



Breakaway and Marillana South:  
Reconnaissance Flora and  
Vegetation Survey

Biologic Environmental Survey

Report to BHP WAIO Pty Ltd

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## EXECUTIVE SUMMARY

BHP Western Australia Iron Ore commissioned Biologic Environmental Survey (Biologic) to undertake a reconnaissance flora survey covering the Breakaway tenement (E47/1239) and Marillana South tenement (E47/4245), to provide local and contextual information to inform future environmental approvals for the area. The Breakaway tenement covers an area of 3,141 hectares (ha) and Marillana South tenement covers 23 ha (the two tenements are hereafter referred to collectively as 'the Study Area', total area 3,166 ha). The Study Area is located approximately 95 km north-west of Newman.

The reconnaissance survey comprised:

- a comprehensive desktop assessment (database searches and literature review) to identify flora species and vegetation/ ecological communities potentially occurring within the Study Area; and
- a field survey to identify the occurrence of significant flora and vegetation components within the Study Area, with a focus on significant species (those listed as 'Threatened' and under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and/or *Biodiversity Conservation Act 2016* (WA) or listed as Priority by the Department of Biodiversity, Conservation and Attractions).

A total of 59 flora taxa were identified as significant by the desktop assessment, of which four were previously recorded within the Study Area: *Isotropis parviflora* (Priority (P) 3); *Rostellularia adscendens* var. *latifolia* (P3); *Synostemon hamersleyensis* (T); and *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4). The desktop assessment indicated that no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) occur within the Study Area; however, eight PECs occur within 50 km of the Study Area. No TECs are known to occur within the same radius.

The reconnaissance field survey was conducted between July 27th and August 1st 2022 by two Biologic personnel. Eight relevés and 41 mapping notes were sampled in the Study Area, and targeted surveys were undertaken for significant flora taxa.

A total of 204 confirmed vascular flora taxa from 42 families and 115 genera were recorded from the Study Area during the field survey, which comprised 191 native taxa and 13 introduced taxa. Two priority-listed taxa were recorded in the Study Area (Figure 4.3), as follows:

- *Synostemon hamersleyensis* (T) – one individual from the Marillana South tenement in shrubland over scattered *Triodia* hummock grassland and *Enneapogon* tussock grassland on red-brown sandy loam in medium drainage lines; and
- *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4) – 12 individuals from six locations on ironstone outcrops with *Triodia* hummock grassland and *Themeda* tussock grassland within the Breakaway tenement.

Both *Synostemon hamersleyensis* (T) and *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4) have previously been recorded within the Study Area, found to occur on steep ironstone slopes, screens, cliffs and gorges.

Thirteen introduced taxa were recorded from the Study Area, of which none are listed as 'Weeds of National Significance', a Declared Pest under the *Biosecurity and Agriculture Management Act 2007* (WA), or as 'Priority Alert' weeds by Parks and Wildlife service of DBCA.

Fourteen vegetation types were described from four broad landforms in the Study Area, with an additional mapping unit of 'Cleared' to delineate tracks or mining disturbances and other areas devoid of vegetation. Native vegetation covered 98.85 % of the Study Area, with the remaining area mapped as 'Cleared'. The condition of the vegetation within the Study Area ranged from Poor (19.5 ha/ 0.06%) to Excellent. With the majority of the mapped native vegetation in Excellent condition (2820.41 ha/ 89.09%). None of the vegetation types described and delineated from the Study Area are considered to be analogous with any TECs or PECs known to occur in the Pilbara region. Five vegetation types were considered to form vegetation of "other" significance, due to association with major drainage lines, containing key indicator species for GDV, or supporting significant flora.

Following the post-survey review of the likelihood of occurrence assessment, two Priority taxa, *Ipomoea racemigera* (P2) and *Amaranthus centralis* (P3), both of which are annual taxa, remained 'Possible to occur'. Despite above-average rainfall occurring in the two months prior to the survey, lower than average rainfall occurred overall in the 12 months preceding the survey. While lower rainfall can result in suboptimal conditions for the germination of annuals, higher rainfall immediately prior to the survey, in conjunction with sufficient follow-up rains and soil warming, can result in the breaking of seed dormancy and germination of annual taxa. As other annual species were recorded during the survey (e.g. Asteraceae spp.), the lower than average overall rainfall was not considered to have been a major limitation.

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## 1 INTRODUCTION

### 1.1 Background

BHP Western Australia Iron Ore (BHP WAIO) commissioned Biologic Environmental Survey (Biologic) to undertake a reconnaissance flora survey covering the Breakaway tenement (E47/1239) and Marillana South tenement (E47/4245), to provide local and contextual information to inform future environmental approvals for the area. The Breakaway tenement covers an area of 3,142 hectares (ha) and Marillana South tenement covers 24 ha (hereafter referred to collectively as the Study Area, total area 3,166 ha). The Study Area is located approximately 95 km north-west of Newman (Figure 1.1), and nine kilometres (km) east of Spinifex Camp (Yandi).

#### 1.1.1 Land Use and Tenure

The south-eastern section of the Study Area is located upon pastoral lease (Marillana Station) and the western portion of the Study Area is located upon Unallocated Crown Land – East of Karijini. Two exploration licences (E47/1239 and E47/4245) held by BHP WAIO are located within the Study Area. Historically, land use in the vicinity of the Study Area has been mining and cattle grazing.

### 1.2 Objectives

BHP WAIO commissioned Biologic to undertake a single season reconnaissance flora and vegetation survey of the Study Area. The overarching objectives of this assessment were to:

- conduct a comprehensive desktop assessment (database searches and literature review) to identify flora species and vegetation/ ecological communities potentially occurring within the Study Area; and
- undertake a reconnaissance flora and vegetation survey to identify the occurrence of significant flora and vegetation components within the Study Area, with a focus on significant species (those listed as threatened and under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or *Biodiversity Conservation Act 2016* (BC Act) or listed as Priority by Department of Biodiversity, Conservation and Attractions (DBCA)).

### 1.3 Legislation & Compliance

Significant flora and vegetation are protected at a state and commonwealth level and legislated by the following parliamentary acts:

- State BC Act;
- State *Environmental Protection Act 1986* (WA); and
- Commonwealth EPBC Act.

The Environmental Protection Authority (EPA) outline guidance for biological surveys in Western Australia. All aspects of botanical assessments at Biologic are compliant with the *EPA Environmental Factor Guidelines for flora and vegetation* (EPA, 2016a) and *EPA Technical Guidance for Flora and Vegetation Surveys for Environmental Impact Assessment* (EIA) (EPA, 2016b). These extend to preparation, survey design, personnel, data analysis, reporting and client data submission intended to

protect the biological diversity and ecological integrity of Western Australian flora and vegetation during the EIA process.

### 1.3.1 Significant Flora & Vegetation

The State and Commonwealth governments protect rare, endemic, new or special flora and vegetation communities at varying levels by classifying them under codes of conservation significance. These codes, jurisdiction and level of protection are detailed in Appendix A.

Significant flora may extend beyond the assigned codes and may include:

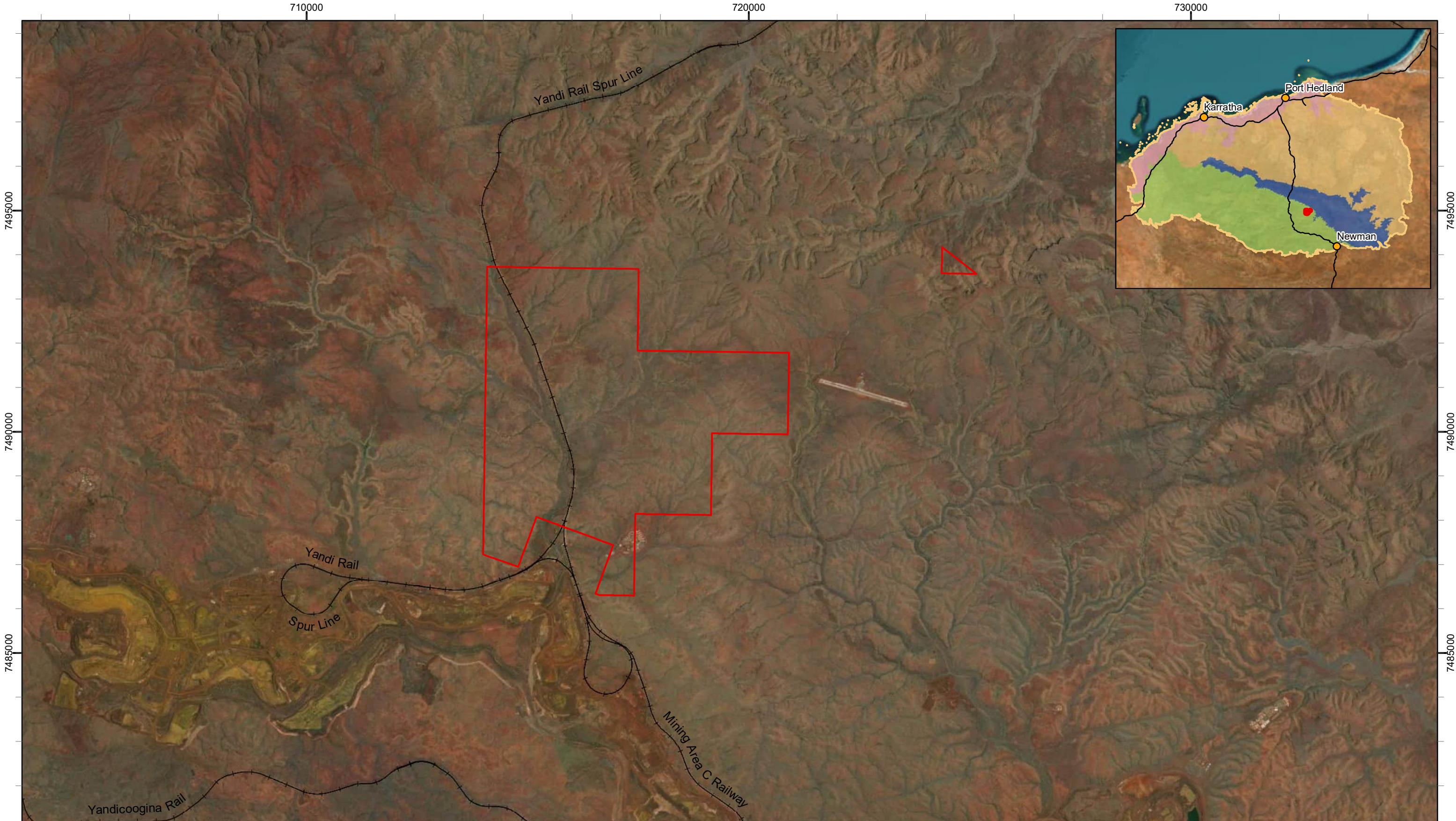
- Being identified as Threatened, Critically Endangered, Endangered or Vulnerable species (State listed BC Act and/or Commonwealth listed EPBC Act);
- Being listed as Priority flora species (DBCA, 2022e);
- Locally endemic or associated with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems);
- New species or anomalous features that indicate a potential new species;
- Range extensions or representative of outer population extent (particularly at the extremes of range, recently discovered range extensions or isolated outliers of the main range);
- Unusual species; restricted subspecies, varieties, naturally occurring hybrids, or complex taxonomic groups; or
- Relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Significant vegetation may extend beyond the assigned codes and may include:

- Being identified as Threatened Ecological Community (TEC), Critically Endangered, Endangered or Vulnerable ecological community (State listed BC Act and/or Commonwealth listed EPBC Act);
- Identified as a Priority Ecological Community (PEC) (DBCA, 2022b);
- Restricted or endemic distribution;
- Degree of historical impact from threatening processes (such as mining or agricultural);
- A role as a refuge for significant flora; or
- Providing an important function required to maintain ecological integrity of a significant ecosystem.

### 1.3.2 Introduced Flora

Introduced flora can pose a threat to native vegetation and biodiversity. A database of declared pests is kept by the Department of Primary Industries and Regional Development (DPIRD). This database falls under State jurisdiction, legislated by the *Biosecurity and Agricultural Management Act 2007* (WA) (BAM Act) (DPIRD, 2007). Some introduced flora may be classified with legal control or management requirements to be met by the land occupier/user. These categories are outlined in Appendix A.

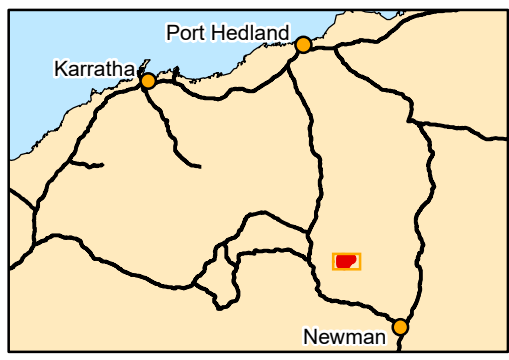


**Legend**

Study Area	<b>IBRA Region</b>	<b>IBRA Subregion</b>
Rail	Pilbara	Chichester
		Fortescue
		Hamersley
		Roebourne

Scale: 1:80,000

Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020      Created 23/05/2023



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**Figure 1.1: Study Area and regional context**

## 2 EXISTING ENVIRONMENT

### 2.1 Biogeography

The Study Area is located within the Pilbara bioregion and Hamersley subregion (PIL03), as defined by the *Interim Biogeographic Regionalisation of Australia* (IBRA; Thackway & Cresswell, 1995) (Figure 1.1). The Pilbara bioregion is characterised by vast coastal plains and inland mountain ranges with cliffs and deep gorges (Thackway & Cresswell, 1995). Vegetation is predominantly mulga low woodlands or snappy gum over bunch and hummock grasses (Bastin, 2008). The Hamersley subregion is characterised by mountainous areas of Proterozoic sedimentary ranges (ironstone ranges) and plateaux dissected by gullies and gorges (Kendrick, 2003). Mulga low woodland over bunch grasses on fine-textured soils dominates in valley floors, while skeletal soils of the ranges are dominated by snappy gum (*Eucalyptus leucophloia*) over *Triodia brizoides* (Kendrick, 2003). Drainage is typically into the Fortescue River to the north, the Ashburton River to the south, or the Robe River to the west (Kendrick, 2003).

### 2.2 Climate

The Pilbara bioregion has a semi-desert to tropical climate, with rainfall occurring sporadically throughout the year, although mostly during summer (Thackway & Cresswell, 1995). Summer rainfall is usually the result of tropical low pressure systems and cyclonic activity in the region (Leighton, 2004). Winter rainfall is generally lighter and are often associated with cold fronts moving north easterly across the state (Leighton, 2004). The average annual rainfall ranges from 200–350 mm (BoM, 2020; McKenzie *et al.*, 2009).

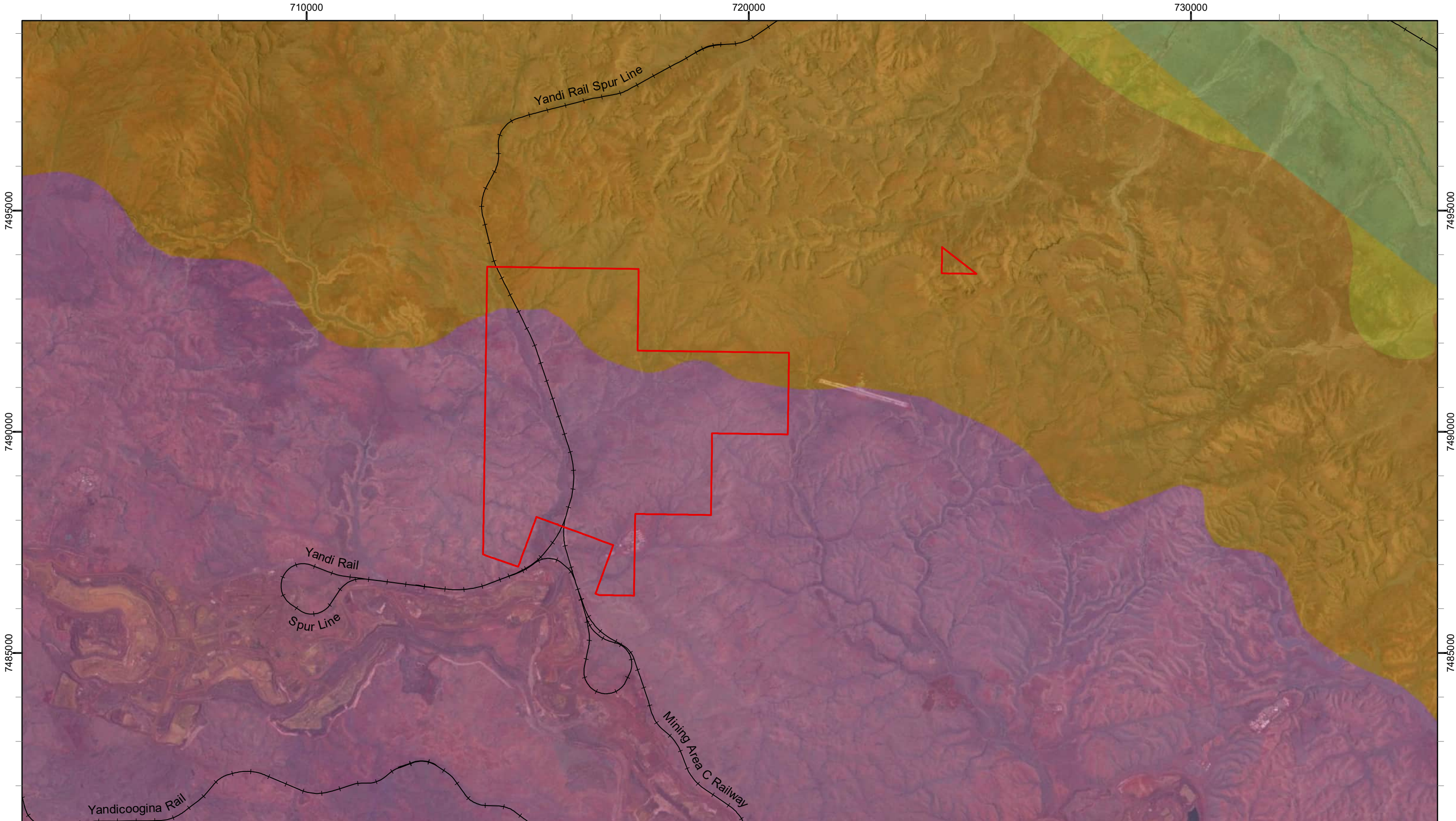
### 2.3 Geology

The Hamersley subregion contains Proterozoic sedimentary ranges and gorges of basalt, shale and dolerite. This subregion also contains calcrete deposits (Kendrick, 2003).


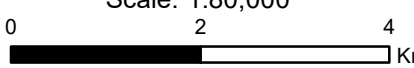
The Study Area occurs across two broad (1:500,000) geological units (Table 2.1; Figure 2.1). The dominant geological unit occurring within the Study Area is the Weeli Wolli formation, occupying approximately 78.81% (2,495.15 ha), followed by the Brockman Iron formation (21.19%, 670.81 ha) (Table 2.1; Figure 2.1).

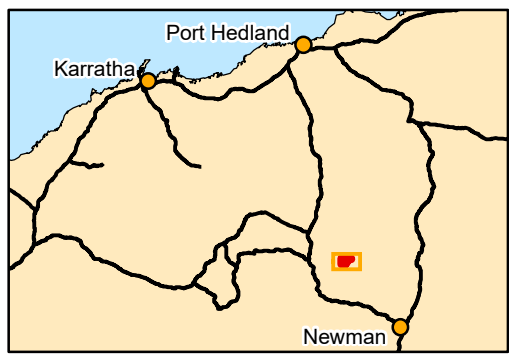
**Table 2.1: Geology units within the Study Area.**

Geological unit	Description	Extent in Study Area	
		Hectares	%
P-HAj-xci-od	<b>Weeli Wolli Formation:</b> Banded iron-formation (commonly jaspilitic), mudstone, siltstone, and numerous dolerite sills; metamorphosed	2,495.2	78.8
P-HAb-cib	<b>Brockman Iron Formation:</b> Banded iron-formation, chert, mudstone, and siltstone; metamorphosed	670.8	21.2
<b>Total</b>		<b>3,166</b>	<b>100%</b>



- Legend**
- Study Area
  - Rail
- Bedrock Geology**
- A-HAd-kd; Wittenoom Formation
  - AP-HAu-xsl-ci; Mount McRae Shale and Mount Sylvia Formation
  - P-HAb-cib; Brockman Iron Formation
  - P-HAj-xci-od; Weeli Wollie Formation

  
 Scale: 1:80,000  
  
 Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020      Created 23/05/2023



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**Figure 2.1: Broad Geology**  
**of the Study Area**

## 2.4 Soils

The CSIRO (2009) *Atlas of Australian Soils* described and mapped the soils of Australia following Bettany *et al.* (1967). The Study Area occurs across one soil unit, Fa13 (Figure 2.2). Fa13 comprises ranges of banded jaspilite and chert along with shales, dolomites, and iron ore formations, with some areas of ferruginous duricrust as well as occasional narrow winding valley plains and steeply dissected pediments. Fa13 is largely associated with the Hamersley and Ophthalmia Ranges. The soils are frequently stony and shallow and there are extensive areas without soil cover (Bettany *et al.*, 1967).

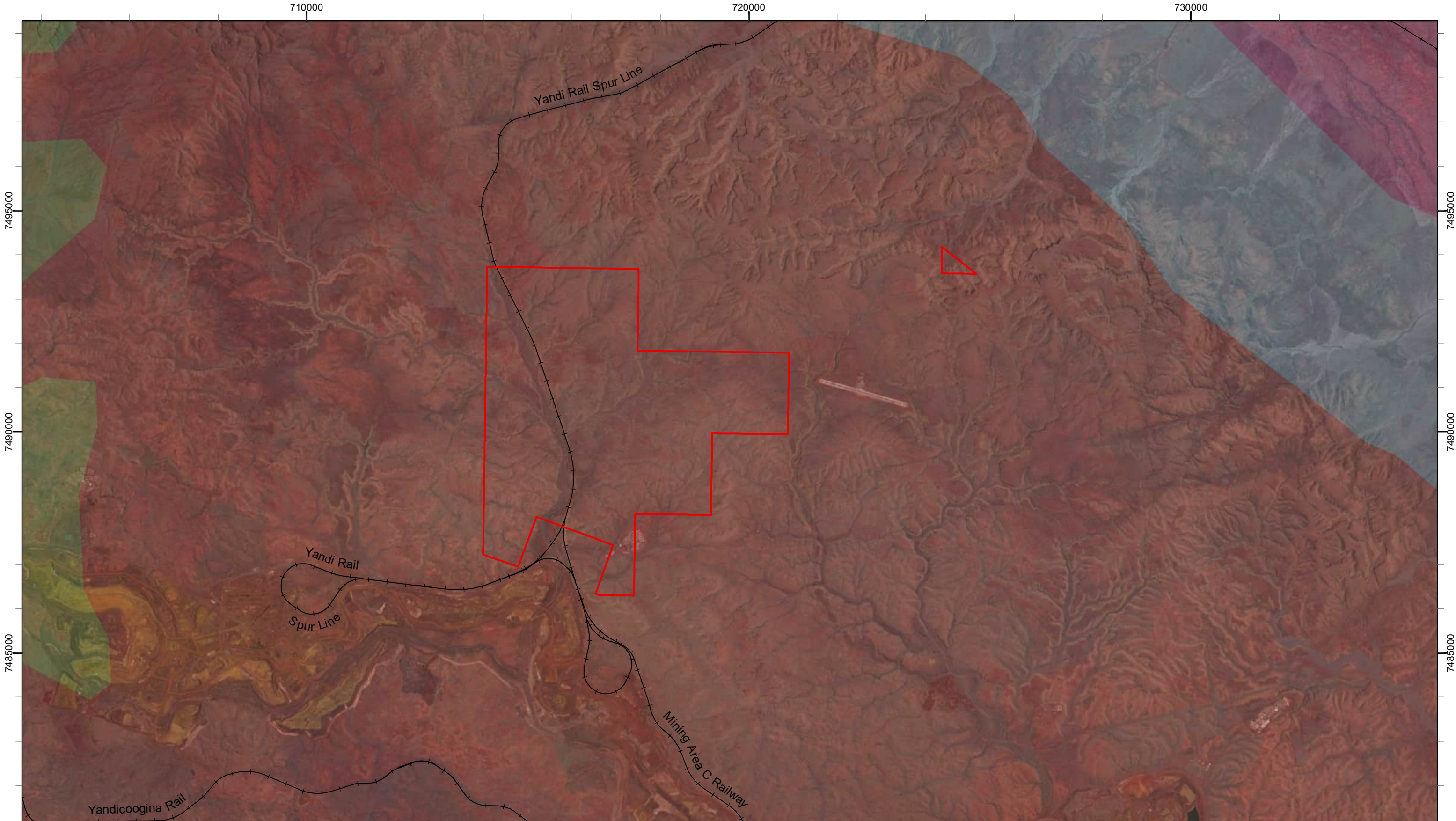
## 2.5 Land Systems

Payne *et al.* (1988) and van Vreeswyk *et al.* (2004) classified and mapped the land systems of the Pilbara bioregions according to similarities in landform, soil, vegetation, geology and geomorphology.







There are five land systems occurring within the Study Area (Figure 2.3; Table 2.2). The dominant land system is the Platform land system, covering approximately 54.22% of the Study Area (Figure 2.3; Table 2.2). The Platform land system is defined as “Dissected slopes and raised plains supporting hard spinifex grasslands” (van Vreeswyk *et al.*, 2004). The second most dominant land system is the Newman land system, covering approximately 36.08% of the Study Area. The remaining three land systems are McKay (6.00%), Robe (2.71%) and Rocklea (0.99%) (Figure 2.3; Table 2.2).


**Table 2.2: Land systems of the Study Area.**

Land system	Land type	Description	Extent in Study Area	
			Area (ha)	%
Platform	Stony plains with spinifex grasslands	Dissected slopes and raised plains supporting hard spinifex grasslands.	1,716.6	54.2
Newman	Hills and ranges with spinifex grasslands	Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	1,142.2	36.1
McKay	Hills and ranges with spinifex grasslands	Hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands.	189.9	6.0
Robe	Mesas, breakaways and stony plains with spinifex grasslands	Low plateaux, mesas and buttes of limonites supporting soft spinifex (and occasionally hard spinifex) grasslands.	85.8	2.7
Rocklea	Hills and ranges with spinifex grasslands	Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands.	31.5	1.0
<b>Total</b>			<b>3,166</b>	<b>100%</b>

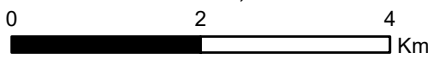


**Legend**

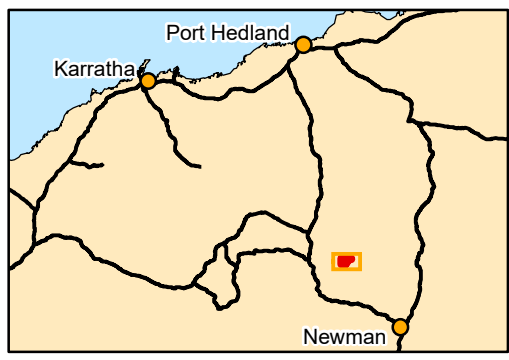
 Study Area	<b>Soil Unit</b>
 Rail	 Fa13
	 Fb3
	 My55
	 Oc71



Scale: 1:80,000



Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020      Created 23/05/2023



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**Figure 2.2: Soils of the Study Area**

710000

720000

730000

7495000

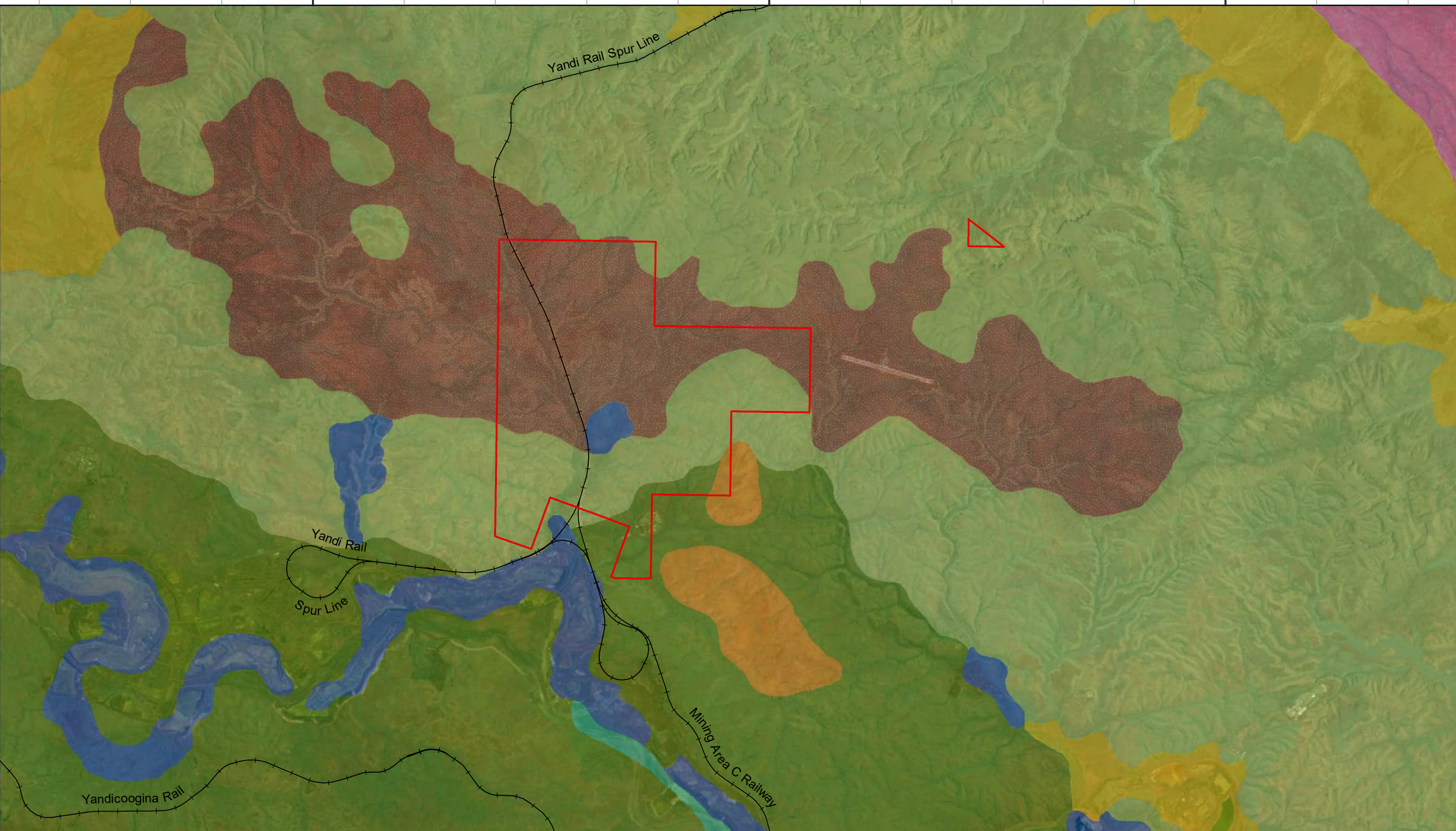
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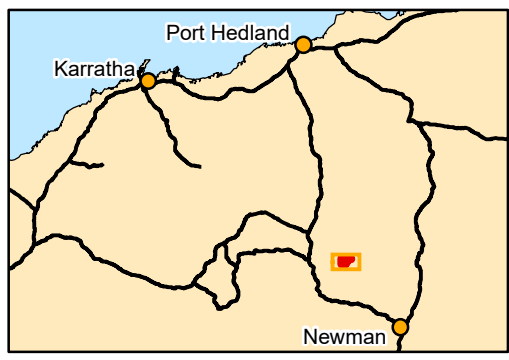


**Legend**

Study Area	<b>Land System</b>	McKay System	River System
Rail	Boolgeeda System	Newman System	Robe System
	Fortescue System	Platform System	Rocklea System

Scale: 1:80,000

Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020 Created 23/05/2023



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**Figure 2.3: Land Systems**  
**of the Study Area**

## 2.6 Hydrology & Surface Drainage

The Study Area occurs between two major watercourses, Marillana Creek and Weeli Wolli Creek (Figure 2.4). The Marillana Creek is located approximately 1.9 km south of the Study Area. Marillana Creek is an important source of surface water runoff to Weeli Wolli Creek, which flows to the north and discharges into the Fortescue River Valley and into the Fortescue Marsh (a nationally important wetland, located approximately 14.5 km to the north of the Study Area) (EPA, 2018). Marillana Creek typically only flows during the wet season following significant rainfall such as those associated with cyclonic weather events. Marillana Creek is also a source of recharge to the Marillana Creek Channel Iron Deposit groundwater aquifer (WRC, 2003)

## 2.7 Pre-European Vegetation

Beard (1975a) broadly (1:1,000,000) mapped the major structural vegetation types of WA. Shepherd *et al.* (2002)\_ENREF\_68 reinterpreted and updated the vegetation association mapping to reflect the National Vegetation Information System (NVIS) standards (ESCAVI, 2003). This update also accounts for extensive clearing since Beard (1975a) mapping.

Two vegetation associations occur within the Study Area (Table 2.3; Figure 2.5). The dominant vegetation association is Hammersley-18, which covers approximately 56.82% (1,798.90 ha) of the Study Area. The second largest vegetation association is Hammersley-82, covering approximately 43.18% (1,367.06 ha) of the Study Area. Hammersley-18 comprises low mulga woodland dominated by *Acacia aneura*, Hammersley-82 association comprises hummock grasslands, low tree steppe and snappy gums (*Eucalyptus leucophloia*) over *Triodia wiseana* (Shepherd *et al.*, 2002).

**Table 2.3: Vegetation associations within the Study Area.**

Vegetation Association	Description	Extent in Study Area	
		Area (ha)	%
Hammersley 18	Mulga ( <i>Acacia aneura</i> ) low woodland	1,798.9	56.8
Hammersley 82	<i>Eucalyptus leucophloia</i> over <i>Triodia wiseana</i> hummock grasslands/ low tree steppe	1,367.1	43.2
<b>Total</b>		<b>3,166</b>	<b>100%</b>

710000

720000

730000

7495000

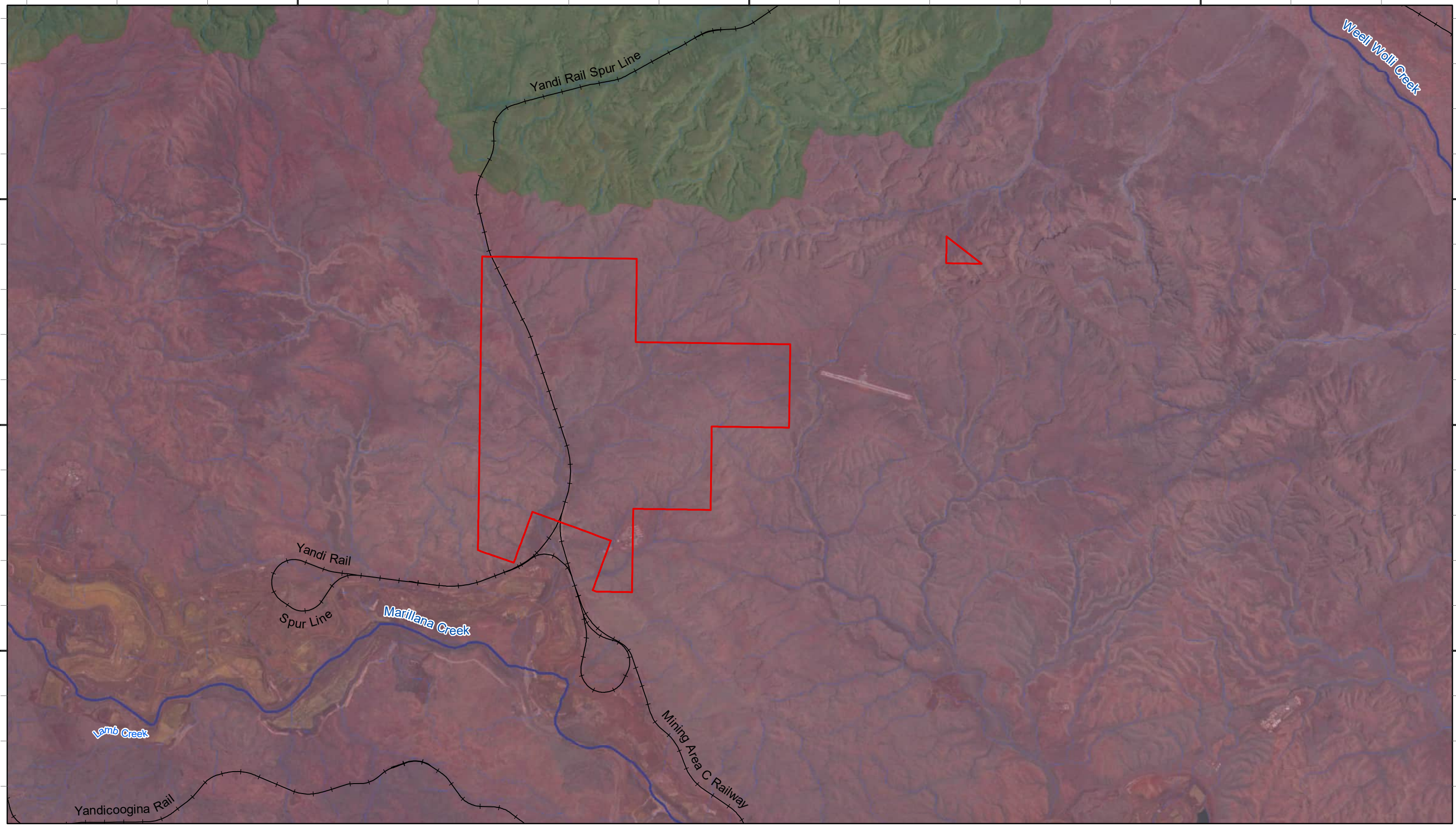
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




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7490000

7485000

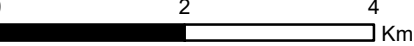
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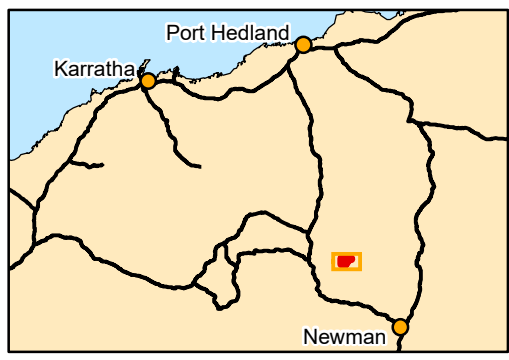
Legend		
	Study Area	<b>Surface Hydrology</b>
	Rail	 Minor
		 Major
		<b>Subcatchment</b>
		 Unnamed
		 Weeli Wolli/Marillana



Scale: 1:80,000

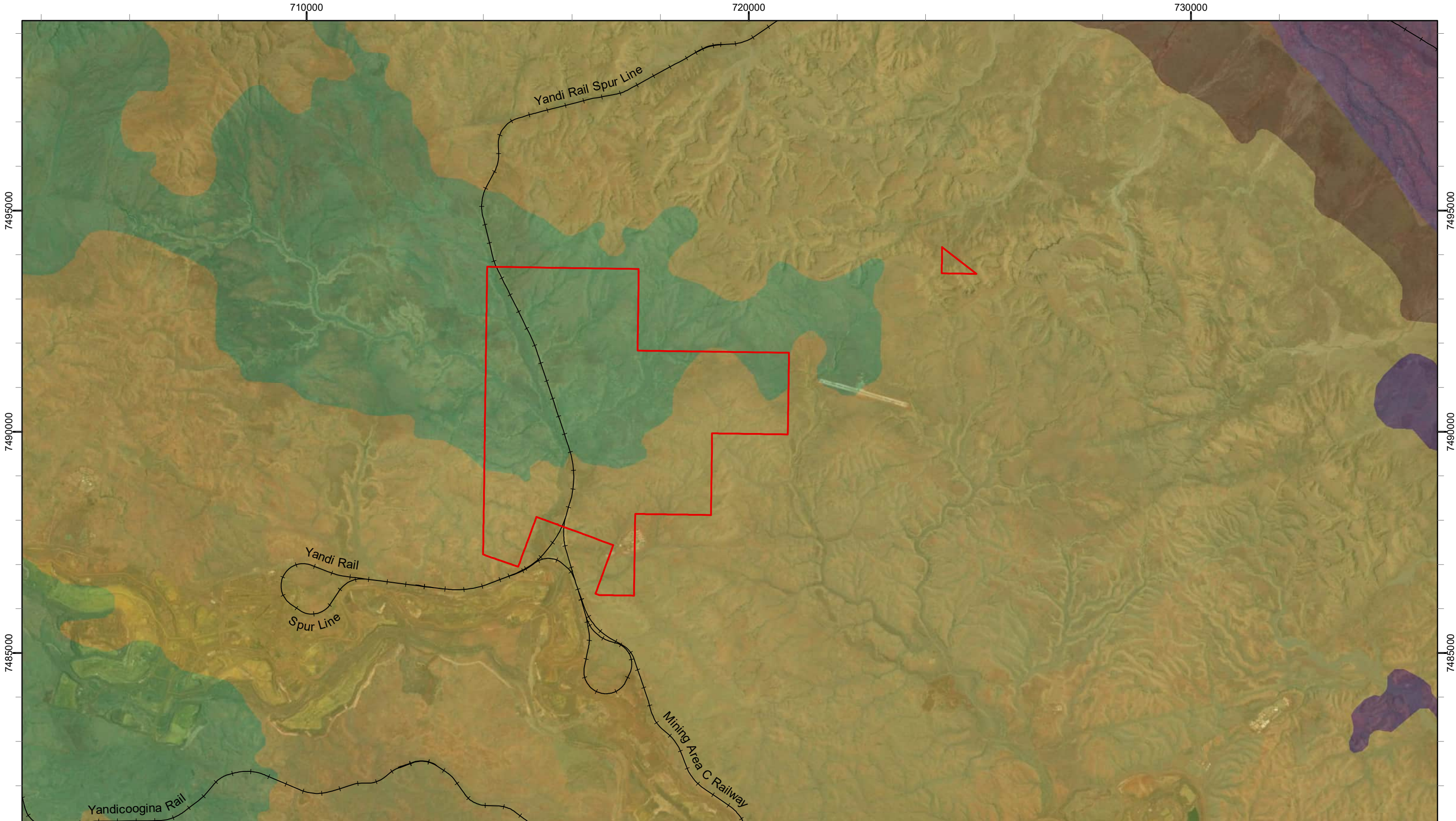
 Km

Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020 Created 23/05/2023


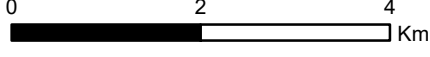


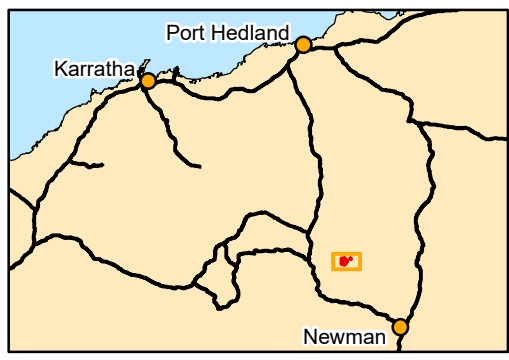
**BHP WAIO**  
**Breakaway and Marillana**  
**South Reconnaissance**  
**Flora Survey**

**Figure 2.4: Hydrology of the Study Area**



- Legend**
- Study Area
  - Rail
- Vegetation Association**
- Fortescue Valley 29
  - Fortescue Valley 111
  - Hamersley 18
  - Hamersley 82

  
 Scale: 1:80,000  
  
 Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020      Created 23/05/2023



**BHP WAIO**  
**Breakaway and Marillana**  
**South Reconnaissance**  
**Flora Survey**

**Figure 2.5: Pre-European**  
**vegetation associations**  
**of the Study Area**

### 3 DESKTOP ASSESSMENT

#### 3.1 Methods

A desktop assessment, comprising database searches and a literature review, was undertaken prior to field survey mobilisation to gain contextual understanding of general and significant flora and vegetation composition within the Study Area prior to the field survey.

##### 3.1.1 Database Searches

Database searches were conducted from a single shapefile of the Study Area and assessed a radius of up to 60 km (Table 3.1). Database search results are provided in Appendix B and mapped in Figure 3.1 and Figure 3.2.

**Table 3.1: Details of database searches conducted.**

Database	Purpose	Search radius
TPFL: Threatened & Priority Flora databases (DBCA, 2022d)	To identify flora species and communities previously recorded within the Study Area and its vicinity, in particular those of conservation significance	Shapefile of Study Area provided with a 55 km buffer
Western Australian Herbarium (WAH) (DBCA, 2022f)		Shapefile of Study Area provided with a 55 km buffer
Atlas of Living Australia (ALA, 2022)		Study Area provided with a 40 km buffer
Threatened and Priority Ecological Communities (PEC or TEC) database (DBCA, 2022c)		Shapefile of Study Area provided with a 60 km buffer
DAWE Protected Matters Search Tool (PMST) (DCCEEW, 2022)	To identify potential species listed under the Commonwealth EPBC Act within the Study Area	Study Area provided with a 40 km buffer
Declared Plants Database – Western Australian Organism List (WAOL) (DPIRD, 2022b)	To identify declared pest plants within the Study Area	Shires of Ashburton and East Pilbara

##### 3.1.2 Literature Review

A review of available literature relevant to the Study Area was undertaken to compile a list of flora species and vegetation/ ecological communities with the potential to occur within the Study Area. Twenty-nine assessments were reviewed, of which one overlapped with the current Study Area, ten were within 10 km of the Study Area and the remainder were within 40 km of the Study Area (Table 3.2; Appendix C).

**Table 3.2: Literature sources used for the review.**

Survey Title	Reference	Survey Type	Distance from Study Area (km)
Area C West to Yandi Level 2 Flora and Vegetation Survey	Onshore (2014)	Detailed Flora and Vegetation Survey	Partially overlaps
Yandicoogina Stage II Iron Ore Project: Biological Assessment Survey	Ecologia (1995)	Detailed Flora and Vegetation Survey	Directly adjacent
Marillana Creek Riparian Flora and Vegetation Survey	Onshore (2015)	Detailed Flora and Vegetation Survey, Riparian Vegetation Monitoring	2.0 km south
Ministers North Miscellaneous License Area Amendment Surveys and Yandicoogina Creek Detailed Flora and Vegetation Assessment	Biologic (2021)	Detailed Flora and Vegetation Survey	2.3 km southwest
Area C West to Yandi Flora and Vegetation Assessment	Astron (2018)	Flora and Vegetation Values Assessment	2.5 km south
Marillana (E47/1408) Vegetation and Flora Report	Ecologia (2009)	Detailed Flora and Vegetation Survey	5.5 km northeast
Packsaddle Range Biological Survey	Ecologia (2004)	Detailed Flora and Vegetation Survey	5.7 km southwest
A Vegetation and Flora Survey of the Koodaideri Study Area	Biota (2012)	Detailed Flora and Vegetation Survey	5.8 km north
Yandicoogina Additional Vegetation Mapping	Biota (2011)	Reconnaissance Flora and Vegetation Assessment	6.7 km southeast
Upper Marillana and Munjina Flora, Vegetation and Fauna Assessment	ENV (2011)	Detailed Flora and Vegetation Survey	8.6 km west
Area C to Yandi Flora and Vegetation Survey	Astron (2010a)	Detailed Flora and Vegetation Survey	9.3 km southeast
Koodaideri Spring Gorge Ecological Monitoring - Phase 4 Baseline Report	Biota (2019)	Ecological Monitoring	10.6 km south
Yandicoogina JSE Project - Conservation Significant Vegetation, Flora, Fauna and Fauna Habitat Assessment	Biota (2005a)	Detailed Flora and Vegetation Survey	11.9 km southeast
Vegetation and Flora Surveys of the Oxbow and Junction South West Deposits, near Yandicoogina	Biota (2010)	Detailed Flora and Vegetation Survey	12.9 km southeast
Yandicoogina Expansion Vegetation and Flora Survey	Biota (2004)	Detailed Flora and Vegetation Survey	13.2 km southeast
Yandicoogina Creek Reconnaissance Vegetation Survey	Onshore (2018)	Reconnaissance Flora and Vegetation Survey	13.3 km southeast
Koodaideri - Flora, Vegetation and Fauna Habitat Assessment – NVCP Supporting Report	Rio Tinto (2016)	Reconnaissance and Targeted Flora and Vegetation Survey	15.8 km northwest
Iron Valley Flora and Vegetation Survey	Astron (2012a)	Detailed Flora and Vegetation Survey	16.9 km east southeast
Koodaideri Biological Assessment	Eco Logical (2014)	Detailed Flora and Vegetation Survey	18.4 km northwest
Yandicoogina Billiards Vegetation and Flora Survey – Phase 1 Interim Report	Biota (2014b)	Detailed Flora and Vegetation Survey	19.7 km southeast
Area C and Surrounds Flora and Vegetation Survey	Onshore (2011)	Detailed Flora and Vegetation Survey	21.1 km south
Area C Biological Survey	Ecologia (1998)	Detailed Flora and Vegetation Survey	23.9 km southwest

Survey Title	Reference	Survey Type	Distance from Study Area (km)
Level 2 Flora and Vegetation Survey South Flank	Onshore (2012)	Detailed Flora and Vegetation Survey	24.8 km south southwest
Koodaideri Hydrological Drilling Vegetation, Flora and Fauna Survey	Astron (2012b)	Reconnaissance Flora and Vegetation Assessment	29.1 km northwest
MAC4 Pipeline Reconnaissance Flora and Vegetation Assessment	Biologic (2019b)	Reconnaissance Flora and Vegetation Assessment	30.6 km southwest
Baby Hope Downs Flora and Vegetation Survey	Biota (2014a)	Detailed Flora and Vegetation Survey	31.7 km south
Field Survey for Priority and Rare Flora – Area C South Flank	Pilbara Flora (2008)	Targeted Flora Survey	33.3 km southwest
Packsaddle West Vegetation and Flora Survey and Fauna Assessment	Astron (2010b)	Detailed Flora and Vegetation Survey	35.8 km southwest
Fibre Optic Cable Flora and Fauna Assessment	AECOM (2020)	Reconnaissance Flora and Vegetation Survey	40.0 km southwest

### 3.1.3 Assessment of Occurrence

Significant flora species identified in the database searches and previous reports are assessed per taxa for their likelihood of occurrence in the Study Area. Prior to field mobilisation, Biologic utilises botanical expertise and a decision matrix to guide a preliminary occurrence assessment for likely presence of significant flora. Following the field assessment, ground-truthing of existing significant flora records and presence of potential habitat is reviewed to revise the occurrence assessment per taxa.

The occurrence assessment decision matrix is outlined below in Table 3.3. A summary of the preliminary occurrence assessment is provided in the desktop assessment flora results (Section 3.2.1). A summary of the revised occurrence assessment is presented in Table 4.5 and Appendix D. The full detail of the preliminary and revised occurrence assessment is presented in Appendix D for each significant taxa returned in the database searches.

**Table 3.3: Occurrence Assessment decision matrix.**

Known Record's Proximity to the Study Area	Habitat categories within the Study Area			
	Core/ critical habitat present	Suitable habitat present/ within known distribution	Marginal habitat present/ adjacent to known distribution	Not present/ outside of known distribution
Within the Study Area	Confirmed	Confirmed	Confirmed	Confirmed
Within <5 km	Highly Likely	Likely	Possible	Possible
Within 5-15 km	Likely	Possible	Possible	Unlikely
Within 15-40 km	Possible	Possible	Unlikely	Unlikely
Greater than 40 km	Possible	Unlikely	Unlikely	Highly Unlikely
Taxa considered locally/ regionally extinct	Unlikely	Unlikely	Highly Unlikely	Highly Unlikely

## 3.2 Results

### 3.2.1 Flora

#### Significant Flora

DBCA database searches identified 68 significant flora taxa (those listed under the EPBC Act, BC Act, or DBCA Priority List) within and occurring in the vicinity of the Study Area (Table 3.4, Figure 3.1). One additional taxon, *Nicotiana umbratica* (P3), was identified in the literature review; however, given the age of records (2011, 2012) and the current known distribution for this taxon is limited to north of the Fortescue Marsh (WAH, 1998–), this was considered likely to be a misidentification and was not included in the total number of desktop records. The significant flora identified from the desktop assessment comprised:

- One Threatened
- Seven Priority 1 taxa;
- 15 Priority 2 taxa;
- 38 Priority 3 taxa; and
- Seven Priority 4 taxa.

Of the total 68 flora taxa identified by the desktop assessment, four were previously recorded within the Study Area (Table 3.4). Prior to mobilisation the remaining taxa were assessed to determine occurrence likelihood within the Study Area. This assessment utilised information observed from the database search results and literature review. A summary of the assessment is below at Table 3.4 inclusive of Confirmed records and those considered Highly Likely through to Possible. The full assessment of occurrence is presented at Appendix D and the review post survey is further discussed in Section 4.2.3.

Of the remaining 64 taxa, four were considered Highly Likely to occur in the Study Area, three were considered Likely to occur, 19 Possible to occur, 16 Unlikely to occur, and 22 Highly Unlikely to occur.

**Table 3.4: Summary of desktop significant flora within the Study Area.**

Taxon	Description	Approximate Distance from Study Area
<b>Confirmed</b>		
<i>Synostemon hamersleyensis</i> (T)	Shrub to 1 m high. Steep slopes, scree, cliffs, gorges. Ironstone	1.8 Km E
<i>Isotropis parviflora</i> (P3)	Shrub, 0.1 m high. Fl. white/pink, Mar. Valley slope of ironstone plateau.	Within Study Area
<i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3)	Herb or shrub, 0.1-0.3 m high. Fl. blue-purple-violet, Apr to May. Ironstone soils. Near creeks, rocky hills.	Within Study Area
<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P4)	Spreading shrub, to 0.5 m high. Fl. yellow, Aug. Skeletal red soils pockets. Steep slope.	Within Study Area
<b>Highly Likely</b>		
<i>Aristida lazaridis</i> (P2)	Tufted perennial, grass-like or herb, 0.4-1.5 m high. Fl. green/purple, Apr. Sand or loam.	3.1 Km SSW
<i>Ipomoea racemigera</i> (P2)	Creeping annual, herb or climber. Fl. white.	2.3 Km SSW
<i>Rhynchosia bungarensis</i> (P4)	Compact, prostrate shrub, to 0.5 m high. Fl. yellow. Pebbly, shingly coarse sand amongst boulders. Banks of flow line in the mouth of a gully in a valley wall. Granite	2 Km NW
<i>Lepidium catapycnon</i> (P4)	Open, woody perennial, herb or shrub, 0.2-0.3 m high, stems zigzag. Fl. white, Oct. Skeletal soils. Hillsides.	4.2 km SSW
<b>Likely</b>		
<i>Gymnanthera cunninghamii</i> (P3)	Erect shrub, 1-2 m high. Fl. cream-yellow-green, Jan to Dec. Sandy soils.	1.5 Km NW
<i>Acacia bromilowiana</i> (P4)	Tree or shrub, to 12 m high, bark dark grey, fibrous; inflorescence in spikes. Fl. yellow/pink, Jul to Aug. Red skeletal stony loam, orange-brown pebbly, gravel loam, laterite, banded ironstone, basalt. Rocky hills, breakaways, scree slopes, gorges, creek beds.	6.7 km W
<i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P4)	Shrub, 0.5-1.5 m high. Fl. blue, Aug to Nov. Skeletal soils over ironstone. Rocky screes.	10.4 Km NNW
<b>Possible</b>		
<i>Acacia subtiliformis</i> (P3)	Spindly, slender, erect shrub, to 3.5 m high, phyllodes green; inflorescence in heads to 6 mm diameter; peduncles red. Fl. yellow, Jun. On rocky calcrete plateau.	14.7 Km WSW
<i>Amaranthus centralis</i> (P3)	Annual herb, decumbent or erect to 0.6 m high. Grows in red sand in ephemeral watercourses, sandy to clayey loam on river banks and edges of permanent pools in eucalypt lined channels, or acacia shrubland	6 Km SSE
<i>Aristida jerichoensis</i> var. <i>subspinulifera</i> (P3)	Compactly tufted perennial, grass-like or herb, 0.3-0.8 m high, lemma groove muricate. Hardpan plains.	24.5 Km WNW
<i>Dolichocarpa</i> sp. Hamersley Station (A.A. Mitchell PRP 1479) (P3)	Annual herb to 10 cm. Crabhole plain, drainage line, floodplain and gentle slopes.	20.9 Km W

Taxon	Description	Approximate Distance from Study Area
<i>Eragrostis crateriformis</i> (P3)	Annual, grass-like or herb, 0.1-0.5 m high. Fl. Jan to May or Jul. Clayey loam or clay. Creek banks, depressions.	31.6 Km W
<i>Eragrostis</i> sp. Mt Robinson (S. van Leeuwen 4109) (P2)	Tussock-forming perennial, grass-like or herb, to 0.3 m high. Fl. Sep. Red-brown skeletal soils, ironstone. Steep slopes, summits.	41.7 Km SSW
<i>Eremophila naaykensis</i> (P3)	Shrub to 1m. Hillslopes and gorges. Red/ brown loam and skeletal soils.	15.5 Km SE
<i>Euphorbia australis</i> var. <i>glabra</i> (P3)	Annual prostrate herb, leaves green with a red tinged margins. Drainage lines on clay loam and river sand	17.4 Km W
<i>Goodenia lyrata</i> (P3)	Prostrate herb, with lyrate leaves. Fl. yellow, Aug. Red sandy loam. Near claypan	35.7 Km SW
<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727) (P3)	Open, erect annual or biennial, herb, to 0.2 m high. Fl. yellow. Red-brown clay soil, calcrete pebbles. Low undulating plain, swampy plains.	2.3 km W
<i>Iotasperma sessilifolium</i> (P3)	Erect herb. Fl. pink. Cracking clay, black loam. Edges of waterholes, plains	32.6 Km W
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3)	Tall spindly shrub, 1.5-4 m high. Fl. yellow. Red brown sandy loam or clay, ironstone plain. Undulating plains, floodplain.	16.3 Km S
<i>Stylidium weeliwoilli</i> (P3)	Annual, herb, 0.1-0.25 m high, throat appendages 4, rod-shaped. Fl. pink & red, Aug to Sep. Gritty sand soil, sandy clay. Edge of watercourses	16.5 Km E
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431) (P3)	Tussocky perennial, grass-like or herb, 0.9-1.8 m high. Fl. Aug. Red clay. Clay pan, grass plain.	14 Km N
<i>Triodia basitricha</i> (P3)	Hummock grass to 0.8 m high, non-resinous. Red/brown clay loam over ironstone. Floodplains, flat hill crest, lower slopes.	30.3 Km SW
<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684) (P3)	Erect annual herb, 0.3-1 m high. Fl. cream, Mar-May, Jul-Sept. Red-brown sandy loam. Drainage areas, floodplains, flat and/or stony plains.	10.4 W
<i>Eremophila youngii</i> subsp. <i>lepidota</i> (P4)	Dense, spreading shrub, (0.2-)1-3 m high. Fl. purple-red-pink, Jan or Mar or Jun or Aug to Sep. Stony red sandy loam. Flats plains, floodplains, sometimes semi-saline, clay flats.	23.4 km N
<i>Ptilotus mollis</i> (P4)	Compact, perennial shrub, to 0.5 m high, soft grey foliage. Fl. white/pink, May or Sep. Stony hills and screes.	35.4 km S

### Introduced Flora

The NatureMap (DBCA, 2022a), Protected Matters (DAWE, 2022), ALA (2022), WAOL (DPIRD, 2022a) and BHP database searches identified a list of 117 introduced taxa that may potentially occur within the Study Area. The list of introduced taxa known to occur or potentially occur within the Study Area (Appendix E) was reviewed to identify Weeds of National Significance (WoNS) and Declared Pests (DPs).

### *Weeds of National Significance*

Of the list of introduced taxa identified during the desktop assessment as occurring in or near the Study Area, 29 are listed as WoNS (Appendix E). The 29 WoNS were identified from the WAOL database

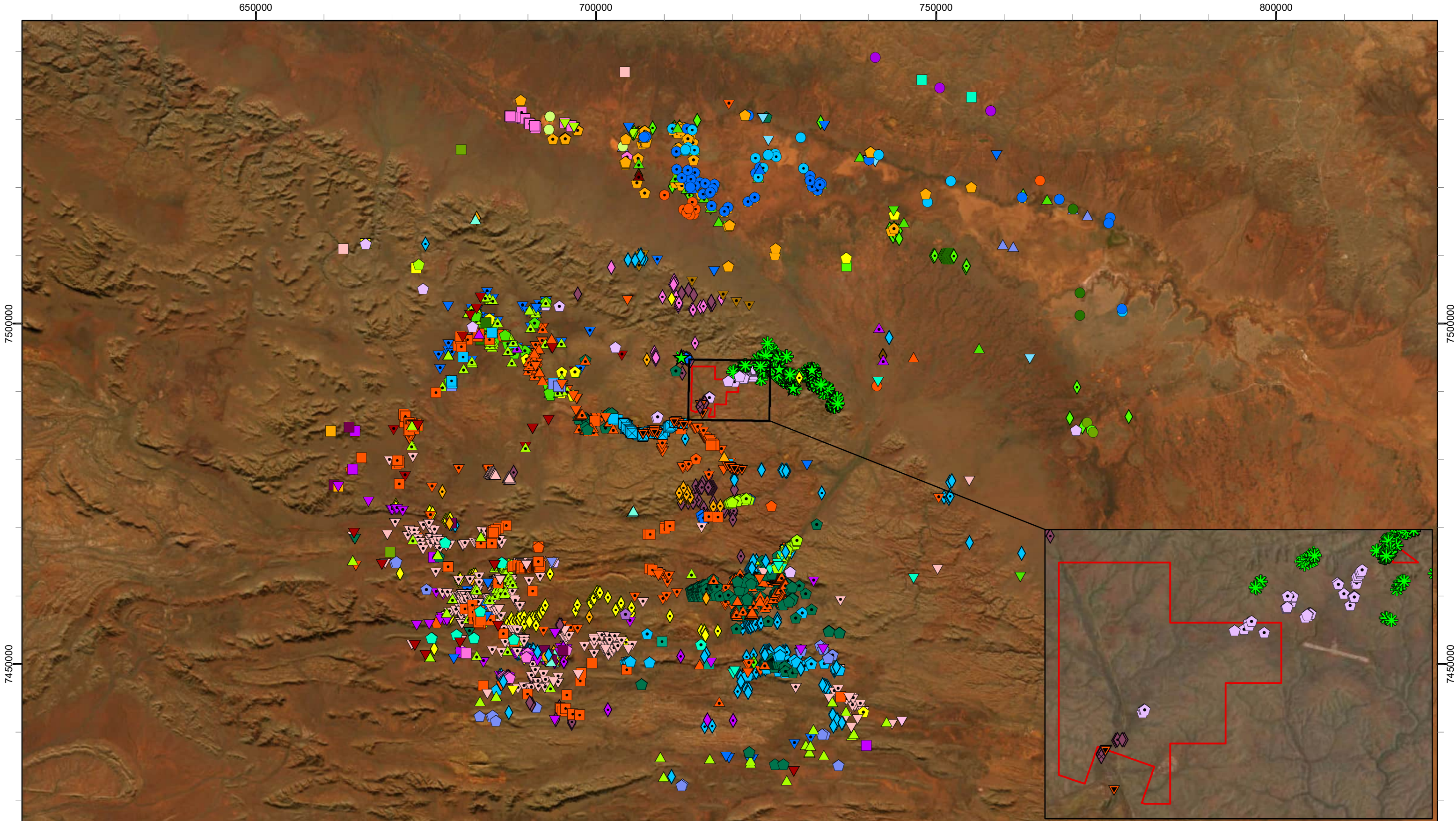
search for the entire Shire of Ashburton and Shire of East Pilbara, and occur or may potentially occur within the shire boundaries. No other database search or literature review identified any WoNS as occurring in, or with the potential to occur in, the Study Area. The 29 taxa include numerous *Opuntia*, *Austrocylindropuntia*, and *Cylindropuntia* species that are grouped together in the WoNS listing.

#### *Declared Pests*

The desktop assessment identified 48 DPs (including numerous cacti species that are all listed as DPs, Appendix E), previously recorded or potentially located within either the Shire of Ashburton or the Shire of East Pilbara. The database searches did not identify any DPs as occurring within or near the Study Area.

#### *Weed Prioritisation*

The Parks and Wildlife Service of DBCA have identified 'Priority Alert' weeds for each of their management regions. Fifteen introduced taxa have been identified for the Pilbara region (DBCA, 2014a, 2014b). None of these Priority Alert weeds are expected to occur within the Study Area.



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650000

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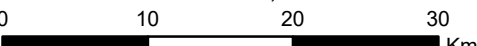
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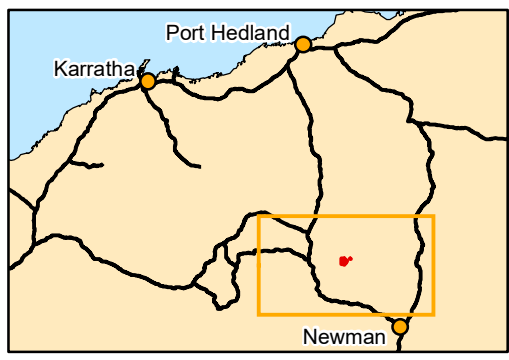
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**Legend**

 Study Area



  
 Scale: 1:520,000
   

  
 Coordinate System: GDA2020 MGA Zone 50
   
 Projection: Transverse Mercator
   
 Datum: GDA2020      Created 13/06/2024



**BHP WAIO**  
**Breakaway and Marillana**  
**South Reconnaissance**  
**Flora Survey**

**Figure 3.1: Significant flora records from the desktop assessment**

**DBCA (2022)****Threatened**★ *Synostemon hamersleyensis***Priority 1**

- *Barbula ehrenbergii*
- *Calotis squamigera*
- *Eragrostis* sp. Mt Robinson (S. van Leeuwen 4109)
- *Eremophila* sp. West Angelas (S. van Leeuwen 4068)
- *Lindernia* sp. Pilbara (M.N. Lyons & L. Lewis FV 1069)
- *Myriocephalus scalpellus*
- *Rorippa* sp. Fortescue Valley (M.N. Lyons & R.A. Coppen FV 0760)
- *Samolus* sp. Fortescue Marsh (A. Markey & R. Coppen FM 9702)
- *Tecticornia globulifera*
- *Tecticornia* sp. Christmas Creek (K.A. Shepherd & T. Colmer *et al.* KS 1063)
- *Triodia veniciae*

**Priority 2**

- *Adiantum capillus-veneris*
- *Aristida lazaridis*
- *Arthropodium vanleeuwenii*
- *Cladium procerum*
- *Eremophila pusilliflora*
- *Euphorbia inappendiculata* var. *inappendiculata*
- *Euphorbia inappendiculata* var. *queenslandica*
- *Gompholobium karijini*
- *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708)
- *Ipomoea racemigera*
- *Kohautia australiensis*
- *Oxalis* sp. Pilbara (M.E. Trudgen 12725)
- *Teucrium pilbaranum*
- *Triodia karijini*

**Priority 3**

- ▲ *Acacia effusa*
- ▲ *Acacia subtiliformis*
- ▲ *Amaranthus centralis*
- ▲ *Ampelopteris prolifera*
- ▲ *Aristida jerichoensis* var. *subspinulifera*
- ▲ *Atriplex flabelliformis*
- ▲ *Dampiera metallorum*
- ▲ *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479)

- ▲ *Dysphania congestiflora*
- ▲ *Eleocharis papillosa*
- ▲ *Eragrostis crateriformis*
- ▲ *Eragrostis* sp. Erect spikelets (P.K. Latz 2122)
- ▲ *Eremophila magnifica* subsp. *velutina*
- ▲ *Eremophila naaykensis*
- ▲ *Eremophila spongiorcarpa*
- ▲ *Euphorbia australis* var. *glabra*
- ▲ *Fimbristylis sieberiana*
- ▲ *Glycine falcata*
- ▲ *Goodenia lyrata*
- ▲ *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727)
- ▲ *Grevillea saxicola*
- ▲ *Gymnanthera cunninghamii*
- ▲ *Indigofera gilesii*
- ▲ *Iotasperma sessilifolium*
- ▲ *Isotropis parviflora*
- ▲ *Pilbara trudgenii*
- ▲ *Rhagodia* sp. Hamersley (M. Trudgen 17794)
- ▲ *Rostellularia adscendens* var. *latifolia*
- ▲ *Solanum kentrocaule*
- ▲ *Stackhousia clementii*
- ▲ *Streptoglossa* sp. Cracking clays (S. van Leeuwen *et al.* PBS 7353)
- ▲ *Stylidium weeliwollii*
- ▲ *Swainsona thompsoniana*
- ▲ *Tecticornia medusa*
- ▲ *Themeda* sp. Hamersley Station (M.E. Trudgen)
- ▲ *Triodia basitricha*
- ▲ *Triodia* sp. Mt Ella (M.E. Trudgen 12739)
- ▲ *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684)
- ▲ *Xerochrysum boreale*

**Priority 4**

- ◆ *Acacia bromilowiana*
- ◆ *Eremophila magnifica* subsp. *magnifica*
- ◆ *Eremophila youngii* subsp. *lepidota*
- ◆ *Lepidium catapycnon*
- ◆ *Ptilotus mollis*
- ◆ *Rhynchosia bungarensis*
- ◆ *Sida* sp. Barlee Range (S. van Leeuwen 1642)

**BHP (2022)****Threatened**★ *Synostemon hamersleyensis***Priority 1**

- *Calotis squamigera*
- *Tecticornia globulifera*
- *Tecticornia* sp. Christmas Creek (K.A. Shepherd & T. Colmer *et al.* KS 1063)

**Priority 2**

- *Aristida lazaridis*
- *Eragrostis* sp. Mt Robinson (S. van Leeuwen 4109)
- *Eremophila* sp. West Angelas (S. van Leeuwen 4068)
- *Euphorbia inappendiculata* var. *queenslandica*
- *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708)
- *Ipomoea racemigera*
- *Kohautia australiensis*
- *Oxalis* sp. Pilbara (M.E. Trudgen 12725)
- *Teucrium pilbaranum*
- *Triodia karijini*

**Priority 3**

- ▲ *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095)
- ▲ *Acacia effusa*
- ▲ *Acacia subtiliformis*
- ▲ *Amaranthus centralis*
- ▲ *Aristida jerichoensis* var. *subspinulifera*
- ▲ *Atriplex flabelliformis*
- ▲ *Dampiera metallorum*
- ▲ *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479)
- ▲ *Eragrostis crateriformis*
- ▲ *Eremophila naaykensis*
- ▲ *Eremophila spongiorcarpa*
- ▲ *Euphorbia australis* var. *glabra*
- ▲ *Fimbristylis sieberiana*
- ▲ *Glycine falcata*
- ▲ *Goodenia lyrata*
- ▲ *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727)
- ▲ *Grevillea saxicola*
- ▲ *Gymnanthera cunninghamii*
- ▲ *Indigofera gilesii*
- ▲ *Isotropis parviflora*
- ▲ *Nicotiana umbratica*

- ◆ *Oldenlandia* sp. Hamersley Station (A.A. Mitchell PRP 1479)
- ◆ *Pilbara trudgenii*
- ◆ *Rhagodia* sp. Hamersley (M. Trudgen 17794)
- ◆ *Rostellularia adscendens* var. *latifolia*
- ◆ P3, *Sida* sp. Hamersley Range (K. Newbey 10692)
- ◆ *Solanum kentrocaule*
- ◆ *Stackhousia clementii*
- ◆ *Stylidium weeliwollii*
- ◆ *Swainsona thompsoniana*
- ◆ *Themeda* sp. Hamersley Station (M.E. Trudgen)
- ◆ *Triodia* sp. Mt Ella (M.E. Trudgen 12739)
- ◆ *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684)

**Priority 4**

- ◆ *Acacia bromilowiana*
- ◆ *Bulbostylis burbidgeae*
- ◆ *Eremophila magnifica* subsp. *magnifica*
- ◆ *Eremophila youngii* subsp. *lepidota*
- ◆ *Lepidium catapycnon*
- ◆ *Ptilotus mollis*
- ◆ *Rhynchosia bungarensis*
- ◆ *Sida* sp. Barlee Range (S. van Leeuwen 1642)

**Biologic (2022)****Priority 1**

- *Ipomoea racemigera*

**Priority 3**

- ▲ *Rostellularia adscendens* var. *latifolia*

**Priority 4**

- ◆ *Sida* sp. Barlee Range (S. van Leeuwen 1642)

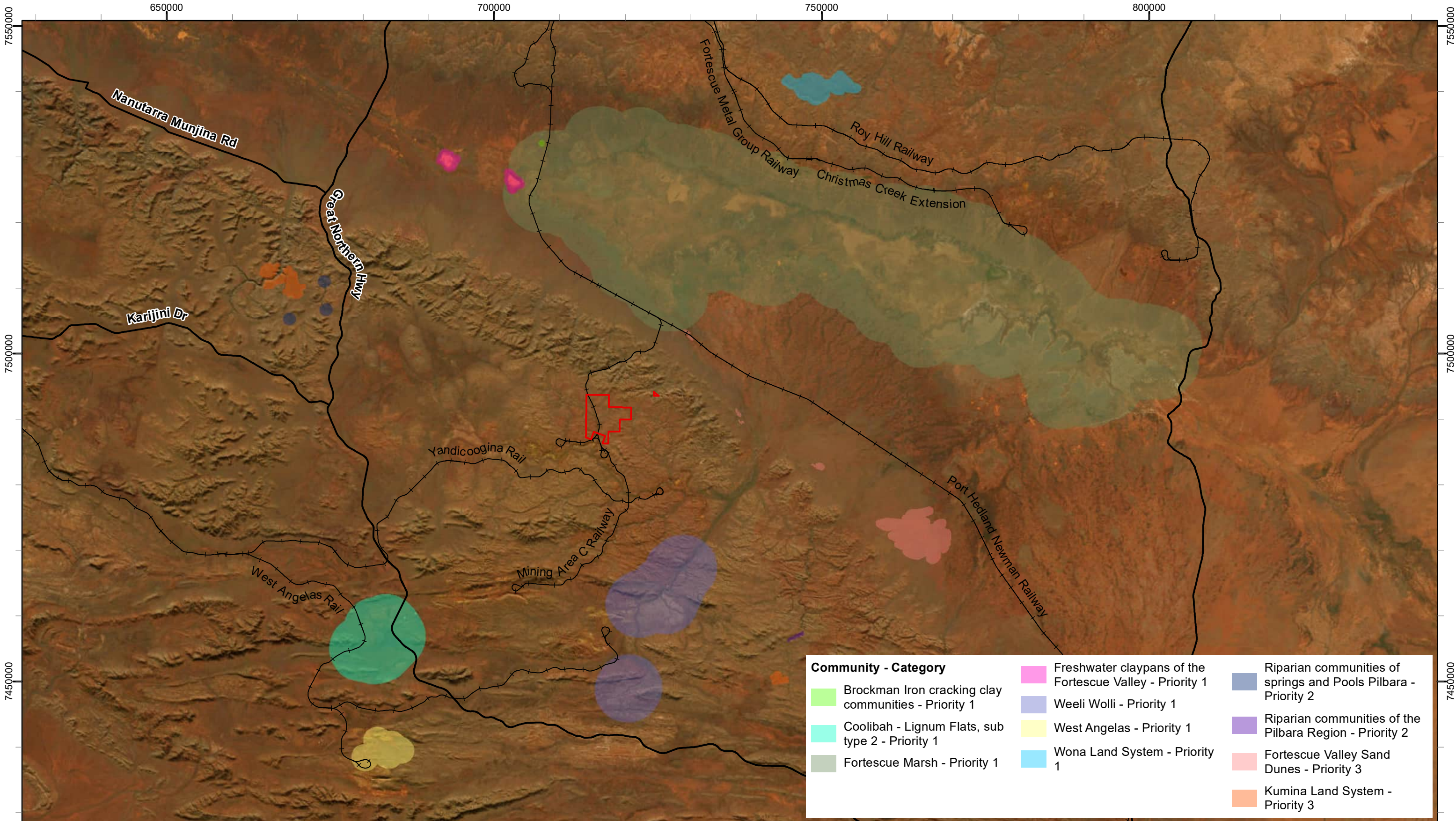
### 3.2.2 Significant Vegetation

The database searches indicated that no TECs occur within the Study Area. Eight PECs are known to occur within a 50 km radius of the Study Area (Table 3.5, Figure 3.2).

**Table 3.5: PECs identified in the vicinity of the Study Area.**

PEC name and description	Distance from Study Area (km)
<b>Priority 1</b>	
<b>Fortescue Marsh (Martuyitha) (Marsh Land System)</b> <ul style="list-style-type: none"> <li>extensive, episodically inundated samphire marsh at the upper terminus of the Fortescue River and the western end of Goodiadarrie Hills.</li> <li>Largest ephemeral wetland in the Pilbara.</li> <li>highly diverse ecosystem with fringing mulga woodlands (on the northern side), samphire shrublands and groundwater dependant riparian ecosystems.</li> <li>Recorded locality for night parrot and bilby and several other threatened vertebrate fauna.</li> <li>Endemic <i>Eremophila</i> species, populations of priority flora and several near-endemic and novel samphires.</li> </ul>	~12.2 Km NE
<b>Weeli Wolli Spring community</b> <ul style="list-style-type: none"> <li>Unusual riparian woodland and forest associations because of composition of the understorey.</li> <li>Sedge and herbfield communities present that are not recorded in any other Pilbara wetland sites.</li> <li>Relatively high diversity of stygofauna and rich microbat assemblage including a threatened species.</li> </ul>	~17.0 Km SE
<b>Freshwater claypans of the Fortescue Valley</b> <ul style="list-style-type: none"> <li>Freshwater claypans downstream of the Fortescue Marsh - Goodiadarrie Hills on Mulga Downs Station.</li> <li>Larger claypans contain the highest number of invertebrate species and most of the restricted elements of the Pilbara riparian flora.</li> </ul>	~33.9 Km NNW
<b>Coolibah-lignum flats: <i>Eucalyptus victrix</i> over lignum community in the Pilbara</b> <ul style="list-style-type: none"> <li>Woodland or forest of <i>Eucalyptus victrix</i> (coolibah) over thicket of <i>Duma florulenta</i> (lignum) on red clays in run-on zones.</li> <li>Associated species include <i>Eriachne benthamii</i>, <i>Themeda triandra</i>, <i>Aristida latifolia</i>, <i>Eulalia aurea</i> and <i>Acacia aneura</i>.               <ul style="list-style-type: none"> <li>Sub-type 2: Coolibah woodlands over lignum (<i>Duma florulenta</i>) over swamp wandiree (Lake Robinson is the only known occurrence).</li> </ul> </li> </ul>	~37.3 Km SW
<b>Brockman Iron cracking clay communities of the Hamersley Range</b> <ul style="list-style-type: none"> <li>Rare tussock grassland dominated by <i>Astrebla lappacea</i> in the Hamersley Range, on the Brockman land system.</li> <li>Tussock grassland on cracking clays - derived in valley floors, depositional floors.</li> <li>Rare community and landform.</li> </ul>	~38.6 Km NNW

PEC name and description	Distance from Study Area (km)
<b>Priority 2</b>	
<p><b>Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara Region</b></p> <ul style="list-style-type: none"> <li>Populations of <i>Imperata cylindrica</i>, <i>Cladium procerum</i>, <i>Schoenus falcatus</i> and <i>Fimbristylis sieberiana</i> (P3) which are highly disjunct or are major range extensions from northern and eastern Australia.</li> </ul>	~40.7 Km SE
<b>Priority 3</b>	
<p><b>Vegetation of sand dunes of the Hamersley Range/Fortescue Valley</b></p> <ul style="list-style-type: none"> <li>Junction of the Hamersley Range and Fortescue Valley, between Kalgan Creek and the low hills to the west.</li> <li>Some vegetated with <i>Acacia dictyophleba</i> scattered tall shrubs over <i>Crotalaria cunninghamii</i>, <i>Trichodesma zeylanicum</i> var. <i>grandiflorum</i> open shrubland.</li> <li>Regionally rare, small and fragile and highly susceptible to threatening processes.</li> </ul>	~14.9 Km NE
<p><b>Kumina Land System</b></p> <ul style="list-style-type: none"> <li>Ferricrete duricrust plains, uplands and plateaux remnants, relief up to 15 m. Duricrust plains and plateau remnants support hard spinifex grasslands.</li> </ul>	~45.9 Km ENE

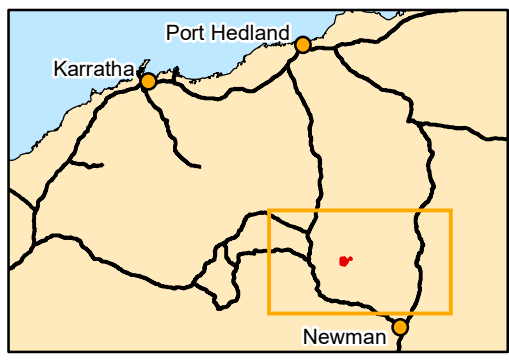


Community - Category			
	Freshwater claypans of the Fortescue Valley - Priority 1		Riparian communities of springs and Pools Pilbara - Priority 2
	Brockman Iron cracking clay communities - Priority 1		Riparian communities of the Pilbara Region - Priority 2
	Coolibah - Lignum Flats, sub type 2 - Priority 1		West Angelas - Priority 1
	Fortescue Marsh - Priority 1		Wona Land System - Priority 1
			Kumina Land System - Priority 3

- Legend**
- Study Area
  - State Road
  - Rail

Scale: 1:540,000

Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020      Created 13/06/2023



**BHP WAIO**  
**Breakaway and Marillana South Reconnaissance Flora Survey**  
**Figure 3.2: Threatened and Priority Ecological Communities identified in the desktop assessment**

## 4 FIELD SURVEY

### 4.1 Methods

#### 4.1.1 Survey Timing & Personnel

The flora field survey was undertaken July 27<sup>th</sup> – August 1<sup>st</sup> 2022 by two Biologic personnel over 12 person days. Senior Botanist Ben Eckermann led the field survey with the support of Botanist Diana Barrie. Biologic has a well-established and experienced botanical team with the team lead having over 16 years’ experience in botanical surveys in Western Australia. All personnel were fully inducted to site, hold the current and relevant licencing, and have adequate experience for the bioregion.

**Table 4.1: Project Team & Licences.**

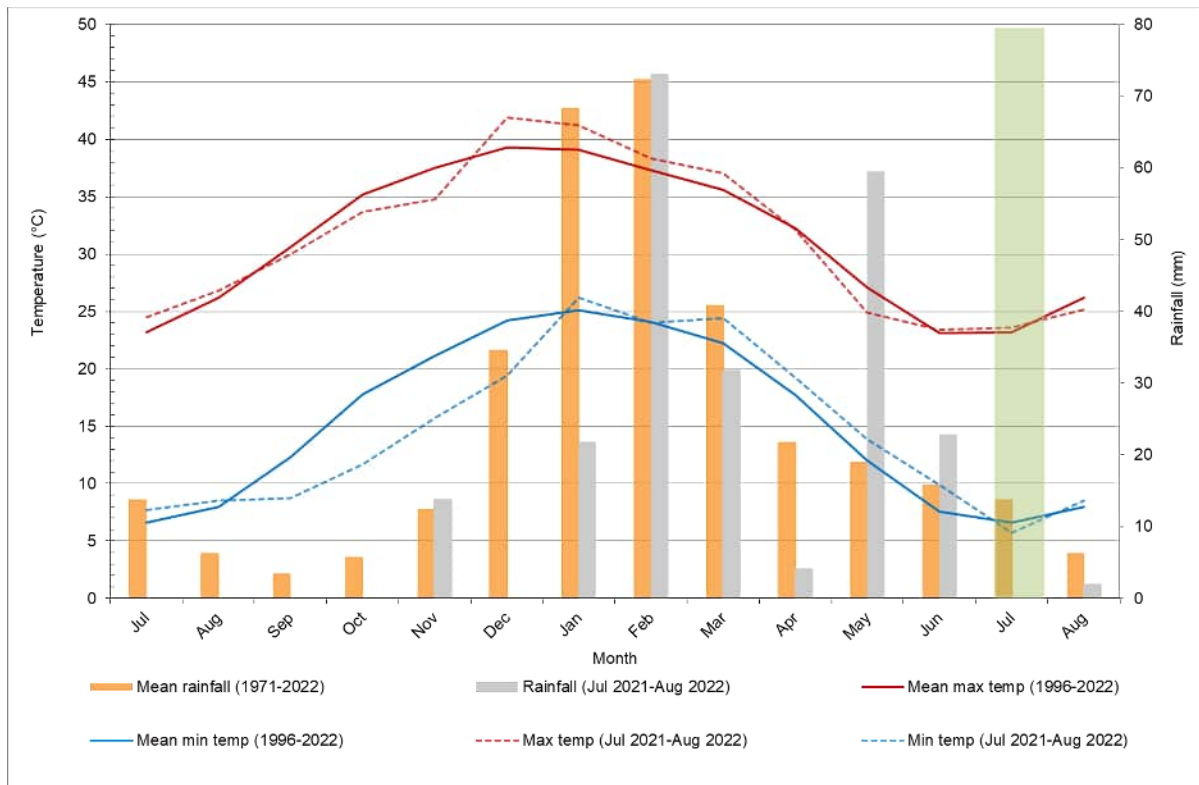
Biologic Personnel	Project Involvement	Licencing	Experience
<b>Senior Botanist</b>			
Ben Eckermann	Field survey – 27 July- 1 August	FB62000017-2 TFL 60-1819	16+ years
Diana Barrie	Field survey – 27 July- 1 August	n/a	2 Years

#### 4.1.2 Climate and Weather

Observed weather conditions prior to and during the survey are shown in Figure 4.1, alongside long-term climatic data for Newman Airport (station #007176). Newman Airport is located approximately 95 km southeast of the Study Area. In the 12 months prior to the survey, minimum and maximum temperatures recorded at Newman Airport were comparable to long-term averages (Figure 4.1)

Overall, rainfall received in the 12 months prior to the survey (July 2021 to June 2022) was 27.8% (87.4mm) below the annual long-term average for the same period (BoM, 2022); however, immediately prior to the survey in May and June 2022, above average rainfall was recorded (40.4 mm and 7 mm respectively above the long-term average) (Figure 4.1). During the survey, rainfall (0.2 mm) was only recorded on one day (Table 4.2).

Observed maximum temperatures recorded during the survey were 4.3°C higher than the Long-term average (Table 4.2). Conversely, observed minimum temperatures recorded during the survey were 1.7°C degrees lower than the long term average (BoM, 2022).



**Figure 4.1: Long-term average and contemporary climate data recorded near the Study Area (BoM, 2022) with approximate survey timing shown in shaded box**

**Table 4.2: Climatic conditions recorded for Newman Airport during the field assessment.**

Date	Min. temp (°C)	Max. temp (°C)	Rainfall (mm)
27/07/2022	4.9	27.5	0
28/07/2022	9	26.6	0
29/07/2022	11.1	26	0
30/07/2022	15.5	21.3	0
31/07/2022	11.9	25	0
01/08/2022	15.1	26	0.2

### 4.1.3 Reconnaissance Flora Survey

Eight relevés and 41 mapping notes were sampled in the Study Area (Figure 4.2). Broad preliminary vegetation units and potential sites therein were determined prior to field mobilisation. These were derived from a combination of aerial photography (Scale 1:15,000) of the Study Area, Google Earth Pro®, previous vegetation mapping (Beard, 1975b; Shepherd *et al.*, 2002) and soil landscape mapping (Northcote *et al.*, 1960-1968). Reconnaissance surveys are traditionally sampled at a low intensity via relevés (unmarked area within which data is collected, EPA, 2016c) and mapping points (unmarked area within which the vegetation unit and condition is broadly described).

Where practical, at least one mapping note was established in each of the preliminary vegetation unit areas to ensure that all vegetation units were captured by the survey and described appropriately in accordance with EPA (2016b) guidelines. The Study Area was accessible via vehicle and on foot. All

major landforms and vegetation units were traversed and sampled. Track coverage was relatively limited but provided sufficient access for the purpose of a reconnaissance level survey.

All vascular flora taxa within each relevé, including the height and approximate cover for the dominant species, and additional taxa found during mapping notes and opportunistic searches while traversing the Study Area, were recorded (Appendix F). A brief summary of the vegetation assemblage at each site was also recorded to aid in producing vegetation unit descriptions (NVIS Technical Working Group, 2017) (Appendix G). In addition, the following information was recorded at each site:

- Unique site identification number;
- Date of survey;
- Personnel;
- Central GPS coordinate (GDA 94);
- Site photograph of the representative vegetation unit;
- Soil characteristics (texture and colour);
- Geology (type, size and nature of any rocks, stones, gravel, or outcropping);
- Topography (landform type and aspect);
- Vegetation condition (Appendix H);
- Vegetation structure, including the dominant flora species in the three traditional strata, upper, mid and lower (Appendix G);
- Disturbance (if present);
- Approximate time since last fire; and
- GPS coordinates for conservation significant or introduced flora.

#### 4.1.4 Targeted Searches

Prior to the survey, a list of significant flora known to, with the likelihood to, or potential to occur within the Study Area was compiled. Field personnel familiarised themselves with photographs, reference samples and descriptions of these taxa before conducting the survey. Once on the ground, personnel actively searched while traversing the Study Area and in known locations or preferred habitat encountered in the field.

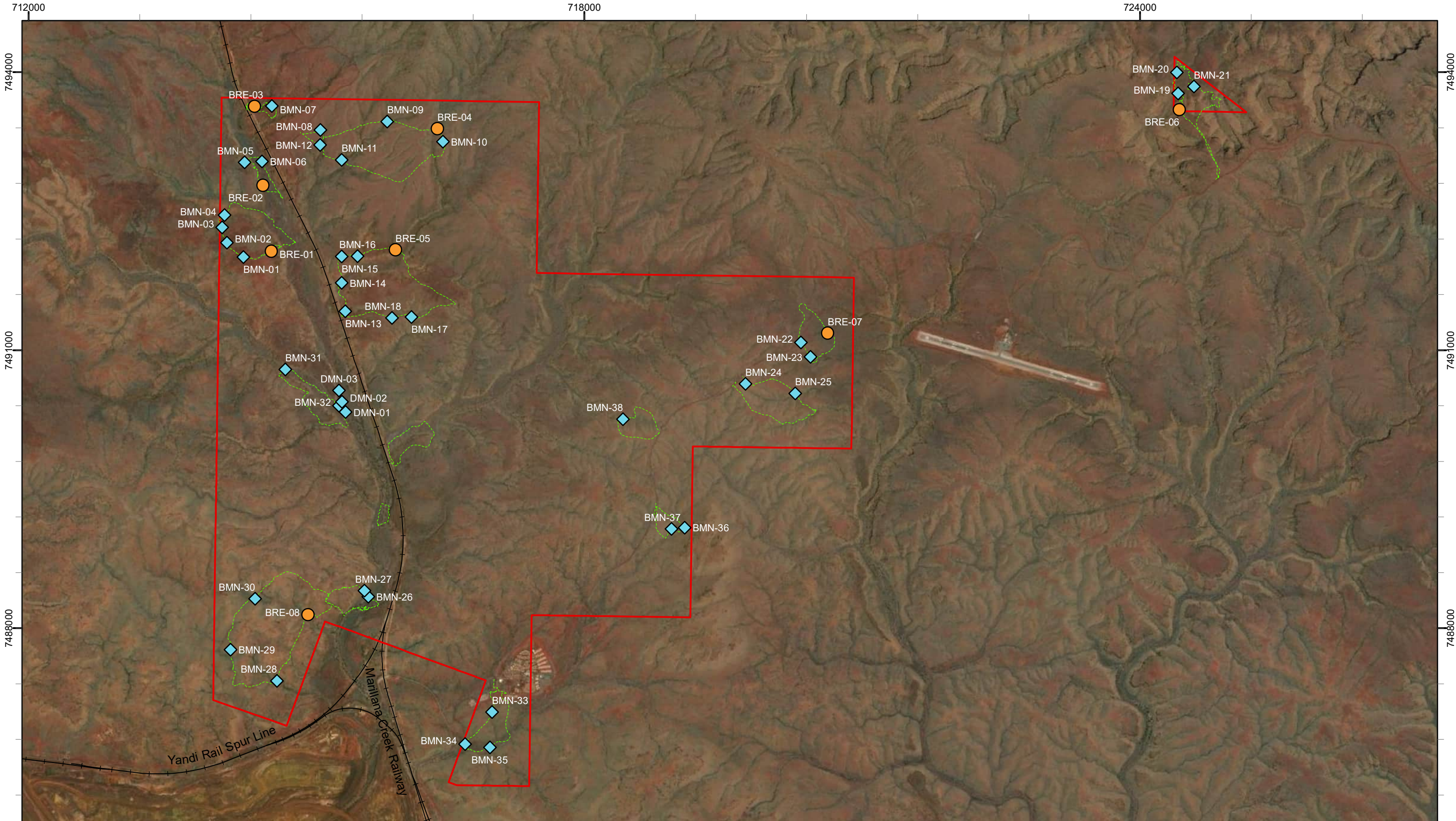
Targeted searching was undertaken for flora of significance, as identified during the desktop assessment. Taxa that were confirmed or considered 'Highly Likely', 'Likely' or 'Possible to occur' within the Study Area were targeted. The meandering targeted searches were conducted while traversing the Study Area focussed on habitat considered likely to support significant flora.

If a significant taxon was identified, a GPS coordinate of the individual was taken when occurring in isolation, or a central GPS coordinate was taken for a small population (central coordinate with an approximate 20 m radius). Information collected at each location comprised:


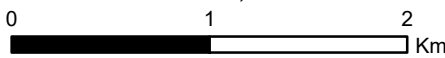
- Number of individuals, for a small population;
- Condition and reproductive status of the plants in each population;
- Photographs and description of vegetation habitat; and

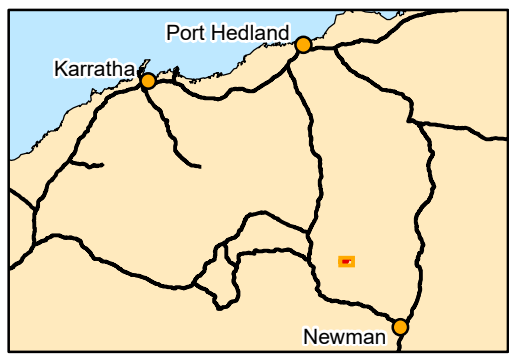
- Broad information on vegetation type and condition.

Coordinates of either each plant (if few) or the extent of the population (if many) was recorded using a GPS. *Threatened and Priority Flora Report Forms* will be provided to the Parks and Wildlife Division (Parks and Wildlife) of DBCA, as required under the flora collecting permits. Significant flora specimens will be vouchered with the Western Australian Herbarium (WAH), where required and appropriate.



- Legend**
- Study Area
  - Rail
  - Sampling Method**
  - ◆ Mapping Note
  - Relevé
  - - - Traverse

  
 Scale: 1:38,200  
  
 Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020      Created 21/06/2023



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**Breakaway and Marillana**  
**South Reconnaissance**  
**Flora Survey**

**Figure 4.2: Flora sample sites and traverses**

#### **4.1.5 Flora**

##### Nomenclature & Specimen Identification

Plant taxa that could not be identified during the field survey were collected for subsequent identification. Identifications were carried out by Biologic Senior Botanist Dr. Rachel Meissner, using the WAH reference collection, taxonomic keys, and reference material. All taxa were checked against Florabase© (version 3.0.5; WAH, 1998–) to ensure their currency and validity. Any significant flora taxa, including potential threatened and priority species, range extensions and potential new taxa will be verified and vouchered (if appropriate) at the WAH.

##### Introduced Taxa

Whilst completing the detailed flora assessment and targeted searches, any significant environmental weeds were noted. Significant environmental weeds refer to any plant listed in the WoNS and DPs listed under Section 12 and Section 22 of the BAM Act. Records of any introduced species identified in the Study Area were recorded and searched with a minimum 20 m radius to establish population density and extent. Each record noted the number of individual plants and map the spatial extent of the infestation. Weed classification definitions are provided in Section 1.3.2 and Appendix A

#### **4.1.6 Vegetation**

##### Vegetation Mapping

The current nationally adopted classification system for vegetation descriptions is the *Native Vegetation Information System* (NVIS) (NVIS Technical Working Group, 2017). NVIS seeks to manage national vegetation data to help improve vegetation planning and management within Australia including standardising scale and technical wording for vegetation associations. Vegetation types and condition is mapped in accordance with the scale for NVIS level V.

Vegetation assemblages were ground-truthed during the survey, with site photographs and full descriptions recorded at each sampling site. The vegetation boundaries were drawn interpreting the sampling data with aerial imagery, ground-truthing knowledge, geology and historical mapping and sampling data.

##### Vegetation Condition

Vegetation condition was defined within the Study Area using the vegetation condition scale for the Eremaean Botanical Province in EPA (2016a), which has been adapted from Keighery (1994) and Trudgen (1988) (Appendix H). The vegetation condition was determined based on the level of disturbance observed in the sampling area. Condition was recorded at each quadrat and relevé, while additional notes were taken while traversing the Study Area to broadly map vegetation condition boundaries. The vegetation condition mapping was then digitised using GIS software.

##### Vegetation of Other Significance

Vegetation types with potential to be groundwater dependent vegetation (GDV) were identified based on the presence of key indicator flora species, as follows:

- Phreatophytic: four key species in the Pilbara, *Melaleuca argentea* (obligate phreatophyte), *Eucalyptus camaldulensis* (facultative phreatophyte), *Eucalyptus victrix* (facultative phreatophyte to vadophyte) and *Sesbania formosa* (obligate to facultative phreatophyte).
- Hydrophytic: flora species that are wholly reliant on the permanent to semi-permanent presence of water at or just below the surface; for example: *Phragmites karka*, *Cladium procerum*, *Livistona alfredii*.
- Mesophytic: flora species that have an increased reliance on consistent subsurface soil moisture for extended periods; for example: *Imperata cylindrica*, *Acacia ampliceps*, *Cullen leucanthum*.

## 4.2 Results

### 4.2.1 Flora

#### Flora Composition

A total of 204 confirmed vascular flora taxa from 42 families and 115 genera were recorded from the Study Area during the field survey (Appendix I). The total number of vascular flora taxa recorded comprised 191 native taxa and 13 introduced taxa.

The dominant families equate to 46% of the total taxa recorded and comprised Fabaceae (wattle/ pea family; 44), Poaceae (grasses; 31), and Malvaceae (mallows; 22). Of the 42 families, 22 were represented by one taxon. The dominant genera make up 19% of the total taxa recorded and comprised *Acacia* (21), *Ptilotus* (7), *Senna* (7).

#### Significant Flora

Two priority listed taxa were recorded from the Study Area (Figure 4.3), as follows:

- *Synostemon hamersleyensis* (T), one individual from Marillana South tenement; and
- *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4), 12 individuals from six locations within the Breakaway tenement.

Both *Sida* sp. Barlee Range (S. van Leeuwen 1642) and *Synostemon hamersleyensis* have previously been recorded within the Study Area (Table 3.4, Figure 4.3). All priority-listed specimens were submitted to the WAH for formal identification by taxonomic experts (Appendix J).

***Synostemon hamersleyensis* (T)**

*Synostemon hamersleyensis* is subshrub, growing to 50 cm in height (Plate 4.2). This species is described as being bright green when fresh, drying to a grey-green with broadly triangular to ovate stipules 0.4-0.4 mm long. It can be distinguished by small, reduced leaves (cataphylls), and purple and white, large, male flowers (Telford, 2015). *Synostemon hamersleyensis* grows on steep ironstone slopes, screes, cliffs and gorges. It has been recorded near Koodaideri, Barimunya, Newman and Marillana Station (WAH, 1998 - ). There are currently 30 records for this species (each of which has a corresponding specimen held at WAH) (WAH, 1998 - ). One individual of *Synostemon hamersleyensis* was recorded during the survey from within the Marillana South tenement (Figure 4.3), in medium drainage vegetation type ME GoroGrwApyp Ch TpEnI, in proximity (<50 m) from existing records of the taxon.

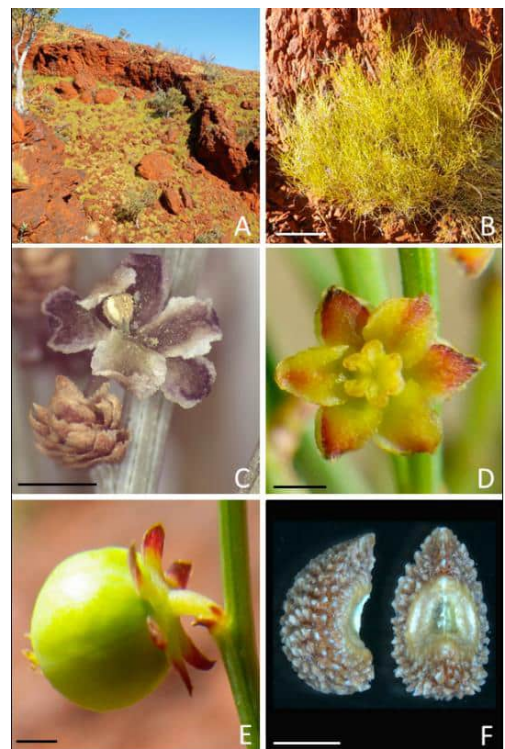


Figure 1. *Synostemon hamersleyensis*. A – habitat; B – habit; C – male flower (from dried specimen); D – female flower; E – fruit; F – seeds. Scale bars = 10 cm (B); 1 mm (C, D, E, F). Images from *J. Naaykens* 981 - 11 - 12 (C) and *J. Naaykens* 969 - 11 - 12 (D, E, F). Photographs by *J. Naaykens* (A, B, D, E) and *J.J. Bruhl* (C, F).

Plate 4.1: *Synostemon hamersleyensis* (T).

Source: Left - Taken by Biologic personnel during current survey. Right - Telford (2015)

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

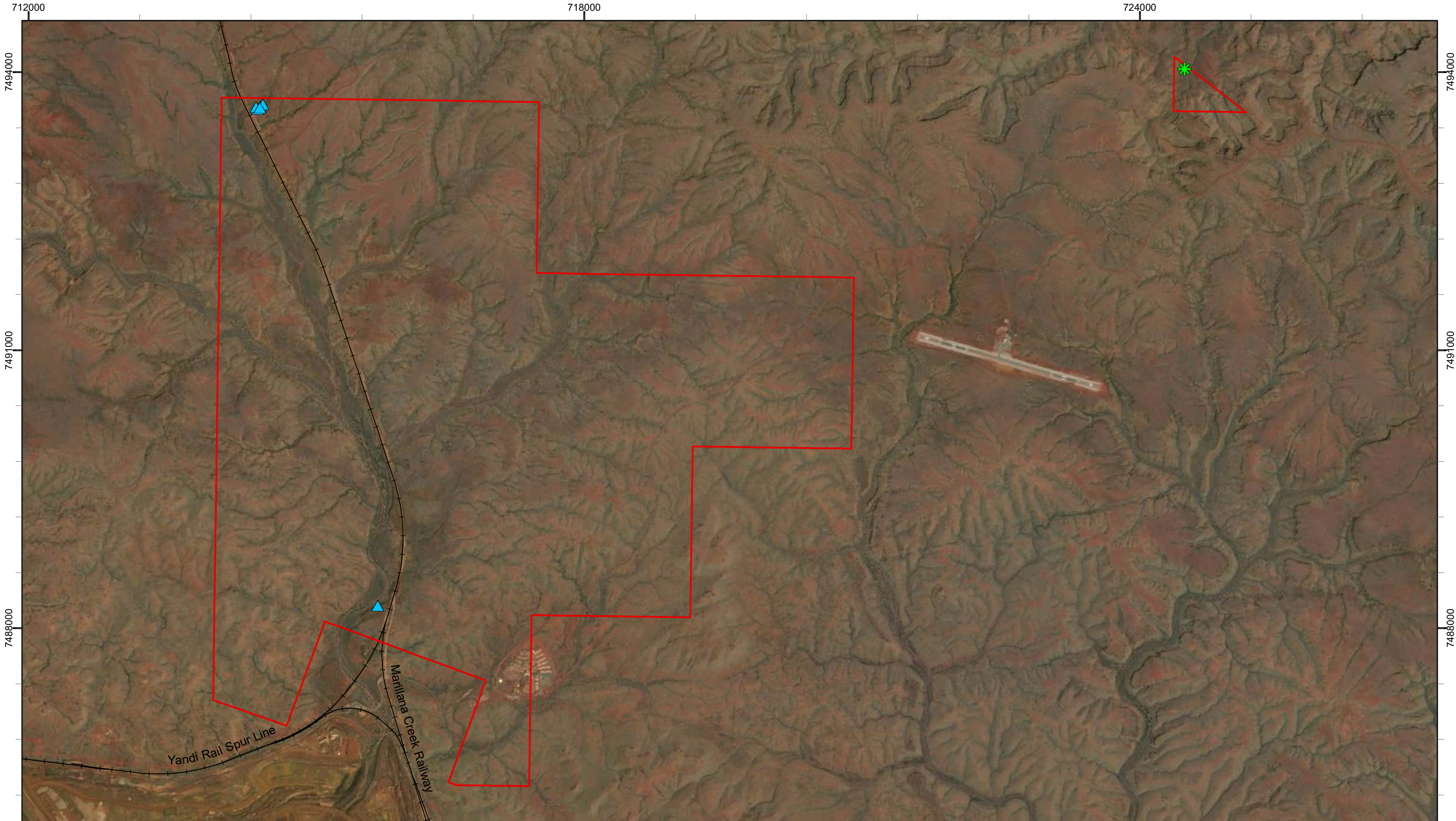
*Sida* sp. Barlee Range (S. van Leeuwen 1642) is a spreading shrub, growing to 0.5 m in height (WAH, 1998 - ) (Plate 4.2). This species is described as being a rounded, densely woolly to velvety and somewhat woody shrub, with ovate, deeply-veined leaves and yellow flowers (flowering occurs in August; while individuals have been recorded flowering/fruitleting from May to September) (Rio Tinto & WAH, 2015).

*Sida* sp. Barlee Range (S. van Leeuwen 1642) is known to grow in skeletal soils (particularly red soil pockets) in rocky areas, especially scree slopes and rock piles in full sun to afternoon shade, or in small chines and gullies. It has been recorded widely in the southern Pilbara and northern Gascoyne, especially common in the Brockman area west of Tom Price (Rio Tinto & WAH, 2015). There are currently 58 records for this species (each of which has a corresponding specimen held at WAH) (WAH, 1998 - ). A total of 12 individuals of *Sida* sp. Barlee Range were recorded during the survey at six locations within the Breakaway tenement (Figure 4.3). This taxon occurred on ironstone outcrops with *Triodia* hummock grassland and *Themeda* tussock grassland in vegetation types HC Tv EI(+/-)Cd AhiGooAad, HS Tw(+/-)Tbr EI Ai and GG ThmbErmuTt CfEICh AIAtGrw. One individual from this survey was located in proximity to known records at the south of the tenement while the remaining individuals at the north of the tenement were located approximately 1 km from the nearest known records.


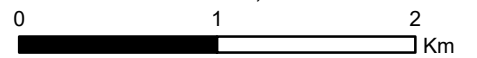


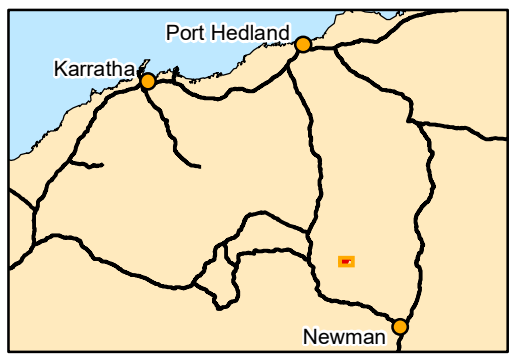
Plate 4.2: *Sida* sp. Barlee Range (P4).

Source: Taken by Biologic personnel during current survey.



- Legend**
- Study Area
  - Rail
  - Significant Flora**
  - Threatened**
  - ✱ *Synostemon hamersleyensis*
  - Priority 4**
  - ▲ *Sida* sp. Barlee Range (S. van Leeuwen 1642)

  
 Scale: 1:38,200  
  
 Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020      Created 11/06/2024



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**Breakaway and Marillana**  
**South Reconnaissance**  
**Flora Survey**

**Figure 4.3: Significant flora**  
**recorded in the Study Area**

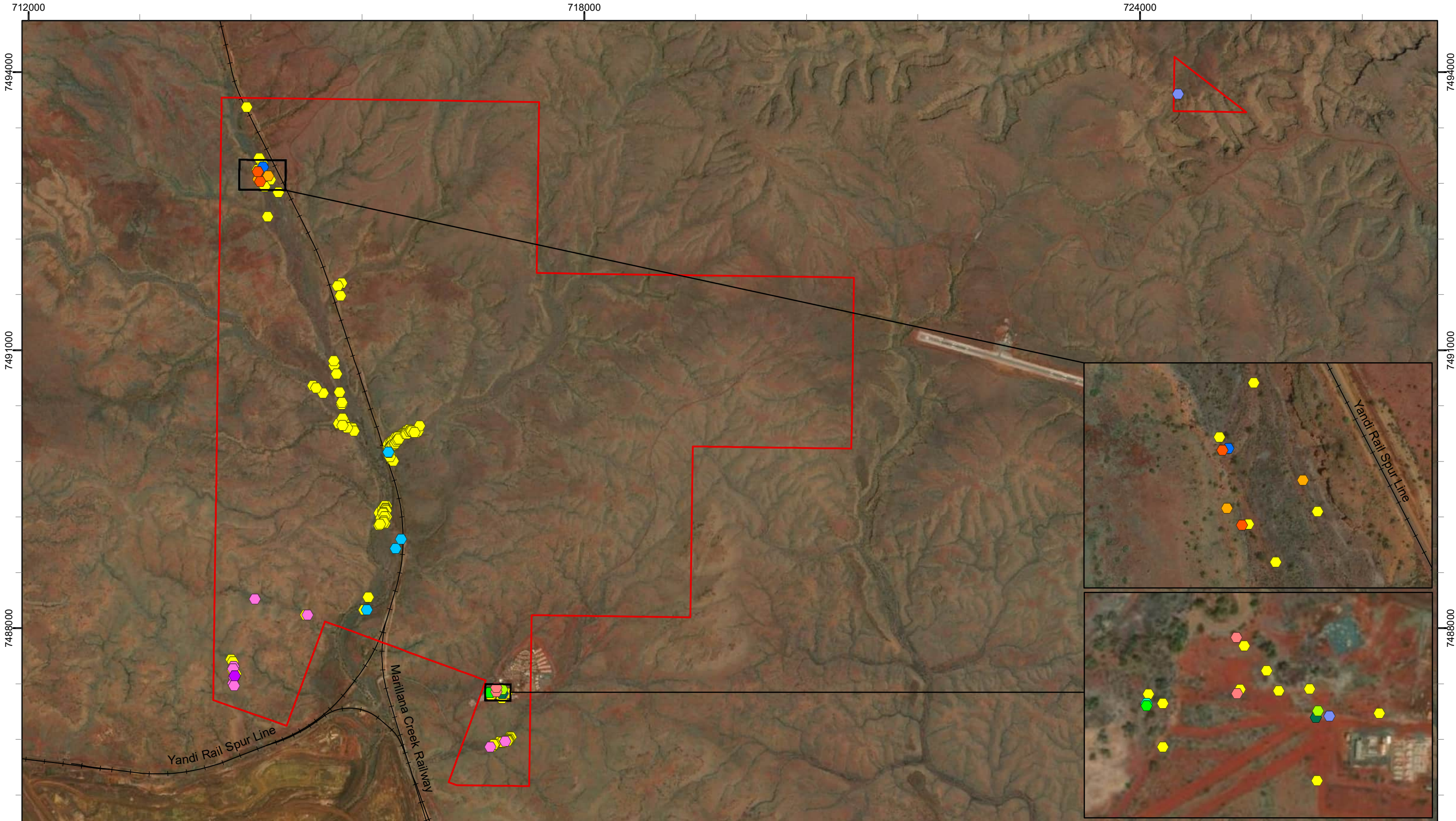
### Introduced Flora

Thirteen confirmed introduced taxa were recorded from the Study Area (Figure 4.4). None of the introduced flora are listed as WoNS, a DP under the BAM Act, or as 'Priority Alert' weeds by Parks and Wildlife Service. Introduced flora were distributed primarily within drainage line, floodplain, and stony plain vegetation types, while the upper landscapes (i.e., hillcrests, summits, upper hillslopes) had lower introduced flora presence. Introduced flora are known to be more prevalent along drainage lines and floodplains, due to dispersal of seeds by water movement as well as the higher water availability these landforms provide for germination and growth (Hill *et al.*, 2005; van der Meulen & Sindel, 2008). Furthermore, spread via cattle is more prevalent on the lower landforms, compared to rocky, breakaway country and large hills and ranges.

#### **4.2.2 Vegetation**

Fourteen vegetation types were described from four broad landforms in the Study Area (Table 4.3), with an additional mapping unit of 'Cleared' to delineate tracks or mining disturbances and other areas devoid of vegetation. These were derived from the review of structural floristic assemblages, and review of aerial imagery. The dominant landforms of the Study Area included hills, crests and slopes comprising 82.37 % from four vegetation types. Native vegetation covered 98.85 % of the Study Area, with the remaining area mapped as 'Cleared'.

The condition of the vegetation within the Study Area ranged from Poor (19.5 ha/ 0.06%) to Excellent (Table 4.3, Figure 4.6), with the majority of the mapped vegetation in Excellent condition (2820.41 ha/ 89.09%). The main disturbances observed was weed invasion. \**Cenchrus ciliaris* was the most abundant introduced flora species, recorded at 128 locations with a total estimate of 13,093 individuals.



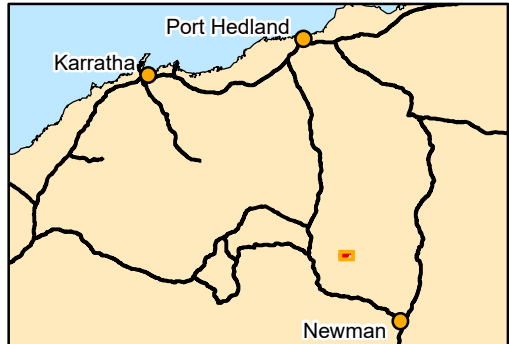
**Legend**

- |            |   |                              |                               |
|------------|---|------------------------------|-------------------------------|
| Study Area | <b>Introduced Flora</b>                             | <i>Chloris virgata</i>       | <i>Sigesbeckia orientalis</i> |
| Rail       | <i>Aerva javanica</i>                               | <i>Cynodon dactylon</i>      | <i>Sonchus oleraceus</i>      |
|            | <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i> | <i>Lepidium didymum</i>      | <i>Tridax procumbens</i>      |
|            | <i>Bidens bipinnata</i>                             | <i>Malvastrum americanum</i> | <i>Vachellia farnesiana</i>   |
|            | <i>Cenchrus ciliaris</i>                            | <i>Rumex vesicarius</i>      |                               |

Scale: 1:38,200

0 1 2 Km




Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020 Created 21/06/2023









**BHP WAIO**  
**Breakaway and Marillana**  
**South Reconnaissance**  
**Flora Survey**




**Figure 4.4: Introduced flora recorded in the Study Area**

Table 4.3: Vegetation and mapping units within the Study Area

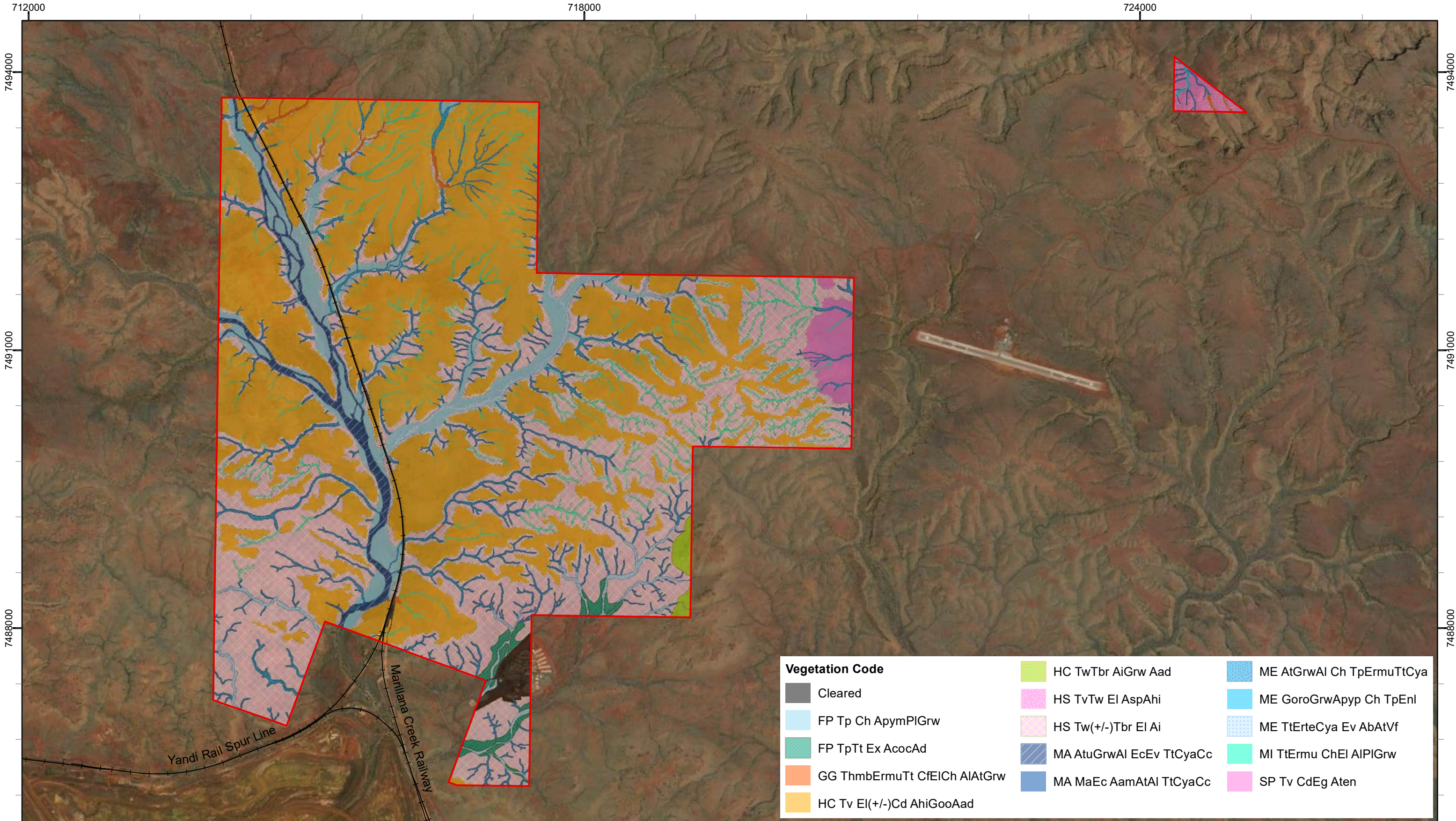
Vegetation Code	Description	Extent (ha/%)	Sample Sites	Features of Interest	Site Attributes - Condition	Photo
<b>Floodplains</b>						
<b>FP Tp Ch ApymPIGrw</b>	Hummock grassland of <i>Triodia pungens</i> with low open woodland of <i>Corymbia hamersleyana</i> over high open shrubland of <i>Acacia pyrifolia</i> var. <i>morrisonii</i> , <i>Petalostylis labicheoides</i> , <i>Grevillea wickhamii</i> on brown sandy loam on floodplains	143.57/ 4.5%	BMN-26, DMN-01, DMN-02		Very Good	
<b>FP TpTt Ex AcocAd</b>	Open hummock grassland of <i>Triodia pungens</i> and scattered tussock grassland of <i>Themeda triandra</i> with low open woodland of <i>Eucalyptus xerothermica</i> over high open shrubland of <i>Acacia coleii</i> subsp. <i>coleii</i> , <i>Acacia dictyophleba</i> on brown sandy loam on floodplains	21.77/ 0.7%	BMN-34		Very Good	
<b>Gorge gullies</b>						
<b>GG ThmbErmuTt CfEICH AIAtGrw</b>	Open tussock grassland of <i>Themeda</i> sp. Mt Barricade, <i>Eriachne mucronata</i> , <i>Themeda triandra</i> with low open woodland of <i>Corymbia ferritcola</i> , <i>Eucalyptus leucophloia</i> , <i>Corymbia hamersleyana</i> over high open shrubland of <i>Androcalva luteiflora</i> , <i>Acacia tumida</i> , <i>Grevillea wickhamii</i> on brown sandy loam on gorges and gullies	9.13/ 0.3%	BRE-03	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P4)	Excellent	

Vegetation Code	Description	Extent (ha/%)	Sample Sites	Features of Interest	Site Attributes - Condition	Photo
<b>Hillcrests</b>						
<b>HC Tv EI(+/-)Cd AhiGooAad</b>	Hummock grassland of <i>Triodia vanleeuwenii</i> with low open woodland of <i>Eucalyptus leucophloia</i> (+/- <i>Corymbia deserticola</i> ) over low scattered shrubs of <i>Acacia hilliana</i> , <i>Gompholobium oreophilum</i> , <i>Acacia adoxa</i> on red-brown sandy loam on hill crests	1384.77/ 43.7%	BRE-01 BMN-01, BMN-02, BMN-05, BMN-07, BMN-08, BMN-10, BMN-15, BMN-18, BMN-24	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P4)	Excellent	
<b>HC TwTbr AiGrw Aad</b>	Hummock grassland of <i>Triodia wiseana</i> , <i>Triodia brizoides</i> with high scattered shrubs of <i>Acacia inaequilatera</i> , <i>Grevillea wickhamii</i> over low scattered shrubs of <i>Acacia adoxa</i> on red-brown sandy loam on hill crests	12.95/ 0.4%	BMN-36		Excellent	
<b>Hillslopes</b>						
<b>HS Tw(+/-)Tbr EI Ai</b>	Hummock grassland of <i>Triodia wiseana</i> (+/- <i>Triodia brizoides</i> ) with low scattered trees of <i>Eucalyptus leucophloia</i> over high scattered shrubs of <i>Acacia inaequilatera</i> on red-brown sandy loam on hillslopes	1190.82/ 37.6%	BRE-05, BRE-08 BMN-04, BMN-12, BMN-22, BMN-25, BMN-27, BMN-29, BMN-33		Very Good – Excellent	

Vegetation Code	Description	Extent (ha/%)	Sample Sites	Features of Interest	Site Attributes - Condition	Photo
<b>HS TvTw EI AspAhi</b>	Open hummock grassland of <i>Triodia vanleeuwenii</i> , <i>Triodia wiseana</i> with low scattered trees of <i>Eucalyptus leucophloia</i> over low open shrubland of <i>Acacia spondylophylla</i> , <i>Acacia hilliana</i> on red-brown sandy loam on hillslopes	19.35/ 0.6%	BRE-06 BMN-20, BMN-21		Excellent	
<b>Major Drainage Lines</b>						
<b>MA AtGrwAI EcEv TtCyaCc</b>	High shrubland of <i>Acacia tumida</i> , <i>Grevillea wickhamii</i> , <i>Androcalva luteiflora</i> with low open woodland of <i>Eucalyptus camaldulensis</i> , <i>Eucalyptus victrix</i> over open tussock grassland of <i>Themeda triandra</i> , <i>Cymbopogon ambiguus</i> , * <i>Cenchrus ciliaris</i> on red-brown sandy loam on major creeklines	53.98/ 1.7%	BRE-02 BMN-06, BMN-31, BMN-32, DMN-03		Good – Very Good	
<b>MA MaEc AamAtAI TtCyaCc</b>	Low woodland to open woodland of <i>Melaleuca argentea</i> , <i>Eucalyptus camaldulensis</i> over high shrubland of <i>Acacia ampliceps</i> , <i>Acacia tumida</i> , <i>Androcalva luteiflora</i> over open tussock grassland of <i>Themeda triandra</i> , <i>Cymbopogon ambiguus</i> , * <i>Cenchrus ciliaris</i> on brown sandy loam on major drainage lines	0.33/ <0.1%	Not sampled		Not sampled	No photograph available.
<b>Medium Drainage Lines</b>						
<b>ME AtGrwAI Ch TpErmuTtCya</b>	High open shrubland to shrubland of <i>Acacia tumida</i> , <i>Grevillea wickhamii</i> , <i>Androcalva luteiflora</i> with low open woodland to low scattered trees of <i>Corymbia hamersleyana</i> over open to scattered hummock grassland of <i>Triodia pungens</i> and open to scattered tussock grassland of <i>Eriachne mucronata</i> , <i>Themeda triandra</i> , <i>Cymbopogon ambiguus</i> on brown sandy loam on medium to minor drainage lines	121.14/ 3.8%	BRE-04 BMN-11, BMN-13, BMN-14, BMN-16, BMN-17, BMN23, BMN-28			

Vegetation Code	Description	Extent (ha/%)	Sample Sites	Features of Interest	Site Attributes - Condition	Photo
ME GoroGrwAyp Ch TpEnl	High open shrubland to shrubland of <i>Gossypium robinsonii</i> , <i>Grevillea wickhamii</i> , <i>Acacia pyrifolia</i> with low scattered trees of <i>Corymbia hamersleyana</i> over scattered hummock grassland of <i>Triodia pungens</i> and scattered tussock grassland of <i>Enneapogon lindleyanus</i> on red-brown sandy loam on medium creeklines	1.17/ <0.1%	BMN-19	<i>Synostemon hamersleyensis</i> (T)		
ME TtErteCya Ev AbAtVf	Open tussock grassland of <i>Themeda triandra</i> , <i>Eragrostis tenellula</i> , <i>Cymbopogon ambiguus</i> with open woodland of <i>Eucalyptus victrix</i> over high open shrubland of <i>Acacia bivenosa</i> , <i>Acacia tumida</i> , * <i>Vachellia farnesiana</i> on red-brown sandy loam on medium drainages lines	41.55/ 1.3%	BMN-30, BMN-35, BMN-37			
<b>Minor Drainage Lines</b>						
MI TtErmu ChEl AIPGrw	Tussock grassland of <i>Themeda triandra</i> , <i>Eriachne mucronata</i> with low to open woodland of <i>Corymbia hamersleyana</i> , <i>Eucalyptus leucophloia</i> over high shrubland to open shrubland of <i>Androcalva luteiflora</i> , <i>Petalostylis labicheoides</i> , <i>Grevillea wickhamii</i> on red-brown sandy clay loam on minor creeklines	84.54/ 2.7%	BMN-03, BMN-09, BMN-38			
<b>Stony Plains</b>						
SP Tv CdEg Aten	Hummock grassland of <i>Triodia vanleeuwenii</i> with low open woodland of <i>Corymbia deserticola</i> , <i>Eucalyptus gamophylla</i> over high open shrubland of <i>Acacia tenuissima</i> on re-brown sandy clay loam on stony undulating plains	44.53/ 1.4%	BRE-07			No photograph available.

Vegetation Code	Description	Extent (ha/%)	Sample Sites	Features of Interest	Site Attributes - Condition	Photo
<b>Mapping Units</b>						
Cleared	Cleared areas including tracks	36.35/ 1.2%	n/a		Completely Degraded	No photograph available.
<b>Total</b>		<b>3165.95/ 100</b>				

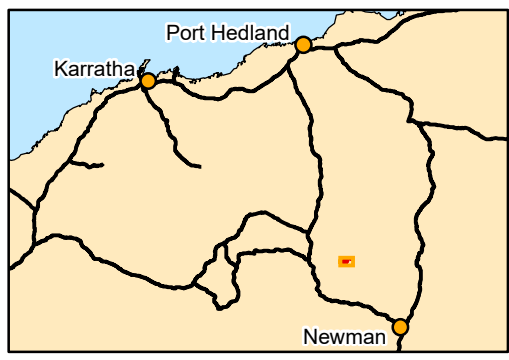


Vegetation Code					
	Cleared		HC TwTbr AiGrw Aad		ME AtGrwAl Ch TpErmuTtCya
	FP Tp Ch ApymPIGrw		HS TvTw El AspAhi		ME GoroGrwApyyp Ch TpEnl
	FP TpTt Ex AcocAd		HS Tw(+/-)Tbr El Ai		ME TtErteCya Ev AbAtVf
	GG ThmbErmuTt CfElCh AIAtGrw		MA AtuGrwAl EcEv TtCyaCc		MI TtErmu ChEl AIPIGrw
	HC Tv El(+/-)Cd AhiGooAad		MA MaEc AamAtAl TtCyaCc		SP Tv CdEg Aten

**Legend**  
 Study Area  
 Rail

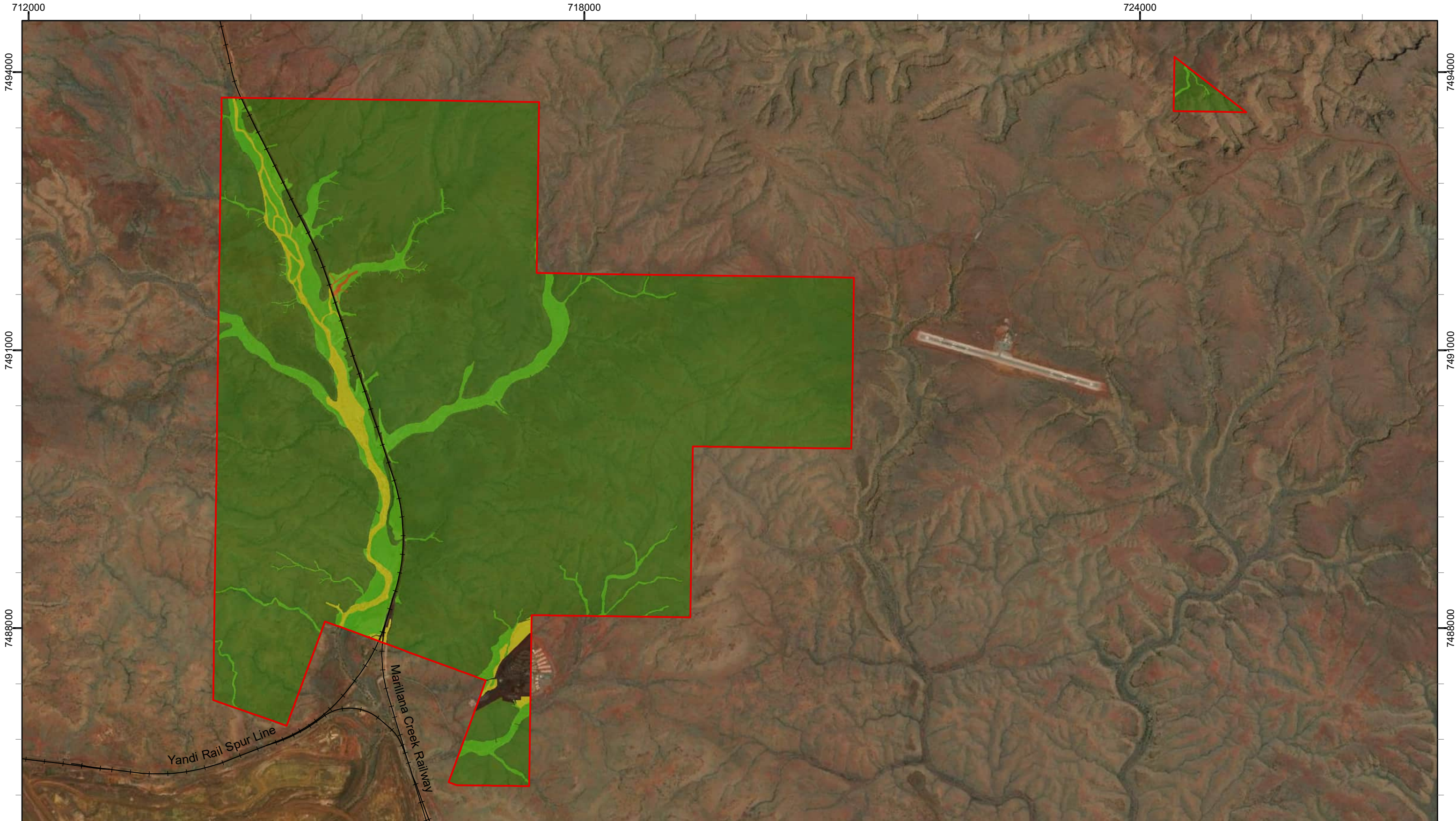
Scale: 1:38,200

Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020 Created 23/05/2023



**BHP WAIO**  
**Breakaway and Marillana**  
**South Reconnaissance**  
**Flora Survey**

**Figure 4.5: Vegetation types**  
**in the Study Area**

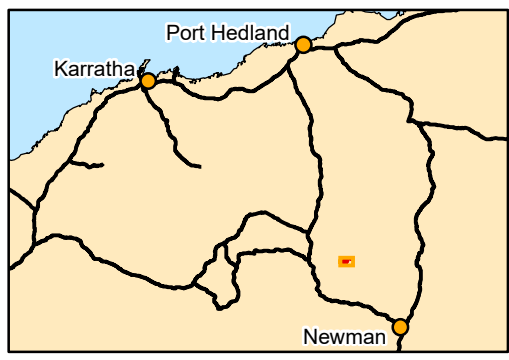


**Legend**

Study Area	<b>Vegetation Condition</b>	Good
Rail	Excellent	Poor
	Very Good	Cleared

Scale: 1:38,200

Coordinate System: GDA2020 MGA Zone 50  
 Projection: Transverse Mercator  
 Datum: GDA2020 Created 23/05/2023



**BHP WAIO**  
**Breakaway and Marillana**  
**South Reconnaissance**  
**Flora Survey**

**Figure 4.6: Vegetation**  
**condition in the Study Area**

Significant Vegetation

None of the vegetation types described and delineated from the Study Area are considered to be analogous with any TECs or PECs known to occur in the Pilbara region.

Vegetation of Other Significance

Vegetation types associated with major drainage lines, containing key indicator species for GDV, or supporting significant flora were considered to form vegetation of other significance (Table 4.4).

**Table 4.4: Vegetation of other significance recorded in the Study Area.**

Vegetation code	Key indicator species
<b>MA MaEc AamAtAI TtCyaCc</b>	Potential GDV. Contains key indicator species <i>Melaleuca argentea</i> and <i>Eucalyptus camaldulensis</i>
<b>MA AtuGrwAI EcEv TtCyaCc</b>	Potential GDV. Contains key indicator species <i>Eucalyptus camaldulensis</i> and <i>Eucalyptus victrix</i>
<b>GG ThmbErmuTt CfEICH AIAtGrw</b>	Supports <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P4)
<b>HC Tv EI(+/-)Cd AhiGooAad</b>	Supports <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P4)
<b>ME GoroGrwApyp Ch TpEnl</b>	Supports <i>Synostemon hamersleyensis</i> (T)

**4.2.3 Review of Occurrence Assessment**

Four significant flora taxa were known to occur in the Study Area prior to mobilisation. Of these, two were recorded during the current survey (*Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4), *Synostemon hamersleyensis* (T)). The remaining two, *Isotropis parviflora* (P3) and *Rostellularia adscendens* var. *latifolia* (P3) were not recorded during the current field survey, but it is assumed that the records are accurate and still exist; thus, their likelihoods also remain Confirmed.

The other seven flora taxa considered Highly Likely or Likely to occur were downgraded to Unlikely or Highly Unlikely with the exception of *Ipomoea racemigera* (P2) and *Amaranthus centralis* (P3), which being annuals remain Possible to occur as they may potentially be present within the Study Area but were not observed during the survey. Table 4.5 provides a summary of changes to likelihood based on the post-survey review of the occurrence assessment.

**Table 4.5: Summary of post-survey review of assessment of occurrence.**

Taxon	Pre-survey Likelihood	Post-survey Likelihood
<i>Aristida lazaridis</i> (P2)	Highly Likely	Unlikely
<i>Ipomoea racemigera</i> (P2)	Highly Likely	Possible
<i>Lepidium catapycnon</i> (P4)	Highly Likely	Highly Unlikely
<i>Rhynchosia bungarensis</i> (P4)	Highly Likely	Unlikely
<i>Gymnanthera cunninghamii</i> (P3)	Likely	Unlikely
<i>Acacia bromilowiana</i> (P4)	Likely	Highly Unlikely
<i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P4)	Likely	Highly Unlikely
<i>Eragrostis</i> sp. Mt Robinson (S. van Leeuwen 4109) (P2)	Possible	Highly Unlikely
<i>Euphorbia inappendiculata</i> var. <i>inappendiculata</i> (P2)	Possible	Highly Unlikely
<i>Acacia subtiliformis</i> (P3)	Possible	Highly Unlikely
<i>Amaranthus centralis</i> (P3)	Possible	Possible
<i>Aristida jerichoensis</i> var. <i>subspinulifera</i> (P3)	Possible	Unlikely
<i>Dolichocarpa</i> sp. Hamersley Station (A.A. Mitchell PRP 1479) (P3)	Possible	Unlikely
<i>Eragrostis crateriformis</i> (P3)	Possible	Unlikely
<i>Eremophila naaykensis</i> (P3)	Possible	Highly Unlikely
<i>Euphorbia australis</i> var. <i>glabra</i> (P3)	Possible	Unlikely
<i>Goodenia lyrata</i> (P3)	Possible	Highly Unlikely
<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727) (P3)	Possible	Unlikely
<i>Iotasperma sessilifolium</i> (P3)	Possible	Unlikely
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3)	Possible	Unlikely
<i>Stylidium weeliwollii</i> (P3)	Possible	Unlikely
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431) (P3)	Possible	Highly Unlikely
<i>Triodia basitricha</i> (P3)	Possible	Highly Unlikely
<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684) (P3)	Possible	Unlikely
<i>Eremophila youngii</i> subsp. <i>lepidota</i> (P4)	Possible	Highly Unlikely
<i>Ptilotus mollis</i> (P4)	Possible	Highly Unlikely

### 4.3 Constraints and Limitations

The EPA (2016d) outlines several potential limitations to flora surveys. These aspects are assessed and discussed in Table 4.6. No major limitations or constraints were identified for the survey.

**Table 4.6: Survey limitations and constraints.**

Potential limitation or constraint	Constraint	Applicability to this survey
Availability of data and information	No	A significant amount of survey work has been undertaken in the wider local area and the surrounding region, and most of these previous survey results were available for review at the time of reporting.
Competency/ experience of the survey team, including experience in the bioregion surveyed	No	The field personnel involved in the survey are experienced in undertaking flora surveys of similar nature, including with the species of conservation significance targeted during the survey. The flora field lead Ben Eckermann has over 16 years' experience in flora surveys including experience in the Pilbara bioregion.
Proportion of flora recorded/collected and any identification issues	No	The scope was a reconnaissance flora and vegetation survey which was conducted within the (EPA, 2016b) framework. All but one specimen was identified to at least the species level. This specimen had immature flowers and fruit. For taxonomic purposes this was not considered a limitation of the survey.
Timing, weather, and season	No	Despite above-average rainfall occurring in the two months prior to the survey, lower than average rainfall occurred overall in the 12 months preceding the survey. While lower rainfall can result in suboptimal conditions for the germination of annuals, higher rainfall immediately prior to the survey, in conjunction with sufficient follow-up rains and soil warming, can result in the breaking of seed dormancy and germination of annual taxa. As other annual species were recorded during the survey (e.g. Asteraceae spp.), the lower than average overall rainfall was not considered to have been a major limitation. Maximum temperatures recorded were slightly higher than the long-term averages. Minimum temperatures were also lower than the long-term average particularly during the survey period in July and August.
Disturbance that may have affected results, e.g. fire, flood	No	No temporary disturbance impinged on the results of this assessment.
Appropriate area fully surveyed (effort & extent)	No	A reconnaissance flora and vegetation survey was undertaken across the Study Area to assist with decisions on future environmental approvals. The sampling methods and survey intensity was appropriate to achieve the scope of the survey. The intent of a reconnaissance survey was to collect preliminary and baseline information on site.
Access restrictions within the Study Area	No	Access within the Study Area was poor due to a lack of useable tracks, resulting in a reduced amount of survey coverage; however, sufficient data was able to be collected for the purposes of a reconnaissance level survey.
Problems with data and analysis, including sampling bias	No	No limitations with data collection and/or analysis were encountered during the field survey or during subsequent analysis.

## 5 CONCLUSION

A reconnaissance flora and vegetation survey and concurrent targeted surveys for significant flora taxa were completed in the Study Area in late July 2022, by two personnel over 12 person days. While overall rainfall was lower than average over the 12 months preceding the survey, above average rainfall occurred in the two months immediately prior to the survey (40.4 mm above average in May 2022 and 7 mm above average in June 2022). While lower rainfall can result in suboptimal conditions for the germination of annuals, higher rainfall immediately prior to the survey, in conjunction with sufficient follow-up rains and soil warming, can result in the breaking of seed dormancy and germination of annual taxa. As other annual species were recorded during the survey (e.g. Asteraceae spp.), the lower than average overall rainfall was not considered to have been a major limitation.

Limited tracks were available within the Study Area; however, access was adequate to complete work to a level sufficient to meet EPA requirements for a reconnaissance level survey. Key findings from the current survey were:

- The desktop study identified four significant flora taxa previously recorded in the Study Area (*Isotropis parviflora* (P3), *Rostellularia adscendens* var. *latifolia* (P3), *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4), *Synostemon hamersleyensis* (T));
- An assessment of the likelihood of occurrence of significant flora determined that four taxa were Highly Likely to occur in the Study Area, three were considered Likely to occur, 18 Possible to occur, 16 Unlikely to occur, and 14 Highly Unlikely to occur
- The post-survey review of likelihood determined that the majority of taxa assessed as Highly Likely, Likely or Possible to occur prior to the survey were downgraded to Unlikely or Highly Unlikely, based on observations within the Study Area;
- Two taxa, *Ipomoea racemigera* (P2) and *Amaranthus centralis* (P3), both annual taxa, remained Possible to occur in the post-survey likelihood assessment, as rainfall during the majority of the year prior to the survey was low which may have resulted in suboptimal germination of annuals;
- A total of 204 confirmed vascular flora taxa from 42 families and 115 genera were recorded from the Study Area, of which 191 were native and 13 introduced;
- Two conservation significant listed flora taxa were recorded:
  - *Synostemon hamersleyensis* (T), one individual; and
  - *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4), 12 individuals from six locations.
- Thirteen introduced taxa were recorded, of which none are listed as WoNS or DP;
- Fourteen vegetation types from four broad landforms were recorded, of which the most dominant were *Triodia* hummock grasslands on hillslopes and crests (2575.59 ha/ 81.3%);
- No TECs or PECs were recorded in the Study Area;
- Five vegetation types were considered to have “other” significance due to the presence of Priority flora and potential GDV;
- The majority of vegetation was in Excellent condition (2820.41 ha/ 89.09%).

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**Appendix A: State and federal conservation codes**

**Environment Protection and Biodiversity Conservation Act 1999**

Category	Definition
<b>Threatened Flora Species</b>	
<b>Extinct (EX)</b>	A native species is eligible to be included in the Extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
<b>Extinct in the Wild (EW)</b>	A native species is eligible to be included in the Extinct in the Wild category at a particular time if, at that time: (a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) 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.
<b>Critically Endangered (CR)</b>	A native species is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
<b>Endangered (EN)</b>	A native species is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
<b>Vulnerable (VU)</b>	A native species is eligible to be included in the vulnerable category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.
<b>Conservation Dependent (CD)</b>	A native species is eligible to be included in the Conservation Dependent category at a particular time if, at that time: (a) the species is 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 management 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; and (iv) cessation of the plan of management would adversely affect the conservation status of the species.

Category	Definition
<b>Threatened Ecological Communities</b>	
<b>Critically Endangered</b>	An ecological community is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
<b>Endangered</b>	An ecological community is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
<b>Vulnerable</b>	An ecological community is eligible to be included in the vulnerable category at a particular time if, at that time: (a) it is not critically endangered nor endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.

**Biodiversity Conservation Act 2016**

Category	Definition
<b>Threatened Flora Species</b>	
<b>Critically Endangered (CR)</b>	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”. Published under schedule 1 of the <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for critically endangered flora.
<b>Endangered (EN)</b>	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”. Published under schedule 2 of the <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for endangered flora.
<b>Vulnerable (VU)</b>	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”. Published under schedule 3 of the <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for vulnerable flora.
<b>Extinct (EX)</b>	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 <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for extinct flora.
<b>Extinct in the Wild (EW)</b>	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 flora species listed as extinct in the wild.

Category	Definition
<b>Threatened Ecological Communities</b>	
<b>Critically Endangered (CR)</b>	<p>An ecological community is eligible for listing in the category of critically endangered ecological community at a particular time if, at that time —</p> <p>(a) it is facing an extremely high risk of becoming eligible for listing as a collapsed ecological community in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines; and</p> <p>(b) listing in that category is otherwise in accordance with the ministerial guidelines.</p>
<b>Endangered (EN)</b>	<p>An ecological community is eligible for listing in the category of endangered ecological community at a particular time if, at that time —</p> <p>(a) it is not a critically endangered ecological community; and</p> <p>(b) it is facing a very high risk of becoming eligible for listing as a collapsed ecological community in the near future, as determined in accordance with criteria set out in the ministerial guidelines; and</p> <p>(c) listing in that category is otherwise in accordance with the ministerial guidelines.</p>
<b>Vulnerable (VU)</b>	<p>An ecological community is eligible for listing in the category of vulnerable ecological community at a particular time if, at that time —</p> <p>(a) it is not a critically endangered ecological community or an endangered ecological community; and</p> <p>(b) it is facing a high risk of becoming eligible for listing as a collapsed ecological community in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines; and</p> <p>(c) listing in that category is otherwise in accordance with the ministerial guidelines.</p>
<b>Collapsed</b>	<p>An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time —</p> <p>(a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed; or</p> <p>(b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover —</p> <p style="padding-left: 40px;">(i) its species composition or structure; or</p> <p style="padding-left: 40px;">(ii) its species composition and structure.</p>

**Department of Biodiversity, Conservation and Attractions Priority Definitions**

Category	Definition
<b>Priority Flora Species</b>	
<b>Priority 1 (P1)</b>	<p><b>Poorly-known Species</b></p> <p>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.</p>
<b>Priority 2 (P2)</b>	<p><b>Poorly-known Species</b></p> <p>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.</p>
<b>Priority 3 (P3)</b>	<p><b>Poorly-known Species</b></p> <p>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.</p>
<b>Priority 4 (P4)</b>	<p><b>Rare, Near Threatened and other species in need of monitoring</b></p> <p>(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.</p> <p>(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.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>

Category	Definition
<b>Priority Ecological Communities</b>	
<b>Priority 1 (P1)</b>	<p><b>Poorly-known ecological communities</b></p> <p>Ecological communities that are known from very few occurrences with a very restricted distribution (generally <math>\leq 5</math> occurrences or a total area of <math>\leq 100</math>ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g., within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.</p>
<b>Priority 2 (P2)</b>	<p><b>Poorly-known Ecological Communities</b></p> <p>Communities that are known from few occurrences with a restricted distribution (generally <math>\leq 10</math> occurrences or a total area of <math>\leq 200</math>ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.</p>
<b>Priority 3 (P3)</b>	<p><b>Poorly-known Ecological Communities</b></p> <p>(i) 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:</p> <p>(ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat (within approximately 10 years), or;</p> <p>(iii) communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, inappropriate fire regimes, clearing, hydrological change etc.</p> <p>Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.</p>

Category	Definition
<b>Priority 4 (P4)</b>	<p><b>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.</b></p> <p>(i) Rare. Ecological communities known from few occurrences 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 communities are usually represented on conservation lands.</p> <p>(ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for a higher threat category.</p> <p>(iii) Ecological communities that have been removed from the list of threatened communities during the past five years.</p>
<b>Priority 5 (P5)</b>	<p><b>Conservation Dependent Ecological Communities</b></p> <p>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.</p>

#### **Legal Status Definitions of Listed Plants in Western Australia**

Legal status	Definition
Declared Pest, Prohibited – s12	Prohibited organisms are declared pests by virtue of section 22(1) and many only be imported and keep subject to permits
Declared Pest – s22(2)	Declared pests must satisfy any applicable import requirements when imported and may be subject to control keeping requirements
Permitted – s11	Permitted organisms must satisfy applicable import requirements and import permits (where required)
Permitted Requires Permit – r73	Regulation 73 permitted organisms may be subject to restriction under legislation other and the BAM Act (2007)
Unlisted	Unlisted organisms are prohibited in WA
Control Categories	Definition
C1 Exclusion	Organisms should be excluded from parts or all of WA
C2 Eradication	Organisms should be eradicated from all or parts of WA
C3 Management	Organisms should have some form of management applied that will alleviate the harmful impact of the organism, reduce the numbers or distribution of the organism or prevent or contain the spread of the organism
Unassigned	Declared pests that are recognised a having a harmful impact under certain circumstances where their subsequent control requirements are determined by a plan or other legislative arrangements under the Act

Keeping Categories	Definition
Prohibited Keeping	Can only be kept under a permit or public display, education or scientific purposes
Restricted Keeping	Kept under a permit by private individuals due to low risk of becoming a problem for the environment
Exempt Keeping	No permit or conditions are required for keeping. Organism may be subject to restrictions under the Wildlife Conservation Act (1950)

**Appendix B: Database search results**

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
Acanthaceae	<i>Dicladantha forrestii</i>	x	x				x					
	<i>Dipteracanthus australasicus</i>						x					
	<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>	x	x				x					
	<i>Rostellularia adscendens</i>	x										
	<i>Rostellularia adscendens</i> var. <i>clementii</i>	x	x				x					
	<i>Rostellularia adscendens</i> var. <i>latifolia</i>	x	x	x			x		P3			
Aizoaceae	<i>Trianthema</i> aff. <i>triquetra</i>	x										
	<i>Trianthema glossostigmum</i>	x					x					
	<i>Trianthema oxycalyptum</i> var. <i>oxycalyptum</i>						x					
	<i>Trianthema pilosa</i>	x										
	<i>Trianthema pilosum</i>	x	x				x					
	<i>Trianthema triquetrum</i>	x	x				x					
	<i>Trianthema turgidifolium</i>	x	x				x					
	<i>Zaleya galericulata</i> subsp. <i>galericulata</i>	x	x									
Alismataceae	<i>Sagittaria platyphylla</i>							1				Y
Amaranthaceae	<i>Achyranthes aspera</i>						x					
	<i>Aerva javanica</i>	x	x				x					Y
	<i>Alternanthera angustifolia</i>	x					x					
	<i>Alternanthera denticulata</i>	x	x				x					
	<i>Alternanthera nana</i>	x	x				x					
	<i>Alternanthera nodiflora</i>	x	x				x					
	<i>Alternanthera pungens</i>		x				x					Y
	<i>Amaranthaceae</i> sp. indet						x					
	<i>Amaranthus</i> aff. <i>undulatus</i>						x					
	<i>Amaranthus centralis</i>	x	x	x			x		P3			
<i>Amaranthus cuspidifolius</i>	x					x						

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Amaranthus interruptus</i>						X					
	<i>Amaranthus mitchellii</i>						X					
	<i>Amaranthus undulatus</i>	X	X				X					
	<i>Gomphrena affinis</i>	X	X									
	<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>	X	X				X					
	<i>Gomphrena canescens</i>	X	X				X					
	<i>Gomphrena canescens</i> subsp. <i>canescens</i>	X	X				X					
	<i>Gomphrena cunninghamii</i>	X	X				X					
	<i>Gomphrena globosa</i>		X									Y
	<i>Gomphrena kanisii</i>						X					
	<i>Ptilotus aevoides</i>	X	X				X					
	<i>Ptilotus astrolasius</i>	X	X				X					
	<i>Ptilotus auriculifolius</i>	X	X				X					
	<i>Ptilotus axillaris</i>	X										
	<i>Ptilotus calostachyus</i>	X	X				X					
	<i>Ptilotus carinatus</i>	X	X				X					
	<i>Ptilotus</i> cf. <i>aevoides</i>						X					
	<i>Ptilotus clementii</i>	X	X				X					
	<i>Ptilotus drummondii</i>	X	X									
	<i>Ptilotus exaltatus</i>	X					X					
	<i>Ptilotus fusiformis</i>	X	X				X					
	<i>Ptilotus gaudichaudii</i>	X	X				X					
	<i>Ptilotus gomphrenoides</i>	X	X				X					
	<i>Ptilotus helipteroides</i>	X	X				X					
	<i>Ptilotus incanus</i>						X					
	<i>Ptilotus latifolius</i>	X	X				X					
	<i>Ptilotus macrocephalus</i>	X										
	<i>Ptilotus mollis</i>	X		X			X		P4			

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Ptilotus nobilis</i>	x	x									
	<i>Ptilotus nobilis</i> subsp. <i>nobilis</i>	x										
	<i>Ptilotus obovatus</i>	x	x					x				
	<i>Ptilotus obovatus</i> var. <i>obovatus</i>							x				
	<i>Ptilotus polystachyus</i>	x	x					x				
	<i>Ptilotus roei</i>							x				
	<i>Ptilotus rotundifolius</i>	x	x					x				
	<i>Ptilotus schwartzii</i> var. <i>schwartzii</i>							x				
	<i>Ptilotus xerophilus</i>		x					x				
Apiaceae	<i>Cyclospermum leptophyllum</i>	x	x									Y
Apocynaceae	<i>Calotropis procera</i>								1			Y
	<i>Cryptostegia madagascariensis</i>								1			Y
	<i>Cynanchum floribundum</i>	x	x					x				
	<i>Cynanchum pedunculatum</i>	x	x									
	<i>Cynanchum viminale</i>	x	x									
	<i>Cynanchum viminale</i> subsp. <i>australe</i>	x						x				
	<i>Gymnanthera cunninghamii</i>	x	x	x				x		P3		
	<i>Leichhardtia australis</i>							x				
	<i>Rhyncharrhena linearis</i>	x										
	<i>Vincetoxicum flexuosum</i>	x	x					x				
	<i>Vincetoxicum lineare</i>	x	x					x				
Araceae	<i>Pistia stratiotes</i>								1			Y
	<i>Zantedeschia aethiopica</i>								1			Y
Araliaceae	<i>Astrotricha hamptonii</i>	x	x					x				
	<i>Hydrocotyle ranunculoides</i>								1			Y
	<i>Trachymene oleracea</i>	x	x					x				
	<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	x	x					x				
	<i>Trachymene pilbarensis</i>							x				
Arecaceae	<i>Phoenix dactylifera</i>							x				Y

Family	Taxon	Source							Conservation Status			Introduced		
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act			
	<i>Washingtonia filifera</i>						x						Y	
Asparagaceae	<i>Arthropodium vanleeuwenii</i>			x						P2				
	<i>Asparagus asparagoides</i>							1					Y	
Asphodelaceae	<i>Bulbine pendula</i>	x	x											
Asteraceae	<i>Angianthus cyathifer</i>	x	x											
	<i>Angianthus milnei</i>	x												
	<i>Angianthus tomentosus</i>	x	x				x							
	<i>Apowollastonia hamersleyensis</i>	x	x				x							
	<i>Bidens bipinnata</i>	x	x				x						Y	
	<i>Bidens subalternans</i>		x										Y	
	<i>Bidens subalternans</i> var. <i>simulans</i>		x										Y	
	<i>Blumea tenella</i>	x	x				x							
	<i>Brachyscome ciliaris</i>	x					x							
	<i>Brachyscome iberidifolia</i>						x							
	<i>Calocephalus beardii</i>		x				x							
	<i>Calocephalus francisii</i>	x												
	<i>Calocephalus multiflorus</i>	x	x				x							
	<i>Calotis hispidula</i>	x	x				x							
	<i>Calotis latiuscula</i>		x				x							
	<i>Calotis multicaulis</i>	x	x				x							
	<i>Calotis plumulifera</i>	x	x				x							
	<i>Calotis squamigera</i>	x	x	x			x			P1				
	<i>Centaurea melitensis</i>						x							Y
	<i>Centipeda crateriformis</i> subsp. <i>crateriformis</i>						x							
<i>Centipeda minima</i>	x					x								
<i>Centipeda minima</i> subsp. <i>macrocephala</i>	x	x				x								
<i>Centipeda minima</i> subsp. <i>minima</i>	x	x												
<i>Centipeda pleiocephala</i>	x	x												

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Centipeda thespidioides</i>	x					x					
	<i>Chondrilla juncea</i>							1				Y
	<i>Chrysocephalum apiculatum</i>	x	x				x					
	<i>Chrysocephalum apiculatum</i> subsp. <i>pilbarensis</i>	x	x				x					
	<i>Chrysocephalum eremaeum</i>						x					
	<i>Chrysocephalum gilesii</i>						x					
	<i>Chrysocephalum pterochaetum</i>						x					
	<i>Conyza bonariensis</i>	x										
	<i>Erigeron bonariensis</i>		x				x					Y
	<i>Flaveria australasica</i>	x										
	<i>Flaveria trinervia</i>	x	x				x					Y
	<i>Gnephosis brevifolia</i>		x				x					
	<i>Iotasperma sessilifolium</i>	x	x	x					P3			
	<i>Ixiochlamys cuneifolia</i>	x	x				x					
	<i>Lactuca saligna</i>	x	x									Y
	<i>Lactuca serriola</i>	x	x				x					Y
	<i>Lactuca serriola</i> forma <i>serriola</i>						x					Y
	<i>Leiocarpa semicalva</i> subsp. <i>semicalva</i>						x					
	<i>Minuria leptophylla</i>						x					
	<i>Myriocephalus oldfieldii</i>	x	x				x					
	<i>Myriocephalus rudallii</i>	x	x									
	<i>Myriocephalus scalpellus</i>			x	x				P1			
	<i>Olearia fluvialis</i>	x	x				x					
	<i>Olearia stuartii</i>						x					
	<i>Olearia xerophila</i>	x	x				x					
	<i>Onopordum acaulon</i>							1				Y
	<i>Pentalepis trichodesmoides</i>						x					
	<i>Pentalepis trichodesmoides</i> subsp. <i>trichodesmoides</i>	x	x									

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Peripleura arida</i>	x					x					
	<i>Peripleura hispidula</i> var. <i>hispidula</i>						x					
	<i>Peripleura obovata</i>	x	x				x					
	<i>Peripleura virgata</i>						x					
	<i>Pilbara trudgenii</i>	x		x	x		x		P3			
	<i>Pluchea dentex</i>	x					x					
	<i>Pluchea dunlopii</i>	x	x				x					
	<i>Pluchea ferdinandi-muelleri</i>	x	x				x					
	<i>Pluchea rubelliflora</i>	x	x				x					
	<i>Pluchea tetranthera</i>	x	x				x					
	<i>Podolepis eremaea</i>	x	x									
	<i>Pseudognaphalium luteoalbum</i>	x					x					
	<i>Pterocaulon serrulatum</i>						x					
	<i>Pterocaulon serrulatum</i> var. <i>velutinum</i>						x					
	<i>Pterocaulon sphacelatum</i>	x	x				x					
	<i>Pterocaulon sphaeranthoides</i>	x	x				x					
	<i>Pterocaulon sphaeranthoides</i> x <i>sphacelatum</i>						x					
	<i>Rhodanthe charsleyae</i>	x	x				x					
	<i>Rhodanthe citrina</i>						x					
	<i>Rhodanthe floribunda</i>	x	x				x					
	<i>Rhodanthe humboldtiana</i>	x	x									
	<i>Rhodanthe margarethae</i>	x	x				x					
	<i>Rhodanthe propinqua</i>	x	x				x					
	<i>Rhodanthe sterilecens</i>		x				x					
	<i>Rhodanthe stricta</i>						x					
	<i>Roebuckiella ciliocarpa</i>						x					
	<i>Roebuckiella similis</i>	x	x				x					
	<i>Rutidosis helichrysoides</i>	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Rutidosia helichrysoidea</i> subsp. <i>helichrysoidea</i>		x				x					
	<i>Senecio magnificus</i>	x	x				x					
	<i>Sigesbeckia orientalis</i>	x	x				x					Y
	<i>Silybum marianum</i>							1				Y
	<i>Sonchus asper</i>						x					Y
	<i>Sonchus oleraceus</i>						x					Y
	<i>Streptoglossa adscendens</i>	x										
	<i>Streptoglossa bubakii</i>	x	x				x					
	<i>Streptoglossa</i> cf. <i>bubakii</i>						x					
	<i>Streptoglossa cylindriceps</i>	x	x									
	<i>Streptoglossa decurrens</i>	x	x				x					
	<i>Streptoglossa liatroides</i>	x	x				x					
	<i>Streptoglossa macrocephala</i>	x					x					
	<i>Streptoglossa odora</i>	x	x				x					
	<i>Streptoglossa</i> sp. Cracking clays (S. van Leeuwen et al. PBS 7353)		x	x						P3		
	<i>Streptoglossa tenuiflora</i>	x					x					
	<i>Symphotrichum squamatum</i>	x	x									Y
	<i>Taraxacum khatoonae</i>	x	x				x					Y
	<i>Tridax procumbens</i>	x	x				x					Y
	<i>Vittadinia arida</i>		x									
	<i>Vittadinia dissecta</i> var. <i>hirta</i>	x	x				x					
	<i>Vittadinia eremaea</i>						x					
	<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684)	x	x	x	x		x			P3		
	<i>Xanthium spinosum</i>								1			Y
	<i>Xanthium strumarium</i>								1			Y
	<i>Xerochrysum boreale</i>			x						P3		

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
Bignoniaceae	<i>Pandorea doratoxylon</i>		x				x					
	<i>Pandorea pandorana</i>	x										
Boraginaceae	<i>Echium plantagineum</i>							1				Y
	<i>Ehretia saligna</i>						x					
	<i>Ehretia saligna</i> var. <i>saligna</i>		x									
	<i>Euploca chrysocharpa</i>	x	x				x					
	<i>Euploca conocarpa</i>	x	x				x					
	<i>Euploca cunninghamii</i>	x	x				x					
	<i>Euploca glabella</i>	x	x				x					
	<i>Euploca heterantha</i>	x	x				x					
	<i>Euploca inexplicita</i>	x	x				x					
	<i>Euploca ovalifolia</i>	x	x				x					
	<i>Euploca pachyphylla</i>	x	x				x					
	<i>Euploca skeleton</i>	x	x									
	<i>Euploca tanythrix</i>						x					
	<i>Euploca tenuifolia</i>	x	x				x					
	<i>Halgania cyanea</i>		x									
	<i>Halgania cyanea</i> var. <i>Allambi</i> Stn (B.W. Strong 676)	x	x				x					
	<i>Halgania gustafsenii</i> var. <i>gustafsenii</i>						x					
	<i>Heliotropium curassavicum</i>	x										
	<i>Trichodesma zeylanicum</i>	x	x				x					
	<i>Trichodesma zeylanicum</i> var. <i>latise-paleum</i>	x										
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	x	x				x						
Brassicaceae	<i>Cuphonotus andraeanus</i>						x					
	<i>Lepidium catapycnon</i>	x	x	x	x		x		P4			
	<i>Lepidium echinatum</i>	x	x				x					
	<i>Lepidium muelleri-ferdinandii</i>	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Lepidium oxytrichum</i>						x					
	<i>Lepidium pedicellosum</i>						x					
	<i>Lepidium phlebopetalum</i>	x	x				x					
	<i>Lepidium pholidogynum</i>	x	x				x					
	<i>Lepidium platypetalum</i>	x	x				x					
	<i>Rorippa</i> sp. Fortescue Valley (M.N. Lyons & R.A. Coppen FV 0760)			x					P1			
	<i>Sisymbrium orientale</i>						x					Y
	<i>Stenopetalum anfractum</i>	x	x				x					
	<i>Stenopetalum decipiens</i>						x					
	<i>Stenopetalum nutans</i>	x	x				x					
	<i>Stenopetalum pedicellare</i>	x	x				x					
	<i>Stenopetalum velutinum</i>						x					
Cactaceae	<i>Austrocylindropuntia cylindrica</i>							1				Y
	<i>Austrocylindropuntia subulata</i>							1				Y
	<i>Cylindropuntia fulgida</i>							1				Y
	<i>Cylindropuntia imbricata</i>							1				Y
	<i>Cylindropuntia kleiniae</i>							1				Y
	<i>Cylindropuntia pallida</i>							1				Y
	<i>Cylindropuntia tunicata</i>							1				Y
	<i>Opuntia elata</i>							1				Y
	<i>Opuntia elatior</i>							1				Y
	<i>Opuntia engelmannii</i>							1				Y
	<i>Opuntia ficus-indica</i>							1				Y
	<i>Opuntia microdasys</i>							1				Y
	<i>Opuntia monacantha</i>							1				Y
	<i>Opuntia polyacantha</i>							1				Y
	<i>Opuntia puberula</i>							1				Y
<i>Opuntia stricta</i>							1				Y	

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Opuntia tomentosa</i>							1				Y
Campanulaceae	<i>Lobelia arnhemiaca</i>	x	x					x				
	<i>Lobelia heterophylla</i>							x				
	<i>Lobelia heterophylla</i> subsp. <i>pilbarensis</i>	x	x					x				
	<i>Lobelia quadrangularis</i>		x									
	<i>Wahlenbergia caryophylloides</i>		x					x				
	<i>Wahlenbergia gracilentia</i>							x				
	<i>Wahlenbergia tumidifruca</i>	x	x					x				
Capparaceae	<i>Capparis lasiantha</i>	x						x				
	<i>Capparis mitchellii</i>							x				
	<i>Capparis spinosa</i>	x	x					x				
	<i>Capparis spinosa</i> subsp. <i>nummularia</i>	x	x					x				
	<i>Capparis umbonata</i>							x				
Caryophyllaceae	<i>Polycarpaea corymbosa</i>	x						x				
	<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>							x				
	<i>Polycarpaea holtzei</i>	x	x					x				
	<i>Polycarpaea involucreta</i>	x										
	<i>Polycarpaea longiflora</i>	x	x					x				
	<i>Polycarpaea</i> sp. <i>indet</i>							x				
Celastraceae	<i>Maytenus</i> sp. Mt Windell (S. van Leeuwen 846)	x	x					x				
	<i>Stackhousia clementii</i>	x		x				x		P3		
	<i>Stackhousia intermedia</i>							x				
	<i>Stackhousia monogyna</i>							x				
	<i>Stackhousia muricata</i>	x	x					x				
	<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172)	x						x				
	<i>Stackhousia</i> sp. swollen gynophore (W.R. Barker 2041)							x				

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Stackhousia</i> sp. Swollen gynophore (W.R.Barker 2041)		x									
Chenopodiaceae	<i>Atriplex amnicola</i>	x	x					x				
	<i>Atriplex bunburyana</i>	x						x				
	<i>Atriplex</i> cf. <i>bunburyana</i>							x				
	<i>Atriplex codonocarpa</i>	x	x					x				
	<i>Atriplex flabelliformis</i>	x	x	x				x		P3		
	<i>Atriplex lindleyi</i> subsp. <i>lindleyi</i>		x									
	<i>Atriplex semilunaris</i>		x									
	<i>Chenopodium auricomum</i>		x					x				
	<i>Chenopodium gaudichaudianum</i>							x				
	<i>Chenopodium melanocarpum</i>	x										
	<i>Dissocarpus paradoxus</i>	x	x					x				
	<i>Dysphania congestiflora</i>	x	x	x						P3		
	<i>Dysphania glomulifera</i> subsp. <i>eremaea</i>							x				
	<i>Dysphania kalpari</i>	x	x					x				
	<i>Dysphania melanocarpa</i>	x	x					x				
	<i>Dysphania melanocarpa</i> forma <i>leucocarpa</i>	x										
	<i>Dysphania melanocarpa</i> forma <i>melanocarpa</i>	x						x				
	<i>Dysphania plantaginella</i>	x	x					x				
	<i>Dysphania platycarpa</i>	x	x									
	<i>Dysphania rhadinostachya</i>	x	x					x				
	<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	x	x									
	<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	x	x					x				
	<i>Dysphania simulans</i>	x										
<i>Dysphania sphaerosperma</i>		x										
<i>Einadia nutans</i> subsp. <i>eremaea</i>	x	x										

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Enchylaena tomentosa</i>	x	x				x					
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	x	x				x					
	<i>Eremophea spinosa</i>	x					x					
	<i>Maireana amoena</i>	x	x									
	<i>Maireana carnosa</i>	x	x				x					
	<i>Maireana georgei</i>	x	x				x					
	<i>Maireana integra</i>	x	x				x					
	<i>Maireana luehmannii</i>	x	x				x					
	<i>Maireana melanocoma</i>	x										
	<i>Maireana planifolia</i>	x	x				x					
	<i>Maireana platycarpa</i>	x	x									
	<i>Maireana pyramidata</i>	x	x				x					
	<i>Maireana tomentosa</i>						x					
	<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	x	x				x					
	<i>Maireana triptera</i>	x	x				x					
	<i>Maireana villosa</i>	x	x				x					
	<i>Neobassia astrocarpa</i>	x										
	<i>Rhagodia eremaea</i>	x	x				x					
	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	x	x	x	x		x		P3			
	<i>Salsola australis</i>	x	x				x					
	<i>Salsola kali</i>	x										
	<i>Salsola tragus</i>	x										
	<i>Sclerolaena</i> aff. <i>cuneata</i>						x					
	<i>Sclerolaena beaugleholei</i>		x				x					
	<i>Sclerolaena bicornis</i>	x										
	<i>Sclerolaena burbridgeae</i>	x	x									
	<i>Sclerolaena clelandii</i>						x					
	<i>Sclerolaena convexula</i>						x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Sclerolaena cornishiana</i>	x	x				x					
	<i>Sclerolaena costata</i>	x					x					
	<i>Sclerolaena cuneata</i>	x	x				x					
	<i>Sclerolaena cuneata</i> x						x					
	<i>Sclerolaena densiflora</i>	x	x				x					
	<i>Sclerolaena diacantha</i>	x	x									
	<i>Sclerolaena eriacantha</i>	x					x					
	<i>Sclerolaena eriacantha</i> x						x					
	<i>Sclerolaena lanicuspis</i>	x	x				x					
	<i>Sclerolaena recurvicuspis</i>	x										
	<i>Sclerolaena tetragona</i>						x					
	<i>Tecticornia auriculata</i>	x	x				x					
	<i>Tecticornia globulifera</i>	x	x	x	x		x		P1			
	<i>Tecticornia halocnemoides</i>	x	x									
	<i>Tecticornia indica</i>	x										
	<i>Tecticornia indica</i> subsp. <i>bidens</i>	x	x				x					
	<i>Tecticornia indica</i> subsp. <i>leiostachya</i>	x	x				x					
	<i>Tecticornia medusa</i>	x	x	x					P3			
	<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>	x										
	<i>Tecticornia</i> sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	x	x	x			x		P1			
	<i>Tecticornia</i> sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)	x	x				x					
	<i>Tecticornia</i> sp. sterile	x										
	<i>Tecticornia undulata</i>	x	x									
	<i>Tecticornia verrucosa</i>	x										
Cleomaceae	<i>Areocleome oxalidea</i>		x				x					
	<i>Arivela viscosa</i>						x					
	<i>Cleome oxalidea</i>	x										

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Cleome viscosa</i>	x	x									
Commelinaceae	<i>Commelina ensifolia</i>	x	x				x					
Convolvulaceae	<i>Bonamia erecta</i>	x	x				x					
	<i>Bonamia media</i>						x					
	<i>Bonamia pannosa</i>						x					
	<i>Bonamia pilbarensis</i>	x	x				x					
	<i>Bonamia rosea</i>						x					
	<i>Convolvulus clementii</i>	x	x				x					
	<i>Convolvulus remotus</i>						x					
	<i>Cressa australis</i>	x										
	<i>Cuscuta victoriana</i>						x					
	<i>Duperreya commixta</i>	x	x				x					
	<i>Evolvulus alsinoides</i>	x	x				x					
	<i>Evolvulus alsinoides</i> var. <i>decumbens</i>						x					
	<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	x	x				x					
	<i>Ipomoea coptica</i>	x										
	<i>Ipomoea lonchophylla</i>	x	x				x					
	<i>Ipomoea muelleri</i>	x	x				x					
	<i>Ipomoea plebeia</i>						x					
	<i>Ipomoea polymorpha</i>						x					
	<i>Ipomoea racemigera</i>	x	x	x			x		P2			
	<i>Operculina aequisejala</i>	x	x				x					
	<i>Polymeria ambigua</i>	x	x				x					
	<i>Polymeria calycina</i>						x					
	<i>Polymeria distigma</i>		x						P3			
<i>Polymeria lanata</i>	x	x										
<i>Polymeria longifolia</i>	x	x				x						
<i>Polymeria mollis</i>		x				x						
Cucurbitaceae	<i>Austrobryonia pilbarensis</i>						x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Citrullus amarus</i>	x	x				x					Y
	<i>Citrullus colocynthis</i>						x					
	<i>Coccinia grandis</i>							1				Y
	<i>Cucumis maderaspatanus</i>	x										
	<i>Cucumis melo</i>	x	x				x					Y
	<i>Cucumis myriocarpus</i>						x					Y
	<i>Cucumis variabilis</i>	x	x				x					
	<i>Trichosanthes cucumerina</i> var. <i>cucumerina</i>						x					Y
<i>Cupressaceae</i>	<i>Callitris columellaris</i>						x					
<i>Cyperaceae</i>	<i>Abildgaardia oxystachya</i>						x					
	<i>Bulbostylis barbata</i>	x	x				x					
	<i>Bulbostylis burbridgeae</i>						x					
	<i>Bulbostylis turbinata</i>	x	x				x					
	<i>Cladium procerum</i>		x	x					P2			
	<i>Cyperus bifax</i>	x	x				x					
	<i>Cyperus bulbosus</i>	x	x				x					
	<i>Cyperus cunninghamii</i>						x					
	<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>	x	x				x					
	<i>Cyperus dactylotes</i>						x					
	<i>Cyperus difformis</i>						x					
	<i>Cyperus hesperius</i>	x	x				x					
	<i>Cyperus iria</i>	x	x				x					
	<i>Cyperus ixiocarpus</i>	x	x				x					
	<i>Cyperus leptocarpus</i>						x					
	<i>Cyperus pulchellus</i>		x				x					
	<i>Cyperus squarrosus</i>	x					x					
	<i>Cyperus vaginatus</i>	x	x				x					
<i>Eleocharis atropurpurea</i>	x	x				x						

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Eleocharis geniculata</i>	x	x				x					
	<i>Eleocharis pallens</i>		x									
	<i>Eleocharis papillosa</i>	x	x	x						P3		
	<i>Fimbristylis cardiocarpa</i>	x										
	<i>Fimbristylis dichotoma</i>	x	x				x					
	<i>Fimbristylis littoralis</i>	x	x				x					
	<i>Fimbristylis microcarya</i>	x	x				x					
	<i>Fimbristylis rara</i>						x					
	<i>Fimbristylis sieberiana</i>	x	x	x	x		x			P3		
	<i>Fimbristylis simulans</i>						x					
	<i>Fuirena ciliaris</i>						x					
	<i>Isolepis cernua</i>	x										
	<i>Lipocarpha microcephala</i>	x										
	<i>Schoenoplectiella dissachantha</i>	x					x					
	<i>Schoenoplectiella laevis</i>						x					
	<i>Schoenoplectus subulatus</i>	x	x				x					
	<i>Schoenus falcatus</i>						x					
<i>Dilleniaceae</i>	<i>Hibbertia glaberrima</i>	x	x				x					
<i>Droseraceae</i>	<i>Drosera finlaysoniana</i>		x				x					
<i>Elatinaceae</i>	<i>Bergia ammannioides</i>	x										
	<i>Bergia pedicellaris</i>						x					
	<i>Bergia perennis</i>	x	x									
	<i>Bergia perennis</i> subsp. <i>obtusifolia</i>	x	x									
	<i>Bergia trimera</i>	x	x				x					
<i>Euphorbiaceae</i>	<i>Adriana tomentosa</i>						x					
	<i>Adriana tomentosa</i> var. <i>tomentosa</i>	x	x				x					
	<i>Euphorbia australis</i>	x	x				x					
	<i>Euphorbia australis</i> var. <i>glabra</i>	x	x	x			x			P3		
	<i>Euphorbia australis</i> var. <i>hispidula</i>	x					x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Euphorbia australis</i> var. <i>subtomentosa</i>	x	x				x					
	<i>Euphorbia biconvexa</i>	x	x				x					
	<i>Euphorbia boophthona</i>	x	x				x					
	<i>Euphorbia careyi</i>	x	x				x					
	<i>Euphorbia</i> cf. <i>boophthona</i>						x					
	<i>Euphorbia coghlanii</i>	x	x				x					
	<i>Euphorbia drummondii</i>						x					
	<i>Euphorbia ferdinandi</i> var. <i>ferdinandi</i>						x					
	<i>Euphorbia hirta</i>						x					Y
	<i>Euphorbia inappendiculata</i> var. <i>inappendiculata</i>		x	x						P2		
	<i>Euphorbia inappendiculata</i> var. <i>queenslandica</i>		x	x			x			P2		
	<i>Euphorbia myrtoides</i>	x										
	<i>Euphorbia schultzii</i>						x					Y
	<i>Euphorbia</i> sp. sterile	x										
	<i>Euphorbia</i> sp. sterile cf. <i>tannensis</i>	x										
	<i>Euphorbia tannensis</i>						x					
	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	x	x				x					
	<i>Euphorbia trigonosperma</i>	x	x				x					
	<i>Euphorbia vaccaria</i>	x	x				x					
	<i>Euphorbia vaccaria</i> var. <i>erucoides</i>	x	x				x					
	<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	x	x									
	<i>Euphorbia wheeleri</i>	x	x				x					
	<i>Jatropha gossypifolia</i>								1			Y
Fabaceae	<i>Acacia</i> ? <i>arida</i> x <i>hilliana</i>						x					
	<i>Acacia adoxa</i>						x					
	<i>Acacia adoxa</i> var. <i>adoxa</i>	x	x				x					
	<i>Acacia adsurgens</i>	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Acacia adsurgens</i> x <i>rhodophloia</i>		x									
	<i>Acacia adsurgens</i> x						x					
	<i>Acacia ampliceps</i>	x					x					
	<i>Acacia ancistrocarpa</i>	x	x				x					
	<i>Acacia ancistrocarpa</i> x <i>citrinoviridis</i>	x										
	<i>Acacia aneura</i>	x	x				x					
	<i>Acacia aneura</i> var. <i>intermedia</i>						x					
	<i>Acacia aneura</i> var. <i>major</i>						x					
	<i>Acacia aneura</i> x <i>ayersiana</i>						x					
	<i>Acacia aptaneura</i>	x	x				x					
	<i>Acacia aptaneura</i> x ?						x					
	<i>Acacia aptaneura</i> x <i>ayersiana</i>						x					
	<i>Acacia aptaneura</i> x <i>paraneura</i>	x										
	<i>Acacia aptaneura</i> x <i>paraneura/pteraneura</i>						x					
	<i>Acacia arida</i>	x	x				x					
	<i>Acacia arida</i> x <i>hilliana</i>	x										
	<i>Acacia arrecta</i>	x	x				x					
	<i>Acacia atkinsiana</i>	x	x				x					
	<i>Acacia ayersiana</i>	x	x				x					
	<i>Acacia bivenosa</i>	x	x				x					
	<i>Acacia bivenosa</i> x <i>sclerosperma</i> subsp. <i>sclerosperma</i>	x										
	<i>Acacia bromilowiana</i>	x	x	x	x		x		P4			
	<i>Acacia catenulata</i>	x										
	<i>Acacia catenulata</i> subsp. <i>occidentalis</i>	x	x				x					
	<i>Acacia citrinoviridis</i>	x	x				x		P1			
	<i>Acacia colei</i>						x					
	<i>Acacia colei</i> var. <i>colei</i>						x					
	<i>Acacia colei</i> var. <i>ileocarpa</i>						x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Acacia coriacea</i>	x					x					
	<i>Acacia coriacea</i> subsp. <i>pendens</i>	x	x				x					
	<i>Acacia cowleana</i>	x	x				x					
	<i>Acacia cuthbertsonii</i> subsp. <i>cuthbertsonii</i>						x					
	<i>Acacia dictyophleba</i>	x	x				x					
	<i>Acacia distans</i>	x					x					
	<i>Acacia effusa</i>	x	x	x	x		x		P3			
	<i>Acacia elachantha</i>	x	x				x					
	<i>Acacia elachantha</i> (Hairy variant)	x										
	<i>Acacia eriopoda</i>	x										
	<i>Acacia hamersleyensis</i>	x	x				x					
	<i>Acacia hilliana</i>	x	x				x					
	<i>Acacia inaequilatera</i>	x	x				x					
	<i>Acacia incurvaneura</i>						x					
	<i>Acacia kempeana</i>	x	x				x					
	<i>Acacia macraneura</i>						x					
	<i>Acacia maitlandii</i>	x	x				x					
	<i>Acacia marramamba</i>						x					
	<i>Acacia melleodora</i>	x	x				x					
	<i>Acacia microneura</i>		x						P1			
	<i>Acacia minyura</i>	x	x				x					
	<i>Acacia monticola</i>	x	x				x					
	<i>Acacia mulganeura</i>						x					
	<i>Acacia orthocarpa</i>						x					
	<i>Acacia pachyacra</i>	x	x				x					
	<i>Acacia paraneura</i>	x					x					
	<i>Acacia pruinocarpa</i>	x	x				x					
	<i>Acacia pteraneura</i>	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Acacia pyrifolia</i>	x	x				x					
	<i>Acacia pyrifolia</i> var. <i>morrisonii</i>	x	x				x					
	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	x	x				x					
	<i>Acacia ramulosa</i> var. <i>linophylla</i>						x					
	<i>Acacia retivenea</i> subsp. <i>clandestina</i>	x										
	<i>Acacia rhodophloia</i>						x					
	<i>Acacia rhodophloia</i> x <i>sibirica</i>		x				x					
	<i>Acacia sclerosperma</i>	x					x					
	<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>	x	x				x					
	<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> x <i>bivenosa</i>	x										
	<i>Acacia sericophylla</i>						x					
	<i>Acacia sibirica</i>	x	x				x					
	<i>Acacia sibirica/kempeana</i>						x					
	<i>Acacia spondylophylla</i>	x	x				x					
	<i>Acacia steedmanii</i> subsp. <i>borealis</i>	x	x				x					
	<i>Acacia stenophylla</i>	x	x									
	<i>Acacia stowardii</i>	x										
	<i>Acacia subtiliformis</i>	x	x	x	x		x		P3			
	<i>Acacia synchronicia</i>	x	x				x					
	<i>Acacia tenuissima</i>	x	x				x					
	<i>Acacia tetragonophylla</i>	x	x				x					
	<i>Acacia trachycarpa</i>	x	x				x					
	<i>Acacia trachycarpa</i> x <i>tumida</i> var. <i>pilbarensis</i>						x					
	<i>Acacia trudgeniana</i>						x					
	<i>Acacia tumida</i>	x	x									
	<i>Acacia tumida</i> var. <i>pilbarensis</i>	x	x				x					
	<i>Acacia tumida</i> var. <i>tumida</i>	x	x				x					
	<i>Acacia validinervia</i>		x				x					
	<i>Acacia victoriae</i>	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Acacia victoriae</i> subsp. <i>victoriae</i>	x	x									
	<i>Acacia wanyu</i>		x				x					
	<i>Acacia xiphophylla</i>	x					x					
	<i>Alhagi maurorum</i>							1				Y
	<i>Alysicarpus muelleri</i>	x	x				x					
	<i>Cajanus cinereus</i>	x	x				x					
	<i>Crotalaria cunninghamii</i>		x				x					
	<i>Crotalaria dissitiflora</i> subsp. <i>benthamiana</i>	x	x				x					
	<i>Crotalaria medicaginea</i>	x	x				x					
	<i>Crotalaria medicaginea</i> var. <i>neglecta</i>	x	x				x					
	<i>Crotalaria novae-hollandiae</i>	x	x				x					
	<i>Crotalaria novae-hollandiae</i> subsp. <i>novae-hollandiae</i>	x	x				x					
	<i>Cullen cinereum</i>	x	x				x					
	<i>Cullen graveolens</i>	x	x				x					
	<i>Cullen lachnostachys</i>		x									
	<i>Cullen leucanthum</i>	x	x				x					
	<i>Cullen leucochaites</i>	x	x				x					
	<i>Cullen martinii</i>	x	x				x					
	<i>Cullen pogonocarpum</i>	x	x				x					
	<i>Cullen stipulaceum</i>						x					
	<i>Desmodiopsis campylocaulon</i>						x					
	<i>Erythrina vespertilio</i>	x	x									
	<i>Gastrolobium floribundum</i>		x									
	<i>Gastrolobium grandiflorum</i>	x	x				x					
	<i>Glycine canescens</i>	x	x				x					
	<i>Glycine falcata</i>	x	x	x	x		x		P3			
	<i>Glycine tabacina</i>		x									
	<i>Gompholobium karijini</i>			x					P2			
	<i>Gompholobium oreophilum</i>	x	x				x					
	<i>Gompholobium polyzygum</i>	x					x					
	<i>Grona muelleri</i>		x				x					
	<i>Indigastrum parviflorum</i>		x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Indigofera colutea</i>	x	x				x					
	<i>Indigofera fractiflexa</i>						x					
	<i>Indigofera fractiflexa</i> subsp. <i>fractiflexa</i>	x	x				x					
	<i>Indigofera georgei</i>	x	x				x					
	<i>Indigofera gilesii</i>	x	x	x	x		x		P3			
	<i>Indigofera hirsuta</i>						x					
	<i>Indigofera linifolia</i>	x	x				x					
	<i>Indigofera linnaei</i>	x					x					
	<i>Indigofera monophylla</i>	x	x				x					
	<i>Indigofera rugosa</i>						x					
	<i>Indigofera trita</i>	x										
	<i>Isotropis atropurpurea</i>	x	x				x					
	<i>Isotropis parviflora</i>	x	x	x			x		P3			
	<i>Isotropis</i> sp. Arid zone (G. Byrne 2775)	x					x					
	<i>Lotus</i> cf. <i>cruentus</i>						x					
	<i>Lotus cruentus</i>	x	x				x					
	<i>Mirbelia viminalis</i>	x	x				x					
	<i>Muelleranthus stipularis</i>		x				x					
	<i>Neptunia dimorphantha</i>	x	x				x					
	<i>Neptunia gracilis</i>	x	x									
	<i>Neptunia gracilis</i> f. <i>gracilis</i>		x									
	<i>Neptunia gracilis</i> forma <i>gracilis</i>	x					x					
	<i>Parkinsonia aculeata</i>							1				Y
	<i>Petalostylis cassioides</i>	x	x				x					
	<i>Petalostylis labicheoides</i>	x	x				x					
	<i>Prosopis glandulosa</i> x <i>velutina</i>							1				Y
	<i>Rhynchosia australis</i>	x	x				x					
	<i>Rhynchosia bungarensis</i>	x	x	x			x		P4			
	<i>Rhynchosia minima</i>	x	x				x					
	<i>Senna alata</i>							1				Y
	<i>Senna artemisioides</i> <i>helmsii</i> x <i>oligophylla</i>	x										
	<i>Senna artemisioides</i>	x	x				x					
	<i>Senna artemisioides</i> subsp. <i>filifolia</i>		x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Senna artemisioides</i> subsp. <i>helmsii</i>	x	x				x					
	<i>Senna artemisioides</i> subsp. <i>helmsii</i> x <i>artemisioides</i> subsp. <i>oligophylla</i>	x										
	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	x	x				x					
	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x						x					
	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x <i>helmsii</i>						x					
	<i>Senna artemisioides</i> subsp. <i>petiolaris</i>						x					
	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>	x					x					
	<i>Senna artemisioides</i> subsp. x <i>sturtii</i>						x					
	<i>Senna</i> cf. <i>ferraria</i>						x					
	<i>Senna charlesiana</i>						x					
	<i>Senna curvistyla</i>	x	x				x					
	<i>Senna ferraria</i>	x					x					
	<i>Senna glaucifolia</i>	x					x					
	<i>Senna glutinosa</i>		x				x					
	<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>		x									
	<i>Senna glutinosa</i> subsp. <i>chatelainiana</i>	x	x				x					
	<i>Senna glutinosa</i> subsp. <i>chatelainiana</i> x						x					
	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	x	x				x					
	<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x <i>luerssenii</i>						x					
	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	x	x				x					
	<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	x					x					
	<i>Senna glutinosa</i> x						x					
	<i>Senna hamersleyensis</i>						x					
	<i>Senna notabilis</i>	x	x				x					
	<i>Senna obtusifolia</i>								1			Y
	<i>Senna pleurocarpa</i>						x					
	<i>Senna pleurocarpa</i> var. <i>angustifolia</i>	x	x				x					
	<i>Senna sericea</i>	x	x				x					
	<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Senna stricta</i>	x	x				x					
	<i>Senna symonii</i>	x	x				x					
	<i>Senna venusta</i>	x	x				x					
	<i>Sesbania cannabina</i>	x	x				x					
	<i>Sesbania formosa</i>	x	x									
	<i>Stylosanthes hamata</i>						x					
	<i>Swainsona canescens</i>						x					
	<i>Swainsona complanata</i>						x					Y
	<i>Swainsona decurrens</i>	x	x				x					
	<i>Swainsona formosa</i>	x	x				x					
	<i>Swainsona incei</i>						x					
	<i>Swainsona kingii</i>	x	x				x					
	<i>Swainsona leana</i>	x	x									
	<i>Swainsona oroboides</i>						x					
	<i>Swainsona tanamiensis</i>	x	x				x					
	<i>Swainsona thompsoniana</i>			x			x		P3			
	<i>Swainsona unifoliolata</i>	x	x				x					
	<i>Tephrosia densa</i>	x	x				x					
	<i>Tephrosia oxalidea</i>	x	x				x					
	<i>Tephrosia rosea</i>						x					
	<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	x	x				x					
	<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)	x	x				x					
	<i>Tephrosia</i> sp. clay soils (S. van Leeuwen et al. PBS 0273)						x					
	<i>Tephrosia</i> sp. D Kimberley Flora (R.D. Royce 1848)						x					
	<i>Tephrosia</i> sp. Newman (A.A. Mitchell PRP 29)	x	x				x					
	<i>Tephrosia</i> sp. Northern (K.F.Kenneally 11950)		x									
	<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	x	x				x					
	<i>Tephrosia stipuligera</i>		x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Tephrosia supina</i>	x					x					
	<i>Tephrosia uniovulata</i>	x					x					
	<i>Tephrosia virens</i>	x	x				x					
	<i>Ulex europaeus</i>							1				Y
	<i>Vachellia farnesiana</i>	x	x				x					Y
	<i>Vigna lanceolata</i>	x	x				x					
	<i>Vigna lanceolata</i> var. <i>lanceolata</i>	x					x					Y
	<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	x	x				x					
Frankeniaceae	<i>Frankenia ambita</i>	x	x				x					
	<i>Frankenia cinerea</i>	x										
	<i>Frankenia irregularis</i>	x										
	<i>Frankenia pauciflora</i>	x	x									
	<i>Frankenia setosa</i>	x					x					
Gentianaceae	<i>Centaurium clementii</i>	x										
	<i>Schenkia australis</i>	x	x				x					
	<i>Schenkia clementii</i>	x					x					
Goodeniaceae	<i>Brunonia australis</i>	x	x				x					
	<i>Brunonia australis</i> var. A Kimberley Flora (K.F. Kenneally 5452)	x										
	<i>Brunonia</i> sp. Long hairs (D.E. Symon 2440)						x					
	<i>Dampiera candidans</i>	x	x				x					
	<i>Dampiera cinerea</i>						x					
	<i>Dampiera metallorum</i>	x	x	x	x		x		P3			
	<i>Goodenia collaris</i>		x									
	<i>Goodenia connata</i>		x									
	<i>Goodenia cusackiana</i>	x	x				x					
	<i>Goodenia heterochila</i>						x					
	<i>Goodenia lamprosperma</i>	x	x				x					
	<i>Goodenia lyrata</i>	x		x	x		x		P3			
	<i>Goodenia microptera</i>	x	x				x					
<i>Goodenia nuda</i>	x	x	x	x		x		P4				
<i>Goodenia omearana</i>	x											

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Goodenia pascua</i>	x	x				x					
	<i>Goodenia prostrata</i>	x	x				x					
	<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727)	x	x	x	x		x		P3			
	<i>Goodenia stellata</i>	x	x				x					
	<i>Goodenia stobbsiana</i>	x	x				x					
	<i>Goodenia tenuiloba</i>						x					
	<i>Goodenia trichophylla</i>	x										
	<i>Goodenia triodiophila</i>	x	x				x					
	<i>Goodenia vilmoriniae</i>						x					
	<i>Scaevola acacioides</i>	x					x					
	<i>Scaevola amblyanthera</i>	x	x				x					
	<i>Scaevola amblyanthera</i> var. <i>amblyanthera</i>	x										
	<i>Scaevola amblyanthera</i> var. <i>centralis</i>	x					x					
	<i>Scaevola browniana</i>	x	x				x					
	<i>Scaevola browniana</i> subsp. <i>browniana</i>	x	x				x					
	<i>Scaevola collaris</i>	x					x					
	<i>Scaevola parvifolia</i>	x	x				x					
	<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	x	x				x					
	<i>Scaevola</i> sp. Mt Bruce (M.E. Trudgen 1333)	x	x				x					
	<i>Scaevola spinescens</i>	x	x				x					
	<i>Velleia connata</i>	x					x					
<i>Gyrostemonaceae</i>	<i>Codonocarpus cotinifolius</i>	x	x				x					
	<i>Gonocarpus ephemerus</i>	x	x									
	<i>Haloragis gossei</i>	x	x				x					
<i>Haloragaceae</i>	<i>Haloragis gossei</i> var. <i>gossei</i>	x	x				x					
	<i>Haloragis maierae</i>	x	x				x					
	<i>Haloragis trigonocarpa</i>						x					
	<i>Corynotheca pungens</i>						x					
<i>Hemerocallidaceae</i>	<i>Tricoryne</i> sp. Hamersley Range (S. van Leeuwen 915)	x	x				x					
<i>Hydrocharitaceae</i>	<i>Vallisneria annua</i>						x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
Iridaceae	<i>Moraea flaccida</i>							1				Y
	<i>Moraea miniata</i>							1				Y
Juncaginaceae	<i>Triglochin hexagona</i>	x										
Lamiaceae	<i>Clerodendrum floribundum</i>							x				
	<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>	x	x					x				
	<i>Clerodendrum tomentosum</i>							x				
	<i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i>	x	x					x				
	<i>Dicrasyllis cordifolia</i>	x	x					x				
	<i>Dicrasyllis georgei</i>	x						x				
	<i>Newcastelia clavipetala</i>	x	x					x				
	<i>Plectranthus scutellarioides</i>	x										
	<i>Prostanthera albiflora</i>	x	x					x				
	<i>Teucrium disjunctum</i>	x	x					x				
	<i>Teucrium pilbaranum</i>			x				x		P2		
<i>Teucrium teucriiflorum</i>							x					
Lauraceae	<i>Cassytha aurea</i>							x				
	<i>Cassytha capillaris</i>							x				
	<i>Cassytha filiformis</i>	x	x					x				
	<i>Cassytha racemosa</i> forma <i>pilosa</i>							x				
Linderniaceae	<i>Lindernia</i> sp. Pilbara (M.N. Lyons & L. Lewis FV 1069)	x	x	x						P1		
	<i>Striga curviflora</i>		x									
	<i>Striga squamigera</i>		x									
Loganiaceae	<i>Mitrasacme connata</i>							x				
Loranthaceae	<i>Amyema bifurcata</i>	x						x				
	<i>Amyema fitzgeraldii</i>	x	x					x				
	<i>Amyema gibberula</i> var. <i>gibberula</i>	x	x					x				
	<i>Amyema hilliana</i>	x	x					x				
	<i>Amyema miquelii</i>	x	x					x				
	<i>Amyema preissii</i>	x	x					x				
	<i>Amyema sanguinea</i>		x					x				
	<i>Amyema sanguinea</i> var. <i>pulchra</i>							x				

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Amyema sanguinea</i> var. <i>sanguinea</i>	x	x				x					
	<i>Diplatia grandibractea</i>	x	x				x					
	<i>Lysiana casuarinae</i>	x	x				x					
	<i>Lysiana murrayi</i>	x					x					
Lythraceae	<i>Ammannia auriculata</i>	x	x				x					
	<i>Ammannia baccifera</i>	x	x				x					
	<i>Ammannia multiflora</i>	x					x					
	<i>Rotala diandra</i>						x					
	<i>Rotala mexicana</i>		x				x					
	<i>Rotala occultiflora</i>						x					
Malvaceae	<i>Abutilon amplum</i>						x					
	<i>Abutilon</i> cf. <i>lepidum</i>						x					
	<i>Abutilon cryptopetalum</i>	x	x				x					
	<i>Abutilon cunninghamii</i>	x	x				x					
	<i>Abutilon fraseri</i>						x					
	<i>Abutilon fraseri</i> subsp. <i>fraseri</i>	x	x									
	<i>Abutilon lepidum</i>	x	x				x					
	<i>Abutilon leucopetalum</i>	x	x				x					
	<i>Abutilon macrum</i>	x	x				x					
	<i>Abutilon malvifolium</i>	x	x				x					
	<i>Abutilon otocarpum</i>	x	x				x					
	<i>Abutilon oxycarpum</i>						x					
	<i>Abutilon oxycarpum</i> subsp. <i>Prostrate</i> (A.A. Mitchell PRP 1266)		x				x					
	<i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618)	x	x				x					
	<i>Abutilon</i> sp. <i>Pilbara</i> (W.R. Barker 2025)	x	x				x					
	<i>Abutilon</i> sp. <i>Pritzelianum</i> (S. van Leeuwen 5095)						x					
	<i>Androcalva loxophylla</i>						x					
	<i>Androcalva luteiflora</i>	x	x				x		P1			
	<i>Brachychiton acuminatus</i>	x	x				x					
	<i>Brachychiton gregorii</i>						x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Corchorus crozophorifolius</i>	x	x				x					
	<i>Corchorus elachocarpus</i>	x										
	<i>Corchorus incanus</i> subsp. <i>incanus</i>						x					
	<i>Corchorus incanus</i> subsp. <i>lithophilus</i>	x	x				x					
	<i>Corchorus laniflorus</i>						x					
	<i>Corchorus lasiocarpus</i>						x					
	<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	x	x				x					
	<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	x	x				x					
	<i>Corchorus parviflorus</i>						x					
	<i>Corchorus sidoides</i>	x	x				x					
	<i>Corchorus sidoides</i> subsp. <i>sidoides</i>	x	x				x					
	<i>Corchorus</i> sp. Hamersley Range (S. van Leeuwen 3586)						x					
	<i>Corchorus tectus</i>	x	x				x					
	<i>Corchorus tridens</i>	x	x				x					
	<i>Corchorus walcottii</i>						x					
	<i>Gossypium australe</i>	x	x				x					
	<i>Gossypium robinsonii</i>	x	x				x					
	<i>Gossypium robinsonii</i> x <i>sturtianum</i>	x										
	<i>Gossypium sturtianum</i>	x	x				x					
	<i>Gossypium sturtianum</i> var. <i>sturtianum</i>	x	x									
	<i>Hannafordia bissillii</i> subsp. <i>bissillii</i>	x										
	<i>Hibiscus brachychlaenus</i>	x	x				x					
	<i>Hibiscus brachysiphonius</i>	x										
	<i>Hibiscus burtonii</i>	x	x				x					
	<i>Hibiscus coatesii</i>	x	x				x					
	<i>Hibiscus goldsworthii</i>						x					
	<i>Hibiscus haynaldii</i>						x					
	<i>Hibiscus leptocladus</i>	x	x				x					
	<i>Hibiscus</i> sp. Gardneri (A.L. Payne PRP 1435)						x					
	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	x	x	x			x		P2			

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Hibiscus</i> sp. Mt Robinson (G. Byrne 3537)	x	x				x					
	<i>Hibiscus sturtii</i>	x	x				x					
	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	x	x				x					
	<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>						x					
	<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	x	x				x					
	<i>Hibiscus sturtii</i> var. <i>truncatus</i>						x					
	<i>Hibiscus verdcourtii</i>		x				x					
	<i>Lawrencia densiflora</i>	x	x				x					
	<i>Lawrencia glomerata</i>	x	x									
	<i>Lawrencia helmsii</i>	x	x				x					
	<i>Malvastrum americanum</i>	x	x				x					Y
	<i>Melhania oblongifolia</i>	x	x				x					
	<i>Seringia elliptica</i>	x					x					Y
	<i>Seringia exastia</i>		x	x								
	<i>Seringia nephrosperma</i>						x					
	<i>Seringia velutina</i>						x					
	<i>Sida arenicola</i>	x	x				x					
	<i>Sida arsiniata</i>	x	x				x					
	<i>Sida calyxhymenia</i>	x	x				x					
	<i>Sida cardiophylla</i>	x	x				x					
	<i>Sida clementii</i>						x					
	<i>Sida echinocarpa</i>	x	x				x					
	<i>Sida ectogama</i>		x				x					
	<i>Sida fibulifera</i>	x	x				x					
	<i>Sida intricata</i>						x					
	<i>Sida platycalyx</i>	x	x				x					
	<i>Sida rohlenae</i>	x	x				x					
	<i>Sida rohlenae</i> subsp. <i>rohlenae</i>						x					
	<i>Sida</i> sp. Articulation below (A.A. Mitchell PRP 1605)	x	x				x					
	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	x	x	x			x		P4			

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Sida</i> sp. dark green fruits (S. van Leeuwen 2260)	x	x				x					
	<i>Sida</i> sp. Excedentifolia (J.L. Egan 1925)	x	x				x					
	<i>Sida</i> sp. Golden calyces glabrous (H.N. Foote 32)						x		P1			
	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)						x					
	<i>Sida</i> sp. L (A.M. Ashby 4202)	x	x				x					
	<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	x	x				x		P1			
	<i>Sida</i> sp. Rabbit Flat (B.J. Carter 626)	x	x				x					
	<i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842)						x					
	<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	x	x				x					
	<i>Sida</i> sp. Supplejack Station (T.S. Henshall 2345)	x	x				x					
	<i>Sida</i> sp. verrucose glands (F.H. Mollemans 2423)	x										
	<i>Sida spinosa</i>		x				x					
	<i>Sida trichopoda</i>	x	x									
	<i>Triumfetta appendiculata</i>	x	x									
	<i>Triumfetta chaetocarpa</i>		x				x					
	<i>Triumfetta clementii</i>						x					
	<i>Triumfetta leptacantha</i>	x	x				x					
	<i>Triumfetta maconochieana</i>	x	x				x					
	<i>Waltheria indica</i>	x	x				x					
	<i>Waltheria virgata</i>	x					x					
<i>Marsileaceae</i>	<i>Marsilea drummondii</i>		x									
	<i>Marsilea exarata</i>						x					
	<i>Marsilea hirsuta</i>	x	x				x					
<i>Menispermaceae</i>	<i>Tinospora smilacina</i>						x					
<i>Molluginaceae</i>	<i>Hypertelis cerviana</i>						x					
	<i>Trigastrotheca molluginea</i>	x	x				x					
<i>Montiaceae</i>	<i>Calandrinia ptychosperma</i>	x					x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Calandrinia pumila</i>						X					
Moraceae	<i>Ficus aculeata</i> var. <i>indecora</i>	X	X									
	<i>Ficus brachypoda</i>	X	X				X					
	<i>Ficus platypoda</i>	X	X				X					
	<i>Ficus virens</i>		X				X					
	<i>Ficus virens</i> var. <i>virens</i>	X	X									
	<i>Calytrix carinata</i>	X	X				X					
Myrtaceae	<i>Corymbia aspera</i>						X					
	<i>Corymbia candida</i>	X	X				X					
	<i>Corymbia candida</i> subsp. <i>candida</i>		X									
	<i>Corymbia deserticola</i>	X					X					
	<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	X	X				X					
	<i>Corymbia ferriticola</i>	X	X				X					
	<i>Corymbia hamersleyana</i>	X	X				X					
	<i>Eucalyptus alatissima</i>		X									
	<i>Eucalyptus aridimontana</i>	X										
	<i>Eucalyptus camaldulensis</i>	X					X					
	<i>Eucalyptus camaldulensis</i> subsp. <i>obtusata</i>	X	X				X					
	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	X					X					
	<i>Eucalyptus ewartiana</i>	X	X				X					
	<i>Eucalyptus gamophylla</i>	X	X				X					
	<i>Eucalyptus hamersleyana</i>	X										
	<i>Eucalyptus kingsmillii</i>	X	X				X					
	<i>Eucalyptus kingsmillii</i> subsp. <i>kingsmillii</i>		X									
	<i>Eucalyptus leucophloia</i>	X					X					
	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	X	X				X					
	<i>Eucalyptus pilbarensis</i>	X	X				X					
	<i>Eucalyptus repullulans</i>	X	X				X					
<i>Eucalyptus socialis</i>	X											
<i>Eucalyptus socialis</i> subsp. <i>eucentrica</i>	X	X				X						

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Eucalyptus tephrodes</i>	x	x									
	<i>Eucalyptus trivalva</i>	x	x					x				
	<i>Eucalyptus victrix</i>	x	x					x				
	<i>Eucalyptus xerothermica</i>	x	x					x				
	<i>Lamarchea sulcata</i>	x	x									
	<i>Melaleuca argentea</i>	x	x					x				
	<i>Melaleuca bracteata</i>	x	x					x				
	<i>Melaleuca eleuterostachya</i>							x				
	<i>Melaleuca glomerata</i>	x	x					x				
	<i>Melaleuca lasiandra</i>							x				
	<i>Melaleuca leucadendra</i>							x				
	<i>Melaleuca linophylla</i>							x				
	<i>Melaleuca xerophila</i>	x	x					x				
Nyctaginaceae	<i>Boerhavia burbridgeana</i>	x	x					x				
	<i>Boerhavia coccinea</i>	x	x					x				
	<i>Boerhavia gardneri</i>							x				
	<i>Boerhavia paludosa</i>							x				
	<i>Boerhavia repleta</i>	x	x					x				
	<i>Boerhavia schomburgkiana</i>							x				
Oleaceae	<i>Jasminum didymum</i>	x	x									
	<i>Jasminum didymum</i> subsp. <i>lineare</i>	x	x					x				
Onagraceae	<i>Ludwigia perennis</i>							x				
Ophioglossaceae	<i>Ophioglossum lusitanicum</i>							x				
Orobanchaceae	<i>Striga curviflora</i>							x				
	<i>Striga squamigera</i>	x										
Oxalidaceae	<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)			x				x		P2		
Papaveraceae	<i>Argemone ochroleuca</i>	x	x					x				Y
	<i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>							x				
Pedaliaceae	<i>Josephinia eugeniae</i>							x				
Phrymaceae	<i>Mimulus</i> aff. <i>repens</i>							x				Y
	<i>Mimulus gracilis</i>	x	x					x				Y
	<i>Mimulus repens</i>	x										

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Peplidium aithocheilum</i>						x					
	<i>Peplidium maritimum</i>						x					
	<i>Peplidium muelleri</i>						x					
	<i>Peplidium</i> sp. C Evol. Fl. Fauna Arid Aust. (N.T. Burbidge & A. Kanis 8158)						x					
	<i>Peplidium</i> sp. E Evol. Fl. Fauna Arid Aust. (A.S. Weston 12768)	x										
	<i>Uvedalia linearis</i>		x									
Phyllanthaceae	<i>Cathetus virgatus</i>	x					x					
	<i>Dendrophyllanthus erwinii</i>						x					
	<i>Kirganelia baccata</i>	x					x					
	<i>Nellica maderaspatensis</i>	x					x					
	<i>Notoleptopus decaisnei</i>						x					
	<i>Notoleptopus decaisnei</i> var. <i>decaisnei</i>						x					
	<i>Notoleptopus decaisnei</i> var. <i>Orbicularis</i> (A.B. Craig 428)						x					
	<i>Sauropus</i> sp. Koodaideri detritals (J. Naaykens & J. Hurter JH 11213)	x										
	<i>Synostemon hamersleyensis</i>	x	x	x			x		T			
<i>Synostemon rhytidospermus</i>	x	x				x						
Pittosporaceae	<i>Pittosporum angustifolium</i>		x				x					
Plantaginaceae	<i>Stemodia grossa</i>	x	x				x					
	<i>Stemodia kingii</i>	x	x				x					
	<i>Stemodia</i> sp. indet						x					
	<i>Stemodia viscosa</i>	x					x					
Plumbaginaceae	<i>Muellerolimon salicorniaceum</i>	x					x					
	<i>Plumbago zeylanica</i>	x	x				x					
Poaceae	<i>Acrachne racemosa</i>	x	x				x					
	<i>Amhipogon caricinus</i>						x					
	<i>Amhipogon caricinus</i> var. <i>caricinus</i>						x					
	<i>Amhipogon sericeus</i>	x	x				x					
	<i>Aristida burbridgeae</i>		x				x					
	<i>Aristida contorta</i>	x	x				x					
	<i>Aristida holathera</i>	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Aristida holathera</i> var. <i>holathera</i>	x	x				x					
	<i>Aristida hygrometrica</i>	x	x				x					
	<i>Aristida inaequiglumis</i>	x	x				x					
	<i>Aristida ingrata</i>						x					
	<i>Aristida jerichoensis</i>		x									
	<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	x	x	x	x		x		P3			
	<i>Aristida latifolia</i>	x	x				x					
	<i>Aristida lazaridis</i>	x	x	x			x		P2			
	<i>Aristida obscura</i>						x					
	<i>Aristida pruinosa</i>	x	x				x					
	<i>Astrebla elymoides</i>	x	x				x					
	<i>Bothriochloa ewartiana</i>	x	x				x					
	<i>Cenchrus ciliaris</i>	x	x				x					Y
	<i>Cenchrus ciliaris</i> x <i>setiger</i>	x										
	<i>Cenchrus echinatus</i>	x	x									Y
	<i>Cenchrus setiger</i>	x	x				x					Y
	<i>Chloris barbata</i>	x	x				x					Y
	<i>Chloris pectinata</i>	x	x				x					Y
	<i>Chloris pumilio</i>	x	x									
	<i>Chloris virgata</i>	x	x				x					Y
	<i>Chrysopogon fallax</i>	x	x				x					Y
	<i>Cymbopogon ambiguus</i>	x	x				x					
	<i>Cymbopogon obtectus</i>	x	x				x					Y
	<i>Cymbopogon procerus</i>						x					
	<i>Cynodon convergens</i>		x				x					
	<i>Cynodon dactylon</i>						x					Y
	<i>Cynodon prostratus</i>	x	x				x					
	<i>Cynodon tenellus</i>		x				x					
	<i>Dactyloctenium radulans</i>	x	x				x					Y
	<i>Dichanthium fecundum</i>						x					
	<i>Dichanthium sericeum</i>	x										
	<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	x	x				x					
	<i>Dichanthium sericeum</i> subsp. <i>polystachyum</i>	x	x									

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Dichanthium sericeum</i> subsp. <i>sericeum</i>						X					
	<i>Digitaria ammophila</i>						X					
	<i>Digitaria brownii</i>	X	X				X					
	<i>Digitaria ciliaris</i>	X	X				X					Y
	<i>Digitaria coenicola</i>	X										
	<i>Digitaria ctenantha</i>						X					
	<i>Diplachne fusca</i> subsp. <i>fusca</i>	X	X				X					
	<i>Diplachne fusca</i> subsp. <i>muelleri</i>	X					X					Y
	<i>Echinochloa colona</i>	X	X				X					Y
	<i>Elytrophorus spicatus</i>	X	X				X					
	<i>Enneapogon avenaceus</i>	X	X				X					
	<i>Enneapogon caerulescens</i>	X	X				X					Y
	<i>Enneapogon cylindricus</i>	X	X				X					
	<i>Enneapogon lindleyanus</i>	X	X				X					
	<i>Enneapogon pallidus</i>		X									
	<i>Enneapogon polyphyllus</i>	X	X				X					
	<i>Enneapogon robustissimus</i>	X	X				X					
	<i>Enteropogon ramosus</i>	X	X				X					
	<i>Eragrostis</i> aff. <i>lanicaulis</i>						X					
	<i>Eragrostis australasica</i>	X										
	<i>Eragrostis crateriformis</i>		X	X			X		P3			
	<i>Eragrostis cumingii</i>	X	X				X					
	<i>Eragrostis desertorum</i>	X	X				X					
	<i>Eragrostis dielsii</i>	X	X				X					
	<i>Eragrostis elongata</i>		X				X					
	<i>Eragrostis eriopoda</i>	X	X				X					
	<i>Eragrostis falcata</i>	X	X				X					
	<i>Eragrostis leptocarpa</i>	X					X					
	<i>Eragrostis olida</i>	X	X									
	<i>Eragrostis pergracilis</i>	X	X				X					
	<i>Eragrostis setifolia</i>	X	X				X					
	<i>Eragrostis setifolia</i> x <i>xerophila</i> intergrade	X										

Family	Taxon	Source							Conservation Status			Introduced	
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act		
	<i>Eragrostis</i> sp. Erect spikelets (P.K. Latz 2122)	x	x	x						P3			
	<i>Eragrostis</i> sp. Mt Robinson (S. van Leeuwen 4109)			x	x			x		P2			
	<i>Eragrostis speciosa</i>	x	x					x					
	<i>Eragrostis tenellula</i>	x	x					x					
	<i>Eragrostis xerophila</i>	x						x		P1			
	<i>Eriachne</i> aff. <i>benthamii</i>							x					
	<i>Eriachne aristidea</i>	x	x					x					
	<i>Eriachne benthamii</i>	x	x					x					
	<i>Eriachne ciliata</i>		x					x					
	<i>Eriachne dominii</i>	x											
	<i>Eriachne flaccida</i>	x	x					x					
	<i>Eriachne gardneri</i>	x	x					x					
	<i>Eriachne helmsii</i>	x	x					x					
	<i>Eriachne lanata</i>	x	x					x					
	<i>Eriachne mucronata</i>	x	x					x					
	<i>Eriachne obtusa</i>							x					
	<i>Eriachne ovata</i>	x											
	<i>Eriachne pulchella</i>	x	x					x					
	<i>Eriachne pulchella</i> subsp. <i>dominii</i>							x					
	<i>Eriachne pulchella</i> subsp. <i>pulchella</i>	x	x					x					
	<i>Eriachne tenuiculmis</i>	x	x					x					
	<i>Eulalia aurea</i>	x	x					x					
	<i>Eulalia fulva</i>	x											
	<i>Eulalia simonii</i>		x										
	<i>Eulalia</i> sp. Three Rivers Station (B.Forsyth AQ6789133)							x					
	<i>Heteropogon contortus</i>	x						x					
	<i>Imperata cylindrica</i>		x					x					
	<i>Ischaemum albobillosum</i>							x					
	<i>Iseilema</i> cf. <i>vaginiflorum</i>							x					
	<i>Iseilema dolichotrichum</i>							x					
	<i>Iseilema eremaeum</i>							x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Iseilema membranaceum</i>	x	x				x					
	<i>Iseilema vaginiflorum</i>	x	x				x					
	<i>Leptochloa fusca</i> subsp. <i>muelleri</i>	x										
	<i>Melinis repens</i>	x					x					Y
	<i>Panicum australiense</i>		x									
	<i>Panicum decompositum</i>	x	x				x					
	<i>Panicum effusum</i>	x					x					
	<i>Panicum laevinode</i>	x	x				x					Y
	<i>Paractaenum refractum</i>						x					
	<i>Paraneurachne muelleri</i>	x	x				x					
	<i>Paspalidium</i> ? aff. <i>jubiflorum</i>	x										
	<i>Paspalidium basicladum</i>	x	x				x					
	<i>Paspalidium</i> cf. <i>clementii</i>						x					
	<i>Paspalidium</i> cf. <i>jubiflorum</i>						x					
	<i>Paspalidium clementii</i>	x	x				x					
	<i>Paspalidium constrictum</i>						x					
	<i>Paspalidium gracile</i>	x	x									
	<i>Paspalidium jubiflorum</i>	x	x				x					
	<i>Paspalidium rarum</i>	x	x				x					
	<i>Paspalidium reflexum</i>	x										
	<i>Paspalidium</i> sp. indet						x					
	<i>Paspalidium tabulatum</i>						x					
	<i>Paspalum dilatatum</i>	x	x									Y
	<i>Perotis rara</i>	x	x				x					
	<i>Poaceae</i> sp. indet						x					
	<i>Polypogon monspeliensis</i>						x					
	<i>Rostraria cristata</i>						x					
	<i>Schizachyrium fragile</i>	x	x				x					
	<i>Setaria dielsii</i>	x	x				x					Y
	<i>Setaria surgens</i>						x					Y
	<i>Setaria verticillata</i>	x	x				x					Y
	<i>Sorghum plumosum</i>						x					
	<i>Sorghum plumosum</i> var. <i>plumosum</i>		x				x					

Family	Taxon	Source							Conservation Status			Introduced	
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act		
	<i>Sorghum timorense</i>		x				x						Y
	<i>Sporobolus australasicus</i>	x	x				x						
	<i>Sporobolus caroli</i>	x											
	<i>Sporobolus mitchellii</i>	x	x										
	<i>Sporobolus ramigerus</i>		x										
	<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	x	x	x			x			P3			
	<i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471)	x	x				x						
	<i>Themeda triandra</i>	x	x				x						Y
	<i>Tragus australianus</i>	x	x				x						
	<i>Triodia angusta</i>	x	x				x						
	<i>Triodia basedowii</i>	x	x				x						
	<i>Triodia basitricha</i>		x	x						P3			
	<i>Triodia biflora</i>	x	x				x						
	<i>Triodia bitextura</i>		x										
	<i>Triodia brizoides</i>	x					x						
	<i>Triodia epactia</i>	x	x				x						
	<i>Triodia lanigera</i>						x						
	<i>Triodia longiceps</i>	x	x				x						
	<i>Triodia melvillei</i>						x						
	<i>Triodia pungens</i>	x	x				x						
	<i>Triodia schinzii</i>	x	x				x						
	<i>Triodia secunda</i>						x						
	<i>Triodia</i> Karijini	x		x			x			P2			
	<i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739)	x	x	x			x			P3			
	<i>Triodia vanleeuwenii</i>	x	x				x						
	<i>Triodia veniciae</i>			x						P1			
	<i>Triodia wiseana</i>	x	x				x						
	<i>Tripogonella loliiformis</i>						x						
	<i>Triraphis mollis</i>	x	x				x						
	<i>Urochloa</i> cf. <i>piligera</i>						x						
	<i>Urochloa occidentalis</i>						x						

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Urochloa occidentalis</i> var. <i>ciliata</i>	x	x				x					
	<i>Urochloa occidentalis</i> var. <i>occidentalis</i>	x	x				x					
	<i>Urochloa piligera</i>	x	x				x					
	<i>Urochloa pubigera</i>						x					
	<i>Urochloa subquadripa</i>		x				x					
	<i>Yakirra australiensis</i>	x					x					
	<i>Yakirra australiensis</i> var. <i>australiensis</i>	x					x					
Polygalaceae	<i>Polygala glaucifolia</i>	x	x				x					
	<i>Polygala isingii</i>	x					x					
	<i>Polygala longifolia</i>						x					
Polygonaceae	<i>Duma florulenta</i>	x	x				x					
	<i>Muehlenbeckia florulenta</i>	x										
	<i>Rumex vesicarius</i>	x	x				x					Y
Portulacaceae	<i>Calandrinia ptychosperma</i>		x									
	<i>Calandrinia pumila</i>		x									
	<i>Portulaca</i> cf. <i>filifolia</i>						x					
	<i>Portulaca filifolia</i>	x	x									
	<i>Portulaca intraterranea</i>	x	x				x					
	<i>Portulaca oleracea</i>	x	x				x					Y
	<i>Portulaca pilosa</i>	x					x					
Potamogetonaceae	<i>Potamogeton tepperi</i>						x					
	<i>Potamogeton tricarinatus</i>						x					
	<i>Stuckenia pectinata</i>						x					
Pottiaceae	<i>Barbula ehrenbergii</i>			x						P1		
Primulaceae	<i>Lysimachia arvensis</i>						x					
	<i>Samolus repens</i>						x					
	<i>Samolus</i> sp. Fortescue Marsh (A. Markey & R. Coppen FM 9702)	x	x	x			x			P1		
	<i>Samolus</i> sp. Millstream (M.I.H. Brooker 2076)	x										
	<i>Samolus</i> sp. Millstream (M.I.H. Brooker 2076)		x									
Proteaceae	<i>Grevillea berryana</i>						x					Y

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>						x					
	<i>Grevillea nematophylla</i>						x					
	<i>Grevillea pyramidalis</i>	x	x				x					
	<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	x	x				x					
	<i>Grevillea saxicola</i>	x	x	x			x		P3			
	<i>Grevillea striata</i>	x	x				x					
	<i>Grevillea wickhamii</i>	x	x				x					
	<i>Grevillea wickhamii</i> subsp. <i>aprica</i>						x					
	<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	x	x				x					
	<i>Hakea chordophylla</i>	x	x				x					
	<i>Hakea lorea</i>	x	x				x					
	<i>Hakea lorea</i> subsp. <i>lorea</i>	x	x				x					
	<i>Hakea macrocarpa</i>						x					
	Pteridaceae	<i>Adiantum capillus-veneris</i>			x					P2		
<i>Cheilanthes austrotenuifolia</i>		x	x				x					
<i>Cheilanthes brownii</i>		x	x				x					
<i>Cheilanthes contigua</i>		x	x									
<i>Cheilanthes lasiophylla</i>		x	x				x					
<i>Cheilanthes sieberi</i>		x					x					
<i>Cheilanthes sieberi</i> subsp. <i>pseudovellea</i>		x	x									
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		x	x				x					
<i>Paraceterach reynoldsii</i>		x										
<i>Pellaea reynoldsii</i>			x				x					
Rhamnaceae	<i>Cryptandra monticola</i>						x					
	<i>Ventilago viminalis</i>						x					
	<i>Ziziphus mauritiana</i>								1			Y
Rosaceae	<i>Rubus anglocandicans</i>								1			Y
	<i>Rubus laudatus</i>								1			Y
	<i>Rubus rugosus</i>								1			Y
	<i>Rubus ulmifolius</i>								1			Y
Rubiaceae	<i>Dolichocarpa crouchiana</i>	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced	
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act		
	<i>Dolichocarpa</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)			x						P3			
	<i>Kohautia australiensis</i>	x	x	x					x	P2			
	<i>Oldenlandia galioides</i>								x				
	<i>Pomax rupestris</i>	x	x										
	<i>Psydrax latifolia</i>	x	x						x				
	<i>Psydrax suaveolens</i>								x				
	<i>Spermacoce brachystema</i>								x				
	<i>Synaptantha tillaeacea</i>	x							x				
	<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	x	x						x				
Santalaceae	<i>Anthobolus leptomerioides</i>	x	x						x				
	<i>Exocarpos aphyllus</i>								x				
	<i>Exocarpos sparteus</i>	x	x						x				
	<i>Santalum lanceolatum</i>	x	x						x				
	<i>Santalum spicatum</i>	x	x						x				
Sapindaceae	<i>Alectryon oleifolius</i>	x	x										
	<i>Atalaya hemiglauca</i>	x	x						x				
	<i>Diplopeltis stuartii</i>								x				
	<i>Diplopeltis stuartii</i> var. <i>stuartii</i>		x										
	<i>Dodonaea coriacea</i>	x	x						x				
	<i>Dodonaea lanceolata</i>	x	x						x				
	<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	x	x						x				
	<i>Dodonaea pachyneura</i>	x	x						x				
	<i>Dodonaea petiolaris</i>	x							x				
	<i>Dodonaea viscosa</i>	x	x										
	<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>								x				
	<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>		x						x				
<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>								x					
Scrophulariaceae	<i>Eremophila canaliculata</i>								x				
	<i>Eremophila compacta</i> subsp. <i>compacta</i>								x				
	<i>Eremophila cuneifolia</i>	x	x						x				
	<i>Eremophila forrestii</i>	x							x				

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		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	x	x				x					
	<i>Eremophila fraseri</i>	x	x									
	<i>Eremophila fraseri</i> subsp. <i>fraseri</i>	x	x				x					
	<i>Eremophila jucunda</i>	x					x					
	<i>Eremophila jucunda</i> subsp. <i>pulcherrima</i>	x	x				x					
	<i>Eremophila lachnocalyx</i>						x					
	<i>Eremophila lanceolata</i>	x	x				x					
	<i>Eremophila latrobei</i>	x	x				x					
	<i>Eremophila latrobei</i> subsp. <i>filiformis</i>	x	x				x					
	<i>Eremophila latrobei</i> subsp. <i>glabra</i>						x					
	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	x	x				x					
	<i>Eremophila longifolia</i>	x	x				x					
	<i>Eremophila maculata</i> subsp. <i>brevifolia</i>	x										
	<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	x	x	x			x		P4			
	<i>Eremophila magnifica</i> subsp. <i>velutina</i>			x					P3			
	<i>Eremophila naaykensis</i>	x		x			x		P3			
	<i>Eremophila petrophila</i> subsp. <i>petrophila</i>						x					
	<i>Eremophila platycalyx</i> subsp. Neds Creek (N.H. Speck 1228)	x										
	<i>Eremophila platycalyx</i> subsp. <i>pardalota</i>						x					
	<i>Eremophila pusilliflora</i>			x					P2			
	<i>Eremophila</i> sp. West Angelas (S. van Leeuwen 4068)			x			x		P2			
	<i>Eremophila spongiocharpa</i>	x	x	x	x		x		P3			
	<i>Eremophila tietkensis</i>		x				x					
	<i>Eremophila youngii</i> subsp. <i>lepidota</i>	x	x	x			x		P4			
	<i>Myoporum montanum</i>	x	x				x					
Solanaceae	<i>Datura leichhardtii</i>		x				x					Y
	<i>Datura leichhardtii</i> subsp. <i>leichhardtii</i>	x	x									Y
	<i>Nicotiana benthamiana</i>	x	x				x					
	<i>Nicotiana</i> cf. <i>rosulata</i>						x					
	<i>Nicotiana heterantha</i>	x	x				x					Y

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Nicotiana obliqua</i>		x				x					
	<i>Nicotiana occidentalis</i>	x	x				x					
	<i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>	x										
	<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	x										
	<i>Nicotiana rosulata</i>	x					x					
	<i>Nicotiana rosulata</i> subsp. <i>rosulata</i>	x										
	<i>Nicotiana simulans</i>	x	x				x					
	<i>Nicotiana umbratica</i>						x		P3			
	<i>Solanum</i> aff. <i>esuriale</i>						x					
	<i>Solanum ashbyae</i>						x					
	<i>Solanum centrale</i>		x				x					
	<i>Solanum chippendalei</i>	x	x									
	<i>Solanum cleistogamum</i>	x	x				x					
	<i>Solanum diversiflorum</i>	x	x									
	<i>Solanum elaeagnifolium</i>							1				Y
	<i>Solanum elatius</i>	x	x				x					
	<i>Solanum ferocissimum</i>						x					
	<i>Solanum gabrielae</i>	x	x				x					
	<i>Solanum horridum</i>	x	x				x					
	<i>Solanum kentrocaule</i>			x			x		P3			
	<i>Solanum lasiophyllum</i>	x	x				x					
	<i>Solanum linnaeanum</i>							1				Y
	<i>Solanum morrisonii</i>	x	x									
	<i>Solanum nigrum</i>	x	x				x					Y
	<i>Solanum phlomoides</i>	x	x				x					
	<i>Solanum</i> sp. <i>indet</i>						x					
	<i>Solanum sturtianum</i>	x	x									
Stylidiaceae	<i>Stylidium fluminense</i>						x					Y
	<i>Stylidium weeliwoffi</i>	x	x	x	x		x		P3			
Surianaceae	<i>Stylobasium spathulatum</i>	x	x				x					
Tamaricaceae	<i>Tamarix aphylla</i>							1				Y
Thelypteridaceae	<i>Ampelopteris prolifera</i>			x					P3			
Thymelaeaceae	<i>Pimelea forrestiana</i>	x	x				x					

Family	Taxon	Source							Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	BHP	WAOL	DBCA	BC Act	EPBC Act	
	<i>Pimelea microcephala</i> subsp. <i>microcephala</i>	x	x				x					
Typhaceae	<i>Typha domingensis</i>		x				x					
Verbenaceae	<i>Lantana camara</i>							1				Y
Violaceae	<i>Afrohybanthus aurantiacus</i>		x									
	<i>Hybanthus aurantiacus</i>	x					x					
Zygophyllaceae	<i>Roepera compressa</i>	x	x									
	<i>Roepera eichleri</i>	x	x				x					
	<i>Roepera iodocarpa</i>	x	x				x					
	<i>Roepera</i> sp. indet						x					
	<i>Tribulopsis angustifolia</i>	x	x				x					
	<i>Tribulus astrocarpus</i>	x	x				x					
	<i>Tribulus eichlerianus</i>		x									
	<i>Tribulus forrestii</i>	x	x									
	<i>Tribulus hirsutus</i>	x	x				x					
	<i>Tribulus macrocarpus</i>	x	x				x					Y
	<i>Tribulus occidentalis</i>	x	x				x					
	<i>Tribulus platypterus</i>	x					x					
	<i>Tribulus suberosus</i>	x	x				x					
	<i>Tribulus terrestris</i>	x	x				x					Y

## Appendix C: Literature Review Key Findings

		Yandicoogina Stage II Iron Ore Project: Biological Assessment Survey	Area C to Yandi Flora and Vegetation Survey	Iron Valley Flora and Vegetation Survey	Yandicoogina Expansion Vegetation and Flora Survey	Yandicoogina JSE Project - Conservation Significant Vegetation, Flora, Fauna and Fauna Habitat Assessment
Survey Details	Reference	Ecologia (1995)	(Astron, 2010a)	(Astron, 2012a)	(Biota, 2004)	(Biota, 2005b)
	Type	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey
	Client	BHP Iron Ore	BHP Billiton Iron Ore	URS Australia Pty Ltd on behalf of Iron Ore Holdings Ltd	Hamersley Iron Pty Ltd	Hamersley Iron Pty Ltd
	Location	Yandi Stage II	Area C to Yandi	Iron Valley Mining Tenement	Yandi	Yandi JSE
	Size (ha)	n/a	2, 181 ha	1,102 ha	511 ha	n/a
	Timing	May-June 1995	September 2010	April, July & Aug 2011	Aug-Sept 2004	Aug-Oct 2004 & May-June, Sept 2005
Methods	Desktop Assessment (Yes/No)	Yes	Yes	Yes	Yes	Yes
	Quadrat #	83	20	69	39	39
	Relevé #	n/a	7	6	n/a	6
	Targeted Searching (Yes/No)	Yes	Yes	No	Yes	Yes
	Other Methods	n/a	n/a	n/a	n/a	n/a
Results	Taxa	345	91	238	319	344
	Families	55	20	40	53	52
	Genera	15	43	105	150	140
	Vegetation Types	22	13	6	20	21
	Vegetation Condition	n/a	Excellent- Good	Excellent- Poor	Excellent- Degraded	n/a

		Yandicoogina Stage II Iron Ore Project: Biological Assessment Survey	Area C to Yandi Flora and Vegetation Survey	Iron Valley Flora and Vegetation Survey	Yandicoogina Expansion Vegetation and Flora Survey	Yandicoogina JSE Project - Conservation Significant Vegetation, Flora, Fauna and Fauna Habitat Assessment
	<b>Weeds #</b>	5	0	5	13	13
<b>Significant Findings</b>	<b>Threatened/ Priority Flora</b>	<ul style="list-style-type: none"> <li>One Priority flora species recorded:</li> <li><i>Goodenia stellata</i> (P2)<sup>1</sup> – no longer a priority</li> </ul>	<ul style="list-style-type: none"> <li>One Priority flora species recorded:</li> <li><i>Acacia bromilowiana</i> (P4)</li> </ul>	<ul style="list-style-type: none"> <li>None recorded</li> </ul>	<ul style="list-style-type: none"> <li>Six Priority flora species recorded: <ul style="list-style-type: none"> <li><i>Sida</i> sp. Barlee Range (S van Leeuwen 1642) (P2)<sup>2</sup></li> <li><i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431) (P4)<sup>3</sup></li> <li><i>Goodenia stellata</i> (P4)<sup>1</sup></li> <li><i>Olearia fluvialis</i> (P2),</li> <li><i>Abutilon trudgenii</i> (P3)<sup>4</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>One Threatened and six Priority flora species recorded: <ul style="list-style-type: none"> <li><i>Lepidium catapycnon</i> (T)<sup>5</sup></li> <li><i>Sida</i> sp. Barlee Range (S van Leeuwen 1642) (P2)<sup>2</sup></li> <li><i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431) (P4)<sup>3</sup></li> <li><i>Goodenia stellata</i> (P4)<sup>1</sup>, <i>Olearia fluvialis</i> (P2), <i>Abutilon trudgenii</i> (P3)<sup>4</sup>, <i>Sida</i> sp. Wittenoom (W.R.Barker 1962) (P3)<sup>6</sup></li> </ul> </li> </ul>
	<b>Threatened/ Priority Ecological Communities</b>	n/a	n/a	None recorded	n/a	n/a
	<b>WoNs and DPP Weeds</b>	n/a	n/a	n/a	None recorded	n/a
	<b>Range Extensions</b>	n/a	n/a	Two range extensions: <ul style="list-style-type: none"> <li><i>Aristida hygrometrica</i></li> <li><i>Senna curvistyla</i></li> </ul>	n/a	n/a
	<b>Other significant findings</b>	n/a	n/a	n/a	Six vegetation types represented an ecosystem at risk (Kendrick 2003)	Six vegetation types considered to be of “other” significance - riparian or breakaway vegetation

Breakaway Reconnaissance Flora and Vegetation Survey

		Yandicoogina Stage II Iron Ore Project: Biological Assessment Survey	Area C to Yandi Flora and Vegetation Survey	Iron Valley Flora and Vegetation Survey	Yandicoogina Expansion Vegetation and Flora Survey	Yandicoogina JSE Project - Conservation Significant Vegetation, Flora, Fauna and Fauna Habitat Assessment
<b>Other</b>	<b>Limitations of survey</b>	None identified	• Poor seasonal conditions	No substantial limitations	<ul style="list-style-type: none"> <li>• Out-of-season timing</li> <li>• Dry conditions</li> <li>• A third of the Study Area had been recently burnt</li> </ul>	None identified

<sup>1</sup> *Goodenia stellata* is no longer a priority taxon.

<sup>2</sup> *Sida* sp. Barlee Range (S van Leeuwen 1642) is now a priority four taxon.

<sup>3</sup> *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) is now a priority three taxon.

<sup>4</sup> *Abutilon trudgenii* is no longer a priority taxon.

<sup>5</sup> *Lepidium catapycnon* is now a priority four taxon.

<sup>6</sup> *Sida* sp. Wittenoom (W.R. Barker 1962) is no longer a priority taxon.

		<b>Vegetation and Flora Surveys of the Oxbow and Junction South West Deposits, near Yandicoogina</b>	<b>Yandicoogina Additional Vegetation Mapping</b>	<b>Area C West to Yandi Level 2 Flora and Vegetation Survey</b>	<b>Marillana Creek Riparian Flora and Vegetation Survey</b>	<b>Upper Marillana and Munjina Flora, Vegetation and Fauna Assessment</b>
<b>Survey Details</b>	<b>Reference</b>	(Biota, 2010)	(Biota, 2011)	(Onshore, 2014)	(Onshore, 2015)	(ENV, 2011)
	<b>Type</b>	Vegetation and Flora Surveys	Additional Flora and vegetation survey	Two Season Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey and Riparian Vegetation Monitoring	Detailed Flora and Vegetation Survey
	<b>Client</b>	Rio Tinto Pty Ltd	Rio Tinto Iron Ore	BHP Billiton Iron Ore	BHP Billiton Iron Ore	BHP Billiton Iron Ore
	<b>Location</b>	Yandi Junction South West (JSW) and Oxbow Deposits	Additional areas around Oxbow and JSW Deposits and areas of Weeli Wolli Creek	Area C West to Yandi	Marillana Creek	Munjina and Upper Marillana
	<b>Size (ha)</b>	n/a	n/a	n/a	n/a	25,430 ha
	<b>Timing</b>	June 2007, July and August 2008, June 2009	November and December 2010	May to June 2011, July to August 2012 and August 2013	June 2015	August and September 2010
<b>Methods</b>	<b>Desktop Assessment (Yes/No)</b>	Yes	Yes	Yes	Yes	Yes
	<b>Quadrat #</b>	30	n/a	170	40	141
	<b>Relevé #</b>	1	n/a	n/a	237	n/a
	<b>Targeted Searching (Yes/No)</b>	Yes	Yes	Yes	Yes	No
	<b>Other Methods</b>	n/a	Vegetation assessment	n/a	5 riparian monitoring plot locations	Opportunistic collections
<b>Results</b>	<b>Taxa</b>	220 (Oxbow) 278 (JSW)	75	428	399 (Detailed) 70 (Riparian)	432
	<b>Families</b>	38 (Oxbow) 43 (JSW)	23	58	58 (Detailed)	48

Breakaway Reconnaissance Flora and Vegetation Survey

		Vegetation and Flora Surveys of the Oxbow and Junction South West Deposits, near Yandicoogina	Yandicoogina Additional Vegetation Mapping	Area C West to Yandi Level 2 Flora and Vegetation Survey	Marillana Creek Riparian Flora and Vegetation Survey	Upper Marillana and Munjina Flora, Vegetation and Fauna Assessment
	<b>Genera</b>	102 (Oxbow) 120 (JSW)	37	174	186 (Detailed)	166
	<b>Vegetation Types</b>	16 (Oxbow) 7 (JSW)	17	23	22 (Detailed)	9
	<b>Vegetation Condition</b>	Excellent- Very Good (Both areas)	Excellent- Completely Degraded	Excellent- Very Good	Excellent- Degraded (Detailed)	Pristine- Completely Degraded
	<b>Weeds #</b>	13 (Both areas)	1	12	22 (Detailed) 11 (Riparian)	9
<b>Significant Findings</b>	<b>Threatened/ Priority Flora</b>	One Threatened and one Priority flora taxa recorded: <ul style="list-style-type: none"> <li>o <i>Lepidium catapycnon</i> (T)<sup>1</sup> (Oxbow Deposit)</li> <li>o <i>Goodenia nuda</i> (P4) (JSW Deposit)</li> </ul>	One Priority flora taxa recorded <i>Goodenia nuda</i> (P4)	<ul style="list-style-type: none"> <li>• 13 Priority flora species recorded: <ul style="list-style-type: none"> <li>o <i>Acacia subtiliformis</i> (P3)</li> <li>o <i>Aristida jerichoensis</i> subsp. <i>subspinulifera</i> (P1)<sup>2</sup></li> <li>o <i>Acacia bromilowiana</i> (P4)</li> <li>o <i>Acacia effusa</i> (P3)</li> <li>o <i>Gymnanthera cunninghamii</i> (P3)</li> <li>o <i>Goodenia nuda</i> (P4)</li> <li>o <i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727) (P3)</li> <li>o <i>Rhynchosia bungarensis</i> (P4)</li> <li>o <i>Sauropus</i> sp. Koodaideri detritals (J. Naaykens &amp; J. Hurter JH 11213) (P1)<sup>3</sup></li> <li>o <i>Vittadinia</i> sp. Coondewanna Flats (s. Van Leeuwen 4684) (P3)</li> <li>o <i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3)</li> <li>o <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P3)<sup>4</sup></li> <li>o <i>Spartothamnella puberula</i> (P2)<sup>5</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Six Priority flora species recorded: <ul style="list-style-type: none"> <li>o <i>Amaranthus centralis</i> (P3)</li> <li>o <i>Aristida lazaridis</i> (P2)</li> <li>o <i>Goodenia nuda</i> (P4)</li> <li>o <i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727) (P3)</li> <li>o <i>Ipomoea racemigera</i> (P2)</li> <li>o <i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Four Priority flora species recorded: <ul style="list-style-type: none"> <li>o <i>Acacia subtiliformis</i> (P3)</li> <li>o <i>Aristida jerichoensis</i> var. <i>subspinulifera</i> (P1)<sup>2</sup></li> <li>o <i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3)</li> <li>o <i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431) (P3)</li> </ul> </li> </ul>

		Vegetation and Flora Surveys of the Oxbow and Junction South West Deposits, near Yandicoogina	Yandicoogina Additional Vegetation Mapping	Area C West to Yandi Level 2 Flora and Vegetation Survey	Marillana Creek Riparian Flora and Vegetation Survey	Upper Marillana and Munjina Flora, Vegetation and Fauna Assessment
	<b>Threatened/ Priority Ecological Communities</b>	n/a	No TECS or PECs	No TECS or PECs	No TECS or PECs	No TECS or PECs
	<b>WoNS and DPP Weeds</b>	None	None	None	None	None
	<b>Range Extensions</b>	n/a	n/a	n/a	n/a	n/a
	<b>Other significant findings</b>	n/a	n/a	n/a	n/a	One community (Triodia Open Hummock Grassland 1 b) is considered to be of interest
<b>Other</b>	<b>Limitations of survey</b>	Dry conditions during 2008 surveys	<ul style="list-style-type: none"> <li>Poor survey conditions</li> <li>Recent bushfire</li> </ul>	No substantial limitations	No substantial limitations	<ul style="list-style-type: none"> <li>Poor seasonal conditions</li> </ul>

<sup>1</sup> *Lepidium catapycnon* is now a priority four taxon.

<sup>2</sup> *Aristida jerichoensis* subsp. *subspinulifera* is now a priority three taxon

<sup>3</sup> *Sauropus* sp. Koodaideri detritals (J. Naaykens & J. Hurter JH 11213) is not current and is more recently known as *Synostemon hamersleyensis*, a threatened flora.

<sup>4</sup> *Sida* sp. Barlee Range (S van Leeuwen 1642) is now a priority four taxon.

<sup>5</sup> *Spartothamnella puberula* is an excluded name and no longer occurs in Western Australia.

Breakaway Reconnaissance Flora and Vegetation Survey

		Yandicoogina Billiards Vegetation and Flora Survey – Phase 1 Interim Report	Yandicoogina Creek Reconnaissance Vegetation Survey	Marillana (E47/1408) Vegetation and Flora Report	Ministers North Miscellaneous License Area Amendment Surveys and Yandicoogina Creek Detailed Flora and Vegetation Assessment	Packsaddle Range Biological Survey
<b>Survey Details</b>	<b>Reference</b>	(Biota, 2014b)	(Onshore, 2018)	(Ecologia, 2009)	(Biologic, 2020)	(Ecologia, 2004)
	<b>Type</b>	Detailed Flora and Vegetation Survey	Reconnaissance Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey
	<b>Client</b>	Rio Tinto	BHP WAIO	Brockman Resources Limited	BHP Western Australian Iron Ore	BHP Billiton Iron Ore
	<b>Location</b>	Yandi Billiards	Yandi Creek	Marillana tenement (E47/1408)	Minister's North and Yandicoogina Creek	Packsaddle Range
	<b>Size (ha)</b>	n/a	n/a	n/a	1,745 ha	n/a
	<b>Timing</b>	March 2014	June 2018	June and September 2008	Sept 2019 & March/April 2020	April and May 2004
<b>Methods</b>	<b>Desktop Assessment (Yes/No)</b>	Yes	Yes	Yes	Yes	Yes
	<b>Quadrat #</b>	118	n/a	137	29 (Yandi Creek) 3 (Minister's North)	53
	<b>Relevé #</b>	28	33	n/a	2 (Yandi Creek) 4 (Minister's North)	n/a
	<b>Targeted Searching (Yes/No)</b>	Yes	n/a	No	Yes (both locations)	Yes
	<b>Other Methods</b>	n/a	Opportunistic collections	n/a	n/a	n/a
<b>Results</b>	<b>Taxa</b>	451	n/a	302	248 (Yandi Creek) 128 (Minister's North) 279 (Both locations)	215
	<b>Families</b>	47	n/a	42	51 (Both)	42

Breakaway Reconnaissance Flora and Vegetation Survey

		Yandicoogina Billiards Vegetation and Flora Survey – Phase 1 Interim Report	Yandicoogina Creek Reconnaissance Vegetation Survey	Marillana (E47/1408) Vegetation and Flora Report	Ministers North Miscellaneous License Area Amendment Surveys and Yandicoogina Creek Detailed Flora and Vegetation Assessment	Packsaddle Range Biological Survey
	<b>Genera</b>	147	n/a	116	141 (Both)	102
	<b>Vegetation Types</b>	23	10	8	35	7
	<b>Vegetation Condition</b>	Very Good- Poor	Good- Poor	Excellent- Poor	Excellent- Degraded	Pristine- Poor
	<b>Weeds #</b>	18	10	10	17	2
<b>Significant Findings</b>	<b>Threatened/ Priority Flora</b>	<ul style="list-style-type: none"> <li>One Priority flora taxa recorded: <i>Goodenia nuda</i> (P4)</li> </ul>	<ul style="list-style-type: none"> <li>Five Priority flora species recorded:                             <ul style="list-style-type: none"> <li><i>Aristida lazaridis</i> (P2)</li> <li><i>Fimbristylis sieberiana</i> (P3)</li> <li><i>Gymnanthera cunninghamii</i> (P3)</li> <li><i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3)</li> <li><i>Sida</i> sp. Barlee Range (S. van Leeuwen 1643) (P3)<sup>1</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>One Priority flora species recorded:                             <ul style="list-style-type: none"> <li><i>Goodenia nuda</i> (P3)<sup>2</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Six Priority flora species recorded:                             <ul style="list-style-type: none"> <li><i>Aristida lazaridis</i> (P2)</li> <li><i>Fimbristylis sieberiana</i> (P3)</li> <li><i>Gymnanthera cunninghamii</i> (P3)</li> <li><i>Goodenia nuda</i> (P4)</li> <li><i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P3)</li> <li><i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Three Priority flora species recorded:                             <ul style="list-style-type: none"> <li><i>Euphorbia drummondii</i> subsp. <i>Pilbara</i> (B.G. Thomson 3503) (P2)<sup>3</sup></li> <li><i>Themeda</i> sp. <i>Mt. Barricade</i> (M.E. Trudgen 2471) (P3)<sup>4</sup></li> <li><i>Triumfetta leptacantha</i> (P3)<sup>5</sup></li> </ul> </li> </ul>
	<b>Threatened/ Priority Ecological Communities</b>	None recorded	None recorded	One Priority Ecological Community: Vegetation of sand dunes of the Hamersley Range and Fortescue Valley (P3)	None recorded	n/a
	<b>WoNS and DPP Weeds</b>	None recorded	None recorded	None recorded	None recorded	None recorded

Breakaway Reconnaissance Flora and Vegetation Survey

		Yandicoogina Billiards Vegetation and Flora Survey – Phase 1 Interim Report	Yandicoogina Creek Reconnaissance Vegetation Survey	Marillana (E47/1408) Vegetation and Flora Report	Ministers North Miscellaneous License Area Amendment Surveys and Yandicoogina Creek Detailed Flora and Vegetation Assessment	Packsaddle Range Biological Survey
	<b>Range Extensions</b>	n/a	n/a	n/a	n/a	n/a
	<b>Other significant findings</b>	n/a	Six vegetation associations supported GDV, of which one supported zones of permanent pooling	n/a	<ul style="list-style-type: none"> <li>Three vegetation types considered to have affinities with '<i>Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara</i>' priority ecological community</li> <li>12 vegetation types considered to be of "other" significance as they support priority flora taxa.</li> </ul>	n/a
<b>Other</b>	<b>Limitations of survey</b>	No substantial limitations	<ul style="list-style-type: none"> <li>Half of Study Area was not assessed due to heavy rainfall &amp; distance</li> </ul>	No substantial limitations	<ul style="list-style-type: none"> <li>Access restrictions within the Study Area</li> <li>Survey effort restricted due to Covid-19 pandemic</li> </ul>	No substantial limitations

<sup>1</sup> *Sida* sp. Barlee Range (S van Leeuwen 1642) is now a priority four taxon.

<sup>2</sup> *Goodenia nuda* is no longer listed as a Priority.

<sup>3</sup> *Euphorbia drummondii* subsp. Pilbara (B.G. Thomson 3503) is not current and is more recently known as *Euphorbia inappendiculata*, which is no longer listed as a priority flora species.

<sup>4</sup> *Themeda* sp. Mt. Barricade (M.E. Trudgen 2471) is no longer a priority taxon.

<sup>5</sup> *Triumfetta leptacantha* is no longer a priority taxon.

Breakaway Reconnaissance Flora and Vegetation Survey

	Area C and Surrounds Flora and Vegetation Survey	Area C Biological Survey	Flora, Vegetation and Fauna Habitat Assessment at Koodaideri NVCP Supporting Report	MAC4 Pipeline Reconnaissance Flora and Vegetation Assessment	A Vegetation and Flora Survey of the Koodaideri Study Area	
<b>Survey Details</b>	<b>Reference</b>	(Onshore, 2011)	(Ecologia, 1998)	(Rio Tinto, 2016)	(Biologic, 2019a)	(Biota, 2012)
	<b>Type</b>	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Reconnaissance Flora and Vegetation Survey	Reconnaissance Flora and Vegetation Assessment	Detailed Flora and Vegetation Survey
	<b>Client</b>	BHP Billiton Iron Ore	BHP Billiton Iron Ore	Rio Tinto	BHP WAIO	Rio Tinto
	<b>Location</b>	Area C and Surrounds	Mining Area C	Koodaideri	Mining Area C	Koodaideri
	<b>Size (ha)</b>	n/a	n/a	n/a	n/a	11,991 ha
	<b>Timing</b>	Nov to Dec 2009, Feb 2010, and June 2010	April & May 1997	May 2016	November 2018	July 2010, and March and May 2011
<b>Methods</b>	<b>Desktop Assessment (Yes/No)</b>	Yes	No (other studies mentioned)	n/a	Yes	Yes
	<b>Quadrat #</b>	510	132	n/a	n/a	62
	<b>Relevé #</b>	n/a	n/a	52	52	2
	<b>Targeted Searching (Yes/No)</b>	Yes	No	No	n/a	n/a
	<b>Other Methods</b>	Weed searching	29 transects	Opportunistic sampling	Opportunistic sampling	Opportunistic sampling
<b>Results</b>	<b>Taxa</b>	479 (Area C) 206 (Northern Study Area) 219 (Southern Study Area)	459	204	117	384
	<b>Families</b>	53 (Area C) 45 (Northern Study Area) 36 (Southern Study Area)	53	34	28	43

		Area C and Surrounds Flora and Vegetation Survey	Area C Biological Survey	Flora, Vegetation and Fauna Habitat Assessment at Koodaideri NVCP Supporting Report	MAC4 Pipeline Reconnaissance Flora and Vegetation Assessment	A Vegetation and Flora Survey of the Koodaideri Study Area
	<b>Genera</b>	166 (Area C) 97 (Northern Study Area) 99 (Southern Study Area)	161	69	66	130
	<b>Vegetation Types</b>	37 (Area C and surrounds)	15	12	17	25
	<b>Vegetation Condition</b>	Excellent- Very Good	n/a	Excellent- Poor	Excellent- Completely Degraded	Excellent- Completely Degraded
	<b>Weeds #</b>	11 (Area C) 2 (Southern Study Area)	6	1	4	13
<b>Significant Findings</b>	<b>Threatened/ Priority Flora</b>	<ul style="list-style-type: none"> <li>One Declared Rare flora and 12 Priority flora species recorded: <ul style="list-style-type: none"> <li><i>Lepidium catapycnon</i> (T)<sup>1</sup></li> <li><i>Acacia subtiliformis</i> (P3)</li> <li><i>Aristida jerichoensis</i> subsp. <i>subspinulifera</i> (P1)<sup>2</sup></li> <li><i>Aristida lazaridis</i> (P2)</li> <li><i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P4)</li> <li><i>Fimbristylis sieberiana</i> (P3)</li> <li><i>Goodenia nuda</i> (P4)</li> <li><i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727) (P3)</li> <li><i>Nicotiana umbratica</i> (P3)</li> <li><i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3)</li> <li><i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3)</li> <li><i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P3)<sup>3</sup></li> <li><i>Spartothamnella puberula</i> (P2)<sup>4</sup></li> </ul> </li> <li>12 Range extensions</li> </ul>	<ul style="list-style-type: none"> <li>Four Priority flora species recorded: <ul style="list-style-type: none"> <li><i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P3)<sup>5</sup></li> <li><i>Triumfetta leptacantha</i> (P3)<sup>6</sup></li> <li><i>Triumfetta maconochieana</i> (P3)<sup>7</sup></li> <li><i>Brachychiton acuminatus</i> (P4)<sup>8</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Two Priority flora taxa recorded: <ul style="list-style-type: none"> <li><i>Synostemon hamersleyensis</i> (T)</li> <li><i>Acacia bromilowiana</i> (P4)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Two Priority flora taxa recorded: <ul style="list-style-type: none"> <li><i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136) (P3)<sup>9</sup></li> <li><i>Aristida lazaridis</i> (P4)<sup>10</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>One Threatened and seven Priority flora taxa recorded: <ul style="list-style-type: none"> <li><i>Lepidium catapycnon</i> (T)<sup>1</sup></li> <li><i>Sida</i> sp. Hamersley Range (K. Newbey 10692) (P1)<sup>11</sup></li> <li><i>Vigna</i> sp. central (M.E. Trudgen 1626) (P2)<sup>12</sup></li> <li><i>Nicotiana umbratica</i> (P3)</li> <li><i>Sida</i> sp. Barlee Range (S van Leeuwen 1642) (P3)</li> <li><i>Themeda</i> sp. Hamersley Station (M.E.</li> </ul> </li> </ul>

	Area C and Surrounds Flora and Vegetation Survey	Area C Biological Survey	Flora, Vegetation and Fauna Habitat Assessment at Koodaideri NVCP Supporting Report	MAC4 Pipeline Reconnaissance Flora and Vegetation Assessment	A Vegetation and Flora Survey of the Koodaideri Study Area	
	<ul style="list-style-type: none"> <li>One Priority Ecological Community: Weeli Wolli Spring Community (P1)</li> </ul>				Trudgen 11431) (P3) <ul style="list-style-type: none"> <li><i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P4)</li> <li><i>Rhynchosia bungarensis</i> (P4)</li> </ul> <ul style="list-style-type: none"> <li>One newly recognised species:               <ul style="list-style-type: none"> <li><i>Sauropus</i> sp. Koodaideri detritals (J. Naaykens &amp; J. Hurter JH 11213)<sup>13</sup></li> </ul> </li> </ul>	
<b>Threatened/ Priority Ecological Communities</b>	Eastern fringe of the Area C and Surrounds Study area; Weeli Wolli Spring Community, listed as Priority 1	n/a	None recorded	None recorded	None recorded	
<b>WoNS and DPP Weeds</b>	None recorded	None recorded	None recorded	None recorded	None recorded	
<b>Range Extensions</b>	n/a	n/a	n/a	n/a	n/a	
<b>Other significant findings</b>	n/a	n/a	n/a	• Four vegetation associations supported priority flora	n/a	
<b>Other</b>	<b>Limitations of survey</b>	No substantial limitations	<ul style="list-style-type: none"> <li>Minor access issues</li> </ul>	No substantial limitations	<ul style="list-style-type: none"> <li>Sub-optimal survey timing, dry conditions</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility in some sections</li> </ul>

<sup>1</sup> *Lepidium catapycnon* is now a priority four taxon.

<sup>2</sup> *Aristida jerichoensis* subsp. *subspinulifera* is now a priority three taxon

<sup>3</sup> *Sida* sp. Barlee Range (S. van Leeuwen 1642) is now a priority four taxon

<sup>4</sup> *Spartothamnella puberula* is an excluded name and no longer occurs in Western Australia.

<sup>5</sup> *Eremophila magnifica* subsp. *magnifica* is now a priority four taxon.

<sup>6</sup> *Triumfetta leptacantha* is no longer a priority taxon.

<sup>7</sup> *Triumfetta maconochieana* is no longer a priority taxon.

<sup>8</sup> *Brachychiton acuminatus* is no longer a priority taxon.

<sup>9</sup> *Eremophila* sp. Hamersley Range (K. Walker KW 136) is now *Eremophila naaykensis*

<sup>10</sup> *Aristida Lazaridis* is now a priority two taxon.

<sup>11</sup> *Sida* sp. Hamersley Range (K. Newbey 10692) is now a priority three taxon.

<sup>12</sup> *Vigna* sp. central (M.E. Trudgen 1626) is not current and is more recently known as *Vigna* sp. Hamersley Clay (A.A. Mitchell PRP 113), which is not listed as a priority flora taxon.

<sup>13</sup> *Sauropus* sp. Koodaideri detritals (J. Naaykens & J. Hurter JH 11213) is not current and is more recently known as *Synostemon hamersleyensis*, which is listed as a threatened flora.

		Level 2 Flora and Vegetation Survey South Flank	Packsaddle West Vegetation and Flora Survey and Fauna Assessment	Koodaideri Biological Assessment	Baby Hope Downs Flora and Vegetation Survey	Koodaideri Spring Gorge Ecological Monitoring - Phase 4 Baseline Report
Survey Details	Reference	(Onshore, 2012)	(Astron, 2010b)	(Eco Logical, 2014)	(Biota, 2014a)	(Biota, 2019)
	Type	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Detailed Flora and Vegetation Survey	Ecological Monitoring
	Client	BHP Billiton Iron Ore	BHP Billiton Iron Ore	Rio Tinto	Rio Tinto Iron Ore	Mount Bruce Mining Pty Ltd
	Location	South Flank	Packsaddle West	Koodaideri	Baby Hope Downs	Koodaideri Spring Gorge
	Size (ha)	n/a	20,000 ha	314 ha	1, 652 ha	n/a
	Timing	March, May and September 2010	April and May 2010	May-June 2014	Oct to Nov 2014	June 2019
Methods	Desktop Assessment (Yes/No)	Yes	Yes	Yes	Yes	No
	Quadrat #	220	120	27	17	24
	Relevé #	n/a	8	n/a	8	n/a
	Targeted Searching (Yes/No)	Yes	Yes	Yes	Yes	n/a
	Other Methods	n/a	n/a	28 mapping notes	n/a	16 transects, 78 riparian tree health monitoring points
Results	Taxa	386	283	131	354	120
	Families	50	48	32	53	36
	Genera	160	106	67	150	76
	Vegetation Types	34	27	4 broad vegetation communities	12	4
	Vegetation Condition	Pristine- Degraded	Pristine- Degraded	Excellent- Very Good	Excellent	Very Good- good
	Weeds #	8	4	1	10	5

		Level 2 Flora and Vegetation Survey South Flank	Packsaddle West Vegetation and Flora Survey and Fauna Assessment	Koodaideri Biological Assessment	Baby Hope Downs Flora and Vegetation Survey	Koodaideri Spring Gorge Ecological Monitoring - Phase 4 Baseline Report
<b>Significant Findings</b>	<b>Threatened/ Priority Flora</b>	<ul style="list-style-type: none"> <li>• One Threatened and 13 Priority flora species recorded:               <ul style="list-style-type: none"> <li>○ <i>Lepidium catapycnon</i> (T)<sup>1</sup></li> <li>○ <i>Acacia bromilowiana</i> (P4)</li> <li>○ <i>Aristida jerichoensis</i> var. <i>subspinulifera</i> (P1)<sup>2</sup></li> <li>○ <i>Aristida lazaridis</i> (P2)</li> <li>○ <i>Dampiera metallorum</i> (P3)</li> <li>○ <i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P4)</li> <li>○ <i>Pilbara trudgenii</i> (P2)<sup>3</sup></li> <li>○ <i>Ptilotus mollis</i> (P4)</li> <li>○ <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3)</li> <li>○ <i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3)</li> <li>○ <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P3)<sup>4</sup></li> <li>○ <i>Spartothamnella puberula</i> (P2)<sup>5</sup></li> <li>○ <i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431) (P3)</li> <li>○ <i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739) (P3)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Three Priority flora species recorded:               <ul style="list-style-type: none"> <li>○ <i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P4)</li> <li>○ <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3)</li> <li>○ <i>Aristida jerichoensis</i> var. <i>subspinulifera</i> (P1)<sup>2</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• One Priority flora species recorded:               <ul style="list-style-type: none"> <li>○ <i>Rhynchosia bungarensis</i> (P4)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Five Priority flora taxa recorded:               <ul style="list-style-type: none"> <li>○ <i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136) (P1)<sup>6</sup></li> <li>○ <i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708) (P2)</li> <li>○ <i>Eremophila magnifica</i> subsp. <i>velutina</i> (P3)</li> <li>○ <i>Goodenia lyrata</i> (P3)</li> <li>○ <i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P4)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Two Priority flora taxa recorded:               <ul style="list-style-type: none"> <li>○ <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P3)<sup>4</sup></li> <li>○ <i>Rhynchosia bungarensis</i> (P4)</li> </ul> </li> </ul>
	<b>Threatened/ Priority Ecological Communities</b>	<ul style="list-style-type: none"> <li>• Two sub-types of the PEC Coolibah-lignum flats: <i>Eucalyptus victrix</i> over <i>Muehlenbeckia florulenta</i>, occur along the western fringe of the Study area               <ul style="list-style-type: none"> <li>○ Coolibah (<i>Eucalyptus victrix</i>) woodland over Lignum (<i>Muehlenbeckia florulenta</i>) over Swamp Wandiree (<i>Eriachne benthamii</i>) (Priority 1) – Lake Robinson being the</li> </ul> </li> </ul>	None recorded within the Study Area	Study area lies within the buffer of one Priority Ecological Community (PEC), the Priority 1 PEC „Fortescue Marsh“	None recorded	None recorded

		Level 2 Flora and Vegetation Survey South Flank	Packsaddle West Vegetation and Flora Survey and Fauna Assessment	Koodaideri Biological Assessment	Baby Hope Downs Flora and Vegetation Survey	Koodaideri Spring Gorge Ecological Monitoring - Phase 4 Baseline Report
		<ul style="list-style-type: none"> <li>○ only known occurrence; and</li> <li>○ Coolibah (<i>Eucalyptus victrix</i>) and Mulga (<i>Acacia aneura</i>) woodland over Lignum (<i>Muehlenbeckia florulenta</i>) and tussock grasses on clay plains (Priority 3) - Coondewanna Flats being one of two known occurrences (the other being Wanna Munna Flats).</li> </ul>				
	<b>WoNS and DPP Weeds</b>	None recorded	None recorded	None recorded	None recorded	None recorded
	<b>Range Extensions</b>	* <i>Stylosanthes hamata</i>	n/a	n/a	n/a	n/a
	<b>Other significant findings</b>	n/a	n/a	n/a	n/a	n/a
<b>Other</b>	<b>Limitations of survey</b>	No substantial limitations	<ul style="list-style-type: none"> <li>• Poor seasonal conditions</li> <li>• Limited access</li> </ul>	No substantial limitations	<ul style="list-style-type: none"> <li>• Poor survey conditions</li> <li>• Some difficulty mapping vegetation from aerial images due to varying fire regimes.</li> <li>• Existing drilling disturbance made site selection difficult in some cases</li> </ul>	Recent bushfire

<sup>1</sup> *Lepidium catapycnon* is now a priority four taxon.

<sup>2</sup> *Aristida jerichoensis* subsp. *subspinulifera* is now a priority three taxon

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Breakaway Reconnaissance Flora and Vegetation Survey

<sup>3</sup> *Pilbara trudgenii* is now a priority three taxon.

<sup>4</sup> *Sida* sp. Barlee Range (S. van Leeuwen 1642) is now a priority four taxon

<sup>5</sup> *Spartothamnella puberula* is an excluded name and no longer occurs in Western Australia.

<sup>6</sup> *Eremophila* sp. Hamersley Range (K. Walker KW 136) is now known as *Eremophila naaykensis* and is a priority three taxon.

	<b>Fibre Optic Cable Flora and Fauna Assessment</b>	<b>Field Survey for Priority and Rare Flora – Area C South Flank</b>	<b>Koodaideri Hydrological Drilling Vegetation, Flora and Fauna Survey</b>
<b>Survey Details</b>	<b>Reference</b>	(AECOM, 2020)	(Pilbara Flora, 2008)
	<b>Type</b>	Reconnaissance Flora and Vegetation Assessment	Targeted Flora Survey
	<b>Client</b>	Pilbara Iron	BHP Billiton Iron Ore
	<b>Location</b>	North of West Angelas	Area C South Flank
	<b>Size (ha)</b>	21.7 ha	5610 ha
	<b>Timing</b>	November 2019	May 2008
<b>Methods</b>	<b>Desktop Assessment (Yes/No)</b>	Yes	Yes
	<b>Quadrat #</b>	n/a	n/a
	<b>Relevé #</b>	8	n/a
	<b>Targeted Searching (Yes/No)</b>	No	Yes
	<b>Other Methods</b>	Opportunistic sampling	n/a
<b>Results</b>	<b>Taxa</b>	52	n/a
	<b>Families</b>	18	n/a
	<b>Genera</b>	30	n/a
	<b>Vegetation Types</b>	4	4 broad landscape units
	<b>Vegetation Condition</b>	Excellent	n/a
	<b>Weeds #</b>	0	1

		Fibre Optic Cable Flora and Fauna Assessment	Field Survey for Priority and Rare Flora – Area C South Flank	Koodaideri Hydrological Drilling Vegetation, Flora and Fauna Survey
<b>Significant Findings</b>	<b>Threatened/ Priority Flora</b>	<ul style="list-style-type: none"> <li>One Priority flora species recorded: <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3)</li> </ul>	<ul style="list-style-type: none"> <li>Two Priority flora species recorded:                             <ul style="list-style-type: none"> <li><i>Triumfetta leptacantha</i> (P3)<sup>1</sup></li> <li><i>Eremophila magnifica</i> subsp. <i>magnifica</i> (P4)</li> </ul> </li> </ul>	None recorded
	<b>Threatened/ Priority Ecological Communities</b>	None recorded	n/a	None recorded
	<b>WoNS and DPP Weeds</b>	n/a	None recorded	None recorded
	<b>Range Extensions</b>	n/a	n/a	n/a
	<b>Other significant findings</b>	n/a	n/a	n/a
<b>Other</b>	<b>Limitations of survey</b>	No substantial limitations	<ul style="list-style-type: none"> <li>No substantial limitations</li> </ul>	<ul style="list-style-type: none"> <li>Unfavourable seasonal conditions</li> </ul>

<sup>1</sup>*Triumfetta leptacantha* is no longer a priority taxon.

**Appendix D: Likelihood of occurrence assessment**

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current known Distribution	Distance to Nearest Record	Likelihood Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Isotropis parviflora</i>	P3			Shrub, 0.1 m high. Fl. white/pink, Mar. Valley slope of ironstone plateau.	Yes	Yes	Within Study Area	Confirmed	Confirmed
<i>Rostellularia adscendens</i> var. <i>latifolia</i>	P3			Herb or shrub, 0.1-0.3 m high. Fl. blue-purple-violet, Apr to May. Ironstone soils. Near creeks, rocky hills.	Yes	Yes	Within Study Area	Confirmed	Confirmed
<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	P4			Spreading shrub, to 0.5 m high. Fl. yellow, Aug. Skeletal red soils pockets. Steep slope.	Yes	Yes	Within Study Area	Confirmed	Confirmed
<i>Synostemon hamersleyensis</i>	T			Shrub to 1 m high. Steep slopes, scree, cliffs, gorges. Ironstone	Yes	Yes	Within Study Area	Confirmed	Confirmed
<i>Aristida lazaridis</i>	P2			Tufted perennial, grass-like or herb, 0.4-1.5 m high. Fl. green/purple, Apr. Sand or loam.	Yes	Yes	3.1 Km SSW	Highly Likely	Unlikely
<i>Ipomoea racemigera</i>	P2			Creeping annual, herb or climber. Fl. white.	Yes	Yes	2.3 Km SSW	Highly Likely	Possible
<i>Rhynchosia bungarensis</i>	P4			Compact, prostrate shrub, to 0.5 m high. Fl. yellow. Pebbly, shingly coarse sand amongst boulders. Banks of flow line in the mouth of a gully in a valley wall. Granite	Yes	Yes	2 Km NW	Highly Likely	Unlikely
<i>Lepidium catapycnon</i>	P4			Open, woody perennial, herb or shrub, 0.2-0.3 m high, stems zigzag. Fl. white, Oct. Skeletal soils. Hillsides.	Yes	Yes	4.2 km SSW	Highly Likely	Highly Unlikely
<i>Acacia bromilowiana</i>	P4			Tree or shrub, to 12 m high, bark dark grey, fibrous; inflorescence in spikes. Fl. yellow/pink, Jul to Aug. Red skeletal stony loam, orange-brown pebbly, gravel loam, laterite, banded ironstone, basalt. Rocky	Yes	Yes	6.7 km W	Likely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current known Distribution	Distance to Nearest Record	Likelihood Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
				hills, breakaways, scree slopes, gorges, creek beds.					
<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	P4			Shrub, 0.5-1.5 m high. Fl. blue, Aug to Nov. Skeletal soils over ironstone. Rocky screes.	Yes	Yes	5 Km ESE	Likely	Highly Unlikely
<i>Gymnanthera cunninghamii</i>	P3			Erect shrub, 1-2 m high. Fl. cream-yellow-green, Jan to Dec. Sandy soils.	Some	Yes	1.5 Km NW	Likely	Unlikely
<i>Acacia subtiliformis</i>	P3			Spindly, slender, erect shrub, to 3.5 m high, phyllodes green; inflorescence in heads to 6 mm diameter; peduncles red. Fl. yellow, Jun. On rocky calcrete plateau.	No/marginal?	Yes	14.7 Km WSW	Possible	Highly Unlikely
<i>Amaranthus centralis</i>	P3			Annual herb, decumbent or erect to 0.6 m high. Grows in red sand in ephemeral watercourses, sandy to clayey loam on river banks and edges of permanent pools in eucalypt lined channels, or acacia shrubland	Marginal	Yes	6 Km SSE	Possible	Possible
<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	P3			Compactly tufted perennial, grass-like or herb, 0.3-0.8 m high, lemma groove muricate. Hardpan plains.	Some	Yes	24.5 Km WNW	Possible	Unlikely
<i>Dolichocarpa</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3			Annual herb to 10 cm. Crabhole plain, drainage line, floodplain and gentle slopes.	Yes	Adjacent	20.9 Km W	Possible	Unlikely
<i>Eragrostis crateriformis</i>	P3			Annual, grass-like or herb, 0.1-0.5 m high. Fl. Jan to May or Jul. Clayey loam or clay. Creek banks, depressions.	Some	Yes	31.6 Km W	Possible	Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current known Distribution	Distance to Nearest Record	Likelihood Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Eragrostis</i> sp. Mt Robinson (S. van Leeuwen 4109)	P2			Tussock-forming perennial, grass-like or herb, to 0.3 m high. Fl. Sep. Red-brown skeletal soils, ironstone. Steep slopes, summits.	Yes	One record	41.7 Km SSW	Possible	Highly Unlikely
<i>Eremophila naaykensis</i>	P3			Shrub to 1m. Hillslopes and gorges. Red/ brown loam and skeletal soils.	Yes	Adjacent	15.5 Km SE	Possible	Highly Unlikely
<i>Eremophila youngii</i> subsp. <i>lepidota</i>	P4			Dense, spreading shrub, (0.2-)1-3 m high. Fl. purple-red-pink, Jan or Mar or Jun or Aug to Sep. Stony red sandy loam. Flats plains, floodplains, sometimes semi-saline, clay flats.	Yes	Yes	23.4 km N	Possible	Highly Unlikely
<i>Euphorbia australis</i> var. <i>glabra</i>	P3			Annual prostrate herb, leaves green with a red tinged margins. Drainage lines on clay loam and river sand	Yes	Yes	17.4 Km W	Possible	Unlikely
<i>Goodenia lyrata</i>	P3			Prostrate herb, with lyrate leaves. Fl. yellow, Aug. Red sandy loam. Near claypan	Yes	Yes	35.7 Km SW	Possible	Highly Unlikely
<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727)	P3			Open, erect annual or biennial, herb, to 0.2 m high. Fl. yellow. Red-brown clay soil, calcrete pebbles. Low undulating plain, swampy plains.	Limited/ No	Adjacent	2.3 km W	Possible	Unlikely
<i>Iotasperma sessilifolium</i>	P3			Erect herb. Fl. pink. Cracking clay, black loam. Edges of waterholes, plains	Yes	Yes	32.6 Km W	Possible	Unlikely
<i>Ptilotus mollis</i>	P4			Compact, perennial shrub, to 0.5 m high, soft grey foliage. Fl. white/pink, May or Sep. Stony hills and screes.	Yes	Yes	35.4 km S	Possible	Highly Unlikely
<i>Rhagodia</i> sp. <i>Hammersley</i> (M. Trudgen 17794)	P3			Tall spindly shrub, 1.5-4 m high. Fl. yellow. Red brown sandy loam or	Yes	Yes	16.3 Km S	Possible	Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current known Distribution	Distance to Nearest Record	Likelihood Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
				clay, ironstone plain. Undulating plains, floodplain.					
<i>Stylidium weeliwolli</i>	P3			Annual, herb, 0.1-0.25 m high, throat appendages 4, rod-shaped. Fl. pink & red, Aug to Sep. Gritty sand soil, sandy clay. Edge of watercourses	Some	Yes	16.5 Km E	Possible	Unlikely
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	P3			Tussocky perennial, grass-like or herb, 0.9-1.8 m high. Fl. Aug. Red clay. Clay pan, grass plain.	Limited	Yes	14 Km N	Possible	Highly Unlikely
<i>Triodia basitricha</i>	P3			Hummock grass to 0.8 m high, non-resinous. Red/brown clay loam over ironstone. Floodplains, flat hill crest, lower slopes.	Yes	Yes	30.3 Km SW	Possible	Highly Unlikely
<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684)	P3			Erect annual herb, 0.3-1 m high. Fl. cream, Mar-May, Jul-Sept. Red-brown sandy loam. Drainage areas, floodplains, flat and/or stony plains.	Yes	Yes	10.4 W	Possible	Unlikely
<i>Acacia effusa</i>	P3			Low, dense, spreading, somewhat viscid shrub, 0.3-1 m high, bark 'minni-ritchi'. Fl. yellow, May to Aug. Stony red loam. Scree slopes of low ranges	Yes	No	28.5 Km WSW	Unlikely	Highly Unlikely
<i>Atriplex flabelliformis</i>	P3			Herb, 0.5 m high. Gilgai plains and marshes	No	No	21.3 Km N	Unlikely	Highly Unlikely
<i>Calotis squamigera</i>	P1			Procumbent annual, herb, to 0.21 m high. Fl. yellow, Jul. Pebbly loam	Yes	Adjacent	16.4 Km E	Unlikely	Highly Unlikely
<i>Cladium procerum</i>	P2			Densely tufted perennial, grass-like or herb (sedge), 2 m high. Fl. Nov (?). Perennial pools.	No/marginal?	No	22.4 km SE	Unlikely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current known Distribution	Distance to Nearest Record	Likelihood Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Dampiera metallorum</i>	P3			Rounded, multi-stemmed perennial, herb, to 0.5 m high. Fl. blue, Apr or Jun to Oct. Skeletal red-brown gravelly soil over banded ironstone. Steep slopes, summits of hills.	Yes	Yes	17 Km SSW	Unlikely	Highly Unlikely
<i>Dysphania congestiflora</i>	P3			Annual, herb 5-10cm. Floodplain. Saline clay.	Yes	No	26.2 Km N	Unlikely	Highly Unlikely
<i>Eremophila spongicarpa</i>	P3			Compact, succulent-leaved shrub, to 1 m high. Fl. white, May or Sep. Weakly saline alluvial plain on margins of marsh.	No	Adjacent	14.9 Km N	Unlikely	Highly Unlikely
<i>Fimbristylis sieberiana</i>	P3			Shortly rhizomatous, tufted perennial, grass-like or herb (sedge), 0.25-0.6 m high. Fl. brown, May to Jun. Mud, skeletal soil pockets. Pool edges, sandstone cliffs	Limited?	No	12.7 Km SSE	Unlikely	Highly Unlikely
<i>Glycine falcata</i>	P3			Mat-forming perennial, herb, to 0.2 m high. Fl. blue-purple, May or Jul. Black clayey sand. Along drainage depressions in crabhole plains on river floodplains.	Yes	No	20.9 Km W	Unlikely	Highly Unlikely
<i>Grevillea saxicola</i>	P3			Tree or shrub, to 8 m high, rough bark on trunks and stems. Fl. creamy white. Skeletal red brown sandy loam with ironstone pebble cover. Rocky gully, drainage lines, steep cliff, low rocky hills.	Yes	No	23.6 km SSE	Unlikely	Highly Unlikely
<i>Hibiscus</i> sp. Gurinbidy Range (M.E. Trudgen MET 15708)	P2			Erect slender shrub, 1-3 m high. Fl. pale purple. Loamy skeletal soils.	Yes	No	33.7 km S	Unlikely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current known Distribution	Distance to Nearest Record	Likelihood Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
				Gorge with ironstone outcropping, gullies, drainage line.					
<i>Indigofera gilesii</i>	P3			Shrub, to 1.5 m high. Fl. purple-pink, May or Aug. Pebbly loam. Amongst boulders & outcrops, hills.	Yes	No	35.6 km SE	Unlikely	Highly Unlikely
<i>Kohautia australiensis</i>	P2			Erect sparsely or much-branched annual, herb, 0.1-0.5 m high. Fl. blue. Low calcrete outcrops.	Limited/no	Adjacent	19.2 km W	Unlikely	Unlikely
<i>Tecticornia globulifera</i>	P1			Low compact shrub, to 0.5m high. Fl. red, green, May-June. Clay loam, sandy loam. Salt flats, lake beds, floodplain.	Some	No	27.3 km N	Unlikely	Highly Unlikely
<i>Tecticornia</i> sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	P1			Low shrub, 0.5m high. Fl. Jul-Aug, Oct. Red-orange/white sandy clay/sandy loam/brown loam. Gilgai/undulating plains, dry flats, saline flats, floodplain.	No	Adjacent	22.8 km N	Unlikely	Highly Unlikely
<i>Teucrium pilbaranum</i>	P2			Upright shrub, 0.2 m high. Fl. white, May or Sep. Clay. Crab hole plain in a river floodplain, margin of calcrete table.	Yes	No	39.5 km NNW	Unlikely	Highly Unlikely
<i>Adiantum capillus-veneris</i>	P2			Rhizomatous, perennial, herb or (fern), 0.1-0.2 m high, frond 1-2-pinnate; stipe blackish-brown, hard, glossy; sori marginal between sinuses, oblong. Moist, sheltered sites in gorges and on cliff walls.	Some	No	44.3 km NNW	Highly Unlikely	Highly Unlikely
<i>Ampelopteris prolifera</i>	P3			Rhizomatous, perennial, herb or (fern), to 4 m high, fronds 1-pinnate, pinnae shallowly lobed;	Marginal	No	51.2 Km WNW	Highly Unlikely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current known Distribution	Distance to Nearest Record	Likelihood Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
				buds on pinnae can form new plants; sori lacking indusia. Near water or in wet ground.					
<i>Arthropodium vanleeuwenii</i>	P2			Perennial herb to 70 cm. Moderate to steep slopes on banded iron formation. Brown loam.	Yes?	No	53 Km W	Highly Unlikely	Highly Unlikely
<i>Eremophila magnifica</i> subsp. <i>velutina</i>	P3			Shrub, 0.5-1.5 m high. Fl. blue-purple, Aug to Sep. Skeletal soils over ironstone. Summits.	Yes	No	48.8 Km SW	Highly Unlikely	Highly Unlikely
<i>Eremophila pusilliflora</i>	P2			Low spreading shrub, to 0.8 m high. Drainage lines, broad depressions, flood plains. Red sandy loam	Some	No	46.5 km NW	Highly Unlikely	Highly Unlikely
<i>Eremophila</i> sp. West Angelas (S. van Leeuwen 4068)	P2			Spindly shrub, 0.4-3 m high. Skeletal brown-red soil or loam. Hill slopes and summits.	Yes	No	42 Km SSW	Highly Unlikely	Highly Unlikely
<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	P2			Annual herb, 0.1-0.3 m high. Fl. Yellow. Brown sandy loam or clay. Gorge, ironstone outcrops, gully, shaded areas, creeklines.	Yes	Adjacent	49.1 Km SW	Highly Unlikely	Highly Unlikely
<i>Pilbara trudgenii</i>	P3			Gnarled, aromatic shrub, to 1 m high. Fl. Sep. Skeletal, red stony soil over ironstone. Hill summits, steep slopes, screes, cliff faces.	Yes	No	32.2 km NNW	Highly Unlikely	Highly Unlikely
<i>Rorippa</i> sp. Fortescue Valley (M.N. Lyons & R.A. Coppen FV 0760)	P1			Riparian slope/ drainage line.	Some	No	48.6 Km E	Highly Unlikely	Highly Unlikely
<i>Solanum kentrocaule</i>	P3			Spiny, erect perennial shrub, to 0.7 m high. Fl. purple. Steep rocky gullies, gorges, outcrops, cliffs.	Yes	No	42.1 Km SSW	Highly Unlikely	Highly Unlikely
<i>Tecticornia medusa</i>	P3			Erect shrub to 0.7 m. Articles bright green. Flat saline floodplain. Red clay. Samphire flats	No?	No	38.7 Km E	Highly Unlikely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current known Distribution	Distance to Nearest Record	Likelihood Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Triodia Karijini</i>	P2			Hummock grass to 0.9 m high. Steep hillslopes, hillcrests, ironstone outcrops on grey-brown silty loam	Yes	No	39 Km WSW	Highly Unlikely	Highly Unlikely
<i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739)	P3			Perennial, grass-like or herb, 0.4 m high. Light orange-brown, pebbly loam. Amongst rocks & outcrops, gully slopes.	Yes	No	28.2 SE	Highly Unlikely	Highly Unlikely
<i>Xerochrysum boreale</i>	P3			Stony plain. Red brown clay.	Yes	No	52.6 Km SE	Highly Unlikely	Highly Unlikely

**Appendix E: Introduced flora database results**

Family	Taxon	Source					Declared Plant Pests (DPP)	Weed of National Significance (WoNS)	Ecological Impact	Invasiveness
		NM	ALA	EPBC	BHP	WAOL				
Alismataceae	<i>Sagittaria platyphylla</i>					x	Y	Y		
Amaranthaceae	<i>Aerva javanica</i>	x	x		x				High	Rapid
Amaranthaceae	<i>Alternanthera pungens</i>		x		x				Low	Slow
Amaranthaceae	<i>Gomphrena globosa</i>		x							
Apiaceae	<i>Cyclospermum leptophyllum</i>	x	x							
Apocynaceae	<i>Calotropis procera</i>					x	Y			
Apocynaceae	<i>Cryptostegia madagascariensis</i>					x	Y			
Araceae	<i>Pistia stratiotes</i>					x	Y			
Araceae	<i>Zantedeschia aethiopica</i>					x	Y			
Araliaceae	<i>Hydrocotyle ranunculoides</i>					x	Y			
Arecaceae	<i>Phoenix dactylifera</i>				x				High	Rapid
Arecaceae	<i>Washingtonia filifera</i>				x				High	Rapid
Asparagaceae	<i>Asparagus asparagoides</i>					x	Y	Y		
Asteraceae	<i>Bidens bipinnata</i>	x	x		x				Unknown	Rapid
Asteraceae	<i>Bidens subalternans</i>		x							
Asteraceae	<i>Bidens subalternans</i> var. <i>simulans</i>		x							
Asteraceae	<i>Centaurea melitensis</i>				x					
Asteraceae	<i>Chondrilla juncea</i>					x	Y			
Asteraceae	<i>Erigeron bonariensis</i>		x		x					
Asteraceae	<i>Flaveria trinervia</i>	x	x		x					
Asteraceae	<i>Lactuca saligna</i>	x	x							
Asteraceae	<i>Lactuca serriola</i>	x	x		x					
Asteraceae	<i>Lactuca serriola</i> forma <i>serriola</i>				x					
Asteraceae	<i>Onopordum acaulon</i>					x	Y			
Asteraceae	<i>Sigesbeckia orientalis</i>	x	x		x				Unknown	Rapid
Asteraceae	<i>Silybum marianum</i>					x	Y			
Asteraceae	<i>Sonchus asper</i>				x					
Asteraceae	<i>Sonchus oleraceus</i>				x				Low	Rapid
Asteraceae	<i>Symphyotrichum squamatum</i>	x	x							
Asteraceae	<i>Taraxacum khatoonae</i>	x	x		x					
Asteraceae	<i>Tridax procumbens</i>	x	x		x					
Asteraceae	<i>Xanthium spinosum</i>					x	Y			
Asteraceae	<i>Xanthium strumarium</i>					x				
Boraginaceae	<i>Echium plantagineum</i>					x	Y			
Brassicaceae	<i>Sisymbrium orientale</i>				x				Low	Unknown

Family	Taxon	Source					Declared Plant Pests (DPP)	Weed of National Significance (WoNS)	Ecological Impact	Invasiveness
		NM	ALA	EPBC	BHP	WAOL				
Cactaceae	<i>Austrocyllindropuntia cylindrica</i>					x	Y	Y		
Cactaceae	<i>Austrocyllindropuntia subulata</i>					x	Y	Y		
Cactaceae	<i>Cylindropuntia fulgida</i>					x	Y	Y	High	Slow
Cactaceae	<i>Cylindropuntia imbricata</i>					x	Y	Y		
Cactaceae	<i>Cylindropuntia kleiniae</i>					x	Y	Y		
Cactaceae	<i>Cylindropuntia pallida</i>					x	Y	Y		
Cactaceae	<i>Cylindropuntia tunicata</i>					x	Y	Y		
Cactaceae	<i>Opuntia elata</i>					x	Y	Y		
Cactaceae	<i>Opuntia elatior</i>					x	Y	Y		
Cactaceae	<i>Opuntia engelmannii</i>					x	Y	Y		
Cactaceae	<i>Opuntia ficus-indica</i>					x	Y	Y		
Cactaceae	<i>Opuntia microdasys</i>					x	Y	Y		
Cactaceae	<i>Opuntia monacantha</i>					x	Y	Y		
Cactaceae	<i>Opuntia polyacantha</i>					x	Y	Y		
Cactaceae	<i>Opuntia puberula</i>					x	Y	Y		
Cactaceae	<i>Opuntia stricta</i>					x	Y	Y	High	Rapid
Cactaceae	<i>Opuntia tomentosa</i>					x	Y	Y		
Cucurbitaceae	<i>Citrullus amarus</i>	x	x		x					
Cucurbitaceae	<i>Coccinia grandis</i>					x	Y			
Cucurbitaceae	<i>Cucumis melo</i>	x	x		x				Unknown	Moderate
Cucurbitaceae	<i>Cucumis myriocarpus</i>				x				Low	Rapid
Cucurbitaceae	<i>Trichosanthes cucumerina</i> var. <i>cucumerina</i>				x					
Euphorbiaceae	<i>Euphorbia hirta</i>				x				Low	Slow
Euphorbiaceae	<i>Euphorbia schultzei</i>				x					
Euphorbiaceae	<i>Jatropha gossypifolia</i>					x	Y			
Fabaceae	<i>Alhagi maurorum</i>					x	Y			
Fabaceae	<i>Parkinsonia aculeata</i>					x	Y	Y	High	Rapid
Fabaceae	<i>Prosopis glandulosa</i> x <i>velutina</i>					x	Y	Y		
Fabaceae	<i>Senna alata</i>					x	Y			
Fabaceae	<i>Senna obtusifolia</i>					x	Y			
Fabaceae	<i>Swainsona complanata</i>				x					
Fabaceae	<i>Ulex europaeus</i>					x	Y	Y		
Fabaceae	<i>Vachellia farnesiana</i>	x	x		x				High	Rapid
Fabaceae	<i>Vigna lanceolata</i> var. <i>lanceolata</i>	x			x					
Iridaceae	<i>Moraea flaccida</i>					x	Y			

Family	Taxon	Source					Declared Plant Pests (DPP)	Weed of National Significance (WoNS)	Ecological Impact	Invasiveness
		NM	ALA	EPBC	BHP	WAOL				
Iridaceae	<i>Moraea miniata</i>					x	Y			
Malvaceae	<i>Malvastrum americanum</i>	x	x		x			High	Rapid	
Malvaceae	<i>Seringia elliptica</i>	x			x					
Papaveraceae	<i>Argemone ochroleuca</i>	x	x		x					
Phrymaceae	<i>Mimulus aff. repens</i>				x					
Phrymaceae	<i>Mimulus gracilis</i>	x	x		x					
Poaceae	<i>Cenchrus ciliaris</i>	x	x		x			High	Rapid	
Poaceae	<i>Cenchrus echinatus</i>	x	x					Medium	Rapid	
Poaceae	<i>Cenchrus setiger</i>	x	x		x			High	Rapid	
Poaceae	<i>Chloris barbata</i>	x	x		x			High	Rapid	
Poaceae	<i>Chloris pectinata</i>	x	x		x					
Poaceae	<i>Chloris virgata</i>	x	x		x			High	Rapid	
Poaceae	<i>Chrysopogon fallax</i>	x	x		x					
Poaceae	<i>Cymbopogon obtectus</i>	x	x		x					
Poaceae	<i>Cynodon dactylon</i>				x			High	Rapid	
Poaceae	<i>Dactyloctenium radulans</i>	x	x		x					
Poaceae	<i>Digitaria ciliaris</i>	x	x		x			Low	Slow	
Poaceae	<i>Diplachne fusca</i> subsp. <i>muelleri</i>	x			x					
Poaceae	<i>Echinochloa colona</i>	x	x		x			High	Rapid	
Poaceae	<i>Enneapogon caeruleus</i>	x	x		x					
Poaceae	<i>Melinis repens</i>	x			x					
Poaceae	<i>Panicum laevinode</i>	x	x		x					
Poaceae	<i>Paspalum dilatatum</i>	x	x							
Poaceae	<i>Setaria dielsii</i>	x	x		x					
Poaceae	<i>Setaria surgens</i>				x					
Poaceae	<i>Setaria verticillata</i>	x	x		x			High	Rapid	
Poaceae	<i>Sorghum timorense</i>		x		x					
Poaceae	<i>Themeda triandra</i>	x	x		x					
Polygonaceae	<i>Rumex vesicarius</i>	x	x		x					
Portulacaceae	<i>Portulaca oleracea</i>	x	x		x			Unknown	Unknown	
Proteaceae	<i>Grevillea berryana</i>				x					
Rhamnaceae	<i>Ziziphus mauritiana</i>					x	Y			
Rosaceae	<i>Rubus anglocandicans</i>					x	Y	Y		
Rosaceae	<i>Rubus laudatus</i>					x	Y	Y		
Rosaceae	<i>Rubus rugosus</i>					x	Y	Y		

Family	Taxon	Source					Declared Plant Pests (DPP)	Weed of National Significance (WoNS)	Ecological Impact	Invasiveness
		NM	ALA	EPBC	BHP	WAOL				
<i>Rosaceae</i>	<i>Rubus ulmifolius</i>					x	Y	Y		
<i>Solanaceae</i>	<i>Datura leichhardtii</i>		x		x				Unknown	Unknown
<i>Solanaceae</i>	<i>Datura leichhardtii</i> subsp. <i>leichhardtii</i>	x	x							
<i>Solanaceae</i>	<i>Nicotiana heterantha</i>	x	x		x					
<i>Solanaceae</i>	<i>Solanum elaeagnifolium</i>					x	Y	Y		
<i>Solanaceae</i>	<i>Solanum linnaeanum</i>					x	Y			
<i>Solanaceae</i>	<i>Solanum nigrum</i>	x	x		x				Low	Rapid
<i>Stylidiaceae</i>	<i>Stylidium fluminense</i>				x					
<i>Tamaricaceae</i>	<i>Tamarix aphylla</i>					x	Y	Y	High	Rapid
<i>Verbenaceae</i>	<i>Lantana camara</i>					x	Y	Y		
<i>Zygophyllaceae</i>	<i>Tribulus macrocarpus</i>	x	x		x					
<i>Zygophyllaceae</i>	<i>Tribulus terrestris</i>	x	x		x				Unknown	Moderate

**Appendix F: Floristic sample site data sheets**

## Site BMN-01

**Date** 28/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714318 mE; 7492005 mN  
119.0858 E -22.665502 S

**Veg Condition** Excellent

**Soil** n/a

**Rock Type** n/a

**Fire Age** Moderate (3 to 5 yr)

**Habitat** n/a

**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia deserticola* subsp. *deserticola* low open woodland over *Triodia vanleeuwenii* hummock grassland



## SPECIES LIST

### Name

*Acacia pruinocarpa*  
*Corchorus parviflorus*  
*Corymbia deserticola* subsp. *deserticola*  
*Cymbopogon ambiguus*  
*Dampiera candidans*  
*Eriachne mucronata*  
*Eucalyptus leucophloia* subsp. *leucophloia*  
*Gompholobium oreophilum*  
*Goodenia stobbsiana*  
*Goodenia triodiophila*  
*Hakea chordophylla*  
*Indigofera monophylla*  
*Jasminum didymum* subsp. *lineare*  
*Senna artemisioides* subsp. *oligophylla*  
*Senna glutinosa* subsp. *glutinosa* x *luerssenii*  
*Themeda triandra*  
*Triodia vanleeuwenii*

## Site BMN-02

**Date** 28/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714140 mE; 7492161 mN  
119.0841 E -22.664114 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low  
open woodland over

*Acacia arida* sparse shrubland over *Corchorus lasiocarpus* sparse low  
shrubland over *Triodia vanleeuwenii* and *Triodia pungens* open hummock



## Site BMN-03

**Date** 28/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714088 mE; 7492325 mN  
119.0835 E -22.662639 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** Minor Drainage Line  
**Vegetation** *Acacia arida* tall shrubland over *Gompholobium oreophilum* sparse  
shrubland over *Triodia pungens* and *Triodia vanleeuwenii* sparse  
hummock grassland with *Eriachne mucronata* sparse tussock grassland



## SPECIES LIST

### **Name**

*Acacia adoxa* var. *adoxo*  
*Acacia ancistrocarpa*  
*Acacia arida*  
*Acacia pruinocarpa*  
*Bonamia pilbarensis*  
*Corchorus parviflorus*  
*Cucumis variabilis*  
*Dysphania rhadinostachya*  
*Eucalyptus leucophloia* subsp. *leucophloia*  
*Indigofera monophylla*  
*Ptilotus astrolasius*  
*Ptilotus calostachyus*  
*Santalum lanceolatum*  
*Solanum lasiophyllum*  
*Triodia pungens*  
*Triodia vanleeuwenii*

## Site BMN-04

**Date** 28/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714116 mE; 7492458 mN  
119.0838 E -22.661432 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** Gully  
**Vegetation** *Corymbia hamersleyana* sparse low woodland  
over *Petalostylis*

*labicheoides*, *Androcalva luteiflora*, *Grevillea wickhamii* tall open  
shrubland over *Themeda triandra*, *Eriachne mucronata* tussock grassland



## SPECIES LIST

### Name

*Abutilon lepidum*  
*Acacia pruinocarpa*  
*Acacia pyrifolia* var. *morrisonii*  
*Acacia tumida* var. *pilbarensis*  
*Androcalva luteiflora*  
*Corchorus parviflorus*  
*Corymbia hamersleyana*  
*Cymbopogon ambiguus*  
*Duperreya commixta*  
*Enneapogon polyphyllus*  
*Eriachne mucronata*  
*Gompholobium oreophilum*  
*Gossypium robinsonii*  
*Grevillea wickhamii*  
*Jasminum didymum* subsp. *lineare*  
*Mirbelia viminalis*  
*Paraneurachne muelleri*  
*Petalostylis labicheoides*  
*Pterocaulon sphacelatum*  
*Santalum lanceolatum*  
*Senna artemisioides* subsp. *oligophylla*  
*Tephrosia densa*  
*Themeda triandra*  
*Triodia pungens*  
*Triodia vanleeuwenii*

## Site BMN-05

**Date** 28/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714330 mE; 7493027 mN  
119.0858 E -22.656269 S

**Veg Condition** Excellent

**Soil** n/a

**Rock Type** n/a

**Fire Age** n/a

**Habitat** n/a

**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia*,  
*Corymbia hamersleyana* low

open woodland over *Grevillea wickhamii*, *Acacia inaequilatera* tall sparse  
shrubland over *Triodia vanleeuwenii* hummock grassland



## SPECIES LIST

### Name

*Acacia adoxa* var. *adoxo*

*Acacia inaequilatera*

*Corymbia hamersleyana*

*Eucalyptus leucophloia* subsp. *leucophloia*

*Grevillea wickhamii*

*Hakea chordophylla*

*Mirbelia viminalis*

*Senna glutinosa* subsp. *glutinosa* x *luerssenii*

*Triodia pungens*

*Triodia vanleeuwenii*

## Site BMN-06

**Date** 28/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714519 mE; 7493037 mN  
119.0876 E -22.656160 S  
**Veg Condition** Good  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus camaldulensis* open woodland over  
*Acacia tumida* var



*pilbarensis*, *Grevillea wickhamii*, *Androcalva luteiflora*, *Acacia pyrifolia* var *morrisonii* tall shrubland over *Tephrosia rosea* var *Fortescue Creeks* (=BRE-02-01) sparse low shrubland over *Triodia pungens* sparse hummock grassland with *Themeda triandra*, *Eriachne mucronata*, *Cymbopogon ambiguus*, *Enneapogon lindleyanus* sparse tussock grassland.

## SPECIES LIST

### **Name**

*Cenchrus ciliaris*

## Site BMN-07

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714625 mE; 7493636 mN  
119.0886 E -22.650736 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** Moderate (3 to 5 yr)  
**Habitat** n/a  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low  
open woodland over  
*Acacia inaequilatera* tall sparse shrubland over *Triodia vanleeuwenii*  
open hummock grassland



## Site BMN-08

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715151 mE; 7493378 mN  
119.0937 E -22.653000 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia deserticola*, *Eucalyptus leucophloia*  
subsp. *leucophloia* low  
isolated trees over *Acacia hilliana* isolated low shrubs over  
*Triodia vanleeuwenii* open hummock grassland



## Site BMN-09

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715871 mE; 7493466 mN  
119.1007 E -22.652108 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* low open woodland

over *Acacia tumida* var

*pilbarensis*, *Grevillea wickhamii*, *Androcalva luteiflora* tall shrubland  
over *Triodia pungens* open hummock grassland with *Eriachne mucronata*  
sparse tussock grassland



## Site BMN-10

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
716474 mE; 7493249 mN  
119.1066 E -22.653996 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia deserticola* isolated low trees over  
*Gompholobium oreophilum*,  
*Acacia hilliana* low sparse shrubland over *Triodia vanleeuwenii* open  
hummock grassland



## Site BMN-11

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715379 mE; 7493054 mN  
119.0960 E -22.655888 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* low open woodland  
over *Acacia tumida* var

*pilbarensis*, *Grevillea wickhamii*, *Androcalva luteiflora*, *Dodonaea lanceolata* var *lanceolata* tall shrubland over *Triodia pungens* sparse hummock grassland with *Themeda triandra*, *Eriachne mucronata*, *Cymbopogon ambiguus* open tussock grassland



## Site BMN-12

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715147 mE; 7493214 mN  
119.0937 E -22.654481 S

**Veg Condition** Excellent

**Soil** n/a

**Rock Type** n/a

**Fire Age** n/a

**Habitat** n/a

**Vegetation** *Corymbia ferritcola*, *Eucalyptus leucophloia*

subsp. *leucophloia* low open

woodland over *Acacia tumida* var *pilbarensis*, *Grevillea wickhamii*  
sparse tall shrubland over *Triodia pungens* open hummock grassland  
with *Eriachne mucronata*, *Cymbopogon ambiguus* sparse tussock



## Site BMN-13

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715418 mE; 7491419 mN  
119.0966 E -22.670647 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* scattered low trees over  
*Acacia tumida* var  
*pilbarensis*, *Petalostylis labicheoides*, *Grevillea wickhamii*, *Androcalva*  
*luteiflora* tall shrubland over *Triodia pungens* open hummock grassland  
with *Themeda triandra* sparse tussock grassland



## Site BMN-14

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715379 mE; 7491727 mN  
119.0962 E -22.667868 S  
**Veg Condition** Poor  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* low open woodland  
over *Acacia tumida* var

*pilbarensis*, *Grevillea wickhamii*, *Androcalva luteiflora* tall open  
shrubland over *Triodia pungens* open hummock grassland with \**Cenchrus*  
*ciliaris*, *Themeda triandra*, *Cymbopogon ambiguus* open tussock grassland



## SPECIES LIST

### **Name**

*Cenchrus ciliaris*  
*Indigofera linnaei*

## Site BMN-15

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715379 mE; 7492010 mN  
119.0961 E -22.665315 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia*,  
*Corymbia hamersleyana* low  
open woodland over *Gompholobium oreophilum*, *Acacia hilliana*, *Acacia*  
*adoxa* var *adoxa* sparse low shrubland over *Triodia vanleeuwenii*



## Site BMN-16

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715550 mE; 7492015 mN  
119.0978 E -22.665247 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* low open woodland  
over *Acacia tumida* var

*pilbarensis*, *Grevillea wickhamii*, *Androcalva luteiflora* tall shrubland  
over *Triodia pungens* sparse hummock grassland with *Themeda triandra*,  
*Eriachne mucronata* open tussock grassland



## Site BMN-17

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
716132 mE; 7491358 mN  
119.1035 E -22.671106 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* low open woodland  
over *Acacia tumida* var

*pilbarensis*, *Androcalva luteiflora*, *Grevillea wickhamii*, *Acacia monticola*  
tall open shrubland over *Triodia pungens* open hummock grassland with  
*Themeda triandra*, *Eriachne mucronata* sparse tussock grassland



## Site BMN-18

**Date** 29/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715923 mE; 7491349 mN  
119.1015 E -22.671215 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana*, *Eucalyptus leucophloia*  
subsp. *leucophloia* low

open woodland over *Acacia hilliana* sparse low shrubland over *Triodia vanleeuwenii* open hummock grassland



## Site BMN-19

**Date** 30/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
724409 mE; 7493771 mN  
119.1837 E -22.648249 S  
**Veg Condition** Very Good  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* low isolated trees over  
*Gossypium robinsonii*,



*Grevillea wickhamii*, *Acacia pyrifolia* var *pyrifolia* tall open shrubland  
over *Corchorus laniflorus*, *Ptilotus obovatus* low open shrubland over  
*Triodia pungens* sparse hummock grassland with *Enneapogon lindleyanus*  
open tussock grassland and *Dysphania rhadinostachya* sparse herbland

## SPECIES LIST

### **Name**

*Acacia monticola*  
*Cymbopogon ambiguus*  
*Eriachne pulchella* subsp. *pulchella*  
*Senna artemisioides* subsp. *oligophylla*  
*Sonchus oleraceus*  
*Tephrosia densa*  
*Themeda triandra*

## Site BMN-20

**Date** 30/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
724397 mE; 7493998 mN  
119.1836 E -22.646204 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low  
open woodland over

*Grevillea wickhamii* tall sparse shrubland over *Mirbelia viminalis*, *Acacia spondylophylla* low open shrubland over *Triodia vanleeuwenii* open hummock grassland



## Site BMN-21

**Date** 30/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
724583 mE; 7493844 mN  
119.1854 E -22.647562 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low  
isolated trees over *Hakea*

*chordophylla*, *Grevillea wickhamii* sparse tall shrubland over *Acacia hilliana*, *Acacia spondylophylla* low open shrubland over *Triodia vanleeuwenii* sparse hummock grassland



## Site BMN-22

**Date** 30/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
720338 mE; 7491082 mN  
119.1445 E -22.673058 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia deserticola*, *Eucalyptus leucophloia*  
subsp. *leucophloia* low

open woodland over *Acacia tenuissima* sparse shrubland over *Triodia vanleeuwenii* open hummock grassland



## Site BMN-23

**Date** 30/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
720441 mE; 7490926 mN  
119.1455 E -22.674448 S

**Veg Condition** Excellent

**Soil** n/a

**Rock Type** n/a

**Fire Age** n/a

**Habitat** n/a

**Vegetation** *Corymbia hamersleyana* low open woodland

over *Androcalva luteiflora*,

*Acacia tumida* var *pilbarensis*, *Grevillea wickhamii*, *Santalum*

*lanceolatum* tall shrubland over *Triodia pungens* sparse hummock

grassland with *Themeda triandra* sparse tussock grassland



## SPECIES LIST

### **Name**

*Dodonaea lanceolata* var. *lanceolata*

## Site BMN-24

**Date** 30/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
719741 mE; 7490637 mN  
119.1387 E -22.677147 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low  
open woodland over

*Acacia inaequilatera* sparse tall shrubland over *Acacia adoxa* var *adoxoidea*  
sparse low shrubland over *Triodia wiseana*, *Triodia vanleeuwenii*



## SPECIES LIST

### **Name**

*Acacia hilliana*

## Site BMN-25

**Date** 30/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
720276 mE; 7490533 mN  
119.1440 E -22.678018 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia*,  
*Corymbia hamersleyana* low  
open woodland over *Acacia adoxa* var *adoxo*, *Acacia hilliana* sparse low  
shrubland over *Triodia wiseana*, (*Triodia vanleeuwenii*) hummock



## Site BMN-26

**Date** 31/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715668 mE; 7488339 mN  
119.0994 E -22.698424 S  
**Veg Condition** Very Good  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* low open woodland  
over *Acacia pyrifolia* var

*morrisonii*, *Petalostylis labicheoides*, *Grevillea wickhamii*, *Acacia tumida*  
var *pilbarensis* tall open shrubland over *Triodia pungens* hummock  
grassland with *Themeda triandra* sparse tussock grassland



## SPECIES LIST

### **Name**

*Cenchrus ciliaris*

## Site BMN-27

**Date** 31/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715626 mE; 7488405 mN  
119.0990 E -22.697835 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana* isolated low trees over  
*Triodia wiseana*  
hummock grassland



## SPECIES LIST

### **Name**

*Acacia adoxa* var. *adoxo*  
*Hakea chordophylla*

## Site BMN-28

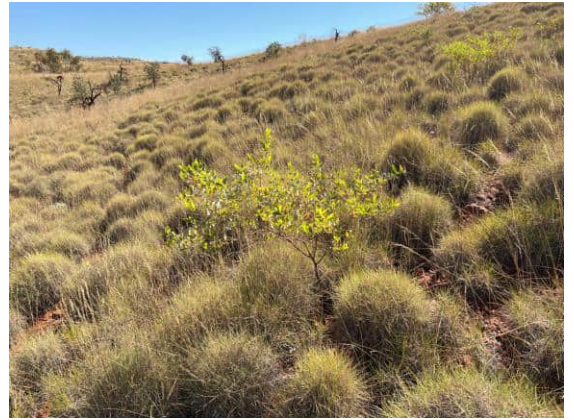
**Date** 31/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714680 mE; 7487431 mN  
119.0900 E -22.706743 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana*, *Eucalyptus leucophloia*  
subsp. *leucophloia* low



open woodland over *Acacia maitlandii*, *Acacia monticola*, *Androcalva luteiflora* tall open shrubland over *Triodia wiseana* sparse hummock grassland with *Themeda triandra*, *Cymbopogon ambiguus* open tussock

## Site BMN-29

**Date** 31/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714180 mE; 7487767 mN  
119.0850 E -22.703777 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Acacia bivenosa*, *Acacia inaequilatera* sparse tall  
shrubland over *Triodia*  
*wiseana*, *Triodia brizoides* closed hummock grassland



## Site BMN-30

**Date** 31/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714443 mE; 7488318 mN  
119.0875 E -22.698765 S

**Veg Condition** Very Good

**Soil** n/a

**Rock Type** n/a

**Fire Age** n/a

**Habitat** n/a

**Vegetation** *Eucalyptus victrix* open woodland over *Acacia tumida* var *pilbarensis*,

*Acacia maitlandii*, *Gossypium robinsonii*, *Acacia bivenosa* tall open shrubland over *Triodia wiseana* sparse hummock grassland with *Themeda triandra*, *Eriachne tenuiculmis*, *Cymbopogon ambiguus* open



## SPECIES LIST

### **Name**

*Acacia coriacea* subsp. *pendens*  
*Cyperus vaginatus*  
*Melaleuca glomerata*  
*Vachellia farnesiana*

## Site BMN-31

**Date** 31/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
714771 mE; 7490792 mN  
119.0904 E -22.676387 S  
**Veg Condition** Very Good  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus camaldulensis*, *Eucalyptus victrix*  
woodland over *Acacia*



*tumida* var *pilbarensis*, *Grevillea wickhamii*, *Androcalva luteiflora*,  
*Acacia pyrifolia* var *morrisonii*, *Gossypium robinsonii*, *Melaleuca*  
*glomerata* tall open shrubland over *Tephrosia rosea* var Fortescue Creeks  
(=BRE-02-01) sparse low shrubland over *Triodia pungens* sparse hummock  
grassland with *Eulalia aurea*, *Themeda triandra*, *Eriachne tenuiculmis*  
open tussock grassland and *Stemodia grossa*, *Pterocaulon sphacelatum*,  
*Goodenia lamprosperma*, *Pluchea dentex* open herbland

## Site BMN-32

**Date** 31/07/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
715350 mE; 7490399 mN  
119.0961 E -22.679864 S  
**Veg Condition** Good  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus camaldulensis*, *Eucalyptus victrix*  
woodland over *Acacia*



*tumida* var *pilbarensis*, *Acacia pyrifolia* var *morrisonii*, *Acacia maitlandii*, *Androcalva luteiflora*, *Gossypium robinsonii* tall open shrubland over *Tephrosia rosea* var Fortescue Creeks (=BRE-02-01) sparse low shrubland over *Triodia pungens* sparse hummock grassland with *Eulalia aurea*, *Cymbopogon ambiguus*, *Themeda triandra* open tussock

## SPECIES LIST

### **Name**

*Olearia fluvialis*

## Site BMN-33

**Date** 1/08/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone50  
717002 mE; 7487094 mN  
119.1126 E -22.709492 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Acacia inaequilatera*, *Acacia dictyophleba* sparse  
tall shrubland over  
*Acacia adoxa* var *adoxo* sparse low shrubland over *Triodia wiseana*  
hummock grassland



## SPECIES LIST

### **Name**

Grevillea wickhamii  
Indigofera monophylla

## Site BMN-34

**Date** 1/08/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
716711 mE; 7486750 mN  
119.1098 E -22.712635 S  
**Veg Condition** Very Good  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus xerothermica* low open woodland  
over *Acacia colei* subsp.

*colei*, *Acacia dictyophleba* tall open shrubland over *Androcalva luteiflora*  
sparse shrubland over *Bonamia erecta* sparse low shrubland over *Triodia*  
*pungens* open hummock grassland *Themeda triandra* sparse tussock



## SPECIES LIST

**Name**

## Site BMN-35

**Date** 1/08/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
716979 mE; 7486712 mN  
119.1124 E -22.712938 S  
**Veg Condition** Very Good  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus victrix* open woodland over *Acacia*  
*colei* var *colei*, *Acacia*

*pyrifolia* var *morrisonii*, *Acacia dictyophleba*, *Acacia bivenosa* tall open shrubland *Triodia pungens* sparse hummock grassland with *Themeda triandra*, *Cymbopogon ambiguus* open tussock grassland and *Cyperus vaginatus* isolated sedges



## SPECIES LIST

### **Name**

*Vachellia farnesiana*

## Site BMN-36

**Date** 1/08/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
719082 mE; 7489085 mN  
119.1326 E -22.691246 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Acacia inaequilatera*, *Grevillea wickhamii* sparse  
tall shrubland over

*Acacia adoxa* var *adoxo* sparse low shrubland over *Triodia wiseana*,  
*Triodia brizoides* hummock grassland



## Site BMN-37

**Date** 1/08/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
718942 mE; 7489071 mN  
119.1312 E -22.691397 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Eucalyptus victrix* open woodland over *Acacia*  
*bivenosa*, *Santalum*



*lanceolatum* tall open shrubland over *Triodia wiseana*, *Triodia pungens*  
open hummock grassland with *Themeda triandra*, *Cymbopogon ambiguus*,  
*Enneapogon lindleyanus* open tussock grassland with *Rhynchosia*  
*minima* sparse vineland

## SPECIES LIST

### **Name**

*Acacia colei* var. *colei*  
*Atalaya hemiglauca*

## Site BMN-38

**Date** 1/08/2022  
**Described by** D. Barrie, B. Eckermann  
**Type** Mapping Note  
**Location** MGA Zone 50  
718417 mE; 7490256 mN  
119.1259 E -22.680763 S  
**Veg Condition** Excellent  
**Soil** n/a  
**Rock Type** n/a  
**Fire Age** n/a  
**Habitat** n/a  
**Vegetation** *Corymbia hamersleyana*, *Eucalyptus leucophloia* subsp. *leucophloia* low

open woodland over *Gossypium robinsonii*, *Grevillea wickhamii*, *Acacia maitlandii* sparse tall shrubland over *Triodia wiseana* and *Triodia brizoides* sparse hummock grassland with *Themeda triandra*, *Cymbopogon ambiguus* open tussock grassland and *Pluchea dentex*



## Site BRE-01

**Date** 28/07/2022  
**Described by** B. Eckermann, D. Barrie  
**Type** Relevé  
**Location** MGA Zone 50  
714624 mE; 7492068 mN  
119.0888 E -22.664891 S  
**Veg Condition** Excellent  
**Soil** Sandy Loam  
**Rock Type** BIF  
**Fire Age** Old (6+ yr)  
**Habitat** Hillcrest/ Upper Hillslope  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over  
*Acacia pruinocarpa* isolated tall shrubs over *Triodia vanleeuwenii*  
(*Triodia pungens*) hummock grassland



## SPECIES LIST

### Name

*Acacia adoxa* var. *adoxo*  
*Acacia atkinsiana*  
*Acacia hilliana*  
*Acacia inaequilatera*  
*Acacia pruinocarpa*  
*Corchorus parviflorus*  
*Eriachne mucronata*  
*Eucalyptus leucophloia* subsp. *leucophloia*  
*Goodenia stobbsiana*  
*Goodenia triodiophila*  
*Grevillea wickhamii*  
*Hakea chordophylla*  
*Ptilotus astrolasius*  
*Ptilotus calostachyus*  
*Scaevola amblyanthera*  
*Senna glutinosa* subsp. *glutinosa*  
*Sida* sp. spiciform panicles (E. Leyland s.n. 14/8/90)  
*Solanum cleistogamum*  
*Solanum lasiophyllum*  
*Themeda triandra*  
*Triodia pungens*  
*Triodia vanleeuwenii*

## Site BRE-02

**Date** 28/07/2022  
**Described by** B. Eckermann, D. Barrie  
**Type** Relevé  
**Location** MGA Zone 50  
714532 mE; 7492777 mN  
119.0878 E -22.658502 S  
**Veg Condition** Good  
**Soil** Sandy Loam  
**Rock Type** BIF  
**Fire Age** Old (6+ yr)  
**Habitat** Medium Drainage Line

**Vegetation** *Eucalyptus camaldulensis* low open woodland over *Acacia tumida* var *pilbarensis*, *Grevillea wickhamii*, *Androcalva luteiflora* tall shrubland over *Tephrosia rosea* var. Fortescue creeks (BRE02-01) sparse low shrubland. Over *Themeda triandra*, *Cymbopogon ambiguus*, \**Cenchrus ciliaris* open tussock grassland with *Triodia pungens* sparse hummock grassland.



## SPECIES LIST

### Name

*Acacia maitlandii*  
*Acacia pyrifolia* var. *morrisonii*  
*Acacia tumida* var. *pilbarensis*  
*Afrohybanthus aurantiacus*  
*Alternanthera nana*  
*Amaranthus* sp. Indet  
*Androcalva luteiflora*  
*Aristida holathera*  
*Atalaya hemiglaucula*  
*Capparis spinosa* subsp. *nummularia*  
*Cenchrus ciliaris*  
*Chrysocephalum apiculatum* subsp. *pilbarensis*  
*Codonocarpus cotinifolius*  
*Corymbia hamersleyana*  
*Cymbopogon ambiguus*  
*Dicrastylis cordifolia*  
*Digitaria brownii*  
*Dysphania* sp. Indet  
*Enneapogon lindleyanus*  
*Eremophila longifolia*  
*Eriachne mucronata*  
*Eucalyptus camaldulensis*  
*Evolvulus alsinoides*  
*Gomphrena cunninghamii*  
*Goodenia microptera*  
*Gossypium robinsonii*  
*Grevillea pyramidalis* subsp. *leucadendron*  
*Grevillea wickhamii*  
*Notoleptopus decaisnei* var. *orbicularis* (A.B. Craig 428)  
*Paraneurachne muelleri*  
*Petalostylis labicheoides*  
*Polycarpaea longiflora*  
*Pterocaulon sphacelatum*  
*Ptilotus astrolasius*  
*Salsola australis*  
*Sida fibulifera*  
*Sida* sp. spiciform panicles (E. Leyland s.n. 14/8/90)  
*Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186)  
*Themeda triandra*  
*Trachymene oleracea*  
*Trichodesma zeylanicum*  
*Triodia pungens*  
*Waltheria indica*

## Breakaway

## Site BRE-03

**Date** 29/07/2022  
**Described by** B. Eckermann, D. Barrie  
**Type** Relevé  
**Location** MGA Zone 50  
714442 mE; 7493629 mN  
119.0868 E -22.650818 S  
**Veg Condition** Excellent  
**Soil** Sandy Loam  
**Rock Type** BIF  
**Fire Age** Old (6+ yr)  
**Habitat** Gorge  
**Vegetation** *Corymbia ferritcola*, *Eucalyptus leucophloia* subsp. *leucophloia*,  
*Corymbia hammersleyana* low open woodland, over *Androcalva*  
*luteiflora*, *Acacia tumida*, *Grevillea wickhamii* tall open shrubland with  
*Duperreya commixta* sparse vine-land over *Triodia pungens* sparse  
hummock grassland, with *Themeda* sp. Mt barricade (M.E. Trudgen 2471),  
*Eriachne mucronata* and *Themeda triandra* open tussock grassland



## SPECIES LIST

### Name

*Abutilon lepidum*  
*Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618)  
*Acacia maitlandii*  
*Acacia pruinocarpa*  
*Acacia tumida* var. *pillbarensis*  
*Afrohybanthus aurantiacus*  
*Androcalva luteiflora*  
*Aristida burbridgeae*  
*Capparis lasiantha*  
*Cheilanthes austrotenuifolia*  
*Clerodendrum tomentosum* var. *tomentosum*  
*Corymbia ferritcola*  
*Corymbia hammersleyana*  
*Cucumis variabilis*  
*Cymbopogon ambiguus*  
*Duperreya commixta*  
*Eriachne mucronata*  
*Eucalyptus leucophloia* subsp. *leucophloia*  
*Euphorbia* sp. Indet  
*Gossypium robinsonii*  
*Grevillea wickhamii*  
*Hibiscus coatesii*  
*Jasminum didymum* subsp. *lineare*  
*Newcastelia clavipetala*  
*Nicotiana* sp. Indet  
*Paraneurachne muelleri*  
*Petalostylis labicheoides*  
*Ptilotus obovatus*  
*Senna glutinosa* subsp. *glutinosa*  
*Senna notabilis*  
*Sida* ? sp. Articulation below (A.A. Mitchell PRP 1605)  
*Sida* sp. Barlee Range (S. van Leeuwen 1642)  
*Solanum cleistogamum*  
*Solanum phlomoides*  
*Tephrosia densa*  
*Themeda* sp. Mt Barricade (M.E. Trudgen 2471)  
*Themeda triandra*  
*Triodia pungens*  
*Triumfetta leptacantha*

## Breakaway

## SiteBRE-04

**Date** 29/07/2022  
**Described by** B. Eckermann, D. Barrie  
**Type** Relevé  
**Location** MGA Zone 50  
716416 mE; 7493389 mN  
119.1060 E -22.652734 S  
**Veg Condition** Excellent  
**Soil** Sandy Loam  
**Rock Type** BIF  
**Fire Age** Old (6+ yr)  
**Habitat** Drainage Area/ Floodplain  
**Vegetation** *Corymbia hamersleyana* low open woodland, over *Acacia tumida*, *Androcalva luteiflora* var. *pilbarensis*, *Grevillea wickhamii*, *Gossypium robinsonii* tall open shrubland, over *Triodia pungens* open hummock grassland with *Themeda triandra*, *Cymbopogon ambiguus*, *Eriachne mucronata* sparse tussock grassland.

## SPECIES LIST

### Name

*Abutilon lepidum*  
*Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618)  
*Acacia adoxa* var. *adoxo*  
*Acacia maitlandii*  
*Acacia pyrifolia* var. *pyrifolia*  
*Acacia tumida* var. *pilbarensis*  
*Afrohybanthus aurantiacus*  
*Androcalva luteiflora*  
*Arivela viscosa*  
*Clerodendrum floribundum* var. *angustifolium*  
*Corchorus crozophorifolius*  
*Corchorus laniflorus*  
*Corymbia hamersleyana*  
*Crotalaria medicaginea* var. *neglecta*  
*Cucumis variabilis*  
*Cymbopogon ambiguus*  
*Dodonaea lanceolata* var. *lanceolata*  
*Duperreya commixta*  
*Dysphania rhadinostachya*  
*Enneapogon caerulescens*  
*Euphorbia* sp. Indet  
*Evolvulus alsinoides*  
*Gomphrena cunninghamii*  
*Goodenia stobbsiana*  
*Gossypium robinsonii*  
*Grevillea pyramidalis* subsp. *leucadendron*  
*Grevillea wickhamii*  
*Indigofera monophylla*  
*Notoleptopus decaisnei* var. *orbicularis* (A.B. Craig 428)  
*Paraneurachne muelleri*  
*Polycarpaea longiflora*  
*Pterocaulon sphacelatum*  
*Ptilotus calostachyus*  
*Rhynchosia minima*  
*Senna artemisioides* subsp. *oligophylla*  
*Senna pleurocarpa* var. *pleurocarpa*  
*Solanum cleistogamum*  
*Tephrosia densa*  
*Themeda triandra*  
*Trachymene oleracea*  
*Triodia pungens*  
*Triodia vanleeuwenii*

**Breakaway****SiteBRE-05**

**Date** 29/07/2022  
**Described by** B. Eckermann, D. Barrie  
**Type** Relevé  
**Location** MGA Zone 50  
715961 mE; 7492082 mN  
119.1018 E -22.664592 S  
**Veg Condition** Excellent  
**Soil** Sandy Loam  
**Rock Type** BIF  
**Fire Age** Old (6+ yr)  
**Habitat** Hillslope  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low isolated trees over *Acacia adoxa* var. *adoxo* shrubland over *Triodia wiseana* hummock with *Themeda* sp. Mt barricade (M.E. Trudgen 2471).

**SPECIES LIST****Name**

*Acacia adoxa* var. *adoxo*  
*Acacia inaequilatera*  
*Dodonaea lanceolata* var. *lanceolata*  
*Duperreya commixta*  
*Eucalyptus leucophloia* subsp. *leucophloia*  
*Grevillea wickhamii*  
*Senna glutinosa* subsp. *pruinosa*  
*Themeda* sp. Mt Barricade (M.E. Trudgen 2471)  
*Triodia pungens*  
*Triodia wiseana*

## Breakaway

## SiteBRE-06

**Date** 30/07/2022  
**Described by** B. Eckermann, D. Barrie  
**Type** Relevé  
**Location** MGA Zone 50  
724427 mE; 7493595 mN  
119.1839 E -22.649837 S  
**Veg Condition** Excellent  
**Soil** Sandy Loam  
**Rock Type** BIF  
**Fire Age** Moderate (3 to 5 yr)  
**Habitat** Breakaway  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia inaequilatera*, *Grevillea wickhamii* tall sparse shrubland, over *Acacia spondylophylla* low open shrubland, over *Triodia vanleeuwenii* and *Triodia wiseana* open hummock grassland, with *Eriachne mucronata* isolated tussock grassland

## SPECIES LIST

### Name

*Acacia inaequilatera*  
*Acacia maitlandii*  
*Acacia spondylophylla*  
*Amphipogon sericeus*  
*Corchorus lasiocarpus* subsp. *parvus*  
*Corymbia hamersleyana*  
*Eriachne mucronata*  
*Eucalyptus leucophloia* subsp. *leucophloia*  
*Grevillea wickhamii*  
*Senna glutinosa* subsp. *glutinosa*  
*Trachymene oleracea*  
*Triodia vanleeuwenii*  
*Triodia wiseana*

**Breakaway****SiteBRE-07**

**Date** 30/07/2022  
**Described by** B. Eckermann,D. Barrie  
**Type** Relevé  
**Location** MGA Zone50  
720631 mE; 7491183 mN  
119.1473 E -22.672111 S  
**Veg Condition** Excellent  
**Soil** Sandy Clay Loam  
**Rock Type** None Discernible  
**Fire Age** Old (6+ yr)  
**Habitat** Sandy/ Stony Plain  
**Vegetation** *Corymbia deserticola* low open woodland, over *Acacia tenuissima* tall open shrubland over *Triodia vanleeuwenii* hummock grassland.

**SPECIES LIST****Name**

*Acacia adoxa* var. *adoxo*  
*Acacia ancistrocarpa*  
*Acacia colei* var. *colei*  
*Acacia pruinocarpa*  
*Acacia tenuissima*  
*Bonamia erecta*  
*Corymbia deserticola* subsp. *deserticola*  
*Cymbopogon ambiguus*  
*Eriachne mucronata*  
*Goodenia microptera*  
*Goodenia stobbsiana*  
*Grevillea wickhamii*  
*Hakea chordophylla*  
*Hibiscus coatesii*  
*Paraneurachne muelleri*  
*Senna artemisioides* subsp. *oligophylla*  
*Triodia vanleeuwenii*

## Breakaway

## SiteBRE-08

**Date** 31/07/2022  
**Described by** B. Eckermann, D. Barrie  
**Type** Relevé  
**Location** MGA Zone 50  
715017 mE; 7488142 mN  
119.0931 E -22.700279 S  
**Veg Condition** Very Good  
**Soil** Sandy Loam  
**Rock Type** BIF  
**Fire Age** Old (6+ yr)  
**Habitat** Medium Drainage Line  
**Vegetation** *Eucalyptus victrix* open woodland over *Acacia bivenosa*, *Acacia tumida* var *pilbarensis*, *Vachellia farnesiana* tall open shrubland, over *Triodia brizoides*, *Triodia wiseana* open hummock grassland, with *Themeda triandra*, *Eriachne tenuiculmis*, *Cymbopogon ambiguus* open tussock grassland and *Cyperus vaginatus* isolated sedges.

## SPECIES LIST

### Name

*Acacia adoxa* var. *adoxo*  
*Acacia bivenosa*  
*Acacia coriacea* subsp. *pendens*  
*Acacia inaequilatera*  
*Acacia maitlandii*  
*Acacia pyrifolia* var. *morrisonii*  
*Acacia tenuissima*  
*Acacia tumida* var. *pilbarensis*  
*Afrohybanthus aurantiacus*  
*Androcalva luteiflora*  
*Arivela viscosa*  
*Cenchrus ciliaris*  
*Cheilanthes sieberi* subsp. *sieberi*  
*Chrysopogon fallax*  
*Corchorus crozophorifolius*  
*Crotalaria medicaginea* var. *neglecta*  
*Cullen* sp.  
*Cymbopogon ambiguus*  
*Cyperus vaginatus*  
*Enneapogon caerulescens*  
*Enneapogon lindleyanus*  
*Eriachne tenuiculmis*  
*Eucalyptus victrix*  
*Euphorbia biconvexa*  
*Gomphrena cunninghamii*  
*Gossypium robinsonii*  
*Grevillea wickhamii*  
*Melaleuca glomerata*  
*Nellica maderaspatensis*  
*Pluhea dentex*  
*Polycarpaea longiflora*  
*Polymeria ambigua*  
*Rhynchosia minima*  
*Stemodia grossa*  
*Themeda triandra*  
*Triodia brizoides*  
*Triodia wiseana*  
*Vachellia farnesiana*

## Opportunistic records

### SPECIES LIST

#### Name

*Abutilon otocarpum*  
*Acacia adsurgens*  
*Acacia ampliceps*  
*Acacia bivenosa*  
*Acacia colei* var. *colei*  
*Acacia dictyophleba*  
*Acacia monticola*  
*Acacia tetragonophylla*  
*Adriana tomentosa* var. *hookeri*  
*Aerva javanica*  
*Amaranthus undulatus*  
*Amphipogon sericeus*  
*Amyema miquelii*  
*Argemone ochroleuca* subsp. *ochroleuca*  
*Aristida contorta*  
*Aristida holathera* var. *holathera*  
*Aristida inaequiglumis*  
*Arivela viscosa*  
*Bidens bipinnata*  
*Boerhavia coccinea*  
*Bonamia erecta*  
*Calytrix carinata*  
*Capparis lasiantha*  
*Cassytha capillaris*  
*Cenchrus ciliaris*  
*Centipeda minima* subsp. *macrocephala*  
*Cheilanthes austrotenuifolia*  
*Cheilanthes brownii*  
*Cheilanthes sieberi* subsp. *sieberi*  
*Chloris virgata*  
*Corchorus lasiocarpus* subsp. *parvus*  
*Cymbopogon obtectus*  
*Cynodon dactylon*  
*Dodonaea coriacea*  
*Dodonaea lanceolata* var. *lanceolata*  
*Ehretia saligna* var. *saligna*  
*Eragrostis cumingii*  
*Eremophila jucunda* subsp. *pulcherrima*  
*Eriachne aristidea*  
*Eriachne lanata*  
*Eriachne pulchella* subsp. *dominii*  
*Eucalyptus gamophylla*  
*Eucalyptus xerothermica*  
*Eulalia aurea*  
*Euphorbia boophthona*  
*Euphorbia vaccaria* var. *vaccaria*  
*Euploca tenuifolia*  
*Evolvulus alsinoides* var. *decumbens*  
*Evolvulus alsinoides* var. *villosicalyx*  
*Ficus brachypoda*  
*Fimbristylis dichotoma*  
*Glycine canescens*  
*Gomphrena canescens* subsp. *canescens*  
*Goodenia forrestii*  
*Goodenia lamprosperma*  
*Goodenia stellata*  
*Gossypium australe*  
*Hakea lorea* subsp. *lorea*  
*Hibiscus coatesii*  
*Ipomoea ?plebeia*  
*Indigofera rugosa*  
*Isotropis iophyta*  
*Kirganelia baccata*  
*Lepidium didymum*  
*Malvastrum americanum*  
*Melaleuca argentea*  
*Melaleuca glomerata*  
*Melhania oblongifolia*  
*Nellica maderaspatensis*  
*Pluchea dentex*  
*Pluchea rubelliflora*  
*Portulaca oleracea*  
*Ptilotus exaltatus*  
*Ptilotus fusiformis*  
*Ptilotus polystachyus*

**Appendix G: Vegetation structural formation**

### NVIS Vegetation Structural Classifications

Cover Characteristics							
Foliage cover *	70-100	30-70	10-30	<10	≈0	0-5	unknown
Crown cover **	>80	50-80	20-50	0.25-20	<0.25	0-5	unknown
% Crown cover ***	>80	50-80	20-50	0.25-20	<0.25	0-5	unknown
Cover code	d	c	i	r	bi	bc	unknown

Growth Form	Height ranges (m)	Structural Formation Classes						
tree, palm	>30 Tall	closed forest	open forest	woodland	open woodland	isolated trees	isolated clumps of trees	trees
	10-30 Mid							
	<10 Low							
tree mallee	10-30 Tall	closed forest mallee	open forest mallee	mallee woodland	open woodland mallee	isolated mallee trees	isolated clumps of mallee trees	mallee trees
	<10 Mid							
	<3 Low							
shrub, cypripedium, grass-tree, fern	>2 Tall	closed shrubland	shrubland	open shrubland	sparse shrubland	isolated shrubs	isolated clumps of shrubs	shrubs
	1-2 Mid							
	<1 Low							
mallee shrub	10-30 Tall	closed shrubland mallee	mallee shrubland	open shrubland mallee	sparse shrubland mallee	isolated mallee shrubs	isolated clumps of mallee shrubs	mallee shrubs
	<10 Mid							
	<3 Low							

Growth Form	Height ranges (m)	Structural Formation Classes							
heath shrub	>2 Tall	closed heathland	heathland	open heathland	sparse heathland	isolated shrubs	heath	isolated clumps of heath shrubs	heath shrubs
	1-2 Mid								
	<1 Low								
chenopod shrub	>2 Tall	closed chenopod shrubland	chenopod shrubland	open chenopod shrubland	sparse chenopod shrubland	isolated chenopod shrubs		isolated clumps of chenopod shrubs	chenopod shrubs
	1-2 Mid								
	<1 Low								
samphire shrub	>0.5 Low	closed samphire shrubland	samphire shrubland	open samphire shrubland	sparse samphire shrubland	isolated samphire shrubs		isolated clumps of samphire shrubs	samphire shrubs
	<0.5 Low								
hummock grass	>2 Tall	closed hummock grassland	hummock grassland	open hummock grassland	sparse hummock grassland	isolated hummock grasses		isolated clumps of hummock grasses	hummock grasses
	<2 Tall								
tussock grass	>0.5 Mid	closed tussock grassland	tussock grassland	open tussock grassland	sparse tussock grassland	isolated tussock grasses		isolated clumps of tussock grasses	tussock grasses
	<0.5 Low								
other grass	>0.5 Mid	closed grassland	grassland	open grassland	sparse grassland	isolated grasses		isolated clumps of grasses	other grasses
	<0.5 Low								
sedge	>0.5 Mid	closed sedgeland	sedgeland	open sedgeland	sparse sedgeland	isolated sedges		isolated clumps of sedges	sedges
	<0.5 Low								
rush	>0.5 Mid	closed rushland	rushland	open rushland	sparse rushland	isolated rushes		isolated clumps of rushes	rushes
	<0.5 Low								
forb	>0.5 Mid	closed forbland	forbland	open forbland	sparse forbland	isolated forbs		isolated clumps of forbs	forbs
	<0.5 Low								

Growth Form	Height ranges (m)	Structural Formation Classes						
fern	>2 Tall	closed fernland	fernland	open fernland	sparse fernland	isolated ferns	isolated clumps of ferns	ferns
	1-2 Tall							
	<1 Low							
bryophyte	<0.5	closed bryophyte land	bryophyte land	open bryophyte land	sparse bryophyte land	isolated bryophytes	isolated clumps of bryophytes	bryophytes
lichen	<0.5	closed lichenland	lichenland	open lichenland	sparse lichenland	isolated lichens	isolated clumps of lichens	lichens
vine	>30 Tall	closed vineland	vineland	open vineland	sparse vineland	isolated vines	isolated clumps of vines	vines
	10-30 Med							
	<10 Low							
aquatic	<1 Tall	closed aquatic bed	aquatic bed	open aquatic bed	sparse aquatics	isolated aquatics	isolated clumps of aquatics	aquatics
	0-0.5 Low							
seagrass	<1 Tall	closed seagrass bed	Seagrass bed	open seagrass bed	sparse seagrass bed	isolated seagrasses	isolated clumps of seagrasses	seagrasses
	0-0.5 Low							

From: NVIS Structural Formation Terminology (Australian Vegetation Attribute Manual Version 7.0 November 2017 <https://www.environment.gov.au/land/publications/australian-vegetation-attribute-manual-version-7>)

\* Foliage Cover is defined for each stratum as 'the proportion of the ground, which would be shaded if sunshine came from directly overhead'. It includes branches and leaves and is obtained by multiplying Crown Cover with Crown type (Hnatiuk *et al.*, 2009). It is applied to a stratum in a plot, rather than an individual crown, with the NVIS measure for a vegetation type ideally being a summary of several plots. Foliage Projective Cover, which considers only the vertical projection of photosynthetic components (generally leaves), can be measured by line interception methods for tree, shrub and ground layer vegetation (Specht & Specht, 1999).

\*\* Crown Cover (canopy cover) as per Hnatiuk *et al.* (2009). Although relationships between this attribute and Foliage Cover are dependent on season, species, species age etc., the crown cover category classes have been adopted as the defining measure.

\*\*\* The percentage cover is defined as the percentage of a strictly defined plot area, covered by vegetation. This can be an estimate and is a less precise measure than using, for example, a point intercept transect method on ground layer, or overstorey vegetative cover. That is, for precisely measured values (e.g. crown densitometer or point intercept transects) the value measured would be 'foliage' cover. Where less precise or qualitative measures are used these will most probably be recorded as 'percentage' cover.

**Appendix H: Vegetation Condition**

Vegetation Condition	South West & Interzone Botanical Province	Eremaean & Northern Botanical Province
<b>Pristine</b>	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.	N/A
<b>Excellent</b>	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 disturbance or damage caused by human activities since European settlement
<b>Very Good</b>	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.
<b>Good</b>	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.
<b>Poor</b>	N/A	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.
<b>Degraded</b>	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.
<b>Completely Degraded</b>	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 I: Flora Composition

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**357 Amaranthaceae**

- \* *Aerva javanica*
- Alternanthera nana*
- Amaranthus* sp. Indet
- Amaranthus undulatus*
- Gomphrena canescens* subsp. *canescens*
- Gomphrena cunninghamii*
- Ptilotus astrolasius*
- Ptilotus calostachyus*
- Ptilotus exaltatus*
- Ptilotus fusiformis*
- Ptilotus obovatus*
- Ptilotus polystachyus*
- Ptilotus rotundifolius*

**472 Araliaceae**

- 
- Trachymene oleracea*

**460 Asteraceae**

- 
- \* *Bidens bipinnata*
  - Centipeda minima* subsp. *macrocephala*
  - Chrysocephalum apiculatum* subsp. *pilbarensis*
  - Olearia fluvialis*
  - Pluchea dentex*
  - Pluchea rubelliflora*
  - Pterocaulon sphacelatum*
  - Rhodanthe margarethae*
  - \* *Sigesbeckia orientalis*
  - \* *Sonchus oleraceus*
  - \* *Tridax procumbens*
  - Vittadinia eremaea*

**415 Boraginaceae**

- 
- Ehretia saligna* var. *saligna*
- Euploca tenuifolia*
- Trichodesma zeylanicum*

**332 Brassicaceae**

- 
- \* *Lepidium didymum*

**330 Capparaceae**

- 
- Capparis lasiantha*
- Capparis spinosa* subsp. *nummularia*

**355 Caryophyllaceae**

- 
- Polycarpaea longiflora*

**358 Chenopodiaceae**

- 
- Dysphania rhadinostachya*
- Dysphania* sp. Indet
- Salsola australis*

**331 Cleomaceae**

- 
- Arivela viscosa*

**416 Convolvulaceae**

- 
- Bonamia erecta*
- Bonamia pilbarensis*

*Duperreya commixta*  
*Evolvulus alsinoides*  
*Evolvulus alsinoides* var. *decumbens*  
*Evolvulus alsinoides* var. *villosicalyx*  
*Ipomoea ?plebeia*  
*Polymeria ambigua*

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**224 Cucurbitaceae**

*Cucumis variabilis*

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**156 Cyperaceae**

*Cyperus vaginatus*  
*Fimbristylis dichotoma*

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**242 Euphorbiaceae**

*Adriana tomentosa* var. *hookeri*  
*Euphorbia biconvexa*  
*Euphorbia boophthona*  
*Euphorbia* sp. Indet  
*Euphorbia vaccaria* var. *vaccaria*

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**201 Fabaceae**

*Acacia adoxa* var. *adoxo*  
*Acacia adsurgens*  
*Acacia ampliceps*  
*Acacia ancistrocarpa*  
*Acacia arida*  
*Acacia atkinsiana*  
*Acacia bivenosa*  
*Acacia colei* var. *colei*  
*Acacia coriacea* subsp. *pendens*  
*Acacia dictyophleba*  
*Acacia hilliana*  
*Acacia inaequilatera*  
*Acacia maitlandii*  
*Acacia monticola*  
*Acacia pruinocarpa*  
*Acacia pyrifolia* var. *morrisonii*  
*Acacia pyrifolia* var. *pyrifolia*  
*Acacia spondylophylla*  
*Acacia tenuissima*  
*Acacia tetragonophylla*  
*Acacia tumida* var. *pilbarensis*  
*Crotalaria medicaginea* var. *neglecta*  
*Cullen* sp.  
*Glycine canescens*  
*Gompholobium oreophilum*  
*Indigofera linnaei*  
*Indigofera monophylla*  
*Indigofera rugosa*  
*Isotropis iophyta*  
*Mirbelia viminalis*  
*Petalostylis labicheoides*  
*Rhynchosia minima*  
*Senna artemisioides* subsp. *oligophylla*  
*Senna glutinosa* subsp. *glutinosa*  
*Senna glutinosa* subsp. *glutinosa* x *luerssenii*  
*Senna glutinosa* subsp. *pruinosa*  
*Senna notabilis*  
*Senna pleurocarpa* var. *pleurocarpa*

*Senna* sp. Barlee Range (S. van Leeuwen 1520) (P2)  
*Senna venusta*  
*Swainsona decurrens*  
*Tephrosia arenicola*  
*Tephrosia densa*  
*Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186)  
*Vachellia farnesiana*

**458 Goodeniaceae**

*Dampiera candidans*  
*Goodenia forrestii*  
*Goodenia lamprosperma*  
*Goodenia microptera*  
*Goodenia stellata*  
*Goodenia stobbsiana*  
*Goodenia triodiophila*  
*Scaevola amblyanthera*  
*Scaevola parvifolia* subsp. *pilbarae*

**328 Gyrostemonaceae**

*Codonocarpus cotinifolius*

**432 Lamiaceae**

*Clerodendrum floribundum* var. *angustifolium*  
*Clerodendrum tomentosum* var. *tomentosum*  
*Dicrastylis cordifolia*  
*Newcastelia clavipetala*

**80 Lauraceae**

*Cassytha capillaris*

**339 Loranthaceae**

*Amyema miquelii*

**309 Malvaceae**

*Abutilon lepidum*  
*Abutilon otoparpum*  
*Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618)  
*Androcalva luteiflora*  
*Corchorus crozophorifolius*  
*Corchorus laniflorus*  
*Corchorus lasiocarpus* subsp. *parvus*  
*Corchorus parviflorus*  
*Gossypium australe*  
*Gossypium robinsonii*  
*Hibiscus coatesii*  
 \* *Malvastrum americanum*  
*Melhania oblongifolia*  
*Seringia exastia* (T)  
*Sida* ? sp. Articulation below (A.A. Mitchell PRP 1605)  
*Sida fibulifera*  
*Sida rohlena* subsp. *rohlena*  
*Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4)  
*Sida* sp. Pilbara (A.A. Mitchell PRP 1543)  
*Sida* sp. spiciform panicles (E. Leyland s.n. 14/8/90)  
*Triumfetta leptacantha*  
*Waltheria indica*

**169 Menispermaceae**

*Tinospora smilacina*

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**368 Molluginaceae**

*Trigastrotheca molluginea*

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**211 Moraceae**

*Ficus brachypoda*

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**281 Myrtaceae**

*Calytrix carinata*  
*Corymbia deserticola* subsp. *deserticola*  
*Corymbia ferritcola*  
*Corymbia hamersleyana*  
*Eucalyptus camaldulensis*  
*Eucalyptus gamophylla*  
*Eucalyptus leucophloia* subsp. *leucophloia*  
*Eucalyptus victrix*  
*Eucalyptus xerothermica*  
*Melaleuca argentea*  
*Melaleuca glomerata*

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**367 Nyctaginaceae**

*Boerhavia coccinea*

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**423 Oleaceae**

*Jasminum didymum* subsp. *lineare*

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**435 Orobanchaceae**

*Striga curviflora*

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**166 Papaveraceae**

\* *Argemone ochroleuca* subsp. *ochroleuca*

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**247 Phyllanthaceae**

*Kirganelia baccata*  
*Nellica maderaspatensis*  
*Notoleptopus decaisnei* var. *orbicularis* (A.B. Craig 428)  
*Synostemon hamersleyensis*

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**427 Plantaginaceae**

*Stemodia grossa*

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**163 Poaceae**

*Amphipogon sericeus*  
*Aristida burbridgeae*  
*Aristida contorta*  
*Aristida holathera*  
*Aristida holathera* var. *holathera*  
*Aristida inaequiglumis*  
 \* *Cenchrus ciliaris*  
 \* *Chloris virgata*  
*Chrysopogon fallax*  
*Cymbopogon ambiguus*  
*Cymbopogon obtectus*  
 \* *Cynodon dactylon*  
*Digitaria brownii*  
*Enneapogon caeruleus*  
*Enneapogon lindleyanus*  
*Enneapogon polyphyllus*  
*Eragrostis cumingii*  
*Eriachne aristidea*  
*Eriachne lanata*

*Eriachne mucronata*  
*Eriachne pulchella* subsp. *dominii*  
*Eriachne pulchella* subsp. *pulchella*  
*Eriachne tenuiculmis*  
*Eulalia aurea*  
*Paraneurachne muelleri*  
*Themeda* sp. Mt Barricade (M.E. Trudgen 2471)  
*Themeda triandra*  
*Triodia brizoides*  
*Triodia pungens*  
*Triodia vanleeuwenii*  
*Triodia wiseana*

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**345 Polygonaceae**

\* *Rumex vesicarius*

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**374 Portulacaceae**

\* *Portulaca oleracea*

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**175 Proteaceae**

*Grevillea pyramidalis* subsp. *leucadendron*  
*Grevillea wickhamii*  
*Hakea chordophylla*  
*Hakea lorea* subsp. *lorea*

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**29 Pteridaceae**

*Cheilanthes austrotenuifolia*  
*Cheilanthes brownii*  
*Cheilanthes sieberi* subsp. *sieberi*

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**338 Santalaceae**

*Santalum lanceolatum*

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**299 Sapindaceae**

*Atalaya hemiglauca*  
*Dodonaea coriacea*  
*Dodonaea lanceolata* var. *lanceolata*

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**428 Scrophulariaceae**

*Eremophila jucunda* subsp. *pulcherrima*  
*Eremophila longifolia*

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**417 Solanaceae**

*Nicotiana* sp. Indet  
*Solanum cleistogamum*  
*Solanum lasiophyllum*  
*Solanum phlomoides*

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**148 Typhaceae**

*Typha domingensis*

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**261 Violaceae**

*Afrohybanthus aurantiacus*

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**199 Zygophyllaceae**

*Tribulus suberosus*

**Appendix J: WAH Formal Identifications**

Collection #	Field/taxon name	WAH identification
BPO-01-08	? <i>Ventilago viminalis</i>	<i>Ehretia saligna</i> var. <i>saligna</i>
BRE03-04	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642) (P4)
BPO-01-07	<i>Synostemon hamersleyensis</i>	<i>Synostemon hamersleyensis</i> (T)