must be completed in full (including nil taking/disturbance details) and submitted to DBCA Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au) prior to the end of the Authorisation duration and, if the Authorisation duration is greater than 12 months, prior to the end of each annual period of the Authorisation (from the date signed by the Minister's delegate) (refer to "Additional Information" section below). Where a licence to take or disturb fauna is issued in conjunction with this Authorisation to take or disturb threatened species, a combined "Return of Fauna Taken/Disturbed" may be completed and submitted.
9. A written report detailing the undertaken Authorised Activities, outcome, unintended incidents, injuries and mortalities of threatened fauna, implemented monitoring, mitigation and management, and explaining the records and information as required in a DBCA approved "Return of Fauna Taken/Disturbed" must be submitted, in addition to a "Return of Fauna Taken/Disturbed" to DBCA Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au).

ADDITIONAL INFORMATION

1. Before undertaking the Authorised Activity, permission must be obtained from: (a) the owner or occupier of private land; or (b) the department or authority controlling Crown land, on which the threatened fauna occurs. This includes obtaining the written endorsement from Department of Biodiversity, Conservation and Attractions (DBCA) if the Authorised Activity is proposed for land managed by DBCA.
2. This Authorisation to take or disturb threatened species does not constitute lawful authority issued under regulations 4 and 8 of the *Conservation and Land Management Regulations 2002*. Contact the applicable Department District Officer for further information.
3. The approved DBCA "Return of Fauna Taken/Disturbed" template can be obtained from DBCA Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au).
4. Any interference or influence involving nationally listed threatened fauna that may be harmful to the fauna and/or invasive may require approval from the Commonwealth Department of Climate Change, Energy, the Environment and Water (https://www.dccee

w.gov.au/environment/biodiversity/threatened/permits). Interference or influence with such species is controlled by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and *Environment Protection and Biodiversity Conservation Regulations 2000*.

5. It is the responsibility of the Authorisation Holder to ensure that they comply with the requirements of all applicable legislation.

6. An Authorisation to take or disturb threatened species does not constitute an animal ethics approval or a licence to use animals for scientific purposes as required under the *Animal Welfare Act 2002* and *Animal Welfare (Scientific Purposes) Regulations 2003*. Enquiries relating to the Animal Welfare Act scientific purposes licence and animal ethics committee approvals are to be directed to the Western Australian Department of Primary Industries and Regional Development (https://www.agric.wa.gov.au/animalwelfare).

Margaret Byrne
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Dr Margaret Byrne
Executive Director of Biodiversity and Conservation Science
AS DELEGATE OF THE MINISTER
DATE: ...5.../...4...../2024

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

FAUNA TAKING (BIOLOGICAL ASSESSMENT) LICENCE

Regulation 27, Biodiversity Conservation Regulations 2018

Licence Number: BA27001038

Licence Holder: Yanlin Li
SLR Consulting
Level 1 / 500 Hay Street
Subiaco WA 6008

Date of Issue: 11/04/2024

Date Valid From: 11/04/2024
Date of Expiry: 30/04/2025

LICENSED ACTIVITIES

Subject to the terms and conditions on this licence, the licence holder may –

1. Undertake terrestrial fauna survey to determine the presence of conservation significant species recorded within the survey area. Findings may inform project planning and environmental impact assessment processes.

   Disturb fauna through the deployment of camera traps with a consumable lure that may be replenished.

   Disturb fauna through the deployment (installation and retrieval) of acoustic recording devices within areas of potential nesting and roosting habitat.

   Disturb fauna (Bats) when entering caves to deploy (install and retrieve) ultrasonic bat detectors.

   Disturb fauna during spotlighting surveys undertaken on consecutive nights.

   All proposed activities will be conducted in accordance with DBCA Standard Operating Procedures (SOPs) for fauna survey and monitoring techniques.

LOCATIONS

1. West Angelas survey area, approximately 110 km southeast of Tom Price.

AUTHORISED PERSONS

The following persons or persons of the specified class may assist in carrying out the licensed activities:

1. Yanlin Li
2. Christina Walker

CONDITIONS

1. Fauna must not be taken on CALM land, (as defined in the Conservation and Land Management Regulations 2002*),* unless authorised by a written notice of a lawful authority issued under regulations 4 and 8 of the Conservation and Land Management Regulations 2002.

2. If persons, other than the licence holder, are authorised to carry out/assist in carrying out the activities under the licence, the licence holder must ensure those persons have read and understand the licence terms and conditions.
3. The written authorisation of the person in possession or occupation of the land accessed and upon which fauna is taken, as required under regulation 101(2) and referred to in "Additional information" below, must:
    a) state location details (including lot or location number, street/road, suburb and local government authority);
    b) state land owner or occupier name, and contact phone number;
    c) specify the time period that the authorisation is valid for;
    d) be signed and dated; and
    e) be attached to this licence at all times.
4. This licence, and any written authorisation or lawful authority which authorises the take of fauna on specified locations must be carried at all times while conducting licensed activities and be produced on demand by a wildlife officer.
5. If a species of fauna listed as a threatened species under Section 19 of the *Biodiversity Conservation Act 2016* is inadvertently captured, that species is to be released immediately at the point of capture. If the fauna is injured or deceased, the licence holder shall contact the DBCA Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au) for advice on treatment or disposal. Details of any capture of threatened fauna must be included in the "Return of Fauna Taken."
6. The licence holder must not:
    a) release any fauna in any area where it does not naturally occur;
    b) transfer fauna to any other person or authority (other than the Western Australian Museum) unless approved in writing by the CEO; or
    c) dispose of the remains of fauna in any manner likely to interfere the natural or present day distribution of the species.
7. The licence holder must not take and remove more than ten specimens of any one protected species of fauna from any location less than 20km apart. Where exceptional circumstances make it necessary to take a larger number of specimens from a particular location in order to obtain adequate statistical data, the collector must proceed with circumspection and justify their actions to the Director General in advance.
8. All holotypes and syntypes and a half share of paratypes of species or subspecies permitted to be permanently taken under this licence must be donated to the Western Australian Museum. Duplicates (one pair in each case) of any species collected, which represents a significant extension of geographic range must be offered to the Western Australian Museum.
9. All specimens and material retained under the authority of this licence must be offered to the Western Australian Museum for loan, for inclusion in its collection, or on request be made available to other persons involved in relevant scientific studies.
10. The licence holder must create, compile and maintain records and information as required in a DBCA approved "Return of Fauna Taken" of all fauna taking activities as they occur.
11. A DBCA approved "Return of Fauna Taken" must be completed in full (including nil taking details) and submitted to DBCA Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au) prior to the end of each annual period of the licence (from the valid from date) (refer to "Additional Information" section

D Stefoni
LICENSING OFFICER
WILDLIFE PROTECTION BRANCH
Delegate of CEO

ADDITIONAL INFORMATION

1. It is an offence to take any species of fauna listed as a threatened species under Section 19 of the *Biodiversity Conservation Act 2016* unless the person is authorised under Section 40. The penalty ranges between $300 000 and $500 000; Section 150 Biodiversity Conservation Act 2016.
2. Regulation 82 empowers the CEO to add, substitute or delete a term or condition of a licence or to correct errors. Such power may be exercised on application of a licence holder or by the CEO's own initiative. If an amendment to a licence term or condition is required, please contact the CEO or the Licensing Section on wildlifelicensing@dbca.wa.gov.au in the first instance. The licence holder, if adversely affected by a condition imposed in this licence, may apply to the State Administrative Tribunal for review of the decision of the CEO to impose that condition on a licence: regulation 89(2) Biodiversity Conservation Regulations 2018.
3. A person must not contravene a condition of a licence. The penalty for an offence involving the contravention of a condition of a licence is a fine of $10 000: regulation 84 of the Biodiversity Conservation Regulations 2018.
4. It is an offence for persons authorised by this licence to enter land that is not in their possession or under their control without first having the *prior* written authorisation of the current owner or occupier of the land to:

   a) enter the land; and

   b) carry out the activity authorised by this licence.

   The penalty for this offence is a fine of $5 000: regulation 101(2) of the Biodiversity Conservation Regulations 2018.
5. The licence holder must be able to produce for inspection upon request any information or records required by regulation 85(2) of the Biodiversity Conservation Regulations 2018 Penalty $10 000. It is an offence to knowingly include false or misleading information or make statements in records: regulation 85(3) of the Biodiversity Conservation Regulations 2018 Penalty $10 000. It is an offence to include any information or make any statement in a return that the licence holder knows to be false or misleading in a material particular: regulation 86 (2) of the Biodiversity Conservation Regulations 2018 Penalty $10 000.
6. The approved DBCA "Return of Fauna Taken" data file can be downloaded from the DBCA webpage (https://www.dpaw.wa.gov.au/plants-and-animals/licences-and-authorities).
7. The issuing of a licence under the Biodiversity Conservation Regulations 2018 does not constitute an animal ethics approval or a licence to use animals for scientific purposes as required under the *Animal Welfare Act 2002,* Animal Welfare (Scientific Purposes) Regulations 2003. It is the responsibility of a licence applicant / licence holder to ensure that they comply with the requirements of all applicable legislation. Enquiries relating to the Animal Welfare Act licences and animal ethics approvals are to be

directed to the Department of Primary Industries and Regional Development (https://www.agric.wa.gov.au/animalwelfare).

8. Threatened fauna can only be taken under a *Biodiversity Conservation Act 2016* Section 40 authorisation, Occurrences of threatened species must be reported to the CEO. For more information please see https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-animals.

9. Any interaction involving Nationally Listed Threatened Fauna that may be invasive and/or harmful to the fauna may require approval from the Commonwealth Department of the Environment and Energy http://www.environment.gov.au/about-us/business-us/permits-assessments-licences. Interaction with such species is controlled by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and Environment Protection and Biodiversity Conservation Regulations 2000 as well as the *Biodiversity Conservation Act 2016* and Biodiversity Conservation Regulations 2018.

Appendix D Likelihood of Occurrence

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

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

Distance to Nearest Record from the Survey Area is based on a distance analysis undertaken against 2022 DBCA database. High = Suitable habitat present and records less than 10 km from the Survey Area, Medium = Suitable habitat present and records between 10 km and 20 km from the Survey Area, and Low = No suitable habitat present and/or records greater than 15 km from the Survey Area, Unknown = Insufficient information available to classify . CR= Listed as Critically Endangered under the EPBC Act, EN = Listed as Endangered under the EBPC Act, VU = listed as Vulnerable under the EBPC Act. T = Threatened under the BC Act, P = Priority Listed, Ranked and Listed by the DBCA. Likelihoods are assessed both pre and post survey based on knowledge of the Survey Area, nearest known records, known flowering period of flora taxa and knowledge gained from the survey effort during ground truthing. 1: Department of the Environment (2024). SPRAT EPBC Threatened Flora in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. 2: Department of Biodiversity, Conservation and Attractions (2024). FloraBase - TheWestern Australian Flora. https://florabase.dpaw.wa.gov.au/

Species	Conservation Status		Source					Distance to Nearest Record (km)	Flowering Period	Prefered Habitat	Habitat occurs within the Survey Area	Pre-Survey Likelihood of Occurrence	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	Nature Map	PMST	DBCA	RTIO	Literature						
Seringia exastia	-	VU				x		N/A	Apr - Dec		Yes	Recorded	Previously recorded
Thryptomene wittweri	T	VU	x	x	x			17.56	Apr - Jul or Aug	Skeletal red stony soils. Breakaways, stony creek beds.[2]	Yes	Medium	Low
Hibiscus sp. Mt Brockman (E. Thoma ET 1354)	P1					x		13.8	Aug	Gullies, breakways.[2]	Yes	Medium	Low
Isotropis forrestii	P1					x		9.19	Apr - Sep or Dec	Stony clay loam, sandy alluvium. Along drainage lines.	Yes	High	Low
Rhodanthe ascendens	P1		x		x			6.8	Aug	Clay. Roadside verge.[2]	Yes	High	Low
Sida sp. Turee Creek (P.-L.de Kock PLDK1116)	P1				x	x		8.03	July	Clay loam Mulga plains with ironstone gravel, pebbles and cobbles.[2]	Yes	High	Low
Eragrostis sp. Mt Robinson (S. van Leeuwen 4109)	P2		x		x	x		10.45	Sep	Red-brown skeletal soils, ironstone. Steep slopes, summits.[2]	Yes	Medium	Low
Eremophila pusilliflora	P2		x		x	x	x	N/A	Aug - Sep	Red brown loam over ironstone.[2]	Yes	Recorded	Recorded
Eremophila sp. West Angelas (S. van Leeuwen 4068)	P2		x		x	x	x	N/A	Aug - Sep	Steep rock slopes and scree, skeletal brown-red soils.[2]	Yes	Recorded	Recorded
Euphorbia inappendiculata var. *inappendiculata*	P2					x		N/A	May, Aug	Red, brown clay or loam. Plains.[2]	Yes	Recorded	Previously recorded
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2		x		x	x	x	N/A	Apr -Jun or Aug - Oct	Drainage lines, gullies.[2]	Yes	Recorded	Recorded
Ipomoea racemigera	P2					x		10.88	Apr	On sandy soils along watercourses.[2]	No	Low	Low
Neptunia longipila	P2				x			N/A	Sept	Plain. Stony sandy-clay.[2]	Yes	Recorded	Previously recorded
Oxalis sp. Pilbara (M.E. Trudgen 12725)	P2		x		x	x	x	N/A	May	Gorges with sandy loam soil, creeklines.[2]	Yes	Recorded	Previously recorded
Pentalepis trichodesmoides subsp. *hispida*	P2					x		19.25	Jul - Sep	Red brown clay loam, stony brown clayey sand. Hillslopes.[2]	No	Low	Low
Teucrium pilbaranum	P2		x					N/A	May or Sep	Clay. Crab hole plain in a river floodplain, margin of calcrete table.[2]	No	Low	Low
Triodia karijini	P2		x		x			10.48	Unknown	Hillcrest with sandy loam soil.[2]	Yes	Medium	Low
Acacia daweana	P3		x		x	x		13.03	Jul - Sep	Stony red loamy soils. Low rocky rises, along drainage lines.[2]	Yes	Medium	Low

[1] Department of Agriculture, Water and Environment (2020) [2]Western Australian Herbarium (2020)

Acacia effusa	P3		x		x	x		0.5	May - Aug	Stony red loam. Scree slopes of low ranges.[2]	Yes	High	Medium
Acacia subtiliformis	P3				x	x	x	N/A	Jun	On rocky calcrete plateau.[2]	Yes	Recorded	Previously recorded
Aristida jerichoensis var. *subspinulifera*	P3		x		x	x	x	N/A	Unknown	Hardpan plains.[2]	Yes	Recorded	Previously recorded
Aristida lazaridis	P3		x		x	x	x	N/A	Apr	Sand or loam.[2]	Yes	Recorded	Recorded
Dampiera metallorum	P3		x		x	x	x	N/A	Apr or Jun - Oct	Skeletal red-brown gravelly soil over banded ironstone. Steep slopes, summits of hills.	Yes	Recorded	Previously recorded
Dolichocarpa sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3				x	x		N/A	May - Jul or Sep	Brown sandy clay, or medium clay. Claypans, drainage lines, cracking clays, crabhole plains.[2]	Yes	Recorded	Previously recorded
Eremophila magnifica subsp. *velutina*	P3		x		x	x	x	1.73	Aug - Sep	Skeletal soils over ironstone. Summits.[2]	Yes	High	Medium
Eremophila naaykensii	P3		x		x	x	x	N/A	Aug - Sep	Red clay loam on rocky hill slopes, hill crests and upper hill slopes. Ironstone gorges.[2]	Yes	Recorded	Recorded
Euphorbia clementii	P3		x			x		N/A	Jun	Gravelly hillsides, stony grounds.[2]	Yes	Recorded	Previously recorded
Euphorbia stevenii	P3		x		x			N/A	Unknown	Clay, sandy soils.[2]	Yes	Recorded	Previously recorded
Fimbristylis sieberiana	P3						x	approx 20km			No	Low	Low
Geijera salicifolia	P3					x		4.36	Sep	Skeletal soils, stony soils. Massive rock scree, gorges.	Yes	High	Low
Goodenia lyrata	P3		x		x	x		7.43	Aug	Red sandy loam. Near claypan.[2]	Yes	High	Low
Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	P3		x		x	x	x	1.53	July	Red-brown clay soil, calcrete pebbles. Low undulating plain, swampy plains.[2]	Yes	High	Medium
Grevillea saxicola	P3		x		x	x	x	N/A	Mar	Gully system in rocky valley, loamy soils.[2]	Yes	Recorded	Recorded
Gymnanthera cunninghamii	P3					x		13.81	Jan - Dec	Sandy soils.[2]	Yes	Medium	Low
Indigofera gilesii	P3		x		x	x	x	N/A	May or Aug	Pebbly loam. Amongst boulders and outcrops, hills.[2]	Yes	Recorded	Recorded
Isotropis parviflora	P3		x		x	x	x	N/A	Mar	Valley slope of ironstone plateau.[2]	Yes	Recorded	Previously recorded
Nicotiana umbratica	P3						x	approx 20km			Yes	Low	Low
Olearia mucronata	P3		x		x	x	x	N/A	Aug - Dec or Jan	Schistose hills, along drainage channels.[2]	Yes	Recorded	Recorded
Pilbara trudgenii	P3		x		x	x	x	N/A	Sep	Skeletal, red stony soil over ironstone. Hill summits, steep slopes, screes, cliff faces.[2]	Yes	Recorded	Previously recorded
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3		x		x	x	x	N/A	Unknown	Red sandy loam over gravelly ironstone. Plains.[2]	Yes	Recorded	Recorded

[1] Department of Agriculture, Water and Environment (2020) [2]Western Australian Herbarium (2020)

Rostellularia adscendens var. *latifolia*	P3		x		x	x	x	1.23	Apr - May	Ironstone soils. Near creeks, rocky hills.[2]	Yes	High	Medium
Sida sp. Hamersley Range (K. Newbey 10692)	P3		x		x	x		2.74	Aug - Oct	Ironstone crevices of breakaways, gullies.[2]	Yes	High	Medium
Solanum kentrocaule	P3		x		x	x	x	N/A	May - Jul	Steep slope of ironstone hills.[2]	Yes	Recorded	Recorded
Streptoglossa sp. Cracking clays (S. van Leeuwen et al. PBS 7353)	P3				x			N/A	Unknown	Cracking clays, colluvial and alluvial gravels in floodplain.[2]	Yes	Recorded	Previously recorded
Stylidium weeliwolli	P3						x	approx 20km	Aug - Sep	Gritty sand soil, sandy clay. Edge of watercourses.[2]	No	Low	Low
Swainsona thompsoniana	P3		x		x	x		N/A	N/A	Cracking clay floodplain. Dark reddish brown craacking clays.[2]	Yes	Recorded	Previously recorded
Themeda sp. Hamersley Station (M.E. Trudgen 11431)	P3		x		x	x	x	N/A	Aug	Red clay. Clay pan, grass plain.[2]	Yes	Recorded	Previously recorded
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3		x				x	N/A	Feb - Mar	Light orange-brown, pebbly loam. Amongst rocks and outcrops, gully slopes.[2]	Yes	Recorded	Recorded
Vittadinia sp. Coondewanna Flats (S. van Leeuwen 4684)	P3		x		x	x	x	N/A	Jul	Flat plain. Red, brown sandy clay-loam.[2]	Yes	Recorded	Previously recorded
Xerochrysum boreale	P3		x					N/A	May - Oct	Loamy, sandy, or gravelly soils, sometimes in seasonally inundated areas.	No	Low	Low
Acacia bromilowiana	P4		x		x	x	x	N/A	Jul - Aug	Red skeletal stony loam, orange-brown pebbly,gravel loam, laterite, banded ironstone, basalt. Rocky hills, breakaways, scree slopes, gorges, creek beds.[2]	Yes	Recorded	Recorded
Eremophila magnifica subsp. *magnifica*	P4		x		x	x	x	0.17	Aug - Nov	Skeletal soils over ironstone. Rocky screes.[2]	Yes	High	Medium
Lepidium catapycnon	P4		x		x	x	x	0.8	Oct	Prime habitat includes stony hill slopes such as the uplands of the Hamersley Range plateau, open woodland in usually hilly areas, more frequently on south facing slopes, hill hummock grasslands, road verges and cuttings.[1]	Yes	High	Medium
Ptilotus mollis	P4		x		x	x	x	8.9	May or Sep	Stony hills and screes.[2]	Yes	High	Low
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4		x		x	x	x	N/A	Aug	Skeletal red soils pockets. Steep slope.[2]	Yes	Recorded	Recorded

[1] Department of Agriculture, Water and Environment (2020) [2]Western Australian Herbarium (2020)

Appendix E Flora Recorded During the Survey

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

Family	Taxa	Status
Acanthaceae	*Dicladanthera forrestii*	
	Dipteracanthus australasicus subsp. *australasicus*	
	Harnieria kempeana subsp. *muelleri*	
Amaranthaceae	*Amaranthus* sp.	
	Gomphrena cunninghamii	
	Ptilotus astrolasius	
	Ptilotus drummondii	
	Ptilotus obovatus var. *obovatus*	
	Ptilotus roei	
	Ptilotus rotundifolius	
	Ptilotus schwartzii var. *schwartzii*	
	Ptilotus sp.	
Apocynaceae	*Cynanchum floribundum*	
	Cynanchum viminale subsp. *australe*	
	Vincetoxicum lineare	
	Wrightia saligna	
Araliaceae	*Astrotricha hamptonii*	
Asteraceae	**Bidens bipinnata*	Weed
	**Erigeron bonariensis*	Weed
	Olearia mucronata	P3
	Pterocaulon sphacelatum	
	**Sonchus oleraceus*	Weed
	Streptoglossa ?bubakii	
	**Symphyotrichum squamatum*	Weed
Aytoniaceae	*Plagiochasma rupestre*	
Boraginaceae	*Euploca heterantha*	
	Euploca sp.	
	Euploca tanythrix	
	Halgania gustafsenii var. Mid West (G.Perry 370)	
	Halgania solanacea	
Brassicaceae	*Lepidium pholidogynum*	
Capparaceae	*Capparis lasiantha*	
	Capparis mitchellii	
	Capparis spinosa subsp. *nummularia*	
	Enchylaena tomentosa var. *tomentosa*	
	Maireana ?planifolia	
	Maireana planifolia	
	Maireana planifolia × villosa	
	Maireana villosa	
	Rhagodia eremaea	

	Rhagodia sp. Hamersley (M. Trudgen 17794)	P3
	Salsola australis	
	Sclerolaena cornishiana	
	Sclerolaena costata	
Cleomaceae	*Areocleome oxalidea*	
	Arivela viscosa	
Commelinaceae	*Commelina ensifolia*	
Convolvulaceae	*Duperreya commixta*	
	Evolvulus alsinoides var. *decumbens*	
	Evolvulus alsinoides var. *villosicalyx*	
	Ipomoea ?calobra	
	Ipomoea lonchophylla	
	Ipomoea plebeia	
	Ipomoea polymorpha	
	Ipomoea sp.	
	Operculina aequisepala	
Cucurbitaceae	*Austrobryonia pilbarensis*	
	Cucumis variabilis	
Cyperaceae	*Bulbostylis barbata*	
	Cyperaceae sp.	
	Fimbristylis dichotoma	
Euphorbiaceae	*Adriana tomentosa* var. *tomentosa*	
	Euphorbia australis var. *subtomentosa*	
	Euphorbia biconvexa	
	Euphorbia drummondii	
	Euphorbia sp.	
Fabaceae	*Acacia adoxa* var. *adoxa*	
	Acacia ancistrocarpa	
	Acacia aneura	
	Acacia aphanoclada x pyrifolia var. *pyrifolia*	
	Acacia aptaneura	
	Acacia atkinsiana	
	Acacia ayersiana	
	Acacia bivenosa	
	Acacia bromilowiana	P4
	Acacia catenulata	
	Acacia catenulata subsp. *occidentalis*	
	Acacia citrinoviridis	
	Acacia colei	
	Acacia cowleana	
	Acacia dictyophleba	

	Acacia elachantha	
	Acacia eriopoda	
	Acacia hamersleyensis	
	Acacia inaequilatera	
	Acacia maitlandii	
	Acacia marramamba	
	Acacia pachyacra	
	Acacia paraneura	
	Acacia pruinocarpa	
	Acacia pyrifolia var. *pyrifolia*	
	Acacia rhodophloia	
	Acacia rhodophloia x sibirica	
	Acacia sibirica	
	Acacia steedmanii subsp. *borealis*	
	Acacia synchronicia	
	Acacia tenuissima	
	Acacia tetragonophylla	
	Acacia trudgeniana	
	Indigofera deserticola	
	Indigofera fractiflexa subsp. *fractiflexa*	
	Indigofera georgei	
	Indigofera gilesii	P3
	Indigofera linifolia	
	Indigofera monophylla	
	Isotropis iophyta	
	Mirbelia viminalis	
	Neptunia sp.	
	Petalostylis labicheoides	
	Rhynchosia minima	
	Senna artemisioides subsp. *artemisioides*	
	Senna artemisioides subsp. *filifolia*	
	Senna artemisioides subsp. *helmsii*	
	Senna artemisioides subsp. *helmsii x oligophylla*	
	Senna artemisioides subsp. *oligophylla*	
	Senna artemisioides subsp. *oligophylla x helmsii*	
	Senna ferraria	
	Senna glutinosa subsp. *glutinosa*	
	Senna glutinosa subsp. *luerssenii*	
	Senna glutinosa subsp. *pruinosa*	
	Senna hamersleyensis	
	Senna pleurocarpa var. *angustifolia*	

	Senna sp.	
	Senna sp. Karijini (M.E.Trudgen 10392)	
	Senna stricta	
	Tephrosia rosea var. Fortescue creeks (M.I.H.Brooker 2186)	
	**Vachellia farnesiana* var. *farnesiana*	Weed
	Vigna ?sp. Hamersley Clay (A.A.Mitchell PRP 113)	
	Vigna lanceolata var. *lanceolata*	
	Vigna sp.	
	Vigna sp. Hamersley Clay (A.A.Mitchell PRP 113)	
Goodeniaceae	*Goodenia muelleriana*	
	Goodenia stellata	
	Scaevola acacioides	
	Scaevola amblyanthera var. *centralis*	
Gyrostemonaceae	*Codonocarpus cotinifolius*	
Hemerocallidaceae	*Tricoryne* sp. Hamersley Range (S. van Leeuwen 915)	
Lamiaceae	*Clerodendrum floribundum* var. *?angustifolium*	
	Clerodendrum floribundum var. *angustifolium*	
	Clerodendrum tomentosum var. *lanceolatum*	
Malvaceae	*Abutilon ?amplum*	
	Abutilon ?otocarpum	
	Abutilon amplum	
	Abutilon fraseri subsp. *fraseri*	
	Abutilon otocarpum	
	Abutilon sp.	
	Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	
	Androcalva luteiflora	
	Brachychiton acuminatus	
	Corchorus crozophorifolius	
	Corchorus lasiocarpus subsp. *lasiocarpus*	
	Corchorus sp.	
	Corchorus sp. *tridens/trilocularis* indet	
	Gossypium australe	
	Gossypium robinsonii	
	Hibiscus burtonii	
	Hibiscus coatesii	
	Hibiscus sp.	
	Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2
	Hibiscus sturtii var. *platychlamys*	
	**Malvastrum americanum*	Weed
	Melhania oblongifolia	
	Seringia exastia	

	Seringia sp.	
	Sida ectogama	
	Sida fibulifera	
	Sida sp. *Barlee Range (S. van Leeuwen 1642)*	P4
	Sida sp. dark green fruits (S. van Leeuwen 2260)	
	Sida sp. Pilbara (A.A. Mitchell PRP 1543)	
	Sida sp. Shovelanna Hill (S. van Leeuwen 3842)	
	Sida sp. spiciform panicles (E.Leyland s.n. 14/8/1990)	
	Waltheria indica	
Marsileaceae	*Marsilea* sp.	
Moraceae	*Ficus brachypoda*	
	Ficus virens var. *virens*	
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*	
	Corymbia ferriticola	
	Corymbia hamersleyana	
	Eucalyptus ?trivalva	
	Eucalyptus camaldulensis subsp. *refulgens*	
	Eucalyptus gamophylla	
	Eucalyptus kingsmillii	
	Eucalyptus leucophloia subsp. *leucophloia*	
	Eucalyptus pilbarensis	
	Eucalyptus repullulens	
	Eucalyptus socialis subsp. *eucentrica*	
	Eucalyptus trivalva	
	Eucalyptus victrix	
	Eucalyptus xerothermica	
Nyctaginaceae	*Boerhavia coccinea*	
	Boerhavia paludosa	
	Boerhavia repleta	
	Boerhavia sp.	
Oleaceae	*Jasminum didymum* subsp. *lineare*	
Ophioglossaceae	*Ophioglossum lusitanicum*	
Phrymaceae	*Peplidium* sp. C Evol. Fl. Fauna Arid Aust. (N.T. Burbidge & A. Kanis 8158)	
Phyllanthaceae	*Nellica maderaspatensis*	
Pittosporaceae	*Pittosporum angustifolium*	
Plantaginaceae	*Stemodia grossa*	
Poaceae	*Acrachne racemosa*	
	Aristida ?burbidgeae	
	Aristida burbidgeae	
	Aristida contorta	
	Aristida lazaridis	P2

	Aristida obscura	
	Aristida sp.	
	Astrebla elymoides	
	Astrebla pectinata	
	Bothriochloa ewartiana	
	**Cenchrus ciliaris*	Weed
	**Cenchrus setiger*	Weed
	Chrysopogon fallax	
	Cymbopogon ambiguus	
	Cynodon convergens	
	Dactyloctenium radulans	
	Digitaria brownii	
	Digitaria ctenantha	
	Enneapogon ?robustissimus	
	Enneapogon lindleyanus	
	Enneapogon polyphyllus	
	Enneapogon robustissimus	
	Enneapogon sp.	
	Eragrostis ?xerophila	
	Eragrostis eriopoda	
	Eragrostis xerophila	
	Eriachne aristidea	
	Eriachne mucronata	
	Eriachne tenuiculmis	
	Eulalia aurea	
	Eulalia simonii	
	Iseilema sp.	
	Paraneurachne muelleri	
	Paspalidium basicladum	
	Paspalidium clementii	
	Perotis rara	
	Poaceae sp.	
	**Setaria verticillata*	Weed
	Themeda triandra	
	Tragus australianus	
	Triodia angusta	
	Triodia epactia	
	Triodia longiceps	
	Triodia melvillei	
	Triodia pungens	
	Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3

	Triodia vanleeuwenii	
	Triodia wiseana	
	Tripogonella loliiformis	
	Urochloa distachyos	
	Urochloa occidentalis var. *ciliata*	
Polygalaceae	*Polygala ?glaucifolia*	
Portulacaceae	*Portulaca filifolia*	
	Portulaca oleracea	Weed
Proteaceae	*Grevillea berryana*	
	Grevillea saxicola	P3
	Grevillea wickhamii subsp. *hispidula*	
	Hakea chordophylla	
	Hakea loreus subsp. *loreus*	
Pteridaceae	*Cheilanthes brownii*	
	Cheilanthes sieberi subsp. *pseudovellea*	
	Cheilanthes sieberi subsp. *sieberi*	
Rubiaceae	*Psydrax latifolia*	
	Psydrax suaveolens	
Santalaceae	*Anthobolus leptomerioides*	
	Santalum lanceolatum	
Sapindaceae	*Dodonaea ?viscosa* subsp. *mucronata*	
	Dodonaea lanceolata var. *lanceolata*	
	Dodonaea pachyneura	
	Dodonaea petiolaris	
Scrophulariaceae	*Eremophila ?jucunda*	
	Eremophila caespitosa	
	Eremophila clarkei	
	Eremophila cuneifolia	
	Eremophila exilifolia	
	Eremophila forrestii subsp. *forrestii*	
	Eremophila fraseri subsp. *fraseri*	
	Eremophila jucunda subsp. *jucunda*	
	Eremophila jucunda subsp. *pulcherrima*	
	Eremophila lachnocalyx	
	Eremophila latrobei subsp. *filiformis*	
	Eremophila latrobei subsp. *latrobei*	
	Eremophila longifolia	
	Eremophila naaykensii	P3
	Eremophila oppositifolia subsp. *angustifolia*	
	Eremophila phyllopoda subsp. *obliqua*	
	Eremophila platycalyx subsp. *pardalota*	

	Eremophila pusilliflora	P2
	Eremophila sp. West Angelas (S.van Leeuwen 4068)	P2
Solanaceae	**Datura leichhardtii* subsp. *leichhardtii*	Weed
	Solanum horridum	
	Solanum kentrocaule	P3
	Solanum lasiophyllum	
	**Solanum nigrum*	Weed
	Solanum piceum	
Typhaceae	*Typha domingensis*	
Violaceae	*Afrohybanthus aurantiacus*	
Zygophyllaceae	*Tribulus astrocarpus*	
	Tribulus hirsutus	
	Tribulus sp.	
	Tribulus suberosus	

Appendix F Flora Site Sheets

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

FLORA SITE SHEET

Project Name	West Angelas NVCP2		
Site:	WGR01		
Location	MGA 50	673062 **mE**	7437850 **mN**
Described by:	SC		
Date:	16-03-2024		
Type:	Releve		
Landform:	Cracking clays		
Slope:	Flat		
Rock Type:	Ironstone		
Soil Type:	Cracking Clays		
Soil Colour:	Red Brown		



Vegetation: *Astrebla pectinata low open tussock grassland.*

Condition:	Very Good	**Disturbance Type:**	Vehicle tracks
Fire Age:	Unknown		

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Astrebla pectinata	30	5	
Boerhavia sp.	1	0.1	
Eremophila lachnocalyx	70	0.1	
Ipomoea ?calobra	3	0.1	
Ipomoea lonchophylla	5	0.1	
Operculina aequisepala	5	0.1	
Rhagodia eremaea	110	0.1	
Salsola australis	30	0.1	
Senna hamersleyensis	30	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR02
Location MGA 50 673386 **mE** 7442039 **mN**

Described by: SC
Date: 17-03-2024
Type: Releve

Landform: Shale hillslope
Slope: Steep
Rock Type: Ironstone,Shale
Soil Type: Clay Loam
Soil Colour: Light Brown



Vegetation: *Eucalyptus pilbarensis and Acacia aptaneura low woodland over Scaevola acacioides tall isolated shrubs over Triodia pungens low isolated hummock grasses.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	600	25	
Capparis lasiantha	60	0.1	
Eremophila ?jucunda	70	0.1	
Eremophila forrestii subsp. forrestii	60	0.1	
Eremophila latrobei subsp. latrobei	70	0.1	
Eucalyptus pilbarensis	400	20	
Ptilotus obovatus var. obovatus	30	0.1	
Scaevola acacioides	170	1	WGR02-1
Senna glutinosa subsp. glutinosa	220	0.1	
Triodia pungens	20	1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR03
Location MGA 50 673320 **mE** 7442159 **mN**

Described by: SC
Date: 17-03-2024
Type: Releve

Landform: Steep hillslope
Slope: Steep
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura low woodland over Eremophila oppositifolia subsp. angustifolia tall open shrubland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	500	20	
Cheilanthes sieberi subsp. sieberi	10	0.1	
Duperreya commixta	60	0.1	
Eremophila jucunda subsp. pulcherrima	160	0.1	
Eremophila latrobei subsp. latrobei	80	0.1	
Eremophila oppositifolia subsp. angustifolia	200	15	
Eriachne mucronata	15	0.1	
Lepidium pholidogynum	30	0.1	
Olearia mucronata	50	0.1	Sm03=
Psydrax suaveolens	180	0.1	
Ptilotus obovatus var. obovatus	50	0.1	
Rhagodia eremaea	80	0.1	
Scaevola acacioides	210	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR04
Location MGA 50 673598 **mE** 7441789 **mN**

Described by: SC
Date: 17-03-2024
Type: Releve

Landform: Mudstone outcropping
Slope: Moderate
Rock Type: Mudstone
Soil Type: Clay Loam
Soil Colour: Light Brown



Vegetation: *Acacia bivenosa and Androcalva luteiflora mid sparse shrubland over Eremophila fraseri subsp. fraseri and Tephrosia rosea var. Fortescue creeks (M.I.H.Brooker 2186) low isolated shrubs with Triodia longiceps open hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	150	1	
Acacia pyrifolia var. pyrifolia	120	0.1	
Androcalva luteiflora	110	2	
Arivela viscosa	5	0.1	
**Bidens bipinnata*	5	0.1	
Capparis lasiantha	40	0.1	
Capparis spinosa subsp. nummularia	70	0.1	
Codonocarpus cotinifolius	250	0.1	
Corchorus crozophorifolius	50	0.5	
Cymbopogon ambiguus	30	1	
Dodonaea petiolaris	60	0.1	WGR04-1
Duperreya commixta	60	0.1	
Enneapogon sp.	20	0.1	
Eremophila fraseri subsp. fraseri	50	1	
Hakea chordophylla	250	0.1	
Ptilotus obovatus var. obovatus	70	0.1	
Rhagodia eremaea	60	0.1	
Santalum lanceolatum	250	0.1	
Scaevola acacioides	60	0.1	
Senna artemisioides subsp. helmsii	80	0.1	
Senna glutinosa subsp. glutinosa	100	0.1	
Solanum kentrocaule	50	0.1	
Solanum lasiophyllum	15	0.1	
Tephrosia rosea var. Fortescue creeks (M.I.H.Brooker 2186)	10	1	WGR04-2
Tribulus hirsutus	1	0.1	
Tribulus suberosus	0.5	0.1	
Triodia longiceps	50	15	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR05
Location MGA 50 673635 **mE** 7441563 **mN**

Described by: SC
Date: 17-03-2024
Type: Releve

Landform: Mudstone calcrete foot slope/outcropping
Slope: Moderate
Rock Type: Mudstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus socialis subsp. Eucentrica low woodland over Acacia bivenosa mid isolated shrubs over Triodia longiceps tussock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	150	2	
Capparis lasiantha	80	0.1	
Eucalyptus socialis subsp. eucentrica	300	11	
Hakea chordophylla	50	0.1	
Senna glutinosa subsp. glutinosa	210	0.1	
Senna glutinosa subsp. luerssenii	170	0.1	
Tribulus hirsutus	5	0.1	
Triodia longiceps	30	50	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR06
Location MGA 50 674682 **mE** 7441916 **mN**



Described by: SC
Date: 17-03-2024
Type: Releve

Landform: Undulating hills
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown

Vegetation: *Acacia catenulata subsp. occidentalis, A. aptaneura, (A. pruinocarpa) open forest over Triodia epactia open tussock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	900	35	
Acacia ayersiana	900	1	WGR06-2
Acacia catenulata subsp. occidentalis	1000	15	WGR06-1
Acacia pruinocarpa	1000	1	
Eremophila forrestii subsp. forrestii	160	0.1	
Eucalyptus leucophloia subsp. leucophloia	900	1	
Psydrax suaveolens	210	0.1	
Scaevola acacioides	150	0.1	WGR0201=
Triodia epactia	25	15	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR07
Location MGA 50 674331 **mE** 7442099 **mN**

Described by: SC
Date: 17-03-2024
Type: Releve

Landform: Mudstone
Slope: Gentle
Rock Type: Mudstone
Soil Type: Clay Loam
Soil Colour: Light Brown



Vegetation: *Eucalyptus leucophloia subsp. leucophloia, Corymbia hamersleyana low open woodland over Acacia bivenosa, Eremophila fraseri subsp. fraseri low sparse shrubland over Triodia longiceps, T. pungens low open hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	60	4	
Acacia pyrifolia var. pyrifolia	120	0.1	
Androcalva luteiflora	60	1	
Corchorus sp.	20	0.1	
Corymbia hamersleyana	600	2	
Cymbopogon ambiguus	50	0.1	
Enneapogon sp.	40	0.1	
Eremophila fraseri subsp. fraseri	45	1	
Eucalyptus leucophloia subsp. leucophloia	700	1	
Eucalyptus socialis subsp. eucentrica	180	1	
Euphorbia biconvexa	10	0.1	
Gossypium robinsonii	250	1	
Hakea chordophylla	180	0.1	
Jasminum didymum subsp. lineare	10	0.1	
Ptilotus obovatus var. obovatus	70	0.1	
Salsola australis	25	0.1	
Senna artemisioides subsp. helmsii	45	0.1	
Senna artemisioides subsp. oligophylla	170	0.1	
Senna glutinosa subsp. glutinosa	160	0.1	
Solanum lasiophyllum	25	0.1	
Tribulus hirsutus	5	0.1	
Triodia longiceps	50	20	
Triodia pungens	25	1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR08
Location MGA 50 674382 **mE** 7442039 **mN**

Described by: SC
Date: 17-03-2024
Type: Releve

Landform: Calcrete mudstone slope
Slope: Gentle
Rock Type: Calcrete,Mudstone
Soil Type: Clay Loam
Soil Colour: Light Brown



Vegetation: *Eucalyptus socialis subsp. eucentrica tall open mallee shrubland with Hake chordophylla and Acacia bivensosa tall to low sparse shrubland over Triodia longiceps and T.epactia mid to low hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	70	2	
Acacia pyrifolia var. pyrifolia	25	0.1	
Capparis lasiantha	65	0.1	
Codonocarpus cotinifolius	60	0.1	
Eucalyptus socialis subsp. eucentrica	200	9	
Gossypium robinsonii	250	0.1	
Hakea chordophylla	240	1	
Ptilotus obovatus var. obovatus	40	0.1	
Ptilotus rotundifolius	45	0.1	
Senna artemisioides subsp. helmsii	60	0.1	
Triodia epactia	50	2	
Triodia longiceps	40	50	
Triodia wiseana	30	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR09
Location MGA 50 674346 **mE** 7441749 **mN**



Described by: SC
Date: 17-03-2024
Type: Releve

Landform: Mudstone calcrete outcropping hill
Slope: Gentle
Rock Type: Calcrete,Mudstone
Soil Type: Clay Loam
Soil Colour: Light Brown

Vegetation: *Eucalyptus socialis subsp. eucentrica and Corymbia hamersleyana low woodland over Petalostylis labicheoides and Androcalva luteiflora tall to low sparse shrubland over Triodia longiceps and T. wiseana low hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	50	0.1	
Acacia maitlandii	120	0.1	
Acacia pyrifolia var. pyrifolia	60	0.1	
Androcalva luteiflora	70	1	
Capparis lasiantha	50	0.1	
Corchorus lasiocarpus subsp. lasiocarpus	30	0.1	
Corymbia hamersleyana	450	1	
Duperreya commixta	60	0.1	
Eucalyptus socialis subsp. eucentrica	210	15	
Hakea chordophylla	300	0.1	
Petalostylis labicheoides	250	1	
Senna artemisioides subsp. oligophylla x helmsii	40	0.1	
Senna glutinosa subsp. glutinosa	150	0.1	
Tribulus hirsutus	1	0.1	
Triodia longiceps	30	50	
Triodia pungens	20	0.1	
Triodia wiseana	30	2	

FLORA SITE SHEET

Project Name	West Angelas NVCP2			
Site:	WGR10			
Location	MGA 50	680750 **mE**	7443131 **mN**	
Described by:	SC			
Date:	18-03-2024			
Type:	Releve			
Landform:	Floodplain			
Slope:	Flat			
Rock Type:	Ironstone			
Soil Type:	Clay Loam			
Soil Colour:	Red Brown			



Vegetation: *Acacia ayersiana, A.aptaneura and A. catenulata subsp. occidentalis low woodland over Grevillea berryana and Acacia pruinocarpa tall sparse shrubland over Triodia pungens low hummock grassland.*

Condition:	Good	**Disturbance Type:**	None
Fire Age:	Long unburnt		

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	600	5	
Acacia ayersiana	700	15	
Acacia catenulata subsp. occidentalis	600	15	
Acacia pruinocarpa	600	1	
**Bidens bipinnata*	5	0.1	
Cheilanthes sieberi subsp. sieberi	20	5	
Corymbia deserticola subsp. deserticola	800	1	
Eremophila latrobei subsp. filiformis	160	0.1	
Euphorbia sp.	5	0.1	
Grevillea berryana	500	1	
Poaceae sp.	5	0.1	
Psydrax suaveolens	180	0.1	
Triodia pungens	35	1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR11
Location MGA 50 679601 **mE** 7443088 **mN**



Described by: SC
Date: 18-03-2024
Type: Releve

Landform: Plain
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown

Vegetation: *Acacia aptaneura and A. pruinocarpa low woodland over Triodia pungens and T. melvillei mid-to-low open hummock grassland.*

Condition: Good **Disturbance Type:** None
Fire Age: Freshly Burnt,Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	500	15	
Acacia ayersiana	450	0.1	
Acacia pruinocarpa	500	10	
Aristida obscura	30	0.1	WGR11-2
Arivela viscosa	2	0.1	
**Bidens bipinnata*	2	0.1	
Boerhavia sp.	2	0.1	
Cheilanthes sieberi subsp. sieberi	10	0.1	
Cucumis variabilis	3	0.1	
**Datura leichhardtii subsp. leichhardtii*	5	1	
Duperreya commixta	70	0.1	
Eremophila latrobei subsp. filiformis	150	0.1	
Euphorbia sp.	3	0.1	
Ptilotus astrolasius	40	0.1	
Rhagodia eremaea	170	0.1	
Sida ectogama	60	0.1	WGR11-1
Sida sp. dark green fruits (S. van Leeuwen 2260)	110	0.1	
Themeda triandra	70	0.1	
Triodia melvillei	50	5	
Triodia pungens	35	7	

FLORA SITE SHEET

Project Name	West Angelas NVCP2			
Site:	WGR12			
Location	MGA 50	678037 **mE**	7442787 **mN**	
Described by:	SC			
Date:	18-03-2024			
Type:	Releve			
Landform:	Claypan			
Slope:	Flat			
Rock Type:	Ironstone			
Soil Type:	Clay Loam			
Soil Colour:	Red Brown			



Vegetation: *Eucalyptus xerothermica and Acacia aptaneura low open woodland over Senna artemisioides subsp. artemisioides, Rhagodia eremaea and Ptilotus obovatus var. obovatus mid sparse shrubland over Themeda triandra mid sparse tussock grassland.*

Condition: Good **Disturbance Type:** Weeds

Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	700	3	
**Bidens bipinnata*	2	0.1	
Boerhavia coccinea	10	0.1	
Boerhavia repleta	10	0.1	
Duperreya commixta	70	0.1	
Eremophila longifolia	300	2	
Eucalyptus xerothermica	600	2	
Hakea loreus subsp. loreus	210	0.1	
Ipomoea sp.	2	0.1	
Pittosporum angustifolium	180	0.1	WGR12-2
Pterocaulon sphacelatum	20	0.1	
Ptilotus obovatus var. obovatus	110	1	
Rhagodia eremaea	130	1	
Santalum lanceolatum	230	0.1	
Sclerolaena costata	25	0.1	
Senna artemisioides subsp. artemisioides	170	1	
Sida fibulifera	15	0.1	
Themeda triandra	80	5	
Tribulus sp.	2	0.1	
Tripogonella loliiformis	15	0.1	WGR12-1
Vigna sp.	10	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR13
Location MGA 50 677946 **mE** 7442831 **mN**

Described by: SC
Date: 18-03-2024
Type: Releve

Landform: Drainage
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus victrix, E. camaldulensis subsp. refulgens mid woodland over Acacia citrinoviridis tall open shrubland over Enchylaena tomentosa var. tomentosa open chenopod shrubland.*

Condition: Good **Disturbance Type:** Weeds
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia citrinoviridis	450	10	
Acacia pyrifolia var. pyrifolia	110	0.1	
Arivela viscosa	2	0.1	
**Bidens bipinnata*	2	0.1	
**Cenchrus setiger*	30	0.1	
Cheilanthes sieberi subsp. sieberi	20	0.1	
Dicladanthera forrestii	25	0.1	WGR13-1
Duperreya commixta	20	0.1	
Enchylaena tomentosa var. tomentosa	0.1	25	
Enneapogon ?robustissimus	30	5	
Eremophila longifolia	70	0.1	
Eucalyptus camaldulensis subsp. refulgens	1100	2	
Eucalyptus victrix	1000	25	
Poaceae sp.	45	0.1	
Ptilotus obovatus var. obovatus	50	0.1	
Rhagodia eremaea	60	0.1	
Salsola australis	20	0.1	
Triodia longiceps	40	0.1	
Triodia pungens	30	0.1	
**Vachellia farnesiana*	230	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR14
Location MGA 50 677719 **mE** 7442494 **mN**



Described by: SC
Date: 18-03-2024
Type: Releve

Landform: Semi cracking clay
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown

Vegetation: *Acacia aptaneura low open wodland over Rhagodia eremaea mid isolated shrubs over Aristida sp. low isolated tussock grasses*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	400	3	
Aristida sp.	40	1	
Boerhavia sp.	10	0.1	
Commelina ensifolia	30	0.1	
Eragrostis xerophila	15	0.1	
Euphorbia sp.	2	0.1	
Indigofera linifolia	20	0.1	
Ipomoea lonchophylla	10	0.1	WGR14-2
Ipomoea polymorpha	15	0.1	WGR14-1
Neptunia sp.	5	0.1	
Operculina aequisepala	10	0.1	
Ptilotus sp.	3	0.1	
Rhagodia eremaea	110	1	
Rhynchosia minima	10	0.1	
Senna artemisioides subsp. helmsii	40	0.1	
Senna artemisioides subsp. oligophylla	100	0.1	
Senna hamersleyensis	50	0.1	
Sida fibulifera	5	0.1	
Vigna sp.	5	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR15
Location MGA 50 677554 **mE** 7441310 **mN**

Described by: SC
Date: 18-03-2024
Type: Releve

Landform: Gully
Slope: Steep,Moderate
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus leucophloia subsp. leucophloia, Corymbia ferriticola and Acacia pruinocarpa low open woodland over A. maitlandii mid isolated shrubs over Triodia pungens low sparse hummock grassland with Themeda triandra low sparse tussock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years,Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	50	0.1	
Acacia hamersleyensis	400	0.1	
Acacia maitlandii	160	1	
Acacia pruinocarpa	500	2	
Arivela viscosa	2	0.1	
**Bidens bipinnata*	3	0.1	
Capparis lasiantha	200	0.1	
Cheilanthes brownii	10	0.1	
Cheilanthes sieberi subsp. sieberi	5	0.1	
Corymbia ferriticola	450	2	
Cymbopogon ambiguus	60	0.1	
Dicladanthera forrestii	40	1	WGR15-1
Duperreya commixta	50	0.1	
Eucalyptus leucophloia subsp. leucophloia	600	1	
Indigofera gilesii	200	0.1	WGR15-2
Jasminum didymum subsp. lineare	150	0.1	
Plagiochasma rupestre	0.1	0.1	
Ptilotus obovatus var. obovatus	60	2	
Ptilotus rotundifolius	70	0.1	
Rhagodia eremaea	90	0.1	
Senna glutinosa subsp. glutinosa	50	0.1	
Solanum lasiophyllum	40	0.1	
Themeda triandra	35	5	
Triodia pungens	40	3	

FLORA SITE SHEET

Project Name	West Angelas NVCP2			
Site:	WGR16			
Location	MGA 50	677607 **mE**	7441426 **mN**	
Described by:	SC			
Date:	18-03-2024			
Type:	Releve			
Landform:	Hill			
Slope:	Gentle			
Rock Type:	Ironstone			
Soil Type:	Clay Loam			
Soil Colour:	Red Brown			



Vegetation: *Eucalyptus leucophloia subsp. leucophloia and Corymbia hamersleyana low open woodland over Acacia trudgeniana tall sparse shrubland over Triodia vanleeuwenii, Triodia wiseana and T. pungens low hummock grassland.*

Condition: Very Good **Disturbance Type:** None

Fire Age: 2-5 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia eriopoda	140	0.1	
Acacia maitlandii	110	1	
Acacia tenuissima	150	0.1	
Acacia trudgeniana	200	2	
Codonocarpus cotinifolius	50	0.1	
Corymbia hamersleyana	700	2	
Eucalyptus leucophloia subsp. leucophloia	800	2	
Gossypium robinsonii	100	0.1	
Hakea chordophylla	350	0.1	
Senna glutinosa subsp. luerssenii	120	0.1	
Senna sp. (indet.)	80	0.1	WGR16-7
Triodia pungens	40	1	
Triodia vanleeuwenii	20	20	
Triodia wiseana	20	10	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR17
Location MGA 50 677037 **mE** 7442911 **mN**

Described by: SC
Date: 18-03-2024
Type: Releve

Landform: Footslope
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia pruinocarpa low isolated trees over Acacia bivenosa mid sparse shrubland over Triodia vanleeuwnii and T. pungens low open hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 2-5 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	180	4	
Acacia pruinocarpa	400	1	
Acacia tenuissima	200	0.1	
Codonocarpus cotinifolius	150	0.1	
Corymbia deserticola subsp. deserticola	400	0.1	
Eucalyptus leucophloia subsp. leucophloia	800	0.1	
Senna artemisioides subsp. helmsii	60	0.1	
Senna glutinosa subsp. glutinosa	180	0.1	
Senna glutinosa subsp. luerssenii	40	1	
Seringia sp.	100	0.1	
Solanum lasiophyllum	60	0.1	
Triodia pungens	50	4	
Triodia vanleeuwenii	20	20	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR18
Location MGA 50 677307 **mE** 7442345 **mN**

Described by: SC
Date: 18-03-2024
Type: Releve

Landform: Semi cracking clay
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura low isolated trees over Senna artemisioides subsp. oligophylla mid isolated shrubs over Themeda triandra mid islolated tussock grasses.*

Condition: Good **Disturbance Type:** Vehicle tracks
Fire Age: 2-5 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	500	1	
Aristida sp.	10	0.1	
Euploca sp.	15	0.1	
Ipomoea lonchophylla	3	0.1	
Operculina aequisepala	5	0.1	
Rhynchosia minima	5	0.1	
Salsola australis	20	0.1	
Senna artemisioides subsp. helmsii	25	0.1	
Senna artemisioides subsp. oligophylla	50	1	
Themeda triandra	60	1	
Vigna sp. Hamersley Clay (A.A.Mitchell PRP 113)	5	0.1	WGR18-1

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR19
Location MGA 50 676823 **mE** 7438568 **mN**

Described by: SC
Date: 18-03-2024
Type: Releve

Landform: Low rise ironstone
Slope: Gentle
Rock Type: Ironstone,Quartz,Granite
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia inaequilatera and A. pruinocarpa low open woodland over Triodia wiseana low hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 2-5 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon otocarpum	10	0.1	
Acacia atkinsiana	250	0.1	
Acacia inaequilatera	300	2	
Acacia pruinocarpa	500	1	
Acacia tetragonophylla	180	0.1	
Cucumis variabilis	10	0.1	
Eremophila fraseri subsp. fraseri	60	0.1	
Poaceae sp.	20	0.1	
Senna artemisioides subsp. oligophylla	60	0.1	
Senna artemisioides subsp. oligophylla x helmsii	70	0.1	
Tribulus suberosus	70	0.1	
Triodia wiseana	40	45	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR20
Location MGA 50 676121 **mE** 7438873 **mN**

Described by: SC
Date: 18-03-2024
Type: Releve

Landform: Low rise slope ironstone hill
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura open forest over Eremophila phyllodpoda subsp. obliqua, Senna stricta and Acacia tetragonophylla mid open shrubland over Triodia pungens low open hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	800	45	
Acacia tetragonophylla	150	1	
Anthobolus leptomerioides	90	0.1	
Cheilanthes sieberi subsp. sieberi	10	0.1	
Cynanchum viminale subsp. australe	300	0.1	
Eremophila cuneifolia	90	0.1	
Eremophila latrobei subsp. filiformis	150	0.1	
Eremophila phyllopoda subsp. obliqua	150	12	
Senna glutinosa subsp. luerssenii	180	0.1	
Senna stricta	150	1	
Sida sp. dark green fruits (S. van Leeuwen 2260)	30	0.1	
Triodia pungens	30	15	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR21
Location MGA 50 660672 **mE** 7434974 **mN**

Described by: SC
Date: 19-03-2024
Type: Releve

Landform: Hill slope
Slope: Moderate
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus leucophloia subsp. leucophloia and Acacia pruinocarpa low open woodland over A. maitlandii and A. bivenosa mid open shrubland over Triodia pungens and T. vanleeuwenii low hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 2-5 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	120	2	
Acacia maitlandii	150	12	
Acacia pruinocarpa	300	1	
Cheilanthes brownii	5	0.1	WGR21-1
Codonocarpus cotinifolius	130	0.1	
Corymbia hamersleyana	800	0.1	
Eremophila exilifolia	50	0.1	
Eremophila jucunda subsp. pulcherrima	100	0.1	
Eriachne mucronata	40	0.1	
Eucalyptus leucophloia subsp. leucophloia	700	1	
Fimbristylis dichotoma	10	0.1	
Ptilotus rotundifolius	110	0.1	
Senna glutinosa subsp. luerssenii	80	0.1	
Senna glutinosa subsp. pruinosa	120	0.1	
Senna sp. (indet.)	180	0.1	
Tribulus suberosus	60	0.1	
Triodia pungens	30	20	
Triodia vanleeuwenii	20	20	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR22
Location MGA 50 660753 **mE** 7435051 **mN**

Described by: SC
Date: 19-03-2024
Type: Releve

Landform: Gully
Slope: Steep,Moderate
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Corymbia ferriticola low open woodland over Acacia maitlandii and Gossypium robinsonii tall sparse shrubland over Triodia pungens and T. vanleeuwenii mid to low hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	100	0.1	
Acacia aptaneura	200	0.1	
Acacia bivenosa	90	0.1	
Acacia maitlandii	350	5	
Acacia pruinocarpa	60	0.1	
Arivela viscosa	2	0.1	
Cheilanthes brownii	2	0.1	
Clerodendrum tomentosum var. lanceolatum	150	0.1	
Corymbia ferriticola	500	5	
Cucumis variabilis	20	0.1	
Cymbopogon ambiguus	50	0.1	
Duperreya commixta	60	0.1	
Enneapogon lindleyanus	20	0.1	
Eremophila exilifolia	40	0.1	
Eremophila jucunda subsp. pulcherrima	60	0.1	
Evolvulus alsinoides var. villosicalyx	10	0.1	
Fimbristylis dichotoma	5	0.1	
Gossypium robinsonii	350	1	
Jasminum didymum subsp. lineare	40	0.1	
Ptilotus obovatus var. obovatus	60	0.1	
Senna glutinosa subsp. glutinosa	150	5	
Sida sp. Shovelanna Hill (S. van Leeuwen 3842)	25	0.1	
Solanum lasiophyllum	45	0.1	
Themeda triandra	40	0.1	
Triodia pungens	50	30	
Triodia vanleeuwenii	20	5	

FLORA SITE SHEET

Project Name	West Angelas NVCP2			
Site:	WGR23			
Location	MGA 50	660635 **mE**	7435578 **mN**	
Described by:	SC			
Date:	19-03-2024			
Type:	Releve			
Landform:	Drainage			
Slope:	Flat			
Rock Type:	Ironstone			
Soil Type:	Clay Loam			
Soil Colour:	Red Brown			



Vegetation: *Eucalyptus victrix, Acacia citrinoviridis and Corymbia hamersleyana low open woodland over A. elachantha, Gossypium robinsonii and A. bivenosa tall sparse shrubland over Themeda triandra mid tussock grassland with Triodia pungens low sparse hummock grassland.*

Condition: Excellent **Disturbance Type:** None

Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia ancistrocarpa	180	1	
Acacia bivenosa	210	2	
Acacia citrinoviridis	600	3	
Acacia elachantha	300	1	
Acacia maitlandii	180	1	
Acacia pruinocarpa	250	0.1	
Androcalva luteiflora	180	1	
Corymbia hamersleyana	800	5	
Duperreya commixta	150	0.1	
Eucalyptus gamophylla	300	0.1	
Eucalyptus victrix	1100	1	
Gossypium robinsonii	250	1	
Grevillea wickhamii subsp. hispidula	300	0.1	
Hibiscus sturtii var. platychlamys	60	0.1	
Poaceae sp.	40	0.1	
Ptilotus obovatus var. obovatus	80	0.1	
Senna artemisioides subsp. helmsii	120	0.1	
Solanum lasiophyllum	40	0.1	
Solanum piceum	60	0.1	WGR23-1
Themeda triandra	70	60	
Triodia pungens	40	8	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR24
Location MGA 50 660656 **mE** 7435451 **mN**

Described by: SC
Date: 19-03-2024
Type: Releve

Landform: Drainage minor
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aneura, A. rhodophloia and A. marramamba low woodland over A. bivenosa tall isolated shrubs over Triodia pungens low open hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aneura	600	30	WGR24-1
Acacia aptaneura	800	2	
Acacia bivenosa	250	1	
Acacia marramamba	500	2	
Acacia pruinocarpa	400	0.1	
Acacia rhodophloia	500	10	
**Bidens bipinnata*	5	0.1	
Corymbia hamersleyana	500	1	
Eremophila forrestii subsp. forrestii	110	0.1	
Hibiscus coatesii	60	0.1	
Senna artemisioides subsp. helmsii	120	0.1	
Senna sp.	120	0.1	
Sida sp. dark green fruits (S. van Leeuwen 2260)	50	0.1	
Triodia pungens	40	15	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR25
Location MGA 50 659800 **mE** 7434388 **mN**

Described by: SC
Date: 19-03-2024
Type: Releve

Landform: Rocky gully
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura, A. citrinoviridis and Corymbia ferriticola low woodland over Acacia pyrifolia var. pyrifolia and Androcalva luteiflora tall sparse shrubland over Themeda triandra and Eriachne tenuiculmis mid to low sparse tussock grassland with Triodia pungens low sparse hummock grassland.*

Condition: Very Good **Disturbance Type:** Weeds
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aphanoclada pyrifolia var. pyrifolia	250	5	
Acacia aptaneura	300	0.1	
Acacia bivenosa	300	0.1	
Acacia citrinoviridis	600	4	
Acacia pruinocarpa	500	1	
Acacia rhodophloia	800	1	
Amaranthus sp.	3	0.1	
Androcalva luteiflora	200	1	
Arivela viscosa	5	0.1	
Astrotricha hamptonii	200	0.1	
**Bidens bipinnata*	2	0.1	
Boerhavia sp.	2	0.1	
Cheilanthes brownii	3	0.1	WGR21-1=
Cheilanthes sieberi subsp. pseudovellea	2	0.1	
Commelina ensifolia	15	0.1	
Corchorus crozophorifolius	60	0.1	
Corymbia ferriticola	500	1	
Cymbopogon ambiguus	40	0.1	
Dicladanthera forrestii	40	0.1	
Dipteracanthus australasicus subsp. australasicus	20	0.1	
Dodonaea pachyneura	100	0.1	
Duperreya commixta	40	0.1	
Enchylaena tomentosa var. tomentosa	150	0.1	
Enneapogon robustissimus	60	0.1	
Eremophila naaykensii	20	0.1	
Eriachne mucronata	20	0.1	
Eriachne tenuiculmis	30	1	
Ficus brachypoda	600	1	
Gomphrena cunninghamii	5	0.1	
Gossypium robinsonii	200	0.1	
Harnieria kempeana subsp. muelleri	20	0.1	
Jasminum didymum subsp. lineare	60	1	
Plagiochasma rupestre	1	0.1	
Psydrax latifolia	80	0.1	
Ptilotus obovatus var. obovatus	50	0.1	
Rhagodia eremaea	60	0.1	
Senna glutinosa subsp. glutinosa	120	0.1	
Sida sp. Barlee Range (S. van Leeuwen 1642)	25	0.1	
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	60	0.1	
Themeda triandra	50	5	
Triodia pungens	30	5	
Wrightia saligna	250	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR26
Location MGA 50 656864 **mE** 7434246 **mN**

Described by: SC
Date: 19-03-2024
Type: Releve

Landform: Claypan
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aneura, A. aptaneura and A. pruinocarpa low woodland over *Bidens bipinnata low sparse herbland over Triodia pungens low open hummock grassland.*

Condition: Good **Disturbance Type:** Weeds,Fauna tracks/scats
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aneura	700	20	
Acacia aptaneura	700	5	
Acacia marramamba	300	0.1	
Acacia pruinocarpa	600	1	
Acacia tetragonophylla	250	0.1	
**Bidens bipinnata*	3	2	
Boerhavia sp.	2	0.1	
Cheilanthes sieberi subsp. sieberi	2	0.1	
Enchylaena tomentosa var. tomentosa	30	0.1	
Eremophila forrestii subsp. forrestii	180	0.1	
Eremophila fraseri subsp. fraseri	70	0.1	
Hibiscus sp.	70	0.1	
Poaceae sp.	10	1	
Rhagodia eremaea	120	0.1	
Senna artemisioides subsp. helmsii	130	0.1	
Senna artemisioides subsp. oligophylla x helmsii	150	0.1	
Tribulus suberosus	130	0.1	
Triodia pungens	30	15	

FLORA SITE SHEET

Project Name	West Angelas NVCP2		
Site:	WGR27		
Location	MGA 50	656799 **mE**	7434516 **mN**
Described by:	SC		
Date:	19-03-2024		
Type:	Releve		
Landform:	Gully		
Slope:	Moderate		
Rock Type:	Ironstone		
Soil Type:	Clay Loam		
Soil Colour:	Red Brown		



Vegetation: *Corymbia ferriticola, Acacia aptaneura and A. citrinociridis low open woodland over Dodonaea petiolaris and Eremophila naaykensii tall to mid sparse shrubland over Ptilotus obovatus low open shrubland with Themeda triandra mid isolated tussock grasses.*

Condition: Very Good **Disturbance Type:** Weeds

Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon sp.	70	0.1	
Acacia aptaneura	600	2	
Acacia citrinoviridis	600	4	
Acacia sibirica x rhodophloia	350	0.1	
Afrohybanthus aurantiacus	30	0.1	
**Bidens bipinnata*	5	0.1	
Cheilanthes sieberi subsp. sieberi	5	0.1	
Corymbia ferriticola	700	2	
Dipteracanthus australasicus subsp. australasicus	30	1	
Dodonaea pachyneura	180	0.1	
Dodonaea petiolaris	220	3	WGR27-2
Duperreya commixta	40	0.1	
Enchylaena tomentosa var. tomentosa	60	0.1	
Eremophila latrobei subsp. latrobei	180	0.1	
Eremophila naaykensii	180	2	
Eriachne mucronata	30	0.1	
Ficus brachypoda	300	0.1	
Hibiscus sp.	120	0.1	
Isotropis iophyta	50	0.1	WGR27-1
Psydrax latifolia	120	0.1	
Ptilotus obovatus var. obovatus	60	20	
Rhagodia eremaea	120	0.1	
Senna artemisioides subsp. filifolia	150	0.1	
Senna glutinosa subsp. glutinosa	180	0.1	
Senna glutinosa subsp. luerssenii	180	0.1	
Sida ectogama	120	0.1	
Sida fibulifera	10	0.1	
Solanum piceum	60	0.1	WGR23-1=
Themeda triandra	50	1	

FLORA SITE SHEET

Project Name	West Angelas NVCP2			
Site:	WGR28			
Location	MGA 50	656684 **mE**	7434516 **mN**	
Described by:	SC			
Date:	19-03-2024			
Type:	Releve			
Landform:	Hilltop			
Slope:	Moderate			
Rock Type:	Ironstone			
Soil Type:	Clay Loam			
Soil Colour:	Red Brown			



Vegetation: *Grevillea berryana and Acacia rhodophloia tall isolated shrubs over Eremophila exifolia low sparse shrubland with Triodia pungens low open hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia rhodophloia	300	1	
Cheilanthes brownii	10	0.1	WGR21-1=
Cheilanthes sieberi subsp. sieberi	10	0.1	
Corymbia ferriticola	350	0.1	
Cynanchum viminale subsp. australe	70	0.1	
Eremophila exilifolia	50	7	
Fimbristylis dichotoma	10	0.1	
Grevillea berryana	400	1	WGR28-1
Triodia pungens	20	11	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR29
Location MGA 50 667629 7432691 **mN**



Described by: SC
Date: 19-03-2024
Type: Releve

Landform: Gully next to drainage
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown

Vegetation: *Eucalyptus leucophloia subsp. leucophloia, Corymbia ferriticola and Acacia pruinocarpa low open woodland over Acacia pyrifolia var. pyrifolia, Ficus virens var. virens and Clerodendrum floribundum var. ?angustifolium tall sparse shrubland over Cymbopogon ambiguus mid sparse tussock grassland with Triodia pungens low isolated hummock grasses.*

Condition: Very Good **Disturbance Type:** Weeds
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	10	0.1	
Acacia aptaneura	400	0.1	
Acacia pruinocarpa	800	1	
Acacia pyrifolia var. pyrifolia	300	2	
Aristida burbidgeae	30	0.1	
Astrotricha hamptonii	80	0.1	
Cheilanthes brownii	10	0.1	
Clerodendrum floribundum var. ?angustifolium	300	1	WGR29-1
Corchorus crozophorifolius	50	0.1	
Corymbia ferriticola	500	1	
Corymbia hamersleyana	500	0.1	
Cymbopogon ambiguus	50	5	
Cynanchum viminale subsp. australe	60	0.1	
Dipteracanthus australasicus subsp. australasicus	30	0.1	
Dodonaea pachyneura	180	0.1	
Duperreya commixta	50	0.1	
Eremophila longifolia	250	0.1	
Eucalyptus leucophloia subsp. leucophloia	60	0.1	
Ficus virens var. virens	400	1	WGR29-2
Gossypium robinsonii	250	0.1	
Grevillea wickhamii subsp. hispidula	250	0.1	
Harnieria kempeana subsp. muelleri	60	0.1	
Petalostylis labicheoides	300	0.1	
Ptilotus obovatus var. obovatus	50	1	
Rhagodia eremaea	60	0.1	
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	40	1	
Themeda triandra	50	0.1	
Triodia pungens	40	1	
Waltheria indica	30	0.1	

FLORA SITE SHEET

Project Name	West Angelas NVCP2			
Site:	WGR30			
Location	MGA 50	668639 **mE**	7432741 **mN**	
Described by:	SC			
Date:	19-03-2024			
Type:	Releve			
Landform:	Hillslope			
Slope:	Moderate			
Rock Type:	Ironstone			
Soil Type:	Clay Loam			
Soil Colour:	Red Brown			



Vegetation: *Corymbia hamersleyana low sparse woodland over Acacia maitlandii low isolated shrubs over Triodia pungens low hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	150	0.1	
Acacia maitlandii	210	1	
Corchorus lasiocarpus subsp. lasiocarpus	40	0.1	
Corymbia hamersleyana	500	1	
Eucalyptus leucophloia subsp. leucophloia	800	5	
Gossypium robinsonii	150	0.1	
Hakea chordophylla	180	0.1	
Ptilotus rotundifolius	40	0.1	
Senna glutinosa subsp. glutinosa	150	0.1	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	40	0.1	
Solanum lasiophyllum	50	0.1	
Themeda triandra	40	0.1	
Triodia pungens	30	50	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR31
Location MGA 50 666958 **mE** 7433042 **mN**

Described by: SC
Date: 19-03-2024
Type: Releve

Landform: Hillslope
Slope: Moderate
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus leucophloia subsp. leucophloia, Corymbia hamersleyana and Acacia pruinocarpa low open woodland over A. maitlandii and A. bivenosa mid sparse shrubland over Triodia pungens mid hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	300	1	
Acacia bivenosa	150	1	
Acacia catenulata subsp. occidentalis	250	0.1	
Acacia maitlandii	150	5	
Acacia marramamba	50	1	
Acacia pruinocarpa	600	1	
Acacia rhodophloia	300	0.1	
Corymbia hamersleyana	800	1	
Eremophila exilifolia	40	0.1	
Eremophila jucunda subsp. pulcherrima	50	0.1	
Eucalyptus leucophloia subsp. leucophloia	600	1	
Psydrax suaveolens	110	0.1	
Senna glutinosa subsp. luerssenii	160	0.1	
Senna sp. (indet.)	150	0.1	WGR16-7=
Senna stricta	190	0.1	
Seringia sp.	15	0.1	
Solanum lasiophyllum	10	0.1	
Triodia pungens	50	40	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR32
Location MGA 50 695218 **mE** 7435622 **mN**

Described by: SC
Date: 20-03-2024
Type: Releve

Landform: Floodplain
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia catenulata subsp. occidentalis, A. ayersiana and Eucalyptus leucophloia subsp. leucophloia low closed forest over Paspalidium clementii low isolated tussock grasses with Triodia melvillei low sparse hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon ?otocarpum	3	0.1	
Acacia aptaneura	450	1	
Acacia ayersiana	500	3	
Acacia catenulata subsp. occidentalis	500	80	
Acacia pruinocarpa	600	2	
**Bidens bipinnata*	2	0.1	
**Boerhavia coccinea*	4	0.1	
Cheilanthes sieberi subsp. sieberi	3	0.1	
Corymbia deserticola subsp. deserticola	500	2	
Corymbia hamersleyana	750	0.1	
Eremophila forrestii subsp. forrestii	140	0.1	
Eremophila fraseri subsp. fraseri	200	0.1	
Eucalyptus leucophloia subsp. leucophloia	650	1	
Euphorbia drummondii	5	0.1	WGR32-1
Evolvulus alsinoides var. villosicalyx	10	0.1	
Ophioglossum lusitanicum	10	0.1	WGR32-3
Paspalidium clementii	30	1	
Psydrax latifolia	160	0.1	
Ptilotus drummondii	20	0.1	
Ptilotus obovatus var. obovatus	110	0.1	
Rhagodia sp. Hamersley (M. Trudgen 17794)	170	0.1	WGR32-2
Senna artemisioides subsp. helmsii	100	0.1	
Senna sp. (indet.)	70	0.1	WGR16-7=
Triodia melvillei	40	2	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR33
Location MGA 50 695472 **mE** 7436142 **mN**



Described by: SC
Date: 20-03-2024
Type: Releve

Landform: Floodplain
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown

Vegetation: *Acacia catenulata subsp. occidentalis, A. pruinocarpa and A. ayersiana low woodland over Psydrax latifolia, Sida ectogama and Eremophila fraseri subsp. fraseri mid sparse shrubland over Triodia melvillei mid open hummock grassland.*

Condition: Very Good **Disturbance Type:** Weeds
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia ayersiana	350	1	
Acacia catenulata subsp. occidentalis	700	10	
Acacia pruinocarpa	500	10	
**Bidens bipinnata*	2	0.1	
Boerhavia coccinea	4	0.1	
Cheilanthes sieberi subsp. sieberi	3	0.1	
Cymbopogon ambiguus	10	0.1	
Enchylaena tomentosa var. tomentosa	60	0.1	
Eremophila forrestii subsp. forrestii	140	0.1	
Eremophila fraseri subsp. fraseri	110	4	
Evolvulus alsinoides var. villosicalyx	20	0.1	
Ophioglossum lusitanicum	3	0.1	WGR32-3
Paspalidium clementii	10	0.1	
Portulaca oleracea	10	0.1	
Psydrax latifolia	180	1	
Ptilotus obovatus var. obovatus	100	1	
Ptilotus schwartzii var. schwartzii	25	0.1	
Rhagodia sp. Hamersley (M. Trudgen 17794)	80	0.1	
Senna sp. (indet.)	160	0.1	WGR16-7=
Sida ectogama	180	1	
Triodia melvillei	70	20	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR34
Location MGA 50 695442 **mE** 7435927 **mN**

Described by: SC
Date: 20-03-2024
Type: Releve

Landform: Floodplain
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Abutilon fraseri subsp. fraseri mid isolated shrubs over Ptilotus obovatus low isolated shrubs.*

Condition: Very Good **Disturbance Type:** Weeds
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon fraseri subsp. fraseri	120	1	
Areocleome oxalidea	10	0.1	
Cheilanthes sieberi subsp. sieberi	10	0.1	
Duperreya commixta	55	0.1	
Eremophila forrestii subsp. forrestii	50	0.1	
Evolvulus alsinoides var. villosicalyx	10	0.1	
Fimbristylis dichotoma	20	0.1	
Hibiscus sp.	10	0.1	
Ophioglossum lusitanicum	5	0.1	WGR32-3=
Paspalidium clementii	30	0.1	
Perotis rara	1	0.1	
Ptilotus drummondii	20	0.1	
Ptilotus obovatus var. obovatus	60	1	
Ptilotus roei	5	0.1	
Sida ectogama	110	0.1	
Tribulus astrocarpus	1	0.1	
Tripogonella loliiformis	5	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR35
Location MGA 50 678182 **mE** 7434613 **mN**

Described by: SC
Date: 20-03-2024
Type: Releve

Landform: Drainage
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aneura, A. catenulata and Corymbia deserticola subsp. deserticola low open forest over Triodia pungens mid sparse hummock grassland.*

Condition: Good **Disturbance Type:** Weeds,Vehicle tracks
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aneura	500	40	WGR24-1=
Acacia aptaneura	300	0.1	
Acacia ayersiana	350	0.1	
Acacia catenulata	450	3	
Acacia pruinocarpa	500	0.1	
**Bidens bipinnata*	4	0.1	
Boerhavia sp.	3	0.1	
Cheilanthes sieberi subsp. sieberi	10	0.1	
Corymbia deserticola subsp. deserticola	700	2	
Enchylaena tomentosa var. tomentosa	15	0.1	
Evolvulus alsinoides var. villosicalyx	15	0.1	
Poaceae sp.	4	0.1	
Senna sp.	2	0.1	
Themeda triandra	20	0.1	
Triodia pungens	50	2	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR36
Location MGA 50 688954 **mE** 7432699 **mN**

Described by: SC
Date: 21-03-2024
Type: Releve

Landform: Plain
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Corymbia deserticola subsp. deserticola, Acacia pruinocarpa and A. aptaneura low woodland over Eremophila forrestii subsp. forrestii mid isolated shrubs over Triodia pungens mid open hummock grassland.*

Condition: Very Good **Disturbance Type:** Vehicle tracks
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	400	10	WGR36-1
Acacia pruinocarpa	600	3	
Cheilanthes sieberi subsp. sieberi	10	0.1	
Corymbia deserticola subsp. deserticola	800	1	
Eremophila forrestii subsp. forrestii	100	1	
Grevillea berryana	400	1	
Hibiscus burtonii	25	0.1	
Maireana planifolia	20	0.1	
Solanum lasiophyllum	40	0.1	
Triodia pungens	60	30	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR37
Location MGA 50 691536 **mE** 7433095 **mN**

Described by: SC
Date: 21-03-2024
Type: Releve

Landform: Plain
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Corymbia deserticola subsp. deserticola, Acacia pruinocarpa and A. aptaneura low open woodland over A. catenulata tall sparse shrubland over Triodia pungens mid open hummock grassland.*

Condition: Very Good **Disturbance Type:** Vehicle tracks
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aneura	230	0.1	WGR24-01=
Acacia aptaneura	600	1	
Acacia catenulata	300	2	
Acacia pruinocarpa	850	5	
Anthobolus leptomerioides	60	0.1	
**Bidens bipinnata*	5	0.1	
Boerhavia coccinea	20	0.1	
Cheilanthes sieberi subsp. sieberi	20	0.1	
Chrysopogon fallax	100	0.1	
Corymbia deserticola subsp. deserticola	850	2	
Duperreya commixta	15	0.1	
Enchylaena tomentosa var. tomentosa	50	0.1	
Eremophila forrestii subsp. forrestii	150	0.1	
Eremophila longifolia	210	0.1	
Hibiscus burtonii	35	0.1	
Maireana planifolia	10	0.1	
Psydrax suaveolens	110	0.1	
Ptilotus obovatus var. obovatus	70	0.1	
Rhagodia sp. Hamersley (M. Trudgen 17794)	120	0.1	
Senna artemisioides subsp. helmsii	140	0.1	
Senna sp. (indet.)	130	0.1	WGR16-7=
Seringia exastia	75	0.1	WGR37-1
Sida ectogama	180	0.1	
Sida fibulifera	10	0.1	
Solanum lasiophyllum	20	0.1	
Triodia pungens	55	15	
Vincetoxicum lineare	60	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR38
Location MGA 50 693021 **mE** 7434445 **mN**

Described by: SC
Date: 21-03-2024
Type: Releve

Landform: Minor drainage
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus xerothermica, Acacia aptaneura low woodland over Petalostylis labicheoides and Androcalva luteiflora mid low sparse shrubland over Themeda triandra and Chrysopogon fallax mid closed tussock grassland.*

Condition: Good **Disturbance Type:** Vehicle tracks
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	8	1	
Androcalva luteiflora	120	1	
Anthobolus leptomerioides	210	0.1	
**Bidens bipinnata*	20	1	
Boerhavia coccinea	5	0.1	
Chrysopogon fallax	75	1	
Duperreya commixta	15	0.1	
Eremophila longifolia	350	0.1	
Eucalyptus xerothermica	1000	15	
Euphorbia biconvexa	20	0.1	
Goodenia stellata	5	0.1	
Perotis rara	10	0.1	
Petalostylis labicheoides	250	1	
Scaevola amblyanthera var. centralis	45	0.1	WGR38-1
Sida fibulifera	20	0.1	
Themeda triandra	80	85	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR39
Location MGA 50 679131 **mE** 7432412 **mN**

Described by: SC
Date: 21-03-2024
Type: Releve

Landform: Steep Rocky hill
Slope: Steep
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura and Corymbia ferriticola mid to low woodland over Grevillea saxicola and Eremophila naaykensii tall isolated shrubs over Eriachne mucronata mid sparse tussock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	1100	10	
Anthobolus leptomerioides	60	0.1	
Capparis lasiantha	150	0.1	
Capparis mitchellii	250	0.1	
Cheilanthes brownii	10	0.1	
Corymbia ferriticola	800	1	
Dodonaea pachyneura	120	0.1	
Duperreya commixta	150	0.1	
Enchylaena tomentosa var. tomentosa	25	0.1	
Eremophila latrobei subsp. filiformis	100	1	
Eremophila naaykensii	350	1	
Eriachne mucronata	50	2	
Gomphrena cunninghamii	5	0.1	
Grevillea saxicola	500	3	SM07=
Jasminum didymum subsp. lineare	60	0.1	
Rhagodia eremaea	140	0.1	
Scaevola acacioides	30	0.1	WGR02-1=
Senna glutinosa subsp. glutinosa	120	0.1	
Senna glutinosa subsp. luerssenii	130	0.1	
Sida sp. Shovelanna Hill (S. van Leeuwen 3842)	20	0.1	
Solanum horridum	10	0.1	
Triodia pungens	30	0.1	

FLORA SITE SHEET

Project Name	West Angelas NVCP2		
Site:	WGR40		
Location	MGA 50	665475 **mE**	7439547 **mN**
Described by:	SC		
Date:	22-03-2024		
Type:	Releve		
Landform:	Plain		
Slope:	Flat		
Rock Type:	Ironstone		
Soil Type:	Clay Loam		
Soil Colour:	Red Brown		



Vegetation: *Acacia aptaneura, A. pruinocarpa and A. ayersiana low open forest over Eremophila forrestii subsp. forrestii mid sparse shrubland over Triodia pungens low open hummock grassland.*

Condition: Good **Disturbance Type:** Weeds
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	400	25	
Acacia ayersiana	400	2	
Acacia pruinocarpa	500	5	
Cheilanthes sieberi subsp. sieberi	10	1	
Eremophila forrestii subsp. forrestii	120	5	
Senna artemisioides subsp. helmsii	120	0.1	
Tribulus suberosus	70	1	
Triodia pungens	30	25	

FLORA SITE SHEET

Project Name	West Angelas NVCP2		
Site:	WGR41		
Location	MGA 50	665956 **mE**	7438447 **mN**
Described by:	SC		
Date:	22-03-2024		
Type:	Releve		
Landform:	Rocky gully		
Slope:	Moderate		
Rock Type:	Ironstone		
Soil Type:	Clay Loam		
Soil Colour:	Red Brown		



Vegetation: *Corymbia ferriticola and A. pruinocarpa tall open woodland over Eremophila naaykensii tall sparse shrubland over Triodia pungens low sparse hummock grassland.*

Condition:	Very Good	**Disturbance Type:**	None
Fire Age:	Long unburnt		

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia pruinocarpa	600	5	
Aristida ?burbidgeae	30	1	
Astrotricha hamptonii	210	0.1	
Clerodendrum floribundum var. angustifolium	250	0.1	
Corymbia ferriticola	500	4	
Dodonaea pachyneura	180	5	
Duperreya commixta	70	0.1	
Eremophila naaykensii	210	6	
Eriachne mucronata	30	2	
Ptilotus obovatus var. obovatus	60	5	
Triodia pungens	30	5	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR42
Location MGA 50 666699 **mE** 7437927 **mN**

Described by: SC
Date: 22-03-2024
Type: Releve

Landform: Gully
Slope: Steep
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura, A. pruinocarpa and Corymbia ferriticola low open forest over Eremophila naaykensii tall sparse shrubland over Triodia pungens low open hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	500	25	
Acacia pruinocarpa	600	7	
Capparis mitchellii	150	0.1	
Cheilanthes brownii	10	0.1	
Cheilanthes sieberi subsp. sieberi	10	0.1	
Corymbia ferriticola	500	2	
Dodonaea pachyneura	180	1	
Dodonaea petiolaris	70	0.1	WGR27-2=
Eremophila latrobei subsp. filiformis	60	0.1	
Eremophila naaykensii	220	3	
Eriachne mucronata	30	1	
Grevillea saxicola	600	1	SM07=
Psydrax latifolia	150	0.1	
Ptilotus obovatus var. obovatus	70	1	
Senna sp. (indet.)	180	0.1	WGR16-7=
Sida sp. Barlee Range (S. van Leeuwen 1642)	20	0.1	
Triodia pungens	30	12	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR43
Location MGA 50 666736 **mE** 7438283 **mN**

Described by: SC
Date: 22-03-2024
Type: Releve

Landform: Hilltop
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus leucophloia subsp. leucophloia low isolated trees over Acacia rhodophloia, A. pruinocarpa and A. marramamba tall open shrubland over Triodia pungens low hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia hamersleyensis	350	0.1	
Acacia maitlandii	180	3	
Acacia marramamba	300	5	
Acacia pruinocarpa	450	0.1	
Acacia rhodophloia	250	20	SM12=
Eucalyptus leucophloia subsp. leucophloia	600	1	
Fimbristylis dichotoma	5	0.1	
Hakea chordophylla	400	0.1	
Senna glutinosa subsp. glutinosa	120	0.1	
Senna sp. (indet.)	200	1	WGR16-7=
Triodia pungens	40	40	
Triodia wiseana	40	0.1	

FLORA SITE SHEET

Project Name	West Angelas NVCP2		
Site:	WGR44		
Location	MGA 50	663794 **mE**	7439665 **mN**
Described by:	SC		
Date:	22-03-2024		
Type:	Releve		
Landform:	Flodplain		
Slope:	Flat		
Rock Type:	Ironstone		
Soil Type:	Clay Loam		
Soil Colour:	Red Brown		



Vegetation: *Acacia citrinoviridis and A. pruinocarpa tall woodland over Eremophila longipila mid sparse shrubland over Triodia pungens low hummock grassland.*

Condition: Good **Disturbance Type:** Weeds,Fauna tracks/scats
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	160	0.1	
Acacia citrinoviridis	250	11	
Acacia pruinocarpa	400	2	
Acacia pyrifolia var. pyrifolia	130	0.1	
Arivela viscosa	2	0.1	
Boerhavia sp.	5	0.1	
Eremophila longifolia	160	2	
Indigofera georgei	35	0.1	
Paspalidium basicladum	5	0.1	
Poaceae sp.	10	0.1	
**Portulaca oleracea*	5	0.1	
Ptilotus obovatus var. obovatus	45	1	
Rhagodia eremaea	60	0.1	
**Solanum nigrum*	10	0.1	
Tribulus suberosus	100	0.1	
Triodia pungens	55	31	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR45
Location MGA 50 664167 **mE** 7439649 **mN**

Described by: SC
Date: 22-03-2024
Type: Releve

Landform: Drainage
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus victrix low open woodland over Acacia aptaneura and A. citrinoviridis tall shrubland over Eulalia aurea tall sprase grassland.*

Condition: Good
Fire Age: Long unburnt
Disturbance Type: Weeds,Vehicle tracks,Fauna tracks/scats

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia citrinoviridis	500	11	
Arivela viscosa	5	0.1	
**Bidens bipinnata*	5	0.1	
Corchorus crozophorifolius	100	0.1	
Cyperacea sp.	5	0.1	
Eriachne tenuiculmis	10	0.1	
Eucalyptus victrix	1000	5	
Eulalia aurea	90	3	
Ipomoea plebeia	40	0.1	
Marsilea sp.	4	0.1	
Poaceae sp.	10	0.1	
Ptilotus obovatus var. obovatus	40	0.1	
Themeda triandra	40	1	

FLORA SITE SHEET

Project Name	West Angelas NVCP2			
Site:	WGR46			
Location	MGA 50	664290 **mE**	7439269 **mN**	
Described by:	SC			
Date:	22-03-2024			
Type:	Releve			
Landform:	Plain			
Slope:	Flat			
Rock Type:	Ironstone			
Soil Type:	Clay Loam			
Soil Colour:	Red Brown			



Vegetation: *Acacia pruinocarpa and A. aneura tall open woodland over Eremophils forrestii subsp. Forrestii mid isolated shurbs over Triodia pungens low open hummock grassland.*

Condition: Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aneura	400	5	
Acacia aptaneura	500	20	
Acacia pruinocarpa	600	5	
Anthobolus leptomerioides	180	0.1	
**Bidens bipinnata*	5	1	
Eremophila forrestii subsp. forrestii	150	1	
Psydrax latifolia	100	0.1	
Ptilotus obovatus var. obovatus	50	0.1	
Senna stricta	150	0.1	
Sida sp. dark green fruits (S. van Leeuwen 2260)	50	0.1	
Tribulus suberosus	80	0.1	
Triodia pungens	30	15	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR47
Location MGA 50 664740 **mE** 7437777 **mN**



Described by: SC
Date: 22-03-2024
Type: Releve

Landform: Gully
Slope: Steep
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown

Vegetation: *Corymbia ferriticola, Acacia aptaneura and A. pruinocarpa tall woodland over Dodonaea pachyneura, Eremophila naaykensii and Ptilotus obovatus var. obovatus mid sparse shrubland over Triodia pungens low isolated hummock grasses.*
Condition: Very Good **Disturbance Type:** Weeds
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	450	12	
Acacia pruinocarpa	500	2	
Arivela viscosa	5	0.1	
Astrotricha hamptonii	140	0.1	
**Bidens bipinnata*	5	0.1	
Capparis lasiantha	400	0.1	
Cheilanthes brownii	5	0.1	
Cheilanthes sieberi subsp. sieberi	5	0.1	
Corymbia ferriticola	600	3	
Cucumis variabilis	2	0.1	
Dodonaea pachyneura	180	2	
Duperreya commixta	60	0.1	
Eremophila latrobei subsp. latrobei	120	0.1	
Eremophila naaykensii	120	2	
Harnieria kempeana subsp. muelleri	15	0.1	
Ptilotus obovatus var. obovatus	100	4	
Rhagodia eremaea	160	0.1	
Senna stricta	80	0.1	
Sida sp. dark green fruits (S. van Leeuwen 2260)	50	0.1	
Triodia pungens	40	1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR48
Location MGA 50 685691 **mE** 7436362 **mN**

Described by: SC
Date: 23-03-2024
Type: Releve

Landform: Gully
Slope: Moderate
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus leucophloia subsp. leucophloia and Corymbia hamersleyana low open woodland over Dodonaea ?viscosa subsp. mucronata, Gossypium robinsonii and Acacia maitlandii tall sparse shrubland over Triodia sp. Mt Ella (M.E. Trudgen 12739), T. pungens and T. wiseana low hummock grassland.*

Condition: Excellent **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia adoxa var. adoxa	30	0.1	
Acacia hamersleyensis	320	0.1	
Acacia maitlandii	200	1	
Capparis mitchellii	70	0.1	
Corymbia hamersleyana	500	2	
Cymbopogon ambiguus	70	2	
Dodonaea ?viscosa subsp. mucronata	210	5	WGR48-1
Duperreya commixta	100	0.1	
Eremophila jucunda subsp. pulcherrima	60	1	
Eriachne mucronata	30	0.1	
Eucalyptus leucophloia subsp. leucophloia	600	5	
Gossypium robinsonii	220	3	
Grevillea wickhamii subsp. hispidula	150	0.1	
Indigofera fractiflexa subsp. fractiflexa	30	0.1	
Jasminum didymum subsp. lineare	50	0.1	
Santalum lanceolatum	250	0.1	
Senna glutinosa subsp. glutinosa	150	0.1	
Themeda triandra	60	1	
Triodia pungens	30	15	
Triodia sp. Mt Ella (M.E. Trudgen 12739)	30	20	
Triodia wiseana	30	1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR49
Location MGA 50 686038 **mE** 7436115 **mN**



Described by: SC
Date: 23-03-2024
Type: Releve

Landform: Hilltop
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown

Vegetation: *Eucalyptus kingsmillii, E. leucophloia subsp. leucophloia and Corymbia hamersleyana low open woodland over Acacia maitlandii mid open shrubland over Triodia wiseana mid hummock grassland.*

Condition: Excellent **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia hamersleyensis	500	5	SM30=
Acacia maitlandii	170	15	
Acacia pruinocarpa	200	0.1	
Acacia pyrifolia var. pyrifolia	50	0.1	
Acacia rhodophloia x sibirica	250	0.1	
Acacia sibirica	250	0.1	
Corymbia hamersleyana	450	1	
Eremophila latrobei subsp. latrobei	70	0.1	
Eucalyptus kingsmillii	600	2	
Eucalyptus leucophloia subsp. leucophloia	800	2	
Fimbristylis dichotoma	20	0.1	
Gossypium robinsonii	150	0.1	
Grevillea berryana	150	0.1	
Hakea chordophylla	250	0.1	
Halgania gustafsenii var. Mid West (G.Perry 370)	60	0.1	WGR49-1
Mirbelia viminalis	40	0.1	
Senna ferraria	60	0.1	
Senna glutinosa subsp. glutinosa	60	0.1	
Sida sp. Shovelanna Hill (S. van Leeuwen 3842)	30	0.1	
Triodia wiseana	80	35	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR50
Location MGA 50 685833 **mE** 7435648 **mN**

Described by: SC
Date: 23-03-2024
Type: Releve

Landform: Hilltop
Slope: Moderate
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus leucophloia subsp. Leucophloia, Corymbia hamersleyana and Acacia hamersleyensis open woodland over A. maitlandii low open shrubland over T. wiseana low hummock grassland.*

Condition: Excellent **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia adoxa var. adoxa	20	0.1	
Acacia hamersleyensis	700	2	
Acacia maitlandii	210	5	
Acacia pruinocarpa	60	0.1	
Acacia pyrifolia var. pyrifolia	150	0.1	
Corymbia hamersleyana	500	2	
Eucalyptus kingsmillii	180	2	
Eucalyptus leucophloia subsp. leucophloia	600	2	
Fimbristylis dichotoma	5	0.1	
Hakea chordophylla	250	0.1	
Halgania solanacea	40	0.1	
Mirbelia viminalis	50	0.1	
Senna ferraria	50	0.1	
Triodia wiseana	40	31	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR51
Location MGA 50 686869 **mE** 7436927 **mN**

Described by: SC
Date: 23-03-2024
Type: Releve

Landform: Low Rocky hills
Slope: Gentle
Rock Type: Ironstone,Dolerite
Soil Type: Clay Loam
Soil Colour: Brown



Vegetation: *Eucalyptus leucophloia subsp. leucophloia low isolated trees over Eucalyptus repullulens, Eucalyptus ?trivalva and low open woodland over Triodia longiceps and T. wiseana mid hummock grassland.*

Condition: Very Good **Disturbance Type:** Vehicle tracks
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	25	0.1	
Acacia bivenosa	300	1	
Acacia pyrifolia var. pyrifolia	50	0.1	
Anthobolus leptomerioides	40	0.1	
Capparis lasiantha	100	0.1	
Duperreya commixta	100	0.1	
Eucalyptus ?trivalva	200	10	WGR51-1
Eucalyptus leucophloia subsp. leucophloia	700	1	
Eucalyptus repullulens	230	10	WGR51-2
Jasminum didymum subsp. lineare	70	0.1	
Senna artemisioides subsp. helmsii x oligophylla	110	0.1	
Senna glutinosa subsp. glutinosa	200	1	
Senna glutinosa subsp. pruinosa	140	1	
Triodia angusta	15	0.1	
Triodia longiceps	60	10	
Triodia wiseana	40	21	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR52
Location MGA 50 687309 **mE** 7437764 **mN**

Described by: SC
Date: 23-03-2024
Type: Releve

Landform: Drainage
Slope: Gentle
Rock Type: Ironstone,Granite,Dolerite
Soil Type: Sand
Soil Colour: Beige,Brown



Vegetation: *Eucalyptus camaldulensis subsp. Refulgens and E. xerothermica low woodland over Acacia dictyophleba, Petalostylis labicheoides and A. pyrifolia var. pyrifolia tall sparse shrubland over *Cenchrus ciliaris low open grassland.*

Condition: Good **Disturbance Type:** Weeds
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon amplum	20	0.1	
Acacia colei	300	0.1	
Acacia dictyophleba	300	5	
Acacia pyrifolia var. pyrifolia	350	2	
Androcalva luteiflora	120	3	
Arivela viscosa	30	0.1	
**Bidens bipinnata*	5	0.1	
**Cenchrus ciliaris*	1	20	
Cymbopogon ambiguus	120	2	
Digitaria brownii	20	0.1	
Dipteracanthus australasicus subsp. australasicus	30	0.1	
Dodonaea lanceolata var. lanceolata	250	0.1	WGR52-2
Duperreya commixta	35	0.1	
Enneapogon robustissimus	30	0.1	
Eragrostis eriopoda	30	0.1	WGR52-3
Eremophila longifolia	110	0.1	
Eucalyptus camaldulensis subsp. refulgens	1200	11	
Eucalyptus xerothermica	800	6	
Evolvulus alsinoides var. decumbens	10	0.1	
Evolvulus alsinoides var. villosicalyx	25	0.1	
Isotropis iophyta	100	0.1	
**Malvastrum americanum*	20	0.1	
Melhania oblongifolia	40	0.1	
Nellica maderaspatensis	30	0.1	
Petalostylis labicheoides	300	4	
Ptilotus obovatus var. obovatus	35	0.1	
Rhynchosia minima	25	0.1	
Santalum lanceolatum	250	0.1	
Senna artemisioides subsp. artemisioides	200	1	
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	10	0.1	
Themeda triandra	45	5	
Triodia longiceps	50	2	
**Vachellia farnesiana*	400	1	
Vigna ?sp. Hamersley Clay (A.A.Mitchell PRP 113)	5	1	WGR52-1

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR53
Location MGA 50 683137 **mE** 7439064 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Plain
Slope: Flat
Rock Type: Ironstone,Quartz,Shale
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura, A. bivenosa and A. sibirica tall sparse shrubland over Ptilotus obovatus var. obovatus, Senna stricta and A. synchronicia low sparse shrubland over Themeda triandra mid open grassland with Triodia wiseana mid sparse hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	400	1	
Acacia bivenosa	250	1	
Acacia sibirica	220	1	
Acacia synchronicia	80	1	
Anthobolus leptomerioides	150	0.1	
Aristida contorta	20	0.1	
Bothriochloa ewartiana	60	3	Sm37=
Cymbopogon ambiguus	80	0.1	
Duperreya commixta	50	0.1	
Eremophila forrestii subsp. forrestii	120	0.1	
Eremophila platycalyx subsp. pardalota	110	1	Sm36=
Gossypium australe	50	0.1	
Indigofera deserticola	70	0.1	
Ptilotus obovatus var. obovatus	70	2	
Rhagodia eremaea	70	0.1	
Sclerolaena cornishiana	30	0.1	
Senna artemisioides subsp. oligophylla	150	0.1	
Senna glutinosa subsp. luerssenii	110	0.1	
Senna stricta	70	2	
Sida fibulifera	15	0.1	
Sida sp. spiciform panicles (E.Leyland s.n. 14/8/1990)	60	0.1	Sm35=
Solanum lasiophyllum	50	0.1	
Themeda triandra	60	1	
Tribulus suberosus	70	0.1	
Triodia wiseana	70	7	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR54
Location MGA 50 683426 **mE** 7439115 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Cracking clay
Slope: Flat
Rock Type: Ironstone
Soil Type: Cracking Clays
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura low open woodland over Eremophila lachnocalyx low sparse shrubland over Eragrostis xerophila low open grassland.*

Condition: Very Good **Disturbance Type:** Weeds,Fauna tracks/scats
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Aristida sp.	30	2	
Astrebla pectinata	50	0.1	
Astrebla pectinata	40	5	Sm42=
Austrobryonia pilbarensis	10	0.1	
**Bidens bipinnata*	15	0.1	
Boerhavia paludosa	20	0.1	
Chrysopogon fallax	70	0.1	
Corchorus sp. tridens/trilocularis indet	10	0.1	
Dipteracanthus australasicus subsp. australasicus	30	0.1	
Eragrostis xerophila	20	20	
Eremophila lachnocalyx	90	2	
Evolvulus alsinoides var. villosicalyx	5	0.1	
Indigofera linifolia	15	0.1	
Ipomoea lonchophylla	10	2	
Ipomoea polymorpha	15	0.1	
Iseilema sp.	15	0.1	
Maireana planifolia × villosa	20	0.1	Sm41=
Ptilotus obovatus var. obovatus	40	0.1	
Rhynchosia minima	15	0.1	
Sida fibulifera	15	0.1	
Themeda triandra	70	15	Sm39=
Themeda triandra	50	5	
Urochloa occidentalis var. ciliata	15	0.1	Sm40=
Vigna sp. Hamersley Clay (A.A. Mitchell PRP 113)	30	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR55
Location MGA 50 683170 **mE** 7440049 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Stony plain
Slope: Flat
Rock Type: Ironstone,Quartz
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura, A. pruinocarpa and A. tetragonophylla tall sparse shrubland over Senna glutinosa subsp. luerssenii and Eremophila platycalyx subsp. pardalota mid sparse shrubland over Bothriochloa ewartiana, *Cenchrus ciliaris and Themeda triandra mid sparse grassland with Triodia wiseana low sparse hummock*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	600	5	
Acacia pruinocarpa	600	2	
Acacia synchronicia	250	0.1	
Acacia tetragonophylla	300	1	
**Bidens bipinnata*	5	0.1	
Bothriochloa ewartiana	70	5	Sm37=
**Cenchrus ciliaris*	50	1	
Corchorus sp. tridens/trilocularis indet	5	0.1	
Dipteracanthus australasicus subsp. australasicus	30	0.1	
Enchylaena tomentosa var. tomentosa	40	0.1	
Eremophila platycalyx subsp. pardalota	180	2	Sm36=
Ptilotus obovatus var. obovatus	40	0.1	
Rhagodia eremaea	80	0.1	
Santalum lanceolatum	250	0.1	
Senna glutinosa subsp. luerssenii	150	5	
Themeda triandra	50	1	
Triodia wiseana	20	2	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR56
Location MGA 50 683242 **mE** 7440451 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Plain by drainage
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Eucalyptus xerothermica mid open woodland over Hakea loreus subsp. loreus, Acacia synchronicia and Senna artemisoides subsp. filifolia tall sparse shrubland over Themeda triandra mid open grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon ?amplum	35	0.1	
Acacia synchronicia	350	1	
Aristida contorta	60	0.1	
Aristida lazaridis	40	0.1	Sm46
Arivela viscosa	30	0.1	
**Bidens bipinnata*	0.1	0.1	
Boerhavia coccinea	10	0.1	
Boerhavia repleta	10	0.1	
**Cenchrus ciliaris*	50	0.1	
Commelina ensifolia	45	0.1	
Dactyloctenium radulans	30	0.1	
Duperreya commixta	100	0.1	
Enchylaena tomentosa var. tomentosa	70	0.1	
Eremophila longifolia	65	1	
Eriachne aristidea	15	0.1	
Eucalyptus xerothermica	1050	3	
Euphorbia australis var. subtomentosa	5	0.1	
Euphorbia biconvexa	25	0.1	
Hakea loreus subsp. loreus	450	6	
Maireana villosa	35	1	
Paraneurachne muelleri	25	0.1	
Ptilotus obovatus var. obovatus	50	1	
Rhagodia eremaea	180	2	
Senna artemisioides subsp. filifolia	210	1	SM28=
Sida fibulifera	20	1	
Themeda triandra	70	15	
Tragus australianus	15	0.1	
**Vachellia farnesiana*	200	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR57
Location MGA 50 683328 **mE** 7440644 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Drainage
Slope: Gentle
Rock Type: Ironstone,Granite
Soil Type: Sand
Soil Colour: Brown



Vegetation: *Eucalyptus camaldulensis subsp. refulgens and E. xerothermica low to mid woodland over Hakea loreus subsp. loreus, Acacia dictyophleba and Androcalva luteifolia tall open shrubland over Themeda triandra and Cymbopogon ambiguus mid sparse grassland with Triodia longiceps mid sparse hummock grassland.*

Condition: Good **Disturbance Type:** Weeds
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia bivenosa	200	0.1	
Acacia citrinoviridis	500	0.1	
Acacia dictyophleba	350	6	
Acacia pyrifolia var. pyrifolia	180	2	
Acacia tetragonophylla	150	0.1	
Adriana tomentosa var. tomentosa	80	0.1	
Androcalva luteiflora	200	1	
Arivela viscosa	45	0.1	
**Bidens bipinnata*	5	0.1	
Boerhavia coccinea	10	0.1	
Boerhavia repleta	30	0.1	
Cymbopogon ambiguus	45	2	
Duperreya commixta	45	0.1	
Enneapogon robustissimus	45	0.1	
Eucalyptus camaldulensis subsp. refulgens	1800	15	
Eucalyptus xerothermica	800	11	
Eulalia aurea	40	5	
Eulalia simonii	15	4	
Gossypium robinsonii	300	0.1	
Hakea loreus subsp. loreus	450	5	
Ipomoea plebeia	5	0.1	
Ptilotus obovatus var. obovatus	100	0.1	
Rhynchosia minima	25	0.1	
Santalum lanceolatum	250	0.1	
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	35	0.1	
Themeda triandra	60	5	
Triodia longiceps	35	5	
Urochloa distachyos	40	0.1	WGR57-1
**Vachellia farnesiana*	120	1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR58
Location MGA 50 685779 **mE** 7438572 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Drainage
Slope: Gentle
Rock Type: Ironstone
Soil Type: Clay Loam,Sand
Soil Colour: Red Brown



Vegetation: *Eucalyptus camaldulensis subsp. refulgens and E. xerothermica low to mid woodland over Acacia bivenosa, and A. dictyophleba tall open shrubland over Triodia longiceps mid sparse hummock grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Abutilon amplum	10	0.1	
Acacia bivenosa	300	20	
Acacia dictyophleba	250	3	
Acacia pyrifolia var. pyrifolia	180	1	
Adriana tomentosa var. tomentosa	70	0.1	
Androcalva luteiflora	150	1	
Arivela viscosa	15	0.1	
**Bidens bipinnata*	5	0.1	
Boerhavia coccinea	1	0.1	
**Cenchrus ciliaris*	60	1	
Cymbopogon ambiguus	70	0.1	
Dodonaea lanceolata var. lanceolata	120	0.1	
Duperreya commixta	50	0.1	
Enneapogon robustissimus	50	0.1	
Eremophila longifolia	180	1	
Eucalyptus camaldulensis subsp. refulgens	1800	20	
Eucalyptus xerothermica	700	5	
Eulalia aurea	60	2	
Evolvulus alsinoides var. decumbens	15	0.1	
Evolvulus alsinoides var. villosicalyx	10	0.1	
Gossypium australe	80	0.1	
Gossypium robinsonii	150	0.1	
Ipomoea plebeia	5	0.1	
Isotropis iophyta	50	0.1	
Nellica maderaspatensis	20	0.1	
Rhynchosia minima	20	0.1	
Salsola australis	20	0.1	
Santalum lanceolatum	180	0.1	
Senna artemisioides subsp. filifolia	120	1	
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	20	0.1	
Themeda triandra	60	1	
Triodia longiceps	50	6	
**Vachellia farnesiana*	250	0.1	
Vigna ?sp. Hamersley Clay (A.A.Mitchell PRP 113)	15	0.1	WGR52-01=

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR59
Location MGA 50 685685 **mE** 7439659 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Cracking clay
Slope: Flat
Rock Type: Ironstone
Soil Type: Clay Loam
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura low woodland over Eremophila lachnocalyx, E. forrestii subsp. forrestii and Rhagodia eremaea mid sparse shrubland over Eragrostis ?xerophila low open grassland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	450	15	
Acacia tetragonophylla	110	1	
**Bidens bipinnata*	5	0.1	
Boerhavia paludosa	40	0.1	
Bulbostylis barbata	5	0.1	
Cheilanthes sieberi subsp. sieberi	35	1	
Cynodon convergens	30	0.1	WGR59-4
Dactyloctenium radulans	15	0.1	
Digitaria ctenantha	10	0.1	
Dipteracanthus australasicus subsp. australasicus	10	0.1	
Eragrostis ?xerophila	30	15	WGR59-1
Eremophila forrestii subsp. forrestii	160	1	
Eremophila lachnocalyx	170	4	
Euphorbia biconvexa	10	0.1	
Euploca heterantha	1	0.1	
Euploca tanythrix	10	0.1	SM34=
Goodenia muelleriana	15	0.1	WGR59-3
Ipomoea lonchophylla	10	0.1	
Iseilema sp.	15	0.1	
Ophioglossum lusitanicum	5	0.1	
Polygala ?glaucifolia	2	0.1	WGR59-2
Portulaca filifolia	5	0.1	
**Portulaca oleracea*	15	0.1	
Rhagodia eremaea	140	3	
Senna hamersleyensis	45	0.1	
Sida fibulifera	15	0.1	
Tripogonella loliiformis	10	0.1	
Urochloa occidentalis var. ciliata	20	0.1	SM40=
Vigna lanceolata var. lanceolata	10	0.1	

FLORA SITE SHEET

Project Name West Angelas NVCP2
Site: WGR60
Location MGA 50 685418 **mE** 7439558 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Cracking clay
Slope: Flat
Rock Type: Ironstone
Soil Type: Cracking Clays
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura low woodland over A. tetragonophylla tall open shrubland over Eragrostis xerophila and Astrebla pectinata low sparse grassland.*

Condition: Good **Disturbance Type:** Weeds,Fauna tracks/scats
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	600	15	
Acacia tetragonophylla	250	15	
Astrebla elymoides	50	0.1	
Astrebla pectinata	40	1	WGR60-1
**Bidens bipinnata*	5	0.1	
Cheilanthes sieberi subsp. sieberi	10	0.1	
Corchorus sp. tridens/trilocularis indet	2	0.1	
Dipteracanthus australasicus subsp. australasicus	30	0.1	
Enneapogon polyphyllus	15	0.1	
Eragrostis xerophila	20	8	
Eremophila lachnocalyx	90	2	
Euphorbia biconvexa	10	0.1	
Goodenia muelleriana	10	0.1	WGR59-03=
Iseilema sp.	5	0.1	
Portulaca filifolia	5	0.1	
**Portulaca oleracea*	1	0.1	
Rhagodia eremaea	120	2	
Santalum lanceolatum	180	0.1	
Sclerolaena cornishiana	15	0.1	
Senna artemisioides subsp. oligophylla	60	2	
Senna sp. Karijini (M.E. Trudgen 10392)	60	1	
Sida fibulifera	10	0.1	
Streptoglossa ?bubakii	5	0.1	

FLORA SITE SHEET

Project Name	West Angelas NVCP 2		
Site:	WGR61		
Location	MGA 50	679732 **mE**	7439387 **mN**
Described by:	SC		
Date:	24-03-2024		
Type:	Releve		
Landform:	Ironstone outcropping		
Slope:	Moderate		
Rock Type:	Red Brown		
Soil Type:	Clay Loam		
Soil Colour:	Red Brown		



Vegetation: *Acacia aptaneura low woodland over Eremophila platycalyx subsp. pardalota mid sparse shrubland over Capparis lasiantha, E. forrestii subsp. forrestii and Rhagodia eremaea low sparse shrubland.*

Condition: Very Good **Disturbance Type:** None
Fire Age: 5-10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	650	15	
Acacia pruinocarpa	600	0.1	
Arivela viscosa	15	0.1	
Capparis lasiantha	80	1	
Digitaria ctenantha	20	0.1	
Dipteracanthus australasicus subsp. australasicus	20	0.1	
Enneapogon lindleyanus	50	1	
Eremophila forrestii subsp. forrestii	80	1	
Eremophila jucunda subsp. pulcherrima	80	0.1	
Eremophila platycalyx subsp. pardalota	120	2	Sm36=
Indigofera deserticola	40	0.1	
Maireana ?planifolia	20	0.1	
Ptilotus obovatus var. obovatus	30	1	
Rhagodia eremaea	80	1	
Sida sp. spiciform panicles (E.Leyland s.n. 14/8/1990)	60	1	Sm35=
Tribulus suberosus	50	0.1	

FLORA SITE SHEET

Project Name	West Angelas NVCP 2		
Site:	WGR62		
Location	MGA 50	679985 **mE**	7439755 **mN**
Described by:	SC		
Date:	24-03-2024		
Type:	Releve		
Landform:	Wetland		
Slope:	Flat		
Rock Type:	Red Brown		
Soil Type:	Clay Loam		
Soil Colour:	Red Brown		



Vegetation: **Symphyotrichum squamatum tall sparse herbland over Typha domingensis close tall sedgeland.*

Condition: Good **Disturbance Type:** Weeds
Fire Age: Long unburnt

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Erigeron bonariensis	60	0.1	
Stemodia grossa	30	0.1	
**Symphyotrichum squamatum*	80	2	
Typha domingensis	250	90	

FLORA SITE SHEET

Project Name	West Angelas NVCP 2			
Site:	WGR63			
Location	MGA 50	679319 **mE**	7439572 **mN**	
Described by:	SC			
Date:	24-03-2024			
Type:	Releve			
Landform:	Wetland			
Slope:	Flat			
Rock Type:	Red Brown			
Soil Type:	Clay Loam			
Soil Colour:	Red Brown			



Vegetation: *Eucalyptus xerothermica low sparse woodland over*Symphyotrichum squamatum tall sparse herbland over Typha domingensis close tall sedgeland.*

Condition:	Poor	**Disturbance Type:**	Weeds
Fire Age:	Long unburnt		

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
**Erigeron bonariensis*	80	0.1	
Eucalyptus xerothermica	700	1	
**Symphyotrichum squamatum*	80	2	
Typha domingensis	220	98	

FLORA SITE SHEET

Project Name West Angelas NVCP 2
Site: WGR64
Location MGA 50 679747 **mE** 7438598 **mN**

Described by: SC
Date: 24-03-2024
Type: Releve

Landform: Cracking clay
Slope: Flat
Rock Type: Red Brown
Soil Type: Cracking Clays
Soil Colour: Red Brown



Vegetation: *Acacia aptaneura low open woodland over Eremophila lachnocalyx low isolated shrubs over Eragrostis xerophila, Astrebla elymoides and Astrebla pectinata low open grassland.*

Condition: Good **Disturbance Type:** Weeds
Fire Age: Unknown

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia aptaneura	600	2	
Acacia tetragonophylla	120	0.1	
Astrebla elymoides	50	5	
Astrebla pectinata	40	1	
Chrysopogon fallax	30	1	
Corchorus tridens/trilocularis sterile	5	0.1	
Dipteracanthus australasicus subsp. australasicus	20	0.1	
Eragrostis xerophila	15	8	
Eremophila lachnocalyx	80	1	
Eremophila longifolia	150	0.1	
Euphorbia biconvexa	15	0.1	
Euploca tanythrix	15	0.1	SM34=
Evolvulus alsinoides var. villosicalyx	2	0.1	
Hakea loreus subsp. loreus	180	0.1	
Ipomoea lonchophylla	5	0.1	
Ophioglossum lusitanicum	5	0.1	
Ptilotus obovatus var. obovatus	30	0.1	
Senna artemisioides subsp. oligophylla	50	0.1	
Sida fibulifera	15	0.1	

Appendix G Threatened and Priority Flora Report Forms

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at http://dpaw.wa.gov.au under *Standard Report Forms*

TAXON: Acacia bromilowiana **TPFL Pop. No:** P4

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):

56.9 km South of Juna Downs, 96.0 km West of Newman and 117.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.17387158 No. satellites: Map used:

WGS84 **Long / Easting:** 118.81455859922799 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				50
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia scattered low trees

2. Acacia maitlandii scattered shrubs

3. Triodia vanleeuwenii, T. pungens open hummock grassland.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good ☒ Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Aristida lazaridis **TPFL Pop. No:** P4

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
52.1 km South of Juna Downs, 99.5 km West of Newman and 114.7 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.134643700000002 No. satellites: Map used:

WGS84 **Long / Easting:** 118.78963330000001 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				15
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative ☒ | Flowerbud | Flower

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

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Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line ☒					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura', Eucalyptus xerothermica scattered low trees to low open woodland

2. Eremophila forrestii subsp. forrestii and/or E. longifolia very open shrubland

3. Themeda triandra scattered tussock grasses over Triodia wiseana and/or T. pungens open hummock grassland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Eremophila naaykensii **TPFL Pop. No:** P2

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
56.7 km South of Juna Downs, 96.0 km West of Newman and 117.2 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.1718826 No. satellites: Map used:

WGS84 **Long / Easting:** 118.8154274 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				3
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia catenulata subsp. occidentalis, (Eucalyptus leucophloia subsp. leucophloia, A. 'aneura') low open forest

2. Triodia pungens open hummock grassland

3.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other:

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

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GOVERNMENT OF WESTERN AUSTRALIA

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TAXON: Eremophila naaykensii **TPFL Pop. No:** P2

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
59.6 km South of Juna Downs, 101.7 km West of Newman and 110.5 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.207718119999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.750552871571 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				15
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

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HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia low open woodland

2. Triodia pungens and/or T. wiseana open hummock grassland

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

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Threatened and Priority Flora Report Form

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TAXON: Eremophila naaykensii **TPFL Pop. No:** P3

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
59.6 km South of Juna Downs, 113.1 km West of Newman and 99.0 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.206942049999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.638230318449 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia low open woodland

2. Triodia pungens and/or T. wiseana open hummock grassland

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at http://dpaw.wa.gov.au under *Standard Report Forms*

TAXON: Eremophila naaykensii **TPFL Pop. No:** P3

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
54.8 kmSouth of Juna Downs, 115.3 km West of Newman and 97.7 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.161431870000001 No. satellites: Map used:

WGS84 **Long / Easting:** 118.624833131275 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				20
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia low open woodland

2. Triodia vanleeuwenii, T. pungens and/or T. sp. Mt Ella (M.E. Trudgen 12739) open hummock grassland

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Eremophila naaykensii **TPFL Pop. No:** P3

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
55.0 km South of Juna Downs, 116.9 km West of Newman and 96.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.161168799999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.6090655 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				15
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' low woodland

2. Eremophila jucunda subsp. pulcherrima, E. phyllopoda subsp. obliqua, (E. cuneifolia, E. oppositifolia subsp. angustifolia) open shrubland

3. Triodia pungens very open hummock grassland.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

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TAXON: Eremophila naaykensii **TPFL Pop. No:** P3

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
49.9 km South of Juna Downs, 109.5 km West of Newman and 105.0 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.121892899999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.69307740000001 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				10
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

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Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' low woodland

2. Eremophila jucunda subsp. pulcherrima, E. phyllopoda subsp. obliqua, (E. cuneifolia, E. oppositifolia subsp. angustifolia) open shrubland

3. Triodia pungens very open hummock grassland.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: [signature] Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
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Version 1.3 August 2017

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TAXON: Eremophila naaykensii **TPFL Pop. No:** P3

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
59.5 km South of Juna Downs, 121.1 km West of Newman and 91.2 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.19293369 No. satellites: Map used:

WGS84 **Long / Easting:** 118.56197282098501 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				10
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia low open woodland

2. Triodia pungens and/or T. wiseana open hummock grassland

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at http://dpaw.wa.gov.au under *Standard Report Forms*

TAXON: Eremophila naaykensii **TPFL Pop. No:** P3

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
60.1 km South of Juna Downs, 124.1 km West of Newman and 88.2 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.191726769999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.53257457226201 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				15
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Corymbia ferriticola low open woodland

2. Acacia monticola tall open shrubland

3. Themeda triandra very open tussock grassland over Triodia pungens scattered hummock grasses

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Eremophila pusilliflora **TPFL Pop. No:** P3

OBSERVATION DATE: 17/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
60.4 km South of Juna Downs, 123.8 km West of Newman and 88.4 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.195074900000002 No. satellites: Map used:

WGS84 **Long / Easting:** 118.5350272 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope ☒	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura', A. pruinocarpa low open woodland/A. 'aneura', A. catenulata subsp. occidentalis low woodland to low open forest

2. Eremophila forrestii subsp. forrestii open shrubland

3. Triodia pungens open hummock grassland/T. pungens very open hummock grassland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

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Version 1.3 August 2017

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TAXON: Eremophila sp. West Angelas (S.van Leeuwen 4068) **TPFL Pop. No:** P3

OBSERVATION DATE: 24/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
49.6 km South of Juna Downs, 109.6 km West of Newman and 105.0 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.119573800000001 No. satellites: Map used:

WGS84 **Long / Easting:** 118.6927182 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' low woodland

2. Eremophila jucunda subsp. pulcherrima, E. phyllopoda subsp. obliqua, (E. cuneifolia, E. oppositifolia subsp. angustifolia) open shrubland

3. Triodia pungens very open hummock grassland.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

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TAXON: Grevillea saxicola **TPFL Pop. No:** P3

OBSERVATION DATE: 23/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
59.6 km South of Juna Downs, 101.8 km West of Newman and 110.5 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.207663799999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.7504934 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia low open woodland

2. Triodia pungens and/or T. wiseana open hummock grassland

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Grevillea saxicola **TPFL Pop. No:** P3

OBSERVATION DATE: 23/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
49.8 km South of Juna Downs, 109.4 km West of Newman and 105.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.121240700000001 No. satellites: Map used:

WGS84 **Long / Easting:** 118.6937908 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				10
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' low woodland

2. Eremophila jucunda subsp. pulcherrima, E. phyllopoda subsp. obliqua, (E. cuneifolia, E. oppositifolia subsp. angustifolia) open shrubland

3. Triodia pungens very open hummock grassland.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Grevillea saxicola **TPFL Pop. No:** P3

OBSERVATION DATE: 23/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
54.5 km South of Juna Downs, 115.1 km West of Newman and 98.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.158892399999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.6281797 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' low woodland

2. Eremophila jucunda subsp. pulcherrima, E. phyllopoda subsp. obliqua, (E. cuneifolia, E. oppositifolia subsp. angustifolia) open shrubland

3. Triodia pungens very open hummock grassland.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

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TAXON: Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708) **TPFL Pop. No:** P3

OBSERVATION DATE: 18/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
56.8 km South of Juna Downs, 96.2 km West of Newman and 117.0 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.173166949999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.813451772896 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia scattered low trees

2. Acacia maitlandii scattered shrubs

3. Triodia vanleeuwenii, T. pungens open hummock grassland.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good ☒ Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

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TAXON: Indigofera gilesii **TPFL Pop. No:** P3

OBSERVATION DATE: 21/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
50.6 km South of Juna Downs, 105.2 km West of Newman and 109.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.127376300000002 No. satellites: Map used:

WGS84 **Long / Easting:** 118.7340875 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. | Size | Data attached | Total area of quadrats (m^2):

Summary Quad. Totals: Alive

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression ☒	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia scattered low trees

2. Acacia maitlandii scattered shrubs

3. Triodia vanleeuwenii, T. pungens open hummock grassland.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good ☒ Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Indigofera gilesii **TPFL Pop. No:** P3

OBSERVATION DATE: 21/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
59.3 km South of Juna Downs, 121.2 km West of Newman and 91.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.1917136 No. satellites: Map used:

WGS84 **Long / Easting:** 118.56131000000001 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				3
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression ☒	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Corymbia ferriticola low open woodland

2. Acacia monticola tall open shrubland

3. Themeda triandra very open tussock grassland over Triodia pungens scattered hummock grasses

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other:

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Olearia mucronata **TPFL Pop. No:** P3

OBSERVATION DATE: 18/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
49.7 km South of Juna Downs, 109.6 km West of Newman and 105.0 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.120439600000001 No. satellites: Map used:

WGS84 **Long / Easting:** 118.6926516 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				15
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' low woodland

2. Eremophila jucunda subsp. pulcherrima, E. phyllopoda subsp. obliqua, (E. cuneifolia, E. oppositifolia subsp. angustifolia) open shrubland

3. Triodia pungens very open hummock grassland.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
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TAXON: Rhagodia sp. Hamersley (M. Trudgen 17794) **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
59.9 km South of Juna Downs, 86.7 km West of Newman and 126.6 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.1767228 No. satellites: Map used:

WGS84 **Long / Easting:** 118.9072122 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

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GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat ☒	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eremophila forrestii subsp. forrestii open shrubland

2. Triodia melvillei open hummock grassland.

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Releve data

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

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TAXON: Rhagodia sp. Hamersley (M. Trudgen 17794) **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
61.1 km South of Juna Downs, 89.7 km West of Newman and 122.9 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.200259800000001 No. satellites: Map used:

WGS84 **Long / Easting:** 118.8713703 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat ☒	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura', A. ayersiana, A. pruinocarpa low open woodland

2. Triodia vanleeuwenii, T. pungens open hummock grassland.

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: [signature] Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Rhagodia sp. Hamersley (M. Trudgen 17794) **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
57.4 km South of Juna Downs, 103.1 km West of Newman and 109.5 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.188316499999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.74088999999999 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat ☒	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' and/or A. pruinocarpa low woodland to low open forest

2. Eremophila forrestii subsp. forrestii open shrubland

3. Triodia pungens very open hummock grassland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Rhagodia sp. Hamersley (M. Trudgen 17794) **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
56.3 km South of Juna Downs, 105.2 km West of Newman and 107.5 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.179885200000001 No. satellites: Map used:

WGS84 **Long / Easting:** 118.72154 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat ☒	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' and/or A. pruinocarpa low woodland to low open forest

2. Eremophila forrestii subsp. forrestii open shrubland

3. Triodia pungens very open hummock grassland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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GOVERNMENT OF WESTERN AUSTRALIA

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Version 1.3 August 2017

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TAXON: Sida sp. Barlee Range (S. van Leeuwen 1642) **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):

54.5 km South of Juna Downs, 114.9 km West of Newman and 98.2 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.1589195 No. satellites: Map used:

WGS84 **Long / Easting:** 118.62965560000001 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve Timber reserve Private property Rail reserve Shire road reserve

National park State forest Pastoral lease MRWA road reserve Other Crown reserve

Conservation park Water reserve UCL SLK/Pole to Specify other: Mining Lease

AREA ASSESSMENT: Edge survey Partial survey ☒ Full survey Area observed (m^2):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ Extrapolation Estimate Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				5
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached Total area of quadrats (m^2):

Summary Quad. Totals: Alive

REPRODUCTIVE STATE: Clonal Vegetative Flowerbud Flower ☒

Immature fruit Fruit Dehisced fruit Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate Poor Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

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HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Acacia 'aneura' low woodland

2. Eremophila jucunda subsp. pulcherrima, E. phyllopoda subsp. obliqua, (E. cuneifolia, E. oppositifolia subsp. angustifolia) open shrubland

3. Triodia pungens very open hummock grassland.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

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TAXON: Sida sp. Barlee Range (S. van Leeuwen 1642) **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):

54.9 km South of Juna Downs, 116.9 km West of Newman and 96.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.159907539999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.609320183561 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				20
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia low open woodland

2. Triodia vanleeuwenii, T. pungens and/or T. sp. Mt Ella (M.E. Trudgen 12739) open hummock grassland

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other:

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at http://dpaw.wa.gov.au under *Standard Report Forms*

TAXON: Sida sp. Barlee Range (S. van Leeuwen 1642) **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
59.4 km South of Juna Downs, 121.0 km West of Newman and 91.3 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.1929187 No. satellites: Map used:

WGS84 **Long / Easting:** 118.56273040000001 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. | Size | Data attached | Total area of quadrats (m^2):

Summary Quad. Totals: Alive

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia low open woodland

2. Triodia pungens and/or T. wiseana open hummock grassland

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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TAXON: Sida sp. Barlee Range (S. van Leeuwen 1642) **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):

60.1 km South of Juna Downs, 124.2 km West of Newman and 88.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.190834899999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.53163670000001 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve Timber reserve Private property Rail reserve Shire road reserve

National park State forest Pastoral lease MRWA road reserve Other Crown reserve

Conservation park Water reserve UCL SLK/Pole to Specify other: Mining Lease

AREA ASSESSMENT: Edge survey Partial survey ☒ Full survey Area observed (m^2):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ Extrapolation Estimate Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached Total area of quadrats (m^2):

Summary Quad. Totals: Alive

REPRODUCTIVE STATE: Clonal Vegetative Flowerbud Flower ☒

Immature fruit Fruit Dehisced fruit Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate Poor Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:

Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Corymbia ferriticola low open woodland

2. Acacia monticola tall open shrubland

3. Themeda triandra very open tussock grassland over Triodia pungens scattered hummock grasses

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good ☒ Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: WA Herb. ☒ Regional Herb. District Herb. Other:

ATTACHED: Map Mudmap Photo GIS data Field notes Other:

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
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GOVERNMENT OF WESTERN AUSTRALIA

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TAXON: Solanum kentrocaule **TPFL Pop. No:** P3

OBSERVATION DATE: 19/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
50.1 km South of Juna Downs, 109.2 km West of Newman and 105.2 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.124028800000001 No. satellites: Map used:

WGS84 **Long / Easting:** 118.69552539999999 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate | Count Method: Actual count - individuals

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative | Flowerbud | Flower ☒

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

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Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

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GOVERNMENT OF WESTERN AUSTRALIA

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Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia low open woodland

2. Triodia longiceps and/or T. wiseana, T. pungens open hummock grassland.

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: [signature] Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

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Version 1.3 August 2017

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TAXON: Triodia sp. Mt Ella (M.E. Trudgen 12739) **TPFL Pop. No:** P3

OBSERVATION DATE: 20/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):

56.9 km South of Juna Downs, 96.0 km West of Newman and 117.1 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.174355259999999 No. satellites: Map used:

WGS84 **Long / Easting:** 118.815016768178 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate ☒ | Count Method: Estimate (Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1000
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative ☒ | Flowerbud | Flower

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

Please return completed form to **Species And Communities Branch** DBCA,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 **OR** email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ☐

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

HABITAT INFORMATION:

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	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone ☒	10-30% ☒	Clay loam ☒	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia scattered low trees

2. Acacia maitlandii scattered shrubs

3. Triodia vanleeuwenii, T. pungens open hummock grassland.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

DRF PERMIT/ LICENCE No: Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☒ Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other:

Submitter of Record: Rebecca Mason Role: Principal Botanist Signed: _____ Date: 30 / 9 / 2024

Please return completed form to **Species And Communities Branch** DBCA,
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Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at http://dpaw.wa.gov.au under *Standard Report Forms*

TAXON: Triodia sp. Mt Ella (M.E. Trudgen 12739) **TPFL Pop. No:** P3

OBSERVATION DATE: 20/3/2024 **CONSERVATION STATUS:** New population: ☒

OBSERVER/S Simon Colwill **PHONE:** 08 9422 5900

ROLE: Principal Botanist **ORGANISATION:** SLR Consulting Australia Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place):
50.4 km South of Juna Downs, 97.6 km West of Newman and 117.6 km East of Paraburdoo

Reserve no:

DBCA DISTRICT: Pilbara region **LGA:** Land manager present:

DATUM: **COORDINATES:** (If UTM coords provided, **Zone** is also required) **METHOD USED:**

GDA94 / MGA94 DecDegrees DegMinSec UTMs ☒ GPS ☒ Differential GPS Map

AGD84 / AMG84 **Lat / Northing:** -23.113961499999998 No. satellites: Map used:

WGS84 **Long / Easting:** 118.8156596 Boundary polygon captured Map Scale:

Unknown **ZONE:** 50K

LAND TENURE:

Nature reserve | Timber reserve | Private property | Rail reserve | Shire road reserve

National park | State forest | Pastoral lease | MRWA road reserve | Other Crown reserve

Conservation park | Water reserve | UCL | SLK/Pole to | Specify other: Mining Lease

AREA ASSESSMENT: Edge survey | Partial survey ☒ | Full survey | Area observed (m^2):

EFFORT: Time spent surveying (minutes): | No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☒ | Extrapolation | Estimate ☒ | Count Method: Estimate (Refer to field manual for list)

WHAT COUNTED: Plants ☒ | Clumps | Clonal stems

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				100
Dead				

Area of pop (m^2):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:

	No.	Size	Data attached	Total area of quadrats (m^2):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal | Vegetative ☒ | Flowerbud | Flower

Immature fruit | Fruit | Dehisced fruit | Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ | Moderate | Poor | Senescent

COMMENT:

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential impact (L-E)**	**Potential Threat Onset (S-L)**
• Complete vegetation clearing - Mining enterprise	N	H	M
• Weed invasion - General	L	M	M
•			

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GOVERNMENT OF WESTERN AUSTRALIA

Threatened and Priority Flora Report Form

Version 1.3 August 2017

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Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific **Landform** Element				
Wetland	(Refer to field manual for additional values)				

CONDITION OF SOIL: Dry ☒ Moist Waterlogged Inundated

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. illicifolia); **2.** Open shrubland (Hibbertia sp., Acacia spp.); **3.** Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus leucophloia subsp. leucophloia scattered low trees

2. Triodia brizoides, (T. wiseana) open hummock grassland.

3.

4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent ☒ Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: Year: **Fire Intensity:** High Medium Low No signs of fire ☒

FENCING: Not required ☒ Present Replace / repair Required Length req'd:

ROADSIDE MARKERS: Not required ☒ Present Replace / reposition Required Quantity req'd:

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)
Additional records for this population are attached.

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The following additional location data pertains to the populations detailed in the TPRF forms above:

Species	Status	Number of Individuals	Latitude	Longitude
Acacia bromilowiana	P4	50	-23.1739	118.8146
Acacia bromilowiana	P4	20	-23.1733	118.8136
Aristida lazaridis	P2	1	-23.1346	118.7897
Aristida lazaridis	P2	15	-23.1346	118.7896
Eremophila naaykensii	P3	3	-23.1719	118.8154
Eremophila naaykensii	P3	25	-23.1711	118.812
Eremophila naaykensii	P3	20	-23.1705	118.8126
Eremophila naaykensii	P3	50	-23.171	118.8127
Eremophila naaykensii	P3	5	-23.1719	118.8165
Eremophila naaykensii	P3	1	-23.2061	118.7511
Eremophila naaykensii	P3	3	-23.2075	118.7506
Eremophila naaykensii	P3	15	-23.2077	118.7506
Eremophila naaykensii	P3	0	-23.2077	118.7504
Eremophila naaykensii	P3	2	-23.2069	118.6382
Eremophila naaykensii	P3	10	-23.2069	118.6387
Eremophila naaykensii	P3	20	-23.1523	118.6193
Eremophila naaykensii	P3	15	-23.1523	118.6197
Eremophila naaykensii	P3	1	-23.1528	118.6197
Eremophila naaykensii	P3	4	-23.1531	118.6199
Eremophila naaykensii	P3	1	-23.153	118.6201
Eremophila naaykensii	P3	3	-23.1544	118.6208
Eremophila naaykensii	P3	30	-23.1548	118.6211
Eremophila naaykensii	P3	10	-23.1551	118.6213
Eremophila naaykensii	P3	15	-23.1559	118.6219
Eremophila naaykensii	P3	20	-23.1614	118.6248
Eremophila naaykensii	P3	10	-23.1614	118.6239
Eremophila naaykensii	P3	10	-23.1594	118.6252
Eremophila naaykensii	P3	4	-23.1593	118.6257
Eremophila naaykensii	P3	7	-23.1605	118.6266
Eremophila naaykensii	P3	40	-23.16	118.6279
Eremophila naaykensii	P3	30	-23.1594	118.6273
Eremophila naaykensii	P3	100	-23.1588	118.6281
Eremophila naaykensii	P3	50	-23.1601	118.6303
Eremophila naaykensii	P3	50	-23.1596	118.6292
Eremophila naaykensii	P3	25	-23.16	118.6289
Eremophila naaykensii	P3	100	-23.159	118.6289
Eremophila naaykensii	P3	75	-23.1586	118.629
Eremophila naaykensii	P3	50	-23.1545	118.6263
Eremophila naaykensii	P3	20	-23.1543	118.6259
Eremophila naaykensii	P3	10	-23.153	118.6266
Eremophila naaykensii	P3	50	-23.1528	118.6263
Eremophila naaykensii	P3	10	-23.1521	118.626
Eremophila naaykensii	P3	60	-23.1518	118.6257
Eremophila naaykensii	P3	10	-23.1516	118.6256
Eremophila naaykensii	P3	15	-23.1512	118.625
Eremophila naaykensii	P3	10	-23.1511	118.6256
Eremophila naaykensii	P3	5	-23.1592	118.6261
Eremophila naaykensii	P3	0	-23.1546	118.6211
Eremophila naaykensii	P3	0	-23.1589	118.6281
Eremophila naaykensii	P3	15	-23.1612	118.6091
Eremophila naaykensii	P3	25	-23.1605	118.6093
Eremophila naaykensii	P3	100	-23.1601	118.6098
Eremophila naaykensii	P3	1	-23.1607	118.6093
Eremophila naaykensii	P3	10	-23.1219	118.6931

Eremophila naaykensii	P3	1	-23.1194	118.6927
Eremophila naaykensii	P3	4	-23.1215	118.6935
Eremophila naaykensii	P3	3	-23.1216	118.6935
Eremophila naaykensii	P3	8	-23.1929	118.5625
Eremophila naaykensii	P3	10	-23.1929	118.562
Eremophila naaykensii	P3	5	-23.1925	118.5617
Eremophila naaykensii	P3	10	-23.1922	118.5616
Eremophila naaykensii	P3	10	-23.1923	118.5612
Eremophila naaykensii	P3	1	-23.1918	118.5614
Eremophila naaykensii	P3	15	-23.1917	118.5326
Eremophila naaykensii	P3	10	-23.1917	118.5324
Eremophila naaykensii	P3	10	-23.1915	118.5321
Eremophila naaykensii	P3	10	-23.1908	118.5318
Eremophila naaykensii	P3	0	-23.1915	118.5322
Eremophila pusilliflora	P2	1	-23.1951	118.535
Eremophila pusilliflora	P2	10	-23.1946	118.5331
Eremophila pusilliflora	P2	3	-23.1942	118.5331
Eremophila pusilliflora	P2	1	-23.1951	118.535
Eremophila pusilliflora	P2	2	-23.1949	118.5349
Eremophila sp. West Angelas (S.van Leeuwen 4068)	P2	1	-23.1196	118.6927
Eremophila sp. West Angelas (S.van Leeuwen 4068)	P2	3	-23.1195	118.6928
Grevillea saxicola	P3	5	-23.2077	118.7505
Grevillea saxicola	P3	10	-23.1212	118.6938
Grevillea saxicola	P3	0	-23.1589	118.6282
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	3	-23.1712	118.8144
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	5	-23.1721	118.8164
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	5	-23.1732	118.8135
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	3	-23.1731	118.8132
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	1	-23.1716	118.8156
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	3	-23.1719	118.8168
Indigofera gilesii	P3	1	-23.1266	118.7329
Indigofera gilesii	P3	2	-23.1274	118.7341
Indigofera gilesii	P3	3	-23.1917	118.5613
Olearia mucronata	P3	15	-23.1204	118.6927
Olearia mucronata	P3	0	-23.1203	118.6925
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	1	-23.1765	118.9074
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	0	-23.1767	118.9072
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	0	-23.1723	118.9092
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	1	-23.2003	118.8714
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	1	-23.1883	118.7409
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	1	-23.1795	118.7214
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	2	-23.1793	118.7216
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	1	-23.1799	118.7215
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	15	-23.1523	118.6196
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	5	-23.1589	118.6297
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	5	-23.1533	118.6266
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	25	-23.1531	118.6265
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	5	-23.1527	118.6261
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	15	-23.1522	118.626
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	15	-23.1518	118.6259
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	0	-23.1589	118.6281
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	20	-23.1599	118.6093
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	1	-23.1929	118.5627
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	18	-23.1929	118.5625
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	20	-23.1929	118.5618
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	14	-23.1917	118.5613
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	1	-23.1918	118.5614

Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	5	-23.1908	118.5316
Solanum kentrocaule	P3	1	-23.1196	118.6927
Solanum kentrocaule	P3	1	-23.1195	118.6928
Solanum kentrocaule	P3	0	-23.124	118.6955
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	1000	-23.171	118.8129
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	1000	-23.1712	118.8136
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	1000	-23.1717	118.815
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	300	-23.1721	118.8163
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	1000	-23.1721	118.8171
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	1000	-23.1744	118.815
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	1000	-23.1733	118.8134
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	50	-23.1709	118.8111
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	0	-23.1713	118.8139
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	100	-23.114	118.8157
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	100	-23.1137	118.8152
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	200	-23.1135	118.8149
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	100	-23.1135	118.8143
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	50	-23.1135	118.814
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	100	-23.1135	118.8132
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	100	-23.1135	118.8125
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	50	-23.1136	118.8119
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	100	-23.1131	118.8112
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	100	-23.1128	118.8109
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	50	-23.1132	118.8105

Appendix H Fauna Desktop Assessment Results

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

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.

Conservation Status: CR/CE - Critically Endangered, EN - Endangered, VU - Vulnerable, MI - Migratory, OS - Other Specially Protected fauna, MA - Marine, P - Listed as Priority by DBCA.

NM - NatureMap, PMST - EPBC Protected Matters Search Tool, DBCA - DBCA Threatened and Priority Fauna database search, RTIO – Rio Tinto Internal Database.

Literature: A - Greater West Angelas Terrestrial Fauna Assessment (Ecologia Environment, 2014), B - Hope Downs 2 Proposal – Ghost Bat Cave Characteristics, February/March 2020 (Astron Environmental Services, 2020), C - Hope Downs 2 Proposal Fauna Survey (Astron Environmental Services 2019), D - Flora, Vegetation and Fauna Habitat Assessment at Juna Downs Native Vegetation Clearing Permit – Supporting Report (Rio Tinto, 2016), E - West Angelas - Deposit B and F Ghost Bat Assessment (Biologic Environmental Survey, 2014), F - 2017 West Angelas Ghost Bat Monitoring (Biologic Environmental Survey, 2018), G - West Angelas Gas Pipeline Native Vegetation Clearing Permit (B-2018-007) (Biota Environmental Sciences, 2019), H - West angelas Beyond 2020 level 2 Vertebrate Fauna, SRE Invertebrate and Fauna Assessment Phase 1 and 2 (Biologic Environmental Survey, 2019), I - West Angelas Beyond 2020: Targeted Vertebrate fauna Survey (Biologic Environemntal Survey, 2020), J - West Angelas Managed Aquifer Targeted Flora and Fauna Survey (Biolgici Environmemntal Survey, 2023), K - West Angelas Beyond 2020 Infrastucture Corridors Reconnaisance and Targeted Survey (Biologic Environmental Survey, 2022)

Family	Scientific Name	Common Name	Conservation Status		Database				Literature										
			State	Commonwealth	NM	PMST	DBCA	RTIO	A	B	C	D	E	F	G	H	I	J	K
Amphibia																			
Limnodynastidae	*Neobatrachus aquilonius*	Northern Burrowing Frog			1														
Limnodynastidae	*Neobatrachus sutor*	Shoemaker Frog			5			1											
Myobatrachidae	*Pseudophryne douglasi*	Gorge Toadlet			1			1											
Pelodryadidae	*Cyclorana maini*	Sheep Frog			44			19			x								
Pelodryadidae	*Cyclorana occidentalis*	Western Water-holding Frog						2											
Pelodryadidae	*Litoria rubella*	Little Red Tree Frog			22			46			x								
Aves																			
Acanthizidae	*Acanthiza apicalis*	Inland Thornbill			68			95	59		x								
Acanthizidae	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill			4			3											
Acanthizidae	*Acanthiza robustirostris*	Slaty-backed Thornbill			20			28			x								

Family	Scientific Name	Common Name	Conservation Status		Database				Literature										
			State	Commonwealth	NM	PMST	DBCA	RTIO	A	B	C	D	E	F	G	H	I	J	K
Acanthizidae	*Acanthiza uropygialis*	Chestnut-rumped Thornbill			37			69	54		x								
Acanthizidae	*Aphelocephala leucopsis*	Southern Whiteface		VU		x													
Acanthizidae	*Gerygone fusca*	Western Gerygone			91			163	66		x								
Acanthizidae	*Pyrrholaemus brunneus*	Redthroat			6			3											
Acanthizidae	*Smicrornis brevirostris*	Weebill			327			427	411		x								
Accipitridae	*Accipiter cirrocephalus*	Collared Sparrowhawk			7			4	2										
Accipitridae	*Accipiter cirrocephalus cirrocephalus*				2														
Accipitridae	*Accipiter fasciatus*	Brown Goshawk		MA	7			15	1		x								
Accipitridae	*Aquila audax*	Wedge-tailed Eagle			12			10	4		x								
Accipitridae	*Circus assimilis*	Spotted Harrier			21			33	25		x								
Accipitridae	*Elanus axillaris*	Black-shouldered Kite			7			10	7		x								
Accipitridae	*Elanus scriptus*	Letter-winged Kite	P4		1		1	2			x								
Accipitridae	*Erythrotriorchis radiatus*	Red Goshawk	VU	EN		x													
Accipitridae	*Haliastur sphenurus*	Whistling Kite		MA	23			24	2		x								
Accipitridae	*Hamirostra melanosternon*	Black-breasted Buzzard			4			4			x								
Accipitridae	*Hieraaetus morphnoides*	Little Eagle			6			4	1		x								
Accipitridae	*Milvus migrans*	Black Kite			1														
Aegothelidae	*Aegotheles cristatus*	Australian Owlet-nightjar			25			185	9		x								

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Alaudidae	*Mirafra javanica*	Horsfield's Bush Lark			4			3	3		x								
Alcedinidae	*Dacelo leachii*	Blue-winged Kookaburra			3			7			x								
Alcedinidae	*Todiramphus pyrrhopygius*	Red-backed Kingfisher			57			66	18		x								
Alcedinidae	*Todiramphus sanctus*	Sacred Kingfisher		MA	12			21			x								
Anatidae	*Anas gracilis*	Grey Teal						1											
Anatidae	*Anas superciliosa*	Pacific Black Duck			1														
Anatidae	*Cygnus atratus*	Black Swan						1											
Anatidae	*Dendrocygna eytoni*	Plumed Whistling Duck			2														
Anatidae	*Malacorhynchus membranaceus*	Pink-eared Duck						1											
Apodidae	*Apus pacificus*	Pacific Swift	MI	MI, MA	6	x	6	8	553							1			
Ardeidae	*Ardea pacifica*	White-necked Heron			1			2											
Ardeidae	*Bubulcus coromandus*	Eastern Cattle Egret				x													
Artamidae	*Artamus cinereus*	Black-faced Woodswallow			63			190	182		x								
Artamidae	*Artamus cinereus melanops*				15														
Artamidae	*Artamus minor*	Little Woodswallow			38			76	60		x								
Artamidae	*Artamus personatus*	Masked Woodswallow			4			15	37		x								
Artamidae	*Cracticus nigrogularis*	Pied Butcherbird			132			205	46		x								

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Artamidae	*Cracticus torquatus*	Grey Butcherbird			66			172	38		x								
Artamidae	*Gymnorhina tibicen*	Australian Magpie			35			70	19		x								
Artamidae	*Gymnorhina tibicen dorsalis*	White-backed Magpie			8														
Burhinidae	*Burhinus grallarius*	Bush Stone-curlew			4			5	1										
Cacatuidae	*Cacatua sanguinea*	Little Corella			9			12			x								
Cacatuidae	*Cacatua sanguinea westralensis*	Western Little Corella			8														
Cacatuidae	*Eolophus roseicapilla*	Galah			28			86	80		x								
Cacatuidae	*Nymphicus hollandicus*	Cockatiel			55			25	132		x								
Campephagidae	*Coracina maxima*	Ground Cuckooshrike			11			4											
Campephagidae	*Coracina novaehollandiae*	Black-faced Cuckooshrike		MA	96			155	25		x								
Campephagidae	*Lalage tricolor*	White-winged Triller			33			52	31		x								
Caprimulgidae	*Eurostopodus argus*	Spotted Nightjar		MA	14			48	9		x								
Casuariidae	*Dromaius novaehollandiae*	Emu			4			3			x								
Charadriidae	*Charadrius veredus*	Oriental Plover	MI	MI, MA		x	1	1			x								
Charadriidae	*Elseyornis melanops*	Black-fronted Dotterel			3														
Columbidae	*Geopelia cuneata*	Diamond Dove			81			95	55		x								
Columbidae	*Geophaps plumifera*	Spinifex Pigeon			13			28	18		x								

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Columbidae	*Ocyphaps lophotes*	Crested Pigeon			89			144	119		x								
Columbidae	*Phaps chalcoptera*	Common Bronzewing			27			57	33		x								
Corvidae	*Corvus bennetti*	Little Crow			13			8	2		x								
Corvidae	*Corvus orru*	Torresian Crow			75			382	25		x								
Corvidae	*Corvus orru cecilae*	Western Crow			21														
Cuculidae	*Centropus phasianinus*	Pheasant Coucal						2											
Cuculidae	*Chalcites basalis*	Horsfield's Bronze Cuckoo		MA	7			135	2		x								
Cuculidae	*Chalcites osculans*	Black-eared Cuckoo		MA		x		17											
Cuculidae	*Heteroscenes pallidus*	Pallid Cuckoo		MA	45			59			x								
Dicaeidae	*Dicaeum hirundinaceum*	Mistletoebird			19			13	1										
Estrildidae	*Emblema pictum*	Painted Finch			70			80	75		x								
Estrildidae	*Neochmia ruficauda*	Star Finch			5														
Estrildidae	*Taeniopygia castanotis*	Australian Zebra Finch			239			361	840		x								
Falconidae	*Falco berigora*	Brown Falcon			55			105	28		x								
Falconidae	*Falco cenchroides*	Nankeen Kestral		MA	18			14	5		x								
Falconidae	*Falco cenchroides cenchroides*	Nankeen Kestral		MA	1														
Falconidae	*Falco hypoleucos*	Grey Falcon	VU	VU	4	x	4												
Falconidae	*Falco longipennis*	Australian Hobby			6			8	2		x								

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Falconidae	*Falco peregrinus*	Peregrine Falcon	OS		2		2												
Hirundinidae	*Hirundo rustica*	Barn Swallow	MI	MI, MA		x													
Hirundinidae	*Petrochelidon ariel*	Fairy Martin			8			5			x								
Hirundinidae	*Petrochelidon nigricans*	Tree Martin		MA	4						x								
Locustellidae	*Cincloramphus cruralis*	Brown Songlark			7			3	1										
Locustellidae	*Cincloramphus mathewsi*	Rufous Songlark			67			79	18		x								
Locustellidae	*Poodytes carteri*	Spinifexbird			66			184	85		x								
Maluridae	*Amytornis whitei whitei*	Pilbara Grasswren	P4		16			22			x								
Maluridae	*Malurus assimilis*	Purple-backed Fairywren			86			177	136		x								
Maluridae	*Malurus leucopterus*	White-winged Fairywren			34			94	60		x								
Maluridae	*Malurus splendens*	Splendid Fairywren			14			33	11										
Maluridae	*Stipiturus ruficeps*	Rufous-crowned Emu-wren			24			35	34		x								
Maluridae	*Stipiturus ruficeps ruficeps*				1														
Meliphagidae	*Acanthagenys rufogularis*	Spiny-cheeked Honeyeater			139			274	96		x								
Meliphagidae	*Certhionyx variegatus*	Pied Honeyeater			1														
Meliphagidae	*Epthianura tricolor*	Crimson Chat			29			28	73										
Meliphagidae	*Gavicalis virescens*	Singing Honeyeater			259			522	288		x								

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Meliphagidae	*Lacustroica whitei*	Grey Honeyeater			3			4	3										
Meliphagidae	*Lichmera indistincta*	Brown Honeyeater			25			24	15		x								
Meliphagidae	*Lichmera indistincta indistincta*				4														
Meliphagidae	*Manorina flavigula*	Yellow-throated Miner			150			186	152		x								
Meliphagidae	*Melithreptus gularis*	Black-chinned Honeyeater			7			5	5										
Meliphagidae	*Ptilotula keartlandi*	Grey-headed Honeyeater			85			214	134		x								
Meliphagidae	*Ptilotula penicillata*	White-plumed Honeyeater			26			66			x								
Meliphagidae	*Ptilotula plumula*	Grey-fronted Honeyeater			7			5											
Meliphagidae	*Purnella albifrons*	White-fronted Honeyeater			2			6	3										
Meliphagidae	*Sugomel nigrum*	Black Honeyeater			2			1											
Meropidae	*Merops ornatus*	Rainbow Bee-eater		MA	12	x		40			x								
Monarchidae	*Grallina cyanoleuca*	Magpie-lark		MA	25			22	1		x								
Motacillidae	*Anthus australis*	Australian Pipit		MA	4			8	1		x								
Motacillidae	*Motacilla cinerea*	Grey Wagtail	MI	MI, MA		x													
Motacillidae	*Motacilla tschutschensis*	Eastern Yellow Wagtail	MI	MI, MA		x													
Neosittidae	*Daphoenositta chrysoptera*	Varied Sittella			2														
Oreoicidae	*Oreoica gutturalis*	Crested Bellbird			137			371	80		x								

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Otididae	*Ardeotis australis*	Australian Bustard			17			30	3		x								
Pachycephalidae	*Colluricincla harmonica*	Grey Shrikethrush			139			251	61		x								
Pachycephalidae	*Colluricincla harmonica rufiventris*	Grey Shrikethrush			1														
Pachycephalidae	*Pachycephala rufiventris*	Rufous Whistler			202			386	89		x								
Pardalotidae	*Pardalotus rubricatus*	Red-browed Pardalote			40			32	9		x								
Pardalotidae	*Pardalotus striatus*	Striated Pardalote			50			22	19		x								
Petroicidae	*Melanodryas cucullata*	Hooded Robin			87			96	23		x								
Petroicidae	*Petroica goodenovii*	Red-capped Robin			27			24	43		x								
Phalacrocoracidae	*Phalacrocorax sulcirostris*	Little Black Cormorant			2			1											
Phasianidae	*Synoicus ypsilophorus*	Brown Quail			10			22	7		x								
Podargidae	*Podargus strigoides*	Tawny Frogmouth			6			12	7		x								
Pomatostomidae	*Pomatostomus superciliosus*	White-browed Babbler			18			12	11										
Pomatostomidae	*Pomatostomus temporalis*	Grey-crowned Babbler			73			184	101		x								
Pomatostomidae	*Pomatostomus temporalis rubeculus*				10														
Psittaculidae	*Barnardius zonarius*	Australian Ringneck			52			179	63		x								
Psittaculidae	*Barnardius zonarius zonarius*	Port Lincoln Parrot			1														

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Psittaculidae	*Melopsittacus undulatus*	Budgerigar			161			195	###		x								
Psittaculidae	*Neophema elegans*	Elegant Parrot						1											
Psittaculidae	*Neopsephotus bourkii*	Bourke's Parrot			13			22			x								
Psittaculidae	*Pezoporus occidentalis*	Night Parrot	CR	EN		x													
Psittaculidae	*Polytelis alexandrae*	Princess Parrot	P4	VU		x													
Psittaculidae	*Psephotellus varius*	Mulga Parrot			4			19	10		x								
Psophodidae	*Psophodes occidentalis*	Western Wedgebill									x								
Ptilonorhynchidae	*Chlamydera guttata*	Western Bowerbird			21			62	7		x								
Ptilonorhynchidae	*Chlamydera maculata*	Spotted Bowerbird						2											
Recurvirostridae	*Himantopus himantopus*	Black-winged Stilt		MA	1														
Rhipiduridae	*Rhipidura albiscapa*	Grey Fantail			26			59	6		x								
Rhipiduridae	*Rhipidura albiscapa albicauda*	White-tailed Fantail			2														
Rhipiduridae	*Rhipidura leucophrys*	Willie Wagtail			174			540	125		x								
Rhipiduridae	*Rhipidura leucophrys leucophrys*				2														
Rostratulidae	*Rostratula australis*	Australian Painted Snipe	EN	EN, MA		x													
Scolopacidae	*Actitis hypoleucos*	Common Sandpiper	MI	MI, MA		x													

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Scolopacidae	*Calidris acuminata*	Sharp-tailed Sandpiper	MI	VU, MI, MA		x													
Scolopacidae	*Calidris ferruginea*	Curlew Sandpiper	CR	CE, MI, MA		x													
Scolopacidae	*Calidris melanotos*	Pectoral Sandpiper	MI	MI, MA		x													
Scolopacidae	*Tringa nebularia*	Common Greenshank	MI	EN, MI, MA				1											
Strigidae	*Ninox boobook boobook*	Southern Boobook		MA	8			16	1		x								
Threskiornithidae	*Threskiornis spinicollis*	Straw-necked Ibis		MA				1	5		x								
Turnicidae	*Turnix velox*	Little Buttonquail			53			99	57		x								
Tytonidae	*Tyto javanica*	Eastern Barn Owl			1			10	1										
Tytonidae	*Tyto javanica delicatula*							5											
Zosteropidae	*Zosterops lateralis*	Grey-breasted White-eye		MA				1											
Mammalia																			
Bovidae	*Bos primigenius taurus*	European Cattle			10			21			x								
Camelidae	*Camelus dromedarius*	Dromedary Camel			11			24			x								
Canidae	*Canis familiaris*	Dingo / Dog			26			62	5		x								

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Dasyuridae	*Dasykaluta rosamondae*	Kaluta			57			267	35		x								
Dasyuridae	*Dasyurus hallucatus*	Northern Quoll	EN	EN	4	x		18		x	x	x				1		3	
Dasyuridae	*Ningaui sp.*							3											
Dasyuridae	*Ningaui timealeyi*	Pilbara Ningaui			70			104	33		x								
Dasyuridae	*Planigale ingrami*	Long-tailed Planigale			5			1	1										
Dasyuridae	*Planigale kendricki*	Orange-headed Pilbara Planigale			4			45			x								
Dasyuridae	*Planigale sp.*				11			4											
Dasyuridae	*Pseudantechinus woolleyae*	Woolley's Pseudantechinus			1			52											
Dasyuridae	*Sminthopsis dolichura*	Little Long-tailed Dunnart			1														
Dasyuridae	*Sminthopsis macroura*	Stripe-faced Dunnart			54			90	35		x								
Dasyuridae	*Sminthopsis ooldea*	Ooldea Dunnart			19			34	11		x								
Dasyuridae	*Sminthopsis sp.*				1														
Dasyuridae	*Sminthopsis youngsoni*	Lesser Hairy-footed Dunnart			2			4											
Emballonuridae	*Saccolaimus flaviventris*	Yellow-bellied Sheath-tailed Bat			17			34	1										
Emballonuridae	*Taphozous georgianus*	Common Sheath-tailed Bat			38			191	1										
Emballonuridae	*Taphozous hilli*	Hill's Sheath-tailed Bat			34			269											

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Emballonuridae	*Taphozous sp.*							14											
Equidae	*Equus africanus asinus*	Donkey			3			2			x								
Equidae	*Equus ferus caballus*	Horse			2			4											
Felidae	*Felis catus*	Cat			5			75			x								
Leporidae	*Oryctolagus cuniculus*	Rabbit			18			34	8		x								
Macropodidae	*Osphranter robustus*	Common Wallaroo			31			89	10		x								
Macropodidae	*Osphranter robustus erubescens*	Euro, Biggada			1														
Macropodidae	*Osphranter rufus*	Red Kangaroo, Marlu			6			23	4		x								
Macropodidae	*Petrogale rothschildi*	Rothschild's Rock-wallaby			22			264	2		x								
Macropodidae	*Petrogale sp.*				1														
Megadermatidae	*Macroderma gigas*	Ghost Bat	VU	VU	121	x	141	68		x			x	x		11	2	4	1
Molossidae	*Austronomus australis*	White-striped Free-tailed Bat			9			37											
Molossidae	*Chaerephon jobensis colonicus*	Greater Northern Free-tailed Bat			15			281	1										
Molossidae	*Ozimops beccarii*	Beccari's Free-tailed Bat			19			12											
Molossidae	*Ozimops lumsdenae*	Northern Free-tailed Bat			2			68	1										
Muridae	*Leggadina lakedownensis*	Short-tailed Mouse	P4		3		3												
Muridae	*Mus musculus*	House Mouse			54			181	41		x								

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Muridae	*Notomys alexis alexis*	Spinifex Hopping-mouse			4														
Muridae	*Pseudomys chapmani*	Western Pebble-mound Mouse	P4		105		264	751	3		x	x			x	1		29	19
Muridae	*Pseudomys delicatulus*	Delicate Mouse			4			6	6										
Muridae	*Pseudomys desertor*	Desert Mouse			38			80	23		x								
Muridae	*Pseudomys hermannsburgensis*	Sandy Inland Mouse			84			200	76		x								
Muridae	*Pseudomys nanus nanus*	Western Chestnut Mouse			2														
Muridae	*Pseudomys sp.*							3											
Muridae	*Zyzomys argurus*	Common Rock-rat			58			467	53		x								
Rhinonycteridae	*Rhinonicteris aurantia Pilbara form*	Pilbara Leaf-nosed Bat	VU	VU	4	x	14	16	1							2	2		
Tachyglossidae	*Tachyglossus aculeatus acanthion*	Short-beaked Echidna						8			x								
Thylacomyidae	*Macrotis lagotis*	Bilby, Dalgyte	VU	VU	2		2												
Vespertilionidae	*Chalinolobus gouldii*	Gould's Wattled Bat			51			351	1										
Vespertilionidae	*Nyctophilus geoffroyi geoffroyi*	Lesser Long-eared Bat			9			44	1										
Vespertilionidae	*Scotorepens greyii*	Little Broad-nosed Bat			39			314	1										
Vespertilionidae	*Vespadelus finlaysoni*	Finlayson's Cave Bat			52			376	1										
Reptilia																			

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Agamidae	*Ctenophorus caudicinctus*	Western Ring-tailed Dragon			145			356	100		x								
Agamidae	*Ctenophorus isolepis*	Central Military Dragon			5			16			x								
Agamidae	*Ctenophorus isolepis isolepis*	Central Military Dragon			7														
Agamidae	*Ctenophorus reticulatus*	Western Netted Dragon			8														
Agamidae	*Diporiphora amphiboluroides*	Mulga Dragon			4			28											
Agamidae	*Diporiphora valens*	Southern Pilbara Tree Dragon			18			17	1										
Agamidae	*Diporiphora winneckei*	Canegrass Dragon			3														
Agamidae	*Gowidon longirostris*	Long-nosed Dragon			98			66	15		x								
Agamidae	*Pogona minor*	Dwarf Bearded Dragon			12			72	17		x								
Agamidae	*Pogona minor minor*	Western Bearded Dragon			11														
Agamidae	*Pogona minor mitchelli*	Northwest Bearded Dragon			8														
Agamidae	*Tympanocryptis cephalus*	Coastal Pebble-mimic Dragons			3			2	2										
Carphodactylidae	*Nephrurus cinctus*	Northern Banded Knob-tailed Gecko			2			12			x								
Carphodactylidae	*Nephrurus wheeleri*	Southern Banded Knob-tailed Gecko			2			3	2										

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Carphodactylidae	*Underwoodisaurus seorsus*	Pilbara Barking Gecko	P2		2		3	3	1										
Chelidae	*Chelodina steindachneri*	Flat-shelled Turtle			1			4											
Diplodactylidae	*Diplodactylus conspicillatus*	Variable Fat-tailed Gecko			2														
Diplodactylidae	*Diplodactylus galaxias*	Northern Pilbara Beak-faced Gecko						1											
Diplodactylidae	*Diplodactylus granariensis rex*							7											
Diplodactylidae	*Diplodactylus pulcher*				29			50	6		x								
Diplodactylidae	*Diplodactylus savagei*	Southern Pilbara Beak-faced Gecko			6			41	4										
Diplodactylidae	*Lucasium wombeyi*	Pilbara Ground Gecko			14			55	5		x								
Diplodactylidae	*Lucasium woodwardi*	Pilbara Ground Gecko			41			139	18		x								
Diplodactylidae	*Oedura fimbria*	Western Marbled Velvet Gecko			15			64	3		x								
Diplodactylidae	*Oedura marmorata*	Marbled Velvet Gecko			15			4											
Diplodactylidae	*Rhynchoedura ornata*	Western Beaked Gecko			32			75	5		x								
Diplodactylidae	*Strophurus ciliaris*	Northern Spiny-tailed Gecko						2											
Diplodactylidae	*Strophurus elderi*	Jewelled Gecko			14			6	2		x								

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Diplodactylidae	*Strophurus wellingtonae*	Western-shield Spiny-tailed Gecko			40			63	21		x								
Elapidae	*Acanthophis wellsi*	Pilbara Death Adder			6			6	1		x								
Elapidae	*Brachyurophis approximans*	North-western Shovel-nosed Snake			7			39	3		x								
Elapidae	*Demansia reticulata*	Reticulated Whipsnake			11			14	6		x								
Elapidae	*Demansia rufescens*	Rufous Whipsnake			6			20	4										
Elapidae	*Furina ornata*	Moon Snake			9			20	9		x								
Elapidae	*Pseudechis australis*	Mulga Snake			9			30	9		x								
Elapidae	*Pseudonaja mengdeni*	Western Brown Snake			5			17	6										
Elapidae	*Pseudonaja modesta*	Ringed Brown Snake			11			13	3										
Elapidae	*Pseudonaja nuchalis*	Gwardar; Northern Brown Snake			1			1			x								
Elapidae	*Simoselaps anomalus*	Desert Banded Snake						1											
Elapidae	*Suta fasciata*	Rosen's Snake			4			6	2										
Elapidae	*Suta gaikhorstorum*	Pilbara Hooded Snake						9											
Elapidae	*Suta monachus*	Inland Hooded Snake			16			3	2										
Elapidae	*Suta nigriceps*							1											
Elapidae	*Vermicella snelli*	Pilbara Bandy Bandy			1			1	1										

Family	Scientific Name	Common Name	Conservation Status		Database				Literature										
			State	Commonwealth	NM	PMST	DBCA	RTIO	A	B	C	D	E	F	G	H	I	J	K
Gekkonidae	*Gehyra fenestrula*	Hamersley Range Spotted Gehyra						3											
Gekkonidae	*Gehyra micra*	Small Pilbara Spotted Rock Gehyra						21											
Gekkonidae	*Gehyra montium*							2											
Gekkonidae	*Gehyra pilbara*	Pilbara Dtella			1			2											
Gekkonidae	*Gehyra punctata*	Spotted Pilbara Rock Dtella			51			42	5		x								
Gekkonidae	*Gehyra purpurascens*							2											
Gekkonidae	*Gehyra variegata*	Variegated Gehyra			77			132	52		x								
Gekkonidae	*Heteronotia binoei*	Bynoe's Gecko			87			212	71		x								
Gekkonidae	*Heteronotia spelea*	Pilbara Cave Gecko			12			41	2		x								
Pygopodidae	*Delma butleri*	Spinifex Delma			5			2			x								
Pygopodidae	*Delma elegans*	Pilbara Delma			5			5	3										
Pygopodidae	*Delma nasuta*	Sharp-snouted Delma			17			16	7		x								
Pygopodidae	*Delma pax*	Peaceful Delma			7			17	2		x								
Pygopodidae	*Delma tincta*	Excitable Delma			11			17	2										
Pygopodidae	*Lialis burtonis*	Burton's Snake-lizard			19			32	8		x								
Pygopodidae	*Pygopus nigriceps*	Western Hooded Scaly-foot			14			21	11		x								

Family	Scientific Name	Common Name	Conservation Status		Database				Literature										
			State	Commonwealth	NM	PMST	DBCA	RTIO	A	B	C	D	E	F	G	H	I	J	K
Pythonidae	*Antaresia perthensis*	Pygmy Python			7			11	5										
Pythonidae	*Aspidites melanocephalus*	Black-headed Python			1			3											
Pythonidae	*Liasis olivaceus barroni*	Pilbara Olive Python	VU	VU	2	x	2	4								1			
Scincidae	*Carlia munda*	Shaded-litter Rainbow-skink			97			281	47		x								
Scincidae	*Carlia triacantha*	Desert Rainbow Skink			2			27	1										
Scincidae	*Cryptoblepharus buchananii*	Buchanan's Snake-eyed Skink			4			2											
Scincidae	*Cryptoblepharus plagiocephalus*	Péron's Snake-eyed Skink			3														
Scincidae	*Cryptoblepharus ustulatus*	Russet Snake-eyed Skink			16			37	9		x								
Scincidae	*Ctenotus ariadnae*	Ariadna's Ctenotus			1														
Scincidae	*Ctenotus duricola*	Eastern Pilbara Lined Ctenotus			49			27	19										
Scincidae	*Ctenotus grandis*	Grand Ctenotus			1			8			x								
Scincidae	*Ctenotus hanloni*	Nimble Ctenotus						6											
Scincidae	*Ctenotus helenae*	Clay-soil Ctenotus			98			76	68		x								
Scincidae	*Ctenotus inornatus*							344											
Scincidae	*Ctenotus leonhardii*	Common Desert Ctenotus			1			9											
Scincidae	*Ctenotus pallasotus*	Western Pilbara Lined Ctenotus			2			25			x								

Family	Scientific Name	Common Name	Conservation Status		Database				Literature										
			State	Commonwealth	NM	PMST	DBCA	RTIO	A	B	C	D	E	F	G	H	I	J	K
Scincidae	*Ctenotus pantherinus*	Leopard Ctenotus			191			481	111		x								
Scincidae	*Ctenotus piankai*	Coarse Sands Ctenotus			4			2											
Scincidae	*Ctenotus robustus*	Robust Striped Ctenotus			4			4	4										
Scincidae	*Ctenotus rubicundus*	Ruddy Ctenotus			3			6											
Scincidae	*Ctenotus rutilans*	Rusty-shouldered Ctenotus			19			23	7		x								
Scincidae	*Ctenotus saxatilis*	Rock Ctenotus			108			163	60		x								
Scincidae	*Ctenotus schomburgkii*	Barred Wedge-snouted Ctenotus			61			98	29		x								
Scincidae	*Ctenotus serventyi*	North-western Sandy-loam Ctenotus						6											
Scincidae	*Ctenotus superciliaris*	Sharp-browed Ctenotus						14											
Scincidae	*Ctenotus uber uber*	Western Spotted Ctenotus			6			55	2		x								
Scincidae	*Cyclodomorphus melanops*	Spinifex Slender Blue-tongue			7			17	6										
Scincidae	*Cyclodomorphus melanops melanops*	Spinifex Slender Blue-tongue			4														
Scincidae	*Egernia cygnitos*	Western Pilbara Spiny-tailed Skink			3			6	1										
Scincidae	*Egernia depressa*	Southern Pygmy Spiny-tailed Skink			1														

Family	Scientific Name	Common Name	Conservation Status		Database				Literature										
			State	Commonwealth	NM	PMST	DBCA	RTIO	A	B	C	D	E	F	G	H	I	J	K
Scincidae	*Egernia formosa*	Goldfields Crevice-skink			6			33	2		x								
Scincidae	*Eremiascincus richardsonii*	Broad-banded Sand Swimmer						1											
Scincidae	*Lerista chalybura*				8			14	8										
Scincidae	*Lerista flammicauda*	Pilbara flame-tailed slider			1			2											
Scincidae	*Lerista jacksoni*	Jackson's Three-toed Slider			1			7											
Scincidae	*Lerista macropisthopus remota*		P2		3		4	1			x								
Scincidae	*Lerista muelleri*	Wood Mulch-slider			30			58	3		x								
Scincidae	*Lerista neander*				18			53	3		x								
Scincidae	*Lerista timida*	Timid Slider			4			4	4										
Scincidae	*Lerista verhmens*	Powerful Three-toed Slider			1			1	1										
Scincidae	*Liopholis kintorei*	Great Desert Skink	VU	VU		x													
Scincidae	*Menetia greyii*	Common Dwarf Skink			19			31	1		x								
Scincidae	*Menetia surda surda*				3			4											
Scincidae	*Morethia ruficauda*	Lined Fire-tailed Skink			7			92	10		x								
Scincidae	*Morethia ruficauda exquisita*	Lined Fire-tailed Skink			22														
Scincidae	*Tiliqua multifasciata*	Central Blue-tongue			13			56	9		x								

Family	Scientific Name	Common Name	Conservation Status		Database				Literature										
			State	Commonwealth	NM	PMST	DBCA	RTIO	A	B	C	D	E	F	G	H	I	J	K
Typhlopidae	*Anilios ammodytes*	Pilbara Blind Snake			1			5			x								
Typhlopidae	*Anilios ganei*	Gane's Blind Snake	P1		1		2	9								1			
Typhlopidae	*Anilios grypus*	Long-beaked Blind Snake			7			35			x								
Typhlopidae	*Anilios hamatus*				6			15			x								
Typhlopidae	*Anilios pilbarensis*	Pilbara Hook-snouted Blind Snake			1														
Varanidae	*Varanus acanthurus*	Spiny-tailed Goanna			39			77	30		x								
Varanidae	*Varanus brevicauda*	Short-tailed Pygmy Goanna			23			52	14		x								
Varanidae	*Varanus bushi*	Pilbara Mulga Goanna			13			13	9		x								
Varanidae	*Varanus caudolineatus*				6			6	1		x								
Varanidae	*Varanus giganteus*	Perentie			2			30	3		x								
Varanidae	*Varanus gilleni*	Pygmy Mulga Goanna						1											
Varanidae	*Varanus gouldii*	Bungarra Or Sand Goanna			4			14			x								
Varanidae	*Varanus hamersleyensis*	Southern Pilbara Rock Goanna						14											
Varanidae	*Varanus panoptes*				5			21	5		x								
Varanidae	*Varanus panoptes rubidus*	Yellow-Spotted Monitor			3														
Varanidae	*Varanus pilbarensis*	Northern Pilbara Rock Goanna			1														

Family	Scientific Name	Common Name	Conservation Status		Database				Literature										
			State	Commonwealth	NM	PMST	DBCA	RTIO	A	B	C	D	E	F	G	H	I	J	K
Varanidae	*Varanus tristis*	Racehorse Goanna			16			31	10		x								

Appendix I Fauna Habitat Assessments

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

WA-CAM-A1

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.193010	**Longitude**	118.544608

Landform and Soil		**Rock**	
Landform	Gorge	**Rock type/s**	Ironstone
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Small pool down stream
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Exfoliating rock, Rock crevices
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	<10%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt*
Mid stratum	Absent		
Ground stratum	Mid (0.5-1 m)	Sparse hummock grassland (0.25-20%)	*Triodia spp.*



Fulcrum photo ID	e3b8bd12-c51d-43a6-b37e-a065e27d0b24, 1216dd57-576b-438a-

WA-CAM-A1-cave

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.192842	**Longitude**	118.546712

Landform and Soil		**Rock**	
Landform	Gorge	**Rock type/s**	Ironstone
Aspect	Southeast	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Present
Fire History	Unknown	**Microhabitats**	Caves, Exfoliating rock, Hummocks, Leaf litter, Peeling bark, Rock crevices, Woody debris
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt, Ficus sp.*
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Mixed shrubs*
Ground stratum	Low (>0.5 m)	Grassland (50-80%)	*Triodia spp., mixed grasses*



Fulcrum photo ID	fdb5d784-8ba4-45bb-ba02-a19f995c1832

WA-CAM-A2

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.191588	**Longitude**	118.560661

Landform and Soil		**Rock**	
Landform	Drainage line	**Rock type/s**	Ironstone
Aspect	Southeast	**Surface stone cover**	75 - 100%
Soil type	Clay loam	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Unknown	**Microhabitats**	Exfoliating rock, Leaf litter, Rock crevices, Termite mounds, Woody debris
Disturbance	None observed		
Introduced fauna	Dog	**Ground Cover**	26-50%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt, Acacia spp.*
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	*Mixed shrubs*
Ground stratum	Low (>0.5 m)	Open grassland (20-50%), Sparse fordland (0.25-20%)	*Triodia spp., mixed grasses, mixed herbs*



Fulcrum photo ID	3d097424-8d2f-4fd7-b251-d745ec838870, 501604ae-ff42-440d-95c4-

WA-HAB-A4

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.192749	**Longitude**	118.529768

Landform and Soil		**Rock**	
Landform	Gorge	**Rock type/s**	Ironstone
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Clay loam	**Surface stone size classes present**	Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Leaf litter, Peeling bark, Rock crevices
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	51-75%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt, Ficus sp.*
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Mixed shrubs*
Ground stratum	Low (>0.5 m)	Sparse grassland (0.25-20%), Sparse fordland (0.25-20%)	*Triodia spp., mixed grasses, mixed herbs*



Fulcrum photo ID	ff57ae5b-a413-4e62-a46c-09c17cbd42b3, fe0069c9-693c-4ae2-b212-

WA-HAB-A5

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.194222	**Longitude**	118.535576

Landform and Soil		**Rock**	
Landform	Upper slope	**Rock type/s**	Greenstone, Ironstone, Quartz
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	Very good	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks
Disturbance	None observed		
Introduced fauna	Cattle	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Isolated shrubs and/or heath shrubs (<0.25%)	
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	*Triodia spp.*



Fulcrum photo ID	f7c0f66b-0024-45a8-aa67-b3cac2c36b12, 4f53a3ee-3835-455f-b6f6-

WA-HAB-A6

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.193156	**Longitude**	118.563695

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Ironstone
Aspect	Southeast	**Surface stone cover**	75 - 100%
Soil type	Sandy loam	**Surface stone size classes present**	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Black, Red		
Condition		**Habitat Features**	
Quality	Very good	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks, Woody debris
Disturbance			
Introduced fauna	Dog	**Ground Cover**	26-50%

Vegetation			
Upper stratum	Absent		
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp.*
Ground stratum	Mid (0.5-1 m)	Open hummock grassland (20-50%)	*Triodia spp.*



Fulcrum photo ID	3e60de92-2bcf-4fc1-9c2f-d558ec019b15, b4724b4a-20c0-4443-a15c-

WA-HAB-A8

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-17		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.193836	**Longitude**	118.565791

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Ironstone, Quartz
Aspect	South	**Surface stone cover**	50 - 75%
Soil type	Sandy clay	**Surface stone size classes present**	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	Very good	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks, Peeling bark, Termite mounds
Disturbance	Vehicle tracks		
Introduced fauna	Cattle	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Absent		
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	*Acacia spp.*
Ground stratum	Low (>0.5 m)	Sparse hummock grassland (0.25-20%)	*Triodia spp.*



Fulcrum photo ID	af1e3d4c-6eba-4e41-a586-875f2544ed91, 149e8c14-d171-46b9-be1d-

WA-HAB-A9

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.180300	**Longitude**	118.564769

Landform and Soil		**Rock**	
Landform	Drainage line	**Rock type/s**	Ironstone
Aspect	Southeast	**Surface stone cover**	75 - 100%
Soil type	Sandy loam	**Surface stone size classes present**	Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks, Leaf litter, Woody debris
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	51-75%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt*
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	*Acacia spp., mixed shrubs*
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	*Triodia spp.*



Fulcrum photo ID	0c5bd7bc-d700-47df-82e0-bda4ac1a769f, 13663456-a091-4c5d-941e-

WA-HAB-A10

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.184553	**Longitude**	118.570340

Landform and Soil		**Rock**	
Landform	Lower slope	**Rock type/s**	Ironstone
Aspect	North	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Unknown	**Microhabitats**	Hummocks
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	76-100%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Eucalypt, Acacia spp.*
Ground stratum	Low (>0.5 m)	Grassland (50-80%)	*Triodia spp.*



Fulcrum photo ID	5e118a03-b1e1-4dec-8a44-aa7900867cd1

WA-HAB-A11

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.191505	**Longitude**	118.573060

Landform and Soil		**Rock**	
Landform	Mid slope	**Rock type/s**	Ironstone
Aspect	Southeast	**Surface stone cover**	50 - 75%
Soil type	Rock	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Unknown	**Microhabitats**	Hummocks, Leaf litter, Termite mounds, Woody debris
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	51-75%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt, Acacia spp.*
Mid stratum	Mid (1-2 m)	Isolated shrubs and/or heath shrubs (<0.25%)	*Mixed shrubs*
Ground stratum	Low (>0.5 m)	Grassland (50-80%)	*Triodia spp.*



Fulcrum photo ID	5cc31916-3332-40fa-af23-3a465ddcbd98

WA-HAB-A12

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.192393	**Longitude**	118.573155

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Ironstone
Aspect	Negligible	**Surface stone cover**	25 - 50%
Soil type	Sand	**Surface stone size classes present**	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)
Soil colour	Black, Red		
Condition		**Habitat Features**	
Quality	Very good	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks
Disturbance	None observed		
Introduced fauna	Cattle	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Absent		
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp.*
Ground stratum	Low (>0.5 m)	Sparse hummock grassland (0.25-20%)	*Triodia spp.*



Fulcrum photo ID	119e0e0b-86bc-4167-9606-b08d79d075d9, c642e0cf-2fb6-48fb-bd03-

WA-CAM-B1

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-16		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.206634	**Longitude**	118.639677

Landform and Soil		**Rock**	
Landform	Drainage line	**Rock type/s**	Ironstone
Aspect	West	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	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)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Caves, Leaf litter, Peeling bark, Rock crevices, Woody debris
Disturbance	Vehicle tracks		
Introduced fauna	None observed	**Ground Cover**	<10%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt*
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp.*
Ground stratum	Low (>0.5 m)	Sparse grassland (0.25-20%)	*Mixed grasses*



Fulcrum photo ID	dc132fd9-66c8-48d1-96f0-795196dc94cb, df529991-f5a1-43b0-82dd-

WA-CAM-B2

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-16		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.203592	**Longitude**	118.651748

Landform and Soil		**Rock**	
Landform	Gorge	**Rock type/s**	Ironstone
Aspect	Southwest	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	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)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Unknown	**Microhabitats**	Caves, Exfoliating rock, Leaf litter, Peeling bark, Rock crevices, Woody debris
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	<10%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt, Ficus sp.*
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Mixed shrubs*
Ground stratum	Mid (0.5-1 m)	Sparse grassland (0.25-20%), Sparse fordland (0.25-20%)	*Triodia spp., mixed grasses, mixed herbs*



Fulcrum photo ID	1a74a73d-8839-4517-bae5-b1dc2e5b46af, f5a4a94c-672c-4aee-a623-

WA-HAB-B3

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-16		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.205962	**Longitude**	118.627585

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Ironstone
Aspect	Negligible	**Surface stone cover**	50 - 75%
Soil type	Clay loam	**Surface stone size classes present**	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks, Rock crevices
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	51-75%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Mallee Eucalypt*
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	*Acacia spp., mixed shrubs*
Ground stratum	Low (>0.5 m)	Hummock grassland (50-80%)	*Triodia spp.*



Fulcrum photo ID	eb2b0a66-51d9-4f6e-b6d7-87d14b99bd7e, 6bcbbaa8-d881-4ea8-bafe-

WA-HAB-B4

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-16		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.203002	**Longitude**	118.631654

Landform and Soil		**Rock**	
Landform	Upper slope	**Rock type/s**	Ironstone
Aspect	Southwest	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	Very good	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks
Disturbance	Clearing, Vehicle tracks		
Introduced fauna	None observed	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt*
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp., mixed shrubs*
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	*Triodia spp.*



Fulcrum photo ID	cbcef2c6-8ace-4cc2-9794-4a08ce116ea9, 29f1cd48-1041-4b5a-b9ad-

WA-HAB-B5

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-16		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.206168	**Longitude**	118.645021

Landform and Soil		**Rock**	
Landform	Gully	**Rock type/s**	Ironstone
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Sandy loam	**Surface stone size classes present**	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		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Present - small, dirty pool
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Caves, Exfoliating rock, Leaf litter, Peeling bark, Rock crevices, Woody debris
Disturbance	None observed		
Introduced fauna	Dog	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt*
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp., mixed shrubs*
Ground stratum	Low (>0.5 m)	Sparse grassland (0.25-20%)	*Triodia spp., mixed grasses*



Fulcrum photo ID	d85f2e9d-53a5-42e9-95ae-4696970a01e9, 9c2d7e7f-2ea4-4d3e-8a73-

WA-HAB-B6

Project:	West Angelas Basic and Targeted Fauna				
Date	2024-04-16		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.205815	**Longitude**	118.651747

Landform and Soil		**Rock**	
Landform	Lower slope	**Rock type/s**	Ironstone
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	Very good	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks
Disturbance	Clearing		
Introduced fauna	None observed	**Ground Cover**	26-50%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt*
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp.*
Ground stratum	Low (>0.5 m)	Hummock grassland (50-80%)	*Triodia spp.*



Fulcrum photo ID	744fe357-7659-4daf-aa65-9e083e8e59fd, bf1b7bfe-3c6c-438b-a495-

WA-CAM-C1

Project:	West Angelas Targeted Fauna				
Date	2024-04-14		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.160244	**Longitude**	118.623001

Landform and Soil		**Rock**	
Landform	Gully	**Rock type/s**	Ironstone
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Unknown	**Microhabitats**	Caves, Exfoliating rock, Hummocks, Rock crevices
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	26-50%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt, Acacia spp.*
Mid stratum	Absent		
Ground stratum	Low (>0.5 m)	Grassland (50-80%)	*Triodia spp., mixed grasses*



Fulcrum photo ID	e08872d5-e938-493d-83e6-492d12d0bdb5, 875e792a-6f80-4576-8799-

WA-BIR-C2

Project:	West Angelas Targeted Fauna				
Date	2024-04-14		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.153198	**Longitude**	118.679613

Landform and Soil		**Rock**	
Landform	Lower slope	**Rock type/s**	Ironstone
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	Very good	**Water Source**	Sewage water discharge 100m south
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)	Isolated shrubs and/or heath shrubs (<0.25%)	*Acacia sp., ?Grevillea spp.*
Ground stratum	Low (>0.5 m)	Hummock grassland (50-80%)	*Triodia spp.*



Fulcrum photo ID	1b51165f-9293-4048-95d2-a70b2088aedb, b72ca368-4487-4039-b3c4-

WA-CAM-C2

Project:	West Angelas Targeted Fauna				
Date	2024-04-14		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.152260	**Longitude**	118.678533

Landform and Soil		**Rock**	
Landform	Outcrop/breakaway	**Rock type/s**	Ironstone
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	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)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Unknown	**Microhabitats**	Caves, Exfoliating rock, Leaf litter, Rock crevices, Woody debris
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt*
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp.*
Ground stratum	Low (>0.5 m)	Sparse grassland (0.25-20%), Sparse fordland (0.25-20%)	*Mised grasses, mixed herbs*



Fulcrum photo ID	467a7101-7f5a-4ecd-ae90-58ce9736c561, 39f7c0ea-d8f4-48b8-a0e9-

WA-HAB-C3

Project:	West Angelas Targeted Fauna				
Date	2024-04-13		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.168669	**Longitude**	118.737974

Landform and Soil		**Rock**	
Landform	Drainage line	**Rock type/s**	Ironstone
Aspect	Northwest	**Surface stone cover**	5 - 25%
Soil type	Clay loam	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Present
Fire History	Unknown	**Microhabitats**	Leaf litter, Woody debris
Disturbance	Weeds		
Introduced fauna	None observed	**Ground Cover**	51-75%

Vegetation			
Upper stratum	Mid (10-30 m)	Isolated trees (<0.25%)	*Eucalypt*
Mid stratum	Tall (>2 m)	Closed shrubland and/or heathland (>80%)	*Acacia spp., mixed shrubs*
Ground stratum	Mid (0.5-1 m)	Grassland (50-80%)	*Mixed grasses and sedges*



Fulcrum photo ID	5e98d394-056d-4ea9-a7bb-66db7ccd71e1, df6f8e75-5a86-47a8-84d5-

WA-BAT-C4

Project:	West Angelas Targeted Fauna				
Date	2024-04-15		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.169926	**Longitude**	118.812028

Landform and Soil		**Rock**	
Landform	Lower slope	**Rock type/s**	Ironstone
Aspect	West	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	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)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks, Rock crevices
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	26-50%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt, Acacia sp.*
Mid stratum	Absent		
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	*Triodia spp.*



Fulcrum photo ID	9fdb48c7-2723-4ea9-9759-fc9dbf5120eb, 50f9f8dd-9fd0-4be5-a873-

WA-CAM-C4

Project:	West Angelas Targeted Fauna				
Date	2024-04-15		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.170401	**Longitude**	118.812991

Landform and Soil		**Rock**	
Landform	Outcrop/breakaway	**Rock type/s**	Ironstone
Aspect	North	**Surface stone cover**	75 - 100%
Soil type	Sandy loam	**Surface stone size classes present**	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)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Leaf litter, Rock crevices, Woody debris
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt, Acacia spp.*
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp., ptilotus spp., mixed shrubs*
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	*Triodia spp.*



Fulcrum photo ID	d22e83ff-1c7e-4e88-8522-53820d47b8bb, f02d71bd-bab4-4edc-8edb-

WA-CAM-C5

Project:	West Angelas Targeted Fauna				
Date	2024-04-15		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.166032	**Longitude**	118.842793

Landform and Soil		**Rock**	
Landform	Outcrop/breakaway	**Rock type/s**	Ironstone
Aspect	Northwest	**Surface stone cover**	75 - 100%
Soil type	Sand	**Surface stone size classes present**	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)
Soil colour	Red		
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**	26-50%

Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	*Eucalypt*
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)	
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	*Triodia spp.*



Fulcrum photo ID	c6d9cf3a-af7d-44cb-b790-f3f8c09c8e1a, d65f7cb4-c1f8-4b02-b6cc-

WA-CAM-C6

Project:	West Angelas Targeted Fauna				
Date	2024-04-15		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.150494	**Longitude**	118.812523

Landform and Soil		**Rock**	
Landform	Drainage line	**Rock type/s**	
Aspect	Southeast	**Surface stone cover**	25 - 50%
Soil type	Sand	**Surface stone size classes present**	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Brown		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Hummocks, Leaf litter, Woody debris
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	11-25%

Vegetation			
Upper stratum	Mid (10-30 m)	Isolated trees (<0.25%)	*Eucalypt*
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp.*
Ground stratum	Mid (0.5-1 m)	Open grassland (20-50%)	*Mixed grasses*



Fulcrum photo ID	31c4550a-dda0-4b36-bd03-0be263c10762, 06bb266f-9766-4557-afe3-

WA-CAM-C7

Project:	West Angelas Targeted Fauna				
Date	2024-04-14		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.122315	**Longitude**	118.695645

Landform and Soil		**Rock**	
Landform	Gully	**Rock type/s**	Ironstone
Aspect	Southeast	**Surface stone cover**	75 - 100%
Soil type	Rock	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Unknown	**Microhabitats**	Caves, Exfoliating rock, Rock crevices
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	51-75%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt*
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp.*
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	*Triodia spp.*



Fulcrum photo ID	1c89f93b-bd1b-4b70-bdd8-be6545045f0d, eb799cc8-b739-4d27-b6a4-

WA-CAM-CX8

Project:	West Angelas Targeted Fauna				
Date	2024-04-15		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.142834	**Longitude**	118.788350

Landform and Soil		**Rock**	
Landform	Outcrop/breakaway	**Rock type/s**	Ironstone
Aspect	South	**Surface stone cover**	75 - 100%
Soil type	Sandy loam	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	High quality	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Leaf litter, Peeling bark, Rock crevices
Disturbance	None observed		
Introduced fauna	None observed	**Ground Cover**	<10%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Eucalypt*
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)	*Mixed shrubs*
Ground stratum	Low (>0.5 m)	Isolated grasses (<0.25%)	*Mixed grasses*



Fulcrum photo ID	01228f5e-9b83-42cf-8529-7a2d2e8627f5

WA-BIR-C10

Project:	West Angelas Targeted Fauna				
Date	2024-04-16		**Sample Type**	Terrestrial vertebrate fauna	
CRS	WGS84	**Latitude**	-23.166251	**Longitude**	118.700272

Landform and Soil		**Rock**	
Landform	Plain	**Rock type/s**	Ironstone
Aspect	Negligible	**Surface stone cover**	25 - 50%
Soil type	Clay	**Surface stone size classes present**	Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Red		
Condition		**Habitat Features**	
Quality	Very good	**Water Source**	Absent
Fire History	Unknown	**Microhabitats**	Hummocks, Termite mounds
Disturbance	Vehicle tracks		
Introduced fauna	None observed	**Ground Cover**	26-50%

Vegetation			
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	*Acacia spp.*
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Acacia spp.*
Ground stratum	Low (>0.5 m)	Hummock grassland (50-80%)	*Triodia sp., mixed shrubs*



Fulcrum photo ID	22cf157d-1bb9-4909-b7cb-b6ce9d6a0259

Appendix J Fauna Inventory

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

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.

Family	Scientific Name	Common Name	Conservation Status		Method								Total
			State	Federal	Sighting	Camera	ARU	Call	Scat	Tracks	Remains	Mound	
Amphibians													
Pelodryadidae	*Litoria rubella*	Little Red Tree Frog			3								**3**
Birds													
Acanthizidae	*Smicrornis brevirostris*	Weebill						11					**11**
Accipitridae	*Accipiter cirrocephalus*	Collared Sparrowhawk			1								**1**
	Aquila audax	Wedge-tailed Eagle			2								**2**
	Milvus migrans	Black Kite			2								**2**
Anatidae	*Anas gracilis*	Grey Teal			3								**3**
Artamidae	*Artamus cinereus*	Black-faced Woodswallow			3								**3**
	Cracticus nigrogularis	Pied Butcherbird			4	1							**5**
	Gymnorhina tibicen	Australian Magpie			1								**1**
Cacatuidae	*Eolophus roseicapilla*	Galah			2								**2**
Campephagidae	*Coracina novaehollandiae*	Black-faced Cuckooshrike		MA	3								**3**
Columbidae	*Geopelia cuneata*	Diamond Dove				1							**1**
	Geophaps plumifera	Spinifex Pigeon			25	1					2		**28**
	Ocyphaps lophotes	Crested Pigeon			57	1							**58**
	Phaps chalcoptera	Common Bronzewing			1								**1**
Corvidae	*Corvus orru*	Torresian Crow			7	57							**64**
Cuculidae	*Chalcites basalis*	Horsfield's Bronze Cuckoo		MA	1								**1**
Estrildidae	*Taeniopygia castanotis*	Australian Zebra Finch			72	1		1					**74**
Falconidae	*Falco berigora*	Brown Falcon			4								**4**
	Falco cenchroides	Nankeen Kestral		MA	2								**2**
Hirundinidae	*Petrochelidon nigricans*	Tree Martin		MA	4								**4**
Locustellidae	*Poodytes carteri*	Spinifexbird			1								**1**

Family	Scientific Name	Common Name	Conservation Status		Method								Total
			State	Federal	Sighting	Camera	ARU	Call	Scat	Tracks	Remains	Mound	
Maluridae	*Malurus assimilis*	Purple-backed Fairywren			6								**6**
	Malurus leucopterus	White-winged Fairywren			4								**4**
Meliphagidae	*Anthochaera lunulata*	Western Little Wattlebird			1								**1**
	Epthianura tricolor	Crimson Chat			1								**1**
	Manorina flavigula	Yellow-throated Miner			2								**2**
	Ptilotula penicillata	White-plumed Honeyeater			1								**1**
Monarchidae	*Grallina cyanoleuca*	Magpie-lark		MA	1								**1**
Otididae	*Ardeotis australis*	Australian Bustard			1								**1**
Pachycephalidae	*Colluricincla harmonica*	Grey Shrikethrush						1					**1**
	Pachycephala rufiventris	Rufous Whistler			3								**3**
Petroicidae	*Melanodryas cucullata*	Hooded Robin			3								**3**
Podicipedidae	*Poliocephalus poliocephalus*	Hoary-headed Grebe			1								**1**
Pomatostomidae	*Pomatostomus temporalis*	Grey-crowned Babbler			20	1		4					**25**
Psittaculidae	*Barnardius zonarius*	Australian Ringneck			2								**2**
	Melopsittacus undulatus	Budgerigar			16								**16**
Psophodidae	*Psophodes occidentalis*	Western Wedgebill						1					**1**
Ptilonorhynchidae	*Chlamydera guttata*	Western Bowerbird				2							**2**
Rhipiduridae	*Rhipidura leucophrys*	Willie Wagtail			3								**3**
Tytonidae	*Tyto javanica*	Barn Owl				1							**1**
Mammals													
Bovidae	*Bos primigenius taurus*	European Cattle			4	1			2	3			**10**
Canidae	*Canis familiaris*	Dingo / Dog			3				3				**6**
Dasyuridae	*Dasyurus hallucatus*	Northern Quoll	EN	EN					5				**5**
Dasyurinae	*Pseudantechinus woolleyae*	Woolley's Pseudantechinus				33							**33**
Emballonuridae	*Taphozous hilli*	Hill's Sheath-tailed Bat					4						**4**
Equidae	*Equus africanus asinus*	Donkey							1				**1**
Felidae	*Felis catus*	Cat				9							**9**

Family	Scientific Name	Common Name	Conservation Status		Method								Total
			State	Federal	Sighting	Camera	ARU	Call	Scat	Tracks	Remains	Mound	
Leporidae	*Oryctolagus cuniculus*	Rabbit			1	1			2				**4**
Macropodidae	*Osphranter rufus*	Red Kangaroo, Marlu			3								**3**
	Petrogale rothschildi	Rothschild's Rock-wallaby			1	23							**24**
Molossidae	*Chaerephon jobensis colonicus*	Greater Northern Free-tailed Bat					4						**4**
	Ozimops lumsdenae	Northern Free-tailed Bat					2						**2**
Muridae	Muridae sp.					46							**46**
	Pseudomys chapmani	Western Pebble-mound Mouse	P4									41	**41**
Vespertilionidae	*Chalinolobus gouldii*	Gould's Wattled Bat					6						**6**
	Nyctophilus geoffroyi geoffroyi	Lesser Long-eared Bat					1						**1**
	Scotorepens greyii	Little Broad-nosed Bat					5						**5**
	Vespadelus finlaysoni	Finlayson's Cave Bat					5						**5**
	Chiroptera sp.				2								**2**
Reptiles													
Agamidae	*Ctenophorus caudicinctus*	Western Ring-tailed Dragon			3								**3**
	Gowidon longirostris	Long-nosed Dragon			1								**1**
Diplodactylidae	*Oedura fimbria*	Western Marbled Velvet Gecko									2		**2**
Gekkonidae	*Gehyra variegata*	Variegated Gehyra			3								**3**
Scincidae	*Cryptoblepharus buchananii*	Buchanan's Snake-eyed Skink			1								**1**
	Ctenotus sp.					2							**2**
	Egernia formosa					1							**1**
Varanidae	*Varanus bushi*	Pilbara Mulga Goanna				1							**1**
	Varanus gouldii	Bungarra, Sand Goanna			1	1							**2**

Family	Scientific Name	Common Name	Conservation Status		Method								Total
			State	Federal	Sighting	Camera	ARU	Call	Scat	Tracks	Remains	Mound	
	Varanus hamersleyensis	Southern Pilbara Rock Goanna				1							**1**
	Varanus panoptes					1							**1**

Appendix K Significant Fauna Likelihood of Occurrence

West Angelas NVCP 2

Flora, Vegetation, and Fauna Survey

Rio Tinto Iron Ore

SLR Project No.: 675.072156.00002

6 March 2025

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/CE - Critically Endangered, EN - Endangered, VU - Vulnerable, MI - Migratory, OS - Other Specially Protected fauna, MA - Marine, P - Listed as Priority by DBCA.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Birds						
Acanthizidae	*Aphelocephala leucopsis* Southern Whiteface	-	VU	Open forest and woodland, inland scrubs such as mallee, mulga, cypress pine; saltbush, dead trees, stumps (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature. However, this species is not returned by the DBCA Threatened and Priority Fauna Database as it is not state listed.	**Low** No nearby records, however, due to its listing, records are not returned from the DBCA threatened and priority fauna database. Suitable habitat occurs in the Survey Area.
Accipitridae	*Elanus scriptus* Letter-winged Kite	P4	-	Grasslands, with trees; tree-lined watercourses (Pizzey and Knight, 2012).	One unique record returned from the Rio Tinto Internal Database within 20 km of the Survey Area, 9.4 km northeast in 2018. No additional unique records were identified from the DBCA database.	**Low** Outside range. No nearby records. Limited suitable habitat occurs in the Survey Area.
Accipitridae	*Erythrotriorchis radiatus* Red Goshawk	VU	EN	Tropical and subtropical open-forests and woodlands dominated by eucalypts and paperbarks along streams and near wetlands (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	**Low** Outside range. No nearby records. No suitable habitat occurs in the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Apodidae	*Apus pacificus* Pacific Swift, Fork-tailed Swift	MI	MI, MA	Low to very high airspace over varied habitat (Pizzey and Knight, 2012).	Five unique records returned from the Rio Tinto Internal Database within the Survey Area in 2013. One unique record returned from the Rio Tinto Internal Database within 20 km of the Survey Area, 0.7 km northwest in 2019. No additional unique records were identified from the DBCA database.	**Previously Recorded** Previously recorded in the Survey Area. May use the airspace above the Survey Area.
Charadriidae	*Charadrius veredus* Oriental Plover	MI	MI, MA	Open plains; bare, rolling country, often far from water; ploughed land; muddy or sandy wastes near inland swamps or tidal flats; bare claypans; margins of coastal marshes; grassy airfields, sportsfields, lawns (Pizzey and Knight, 2012).	One record returned from the Rio Tinto Internal Database within 20 km of the Survey Area, 16.8 km northeast in 2019. No additional unique records were identified from the DBCA database.	**Low** Low number of records within 20km of the Survey Area. Limited suitable habitat occurs in the Survey Area.
Falconidae	*Falco hypoleucos* Grey Falcon	VU	VU	Open plains with treed watercourses in arid inland (Menkhorst et al., 2017).	One DBCA record within the Survey Area in 1997. Three unique DBCA records within 20 km of the Survey Area, including 12.7 km and 15.6 km northeast in 2008.	**Previously Recorded** Previously recorded within the Survey Area. Limited suitable habitat occurs in the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Falconidae	*Falco peregrinus* Peregrine Falcon	OS	-	Most environments with suitable nest sites: cliff faces preferred, including man-made ones, commonly uses stick nests built by other species (Menkhorst et al., 2017).	Two unique DBCA records within 20 km of the Survey Area, 18.4 km northeast in 2007 and 18.8 northwest in 2013.	**Medium** Low number of records within 20km of the Survey Area. Limited suitable nesting habitat occurs in the Survey Area. May use the airspace above the Survey Area.
Hirundinidae	*Hirundo rustica* Barn Swallow	MI	MI, MA	Open country; agricultural land, especially near water; railyards, towns, overhead wires (Pizzey and Knight).	No nearby records identified from the database searches or literature.	**Low** Outside range. No nearby records. No suitable habitat occurs in the Survey Area.
Maluridae	*Amytornis whitei whitei* Pilbara Grasswren	P4 (as *A. striatus striatus*)	-	Spinifex associated with mallee, acacias, though prefer tall dense spinifex hummocks; rocky slopes, and ridges; coastal shrublands (Pizzey and Knight, 2012; Menkhorst et al. 2017).	Nineteen unique records returned from the Rio Tinto Internal Database within 20 km of the Survey Area, including 6.2 km south in 2021 and 2022.	**High** Recorded within 20km of the Survey Area. Suitable habitat occurs in the Survey Area. DBCA has advised that the taxon should still be treated as Priority 4 species pending further updates to the DBCA Threatened and Priority Fauna List (Amy Mutton pers. comm. 2022).

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Motacillidae	*Motacilla cinerea* Grey Wagtail	MI	MI, MA	Running water near disused quarries; sandy, rocky streams in escarpments; sewage ponds, ploughed fields, airfields (Pizzey and Knight 2012).	No nearby records identified from the database searches or literature.	**Low** Outside range. No nearby records. No suitable habitat occurs in the Survey Area.
Motacillidae	*Motacilla tschutschensis* Eastern Yellow Wagtail	MI	MI, MA	Short grass and bare ground; swamp margins, sewage ponds, saltmarshes, ploughed fields, airfields, lawns (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** Outside range. No nearby records. No suitable habitat occurs in the Survey Area.
Psittaculidae	*Pezoporus occidentalis* Night Parrot	CR	EN	Seeding spinifex on stony rises, breakaway country, sandy 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.	**Low** No nearby records. Limited suitable habitat occurs in the Survey Area.
Psittaculidae	*Polytelis alexandrae* Princess Parrot	P4	VU	Spinifex with Eucalyptus, Acacia, desert-oaks, desert poplars, Hakeas, misstletoes; parakeelia, other succulents around salt lakes; often far from fresh water (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** No nearby records. Limited suitable habitat occurs in the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Rostratulidae	*Rostratula australis* Australian Painted Snipe	EN	EN, MA	Well-vegetated shallows and margins of wetlands, dams, sewage ponds; wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, open timber (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** Outside range. No nearby records. No suitable habitat occurs in the Survey Area.
Scolopacidae	*Actitis hypoleucos* Common Sandpiper	MI	MI, MA	Shallow, pebbly, muddy or sandy 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).	No nearby records identified from the database searches or literature.	**Low** No nearby records. No suitable habitat occurs in the Survey Area.
Scolopacidae	*Calidris acuminata* Sharp-tailed Sandpiper	MI	VU, MI, MA	Tidal mudflats, saltmarshes, mangroves; shallow fresh, brackish or saline inland wetlands; muddy edges of lagoons, swamps, lakes, floodwaters, dams, irrigated pastures and crops; sewage ponds, saltfields (Morcombe, 2003; Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** No nearby records. No suitable habitat occurs in the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Scolopacidae	*Calidris ferruginea* Curlew Sandpiper	CR	CE, MI, MA	Inter-tidal mudflats of estuaries, lagoons, 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).	No nearby records identified from the database searches or literature.	**Low** No nearby records. No suitable habitat occurs in the Survey Area.
Scolopacidae	*Calidris melanotos* Pectoral Sandpiper	MI	MI, MA	Shallow fresh waters, often with low grass or other herbage; swamp margins, flooded pastures, sewage ponds; occasionally tidal areas, saltmarshes (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** Outside range. No nearby records. No suitable habitat occurs in the Survey Area.
Scolopacidae	*Tringa nebularia* Common Greenshank	MI	EN, MI, MA	Mudflats, estuaries, saltmarshes, swamps, margins of lakes, muddy shallows of lagoons; permanent and temporary wetlands, claypans; commercial saltfield, irrigated crops, sewage ponds (Morcombe, 2003; Pizzey and Knight, 2012).	One unique record returned from the Rio Tinto Internal Database within 20 km of the Survey Area, 14.4 km south in 2021.	**Low** No nearby records. No suitable habitat occurs in the Survey Area.

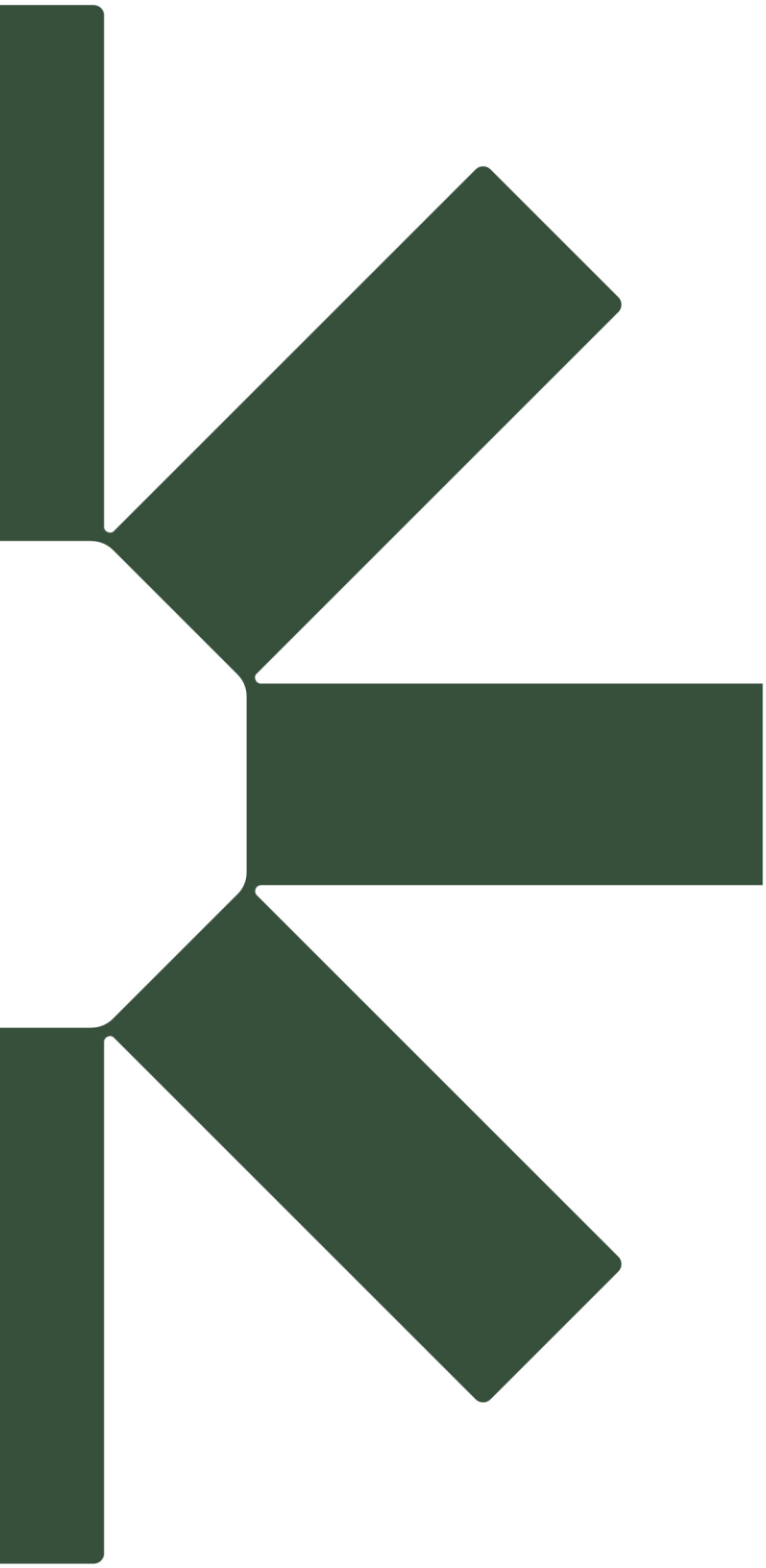
Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Mammals						
Dasyuridae	*Dasyurus hallucatus* Northern Quoll	EN	EN	Dissected rocky escarpments; eucalypt forest and woodland; human settlements; occasionally in rainforest patches or on beaches (Van Dyck, Gynther and Baker, 2013).	Nine unique records returned from the Rio Tinto Internal Database within 20 km of the Survey Area, including 0.2 km and 0.5 km east in 2021.	**Recorded** Recorded within the Survey Area during the field survey.
Megadermatidae	*Macroderma gigas* Ghost Bat	VU	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).	Three unique records returned from the Rio Tinto Internal Database within the Survey Area in 2013. Forty-two unique records returned from the Rio Tinto Internal Database within 20 km of the Survey Area, including 41 m north in 2013 and 0.1 km east in 2021. Forty-nine DBCA records from within the Survey Area in 1998, 2017, and 2022. One hundred and forty-one DBCA records within 20 km of the Survey Area, including 0.1 km north in 2017 and 1.7 km south in 2022.	**Previously Recorded** Previously recorded within the Survey Area. Suitable habitat occurs in the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Muridae	*Leggadina lakedownensis* Short-tailed Mouse	P4	-	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).	Two unique DBCA voucher records within the Survey Area in 1997.	**Previously Recorded** Previously recorded within the Survey Area. Suitable habitat occurs in the Survey Area.
Muridae	*Pseudomys chapmani* Western Pebble-mound Mouse	P4	-	Gentler slopes of rocky ranges covered by stony mulch and hard spinifex, often with a sparse overstorey of eucalypts and scattered shrubs (Van Dyck, Gynther and Baker, 2013).	Seventy records returned from the Rio Tinto Internal Database within the Survey Area from 2008 to 2023. Seven hundred and fifty-one records returned from the Rio Tinto Internal Database within 20 km of the Survey Area, including 11 m east in 2022 and 0.29 km north in 2022. Twenty DBCA records from within the Survey Area from 1979 to 2022. Two hundred and sixty-four DBCA records within 20 km of the Survey Area, including 19 records within 0.25 km of the Survey Area in 2022.	**Previously Recorded** Forty-one mounds recorded in the Survey Area during the targeted vertebrate fauna survey. Previously recorded within the Survey Area. Suitable habitat occurs in the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Rhinonycteridae	*Rhinonicteris aurantia Pilbara form* Pilbara Leaf-nosed Bat	VU	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).	Three unique records returned from the Rio Tinto Internal Database within the Survey Area in 2013. Thirteen unique records returned from the Rio Tinto Internal Database within 20 km of the Survey Area, including 2.5 km north in 2019 and 3.1 km west in 2017. One additional unique DBCA record within the Survey Area in 2022. Nine additional unique DBCA records within 20 km of the Survey Area, including 4.1 km north in 2022 and 4.9 km northwest in 2018.	**Previously Recorded** Previously recorded within the Survey Area. Suitable habitat occurs in the Survey Area.
Thylacomyidae	*Macrotis lagotis* Bilby, Dalgyte	VU	VU	Mitchell grass and stony downs country of cracking clays, desert sandplains and dune fields sometimes containing laterite, hummock grassland and massive red earths with Acacia shrubland (Van Dyck, Gynther and Baker, 2013).	Two historical DBCA records within 20 km of the Survey Area, 9.5 km north in 1983 and 1984.	**Low** No recent records. Limited suitable habitat occurs in the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Reptiles						
Carphodactylidae	*Underwoodisaurus seorsus* Pilbara Barking Gecko	P2	-	Rocky areas with spinifex and low tree cover, within the Hamersley Range, from north of Tom Price southeast to near Newman (Wilson and Swan, 2021).	Three unique records returned from the Rio Tinto Internal Database within 20 km of the Survey Area, including 2.2 km south in 2022 and 3.2 km east in 2013. One additional unique DBCA record within the Survey Area in 1997.	**Previously Recorded** Previously recorded within the Survey Area. Suitable habitat occurs in the Survey Area.
Pythonidae	*Liasis olivaceus barroni* Pilbara Olive Python	VU	VU	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 Triodia (Wilson and Swan, 2021).	Three unique records returned from the Rio Tinto Internal Database within 20 km of the Survey Area, including 2.5 km north in 2018 and 3.9 km east in 2018. Two additional unique DBCA records within 20 km of the Survey Area, 5.7 km northeast in 1900 and 17.2 km northwest in 2013.	**Medium** Recorded within 20km of the Survey Area. Limited suitable habitat occurs in the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Scincidae	*Lerista macropistho pus remota*	P2	-	Acacia shrublands and woodlands in semi-arid to arid interior of WA, shelters in loose soil under leaf litter at base of shrubs (Wilson and Swan, 2021).	One unique record returned from the Rio Tinto Internal Database within 20 km of the Survey Area, 15.4 km northeast in 2019. Three additional unique DBCA records within 20 km of the Survey Area, including 16.6 km and 17.0 km east in 2012.	**Medium** Recorded within 20km of the Survey Area. Limited suitable habitat occurs in the Survey Area.
Scincidae	*Liopholis kintorei* Great Desert Skink	VU	VU	Found in arid sandflats and clay-based/loamy soils with spinifex (Wilson and Swan, 2021).	No nearby records identified from the database searches or literature.	**Low** No recent records. No suitable habitat occurs in the Survey Area.
Typhlopidae	*Anilios ganei* Gane's Blind Snake	P1	-	Associated with moist gorges and valleys (Wilson and Swan, 2021).	Seven unique records returned from the Rio Tinto Internal Database within 20 km of the Survey Area, including 3.3 km south in 2018 and 11.3 km south in 2021. One additional unique DBCA record within 20 km of the Survey Area, 11.4 km northeast in 1999.	**Medium** Recorded within 20km of the Survey Area. Limited suitable habitat occurs in the Survey Area.



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