NATIVE VEGETATION CLEARING PERMIT
KATHLEEN VALLEY LITHIUM-TANTALUM PROJECT

PREPARED FOR:

LIONTOWN RESOURCES LIMITED

FEBRUARY 2022

PREPARED BY:

Martinick Bosch Sell Pty Ltd
4 Cook Street
West Perth WA 6005
Ph: (08) 9226 3166
Email: info@mbsenvironmental.com.au
Web: www.mbsenvironmental.com.au

MARTINICK BOSCH SELL PTY LTD
ABN 60 102 614 479
MBS ENVIRONMENTAL
environmental and geoscience consultants

KATHLEEN VALLEY LITHIUM-TANTALUM PROJECT
NATIVE VEGETATION CLEARING PERMIT

Distribution List:

Company	Contact Name	Copies	Date
Liontown Resources Limited	Adam Smits – Chief Operations Officer	1	3 February 2022
Department of Mines, Industry Regulation and Safety	Native Vegetation Clearing Branch	1	3 February 2022

Document Control for Job Number: LTRKVNVCP

Document Status	Prepared By	Authorised By	Date
Draft Report	Kat Partridge	Leo Boynton	7 October 2021
Draft Report - Rev 1	Kat Partridge	Kristy Sell	2 December 2021
Draft Report - Rev 2	Kat Partridge	Kristy Sell	7 January 2022
Final Report	Laura Damasceno	Kristy Sell	3 February 2022

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1. SUMMARY

Liontown Resources Limited (Liontown) proposes to clear 348.2 ha of native vegetation within a 766.8 ha Purpose Permit Area for development of the Kathleen Valley Lithium-Tantalum Project (the Project).

The Project is located 680 km north east of Perth and approximately 45 km north northwest of Leinster in the Northern Goldfields region of Western Australia. The project will consist of two open pits and an underground mine with on-site processing of ore to produce spodumene and tantalum products for sale via export overseas. Associated infrastructure will include a temporary waste rock dump, tailing storage facilities, low-grade ore stockpiles, workshops, offices, an accommodation village, wind farm, solar farm, gas fired power station and internal roads.

An assessment against the ten clearing principles was undertaken based on information collected from site specific flora, fauna and heritage surveys of the Project area.

Liontown commissioned a number of Aboriginal heritage surveys and an ecological cultural knowledge assessment as part of exploration and Detailed Feasibility Study (DFS) on ground works. Exclusion zones have been agreed with Traditional Owners as part of stakeholder consultation processes including negotiation of a Native Title Agreement. The site layout has been developed to respect exclusion zones recognising cultural heritage values.

The assessment of the proposed clearing against the ten clearing principles determined that the proposed clearing of 348.2 ha for the Kathleen Valley Lithium-Tantalum Project will not be at variance with the ten clearing principles. Appropriate environmental management procedures will be implemented to ensure potential direct and indirect impacts associated with the clearing are avoided or minimised where practicable.

2. INTRODUCTION

Liontown proposes to develop the Kathleen Valley Lithium-Tantalum Project located within the Northern Goldfields region of Western Australia.

It is proposed the project will include:

- Two small open pit mines located south of Jones Creek.
- One underground mine which will extend to about 450 m in depth. This includes ventilation shafts and will be accessed by three declines, the portal of one which will be external to the pits. Two paste plants will be constructed to provide paste fill for underground stopes.
- Processing plant including supporting activities such as a Process Water Pond, Run of Mine (ROM) Pad and low-grade ore stockpiles.
- Two tailings storage facilities (TSFs) consisting of three cells, with the second facility (third cell) being constructed about 12 years after Project commencement.
- One temporary waste rock dump (WRD). Waste rock will be used for construction of TSF embankment lifts over time and no permanent WRD will be required post closure.
- A borefield and water conveyance infrastructure.
- An integrated energy facility comprised of a natural gas power plant, solar farm and wind turbines to provide power for the Project.
- An on-site accommodation village located north of Jones Creek and the mining and ore processing facilities.
- Roads including connection from the Goldfields Highway and internal roads and tracks.
- Supporting infrastructure such as laydown areas, workshops, on-site offices, power transmission lines, a water treatment plants, landfill, magazine, surface water management infrastructure and topsoil stockpiles.

Clearing will be undertaken in a staged manner as the project is developed over time.

3. BACKGROUND

3.1 LOCATION

The project is located 680 km north east of Perth and approximately 45 km north northwest of Leinster in the Northern Goldfields region of Western Australia. The closest towns to the project are Leinster (45 km south east) and Wiluna (100 km north) as shown in Figure 1.

The project is in close proximity to the Goldfields Highway and is currently accessed using Yakabindie Road which runs across the Liontown leases.

3.2 TENURE

The Project is situated within four Mining Leases M36/265, M36/459, M36/460 and M36/696 (Figure 2). The proposed borefield is located on two Miscellaneous Licence applications L36/255 and L36/256 and the proposed magazine is located on General Purpose lease application G36/52. A summary of the tenements applicable to this Clearing Permit is provided in Table 1. Evidence of tenure ownership is provided in Appendix 1

Table 1: Project Tenements

Tenement	Tenement Holder	Area (ha)	Grant Date	Expiry Date
M 36/265	Liontown Resources Limited	103.30	28/06/1993	27/06/2035
M 36/459	Liontown Resources Limited	326.75	04/05/1999	03/05/2041
M 36/460	Liontown Resources Limited	947.90	04/05/1999	03/05/2041
M 36/696	Liontown Resources Limited	506.00	13/01/2022	12/01/2043
G 36/52	Liontown Resources Limited	9.59	N/A	N/A
L 36/255	Liontown Resources Limited	11.99	N/A	N/A
L 36/256	Liontown Resources Limited	10.00	N/A	N/A

The Project is located within the Shire of Leonora and is situated across Crown Reserve 8560 (Kathleen Town Common) and Yakabindie Pastoral Station.

Liontown's Kathleen Valley tenure is partly covered by the Tjiwarl Determined Native Title Claim (WAD228/2011, WAD302/2015). The Project is mainly located on existing mining leases, however as described above, a number of additional tenements have been applied for. Tenements still under application will attract the right to negotiate under the Commonwealth *Native Title Act 1993* once they progress to grant. On 17 November 2021, Liontown signed a Native Title Agreement (NTA) for the Project with the Native Title holders (Tjiwarl). Under the agreement terms, Liontown has committed to actions with regards to communication, land and water management, Aboriginal heritage management, cultural awareness and access, compensation, social opportunities and development and employment and contracting. Applications for additional tenements have been discussed with the Traditional Owners and the applications have been lodged with their full knowledge.

Scale: 1:400000
Original Size: A4
Image: Copernicus Sentinel Data 2020
Grid: GDA94 / MGA zone 51
0 5 10 km

Liontown Resources
Kathleen Valley Lithium-Tantalum Project

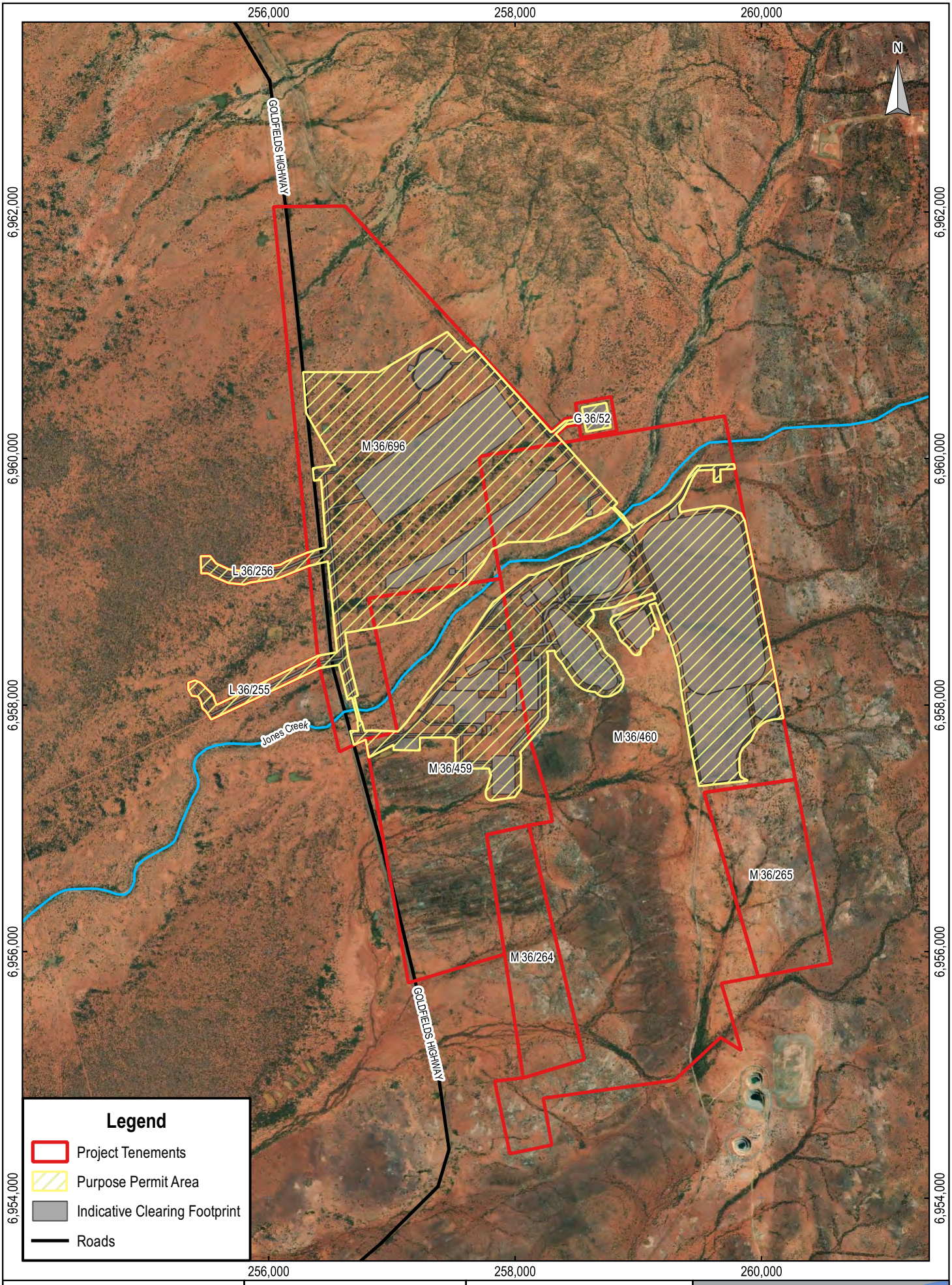
Figure 1

Location Plan

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Australia
t: +61 8 9226 3166
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

W:\Liontown Resources\Kathleen Valley\GIS-Common\LocationPlan Kathleen Valley.qgz 19/01/2022



Scale: 1: 40,000
Original Size: A4
Grid: GDA94 / MGA zone 51

0 0.5 1 km

Liontown Resources
Kathleen Valley Lithium-Tantalum Project

Figure 2

Tenement Plan

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Australia
t: +61 8 9226 3166
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

W:\Liontown Resources\Kathleen Valley\Approvals\NVCP\GIS\Kathleen Valley NVCP.qgs 03/02/2022 F2 Tenement Plan

3.3 ENVIRONMENTAL SETTING

3.3.1 Climate

The Project is located in the Northern Goldfields region which experiences a non-seasonal arid climate with hot and dry summers and cool winters. No month in a given year can be considered reliably wet, and zero rainfall can be recorded in any month.

Leinster Aero (ID: 012314) is the closest representative Bureau of Meteorology (BoM) weather station (45 km to the south). The mean maximum temperatures range from 19.0 to 37.2ºC, with mean minimum temperatures ranging from 6.1 to 23.2ºC (Figure 3).

Precipitation is predominantly associated with sporadic summer cyclonic rainfall and thunderstorms. The yearly rainfall statistics from Leinster weather station are shown in Figure 3. The mean total annual rainfall for the area is 248.3 mm with January to March having the greatest number of rain days (BoM 2021). The lowest recorded annual rainfall was 102.6 mm with the highest recorded at 439.4 mm. The median rainfall between May to September is low at less than 11.5 mm. Low rainfall can occur within any of the months with summer rainfall dependent on cyclonic rainfall and thunderstorm events. The year of 2020 was unusually dry with an annual rainfall of 102.6 mm (BoM 2021).

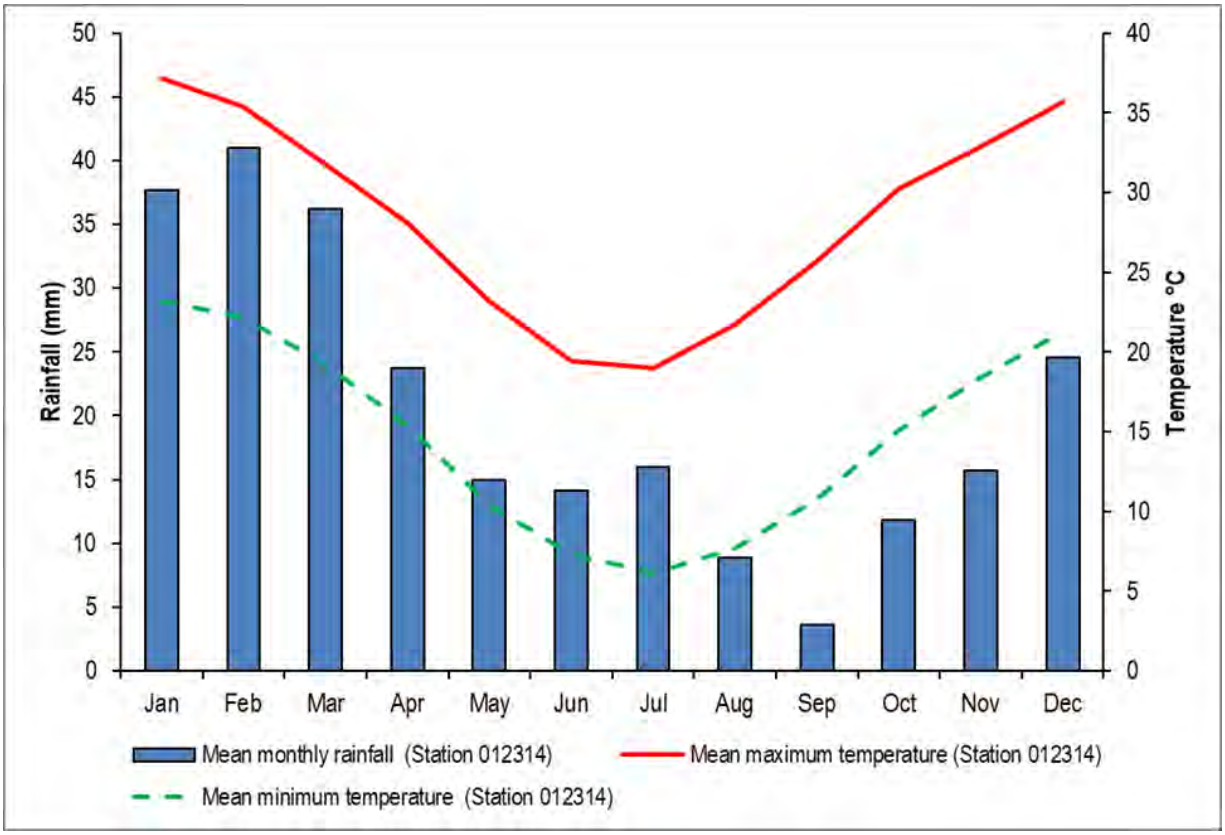


Figure 3: Climate Data for Leinster Aero (1994-2021) (BoM, 2021)

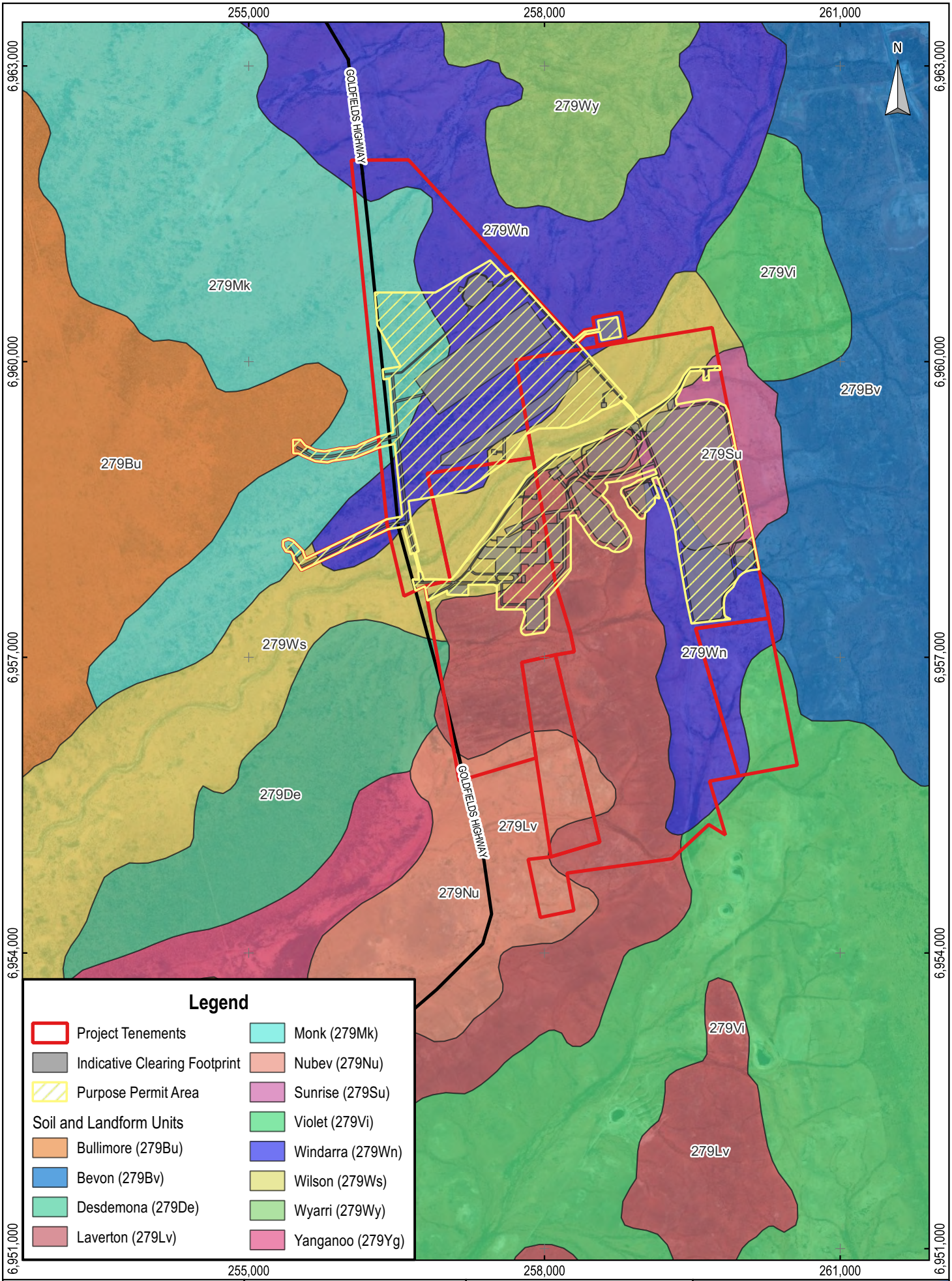
3.3.2 Soils and Landscape

The Project is located in a region of low lying, gentle sloped hills, with some breakaways and mesas located 5 km to the north east. The deposit underlies the elevated Mount Mann and dips to the north and north west towards the non-perennial Jones Creek.

The Australian Soil Resource Information System identified a range of soil units within the project area. The soil units 279Lv, 279Wn, 279Mk, 279Su and 279Ws make up the majority of the project area (CSIRO 1991). These units are described in Table 2 and their extent is shown in Figure 4.

Table 2: Soil and Landform Units

Unit	Description
Laverton (279Lv)	Greenstone hills and ridges with acacia shrublands. Main soils stony soil (45%); red shallow sandy duplex (30%) and red shallow loam (25%)
Wilson (279Ws)	Large creeks with extensive distributary fans, supporting mulga and chenopod shrublands. Main soils are red deep sandy duplex (40%), red shallow loam (35%), red shallow sand (20%), and red deep sand (5%).
Windarra (279Wn)	Gently undulating stony plains and low rises with quartz mantles on granite, supporting acacia-eremophila shrublands. Main soil types are red shallow loam (45%), red shallow sand (30%), and red-brown hardpan shallow loam (10%).
Sunrise (279Su)	Stony plains supporting mulga shrublands. Main soil types are stony soil (55%), red-brown hardpan shallow loam (40%) and red loamy earth (5%).
Monk (279Mk)	Hardpan plains with occasional sandy banks supporting mulga tall shrublands and wanderrie grasses. Main soils are red shallow loam (30%), red-brown hardpan shallow loam (25%), red sandy earth (25%) and red loamy earth (20%).
Desdemona (279De)	Plains with deep sandy or loamy soils supporting mulga tall shrublands and wanderrie grasses. Main soil types are red loamy earth (60%), red deep sand (30%), red sandy earth (5%) and red-brown hardpan shallow loam (5%).
Nubev (279Nu)	Greenstone hills and ridges with acacia shrublands. Main soil types are red shallow loam (50%), red shallow sandy duplex (30%) and red shallow sand (20%).
Violet (279Vi)	Gently undulating gravelly plains on greenstone, laterite and hardpan, with low stony rises and minor saline plains; supporting groved mulga and bowgada shrublands and occasionally chenopod shrublands. Main soils are red shallow loam (45%), deep red sand (20%), shallow gravel (10%), red shallow sandy duplex (10%), red loamy earth (10%); red-brown hardpan shallow loam (5%).



Scale: 1: 50,000
Original Size: A4
Grid: GDA94 / MGA zone 51

0 0.5 1 km

Liontown Resources
Kathleen Valley Lithium-Tantalum Project

Figure 4

Soils and Landscape

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Australia
t: +61 8 9226 3166
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

W:\Liontown Resources\Kathleen Valley\Approvals\NVCP\GIS\Kathleen Valley NVCP.qgs 03/02/2022 F4 Soils

3.3.3 Flora and Vegetation

The Project lies within the Eastern Murchison (MUR1) sub-region of the Interim Biogeographical Regionalisation of Australia (IBRA) Murchison Bioregion (Botanica, 2019). The subregion can be characterised by its internal drainage and extensive areas of red desert sandplains with minimal dune development. The area contains salt-lake systems that are associated with the occluded paleodrainage system. Mulga woodlands, often rich in ephemerals, is the dominant vegetation type throughout the sub-region with a mix of hummock grasslands, saltbush shrublands, and Halosarcia shrublands. The MUR1 sub-regional area is 7,847,996 ha.

The Class A Wanjarri Nature Reserve, registered in March 1978, is located 4 km north east of the project area and is recognised for its high diversity of flora and fauna (including 111 species of birds) and areas of un-grazed mulga. The high diversity of the Nature Reserve is largely due to the overlapping distribution of species ranges. The reserve has a total area of 53,250 ha.

Botanica Consulting undertook a Reconnaissance level flora and vegetation survey of the wider project area (3,792 ha) in October 2018 and a Targeted flora survey in April 2021 (1,490 ha). The surveys identified 12 broad vegetation types represented by 27 families, 56 genera and 100 flora taxa. Four introduced taxa were identified during the 2018 field assessment: *Cenchrus ciliaris* (Buffel Grass), *Citrullus amarus* (Pie Melon), *Lysimachia arvensis* (Pimpernel) and *Tribulus terrestris* (Caltrop). According to the Western Australian Organism List (DPIRD, 2018), none of these taxa are listed as a Declared Plant under the *Biosecurity and Agriculture Management Act 2007* (BAM Act). The Botanica Consulting Reconnaissance/Level 1 survey and Targeted survey reports are attached as Appendix 2 and Appendix 3, respectively.

3.3.3.1 Vegetation Communities

Twelve broad vegetation communities/types were identified during the 2018 reconnaissance survey, of which eleven were identified within the Purpose Permit Area (Botanica, 2019 & 2021a).

Vegetation communities/types within the survey area (Table 3, Figure 5) are generally considered to be locally common and well represented outside the project area. Vegetation condition was assessed to range from "Good" to “Very Good" (Botanica, 2019). Condition has been affected by grazing, fire, vehicle tracks and mineral exploration (Botanica, 2019).

Vegetation communities of the project area are described in Table 3.

Table 3: Vegetation Communities Within the Survey Area

Landform	Vegetation Group	Vegetation Community	Description	Area (ha)
Clay Loam Plain	Acacia Forests & Woodlands	CLP-AFW1	Low woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on clay-loam plains	621.0
		CLP-AFW2	Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plains	1,119.5
Open Depression	Acacia Forests & Woodlands	OD-AFW1	Low woodland of *Acacia caesaneura/ A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depressions	217.8
	Acacia Open Woodlands	OD-AOW1	Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depressions	511.6
	Eucalypt Woodlands	OD-EW1	Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depressions	90.9
Rocky Hillslope	Acacia Forests & Woodlands	RH-AFW1	Low woodland of *Acacia caesaneura /Acacia incurvaneura* over mid shrubland of *Santalum lanceolatum/ Scaevola spinescens* and low open tussock grassland of *Enneapogon caerulescens* on rocky hillslopes	171.1
	Acacia Shrublands	RH-AS1	Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslopes	90.1
		RH-AS2	Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslopes	374.7
		RH-AS3	Mid open shrubland of *Acacia quadrimarginea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on granite exposed hillslopes	211.1
	Casuarina Forests and Woodlands	RH-CFW1	Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslopes	14.3
Rocky Plain	Acacia Open Woodlands	RP-AOW1	Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on rocky plains	340.5
	Other Shrublands	RP-OS1	Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plains	29.5
			Total	3,792.1

3.3.3.2 Threatened and Priority Ecological Communities

A search of the Department of Biodiversity Conservation and Attractions' (DBCA) Threatened Ecological Communities (TEC) list and the Environmental Protection and Biodiversity Conservation (EPBC) Protected Matters Search did not identify any TECs within a 40 km radius of the project area (Botanica, 2021).

The south east part of the survey area is located within the boundary of the Violet Range (Perseverance Greenstone Belt) vegetation complexes (Banded Ironstone Formation) Priority 1 Ecological Community (PEC) (Figure 5). No formal description on the vegetation complexes that represent this PEC are available (Botanica, 2021). No Banded Ironstone Formations were recorded within the survey area, however, based on the description of the Perseverance Greenstone Belt provided by Meissner & Wright (2010), three of the vegetation types identified during the survey (RH-AFW1, RH-AS1 and RH-AS2) are considered to be representative of the PEC. Based on Botanica's assessment, the Violet Range PEC vegetation present within the 2018 and 2021 survey areas can be considered as a Low woodland of *Acacia caesaneura/Acacia incurvaneura*, tall sparse shrubland of *Acacia quadrimarginea* and an open shrubland of *Acacia balsamea* over low sparse shrubland of *Eremophila galeata/Ptilotus obovatus* and low tussock grassland of *Cymbopogon ambiguus/ Enneapogon caerulescens* on slopes of ultramafic and metabasalt derived hills. These communities occupy 635.9 ha of the survey area, which represents 3.3% of the DBCA mapped extent.

3.3.3.3 Significant Flora Species

Database searches and site surveys recorded no Threatened Flora as listed under the West Australian *Biodiversity Conservation Act* or Commonwealth EPBC Act within the survey area.

Two Priority 4 flora species listed by DBCA were recorded within the survey area. The locations of *Grevillea inconspicua* and *Hemigenia exilis* are shown on Figure 6.

Grevillea inconspicua was recorded on loam or gravel soils along drainage lines on rocky outcrops and creeklines. About 3,823 plants were recorded within the survey area in five of the 12 vegetation types, four locations of which had previously been recorded by DBCA (Botanica, 2021a).

Hemigenia exilis was recorded on laterite soils of breakaways and slopes. About 470 plants were recorded within the survey area in two vegetation types. Two of the locations had previously been recorded by DBCA (Botanica, 2021). An additional population was observed nearby to Jones Creek, west of the Goldfields Highway in September 2021 during a cultural ecological knowledge assessment undertaken on behalf of the Tjiwarl Aboriginal Corporation. The number of plants present in this population was not recorded.

3.3.3.4 Groundwater Dependant Ecosystems

Two of the vegetation communities (OD-EW1 and OD-AOW1) were identified as being potential terrestrial Groundwater Dependant Ecosystems (GDE), each being associated with drainage depressions (Figure 5). Streamside eucalypt and related vegetation (e.g. *E. camaldulensis*) along inland (frequently dry) rivers and streams in the arid zone are considered to be groundwater dependent. *Eucalyptus camaldulensis* was identified within the survey area along the banks of Jones Creek (vegetation type OD-EW1). A search of the GDE database indicated a moderate potential for a terrestrial GDE in the south eastern region of the survey area associated with groved mulga (*Acacia aneura*) and bowgada shrubland (*Acacia ramulosa*). One vegetation type identified within the survey area (OD-AFW1) is representative of this potential GDE.

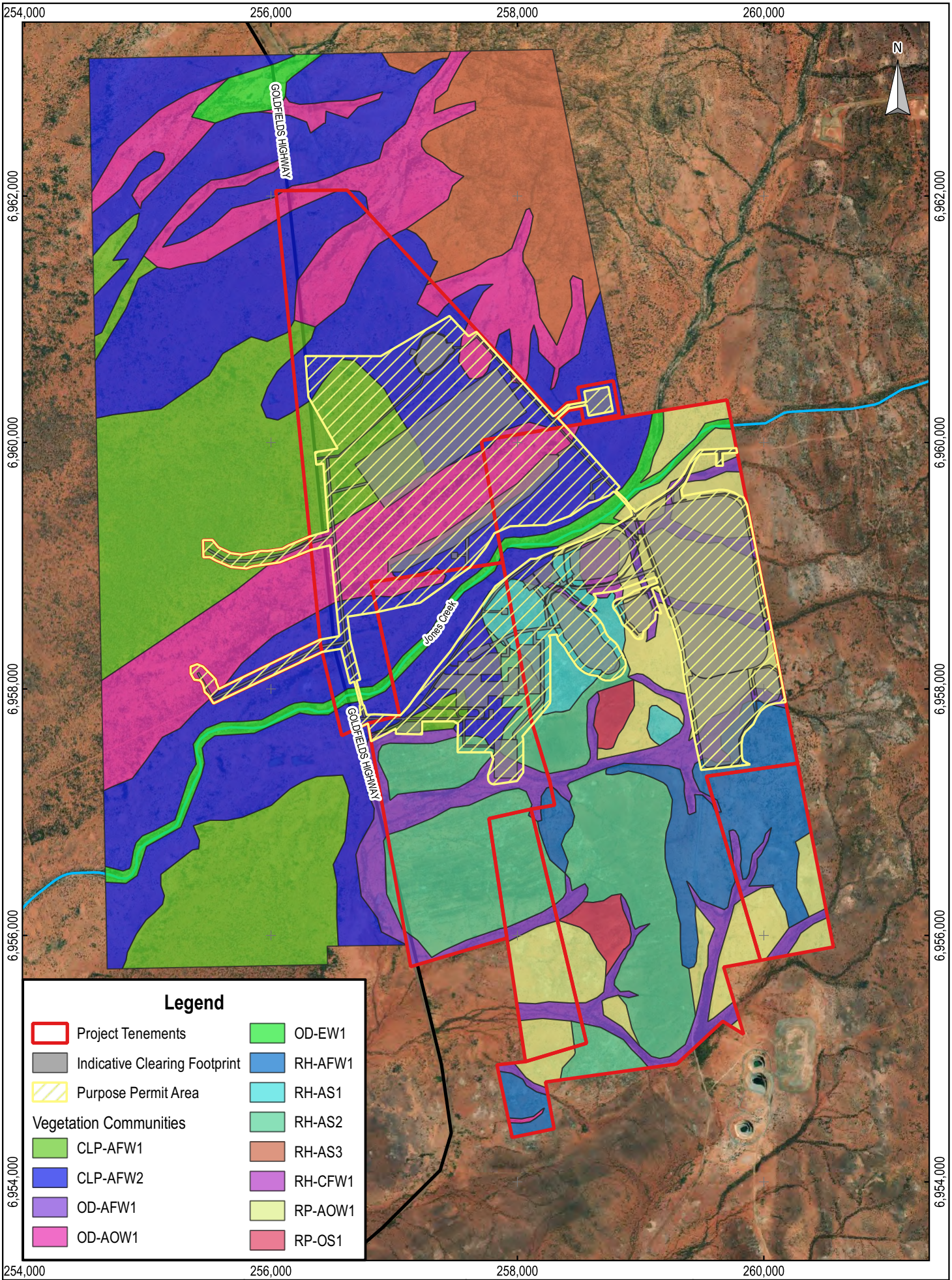
Additional hydrobiological studies were undertaken in October 2019 by AQ2 to further assess the likelihood of the vegetation types to be GDE's. Three areas of riparian vegetation were investigated (upstream, adjacent and downstream of the project area on Jones Creek). Results showed that the vegetation communities do not require groundwater to survive i.e. there is sufficient water in the vadose zone from incident rainfall and flood infiltration to support the vegetation. Vegetation along Jones Creek immediately adjacent to the proposed project infrastructure may be considered to be facultive phreatophytic systems (i.e. opportunistic users of groundwater) where groundwater shallower than 10 m below ground level (bgl) is used when available. The modelling predicts that under prolonged drought, vegetation density may adjust to reflect reduced water availability. Some medium-term

reduction in plant-available-water may be accommodated by dormancy and reduced vigour within the system. Evidence of severe water stress was observed at the site upstream of the proposed project at the time of the survey (AQ2, 2019).

3.3.3.5 Cultural Ecological Values

A cultural ecological knowledge assessment of the project area was undertaken for the Tjiwarl Aboriginal Corporation. The assessment was undertaken by Integrate Sustainability Pty Ltd, Western Ecological and dK Botanical, representatives of the Tjiwarl knowledge holders and an Indigenous Ranger. On ground components of the assessment were undertaken in September 2021 (Integrate Sustainability, Western Ecological and dK Botanical, 2021).

The assessment identified 41 flora taxa of cultural importance considering uses for traditional food (31 taxa), medicine (12 taxa), ceremonies/rituals (3 taxa) and other uses such as tools, heating and navigation (16 taxa). Of the flora taxa identified, none are of scientific significance with the majority being noted to be taxa that are widely distributed and common either locally or regionally.



Scale: 1: 40,000
Original Size: A4
Grid: GDA94 / MGA zone 51

0 0.5 1 km

Liontown Resources
Kathleen Valley Lithium-Tantalum Project

Figure 5

Vegetation Communities

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Australia
t: +61 8 9226 3166
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

W:\Liontown Resources\Kathleen Valley\Approvals\NVCP\GIS\Kathleen Valley NVCP.qgs 03/02/2022 F5 Veg communities

256,000 258,000 260,000

6,962,000 6,960,000 6,958,000 6,956,000 6,954,000

N

GOLDFIELDS HIGHWAY

Jones Creek

GOLDFIELDS HIGHWAY

Legend

- Project Tenements
- Indicative Clearing Footprint
- Purpose Permit Area

Priority Flora

- Grevillea inconspicua (P4)
- Hemigenia exilis (P4)

PEC Vegetation Communities

- RH-AFW1
- RH-AS1
- RH-AS2

256,000 258,000 260,000

Scale: 1: 25,000
Original Size: A3
Grid: GDA94 / MGA zone 51 (EPSG:28351)

0 0.5 1 km

Liontown Resources
Kathleen Valley Lithium-Tantalum Project

Figure 6

Priority Flora and PEC Locations

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Australia
t: +61 8 9226 3166
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

W:\Liontown Resources\Kathleen Valley\Approvals\NVCP\GIS\Kathleen Valley NVCP.qgs 03/02/2022 F6 P Flora A3P

3.3.4 Terrestrial Fauna and Habitats

3.3.4.1 Fauna Habitat

The fauna survey identified four broad scale terrestrial habitat types within the project area as described in Table 4 and shown in Figure 7. All are considered locally common and widespread (Botanica, 2019).

Table 4: Terrestrial Habitat Types of the Project Area

Habitat Type	Description	Area (ha)
Clay Loam Plain	Acacia Forests and Woodlands	1,740.5
Open Depression	Acacia Forests and Woodlands/ Acacia Open Woodlands/ Eucalypt Woodlands	820.3
Rocky Hillslope	Acacia Forests and Woodlands/ Acacia Shrublands/ Casuarina Forests and Woodlands	861.5
Rocky Plain	Acacia Open Woodlands/ Other Shrublands	369.9
	Total	3,792.3

3.3.4.2 Significant Fauna

Database searches were conducted as part of the Level 1 survey undertaken by Botanica Consulting to identify potential conservation significant fauna and their habitat protected under Commonwealth and State Acts. The likelihood of occurrence of each was considered based on records in the region and presence of suitable habitat. The majority were not considered likely to be present within the project area.

A total of 45 native vertebrate fauna taxa were observed during the 2018 Level 1 fauna survey which included one amphibian, three reptiles, 36 birds, two mammals and three bat species.

No Threatened fauna or Migratory fauna as listed under the Western Australian Biodiversity Conservation (BC) Act or Commonwealth EPBC Act or Priority Fauna as listed by DBCA were recorded within the survey area. This is consistent with the results of other fauna surveys conducted for nearby tenements for other mining projects.

One significant fauna species is known to occur locally. The Peregrine Falcon (*Falco peregrinus*) listed as "Other Specially Protected" under the BC Act was observed with one individual bird observed just south of the study area during the 2018 fauna survey. This species inhabits a wide range of habitats including forest, woodlands, wetlands and open country (Pizzey and Knight, 2007).

Potential for rocky areas to support Black-flanked Rock Wallaby (*Petrogale lateralis lateralis*) which is listed as Endangered under the State BC Act and Commonwealth EPBC Act was identified. Targeted surveys for the nearby Yakabindie Project did not identify their presence despite previous sightings in the Barr Smith Range in 2006 and confirmation of scats in 2015 (Biota, 2017). A Targeted survey for this species was conducted by Botanica Consulting in 2021 (Appendix 4). Eleven broad habitat types were identified and assessed for their value as Black-flanked Rock-Wallaby habitat. All of the habitat types were identified as being unsuitable and no Black-flanked Rock Wallabies were detected during the field survey.

3.3.4.3 Subterranean Fauna

A subterranean fauna survey was conducted for the project area by Invertebrate Solutions on 26 November 2021. No stygofauna were identified during the survey that utilised groundwater bores previously drilled by Liontown, and the results therefore indicate that there is a nil to low likelihood of stygofauna being present within the Project area, and no significant impacts are likely (Invertebrate Solutions, 2021).

As part of the nearby Yakabindie Project (located approximately 6 km to north east), MWH (2017) commented on the occurrence of stygofauna in and adjacent to the project. As a result of their review of past work and an on-going monitoring program, they concluded that stygofauna in the region are found predominantly in calcretes,

palaeochannel alluvium and active creek line alluvium and not in weathered or fractured bedrock. Exploration drilling at Kathleen Valley has shown that bedrock is close to or at surface, with limited regolith. Regolith that does occur is above the water table, so will not contain stygofauna. Fracturing in the bedrock was encountered, mostly with limited zones of fracturing at depth of greater than 30 m. No calcrete has been encountered. Within the Jones Creek area, there are zones of streambed alluvium which may be saturated after stream flow events but are unlikely to be saturated at all times. As a result, if stygofauna occur within the alluvium, their occurrence may be sporadic.

3.3.4.4 Short Range Endemics

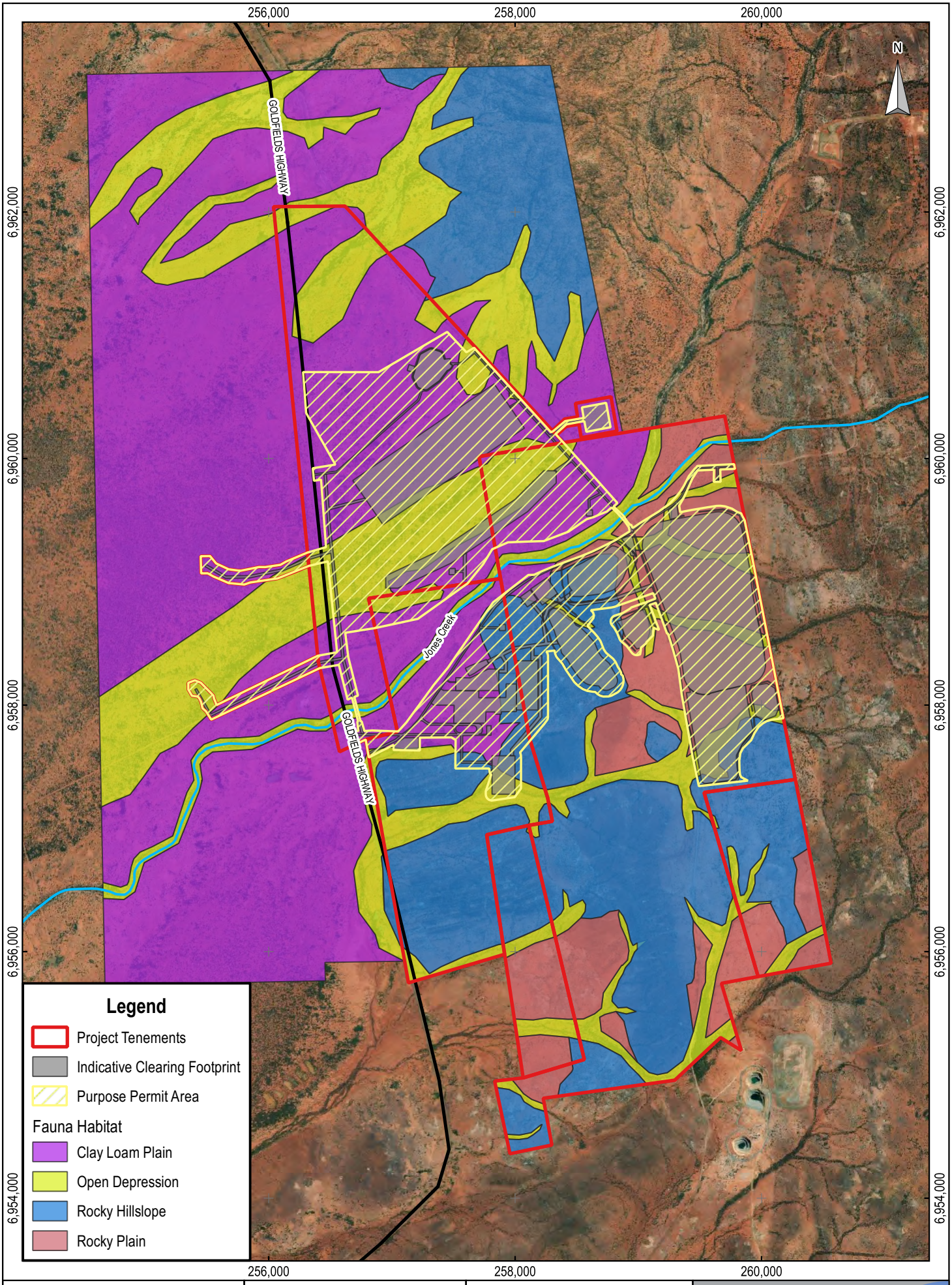
An SRE survey has not been undertaken for the project area. A risk based approach as advocated by the EPA Guidance for SRE was applied when making the decision not to undertake such surveys. The habitat assessment identified four habitats within the project area that are widespread and common. Habitat that may have potential to support unique taxa such as isolated rock outcrops, caves and drainage features has been avoided as part of Project design, with such habitat largely being present in exclusion zones that form part of the Mining Agreement with the Tjiwarl. The proposed disturbance area largely comprises habitats with a low potential to support SRE species.

Results of the SRE assessment conducted in 2016 for the nearby Yakabindie Project were also considered noting that part of the targeted millipede survey conducted as part of this assessment overlaps the project area (MWH, 2016). In the Yakabindie assessment, creekline was identified as having high potential to support SRE as it has isolated, sheltered microhabitat with unique riparian vegetation. Drainage line habitat was assessed to have medium potential to support SRE. Jones Creek and associated drainage lines was identified as being an important habitat for an SRE species (millipede) with one confirmed SRE species being identified in a number of locations within these areas (*Antichiropus DIP003*). Creekline habitat and much of drainage line habit is located within exclusion areas within the Project area.

3.3.4.5 Cultural Ecological Values

A cultural ecological knowledge assessment of the project area was undertaken for the Tjiwarl Aboriginal Corporation. The assessment was undertaken by Integrate Sustainability Pty Ltd, Western Ecological and dK Botanical, representatives of the Tjiwarl knowledge holders and an Indigenous Ranger. On ground components of the assessment were undertaken in September 2021 (Integrate Sustainability, Western Ecological and dK Botanical, 2021).

The assessment identified 37 fauna taxa likely to occur within the survey area as fauna of cultural significance. These taxa can represent a source of food, have medicinal uses, can be used in ceremonies and rituals, may have totemic status and/or represent mythological beings. Of the fauna taxa identified, none are of scientific significance with the majority being noted to be taxa that are widely distributed and common either locally or regionally.



Scale: 1: 40,000
Original Size: A4
Grid: GDA94 / MGA zone 51

0 0.5 1 km

Liontown Resources
Kathleen Valley Lithium-Tantalum Project

Figure 7

Habitat Types

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Australia
t: +61 8 9226 3166
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

W:\Liontown Resources\Kathleen Valley\Approvals\NVCP\GIS\Kathleen Valley NVCP.qgs 03/02/2022 F7 Fauna

3.3.5 Surface Water and Groundwater

3.3.5.1 Hydrogeological Setting

The Northern Goldfields can be characterised as being low relief with the drainage system comprising of three large, broad, sub-parallel, south easterly trending palaeodrainage systems. The Carey and Raeside Palaeodrainages extend from a regional divide to the west of the project area and drain towards the Eucla Basin, while the discharge of the Minigwal Palaeodrainage is into the Carey Palaeodrainage located downstream of Lake Carey (Johnson *et al.* 1999).

Heavy rainfalls, and associated runoff and local flooding, maintain the groundwater flow systems in the Northern Goldfields. Groundwater discharge occurs mainly by evaporation from playa lakes and a relatively small amount by throughflow within the palaeochannels (Allen, 1996).

Groundwater in the region typically occurs in:

- Shallow alluvium associated with larger creeks and river valleys.
- Tertiary palaeochannel sands (Wollubar sandstone).
- Calcrete horizons, typically found to overly major palaeochannel systems.
- Permeable zones within fractured fresh and weathered bedrock aquifers.

To the west of the Project, the Albion Downs palaeochannel system is a major aquifer, with water quality in the range of 100,000 – 180,000 mg/L TDS (i.e. hypersaline). Better quality groundwater (ranging from fresh to saline) has been sourced from calcrete aquifer systems in the area (AQ2, 2018).

3.3.5.2 Local Groundwater

A preliminary hydrogeological study of the project area was undertaken by AQ2 Pty Ltd in 2018 (AQ2 2018). More detailed studies were undertaken by AQ2 (AQ2 2019 and 2020) and Knight Piesold 2020 (KP 2020a, b). These studies indicate:

- Groundwater flow at the site is predicted to be from east to west at a relatively steep groundwater gradient for the Goldfields (AQ2 2019).
- The depth to groundwater in the pit area ranges from 49 m below ground level (bgl) at Mount Mann to 7 mbgl at the lowest elevation in the northern extent of Kathleen's Corner. The proposed pit depth is approximately 90 m and underground workings are expected to extend to a depth of about 450 m. Therefore, mine dewatering will be required to facilitate both open pit and underground operations.
- Due to limited porosity in the regions rockmass, the majority of groundwater is hosted in discrete geological structural features with associated limited storage. Preferential pathways for groundwater inflow exist in the form of faults and fractures in the vicinity of the planned underground mine. Inflows are anticipated to decrease over time as the geological structures are dewatered (KP 2020).
- Groundwater quality at Kathleen Valley is fresh (total dissolved solids concentrations (TDS) of 590 to 810 mg/L), alkaline (pH 8.0 to 8.6) and with no significant concentrations of dissolved metals (AQ2, 2019).

Specific investigations regarding underground mine inflows are in progress, comprising the drilling and aquifer testing of deep production bores and associated monitoring bores at selected locations into and adjacent to the ore body, to depths of between 200 m and 320 m. The results of these investigations will be used in groundwater modelling to more accurately simulate projected underground mining development inflows and associated dewatering requirements, and to predict the scale and timeframe for the development of the dewatering drawdown cone.

In addition to mine dewatering, a borefield/s will be established in proximity to the Project to supply an additional 35-40 L/s required for operation of the processing plant. Several prospective aquifers have been identified in the area, including:

- Jones Creek Conglomerate aquifer, located directly adjacent (to the east and south of Project infrastructure). The depth to groundwater in this aquifer ranges from 10 to 15 mbgl (KP 2020b).
- A number of intersecting faults and faults/shear zones intersecting possible palaeochannels or shallow alluvium associated with creeks and river valleys in the greater project area (ranging in an arc from north west to south west and about 500 to 4,000 m from the processing plant location (KP 2020a)). Investigative work on these areas is ongoing.

A drilling and aquifer testing program is ongoing with a number of bores drilled in 2021. Pumping test results to date indicate modest to high transmissivity values and medium to low aquifer storage associated with the targeted fault / fracture zone. These characteristics are typical for fractured rock aquifer systems (KP 2021).

3.3.5.3 Surface water

The Project lies within the upper reaches of the Lake Carey Catchment of the Salt Lake Basin (5,220 km^2) of the Western Plateau Division (DWER 2018b; Timms *et al.* 2006). Surface water sheds off the low hills of the project area, eventually draining through the highly permeable sand plains to Lake Miranda. This lake is located 25 km south and is an internally draining lake formed in an early Tertiary drainage system.

The Project falls within the surface water sub-catchment of Jones Creek, which extends about 14 km to the north east and 8 km to the east of proposed infrastructure. Jones Creek passes just to the north of the Kathleen Valley deposit and proposed mine area. It flows to the south west into the Albion Downs valley and eventually to Lake Miranda. The expected flow frequency of Jones Creek is slightly more than once per year with flow duration of several hours. Continuous flow between 48 and 72 hours has a frequency of about 1:100 years (AQ2, 2018).

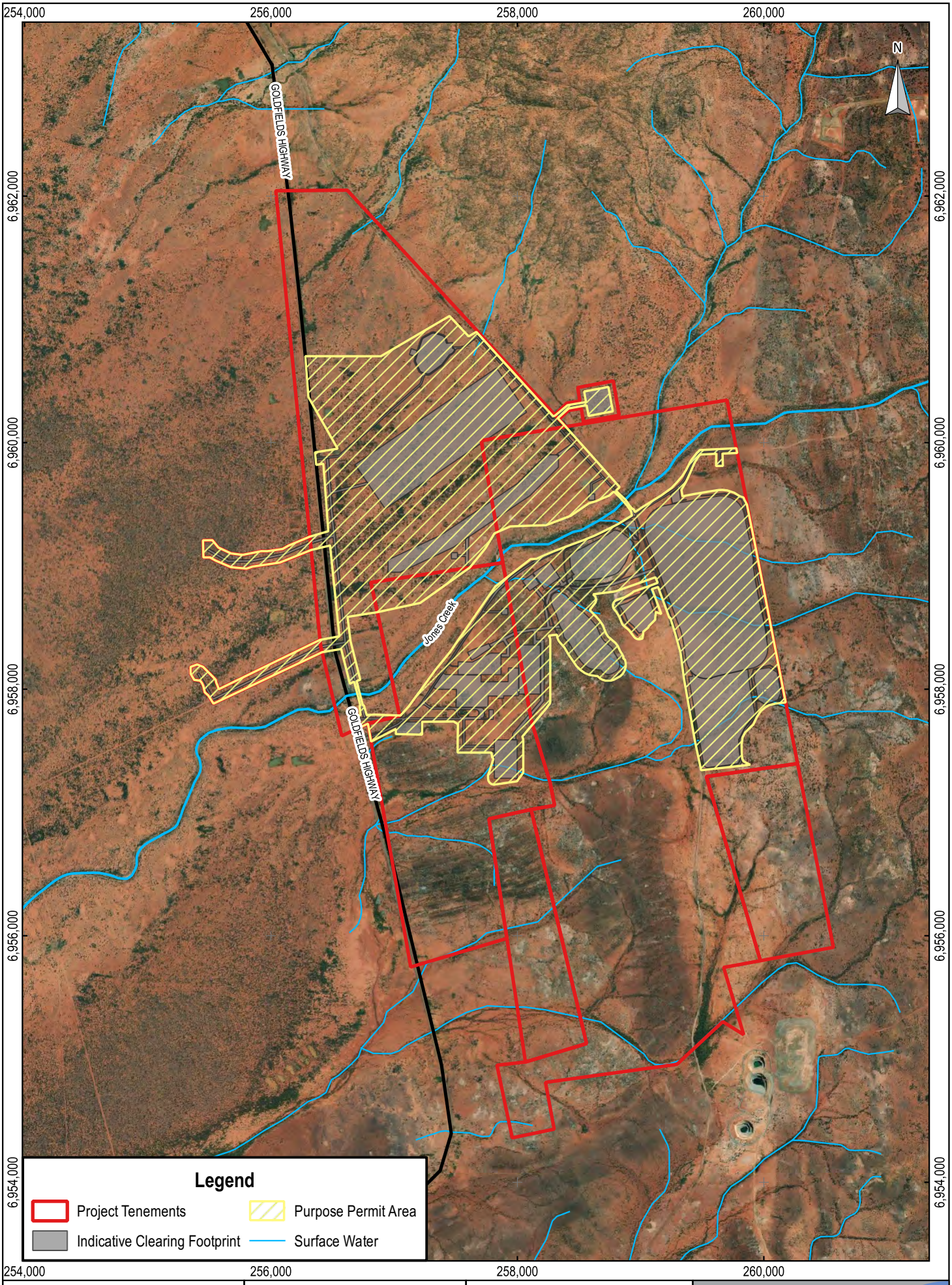
Several smaller drainage lines are present throughout the project area (Figure 8). All creeks are ephemeral in nature, only flowing briefly immediately following significant rainfall events.

3.3.5.4 Flood Modelling

Knight Piesold were engaged to undertake a surface water assessment for the Project. This included estimation of design storm events and peak flows to provide information for input into a flood model (Knight Piesold, 2021).

The design storms for Jones Creek were estimated using the methodologies described in Australian Rainfall and Runoff 2019 (ARR 2019) for the specific catchment area of 61 km^2 that reports to the northern extent of the proposed open pit. Flood modelling was conducted for the 1% AEP (1 in 100 year Average Recurrence Interval) and 0.1% AEP (1,000 year ARI). Results indicate that:

- The 100 year ARI flood does not directly impact the open pits. No infrastructure is required during operations to protect the pits from flooding of Jones Creek.
- The 1,000 year ARI flood would result in water flow into the northern extents of Open Pit 1 for the current topographical conditions (Figure 9). This is due to the flow through existing culverts under the road. If these culverts were to be removed or blocked, the existing road should provide sufficient flood protection from the 1,000 year ARI flood.
- Flows from Jones Creek are unlikely to impact any of the surface infrastructure related to the underground mining operations for the 1,000 year ARI event, as the underground surface infrastructure is assessed as having freeboards ranging from 1.0 m to 1.8 m.



Scale: 1: 40,000
Original Size: A4
Grid: GDA94 / MGA zone 51

0 0.5 1 km

Liontown Resources
Kathleen Valley Lithium-Tantalum Project

Figure 8

Hydrologic Features

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Australia
t: +61 8 9226 3166
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

W:\Liontown Resources\Kathleen Valley\Approvals\NVCP\GIS\Kathleen Valley NVCP.qgs 03/02/2022 F8 Hydro

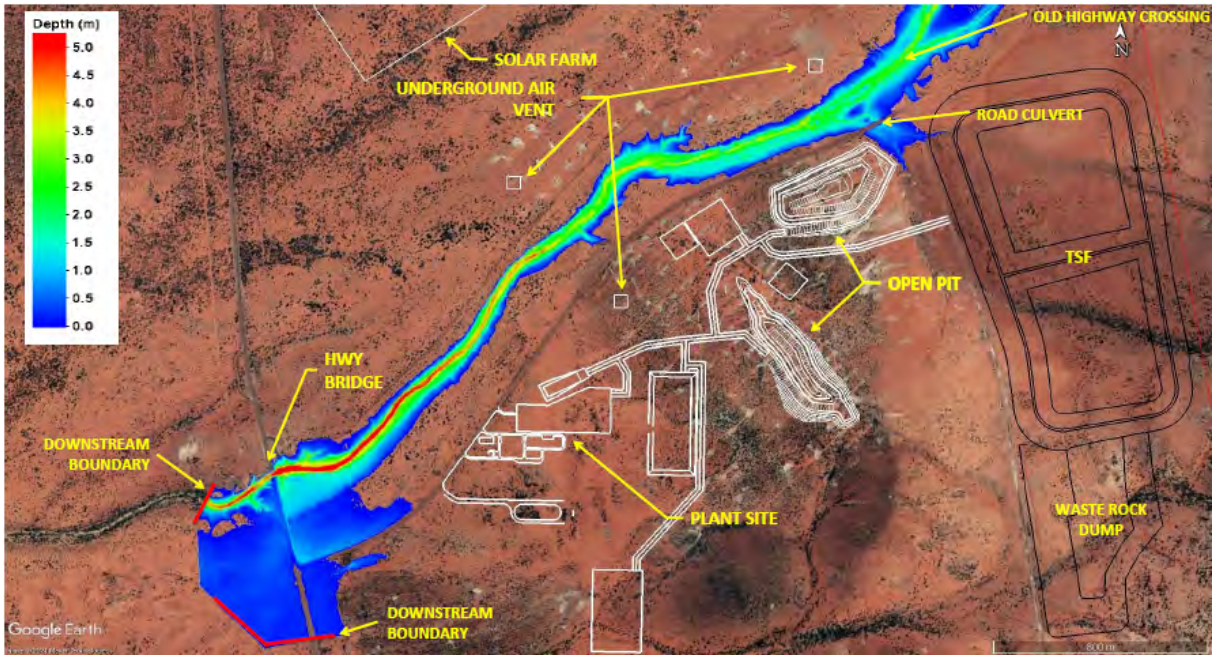


Figure 9: Jones Creek 1,000 Year ARI Flow Depths for Existing Conditions

4. PROPOSED LAND CLEARING

The Project will require clearing of 348.2 ha of native vegetation within the Purpose Permit Application Area of 766.8 ha. Clearing is anticipated to commence early in Q3 of 2022.

Clearing is required for mining activities, which will include the construction of:

- Two open cut mines.
- Underground portal and vent shafts.
- TSFs and associated pipelines.
- Temporary Waste Rock Dump.
- Processing Plant and Ore Stockpiles.
- Paste fill plants and emulsion plant.
- Topsoil stockpiles.
- Run of Mine (ROM).
- Wind farm and powerlines.
- Power station.
- Laydown areas, workshops and offices.
- Borefield.
- Accommodation village.
- Landfill.
- Wastewater treatment plant.
- Site access road, internal roads and tracks.

A shapefile is provided for the Purpose Permit Application Area. There may be minor variations made to the precise location and area of site infrastructure within this.

To allow for potential minor changes to areas of disturbance, Liontown has applied to clear 348.2 ha within the Purpose Permit Application Area of 766.8 ha.

5. ASSESSMENT OF CLEARING PRINCIPLES

5.1 NATIVE VEGETATION CLEARING PRINCIPLES

Clearing applications are assessed against the 10 principles outlined in Schedule 5 of the *Environmental Protection Act 1986*. These principles aim to ensure that all potential impacts resulting from removal of native vegetation are assessed in an integrated method and consistently apply to all lands throughout Western Australia. The principles address the four environmental areas of biodiversity significance, land degradation, conservation estate and ground and surface water quality.

The following sections discuss the potential impacts associated with clearing for the Project. A summary of the outcomes of the assessment against the 10 Clearing Principles are provided in Table 5.

Table 5: Summary of Clearing Assessment Against Clearing Principles

Principle Number	Clearing Principle	Outcome
a	Native vegetation should not be cleared if it comprises a high level of biological diversity.	Unlikely to be at variance
b	Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	Unlikely to be at variance
c	Native vegetation should not be cleared if it includes or is necessary for the continued existence of Threatened flora.	Unlikely to be at variance
d	Native vegetation should not be cleared if it comprises the whole or a part of or is necessary for the maintenance of a TEC.	Not at variance
e	Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	Not at variance
f	Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	Not at variance
g	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	Not at variance
h	Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation areas.	Not at variance
i	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	Unlikely to be at variance
j	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.	Not at variance

5.2 BIODIVERSITY

Clearing Principle A: Native vegetation should not be cleared if it comprises a high level of biological diversity.

5.2.1 Potential Impacts

Impacts to the biological diversity of native vegetation associated with clearing for the project expansion are limited to localised flora/habitat loss from clearing in the project area as well as the potential spread of existing weed species and the introduction of new weed species into the area.

No Threatened flora or fauna species or TECs are present within the Purpose Permit Area.

The vegetation communities mapped within the surveys are well represented at a local and regional scale (Botanica, 2019). Potential impacts to vegetation communities within the Purpose Permit Area are detailed in Table 6. From this it can be seen that the proposed disturbance to any individual mapped vegetation unit does not exceed 34.8%, with the exception of RH-CFW1, which will experience approximately 71.8% clearing of the mapped vegetation community.

Vegetation types RH-AFW1, RH-AS1 and RH-AS2 are considered to be representative of the Priority 1 Violet Range PEC (Botanica, 2021). These communities occupy 635.9 ha of the survey area, which represents 3.3% of the DBCA mapped extent. Approximately 48.0 ha of the PEC is located within the proposed clearing footprint, which represents 0.2% of the DBCA mapped extent. Impacts on this PEC are discussed in more detail in Section 5.5.

Flora surveys of the project area identified two Priority flora species, *Grevillea inconspicua* and *Hemigenia exilis*. Impacts on this species are discussed in more detail in Section 5.4.

The Purpose Permit Area and indicative clearing footprint were designed to minimise environmental impact to vegetation communities, significant flora and culturally important flora and fauna species as much as practicable.

5.2.2 Management and Mitigation

Management and mitigation measures to reduce impacts on biological diversity comprise:

- Clearing of vegetation will be kept to the minimum required for the project.
- Utilising existing disturbed areas and locating infrastructure to avoid significant flora and vegetation.
- Managing clearing via an internal Land Clearing Procedure.
- Clearly delineating the clearing area to ensure only that required for a safe working area is cleared.
- Implement a procedure to record the amount of clearing undertaken and report the cumulative total in the Annual Environmental Report (AER) and Mine Rehabilitation Fund (MRF) reporting.
- Vehicle and equipment hygiene procedures will be implemented to minimise entry of weed and soil borne diseases.
- Site weed control will be conducted as required.
- Stockpiling stripped topsoil and vegetation for use in future rehabilitation activities.
- Progressively rehabilitating disturbed areas on completion of project activities.

Given the widespread and common nature of vegetation communities in the region, absence of Threatened species or TECs in the proposed Purpose Permit Area and low clearing of the PEC the project area is not considered to comprise a high level of biological diversity. Therefore, the proposed clearing is considered unlikely to be at variance to Clearing Principle A.

Table 6: Potential Impacts to Vegetation Communities

Vegetation Community	Description	Total Mapped Area (ha)	Purpose Permit Area (ha)	Clearing Footprint Area (ha)	% Total Vegetation Impacted
CLP-AFW1	Low woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on clay-loam plains	621.0	92.2	26.4	4.3
CLP-AFW2	Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plains	1,119.5	238.0	91.9	8.2
OD-AFW1	Low woodland of *Acacia caesaneura/ A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depressions	217.8	46.6	34.7	15.9
OD-AOW1	Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depressions	511.6	130.6	18.3	3.6
OD-EW1	Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depressions	90.9	0.5	0.4	0.4
RH-AFW1	Low woodland of Acacia caesaneura /Acacia incurvaneura over mid shrubland of Santalum lanceolatum/ Scaevola spinescens and low open tussock grassland of Enneapogon caerulescens on rocky hillslopes.	171.1	9.8	7.9	4.6
RH-AS1	Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslopes	90.1	64.3	28.5	31.6
RH-AS2	Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslopes	374.7	27.6	11.6	3.1
RH-AS3	Mid open shrubland of *Acacia quadrimarginea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on granite exposed hillslopes	211.1	0.0	0.0	0.0
RH-CFW1	Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslopes	14.3	13.3	10.2	71.8
RP-AOW1	Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on rocky plains	340.5	144.0	118.4	34.8
RP-OS1	Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plains	29.5	0.0	0.0	0.0
	Total	3,792.1	766.8	348.2	9.2

5.3 SIGNIFICANT FAUNA HABITAT

Clearing Principle B: Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

5.3.1 Potential Impacts

The fauna survey identified four broad scale terrestrial habitat types within the project area (Botanica, 2019). All of the habitats are considered locally common and widespread. Potential impacts to the fauna habitats mapped within the project area are detailed in Table 7. From this it can be seen that rocky plains will be the most impacted fauna habitat (32.0% of the mapped area).

Table 7: Potential Impacts to Fauna Habitat

Habitat Type	Total Mapped (ha)	Purpose Permit Area (ha)	Clearing Footprint Area (ha)	(%) Total Habitat Impacted
Clay Loam Plain	1,740.5	330.3	118.3	6.8
Open Depression	820.3	177.7	53.4	6.5
Rocky Hillslope	861.5	114.9	58.2	6.8
Rocky Plain	369.9	144.0	118.4	32.0
Total	3,792.2	766.8	348.2	9.2

The Peregrine Falcon (*Falco peregrinus*) listed as "Other Specially Protected" under the BC Act was observed with one individual bird observed just south of the study area during the 2018 fauna survey. This species inhabits a wide range of habitats including forest, woodlands, wetlands and open country (Pizzey and Knight, 2007).

The targeted survey for the Black-Flanked Rock Wallaby conducted in 2021 identified all habitat types as being unsuitable for the species and no Black-flanked Rock Wallabies were detected during the field survey.

5.3.2 Management and Mitigation

The main risk to fauna and habitat is loss or fragmentation through clearing activities.

Management measures to reduce impacts on fauna and habitat comprise:

- Clearing of vegetation will be kept to the minimum required for the project.
- Utilising existing disturbed areas and locating roads and infrastructure to avoid fauna habitat where possible.
- Managing clearing via an internal Land Clearing Procedure.
- Clearly delineating the clearing area with to ensure only that required for a safe working area is cleared.
- Implement a procedure to record the amount of clearing undertaken and report the cumulative total in the Annual Environmental Report (AER) and Mine Rehabilitation Fund (MRF) reporting.
- Progressively rehabilitating disturbed areas on completion of Project activities.

Given the widespread and common nature of habitat in the region and absence of Threatened species or TECs in the proposed Purpose Permit Area, it is not considered to contain significant fauna habitat. Therefore, the proposed clearing is unlikely to be at variance to Clearing Principle B.

5.4 THREATENED FLORA AND PRIORITY FLORA

Clearing Principle C: Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare (Threatened) flora.

5.4.1 Potential Impacts

No Threatened Flora as listed under the *BC Act 2016* or Commonwealth EPBC Act were recorded within the survey area.

Two Priority Flora taxa (*Grevillea inconspicua* and *Hemigenia exilis*) as listed by the DBCA were recorded within the survey area. Both are listed as Priority 4 species (rare, near threatened and other species in need of monitoring, but generally listed due to lack of available information).

As shown in Table 8, 3,823 *Grevillea inconspicua* plants were recorded within the survey area in five of the 12 vegetation types, four locations of which had previously been recorded by DBCA. Approximately 48% of the mapped Grevillea inconspicua individuals are located within the Disturbance Envelope, however only 19.2% are located within the proposed footprint. Grevillea inconspicua populations occur outside of the project area in the Eremaean Botanical Provinces, in the Murchison IBRA subregion (Florabase, 2021).

As shown in Table 8, 470 *Hemigenia exilis* plants were recorded within the survey area in two locations within two vegetation types. Both of the locations had previously been recorded by DBCA. Of the 470 individuals, 10.6% are located within the Disturbance Envelope, however none are expected to be directly impacted. An additional population was observed in September 2021 west of the Goldfields Highway, outside of the Purpose Permit Area as part of the cultural ecological knowledge assessment undertaken on behalf of the Tjiwarl Aboriginal Corporation. The number of plants present within the population was not recorded. *Hemigenia exilis* populations occur outside of the project area in the Eremaean Botanical Province, in the IBRA Bioregion Murchison (Florabase, 2021).

Complete avoidance of these species is not achievable given requirements for avoidance of heritage sites of significance associated with Jones Creek and the geographical extent of these populations between the proposed pits and processing plant area.

Table 8: Potential Impacts on Significant Flora

Significant Flora Taxa	Total Mapped Population	Within Purpose Permit Area	Within Clearing Footprint Area	% Total Flora Impacted
Grevillea inconspicua (P4)	3,823	1,840	735	19.2
Hemigenia exilis (P4)	471	50	0.0	0.0

5.4.2 Management and Mitigation

Management measures to reduce impacts to Priority flora comprise:

- Design of the project to avoid significant flora where practicable.
- Utilising existing disturbed areas and locating infrastructure to avoid *Grevillea inconspicua* and *Hemigenia exilis* where possible.
- Managing clearing via an internal Land Clearing Procedure.
- Clearly delineating the clearing area with survey pegs and flagging tape to ensure only that required for a safe working area is cleared.

- Implement a procedure to record the amount of clearing undertaken, including the take of Priority flora and report the cumulative total in the AER and Mine Rehabilitation Fund (MRF) reporting.
- Weed hygiene practices will be implemented and site weed control will be conducted as required.

As the areas to be impacted do not include Threatened flora and population impacts to the P4 species (*Grevillea inconspicua* and *Hemigenia exilis)* will be avoided and or minimised, the proposed clearing is unlikely to be at variance with Clearing Principle C. The conservation status of both species is considered unlikely to be significantly impacted by the Project.

5.5 THREATENED ECOLOGICAL COMMUNITIES

Clearing Principle D: Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.

No TECs as listed under either the *EPBC Act* or *BC Act* have been identified within the project area or within a 20 km radius of the survey area.

The south-east part of the survey area is located within the boundary of the Priority 1 Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) Ecological Community (PEC) (Figure 6). Three of the vegetation types identified during the survey (RH-AFW1, RH-AS1 and RH-AS2) are considered to be representative of the Violet Range PEC. These communities occupy 635.9 ha of the survey area, which represents 3.3% of the DBCA mapped extent. Approximately 48.0 ha of the PEC is located within the proposed clearing footprint, which represents 0.2% of the DBCA mapped extent (Table 9).

The Purpose Permit Area and indicative clearing footprint were designed to minimise environmental impact to the PEC as much as practicable.

Table 9: Priority Ecological Community Extent (ha)

DBCA Mapped Extent	Survey Area Extent	Purpose Permit Extent	Project Footprint Extent	Project Impact (%)
19,256.2	635.9	101.6	48.0	0.2%

As the proposed clearing will have no impacts on a TEC, it is not at variance with Principle D.

5.6 REMNANT VEGETATION

Clearing Principle E: Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

The Project intersects three pre-European vegetation associations, as detailed in Table 10.

The EPA uses a standard level of native vegetation retention of at least 30% of the pre-clearing extent of an ecological community as a benchmark. The levels of native vegetation retention have most recently been recognised in the National Objectives and Targets for Biodiversity Conservation 2001-2005, which recognised that the retention of 30%, or more, of the pre-clearing extent of an ecological community is necessary if Australia's biological diversity is to be protected (Department of the Environment and Heritage, 2001). The pre-European vegetation types occurring in the project Purpose Permit Area are the Beard vegetation associations Wiluna 18, 39 and 202, which will have at least 99.59 - 99.99 % remaining at a state level after the proposed clearing (Table 10) (DBCA, 2019).

Table 10: Pre-European Vegetation Association Representation

Vegetation Association	Vegetation Description	Current Extent in the State	Pre-European Extent	% Remaining After Clearing
Wiluna 18	Low woodland; mulga (*Acacia aneura*)	4,256,038.04	4,273,509.57	99.59
Wiluna 39	Shrublands; mulga scrub	406,212.44	411,278.07	98.77
Wiluna 202	Shrublands; mulga and *Acacia quadrimarginea* scrub	86,835.62	86,848.57	99.99

The vegetation to be cleared is not significant as a remnant of native vegetation in an area that has been extensively cleared and the proposed clearing will not be at variance with Clearing Principle E.

5.7 WATERCOURSE OR WETLAND ENVIRONMENTS

Clearing Principle F: Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

There are no wetlands of national importance (ANCA Wetlands) or conservation category wetlands within the project area.

The Project falls within the surface water sub-catchment of Jones Creek, which extends about 14 km to the north east and 8 km to the east of proposed infrastructure. Jones Creek passes just to the north of the proposed mine area, with the closest proposed infrastructure being over 140 m south of the creek. Jones Creek is recognised as being of cultural significance to the Traditional Owners and an exclusion zone has been applied as part of the agreement between the Tjiwarl and Liontown. The proposed Purpose Permit Area has been designed to avoid Jones Creek and existing roads will be utilised to avoid disturbance from creek crossings.

Two of the vegetation communities (OD-EW1 and OD-AOW1) were initially identified as being potential terrestrial Groundwater Dependant Ecosystems (GDE), however further studies carried out by AQ2 in October 2019 identified these vegetation communities do not require groundwater to survive i.e. there is sufficient water in the vadose zone from incident rainfall and flood infiltration to support the vegetation.

As the clearing will not impact wetlands or Jones Creek, only minor drainage lines are present and there are no GDEs present, the proposal will not be at variance with Clearing Principle F.

5.8 LAND DEGRADATION

Clearing Principle G: Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Vegetation communities within the survey area were assessed to range from “Good” to “Very Good” (Botanica, 2019). The vegetation condition shows signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds, vehicle tracks and previous mineral exploration.

Existing land degradation is also attributed to previous mining and exploration activity as the Kathleen Valley area contains four historic gold deposits that have been recently mined, namely Main Road, Mossbecker, Yellow Aster and Nils Desperandum. A number of historic gold workings are also located in the area.

5.8.1 Potential Impacts

Potential sources of land degradation from clearing activities include:

- Wind and mechanical erosion during vegetation and topsoil stripping activities.
- Wind and water erosion of topsoil stockpiles and cleared areas.
- Water erosion due to changes in surface water flow.
- Soil compaction.
- Soil contamination i.e. spills, machinery failure
- Introduction and/or spread of weeds.

5.8.2 Management and Mitigation

Minimisation of land degradation will be achieved by applying recognised clearing and rehabilitation methods. Management and mitigation strategies to achieve this include:

- Minimising the area requiring vegetation clearing.
- Confining vehicle movements to defined roads and tracks.
- Conducting topsoil-stripping activities during periods of low winds.
- Stockpiling topsoil and vegetation for use in rehabilitation.
- Storing hydrocarbons and reagents in bunded areas and applying spill response procedures.
- Progressive rehabilitation of completed areas to minimise active areas exposed where possible.
- Scarifying or deep ripping (as appropriate) compacted tracks and roads prior to rehabilitation.

In the context of the local land systems, intact vegetation on a regional scale and existing level of localised land degradation, the scale of disturbance from the proposed clearing is not anticipated to increase land degradation. As such, the project will not be at variance with Clearing Principle G.

5.9 CONSERVATION ESTATE

Clearing Principle H: Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

The project area is not associated with any conservation lands and not located within a DBCA managed Conservation Reserve. The closest Conservation Reserve is the Wanjarri Nature Reserve which is located approximately 4 km north-east of the tenement boundary and of the Purpose Permit Area (Figure 1).

The project area does not contain any Environmentally Sensitive Areas (ESA) listed under the *Environmental Protection Act 1986*.

Due to the distance from the Wanjarri Nature Reserve, clearing of the site is not considered to be at variance with Clearing Principle H.

5.10 SURFACE AND GROUNDWATER QUALITY

Clearing Principle I: Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

There are no permanent water bodies or wetlands within the Purpose Permit Area. There are no water management or surface water protection areas in the project area, other than the Goldfields Groundwater Area. There are no public drinking water source areas in the project area.

Groundwater quality in the area is generally fresh with an alkaline pH ranging from 8.0 to 8.6. Several smaller drainage lines are present throughout the project area, however all creeks are ephemeral in nature, only flowing briefly immediately following significant rainfall events.

5.10.1 Potential Impacts

Surface water quality has the potential to be affected by increased sedimentation caused through clearing and soil disturbance and removal of vegetation that acts to bind soil, including riparian vegetation. This may result in a localised decrease in surface water quality.

Hydrocarbon spills may occur from earth moving machinery used for land clearing activities. Uncontained spills may affect surface and/or groundwater quality.

The Project falls within the surface water sub-catchment of Jones Creek, which extends about 14 km to the north east and 8 km to the east of proposed infrastructure. Jones Creek passes just to the north of the proposed mine site, however all site infrastructure is set back from Jones Creek, with the closest infrastructure being over 140 m to the south outside of the exclusion zone agreed with the Traditional Owners. The proposed Purpose Permit Area has been designed to avoid Jones Creek and existing roads will be utilised to avoid disturbance. Construction and clearing will be scheduled outside of peak rainfall events to avoid times of high surface flows and reduce the risk of erosion and elevated turbidity to drainage lines from disturbed areas.

Land clearing is considered unlikely to adversely impact on groundwater quality.

5.10.2 Management and Mitigation

Management measures to prevent contamination of surface and groundwater quality include:

- Hydrocarbons will be stored in bunded areas.
- Project design has considered locations of ephemeral drainages and minimised disturbance of these.
- Utilising existing disturbed areas to reduce clearing of vegetation where possible.
- Where practicable, infrastructure will be located and built to minimise loss of vegetation.
- Where necessary, surface water drainage infrastructure will be installed to divert surface water flows around cleared areas and back to downstream catchments.
- Spill kits will be maintained at the site to allow containment and treatment of spillages of hydrocarbons.
- Progressive rehabilitation of completed areas to minimise active areas exposed where possible.

Impacts to surface water and groundwater quality groundwater from the proposed clearing are not anticipated to be significant. Localised, short term impacts on surface water quality can be managed using standard erosion and sediment control mitigation measures. Overall, the proposed clearing is considered unlikely to be at variance with Clearing Principle I.

5.11 FLOODING POTENTIAL

Clearing Principle J: Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

The proposed clearing is within a non-seasonal arid region that experiences a mean total annual rainfall of 248.3 (BOM, 2021). Precipitation is predominantly associated with sporadic summer cyclonic rainfall and thunderstorms. No month in a given year can be considered reliably wet, and zero rainfall can be recorded in any month.

The Project falls within the surface water sub-catchment of Jones Creek, which passes just to the north of the Kathleen Valley deposit and proposed mine area. The expected flow frequency of Jones Creek is slightly more than once per year with flow duration of several hours. Continuous flow between 48 and 72 hours has a frequency of about 1:100 years (AQ2 2018). Several smaller drainage lines are present within the Purpose Permit Area. All creeks are ephemeral in nature, only flowing briefly immediately following significant rainfall events.

5.11.1 Potential Impacts

Removal of vegetation generally increases flooding whereby uptake, infiltration, moisture retention and physical barriers to reduce flow velocities provided by vegetation are also removed. Surface water sheds off Mt Mann and other low hills of the project area, eventually draining through the highly permeable sand plains to Lake Miranda, located 25 km south. It is not expected that the removal of vegetation would significantly increase the risk of flooding above natural levels.

Flood modelling undertaken for the Project, specifically for Jones Creek as the most significant watercourse within the project area, confirms that flooding impacts will be localised in extent and will not adversely impact areas adjacent to Jones Creek.

5.11.2 Management and Mitigation

Management strategies to prevent flooding include:

- Project design has considered location of drainage lines and flood levels with the aim of minimising disturbance of these areas.
- Existing flow paths will be maintained where possible.
- Diversions will be installed where necessary to direct surface flow away from cleared areas, and return flows to natural paths.
- Culverts or floodways will be installed where the roads cross ephemeral drainages.
- Flood bunding and berms will be constructed to protect the open pits from flooding in the event of a 1:100 year flood level.
- Vegetation will be removed in stages with disturbance kept to a minimum to reduce runoff.

Overall, the proposed clearing will have no detectable increased impact on flooding potential for Project area or its immediate surrounds. Therefore, the proposed clearing will not be at variance with Clearing Principle J.

6. ROLES AND RESPONSIBILITIES

The roles and responsibilities of the project personnel associated with clearing vegetation are described in the below.

6.1 CHIEF OPERATING OFFICER AND PROJECT DIRECTOR

- Ensure appropriate resources and systems are provided to implement the management and mitigation measures outlined in this document.
- Coordinate preparation and finalisation of the NVCP, in consultation with relevant government agencies, and ensure adequate systems and procedures are in place to facilitate compliance with NVCP requirements through the exploration program.
- Manage all pre-construction environmental surveys and post-implementation monitoring.
- Coordinate engagement with key stakeholders including relevant recreational user groups.
- Overall responsibility for ensuring that all supervisory, management employees and contractor personnel are aware of, and understand, their responsibilities under this NVCP.
- Oversee the implementation of any corrective and remedial actions arising from audits and incident investigations.

6.2 ENVIRONMENTAL SOCIAL GOVERNANCE MANAGER

- Ensure all land clearing for the Project is conducted in compliance with this document and other regulatory requirements.
- Ensure all employees and contractors on site are aware of and adhere to obligations regarding clearing requirements.
- Ensure adequate processes are maintained to communicate relevant information with internal stakeholders.
- Ensure that all the required information is provided in the Vegetation Clearing Application and that data is accurate.
- Conduct visits and inspections to ensure all work complies with commitments and management measures outlined in this NVCP.
- Record and report environmental incidents to the Project Director and Regulator.
- Undertake incident cause analysis method investigations where required and manage the implementation of corrective and remedial actions arising from audits and incident investigations.
- Review and approve all Vegetation Clearing Applications.
- Maintain the Internal Clearing Permit Register.
- Compile and collate vegetation clearing data for annual reporting in the Annual Environmental Report.

6.3 EARTHWORKS SUPERINTENDENT

- Ensure management measures contained in this application and associated plans and procedures are implemented.
- Ensure that land clearing is undertaken only as authorised by the Vegetation Clearing Application.
- Conduct site walkovers of areas with clearing machinery operators prior to clearing.
- Ensure that post-clearing surveys are conducted, and that data is provided to the Environmental Social Governance Manager.

- Report environmental incidents.

6.4 ALL EMPLOYEES AND CONTRACTORS

- Prevent contamination of vegetation, topsoil and subsoil stockpiles.
- Adhere to all obligations in relation to vegetation clearing procedures.
- Report environmental incidents.
- Keep to existing tracks unless following advice from their Supervisor.
- Adhere to standard soil hygiene practices and spill response when operating machinery.
- Aid in implementing and maintaining environmental impact minimisation programs when requested by the Environmental Social Governance Manager.

7. REPORTING AND AUDITING

All clearing will be reported in the Liontown internal monthly operation reports.

Disturbance as a result of the proposed vegetation clearing will be reported yearly under the Project AER and MRF reporting.

Upon approval of this Clearing Permit, subsequent environmental approvals will be sought to construct and develop the Kathleen Valley Lithium-Tantalum Project. These approvals will include additional conditions and commitments relating to environmental monitoring and reporting.

8. CONCLUSION

The vegetation and habitats present within the proposed Purpose Permit Area are well represented on a local and regional scale. It is considered unlikely that there will be any impact on the conservation status of relevant flora and fauna species or vegetation communities and there are likely to be only minor local impacts from loss and fragmentation of vegetation and fauna habitat.

The proposed clearing will not impact significantly upon the ten clearing principles and a range of environmental management measures and procedures are in place to ensure that clearing will be managed to minimise any potential adverse impacts. Rehabilitation will minimise exposed areas and the long-term loss of vegetation cover.

9. REFERENCES

Allen, A.D. 1996. Hydrogeology of the Northeastern Goldfields Western Australia. Report published by Western Australia Geological Survey. Record 1996/4, 43p.

AQ2 Pty Ltd. 2018. Scoping Study – Water Management. Kathleen Valley Lithium Deposit. Unpublished report for Liontown Resources Ltd.

AQ2 Pty Ltd. 2019. Kathleen Valley Ecohydrology Study. Unpublished report for Liontown Resources Ltd.

AQ2 Pty Ltd. 2020. Drilling and Pumping Test Report - Kathleen Valley Lithium Project. Report prepared for Liontown Resources Limited in January 2020.

Biota Environmental Sciences 2017a. Mt Keith Satellite Proposal Vertebrate Fauna Review. Prepared for BHP Billiton Nickel West, Biota Environmental Sciences.

Botanica Consulting (2019). Reconnaissance Flora/Vegetation & Level 1 Fauna Survey for Kathleen Valley Lithium Project. Unpublished report for Liontown Resources Ltd.

Botanica Consulting 2021a. Targeted Flora/Vegetation survey Kathleen Valley Project. Unpublished report for Liontown Resources Ltd.

Botanica Consulting 2021b. Targeted Survey Black-Flanked Rock Wallaby, Kathleen Valley Project. Unpublished report for Liontown Resources Ltd.

Bureau of Meteorology (BoM). 2021. Climate Data Online. Available from: http://www.bom.gov.au/climate/data/ (accessed 15 July 2021).

CSIRO. 1991. *Australian Resource Information System*. http://www.asris.csiro.au/themes/Atlas.html#Atlas_Digital (accessed 18 October 2018).

Department of Biodiversity, Conservation and Attractions. 2019. DBCA Statewide Vegetation statistics. Data available from: https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics.

Department of Primary Industries and Regional Development (DPIRD).2018. *Western Australian Organism List.* https://www.agric.wa.gov.au/organisms (accessed 5 October 2018). Perth: DPIRD.

Department of Water and Environmental Regulation (DWER). 2018b. Geographic Data Atlas Search. https://www.water.wa.gov.au/maps-and-data/maps/geographic-data-atlas (accessed 10 May 2016). Perth: DWER.

Florabase. 2021. Available from: https://florabase.dpaw.wa.gov.au/. (accessed 06 October 2021).

Invertebrate Solutions, 2021. Subterranean Fauna Survey, Kathleen Valley Project. Unpublished report for Liontown Resources Ltd.

Johnson, S.L., Commander, D.P., O'Boy, C.A. 1999. Groundwater Resources of the Northern Goldfields, Western Australia. Report published by the Water and Rivers Commission. Hydrogeological Records Series. Water and Rivers Commission Report HG 2.

Knight Piesold (KP). 2020a. Kathleen Valley - Conceptual Borefield. Memorandum prepared for Liontown Resources in August 2020.

Knight Piesold (KP). 2020b. Kathleen Valley - Monitoring Bore Completion and Aquifer Testing Report. Memorandum prepared for Liontown Resources in August 2020.

Knight Piesold (KP). 2021. Kathleen Valley Lithium Project - Jones Creek Hydrology rev 3. Memorandum prepared for Liontown Resources in October 2021.

Meissner, R & Wright, J (2010). Flora and vegetation of banded iron formations of the Yilgarn Craton: Perseverance Greenstone Belt. Conservation Science W. Aust. 7 (3): 593–604 (2010).

MWH (2017). Mount Keith Satellite Operations. Stygofauna Assessment. Prepared for BHP Nickel West.

Pizzey and Knight (2007). Field Guide to the Birds of Australia. Harper Collins, Australia.

Timms, B.V., Datson, B. and Coleman, M. 2006. "The wetlands of the Lake Carey catchment, northeast Goldfields of Western Australia, with special reference to large branchiopods." Journal of the Royal Society of Western Australia 89: 175-183.

Integrate Sustainability, Western Ecological and dK Botanical (2021). Tjiwarl Traditional Ecological Knowledge Survey. Unpublished report prepared for the Tjiwarl Aboriginal Corporation.

APPENDICES

APPENDIX 1: RECORD OF TENURE

Tenement Register

Register for Tenement M 36/264

Identifier: M 36/264 | New Search | Previous | Next

Status: Live
Area: 85.24500 HA
Markout: 14/02/1993 08:15:00
Received: 15/02/1993 14:31:00
Term Granted: 21 Years (Renewed)
Commence: 28/06/1993
Expiry: 27/06/2035
Death:

Rent Status

Due for Year End 27/06/2022: PAID IN FULL
Rental for Year End 27/06/2023: $1,892.00

Expenditure Status

Expended Year End 27/06/2021: EXPENDED IN FULL
Current Year Commitment: $10,000.00

Holders | Description | Relationships | Survey | General | Shire | Grant | Conditions | Dealings | Payments | Expenditure | Combined Reporting | Bond | Map | Native Title

Current Holders | Holder Changes | Applicants On Receival

Organisation LRL (AUST) PTY LTD 100/100

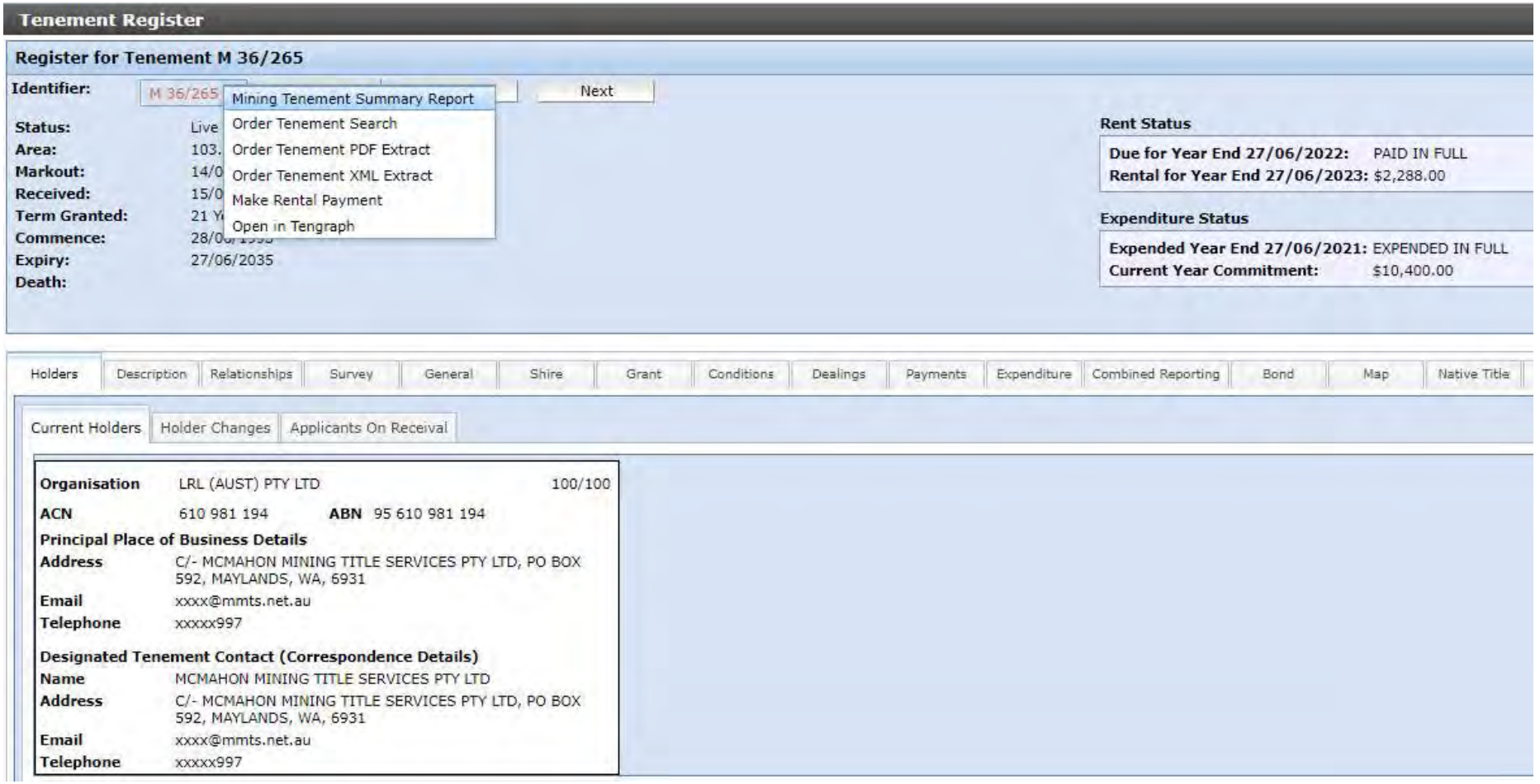
ACN 610 981 194 **ABN** 95 610 981 194

Principal Place of Business Details

Address C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email xxxx@mmts.net.au
Telephone xxxxx997

Designated Tenement Contact (Correspondence Details)

Name MCMAHON MINING TITLE SERVICES PTY LTD
Address C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email xxxx@mmts.net.au
Telephone xxxxx997


Tenement Register
Register for Tenement M 36/265
Identifier:
M 36/265
Mining Tenement Summary Report
Order Tenement Search
Order Tenement PDF Extract
Order Tenement XML Extract
Make Rental Payment
Open in Tengraph
Next
Status:
Live
Area:
103.
Markout:
14/0
Received:
15/0
Term Granted:
21 Y
Commence:
Expiry:
27/06/2035
Death:
Rent Status
Due for Year End 27/06/2022:
PAID IN FULL
Rental for Year End 27/06/2023:
$2,288.00
Expenditure Status
Expended Year End 27/06/2021:
EXPENDED IN FULL
Current Year Commitment:
$10,400.00
Holders
Description
Relationships
Survey
General
Shire
Grant
Conditions
Dealings
Payments
Expenditure
Combined Reporting
Bond
Map
Native Title
Current Holders
Holder Changes
Applicants On Receival
Organisation
LRL (AUST) PTY LTD
100/100
ACN
610 981 194
ABN
95 610 981 194
Principal Place of Business Details
Address
C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email
xxxx@mmts.net.au
Telephone
xxxxx997
Designated Tenement Contact (Correspondence Details)
Name
MCMAHON MINING TITLE SERVICES PTY LTD
Address
C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email
xxxx@mmts.net.au
Telephone
xxxxx997

Tenement Register

Register for Tenement M 36/459

Identifier: M 36/459 | New Search | Previous | Next

Status: Live
Area: 326.75000 HA
Markout: 25/09/1997 17:03:00
Received: 26/09/1997 08:31:00
Term Granted: 21 Years (Renewed)
Commence: 04/05/1999
Expiry: 03/05/2041
Death:

Rent Status

Due for Year End 03/05/2022: PAID IN FULL
Rental for Year End 03/05/2023: $7,194.00

Expenditure Status

Expended Year End 03/05/2021: EXPENDED IN FULL
Current Year Commitment: $32,700.00

Holders | Description | Relationships | Survey | General | Shire | Grant | Conditions | Dealings | Payments | Expenditure | Combined Reporting | Bond | Map | Native Title

Current Holders | Holder Changes | Applicants On Receival

Organisation LRL (AUST) PTY LTD 100/100

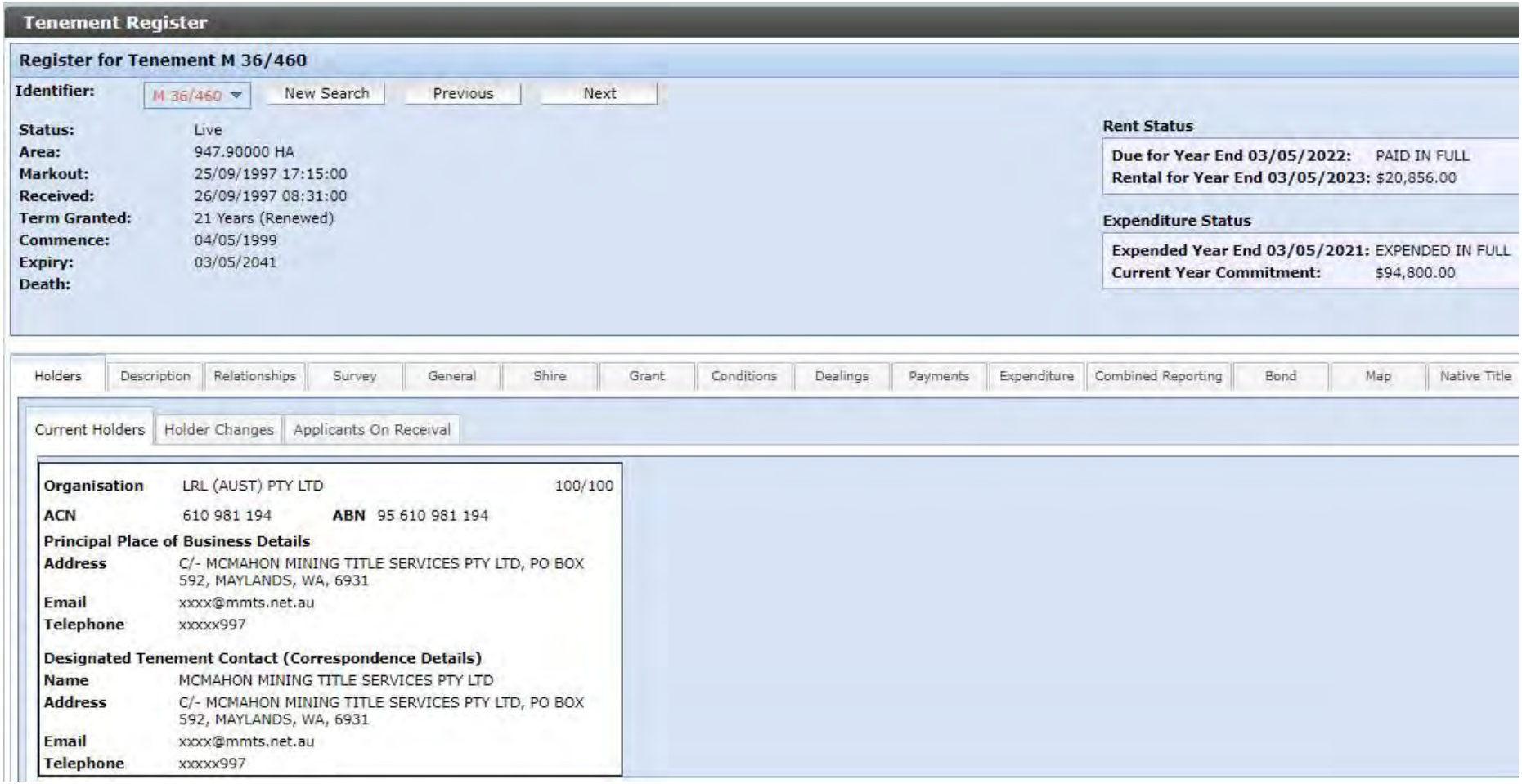
ACN 610 981 194 **ABN** 95 610 981 194

Principal Place of Business Details

Address C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email xxxx@mmts.net.au
Telephone xxxxx997

Designated Tenement Contact (Correspondence Details)

Name MCMAHON MINING TITLE SERVICES PTY LTD
Address C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email xxxx@mmts.net.au
Telephone xxxxx997


Tenement Register
Register for Tenement M 36/460
Identifier:
M 36/460
New Search
Previous
Next
Status: Live
Area: 947.90000 HA
Markout: 25/09/1997 17:15:00
Received: 26/09/1997 08:31:00
Term Granted: 21 Years (Renewed)
Commence: 04/05/1999
Expiry: 03/05/2041
Death:
Rent Status
Due for Year End 03/05/2022: PAID IN FULL
Rental for Year End 03/05/2023: $20,856.00
Expenditure Status
Expended Year End 03/05/2021: EXPENDED IN FULL
Current Year Commitment: $94,800.00
Holders
Description
Relationships
Survey
General
Shire
Grant
Conditions
Dealings
Payments
Expenditure
Combined Reporting
Bond
Map
Native Title
Current Holders
Holder Changes
Applicants On Receival
Organisation LRL (AUST) PTY LTD 100/100
ACN 610 981 194 ABN 95 610 981 194
Principal Place of Business Details
Address C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email xxxx@mmts.net.au
Telephone xxxxx997
Designated Tenement Contact (Correspondence Details)
Name MCMAHON MINING TITLE SERVICES PTY LTD
Address C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email xxxx@mmts.net.au
Telephone xxxxx997

Tenement Register

Register for Tenement M 36/696

Identifier: M 36/696 | New Search | Previous | Next

Status: Pending
Area: 506.00000 HA
Markout: 14/06/2020 13:05:00
Received: 24/06/2020 14:16:17
Term Granted:
Commence:
Expiry:
Death:

Rent Status

Due for Year End 23/06/2022: N/A
Rental Next Year End: N/A

Expenditure Status

Expended Year End : N/A
Current Year Commitment: N/A

Holders | Description | Relationships | Survey | General | Shire | Grant | Conditions | Dealings | Payments | Expenditure | Combined Reporting | Bond | Map

Current Holders | Holder Changes | Applicants On Receival

Organisation LRL (AUST) PTY LTD 100/100

ACN 610 981 194 **ABN** 95 610 981 194

Principal Place of Business Details

Address C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email xxxx@mmts.net.au
Telephone xxxxxxx997

Designated Tenement Contact (Correspondence Details)

Name MCMAHON MINING TITLE SERVICES PTY LTD
Address C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931
Email xxxx@mmts.net.au
Telephone xxxxxxx997

APPENDIX 2: RECONNAISSANCE FLORA/VEGETATION & LEVEL 1 FAUNA SURVEY

Reconnaissance Flora/Vegetation & Level 1 Fauna Survey Kathleen Valley Lithium Project

March 2019
FINAL

Prepared by:
Botanica Consulting
PO Box 2027
Boulder WA 6432
90930024

Liontown

Disclaimer

Quality Assurance

An internal quality review process has been implemented to each project task undertaken by Botanica. Each document and its contents are carefully reviewed by core members of the Consultancy team and signed off at Director Level prior to issue to the client. Draft documents are submitted to the client for comment and acceptance prior to final production.

Document Job Number: 2018/101

Prepared by:
Lauren Pick
Senior Environmental Consultant
Botanica Consulting

Reviewed by:
Jim Williams
Director
Botanica Consulting

Approved by:
Jim Williams
Director
Botanica Consulting

Contents **Page No.**

Tables

Figures

Plates

Appendices

Glossary

Acronym	Description
ANCA	Australian Nature Conservation Agency.
BA	Birdlife Australia (Formerly RAOU, Birds Australia).
BAM Act	Biosecurity and Agriculture Management Act 2007, WA Government.
BC Act	*Biodiversity Conservation Act* 2016, WA Government.
Botanica	Botanica Consulting.
BoM	Bureau of Meteorology.
CAMBA	China Australia Migratory Bird Agreement 1998.
DAFWA	Department of Agriculture and Food (now DPIRD), WA Government.
DBCA	Department of Biodiversity, Conservation and Attractions (formerly DPaW), WA Government.
DEC	Department of Environment and Conservation (now DBCA), WA Government.
DER	Department of Environment Regulation (now DWER), WA Government.
DMIRS	Department of Mines, Industry Regulation and Safety (formerly DMP), WA Government
DMP	Department of Mines and Petroleum (now DMIRS), WA Government.
DoEE	Department of the Environment and Energy (formerly DSEWPaC), Australian Government.
DoW	Department of Water (now DWER), WA Government.
DPaW	Department of Parks and Wildlife (now DBCA), WA Government.
DPIRD	Department of Primary Industries and Regional Development, WA Government
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DoEE,), Australian Government.
DWER	Department of Water and Environmental Regulation (formerly OEPA, DER and DoW), WA Government
EP Act	*Environmental Protection Act 1986,* WA Government.
EP Regulations	Environmental Protection (Clearing of Native Vegetation) Regulations 2004, WA Government.
EPA	Environmental Protection Authority, WA Government.
EPBC Act	*Environment Protection and Biodiversity Conservation Act* 1999, Australian Government.
ESA	Environmentally Sensitive Area.
Ha	Hectare (10,000 square metres).
IBRA	Interim Biogeographic Regionalisation for Australia.
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union.
JAMBA	Japan Australia Migratory Bird Agreement 1981.
Km	Kilometre (1,000 metres).
Liontown	Liontown Resources Limited
MVG	Major Vegetation Groups.
NVIS	National Vegetation Information System.
OEPA	Office of the Environmental Protection Authority (now DWER), WA Government.
PEC	Priority Ecological Community.
RAOU	Royal Australia Ornithologist Union.
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement 2007.
SRE	Short Range Endemic.
SSC	Species Survival Commission, International.

Acronym	Description
Survey Area	Kathleen Valley Lithium Project.
TEC	Threatened Ecological Community.
WA	Western Australia.
WAHERB	Western Australian Herbarium.
WAM	Western Australian Museum, WA Government.
WC Act	*Wildlife Conservation Act* 1950, WA Government.

Executive Summary

Botanica Consulting (Botanica) was commissioned by MBS Environmental to undertake a reconnaissance flora/ vegetation survey and Level 1 fauna survey of the Kathleen Valley Lithium Project (referred to as the 'survey area'), proposed to be developed by Liontown Resources Limited. The survey covered an area of approximately 3,792 ha, located approximately 45km north-west of Leinster, Western Australia. The survey was conducted from 13th to 14th November 2018.

Twelve vegetation types were identified within the survey area, which were represented by a total of 27 Families, 56 Genera and 100 flora Taxa. No Threatened Flora or Threatened Ecological Communities (TEC) as listed under the Western Australian *Biodiversity Conservation (BC) Act 2016* or Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* were identified within the survey area. Two Priority Flora taxa (*Grevillea inconspicua* P4 and *Hemigenia exilis* P4) as listed by Department of Biodiversity, Conservation and Attractions (DBCA) were recorded within the survey area. The south-eastern region of the survey area is located within the boundary of the Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) Priority 1 Priority Ecological Community (PEC). Two potential terrestrial Groundwater Dependent Ecosystems (GDE) associated with ephemeral drainage lines (OD-EW1 and OD-AFW1) were identified within the survey area.

Four fauna habitats were identified within the survey area. Results of the literature review identified 35 mammals (including 10 bat species), 117 bird, 88 reptile and eight frog species as having been previously recorded in the general area, some of which have the potential to occur within the survey area. A total of forty-five native vertebrate fauna taxa were observed during the fauna survey which included one amphibian, three reptiles, 36 birds, two mammals and three bat species. No Threatened Fauna or Migratory Fauna as listed under the Western Australian BC Act or Commonwealth EPBC Act were identified within the survey area. No Priority Fauna as listed by DBCA were recorded within the survey area.

There are no wetlands of international importance (Ramsar Wetlands), national importance (Australian Nature Conservation Agency (ANCA) Wetlands) or conservation category wetlands within the survey area. The survey area is not located within DBCA Managed Conservation Reserve and does not contain any Environmentally Sensitive Areas (ESA) listed under the *Environmental Protection (EP) Act 1986*.

Based on the vegetation condition rating scale adapted from Keighery, 1994 and Trudgen, 1988 (ranging from 'pristine' to 'completely degraded'), vegetation ranged from 'good' to 'very good'.

Four introduced taxa were identified within the survey area. According to the Western Australian Organism List (DPIRD, 2019), none of these taxa are listed as a Declared Plant under the *Biosecurity and Agriculture Management Act 2007* (BAM Act).

1 Introduction

1.1 Project Description

Botanica was commissioned by MBS Environmental to undertake a reconnaissance flora/vegetation and Level 1 fauna survey of the Kathleen Valley Lithium Project (referred to as the 'survey area'). The survey covered an area of approximately 3,792 ha, located approximately 45 km north-west of Leinster, Western Australia (Figure 1-1). The survey was conducted from 13th to 14th November 2018.

1.2 Objectives

The flora/ vegetation assessment was conducted in accordance with the requirements of a reconnaissance flora/vegetation survey as defined in *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment – December 2016* (EPA, 2016a). The objectives of the assessment were to:

- Gather background information on flora and vegetation in the target area (literature review, database and map-based searches);
- Identify significant flora, vegetation/ecological communities;
- Conduct a field survey to verify / ground truth the desktop assessment findings through survey;
- Undertake floristic community mapping to a scale appropriate for the bioregion and described according to the National Vegetation Information System (NVIS) structure and floristics; and
- Undertake vegetation condition mapping.

The fauna assessment was conducted in accordance with the requirements of a Level 1 terrestrial fauna survey as defined in *Technical Guidance - Terrestrial Fauna Surveys for Environmental Impact Assessment – December 2016* (EPA, 2016b). The objectives of the assessment were to:

- Gather background information on fauna in the survey area (literature review, database and map-based searches);
- Delineate and characterise the faunal assemblages and fauna habitats present in the survey area;
- Document and map locations of any Threatened or Priority listed fauna species located; and
- Assess the regional and local conservation status of fauna species and fauna habitats within the survey area.

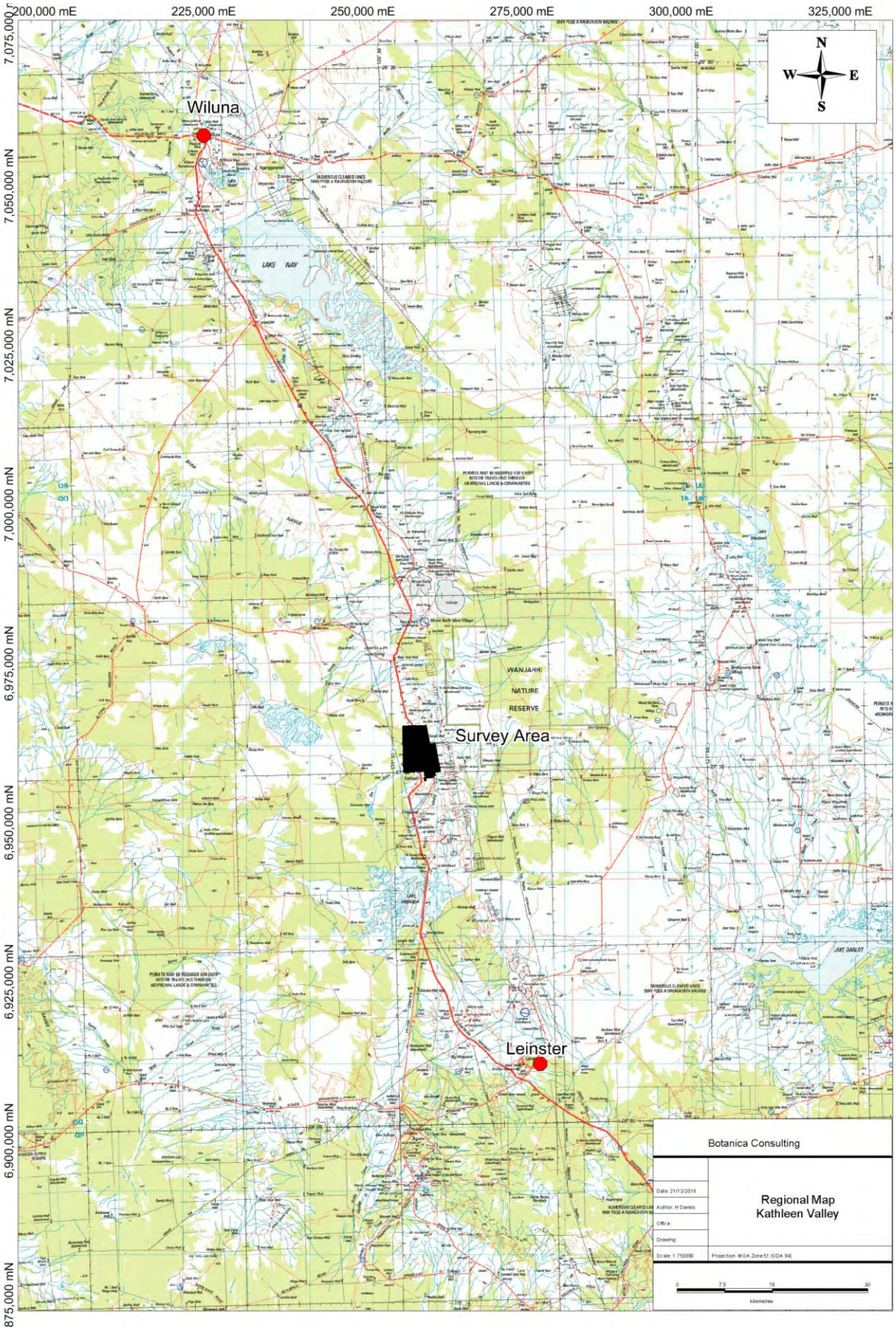


Figure 1-1: Regional map of the survey area

2 Regional Biophysical Environment

2.1 Regional Environment

The survey area lies within the Murchison Bioregion of the Eremaean Province of WA in a region known as the Austin Botanical District. The Murchison Region is further divided into subregions, based on the Interim Biogeographic Regionalisation of Australia (IBRA), with the survey area located within the Eastern Murchison (MUR1) subregion as shown in Figure 2-1.

The landscape of the Murchison Bioregion comprises low hills, mesas of duricrust separated by flat colluvium and alluvial plains (Commonwealth Government, 2008). It is dominated by the Archaean (over 2500 million years ago) granite greenstone terrain of the Yilgarn Craton (Commonwealth Government, 2008). Alluvial soils and sands mantle the granitic and greenstone units of the Yilgarn Craton. These soils are shallow, sandy and infertile. Underlying the soils in low areas is a red-brown siliceous hard pan (Curry et al. 1994). The soils in the eastern half of the bioregion are typically red sands, calcareous red earth soil, duplex soil and clays. There are 41 vegetation associations (hummock grasslands, succulent steppe or low woodlands) that have at least 85 per cent of their total area in the bioregion. The bioregion is rich and diverse in both its flora and fauna but most species are wide ranging and usually occur in adjoining regions (McKenzie, May and McKenna, 2002).

The Eastern Murchison subregion comprises the northern parts of the craton's Southern Cross and Eastern Goldfields Terrains and is characterised by internal drainage and extensive areas of elevated red desert sandplains with minimal dune development. Salt Lake systems are associated with the occluded paleodrainage system. Broad plains of red-brown soils and breakaways complexes as well as red sandplains are widespread. Vegetation is dominated by Mulga woodlands and is often rich in ephemerals, hummock grasslands, saltbush shrublands and Samphire shrublands (McKenzie *et. al.,* 2002). The Eastern Murchison subregion comprises diverse mulga woodlands, which occur on low greenstone belts. The sand plains have red loamy earths and red deep sands are found on the sandy banks.

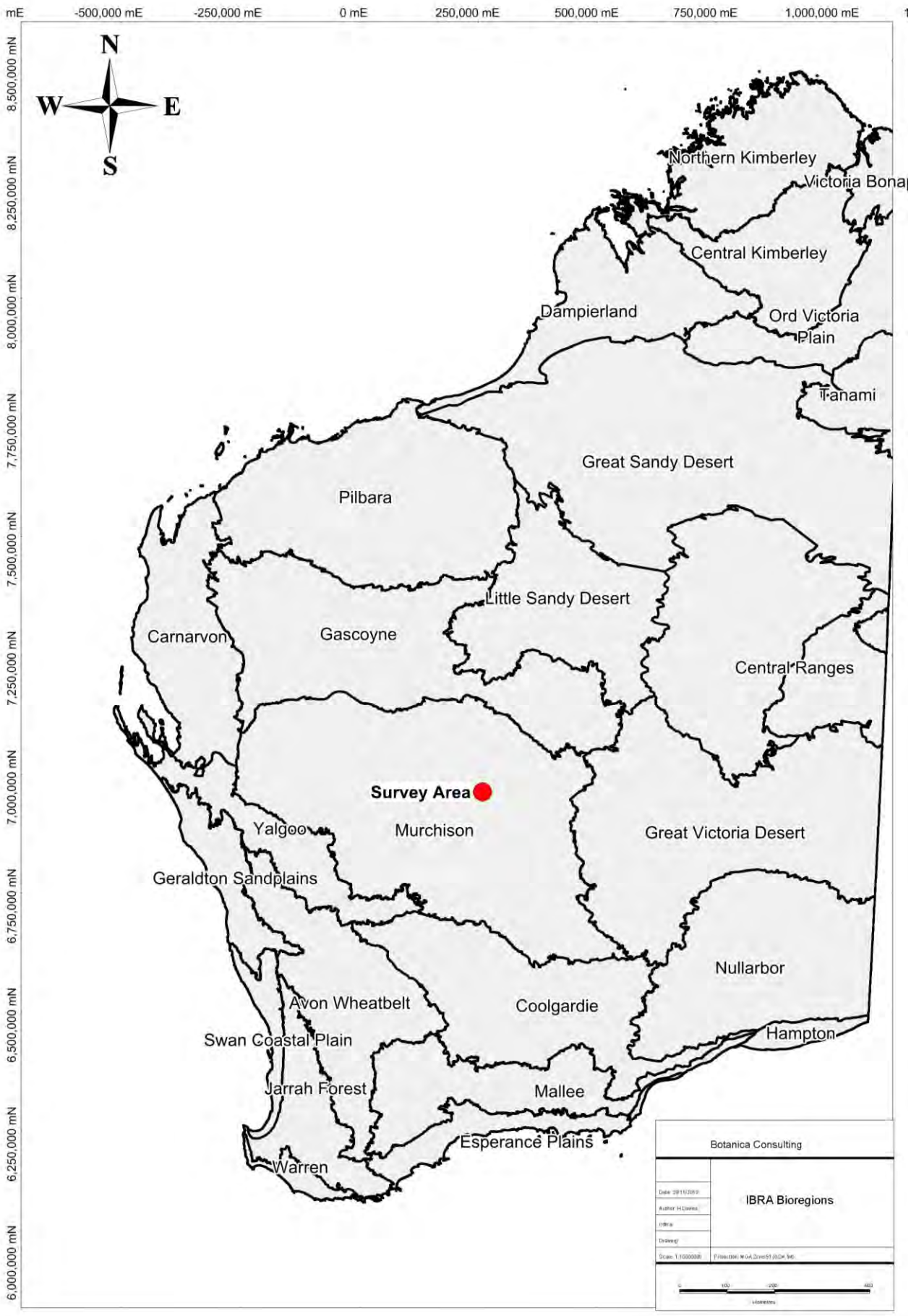


Figure 2-1: Map of IBRA Bioregions in relation to the survey area
Note-survey area not to scale

2.2 Soils and Landscape Systems

The survey area lies within the Murchison Province, which consists of Hardpan wash plains and sandplains (with some stony plains, hills, mesas and salt lakes) on the granitic rocks and greenstone of the Yilgarn Craton. The Murchison Province is located in the inland Mid-west and northern Goldfields between Three Springs, the Gascoyne River, Wiluna, Cosmo Newberry and Menzies. Soil types are dominated by red loamy earths, red sandy earths, red shallow loams, red deep sands and red-brown hardpan shallow loams with some red shallow sands and red shallow sandy duplexes present. Vegetation communities are dominated by Mulga shrublands with spinifex grasslands and some bowgada shrublands, Eucalypt woodlands and halophytic shrublands (Tille, 2006).

The Murchison Province is further divided into seven soil-landscape zones, with the survey area located within the Salinaland Plains Zone (279). The Salinaland Plains Zone comprises sandplains (with hardpan wash plains and some mesas, stony plains and salt lakes) on granitic rocks (and some greenstone) of the Yilgarn Craton. Soils include red sandy earths, red deep sands, red shallow loams and red loamy earths with some red-brown hardpan shallow loams, salt lake soils and red shallow sandy duplexes. Vegetation is dominated by mulga shrublands with spinifex grasslands (and some halophytic shrublands and eucalypt woodlands). This zone is located in the northern Goldfields from Lakes Barlee and Lake Ballard to Wiluna and Laverton (Tille, 2006). The Salinaland Pains Zone is further divided into soil landscape systems, with the survey area located within ten soil landscape systems as shown in Table 2-1 and Figure 2-2 below.

Table 2-1: Soil Landscape Systems within the survey area

Code	Land System	Description
279Bu	Bullimore System	Gently undulating sandplain with occasional linear dunes and stripped surfaces supporting spinifex grasslands with mallees and acacia shrubs.
279De	Desdemona System	Plains with deep sandy or loamy soils supporting mulga tall shrublands and wanderrie grasses.
279Lv	Laverton System	Greenstone hills and ridges with acacia shrublands.
279Mk	Monk System	Hardpan plains with occasional sandy banks supporting mulga tall shrublands and wanderrie grasses.
279Nu	Nubev System	Gently undulating stony plains, minor limonitic low rises and drainage floors supporting mulga and halophytic shrublands.
279Su	Sunrise System	Stony plains supporting mulga shrublands.
279Vi	Violet System	Gently undulating gravelly plains on greenstone, laterite and hardpan, with low stony rises and minor saline plains; supporting groved mulga and bowgada shrublands and occasionally chenopod shrublands.
279Ws	Wilson System	Large creeks with extensive distributary fans, supporting mulga and chenopod shrublands.
279Wn	Windarra System	Gently undulating stony plains and low rises with quartz mantles on granite, supporting acacia-eremophila shrublands.
279Wy	Wyarri System	Granite domes, hills and tor fields with gritty-surfaced fringing plains supporting mulga and granite wattle shrublands.

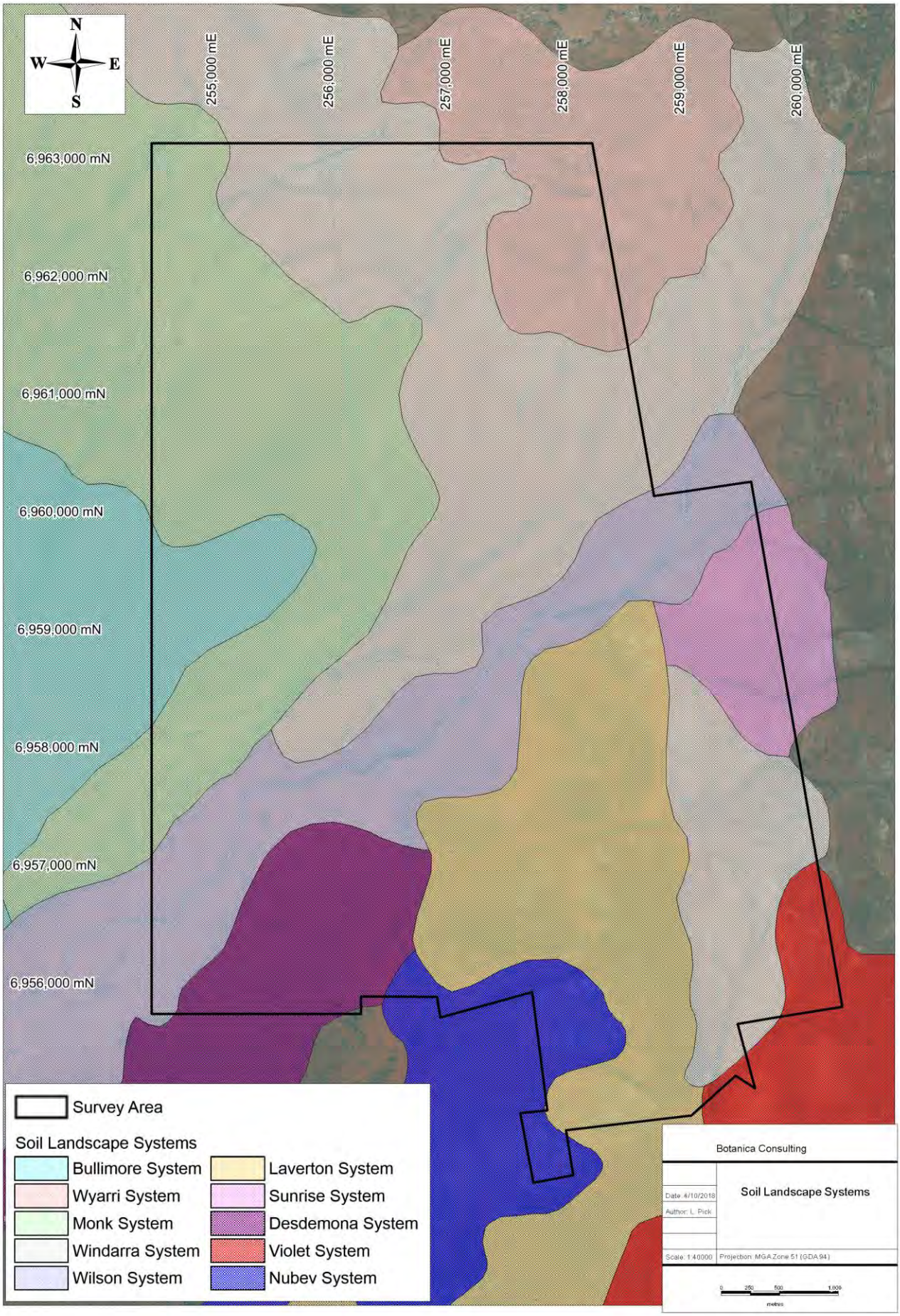


Figure 2-2: Soil landscape systems within the survey area

2.3 Remnant Vegetation

The survey area is located within the Austin Botanical District within the Eremaean Botanical Province. This botanical district is predominantly Mulga low woodlands on plains, often rich in ephemerals, which reduce to scrub on hills. It is also characterised by hummock grasslands, Saltbush shrublands and Samphire shrublands (Beard, 1990). The Eremaean Province is the largest of the three botanical provinces within Western Australia. The vegetation of the Austin Botanical District of the Murchison Region is predominantly low mulga (*Acacia aneura*) woodlands on plains and reduced to scrub on hills. This district is often associated with a tree steppe of *Eucalyptus* spp. and *Triodia basedowii* on sand plains.

The Department of Agriculture and Food Western Australia (DAFWA) GIS file (2011) indicates that the survey area is located within Pre-European Beard vegetation associations Wiluna 18, 39 and 202 (Figure 2-3). The extent of these vegetation associations, as specified in the 2017 Statewide Vegetation Statistics (DBCA, 2017) is provided in Table 2-2.

Areas retaining less than 30% of their pre-European vegetation extent generally experience exponentially accelerated species loss, while areas with less than 10% are considered "endangered" (EPA, 2000).

Table 2-2: Pre-European Vegetation Associations within the survey area

Vegetation Association	Pre-European extent remaining (%)	% of Current extent within DBCA managed lands	Vegetation Description (Beard, 1990)
Wiluna 18	99.59	1.05	Low woodland; mulga (*Acacia aneura*)
Wiluna 39	98.77	0	Shrublands; mulga scrub
Wiluna 202	99.99	0	Shrublands; mulga & *Acacia quadrimarginea* scrub

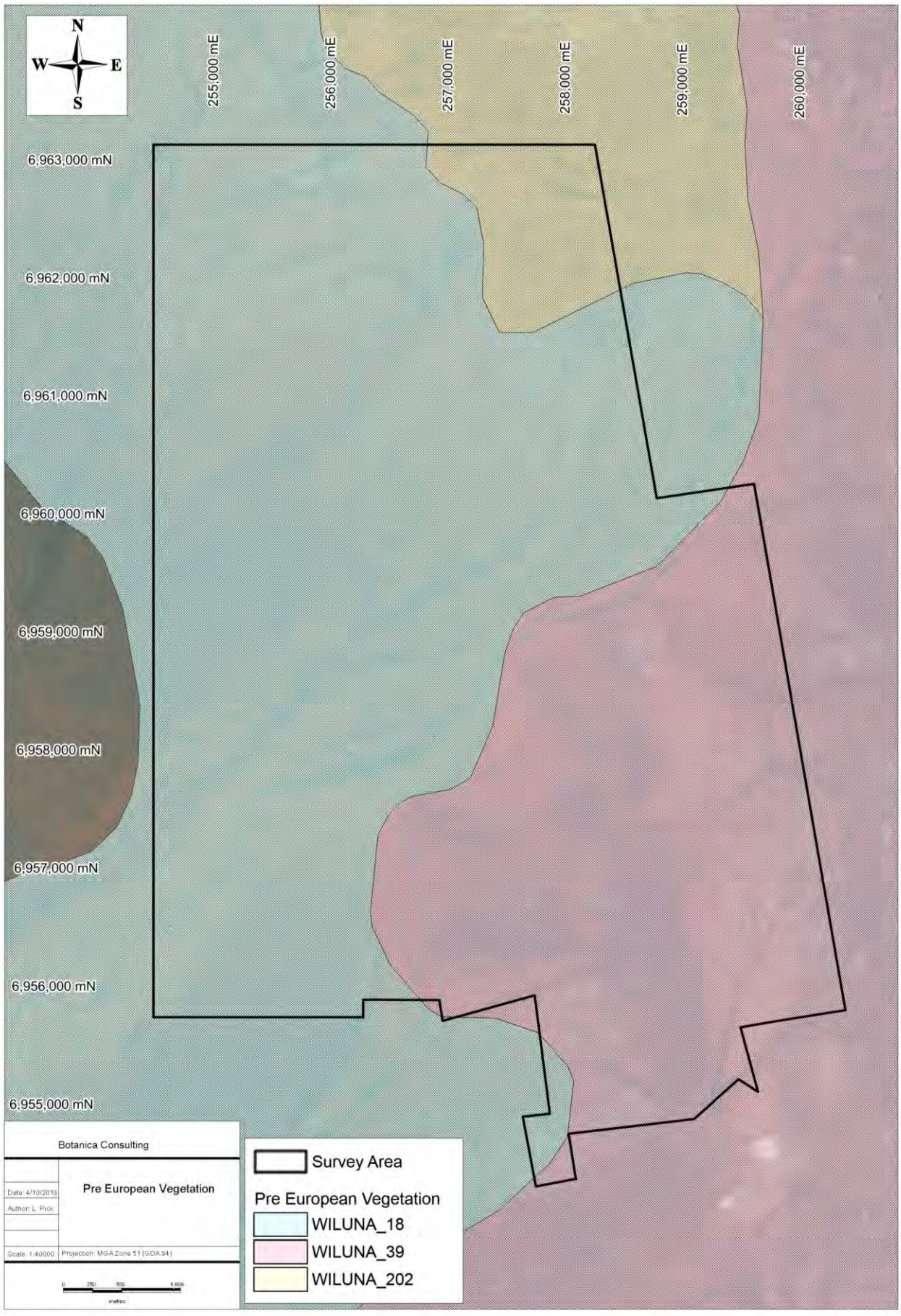
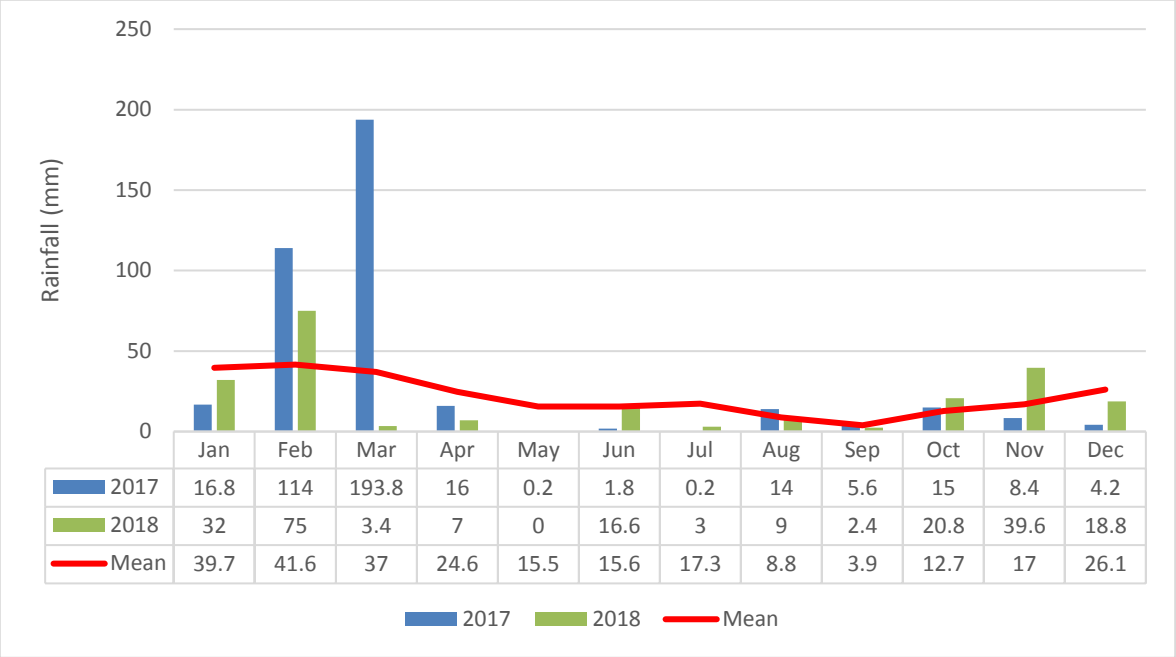


Figure 2-3: Pre-European vegetation associations within the survey area

2.4 Climate

The climate of the Eastern Murchison subregion is characterised as an arid climate with mainly winter rainfall with annual rainfall of approximately 200 mm (Beard, 1990; Cowan, 2001). Climate data for the Leinster Aero weather station (#12314) located approximately 45 km south-east of the survey area is shown in Figure 2-4 and Figure 2-5 (BoM, 2019). Rainfall in the month preceding and during the survey (October and November) were above average (Figure 2-4).



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	16.8	114	193.8	16	0.2	1.8	0.2	14	5.6	15	8.4	4.2
2018	32	75	3.4	7	0	16.6	3	9	2.4	20.8	39.6	18.8
Mean	39.7	41.6	37	24.6	15.5	15.6	17.3	8.8	3.9	12.7	17	26.1

Figure 2-4: Monthly rainfall (January 2017 to December 2018) for the Leinster Aero weather station #12314 (BoM, 2019)

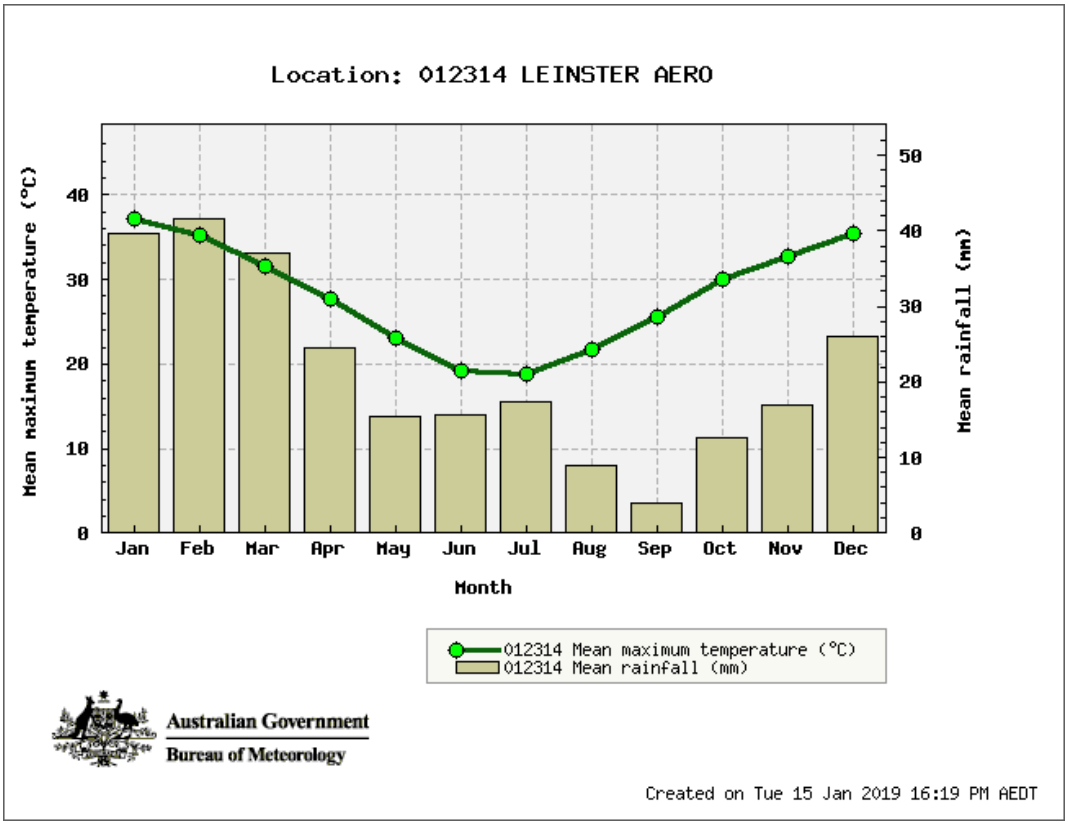


Figure 2-5: Average Climate Data for the Leinster Aero weather station #12314 (BoM, 2019)

2.5 Hydrology

According to the Geoscience Australia database (2001), there are no inland waters within the survey area, with the survey area located approximately 13km north of Lake Miranda. An ephemeral drainage line (Jones Creek) intersects through the mid-section of the survey area which drains to the south-west into an un-named salt lake located approximately 7km south-west of the survey area. A map showing the regional surface hydrology in the local region is provided in Figure 2-6.

According to the BoM *Atlas of Groundwater Dependent Ecosystems* (BoM, 2019b) database, there are no known aquatic or terrestrial GDEs located within the survey area; However, according to the GDE database (BoM, 2019b), the far south-eastern extremity of the survey area (approximately 55ha) has moderate potential to contain a terrestrial GDE as shown in Figure 2-7. This GDE is described by BoM (2019b) as follows; Gently undulating gravelly plains on greenstone, laterite and hardpan with low stony rises and minor saline plains; supporting groved mulga and bowgada shrublands and occasionally chenopod shrublands (defined by DPIRD as the Violet land system).

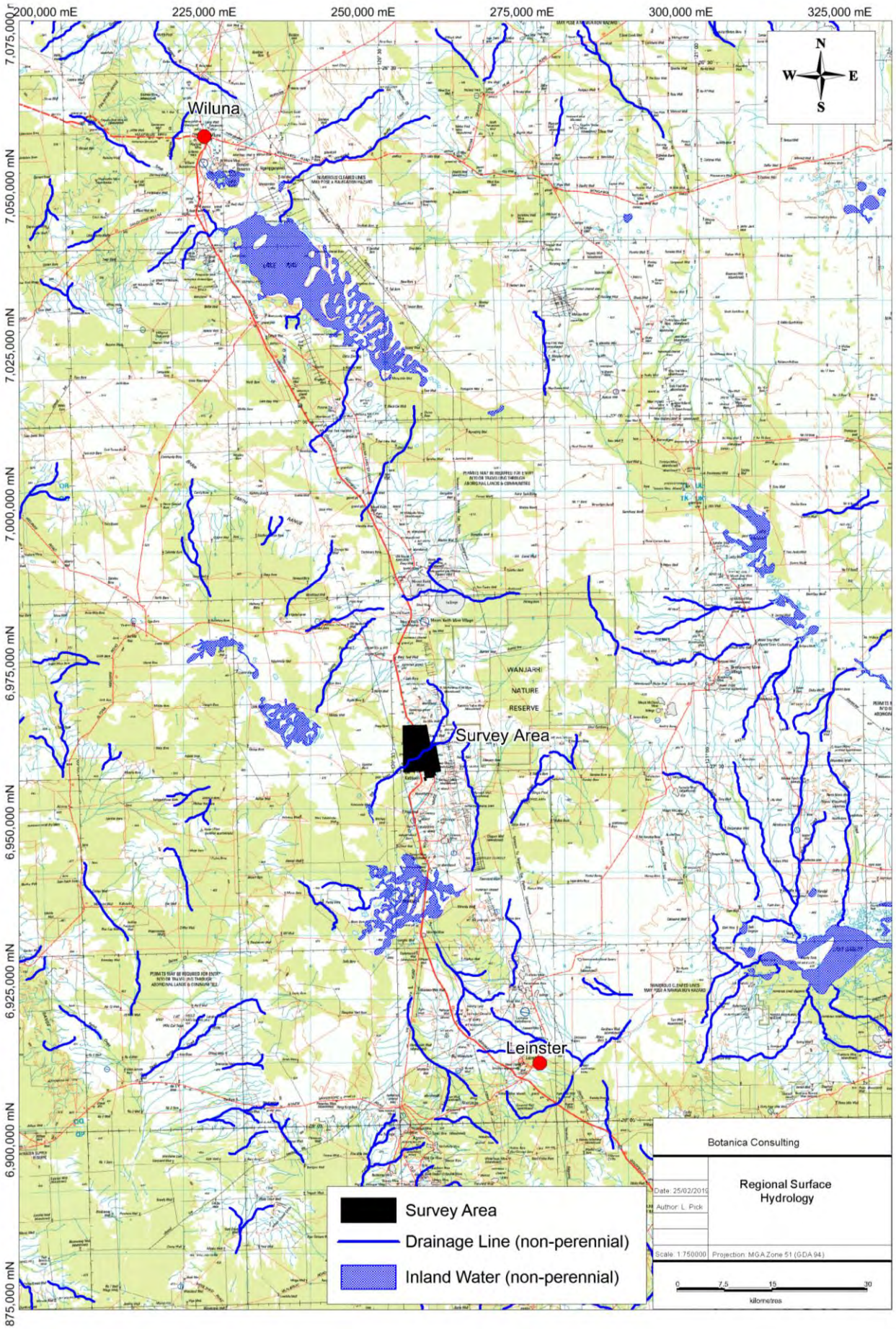


Figure 2-6: Regional Surface Hydrology

Figure 2-7: Potential Groundwater Dependent Ecosystem

2.6 Land Use

The dominant land uses of the Eastern Murchison subregion include grazing native pastures (85.47%), unallocated crown reserves (11.34%), conservation (1.4%) and mining (1.79%) (Cowan, 2001). The north and western portion of the survey area is located within the Yakabindie Pastoral Lease.

3 Survey Methodology

3.1 Desktop Assessment

Prior to the field assessment a literature review was undertaken of previous flora and fauna assessments conducted within the local region. Documents reviewed included:

- Animal Plant Mineral (2015), Vegetation Clearing Permit Application, Matilda Gold Project, Support Information for Matilda Mine Site Native Vegetation Clearing (Purpose) Permit Application, October 2015.
- ATA Environmental (2005). Fauna Assessment, Western Mining Corporation, Yakabindie. Unpublished report for SKM Consulting/BHP Billiton.
- Biota Environmental Sciences (2004). Waterloo and Amorac Extension Fauna Site Inspection. Unpublished report prepared for Lionore Australia Pty Ltd.
- Biota Environmental Sciences (2006a). Wanjarri Land Swap Proposal: Ecological Assessment. Unpublished report for SKM Consultants/BHP Billiton.
- Biota Environmental Sciences (2006b). Fauna Habitat and Fauna Assemblage of the Mt Keith Mine Project Area. Unpublished report for BHP Billiton Nickel West.
- Biota Environmental Sciences (2017a). Mt Keith Satellite Proposal Vertebrate Fauna Review. Prepared for BHP Billiton Nickel West, Biota Environmental Sciences.
- Biota Environmental Sciences (2017b). Mt Keith Satellite Proposal Night Parrot Survey. Prepared for BHP Billiton Nickel West, Biota Environmental Sciences.
- Botanica Consulting (2014), Level 1 Flora and Vegetation Survey of the Thunderbox to Bannockburn Project. Prepared for Saracen Mineral Holdings.
- Botanica Consulting (2016), Level 1 Flora and Fauna Survey Julius Project, Prepared for Echo Resources Limited.
- Botanica Consulting (2018), Reconnaissance Flora & Fauna Survey Orelia Project. Prepared for Echo Resources Limited.
- Ecologia (1990). Yakabindie Nickel Mine Project. Consultative Environmental Review: Flora and Fauna Survey. Unpublished Report Prepared for Dominion Mining Limited.
- Ecologia (1995). An ecological assessment of the Yakabindie Nickel Mine Project: Six Mile Well / Mount Pascoe. Unpublished Report Prepared for Dominion Mining Limited.
- Engenium (2015). Lake Maitland - Level 2 Vertebrate Fauna and Targeted Reptile Survey Report. Unpublished report for Toro Energy Limited
- Hall, N.J., Newbey, K.R., McKenzie, N.L., Keighery, G.J., Rolfe, J.K & Youngson, W. K., (1993), *The Biological survey of the Eastern Goldfields of Western Australia Part 7: Sandstone-Sir Samuel. Laverton-Leonora study area,* West. Aust. Mus. Suppl. 47.
- Halpern Glick Maunsell (2000). Lease Wide Mulgara *Dasycercus cristicauda* Survey. Western Mining Corporation.
- Mattiske Consulting Pty Ltd (2000) Flora and Vegetation Assessment of the Proposed Pipeline Route Options. Report prepared for Dames and Moore Pty Ltd.
- Mattiske Consulting Pty Ltd (2012), *Flora and Vegetation Survey of the Kathleen Valley Gold Project Survey Area.* Prepared for URS Australia Pty Ltd on behalf of Xstrata Nickel Australasia Pty Ltd.

- Meissner, R & Wright, J (2010). *Flora and vegetation of banded iron formations of the Yilgarn Craton: Perseverance Greenstone Belt*. Conservation Science W. Aust. 7 (3): 593–604 (2010).
- Moriarty, T. K. (1972). Birds of Wanjarri WA. The Emu 72:1–6.
- Ninox Wildlife Consulting (2012) A Level 1 Vertebrate Fauna Assessment of the Kathleen Valley Gold Project, Near Leinster, Western Australia. Unpublished report prepared for Ramelius Resources Ltd, October 2012
- Outback Ecology (2008a). Bronzewing – Mt McClure, Application for a Purpose Permit to Clear Native Vegetation at the Bronzewing – Mt McClure Project – Corboys Prospect M53/15, prepared for View Resources.
- Outback Ecology (2008b). Bronzewing – Mt McClure, Report on the distribution of *Eremophila pungens* (P4) within the Bronzewing – Mt McClure Gold Project, prepared for View Resources.
- Paul Armstrong and Associates, (2001) Rare Flora Search, and Flora and Vegetation Survey of the Exploration and Mine Lease of Thunderbox. Prepared for Lionore Australia Pty Ltd.
- Paul Armstrong and Associates, (2004) Rare Flora Search and Vegetation Survey at the Waterloo Prospects. Prepared for Lionore Australia Pty Ltd.
- Pringle, H.J.R., Van Vreeswyk, A.M.E. and Gilligan, S.A. (1994) *An inventory and condition survey in the North-Eastern Goldfields, Western Australia*. Western Australian Department of Agriculture, Technical Bulletin No. 87
- Sinclair Knight Merz (2005). Mulgara (*Dasycercus cristicauda*) Fauna Assessment Western Mining Corporation, Yakabindie - version 1 report # 2004/263.
- Terrestrial Ecosystems (2011). Level 2 Fauna Risk Assessment for the Granny Deeps Project Area. Unpublished report. February 2011.
- Trudgen, M (1989). A Flora and Vegetation Survey of Part of the Cyprus Gold Mount McClure Gold Mining Leases. Report prepared for Cyprus Gold for inclusion in the Mt McClure Project Feasibility Study, Volume 2 Environmental Study.
- Western Botanical (2017). Flora and Vegetation Assessment of the Mt Keith Satellite Proposal Study Area. Unpublished Report Prepared for BHP Billiton, Nickel West Pty Ltd, Western Botanical.

Searches of the following databases were undertaken to aid in the compilation of a list of flora and fauna taxa within the survey area:

- DBCA Priority/ Threatened Flora Database Search (DBCA, 2018a)
- DBCA Priority/ Threatened Ecological Communities Database Search (DBCA, 2018b)
- DBCA NatureMap Database (DBCA, 2018);
- DoEE Protected Matters search tool (DoEE, 2018).

A search of the DBCA Priority Ecological Communities (PEC) and Threatened Ecological Communities (TEC) database was also conducted within a 20 km radius of the survey area (DBCA, 2018b).

The NatureMap and Protected Matters Search were conducted for an area encompassing a 20km radius of the centre coordinates -27.47136 S 120.55792 E. It should be noted that these lists are based on observations from a broader area than the assessment area (20km radius) and therefore may include taxa not present. The databases also often include very old records that may be

incorrect or in some cases the taxa in question have become locally or regionally extinct. Information from these sources should therefore be taken as indicative only and local knowledge and information also needs to be taken into consideration when determining what actual species may be present within the specific area being investigated.

The conservation significance of flora and fauna taxa was assessed using data from the following sources:

- *Environment Protection and Biodiversity and Conservation* (EPBC) *Act 1999*. Administered by the Australian Government (DoEE);
- *Biodiversity Conservation* (BC) *Act 2016*[1]. Administered by the WA Government (DBCA);
- Red List produced by the Species Survival Commission (SSC) of the World Conservation Union (also known as the IUCN Red List – the acronym derived from its former name of the International Union for Conservation of Nature and Natural Resources). The Red List has no legislative power in Australia but is used as a framework for State and Commonwealth categories and criteria; and
- Priority Flora/ Fauna list. A non-legislative list maintained by DBCA for management purposes (released 11th September 2018).

The EPBC Act also requires the compilation of a list of migratory species that are recognised under international treaties including the:

- Japan Australia Migratory Bird Agreement 1981 (JAMBA)[2];
- China Australia Migratory Bird Agreement 1998 (CAMBA);
- Republic of Korea-Australia Migratory Bird Agreement 2007 (ROKAMBA); and
- Bonn Convention 1979 (The Convention on the Conservation of Migratory Species of Wild Animals).

All migratory bird species listed in the annexes to these bilateral agreements are protected in Australia as Matters of National Environmental Significance (MNES) under the EPBC Act. Appendix 1 provide the definitions of conservation significant species and communities.

3.2 Field Assessment

Botanica conducted a reconnaissance flora/vegetation and Level 1 fauna survey covering an area of approximately 3,792 ha. The survey was conducted from 13th to 14th November 2018, with the area traversed on foot and by 4WD by two Botanica staff members.

3.2.1 Flora Assessment

Prior to the commencement of field work, aerial photography was inspected and obvious differences in the vegetation assemblages were identified. The different vegetation communities identified were then inspected during the field survey to assess their validity. A handheld GPS unit was used to record the coordinates of the boundaries between existing vegetation communities. At each sample point (relevé), the following information was recorded:

- GPS location;
- Photograph of vegetation;
- Dominant taxa for each stratum;
- All vascular taxa (including annual taxa);

[1] Prior to 1st January 2019, flora and fauna were protected under the *Wildlife Conservation Act 1950*
[2] Species listed under JAMBA are also specially protected under Specially Protected Species of the BC Act.

- Landform classification;
- Vegetation condition rating;
- Collection and documentation of unknown plant specimens; and
- GPS location, photograph and collection of flora of significance if encountered.

Unknown specimens collected during the survey were identified with the aid of samples housed at the Botanica Herbarium and WA Herbarium. Vegetation was classified in accordance with the NVIS Vegetation Type classification based on visual descriptions of locations in the field.

3.2.2 Fauna Assessment

Vegetation and landform units identified during the flora survey were used to define broad fauna habitat types across the site. This information has been supplemented with observations made during the field fauna assessment. The main aim of the fauna habitat assessment was to determine if it was likely that any species of significance would be utilising the areas Surveyed. The habitat information obtained was also used to aid in finalising the overall potential fauna list.

As part of the desktop literature review, information on the habitat requirements of the species of significance listed as possibly occurring in the area was researched. During the field survey, the habitats within the survey area were assessed and specific elements identified, if present, to determine the likelihood of listed threatened species utilising the area and its significance to them.

Opportunistic observations of fauna species were made during all field survey work which involved a series of transects across the survey area during the day.

3.2.3 Personnel involved

Jim Williams - Environmental Consultant/ Director (Diploma of Horticulture)
Greg Harewood - Zoologist (Bachelor of Science-Zoology)

3.2.4 Scientific licences

Table 3-1: Scientific Flora Licences of Botanica Staff coordinating the survey

Licensed staff	Permit Number	Valid
Jim Williams	SL012391 (Licence to take flora for scientific purposes)	26/05/2018 to 27/05/2019

3.3 Survey limitations and constraints

It is important to note that flora and fauna surveys will entail limitations notwithstanding careful planning and design. Potential limitations are listed in Table 3-5.

The conclusions presented in this report are based upon field data and environmental assessments and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. Also, it should be recognised that site conditions can change with time. Information not available at the time of this assessment which may subsequently become available may alter the conclusions presented.

Some species are reported as potentially occurring based on there being suitable habitat (quality and extent) within the survey area or immediately adjacent. The habitat requirements and ecology of many of the species known to occur in the wider area are however often not well understood or documented. It can therefore be difficult to exclude species from the potential list based on a lack of a specific habitats or microhabitats within the survey area. As a consequence of this limitation,

the potential species list produced is most likely an overestimation of those species that actually utilise the survey area for some purpose.

In recognition of survey limitations, a precautionary approach has been adopted for this assessment. Any flora and fauna species that would possibly occur within the survey area (or immediately adjacent), as identified through ecological databases, publications, discussions with local experts/residents and the habitat knowledge of Botanica, has been listed as having the potential to occur.

Table 3-2: Limitations and constraints associated with the survey

Variable	Potential Impact on Survey	Details
Access problems	Minor constraint	The survey was conducted via 4WD and on foot. Due to Aboriginal heritage values within the survey area, access throughout the survey area (particularly within hill ranges) was limited.
Competency/ Experience	Not a constraint	The Botanica personnel that conducted the survey were regarded as suitably qualified and experienced. **Coordinating Botanist/ Zoologist:** Jim Williams, & Greg Harewood **Data Interpretation:** Jim Williams, Lauren Pick & Greg Harewood
Timing of survey, weather & season	Minor constraint	The survey was conducted outside of the EPA recommended primary survey period for the Eremaean Province (March-June) however fieldwork was completed in Spring 2018 (November) following above average rainfall.
Area disturbance	Not a constraint	Area has been disturbed by existing pastoral and exploration activities. However, vegetation was mostly intact.
Survey Effort/ Extent	Not a constraint	Survey intensity was appropriate for the size/significance of the area with a reconnaissance flora and Level 1 fauna survey completed to identify vegetation types/fauna habitat and areas of Significance.
Availability of contextual information at a regional and local scale	Not a constraint	Threatened flora database searches provided by the DBCA were used to identify any potential locations of Threatened/Priority taxa. BoM, DWER, DPIRD, DBCA and DoEE databases were reviewed to obtain appropriate regional desktop information on the biophysical environment of the local region. Botanica were able to obtain information about the area from previous flora/ fauna assessments conducted within the local region and previous reconnaissance surveys conducted by Botanica which provided context on the local environment.
Completeness	Minor constraint	In the opinion of Botanica, the survey area was covered sufficiently in order to identify vegetation assemblages. Few of the plants during the survey were in flower, however annual species were present. It is estimated that approximately 85% of the flora within the survey area were able to be fully identified. The vegetation types for this study were based on visual descriptions of locations in the field. The distribution of these vegetation communities/ fauna habitats outside the survey area is not known, however vegetation types identified were categorised via comparison to vegetation distributions throughout WA specified in the NVIS Major Vegetation Groups (DoEE, 2017b).

4 Results

4.1 Desktop Assessment

4.1.1 Flora/Vegetation

According to the results of the NatureMap search (DBCA, 2018a), a total of 357 flora taxa have been recorded within a 20 km radius of the survey area. Dominant genera include *Acacia, Eremophila, Grevillea, Maireana* and *Senna.*

Results of database searches identified seven introduced taxa as potentially occurring within a 20 km radius of the survey area:

1. *Carrichtera annua* (Wards Weed)
2. *Cenchrus ciliaris* (Buffel Grass)
3. *Chenopodium murale* (Nettle-leaf Goosefoot)
4. *Cuscuta planiflora*
5. *Lepidium didymum*
6. *Lysimachia arvensis* (Pimpernel)
7. *Solanum nigrum* (Black Berry Nightshade)

According to DPIRD, none of these taxa are listed as a Declared Plant under the BAM Act.

The results of the literature review, combined search of the DBCA's Flora of Conservation Significance databases (DBCA, 2016a), NatureMap search (DBCA, 2018) and DoEE protected matters search (DoEE, 2018) recorded no Threatened Flora within the survey area. Two Priority Flora are listed on the DBCA's Flora of Conservation Significance database as occurring within the survey area (total of seven recorded locations within the survey area). One Threatened Flora and thirty-four Priority Flora were listed by on the databases as potentially occurring within a 40km radius of the survey area (map of flora locations provided in Appendix 2). These taxa were assessed and ranked for their likelihood of occurrence within the survey area (Table 4-1). The rankings and criteria used were:

- Unlikely: Area is outside of the currently documented distribution for the species/no suitable habitat (type, quality and extent) was identified as being present during the field/desktop study.

- Possible: Area is within the known distribution of the species in question and habitat of at least marginal quality was identified as being present during the field/desktop study, supported in some cases by recent records being documented from within or near the area.

- Known to Occur: The species in question was positively identified as being present during previous field surveys.

Table 4-1: Likelihood of occurrence for Threatened and Priority Flora within the survey area

Taxon	EPBC Act	BC Act	DBCA Priority	Description (WAHERB, 2019)	Likelihood of Occurrence
Anacampseros sp. Eremaean (F. Hort, J. Hort & J. Shanks 3248)			P1	Erect, single-stemed tuberous, perennial, herb (with succulent green leaves), to 0.1 m high. Fl. white, Sep. Sand patches inside rocks, brown sandy clay, granite. Depressions in rock outcrops, breakaways, flats.	Possible
Atriplex yeelirrie	EN	VU		The species is an erect, subdioecious (with separate female and male plants; however, many male plants also have scattered female flowers in the lower branches) perennial shrub 0.4–1m high with divaricate woody branches. Highly restricted distribution limited to two populations on Yeelirrie Station	Unlikely
Austroparmelina macrospora			P3	Lichen. Contains atranorin (minor), chloratranorin (major), + scabrosin 4,4'-diacetate (trace) (photo at W.A. herbarium	Possible
Baeckea sp. Sandstone (C.A. Gardner s.n. 26 Oct. 1963)			P3	Upright shrub, ca 1 m high. Fl. white, Oct. Orange sand. Flats.	Unlikely
Bossiaea eremaea			P3	Divaricately-bramnched, spreading shrub, to 1.2 m high. Fl. red-yellow-purple-brown, Jul to Sep. Deep red sand.	Unlikely
Calytrix warburtonensis			P2	Shrub, 0.3-0.6 m high. Fl. white, Mar or Sep to Oct. Rocky hills, breakaways.	Possible
Cratystylis centralis			P3	Much-branched, brittle, greyish shrub, to 1 m high. Red sandy loam with ironstone gravel. Flat plains, breakaway country.	Possible
Eremophila arachnoides subsp. *arachnoides*			P3	Broom-like shrub, to 3 m high, branches with circular, discrete tubercles. Fl. white/blue-purple, Sep. Shallow loam over limestone.	Possible
Eremophila dendritica			P2	Shrub, to 0.5 m high. Fl. blue-purple, Sep.	Possible
Eremophila gracillima			P3	Low flat shrub, ca 0.3 m high, 1.2 m wide. Fl. blue, Sep. Stony flats.	Possible
Eremophila pungens			P4	Erect, viscid shrub, 0.5-1.5 m high. Fl purple-violet, Jun to Aug, Sandy loam, clayey sand over laterite, plains, ridges, breakaways	Possible
Eremophila sp. long pedicels (G. Cockerton 1975)			P2	Low shrub, 0.6 m high. Fl. purple, Sep. Dark red hardpans over paleochannel. Mulga woodland.	Unlikely
Euryomyrtus inflata			P3	Shrub, 0.3 – 0.7 m high, leaves dull green, fruits erect, Fl white-pink, Jun-Jul. Deep red sand, Flat plain.	Unlikely
Goodenia modesta			P3	Herb, to 0.5 m high. Fl. yellow, probably Jan to Dec. Red loam, sand.	Unlikely
Grevillea inconspicua			P4	Intricately branched, spreading shrub, 0.6-2 m high. Fl. white/pink-white, Jun to Aug. Loam, gravel. Along drainage lines on rocky outcrops, creeklines.	Known to occur
Gunniopsis propinqua			P3	Prostrate annual or perennial, herb, 0.03-0.1 m high. Fl. white/pink, Aug to Sep. Stony sandy loam. Lateritic outcrops, winter-wet sites.	Possible

Taxon	EPBC Act	BC Act	DBCA Priority	Description (WAHERB, 2019)	Likelihood of Occurrence
Hemigenia exilis			P4	Erect, multi-stemmed shrub, 0.5–2 m high. Fl. blue, purple, white, Apr/Sep–Nov. Laterite. Breakaways, slopes.	Known to occur
Hibbertia sp. Sherwood Breakaways (R.J. Cranfield 6771)			P2	No description available	Possible
Hybanthus floribundus subsp. *chloroxanthus*			P3	Multi-stemmed shrub, to 0.7 m high. Fl. blue & white, Aug to Oct. Dark red-brown soil, never sandy, rich in iron oxide, laterite. Rocky areas, creek banks, along drainage lines.	Possible
Korthalsella leucothrix			P1	Aerial, parasitic shrub, leaf apex obtuse, c. 20 flowers per node. Fl. white, Aug. On *Acacia acuminata* and *A. craspedocarpa.*	Possible
Olearia arida			P4	Erect shrub, to 0.4 m high. Fl. white, Jul to Sep. Red or yellow sand. Undulating low rises.	Possible
Olearia mucronata			P3	Densely branched, unpleasantly aromatic shrub, 0.6–1 m high. Fl. white, yellow, Aug–Jan. Schistose hills, along drainage channels	Possible
Paspalidium distans			P4	Rhizomatous, tufted perennial, grass-like or herb, 0.15-0.8 m high. Fl. green, Mar to Sep. Loam. River banks.	Possible
Phyllanthus baeckeoides			P3	Shrub, 0.5-1.5 m high. Fl. white-yellow/green-yellow, Jul to Sep. Red lateritic & sandy clay soils. Granite outcrops.	Possible
Rhagodia sp. Yeelirrie Station (K.A. Shepherd et al. KS 1396)			P1	No description available	Possible
Sauropus sp. Woolgorong (M. Officer s.n. 10/8/94)			P3	Shrub, 0.3-1 m high. Fl. yellow, Jun. Red sand. Plains.	Unlikely
Sida picklesiana			P3	Herb or shrub. Stems glabrous. Flowering time April, August or November.	Possible
Stenanthemum mediale			P1	Erect shrub, ca 0.35 m high, leaves entire. Fl. Apr–Aug. Red clayey sand.	Unlikely
Tecticornia fimbriata			P3	Erect shrub, 0.25-1 m high. Clay, loam. Margins of salt & gypsum lakes.	Unlikely
Tecticornia sp. Lake Way (P. Armstrong 05/961)			P1	No description available	Unlikely
Tecticornia sp. Sunshine Lake (K.A. Shepherd et al. KS 867)			P1	No description available	Unlikely
Thryptomene nealensis			P3	Shrub, ca 0.3 m high. Fl. pink, Oct. Lateritic breakaways.	Possible
Thryptomene sp. Leinster (B.J. Lepschi & L.A. Craven 4362)			P3	No description available	Possible
Tribulus adelacanthus			P3	Prostrate herb, plants villous; leaflet pairs 3-6; fruits 5-winged, lacking spines, 10-14 mm high.	Possible
Verticordia jamiesonii			P3	Shrub, 0.2-0.6 m high. Fl. white/pink, Sep to Oct. Sandy clay soils. Lateritic breakaways.	Possible

4.1.2 Fauna

According to the results of the NatureMap search (DBCA, 2018a), a total of 232 vertebrate fauna taxa have been recorded within a 20km radius of the survey area including six amphibians, 103 bird species, 22 mammals and 59 reptiles. A total of 42 invertebrate species have also been recorded within a 20km radius of the survey area.

Combined results of database searches (DBCA 2018a and DoEE 2018) identified seven introduced taxa as potentially occurring within the survey area, these being:

1. *Camelus dromedaries* (Camel)
2. *Canis lupus familiaris* (Dog)
3. *Capra hircus* (Goat)
4. *Felis catus* (Cat)
5. *Mus musculus* (House Mouse)
6. *Oryctolagus cuniculus* (Rabbit)
7. *Vulpes vulpes* (Red Fox)

Fauna of conservation significance identified during the literature review as previously being recorded in the general area were assessed and ranked for their likelihood of occurrence within the survey area itself (Table 4-2). The rankings and criteria used were:

- Would Not Occur: There is no suitable habitat for the species in the survey area and/or there is no documented record of the species in the general area since records have been kept and/or the species is generally accepted as being locally/regionally extinct (supported by a lack of recent records).
    - Locally Extinct: Populations no longer occur within a small part of the species natural range, in this case within 10 or 20 km of the survey area. Populations do however persist outside of this area.
    - Regionally Extinct: Populations no longer occur in a large part of the species natural range, in this case within the southern and south-western goldfields region. Populations do however persist outside of this area.
- Unlikely to Occur: The survey area is outside of the currently documented distribution for the species in question, or no suitable habitat (type, quality and extent) was identified as being present during the field assessment. Individuals of some species may occur occasionally as vagrants/transients especially if suitable habitat is located nearby but the site itself would not support a population or part population of the species.
- Possibly Occurs: Survey area is within the known distribution of the species in question and habitat of at least marginal quality was identified as likely to be present during the field survey and literature review, supported in some cases by recent records being documented in literature from within or near the survey area. In some cases, while a species may be classified as possibly being present at times, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.
- Known to Occur: The species in question has been positively identified as being present (for sedentary species) or as using the survey area as habitat for some other purpose (for non-sedentary/mobile species) during field surveys within or near the survey area. This information may have been obtained by direct observation of individuals or by way of

secondary evidence (e.g. tracks, foraging debris, scats). In some cases, while a species may be classified as known to occur, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

Table 4-2: Likelihood of Occurrence – Fauna Species of Conservation Significance

Taxon	Conservation Status			Habitat Description	Likelihood of Occurrence
	EPBC Act	BC Act	DBCA Priority		
Moriarty's Trapdoor Spider *Kwonkan moriartii*	-	-	P2	Not documented.	Unlikely to occur. Only two historical records of this species from just south and east of the study area. Current status unknown.
Great Desert Skink *Liopholis kintorei*	VU	VU	-	Occurs in a variety of desert habitats on sandy, clay and loamy soils (Storr *et al.* 1999).	Unlikely to occur. A single historical record of this species from well north of the study area exists Appears to be locally extinct.
Oriental Plover *Charadrius veredus*	MI	IA		Inland this species favours flat, open, semi-arid or arid grasslands, where the grass is short and sparse, and interspersed with hard, bare ground, such as claypans, dry paddocks, playing fields, lawns and cattle camps or open areas that have been recently burnt (DoEE 2018).	Unlikely to occur. No Suitable/Marginal Habitat.
Various Other Migratory Shorebirds	Various			Generally, occur around inland waters, both salt and fresh waters (DoEE 2018)	Unlikely to occur. No Suitable Habitat.
Grey Wagtail *Motacilla cinerea*	MI	IA		Running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields (Morecombe 2004)	Would not occur – No Suitable Habitat. Never recorded in this region
Yellow Wagtail *Motacilla flava*	MI	IA		Occurs in a variety of damp or wet habitats with low vegetation, from rushy pastures, meadows, hay fields and marshes to damp steppe and grassy tundra (Morecombe 2004).	Would not occur – No Suitable Habitat. Never recorded in this region
Malleefowl *Leipoa ocellata*	VU	VU		Scrublands and woodlands dominated by mallee and wattle species (DoEE 2018)	Unlikely to occur. No Suitable Habitat. Rarely recorded in the general area.
Night Parrot *Pezoporus occidentalis*	EN	CR		Found in arid and semi arid zones of Australia (DoEE 2018). Habitat preferences are broad, reflecting the wide variety of habitats the species was historically known from (Biota 2017)	Unlikely to occur. Habitat appears marginal. No records from the wider area despite several targeted surveys (e.g. Biota 2017).
Princess Parrot *Polytelis alexandrae*	VU	-	P4	Sand dunes and sand flats in the arid zone of western and central Australia. It occurs in open savanna woodlands and shrublands that usually consist of scattered stands of Eucalyptus, *Casuarina* or *Allocasuarina* trees; an understorey of shrubs such as *Acacia* (especially *A. aneura*), *Cassia, Eremophila, Grevillea, Hakea* and *Senna*; and a ground cover dominated by *Triodia* species (DoEE, 2018).	Unlikely to occur. Rarely recorded in the general area.
Peregrine Falcon *Falco peregrinus*	-	OS	-	This species inhabits a wide range of habitats including forest, woodlands, wetlands and open country (Pizzey and Knight 2007).	Known to Occur. Individual recorded just south of the study area during field survey.
Striated Grasswren (inland) *Amytornis striatus striatus*	-	-	P4	Occurs in *Triodia*-dominated habitat on sandy to loamy plains, where it feeds on insects and seeds. Also found in shrubby *Acacia* on dunes and inter-dunes	Would not occur – No Suitable Habitat.

Taxon	Conservation Status			Habitat Description	Likelihood of Occurrence
	EPBC Act	BC Act	DBCA Priority		
Long-tailed Dunnart *Sminthopsis longicaudata*	-	-	P4	Plateaus near breakaways, and from scree slopes and rugged boulder-strewn screes (Biota 2017) and rocky plains.	Possibly occurs on rocky hillslopes and plains.
Brush-tailed Mulgara *Dasycerus blythi*	-	-	P4	The sandplain unit of the Bullimore land system (Pringle *et al.* 1994) appears to be their primary habitat in the Mt Keith area. (Halpern Glick Maunsell 2000)	Unlikely to occur – preferred sandplain habitat appears to be absent.
Black-footed Rock-wallaby *Petrogale lateralis lateralis*	VU	EN	-	Requires shelter in the form of caves, cliffs and boulder screes during the day (Biota 2017))	Would not occur – No suitable habitat and appears to be locally extinct
Central Long-eared Bat Nyctophilus major tor	-	-	P3	Woodlands and mallee, especially near granite outcrops and old dams. Roosts in tree crevices and beneath exfoliating bark (Biota 2017)	Unlikely to occur – outside of normal documented range.

4.2 Field Assessment

4.2.1 Vegetation Types

Twelve broad vegetation types were identified within the survey area (Table 4-3) which were represented by a total of 27 Families, 56 Genera and 100 taxa as listed in Appendix 3. A map showing the vegetation types present in the survey area is provided in Figure 4-1.

Table 4-3: Summary of vegetation types within the survey area

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Area (ha)	Area (%)
Clay-Loam Plain	Acacia Forests and Woodlands (MVG 6)	CLP-AFW1	Low woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on clay-loam plains	621	16.4
		CLP-AFW2	Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plains	1120	29.5
Open Depression	Acacia Forests and Woodlands (MVG 6)	OD-AFW1	Low woodland of *Acacia caesaneura/ A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depressions	218	5.7
	Acacia Open Woodlands (MVG 13)	OD-AOW1	Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depressions	511	13.5
	Eucalypt Woodlands (MVG 5)	OD-EW1	Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depressions	91	2.4
Rocky Hillslope	Acacia Forests and Woodlands (MVG 6)	RH-AFW1	Low woodland of *Acacia caesaneura /Acacia incurvaneura* over mid shrubland of *Santalum lanceolatum/ Scaevola spinescens* and low open tussock grassland of Enneapogon caerulescens on rocky hillslopes	171	4.5
	Acacia Shrublands (MVG 16)	RH-AS1	Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslopes	90	2.4
		RH-AS2	Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslopes	375	9.9
		RH-AS3	Mid open shrubland of *Acacia quadrimarginea* over low open shrubland of *Ptilous obovatus* and low tussock grassland of *Aristida contorta* on granite exposed hillslopes	211	5.6
	Casuarina Forests and Woodlands (MVG 8)	RH-CFW1	Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslopes	14.5	0.4
Rocky Plain	Acacia Open Woodlands (MVG 13)	RP-AOW1	Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on rocky plains	340	9.0
	Other Shrublands (MVG 17)	RP-OS1	Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plains	29.5	0.8
Total				**3792**	**100**

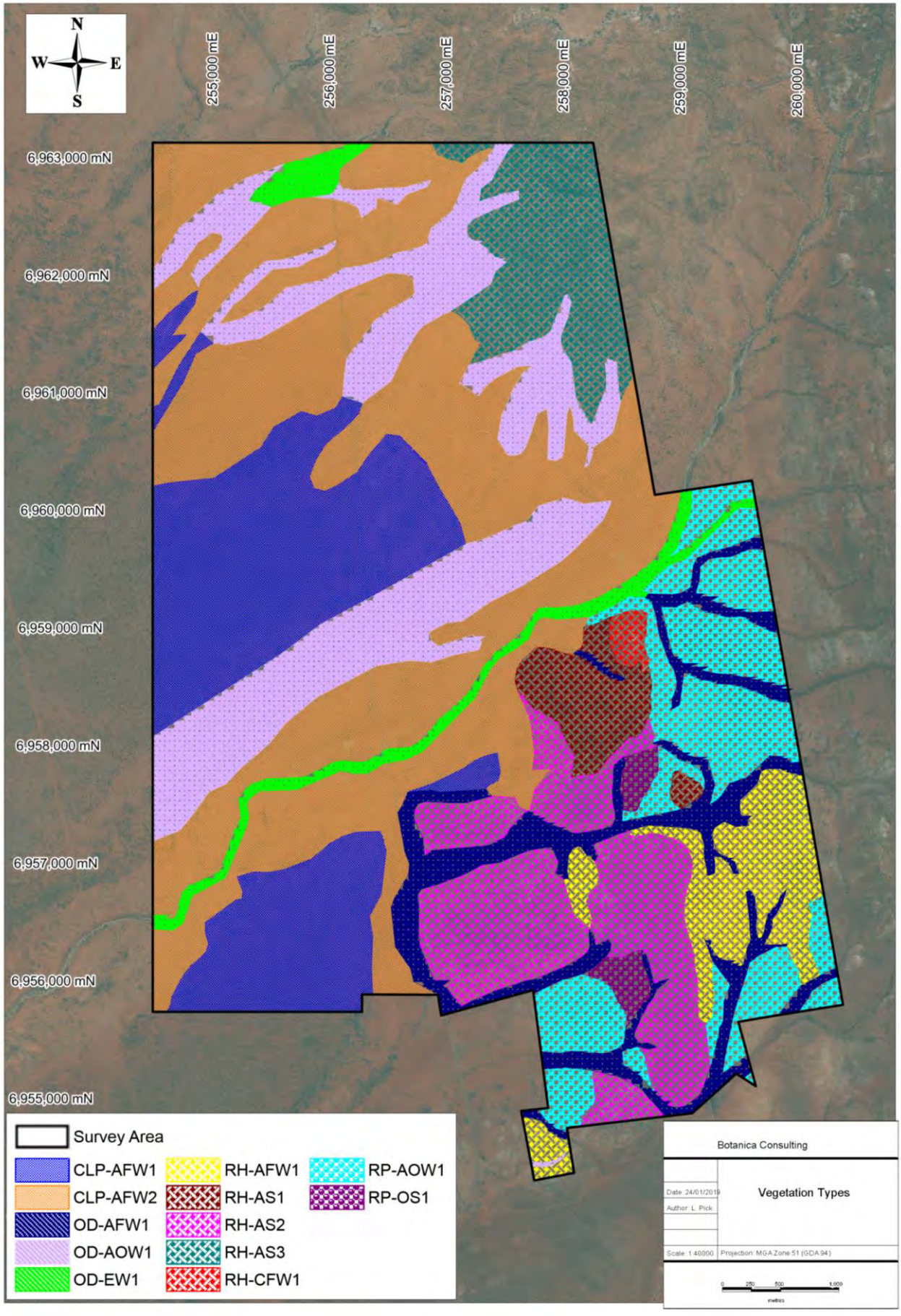


Figure 4-1: Vegetation types within the survey area

Clay-Loam Plain: Acacia Forests and Woodlands

4.2.1.1 Low woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides subsp. helmsii* on clay-loam plain (CLP-AFW1)

The total flora recorded within this vegetation type was represented by a total of 15 Families, 29 Genera and 50 Taxa (Plate 4-1). Dominant taxa are shown in Table 4-4. According to the NVIS, this vegetation type is best represented by the MVG 6–Acacia Forests and Woodlands (DoEE, 2017b).

Table 4-4: Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides subsp. helmsii* on clay-loam plain

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <10m	10-30%	*Acacia incurvaneura*
Shrub 1-2m	10-30%	*Eremophila galeata*
Shrub <1m	10-30%	*Ptilotus obovatus* *Senna artemisioides* subsp. *helmsii*

Plate 4-1: Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides subsp. helmsii* on clay-loam plain

4.2.1.2 Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plain (CLP-AFW2)

The total flora recorded within this vegetation type was represented by a total of 11 Families, 19 Genera and 36 Taxa (Plate 4-2). Dominant taxa are shown in Table 4-5. According to the NVIS, this vegetation type is best represented by the MVG 6–Acacia Forests and Woodlands (DoEE, 2017b).

Table 4-5: Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plain

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <10m	10-30%	*Acacia caesaneura* *Acacia incurvaneura*
Shrub 1-2m	10-30%	*Senna artemisioides* subsp. *helmsii*
Tussock Grass <1m	10-30%	*Eragrostis eriopoda* *Monachather paradoxus*

Plate 4-2: Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plain

Open Depression: Acacia Forests and Woodlands

4.2.1.3 Low woodland of *Acacia aneura/ A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depression (OD-AFW1)

The total flora recorded within this vegetation type was represented by a total of 25 Families, 46 Genera and 67 Taxa (Plate 4-3). Dominant taxa are shown in Table 4-6. According to the NVIS, this vegetation type is best represented by the MVG 6–Acacia Forests and Woodlands (DoEE, 2017b).

Table 4-6: Low woodland of *Acacia aneura/ A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depression

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <10m	10-30%	*Acacia caesaneura* *Acacia incurvaneura*
Shrub <1m	10-30%	*Ptilotus obovatus* *Solanum lasiophyllum* *Senna artemisioides* subsp. *helmsii*
Tussock Grass <1m	10-30%	*Aristida contorta* *Enneapogon caerulescens*

Plate 4-3: Low woodland of *Acacia aneura/ A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depression

Open Depression: Acacia Open Woodlands

4.2.1.4 Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depression (OD-AOW1)

The total flora recorded within this vegetation type was represented by a total of 12 Families, 19 Genera and 30 Taxa (Plate 4-4). Dominant taxa are shown in Table 4-7. According to the NVIS, this vegetation type is best represented by the MVG 13–Acacia Open Woodlands (DoEE, 2017b).

Table 4-7: Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depression

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <10m	5-10%	*Acacia effusifolia*
Shrub 1-2m	10-30%	*Eremophila galeata*
Tussock Grass <1m	10-30%	*Eragrostis eriopoda* *Monacather paradoxus*

Plate 4-4: Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depression

Open Depression: Eucalypt Woodlands

4.2.1.5 Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depression (OD-EW1)

The total flora recorded within this vegetation type was represented by a total of 6 Families, 9 Genera and 11 Taxa (Plate 4-5). Dominant taxa are shown in Table 4-8. According to the NVIS, this vegetation type is best represented by the MVG 5–Eucalypt Woodlands (DoEE, 2017b).

Table 4-8: Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depression

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <10m	30-70%	*Eucalyptus camaldulensis*
Shrub >2m	10-30%	*Acacia burkittii*
Tussock Grass <1m	30-70%	*Themeda triandra*

Plate 4-5: Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depression

Rocky Hillslope: Acacia Forests and Woodlands

4.2.1.6 Low woodland of *Acacia aneura/ Acacia incurvaneura* over mid shrubland of *Santalum lanceolatum/ Scaevola spinescens* and low open tussock grassland of *Enneapogon caerulescens* on rocky hillslope (RH-AFW1)

The total flora recorded within this vegetation type was represented by a total of 10 Families, 12 Genera and 15 Taxa (Plate 4-2). Dominant taxa are shown in Table 4-5. According to the NVIS, this vegetation type is best represented by the MVG 6–Acacia Forests and Woodlands (DoEE, 2017b).

Table 4-9: Low woodland of *Acacia aneura/ Acacia incurvaneura* over mid shrubland of *Santalum lanceolatum/ Scaevola spinescens* and low open tussock grassland of *Enneapogon caerulescens* on rocky hillslope

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <10m	10-30%	*Acacia aneura* *Acacia incurvaneura*
Shrub 1-2m	30-70%	*Santalum lanceolatum* *Scaevola spinescens*
Tussock Grassland <1m	10-30%	*Enneapogon caerulescens*

Plate 4-6: Low woodland of *Acacia aneura/ Acacia incurvaneura* over mid shrubland of *Santalum lanceolatum/ Scaevola spinescens* and low open tussock grassland of *Enneapogon caerulescens* on rocky hillslope

Rocky Hillslope: Acacia Shrublands

4.2.1.7 Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslope (RH-AS1)

The total flora recorded within this vegetation type was represented by a total of 15 Families, 23 Genera and 35 Taxa (Plate 4-7). Dominant taxa are shown in Table 4-10. According to the NVIS, this vegetation type is best represented by the MVG 16–Acacia Shrublands (DoEE, 2017b).

Table 4-10: Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslope

Life Form/Height Class	Canopy Cover	Dominant taxa present
Shrub >2m	5-10%	*Acacia quadrimarginea*
Shrub 1-2m	5-10%	*Eremophila galeata*
Tussock Grassland <1m	30-70%	*Cymbopogon ambiguus*

Plate 4-7: Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslope

4.2.1.8 Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslope (RH-AS2)

The total flora recorded within this vegetation type was represented by a total of 7 Families, 11 Genera and 13 Taxa (Plate 4-8). Dominant taxa are shown in Table 4-11. According to the NVIS, this vegetation type is best represented by the MVG 16–Acacia Shrublands (DoEE, 2017b).

Table 4-11: Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslope

Life Form/Height Class	Canopy Cover	Dominant taxa present
Shrub 1-2m	10-30%	*Acacia balsamea*
Shrub <1m	10-30%	*Ptilotus obovatus*
Tussock Grass <1m	30-70%	*Aristida contorta*

Plate 4-8: Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslope

4.2.1.9 Mid open shrubland of *Acacia quadrimarginea* over low open shrubland of *Ptilous obovatus* and low tussock grassland of *Aristida contorta* on granite exposed hillslope (RH-AS3)

The total flora recorded within this vegetation type was represented by a total of 16 Families, 25 Genera and 34 Taxa (Plate 4-9). Dominant taxa are shown in Table 4-12. According to the NVIS, this vegetation type is best represented by the MVG 16–Acacia Shrublands (DoEE, 2017b).

Table 4-12: Mid open shrubland of *Acacia quadrimarginea* over low open shrubland of *Ptilous obovatus* and low tussock grassland of *Aristida contorta* on granite exposed hillslope

Life Form/Height Class	Canopy Cover	Dominant taxa present
Shrub 1-2m	10-30%	*Acacia quadrimarginea*
Shrub <1m	10-30%	*Ptilotus obovatus*
Tussock Grass <1m	30-70%	*Aristida contorta*

Plate 4-9: Mid open shrubland of *Acacia quadrimarginea* over low open shrubland of *Ptilous obovatus* and low tussock grassland of *Aristida contorta* on granite exposed hillslope

Rocky Hillslope: Casuarina Forests and Woodlands

4.2.1.10 Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslope (RH-CFW1)

The total flora recorded within this vegetation type was represented by a total of 9 Families, 17 Genera and 23 Taxa (Plate 4-10). Dominant taxa are shown in Table 4-13. According to the NVIS, this vegetation type is best represented by the MVG 8–Casuarina Forests and Woodlands (DoEE, 2017b).

Table 4-13: Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslope

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <10m	10-30%	*Casuarina pauper*
Shrub <1m	30-70%	*Ptilotus obovatus* *Senna artemisioides* subsp. *helmsii*

Plate 4-10: Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslope

Rocky Plain: Acacia Open Woodlands

4.2.1.11 Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus oboatus/Senna artemisioides* subsp. *helmsii* on rocky plain (RP-AOW1)

The total flora recorded within this vegetation type was represented by a total of 10 Families, 13 Genera and 15 Taxa (Plate 4-11). Dominant taxa are shown in Table 4-14. According to the NVIS, this vegetation type is best represented by the MVG 13–Acacia Open Woodlands (DoEE, 2017b).

Table 4-14: Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus oboatus/Senna artemisioides* subsp. *helmsii* on rocky plain

Life Form/Height Class	Canopy Cover	Dominant taxa present
Tree <10m	5-10%	*Acacia incurvaneura*
Shrub 1-2m	10-30%	*Eremophila galeata*
Shrub <1m	10-30%	*Ptilotus oboatus* *Senna artemisioides* subsp. *helmsii*

Plate 4-11: Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus oboatus/Senna artemisioides* subsp. *helmsii* on rocky plain

Rocky Plain: Other Shrublands

4.2.1.12 Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plain (RP-OS1)

The total flora recorded within this vegetation type was represented by a total of 8 Families, 12 Genera and 19 Taxa (Plate 4-12). Dominant taxa are shown in Table 4-15. According to the NVIS, this vegetation type is best represented by the MVG 17–Other Shrublands (DoEE, 2017b).

Table 4-15: Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plain

Life Form/Height Class	Canopy Cover	Dominant taxa present
Shrub >2m	5-10%	*Hakea lorea*
Shrub <1m	10-30%	*Ptilotus obovatus* *Scaevola spinescens*
Tussock Grass <1m	70-100%	*Enneapogon polyphyllus*

Plate 4-12: Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plain

4.2.2 Vegetation Condition

Based on the vegetation condition rating scale adapted from Keighery, 1994 and Trudgen, 1988 (Appendix 4), two vegetation types were rated as 'Good' which depicts that vegetation shows more obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds. The remaining ten vegetation types were rated as 'Very Good'. 'Very Good' condition depicts that vegetation structure has some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.

Table 4-16: Vegetation Condition within the survey area

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Vegetation Condition
Clay-Loam Plain	Acacia Forests and Woodlands (MVG 6)	CLP-AFW1	Low woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on clay-loam plain	Very Good
		CLP-AFW2	Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plain	Very Good
Open Depression	Acacia Forests and Woodlands (MVG 6)	OD-AFW1	Low woodland of *Acacia caesaneura A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depression	Good
	Acacia Open Woodlands (MVG 13)	OD-AOW1	Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depression	Good
	Eucalypt Woodlands (MVG 5)	OD-EW1	Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depression	Very Good
Rocky Hillslope	Acacia Forests and Woodlands (MVG 6)	RH-AFW1	Low woodland of *Acacia caesaneura Acacia incurvaneura* over mid shrubland of *Santalum lanceolatum/ Scaevola spinescens* and low open tussock grassland of Enneapogon caerulescens on rocky hillslope	Very Good
	Acacia Shrublands (MVG 16)	RH-AS1	Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslope	Very Good
		RH-AS2	Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslope	Very Good
		RH-AS3	Mid open shrubland of *Acacia quadrimarginea* over low open shrubland of *Ptilous obovatus* and low tussock grassland of *Aristida contorta* on granite exposed hillslope	Very good
	Casuarina Forests and Woodlands (MVG 8)	RH-CFW1	Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslope	Very Good

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Vegetation Condition
Rocky Plain	Acacia Open Woodlands (MVG 13)	RP-AOW1	Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on rocky plain	Very Good
	Other Shrublands (MVG 17)	RP-OS1	Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plain	Very Good

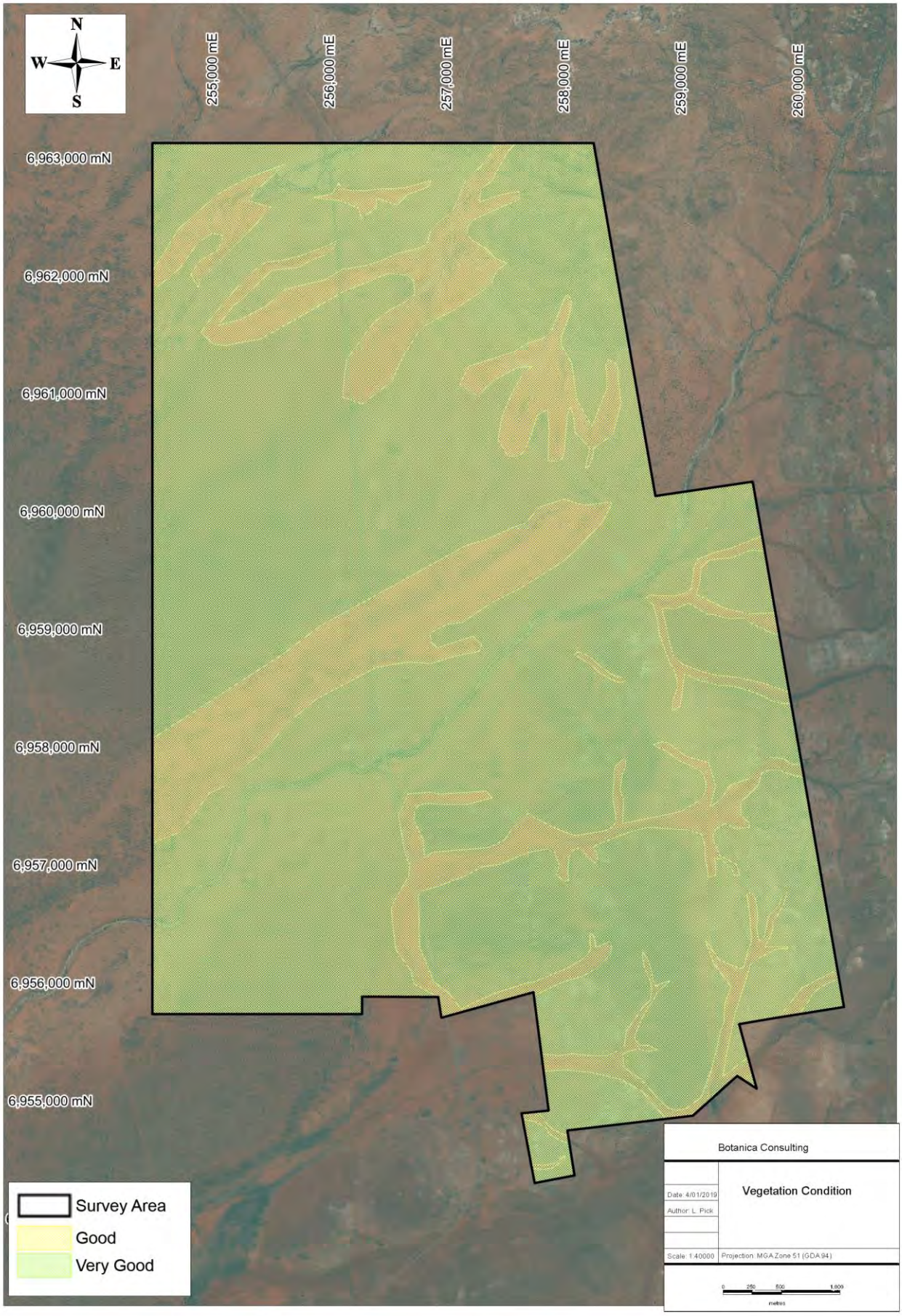


Figure 4-2: Vegetation condition within the survey area

4.2.3 Introduced Plant Species

Four introduced taxa were identified during the field assessment:

1. *Cenchrus ciliaris* (Buffel Grass)
2. *Citrullus amarus* (Pie Melon)
3. *Lysimachia arvensis* (Pimpernel)
4. *Tribulus terrestris* (Caltrop)

According to the Western Australian Organism List (DPIRD, 2019), none of these taxa are listed as a Declared Plant under the *Biosecurity and Agriculture Management Act 2007* (BAM Act).

4.2.4 Fauna Habitat

Four broad scale terrestrial fauna habitats were identified within the survey area, based on vegetation and associated landforms identified during the flora and vegetation survey. The extent of the identified fauna habitats and a summary description is provided in Table 4-17 below. A map of the fauna habitats is provided in Figure 4-3.

Table 4-17: Main Terrestrial Fauna Habitats within the survey area

Fauna Habitat Description	Example Image
Clay-Loam Plain Acacia Forests and Woodlands Total Area = ~1741 ha (~46%)	
Open Depression Acacia Forests and Woodlands/ Acacia Open Woodlands/ Eucalypt Woodlands Total Area = ~820 ha (~22%)	

Fauna Habitat Description	Example Image
<u>Rocky Hillslope</u> Acacia Forests and Woodlands/ Acacia Shrublands/ Casuarina Forests and Woodlands Total Area = ~862 ha (~23%)	
<u>Rocky Plain</u> Acacia Open Woodlands/ Other Shrublands Total Area = ~370 ha (~10%)	

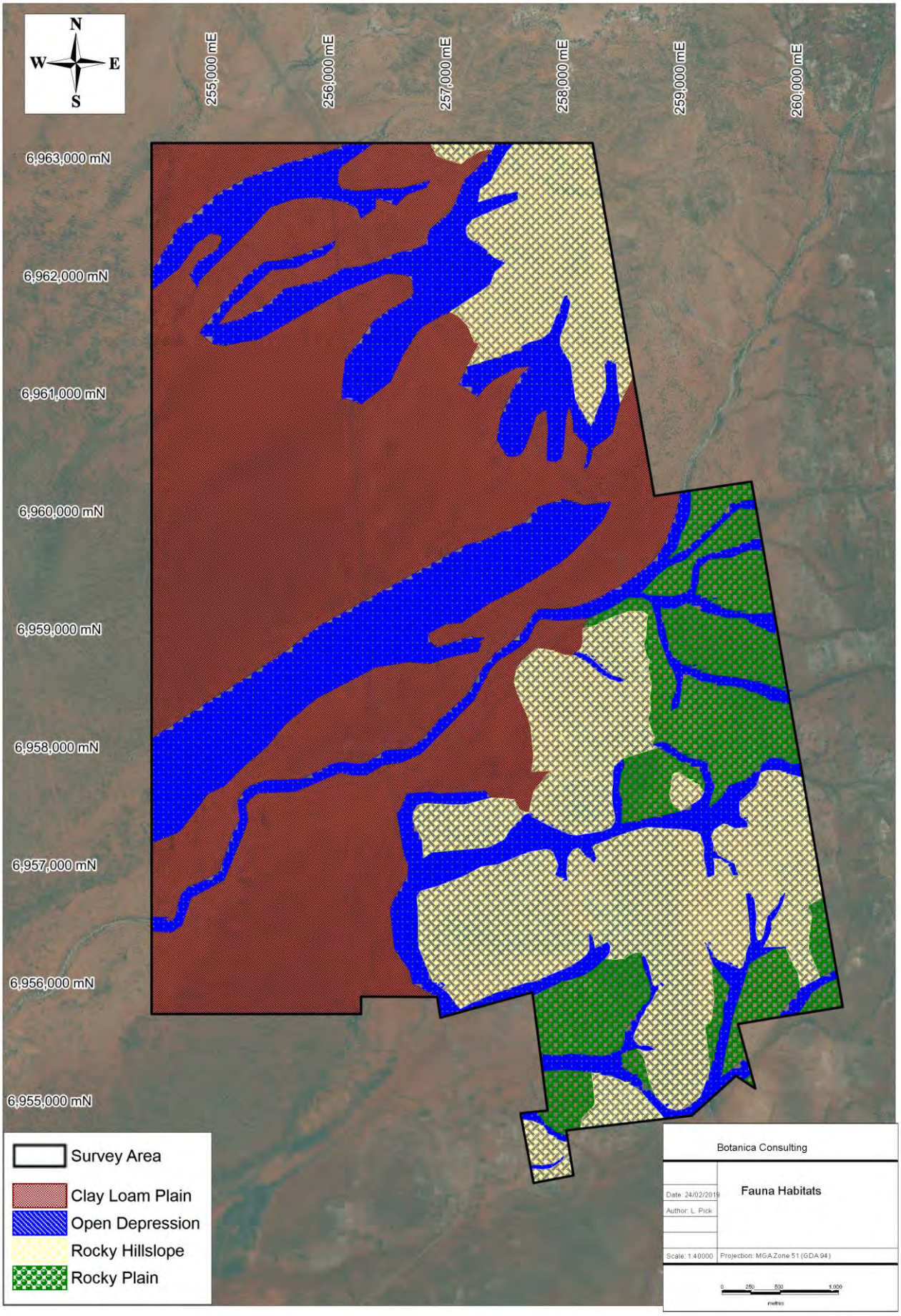


Figure 4-3: Fauna Habitats within the survey area

Based on the habitats present within the survey area, a list of expected vertebrate fauna species likely to occur in the survey area was compiled from information obtained during the literature review and is presented in Appendix 6. The results of some previous fauna surveys carried out in the general area are also summarised in this species listing as are the DBCA NatureMap database search results.

Not all species listed in existing databases and publications as potentially occurring within the region (i.e. EPBC Act's Threatened Fauna and Migratory species lists, DBCA's NatureMap database and various publications) are considered likely to be present within the survey area. The list of potential fauna takes into consideration that firstly the species in question is not known to be locally/regionally extinct and secondly that suitable habitat for each species, as identified during the habitat assessment, is present within the survey area, though compiling an accurate list has limitations (see Section 3.3).

Table 4-18 summarises the numbers of potential species based on vertebrate class considered likely to be present in the general vicinity of the survey area. This list has been developed based on the complete list provided in Appendix 6 and using a precautionary approach adopted for the assessment. At any one time, only a subset of the listed potential species is likely to be present within the bounds of the survey area. A total of forty-five native vertebrate fauna taxa were observed during the fauna survey (listed in Appendix 6) which included one amphibian, three reptiles, 36 birds, two mammals and three bat species.

Table 4-18: Summary of Potential Vertebrate Fauna Species

Group	Total number of potential species	Potential number of specially protected species	Potential number of migratory species	Potential number of priority species
Amphibians	8	0	0	0
Reptiles	88	0	0	0
Birds	117	1	0	0
Non-Volant Mammals	25[9]	0	0	1
Volant Mammals (Bats)	10	0	0	0
Total	**248[9]**	**1**	**0**	**1**

Superscript = number of introduced species included in the total. Note: Where a species state and federal conservation status is different, the highest category is used.

4.2.5 Significant Flora

According to the EPA *Environmental Factor Guideline for Flora and Vegetation* (EPA, 2016b) significant flora includes:

- Flora being identified as threatened or priority species;
- Locally endemic flora or flora associated with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems);
- New species or anomalous features that indicate a potential new species;
- Flora representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range);
- Unusual species, including restricted subspecies, varieties or naturally occurring hybrids; and
- Flora with relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Two Priority Flora taxa were recorded within the survey area:

1. *Grevillea inconspicua* (P4)
2. *Hemigenia exilis* (P4)

Details on these taxa are provided below and map of the locations is provided in Figure 4-4. GPS locations of these taxa are provided in Appendix 5. A map showing regional Threatened and Priority Flora known records in relation to the survey area is provided in Appendix 2.

Streamside eucalypt and related vegetation (e.g. *E. camaldulensis*) along inland (frequently dry) rivers and streams in the arid zone are considered to be groundwater dependent (Hatton, & Evans, 1998). *Eucalyptus camaldulensis* was identified within the survey area along the banks of Jones Creek (vegetation type OD-EW1) which is considered to be potential GDE. Details on this vegetation type are provided in Section 4.2.1.5. The GDE database (Section 2.5) indicates a moderate potential for a terrestrial GDE in the south-eastern region of the survey area associated with groved mulga (*Acacia aneura*) and bowgada shrubland (*Acacia ramulosa*). One vegetation type identified within the survey area (OD-AFW1) is representative of this potential GDE (details on this vegetation type are provided in Section 4.2.1.3).

No other significant flora were identified during the survey.

4.2.5.1 *Grevillea inconspicua* (P4)

This taxon is described as an intricately branched, spreading shrub, which grows between 0.6-2 m high. It produces white/pink-white flowers between June to August. This taxon occurs on loam or gravel soils along drainage lines on rocky outcrops and creeklines (WAHERB, 2019). Seventeen locations of this taxon were recorded within the survey area, four of which are DBCA known locations. The majority of the locations identified were in the southern part of the survey area, along a hill range which extends north-south below Jones Creek. A total of 1,193 plants recorded within the survey area. This taxon was recorded within five of the twelve vegetation types;

1. CLP-AFW1
2. RH-AFW1
3. RH-AS1
4. RH-AS2
5. RP-AOW1

Plate 4-13: *Grevillea inconspicua* (P4)

4.2.5.2 *Hemigenia exilis* (P4)

This taxon is described as an erect, multi-stemmed shrub, which grows between 0.5-2 m high. It produces blue-purple/white flowers from April or September to November. This taxon occurs on laterite soils of breakaways and slopes (WAHERB, 2019). Two locations of this taxon were recorded within the survey area, both of which are DBCA known locations. These locations are immediately south of Jones Creek within two vegetation types; CLP-AFW2 and RH-AS1[3]. A total of 470 plants recorded within the survey area.

Plate 4-14: *Hemigenia exilis* (P4)

[3] As specified in Table 4-1 this taxon occurs on a variety of landforms including laterite, breakaways and slopes therefore this taxon potentially occurs within other vegetation types associated with rocky hills within the survey area.

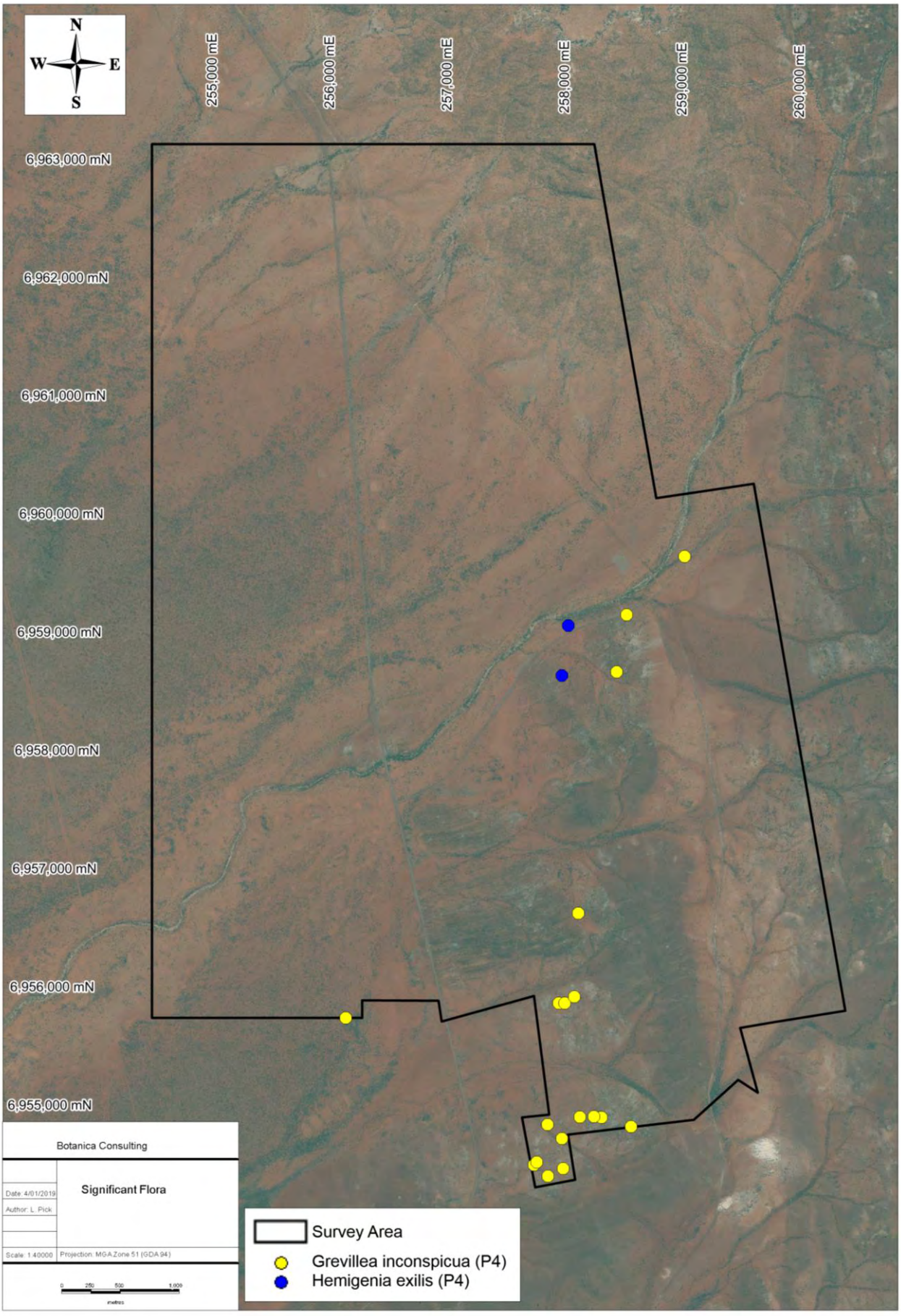


Figure 4-4: Significant flora recorded within the survey area

4.2.6 Significant Fauna

According to the EPA *Environmental Factor Guideline for Terrestrial Fauna* (EPA, 2016d) significant fauna includes:

- Fauna being identified as a threatened or priority species;
- Fauna species with restricted distribution;
- Fauna subject to a high degree of historical impact from threatening processes; and
- Fauna providing an important function required to maintain the ecological integrity of a significant ecosystem.

No significant fauna were confirmed as occurring within the survey area, though a peregrine falcon (OS) was observed just south of the study area during the survey period.

4.2.7 Significant Vegetation

According to the EPA *Environmental Factor Guideline for Flora and Vegetation* (EPA, 2016b) significant vegetation includes:

- Vegetation being identified as threatened or priority ecological communities;
- Vegetation with restricted distribution;
- Vegetation subject to a high degree of historical impact from threatening processes;
- Vegetation which provides a role as a refuge; and
- Vegetation providing an important function required to maintain ecological integrity of a significant ecosystem.

The south-east region of the survey area (approximately 1,597 ha) is located within the boundary of the Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) Priority 1 Ecological Community. No formal description on the vegetation complexes that represent this PEC are available. No Banded Ironstone Formations were recorded within the survey area, however the six vegetation types (associated with rocky substrates) were recorded within the boundary of the PEC. In the absence of a PEC vegetation description, these vegetation types have precautionarily been considered as potential PEC vegetation:

- RH-AFW1;
- RH-AS1;
- RH-AS2;
- RH-CFW1;
- RP-AOW1; and
- RP-OS1

4.3 Matters of National Environmental Significance

None of the following matters of national environmental significance as defined by the Commonwealth EPBC Act were identified within the survey area:

- World heritage properties;
- National heritage places;
- Wetlands of international importance (often called ‘Ramsar’ wetlands after the international treaty under which such wetlands are listed);
- Nationally threatened species and ecological communities;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park; and
- Nuclear actions (including uranium mining) a water resource, in relation to coal seam gas development and large coal mining development.

There are no wetlands of national importance (ANCA Wetlands) or conservation category wetlands within the survey area. The survey area does not contain any TECs as listed under the BC Act or EPBC Act. No Threatened Flora taxon listed under the BC Act were recorded within the survey area. The survey area does not contain any ESA as listed under the EP Act. The survey area is not located within a DBCA managed Conservation Reserve. The closest Conservation Reserve is the Wanjarri Nature Reserve which is located approximately 5km north-east of the survey area.

A map showing areas of conservation significance in relation to the survey area is provided in Appendix 2.

5 Summary

Twelve broad vegetation types were identified within the survey area which were represented by a total of 27 Families, 56 Genera and 100 taxa. No Threatened Flora or TEC as listed under the Western Australian BC Act or Commonwealth EPBC Act were identified within the survey area. Two Priority Flora taxa (*Grevillea inconspicua* P4 and *Hemigenia exilis* P4) as listed by DBCA were recorded within the survey area. The south-eastern region of the survey area is located within the boundary of the Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) Priority 1 PEC. Two potential terrestrial GDEs associated with ephemeral drainage lines (OD-EW1 and OD-AFW1) were identified within the survey area

Four fauna habitats were identified within the survey area. Results of the literature review identified 35 mammals (including 10 bat species), 117 bird, 88 reptile and eight frog species as having been previously recorded in the general area, some of which have the potential to occur within the survey area. A total of forty-five native vertebrate fauna taxa were observed during the fauna survey which included one amphibian, three reptiles, 36 birds, two mammals and three bat species. No Threatened Fauna or Migratory Fauna as listed under the Western Australian BC Act or Commonwealth EPBC were identified within the survey area. No Priority Fauna as listed by DBCA were recorded within the survey area. A review of the EPBC Act threatened fauna list, DBCA's Threatened Fauna Database and Priority List, unpublished reports and scientific publications identified a small number of specially protected, migratory or priority fauna species as having been previously recorded or as being potentially present in the general vicinity of the survey area.

There are no wetlands of international importance (Ramsar Wetlands), national importance (ANCA Wetlands) or conservation category wetlands within the survey area. The survey area is not located within a DBCA managed Conservation Reserve and does not contain any ESA listed under the EP Act.

Vegetation ranged from 'good' to 'very good'. Four introduced taxa were identified within the survey area, none of which are listed as a Declared Plant under the BAM Act.

6 Bibliography

Animal Plant Mineral (2015), Vegetation Clearing Permit Application, Matilda Gold Project, Support Information for Matilda Mine Site Native Vegetation Clearing (Purpose) Permit Application, October 2015.

Anstis, M. (2013), *Tadpoles and Frogs of Australia.* New Holland Publishers, Sydney.

Aplin, K. P. and Smith, L.A. (2001), *Checklist of the frogs and reptiles of Western Australia*, Records of the Western Australian Museum Supplement No. 63, 51-74.

ASRIS (2014), *Atlas of Australian Soils Database.* Australian Soil Resource Information System

ATA Environmental (2005). Fauna Assessment, Western Mining Corporation, Yakabindie. Unpublished report for SKM Consulting/BHP Billiton.

Australian Government (2018), *National Map.* Australian Government.

Barrett, G., Silcocks, A., Barry, S., Cunningham, R. and Poulter, R. (2003), *The New Atlas of Australian Birds*. Royal Australasian Ornithologists Union, Victoria.

Beard, J.S., (1990), *Plant Life of Western Australia*, Kangaroo Press Pty Ltd, NSW.

Biota Environmental Sciences (2004). Waterloo and Amorac Extension Fauna Site Inspection. Unpublished report for LionOre.

Biota Environmental Sciences (2006a). Wanjarri Land Swap Proposal: Ecological Assessment. Unpublished report for SKM Consultants/BHP Billiton.

Biota Environmental Sciences (2006b). Fauna Habitat and Fauna Assemblage of the Mt Keith Mine Project Area. Unpublished report for BHP Billiton Nickel West.

Biota Environmental Sciences (2017a). Mt Keith Satellite Proposal Vertebrate Fauna Review. Prepared for BHP Billiton Nickel West, Biota Environmental Sciences.

Biota Environmental Sciences (2017b). Mt Keith Satellite Proposal Night Parrot Survey. Prepared for BHP Billiton Nickel West, Biota Environmental Sciences.

BoM, (2019a), Leinster Aero weather station Climate Data, Bureau of Meteorology.
Available: http://www.bom.gov.au/climate
Accessed: 15th January 2019

BoM, (2019b), Atlas of Groundwater Dependent Ecosystems, Bureau of Meteorology
http://www.bom.gov.au/water/groundwater/gde/map.shtml
Accessed: 25th January 2019

Botanica Consulting (2014), Level 1 Flora and Vegetation Survey of the Thunderbox to Bannockburn Project. Prepared for Saracen Mineral Holdings.

Botanica Consulting (2016), Level 1 Flora and Fauna Survey Julius Project, Prepared for Echo Resources Limited.

Botanica Consulting (2018), Reconnaissance Flora & Fauna Survey Orelia Project. Prepared for Echo Resources Limited.

Cowan, (2001), *A Biodiversity Audit of Western Australia's 53 Biogeographical Region in 2001-Murchison Region (MUR1-Eastern Murchison)*, Department of Conservation and Land Management.

Curry, P.J., Payne, A.L., Leighton, K.A., Hennig, P. and Blood, D.A. (1994) *Technical Bulletin: An inventory and condition survey of the Murchison River catchment, Western Australia (No. 84).* Department of Agriculture WA.

DAFWA (2011), *Pre-European Vegetation - Western Australia (NVIS Compliant Version GIS file),* Department of Agriculture and Food Western Australia

DAFWA (2014), *Soil Landscape System of Western Australia,* Department of Agriculture and Food Western Australia

DBCA (2017). *2017 Statewide Vegetation Statistics*. Department of Biodiversity, Conservation and Attractions

DBCA (2018a), *Threatened and Priority Flora Database search results*, Department of Biodiversity, Conservation and Attractions. Results obtained November 2018.

DBCA (2018b), *Threatened and Priority Communities Database search results*, Department of Biodiversity, Conservation and Attractions. Results obtained November 2018.
DBCA (2019), *Nature Map Database search,* Department of Biodiversity, Conservation and Attractions
Available: https://naturemap.dpaw.wa.gov.au/
Accessed: 1st September 2018

DoEE, (2012), *Interim Biogeographic Regionalisation for Australia (IBRA), Version 7,* Department of the Environment and Energy.

DoEE (2015b), *National Vegetation Information System (NVIS) Version 7*, Department of the Environment and Energy

DoEE (2018a), *Protected Matters Search Tool, Environment Protection and Biodiversity Conservation Act 1999,* Department of the Environment and Energy
Available: http://www.environment.gov.au/epbc/protected-matters-search-tool
Accessed: 1st September 2018

DoEE (2018b) Species Profiles and Threats Database, Department of Environment and Energy
Available: http://www.environment.gov.au/sprat
Accessed: 12th October 2018

DPIRD (2018), *Declared Organism-database search,* Department of Primary Industries and Regional Development, Western Australia
Available: https://www.agric.wa.gov.au/bam/western-australian-organism-list-waol
Accessed: 22nd October 2018.

Ecologia (1990). Yakabindie Nickel Mine Project. Consultative Environmental Review: Flora and Fauna Survey. Unpublished Report Prepared for Dominion Mining Limited.

Ecologia (1995). An ecological assessment of the Yakabindie Nickel Mine Project: Six Mile Well / Mount Pascoe. Unpublished Report Prepared for Dominion Mining Limited.

Engenium (2015). Lake Maitland - Level 2 Vertebrate Fauna and Targeted Reptile Survey Report. Unpublished report for Toro Energy Limited

EPA, (2016a), *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment – December 2016.* Environmental Protection Authority

EPA, (2016b), *Technical Guidance - Terrestrial Fauna Surveys for Environmental Impact Assessment – December 2016.* Environmental Protection Authority

Government of Western Australia (2018), Wildlife Conservation Act 1950. Wildlife Conservation (Rare Flora and Fauna) Notice 2017. Government Gazette, WA. 14th September 2018.

Hall, N.J., Newbey, K.R., McKenzie, N.L., Keighery, G.J., Rolfe, J.K & Youngson, W. K., (1993), *The Biological survey of the Eastern Goldfields of Western Australia Part 7: Sandstone-Sir Samuel. Laverton-Leonora study area,* West. Aust. Mus. Suppl. 47.

Halpern Glick Maunsell (2000). Lease Wide Mulgara *Dasycercus cristicauda* Survey. Prepared for Western Mining Corporation.

Mattiske Consulting Pty Ltd (2000) Flora and Vegetation Assessment of the Proposed Pipeline Route Options. Report prepared for Dames and Moore Pty Ltd.

Mattiske Consulting Pty Ltd (2012), *Flora and Vegetation Survey of the Kathleen Valley Gold Project Survey Area.* Prepared for URS Australia Pty Ltd on behalf of Xstrata Nickel Australasia Pty Ltd.

Meissner, R & Wright, J (2010). *Flora and vegetation of banded iron formations of the Yilgarn Craton: Perseverance Greenstone Belt*. Conservation Science W. Aust. 7 (3): 593–604 (2010).

Moriarty, T. K. (1972). Birds of Wanjarri WA. The Emu 72:1–6.

Ninox Wildlife Consulting (2012) A Level 1 Vertebrate Fauna Assessment of the Kathleen Valley Gold Project, Near Leinster, Western Australia. Unpublished report prepared for Ramelius Resources Ltd, October 2012

NHT, Natural Heritage Trust (2007), National manual for the malleefowl monitoring system. Standards, protocols and monitoring procedures.

Outback Ecology (2008a). Bronzewing – Mt McClure, Application for a Purpose Permit to Clear Native Vegetation at the Bronzewing – Mt McClure Project – Corboys Prospect M53/15, prepared for View Resources.

Outback Ecology (2008b). Bronzewing – Mt McClure, Report on the distribution of *Eremophila pungens* (P4) within the Bronzewing – Mt McClure Gold Project, prepared for View Resources.

Paul Armstrong and Associates, (2001) Rare Flora Search, and Flora and Vegetation Survey of the Exploration and Mine Lease of Thunderbox. Prepared for Lionore Australia Pty Ltd.

Paul Armstrong and Associates, (2004) Rare Flora Search and Vegetation Survey at the Waterloo Prospects. Prepared for Lionore Australia Pty Ltd.

Pringle, H. J. R, Van Vreeswyk, A. M. E. and Gilligan, S. A. (1994), An inventory and condition survey of the north-eastern Goldfields, Western Australia. Technical Bulletin No. 87. Department of Agriculture, Western Australia.

Shepherd, D. P., Beeston, G. R. and Hopkins, A. J. M. (2002) *Native Vegetation in Western Australia. Extent, Type and Status*, Department of Agriculture, Western Australia

Sinclair Knight Merz (2005). Mulgara (*Dasycercus cristicauda*) Fauna Assessment Western Mining Corporation, Yakabindie - version 1 report # 2004/263.

Terrestrial Ecosystems (2011). Level 2 Fauna Risk Assessment for the Granny Deeps Project Area. Unpublished report. February 2011.

Tille, P. (2006), *Soil Landscapes of Western Australia's Rangelands and Arid Interior*, Department of Agriculture and Food Western Australia

Trudgen, M (1989). A Flora and Vegetation Survey of Part of the Cyprus Gold Mount McClure Gold Mining Leases. Report prepared for Cyprus Gold for inclusion in the Mt McClure Project Feasibility Study, Volume 2 Environmental Study.

WAHERB, (2019), *Florabase – Information on the Western Australian Flora,* Department of Biodiversity, Conservation and Attractions.
Available: https://florabase.dpaw.wa.gov.au/
Accessed 28th November 2018

Western Botanical (2017). Flora and Vegetation Assessment of the Mt Keith Satellite Proposal Study Area. Unpublished Report Prepared for BHP Billiton, Nickel West Pty Ltd, Western Botanical.

Appendix 1: Definitions of Conservation Significant species and communities

Code	Category
State categories of threatened and priority species	
Threatened Species (T) Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the Biodiversity Conservation Act 2016 (BC Act).	
CR	**Critically Endangered** Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for critically endangered fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for critically endangered flora.
EN	**Endangered** Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for endangered fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for endangered flora.
VU	**Vulnerable** Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for vulnerable fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for vulnerable flora.
Extinct species Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.	
EX	**Extinct** Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act). Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.
EW	**Extinct in the Wild** Species that *"is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act). Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.
Specially protected species Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.	
IA	**International Agreement/ Migratory** Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species. Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.
CD	**Species of special conservation interest**

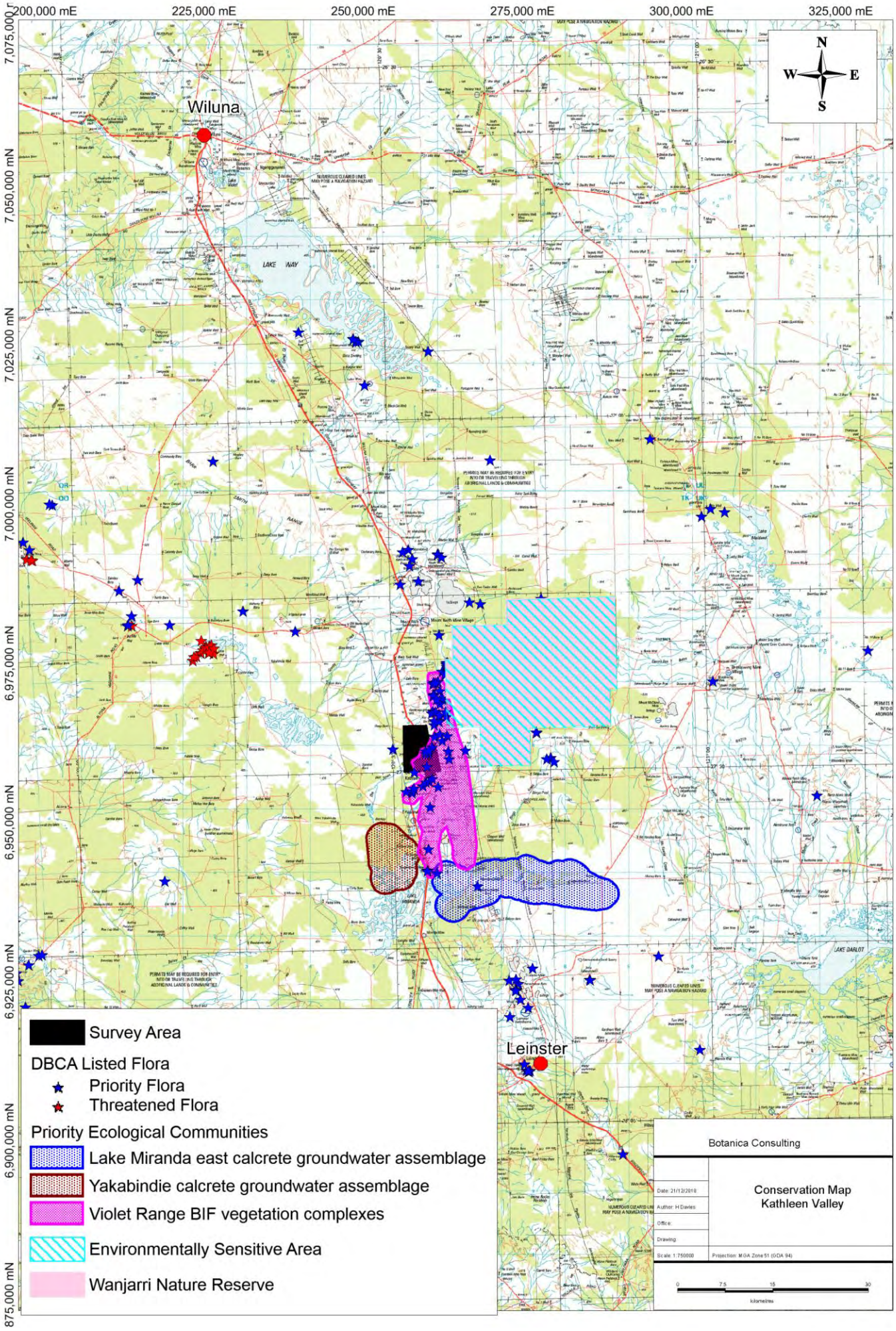
Code	Category
	Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act). Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.
OS	**Other specially protected species** Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act). Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.
Priority species Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.	
P1	**Priority 1: Poorly-known species** Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
P2	**Priority 2: Poorly-known species** Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
P3	**Priority 3: Poorly-known species** Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
P4	**Priority 4: Rare, Near Threatened and other species in need of monitoring** (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
Commonwealth categories of threatened species	
EX	**Extinct** Taxa where there is no reasonable doubt that the last member of the species has died.
EW	**Extinct in the Wild** Taxa where it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CR	**Critically Endangered** Taxa that are facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
EN	**Endangered** Taxa which are not critically endangered and is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
VU	**Vulnerable**

Code	Category
	Taxa which are not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
CD	**Conservation Dependent** Taxa which are the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or (b) the following subparagraphs are satisfied: (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; (iv) cessation of the plan of management would adversely affect the conservation status of the species.

Category Code	Category
State categories of Threatened Ecological Communities (TEC)	
PD	**Presumed Totally Destroyed** An ecological community will be listed as Presumed Totally Destroyed if there are no recent records of the community being extant and either of the following applies: • records within the last 50 years have not been confirmed despite thorough searches or known likely habitats or; • all occurrences recorded within the last 50 years have since been destroyed.
CR	**Critically Endangered** An ecological community will be listed as Critically Endangered when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future, meeting any one of the following criteria: The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification; The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area; The ecological community is highly modified with potential of being rehabilitated in the immediate future.
EN	**Endangered** An ecological community will be listed as Endangered when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. The ecological community must meet any one of the following criteria: The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short-term future, or is unlikely to be substantially rehabilitated in the short-term future due to modification; The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area; The ecological community is highly modified with potential of being rehabilitated in the short-term future.
VU	**Vulnerable** An ecological community will be listed as Vulnerable when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet any one of the following criteria: The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated; The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution; The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.

Category Code	Category
Commonwealth categories of Threatened Ecological Communities (TEC)	
CE	**Critically Endangered** If, at that time, an ecological community is facing an extremely high risk of extinction in the wild in the immediate future (indicative timeframe being the next 10 years).
EN	**Endangered** If, at that time, an ecological community is not critically endangered but is facing a very high risk of extinction in the wild in the near future (indicative timeframe being the next 20 years).
VU	**Vulnerable** If, at that time, an ecological community is not critically endangered or endangered, but is facing a high risk of extinction in the wild in the medium–term future (indicative timeframe being the next 50 years).
Priority Ecological Communities (PEC)	
P1	**Poorly-known ecological communities** Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist.
P2	**Poorly-known ecological communities** Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State forest, un-allocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation.
P3	**Poorly known ecological communities** Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or; Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	**Ecological communities that are adequately known, rare but not threatened** or meet criteria for near threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.
P5	**Conservation Dependent ecological communities** Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Appendix 2: Regional map of conservation areas



Appendix 3: Species List

Family	Genus	Taxon	CLP-AFW1	CLP-AFW2	OD-AFW1	OD-AOW1	OD-EW1	RH-AFW1	RH-AS1	RH-AS2	RH-AS3	RH-CFW1	RP-AOW1	RP-OS1
Amaranthaceae	*Ptilotus*	*aervoides* (A)	*	*	*				*					
Amaranthaceae	*Ptilotus*	*calostachyus*	*	*							*			
Amaranthaceae	*Ptilotus*	*nobilis* (A)	*	*	*				*					
Amaranthaceae	*Ptilotus*	*obovatus*	*	*	*			*	*	*			*	*
Amaranthaceae	*Ptilotus*	*polystachyus* (A)	*	*	*									
Apocynaceae	*Marsdenia*	*australis*			*				*					
Asteraceae	*Brachyscome*	*ciliaris (A)*			*	*	*				*			
Asteraceae	*Centipeda*	*thespidioides* (A)			*							*		
Asteraceae	*Chrysocephalum*	*eremaeum* (A)						*			*			
Asteraceae	*Cratystylis*	*subspinescens*										*		
Asteraceae	*Helipterum*	*craspedioides* (A)			*	*			*					
Celastraceae	*Stackhousia*	*intermedia* (A)			*						*	*		
Chenopodiaceae	*Atriplex*	*codonocarpa* (A)			*									
Chenopodiaceae	*Dysphania*	*cristata* (A)	*		*									
Chenopodiaceae	*Dysphania*	*kalpari* (A)			*							*	*	
Chenopodiaceae	*Enchylaena*	*tomentosa* var. *tomentosa*	*		*			*	*				*	
Chenopodiaceae	*Maireana*	*convexa*	*		*						*			
Chenopodiaceae	*Maireana*	*georgei*	*		*						*	*		*
Chenopodiaceae	*Maireana*	*pyramidata*		*										
Chenopodiaceae	*Maireana*	*tomentosa*	*											
Chenopodiaceae	*Rhagodia*	*eremaea*		*	*							*		
Chenopodiaceae	*Salsola*	*australis* (A)	*	*	*				*					*
Chenopodiaceae	*Sclerolaena*	*densiflora*	*	*	*				*					*
Chenopodiaceae	*Sclerolaena*	*diacantha*	*	*	*				*			*		*
Chenopodiaceae	*Sclerolaena*	*eriacantha*	*	*					*					
Chenopodiaceae	*Sclerolaena*	*patenticuspis*		*	*						*			*
Convolvulaceae	*Duperreya*	*commixta*	*		*						*	*		
Cucurbitaceae	*Citrullus*	*amarus* (W)			*	*								

Family	Genus	Taxon	CLP-AFW1	CLP-AFW2	OD-AFW1	OD-AOW1	OD-EW1	RH-AFW1	RH-AS1	RH-AS2	RH-AS3	RH-CFW1	RP-AOW1	RP-OS1
Cyperaceae	*Bulbostylis*	*barbata (A)*	*			*								
Euphorbiaceae	*Euphorbia*	*tannensis* (A)			*									
Fabaceae	*Acacia*	*mulganeura*	*		*	*		*	*		*	*	*	
Fabaceae	*Acacia*	*oswaldii*										*		
Fabaceae	*Acacia*	*pteraneura*		*						*				
Fabaceae	*Acacia*	*ayersiana*		*		*	*							
Fabaceae	*Acacia*	*balsamea*						*		*		*		
Fabaceae	*Acacia*	*burkittii*	*		*	*	*		*		*			
Fabaceae	*Acacia*	*caesaneura*	*	*	*	*						*		
Fabaceae	*Acacia*	*craspedocarpa*	*		*	*					*			
Fabaceae	*Acacia*	*effusifolia*	*											
Fabaceae	*Acacia*	*incurvaneura*		*	*	*		*				*	*	*
Fabaceae	*Acacia*	*pruinocarpa*	*	*										
Fabaceae	*Acacia*	*quadrimarginea*		*		*			*	*	*			
Fabaceae	*Acacia*	*ramulosa* var. *ramulosa*	*	*							*			
Fabaceae	*Acacia*	*sibirica*							*					
Fabaceae	*Acacia*	*tetragonophylla*	*	*	*	*		*			*	*	*	*
Fabaceae	*Glycine*	*canescens*			*	*								
Fabaceae	*Senna*	*artemisioides* subsp. *filifolia*	*								*	*		*
Fabaceae	*Senna*	*artemisioides* subsp. *helmsii*		*	*				*					
Fabaceae	*Senna*	*artemisioides* subsp. *oligophylla*			*				*		*			
Fabaceae	*Senna*	*artemisioides* subsp. x *artemisioides*	*	*	*		*		*	*	*			*
Fabaceae	*Senna*	*artemisioides* subsp. *x sturtii*			*				*		*			*
Geraniaceae	*Erodium*	*crinitum*			*									
Goodeniaceae	*Goodenia*	*triodiophila*				*								
Goodeniaceae	*Scaevola*	*spinescens*		*	*			*		*	*		*	*
Haloragaceae	*Haloragis*	*gossei* (A)			*				*					
Lamiaceae	*Hemigenia*	*exilis* (P4)		*					*					

Family	Genus	Taxon	CLP-AFW1	CLP-AFW2	OD-AFW1	OD-AOW1	OD-EW1	RH-AFW1	RH-AS1	RH-AS2	RH-AS3	RH-CFW1	RP-AOW1	RP-OS1
Lamiaceae	*Teucrium*	*teucriiflorum*	*		*						*			
Malvaceae	*Abutilon*	*cryptopetalum*	*		*	*								
Malvaceae	*Abutilon*	*oxycarpum*			*									
Malvaceae	*Brachychiton*	*gregorii*	*	*		*								
Malvaceae	*Hibiscus*	sp. Gardneri (A.L. Payne PRP 1435)	*		*				*		*			
Malvaceae	*Sida*	*calyxhymenia*	*	*		*		*					*	
Malvaceae	*Sida*	*fibulifera*	*		*	*			*		*			
Montiaceae	*Calandrinia*	*polyandra* (A)	*		*	*			*		*	*		
Myrtaceae	*Calytrix*	*desolata*												
Myrtaceae	*Eucalyptus*	*camaldulensis*					*							
Nyctaginaceae	*Boerhavia*	*repleta* (A)			*	*					*			
Poaceae	*Aristida*	*contorta (A)*		*	*			*	*	*	*	*	*	*
Poaceae	*Austrostipa*	*scabra*	*		*							*		
Poaceae	*Cenchrus*	*ciliaris (w)*			*	*					*			
Poaceae	*Cymbopogon*	*ambiguus*			*	*	*		*		*			
Poaceae	*Enneapogon*	*caerulescens*			*			*	*				*	*
Poaceae	*Enneapogon*	*polyphyllus* (A)			*							*		*
Poaceae	*Eragrostis*	*eriopoda*	*	*							*	*	*	
Poaceae	*Eragrostis*	*leptocarpa*			*	*								
Poaceae	*Eriachne*	*flaccida*	*	*	*	*								
Poaceae	*Eriachne*	*mucronata*				*		*	*	*	*			
Poaceae	*Monachather*	*paradoxus*	*	*	*		*							
Poaceae	*Paraneurachne*	*muelleri*			*									
Poaceae	*Sporobolus*	*australasicus*	*		*					*				
Poaceae	*Themeda*	*triandra*	*				*			*	*			
Portulaceae	*Portulaca*	*oleracea*	*	*	*				*		*			
Primulaceae	*Lysimachia*	*arvensis* (W)			*	*								
Proteaceae	*Grevillea*	*inconspicua* (P4)	*					*	*	*			*	
Proteaceae	*Hakea*	*lorea*	*		*	*			*					

Family	Genus	Taxon	CLP-AFW1	CLP-AFW2	OD-AFW1	OD-AOW1	OD-EW1	RH-AFW1	RH-AS1	RH-AS2	RH-AS3	RH-CFW1	RP-AOW1	RP-OS1
Proteaceae	*Hakea*	*preissii*		*	*	*								*
Pteridaceae	*Cheilanthes*	*sieberi*	*		*									
Santalaceae	*Santalum*	*lanceolatum*		*			*	*					*	
Santalaceae	*Santalum*	*spicatum*	*		*				*	*				
Scrophulariaceae	*Eremophila*	*exilifolia*				*			*					
Scrophulariaceae	*Eremophila*	*forrestii*	*	*	*									
Scrophulariaceae	*Eremophila*	*galeata*	*	*	*			*	*		*		*	*
Scrophulariaceae	*Eremophila*	*margarethae*	*		*									
Scrophulariaceae	*Eremophila*	*oldfieldii* subsp. *angustifolia*												*
Scrophulariaceae	*Eremophila*	*pantonii*										*		
Scrophulariaceae	*Eremophila*	*serrulata*	*	*	*	*	*							
Scrophulariaceae	*Eremophila*	*spuria*	*				*							
Solanaceae	*Solanum*	*lasiophyllum*	*		*			*	*		*	*	*	*
Solanaceae	*Solanum*	*orbiculatum*							*			*		
Zygophyllaceae	*Tribulus*	*terrestris* (W)			*					*				

Appendix 4: Vegetation Condition Rating

Vegetation Condition Rating	South West and Interzone Botanical Provinces	Eremaean and Northern Botanical Provinces
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.	
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor		Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or ‘parkland cleared’ with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix 5: GPS locations of Priority Flora recorded within the survey area

Taxon	No. Plants	Zone	Easting	Northing
Grevillea inconspicua (P4)	100	51 J	258763	6954890
Grevillea inconspicua (P4)	100	51 J	258510	6954960
Grevillea inconspicua (P4)	100	51 J	258445	6954966
Grevillea inconspicua (P4)	100	51 J	258326	6954963
Grevillea inconspicua (P4)	100	51 J	258179	6954775
Grevillea inconspicua (P4)	10	51 J	258192	6954522
Grevillea inconspicua (P4)	10	51 J	258064	6954456
Grevillea inconspicua (P4)	1	51 J	257944	6954547
Grevillea inconspicua (P4)	1	51 J	257967	6954571
Grevillea inconspicua (P4)	10	51 J	258054	6954893
Grevillea inconspicua (P4)	1	51 J	258126	6955919
Grevillea inconspicua (P4)	1	51 J	258180	6955923
Grevillea inconspicua (P4)	1	51 J	258258	6955977
Grevillea inconspicua (P4)	58	51 J	259124	6959718
Grevillea inconspicua (P4)	50	51 J	258639	6959216
Grevillea inconspicua (P4)	50	51 J	258565	6958730
Grevillea inconspicua (P4)	500	51 J	258277	6956683
Hemigenia exilis (P4)	420	51 J	258147	6959114
Hemigenia exilis (P4)	50	51 J	258099	6958690

Appendix 6: Potential Fauna Species List

Fauna Recorded or Potentially in Region of Study Area

Kathleen Valley W.A.

A: Botanica (2019) - Field survey observations October 2018.

B: Combined Species List from all Studies Considered by this Review

C: DBCA (2018). NatureMap Database search. “By Circle” 120° 33' 29" E,27° 28' 17" S – (plus 40km buffer). Accessed 4 October 2018.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Amphibia					
Myobatrachidae Ground or Burrowing Frogs					
Neobatrachus kunapalari	Kunapalari Frog	LC	X		X
Neobatrachus sutor	Shoemaker Frog	LC			X
Neobatrachus wilsmorei	Plonking Frog	LC			X
Opisthodon spenceri	Centralian Burrowing Frog				
Pseudophryne occidentalis	Western Toadlet	LC		X	
Hylidae Tree or Water-Holding Frogs					
Cyclorana maini	Sheep Frog	LC		X	X
Cyclorana platycephala	Water-holding Frog	LC		X	X
Litoria rubella	Little Red Tree Frog	LC		X	X
Reptilia					
Carphodactylidae Knob-tailed Geckos					
Nephrurus laevissimus	Pale Knob-tail Gecko			X	
Nephrurus levis	Smooth Knob-tail Gecko				
Nephrurus vertebralis	Midline Knob-tailed Gecko			X	X
Nephrurus wheeleri	Banded Knob-tailed Gecko				

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Diplodactylidae Geckoes					
Diplodactylus conspicillatus	Fat-tailed Gecko			X	X
Diplodactylus granariensis	Western Stone Gecko			X	X
Diplodactylus pulcher	Western Saddled Ground Gecko			X	X
Lucasium squarrosus	Mottled Ground Gecko			X	
Lucasium stenodactylus	Sand-plain Gecko	LC			
Rhynchoedura ornata	Beaked Gecko			X	X
Strophurus assimilis	Goldfields Spiny-tailed Gecko				
Strophurus elderi	Jewelled Gecko			X	X
Strophurus strophurus	Ring-tailed Gecko			X	X
Strophurus wellingtonae	Western-shield Spiny-tailed Gecko	LC		X	X
Gekkonidae Geckoes					
Gehyra purpurascens	Purple Arid Dtella				
Gehyra variegata	Variegated Dtella			X	X
Heteronotia binoei	Bynoe's Gecko			X	X
Underwoodisaurus milii	Barking Gecko				X
Pygopodidae Legless Lizards					
Delma butleri	Unbanded Delma			X	X
Delma nasuta	Long-nosed Delma			X	X
Lialis burtonis	Burton’s Legless Lizard			X	X
Pygopus nigriceps	Hooded Scaly Foot			X	X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Agamidae Dragon Lizards					
Caimanops amphiboluroides	Mulga Dragon				
Ctenophorus caudicinctus	Ring-tailed Dragon			X	X
Ctenophorus cristatus	Bicycle Dragon				
Ctenophorus fordi	Mallee Sand Dragon				
Ctenophorus isolepis	Military Dragon			X	X
Ctenophorus nuchalis	Central Netted Dragon			X	X
Ctenophorus reticulatus	Western Netted Dragon			X	X
Ctenophorus salinarum	Salt Pan Dragon			X	X
Ctenophorus scutulatus	Lozenge-marked Bicycle Dragon		X	X	X
Moloch horridus	Thorny Devil			X	X
Pogona minor	Western Bearded Dragon			X	X
Tympanocryptis cephala	Pebble Dragon			X	
Varanidae Monitor's or Goanna's					
Varanus brevicauda	Short-tailed Pygmy Monitor			X	X
Varanus caudolineatus	Stripe-tailed Pygmy Monitor			X	X
Varanus eremius	Pygmy Desert Monitor			X	X
Varanus giganteus	Perentie			X	X
Varanus gouldii	Sand Monitor			X	X
Varanus panoptes	Yellow-spotted Monitor		X	X	X
Varanus tristis	Racehorse Monitor			X	

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Scincidae Skinks					
Cryptoblepharus buchananii	Buchanan's Snake-eyed Skink				
Ctenotus ariadnae	Ariadna's Ctenotus			X	X
Ctenotus atlas	Southern Mallee Ctenotus			X	
Ctenotus brooksi	Central Wedge-snout Ctenotus				
Ctenotus calurus	Blue-tailed Skink			X	X
Ctenotus dux	Narrow-lined Skink				
Ctenotus grandis	Giant Desert Ctenotus			X	X
Ctenotus greeri	Greer's Ctenotus				
Ctenotus hanloni	Nimble Ctenotus			X	
Ctenotus helenae	Dusky Ctenotus			X	X
Ctenotus leonhardii	Leonhardi's Skink			X	X
Ctenotus pantherinus	Leopard Ctenotus			X	X
Ctenotus piankai	Pianka's Ctenotus				
Ctenotus quattuordecimlineatus	Fourteen-lined Ctenotus			X	X
Ctenotus schomburgkii	Barred Wedge-snout Ctenotus			X	X
Ctenotus severus	Stern Rock Ctenotus				
Ctenotus uber	Spotted Ctenotus			X	
Cyclodomorphus melanops	Eastern Slender Blue-tongue				
Egernia depressa	Pygmy Spiny-tailed Skink			X	X
Egernia formosa	Goldfields Crevise Skink				X
Egernia striata	Night Skink				
Eremiascincus richardsonii	Broad-banded Sand Swimmer			X	X
Lerista bipes	Western Two-toed Slider				X
Lerista desertorum	Giant Desert Slider			X	X
Lerista kingi	Common Mulch Skink				
Lerista muelleri	Common Mulch Skink				

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Lerista timida	Dwarf Three-toed Slider			X	X
Liopholis inornata	Desert Skink			X	X
Menetia greyii	Dwarf Skink			X	X
Morethia butleri	Woodland Dark-flecked Morethia			X	X
Tiliqua multifasciata	Central Blue-tongue			X	X
Tiliqua occipitalis	Western Bluetongue			X	X
Typhlopidae Blind Snakes					
Anilios bicolor	Dark-spined Blind Snake				
Anilios hamatus	Northern Hook-snouted Blind Snake			X	
Anilios waitii	Common Beaked Blind Snake			X	
Boidae Pythons, Boas					
Antaresia stimsoni	Stimson's Python			X	
Elapidae Elapid Snakes					
Brachyurophis fasciolata	Narrow-banded Shovel-nosed Snake			X	
Brachyurophis semifasciata	Southern Shovel-nosed Snake			X	
Demansia psammophis	Yellow-faced Whipsnake				
Furina ornata	Moon Snake			X	
Parasuta monachus	Monk Snake			X	X
Pseudechis australis	Mulga Snake		X	X	X
Pseudechis butleri	Spotted Mulga Snake				
Pseudonaja mengdeni	Gwardar				X
Pseudonaja modesta	Ringed Brown Snake			X	X
Simoselaps bertholdi	Jan's Banded Snake			X	X
Suta fasciata	Rosen's Snake			X	X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Aves					
Casuariidae Emus, Cassowarries					
Dromaius novaehollandiae	Emu	LC		X	X
Anatidae Geese, Swans, Ducks					
Anas gracilis	Grey Teal	LC		X	X
Anas superciliosa	Pacific Black Duck	LC		X	X
Aythya australis	Hardhead	LC		X	
Chenonetta jubata	Australian Wood Duck	LC		X	
Tadorna tadornoides	Australian Shelduck	LC		X	X
Ardeidae Herons, Egrets, Bitterns					
Ardea novaehollandiae	White-faced Heron	LC		X	
Ardea pacifica	White-necked Heron	LC		X	X
Accipitridae Kites, Goshawks, Eagles, Harriers					
Accipiter cirrocephalus	Collared Sparrowhawk	LC		X	X
Accipiter fasciatus	Brown Goshawk	LC		X	X
Aquila audax	Wedge-tailed Eagle	LC	X	X	X
Aquila morphnoides	Little Eagle	LC		X	
Circus assimilis	Spotted Harrier	LC			X
Elanus caeruleus	Black-shouldered Kite	LC		X	
Haliastur sphenurus	Whistling Kite	LC		X	X
Hamirostra isura	Square-tailed Kite	LC			X
Hamirostra melanosternon	Black-breasted Buzzard	LC		X	
Milvus migrans	Black Kite	LC			X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Falconidae Falcons					
Falco berigora	Brown Falcon	LC		X	X
Falco cenchroides	Australian Kestrel	LC	X	X	X
Falco longipennis	Australian Hobby	LC		X	X
Falco peregrinus	Peregrine Falcon	S7 LC	X		X
Rallidae Rails, Crakes, Swamphens, Coots					
Gallinula ventralis	Black-tailed Native-hen	LC		X	
Otididae Bustards					
Ardeotis australis	Australian Bustard	LC		X	X
Turnicidae Button-quails					
Turnix velox	Little Button-quail	LC	X	X	X
Burhinidae Stone Curlews					
Burhinus grallarius	Bush Stone-curlew	LC			X
Charadriidae Lapwings, Plovers, Dotterels					
Charadrius melanops	Black-fronted Dotterel	LC		X	
Charadrius ruficapillus	Red-capped Plover	LC		X	X
Vanellus tricolor	Banded Lapwing	LC		X	X
Columbidae Pigeons, Doves					
Geopelia cuneata	Diamond Dove	LC		X	X
Ocyphaps lophotes	Crested Pigeon	LC	X	X	X
Phaps chalcoptera	Common Bronzewing	LC		X	X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Psittacidae Parrots					
Cacatua roseicapilla	Galah	LC	X	X	
Cacatua sanguinea	Little Corella	LC			
Melopsittacus undulatus	Budgerigar	LC		X	X
Neophema bourkii	Bourke's Parrot			X	X
Nymphicus hollandicus	Cockatiel	LC			X
Platycercus varius	Mulga Parrot	LC		X	X
Platycercus zonarius	Australian Ringneck	LC		X	
Polytelis anthopeplus	Regent Parrot	LC			X
Cuculidae Parasitic Cuckoos					
Chrysococcyx basalis	Horsfield's Bronze Cuckoo	LC		X	
Chrysococcyx osculans	Black-eared Cuckoo	LC		X	
Cuculus pallidus	Pallid Cuckoo	LC	X	X	
Strigidae Hawk Owls					
Ninox novaeseelandiae	Boobook Owl	LC			
Podargidae Frogmouths					
Podargus strigoides	Tawny Frogmouth	LC			X
Caprimulgidae Nightjars					
Eurostopodus argus	Spotted Nightjar	LC	X		X
Aegothelidae Owlet-nightjars					
Aegotheles cristatus	Australian Owlet-nightjar	LC		X	X
Halcyonidae Tree Kingfishers					
Todiramphus pyrrhopygia	Red-backed Kingfisher	LC	X		
Todiramphus sanctus	Sacred Kingfisher	LC			X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Meropidae Bee-eaters					
Merops ornatus	Rainbow Bee-eater	JA LC		X	X
Climacteridae Treecreepers					
Climacteris affinis	White-browed Treecreeper	LC		X	X
Maluridae Fairy Wrens, GrassWrens					
Malurus lamberti	Variegated Fairy-wren	LC	X	X	X
Malurus leucopterus	White-winged Fairy-wren	LC	X	X	X
Malurus splendens	Splendid Fairy-wren	LC	X	X	X
Stipiturus ruficeps	Rufous-crowned Emu-wren	LC		X	
Acanthizidae Thornbills, Geryones, Fieldwrens & Whitefaces					
Acanthiza apicalis	Broad-tailed Thornbill	LC		X	X
Acanthiza chrysorrhoa	Yellow-rumped Thornbill	LC		X	X
Acanthiza robustirostris	Slaty-backed Thornbill	LC	X	X	X
Acanthiza uropygialis	Chestnut-rumped Thornbill	LC		X	X
Aphelocephala leucopsis	Southern Whiteface	LC		X	X
Calamanthus campestris	Rufous Fieldwren	LC		X	X
Gerygone fusca	Western Gerygone	LC		X	X
Pyrrholaemus brunneus	Redthroat	LC	X	X	X
Smicrornis brevirostris	Weebill	LC	X	X	X
Pardalotidae Pardalotes					
Pardalotus rubricatus	Red-browed Pardalote	LC			X
Pardalotus striatus	Striated Pardalote	LC		X	X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Meliphagidae Honeyeaters, Chats					
Acanthagenys rufogularis	Spiny-cheeked Honeyeater	LC	X	X	X
Anthochaera carunculata	Red Wattlebird	LC			X
Certhionyx niger	Black Honeyeater	LC		X	
Certhionyx variegatus	Pied Honeyeater	LC		X	X
Epthianura aurifrons	Orange Chat	LC			X
Epthianura tricolor	Crimson Chat	LC		X	X
Lichenostomus keartlandi	Grey-headed Honeyeater	LC			
Lichenostomus ornatus	Yellow-plumed Honeyeater	LC			
Lichenostomus penicillatus	White-plumed Honeyeater	LC		X	
Lichenostomus plumulus	Grey-fronted Honeyeater	LC		X	
Lichenostomus virescens	Singing Honeyeater	LC	X	X	
Lichmera indistincta	Brown Honeyeater	LC	X	X	X
Manorina flavigula	Yellow-throated Miner	LC	X	X	X
Phylidonyris albifrons	White-fronted Honeyeater	LC		X	
Petroicidae Australian Robins					
Microeca fascinans	Jacky Winter	LC			X
Petroica cucullata	Hooded Robin	LC		X	
Petroica goodenovii	Red-capped Robin	LC	X	X	X
Pomatostomidae Babblers					
Pomatostomus superciliosus	White-browed Babbler	LC		X	X
Pomatostomus temporalis	Grey-crowned Babbler	LC	X	X	X
Cinclosomatidae Whipbirds, Wedgebills, Quail Thrushes					
Cinclosoma castaneothorax	Chestnut-breasted Quail-thrush	LC		X	X
Cinclosoma castanotus	Chestnut Quail-thrush	LC		X	
Psophodes occidentalis	Chiming Wedgebill	LC			X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Neosittidae Sitellas					
Daphoenositta chrysoptera	Varied Sittella	LC		X	X
Pachycephalidae Crested Shrike-tit, Crested Bellbird, Shrike Thrushes, Whistlers					
Colluricincla harmonica	Grey Shrike-thrush	LC	X	X	X
Oreoica gutturalis	Crested Bellbird	LC	X	X	X
Pachycephala rufiventris	Rufous Whistler	LC	X	X	X
Dicruridae Monarchs, Magpie Lark, Flycatchers, Fantails, Drongo					
Grallina cyanoleuca	Magpie-lark	LC	X	X	X
Rhipidura fuliginosa	Grey Fantail	LC			
Rhipidura leucophrys	Willie Wagtail	LC	X	X	X
Campephagidae Cuckoo-shrikes, Trillers					
Coracina maxima	Ground Cuckoo-shrike	LC	X	X	X
Coracina novaehollandiae	Black-faced Cuckoo-shrike	LC	X	X	X
Lalage tricolor	White-winged Triller	LC		X	X
Artamidae Woodswallows, Butcherbirds, Currawongs					
Artamus cinereus	Black-faced Woodswallow	LC	X	X	X
Artamus minor	Little Woodswallow	LC		X	X
Artamus personatus	Masked Woodswallow	LC		X	X
Cracticidae Currawongs, Magpies & Butcherbirds					
Cracticus nigrogularis	Pied Butcherbird	LC	X	X	X
Cracticus tibicen	Australian Magpie	LC		X	X
Cracticus torquatus	Grey Butcherbird	LC	X	X	X
Strepera versicolor	Grey Currawong	LC		X	

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Corvidae Ravens, Crows					
Corvus bennetti	Little Crow	LC	X	X	X
Corvus orru	Torresian Crow	LC	X	X	X
Ptilonorhynchidae Bowerbirds					
Ptilonorhynchus maculatus	Western Bowerbird			X	
Motacillidae Old World Pipits, Wagtails					
Anthus australis	Australian Pipit	LC	X	X	
Estrilidae Grass Finches & Mannikins					
Taeniopygia guttata	Zebra Finch	LC	X	X	X
Dicaeidae Flowerpeckers					
Dicaeum hirundinaceum	Mistletoebird	LC			X
Hirundinidae Swallows, Martins					
Cheramoeca leucosternus	White-backed Swallow	LC		X	
Hirundo ariel	Fairy Martin	LC		X	
Hirundo neoxena	Welcome Swallow	LC	X	X	X
Hirundo nigricans	Tree Martin	LC		X	
Sylviidae Old World Warblers					
Cincloramphus cruralis	Brown Songlark	LC		X	
Cincloramphus mathewsi	Rufous Songlark	LC		X	

Mammalia

Tachyglossidae Echidnas					
Tachyglossus aculeatus	Echidna	LC		X	X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Dasyuridae Carnivorous Marsupials					
Antechinomys laniger	Kultarr	LC		X	X
Ningaui ridei	Wongai Ningaui	LC		X	X
Pseudantechinus woolleyae	Woolley's Pseudantechinus	LC		X	X
Sminthopsis crassicaudata	Fat-tailed Dunnart	LC		X	X
Sminthopsis dolichura	Little long-tailed Dunnart	LC		X	X
Sminthopsis hirtipes	Hairy-footed Dunnart	LC		X	X
Sminthopsis longicaudata	Long-tailed Dunnart	P4 LC		X	
Sminthopsis macroura	Stripe-faced Dunnart	LC		X	X
Sminthopsis ooldea	Ooldea Dunnart	LC		X	X
Macropodidae Kangaroos, Wallabies					
Macropus robustus	Euro	LC	X	X	X
Macropus rufus	Red Kangaroo	LC	X	X	X
Emballonuridae Sheath-tailed Bats					
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	NT		X	
Taphozous hilli	Hill's Sheathtail-bat	LC		X	
Molossidae Freetail Bats					
Austronomus australis	White-striped Freetail-bat	LC		X	
Ozimops petersi	Inland Freetail-bat	LC		X	
Vespertilionidae Ordinary Bats					
Chalinolobus gouldii	Gould's Wattled Bat	LC	X	X	X
Nyctophilus geoffroyi	Lesser Long-eared Bat	LC		X	X
Scotorepens balstoni	Inland Broad-nosed Bat	LC	X	X	X
Vespadelus baverstocki	Inland Forest Bat	LC		X	X
Vespadelus finlaysoni	Finlayson's Cave Bat	LC	X	X	X
Vespadelus regulus	Southern Forest Bat	LC		X	X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

Class **Family** *Species*	Common Name	Conservation Status	A	B	C
Muridae Rats, Mice					
Mus musculus	House Mouse	Introduced		X	X
Notomys alexis	Spinifex Hopping-mouse	LC		X	X
Pseudomys bolami	Bolam's Mouse	LC		X	X
Pseudomys desertor	Desert Mouse	LC		X	X
Pseudomys hermannsburgensis	Sandy Inland Mouse	LC		X	X
Canidae Dogs, Foxes					
Canis lupus	Dog/Dingo	Introduced		X	
Vulpes vulpes	Red Fox	Introduced			
Felidae Cats					
Felis catus	Cat	Introduced			
Bovidae Horned Ruminants					
Bos taurus	European Cattle	Introduced	X	X	
Capra hircus	Goat	Introduced		X	
Ovis aries	Sheep	Introduced			
Camelidae Camels					
Camelus dromedarius	Camel	Introduced		X	
Leporidae Rabbits, Hares					
Oryctolagus cuniculus	Rabbit	Introduced	X	X	X

BC Act Status - S1 to S7, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, Mig = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions see Appendix A and www.iucnredlist.org/info/categories_criteria2001#categories.

APPENDIX 3: TARGETED FLORA/VEGETATION SURVEY

Mobile: 0419 916 034
Email: jim@botanicaconsulting.com.au
33 Brewer Street, Perth, WA 6000
PO Box 302, Mundijong, WA 6132
ABN 47141175297

Kristy Sell
Managing Director
MBS Environmental
ksell@mbsenvironmental.com.au

12th July 2021

Memorandum: Targeted Flora/ Vegetation survey-Kathleen Valley Project

Botanica Consulting Pty Ltd (Botanica) was commissioned by MBS Environmental on behalf of Liontown Resources Limited to undertake a targeted flora/ vegetation survey to identify conservation significant flora and vegetation within the proposed Kathleen Valley Lithium Project (referred to as the 'survey area'). The findings of the survey will be used to support future environmental approval applications. A reconnaissance flora and vegetation survey of the Kathleen Valley Lithium Project was previously conducted by Botanica in November 2018 (Botanica, 2019), covering an approximate area of 3,792 ha. The objectives of the current survey were to:

- Conduct a targeted search for Threatened/ Priority Flora within the survey area; and
- Conduct a field assessment to determine the potential boundary of the Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) Priority 1 Ecological Community (PEC) in comparison to the PEC spatial boundary provided by Department of Biodiversity, Conservation and Attractions (DBCA).

The survey area is located within Eastern Murchison subregion of the Eremaean Province, located approximately 45km north-west of Leinster, Western Australia (Figure 1). The survey area encompassed an area of approximately 1,492 ha (Figure 2). Fieldwork was conducted from the 21st to 23rd April 2021 by two Botanica personnel; Jim Williams (Botanist, Diploma of Horticulture) and Matthew Newlands (Environmental Technician). The survey timing was planned to occur during the EPA recommended time period for the Eremaean Province (March-June) and was conducted following above average rainfall received at Leinster in February 2021 (BoM, 2021). A handheld GPS was used to record the locations of tracks traversed (Figure 2) and locations of any conservation significant flora/ vegetation (recorded in GDA 94 format). The survey area was traversed on foot.

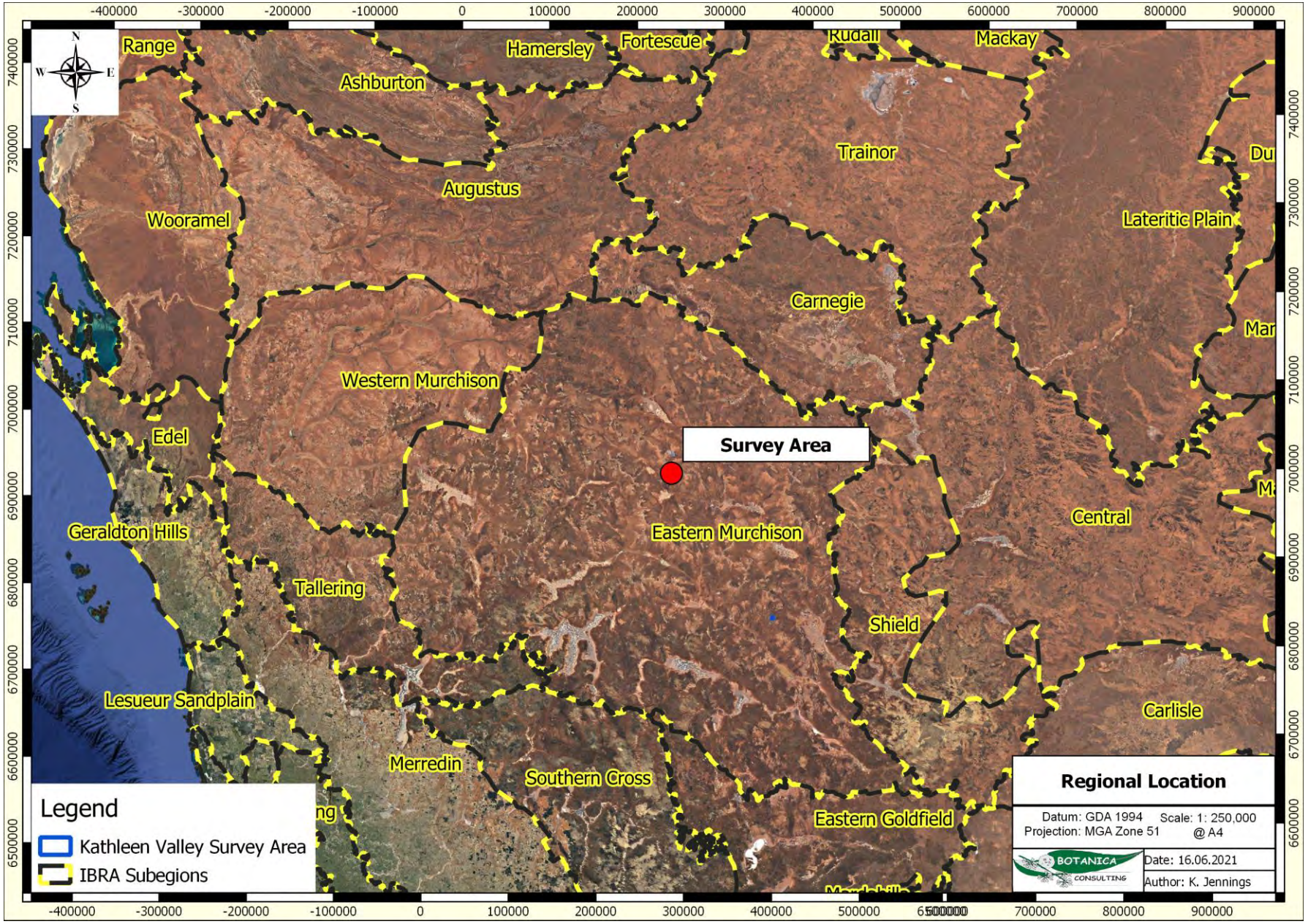


Figure 1: Regional Map

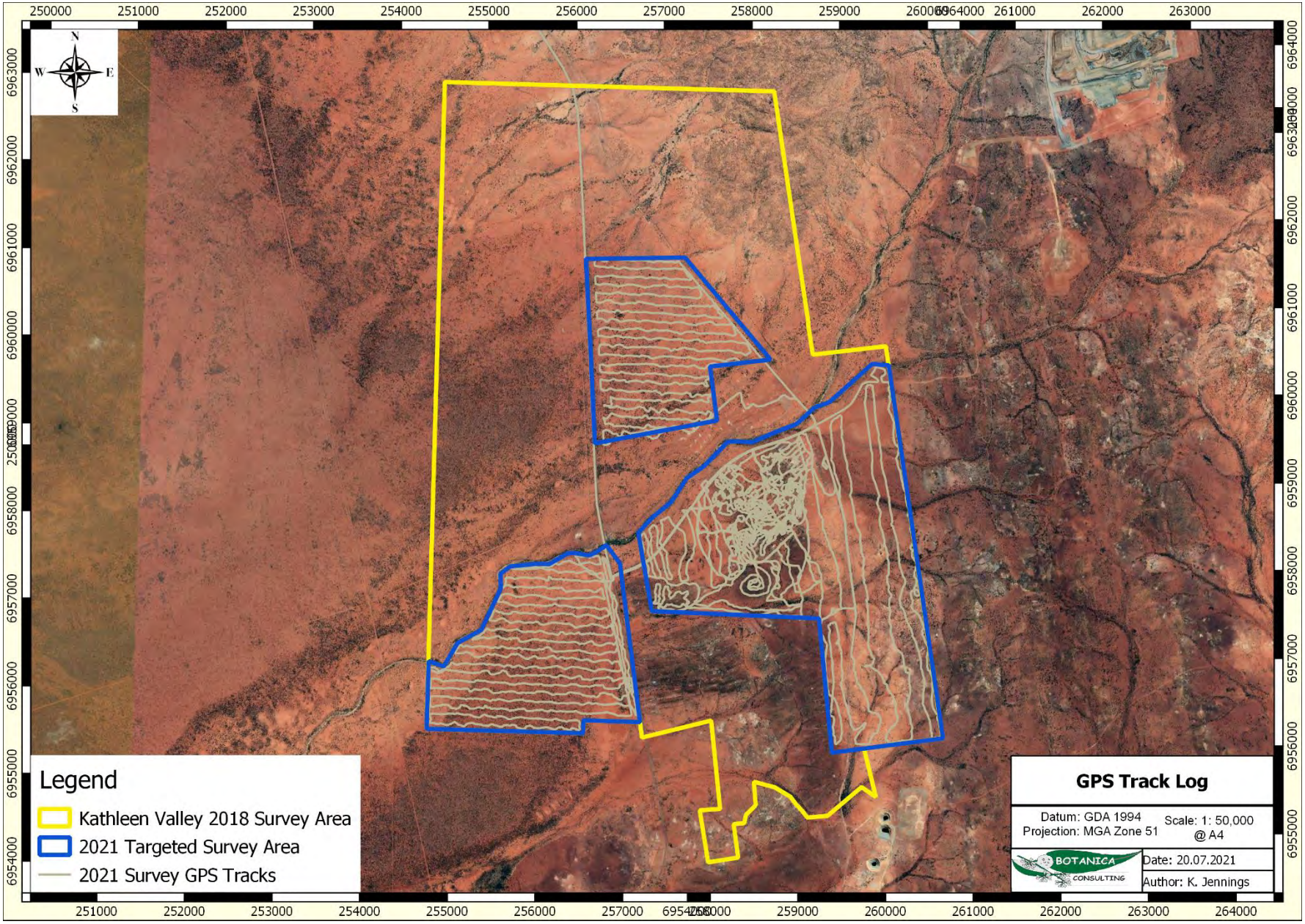


Figure 2: Survey area

1 Background Information

Prior to the field assessment a literature review was undertaken of previous flora and vegetation assessments conducted within the local region. Documents reviewed included:

- Animal Plant Mineral (2015), Vegetation Clearing Permit Application, Matilda Gold Project, Support Information for Matilda Mine Site Native Vegetation Clearing (Purpose) Permit Application, October 2015.
- Botanica Consulting (2014), Level 1 Flora and Vegetation Survey of the Thunderbox to Bannockburn Project. Prepared for Saracen Mineral Holdings.
- Botanica Consulting (2016), Level 1 Flora and Fauna Survey Julius Project, Prepared for Echo Resources Limited.
- Botanica Consulting (2018), Reconnaissance Flora & Fauna Survey Orelia Project. Prepared for Echo Resources Limited.
- Botanica Consulting (2019). *Reconnaissance Flora/Vegetation & Level 1 Fauna Survey Kathleen Valley Lithium Project.* Prepared for Liontown Resources Ltd, March 2019.
- Botanica Consulting (2021). *Reconnaissance Flora & Basic Fauna Survey of the Orelia Haul Road Project.* Prepared for Northern Star Resources Ltd, April 2021.
- Ecologia (1990). Yakabindie Nickel Mine Project. Consultative Environmental Review: Flora and Fauna Survey. Unpublished Report Prepared for Dominion Mining Limited.
- Ecologia (1995). An ecological assessment of the Yakabindie Nickel Mine Project: Six Mile Well / Mount Pascoe. Unpublished Report Prepared for Dominion Mining Limited.
- Hall, N.J., Newbey, K.R., McKenzie, N.L., Keighery, G.J., Rolfe, J.K & Youngson, W. K., (1993), *The Biological survey of the Eastern Goldfields of Western Australia Part 7: Sandstone-Sir Samuel. Laverton-Leonora study area,* West. Aust. Mus. Suppl. 47.
- Mattiske Consulting Pty Ltd (2000) Flora and Vegetation Assessment of the Proposed Pipeline Route Options. Report prepared for Dames and Moore Pty Ltd.
- Mattiske Consulting Pty Ltd (2012), *Flora and Vegetation Survey of the Kathleen Valley Gold Project Survey Area.* Prepared for URS Australia Pty Ltd on behalf of Xstrata Nickel Australasia Pty Ltd.
- Meissner, R & Wright, J (2010). *Flora and vegetation of banded iron formations of the Yilgarn Craton: Perseverance Greenstone Belt*. Conservation Science W. Aust. 7 (3): 593–604 (2010).
- Outback Ecology (2008a). Bronzewing – Mt McClure, Application for a Purpose Permit to Clear Native Vegetation at the Bronzewing – Mt McClure Project – Corboys Prospect M53/15, prepared for View Resources.
- Outback Ecology (2008b). Bronzewing – Mt McClure, Report on the distribution of *Eremophila pungens* (P4) within the Bronzewing – Mt McClure Gold Project, prepared for View Resources.
- Paul Armstrong and Associates, (2001) Rare Flora Search, and Flora and Vegetation Survey of the Exploration and Mine Lease of Thunderbox. Prepared for Lionore Australia Pty Ltd.
- Paul Armstrong and Associates, (2004) Rare Flora Search and Vegetation Survey at the Waterloo Prospects. Prepared for Lionore Australia Pty Ltd.
- Pringle, H.J.R., Van Vreeswyk, A.M.E. and Gilligan, S.A. (1994) *An inventory and condition survey in the North-Eastern Goldfields, Western Australia*. Western Australian Department of Agriculture, Technical Bulletin No. 87
- Trudgen, M (1989). A Flora and Vegetation Survey of Part of the Cyprus Gold Mount McClure Gold Mining Leases. Report prepared for Cyprus Gold for inclusion in the Mt McClure Project Feasibility Study, Volume 2 Environmental Study.
- Western Botanical (2017). Flora and Vegetation Assessment of the Mt Keith Satellite Proposal Study Area. Unpublished Report Prepared for BHP Billiton, Nickel West Pty Ltd, Western Botanical.

In addition to the literature review, searches of the following databases were undertaken to aid in identification of significant flora and vegetation within the survey area:

- DBCA Threatened/ Priority Flora spatial data (DBCA, 2018a);
- DBCA Threatened/ Priority Flora Ecological Communities spatial data (DBCA, 2018b);
- DBCA NatureMap database (DBCA, 2021); and
- EPBC Protected Matters search tool (DAWE, 2021).

The DBCA Priority/ Threatened Flora Database Search and Priority/ Threatened Ecological Communities Database Search were conducted within a 50km radius of the survey area (DBCA, 2018a; DBCA, 2018b).
The NatureMap and Protected Matters Search were conducted for an area encompassing a 40km radius of the centre coordinates -27.47145S 120.53845E. It should be noted that these lists are based on observations from a broader area than the assessment area (40km radius) and therefore may include taxa not present. The databases also often include very old records that may be incorrect or in some cases the taxa in question have become locally or regionally extinct. Information from these sources should therefore be taken as indicative only and local knowledge and information also needs to be taken into consideration when determining what actual species may be present within the specific area being investigated. The conservation significance of flora taxa was assessed using data from the following sources:

- *Environment Protection and Biodiversity and Conservation* (EPBC) *Act 1999*. Administered by the Australian Government (DAWE);
- *Biodiversity Conservation* (WC) *Act 2016*. Administered by the WA Government (DBCA); and
- Priority Flora list. A non-legislative list maintained by DBCA for management purposes (released December 2018).

The results of the literature review, combined with a search of the DBCA Threatened/ Priority Flora databases (DBCA, 2018a), NatureMap search (DBCA, 2021) and Department of Agriculture, Water and Environment (DAWE) Protected Matters search (DAWE, 2021) identified one Threatened Flora and 33 Priority Flora as occurring within a 40km radius of the survey area (Table 1), of which two Priority Flora have previously recorded within the survey area (Figure 3).

As shown in Figure 3, the DBCA Threatened/ Priority Ecological Communities database (DBCA, 2018b) identified the south-eastern section of the survey area intersects the boundary of the Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) PEC.

Table 1: Conservation Significant Flora within 40km of the survey area
Blue shading-previously recorded within the survey area (Botanica, 2019)

Taxon	EPBC Act	BC Act	DBCA Priority	Habitat Description (WAHERB, 2021)
Anacampseros sp. Eremaean (F. Hort, J. Hort & J. Shanks 3248)	-	-	P1	Sand patches inside rocks, brown sandy clay, granite. Depressions in rock outcrops, breakaways, flats.
Atriplex yeelirrie	EN	VU	-	Highly restricted distribution limited to two populations on Yeelirrie Station
Baeckea sp. Sandstone (C.A. Gardner s.n. 26 Oct. 1963)	-	-	P3	Orange sand. Flats.
Bossiaea eremaea	-	-	P3	Deep red sand.
Calytrix warburtonensis	-	-	P2	Rocky hills, breakaways.
Cratystylis centralis	-	-	P3	Red sandy loam with ironstone gravel. Flat plains, breakaway country.
Eremophila arachnoides subsp. *arachnoides*	-	-	P3	Shallow loam over limestone.
Eremophila dendritica	-	-	P2	-

Taxon	EPBC Act	BC Act	DBCA Priority	Habitat Description (WAHERB, 2021)
Eremophila gracillima	-	-	P3	Stony flats.
Eremophila pungens	-	-	P4	Sandy loam, clayey sand over laterite, plains, ridges, breakaways
Eremophila sp. long pedicels (G. Cockerton 1975)	-	-	P2	Dark red hardpans over paleochannel. Mulga woodland.
Euryomyrtus inflata	-	-	P3	Deep red sand, Flat plain.
Frankenia georgei	-	-	P1	Rocky slopes.
Goodenia modesta	-	-	P3	Red loam, sand.
Grevillea inconspicua	-	-	P4	Loam, gravel. Along drainage lines on rocky outcrops, creeklines.
Gunniopsis propinqua	-	-	P3	Stony sandy loam. Lateritic outcrops, winter-wet sites.
Hemigenia exilis	-	-	P4	Laterite. Breakaways, slopes.
Hibbertia sp. Sherwood Breakaways (R.J. Cranfield 6771)	-	-	P2	No description available
Hybanthus floribundus subsp. *chloroxanthus*	-	-	P3	Dark red-brown soil, never sandy, rich in iron oxide, laterite. Rocky areas, creek banks, along drainage lines.
Korthalsella leucothrix	-	-	P1	Aerial, parasitic shrub on *Acacia acuminata* and *A. craspedocarpa.*
Olearia arida	-	-	P4	Red or yellow sand. Undulating low rises.
Olearia mucronata	-	-	P3	Schistose hills, along drainage channels
Paspalidium distans	-	-	P4	Loam. River banks.
Phyllanthus baeckeoides	-	-	P3	Red lateritic & sandy clay soils. Granite outcrops.
Sauropus sp. Woolgorong (M. Officer s.n. 10/8/94)	-	-	P3	Red sand. Plains.
Sida picklesiana	-	-	P3	-
Stenanthemum mediale	-	-	P1	Red clayey sand.
Tecticornia enodis	-	-	P1	No description available
Tecticornia fimbriata	-	-	P3	Clay, loam. Margins of salt & gypsum lakes.
Tecticornia sp. Lake Way (P. Armstrong 05/961)	-	-	P1	-
Thryptomene nealensis	-	-	P3	Lateritic breakaways.
Thryptomene sp. Leinster (B.J. Lepschi & L.A. Craven 4362)	-	-	P3	-
Tribulus adelacanthus	-	-	P3	-
Verticordia jamiesonii	-	-	P3	Sandy clay soils. Lateritic breakaways.

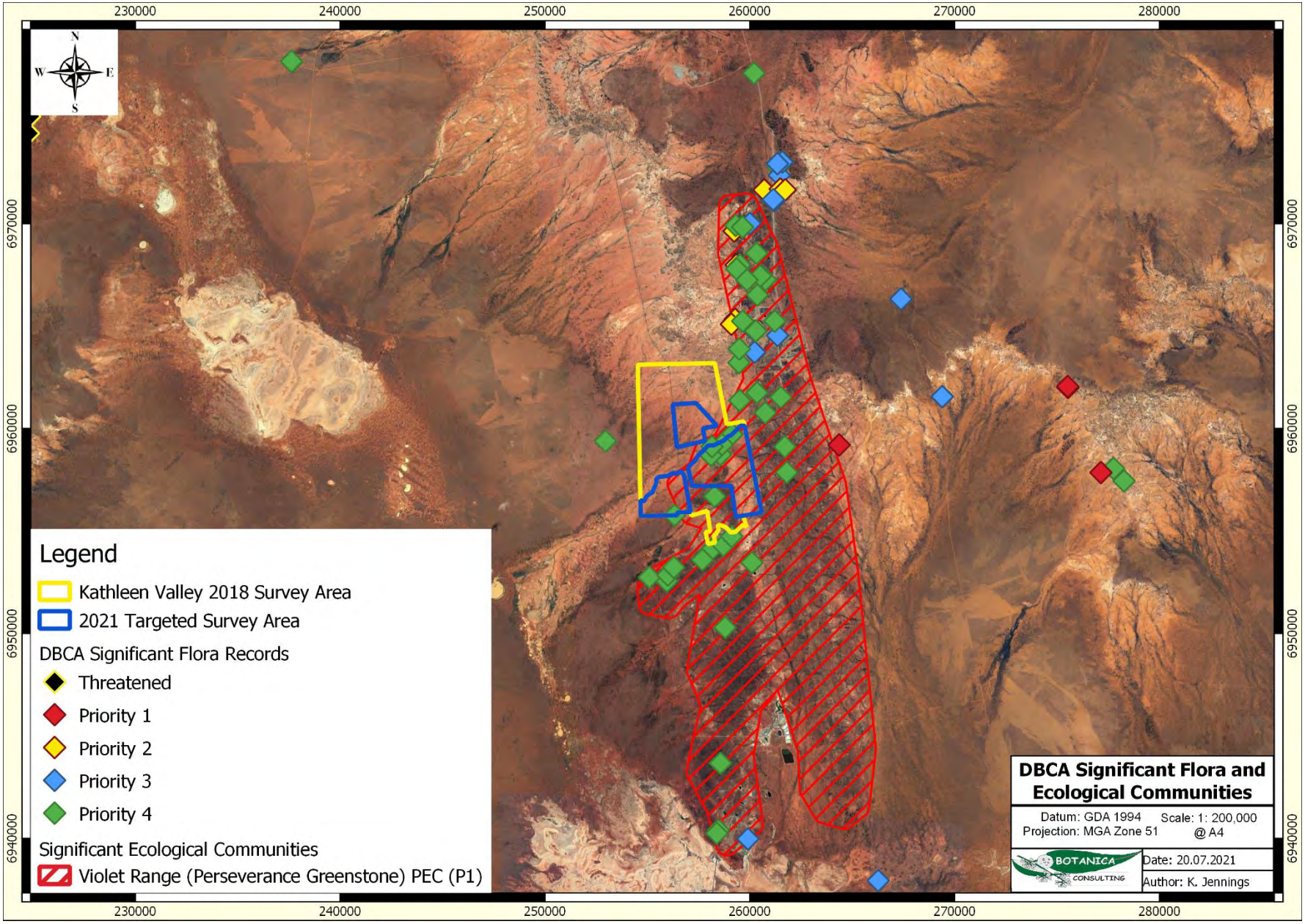


Figure 3: DBCA Conservation Significant Flora and Vegetation records in relation to the survey area

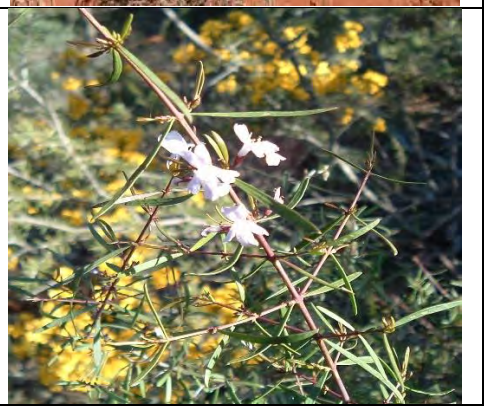
2 Results

2.1 Flora

No Threatened Flora taxa pursuant to the *Biodiversity Conservation Act 2016* (BC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were identified within the survey area. Two Priority Flora taxa as listed by DBCA were identified within the survey area as described in Table 2 below and shown in Figure 4. This information reflects the result of both the 2018 reconnaissance and the 2021 targeted surveys.

GPS coordinates of each Priority Flora record are provided in Appendix 1.

Table 2: Priority Flora recorded by Botanica within the survey area

Taxon	No. plants within target survey area	Total No. Plants Recorded by Botanica at Kathleen Valley	Predominant habitat within the survey area	Known Distribution (WAHERB, 2021)	Image
Grevillea inconspicua (P4)	3,820	3,823	Tall shrubland of *Acacia* spp. over mixed low open shrubland and tussock grassland on a rocky hill range which extends north-south below Jones Creek	Cue, Leonora, Meekatharra, Menzies, Mount Magnet, Sandstone and Wiluna Local Government areas	
Hemigenia exilis (P4)	470	470	One population (420 individuals) located in low Mulga woodland/ tall shrubland of *Acacia* sp. Over mixed low shrubland and tussock grassland on clay-loam plain to rocky hillslope immediately south of Jones Creek. Second population (50 individuals) located in tall shrubland of *Acacia* spp. over mixed low open shrubland and tussock grassland on a rocky hill range	Cue, Laverton, Leonora, Menzies, Sandstone and Wiluna Local Government areas	

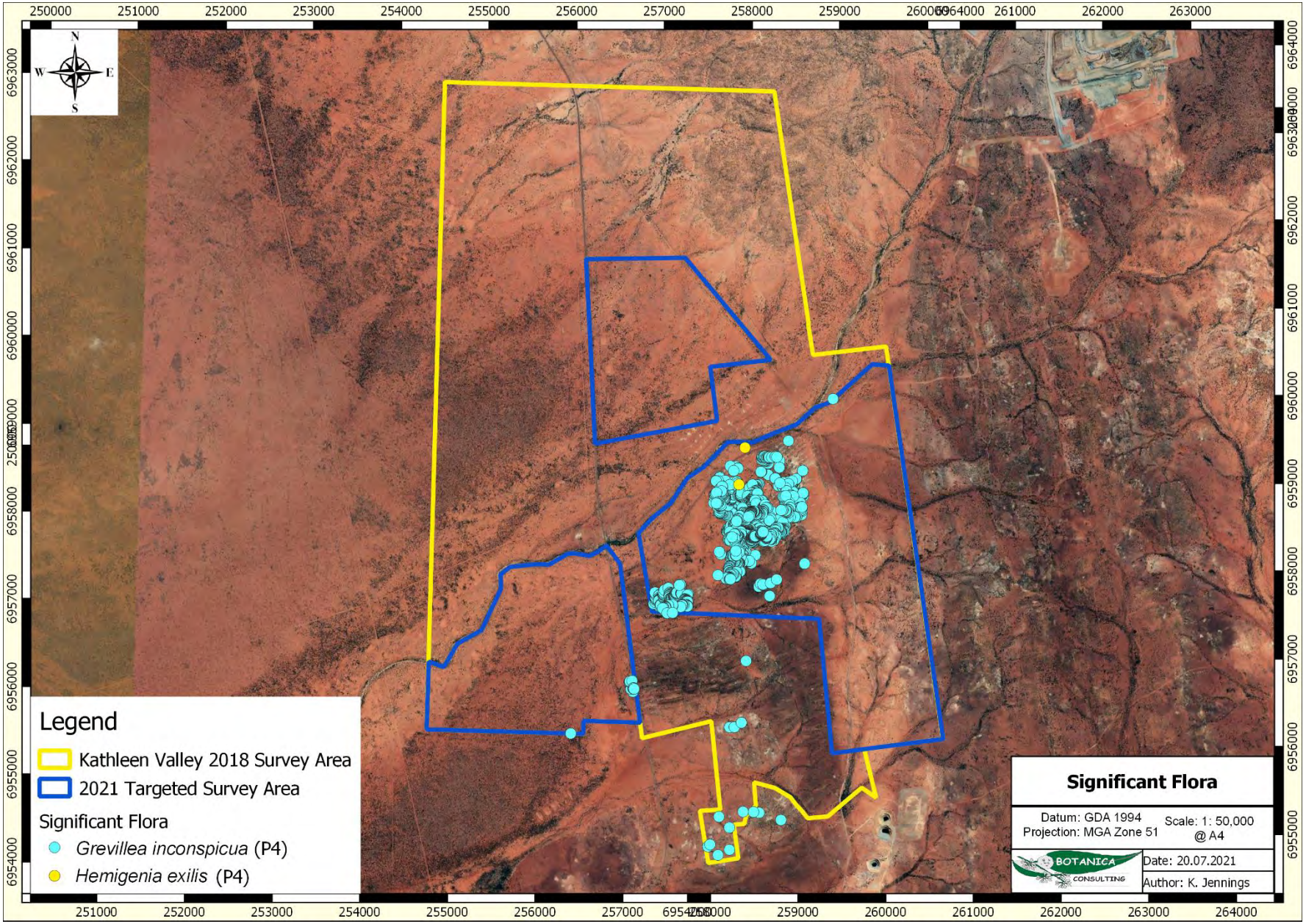


Figure 4: Priority Flora recorded by Botanica within the survey area

2.2 Vegetation

A total of twelve broad vegetation types were previously identified during the reconnaissance survey conducted by Botanica (2019), of which eleven were identified within the current survey area (Botanica, 2019) (Table 3 and Figure 5). As shown in Figure 6, the south-eastern extent of the survey area occurs within the Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) Priority 1 Ecological Community (PEC) (DBCA, 2019b). No formal description of this PEC is available (DBCA, 2020).

Flora and vegetation surveys of banded iron formations of the Yilgarn Craton (Perseverance Greenstone Belt) conducted by the Department of Environment and Conservation (now known as DBCA) identified four vegetation communities within the Perseverance Greenstone Belt; two mafic/ basalt communities (Communities one and four) and two ironstone communities (Communities two and three). Descriptions of each community provided by Meissner & Wright (2010) are provided below:

> ***Community One –*** *Commonly found on crests and mid-slopes of ultramafic and metabasalt derived hills. This community is described as open to sparse shrubland of Acacia resinimarginea and A. grasbyi over open to sparse shrubland of Senna spp. (S. artemisioides subsp. helmsii and Senna sp. Meekatharra (E. Bailey 1–26)) over isolated top pen shrubland of Cheilanthes sieberi subsp. sieberi, Calytrix desolata or Harrnieria kempeana susp. muelleri.*
>
> ***Community Two –*** *Most widespread community on the hills and occurred mostly in the southern part of the range. It occurred mainly on the crests and slopes of banded ironstone and iron-rich chert but also on basalt and felsic rocks. The community is described as open to sparse shrubland of A. aneura and A. quadrimarginea over isolated to sparse shrubland of Eremophila spp. (Eremophila latrobei, Eremophila foliosissima and Eremophila galeata) and Thryptomene decussata over isolated to sparse shrubland of Ptilotus schwartzii. There were two indicator species, Acacia aneura var. microcarpa and P. schwartzii.*
>
> ***Community Three –*** *This was the next most widespread community and was found along the entire range on crests and slopes of banded ironstone and iron rich chert. The community is described as open to sparse shrubland of A. aneura, Grevillea berryana, and Acacia spp. (A. quadrimarginea, A. tetragonophylla and A. cf. resinimarginea) over open to sparse shrubland of Scaevola spinescens and Eremophila latrobei and Senna sp. Meekatharra (E. Bailey 1–26) over isolated to sparse shrublands of Ptilotus spp. (P. obovatus and P. schwartzii) and M. georgei. Indicator species were Sida ectogama, A. tetragonophylla, P. schwartzii, Acacia aneura var. microcarpa, Cymbopogon ambiguus and Senna artemisioides subsp. x artemisioides.*
>
> ***Community Four –*** *This community was recorded on the lower slopes and colluvium derived from metabasalt and ultramafic rocks. This community is described as open to sparse dominated A. aneura shrublands and other Acacia spp. (A. pruinocarpa, Acacia kempeana and A. grasbyi) over open to sparse shrublands of Sida ectogama, Senna sp. Meekatharra (E. Bailey 1–26) and Eremophila pantonii over open to sparse shrubland of M. georgei and M. triptera. indicator species were Eremophila oldfieldii, M. triptera, E. pantonii, Acacia oswaldii, Hakea preissii and A. tetragonophylla.*

No Banded Ironstone Formations were recorded within the survey area; however, based on the description of the Perseverance Greenstone Belt provided above by Meissner & Wright (2010), three of the vegetation types previously recorded by Botanica (2019) are considered to be representative of the PEC (see Table 3). Based on Botanica's assessment, the Violet Range PEC vegetation present within the 2018 and 2021 survey areas can be considered as a Low woodland of *Acacia caesaneura /Acacia incurvaneura*, tall sparse shrubland of *Acacia quadrimarginea* and an open shrubland of *Acacia balsamea* over low sparse shrubland of *Eremophila galeata* /*Ptilotus obovatus* and low tussock grassland of *Cymbopogon ambiguus*/ *Enneapogon caerulescens* on slopes of ultramafic and metabasalt derived hills. These communities occupy 636 ha (16.8%) of the survey area.

Table 3: Vegetation types within the survey area

Light blue shaded cells indicate vegetation potentially representative of the Violet Range PEC

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Extent within survey area		Image
				Area (ha)	Area (%)	
Clay-Loam Plain	Acacia Forests and Woodlands (MVG 6)	CLP-AFW1	Low woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on clay-loam plains	621	16.4	
		CLP-AFW2	Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plains	1120	29.5	

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Extent within survey area		Image
				Area (ha)	Area (%)	
Open Depression	Acacia Forests and Woodlands (MVG 6)	OD-AFW1	Low woodland of *Acacia caesaneura/ A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depressions	218	5.7	
	Acacia Open Woodlands (MVG 13)	OD-AOW1	Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depressions	511	13.5	

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Extent within survey area		Image
				Area (ha)	Area (%)	
	Eucalypt Woodlands (MVG 5)	OD-EW1	Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depressions	91	2.4	
Rocky Hillslope	Acacia Forests and Woodlands (MVG 6)	RH-AFW1	Low woodland of *Acacia caesaneura /Acacia incurvaneura* over mid shrubland of *Santalum lanceolatum/ Scaevola spinescens* and low open tussock grassland of *Enneapogon caerulescens* on rocky hillslopes	171	4.5	

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Extent within survey area		Image
				Area (ha)	Area (%)	
	Acacia Shrublands (MVG 16)	RH-AS1	Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslopes	90	2.4	
		RH-AS2	Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslopes	375	9.9	

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Extent within survey area		Image
				Area (ha)	Area (%)	
		RH-AS3	Mid open shrubland of *Acacia quadrimarginea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on granite exposed hillslopes	211	5.6	
	Casuarina Forests and Woodlands (MVG 8)	RH-CFW1	Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslopes	14.5	0.4	

Landform	NVIS Major Vegetation Group	Vegetation Code	Vegetation Type	Extent within survey area		Image
				Area (ha)	Area (%)	
Rocky Plain	Acacia Open Woodlands (MVG 13)	RP-AOW1	Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on rocky plains	340	9.0	
	Other Shrublands (MVG 17)	RP-OS1	Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plains	29.5	0.8	
Total				**3.792**	**100**	

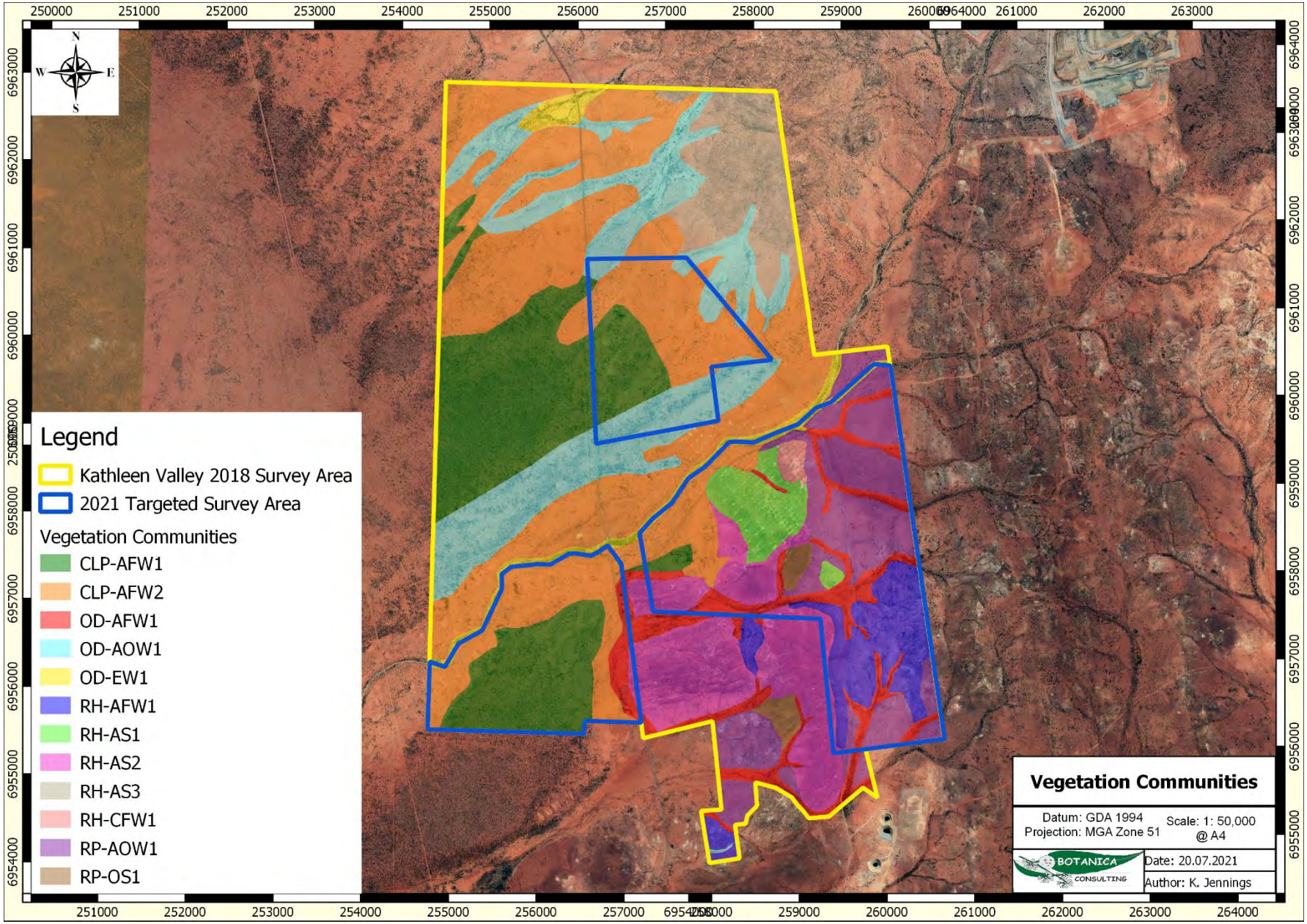


Figure 5: Vegetation Types within the survey area

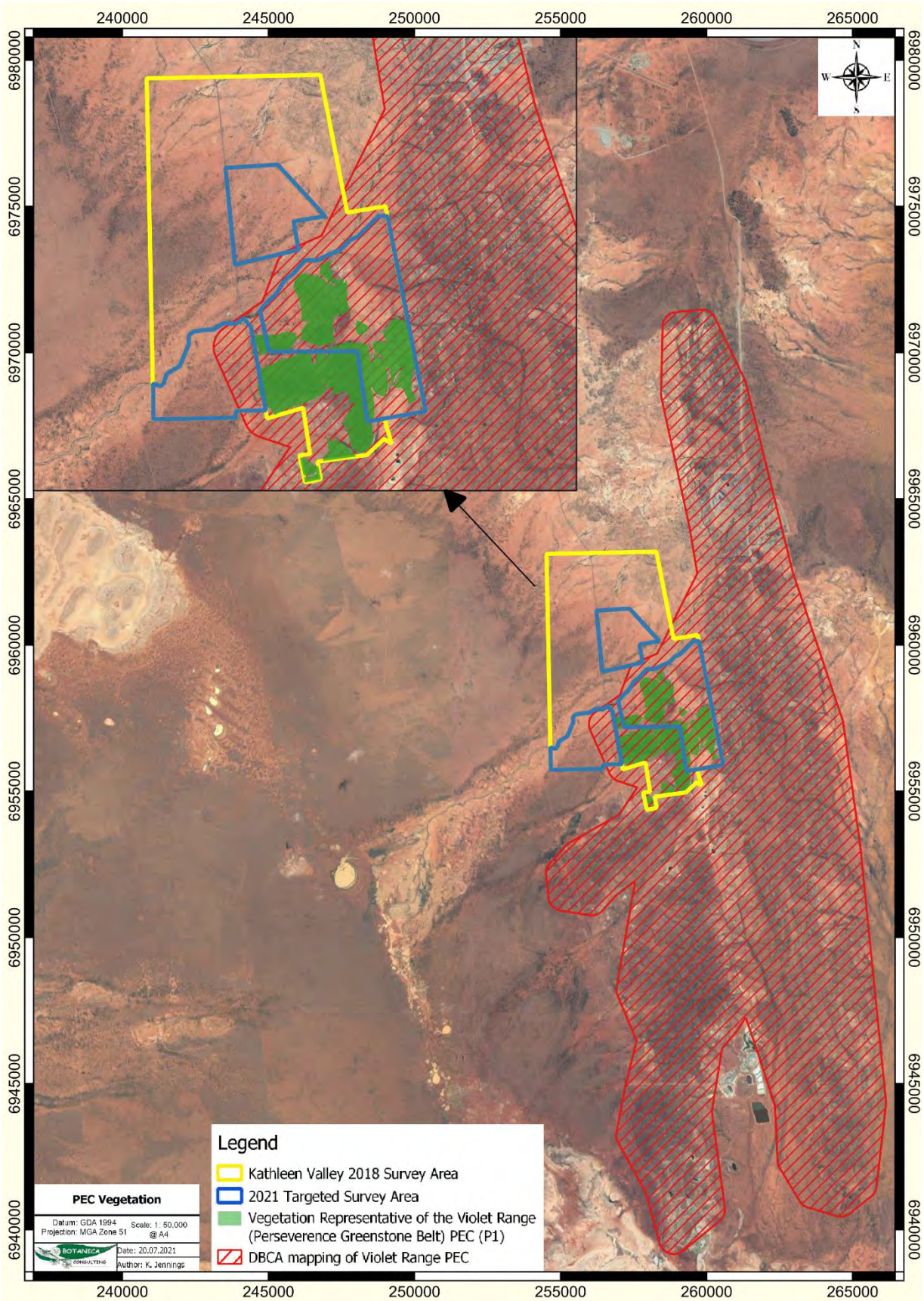


Figure 6: Potential PEC vegetation within the survey area

References

Animal Plant Mineral (2015), *Vegetation Clearing Permit Application, Matilda Gold Project*, Support Information for Matilda Mine Site Native Vegetation Clearing (Purpose) Permit Application, October 2015.

BoM, (2021), *Leinster Aero weather station Climate Data, Bureau of Meteorology*.
Available: http://www.bom.gov.au/climate,
Accessed: 25th June 2021

Botanica Consulting (2014), *Level 1 Flora and Vegetation Survey of the Thunderbox to Bannockburn Project*. Prepared for Saracen Mineral Holdings.

Botanica Consulting (2016), *Level 1 Flora and Fauna Survey Julius Project,* Prepared for Echo Resources Limited.

Botanica Consulting (2018), *Reconnaissance Flora & Fauna Survey Orelia Project*. Prepared for Echo Resources Limited.

Botanica Consulting (2019). *Reconnaissance Flora/Vegetation & Level 1 Fauna Survey Kathleen Valley Lithium Project.* Prepared for Liontown Resources Ltd, March 2019.

DAWE (2021), *Protected Matters Search Tool, Environment Protection and Biodiversity Conservation Act 1999,* Department of Agriculture, Water and Environment.
Available: http://www.environment.gov.au/epbc/protected-matters-search-tool
Accessed: 12th April 2021

DBCA (2018a), *Threatened and Priority Flora Database search results*, Department of Biodiversity, Conservation and Attractions. Results obtained November 2018.

DBCA (2018b), *Threatened and Priority Communities Database search results*, Department of Biodiversity, Conservation and Attractions. Results obtained November 2018.

DBCA (2021), *Nature Map Database search,* Department of Biodiversity, Conservation and Attractions
Available: https://naturemap.dpaw.wa.gov.au/
Accessed: 12th April 2021

Ecologia (1990). *Yakabindie Nickel Mine Project*. Consultative Environmental Review: Flora and Fauna Survey. Unpublished Report Prepared for Dominion Mining Limited.

Ecologia (1995). *An ecological assessment of the Yakabindie Nickel Mine Project*: *Six Mile Well / Mount Pascoe*. Unpublished Report Prepared for Dominion Mining Limited.

EPA, (2016a), *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment – December 2016.* Environmental Protection Authority

Hall, N.J., Newbey, K.R., McKenzie, N.L., Keighery, G.J., Rolfe, J.K & Youngson, W. K., (1993), *The Biological survey of the Eastern Goldfields of Western Australia Part 7: Sandstone-Sir Samuel. Laverton-Leonora study area,* West. Aust. Mus. Suppl. 47.

Mattiske Consulting Pty Ltd (2000) *Flora and Vegetation Assessment of the Proposed Pipeline Route Options*. Report prepared for Dames and Moore Pty Ltd.

Mattiske Consulting Pty Ltd (2012), *Flora and Vegetation Survey of the Kathleen Valley Gold Project Survey Area.* Prepared for URS Australia Pty Ltd on behalf of Xstrata Nickel Australasia Pty Ltd.

Meissner, R & Wright, J (2010). *Flora and vegetation of banded iron formations of the Yilgarn Craton: Perseverance Greenstone Belt*. Conservation Science W. Aust. 7 (3): 593–604 (2010).

Outback Ecology (2008a). Bronzewing – *Mt McClure, Application for a Purpose Permit to Clear Native Vegetation at the Bronzewing – Mt McClure Project – Corboys Prospect M53/15*, prepared for View Resources.

Outback Ecology (2008b). *Bronzewing – Mt McClure, Report on the distribution of Eremophila pungens (P4) within the Bronzewing – Mt McClure Gold Project*, prepared for View Resources.

Paul Armstrong and Associates, (2001) *Rare Flora Search, and Flora and Vegetation Survey of the Exploration and Mine Lease of Thunderbox*. Prepared for Lionore Australia Pty Ltd.

Paul Armstrong and Associates, (2004) *Rare Flora Search and Vegetation Survey at the Waterloo Prospects*. Prepared for Lionore Australia Pty Ltd.

Pringle, H. J. R, Van Vreeswyk, A. M. E. and Gilligan, S. A. (1994), *An inventory and condition survey of the north-eastern Goldfields, Western Australia*. Technical Bulletin No. 87. Department of Agriculture, Western Australia.

Trudgen, M (1989). *A Flora and Vegetation Survey of Part of the Cyprus Gold Mount McClure Gold Mining Leases*. Report prepared for Cyprus Gold for inclusion in the Mt McClure Project Feasibility Study, Volume 2 Environmental Study.

WAHERB, (2021), *Florabase – Information on the Western Australian Flora,* Department of Biodiversity, Conservation and Attractions.
Available: https://florabase.dpaw.wa.gov.au/
Accessed 4th July 2021

Western Botanical (2017). *Flora and Vegetation Assessment of the Mt Keith Satellite Proposal Study Area.* Unpublished Report Prepared for BHP Billiton, Nickel West Pty Ltd, Western Botanical.

Appendix 1: GPS coordinates of Priority Flora recorded by Botanica (GDA94 Zone 51)

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258706	6958707
Grevillea inconspicua	P4	1	258708	6958715
Grevillea inconspicua	P4	1	258711	6958716
Grevillea inconspicua	P4	1	258717	6958716
Grevillea inconspicua	P4	1	258725	6958721
Grevillea inconspicua	P4	1	258724	6958732
Grevillea inconspicua	P4	1	258722	6958733
Grevillea inconspicua	P4	1	258721	6958732
Grevillea inconspicua	P4	1	258716	6958723
Grevillea inconspicua	P4	1	258712	6958721
Grevillea inconspicua	P4	1	258701	6958713
Grevillea inconspicua	P4	1	258704	6958700
Grevillea inconspicua	P4	1	258704	6958697
Grevillea inconspicua	P4	1	258701	6958696
Grevillea inconspicua	P4	1	258702	6958692
Grevillea inconspicua	P4	1	258711	6958689
Grevillea inconspicua	P4	1	258717	6958690
Grevillea inconspicua	P4	1	258727	6958687
Grevillea inconspicua	P4	1	258727	6958682
Grevillea inconspicua	P4	1	258728	6958678
Grevillea inconspicua	P4	1	258728	6958702
Grevillea inconspicua	P4	1	258729	6958708
Grevillea inconspicua	P4	1	258724	6958714
Grevillea inconspicua	P4	1	258724	6958714
Grevillea inconspicua	P4	1	258724	6958714
Grevillea inconspicua	P4	1	258723	6958716
Grevillea inconspicua	P4	1	258724	6958716
Grevillea inconspicua	P4	1	258723	6958718
Grevillea inconspicua	P4	1	258722	6958718
Grevillea inconspicua	P4	1	258723	6958719
Grevillea inconspicua	P4	1	258726	6958721
Grevillea inconspicua	P4	1	258728	6958720
Grevillea inconspicua	P4	1	258728	6958720
Grevillea inconspicua	P4	1	258716	6958736
Grevillea inconspicua	P4	1	258711	6958733
Grevillea inconspicua	P4	1	258710	6958733
Grevillea inconspicua	P4	1	258709	6958732
Grevillea inconspicua	P4	1	258708	6958731
Grevillea inconspicua	P4	1	258710	6958726
Grevillea inconspicua	P4	1	258709	6958723
Grevillea inconspicua	P4	1	258703	6958722
Grevillea inconspicua	P4	1	258702	6958722

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258703	6958721
Grevillea inconspicua	P4	1	258700	6958719
Grevillea inconspicua	P4	1	258699	6958719
Grevillea inconspicua	P4	1	258694	6958716
Grevillea inconspicua	P4	1	258694	6958717
Grevillea inconspicua	P4	1	258694	6958717
Grevillea inconspicua	P4	1	258693	6958717
Grevillea inconspicua	P4	1	258693	6958717
Grevillea inconspicua	P4	1	258696	6958722
Grevillea inconspicua	P4	1	258705	6958728
Grevillea inconspicua	P4	1	258704	6958733
Grevillea inconspicua	P4	1	258698	6958745
Grevillea inconspicua	P4	1	258692	6958744
Grevillea inconspicua	P4	1	258690	6958746
Grevillea inconspicua	P4	1	258686	6958737
Grevillea inconspicua	P4	1	258686	6958737
Grevillea inconspicua	P4	1	258684	6958734
Grevillea inconspicua	P4	1	258684	6958733
Grevillea inconspicua	P4	1	258683	6958733
Grevillea inconspicua	P4	1	258682	6958734
Grevillea inconspicua	P4	1	258682	6958734
Grevillea inconspicua	P4	1	258674	6958723
Grevillea inconspicua	P4	1	258677	6958720
Grevillea inconspicua	P4	1	258679	6958717
Grevillea inconspicua	P4	1	258681	6958713
Grevillea inconspicua	P4	1	258677	6958706
Grevillea inconspicua	P4	1	258682	6958703
Grevillea inconspicua	P4	1	258682	6958702
Grevillea inconspicua	P4	1	258683	6958703
Grevillea inconspicua	P4	1	258683	6958703
Grevillea inconspicua	P4	1	258683	6958703
Grevillea inconspicua	P4	1	258687	6958702
Grevillea inconspicua	P4	1	258700	6958689
Grevillea inconspicua	P4	1	258701	6958683
Grevillea inconspicua	P4	1	258704	6958681
Grevillea inconspicua	P4	1	258707	6958663
Grevillea inconspicua	P4	1	258703	6958663
Grevillea inconspicua	P4	1	258702	6958661
Grevillea inconspicua	P4	1	258690	6958666
Grevillea inconspicua	P4	1	258689	6958668
Grevillea inconspicua	P4	1	258666	6958693
Grevillea inconspicua	P4	1	258671	6958751
Grevillea inconspicua	P4	1	258669	6958752

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258685	6958692
Grevillea inconspicua	P4	1	258683	6958691
Grevillea inconspicua	P4	1	258668	6958673
Grevillea inconspicua	P4	1	258668	6958673
Grevillea inconspicua	P4	1	258669	6958671
Grevillea inconspicua	P4	1	258668	6958669
Grevillea inconspicua	P4	1	258666	6958671
Grevillea inconspicua	P4	1	258675	6958660
Grevillea inconspicua	P4	1	258671	6958656
Grevillea inconspicua	P4	1	258670	6958654
Grevillea inconspicua	P4	1	258672	6958652
Grevillea inconspicua	P4	1	258659	6958647
Grevillea inconspicua	P4	1	258692	6958645
Grevillea inconspicua	P4	1	258693	6958641
Grevillea inconspicua	P4	1	258719	6958634
Grevillea inconspicua	P4	1	258722	6958635
Grevillea inconspicua	P4	1	258840	6958595
Grevillea inconspicua	P4	1	258817	6958590
Grevillea inconspicua	P4	1	258820	6958609
Grevillea inconspicua	P4	1	258830	6958611
Grevillea inconspicua	P4	1	258835	6958618
Grevillea inconspicua	P4	1	258838	6958625
Grevillea inconspicua	P4	1	258835	6958632
Grevillea inconspicua	P4	1	258835	6958629
Grevillea inconspicua	P4	1	258786	6958501
Grevillea inconspicua	P4	1	258745	6958454
Grevillea inconspicua	P4	1	258743	6958448
Grevillea inconspicua	P4	1	258738	6958426
Grevillea inconspicua	P4	1	258731	6958419
Grevillea inconspicua	P4	1	258730	6958417
Grevillea inconspicua	P4	1	258725	6958421
Grevillea inconspicua	P4	1	258727	6958406
Grevillea inconspicua	P4	1	258727	6958403
Grevillea inconspicua	P4	1	258722	6958404
Grevillea inconspicua	P4	1	258723	6958399
Grevillea inconspicua	P4	1	258731	6958397
Grevillea inconspicua	P4	1	258731	6958390
Grevillea inconspicua	P4	1	258730	6958388
Grevillea inconspicua	P4	1	258730	6958386
Grevillea inconspicua	P4	1	258725	6958382
Grevillea inconspicua	P4	1	258735	6958382
Grevillea inconspicua	P4	1	258737	6958379
Grevillea inconspicua	P4	1	258734	6958377

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258734	6958365
Grevillea inconspicua	P4	1	258742	6958367
Grevillea inconspicua	P4	1	258740	6958377
Grevillea inconspicua	P4	1	258745	6958380
Grevillea inconspicua	P4	1	258743	6958391
Grevillea inconspicua	P4	1	258738	6958409
Grevillea inconspicua	P4	1	258737	6958416
Grevillea inconspicua	P4	1	258743	6958412
Grevillea inconspicua	P4	1	258745	6958417
Grevillea inconspicua	P4	1	258745	6958420
Grevillea inconspicua	P4	1	258747	6958422
Grevillea inconspicua	P4	1	258748	6958424
Grevillea inconspicua	P4	1	258743	6958428
Grevillea inconspicua	P4	1	258770	6958445
Grevillea inconspicua	P4	1	258768	6958440
Grevillea inconspicua	P4	1	258776	6958438
Grevillea inconspicua	P4	1	258774	6958431
Grevillea inconspicua	P4	1	258780	6958373
Grevillea inconspicua	P4	1	258779	6958372
Grevillea inconspicua	P4	1	258789	6958361
Grevillea inconspicua	P4	1	258794	6958365
Grevillea inconspicua	P4	1	258800	6958379
Grevillea inconspicua	P4	1	258799	6958410
Grevillea inconspicua	P4	1	258793	6958455
Grevillea inconspicua	P4	1	258791	6958458
Grevillea inconspicua	P4	1	258791	6958465
Grevillea inconspicua	P4	1	258790	6958470
Grevillea inconspicua	P4	1	258789	6958472
Grevillea inconspicua	P4	1	258790	6958474
Grevillea inconspicua	P4	1	258791	6958480
Grevillea inconspicua	P4	1	258794	6958489
Grevillea inconspicua	P4	1	258801	6958509
Grevillea inconspicua	P4	1	258798	6958511
Grevillea inconspicua	P4	1	258808	6958516
Grevillea inconspicua	P4	1	258806	6958465
Grevillea inconspicua	P4	1	258809	6958461
Grevillea inconspicua	P4	1	258810	6958461
Grevillea inconspicua	P4	1	258813	6958462
Grevillea inconspicua	P4	1	258811	6958459
Grevillea inconspicua	P4	1	258804	6958458
Grevillea inconspicua	P4	1	258805	6958457
Grevillea inconspicua	P4	1	258805	6958456
Grevillea inconspicua	P4	1	258804	6958455

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258809	6958444
Grevillea inconspicua	P4	1	258803	6958418
Grevillea inconspicua	P4	1	258810	6958417
Grevillea inconspicua	P4	1	258811	6958409
Grevillea inconspicua	P4	1	258807	6958375
Grevillea inconspicua	P4	1	258829	6958378
Grevillea inconspicua	P4	1	258833	6958422
Grevillea inconspicua	P4	1	258823	6958430
Grevillea inconspicua	P4	1	258823	6958432
Grevillea inconspicua	P4	1	258821	6958450
Grevillea inconspicua	P4	1	258830	6958470
Grevillea inconspicua	P4	1	258327	6958707
Grevillea inconspicua	P4	1	258316	6958697
Grevillea inconspicua	P4	1	258302	6958695
Grevillea inconspicua	P4	1	258301	6958695
Grevillea inconspicua	P4	1	258299	6958695
Grevillea inconspicua	P4	1	258290	6958678
Grevillea inconspicua	P4	1	258288	6958671
Grevillea inconspicua	P4	1	258288	6958664
Grevillea inconspicua	P4	1	258285	6958661
Grevillea inconspicua	P4	1	258280	6958662
Grevillea inconspicua	P4	1	258273	6958671
Grevillea inconspicua	P4	1	258255	6958655
Grevillea inconspicua	P4	1	258247	6958649
Grevillea inconspicua	P4	1	258246	6958647
Grevillea inconspicua	P4	1	258246	6958643
Grevillea inconspicua	P4	1	258250	6958639
Grevillea inconspicua	P4	1	258223	6958614
Grevillea inconspicua	P4	1	258221	6958600
Grevillea inconspicua	P4	1	258218	6958597
Grevillea inconspicua	P4	1	258217	6958600
Grevillea inconspicua	P4	1	258200	6958599
Grevillea inconspicua	P4	1	258193	6958590
Grevillea inconspicua	P4	1	258192	6958582
Grevillea inconspicua	P4	1	258197	6958582
Grevillea inconspicua	P4	1	258181	6958575
Grevillea inconspicua	P4	1	258170	6958580
Grevillea inconspicua	P4	1	258163	6958584
Grevillea inconspicua	P4	1	258162	6958544
Grevillea inconspicua	P4	1	258165	6958540
Grevillea inconspicua	P4	1	258175	6958524
Grevillea inconspicua	P4	1	258175	6958521
Grevillea inconspicua	P4	1	258175	6958521

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258176	6958520
Grevillea inconspicua	P4	1	258179	6958519
Grevillea inconspicua	P4	1	258181	6958520
Grevillea inconspicua	P4	1	258182	6958507
Grevillea inconspicua	P4	1	258181	6958507
Grevillea inconspicua	P4	1	258179	6958506
Grevillea inconspicua	P4	1	258179	6958505
Grevillea inconspicua	P4	1	258179	6958503
Grevillea inconspicua	P4	1	258181	6958501
Grevillea inconspicua	P4	1	258172	6958484
Grevillea inconspicua	P4	1	258168	6958485
Grevillea inconspicua	P4	1	258160	6958482
Grevillea inconspicua	P4	1	258155	6958493
Grevillea inconspicua	P4	1	258154	6958495
Grevillea inconspicua	P4	1	258152	6958497
Grevillea inconspicua	P4	1	258152	6958500
Grevillea inconspicua	P4	1	258151	6958501
Grevillea inconspicua	P4	1	258150	6958502
Grevillea inconspicua	P4	1	258145	6958502
Grevillea inconspicua	P4	1	258144	6958504
Grevillea inconspicua	P4	1	258143	6958506
Grevillea inconspicua	P4	1	258142	6958506
Grevillea inconspicua	P4	1	258141	6958507
Grevillea inconspicua	P4	1	258142	6958513
Grevillea inconspicua	P4	1	258135	6958506
Grevillea inconspicua	P4	1	258132	6958511
Grevillea inconspicua	P4	1	258129	6958513
Grevillea inconspicua	P4	1	258125	6958519
Grevillea inconspicua	P4	1	258118	6958522
Grevillea inconspicua	P4	1	258118	6958522
Grevillea inconspicua	P4	1	258114	6958518
Grevillea inconspicua	P4	1	258099	6958509
Grevillea inconspicua	P4	1	258113	6958500
Grevillea inconspicua	P4	1	258117	6958498
Grevillea inconspicua	P4	1	258119	6958496
Grevillea inconspicua	P4	1	258130	6958481
Grevillea inconspicua	P4	1	258132	6958479
Grevillea inconspicua	P4	1	258132	6958474
Grevillea inconspicua	P4	1	258133	6958471
Grevillea inconspicua	P4	1	258143	6958472
Grevillea inconspicua	P4	1	258146	6958472
Grevillea inconspicua	P4	1	258148	6958476
Grevillea inconspicua	P4	1	258156	6958474

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258159	6958472
Grevillea inconspicua	P4	1	258118	6958463
Grevillea inconspicua	P4	1	258116	6958461
Grevillea inconspicua	P4	1	258108	6958478
Grevillea inconspicua	P4	1	258105	6958484
Grevillea inconspicua	P4	1	258098	6958486
Grevillea inconspicua	P4	1	258087	6958479
Grevillea inconspicua	P4	1	258086	6958485
Grevillea inconspicua	P4	1	258078	6958481
Grevillea inconspicua	P4	1	258073	6958484
Grevillea inconspicua	P4	1	258078	6958493
Grevillea inconspicua	P4	1	258082	6958501
Grevillea inconspicua	P4	1	258074	6958497
Grevillea inconspicua	P4	1	258073	6958499
Grevillea inconspicua	P4	1	258059	6958499
Grevillea inconspicua	P4	1	258064	6958492
Grevillea inconspicua	P4	1	258064	6958490
Grevillea inconspicua	P4	1	258067	6958487
Grevillea inconspicua	P4	1	258067	6958485
Grevillea inconspicua	P4	1	258058	6958486
Grevillea inconspicua	P4	1	258059	6958482
Grevillea inconspicua	P4	1	258059	6958481
Grevillea inconspicua	P4	1	258059	6958481
Grevillea inconspicua	P4	1	258061	6958479
Grevillea inconspicua	P4	1	258060	6958474
Grevillea inconspicua	P4	1	258064	6958468
Grevillea inconspicua	P4	1	258065	6958455
Grevillea inconspicua	P4	1	258077	6958428
Grevillea inconspicua	P4	1	258078	6958427
Grevillea inconspicua	P4	1	258087	6958427
Grevillea inconspicua	P4	1	258097	6958432
Grevillea inconspicua	P4	1	258099	6958434
Grevillea inconspicua	P4	1	258100	6958435
Grevillea inconspicua	P4	1	258101	6958436
Grevillea inconspicua	P4	1	258101	6958437
Grevillea inconspicua	P4	1	258099	6958443
Grevillea inconspicua	P4	1	258096	6958445
Grevillea inconspicua	P4	1	258090	6958451
Grevillea inconspicua	P4	1	258091	6958451
Grevillea inconspicua	P4	1	258092	6958457
Grevillea inconspicua	P4	1	258035	6958418
Grevillea inconspicua	P4	1	258019	6958439
Grevillea inconspicua	P4	1	257985	6958418

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	257985	6958401
Grevillea inconspicua	P4	1	257989	6958385
Grevillea inconspicua	P4	1	257998	6958375
Grevillea inconspicua	P4	1	258001	6958376
Grevillea inconspicua	P4	1	258020	6958380
Grevillea inconspicua	P4	1	258023	6958382
Grevillea inconspicua	P4	1	258024	6958373
Grevillea inconspicua	P4	1	258023	6958364
Grevillea inconspicua	P4	1	258024	6958364
Grevillea inconspicua	P4	1	258030	6958364
Grevillea inconspicua	P4	1	258031	6958365
Grevillea inconspicua	P4	1	258039	6958361
Grevillea inconspicua	P4	1	258036	6958359
Grevillea inconspicua	P4	1	257986	6958339
Grevillea inconspicua	P4	1	257982	6958334
Grevillea inconspicua	P4	1	257983	6958327
Grevillea inconspicua	P4	1	257966	6958338
Grevillea inconspicua	P4	1	257953	6958339
Grevillea inconspicua	P4	1	257937	6958340
Grevillea inconspicua	P4	1	257923	6958344
Grevillea inconspicua	P4	1	257922	6958344
Grevillea inconspicua	P4	1	257921	6958352
Grevillea inconspicua	P4	1	257921	6958353
Grevillea inconspicua	P4	1	257921	6958354
Grevillea inconspicua	P4	1	257913	6958358
Grevillea inconspicua	P4	1	257900	6958352
Grevillea inconspicua	P4	1	257895	6958353
Grevillea inconspicua	P4	1	257890	6958355
Grevillea inconspicua	P4	1	257885	6958355
Grevillea inconspicua	P4	1	257890	6958359
Grevillea inconspicua	P4	1	257894	6958361
Grevillea inconspicua	P4	1	257895	6958361
Grevillea inconspicua	P4	1	257890	6958369
Grevillea inconspicua	P4	1	257894	6958383
Grevillea inconspicua	P4	1	257904	6958406
Grevillea inconspicua	P4	1	257895	6958417
Grevillea inconspicua	P4	1	257909	6958443
Grevillea inconspicua	P4	1	257914	6958450
Grevillea inconspicua	P4	1	257915	6958450
Grevillea inconspicua	P4	1	257916	6958451
Grevillea inconspicua	P4	1	257941	6958463
Grevillea inconspicua	P4	1	257942	6958465
Grevillea inconspicua	P4	1	257942	6958465

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	257944	6958468
Grevillea inconspicua	P4	1	257949	6958466
Grevillea inconspicua	P4	1	257953	6958465
Grevillea inconspicua	P4	1	257961	6958474
Grevillea inconspicua	P4	1	257974	6958476
Grevillea inconspicua	P4	1	257979	6958459
Grevillea inconspicua	P4	1	257981	6958456
Grevillea inconspicua	P4	1	257984	6958446
Grevillea inconspicua	P4	1	257987	6958445
Grevillea inconspicua	P4	1	258016	6958502
Grevillea inconspicua	P4	1	258018	6958510
Grevillea inconspicua	P4	1	258016	6958515
Grevillea inconspicua	P4	1	258015	6958516
Grevillea inconspicua	P4	1	258012	6958519
Grevillea inconspicua	P4	1	258011	6958525
Grevillea inconspicua	P4	1	258009	6958526
Grevillea inconspicua	P4	1	258004	6958523
Grevillea inconspicua	P4	1	258001	6958528
Grevillea inconspicua	P4	1	258001	6958529
Grevillea inconspicua	P4	1	258000	6958530
Grevillea inconspicua	P4	1	258000	6958530
Grevillea inconspicua	P4	1	257988	6958526
Grevillea inconspicua	P4	1	257985	6958525
Grevillea inconspicua	P4	1	257978	6958516
Grevillea inconspicua	P4	1	257978	6958515
Grevillea inconspicua	P4	1	257975	6958525
Grevillea inconspicua	P4	1	257974	6958525
Grevillea inconspicua	P4	1	257974	6958527
Grevillea inconspicua	P4	1	257970	6958527
Grevillea inconspicua	P4	1	257972	6958530
Grevillea inconspicua	P4	1	257972	6958531
Grevillea inconspicua	P4	1	257972	6958532
Grevillea inconspicua	P4	1	257972	6958532
Grevillea inconspicua	P4	1	257979	6958533
Grevillea inconspicua	P4	1	257987	6958537
Grevillea inconspicua	P4	1	257987	6958538
Grevillea inconspicua	P4	1	257988	6958538
Grevillea inconspicua	P4	1	257988	6958541
Grevillea inconspicua	P4	1	257986	6958543
Grevillea inconspicua	P4	1	257991	6958546
Grevillea inconspicua	P4	1	257993	6958547
Grevillea inconspicua	P4	1	257993	6958549
Grevillea inconspicua	P4	1	258004	6958552

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258008	6958551
Grevillea inconspicua	P4	1	258009	6958551
Grevillea inconspicua	P4	1	258014	6958548
Grevillea inconspicua	P4	1	258015	6958548
Grevillea inconspicua	P4	1	258019	6958545
Grevillea inconspicua	P4	1	258022	6958546
Grevillea inconspicua	P4	1	258025	6958544
Grevillea inconspicua	P4	1	258026	6958559
Grevillea inconspicua	P4	1	258017	6958565
Grevillea inconspicua	P4	1	258016	6958567
Grevillea inconspicua	P4	1	258008	6958608
Grevillea inconspicua	P4	1	258009	6958618
Grevillea inconspicua	P4	1	258013	6958568
Grevillea inconspicua	P4	1	258014	6958565
Grevillea inconspicua	P4	1	258016	6958555
Grevillea inconspicua	P4	1	258009	6958551
Grevillea inconspicua	P4	1	258004	6958551
Grevillea inconspicua	P4	1	258010	6958544
Grevillea inconspicua	P4	1	258012	6958544
Grevillea inconspicua	P4	1	258013	6958545
Grevillea inconspicua	P4	1	258018	6958543
Grevillea inconspicua	P4	1	258022	6958545
Grevillea inconspicua	P4	1	258025	6958544
Grevillea inconspicua	P4	1	258030	6958542
Grevillea inconspicua	P4	1	258033	6958539
Grevillea inconspicua	P4	1	258044	6958571
Grevillea inconspicua	P4	1	258045	6958574
Grevillea inconspicua	P4	1	257982	6958627
Grevillea inconspicua	P4	1	257979	6958626
Grevillea inconspicua	P4	1	257998	6958683
Grevillea inconspicua	P4	1	257999	6958685
Grevillea inconspicua	P4	1	258003	6958674
Grevillea inconspicua	P4	1	258006	6958665
Grevillea inconspicua	P4	1	258011	6958665
Grevillea inconspicua	P4	1	258011	6958657
Grevillea inconspicua	P4	1	258011	6958657
Grevillea inconspicua	P4	1	258006	6958656
Grevillea inconspicua	P4	1	258017	6958655
Grevillea inconspicua	P4	1	258039	6958635
Grevillea inconspicua	P4	1	258040	6958634
Grevillea inconspicua	P4	1	258047	6958647
Grevillea inconspicua	P4	1	258035	6958694
Grevillea inconspicua	P4	1	258037	6958700

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258040	6958698
Grevillea inconspicua	P4	1	258041	6958691
Grevillea inconspicua	P4	1	258042	6958687
Grevillea inconspicua	P4	1	258055	6958687
Grevillea inconspicua	P4	1	258057	6958690
Grevillea inconspicua	P4	1	258030	6958714
Grevillea inconspicua	P4	1	258074	6958726
Grevillea inconspicua	P4	1	258073	6958723
Grevillea inconspicua	P4	1	258083	6958704
Grevillea inconspicua	P4	1	258143	6958648
Grevillea inconspicua	P4	1	258145	6958642
Grevillea inconspicua	P4	1	258146	6958633
Grevillea inconspicua	P4	1	258146	6958617
Grevillea inconspicua	P4	1	258143	6958616
Grevillea inconspicua	P4	1	258139	6958614
Grevillea inconspicua	P4	1	258128	6958601
Grevillea inconspicua	P4	1	258122	6958598
Grevillea inconspicua	P4	1	258120	6958595
Grevillea inconspicua	P4	1	258114	6958596
Grevillea inconspicua	P4	1	258104	6958602
Grevillea inconspicua	P4	1	258098	6958574
Grevillea inconspicua	P4	1	258100	6958572
Grevillea inconspicua	P4	1	258106	6958568
Grevillea inconspicua	P4	1	258097	6958565
Grevillea inconspicua	P4	1	258099	6958560
Grevillea inconspicua	P4	1	258106	6958551
Grevillea inconspicua	P4	1	258116	6958556
Grevillea inconspicua	P4	1	258118	6958561
Grevillea inconspicua	P4	1	258118	6958562
Grevillea inconspicua	P4	1	258117	6958564
Grevillea inconspicua	P4	1	258122	6958565
Grevillea inconspicua	P4	1	258124	6958565
Grevillea inconspicua	P4	1	258127	6958567
Grevillea inconspicua	P4	1	258136	6958567
Grevillea inconspicua	P4	1	258128	6958581
Grevillea inconspicua	P4	1	258127	6958581
Grevillea inconspicua	P4	1	258128	6958582
Grevillea inconspicua	P4	1	258132	6958599
Grevillea inconspicua	P4	1	258215	6958645
Grevillea inconspicua	P4	1	258223	6958661
Grevillea inconspicua	P4	1	258263	6958687
Grevillea inconspicua	P4	1	258256	6958694
Grevillea inconspicua	P4	1	258254	6958697

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258302	6958633
Grevillea inconspicua	P4	1	258297	6958631
Grevillea inconspicua	P4	1	258291	6958625
Grevillea inconspicua	P4	1	258287	6958622
Grevillea inconspicua	P4	1	258285	6958622
Grevillea inconspicua	P4	1	258284	6958622
Grevillea inconspicua	P4	1	258282	6958619
Grevillea inconspicua	P4	1	258273	6958604
Grevillea inconspicua	P4	1	258270	6958603
Grevillea inconspicua	P4	1	258267	6958602
Grevillea inconspicua	P4	1	258263	6958598
Grevillea inconspicua	P4	1	258251	6958598
Grevillea inconspicua	P4	1	258247	6958597
Grevillea inconspicua	P4	1	258259	6958580
Grevillea inconspicua	P4	1	258250	6958577
Grevillea inconspicua	P4	1	258238	6958571
Grevillea inconspicua	P4	1	258236	6958568
Grevillea inconspicua	P4	1	258232	6958556
Grevillea inconspicua	P4	1	258204	6958564
Grevillea inconspicua	P4	1	258204	6958564
Grevillea inconspicua	P4	1	258204	6958565
Grevillea inconspicua	P4	1	258262	6958548
Grevillea inconspicua	P4	1	258262	6958540
Grevillea inconspicua	P4	1	258261	6958534
Grevillea inconspicua	P4	1	258273	6958528
Grevillea inconspicua	P4	1	258274	6958533
Grevillea inconspicua	P4	1	258282	6958540
Grevillea inconspicua	P4	1	258285	6958552
Grevillea inconspicua	P4	1	258288	6958557
Grevillea inconspicua	P4	1	258293	6958555
Grevillea inconspicua	P4	1	258299	6958556
Grevillea inconspicua	P4	1	258302	6958555
Grevillea inconspicua	P4	1	258306	6958558
Grevillea inconspicua	P4	1	258303	6958562
Grevillea inconspicua	P4	1	258299	6958562
Grevillea inconspicua	P4	1	258292	6958561
Grevillea inconspicua	P4	1	258288	6958561
Grevillea inconspicua	P4	1	258294	6958576
Grevillea inconspicua	P4	1	258305	6958574
Grevillea inconspicua	P4	1	258308	6958573
Grevillea inconspicua	P4	1	258314	6958573
Grevillea inconspicua	P4	1	258316	6958571
Grevillea inconspicua	P4	1	258322	6958588

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258326	6958591
Grevillea inconspicua	P4	1	258315	6958599
Grevillea inconspicua	P4	1	258314	6958599
Grevillea inconspicua	P4	1	258272	6958513
Grevillea inconspicua	P4	1	258262	6958510
Grevillea inconspicua	P4	1	258257	6958506
Grevillea inconspicua	P4	1	258251	6958519
Grevillea inconspicua	P4	1	258251	6958521
Grevillea inconspicua	P4	1	258238	6958518
Grevillea inconspicua	P4	1	258230	6958512
Grevillea inconspicua	P4	1	258220	6958505
Grevillea inconspicua	P4	1	258226	6958501
Grevillea inconspicua	P4	1	258222	6958495
Grevillea inconspicua	P4	1	258226	6958493
Grevillea inconspicua	P4	1	258226	6958492
Grevillea inconspicua	P4	1	258226	6958492
Grevillea inconspicua	P4	1	258230	6958483
Grevillea inconspicua	P4	1	258234	6958475
Grevillea inconspicua	P4	1	258237	6958473
Grevillea inconspicua	P4	1	258240	6958471
Grevillea inconspicua	P4	1	258243	6958472
Grevillea inconspicua	P4	1	258244	6958471
Grevillea inconspicua	P4	1	258244	6958473
Grevillea inconspicua	P4	1	258242	6958475
Grevillea inconspicua	P4	1	258243	6958476
Grevillea inconspicua	P4	1	258244	6958476
Grevillea inconspicua	P4	1	258249	6958484
Grevillea inconspicua	P4	1	258248	6958487
Grevillea inconspicua	P4	1	258257	6958488
Grevillea inconspicua	P4	1	258259	6958486
Grevillea inconspicua	P4	1	258260	6958486
Grevillea inconspicua	P4	1	258259	6958477
Grevillea inconspicua	P4	1	258256	6958474
Grevillea inconspicua	P4	1	258251	6958472
Grevillea inconspicua	P4	1	258252	6958468
Grevillea inconspicua	P4	1	258257	6958466
Grevillea inconspicua	P4	1	258258	6958465
Grevillea inconspicua	P4	1	258267	6958465
Grevillea inconspicua	P4	1	258268	6958470
Grevillea inconspicua	P4	1	258272	6958474
Grevillea inconspicua	P4	1	258274	6958478
Grevillea inconspicua	P4	1	258274	6958483
Grevillea inconspicua	P4	1	258274	6958484

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258279	6958484
Grevillea inconspicua	P4	1	258281	6958482
Grevillea inconspicua	P4	1	258283	6958482
Grevillea inconspicua	P4	1	258286	6958483
Grevillea inconspicua	P4	1	258283	6958473
Grevillea inconspicua	P4	1	258285	6958470
Grevillea inconspicua	P4	1	258286	6958465
Grevillea inconspicua	P4	1	258289	6958466
Grevillea inconspicua	P4	1	258291	6958466
Grevillea inconspicua	P4	1	258299	6958465
Grevillea inconspicua	P4	1	258275	6958440
Grevillea inconspicua	P4	1	258264	6958440
Grevillea inconspicua	P4	1	258264	6958439
Grevillea inconspicua	P4	1	258262	6958442
Grevillea inconspicua	P4	1	258261	6958442
Grevillea inconspicua	P4	1	258257	6958449
Grevillea inconspicua	P4	1	258258	6958453
Grevillea inconspicua	P4	1	258259	6958456
Grevillea inconspicua	P4	1	258257	6958462
Grevillea inconspicua	P4	1	258257	6958462
Grevillea inconspicua	P4	1	258255	6958467
Grevillea inconspicua	P4	1	258252	6958470
Grevillea inconspicua	P4	1	258249	6958470
Grevillea inconspicua	P4	1	258249	6958470
Grevillea inconspicua	P4	1	258247	6958469
Grevillea inconspicua	P4	1	258238	6958467
Grevillea inconspicua	P4	1	258238	6958466
Grevillea inconspicua	P4	1	258237	6958470
Grevillea inconspicua	P4	1	258237	6958472
Grevillea inconspicua	P4	1	258232	6958481
Grevillea inconspicua	P4	1	258227	6958474
Grevillea inconspicua	P4	1	258216	6958467
Grevillea inconspicua	P4	1	258203	6958481
Grevillea inconspicua	P4	1	258197	6958480
Grevillea inconspicua	P4	1	258191	6958477
Grevillea inconspicua	P4	1	258190	6958475
Grevillea inconspicua	P4	1	258191	6958474
Grevillea inconspicua	P4	1	258189	6958469
Grevillea inconspicua	P4	1	258189	6958468
Grevillea inconspicua	P4	1	258182	6958474
Grevillea inconspicua	P4	1	258180	6958471
Grevillea inconspicua	P4	1	258182	6958463
Grevillea inconspicua	P4	1	258183	6958457

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258184	6958449
Grevillea inconspicua	P4	1	258184	6958448
Grevillea inconspicua	P4	1	258219	6958435
Grevillea inconspicua	P4	1	258220	6958435
Grevillea inconspicua	P4	1	258227	6958435
Grevillea inconspicua	P4	1	258229	6958444
Grevillea inconspicua	P4	1	258229	6958444
Grevillea inconspicua	P4	1	258223	6958446
Grevillea inconspicua	P4	1	258218	6958454
Grevillea inconspicua	P4	1	258217	6958464
Grevillea inconspicua	P4	1	258223	6958465
Grevillea inconspicua	P4	1	258228	6958469
Grevillea inconspicua	P4	1	258239	6958469
Grevillea inconspicua	P4	1	258241	6958469
Grevillea inconspicua	P4	1	258245	6958467
Grevillea inconspicua	P4	1	258247	6958467
Grevillea inconspicua	P4	1	258248	6958468
Grevillea inconspicua	P4	1	258250	6958465
Grevillea inconspicua	P4	1	258252	6958466
Grevillea inconspicua	P4	1	258254	6958466
Grevillea inconspicua	P4	1	258259	6958465
Grevillea inconspicua	P4	1	258260	6958464
Grevillea inconspicua	P4	1	258259	6958458
Grevillea inconspicua	P4	1	258259	6958456
Grevillea inconspicua	P4	1	258256	6958451
Grevillea inconspicua	P4	1	258260	6958444
Grevillea inconspicua	P4	1	258260	6958443
Grevillea inconspicua	P4	1	258259	6958429
Grevillea inconspicua	P4	1	258259	6958428
Grevillea inconspicua	P4	1	258255	6958423
Grevillea inconspicua	P4	1	258230	6958422
Grevillea inconspicua	P4	1	258225	6958423
Grevillea inconspicua	P4	1	258215	6958423
Grevillea inconspicua	P4	1	258215	6958412
Grevillea inconspicua	P4	1	258218	6958409
Grevillea inconspicua	P4	1	258224	6958406
Grevillea inconspicua	P4	1	258201	6958399
Grevillea inconspicua	P4	1	258201	6958399
Grevillea inconspicua	P4	1	258199	6958404
Grevillea inconspicua	P4	1	258193	6958408
Grevillea inconspicua	P4	1	258191	6958410
Grevillea inconspicua	P4	1	258191	6958413
Grevillea inconspicua	P4	1	258181	6958411

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258176	6958404
Grevillea inconspicua	P4	1	258175	6958404
Grevillea inconspicua	P4	1	258175	6958399
Grevillea inconspicua	P4	1	258170	6958402
Grevillea inconspicua	P4	1	258153	6958408
Grevillea inconspicua	P4	1	258153	6958408
Grevillea inconspicua	P4	1	258153	6958408
Grevillea inconspicua	P4	1	258152	6958408
Grevillea inconspicua	P4	1	258148	6958411
Grevillea inconspicua	P4	1	258149	6958412
Grevillea inconspicua	P4	1	258150	6958416
Grevillea inconspicua	P4	1	258150	6958416
Grevillea inconspicua	P4	1	258152	6958418
Grevillea inconspicua	P4	1	258150	6958426
Grevillea inconspicua	P4	1	258157	6958373
Grevillea inconspicua	P4	1	258168	6958373
Grevillea inconspicua	P4	1	258169	6958373
Grevillea inconspicua	P4	1	258170	6958373
Grevillea inconspicua	P4	1	258170	6958373
Grevillea inconspicua	P4	1	258174	6958374
Grevillea inconspicua	P4	1	258192	6958371
Grevillea inconspicua	P4	1	258197	6958371
Grevillea inconspicua	P4	1	258208	6958365
Grevillea inconspicua	P4	1	258221	6958362
Grevillea inconspicua	P4	1	258220	6958368
Grevillea inconspicua	P4	1	258232	6958363
Grevillea inconspicua	P4	1	258234	6958365
Grevillea inconspicua	P4	1	258238	6958356
Grevillea inconspicua	P4	1	258234	6958351
Grevillea inconspicua	P4	1	258248	6958353
Grevillea inconspicua	P4	1	258250	6958355
Grevillea inconspicua	P4	1	258250	6958356
Grevillea inconspicua	P4	1	258252	6958359
Grevillea inconspicua	P4	1	258253	6958360
Grevillea inconspicua	P4	1	258253	6958365
Grevillea inconspicua	P4	1	258249	6958368
Grevillea inconspicua	P4	1	258249	6958370
Grevillea inconspicua	P4	1	258249	6958371
Grevillea inconspicua	P4	1	258249	6958372
Grevillea inconspicua	P4	1	258247	6958375
Grevillea inconspicua	P4	1	258247	6958377
Grevillea inconspicua	P4	1	258253	6958380
Grevillea inconspicua	P4	1	258255	6958382

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258257	6958383
Grevillea inconspicua	P4	1	258261	6958380
Grevillea inconspicua	P4	1	258260	6958375
Grevillea inconspicua	P4	1	258259	6958373
Grevillea inconspicua	P4	1	258259	6958371
Grevillea inconspicua	P4	1	258260	6958370
Grevillea inconspicua	P4	1	258266	6958370
Grevillea inconspicua	P4	1	258269	6958371
Grevillea inconspicua	P4	1	258271	6958377
Grevillea inconspicua	P4	1	258275	6958380
Grevillea inconspicua	P4	1	258277	6958382
Grevillea inconspicua	P4	1	258288	6958381
Grevillea inconspicua	P4	1	258289	6958382
Grevillea inconspicua	P4	1	258292	6958382
Grevillea inconspicua	P4	1	258287	6958389
Grevillea inconspicua	P4	1	258287	6958393
Grevillea inconspicua	P4	1	258297	6958397
Grevillea inconspicua	P4	1	258296	6958399
Grevillea inconspicua	P4	1	258304	6958399
Grevillea inconspicua	P4	1	258305	6958395
Grevillea inconspicua	P4	1	258306	6958392
Grevillea inconspicua	P4	1	258312	6958393
Grevillea inconspicua	P4	1	258316	6958396
Grevillea inconspicua	P4	1	258313	6958398
Grevillea inconspicua	P4	1	258313	6958398
Grevillea inconspicua	P4	1	258313	6958398
Grevillea inconspicua	P4	1	258313	6958398
Grevillea inconspicua	P4	1	258298	6958413
Grevillea inconspicua	P4	1	258295	6958415
Grevillea inconspicua	P4	1	258291	6958419
Grevillea inconspicua	P4	1	258291	6958422
Grevillea inconspicua	P4	1	258290	6958423
Grevillea inconspicua	P4	1	258291	6958425
Grevillea inconspicua	P4	1	258313	6958432
Grevillea inconspicua	P4	1	258314	6958433
Grevillea inconspicua	P4	1	258320	6958427
Grevillea inconspicua	P4	1	258323	6958420
Grevillea inconspicua	P4	1	258333	6958404
Grevillea inconspicua	P4	1	258334	6958404
Grevillea inconspicua	P4	1	258341	6958403
Grevillea inconspicua	P4	1	258342	6958403
Grevillea inconspicua	P4	1	258341	6958414
Grevillea inconspicua	P4	1	258340	6958415

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258338	6958416
Grevillea inconspicua	P4	1	258332	6958418
Grevillea inconspicua	P4	1	258320	6958427
Grevillea inconspicua	P4	1	258371	6958449
Grevillea inconspicua	P4	1	258372	6958449
Grevillea inconspicua	P4	1	258372	6958450
Grevillea inconspicua	P4	1	258387	6958471
Grevillea inconspicua	P4	1	258390	6958478
Grevillea inconspicua	P4	1	258393	6958481
Grevillea inconspicua	P4	1	258393	6958482
Grevillea inconspicua	P4	1	258397	6958487
Grevillea inconspicua	P4	1	258398	6958488
Grevillea inconspicua	P4	1	258397	6958489
Grevillea inconspicua	P4	1	258396	6958490
Grevillea inconspicua	P4	1	258386	6958489
Grevillea inconspicua	P4	1	258389	6958495
Grevillea inconspicua	P4	1	258390	6958497
Grevillea inconspicua	P4	1	258387	6958498
Grevillea inconspicua	P4	1	258384	6958502
Grevillea inconspicua	P4	1	258385	6958505
Grevillea inconspicua	P4	1	258385	6958506
Grevillea inconspicua	P4	1	258385	6958507
Grevillea inconspicua	P4	1	258384	6958510
Grevillea inconspicua	P4	1	258383	6958510
Grevillea inconspicua	P4	1	258381	6958511
Grevillea inconspicua	P4	1	258382	6958513
Grevillea inconspicua	P4	1	258381	6958515
Grevillea inconspicua	P4	1	258356	6958494
Grevillea inconspicua	P4	1	258354	6958486
Grevillea inconspicua	P4	1	258356	6958478
Grevillea inconspicua	P4	1	258355	6958463
Grevillea inconspicua	P4	1	258351	6958465
Grevillea inconspicua	P4	1	258336	6958468
Grevillea inconspicua	P4	1	258333	6958471
Grevillea inconspicua	P4	1	258321	6958277
Grevillea inconspicua	P4	1	258316	6958263
Grevillea inconspicua	P4	1	258318	6958244
Grevillea inconspicua	P4	1	258319	6958237
Grevillea inconspicua	P4	1	258320	6958227
Grevillea inconspicua	P4	1	258324	6958218
Grevillea inconspicua	P4	1	258324	6958218
Grevillea inconspicua	P4	1	258293	6958207
Grevillea inconspicua	P4	1	258277	6958231

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258277	6958247
Grevillea inconspicua	P4	1	258277	6958250
Grevillea inconspicua	P4	1	258277	6958251
Grevillea inconspicua	P4	1	258276	6958255
Grevillea inconspicua	P4	1	258269	6958279
Grevillea inconspicua	P4	1	258264	6958291
Grevillea inconspicua	P4	1	258263	6958291
Grevillea inconspicua	P4	1	258263	6958292
Grevillea inconspicua	P4	1	258263	6958293
Grevillea inconspicua	P4	1	258263	6958293
Grevillea inconspicua	P4	1	258257	6958306
Grevillea inconspicua	P4	1	258253	6958312
Grevillea inconspicua	P4	1	258252	6958312
Grevillea inconspicua	P4	1	258251	6958316
Grevillea inconspicua	P4	1	258251	6958316
Grevillea inconspicua	P4	1	258252	6958317
Grevillea inconspicua	P4	1	258251	6958317
Grevillea inconspicua	P4	1	258251	6958317
Grevillea inconspicua	P4	1	258253	6958320
Grevillea inconspicua	P4	1	258252	6958328
Grevillea inconspicua	P4	1	258248	6958336
Grevillea inconspicua	P4	1	258249	6958339
Grevillea inconspicua	P4	1	258256	6958343
Grevillea inconspicua	P4	1	258255	6958347
Grevillea inconspicua	P4	1	258255	6958347
Grevillea inconspicua	P4	1	258255	6958348
Grevillea inconspicua	P4	1	258255	6958350
Grevillea inconspicua	P4	1	258254	6958353
Grevillea inconspicua	P4	1	258251	6958355
Grevillea inconspicua	P4	1	258252	6958359
Grevillea inconspicua	P4	1	258252	6958363
Grevillea inconspicua	P4	1	258251	6958364
Grevillea inconspicua	P4	1	258250	6958367
Grevillea inconspicua	P4	1	258251	6958368
Grevillea inconspicua	P4	1	258254	6958367
Grevillea inconspicua	P4	1	258259	6958369
Grevillea inconspicua	P4	1	258259	6958369
Grevillea inconspicua	P4	1	258259	6958370
Grevillea inconspicua	P4	1	258262	6958377
Grevillea inconspicua	P4	1	258260	6958382
Grevillea inconspicua	P4	1	258259	6958382
Grevillea inconspicua	P4	1	258233	6958349
Grevillea inconspicua	P4	1	258223	6958326

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258215	6958306
Grevillea inconspicua	P4	1	258208	6958301
Grevillea inconspicua	P4	1	258207	6958297
Grevillea inconspicua	P4	1	258202	6958293
Grevillea inconspicua	P4	1	258203	6958284
Grevillea inconspicua	P4	1	258201	6958279
Grevillea inconspicua	P4	1	258209	6958266
Grevillea inconspicua	P4	1	258210	6958263
Grevillea inconspicua	P4	1	258210	6958256
Grevillea inconspicua	P4	1	258210	6958255
Grevillea inconspicua	P4	1	258219	6958246
Grevillea inconspicua	P4	1	258229	6958241
Grevillea inconspicua	P4	1	258244	6958225
Grevillea inconspicua	P4	1	258253	6958211
Grevillea inconspicua	P4	1	258255	6958191
Grevillea inconspicua	P4	1	258255	6958177
Grevillea inconspicua	P4	1	258249	6958175
Grevillea inconspicua	P4	1	258262	6958159
Grevillea inconspicua	P4	1	258272	6958142
Grevillea inconspicua	P4	1	258272	6958142
Grevillea inconspicua	P4	1	258272	6958142
Grevillea inconspicua	P4	1	258278	6958141
Grevillea inconspicua	P4	1	258280	6958140
Grevillea inconspicua	P4	1	258282	6958139
Grevillea inconspicua	P4	1	258284	6958139
Grevillea inconspicua	P4	1	258291	6958140
Grevillea inconspicua	P4	1	258292	6958137
Grevillea inconspicua	P4	1	258296	6958136
Grevillea inconspicua	P4	1	258301	6958136
Grevillea inconspicua	P4	1	258301	6958136
Grevillea inconspicua	P4	1	258301	6958136
Grevillea inconspicua	P4	1	258302	6958135
Grevillea inconspicua	P4	1	258301	6958134
Grevillea inconspicua	P4	1	258315	6958149
Grevillea inconspicua	P4	1	258320	6958220
Grevillea inconspicua	P4	1	258323	6958225
Grevillea inconspicua	P4	1	258319	6958233
Grevillea inconspicua	P4	1	258320	6958238
Grevillea inconspicua	P4	1	258596	6958265
Grevillea inconspicua	P4	1	258589	6958261
Grevillea inconspicua	P4	1	258549	6958249
Grevillea inconspicua	P4	1	258549	6958249
Grevillea inconspicua	P4	1	258549	6958248

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258549	6958248
Grevillea inconspicua	P4	1	258549	6958248
Grevillea inconspicua	P4	1	258529	6958248
Grevillea inconspicua	P4	1	258529	6958250
Grevillea inconspicua	P4	1	258529	6958250
Grevillea inconspicua	P4	1	258528	6958253
Grevillea inconspicua	P4	1	258528	6958255
Grevillea inconspicua	P4	1	258529	6958255
Grevillea inconspicua	P4	1	258529	6958256
Grevillea inconspicua	P4	1	258528	6958255
Grevillea inconspicua	P4	1	258525	6958257
Grevillea inconspicua	P4	1	258521	6958258
Grevillea inconspicua	P4	1	258518	6958258
Grevillea inconspicua	P4	1	258518	6958259
Grevillea inconspicua	P4	1	258519	6958252
Grevillea inconspicua	P4	1	258483	6958247
Grevillea inconspicua	P4	1	258481	6958248
Grevillea inconspicua	P4	1	258480	6958248
Grevillea inconspicua	P4	1	258478	6958248
Grevillea inconspicua	P4	1	258472	6958245
Grevillea inconspicua	P4	1	258472	6958245
Grevillea inconspicua	P4	1	258466	6958249
Grevillea inconspicua	P4	1	258466	6958249
Grevillea inconspicua	P4	1	258466	6958249
Grevillea inconspicua	P4	1	258451	6958252
Grevillea inconspicua	P4	1	258450	6958251
Grevillea inconspicua	P4	1	258431	6958245
Grevillea inconspicua	P4	1	258431	6958244
Grevillea inconspicua	P4	1	258430	6958241
Grevillea inconspicua	P4	1	258422	6958236
Grevillea inconspicua	P4	1	258420	6958237
Grevillea inconspicua	P4	1	258412	6958236
Grevillea inconspicua	P4	1	258410	6958236
Grevillea inconspicua	P4	1	258398	6958236
Grevillea inconspicua	P4	1	258390	6958234
Grevillea inconspicua	P4	1	258381	6958233
Grevillea inconspicua	P4	1	258380	6958231
Grevillea inconspicua	P4	1	258370	6958224
Grevillea inconspicua	P4	1	258354	6958239
Grevillea inconspicua	P4	1	258350	6958240
Grevillea inconspicua	P4	1	258350	6958240
Grevillea inconspicua	P4	1	258353	6958245
Grevillea inconspicua	P4	1	258353	6958245

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258348	6958254
Grevillea inconspicua	P4	1	258350	6958258
Grevillea inconspicua	P4	1	258365	6958265
Grevillea inconspicua	P4	1	258368	6958265
Grevillea inconspicua	P4	1	258387	6958267
Grevillea inconspicua	P4	1	258390	6958267
Grevillea inconspicua	P4	1	258414	6958255
Grevillea inconspicua	P4	1	258424	6958247
Grevillea inconspicua	P4	1	258424	6958247
Grevillea inconspicua	P4	1	258424	6958247
Grevillea inconspicua	P4	1	258429	6958248
Grevillea inconspicua	P4	1	258435	6958248
Grevillea inconspicua	P4	1	258451	6958248
Grevillea inconspicua	P4	1	258452	6958247
Grevillea inconspicua	P4	1	258454	6958249
Grevillea inconspicua	P4	1	258470	6958253
Grevillea inconspicua	P4	1	258472	6958254
Grevillea inconspicua	P4	1	258473	6958255
Grevillea inconspicua	P4	1	258479	6958251
Grevillea inconspicua	P4	1	258480	6958250
Grevillea inconspicua	P4	1	258482	6958249
Grevillea inconspicua	P4	1	258516	6958267
Grevillea inconspicua	P4	1	258480	6958308
Grevillea inconspicua	P4	1	258480	6958308
Grevillea inconspicua	P4	1	258475	6958308
Grevillea inconspicua	P4	1	258475	6958308
Grevillea inconspicua	P4	1	258475	6958309
Grevillea inconspicua	P4	1	258467	6958310
Grevillea inconspicua	P4	1	258466	6958310
Grevillea inconspicua	P4	1	258465	6958310
Grevillea inconspicua	P4	1	258462	6958310
Grevillea inconspicua	P4	1	258462	6958309
Grevillea inconspicua	P4	1	258461	6958309
Grevillea inconspicua	P4	1	258459	6958308
Grevillea inconspicua	P4	1	258456	6958308
Grevillea inconspicua	P4	1	258413	6958291
Grevillea inconspicua	P4	1	258389	6958288
Grevillea inconspicua	P4	1	258389	6958288
Grevillea inconspicua	P4	1	258388	6958288
Grevillea inconspicua	P4	1	258363	6958325
Grevillea inconspicua	P4	1	258459	6958303
Grevillea inconspicua	P4	1	258462	6958304
Grevillea inconspicua	P4	1	258462	6958304

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258465	6958298
Grevillea inconspicua	P4	1	258466	6958296
Grevillea inconspicua	P4	1	258465	6958295
Grevillea inconspicua	P4	1	258470	6958293
Grevillea inconspicua	P4	1	258478	6958301
Grevillea inconspicua	P4	1	258481	6958306
Grevillea inconspicua	P4	1	258566	6958308
Grevillea inconspicua	P4	1	258754	6958785
Grevillea inconspicua	P4	1	258750	6958785
Grevillea inconspicua	P4	1	258749	6958787
Grevillea inconspicua	P4	1	258704	6958761
Grevillea inconspicua	P4	1	258819	6958883
Grevillea inconspicua	P4	1	258819	6958884
Grevillea inconspicua	P4	1	258819	6958884
Grevillea inconspicua	P4	1	258068	6958883
Grevillea inconspicua	P4	1	258071	6958888
Grevillea inconspicua	P4	1	258054	6958896
Grevillea inconspicua	P4	1	257990	6958896
Grevillea inconspicua	P4	1	258080	6958876
Grevillea inconspicua	P4	1	258079	6958875
Grevillea inconspicua	P4	1	258031	6958845
Grevillea inconspicua	P4	1	257934	6958672
Grevillea inconspicua	P4	1	257933	6958673
Grevillea inconspicua	P4	1	257931	6958673
Grevillea inconspicua	P4	1	257930	6958673
Grevillea inconspicua	P4	1	257920	6958671
Grevillea inconspicua	P4	1	257919	6958686
Grevillea inconspicua	P4	1	257924	6958703
Grevillea inconspicua	P4	1	257920	6958714
Grevillea inconspicua	P4	1	257920	6958715
Grevillea inconspicua	P4	1	257913	6958712
Grevillea inconspicua	P4	1	257910	6958714
Grevillea inconspicua	P4	1	257877	6958766
Grevillea inconspicua	P4	1	257876	6958767
Grevillea inconspicua	P4	1	257874	6958758
Grevillea inconspicua	P4	1	257939	6958728
Grevillea inconspicua	P4	1	257993	6958681
Grevillea inconspicua	P4	1	257995	6958683
Grevillea inconspicua	P4	1	257909	6958656
Grevillea inconspicua	P4	1	257910	6958656
Grevillea inconspicua	P4	1	257908	6958661
Grevillea inconspicua	P4	1	257901	6958659
Grevillea inconspicua	P4	1	257902	6958657

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	257896	6958657
Grevillea inconspicua	P4	1	257891	6958672
Grevillea inconspicua	P4	1	257891	6958675
Grevillea inconspicua	P4	1	257890	6958676
Grevillea inconspicua	P4	1	257885	6958678
Grevillea inconspicua	P4	1	257878	6958677
Grevillea inconspicua	P4	1	257876	6958675
Grevillea inconspicua	P4	1	257875	6958674
Grevillea inconspicua	P4	1	257873	6958683
Grevillea inconspicua	P4	1	257871	6958684
Grevillea inconspicua	P4	1	257870	6958684
Grevillea inconspicua	P4	1	257869	6958686
Grevillea inconspicua	P4	1	257868	6958687
Grevillea inconspicua	P4	1	257864	6958692
Grevillea inconspicua	P4	1	257860	6958720
Grevillea inconspicua	P4	1	257833	6958721
Grevillea inconspicua	P4	1	257835	6958718
Grevillea inconspicua	P4	1	257887	6958636
Grevillea inconspicua	P4	1	257889	6958635
Grevillea inconspicua	P4	1	257889	6958635
Grevillea inconspicua	P4	1	257910	6958656
Grevillea inconspicua	P4	1	257911	6958656
Grevillea inconspicua	P4	1	257909	6958660
Grevillea inconspicua	P4	1	257908	6958660
Grevillea inconspicua	P4	1	257910	6958603
Grevillea inconspicua	P4	1	257913	6958598
Grevillea inconspicua	P4	1	257914	6958598
Grevillea inconspicua	P4	1	257914	6958597
Grevillea inconspicua	P4	1	257924	6958592
Grevillea inconspicua	P4	1	257924	6958582
Grevillea inconspicua	P4	1	257947	6958553
Grevillea inconspicua	P4	1	257955	6958533
Grevillea inconspicua	P4	1	257952	6958528
Grevillea inconspicua	P4	1	257951	6958526
Grevillea inconspicua	P4	1	257950	6958521
Grevillea inconspicua	P4	1	257946	6958521
Grevillea inconspicua	P4	1	257939	6958522
Grevillea inconspicua	P4	1	257932	6958528
Grevillea inconspicua	P4	1	257932	6958540
Grevillea inconspicua	P4	1	257915	6958555
Grevillea inconspicua	P4	1	257915	6958557
Grevillea inconspicua	P4	1	257921	6958556
Grevillea inconspicua	P4	1	257922	6958557

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	257923	6958563
Grevillea inconspicua	P4	1	257916	6958570
Grevillea inconspicua	P4	1	257914	6958570
Grevillea inconspicua	P4	1	257911	6958573
Grevillea inconspicua	P4	1	257902	6958573
Grevillea inconspicua	P4	1	257900	6958573
Grevillea inconspicua	P4	1	257901	6958571
Grevillea inconspicua	P4	1	257890	6958574
Grevillea inconspicua	P4	1	257885	6958586
Grevillea inconspicua	P4	1	257903	6958608
Grevillea inconspicua	P4	1	257839	6958531
Grevillea inconspicua	P4	1	257839	6958530
Grevillea inconspicua	P4	1	257845	6958525
Grevillea inconspicua	P4	1	257845	6958520
Grevillea inconspicua	P4	1	257845	6958519
Grevillea inconspicua	P4	1	257848	6958517
Grevillea inconspicua	P4	1	257848	6958514
Grevillea inconspicua	P4	1	257848	6958510
Grevillea inconspicua	P4	1	257847	6958508
Grevillea inconspicua	P4	1	257845	6958501
Grevillea inconspicua	P4	1	257846	6958499
Grevillea inconspicua	P4	1	257836	6958481
Grevillea inconspicua	P4	1	257821	6958467
Grevillea inconspicua	P4	1	257828	6958534
Grevillea inconspicua	P4	1	257825	6958562
Grevillea inconspicua	P4	1	257828	6958564
Grevillea inconspicua	P4	1	257829	6958564
Grevillea inconspicua	P4	1	257829	6958565
Grevillea inconspicua	P4	1	257830	6958565
Grevillea inconspicua	P4	1	257840	6958569
Grevillea inconspicua	P4	1	257838	6958572
Grevillea inconspicua	P4	1	257838	6958575
Grevillea inconspicua	P4	1	257847	6958586
Grevillea inconspicua	P4	1	258225	6958328
Grevillea inconspicua	P4	1	258226	6958324
Grevillea inconspicua	P4	1	258237	6958323
Grevillea inconspicua	P4	1	258239	6958322
Grevillea inconspicua	P4	1	258250	6958329
Grevillea inconspicua	P4	1	258252	6958330
Grevillea inconspicua	P4	1	258255	6958332
Grevillea inconspicua	P4	1	258258	6958321
Grevillea inconspicua	P4	1	258262	6958319
Grevillea inconspicua	P4	1	258271	6958329

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258273	6958331
Grevillea inconspicua	P4	1	258275	6958336
Grevillea inconspicua	P4	1	258284	6958338
Grevillea inconspicua	P4	1	258282	6958329
Grevillea inconspicua	P4	1	258280	6958325
Grevillea inconspicua	P4	1	258280	6958323
Grevillea inconspicua	P4	1	258293	6958319
Grevillea inconspicua	P4	1	258297	6958320
Grevillea inconspicua	P4	1	258299	6958321
Grevillea inconspicua	P4	1	258302	6958327
Grevillea inconspicua	P4	1	258302	6958332
Grevillea inconspicua	P4	1	258300	6958337
Grevillea inconspicua	P4	1	258301	6958338
Grevillea inconspicua	P4	1	258298	6958338
Grevillea inconspicua	P4	1	258299	6958344
Grevillea inconspicua	P4	1	258303	6958345
Grevillea inconspicua	P4	1	258304	6958347
Grevillea inconspicua	P4	1	258299	6958350
Grevillea inconspicua	P4	1	258296	6958355
Grevillea inconspicua	P4	1	258301	6958358
Grevillea inconspicua	P4	1	258299	6958360
Grevillea inconspicua	P4	1	258299	6958362
Grevillea inconspicua	P4	1	258300	6958362
Grevillea inconspicua	P4	1	258300	6958363
Grevillea inconspicua	P4	1	258300	6958366
Grevillea inconspicua	P4	1	258300	6958366
Grevillea inconspicua	P4	1	258299	6958367
Grevillea inconspicua	P4	1	258301	6958369
Grevillea inconspicua	P4	1	258306	6958370
Grevillea inconspicua	P4	1	258308	6958364
Grevillea inconspicua	P4	1	258309	6958364
Grevillea inconspicua	P4	1	258314	6958360
Grevillea inconspicua	P4	1	258316	6958354
Grevillea inconspicua	P4	1	258316	6958351
Grevillea inconspicua	P4	1	258314	6958346
Grevillea inconspicua	P4	1	258313	6958343
Grevillea inconspicua	P4	1	258311	6958339
Grevillea inconspicua	P4	1	258311	6958334
Grevillea inconspicua	P4	1	258309	6958330
Grevillea inconspicua	P4	1	258304	6958325
Grevillea inconspicua	P4	1	258304	6958325
Grevillea inconspicua	P4	1	258299	6958323
Grevillea inconspicua	P4	1	258298	6958323

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258293	6958320
Grevillea inconspicua	P4	1	258301	6958313
Grevillea inconspicua	P4	1	258304	6958310
Grevillea inconspicua	P4	1	258317	6958315
Grevillea inconspicua	P4	1	258319	6958318
Grevillea inconspicua	P4	1	258327	6958315
Grevillea inconspicua	P4	1	258329	6958332
Grevillea inconspicua	P4	1	258327	6958335
Grevillea inconspicua	P4	1	258338	6958334
Grevillea inconspicua	P4	1	258337	6958337
Grevillea inconspicua	P4	1	258337	6958338
Grevillea inconspicua	P4	1	258337	6958338
Grevillea inconspicua	P4	1	258341	6958340
Grevillea inconspicua	P4	1	258355	6958336
Grevillea inconspicua	P4	1	258340	6958357
Grevillea inconspicua	P4	1	258340	6958357
Grevillea inconspicua	P4	1	258340	6958356
Grevillea inconspicua	P4	1	258339	6958357
Grevillea inconspicua	P4	1	258339	6958358
Grevillea inconspicua	P4	1	258330	6958357
Grevillea inconspicua	P4	1	258329	6958353
Grevillea inconspicua	P4	1	258328	6958351
Grevillea inconspicua	P4	1	258325	6958349
Grevillea inconspicua	P4	1	258321	6958370
Grevillea inconspicua	P4	1	258328	6958376
Grevillea inconspicua	P4	1	258363	6958389
Grevillea inconspicua	P4	1	258363	6958389
Grevillea inconspicua	P4	1	258374	6958389
Grevillea inconspicua	P4	1	258380	6958389
Grevillea inconspicua	P4	1	258381	6958389
Grevillea inconspicua	P4	1	258382	6958392
Grevillea inconspicua	P4	1	258375	6958395
Grevillea inconspicua	P4	1	258374	6958397
Grevillea inconspicua	P4	1	258385	6958394
Grevillea inconspicua	P4	1	258400	6958396
Grevillea inconspicua	P4	1	258400	6958396
Grevillea inconspicua	P4	1	258394	6958405
Grevillea inconspicua	P4	1	258389	6958409
Grevillea inconspicua	P4	1	258389	6958409
Grevillea inconspicua	P4	1	258389	6958409
Grevillea inconspicua	P4	1	258391	6958411
Grevillea inconspicua	P4	1	258395	6958420
Grevillea inconspicua	P4	1	258390	6958423

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258401	6958421
Grevillea inconspicua	P4	1	258484	6958403
Grevillea inconspicua	P4	1	258423	6958390
Grevillea inconspicua	P4	1	258469	6958340
Grevillea inconspicua	P4	1	258480	6958318
Grevillea inconspicua	P4	1	258480	6958319
Grevillea inconspicua	P4	1	258466	6958299
Grevillea inconspicua	P4	1	258466	6958299
Grevillea inconspicua	P4	1	258466	6958299
Grevillea inconspicua	P4	1	258608	6958256
Grevillea inconspicua	P4	1	258608	6958256
Grevillea inconspicua	P4	1	258607	6958255
Grevillea inconspicua	P4	1	258600	6958253
Grevillea inconspicua	P4	1	258594	6958253
Grevillea inconspicua	P4	1	258597	6958246
Grevillea inconspicua	P4	1	258592	6958238
Grevillea inconspicua	P4	1	258583	6958229
Grevillea inconspicua	P4	1	258587	6958225
Grevillea inconspicua	P4	1	258587	6958224
Grevillea inconspicua	P4	1	258588	6958219
Grevillea inconspicua	P4	1	258578	6958218
Grevillea inconspicua	P4	1	258575	6958223
Grevillea inconspicua	P4	1	258573	6958220
Grevillea inconspicua	P4	1	258573	6958219
Grevillea inconspicua	P4	1	258566	6958209
Grevillea inconspicua	P4	1	258566	6958208
Grevillea inconspicua	P4	1	258564	6958213
Grevillea inconspicua	P4	1	258557	6958216
Grevillea inconspicua	P4	1	258556	6958222
Grevillea inconspicua	P4	1	258554	6958223
Grevillea inconspicua	P4	1	258551	6958220
Grevillea inconspicua	P4	1	258548	6958215
Grevillea inconspicua	P4	1	258540	6958210
Grevillea inconspicua	P4	1	258539	6958211
Grevillea inconspicua	P4	1	258534	6958196
Grevillea inconspicua	P4	1	258532	6958194
Grevillea inconspicua	P4	1	258531	6958193
Grevillea inconspicua	P4	1	258355	6958184
Grevillea inconspicua	P4	1	258355	6958180
Grevillea inconspicua	P4	1	258343	6958164
Grevillea inconspicua	P4	1	258340	6958162
Grevillea inconspicua	P4	1	258340	6958161
Grevillea inconspicua	P4	1	258342	6958154

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258313	6958154
Grevillea inconspicua	P4	1	258312	6958154
Grevillea inconspicua	P4	1	258310	6958157
Grevillea inconspicua	P4	1	258297	6958212
Grevillea inconspicua	P4	1	258293	6958212
Grevillea inconspicua	P4	1	258291	6958211
Grevillea inconspicua	P4	1	258315	6958240
Grevillea inconspicua	P4	1	258321	6958238
Grevillea inconspicua	P4	1	258321	6958233
Grevillea inconspicua	P4	1	258321	6958222
Grevillea inconspicua	P4	1	258321	6958222
Grevillea inconspicua	P4	1	258337	6958198
Grevillea inconspicua	P4	1	258341	6958194
Grevillea inconspicua	P4	1	258342	6958192
Grevillea inconspicua	P4	1	258343	6958191
Grevillea inconspicua	P4	1	258351	6958193
Grevillea inconspicua	P4	1	258354	6958196
Grevillea inconspicua	P4	1	258354	6958197
Grevillea inconspicua	P4	1	258358	6958203
Grevillea inconspicua	P4	1	258375	6958175
Grevillea inconspicua	P4	1	258374	6958169
Grevillea inconspicua	P4	1	258380	6958170
Grevillea inconspicua	P4	1	258455	6958161
Grevillea inconspicua	P4	1	258459	6958161
Grevillea inconspicua	P4	1	258469	6958163
Grevillea inconspicua	P4	1	258471	6958163
Grevillea inconspicua	P4	1	258473	6958158
Grevillea inconspicua	P4	1	258457	6958140
Grevillea inconspicua	P4	1	258452	6958142
Grevillea inconspicua	P4	1	258407	6958149
Grevillea inconspicua	P4	1	258405	6958148
Grevillea inconspicua	P4	1	258401	6958149
Grevillea inconspicua	P4	1	258386	6958153
Grevillea inconspicua	P4	1	258384	6958153
Grevillea inconspicua	P4	1	258383	6958153
Grevillea inconspicua	P4	1	258379	6958156
Grevillea inconspicua	P4	1	258377	6958156
Grevillea inconspicua	P4	1	258374	6958158
Grevillea inconspicua	P4	1	258300	6958135
Grevillea inconspicua	P4	1	258300	6958136
Grevillea inconspicua	P4	1	258300	6958136
Grevillea inconspicua	P4	1	258299	6958137
Grevillea inconspicua	P4	1	258300	6958145

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258293	6958146
Grevillea inconspicua	P4	1	258292	6958149
Grevillea inconspicua	P4	1	258292	6958149
Grevillea inconspicua	P4	1	258291	6958150
Grevillea inconspicua	P4	1	258292	6958151
Grevillea inconspicua	P4	1	258287	6958150
Grevillea inconspicua	P4	1	258287	6958158
Grevillea inconspicua	P4	1	258253	6958190
Grevillea inconspicua	P4	1	258251	6958191
Grevillea inconspicua	P4	1	258249	6958191
Grevillea inconspicua	P4	1	258236	6958181
Grevillea inconspicua	P4	1	258238	6958179
Grevillea inconspicua	P4	1	258238	6958178
Grevillea inconspicua	P4	1	258238	6958177
Grevillea inconspicua	P4	1	258229	6958179
Grevillea inconspicua	P4	1	258225	6958183
Grevillea inconspicua	P4	1	258222	6958177
Grevillea inconspicua	P4	1	258219	6958178
Grevillea inconspicua	P4	1	258218	6958178
Grevillea inconspicua	P4	1	258215	6958178
Grevillea inconspicua	P4	1	258213	6958180
Grevillea inconspicua	P4	1	258209	6958184
Grevillea inconspicua	P4	1	258208	6958181
Grevillea inconspicua	P4	1	258205	6958172
Grevillea inconspicua	P4	1	258205	6958172
Grevillea inconspicua	P4	1	258206	6958168
Grevillea inconspicua	P4	1	258206	6958164
Grevillea inconspicua	P4	1	258206	6958162
Grevillea inconspicua	P4	1	258204	6958158
Grevillea inconspicua	P4	1	258209	6958150
Grevillea inconspicua	P4	1	258211	6958147
Grevillea inconspicua	P4	1	258214	6958143
Grevillea inconspicua	P4	1	258214	6958141
Grevillea inconspicua	P4	1	258221	6958142
Grevillea inconspicua	P4	1	258222	6958139
Grevillea inconspicua	P4	1	258224	6958137
Grevillea inconspicua	P4	1	258227	6958138
Grevillea inconspicua	P4	1	258228	6958133
Grevillea inconspicua	P4	1	258228	6958133
Grevillea inconspicua	P4	1	258228	6958133
Grevillea inconspicua	P4	1	258228	6958132
Grevillea inconspicua	P4	1	258228	6958132
Grevillea inconspicua	P4	1	258228	6958132

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258228	6958131
Grevillea inconspicua	P4	1	258229	6958128
Grevillea inconspicua	P4	1	258229	6958128
Grevillea inconspicua	P4	1	258229	6958127
Grevillea inconspicua	P4	1	258226	6958125
Grevillea inconspicua	P4	1	258223	6958122
Grevillea inconspicua	P4	1	258223	6958121
Grevillea inconspicua	P4	1	258223	6958120
Grevillea inconspicua	P4	1	258219	6958118
Grevillea inconspicua	P4	1	258216	6958117
Grevillea inconspicua	P4	1	258215	6958118
Grevillea inconspicua	P4	1	258211	6958122
Grevillea inconspicua	P4	1	258211	6958123
Grevillea inconspicua	P4	1	258210	6958124
Grevillea inconspicua	P4	1	258207	6958125
Grevillea inconspicua	P4	1	258205	6958126
Grevillea inconspicua	P4	1	258203	6958125
Grevillea inconspicua	P4	1	258199	6958122
Grevillea inconspicua	P4	1	258254	6958112
Grevillea inconspicua	P4	1	258254	6958112
Grevillea inconspicua	P4	1	258254	6958112
Grevillea inconspicua	P4	1	258254	6958109
Grevillea inconspicua	P4	1	258255	6958108
Grevillea inconspicua	P4	1	258251	6958106
Grevillea inconspicua	P4	1	258251	6958106
Grevillea inconspicua	P4	1	258251	6958107
Grevillea inconspicua	P4	1	258251	6958107
Grevillea inconspicua	P4	1	258252	6958102
Grevillea inconspicua	P4	1	258255	6958092
Grevillea inconspicua	P4	1	258255	6958092
Grevillea inconspicua	P4	1	258255	6958091
Grevillea inconspicua	P4	1	258255	6958091
Grevillea inconspicua	P4	1	258255	6958101
Grevillea inconspicua	P4	1	258246	6958107
Grevillea inconspicua	P4	1	258244	6958114
Grevillea inconspicua	P4	1	258242	6958116
Grevillea inconspicua	P4	1	258241	6958117
Grevillea inconspicua	P4	1	258239	6958118
Grevillea inconspicua	P4	1	258236	6958123
Grevillea inconspicua	P4	1	258236	6958123
Grevillea inconspicua	P4	1	258236	6958123
Grevillea inconspicua	P4	1	258235	6958124
Grevillea inconspicua	P4	1	258233	6958121

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258233	6958119
Grevillea inconspicua	P4	1	258232	6958114
Grevillea inconspicua	P4	1	258232	6958110
Grevillea inconspicua	P4	1	258232	6958109
Grevillea inconspicua	P4	1	258229	6958108
Grevillea inconspicua	P4	1	258227	6958108
Grevillea inconspicua	P4	1	258227	6958107
Grevillea inconspicua	P4	1	258228	6958101
Grevillea inconspicua	P4	1	258228	6958100
Grevillea inconspicua	P4	1	258228	6958097
Grevillea inconspicua	P4	1	258228	6958089
Grevillea inconspicua	P4	1	258229	6958084
Grevillea inconspicua	P4	1	258230	6958081
Grevillea inconspicua	P4	1	258229	6958078
Grevillea inconspicua	P4	1	258230	6958075
Grevillea inconspicua	P4	1	258229	6958075
Grevillea inconspicua	P4	1	258224	6958075
Grevillea inconspicua	P4	1	258224	6958073
Grevillea inconspicua	P4	1	258224	6958070
Grevillea inconspicua	P4	1	258220	6958065
Grevillea inconspicua	P4	1	258217	6958061
Grevillea inconspicua	P4	1	258216	6958061
Grevillea inconspicua	P4	1	258212	6958058
Grevillea inconspicua	P4	1	258211	6958056
Grevillea inconspicua	P4	1	258213	6958051
Grevillea inconspicua	P4	1	258213	6958051
Grevillea inconspicua	P4	1	258213	6958045
Grevillea inconspicua	P4	1	258216	6958043
Grevillea inconspicua	P4	1	258210	6958047
Grevillea inconspicua	P4	1	258211	6958052
Grevillea inconspicua	P4	1	258211	6958055
Grevillea inconspicua	P4	1	258210	6958058
Grevillea inconspicua	P4	1	258209	6958061
Grevillea inconspicua	P4	1	258209	6958061
Grevillea inconspicua	P4	1	258209	6958062
Grevillea inconspicua	P4	1	258205	6958064
Grevillea inconspicua	P4	1	258205	6958065
Grevillea inconspicua	P4	1	258206	6958066
Grevillea inconspicua	P4	1	258203	6958068
Grevillea inconspicua	P4	1	258197	6958070
Grevillea inconspicua	P4	1	258196	6958070
Grevillea inconspicua	P4	1	258196	6958070
Grevillea inconspicua	P4	1	258197	6958074

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258200	6958076
Grevillea inconspicua	P4	1	258202	6958079
Grevillea inconspicua	P4	1	258200	6958081
Grevillea inconspicua	P4	1	258199	6958081
Grevillea inconspicua	P4	1	258199	6958081
Grevillea inconspicua	P4	1	258202	6958084
Grevillea inconspicua	P4	1	258202	6958088
Grevillea inconspicua	P4	1	258202	6958090
Grevillea inconspicua	P4	1	258201	6958093
Grevillea inconspicua	P4	1	258188	6958084
Grevillea inconspicua	P4	1	258187	6958083
Grevillea inconspicua	P4	1	258187	6958083
Grevillea inconspicua	P4	1	258187	6958082
Grevillea inconspicua	P4	1	258188	6958082
Grevillea inconspicua	P4	1	258188	6958081
Grevillea inconspicua	P4	1	258188	6958081
Grevillea inconspicua	P4	1	258175	6958086
Grevillea inconspicua	P4	1	258173	6958085
Grevillea inconspicua	P4	1	258167	6958087
Grevillea inconspicua	P4	1	258165	6958089
Grevillea inconspicua	P4	1	258158	6958089
Grevillea inconspicua	P4	1	258156	6958089
Grevillea inconspicua	P4	1	258159	6958094
Grevillea inconspicua	P4	1	258161	6958098
Grevillea inconspicua	P4	1	258167	6958102
Grevillea inconspicua	P4	1	258165	6958106
Grevillea inconspicua	P4	1	258163	6958109
Grevillea inconspicua	P4	1	258160	6958109
Grevillea inconspicua	P4	1	258157	6958110
Grevillea inconspicua	P4	1	258155	6958109
Grevillea inconspicua	P4	1	258155	6958106
Grevillea inconspicua	P4	1	258155	6958115
Grevillea inconspicua	P4	1	258155	6958116
Grevillea inconspicua	P4	1	258156	6958117
Grevillea inconspicua	P4	1	258155	6958119
Grevillea inconspicua	P4	1	258152	6958118
Grevillea inconspicua	P4	1	258151	6958117
Grevillea inconspicua	P4	1	258150	6958116
Grevillea inconspicua	P4	1	258146	6958116
Grevillea inconspicua	P4	1	258143	6958114
Grevillea inconspicua	P4	1	258138	6958114
Grevillea inconspicua	P4	1	258135	6958109
Grevillea inconspicua	P4	1	258136	6958117

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258137	6958118
Grevillea inconspicua	P4	1	258136	6958119
Grevillea inconspicua	P4	1	258138	6958124
Grevillea inconspicua	P4	1	258141	6958125
Grevillea inconspicua	P4	1	258142	6958129
Grevillea inconspicua	P4	1	258142	6958130
Grevillea inconspicua	P4	1	258142	6958130
Grevillea inconspicua	P4	1	258142	6958131
Grevillea inconspicua	P4	1	258150	6958126
Grevillea inconspicua	P4	1	258152	6958122
Grevillea inconspicua	P4	1	258153	6958122
Grevillea inconspicua	P4	1	258166	6958124
Grevillea inconspicua	P4	1	258172	6958126
Grevillea inconspicua	P4	1	258176	6958128
Grevillea inconspicua	P4	1	258178	6958131
Grevillea inconspicua	P4	1	258175	6958135
Grevillea inconspicua	P4	1	258175	6958136
Grevillea inconspicua	P4	1	258184	6958134
Grevillea inconspicua	P4	1	258195	6958132
Grevillea inconspicua	P4	1	258200	6958129
Grevillea inconspicua	P4	1	258202	6958128
Grevillea inconspicua	P4	1	258205	6958128
Grevillea inconspicua	P4	1	258206	6958128
Grevillea inconspicua	P4	1	258209	6958128
Grevillea inconspicua	P4	1	258209	6958127
Grevillea inconspicua	P4	1	258209	6958127
Grevillea inconspicua	P4	1	258215	6958121
Grevillea inconspicua	P4	1	258300	6958120
Grevillea inconspicua	P4	1	258304	6958114
Grevillea inconspicua	P4	1	258305	6958110
Grevillea inconspicua	P4	1	258305	6958110
Grevillea inconspicua	P4	1	258304	6958109
Grevillea inconspicua	P4	1	258305	6958108
Grevillea inconspicua	P4	1	258307	6958107
Grevillea inconspicua	P4	1	258308	6958106
Grevillea inconspicua	P4	1	258309	6958105
Grevillea inconspicua	P4	1	258309	6958105
Grevillea inconspicua	P4	1	258308	6958104
Grevillea inconspicua	P4	1	258309	6958103
Grevillea inconspicua	P4	1	258307	6958101
Grevillea inconspicua	P4	1	258307	6958100
Grevillea inconspicua	P4	1	258305	6958096
Grevillea inconspicua	P4	1	258305	6958095

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258305	6958096
Grevillea inconspicua	P4	1	258304	6958096
Grevillea inconspicua	P4	1	258304	6958096
Grevillea inconspicua	P4	1	258304	6958095
Grevillea inconspicua	P4	1	258305	6958094
Grevillea inconspicua	P4	1	258306	6958093
Grevillea inconspicua	P4	1	258306	6958092
Grevillea inconspicua	P4	1	258305	6958092
Grevillea inconspicua	P4	1	258310	6958090
Grevillea inconspicua	P4	1	258309	6958088
Grevillea inconspicua	P4	1	258309	6958088
Grevillea inconspicua	P4	1	258307	6958088
Grevillea inconspicua	P4	1	258305	6958087
Grevillea inconspicua	P4	1	258303	6958084
Grevillea inconspicua	P4	1	258301	6958083
Grevillea inconspicua	P4	1	258296	6958085
Grevillea inconspicua	P4	1	258296	6958088
Grevillea inconspicua	P4	1	258296	6958089
Grevillea inconspicua	P4	1	258296	6958089
Grevillea inconspicua	P4	1	258292	6958091
Grevillea inconspicua	P4	1	258292	6958091
Grevillea inconspicua	P4	1	258292	6958091
Grevillea inconspicua	P4	1	258290	6958091
Grevillea inconspicua	P4	1	258288	6958092
Grevillea inconspicua	P4	1	258288	6958093
Grevillea inconspicua	P4	1	258290	6958094
Grevillea inconspicua	P4	1	258291	6958096
Grevillea inconspicua	P4	1	258291	6958097
Grevillea inconspicua	P4	1	258291	6958100
Grevillea inconspicua	P4	1	258288	6958101
Grevillea inconspicua	P4	1	258285	6958098
Grevillea inconspicua	P4	1	258281	6958099
Grevillea inconspicua	P4	1	258281	6958100
Grevillea inconspicua	P4	1	258280	6958101
Grevillea inconspicua	P4	1	258281	6958105
Grevillea inconspicua	P4	1	258281	6958105
Grevillea inconspicua	P4	1	258281	6958106
Grevillea inconspicua	P4	1	258280	6958108
Grevillea inconspicua	P4	1	258278	6958108
Grevillea inconspicua	P4	1	258278	6958104
Grevillea inconspicua	P4	1	258277	6958103
Grevillea inconspicua	P4	1	258276	6958102
Grevillea inconspicua	P4	1	258273	6958098

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258271	6958099
Grevillea inconspicua	P4	1	258269	6958094
Grevillea inconspicua	P4	1	258273	6958089
Grevillea inconspicua	P4	1	258272	6958086
Grevillea inconspicua	P4	1	258272	6958084
Grevillea inconspicua	P4	1	258273	6958084
Grevillea inconspicua	P4	1	258269	6958079
Grevillea inconspicua	P4	1	258264	6958082
Grevillea inconspicua	P4	1	258263	6958083
Grevillea inconspicua	P4	1	258264	6958076
Grevillea inconspicua	P4	1	258265	6958073
Grevillea inconspicua	P4	1	258264	6958072
Grevillea inconspicua	P4	1	258262	6958072
Grevillea inconspicua	P4	1	258259	6958072
Grevillea inconspicua	P4	1	258263	6958065
Grevillea inconspicua	P4	1	258261	6958063
Grevillea inconspicua	P4	1	258261	6958060
Grevillea inconspicua	P4	1	258266	6958060
Grevillea inconspicua	P4	1	258271	6958062
Grevillea inconspicua	P4	1	258271	6958061
Grevillea inconspicua	P4	1	258271	6958061
Grevillea inconspicua	P4	1	258273	6958059
Grevillea inconspicua	P4	1	258274	6958059
Grevillea inconspicua	P4	1	258299	6958066
Grevillea inconspicua	P4	1	258310	6958067
Grevillea inconspicua	P4	1	258310	6958067
Grevillea inconspicua	P4	1	258311	6958068
Grevillea inconspicua	P4	1	258306	6958059
Grevillea inconspicua	P4	1	258303	6958054
Grevillea inconspicua	P4	1	258305	6958049
Grevillea inconspicua	P4	1	258298	6958047
Grevillea inconspicua	P4	1	258297	6958046
Grevillea inconspicua	P4	1	258299	6958039
Grevillea inconspicua	P4	1	258299	6958039
Grevillea inconspicua	P4	1	258296	6958035
Grevillea inconspicua	P4	1	258293	6958033
Grevillea inconspicua	P4	1	258293	6958033
Grevillea inconspicua	P4	1	258293	6958034
Grevillea inconspicua	P4	1	258288	6958036
Grevillea inconspicua	P4	1	258283	6958042
Grevillea inconspicua	P4	1	258273	6958041
Grevillea inconspicua	P4	1	258272	6958043
Grevillea inconspicua	P4	1	258264	6958031

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258258	6958033
Grevillea inconspicua	P4	1	258253	6958033
Grevillea inconspicua	P4	1	258252	6958033
Grevillea inconspicua	P4	1	258237	6958035
Grevillea inconspicua	P4	1	258233	6958027
Grevillea inconspicua	P4	1	258232	6958026
Grevillea inconspicua	P4	1	258228	6958015
Grevillea inconspicua	P4	1	258226	6958015
Grevillea inconspicua	P4	1	258224	6958005
Grevillea inconspicua	P4	1	258219	6958007
Grevillea inconspicua	P4	1	258217	6958010
Grevillea inconspicua	P4	1	258218	6958016
Grevillea inconspicua	P4	1	257867	6958434
Grevillea inconspicua	P4	1	257870	6958427
Grevillea inconspicua	P4	1	257884	6958436
Grevillea inconspicua	P4	1	257885	6958436
Grevillea inconspicua	P4	1	257886	6958439
Grevillea inconspicua	P4	1	257889	6958443
Grevillea inconspicua	P4	1	257896	6958441
Grevillea inconspicua	P4	1	257897	6958440
Grevillea inconspicua	P4	1	257898	6958440
Grevillea inconspicua	P4	1	257908	6958440
Grevillea inconspicua	P4	1	257909	6958446
Grevillea inconspicua	P4	1	257895	6958459
Grevillea inconspicua	P4	1	257879	6958482
Grevillea inconspicua	P4	1	257870	6958481
Grevillea inconspicua	P4	1	257865	6958468
Grevillea inconspicua	P4	1	257866	6958467
Grevillea inconspicua	P4	1	257866	6958468
Grevillea inconspicua	P4	1	257866	6958468
Grevillea inconspicua	P4	1	257866	6958467
Grevillea inconspicua	P4	1	257861	6958463
Grevillea inconspicua	P4	1	257850	6958465
Grevillea inconspicua	P4	1	257982	6958152
Grevillea inconspicua	P4	1	257982	6958153
Grevillea inconspicua	P4	1	257987	6958154
Grevillea inconspicua	P4	1	257991	6958150
Grevillea inconspicua	P4	1	257993	6958170
Grevillea inconspicua	P4	1	257996	6958186
Grevillea inconspicua	P4	1	258002	6958185
Grevillea inconspicua	P4	1	258011	6958182
Grevillea inconspicua	P4	1	258012	6958182
Grevillea inconspicua	P4	1	258013	6958182

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258010	6958173
Grevillea inconspicua	P4	1	258011	6958161
Grevillea inconspicua	P4	1	258011	6958160
Grevillea inconspicua	P4	1	258010	6958158
Grevillea inconspicua	P4	1	258020	6958157
Grevillea inconspicua	P4	1	258022	6958149
Grevillea inconspicua	P4	1	258034	6958146
Grevillea inconspicua	P4	1	258036	6958149
Grevillea inconspicua	P4	1	258037	6958149
Grevillea inconspicua	P4	1	258045	6958156
Grevillea inconspicua	P4	1	258050	6958164
Grevillea inconspicua	P4	1	258045	6958173
Grevillea inconspicua	P4	1	258044	6958178
Grevillea inconspicua	P4	1	258048	6958183
Grevillea inconspicua	P4	1	258048	6958183
Grevillea inconspicua	P4	1	258031	6958197
Grevillea inconspicua	P4	1	258021	6958199
Grevillea inconspicua	P4	1	258020	6958199
Grevillea inconspicua	P4	1	258032	6958220
Grevillea inconspicua	P4	1	258059	6958231
Grevillea inconspicua	P4	1	258066	6958235
Grevillea inconspicua	P4	1	258068	6958237
Grevillea inconspicua	P4	1	258079	6958239
Grevillea inconspicua	P4	1	258080	6958239
Grevillea inconspicua	P4	1	258080	6958239
Grevillea inconspicua	P4	1	258085	6958241
Grevillea inconspicua	P4	1	258089	6958189
Grevillea inconspicua	P4	1	258093	6958185
Grevillea inconspicua	P4	1	258093	6958185
Grevillea inconspicua	P4	1	258093	6958185
Grevillea inconspicua	P4	1	258093	6958185
Grevillea inconspicua	P4	1	258022	6958146
Grevillea inconspicua	P4	1	258131	6958274
Grevillea inconspicua	P4	1	258136	6958273
Grevillea inconspicua	P4	1	258136	6958273
Grevillea inconspicua	P4	1	258136	6958272
Grevillea inconspicua	P4	1	258135	6958268
Grevillea inconspicua	P4	1	258135	6958267
Grevillea inconspicua	P4	1	258135	6958266
Grevillea inconspicua	P4	1	258141	6958268
Grevillea inconspicua	P4	1	258149	6958265
Grevillea inconspicua	P4	1	258149	6958265
Grevillea inconspicua	P4	1	258153	6958266

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258155	6958260
Grevillea inconspicua	P4	1	258163	6958269
Grevillea inconspicua	P4	1	258164	6958271
Grevillea inconspicua	P4	1	258170	6958277
Grevillea inconspicua	P4	1	258171	6958279
Grevillea inconspicua	P4	1	258171	6958280
Grevillea inconspicua	P4	1	258173	6958281
Grevillea inconspicua	P4	1	258174	6958283
Grevillea inconspicua	P4	1	258174	6958289
Grevillea inconspicua	P4	1	258173	6958290
Grevillea inconspicua	P4	1	258194	6958286
Grevillea inconspicua	P4	1	258196	6958286
Grevillea inconspicua	P4	1	258198	6958294
Grevillea inconspicua	P4	1	258177	6958303
Grevillea inconspicua	P4	1	258175	6958304
Grevillea inconspicua	P4	1	258177	6958319
Grevillea inconspicua	P4	1	258174	6958321
Grevillea inconspicua	P4	1	258173	6958324
Grevillea inconspicua	P4	1	258173	6958324
Grevillea inconspicua	P4	1	258169	6958323
Grevillea inconspicua	P4	1	258156	6958334
Grevillea inconspicua	P4	1	258143	6958330
Grevillea inconspicua	P4	1	258143	6958329
Grevillea inconspicua	P4	1	258135	6958326
Grevillea inconspicua	P4	1	258125	6958332
Grevillea inconspicua	P4	1	258124	6958333
Grevillea inconspicua	P4	1	258109	6958303
Grevillea inconspicua	P4	1	258107	6958296
Grevillea inconspicua	P4	1	258096	6958283
Grevillea inconspicua	P4	1	258092	6958279
Grevillea inconspicua	P4	1	258093	6958271
Grevillea inconspicua	P4	1	258147	6958153
Grevillea inconspicua	P4	1	258511	6957437
Grevillea inconspicua	P4	1	258324	6957894
Grevillea inconspicua	P4	1	258226	6958001
Grevillea inconspicua	P4	1	258232	6958009
Grevillea inconspicua	P4	1	258234	6958013
Grevillea inconspicua	P4	1	258217	6958019
Grevillea inconspicua	P4	1	258202	6957981
Grevillea inconspicua	P4	1	258283	6957801
Grevillea inconspicua	P4	1	258211	6957926
Grevillea inconspicua	P4	1	258188	6957997
Grevillea inconspicua	P4	1	258183	6958006

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258179	6958015
Grevillea inconspicua	P4	1	258183	6958021
Grevillea inconspicua	P4	1	258184	6958025
Grevillea inconspicua	P4	1	258185	6958026
Grevillea inconspicua	P4	1	258189	6958033
Grevillea inconspicua	P4	1	258186	6958043
Grevillea inconspicua	P4	1	258184	6958050
Grevillea inconspicua	P4	1	258168	6958054
Grevillea inconspicua	P4	1	258160	6958057
Grevillea inconspicua	P4	1	258160	6958056
Grevillea inconspicua	P4	1	258158	6958056
Grevillea inconspicua	P4	1	258157	6958062
Grevillea inconspicua	P4	1	258152	6958064
Grevillea inconspicua	P4	1	258152	6958064
Grevillea inconspicua	P4	1	258149	6958070
Grevillea inconspicua	P4	1	258149	6958071
Grevillea inconspicua	P4	1	258150	6958073
Grevillea inconspicua	P4	1	258152	6958078
Grevillea inconspicua	P4	1	258153	6958082
Grevillea inconspicua	P4	1	258151	6958087
Grevillea inconspicua	P4	1	258151	6958090
Grevillea inconspicua	P4	1	258158	6958095
Grevillea inconspicua	P4	1	258160	6958098
Grevillea inconspicua	P4	1	258166	6958104
Grevillea inconspicua	P4	1	258163	6958109
Grevillea inconspicua	P4	1	258161	6958110
Grevillea inconspicua	P4	1	258158	6958110
Grevillea inconspicua	P4	1	258155	6958111
Grevillea inconspicua	P4	1	258153	6958113
Grevillea inconspicua	P4	1	258153	6958114
Grevillea inconspicua	P4	1	258154	6958118
Grevillea inconspicua	P4	1	258154	6958119
Grevillea inconspicua	P4	1	258153	6958120
Grevillea inconspicua	P4	1	258151	6958124
Grevillea inconspicua	P4	1	258126	6958100
Grevillea inconspicua	P4	1	258126	6958097
Grevillea inconspicua	P4	1	258125	6958095
Grevillea inconspicua	P4	1	258122	6958094
Grevillea inconspicua	P4	1	258121	6958095
Grevillea inconspicua	P4	1	258121	6958093
Grevillea inconspicua	P4	1	258121	6958089
Grevillea inconspicua	P4	1	258124	6958085
Grevillea inconspicua	P4	1	258125	6958083

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258126	6958072
Grevillea inconspicua	P4	1	258129	6958062
Grevillea inconspicua	P4	1	258130	6958057
Grevillea inconspicua	P4	1	258126	6958051
Grevillea inconspicua	P4	1	258135	6958048
Grevillea inconspicua	P4	1	258137	6958047
Grevillea inconspicua	P4	1	258140	6958042
Grevillea inconspicua	P4	1	258142	6958038
Grevillea inconspicua	P4	1	258137	6958035
Grevillea inconspicua	P4	1	258136	6958034
Grevillea inconspicua	P4	1	258130	6958031
Grevillea inconspicua	P4	1	258129	6958031
Grevillea inconspicua	P4	1	258123	6958033
Grevillea inconspicua	P4	1	258116	6958033
Grevillea inconspicua	P4	1	258115	6958033
Grevillea inconspicua	P4	1	258117	6958031
Grevillea inconspicua	P4	1	258129	6958017
Grevillea inconspicua	P4	1	258133	6958019
Grevillea inconspicua	P4	1	258136	6958020
Grevillea inconspicua	P4	1	258137	6958023
Grevillea inconspicua	P4	1	258137	6958023
Grevillea inconspicua	P4	1	258144	6958022
Grevillea inconspicua	P4	1	258144	6958022
Grevillea inconspicua	P4	1	258157	6958018
Grevillea inconspicua	P4	1	258157	6958018
Grevillea inconspicua	P4	1	258143	6958011
Grevillea inconspicua	P4	1	258140	6958009
Grevillea inconspicua	P4	1	258137	6958010
Grevillea inconspicua	P4	1	258134	6958005
Grevillea inconspicua	P4	1	258137	6958002
Grevillea inconspicua	P4	1	258140	6958000
Grevillea inconspicua	P4	1	258148	6957993
Grevillea inconspicua	P4	1	258150	6957992
Grevillea inconspicua	P4	1	258147	6957986
Grevillea inconspicua	P4	1	258154	6957980
Grevillea inconspicua	P4	1	258158	6957976
Grevillea inconspicua	P4	1	258161	6957975
Grevillea inconspicua	P4	1	258164	6957974
Grevillea inconspicua	P4	1	258165	6957977
Grevillea inconspicua	P4	1	258179	6957956
Grevillea inconspicua	P4	1	258173	6957939
Grevillea inconspicua	P4	1	258173	6957939
Grevillea inconspicua	P4	1	258186	6957918

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258198	6957908
Grevillea inconspicua	P4	1	258185	6957893
Grevillea inconspicua	P4	1	258184	6957893
Grevillea inconspicua	P4	1	258183	6957893
Grevillea inconspicua	P4	1	258186	6957880
Grevillea inconspicua	P4	1	258207	6957846
Grevillea inconspicua	P4	1	258209	6957839
Grevillea inconspicua	P4	1	258225	6957829
Grevillea inconspicua	P4	1	258249	6957824
Grevillea inconspicua	P4	1	258254	6957823
Grevillea inconspicua	P4	1	258259	6957826
Grevillea inconspicua	P4	1	258184	6957815
Grevillea inconspicua	P4	1	258158	6957863
Grevillea inconspicua	P4	1	258115	6957964
Grevillea inconspicua	P4	1	258129	6957955
Grevillea inconspicua	P4	1	258141	6957952
Grevillea inconspicua	P4	1	258142	6957952
Grevillea inconspicua	P4	1	258146	6957951
Grevillea inconspicua	P4	1	258148	6957950
Grevillea inconspicua	P4	1	258125	6957980
Grevillea inconspicua	P4	1	258123	6957979
Grevillea inconspicua	P4	1	258120	6957980
Grevillea inconspicua	P4	1	258115	6957981
Grevillea inconspicua	P4	1	258113	6957987
Grevillea inconspicua	P4	1	258118	6957992
Grevillea inconspicua	P4	1	258119	6957995
Grevillea inconspicua	P4	1	258103	6958005
Grevillea inconspicua	P4	1	258106	6958003
Grevillea inconspicua	P4	1	258108	6958003
Grevillea inconspicua	P4	1	258114	6958007
Grevillea inconspicua	P4	1	258122	6958009
Grevillea inconspicua	P4	1	258124	6958014
Grevillea inconspicua	P4	1	258125	6958015
Grevillea inconspicua	P4	1	258126	6958015
Grevillea inconspicua	P4	1	258131	6958019
Grevillea inconspicua	P4	1	258116	6958025
Grevillea inconspicua	P4	1	258111	6958033
Grevillea inconspicua	P4	1	258113	6958040
Grevillea inconspicua	P4	1	258100	6958063
Grevillea inconspicua	P4	1	258097	6958066
Grevillea inconspicua	P4	1	258096	6958067
Grevillea inconspicua	P4	1	258093	6958068
Grevillea inconspicua	P4	1	258092	6958073

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258090	6958077
Grevillea inconspicua	P4	1	258086	6958082
Grevillea inconspicua	P4	1	258084	6958083
Grevillea inconspicua	P4	1	258086	6958086
Grevillea inconspicua	P4	1	258086	6958086
Grevillea inconspicua	P4	1	258092	6958099
Grevillea inconspicua	P4	1	258097	6958098
Grevillea inconspicua	P4	1	258101	6958096
Grevillea inconspicua	P4	1	258102	6958094
Grevillea inconspicua	P4	1	258104	6958097
Grevillea inconspicua	P4	1	258105	6958113
Grevillea inconspicua	P4	1	258105	6958116
Grevillea inconspicua	P4	1	258092	6958130
Grevillea inconspicua	P4	1	258081	6958127
Grevillea inconspicua	P4	1	258080	6958122
Grevillea inconspicua	P4	1	258080	6958121
Grevillea inconspicua	P4	1	258074	6958122
Grevillea inconspicua	P4	1	258060	6958082
Grevillea inconspicua	P4	1	258059	6958078
Grevillea inconspicua	P4	1	258048	6958077
Grevillea inconspicua	P4	1	258043	6958078
Grevillea inconspicua	P4	1	258041	6958079
Grevillea inconspicua	P4	1	258029	6958084
Grevillea inconspicua	P4	1	258027	6958085
Grevillea inconspicua	P4	1	258023	6958082
Grevillea inconspicua	P4	1	258022	6958081
Grevillea inconspicua	P4	1	258020	6958080
Grevillea inconspicua	P4	1	258018	6958074
Grevillea inconspicua	P4	1	258006	6958060
Grevillea inconspicua	P4	1	258005	6958059
Grevillea inconspicua	P4	1	258006	6958050
Grevillea inconspicua	P4	1	258015	6958050
Grevillea inconspicua	P4	1	258024	6958048
Grevillea inconspicua	P4	1	258030	6958047
Grevillea inconspicua	P4	1	258060	6958075
Grevillea inconspicua	P4	1	258065	6958079
Grevillea inconspicua	P4	1	258069	6958077
Grevillea inconspicua	P4	1	258073	6958075
Grevillea inconspicua	P4	1	258073	6958075
Grevillea inconspicua	P4	1	258077	6958074
Grevillea inconspicua	P4	1	258078	6958074
Grevillea inconspicua	P4	1	258081	6958071
Grevillea inconspicua	P4	1	258092	6957998

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258093	6957998
Grevillea inconspicua	P4	1	258106	6957979
Grevillea inconspicua	P4	1	258111	6957967
Grevillea inconspicua	P4	1	258128	6957956
Grevillea inconspicua	P4	1	258142	6957937
Grevillea inconspicua	P4	1	258146	6957922
Grevillea inconspicua	P4	1	258140	6957920
Grevillea inconspicua	P4	1	258150	6957795
Grevillea inconspicua	P4	1	258147	6957796
Grevillea inconspicua	P4	1	258144	6957794
Grevillea inconspicua	P4	1	258140	6957796
Grevillea inconspicua	P4	1	258139	6957796
Grevillea inconspicua	P4	1	258161	6957700
Grevillea inconspicua	P4	1	258158	6957700
Grevillea inconspicua	P4	1	258132	6957796
Grevillea inconspicua	P4	1	258133	6957796
Grevillea inconspicua	P4	1	258135	6957797
Grevillea inconspicua	P4	1	258125	6957801
Grevillea inconspicua	P4	1	258124	6957800
Grevillea inconspicua	P4	1	258122	6957801
Grevillea inconspicua	P4	1	258121	6957802
Grevillea inconspicua	P4	1	258105	6957808
Grevillea inconspicua	P4	1	258096	6957811
Grevillea inconspicua	P4	1	258094	6957810
Grevillea inconspicua	P4	1	258088	6957809
Grevillea inconspicua	P4	1	258067	6957812
Grevillea inconspicua	P4	1	258051	6957815
Grevillea inconspicua	P4	1	258050	6957809
Grevillea inconspicua	P4	1	258047	6957806
Grevillea inconspicua	P4	1	258045	6957805
Grevillea inconspicua	P4	1	258042	6957804
Grevillea inconspicua	P4	1	258045	6957840
Grevillea inconspicua	P4	1	258047	6957851
Grevillea inconspicua	P4	1	258050	6957862
Grevillea inconspicua	P4	1	258050	6957863
Grevillea inconspicua	P4	1	258050	6957881
Grevillea inconspicua	P4	1	258057	6957885
Grevillea inconspicua	P4	1	258060	6957885
Grevillea inconspicua	P4	1	258060	6957880
Grevillea inconspicua	P4	1	258062	6957874
Grevillea inconspicua	P4	1	258062	6957873
Grevillea inconspicua	P4	1	258073	6957871
Grevillea inconspicua	P4	1	258073	6957872

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258075	6957871
Grevillea inconspicua	P4	1	258083	6957864
Grevillea inconspicua	P4	1	258101	6957879
Grevillea inconspicua	P4	1	258103	6957879
Grevillea inconspicua	P4	1	258105	6957880
Grevillea inconspicua	P4	1	258108	6957882
Grevillea inconspicua	P4	1	258099	6957933
Grevillea inconspicua	P4	1	258049	6958088
Grevillea inconspicua	P4	1	258041	6957758
Grevillea inconspicua	P4	1	258039	6957755
Grevillea inconspicua	P4	1	258035	6957749
Grevillea inconspicua	P4	1	258034	6957746
Grevillea inconspicua	P4	1	258028	6957732
Grevillea inconspicua	P4	1	258031	6957729
Grevillea inconspicua	P4	1	258032	6957727
Grevillea inconspicua	P4	1	258035	6957717
Grevillea inconspicua	P4	1	258041	6957707
Grevillea inconspicua	P4	1	258037	6957698
Grevillea inconspicua	P4	1	258036	6957696
Grevillea inconspicua	P4	1	258036	6957696
Grevillea inconspicua	P4	1	258050	6957686
Grevillea inconspicua	P4	1	258052	6957680
Grevillea inconspicua	P4	1	258051	6957675
Grevillea inconspicua	P4	1	258049	6957662
Grevillea inconspicua	P4	1	258047	6957659
Grevillea inconspicua	P4	1	258062	6957655
Grevillea inconspicua	P4	1	258067	6957643
Grevillea inconspicua	P4	1	258066	6957642
Grevillea inconspicua	P4	1	258083	6957665
Grevillea inconspicua	P4	1	258097	6957664
Grevillea inconspicua	P4	1	258098	6957666
Grevillea inconspicua	P4	1	258098	6957666
Grevillea inconspicua	P4	1	258102	6957678
Grevillea inconspicua	P4	1	258103	6957680
Grevillea inconspicua	P4	1	258119	6957687
Grevillea inconspicua	P4	1	258119	6957692
Grevillea inconspicua	P4	1	258117	6957632
Grevillea inconspicua	P4	1	258115	6957634
Grevillea inconspicua	P4	1	258112	6957636
Grevillea inconspicua	P4	1	258111	6957636
Grevillea inconspicua	P4	1	258111	6957637
Grevillea inconspicua	P4	1	258111	6957637
Grevillea inconspicua	P4	1	258111	6957639

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258111	6957639
Grevillea inconspicua	P4	1	258110	6957641
Grevillea inconspicua	P4	1	258110	6957641
Grevillea inconspicua	P4	1	258088	6957666
Grevillea inconspicua	P4	1	258083	6957664
Grevillea inconspicua	P4	1	258067	6957652
Grevillea inconspicua	P4	1	258051	6957656
Grevillea inconspicua	P4	1	258040	6957638
Grevillea inconspicua	P4	1	258039	6957629
Grevillea inconspicua	P4	1	258035	6957628
Grevillea inconspicua	P4	1	258033	6957624
Grevillea inconspicua	P4	1	258031	6957623
Grevillea inconspicua	P4	1	258031	6957622
Grevillea inconspicua	P4	1	258029	6957621
Grevillea inconspicua	P4	1	258022	6957618
Grevillea inconspicua	P4	1	258021	6957618
Grevillea inconspicua	P4	1	258020	6957618
Grevillea inconspicua	P4	1	258018	6957617
Grevillea inconspicua	P4	1	258018	6957615
Grevillea inconspicua	P4	1	258012	6957614
Grevillea inconspicua	P4	1	258007	6957623
Grevillea inconspicua	P4	1	258003	6957622
Grevillea inconspicua	P4	1	258000	6957621
Grevillea inconspicua	P4	1	258000	6957621
Grevillea inconspicua	P4	1	257999	6957623
Grevillea inconspicua	P4	1	258002	6957612
Grevillea inconspicua	P4	1	258003	6957612
Grevillea inconspicua	P4	1	258042	6957604
Grevillea inconspicua	P4	1	258047	6957606
Grevillea inconspicua	P4	1	258054	6957608
Grevillea inconspicua	P4	1	257909	6957646
Grevillea inconspicua	P4	1	258349	6958844
Grevillea inconspicua	P4	1	258395	6958491
Grevillea inconspicua	P4	1	258391	6958492
Grevillea inconspicua	P4	1	258387	6958501
Grevillea inconspicua	P4	1	258385	6958501
Grevillea inconspicua	P4	1	258384	6958502
Grevillea inconspicua	P4	1	258382	6958505
Grevillea inconspicua	P4	1	258383	6958508
Grevillea inconspicua	P4	1	258384	6958510
Grevillea inconspicua	P4	1	258384	6958514
Grevillea inconspicua	P4	1	258384	6958520
Grevillea inconspicua	P4	1	258381	6958514

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258376	6958514
Grevillea inconspicua	P4	1	258369	6958518
Grevillea inconspicua	P4	1	258329	6958517
Grevillea inconspicua	P4	1	258302	6958511
Grevillea inconspicua	P4	1	258294	6958515
Grevillea inconspicua	P4	1	258293	6958515
Grevillea inconspicua	P4	1	258291	6958519
Grevillea inconspicua	P4	1	258304	6958485
Grevillea inconspicua	P4	1	258394	6958457
Grevillea inconspicua	P4	1	258397	6958454
Grevillea inconspicua	P4	1	258392	6958445
Grevillea inconspicua	P4	1	258388	6958443
Grevillea inconspicua	P4	1	258384	6958442
Grevillea inconspicua	P4	1	258384	6958441
Grevillea inconspicua	P4	1	258381	6958435
Grevillea inconspicua	P4	1	258380	6958429
Grevillea inconspicua	P4	1	258383	6958428
Grevillea inconspicua	P4	1	258386	6958425
Grevillea inconspicua	P4	1	258394	6958424
Grevillea inconspicua	P4	1	258399	6958424
Grevillea inconspicua	P4	1	258402	6958424
Grevillea inconspicua	P4	1	258413	6958433
Grevillea inconspicua	P4	1	258418	6958448
Grevillea inconspicua	P4	1	258415	6958452
Grevillea inconspicua	P4	1	258415	6958456
Grevillea inconspicua	P4	1	258413	6958460
Grevillea inconspicua	P4	1	258407	6958464
Grevillea inconspicua	P4	1	258406	6958464
Grevillea inconspicua	P4	1	258410	6958467
Grevillea inconspicua	P4	1	258407	6958471
Grevillea inconspicua	P4	1	258408	6958475
Grevillea inconspicua	P4	1	258439	6958442
Grevillea inconspicua	P4	1	258438	6958440
Grevillea inconspicua	P4	1	258436	6958440
Grevillea inconspicua	P4	1	258437	6958440
Grevillea inconspicua	P4	1	258422	6958442
Grevillea inconspicua	P4	1	258393	6958413
Grevillea inconspicua	P4	1	258391	6958410
Grevillea inconspicua	P4	1	258387	6958411
Grevillea inconspicua	P4	1	258380	6958399
Grevillea inconspicua	P4	1	258375	6958397
Grevillea inconspicua	P4	1	258374	6958397
Grevillea inconspicua	P4	1	258380	6958392

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258381	6958390
Grevillea inconspicua	P4	1	258369	6958381
Grevillea inconspicua	P4	1	258364	6958384
Grevillea inconspicua	P4	1	258364	6958384
Grevillea inconspicua	P4	1	258371	6958376
Grevillea inconspicua	P4	1	258373	6958372
Grevillea inconspicua	P4	1	258375	6958371
Grevillea inconspicua	P4	1	258378	6958370
Grevillea inconspicua	P4	1	258378	6958371
Grevillea inconspicua	P4	1	258351	6958370
Grevillea inconspicua	P4	1	258349	6958371
Grevillea inconspicua	P4	1	258336	6958376
Grevillea inconspicua	P4	1	258328	6958378
Grevillea inconspicua	P4	1	258318	6958376
Grevillea inconspicua	P4	1	258314	6958378
Grevillea inconspicua	P4	1	258311	6958377
Grevillea inconspicua	P4	1	258312	6958373
Grevillea inconspicua	P4	1	258312	6958373
Grevillea inconspicua	P4	1	258308	6958372
Grevillea inconspicua	P4	1	258301	6958373
Grevillea inconspicua	P4	1	258300	6958372
Grevillea inconspicua	P4	1	258299	6958370
Grevillea inconspicua	P4	1	258298	6958367
Grevillea inconspicua	P4	1	258299	6958366
Grevillea inconspicua	P4	1	258299	6958365
Grevillea inconspicua	P4	1	258299	6958363
Grevillea inconspicua	P4	1	258300	6958363
Grevillea inconspicua	P4	1	258304	6958361
Grevillea inconspicua	P4	1	258307	6958359
Grevillea inconspicua	P4	1	258313	6958359
Grevillea inconspicua	P4	1	258311	6958362
Grevillea inconspicua	P4	1	258297	6958375
Grevillea inconspicua	P4	1	258289	6958384
Grevillea inconspicua	P4	1	258289	6958385
Grevillea inconspicua	P4	1	258285	6958384
Grevillea inconspicua	P4	1	258283	6958387
Grevillea inconspicua	P4	1	258282	6958390
Grevillea inconspicua	P4	1	258281	6958394
Grevillea inconspicua	P4	1	258260	6958393
Grevillea inconspicua	P4	1	258255	6958388
Grevillea inconspicua	P4	1	258254	6958388
Grevillea inconspicua	P4	1	258256	6958384
Grevillea inconspicua	P4	1	258254	6958382

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258252	6958382
Grevillea inconspicua	P4	1	258245	6958380
Grevillea inconspicua	P4	1	258245	6958380
Grevillea inconspicua	P4	1	258244	6958378
Grevillea inconspicua	P4	1	258245	6958374
Grevillea inconspicua	P4	1	258246	6958373
Grevillea inconspicua	P4	1	258247	6958371
Grevillea inconspicua	P4	1	258250	6958369
Grevillea inconspicua	P4	1	258251	6958367
Grevillea inconspicua	P4	1	258251	6958365
Grevillea inconspicua	P4	1	258247	6958360
Grevillea inconspicua	P4	1	258246	6958357
Grevillea inconspicua	P4	1	258236	6958357
Grevillea inconspicua	P4	1	258236	6958351
Grevillea inconspicua	P4	1	258236	6958350
Grevillea inconspicua	P4	1	258240	6958344
Grevillea inconspicua	P4	1	258241	6958343
Grevillea inconspicua	P4	1	258239	6958338
Grevillea inconspicua	P4	1	258226	6958330
Grevillea inconspicua	P4	1	258764	6958351
Grevillea inconspicua	P4	1	258773	6958354
Grevillea inconspicua	P4	1	258759	6958353
Grevillea inconspicua	P4	1	258754	6958352
Grevillea inconspicua	P4	1	258701	6958348
Grevillea inconspicua	P4	1	258677	6958340
Grevillea inconspicua	P4	1	258655	6958240
Grevillea inconspicua	P4	1	258650	6958237
Grevillea inconspicua	P4	1	258618	6958288
Grevillea inconspicua	P4	1	258588	6958213
Grevillea inconspicua	P4	1	258589	6958208
Grevillea inconspicua	P4	1	258589	6958206
Grevillea inconspicua	P4	1	258592	6958203
Grevillea inconspicua	P4	1	258594	6958201
Grevillea inconspicua	P4	1	258598	6958202
Grevillea inconspicua	P4	1	258599	6958202
Grevillea inconspicua	P4	1	258600	6958202
Grevillea inconspicua	P4	1	258600	6958204
Grevillea inconspicua	P4	1	258610	6958208
Grevillea inconspicua	P4	1	258613	6958212
Grevillea inconspicua	P4	1	258620	6958211
Grevillea inconspicua	P4	1	258619	6958209
Grevillea inconspicua	P4	1	258617	6958207
Grevillea inconspicua	P4	1	258613	6958204

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258612	6958203
Grevillea inconspicua	P4	1	258612	6958202
Grevillea inconspicua	P4	1	258612	6958200
Grevillea inconspicua	P4	1	258614	6958200
Grevillea inconspicua	P4	1	258615	6958200
Grevillea inconspicua	P4	1	258616	6958200
Grevillea inconspicua	P4	1	258620	6958200
Grevillea inconspicua	P4	1	258622	6958201
Grevillea inconspicua	P4	1	258624	6958202
Grevillea inconspicua	P4	1	258625	6958202
Grevillea inconspicua	P4	1	258626	6958207
Grevillea inconspicua	P4	1	258629	6958211
Grevillea inconspicua	P4	1	258632	6958213
Grevillea inconspicua	P4	1	258642	6958215
Grevillea inconspicua	P4	1	258640	6958213
Grevillea inconspicua	P4	1	258632	6958205
Grevillea inconspicua	P4	1	258630	6958203
Grevillea inconspicua	P4	1	258629	6958201
Grevillea inconspicua	P4	1	258623	6958196
Grevillea inconspicua	P4	1	258621	6958193
Grevillea inconspicua	P4	1	258621	6958192
Grevillea inconspicua	P4	1	258619	6958191
Grevillea inconspicua	P4	1	258616	6958184
Grevillea inconspicua	P4	1	258622	6958182
Grevillea inconspicua	P4	1	258623	6958181
Grevillea inconspicua	P4	1	258625	6958182
Grevillea inconspicua	P4	1	258626	6958182
Grevillea inconspicua	P4	1	258640	6958181
Grevillea inconspicua	P4	1	258616	6958149
Grevillea inconspicua	P4	1	258614	6958150
Grevillea inconspicua	P4	1	258602	6958151
Grevillea inconspicua	P4	1	258604	6958152
Grevillea inconspicua	P4	1	258617	6958161
Grevillea inconspicua	P4	1	258617	6958165
Grevillea inconspicua	P4	1	258624	6958176
Grevillea inconspicua	P4	1	258612	6958178
Grevillea inconspicua	P4	1	258608	6958173
Grevillea inconspicua	P4	1	258607	6958172
Grevillea inconspicua	P4	1	258605	6958171
Grevillea inconspicua	P4	1	258602	6958171
Grevillea inconspicua	P4	1	258585	6958170
Grevillea inconspicua	P4	1	258586	6958189
Grevillea inconspicua	P4	1	258571	6958189

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258567	6958191
Grevillea inconspicua	P4	1	258569	6958209
Grevillea inconspicua	P4	1	258567	6958213
Grevillea inconspicua	P4	1	258567	6958220
Grevillea inconspicua	P4	1	258541	6958211
Grevillea inconspicua	P4	1	258534	6958196
Grevillea inconspicua	P4	1	258533	6958194
Grevillea inconspicua	P4	1	258542	6958188
Grevillea inconspicua	P4	1	258538	6958155
Grevillea inconspicua	P4	1	258535	6958157
Grevillea inconspicua	P4	1	258531	6958156
Grevillea inconspicua	P4	1	258529	6958156
Grevillea inconspicua	P4	1	258528	6958156
Grevillea inconspicua	P4	1	258522	6958148
Grevillea inconspicua	P4	1	258519	6958147
Grevillea inconspicua	P4	1	258516	6958146
Grevillea inconspicua	P4	1	258515	6958135
Grevillea inconspicua	P4	1	258517	6958134
Grevillea inconspicua	P4	1	258533	6958143
Grevillea inconspicua	P4	1	258535	6958145
Grevillea inconspicua	P4	1	258555	6958125
Grevillea inconspicua	P4	1	258555	6958123
Grevillea inconspicua	P4	1	258544	6958107
Grevillea inconspicua	P4	1	258527	6958073
Grevillea inconspicua	P4	1	258499	6958061
Grevillea inconspicua	P4	1	258498	6958083
Grevillea inconspicua	P4	1	258500	6958084
Grevillea inconspicua	P4	1	258501	6958085
Grevillea inconspicua	P4	1	258501	6958091
Grevillea inconspicua	P4	1	258501	6958094
Grevillea inconspicua	P4	1	258503	6958103
Grevillea inconspicua	P4	1	258508	6958118
Grevillea inconspicua	P4	1	258505	6958126
Grevillea inconspicua	P4	1	258504	6958128
Grevillea inconspicua	P4	1	258513	6958148
Grevillea inconspicua	P4	1	258495	6958139
Grevillea inconspicua	P4	1	258491	6958133
Grevillea inconspicua	P4	1	258468	6958119
Grevillea inconspicua	P4	1	258471	6958118
Grevillea inconspicua	P4	1	258467	6958109
Grevillea inconspicua	P4	1	258450	6958098
Grevillea inconspicua	P4	1	258456	6958090
Grevillea inconspicua	P4	1	258460	6958087

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258463	6958087
Grevillea inconspicua	P4	1	258471	6958097
Grevillea inconspicua	P4	1	258484	6958100
Grevillea inconspicua	P4	1	258486	6958101
Grevillea inconspicua	P4	1	258493	6958106
Grevillea inconspicua	P4	1	258497	6958109
Grevillea inconspicua	P4	1	258489	6958091
Grevillea inconspicua	P4	1	258479	6958083
Grevillea inconspicua	P4	1	258414	6958054
Grevillea inconspicua	P4	1	258416	6958057
Grevillea inconspicua	P4	1	258426	6958062
Grevillea inconspicua	P4	1	258442	6958090
Grevillea inconspicua	P4	1	258444	6958098
Grevillea inconspicua	P4	1	258442	6958098
Grevillea inconspicua	P4	1	258441	6958099
Grevillea inconspicua	P4	1	258439	6958100
Grevillea inconspicua	P4	1	258441	6958102
Grevillea inconspicua	P4	1	258443	6958105
Grevillea inconspicua	P4	1	258444	6958105
Grevillea inconspicua	P4	1	258445	6958105
Grevillea inconspicua	P4	1	258446	6958107
Grevillea inconspicua	P4	1	258445	6958109
Grevillea inconspicua	P4	1	258445	6958116
Grevillea inconspicua	P4	1	258283	6958044
Grevillea inconspicua	P4	1	258282	6958047
Grevillea inconspicua	P4	1	258278	6958049
Grevillea inconspicua	P4	1	258277	6958051
Grevillea inconspicua	P4	1	258272	6958048
Grevillea inconspicua	P4	1	258269	6958061
Grevillea inconspicua	P4	1	258272	6958063
Grevillea inconspicua	P4	1	258262	6958068
Grevillea inconspicua	P4	1	258263	6958070
Grevillea inconspicua	P4	1	258262	6958071
Grevillea inconspicua	P4	1	258259	6958073
Grevillea inconspicua	P4	1	258261	6958078
Grevillea inconspicua	P4	1	258263	6958082
Grevillea inconspicua	P4	1	258264	6958075
Grevillea inconspicua	P4	1	258265	6958073
Grevillea inconspicua	P4	1	258271	6958068
Grevillea inconspicua	P4	1	258276	6958071
Grevillea inconspicua	P4	1	258270	6958093
Grevillea inconspicua	P4	1	258272	6958092
Grevillea inconspicua	P4	1	258272	6958092

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258273	6958090
Grevillea inconspicua	P4	1	258277	6958092
Grevillea inconspicua	P4	1	258276	6958098
Grevillea inconspicua	P4	1	258278	6958102
Grevillea inconspicua	P4	1	258280	6958107
Grevillea inconspicua	P4	1	258279	6958109
Grevillea inconspicua	P4	1	258284	6958108
Grevillea inconspicua	P4	1	258289	6958103
Grevillea inconspicua	P4	1	258291	6958101
Grevillea inconspicua	P4	1	258292	6958099
Grevillea inconspicua	P4	1	258292	6958095
Grevillea inconspicua	P4	1	258293	6958095
Grevillea inconspicua	P4	1	258296	6958096
Grevillea inconspicua	P4	1	258297	6958097
Grevillea inconspicua	P4	1	258298	6958098
Grevillea inconspicua	P4	1	258298	6958098
Grevillea inconspicua	P4	1	258301	6958097
Grevillea inconspicua	P4	1	258301	6958097
Grevillea inconspicua	P4	1	258303	6958096
Grevillea inconspicua	P4	1	258304	6958095
Grevillea inconspicua	P4	1	258306	6958092
Grevillea inconspicua	P4	1	258304	6958090
Grevillea inconspicua	P4	1	258303	6958090
Grevillea inconspicua	P4	1	258307	6958086
Grevillea inconspicua	P4	1	258310	6958086
Grevillea inconspicua	P4	1	258311	6958086
Grevillea inconspicua	P4	1	258320	6958083
Grevillea inconspicua	P4	1	258314	6958093
Grevillea inconspicua	P4	1	258314	6958095
Grevillea inconspicua	P4	1	258314	6958100
Grevillea inconspicua	P4	1	258311	6958101
Grevillea inconspicua	P4	1	258310	6958102
Grevillea inconspicua	P4	1	258309	6958103
Grevillea inconspicua	P4	1	258309	6958103
Grevillea inconspicua	P4	1	258308	6958103
Grevillea inconspicua	P4	1	258304	6958103
Grevillea inconspicua	P4	1	258303	6958105
Grevillea inconspicua	P4	1	258305	6958109
Grevillea inconspicua	P4	1	258307	6958111
Grevillea inconspicua	P4	1	258313	6958111
Grevillea inconspicua	P4	1	258375	6958130
Grevillea inconspicua	P4	1	258375	6958130
Grevillea inconspicua	P4	1	258375	6958129

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258374	6958128
Grevillea inconspicua	P4	1	258374	6958128
Grevillea inconspicua	P4	1	258374	6958127
Grevillea inconspicua	P4	1	258382	6958130
Grevillea inconspicua	P4	1	258382	6958131
Grevillea inconspicua	P4	1	258382	6958132
Grevillea inconspicua	P4	1	258381	6958135
Grevillea inconspicua	P4	1	258381	6958136
Grevillea inconspicua	P4	1	258381	6958137
Grevillea inconspicua	P4	1	258382	6958137
Grevillea inconspicua	P4	1	258382	6958141
Grevillea inconspicua	P4	1	258381	6958145
Grevillea inconspicua	P4	1	258381	6958146
Grevillea inconspicua	P4	1	258383	6958148
Grevillea inconspicua	P4	1	258383	6958151
Grevillea inconspicua	P4	1	258380	6958155
Grevillea inconspicua	P4	1	258379	6958156
Grevillea inconspicua	P4	1	258387	6958159
Grevillea inconspicua	P4	1	258389	6958157
Grevillea inconspicua	P4	1	258394	6958158
Grevillea inconspicua	P4	1	258395	6958157
Grevillea inconspicua	P4	1	258398	6958163
Grevillea inconspicua	P4	1	258399	6958164
Grevillea inconspicua	P4	1	258892	6957825
Grevillea inconspicua	P4	1	257316	6957218
Grevillea inconspicua	P4	1	257253	6957254
Grevillea inconspicua	P4	1	257254	6957260
Grevillea inconspicua	P4	1	257255	6957270
Grevillea inconspicua	P4	1	257223	6957281
Grevillea inconspicua	P4	1	257222	6957280
Grevillea inconspicua	P4	1	257191	6957283
Grevillea inconspicua	P4	1	257208	6957303
Grevillea inconspicua	P4	1	257215	6957324
Grevillea inconspicua	P4	1	257217	6957336
Grevillea inconspicua	P4	1	257218	6957336
Grevillea inconspicua	P4	1	257220	6957337
Grevillea inconspicua	P4	1	257220	6957339
Grevillea inconspicua	P4	1	257214	6957345
Grevillea inconspicua	P4	1	257210	6957359
Grevillea inconspicua	P4	1	257213	6957385
Grevillea inconspicua	P4	1	257216	6957391
Grevillea inconspicua	P4	1	257211	6957394
Grevillea inconspicua	P4	1	257201	6957413

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	257258	6957394
Grevillea inconspicua	P4	1	257258	6957389
Grevillea inconspicua	P4	1	257251	6957388
Grevillea inconspicua	P4	1	257249	6957387
Grevillea inconspicua	P4	1	257248	6957385
Grevillea inconspicua	P4	1	257248	6957384
Grevillea inconspicua	P4	1	257248	6957384
Grevillea inconspicua	P4	1	257253	6957360
Grevillea inconspicua	P4	1	257259	6957351
Grevillea inconspicua	P4	1	257258	6957347
Grevillea inconspicua	P4	1	257265	6957347
Grevillea inconspicua	P4	1	257265	6957341
Grevillea inconspicua	P4	1	257261	6957336
Grevillea inconspicua	P4	1	257259	6957337
Grevillea inconspicua	P4	1	257253	6957330
Grevillea inconspicua	P4	1	257252	6957329
Grevillea inconspicua	P4	1	257251	6957329
Grevillea inconspicua	P4	1	257249	6957326
Grevillea inconspicua	P4	1	257248	6957321
Grevillea inconspicua	P4	1	257267	6957279
Grevillea inconspicua	P4	1	257270	6957275
Grevillea inconspicua	P4	1	257273	6957273
Grevillea inconspicua	P4	1	257313	6957341
Grevillea inconspicua	P4	1	257307	6957352
Grevillea inconspicua	P4	1	257304	6957354
Grevillea inconspicua	P4	1	257312	6957359
Grevillea inconspicua	P4	1	257306	6957367
Grevillea inconspicua	P4	1	257306	6957367
Grevillea inconspicua	P4	1	257302	6957366
Grevillea inconspicua	P4	1	257299	6957372
Grevillea inconspicua	P4	1	257297	6957388
Grevillea inconspicua	P4	1	257302	6957389
Grevillea inconspicua	P4	1	257303	6957394
Grevillea inconspicua	P4	1	257300	6957401
Grevillea inconspicua	P4	1	257297	6957412
Grevillea inconspicua	P4	1	257299	6957420
Grevillea inconspicua	P4	1	257307	6957447
Grevillea inconspicua	P4	1	257350	6957471
Grevillea inconspicua	P4	1	257371	6957423
Grevillea inconspicua	P4	1	257385	6957417
Grevillea inconspicua	P4	1	257384	6957415
Grevillea inconspicua	P4	1	257371	6957412
Grevillea inconspicua	P4	1	257367	6957409

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	257366	6957408
Grevillea inconspicua	P4	1	257372	6957398
Grevillea inconspicua	P4	1	257367	6957393
Grevillea inconspicua	P4	1	257365	6957387
Grevillea inconspicua	P4	1	257363	6957384
Grevillea inconspicua	P4	1	257363	6957372
Grevillea inconspicua	P4	1	257366	6957369
Grevillea inconspicua	P4	1	257380	6957357
Grevillea inconspicua	P4	1	257386	6957357
Grevillea inconspicua	P4	1	257377	6957350
Grevillea inconspicua	P4	1	257377	6957349
Grevillea inconspicua	P4	1	257386	6957346
Grevillea inconspicua	P4	1	257388	6957352
Grevillea inconspicua	P4	1	257394	6957361
Grevillea inconspicua	P4	1	257397	6957361
Grevillea inconspicua	P4	1	257400	6957365
Grevillea inconspicua	P4	1	257411	6957382
Grevillea inconspicua	P4	1	257411	6957382
Grevillea inconspicua	P4	1	257412	6957381
Grevillea inconspicua	P4	1	257419	6957380
Grevillea inconspicua	P4	1	257423	6957380
Grevillea inconspicua	P4	1	257423	6957382
Grevillea inconspicua	P4	1	257423	6957384
Grevillea inconspicua	P4	1	257426	6957385
Grevillea inconspicua	P4	1	257430	6957388
Grevillea inconspicua	P4	1	257426	6957400
Grevillea inconspicua	P4	1	257429	6957403
Grevillea inconspicua	P4	1	257435	6957416
Grevillea inconspicua	P4	1	257437	6957417
Grevillea inconspicua	P4	1	257443	6957419
Grevillea inconspicua	P4	1	257448	6957419
Grevillea inconspicua	P4	1	257448	6957420
Grevillea inconspicua	P4	1	257452	6957424
Grevillea inconspicua	P4	1	257497	6957418
Grevillea inconspicua	P4	1	257498	6957418
Grevillea inconspicua	P4	1	257500	6957417
Grevillea inconspicua	P4	1	257500	6957416
Grevillea inconspicua	P4	1	257500	6957415
Grevillea inconspicua	P4	1	257501	6957414
Grevillea inconspicua	P4	1	257502	6957414
Grevillea inconspicua	P4	1	257504	6957415
Grevillea inconspicua	P4	1	257580	6957413
Grevillea inconspicua	P4	1	257572	6957404

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	257572	6957404
Grevillea inconspicua	P4	1	257543	6957356
Grevillea inconspicua	P4	1	257544	6957355
Grevillea inconspicua	P4	1	257551	6957352
Grevillea inconspicua	P4	1	257554	6957351
Grevillea inconspicua	P4	1	257561	6957346
Grevillea inconspicua	P4	1	257568	6957346
Grevillea inconspicua	P4	1	257572	6957343
Grevillea inconspicua	P4	1	257572	6957340
Grevillea inconspicua	P4	1	257569	6957335
Grevillea inconspicua	P4	1	257569	6957334
Grevillea inconspicua	P4	1	257568	6957333
Grevillea inconspicua	P4	1	257569	6957332
Grevillea inconspicua	P4	1	257569	6957330
Grevillea inconspicua	P4	1	257570	6957329
Grevillea inconspicua	P4	1	257578	6957327
Grevillea inconspicua	P4	1	257566	6957292
Grevillea inconspicua	P4	1	257566	6957288
Grevillea inconspicua	P4	1	257579	6957279
Grevillea inconspicua	P4	1	257579	6957278
Grevillea inconspicua	P4	1	257578	6957278
Grevillea inconspicua	P4	1	257577	6957276
Grevillea inconspicua	P4	1	257578	6957275
Grevillea inconspicua	P4	1	257536	6957290
Grevillea inconspicua	P4	1	257521	6957289
Grevillea inconspicua	P4	1	257519	6957288
Grevillea inconspicua	P4	1	257518	6957286
Grevillea inconspicua	P4	1	257517	6957284
Grevillea inconspicua	P4	1	257516	6957282
Grevillea inconspicua	P4	1	257501	6957264
Grevillea inconspicua	P4	1	257409	6957272
Grevillea inconspicua	P4	1	257406	6957276
Grevillea inconspicua	P4	1	257406	6957278
Grevillea inconspicua	P4	1	257407	6957282
Grevillea inconspicua	P4	1	257361	6957276
Grevillea inconspicua	P4	1	257327	6957261
Grevillea inconspicua	P4	1	257327	6957258
Grevillea inconspicua	P4	1	257328	6957256
Grevillea inconspicua	P4	1	257329	6957254
Grevillea inconspicua	P4	1	257327	6957248
Grevillea inconspicua	P4	1	257307	6957246
Grevillea inconspicua	P4	1	257306	6957242
Grevillea inconspicua	P4	1	257306	6957240

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	257296	6957239
Grevillea inconspicua	P4	1	257350	6957186
Grevillea inconspicua	P4	1	257412	6957192
Grevillea inconspicua	P4	1	258381	6957538
Grevillea inconspicua	P4	1	258399	6957571
Grevillea inconspicua	P4	1	258431	6957553
Grevillea inconspicua	P4	1	258436	6957556
Grevillea inconspicua	P4	1	258432	6957559
Grevillea inconspicua	P4	1	258431	6957562
Grevillea inconspicua	P4	1	258426	6957565
Grevillea inconspicua	P4	1	258514	6957585
Grevillea inconspicua	P4	1	258581	6957628
Grevillea inconspicua	P4	1	257486	6957516
Grevillea inconspicua	P4	1	257486	6957517
Grevillea inconspicua	P4	1	257474	6957511
Grevillea inconspicua	P4	1	257930	6957886
Grevillea inconspicua	P4	1	257911	6957913
Grevillea inconspicua	P4	1	258500	6959024
Grevillea inconspicua	P4	1	258501	6959026
Grevillea inconspicua	P4	1	258549	6958984
Grevillea inconspicua	P4	1	258550	6958907
Grevillea inconspicua	P4	1	258426	6958818
Grevillea inconspicua	P4	1	258351	6958852
Grevillea inconspicua	P4	1	258346	6958849
Grevillea inconspicua	P4	1	258342	6958848
Grevillea inconspicua	P4	1	258405	6958955
Grevillea inconspicua	P4	1	258418	6958950
Grevillea inconspicua	P4	1	258420	6958947
Grevillea inconspicua	P4	1	258404	6958971
Grevillea inconspicua	P4	1	258397	6958976
Grevillea inconspicua	P4	1	258387	6958978
Grevillea inconspicua	P4	1	258385	6958979
Grevillea inconspicua	P4	1	258385	6958979
Grevillea inconspicua	P4	1	258382	6958979
Grevillea inconspicua	P4	1	258371	6958985
Grevillea inconspicua	P4	1	258371	6958986
Grevillea inconspicua	P4	1	258356	6958982
Grevillea inconspicua	P4	1	258343	6958992
Grevillea inconspicua	P4	1	258346	6959009
Grevillea inconspicua	P4	1	258347	6959019
Grevillea inconspicua	P4	1	258347	6959020
Grevillea inconspicua	P4	1	258349	6959024
Grevillea inconspicua	P4	1	258357	6959022

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258366	6959027
Grevillea inconspicua	P4	1	258372	6959026
Grevillea inconspicua	P4	1	258373	6959026
Grevillea inconspicua	P4	1	258375	6959025
Grevillea inconspicua	P4	1	258387	6959013
Grevillea inconspicua	P4	1	258398	6959010
Grevillea inconspicua	P4	1	258406	6959016
Grevillea inconspicua	P4	1	258416	6959021
Grevillea inconspicua	P4	1	258419	6959012
Grevillea inconspicua	P4	1	258420	6959006
Grevillea inconspicua	P4	1	258425	6959013
Grevillea inconspicua	P4	1	258426	6959014
Grevillea inconspicua	P4	1	258429	6959018
Grevillea inconspicua	P4	1	258459	6959019
Grevillea inconspicua	P4	1	258501	6959032
Grevillea inconspicua	P4	1	258499	6959029
Grevillea inconspicua	P4	1	258516	6959025
Grevillea inconspicua	P4	1	258507	6958780
Grevillea inconspicua	P4	1	258510	6958780
Grevillea inconspicua	P4	1	258598	6958741
Grevillea inconspicua	P4	1	258580	6958715
Grevillea inconspicua	P4	1	258572	6958714
Grevillea inconspicua	P4	1	258579	6958707
Grevillea inconspicua	P4	1	258576	6958699
Grevillea inconspicua	P4	1	258556	6958696
Grevillea inconspicua	P4	1	258558	6958696
Grevillea inconspicua	P4	1	258552	6958697
Grevillea inconspicua	P4	1	258602	6958680
Grevillea inconspicua	P4	1	258602	6958682
Grevillea inconspicua	P4	1	258596	6958686
Grevillea inconspicua	P4	1	258596	6958697
Grevillea inconspicua	P4	1	258610	6958708
Grevillea inconspicua	P4	1	258617	6958706
Grevillea inconspicua	P4	1	258643	6958708
Grevillea inconspicua	P4	1	258663	6958726
Grevillea inconspicua	P4	1	258638	6958676
Grevillea inconspicua	P4	1	258644	6958644
Grevillea inconspicua	P4	1	258644	6958644
Grevillea inconspicua	P4	1	258645	6958644
Grevillea inconspicua	P4	1	258696	6958600
Grevillea inconspicua	P4	1	258697	6958597
Grevillea inconspicua	P4	1	258698	6958598
Grevillea inconspicua	P4	1	258698	6958599

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	258699	6958599
Grevillea inconspicua	P4	1	258704	6958592
Grevillea inconspicua	P4	1	258726	6958589
Grevillea inconspicua	P4	1	258685	6958511
Grevillea inconspicua	P4	1	258652	6958511
Grevillea inconspicua	P4	1	258629	6958524
Grevillea inconspicua	P4	1	258628	6958538
Grevillea inconspicua	P4	1	258628	6958541
Grevillea inconspicua	P4	1	258617	6958561
Grevillea inconspicua	P4	1	258615	6958565
Grevillea inconspicua	P4	1	258609	6958578
Grevillea inconspicua	P4	1	258609	6958580
Grevillea inconspicua	P4	1	258625	6958582
Grevillea inconspicua	P4	1	258639	6958588
Grevillea inconspicua	P4	1	258689	6958487
Grevillea inconspicua	P4	1	258695	6958457
Grevillea inconspicua	P4	1	258697	6958455
Grevillea inconspicua	P4	1	258674	6958432
Grevillea inconspicua	P4	1	258677	6958428
Grevillea inconspicua	P4	1	258676	6958428
Grevillea inconspicua	P4	1	258666	6958415
Grevillea inconspicua	P4	1	258661	6958416
Grevillea inconspicua	P4	1	258663	6958415
Grevillea inconspicua	P4	1	258666	6958412
Grevillea inconspicua	P4	1	258668	6958408
Grevillea inconspicua	P4	1	258668	6958408
Grevillea inconspicua	P4	1	258669	6958409
Grevillea inconspicua	P4	1	258661	6958404
Grevillea inconspicua	P4	1	258675	6958392
Grevillea inconspicua	P4	1	258656	6958398
Grevillea inconspicua	P4	1	258653	6958400
Grevillea inconspicua	P4	1	258655	6958401
Grevillea inconspicua	P4	1	258656	6958404
Grevillea inconspicua	P4	1	258647	6958406
Grevillea inconspicua	P4	1	258646	6958415
Grevillea inconspicua	P4	1	258647	6958420
Grevillea inconspicua	P4	1	258616	6958426
Grevillea inconspicua	P4	1	258608	6958422
Grevillea inconspicua	P4	1	258594	6958422
Grevillea inconspicua	P4	1	257002	6956270
Grevillea inconspicua	P4	1	256978	6956301
Grevillea inconspicua	P4	1	256956	6956380
Grevillea inconspicua	P4	1	256960	6956383

Taxon Name	Conservation Code	No. Plants	Easting	Northing
Grevillea inconspicua	P4	1	256964	6956385
Grevillea inconspicua	P4	1	256963	6956387
Grevillea inconspicua	P4	1	256988	6956394
Grevillea inconspicua	P4	1	257008	6956314
Grevillea inconspicua	P4	1	257010	6956310
Grevillea inconspicua	P4	1	257003	6956311
Grevillea inconspicua	P4	1	257008	6956302
Grevillea inconspicua	P4	1	257011	6956302
Grevillea inconspicua	P4	1	257015	6956304
Grevillea inconspicua	P4	50	256317	6955760
Grevillea inconspicua	P4	50	259124	6959719
Grevillea inconspicua	P4	50	258640	6959216
Grevillea inconspicua	P4	500	258278	6956684
Grevillea inconspicua	P4	50	258566	6958730
Grevillea inconspicua	P4	100	258763	6954890
Grevillea inconspicua	P4	100	258510	6954960
Grevillea inconspicua	P4	100	258445	6954966
Grevillea inconspicua	P4	100	258326	6954963
Grevillea inconspicua	P4	100	258179	6954775
Grevillea inconspicua	P4	10	258192	6954522
Grevillea inconspicua	P4	10	258064	6954456
Grevillea inconspicua	P4	1	257944	6954547
Grevillea inconspicua	P4	1	257967	6954571
Grevillea inconspicua	P4	10	258054	6954893
Grevillea inconspicua	P4	1	258126	6955919
Grevillea inconspicua	P4	1	258180	6955923
Grevillea inconspicua	P4	1	258258	6955977
Hemigenia exilis	P4	420	258147	6959114
Hemigenia exilis	P4	50	258100	6958690

APPENDIX 4: TARGETED SURVEY BLACK-FLANKED ROCK-WALLABY

Targeted Survey
Black-Flanked Rock Wallaby
(*Petrogale lateralis lateralis*)
Kathleen Valley Project

Prepared for Liontown Resources Limited
July 2021
Version 2

Prepared by:
Botanica Consulting Pty Ltd
33 Brewer Street Perth
WA 6000

Disclaimer

Quality Assurance

An internal quality review process has been implemented to each project task undertaken by BC. Each document and its contents are carefully reviewed by core members of the Consultancy team and signed off at Director Level prior to issue to the client. Draft documents are submitted to the client for comment and acceptance prior to final production.

Job number: 2021/31

Prepared by:
Greg Harewood
Zoologist
Botanica Consulting Pty Ltd

Reviewed by:
Andrea Williams
Director
Botanica Consulting Pty Ltd

Approved by:
Jim Williams
Director
Botanica Consulting Pty Ltd

Contents

Figures

Tables

Appendices

1 INTRODUCTION

Botanica Consulting Pty Ltd (Botanica) was commissioned by MBS Environmental on behalf of Liontown Resources Limited to undertake a targeted Black-flanked Rock Wallaby (*Petrogale lateralis lateralis*) survey to identify if the species and/or its habitat are present within the proposed Kathleen Valley Lithium Project area (referred to as the 'survey area'). It is understood that the findings of the survey will be used to support future environmental approval applications.

The objectives of the survey were to:

- Conduct a targeted habitat assessment and fauna survey for the presence of the Black-flanked Rock Wallaby over the Kathleen Valley Lithium Project area.

The survey area is located within Eastern Murchison bioregion, approximately 45km north-west of Leinster, Western Australia (Figure 1). The survey area covers an area of approximately 1,490 hectares (ha) (Figure 2).

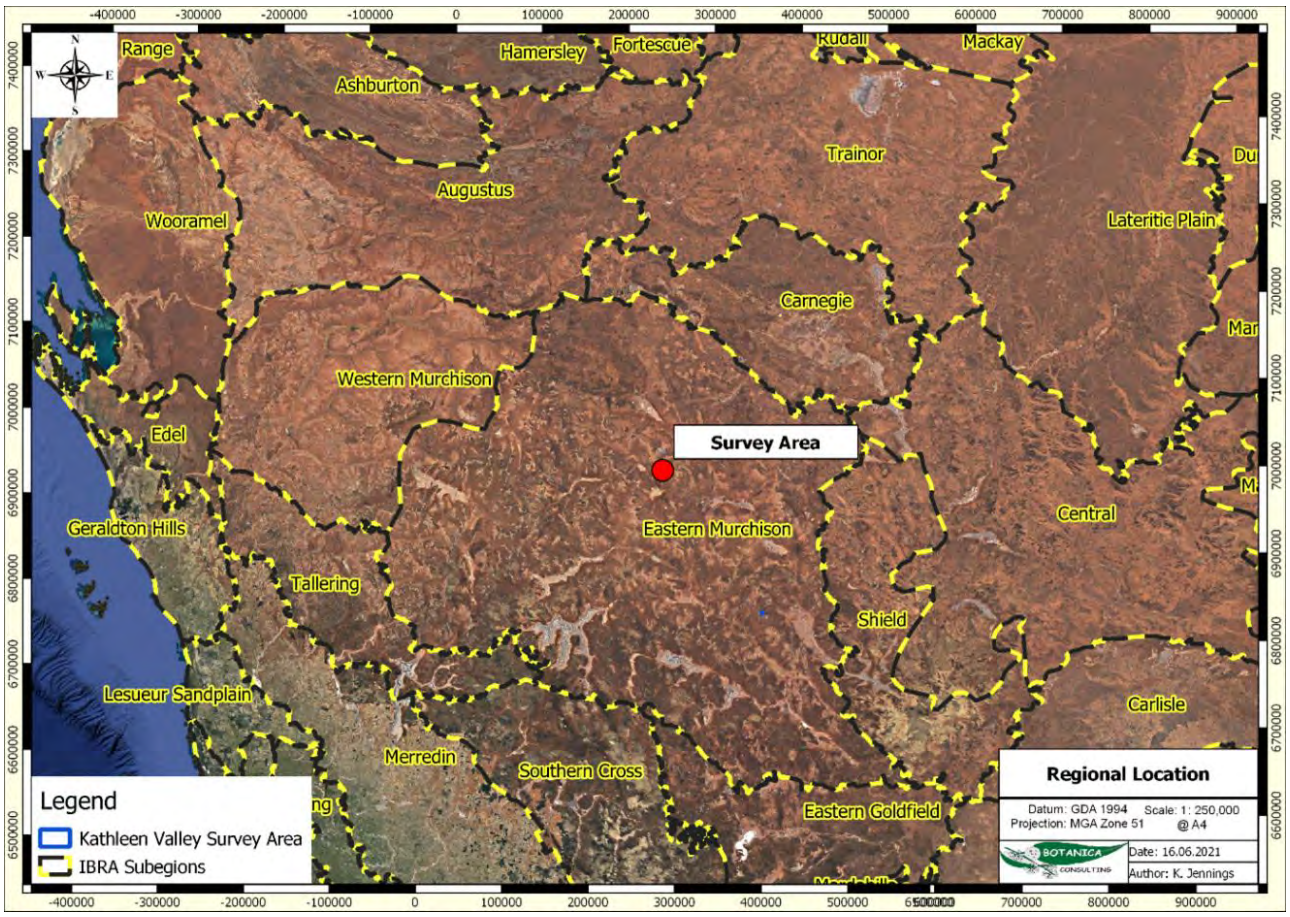


Figure 1: Regional Map of the Kathleen Valley Project Area

1.1 Species Profile - Black-Flanked Rock Wallaby

There are four subspecies of Black-footed Rock Wallabies (*Petrogale lateralis)* that occur in Western Australia: Black-flanked rock Wallaby *Petrogale lateralis lateralis*, Recherche Rock Wallaby *Petrogale lateralis hacketti*, MacDonnell Range Rock Wallaby *Petrogale lateralis* subsp. (MacDonnell Ranges) and West Kimberley Rock Wallaby *Petrogale lateralis* subsp. (West Kimberley) (DBCA 2017).

The *Petrogale lateralis lateralis* sub-species is known from a series of isolated, patchily distributed populations in Western Australia (Pearson 2013, Woinarski *et al.* 2014) and is presumed extinct throughout much of its former range (Woinarski *et al.* 2014), including the part of central Western Australia adjacent to the current survey area.

The presence of Black-flanked Rock Wallabies on the Barr Smith Range (about 25 km north of the survey area at its closest point) was however recently confirmed after a number of initial sightings in 2006 and in following years by way of genetic analysis of scats (BCE 2015).

The Black-flanked Rock Wallaby (*Petrogale lateralis lateralis*) is listed as endangered at both State and Commonwealth levels. Given the proximity of the Barr Smith Range records to the Kathleen Valley Project area the assessment reported on here has been carried out to assess the potential risks of the proposal on the threatened species.

The Black-flanked Rock Wallaby has a preference for rocky habitats. They occur on a wide variety of rock types but require complex caves and crevices as opposed to large, smooth surfaces. Rock-wallabies are generally crepuscular and nocturnal spending daylight hours sheltering in deep and multi-entranced caves, crevices, cliffs, overhangs or boulder piles. These complex rocky habitats provide cool refuge from hot temperatures and shelter from predators. At twilight, they emerge to feed on a variety of grasses, herbs, forbs, leaves, seeds and fruit. They tend to browse close to rocky refuges to provide a quick escape from predators. Permanent water does appear to be an essential component of rock-wallaby habitat. (DBCA 2017).

2 METHODS

2.1 Habitat Assessment

Fieldwork was conducted from the 21 to 23 April 2021 by Greg Harewood (Zoologist. B.Sc.) with assistance from Botanica personnel; Jim Williams (Botanist, Diploma of Horticulture) and Matthew Newlands (Environmental Technician).

A handheld GPS was used to record the locations of tracks traversed (Figure 2) and locations of any significant observations (i.e., wallabies). The survey area was traversed on foot and on a quad bike. In total, 310 kilometers of transects were completed across the survey area over a three-day period.

Broad scale fauna habitats within the survey area have been defined using vegetation unit mapping carried out by Botanica Consulting (2021) which are based on flora composition, soil and landforms.

All habitats within the survey area were assessed for suitability as Black-flanked Rock Wallaby habitat and placed into one of three categories as listed in the table below (from Biota 2017).

Table 1: Black-flanked Rock Wallaby Habitat Categories

Habitat Category	Habitat Definition
Core	Caves and significant overhangs in proximity to foraging habitat
Suitable	Shallow overhangs or large boulder piles
Unsuitable	No habitat or rocky habitat too shallow to provide shelter

2.2 Camera Trap Survey

Sixteen camera traps were placed within the survey area between 21 to 23 April and left in place until the 30 May 2021 (37 to 39 days deployment). Cameras were positioned in areas considered to be the most suitable habitat for Black-flanked wallabies, with caves, crevices, cliffs, overhangs and boulder piles being targeted. In their absence cameras were placed in rocky areas along "kangaroo trails" and in one case near a small lake formed after recent rains. Most cameras were positioned around the rocky hills located in the central/southern section of the survey area. The locations of camera traps are shown in Figure 2. Cameras were placed on 50 centimetre high stakes and set to take three consecutive pictures after each trigger event.

When assessing images a "record" was taken as being any fauna species pictured on what was assessed as being a unique occasion.

Table 2: Camera Trap Habitat Descriptions

Camera Number	Habitat Description
8726	Small cave in boulder pile with low open shrubland
8728	Rocky creek line with tall shrubland along kangaroo trail
8778	Rocky scree slope with very open woodland/shrubland
8788	Rocky flat on low hill with open shrubland along kangaroo trail
8801	Rocky flat on low hill with open shrubland along kangaroo trail
8818	Rocky flat on low hill with open shrubland along kangaroo trail
8862	Rocky flat on low hill with open shrubland along kangaroo trail
8863	Narrow gap in boulder pile with open low woodland
GH 07	Rocky flat on low hill with open shrubland along kangaroo trail
GH 08	Rocky flat on low hill with open shrubland along kangaroo trail
GH 21	Very small cave in boulder pile with low open shrubland
GH 44	Small crevice/cave in boulder pile with grassland
GH 64	Rocky scree slope with very open woodland/shrubland along kangaroo trail
GH 65	Rocky flat on low hill with open shrubland along kangaroo trail
GH 80	Lake shoreline with grassland/forbs
GH 83	Rocky scree slope with very open woodland/shrubland along kangaroo trail

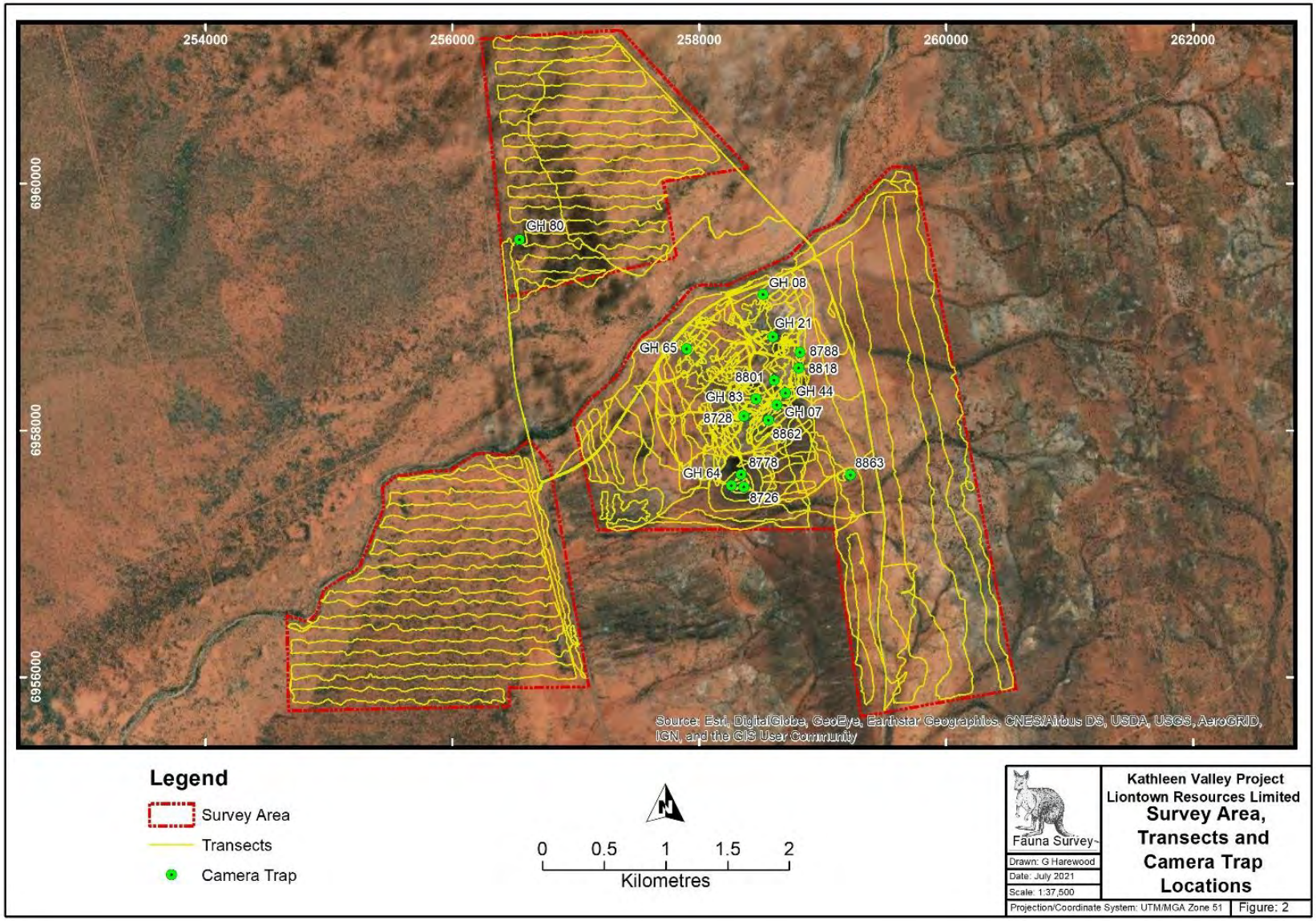


Figure 2: Map showing the survey area, transects and camera trap locations

3 RESULTS

3.1 Habitat Assessment

Four broad fauna habitats were identified within the survey area by Botanica (2019) which were comprised of eleven vegetation types (Figure 3). These were all assessed for their value as Black-flanked Rock Wallaby habitat based on their known preferences, a summary of which is provided in Table 3.

In no case was any of the habitat present classified as “core” (caves and significant overhangs in proximity to foraging habitat) or “suitable” (shallow overhangs or large boulder piles) habitat for Black-flanked Rock Wallabies with all habitats being classified as “unsuitable”. In most cases this conclusion was based on a complete absence of any form of rock refuge used by the wallabies (i.e., voids, caves, overhangs or large boulder piles).

While some of the areas mapped as rocky hillslopes contain one or two boulder piles with one or two voids possibly suitable for Black-flanked Rock Wallabies none could be regarded as “core” or “suitable” given they were limited in number, relatively small and isolated from other suitable areas. It no cases was it considered possible that a population of Black-flanked Rock Wallabies could persist any section of the survey area.

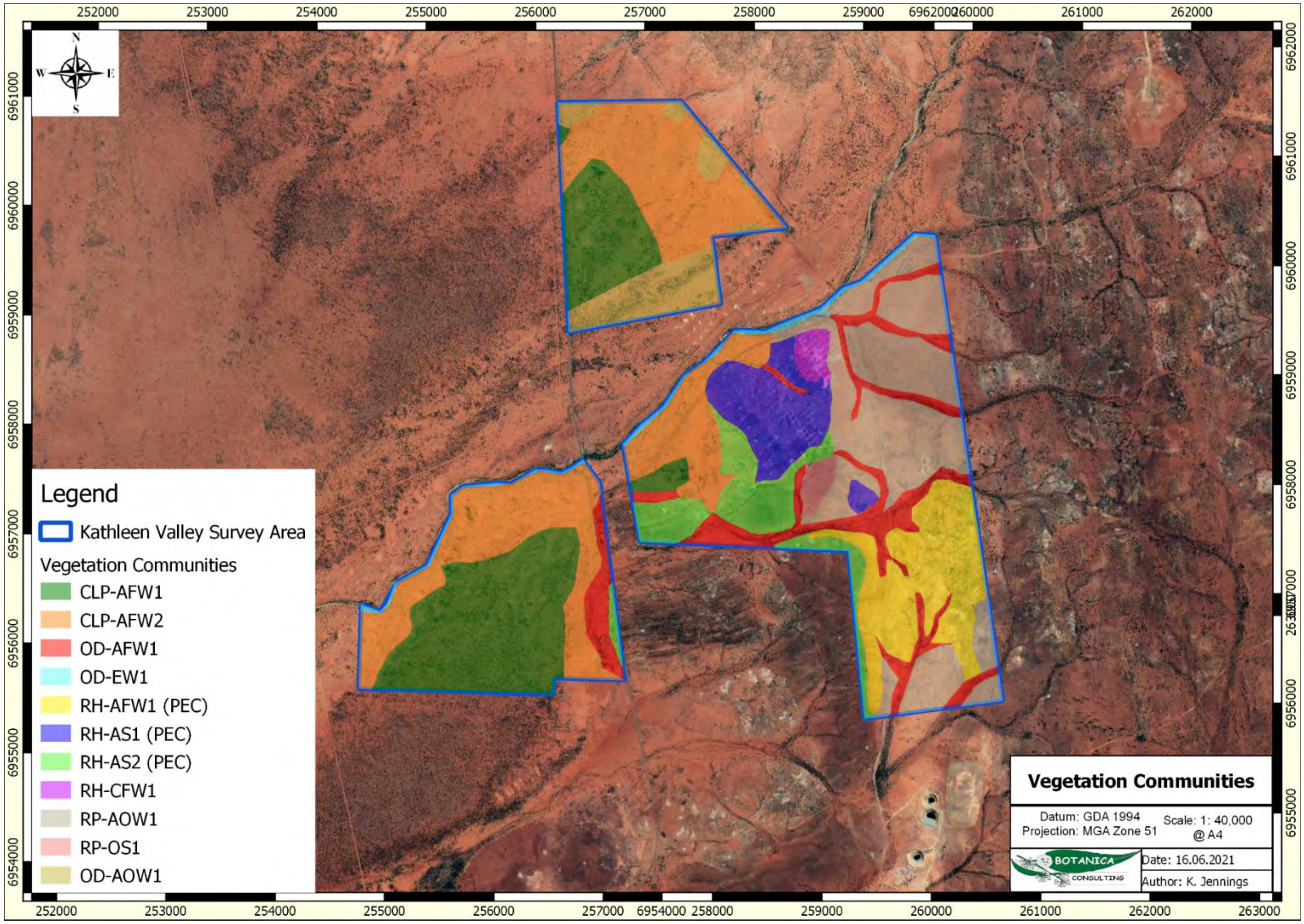


Figure 3: Map showing habitat/vegetation types within the survey area

Table 3: Habitat/Vegetation types within the survey area

Fauna Habitat	Vegetation Type	Black- Flanked Rock-Wallaby Habitat Category/Justification	Extent within survey area		Image
			Area (ha)	Area (%)	
Clay-Loam Plain: Acacia Forests and Woodlands	CLP-AFW1 Low woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/Senna artemisioides* subsp. *helmsii* on clay-loam plains.	Unsuitable No rocky habitat.	283	19.0	
	CLP-AFW2 Low woodland of *Acacia caesaneura/ A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *helmsii* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* on clay-loam plains.	Unsuitable No rocky habitat.	367	24.6	

Fauna Habitat	Vegetation Type	Black- Flanked Rock-Wallaby Habitat Category/Justification	Extent within survey area		Image
			Area (ha)	Area (%)	
Open Depression: Acacia Forests and Woodlands/ Acacia Open Woodlands/ Eucalypt Woodlands	OD-AFW1 Low woodland of *Acacia caesaneura/ A. incurvaneura* over low open shrubland of *Ptilotus obovatus/ Solanum lasiophyllum/ Senna artemisioides* and low tussock grassland of *Aristida contorta/ Enneapogon caerulescens* in drainage depressions.	Unsuitable No rocky habitat.	138	9.3	
	OD-AOW1 Low open woodland of *Acacia effusifolia* over mid open shrubland of *Eremophila galeata* and low open tussock grassland of *Eragrostis eriopoda/ Monachather paradoxus* in drainage depressions.	Unsuitable No rocky habitat.	76	5.1	

Fauna Habitat	Vegetation Type	Black- Flanked Rock-Wallaby Habitat Category/Justification	Extent within survey area		Image
			Area (ha)	Area (%)	
	OD-EW1 Low open forest of *Eucalyptus camaldulensis* over tall open shrubland of *Acacia burkittii* and low tussock grassland of *Themeda triandra* in drainage depressions.	Unsuitable No rocky habitat.	19	1.3	
Rocky Hillslope: Acacia Forests and Woodlands/ Acacia Shrublands/ Casuarina Forests and Woodlands	RH-AFW1 Low woodland of *Acacia caesaneura/ Acacia incurvaneura* over mid shrubland of *Santalum lanceolatum/ Scaevola spinescens* and low open tussock grassland of *Enneapogon caerulescens* on rocky hillslopes.	Unsuitable Subtle hillslopes with rocky lag/scree – occasional small outcrops/boulder piles too small, lacking voids/overhangs/crevices and therefore unsuitable.	145	9.7	

Fauna Habitat	Vegetation Type	Black- Flanked Rock-Wallaby Habitat Category/Justification	Extent within survey area		Image
			Area (ha)	Area (%)	
	RH-AS1 Tall sparse shrubland of *Acacia quadrimarginea* over low sparse shrubland of *Eremophila galeata* and low tussock grassland of *Cymbopogon ambiguus* on rocky hillslopes.	Unsuitable Prominent rocky hills comprised of rocky scree. Very occasional small voids in boulder piles. These are however small, limited in number (only two located) and widely separated from each other. In use by Euros.	90	6.0	
	RH-AS2 Mid open shrubland of *Acacia balsamea* over low open shrubland of *Ptilotus obovatus* and low tussock grassland of *Aristida contorta* on rocky hillslopes.	Unsuitable Prominent rocky hill comprised of rocky scree. Very occasional small voids in boulder piles. These are however small, limited in number (only one located) and widely separated from each other. In use by Euros.	98	6.6	

Fauna Habitat	Vegetation Type	Black- Flanked Rock-Wallaby Habitat Category/Justification	Extent within survey area		Image
			Area (ha)	Area (%)	
	RH-CFW1 Low woodland of *Casuarina pauper* over low shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky hillslopes	Unsuitable Subtle hillslope with rocky lag/scree. No large outcrops/boulder piles identified.	14	0.9	
Rocky Plain: Acacia Open Woodlands/ Other Shrublands	RP-AOW1 Low open woodland of *Acacia incurvaneura* over mid open shrubland of *Eremophila galeata* and low open shrubland of *Ptilotus obovatus/ Senna artemisioides* subsp. *helmsii* on rocky plains	Unsuitable Plain with a rocky lag lacking boulder piles or breakaways therefore unsuitable.	249	16.7	

Fauna Habitat	Vegetation Type	Black- Flanked Rock-Wallaby Habitat Category/Justification	Extent within survey area		Image
			Area (ha)	Area (%)	
	RP-OS1 Tall sparse shrubland of *Hakea lorea* over low open shrubland of *Ptilotus obovatus/Scaevola spinescens* and closed tussock grassland of *Enneapogon polyphyllus* on rocky plains	Unsuitable Plain with a rocky lag/scree lacking boulder piles or breakaways therefore unsuitable.	12	0.8	

3.2 Camera Trap Survey

Images of 18 different fauna species were captured on camera traps with no Black-flanked Rock Wallabies being recorded (Table 4). Euros were recorded on 199 occasions though obviously many images were of the same individuals at different times/locations. A complete list of records are provided in Appendix 1.

Table 4: Fauna Species Recorded on Camera Traps

Common Name	Species
Black-faced Woodswallow	*Artamus cinereus*
Cat	*Felis catus*
Chestnut-breasted Quail-thrush	*Cinclosoma castaneothorax*
Crested Pigeon	*Ocyphaps lophotes*
Dingo/Dog	*Canis lupus*
Euro	*Osphranter robustus*
European Cattle	*Bos taurus*
Grey Butcherbird	*Cracticus torquatus*
Grey-crowned Babbler	*Pomatostomus temporalis*
Rabbit	*Oryctolagus cuniculus*
Slaty-backed Thornbill	*Acanthiza robustirostris*
Spinifex Pigeon	*Geophaps plumifera*
Spiny-cheeked Honeyeater	*Acanthagenys rufogularis*
Torresian Crow	*Corvus orru*
Variegated Fairy-wren	*Malurus lamberti assimilis*
White-faced Heron	*Egretta novaehollandiae*
Willie Wagtail	*Rhipidura leucophrys*
Yellow-spotted Monitor	*Varanus panoptes*

4 CONCLUSION

No habitat within the survey area was identified as being suitable for Black-flanked Rock Wallabies with their being complete lack of the species preferred habitat over most of the area. Where rocky habitat does occur, the number of voids was limited to a few small, isolated examples that would be unsuitable. The conclusion that the survey area contains no suitable habitat for Black-flanked Rock Wallabies is supported by the fact that no individuals were detected during the field survey or during the camera traps survey.

5 REFERENCES

Bamford Consulting Ecologists (BCE) (2015). Yeelirrie Terrestrial Vertebrate Fauna Review. Unpublished report prepared for Cameco Australia, Bamford Consulting Ecologists.

Biota Environmental Sciences (2017). Mt Keith Satellite Proposal Black-footed Rock-wallaby Survey Prepared for BHP Billiton Nickel West, Biota Environmental Sciences.

Botanica Consulting (2021). Targeted Flora/ Vegetation survey-Kathleen Valley Project. Unpublished memorandum for MBS Environmental.

Department of Biodiversity, Conservation and Attractions (DBCA) (2017). Fauna Profile -Black-footed Rock Wallabies *Petrogale lateralis.*
Available http://www.dbca.wa.gov.au

Department of Biodiversity, Conservation and Attractions (DBCA) (2021). NatureMap - Mapping Western Australia Biodiversity, Department of Biodiversity, Conservation and Attractions.
Available: https://naturemap.dbca.wa.gov.au/default.aspx

Pearson, D. (2013). Recovery plan for five species of rock wallabies: Black-footed rock wallaby (*Petrogale lateralis*), Short-eared rock wallaby (*Petrogale brachyotis*), Monjon (*Petrogale burbidgei*), Nabarlek (*Petrogale concinna*), Rothschild rock wallaby (*Petrogale rothschildi*). Department of Parks and Wildlife.

Woinarski, J. C. Z., A. A. Burbidge, and P. L. Harrison (2014). The Action Plan for Australian Mammals 2012. CSIRO Publishing, Victoria.

Appendix 1: Camera Trap Results

Camera Number	Date	Time	Common Name	Species	Number
8726	23/04/2021	11:45:00 PM	Euro	*Osphranter robustus*	1
8726	24/04/2021	6:18:00 AM	Euro	*Osphranter robustus*	1
8726	25/04/2021	11:36:00 PM	Euro	*Osphranter robustus*	1
8726	27/04/2021	1:51:00 AM	Euro	*Osphranter robustus*	1
8726	27/04/2021	2:26:00 AM	Euro	*Osphranter robustus*	2
8726	27/04/2021	4:15:00 AM	Euro	*Osphranter robustus*	1
8726	28/04/2021	2:33:00 AM	Euro	*Osphranter robustus*	1
8726	28/04/2021	2:59:00 AM	Cat	*Felis catus*	1
8726	29/04/2021	2:50:00 AM	Euro	*Osphranter robustus*	1
8726	29/04/2021	3:10:00 AM	Euro	*Osphranter robustus*	1
8726	29/04/2021	4:47:00 AM	Euro	*Osphranter robustus*	1
8726	02/05/2021	3:43:00 AM	Euro	*Osphranter robustus*	1
8726	04/05/2021	3:56:00 PM	Euro	*Osphranter robustus*	1
8726	07/05/2021	6:03:00 AM	Euro	*Osphranter robustus*	1
8726	08/05/2021	7:48:00 AM	Euro	*Osphranter robustus*	1
8726	15/05/2021	3:40:00 AM	Euro	*Osphranter robustus*	1
8726	16/05/2021	5:35:00 AM	Euro	*Osphranter robustus*	1
8726	17/05/2021	8:17:00 PM	Euro	*Osphranter robustus*	2
8726	18/05/2021	6:40:00 AM	Euro	*Osphranter robustus*	1
8726	18/05/2021	7:38:00 AM	Euro	*Osphranter robustus*	1
8726	18/05/2021	5:48:00 PM	Euro	*Osphranter robustus*	1
8726	21/05/2021	6:56:00 PM	Euro	*Osphranter robustus*	2
8726	22/05/2021	11:17:00 PM	Euro	*Osphranter robustus*	1
8726	23/05/2021	6:40:00 PM	Euro	*Osphranter robustus*	1
8726	25/05/2021	2:27:00 AM	Euro	*Osphranter robustus*	1
8726	25/05/2021	6:13:00 AM	Euro	*Osphranter robustus*	1
8726	26/05/2021	11:35:00 PM	Euro	*Osphranter robustus*	1
8726	27/05/2021	7:34:00 AM	Euro	*Osphranter robustus*	2
8726	27/05/2021	11:38:00 PM	Euro	*Osphranter robustus*	1
8726	28/05/2021	2:28:00 AM	Euro	*Osphranter robustus*	1
8726	28/05/2021	4:20:00 PM	Grey-crowned Babbler	*Pomatostomus temporalis*	4
8726	29/05/2021	12:05:00 AM	Euro	*Osphranter robustus*	1
8728	22/04/2021	6:21:00 AM	Euro	*Osphranter robustus*	2
8728	22/04/2021	8:01:00 AM	Euro	*Osphranter robustus*	1
8728	22/04/2021	8:37:00 AM	Euro	*Osphranter robustus*	2
8728	23/04/2021	1:30:00 PM	Euro	*Osphranter robustus*	1
8728	24/04/2021	5:06:00 AM	Euro	*Osphranter robustus*	1
8728	24/04/2021	11:27:00 AM	Euro	*Osphranter robustus*	1
8728	27/04/2021	7:48:00 AM	Euro	*Osphranter robustus*	1
8728	27/04/2021	11:04:00 PM	Euro	*Osphranter robustus*	1
8728	02/05/2021	2:41:00 AM	Euro	*Osphranter robustus*	1
8728	02/05/2021	6:05:00 AM	Euro	*Osphranter robustus*	1
8728	02/05/2021	6:23:00 AM	Euro	*Osphranter robustus*	1

Camera Number	Date	Time	Common Name	Species	Number
8728	02/05/2021	9:13:00 AM	Euro	*Osphranter robustus*	1
8728	02/05/2021	6:22:00 PM	Euro	*Osphranter robustus*	1
8728	09/05/2021	8:10:00 AM	Euro	*Osphranter robustus*	1
8728	11/05/2021	10:20:00 AM	Euro	*Osphranter robustus*	2
8728	11/05/2021	3:51:00 PM	Euro	*Osphranter robustus*	1
8728	12/05/2021	7:12:00 AM	Euro	*Osphranter robustus*	1
8728	13/05/2021	12:17:00 PM	Dingo/Dog	*Canis lupus*	1
8728	15/05/2021	2:18:00 AM	Cat	*Felis catus*	1
8728	18/05/2021	6:16:00 AM	Euro	*Osphranter robustus*	1
8728	19/05/2021	6:15:00 PM	Euro	*Osphranter robustus*	1
8728	26/05/2021	5:38:00 PM	Euro	*Osphranter robustus*	1
8728	27/05/2021	7:17:00 AM	Euro	*Osphranter robustus*	1
8788	28/04/2021	7:23:00 AM	Euro	*Osphranter robustus*	1
8788	28/04/2021	9:05:00 PM	Euro	*Osphranter robustus*	1
8788	29/04/2021	5:13:00 PM	Euro	*Osphranter robustus*	1
8788	30/04/2021	6:12:00 AM	Euro	*Osphranter robustus*	2
8788	04/05/2021	5:42:00 AM	Euro	*Osphranter robustus*	1
8788	04/05/2021	3:37:00 PM	Euro	*Osphranter robustus*	1
8788	05/05/2021	8:53:00 AM	Euro	*Osphranter robustus*	1
8788	05/05/2021	5:32:00 PM	Euro	*Osphranter robustus*	1
8788	06/05/2021	8:12:00 AM	Euro	*Osphranter robustus*	2
8788	07/05/2021	5:13:00 AM	Rabbit	*Oryctolagus cuniculus*	1
8788	07/05/2021	7:15:00 AM	Euro	*Osphranter robustus*	1
8788	07/05/2021	2:31:00 PM	Euro	*Osphranter robustus*	1
8788	08/05/2021	6:26:00 AM	Euro	*Osphranter robustus*	2
8788	14/05/2021	6:13:00 AM	Euro	*Osphranter robustus*	1
8788	20/05/2021	2:33:00 PM	Chestnut-breasted Quail-thrush	*Cinclosoma castaneothorax*	1
8788	21/05/2021	10:44:00 PM	Euro	*Osphranter robustus*	1
8788	24/05/2021	6:08:00 AM	Euro	*Osphranter robustus*	1
8788	24/05/2021	6:34:00 AM	Euro	*Osphranter robustus*	1
8788	24/05/2021	5:40:00 PM	Euro	*Osphranter robustus*	1
8788	24/05/2021	9:00:00 PM	Euro	*Osphranter robustus*	1
8788	24/05/2021	10:49:00 PM	Euro	*Osphranter robustus*	1
8788	25/05/2021	5:43:00 PM	Euro	*Osphranter robustus*	1
8788	28/05/2021	12:30:00 AM	Euro	*Osphranter robustus*	1
8788	28/05/2021	8:08:00 AM	Euro	*Osphranter robustus*	2
8788	30/05/2021	3:36:00 PM	Euro	*Osphranter robustus*	2
8788	22/04/2921	5:57:00 AM	Euro	*Osphranter robustus*	1
8788	24/04/2921	11:22:00 PM	Euro	*Osphranter robustus*	1
8801	24/04/2021	9:21:00 PM	Euro	*Osphranter robustus*	2
8801	28/04/2021	2:09:00 AM	Euro	*Osphranter robustus*	1
8801	02/05/2021	5:05:00 AM	Euro	*Osphranter robustus*	1
8801	03/05/2021	5:08:00 PM	Euro	*Osphranter robustus*	1

Camera Number	Date	Time	Common Name	Species	Number
8801	04/05/2021	10:46:00 AM	Euro	*Osphranter robustus*	1
8801	04/05/2021	10:57:00 AM	Euro	*Osphranter robustus*	1
8801	05/05/2021	2:02:00 AM	Euro	*Osphranter robustus*	1
8801	05/05/2021	9:51:00 PM	Euro	*Osphranter robustus*	1
8801	06/05/2021	6:23:00 AM	Euro	*Osphranter robustus*	3
8801	08/05/2021	2:51:00 AM	Euro	*Osphranter robustus*	1
8801	08/05/2021	5:33:00 AM	Euro	*Osphranter robustus*	1
8801	08/05/2021	6:04:00 AM	Euro	*Osphranter robustus*	1
8801	09/05/2021	5:19:00 AM	Euro	*Osphranter robustus*	1
8801	09/05/2021	7:20:00 AM	Euro	*Osphranter robustus*	1
8801	11/05/2021	12:15:00 AM	Euro	*Osphranter robustus*	1
8801	13/05/2021	6:43:00 AM	Dingo/Dog	*Canis lupus*	1
8801	13/05/2021	8:02:00 AM	Euro	*Osphranter robustus*	1
8801	14/05/2021	6:42:00 AM	Euro	*Osphranter robustus*	2
8801	19/05/2021	6:47:00 AM	Euro	*Osphranter robustus*	3
8801	20/05/2021	11:12:00 PM	Rabbit	*Oryctolagus cuniculus*	1
8801	24/05/2021	7:27:00 AM	Euro	*Osphranter robustus*	2
8801	24/05/2021	5:23:00 PM	Euro	*Osphranter robustus*	1
8801	25/05/2021	7:42:00 AM	Euro	*Osphranter robustus*	1
8818	28/04/2021	10:54:00 AM	Euro	*Osphranter robustus*	1
8818	29/04/2021	7:58:00 AM	Chestnut-breasted Quail-thrush	*Cinclosoma castaneothorax*	1
8818	07/05/2021	5:03:00 AM	Euro	*Osphranter robustus*	1
8818	07/05/2021	8:34:00 AM	Euro	*Osphranter robustus*	1
8818	19/05/2021	6:42:00 PM	Euro	*Osphranter robustus*	1
8818	29/05/2021	3:44:00 AM	Rabbit	*Oryctolagus cuniculus*	1
8818	30/05/2021	1:04:00 AM	Euro	*Osphranter robustus*	1
8862	23/04/2021	5:02:00 PM	Euro	*Osphranter robustus*	1
8862	27/04/2021	1:41:00 AM	Euro	*Osphranter robustus*	2
8862	28/04/2021	5:35:00 PM	Euro	*Osphranter robustus*	1
8862	29/04/2021	5:18:00 PM	Euro	*Osphranter robustus*	1
8862	02/05/2021	8:53:00 PM	Euro	*Osphranter robustus*	1
8862	03/05/2021	6:19:00 AM	Euro	*Osphranter robustus*	1
8862	03/05/2021	12:17:00 PM	Euro	*Osphranter robustus*	1
8862	03/05/2021	12:30:00 PM	Euro	*Osphranter robustus*	1
8862	03/05/2021	3:23:00 PM	Euro	*Osphranter robustus*	1
8862	04/05/2021	6:19:00 AM	Euro	*Osphranter robustus*	1
8862	04/05/2021	11:58:00 AM	Euro	*Osphranter robustus*	1
8862	05/05/2021	6:19:00 PM	Euro	*Osphranter robustus*	1
8862	08/05/2021	4:49:00 AM	Euro	*Osphranter robustus*	2
8862	13/05/2021	6:24:00 PM	Euro	*Osphranter robustus*	1
8862	17/05/2021	4:37:00 PM	Euro	*Osphranter robustus*	1
8862	22/05/2021	8:03:00 AM	Euro	*Osphranter robustus*	2
8862	23/05/2021	5:59:00 AM	Euro	*Osphranter robustus*	1

Camera Number	Date	Time	Common Name	Species	Number
8862	23/05/2021	6:52:00 AM	Euro	*Osphranter robustus*	1
8862	23/05/2021	11:47:00 AM	Euro	*Osphranter robustus*	1
8862	24/05/2021	6:14:00 PM	Euro	*Osphranter robustus*	1
8862	24/05/2021	7:20:00 PM	Euro	*Osphranter robustus*	1
8862	25/05/2021	6:59:00 AM	Euro	*Osphranter robustus*	2
8862	25/05/2021	5:51:00 PM	Euro	*Osphranter robustus*	1
8862	27/05/2021	11:44:00 PM	Euro	*Osphranter robustus*	1
8863	21/04/2021	4:53:00 PM	Willie Wagtail	*Rhipidura leucophrys*	1
8863	23/04/2021	12:50:00 PM	Yellow-spotted Monitor	*Varanus panoptes*	1
8863	23/04/2021	3:18:00 PM	Crested Pigeon	*Ocyphaps lophotes*	1
8863	24/04/2021	10:42:00 AM	Spiny-cheeked Honeyeater	*Acanthagenys rufogularis*	1
8863	24/04/2021	10:26:00 PM	Cat	*Felis catus*	1
8863	25/04/2021	8:58:00 PM	Euro	*Osphranter robustus*	1
8863	26/04/2021	2:07:00 PM	Grey Butcherbird	*Cracticus torquatus*	1
GH 07	27/04/2021	2:25:00 AM	Euro	*Osphranter robustus*	1
GH 07	29/04/2021	11:36:00 PM	Euro	*Osphranter robustus*	1
GH 07	01/05/2021	5:56:00 PM	Euro	*Osphranter robustus*	1
GH 07	03/05/2021	6:19:00 AM	Euro	*Osphranter robustus*	2
GH 07	05/05/2021	6:38:00 AM	Euro	*Osphranter robustus*	1
GH 07	06/05/2021	7:25:00 AM	Euro	*Osphranter robustus*	1
GH 07	06/05/2021	7:26:00 AM	Willie Wagtail	*Rhipidura leucophrys*	1
GH 07	07/05/2021	8:39:00 PM	Euro	*Osphranter robustus*	1
GH 07	11/05/2021	6:29:00 AM	Euro	*Osphranter robustus*	2
GH 07	13/05/2021	6:42:00 AM	Euro	*Osphranter robustus*	1
GH 07	18/05/2021	8:10:00 AM	Euro	*Osphranter robustus*	1
GH 07	19/05/2021	7:58:00 AM	Euro	*Osphranter robustus*	1
GH 07	21/05/2021	9:49:00 PM	Euro	*Osphranter robustus*	2
GH 07	23/05/2021	6:34:00 AM	Euro	*Osphranter robustus*	1
GH 07	27/05/2021	1:33:00 AM	Euro	*Osphranter robustus*	1
GH 07	27/05/2021	7:59:00 AM	Euro	*Osphranter robustus*	1
GH 07	31/05/2021	9:33:00 AM	Black-faced Woodswallow	*Artamus cinereus*	1
GH 21	22/04/2021	9:45:00 AM	Euro	*Osphranter robustus*	1
GH 21	29/04/2021	7:19:00 AM	Spinifex Pigeon	*Geophaps plumifera*	1
GH 21	01/05/2021	5:17:00 PM	Euro	*Osphranter robustus*	1
GH 21	05/05/2021	6:50:00 AM	Euro	*Osphranter robustus*	1
GH 21	09/05/2021	12:10:00 PM	Yellow-spotted Monitor	*Varanus panoptes*	1
GH 44	24/04/2021	12:33:00 AM	Euro	*Osphranter robustus*	1
GH 44	24/04/2021	6:35:00 AM	Euro	*Osphranter robustus*	1
GH 44	25/04/2021	2:44:00 AM	Euro	*Osphranter robustus*	1
GH 44	26/04/2021	4:36:00 AM	Euro	*Osphranter robustus*	1
GH 44	27/04/2021	4:29:00 AM	Euro	*Osphranter robustus*	1
GH 44	27/04/2021	4:47:00 AM	Euro	*Osphranter robustus*	1
GH 44	27/04/2021	6:52:00 PM	Euro	*Osphranter robustus*	1

Camera Number	Date	Time	Common Name	Species	Number
GH 44	27/04/2021	7:03:00 PM	Euro	*Osphranter robustus*	1
GH 44	29/04/2021	6:20:00 AM	Euro	*Osphranter robustus*	1
GH 44	01/05/2021	12:39:00 AM	Euro	*Osphranter robustus*	2
GH 44	01/05/2021	5:38:00 PM	Euro	*Osphranter robustus*	1
GH 44	02/05/2021	5:13:00 PM	Euro	*Osphranter robustus*	1
GH 44	03/05/2021	5:57:00 AM	Euro	*Osphranter robustus*	1
GH 44	08/05/2021	7:30:00 PM	Euro	*Osphranter robustus*	2
GH 44	11/05/2021	12:01:00 AM	Euro	*Osphranter robustus*	1
GH 44	18/05/2021	11:11:00 AM	Willie Wagtail	*Rhipidura leucophrys*	1
GH 44	19/05/2021	7:23:00 AM	Euro	*Osphranter robustus*	1
GH 44	22/05/2021	5:47:00 PM	Euro	*Osphranter robustus*	1
GH 44	23/05/2021	6:15:00 AM	Euro	*Osphranter robustus*	2
GH 44	23/05/2021	6:36:00 AM	Euro	*Osphranter robustus*	1
GH 44	24/05/2021	6:51:00 AM	Euro	*Osphranter robustus*	1
GH 44	24/05/2021	11:56:00 PM	Euro	*Osphranter robustus*	1
GH 44	27/05/2021	7:53:00 AM	Euro	*Osphranter robustus*	1
GH 44	29/05/2021	12:58:00 AM	Euro	*Osphranter robustus*	1
GH 44	29/05/2021	6:28:00 AM	Euro	*Osphranter robustus*	1
GH 44	30/05/2021	5:36:00 AM	Euro	*Osphranter robustus*	1
GH 44	31/05/2021	7:13:00 AM	Euro	*Osphranter robustus*	1
GH 64	23/04/2021	11:56:00 PM	Euro	*Osphranter robustus*	1
GH 64	29/04/2021	3:21:00 AM	Euro	*Osphranter robustus*	2
GH 64	05/05/2021	6:37:00 AM	Euro	*Osphranter robustus*	1
GH 64	15/05/2021	8:13:00 AM	Euro	*Osphranter robustus*	1
GH 64	16/05/2021	9:01:00 AM	Euro	*Osphranter robustus*	1
GH 64	19/05/2021	5:28:00 PM	Euro	*Osphranter robustus*	1
GH 64	19/05/2021	5:49:00 PM	Euro	*Osphranter robustus*	2
GH 64	21/05/2021	10:03:00 PM	Euro	*Osphranter robustus*	1
GH 64	25/05/2021	5:28:00 AM	Euro	*Osphranter robustus*	2
GH 64	25/05/2021	7:07:00 AM	Euro	*Osphranter robustus*	1
GH 64	26/05/2021	8:54:00 AM	Euro	*Osphranter robustus*	2
GH 65	23/04/2021	10:45:00 AM	Slaty-backed Thornbill	*Acanthiza robustirostris*	1
GH 65	06/05/2021	11:50:00 AM	Yellow-spotted Monitor	*Varanus panoptes*	1
GH 65	08/05/2021	9:21:00 AM	Euro	*Osphranter robustus*	2
GH 65	20/05/2021	2:18:00 PM	Variegated Fairy-wren	*Malurus lamberti assimilis*	1
GH 80	25/04/2021	2:30:00 PM	Torresian Crow	*Corvus orru*	1
GH 80	02/05/2021	4:53:00 PM	White-faced Heron	*Egretta novaehollandiae*	1
GH 80	09/05/2021	12:20:00 AM	European Cattle	*Bos taurus*	5
GH 80	09/05/2021	7:51:00 AM	White-faced Heron	*Egretta novaehollandiae*	1
GH 80	09/05/2021	10:23:00 AM	White-faced Heron	*Egretta novaehollandiae*	1
GH 80	10/05/2021	6:44:00 AM	European Cattle	*Bos taurus*	1

Camera Number	Date	Time	Common Name	Species	Number
GH 80	10/05/2021	7:32:00 AM	White-faced Heron	*Egretta novaehollandiae*	1
GH 80	11/05/2021	7:31:00 AM	European Cattle	*Bos taurus*	5
GH 80	12/05/2021	3:27:00 PM	European Cattle	*Bos taurus*	1
GH 80	17/05/2021	2:11:00 PM	Yellow-spotted Monitor	*Varanus panoptes*	1
GH 80	17/05/2021	2:28:00 PM	European Cattle	*Bos taurus*	1
GH 80	18/05/2021	9:17:00 AM	European Cattle	*Bos taurus*	5
GH 80	19/05/2021	12:53:00 PM	European Cattle	*Bos taurus*	5
GH 80	20/05/2021	10:18:00 AM	European Cattle	*Bos taurus*	1
GH 80	21/05/2021	8:57:00 AM	White-faced Heron	*Egretta novaehollandiae*	1
GH 80	22/05/2021	9:10:00 AM	European Cattle	*Bos taurus*	2
GH 80	22/05/2021	3:46:00 PM	European Cattle	*Bos taurus*	2
GH 80	24/05/2021	3:14:00 PM	European Cattle	*Bos taurus*	1
GH 80	26/05/2021	7:48:00 AM	European Cattle	*Bos taurus*	1
GH 80	27/05/2021	9:52:00 AM	White-faced Heron	*Egretta novaehollandiae*	1
GH 80	28/05/2021	12:39:00 AM	European Cattle	*Bos taurus*	4
GH 80	29/05/2021	3:21:00 PM	White-faced Heron	*Egretta novaehollandiae*	1
GH 83	30/4/2021	3:35:00 AM	Euro	*Osphranter robustus*	1
GH 83	30/4/2021	8:33:00 AM	Euro	*Osphranter robustus*	1
GH 83	1/05/2021	5:41:00 AM	Euro	*Osphranter robustus*	1
GH 83	3/05/2021	6:52:00 AM	Euro	*Osphranter robustus*	1
GH 83	4/05/2021	8:16:00 AM	Euro	*Osphranter robustus*	1
GH 83	5/05/2021	9:13:00 AM	Euro	*Osphranter robustus*	1
GH 83	8/05/2021	2:14:00 AM	Euro	*Osphranter robustus*	1
GH 83	8/05/2021	6:34:00 AM	Euro	*Osphranter robustus*	2
GH 83	9/05/2021	5:41:00 AM	Euro	*Osphranter robustus*	2
GH 83	9/05/2021	5:53:00 AM	Euro	*Osphranter robustus*	1
GH 83	9/05/2021	7:45:00 AM	Euro	*Osphranter robustus*	1
GH 83	9/05/2021	5:18:00 PM	Euro	*Osphranter robustus*	2
GH 83	10/05/2021	5:45:00 AM	Euro	*Osphranter robustus*	1
GH 83	10/05/2021	7:20:00 AM	Euro	*Osphranter robustus*	1
GH 83	15/05/2021	5:13:00 PM	Euro	*Osphranter robustus*	1
GH 83	29/05/2021	6:22:00 AM	Euro	*Osphranter robustus*	1