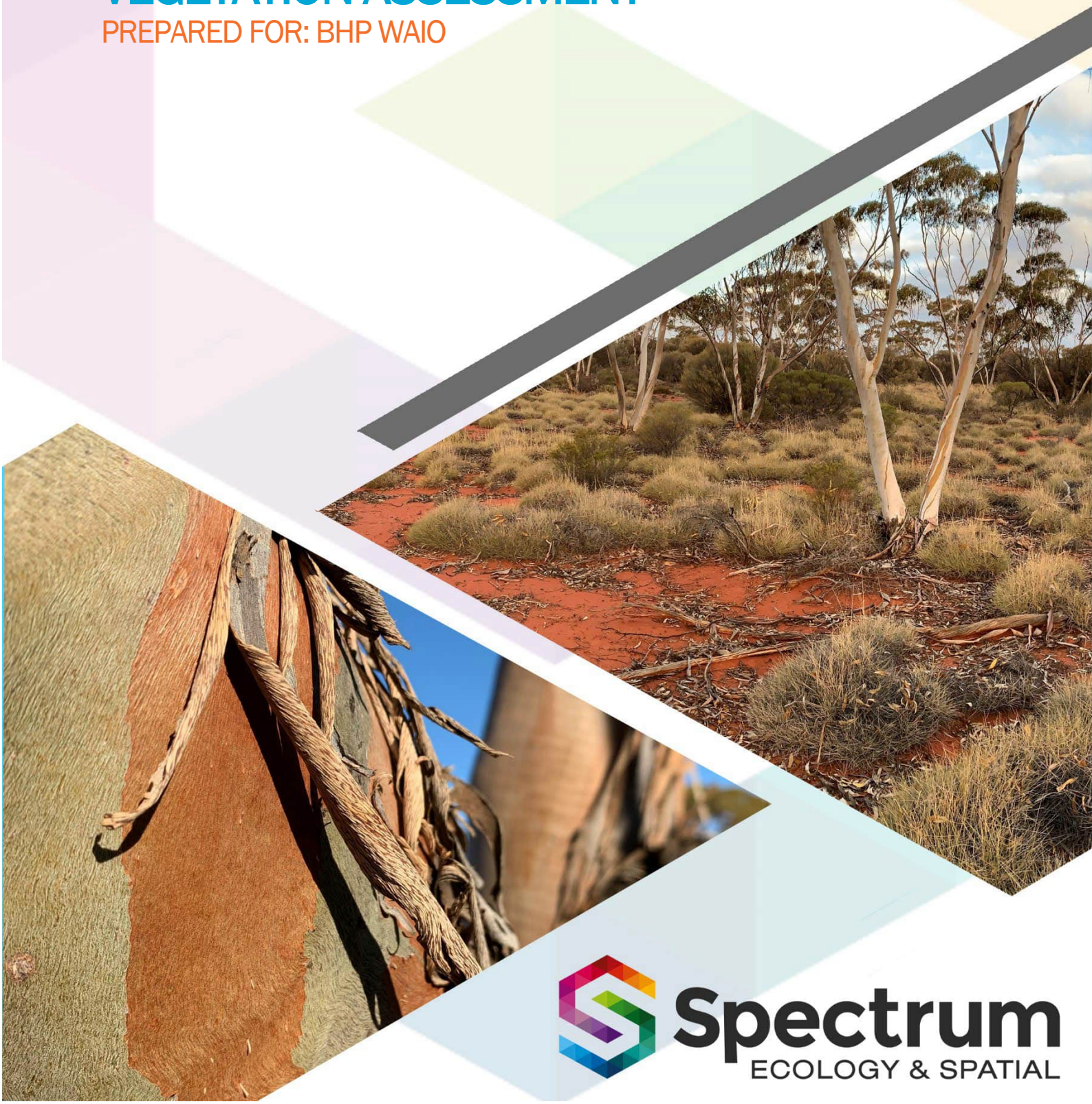
JINIDI RAIL CORRIDOR AND BORROW PIT

DETAILED FLORA & VEGETATION ASSESSMENT

PREPARED FOR: BHP WAIO



Spectrum ECOLOGY & SPATIAL

[redacted]

Report Details	
Project Description:	Jinidi Rail Corridor and Borrow Pit Detailed Flora & Vegetation Assessment
Prepared For:	BHP WAIO
Project ID:	2347

[redacted]

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EXECUTIVE SUMMARY

BHP Western Australian Iron Ore engaged Spectrum Ecology & Spatial to undertake a two-season detailed flora and vegetation survey; covering the Jinidi Rail Corridor, potential alignments, proposed borrow pit and construction camp options (the Survey Area). The Survey Area is located approximately 70 kilometres (km) northwest of Newman and covers approximately 24,951.7 hectares (ha).

No Threatened flora species were reported in the Survey Area during the desktop assessment. One Threatened species, *Synostemon hamersleyensis*, was identified as potentially occurring in the Survey Area during the desktop assessment and has been assigned a 'High' likelihood of occurrence as it occurs within 10 km of the Survey Area.

Five Priority Flora taxa have previously been recorded in the Survey Area. A total of 68 further Priority Flora taxa were also identified, 20 of which are considered to have a 'High' likelihood and 16 a 'Medium' likelihood of occurrence within the Survey Area. The remaining 32 taxa have been assigned a 'Low' likelihood of occurrence.

The two-phased assessment (spring and autumn) was undertaken over four surveys for a total of 80 person days between 12 - 22 October 2023, 4 - 12 May 2024, 27 - 29 May 2024 and 17 September 2024.

A total of 362 taxa from 48 families and 141 genera were recorded within the Survey Area.

No Threatened flora taxa were recorded during the assessment. Four Priority Flora and one Novel taxa were recorded in the Survey Area:

- Priority 3 (P3): *Eremophila naaykensii*, *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727);
- Priority 4 (P4): *Lepidium catapycnon*, *Sida* sp. Barlee Range (S. van Leeuwen 1642);
- Novel: *Corchorus* aff. *elachocarpus*.

One range extension was recorded in the Survey Area, *Corchorus elachocarpus*, found 190 km from its nearest known record.

Eleven introduced flora species were recorded within the Survey Area, one of which is a Declared Pest – s22 (**Calotropis procera*).

Nineteen vegetation types were described from the Survey Area. Six vegetation types were considered to have high local and/or regional significance in the Survey Area:

- SD, FP1, MA, WWFP were considered locally and regionally significant and HS1 and WWHS were considered locally significant.

Vegetation condition varied within VTs based on previous disturbances and proximity to cleared roads and infrastructure. Weeds were common, with *Cenchrus ciliaris (Buffel Grass) recorded commonly across the Survey Area, forming the dominant understory species in five VTs (FP1, SS2, SA3, SD, and MA), and *Cenchrus setiger (Birdwood Grass) forming the dominant structural overstorey component in VT SS2.

1. INTRODUCTION

1.1. Project Background

BHP Western Australian Iron Ore (BHP WAIO) engaged Spectrum Ecology & Spatial (Spectrum) to undertake a two-season detailed flora and vegetation survey; covering the Jinidi Rail Corridor, potential alignments, proposed borrow pit and construction camp options (the Survey Area). The Survey Area is located approximately 70 kilometres (km) northwest of Newman and covers an area of 24,951.7 hectares (ha) (Map 1.1). In addition, a desktop assessment was undertaken of a wider Study Area (the Survey Area with a buffer of 50 km; Desktop Study Area; Map 1.1).

1.2. Project Scope

The project objective was to undertake a desktop assessment, two-season detailed flora and vegetation survey to describe flora and vegetation values across the Survey Area. This flora and vegetation assessment will be used to inform future environmental approvals across the area; however, this survey report is a general report not assessing any specific development proposed by BHP WAIO.

1.3. Legislation & Guidelines

Flora and vegetation in Western Australia (WA) are protected by various legislation, including:

- *Biodiversity Conservation Act 2016* (BC Act);
- *Environmental Protection Act 1986* (EP Act); and
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

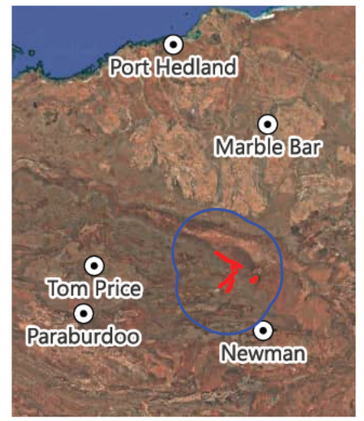
The survey was compliant with survey guidelines, as outlined in:

- Environmental Protection Authority (EPA) Environmental Factor Guideline: Flora and Vegetation (EPA, 2016a);
- EPA Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016b);
- Department of Biodiversity Conservation and Attractions (DBCA) Threatened and Priority Flora Report Form – Field Manual (DBCA, 2017b);
- National Vegetation Information System (NVIS) Australian Vegetation Attribute Manual (ESCAVI, 2003);
- EPA Statement of Environmental Principles, Factors and Objectives (EPA, 2021);
- BHP WAIO's Vegetation and Flora Survey Procedure (0124627; BHP, 2023); and
- BHP WAIO's Biological Survey Spatial Data Requirements (BHP WAIO, 2020).

650000
700000
750000
800000
7550000
7500000
7450000
Yandi Mine
Mining Area C
Great Northern Hwy
Marbe Bar Rd
Newman

Legend

- Survey Area
- Study Area
- BHP WAIO Operations
- Main Roads
- Townsites



N

0 5 10 15 20 km

Scale 1:580,000 @ A3

Coordinate System: GDA 2020 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum

Author: [redacted]

Date: 06-01-2025

Location of the Survey Area

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP 1.1

Prepared for BHP WAIO

1.4. Bioregion

The Interim Biogeographic Regionalisation for Australia (IBRA) classified Australia into regions based on the dominant landscape, climate, lithology, geology, landform, and vegetation (Thackway and Cresswell, 1995).

The Survey Area is located in the Pilbara IBRA bioregion which is divided into four subregions: Chichester, Fortescue Plains, Hamersley, and Roebourne. The Survey Area is located in the Hamersley (35.9%) and Fortescue Plains (64.1%) subregions. The Hamersley subregion is the southern section of the Pilbara Craton, a mountainous area of sedimentary ranges and plateaus dissected by gorges (Kendrick, 2001b). The Fortescue Plains subregion includes alluvial plains and river frontage and deeply incised gorge systems with extensive salt marsh and wetland communities (Kendrick, 2001a).

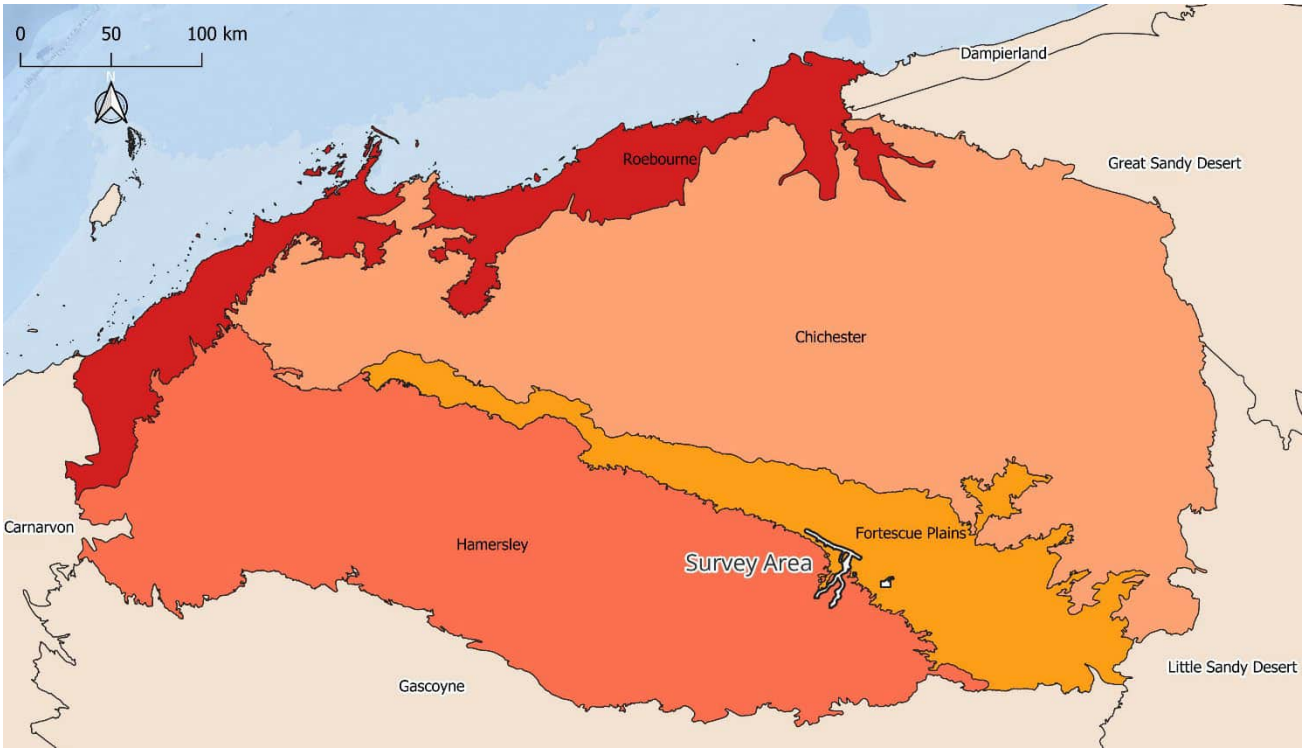


Figure 1.1: IBRA Classification

1.5. Climate

The climate of the Pilbara bioregion is classified as tropical, arid to semi-arid, with a median annual rainfall of 300 mm. Rainfall for the region can be variable, falling mainly in summer cyclonic events from December to February (Thackway and Cresswell, 1995)

Two broad climatic zones occur across the Pilbara region. Semi-desert tropical climatic conditions occur in coastal areas, as well as some higher-rainfall inland areas, which experience 9-11 months of dry weather, with hot humid summers and warm winters. Dry desert climatic conditions occur across the remaining inland areas, which typically experience higher temperatures and lower rainfall, with hot dry summers and mild winters with up to 12 months of dry weather (Leighton, 2004). The Survey Area is located within the dry inland area.

Annual rainfall is highly variable but generally follows an inland to coastal and southern to northern increasing trend (Leighton, 2004). The driest months are in spring (September to October) with tropical cyclones and local thunderstorms producing much of the summer and early autumn rainfall (Mckenzie, Van Leeuwen and Pinder, 2009). Winter rainfall is also highly variable, generally decreasing from the coast through to inland areas (Leighton, 2004).

Monthly maximum temperatures in the Pilbara region range from an average of 25°C in July to 37°C in January, while minimum temperatures range between 12°C in July and 25°C in January (Mckenzie, Van Leeuwen and Pinder, 2009). According to the Köppen-Geiger climate classification, the Survey Area has a hot desert climate (Class BWh; Peel, Finlayson and McMahon, 2007). This classification includes arid regions where annual evaporation exceeds annual precipitation and have a mean annual temperature ≥18°C.

1.6. Disturbance History

The dominant current and historical land uses across the Pilbara region involves grazing of native pasture, conservation, crown reserves, mining leases, and Aboriginal lands and reserves. Historically pastoralism has been the most significant land use in the Pilbara. Since the 1960's mining, predominantly iron ore, has become a significant land use with much of the Pilbara now under mining tenure (Kendrick, 2001b).

1.7. Surface Geology

The surface geology of Western Australia has been mapped at a scale of 1:50,000, 1:100,000,1:250,000, and 1:500,000. The Survey Area occurs in the central west of the 1:500,000 scale geological mapping (Department of Mines, 2019), which is the finest-scale digital mapping available for the area mapped to the state extent.

Eleven geological units were mapped in the Survey Area (Table 1.1; Map 1.2). The Survey Area is primarily covered by the sheetwash unit W-PIP (36.6%) and the exposed unit X-PIP (25.7%), followed by eolian sandplain unit El-PIP (14.2%) and residual/relict unit Rt-PIP (13.0%).

Ll-PIP (0.7%) appears to be a regionally restricted unit with a total area of 2,621.5 ha across WA, of which 169.9 ha lies in the Survey Area. The Rr-fh-PIP (1.0%) geological unit is recorded only in the Pilbara IBRA region but is not considered a restricted unit as it has 25,693.6 ha of coverage.

Table 1.1: Surface Geology

Unit Code	Landform	Description	Area in Survey Area (ha)	% of Survey Area	Total WA Extent (ha)	% of WA Extent in Survey Area	Total Pilbara Extent (ha)	% of Pilbara Extent in Survey Area
1:500,000 scale geological mapping								
A-PIP	Alluvial/fluvial	Clay, silt, sand, and gravel in channels and on floodplains.	797.1	3.2	2,147,172.5	<0.1	689,834.7	<0.1
Ac-PIP	Alluvial/fluvial	Clay, silt, sand, and gravel in fluvial channels.	1,279.3	5.1	798,803.7	0.2	646,611.5	0.2
El-PIP	Eolian	Eolian sandplain with longitudinal (seif) dunes.	3,550.0	14.2	237,518.7	1.5	145,067.0	2.5
Ll-PIP	Lacustrine	Freshwater lake.	169.9	0.7	2,621.5	6.5	1,660.1	10.2
Rr-fh-PIP	Residual or relict	Hematitic duricrust, massive to rubbly; includes iron-cemented reworked products.	253.3	1.0	25,693.6	1.0	25,693.6	1.0
Rr-kc-PIP	Residual or relict	Calcrete, nodular to massive; includes calcite and reworked carbonate products.	48.6	0.2	166,098.3	<0.1	103,320.8	<0.1
Rr-z-PIP	Residual or relict unit, PIP	Silcrete duricrust (residual or relict)	5.8	0.0	33,589.5	<0.1	8,155.6	<0.1
Rt-fl-PIP	Residual or relict	Transported limonitic duricrust; iron-cemented sand, gravel, cobbles and boulders.	53.1	0.2	27,377.3	0.2	26,911.5	0.2
Rt-PIP	Residual or relict	Transported duricrust; cemented sand, gravel, cobbles, and boulders in alluvial/colluvial deposits.	3,243.6	13.0	530,137.0	0.6	513,376.4	0.6
W-PIP	Sheetwash	Clay, silt and sand in distal sheetwash fan and slope deposits; local ferruginous pisoliths and gravel.	9,116.1	36.6	3,809,877.8	0.2	1,200,065.7	0.8
X-PIP	Exposed	Exposed bedrock.	6,418.2	25.7	14,351,073.7	<0.1	8,412,613.3	<0.1

720000 730000 740000 750000 760000 770000

7500000 7490000 7480000 7470000 7460000

A-PIP
LI-PIP
W-PIP
Ac-PIP
X-PIP
Rr-z-PIP
Rr-kc-PIP
Rt-fl-PIP
El-PIP
Rr-fh-PIP
Rt-PIP

Legend

Survey Area

Geological Unit

- A-PIP
- Ac-PIP
- El-PIP
- LI-PIP
- Rr-fh-PIP
- Rt-fl-PIP
- Rr-kc-PIP
- Rr-z-PIP
- Rt-PIP
- W-PIP
- X-PIP
- Units not in Survey Area

N

0 1 2 3 4 5 km

Scale 1:180,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum Ecology + Spatial

Author: [redacted]

Date: 17-02-2025

Surface Geology (1:500,000)

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP 1.2

Prepared for BHP WAIO

1.8. Beard Vegetation Association Mapping

Pre-European vegetation mapping was originally undertaken by Beard at various scales across the state and has since been updated to be consistent with the NVIS descriptions at a scale of 1:250,000 (Department of Primary Industries and Regional Development, 2019). State-wide vegetation statistics are available from 2018 for these associations which lists pre-European extent, current extent, area in DBCA managed lands and is a useful tool to determine if a vegetation association is rare or otherwise significant (DBCA, 2019a).

Three Beard vegetation associations (BVAs) comprising eight Beard sub-associations (BSAs) have been mapped in the Survey Area (Table 1.2; Map 1.3). The most common was BVA29, which was mapped as 39.7% of the Survey Area, followed by BVA82 at 37.4% and BVA111 at 22.9%. None of the BVAs appear restricted in the Pilbara region or in Western Australia. Over 99% of the pre-European vegetation extent remains for all BVAs.

Table 1.2: Beard Vegetation Associations and Sub-Associations

BVA	BSA	NVIS Level V Description	Area in Survey Area (ha)	% of Survey Area	Pre-European Extent WA (ha)	Current Extent WA (ha)	Current Pilbara Extent WA (ha)	% Remaining	% of Current WA Extent in Survey Area	% Current Pilbara Extent in Survey Area
29	29	Mid isolated clumps of shrubs of *Acacia aneura*.	9,886.7	39.7	3,530,311.5	3,529,439.9	902,864.4	100	0.3	1.1
82	82.3	Low open woodland of *Eucalyptus leucophloia* and *Eucalyptus gamophylla* over, tall sparse shrubland of *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa* and *Grevillea wickhamii* over, mid open hummock grassland, open shrubland and open forbland of *Triodia wiseana*, *Ptilotus rotundifolius* and *Acacia lycopodiifolia*.	9,200.7	36.9	2,169,996.6	2,157,841.5	2,156,547.0	99.4	0.4	0.4
	82.3	Low open woodland of *Eucalyptus kingsmillii*, *Eucalyptus gamophylla* and *Eucalyptus leucophloia* over, tall sparse shrubland of *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa* and *Grevillea wickhamii* over, mid open hummock grassland, open shrubland and open forbland of *Triodia wiseana*, *Ptilotus rotundifolius* and *Acacia lycopodiifolia*.								
	82.3	Low woodland of *Eucalyptus camaldulensis*, *Eucalyptus microtheca* and *Eucalyptus dichromophloia* over, mid sparse shrubland and sparse forbland of *Hibiscus goldsworthii* and *Cleome viscosa* over, mid sparse forbland, sparse shrubland and sparse vineland of *Swainsona stenodonta*, *Tephrosia bidwillii* and *Jasminum lineare*.								
	82	Low isolated trees of *Eucalyptus brevifolia* over, low open hummock grassland of *Triodia wiseana*.	127.9	0.5	51,202.1	50,989.0	49,965.4	99.6	0.3	0.3
111	111.1	Low open woodland of *Eucalyptus gamophylla*, *Eucalyptus dichromophloia* and *Eucalyptus setosa* over, tall sparse shrubland of *Acacia pachycarpa*, *Acacia pyrifolia* and *Senna* sp. over, low open hummock grassland and forbland of *Triodia basedowii*, *Triodia pungens* and *Ptilotus axillaris*.	5,719.9	22.9	430,979.8	430,925.3	430,906.1	100	1.3	1.3
	111.1	Low open woodland of *Acacia aneura*, *Eucalyptus dichromophloia*, *Eucalyptus* sp. aff. *aspera*.								
	111.1	Low open woodland of *Eucalyptus gamophylla* and *Hakea lorea* over, tall sparse shrubland of *Acacia pyrifolia* over, mid open hummock grassland of *Triodia basedowii*.								

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111.1
82
82.3

Legend

Survey Area

Vegetation Sub-Association

- 29
- 82
- 82.3
- 111.1
- Units not within Survey Area

N

0 1 2 3 4 5 km

Scale 1:180,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum Ecology + Spatial

Author: [redacted]

Date: 06-01-2025

Beard Vegetation Sub-Associations

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP

Prepared for BHP WAIO

1.3

1.9. Land Systems

The land systems of WA have been mapped at a scale of 1:250,000 (DAFWA 2016).

Nine land systems were mapped across the Survey Area. The Newman land system was dominant covering 35.7% of the Survey Area, followed by areas of Fan (19.1%), Divide (17.2%), Urandy (12.2%), Fortescue (8.8%), and Boolgeeda (6.2%), with the remaining land systems, Adrian, Rocklea, and River covering the remaining 0.9% (Table 1.3; Map 1.4) . All land systems appear well represented in the region and widespread throughout Western Australia.

Table 1.3: Land Systems

Description	Area in Survey Area (ha)	% of Survey Area	Total WA Extent (ha)	% of Total Extent in Survey Area
Adrian Land System: Stony plains and low silcrete hills supporting hard spinifex grasslands.	14.0	0.1	24,467.1	0.1
Boolgeeda Land System: Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	1,545.0	6.2	999,835.4	0.2
Divide Land System: Gently undulating sandplains with minor dunes, supporting hard spinifex hummock grasslands with numerous shrubs.	4,300.0	17.2	862,801.0	0.5
Fan Land System: Wash plains and gilgie plains supporting groved mulga tall shrublands and minor tussock grasslands.	4,749.3	19.1	148,027.7	3.2
Fortescue Land System: Alluvial plains and flood plains supporting patchy grassy eucalypt and acacia woodlands and shrublands and tussock grasslands.	2,203.3	8.8	50,330.4	4.4
Newman Land System: Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	8,902.1	35.7	2,000,360.5	0.4
River Land System: Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex.	92.1	0.4	595,308.2	<0.1
Rocklea Land System: Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs.	97.5	0.4	2,891,992.4	<0.1
Urandy Land System: Stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands.	3,031.8	12.2	132,542.4	2.3

720000
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7490000
7480000
7470000
7460000
Fortescue
Fan
Uandy
River
Boolgeeda
Adrian
Newman
Divide
Rocklea
Platform

Legend

Survey Area

Land Systems

- Adrian Land System
- Boolgeeda Land System
- Divide Land System
- Fan Land System
- Fortescue Land System
- Newman Land System
- Platform Land System
- River Land System
- Rocklea Land System
- Urandy Land System
- Units not within Survey Area

N

0 1 2 3 4 5 km

Scale 1:180,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum

Author: [redacted]

Date: 07-01-2025

Land Systems

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP

Prepared for BHP WAIO

1.4

1.10. Significant Lands

Fifteen significant lands and twenty-five Environmentally Sensitive Areas (ESAs) are located in the Desktop Study Area (within 50 km of the Survey Area). These are listed in Table 1.4 and displayed on Map 1.5 and are described in the following sections.

Table 1.4: Environmentally Significant Areas in the Study Area

Reserve Name (Protected Area ID)	Distance from Survey Area (km)
Conservation Estate	
Karijini National Park	44.4 km NW
Threatened/Priority Ecological Communities	
Weeli Wolli Spring Community (Priority 1)	0 km
Fortescue Marsh Land System (Priority 1)	0 km
Fortescue Valley Sand Dunes (Priority 3)	0 km
Riparian communities of springs and pools of the Pilbara region (Priority 2)	6.6 km SE
Kumina Land System (Priority 3)	9.8 km SE
Narbung Land System (Priority 3)	25.3 km E
Freshwater claypans of the Fortescue Valley (Priority 1)	27 km NE
Brockman Iron cracking clay communities (Priority 1)	30 km NW
Coolibah - Lignum Flats, sub type 1 (Priority 3)	36.9 km SW
Wona Land System (Priority 1)	39.3 km N
Coolibah - Lignum Flats, sub type 2 (Priority 1)	41.3 km SW
West Angelas Cracking-Clays (Priority 1)	47.6 km SW
Wetlands	
Fortescue Marsh (RAMSAR)	2.0 km N
Karijini (Hamersley Range) Gorges	48.0 km W
Environmentally Sensitive Areas	
7 Threatened Flora ESAs	0 – 10 km
13 Threatened Flora ESAs	10 – 20 km
1 Threatened Flora ESA	20 – 30 km
3 Threatened Flora ESAs	30 – 40 km
1 Threatened Flora ESA	40 – 50 km

1.10.1. Conservation Estate

The WA conservation estate includes land and waters vested in the Conservation and Parks Commission under the Conservation and Land Management Act (1984). The conservation estate is generally managed by the DBCA to protect WA's biodiversity and includes national parks, nature reserves, conservation reserves, and other areas managed primarily for biodiversity conservation (Department of Climate Change, Energy, the Environment and Water, 2022). One Conservation Reserve occurs in the Desktop Study Area, with Karijini National Park located 44.4 km west of the Survey Area (Table 1.4; Map 1.5).

1.10.2. Environmentally Sensitive Areas

ESAs are defined by the Department of Water and Environmental Regulation (DWER, 2019) as:

- A defined wetland and the area within 50 m of a wetland;
- The area covered by vegetation within 50 m of Threatened flora, to the extent to which the vegetation is continuous with the vegetation in which the Threatened flora is located;

- The area covered by a Threatened Ecological Community (TEC);
- A Bush Forever site;
- Areas covered by the Gnangara Mound Crown Land Policy and Western Swamp Tortoise Policy; and
- Areas covered by lakes, wetlands, and fringing vegetation of the Swan Coastal Plain Lakes Policy, including South-west Agricultural Zone Wetlands Policy and Swan and Canning Rivers Policy.

There is no ESA located in the Survey Area. Twenty five Threatened Flora ESAs were identified in the Desktop Study Area and represent populations of *Lepidium catapycnon* which was previously listed as Threatened but has since been downgraded to Priority 4 in Western Australia. The ESA database has not been updated to reflect these changes and therefore, their status as an ESA still remains valid (Table 1.4; Map 1.5).

1.10.3. Australian Wetlands Database

The Australian Wetlands Database includes nationally significant wetlands (as listed in the directory of important wetlands), wetlands listed under the Ramsar convention, wetlands that are representative, rare, or unique, or wetlands that are considered of international importance (Department of Climate Change Energy the Environment and Water, 2019).

Two nationally significant wetlands, including a Ramsar wetland, were mapped in the Desktop Study Area, Fortescue Marsh (RAMSAR) and Karijini (Hamersley Range) Gorges. Fortescue Marsh is located 2.0 km north of the Survey Area and Karijini (Hamersley Range) Gorges is located 48.0 km west of the Survey Area (Table 1.4; Map 1.5).

650000
700000
750000
800000
7550000
7500000
7450000

Legend

- Survey Area
- Study Area

Significant Lands

- Environmentally Sensitive Areas
- Conservation Estate (Karijini National Park)
- Fortescue Marshes (RAMSAR)
- Karijini (Hamersley Range) Gorges

Prioity Ecological Communities

- P1: West Angelas Cracking-Clays
- P1: Brockman Iron cracking clay communities
- P1: Coolibah - Lignum Flats, sub type 2
- P1: Fortescue Marsh Land System
- P1: Wona Land System
- P1: Freshwater claypans of the Fortescue Valley
- P1: Weeli Wolli Spring Community
- P2: Riparian communities of springs and pools of the Pilbara Region
- P3: Coolibah - Lignum Flats, sub type 1
- P3: Kumina Land System
- P3: Narbung Land System
- P3: Fortescue Valley Sand Dunes

N

0 5 10 15 20 km

Scale 1:580,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum

Author: TB

Date: 21-02-2025

Significant Lands

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP 1.5

Prepared for BHP WAIO

1.11. Groundwater Dependent Ecosystems

Groundwater dependent ecosystems (GDEs) refer to ecosystems that rely on the presence of groundwater to meet all or some of their water requirements on a permanent or intermittent basis. Access to groundwater is used to maintain flora and fauna communities, ecosystems processes and ecosystems services. GDEs may be represented by aquatic ecosystems, subterranean ecosystems, and terrestrial ecosystems, which includes all groundwater dependent vegetation (S. Richardson et al., 2011).

The GDE Atlas was developed as a national dataset of Australian GDEs by the Bureau of Meteorology (BOM) under the Bioregional Assessment Program (BAP;BOM, 2024a). The atlas defines two GDE evaluation types (regional study and national assessment) which each comprise five categories that indicate the potential for each ecosystem to be interacting with groundwater, based on the physical landscape and ecosystem characteristics (Merz, 2012). The five categories are:

- Known GDE;
- High potential for groundwater interaction;
- Moderate potential for groundwater interaction;
- Low potential for groundwater interaction; and
- Unclassified potential for groundwater interaction.

The GDE potential does not convey the confidence of the prediction, nor the reliability of the results, it conveys the lines of evidence gained from literature and spatial dataset reviews, along with other forms of spatial analyses (Merz 2012).

One known GDE, Weeli Wolli Creek, has been identified from the desktop assessment and is known to occur in the Survey Area (<0.1%). The majority of GDEs have been classified as low or moderate potential GDEs (Table 1.5; Map 1.6).

Table 1.5: Potential GDEs Mapped in the Survey Area BOM, 2024a)

GDE potential	Description	Mapped occurrences	Extent within Survey Area	
			Area (ha)	Proportion (%)
Known	Weeli Wolli Creek (Aquatic)	2	24.2	<0.1
High	-	-	-	-
Moderate	Terrestrial	5	17,668.9	70.1
Low	Terrestrial	6	7,506.3	29.8

720000
730000
740000
750000
760000
770000
7500000
7490000
7480000
7470000
7460000
Marillana Creek
Weeli Wolli Creek
Coondiner Creek

Legend

- Survey Area
- Major Creeks

GDE Potential:

- High
- Moderate
- Low

Aquatic GDEs in the Survey Area:

- Weeli Wolli Creek

N

0 1 2 3 4 5 km

Scale 1:180,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum

Author: [redacted]

Date: 01-07-2025

Desktop Assessment: Groundwater Dependent Ecosystems

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP 1.6

Prepared for BHP WAIO

2. METHODS

2.1. Desktop Assessment

A desktop assessment of relevant and available biological data sources of the Desktop Study Area was undertaken prior to the field survey, to assess the flora and vegetation likely to occur across the Survey Area. The Desktop Study Area includes a buffer of approximately 50 km surrounding the Survey Area, or as listed in Table 2.1, and displayed on Map 1.1.

2.1.1. Biological Database Searches

The following databases were searched and incorporated into the desktop assessment (Table 2.1).

Table 2.1: Summary of Database Searches

Data Source	Custodian	Details	Buffer
Commonwealth Protected Matters Search Tool (PMST)	Department of Climate Change Energy the Environment and Water	Date: 28/19/2023	50 km
DBCA Threatened & Priority Flora Databases (TPFL / WA Herbarium)	DBCA	Date: 18/09/2023 Reference: 64-0923FL	50 km
DBCA Communities Database		Date: 19/09/2023 Reference: 43-0923EC	50 km
Index of Biodiversity Surveys and Assessments (IBSA) Database	DWER	Date: 02/07/2025	50 km
Previously conducted biological assessments	BHP WAIO data base and various sources	Date: 22/09/2023	50 km

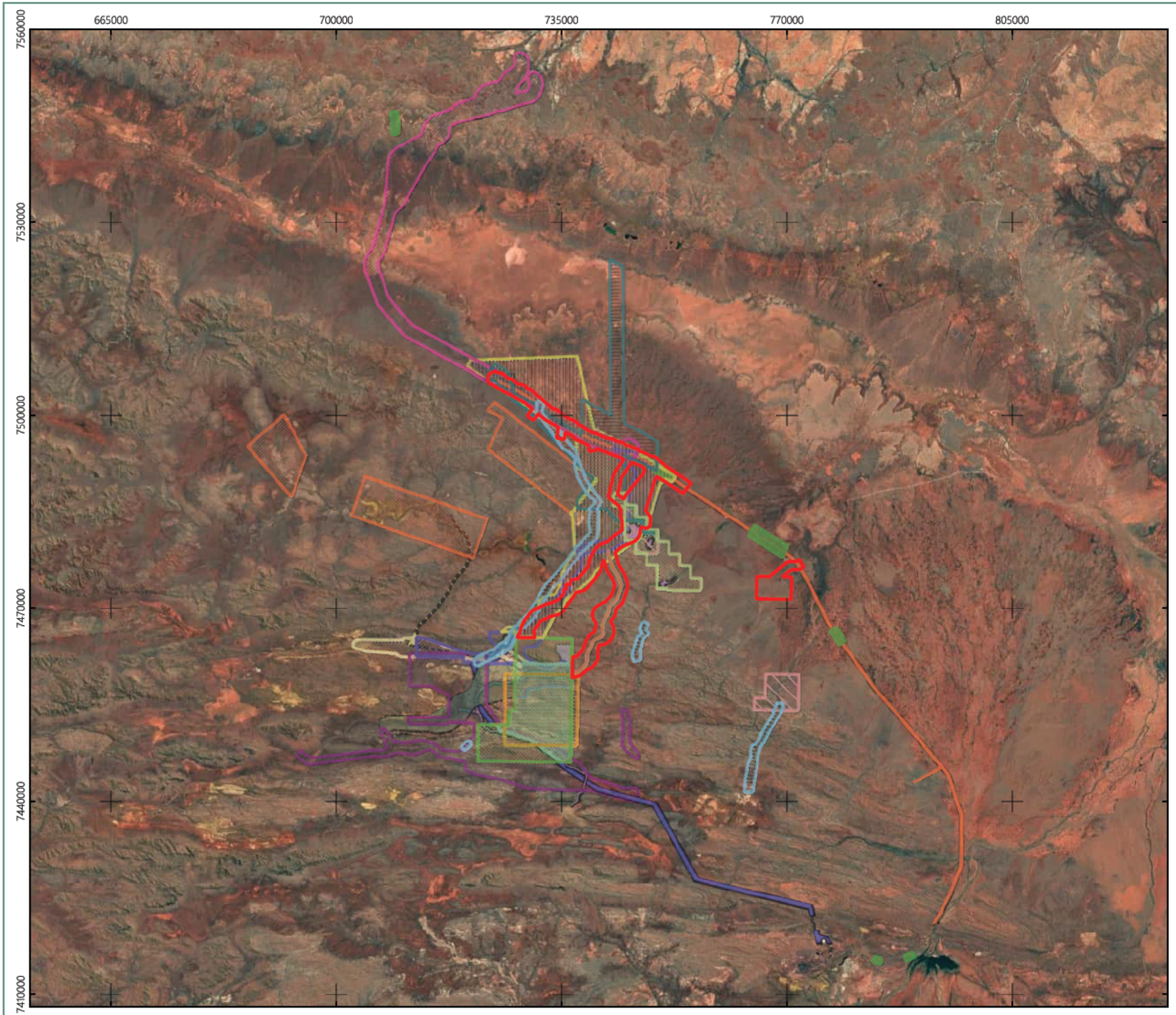
2.1.2. Literature Review

Previously conducted assessments in the Desktop Study Area were reviewed for significant flora and vegetation. Reports were incorporated if they were provided by BHP WAIO, or if they were publicly available. The 27 reports incorporated into the desktop assessment are listed in Table 2.2 and displayed on Map 2.1. Thirteen of the previous surveys in the region overlap the Survey Area. Data collected from the sites located within the Survey Area have been consolidated for this report. Fourteen surveys were also conducted in areas adjacent (<15km) to the Survey Area.

Table 2.2: Previously Conducted Biological Assessments

Biological Assessment Name	Survey Level	Survey Timing	Distance to Survey Area
Intersecting the Survey Area			
Area C to Jinayri to Mount Newman Railway Flora and Vegetation Survey (Woodman Environmental Consulting, 2010).	Detailed flora and vegetation survey	May, June – September 2009	0 km
Area C Rail Corridor Rare Flora Survey (Biota Environmental Science, 2002).	Targeted flora and vegetation survey	November 2001	0 km
Area C Rail Corridor Rare Flora Survey Phase 2 (Biota Environmental Science, 2003).	Targeted flora and vegetation survey	March 2002	0 km
Flora and Vegetation Survey - Jinidi to Mainline (Onshore Environmental Consultants, 2012b).	Detailed flora and vegetation survey	February, March, April – September 2011	0 km
Flora and Vegetation Survey Weeli Wolli Spring Priority Ecological Community (Onshore Environmental Consultants, 2012c).	Reconnaissance flora and vegetation survey	May 2011	0 km
Jinidi to Mindy Level 1 Flora & Vegetation (Biota Environmental Sciences, 2012a).	Reconnaissance flora and vegetation survey	March 2011	0 km

Biological Assessment Name	Survey Level	Survey Timing	Distance to Survey Area
Mindy-Coondiner Exploration Project Biological Survey (Ecologia Environment, 2005b).	Reconnaissance flora and vegetation & basic fauna survey	November 2005	0 km
Mindy North Exploration Lease Flora and Vegetation Assessment (ENV Australia, 2007).	Detailed flora and vegetation survey	April 2007	0 km
Mindy North Tenement Level 2 Flora and Vegetation Survey (Onshore Environmental, 2016).	Detailed flora and vegetation survey	November 2015	0 km
Nyidinghu flora and vegetation assessment (Cardno, 2012).	Detailed flora and vegetation survey	March & April 2011 – July 2011	0 km
Rail Sidings Flora and Vegetation Assessment (Ecologia Environment, 2005a).	Reconnaissance flora and vegetation survey	March 2005	0 km
RGP 5: Jimblebar Junction to Yandi Junction Railway Reserve Flora and Vegetation Assessment (ENV Australia, 2008).	Reconnaissance flora and vegetation survey	April 2008	0 km
Rhodes Ridge Detailed Flora and Vegetation Survey - Field Visit 1 Summary Report (Astron Environmental Services, 2020).	Reconnaissance flora and vegetation survey	June 2019	0 km
Weeli Wolli Creek Biological Assessment Survey (Ecologia Environmental Consultants, 1998).	Detailed flora and vegetation survey	December 1994 – April 1995	0 km
Less than 10km from the Survey Area			
Jinayri Access Road Flora and Vegetation Survey (ENV Australia, 2010a).	Reconnaissance flora and vegetation & basic fauna survey	May 2009	<1 km S
Jinayri Iron Ore Project Flora Survey (Ecologia Environment, 2009).	Detailed flora and vegetation survey	August & September 2005 – February & March 2006	<1 km S
Jinayri Mining Lease Flora and Vegetation Survey (ENV Australia, 2010b).	Reconnaissance flora and vegetation survey	March 2008	<1 km S
Jinidi Iron Ore Project Flora & Vegetation Review (Onshore Environmental Consultants, 2012a).	Detailed survey and literary review of flora and vegetation	September 2005 – May 2011	<1 km S
Flora and Vegetation on the Hope Downs 4 Mile Infrastructure Corridor (Mattiske Consulting, 2008).	Detailed flora and vegetation survey	April & May 2008 – September 2008	2 km SW
Jinayri to Area C Access Corridor Flora and Vegetation Assessment (ENV Australia, 2010c).	Reconnaissance flora and vegetation survey	May 2009	2.5 km SW
Area C West to Yandi Flora and Vegetation Assessment (Astron Environmental Services, 2018).	Reconnaissance flora and vegetation survey	November 2018	2.7 km W
South Flank to Jinidi Level 2 Flora and Vegetation Survey (Biota Environmental Sciences, 2012b).	Detailed flora and vegetation survey	March – August 2011	3.5 km S
Ministers North and Yandi Vegetation Association and Condition Mapping (Onshore Environmental, 2020).	Desktop flora & vegetation review	June 2020	7 km W
Ministers North Miscellaneous Licence Area Amendment Surveys, Sanders Seep and Yandicoogina Creek Flora and Vegetation (Biologic Environmental Survey, 2020).	Desktop flora & vegetation review	June 2020	7 km W
Newman to Yandi Transmission Line Flora and Vegetation Assessment (ENV Australia, 2009).	Reconnaissance flora and vegetation survey	May 2009	7.5 km SW
More than 10km from the Survey Area			
Targeted rare and Priority Flora survey to meet conditions of CPS 4442 (Strategic rail NVCP) (Rio Tinto, 2015).	Targeted flora and vegetation survey	June 2015	13.5 km W
Reconnaissance Flora and Vegetation Survey and Fauna Assessment Newman to Mining Area C Powerline Corridor (Onshore Environmental, 2017).	Reconnaissance flora and vegetation survey	July 2017	15 km S



Legend

- Survey Area

Biological Assessments

- Area C to Jinayri to Mount Newman Railway Flora & Vegetation Survey
- Flora & Vegetation & Vertebrate fauna survey of the Newman to MAC powerline corridor.
- Flora & Vegetation on the Hope Downs 4 Mine Infrastructure Corridor
- Flora & Vegetation Review Jinidi Iron Ore Project
- Flora & Vegetation Survey - Jinidi to Mainline
- Flora & Vegetation Survey - Weeli Wolli Spring PEC
- Jinayri Access Road Flora & Vegetation Survey
- Jinayri Iron Ore Project Flora Survey
- Jinayri Mining Lease Flora & Vegetation Survey
- Jinayri to Area C Access Corridor Flora & Vegetation Assessment
- Jinidi to Mindy Level 1 Flora & Vegetation Survey
- Mindy North Exploration Lease Flora & Vegetation Assessment
- Mindy North Level 2 Flora & Vegetation Survey
- Minidy-Coondiner Exploration Project Biological Survey
- Newman to Hedland BHPBIO Rail Sidings Flora & Vegetation Assessment
- Newman to Yandi Transmission Line Flora & Vegetation Assessment
- Nyidinghu Flora & Vegetation Assessment
- Nyidinghu Rail Spur Flora & Vegetation Assessment
- Review of Flora & Vegetation along Weeli Wolli, Mindy Mindy and Coondiner Creeklines
- Southern Flank to Jinidi Level 2 Flora & Vegetation Survey
- Summary of Important Findings from RGP5 Railway Project Biological Assessments (Letter Report)
- Weeli Wolli Creek Biological Assessment Survey

N

0 5 10 15 20 25 km

Scale 1:800,000 @ A4

Coordinate System: GDA 1994 MGA Zone 50
Projection: Transverse Mercator
Units: Meter

Spectrum Ecology & Spatial

Author: [redacted]

Date: 04-07-2025

Previous Biological Assessments

Jinidi Rail Corridor Detailed Flora & Vegetation Assessment

Prepared for BHP WAIO

MAP 2.1

2.1.3. Likelihood of Occurrence of Significant Flora

The following information was collated for each significant flora taxon or TEC/Priority Ecological Community (PEC) identified during the desktop assessment:

- Conservation status (EPBC Act, BC Act, DBCA listing);
- Description of species and flowering period;
- Description of habitat requirements;
- Description of previous records; and
- Distance of record to the Project.

A likelihood of occurrence assessment was then conducted using the criteria listed in Table 2.3. This included assessing the distance of the record from the Survey Area (historical database records considered not accurate were excluded if required), presence of appropriate habitats in the Survey Area (using geology, vegetation mapping, and/or aerial imagery). A post-survey likelihood of occurrence assessment was also conducted.

Table 2.3: Likelihood of Occurrence Criteria

Likelihood	Flora	Vegetation
Recorded	Species accurately recorded in the Survey Area during the literature review (includes TEC/PEC buffers that intersect).	Vegetation community accurately recorded in the Survey Area during the literature review (includes TEC/PEC buffers that intersect).
High	Species recorded within 10 km near the Survey Area, and suitable habitat does, or is likely, to occur.	Vegetation community recorded within 10 km of the Survey Area, and similar BVA, land systems and surface geology in which it occurs, also occurs in the Survey Area.
Medium	Species recorded outside the Survey Area but within 30 km and suitable habitat may occur.	Vegetation community recorded outside the Survey Area but within 20 km and occurring on a similar BVA, land system, or surface geology to those in the Survey Area.
Low	Species rarely or not recorded within 50 km of the Survey Area and suitable habitat is not likely to occur in the Survey Area.	Vegetation community recorded more than 20 km from the Survey Area, and not occurring on a similar BVA, land system, or surface geology to those in the Survey Area.

2.2. Survey Timing

The two-phased assessment (spring and autumn), was undertaken over four surveys for a total of 80 person days; survey 1 (spring) was undertaken over a ten-day period between 12-22 October 2023, survey 2 (autumn) was undertaken over a seven-day period between the 4-12 May 2024, survey 3 (autumn) was undertaken over a three-day period from 27-29 May 2024, and survey 4 (spring) was undertaken over one-day on the 17 September 2024.

2.2.1. Rainfall

Rainfall data was extracted from the Scientific Information for Land Owners (SILO) database (Queensland Government, 2024) for the centre of the Survey Area (-22.7527, 119.4068). SILO sources climatic data from the BOM and interpolates data between weather stations to provide a complete data set for any location. Figure 2.1 represents the total monthly rainfall for 2023 to 2024 with the long-term monthly median rainfall. The BOM reference climate normal period of January 1961 to December 1990 was used for calculating climate statistics and evaluating rainfall conditions recorded prior to the survey (BOM, 2024b). Rainfall conditions were considered 'typical' if the total rainfall recorded over a period was between the 25th and 75th percentiles, for annual rainfall this range was 184.6 mm to 382.0 mm. Rainfall totals outside of the typical range were considered 'dry' or 'wet', and 'very dry' or 'very wet' if they were below the 10th or above the 90th percentiles, respectively (BOM,2024c). The following data was recorded:

Survey 1 – Spring (12/10/2023):

- In the year preceding the survey, 163.5 mm of rainfall was recorded, which is 93.6 mm lower than the median of the long-term total annual rainfall (257.6 mm) for the same period.
- A total of 0.4 mm of rainfall was recorded in the three months prior to the survey (12 July to 12 October 2023), 10 mm lower than the median of the long-term total rainfall (10.45 mm) for the same period.
- The rainfall conditions were seasonally dry for the three months preceding survey 1 and very dry compared to the annual conditions of the climate reference period.

Survey 2 and 3 - Autumn (04/05/2024):

- In the year preceding surveys 2 and 3, 224.8 mm of rainfall was recorded, which is 32.6 mm lower than the median of the long-term total annual rainfall (257.6 mm) for the same period.
- A total of 120.5 mm of rainfall was recorded in the three months prior to the survey (4 February to 4 May 2024), 26.5 mm higher than the median of the long-term total rainfall (94 mm) for the same period.
- The rainfall conditions were typical at the location for the season and year preceding surveys 2 and 3 and likely to be favorable for plant growth.

Survey 4 (17/09/2024):

- In the year preceding survey 4, 281.5 mm of rainfall was recorded, which is 24.4 mm higher than the median of long-term total annual rainfall (257.6 mm).
- A total of 60.5 mm of rainfall was recorded in the three months prior to the survey (17 June to 17 September 2024), 50.6 mm higher than the median of the long-term total rainfall (9.9 mm) for the same period.
- The rainfall conditions were seasonally wet for the three months preceding survey 4 and typical compared to the annual conditions of the climate reference period and may have been more favorable for plant growth than usual.

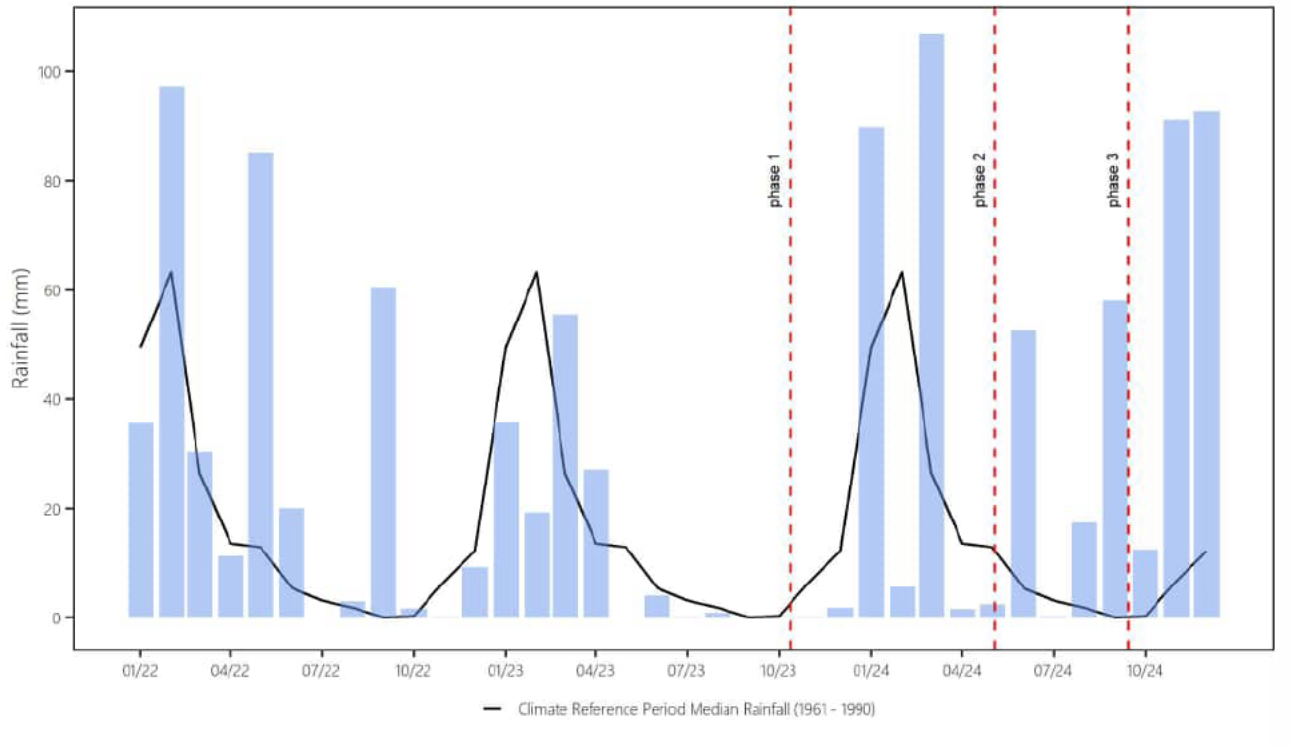


Figure 2.1: Rainfall Data at SILO Request Location (-22.7527, 119.4068).

2.3. Field Methods & Sampling Effort

A two-phase detailed flora and vegetation assessment and a basic targeted significant flora survey was undertaken at the Survey Area over four surveys for a total of 80 person days.

There were 130 quadrats (17 resampled), 38 relevés, and 296 km of targeted traverses sampled during the assessment (Map 2.2). This was considered appropriate for a detailed level survey as stipulated in the technical guidance (EPA, 2016b); these techniques are described in Table 2.4. Comprehensive flora site data collection information is included in Appendix B.

Table 2.4: Flora & Vegetation Survey Technique

Technique	Application & Purpose
Quadrats	Quadrats are comprehensive survey technique for gathering information for a detailed flora and vegetation survey. Each vegetation unit must be represented by a minimum of three quadrats where possible and have at least one corner permanently marked. Information collected at each quadrat include: • Site code, date; GPS coordinates; botanist; • Size and shape of quadrat (quadrats are 50 x 50 m or 2,500 m^2 for Pilbara IBRA region); • Photograph from north-west corner; • Landform, including; slope, aspect, soil description and rock type; • Time since fire (quadrats are not sampled if quadrats have a recent fire history); • Vegetation condition (quadrats are not installed if not in a 'Good' or better condition (section 2.4.3); • Description of disturbance types; • Vegetation description (NVIS Level V); and • Comprehensive species list, canopy cover (%) and height (m).

Technique	Application & Purpose
Relevés	Relevés are a low intensity survey technique for gathering information where vegetation is in 'Degraded' or 'Completely Degraded' vegetation condition, recently burnt areas, or where it is too unsafe to survey using a quadrat (cliff faces etc.). Information collected at each relevé includes: • Site code, date, GPS coordinates, botanist; • A photograph; • Vegetation condition and disturbances (including fire); • Landform including; slope, soil, rock type, aspect; • Vegetation description (NVIS Level V); • Dominant species list, canopy cover (%) and height (m); and • Significant flora, weeds.
Traverses	A traverse is an unmarked route along which data is collected. Traverses are useful for identifying the boundaries and characteristics of vegetation types, selecting sites for detailed survey, and targeting significant flora or vegetation. Information recorded along a traverse is as for the relevé, with the addition of noting vegetation changes and relationships between vegetation and substrate.
Opportunistic Sampling	Flora and vegetation not recorded through other sampling methods is opportunistically sampled as encountered in the Survey Area.
Rapid Assessment	Rapid Assessments are a low intensity technique for gathering information concerning the dominant vegetation types to aid vegetation mapping. Information collected at each rapid assessment includes: • Site code, date, GPS coordinates, botanist; • A photograph; • Vegetation condition and disturbances (including fire); • Landform including; slope, soil, rock type, aspect; • Vegetation description (NVIS Level V); • Dominant species list, canopy cover (%) and height (m); and • Significant flora, weeds.
Mapping Note	An informal method used for gathering information regarding presence of, or changes in, vegetation types while traversing the Survey Area. Information collected often includes: • Site code, date; GPS coordinates; botanist; • Photograph; • Description of disturbance types (as required); and • Vegetation description (NVIS Level V).

When significant flora taxa were recorded, sufficient information was recorded to complete a Threatened and Priority Flora Report Form and detailed counts were undertaken except where populations were large or widespread, in which case the population was estimated using methods consistent with the Threatened and Priority Flora Report Form – Field Manual (DBCA, 2017b).

720000 730000 740000 750000 760000 770000

7500000 7490000 7480000 7470000 7460000

Legend

- Survey Area

Sampling Sites

- Traverse
- Quadrat (single phase sample)
- Quadrat (sampled over both phases)
- Relevé

N

0 1 2 3 4 5 km

Scale 1:180,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum Ecology + Spatial

Author: [redacted]

Date: 04-07-2025

Sampling Effort

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP

Prepared for BHP WAIO

2.2

2.4. Reporting & Data Analysis

2.4.1. Flora Nomenclature, Taxonomy & Lodgement

Flora nomenclature used in this report is consistent with the Western Australian Herbarium's (WAH) plant census, provided on FloraBase (WAH, 2024) and is current at the time of report preparation.

At least one specimen of each flora taxon was collected in order to confirm all species recorded during the assessment and to investigate suspected conservation significance.

Specimens were identified using the appropriate taxonomic keys and where required, relevant taxonomic experts at the WAH were consulted. Specimens were vouchered with the WAH as per guidance; when they represent a population of Threatened or Priority Flora, new occurrences of TECs or PECs, individuals that have atypical characteristics, or bioregional range extensions.

2.4.2. Vegetation Mapping

The data collected from quadrats, relevés, and traverses, as well as general field notes, observations and aerial photography were used to map the vegetation across the Survey Area. The vegetation was described to NVIS Level V – association (referred to as a 'vegetation types (VT)' for the local scale in this report). This level of description provides information on the dominant growth form, height, and cover for up to three species for each of the upper, mid, and ground strata (ESCAVI, 2003).

The VTs were defined floristically, where quadrats were statistically classified according to similarities in species composition. The statistical analysis was performed in R Core Team (R Core Team, 2019) using the "stats" and "vegan" (Oksanen *et al.*, 2019) packages. Dissimilarity indices were calculated using the vegdist function with the Jaccard index on a binary species matrix. Hierarchical clustering was performed using the hclust function using the 'average' or unweighted pair group with arithmetic mean (UPGMA) method. Figures of the hierarchical clustering were produced using the "dendextend" package (Galili, 2015).

Sites were excluded from the floristic analysis if they, were sampled on mosaic vegetation or had high levels of disturbance. A total of 236 quadrats and 1 relevé were used in the analysis which included 124 quadrats from the Survey Area and an additional 112 regional sites and 1 regional relevé (Spectrum, 2021; 2025). The following data preparation steps were undertaken prior to the floristic analysis:

- Subspecies and varieties which cannot be easily told apart in the field were combined;
- Annual taxa were removed;
- Invasive species were removed;
- Only taxa with their taxonomy resolved to at least species level were included;
- Taxa which were only recorded once were removed; and
- Taxa recorded during phase 1 were checked for currency and updated;

The site by species matrix used for this analysis has been provided electronically.

2.4.3. Vegetation Condition

Vegetation condition was recorded at quadrats, relevés and where other areas of different vegetation condition were observed. The vegetation condition was updated following the survey using the scale recommended for the Eremaean Botanical Province as shown in Table 2.5 (EPA, 2016b). Areas with no vegetation present (roads, tracks, infrastructure areas) have been mapped as 'Cleared'.

Table 2.5: Vegetation Condition Scale & Criteria

Condition	Disturbance Criteria – Eremaean Botanical Province
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires, or aggressive weeds.
Degraded	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 multiple weed species present including very aggressive species.
Completely Degraded	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.

2.4.4. Significant Flora & Vegetation Definitions

As defined by the (EPA, 2016a) Environmental Factor Guideline, flora and vegetation can be considered significant for a range of reasons (Table 2.6; Appendix A). In addition to these definitions, flora and vegetation that are susceptible to impacts are included and discussed as significant, this can include GDE, and Banded Mulga vegetation.

Table 2.6: Flora & Vegetation Significance Definitions

Significant Definitions (EPA 2016a)	
Flora	• Being identified as Threatened (state listed WC Act and/or nationally listed EPBC Act). • Being identified as Priority species: Priority 1 to 4, (DBCA, 2019b). • Locally endemic or association with a restricted habitat type (e.g. surface water or groundwater dependant ecosystems). • New species or anomalous features that indicate a potential new species. • Representative of the range of a species (particularly, at the extremes of range recently discovered range extensions, or isolated outliers of the main range). • Unusual species, including restricted subspecies, varieties or naturally occurring hybrids. • Relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.
Vegetation	• Identified as TEC (state listed WC Act and/or nationally listed EPBC Act). • Identified as PEC (DBCA, 2017a). • Restricted distribution. • Degree of historical impact from threatening processes. • A role as a refuge. • Providing an important function required to maintain ecological integrity of a significant ecosystem. • Vegetation that is highly disturbed can reduce the significance.

2.4.5. Local & Regional Context of Flora & Vegetation

Flora and vegetation recorded during the assessment are then further considered at a local and regional scale. The local area includes the Survey Area and near vicinity, and the regional area includes the IBRA region or subregion. Considerations used to determine the local and regional context of flora and vegetation recorded at the Survey Area are listed in Table 2.7.

Table 2.7: Local & Regional Context Definitions

Group	Local & Regional Context Considerations	
Flora	**Local**	
	Not locally significant	• Flora taxon well known from the local area. • Landforms/habitat the flora taxon occurs on are widespread through the local area. • Flora taxon may occur across multiple landforms and habitats.
	Locally significant	• Flora taxon not well known from the local area. • Landforms/habitat the flora taxon occurs are restricted through the local area. • Flora taxon may occur on restricted habitat type.
	Regional	
	Not regionally significant	• Flora taxon's known distribution extends over the region or subregion. • Flora taxon's known distribution may span over multiple IBRA regions.
	Regionally significant	• Flora taxon's known distribution is only known from few locations across the IBRA region or subregion. • May be common in the local area but only known from the Survey Area within the IBRA region or sub-region.
Vegetation	**Local**	
	Not locally significant	• VTs mapped extent is widespread across the Survey Area or local area. • Landforms/habitat the VT occurs on are widespread in the local area, despite a low mapped area in the Survey Area.
	Locally significant	• VTs mapped extent is restricted in the Survey Area. • Landforms/habitat the VT occurs on are restricted in the local area. • VT provides habitat for locally significant flora taxa.
	Regional	
	Not regionally significant	• Determined by comparing VTs to the best available data source. This can include state-wide vegetation mapping (Beard), region specific (if available), land system and/or geology mapping. • VTs are matched with regional mapping units (listed above) that are widespread throughout the IBRA region or subregion.
	Regionally significant	• VTs are matched with regional mapping units (listed above) that are restricted throughout the IBRA region or subregion. • VT provides habitat for regionally significant flora taxa.

2.4.6. Introduced Flora, WoNS & Declared Plant Categories

The Department of Primary Industries and Regional Development (DPIRD) keeps a database of organisms that are Declared Pests in Western Australia. This database is regulated under the Biosecurity and Agricultural Management Act (Government of Western Australia, 2007). The legal status and control requirements for these environmentally significant pests are provided in Appendix A.

There are 32 Weeds of National Significance (WoNS) listed for Australia that have been identified based on their invasive tendencies, impact, potential for spread, and socioeconomic and environmental impacts (Invasive Plants and Animals Committee, 2017). Each species has a national management strategy and manual available.

2.5. Data for the Index of Biodiversity Surveys for Assessment (IBSA)

The EPA has given instruction that all biological surveys collecting data on biodiversity will submit the report and associated raw data to IBSA as an IBSA data package. All survey data collected at the Survey Area has been provided electronically to comply with IBSA and BHP WAIO standards.

2.6. Project Team & Licences

Spectrum personnel involved with this assessment are listed in Table 2.8, along with their role and years of experience.

Table 2.8: Project Team & Licences

Staff	Qualification	Role	Project Tasks	Years of Experience	Flora Licence
Scott Hitchcock	BSc	Principal Botanist	Field survey lead 2 and 3, project management, report review.	19	FB62000561
Melissa Hay	BSc (Hons)	Principal Botanist	Field survey lead 1 and 4, report review.	17	FB62000006-2
Emily Crowther	BSc (Hons), MSc	Senior Botanist	Field survey 3 and 4.	5	FB62000330-2 TFL 2324-0146
Susan Murrey	BSc, MSc	Senior Botanist	Reporting, data management.	7	FB62000101-1b
Adam Crosby-Clark	BSc	Botanist	Field survey 1, 2, 3 and 4, reporting.	3	FB62000349-2
Zane Gates	BSc	Botanist	Field survey 2, reporting.	3	FB62000426-2
Tia Berard	BSc	Botanist	Field survey 2.	3	FB62000578
Julia Mattner	BSc	Botanist	Field survey 3.	24	FB62000060-2
Sam Hetherington	BSc	Ecologist	Field survey 4.	3	FB62000767
Raimond Orifici	BSc (Hons)	Taxonomist	Plant identifications.	24	FB62000158-2
Udani Sirisena	PhD	Taxonomist	Plant identifications.	11	-

2.7. Limitations & Constraints

Survey specific limitations and constraints for the flora assessment at the Survey Area are discussed in Table 2.9.

Table 2.9: Survey Limitations & Constraints

Limitation	Constraint	Comment
Availability of the contextual information at a regional and local scale.	No	Beard vegetation, geology and land system mapping were used to determine regional significance of VTs. Database searches provided detailed information, adequate to guide field survey design and effort for the flora survey. There were 27 assessments conducted within and in the vicinity of the Survey Area and have been included in the desktop assessment.
Competency/experience of the consultant carrying out the survey including experience in bioregion surveyed.	No	The two field team leads, Principal Botanist's Scott Hitchcock and Melissa Hay have extensive experience in Pilbara botanical assessments and were well suited to lead the current assessment. All remaining botanists had suitable knowledge and experience conducting botanical surveys in the Pilbara region of Western Australia or were paired with an experienced botanist.
Timing/weather/season/cycle.	No	The field survey timing was considered appropriate for a flora and vegetation survey conducted in the Pilbara region, where the appropriate timing for primary survey is autumn (March to May), and subsequent secondary surveys in spring (September to November). There was lower than median rainfall at the Survey Area in the three months prior to survey 1, which may have impacted flora species growth, however rainfall and growth conditions were considered close to optimal for the remaining surveys.
Disturbances (e.g., fire, flood, accidental human intervention) which affected results of survey.	Yes (in some areas)	There were some small areas in the Survey Area that were recently burnt, however this did not affect the results of the survey as representative quadrats could be sampled outside of these areas. Some areas in the northern section of the Survey Area, close to the existing rail were heavily grazed by cattle and dominated by **Cenchrus* grass species. Species composition and richness may be altered in these areas.

Limitation	Constraint	Comment
Remoteness and/or access problems.	Yes	There were access restrictions at the Survey Area, particularly those of significant heritage (e.g. Weeli Wolli Creek) which limited access into some vegetation types. Helicopters were used in order to access remote regions however, blasting and drone flight schedules at Yandicoogina mine, which is adjacent to the western section of the Survey Area, limited the time of day and length of time that the helicopter could operate in that area.
Survey effort and extent.	Partial	The 130 quadrats and 38 relevés recorded from the Survey Area were sufficient to map and classify the vegetation for a detailed level survey. Additionally, floristic data from the survey was combined with previous Spectrum survey data (Spectrum, 2025, Spectrum, 2021) to assist in the analysis of VTs resembling Weeli Wolli Creek, where there were access restrictions. Further access limitations from heritage restrictions, dangerous terrain and Rio Tinto Iron Ore drone flying schedules, reduced the number of targeted searches, particularly those toward the centre of the Survey Area, where potential habitat for the Threatened Flora taxon, *Synostemon hamersleyensis* occurs.
Proportion of flora recorded and/or collected, any identification issues.	No	At least one specimen of every flora species encountered was collected for confirmation. Species Accumulation Curve (SAC) analysis suggested that 75.4% of the taxa expected to be present were recorded within quadrats and additional 21 taxa were recorded in relevés and opportunistic sampling. Plants were identified by the Principal Botanist Raimond Orifici who has botanical and taxonomic experience throughout Western Australia and is particularly experienced around the Pilbara area. Seven specimens were unable to be conclusively identified attributed to insufficient material and plants being sterile.

3. RESULTS & DISCUSSION - FLORA

3.1. Desktop Significant Flora

No Threatened flora species were reported in the Survey Area during the desktop assessment. One Threatened species, *Synostemon hamersleyensis*, was identified as potentially occurring in the Survey Area during the desktop assessment and has been assigned a 'High' likelihood of occurrence as it occurs within 10 km of the Survey Area and the habitat that it prefers may be present (Table 3.1; Map 3.1).

Five Priority Flora taxa have previously been recorded in the Survey Area. A total of 68 further Priority Flora taxa were also identified, 20 of which are considered to have a 'High' likelihood and 16 a 'Medium' likelihood of occurrence within the Survey Area (Table 3.1; Map 3.1; Map 3.2).The remaining 32 taxa have been assigned a 'Low' likelihood of occurrence and are listed in Appendix C.

Table 3.1: Desktop Significant Flora – Recorded, High & Medium Likelihood of Occurrence

Likelihood	Status	Taxa	Longevity	Flowering Period	Proximity to Survey Area (km)
Recorded	P3	*Fimbristylis sieberiana*	Perennial	May to Jun.	0
		Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	Annual	Feb to Oct.	
	P4	*Bulbostylis burbidgeae*	Annual	Mar or Jun to Aug.	
		Lepidium catapycnon	Perennial	Oct.	
		Sida sp. Barlee Range (S. van Leeuwen 1642)	Perennial	Aug.	
High	T	*Synostemon hamersleyensis*	Perennial	-	5.5
	P1	*Calotis squamigera*	Annual	Jul.	3.5
	P2	*Cladium procerum*	Perennial	Nov.	0.7
	P3	*Acacia subtiliformis*	Perennial	Jun.	0.3
		Atriplex flabelliformis	Perennial	-	6.7
		Eremophila naaykensii	Perennial	Jun to Sep.	2.8
		Eremophila spongiocarpa	Perennial	May, Jul to Sep.	3.7
		Euphorbia australis var. *glabra*	Annual/Perennial	May, Sep.	8.6
		Grevillea saxicola	Perennial	Feb to Jun, Sep.	3.4
		Gymnanthera cunninghamii	Perennial	Jan to Dec.	2.3
		Indigofera gilesii	Perennial	May or Aug.	6.0
		Isotropis parviflora	Perennial	Mar.	2.0
		Rhagodia sp. Hamersley (M. Trudgen 17794)	Perennial	Mar, May, Nov	1.4
		Rostellularia adscendens var. *latifolia*	Perennial	Apr to May.	0.5
		Sida sp. Hamersley Range (K. Newbey 10692)	Perennial	May, Aug to Oct.	2.7
		Streptoglossa sp. Cracking clays (S. van Leeuwen et al. PBS 7353)	Annual	Jun.	8.9
		Stylidium weeliwolli	Annual	Aug to Sep.	0.6
		Themeda sp. Hamersley Station (M.E. Trudgen 11431)	Perennial	Aug.	6.4
		Triodia sp. Mt Ella (M.E. Trudgen 12739)	Perennial	Sep.	3.5
	P4	*Eremophila magnifica* subsp. *magnifica*	Perennial	Aug. to Nov.	7.6
		Rhynchosia bungarensis	Perennial	May, July, Nov.	5.4
Medium	P1	*Lindernia* sp. Pilbara (M.N. Lyons & L. Lewis FV 1069)	-	-	21.5
		Myriocephalus scalpellus	Annual	-	21.1

Likelihood	Status	Taxa	Longevity	Flowering Period	Proximity to Survey Area (km)
Medium	P2	*Eragrostis* sp. Mt Robinson (S. van Leeuwen 4109)	Perennial	Sep.	14.6
		Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Perennial	Apr to Oct.	19.3
		Oxalis sp. Pilbara (M.E. Trudgen 12725)	Annual/Perennial	May, Jun to Jul.	22.6
	P3	*Aristida jerichoensis* var. *subspinulifera*	Perennial	Mar to Jul, Sep.	4.8
		Aristida lazaridis	Perennial	Apr.	11.7
		Dampiera metallorum	Perennial	Apr/Jun - Oct.	23.7
		Euphorbia inappendiculata var. *inappendiculata*	Annual	-	7.7
		Ipomoea racemigera	Annual	Apr, Jun	14.7
		Pilbara trudgenii	Perennial	Sep.	28.0
		Stackhousia clementii	Perennial	Feb to Jun, Nov.	23.4
		Vittadinia sp. Coondewanna Flats (S. van Leeuwen 4684)	Annual/Perennial	Jul.	22.2
	P4	*Acacia bromilowiana*	Perennial	Jul.- Aug.	12.1
		Eremophila youngii subsp. *lepidota*	Perennial	Jan or Mar or Jun or Aug to Sep.	12.7
		Ptilotus mollis	Perennial	May or Sep.	21.2

650000
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750000
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7550000
7500000
7450000
7400000

Legend

- Survey Area
- Study Area

Previously Recorded

- Priority 3
- Priority 4

High Likelihood

- Threatened
- Priority 1
- Priority 2
- Priority 3
- Priority 4

N

0 5 10 15 20 km

Scale 1:580,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum Ecology • Spatial

Author: [redacted]

Date: 17-02-2025

Desktop Significant Flora - Recorded & High Likelihood

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP

Prepared for BHP WAIO

3.1

650000
700000
750000
800000
7550000
7500000
7450000

Legend

- Survey Area
- Study Area

Medium Likelihood

- Priority 1
- Priority 2
- Priority 3
- Priority 4

N

0 5 10 15 20 km

Scale 1:580,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum Ecology • Spectral

Author: [redacted]

Date: 17-02-2025

Desktop Significant Flora - Medium Likelihood

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP

Prepared for BHP WAIO

3.2

3.2. Flora

A total of 362 taxa from 48 families and 141 genera were recorded within the Survey Area and are listed in Appendix D. The most species rich family was Fabaceae, with 75 species, followed by Poaceae with 58 species. The most species rich genera were *Acacia* with 37 species, followed by *Ptilotus* with 15 species. Of the 363 taxa recorded, 11 were introduced flora species and six were significant flora species (Table 3.2). A novel species was identified as *Corchorus* aff. *elachocarpus* during taxonomic identification of collected flora samples.

Table 3.2: Number of Flora Taxa Recorded

Total Taxa	Native	Introduced	Total Families	Most Common Families	Total Genera	Most Common Genera	Most Common Taxa Based on % of Quadrats
362	351	11	48	Fabaceae – 75 Poaceae – 58 Malvaceae – 45 Amaranthaceae - 23	141	*Acacia* – 37 *Ptilotus* – 15 *Senna* – 13 *Sida* - 12	**Cenchrus ciliaris* – 69.3% *Triodia pungens* – 51.1% *Senna artemisioides* subsp. *oligophylla* – 44.5% *Aristida holathera* var. *holathera* – 43.8%

3.2.1. Species Accumulation Curve - Flora

Species accumulation curves (SAC) show the relationship between sampling effort and the number of species recorded and can therefore be used to discuss sampling adequacy. As sampling effort (quadrats) increases, the rate at which new species are recorded is reduced, and this is used to predict the number of species that are likely to be present within the Survey Area.

A SAC is presented in Figure 3.1, which was plotted using the *specaccum* function in the *vegan* package in R v.4 (R Core Team, 2021). The improved Chao 2 non-parametric species richness estimator (Chiu *et al.*, 2014) was determined at 453 (30.5% CI [407, 530]), suggesting that 75.4% of flora species were recorded during the survey, based on the 342 taxa recorded within the 130 quadrats. Should the additional 21 taxa during opportunistic collections and relevés be included in the total, the results suggest that 80.1% of species present were recorded and that sampling effort was adequate to record species in the Survey Area.

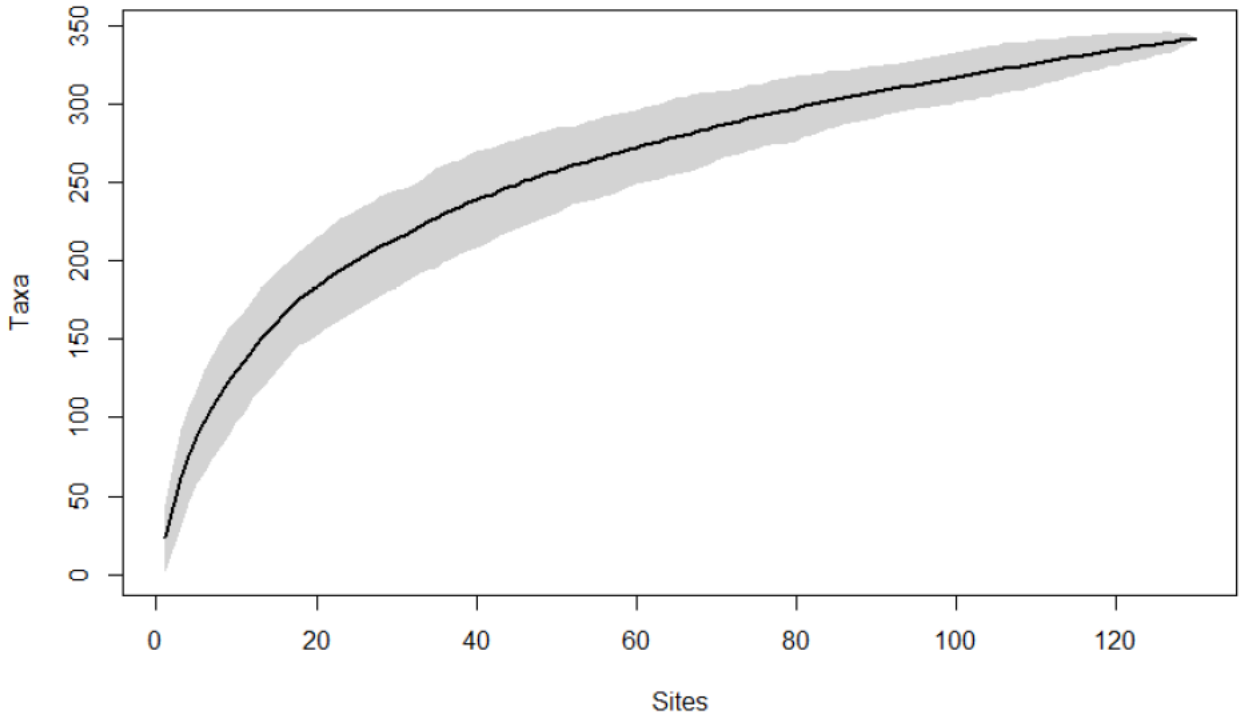


Figure 3.1: SAC – Flora

3.3. Significant Flora

No Threatened flora taxa were recorded in the Survey Area during the assessment.

Four Priority Flora taxa were recorded in the Survey Area (Table 3.3; Table 3.4; Map 3.3)

- Priority 3 (P3): *Eremophila naaykensii*, *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727);
- Priority 4 (P4): *Lepidium catapycnon*, *Sida* sp. Barlee Range (S. van Leeuwen 1642).

One range extension was recorded in the Survey Area, *Corchorus elachocarpus* (Table 3.3; Map 3.3).

One novel species was identified in the Survey Area, *Corchorus* aff. *elachocarpus* (Table 3.3).

No other significant flora taxa, as listed in section 2.4.4, were recorded in the Survey Area during the assessment. Coordinates of all significant flora taxa have been provided electronically with this report.

Table 3.3: Significant Flora Recorded in the Survey Area

Species	Significance	Range Extension (km)
Eremophila naaykensii	Priority 3	-
Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	Priority 3	-
Lepidium catapycnon	Priority 4	-
Sida sp. Barlee Range (S. van Leeuwen 1642)	Priority 4	-
Corchorus elachocarpus	Range Extension	190.0
Corchorus aff. *elachocarpus*	Novel	-

Table 3.4: Significant Flora

Status	Taxon & Description	Description of Habitat in Survey Area	# of Individuals in Survey Area & VTs	Map^	Known Local & Regional Distribution	Photograph
P3	*Eremophila naaykensii* Erect perennial shrub 0.5 m tall, rounded canopy.	Edge of creekline/drainage on lower slopes of red-orange, brown clayey sand with continuous Creekstone/ironstone cobble.	ME: 2 (100%) **Total: 2**		**Local**: Previously known from five locations in the vicinity (between 3 km to 36 km) of the Survey Area **Regional**: Known to occur in the Gascoyne and Pilbara Bioregions and the Augustus and Hamersley IBRA Subregions.	
P3	*Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727) Erect annual herb up to 0.2 m high. Simple hairs present, flat leaves at base of plant, flowers yellow.	Floor of creekline/drainage off lower slopes of red-orange, brown clayey sand with continuous Creekstone/ironstone cobble.	ME: 5 (100%) **Total: 5**		**Local**: Previously recorded within the Survey Area and has been recorded from close to 1000 locations in the local vicinity. **Regional**: Known to occur in the Gascoyne and Pilbara Bioregions and the Augustus, Chichester, Fortescue, Hamersley IBRA Subregions.	

Status	Taxon & Description	Description of Habitat in Survey Area	# of Individuals in Survey Area & VTs	Map^	Known Local & Regional Distribution	Photograph
P4	***Lepidium catapycnon*** Open perennial herb or shrub up to 0.2 m high. Identifiable by a distinct zigzagging stem. Flowers white.	Low hill slopes of red-orange sandy clay loam with continuous coarse ironstone gravel.	HC2: 1 (100%) **Total: 1**		**Local**: Previously recorded within the Survey Area and has been recorded from approximately 900 locations in the local vicinity. **Regional**: Known only to occur in the Pilbara Bioregion within the Chichester, Fortescue, and Hamersley IBRA Subregions.	
P4	***Sida* sp. Barlee Range (S. van Leeuwen 1642)** Low spreading shrub up to 0.3 m. Stems hairy, flowers yellow.	Hill crest with red clayey sand and continuous basalt cobblestones or creek lines/ drainage on lower slopes of red-orange, brown clayey sand with continuous Creekstone/ironstone cobble.	BO: 5 (26.3%) ME: 14 (73.7%) **Total: 19**	 *	**Local**: Previously recorded within the Survey Area and has been recorded from approximately 100 locations in the local vicinity. **Regional**: Known to occur in the Gascoyne and Pilbara Bioregions and the Ashburton, Augustus and Hamersley IBRA Subregions.	

^(Atlas of Living Australia, 2025); * Records shown are of *Sida* sp. Barlee Range (S. van Leeuwen 1642).

720000 730000 740000 750000 760000 770000

7500000 7490000 7480000 7470000 7460000

Legend

Survey Area

Priority Flora:

- *Eremophila naaykensii (P3)*
- *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3)
- *Lepidium catapycnon (P4)*
- *Sida* sp. Barlee Range (S. van Leeuwen 1642)

Novel Species:

- *Corchorus* aff. *elachocarpus* (Novel)

Range Extensions:

- *Corchorus elachocarpus*

N

0 1 2 3 4 5 km

Scale 1:180,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum Ecology + Spatial

Author [redacted] Date: 04-07-2025

Significant Flora

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP 3.3

Prepared for BHP WAIO

3.3.1. Local & Regional Context of Significant Flora

Eremophila naaykensii (P3) was recorded within VT ME, with two individuals recorded from one location within the Survey Area (Table 3.4; Map 3.3). *Eremophila naaykensii* (P3) is previously known from five locations in the vicinity of the Survey Area at approximately 3.1 km southwest (within Priority 1 Weeli Wolli Spring Community), 6.3 km west (along a creek embankment), 19.0 km west (on the outskirts of a creek line), 35.1 km west (within an ironstone gorge), and 36.4 km west (on rocky upper hillslopes and crests). *Eremophila naaykensii* (P3) is likely to be scattered along the edges of creek lines and gorges within the local area and is therefore not considered to be locally significant. *Eremophila naaykensii* (P3) is known from two IBRA regions (Gascoyne and Pilbara) with many known records in these areas. Therefore, *Eremophila naaykensii* (P3) is not considered regionally significant.

Goodenia sp. East Pilbara (A.A. Mitchell PRP 727; P3) was recorded within VT ME, with five individuals recorded from one location within the Survey Area (Table 3.4; Map 3.3). *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3) was previously recorded within the Survey Area and has been recorded from close to 1000 locations in the local vicinity, with the majority of these records occurring between 2.1 to 15.2 km southwest of the Survey Area. Additional populations of the priority taxa have been recorded approximately 40.2 km west of the Survey Area. *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3) has multiple, large populations within the vicinity of the Survey Area and is therefore not considered locally significant. *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3) is known to occur in two IBRA regions (Gascoyne and Pilbara) and all four subregions of the Pilbara, with many known records in these areas. Therefore, *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3) is not considered regionally significant.

Lepidium catapycnon (P4) was recorded within VT HC2, with one individual recorded from one location within the Survey Area (Table 3.4; Map 3.3). *Lepidium catapycnon* (P4) was previously recorded within the Survey Area and has been recorded from approximately 900 locations in the local vicinity, with the majority of these records occurring between 3.2 to 19.0 km south of the Survey Area. Additional population have been recorded east and west of the Survey Area amongst rocky hills and hill crests dominated by *Triodia* hummock grasslands. *Lepidium catapycnon* (P4) has multiple, large populations within the vicinity of the Survey Area and is therefore not considered locally significant. *Lepidium catapycnon* (P4) is only known to occur within the Pilbara IBRA region, however as it is well-represented in this region, it is not considered regionally significant.

Sida sp. Barlee Range (S. van Leeuwen 1642; P4) was recorded in VT BO and ME, with 19 individuals recorded from three locations within the Survey Area (Table 3.4; Map 3.3). *Sida* sp. Barlee Range (S. van Leeuwen 1642; P4) was previously recorded within the Survey Area and has been recorded from approximately 100 locations in the local vicinity, with the largest population occurring between 6.7 km and 17.5 km west of the Survey Area. Additional populations have been recorded further north as well as south-west and south-east of the Survey Area amongst the edges of deep creek lines and ironstone gorges. *Sida* sp. Barlee Range (S. van Leeuwen 1642; P4) has multiple, large populations within the vicinity of the Survey Area and is therefore not considered locally significant. *Sida* sp. Barlee Range (S. van Leeuwen 1642; P4) is known to occur in two IBRA regions (Gascoyne and Pilbara) and all four subregions of the Pilbara, with many known records in these areas. Therefore, *Sida* sp. Barlee Range (S. van Leeuwen 1642; P4) is not considered regionally significant.

3.3.2. Post Survey Review of Desktop Significant Flora

The desktop significant flora taxa assigned a 'Recorded', 'High', or 'Medium' likelihood of occurrence pre-survey were re-assigned a post survey likelihood following the survey and these are detailed in Table 3.5. All significant flora post survey likelihood are shown in Appendix C.

The Threatened Flora taxon, *Synostemon hamersleyensis*, remained 'High'. Although some of the suitable habitat for the species were traversed and the taxon was not recorded, the species may still be present in narrow gorges in the central west of the Survey Area where coverage was limited due to access restrictions and steep terrain.

Of the four Priority Flora taxa previously recorded in the Survey Area, *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3), *Lepidium catapycnon* (P4), and *Sida* sp. Barlee Range (S. van Leeuwen 1642); P4) were recorded during the current survey. Of the remaining two Priority Flora taxa, *Fimbristylis sieberiana* (P3), was reduced to a 'High' likelihood as the species wasn't recorded during the survey, but due to access restrictions to the heritage protected Weeli Wolli Creek, the majority of their previous records and known habitat were not able to be traversed. *Bulbostylis burbidgeae* (P4), was reduced to 'Medium' as the location of the previous record was visited but was not recorded during survey, however, given the species is an annual, it is possible that it may have been undetectable at the time of the surveys.

One Priority Flora taxa assigned a pre-survey likelihood of 'High', *Eremophila naaykensii* (P3), was recorded in the Survey Area during the assessment. Of the remaining 19 Priority Flora taxa assigned a 'High' likelihood of occurrence, four species, *Cladium procerum* (P2), *Gymnanthera cunninghamii* (P3), *Rostellularia adscendens* var. *latifolia* (P3), and *Stylidium weeliwolli* (P3), retained their pre-survey likelihood as access was restricted to their preferred habitat, the heritage protected Weeli Wolli Creek. Three Priority Flora taxon, *Calotis squamigera* (P1), *Grevillea saxicola* (P3), and *Rhagodia* sp. Hamersley (M. Trudgen 17794; P3), were reduced to 'Medium'. *Calotis squamigera* (P1) is an annual species that is known to flower in July and may not have been present at the timing of the surveys, while *Grevillea saxicola* (P3) and *Rhagodia* sp. Hamersley (M. Trudgen 17794; P3) had suitable habitat (Mulga plains or steep Mulga slopes) in the Survey Area that they are likely to be present in. The remaining 12 Priority Flora taxa were reduced to 'Low' as either suitable habitat was limited, or not identified in the Survey Area, or suitable habitat was traversed, and the species were not recorded during the survey.

All Priority Flora taxon assigned a pre-survey likelihood of 'Medium' were reduced to 'Low' post survey.

Table 3.5: Post Survey Likelihood of Occurrence of Desktop Significant Flora

Likelihood of Occurrence		Status	Taxon	Details
Pre Survey	Post Survey			
Recorded	High	P3	*Fimbristylis sieberiana*	Locations were not visited due to access restrictions to Weeli Wolli Creek in which the records occur. No records were made of this species within the Survey Area, however it's still highly likely to occur within the section of Weeli Wolli Creek that exists within the Survey Area.
	Recorded		*Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727)	Recorded within Survey Area.
	Medium	P4	*Bulbostylis burbidgeae*	Location was visited but was not recorded during the survey. Given the species is an annual, it is possible that it may have been undetectable at the time of the surveys. Therefore, the species will be reduced to a 'Medium' likelihood of occurrence.
	Recorded		*Lepidium catapycnon*	Recorded within Survey Area.
			Sida sp. Barlee Range (S. van Leeuwen 1642)	Recorded within Survey Area.
High	High	T	*Synostemon hamersleyensis*	Targeted traverses were walked in the most likely habitat for this species to occur in, however coverage was limited due to steep and dangerous terrain and heritage exclusions. The species was not recorded during the survey but may be present in unsurveyed areas of the narrow gorge in the central west of the Survey Area.
	Medium	P1	*Calotis squamigera*	Suitable habitat traversed, species not recorded during survey. However, it is an annual species known to flower in July and may have been undetectable at the timing of the survey.
	High	P2	*Cladium procerum*	Suitable habitat (Weeli Wolli Creek) was not traversed due to access restrictions to the heritage protected Weeli Wolli Creek.
	Low	P3	*Acacia subtiliformis*	Suitable habitat traversed (calcrete hills and plains), species not recorded during survey.
			Atriplex flabelliformis	Suitable habitat (salt marsh) not identified during survey. Not recorded.
	Recorded		*Eremophila naaykensii*	Recorded within Survey Area.
	Low		*Eremophila spongiocarpa*	Suitable habitat (saline flats) not identified during survey. Not recorded.
			Euphorbia australis var. *glabra*	Suitable habitat (flat calcrete plains) not identified during survey. Not recorded.
	Medium		*Grevillea saxicola*	Suitable habitat (steep Mulga slopes) occurs in the Survey Area. But the species was not recorded during the survey
	High		*Gymnanthera cunninghamii*	Suitable habitat in the Survey Area was traversed however due to access restrictions at the heritage protected Weeli Wolli Creek, it may still be present.
	Low		*Indigofera gilesii*	Suitable habitat traversed (boulders and outcrops, hills), species not recorded during survey.
			Isotropis parviflora	Suitable habitat traversed (valley slopes of ironstone plateau), species not recorded during survey.

Likelihood of Occurrence		Status	Taxon	Details
Pre Survey	Post Survey			
	Medium		*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Suitable habitat (Mulga) occurs in the Survey Area. But the species was not recorded during the survey
High	High	P3	*Rostellularia adscendens* var. *latifolia*	Suitable habitat (Weeli Wolli Creek) was not traversed due to access restrictions to the heritage protected Weeli Wolli Creek.
	Low		*Sida* sp. Hamersley Range (K. Newbey 10692)	Suitable habitat limited in the Survey Area; species not recorded during survey.
			Streptoglossa sp. Cracking clays (S. van Leeuwen et al. PBS 7353)	Suitable habitat (cracking clay) not identified during survey. Not recorded.
	High		*Stylidium weeliwolli*	Suitable habitat (Weeli Wolli Creek) was not traversed due to access restrictions to the heritage protected Weeli Wolli Creek.
	Low		*Themeda* sp. Hamersley Station (M.E. Trudgen 11431)	Suitable habitat limited in the Survey Area; species not recorded during survey.
			Triodia sp. Mt Ella (M.E. Trudgen 12739)	Suitable habitat (rocky outcrops and gully slopes) traversed, species not recorded during survey.
		P4	*Eremophila magnifica* subsp. *magnifica*	Suitable habitat traversed (rocky scree slopes), species not recorded during survey.
			Rhynchosia bungarensis	Suitable habitat (pebbly, shingly coarse sand amongst boulders in gully's) limited in Survey Area; species not recorded during survey.
Medium		P1	*Lindernia* sp. Pilbara (M.N. Lyons & L. Lewis FV 1069)	Suitable habitat not recorded in the Survey Area.
			Myriocephalus scalpellus	Suitable habitat not recorded in the Survey Area.
		P2	*Eragrostis* sp. Mt Robinson (S. van Leeuwen 4109)	Suitable habitat traversed; species not recorded during survey.
			Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Suitable habitat traversed; species not recorded during survey.
			Oxalis sp. Pilbara (M.E. Trudgen 12725)	Suitable habitat traversed; species not recorded during survey.
		P3	*Aristida jerichoensis* var. *subspinulifera*	Suitable habitat traversed; species not recorded during survey.
			Aristida lazaridis	Suitable habitat traversed; species not recorded during survey.
			Dampiera metallorum	Suitable habitat traversed; species not recorded during survey.
			Euphorbia inappendiculata var. *inappendiculata*	Suitable habitat (cracking clay) not identified during survey. Not recorded.
			Ipomoea racemigera	Suitable habitat traversed; species not recorded during survey.
			Pilbara trudgenii	Suitable habitat traversed; species not recorded during survey.
			Stackhousia clementii	Suitable habitat traversed; species not recorded during survey.
			Vittadinia sp. Coondewanna Flats (S. van Leeuwen 4684)	Suitable habitat traversed; species not recorded during survey.
		P4	*Acacia bromilowiana*	Suitable habitat traversed; species not recorded during survey.

Likelihood of Occurrence		Status	Taxon	Details
Pre Survey	Post Survey			
			Eremophila youngii subsp. *lepidota*	Suitable habitat traversed; species not recorded during survey.
			Ptilotus mollis	Suitable habitat traversed (steep midslope of banded ironstone); species not recorded.

3.4. Introduced Flora

Eleven introduced flora species were recorded within the Survey Area of which one, **Calotropis procera* is a Declared Pest - s22.

Of the introduced flora species recorded, **Cenchrus ciliaris* was the most prevalent across the Survey Area, with an estimated 170,786 individuals recorded from 103 records and formed the dominant understory species in five VTs (FP1, SS2, SA3, SD, and MA). **Cenchrus setiger* was recorded at an estimated 31,385 from 19 records and formed the dominant understory species in VT SS2. **Malvastrum americanum* and **Bidens bipinnata* were both recorded in highest abundance in creek lines and drainage areas (VTs FP1, FP2, and MA) at an estimated total abundance of 1,050 and 150 individuals, respectively across the Survey Area. The Declared Pest - s22, **Calotropis procera*, was recorded from one location in the Survey Area at a total abundance of two individuals.

All introduced flora species are listed in Table 3.6. Locations have been provided on Map 3.4 and are provided electronically with the report.

Table 3.6: Introduced Flora

Species	Abundance at the Survey Area	Environmental Significance
**Aerva javanica*	Three individuals from three records	Permitted - s11
**Bidens bipinnata*	Estimated 150 individuals from five records	Permitted - s11
**Calotropis procera*	Two individuals from one record	Declared Pest – s22
**Cenchrus ciliaris*	Estimated 170,786 individuals from 103 records	Permitted - s11
**Cenchrus setiger*	Estimated 31,385 individuals from 19 records	Permitted - s11
**Citrullus colocynthis*	Two individuals from one record	Permitted - s11
**Datura leichhardtii* subsp. *leichhardtii*	One individual from one record	Permitted - s11
**Malvastrum americanum*	Estimated 1,050 individuals from four records	Permitted - s11
**Setaria verticillata*	Ten individuals from one record	Permitted - s11
**Tribulus terrestris*	Estimated 31 individuals from five records	Permitted - s11
**Vachellia farnesiana*	Five individuals from two records	Permitted - s11

720000 730000 740000 750000 760000 770000

7500000 7490000 7480000 7470000 7460000

Legend

Survey Area

Introduced Flora

- **Aerva javanica*
- **Bidens bipinnata*
- **Calotropis procera*
- **Cenchrus ciliaris*
- **Cenchrus setiger*
- **Citrullus colocynthis*
- **Datura leichhardtii subsp. leichhardtii*
- **Malvastrum americanum*
- **Setaria verticillata*
- **Tribulus terrestris*
- **Vachellia farnesiana*

N

0 1 2 3 4 5 km

Scale 1:180,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum Ecology

Author: [redacted]

Date: 27-02-2025

Introduced Flora

Jinidi Rail Corridor: Detailed Flora & Vegetaton Assessment

MAP

Prepared for BHP WAIO

3.4

Table 4.1: Threatened & Priority Ecological Communities

Pre-survey Likelihood	Status	Name	Description	Threats	Distance from Survey Area
Recorded	P1	Weeli Wolli Spring Community	Weeli Wolli Spring's riparian woodland and forest associations are unusual as a consequence of composition of the understorey. The sedge and herb field communities that fringe many of the pools and associated water bodies along the main channels of Weeli Wolli Creek have not been recorded from any other wetland site in the Pilbara. The spring and creek line are also noted for their relatively high diversity of stygofauna, and this is probably attributed to the large-scale calcrete and alluvial aquifer system associated with the creek. The valley of Weeli Wolli Spring also supports a very rich microbat assemblage including a threatened species.	Dewatering and re-watering altering patterns of inundation, weed invasion, increased visitation.	0 km
		Fortescue Marsh (Marsh Land System)	Fortescue Marsh is an extensive, episodically inundated samphire marsh at the upper terminus of the Fortescue River and the western end of Goodiadarrie Hills. It is regarded as the largest ephemeral wetland in the Pilbara. It is a highly diverse ecosystem with fringing mulga woodlands (on the northern side), samphire shrublands and groundwater dependant riparian ecosystems. It is an arid wetland utilized by waterbirds and supports a rich diversity of restricted aquatic and terrestrial invertebrates. Recorded locality for night parrot and bilby and several other threatened vertebrate fauna. Endemic *Eremophila* species, populations of Priority Flora and several near endemic and novel samphire.	Clearing for mining, altered hydrology (watering with fresh water), grazing and weed invasion.	0 km
	P3	Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes")	These red linear iron-rich sand dunes lie on the Divide Land system at the junction of the Hamersley Range and Fortescue Valley, between Kalgan Creek and the low hills to the west. A small number are vegetated with *Acacia dictyophleba* scattered tall shrubs over *Crotalaria cunninghamii*, *Trichodesma zeylanicum* var. *grandiflorum* open shrubland. They are regionally rare, small and fragile and highly susceptible to threatening processes.	Weed invasion especially buffel grass, grazing by cattle, altered fire regimes, erosion and clearing for mining and infrastructure.	0 km
High	P2	Riparian communities of springs and pools Pilbara	The community includes flora with restricted distributions or populations that are highly disjunct or are major range extensions from northern and eastern Australia. These include *Imperata cylindrica*, *Cladium procerum*, *Schoenus falcatus* and *Fimbristylis sieberiana* (P3). In the Pilbara these taxa are almost exclusively restricted to the riparian zones of permanent wetlands with high soil moisture maintained by groundwater flows. Occurrences are disjunct with sites typically associated with groundwater discharge in gorge and valley wetlands that are often coupled with significant shading.	Hydrological change associated with mining, altered fire regimes, weed invasion (*Cenchrus ciliaris*, *Passiflora foetida*), grazing (camels), increased visitation.	6.6 km SE
	P3	Kumina Land System	Ferricrete duricrust plains, uplands and plateaux remnants, relief up to 15 m. Duricrust plains and plateau remnants support hard spinifex grasslands.	Mining activity, clearing, weed invasion.	9.8 km SE

Pre-survey Likelihood	Status	Name	Description	Threats	Distance from Survey Area
Low	P1	Brockman Iron cracking clay communities	Rare tussock grassland dominated by *Astrebla lappacea* in the Hamersley Range, on the Brockman land system. Tussock grassland on cracking clays - derived in valley floors, depositional floors. This is a rare community and the landform is rare.	Heavily grazed, clearing for mining and infrastructure / agricultural developments, altered fire regimes.	30.1 km NW
		Coolibah - Lignum Flats, sub type 2	Woodland or forest of *Eucalyptus victrix* (Coolibah) over thicket of *Duma florulenta* (lignum) on red clays in run-on zones. Associated species include *Eriachne benthamii*, *Themeda triandra*, *Aristida latifolia*, *Eulalia aurea* and *Acacia aneura*. A series of sub-types have been identified with sub-type 2 consisting of: Coolibah woodlands over lignum (*Duma* florulenta) over swamp wandiree (Lake Robinson is the only known occurrence).	Hydrological change associated with mining, altered fire regimes, weed invasion.	41.3 km SW
		Freshwater claypans of the Fortescue Valley	Freshwater claypans downstream of the Fortescue Marsh - Goodiadarrie Hills on Mulga Downs Station. Larger claypans contain the highest number of invertebrate species and most of the restricted elements of the Pilbara riparian flora. Important for waterbirds, invertebrates and some poorly collected plants. *Eriachne* spp., *Eragrostis* spp. grasslands. Unique community has few Coolibah.	Grazing, weed invasion, infrastructure corridors, altered hydrological flows, altered fire regimes.	27 km NE
		West Angelas Cracking-Clays	Open tussock grasslands of *Astrebla pectinata*, *A. elymoides*, *Aristida latifolia*, in combination with low scattered shrubs of *Sida fibulifera*, on basalt (Jerrinah formation) derived cracking-clay loam depressions and flowlines. Occurs throughout the central and eastern Hamersley Range from near Tom Price east to Newman.	Clearing for mining, infrastructure and solar farms, possible weed invasion, fragmentation and altered fire regimes.	47.6 km SW
		Wona Land System	Cracking clays of the Chichester and Mungaroona Range. This shrub less plain of stony gibber community occurs on the tablelands with very little vegetative cover during the dry season, however during the wet a suite of ephemerals/annuals and short-lived perennials emerge, many of which are poorly known and range-end taxa. Or; Annual *Sorghum* grasslands on self-mulching clays with a moderate-dense overlay of rocks. This community appears very rare and restricted to the Pannawonica-Robe valley end of Chichester Range. Naturally species poor when dry.	Weed invasion.	39.3 km N
	P3	Coolibah - Lignum Flats, sub type 1	Woodland or forest of *Eucalyptus victrix* (Coolibah) over thicket of *Duma florulenta* (lignum) on red clays in run-on zones. Associated species include *Eriachne benthamii*, *Themeda triandra*, *Aristida latifolia*, *Eulalia aurea* and *Acacia aneura*. A series of sub-types have been identified with sub-type 1 consisting of: Coolibah and mulga (*Acacia aneura*) woodland over lignum and tussock grasses on clay plains (Coondewanna Flats and Wanna Munna Flats).	Clearing for mining, weed invasion, altered fire regimes, altered hydrological flows.	36.9 km SW

Pre-survey Likelihood	Status	Name	Description	Threats	Distance from Survey Area
Low	P3	Narbung Land System	Alluvial Wash plains with prominent internal drainage foci supporting snakewood and mulga shrublands with halophytic low shrubs.	Mining activity, clearing, weed invasion.	25.3 km E

4.1.2. Literature Review Significant Vegetation

Previously undertaken assessments in the vicinity of the Survey Area were reviewed for significant vegetation. Eight vegetation assemblages (referring to a specific grouping of plant species found in a particular area, forming a distinct community) analogous with the known PECs, Weeli Wolli Spring Community (Priority 1), Riparian communities of springs and pools Pilbara (Priority 2), and Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes"; Priority 3), were recorded in the Desktop Study Area. A further 14 locally or regionally significant vegetation assemblages were identified within the Desktop Study Area, associated with unique landforms, or supporting Priority Flora (Table 4.2).

Table 4.2: Literature Review Significant Vegetation

Pre-Survey Likelihood	Report	Description	Significance	Distance from Survey Area
Recorded	Area C to Jinayri to Mount Newman Railway Flora and Vegetation Survey (Woodman Environmental Consulting, 2010).	Woodland to Forest of *Eucalyptus camaldulensis* subsp. *refulgens* and/or *Melaleuca argentea* with occasional *Eucalyptus victrix* over low Open Woodland of *Acacia citrinoviridis* and *Acacia coriacea* subsp. *pendens* over high shrubland on brown silty sand or clay in creek lines.	Contains the obligate phreatophytic tree species, *Melaleuca argentea* pertaining to the Weeli Wolli Spring Community (Priority 1).	0 km
		Minor and large drainage lines, gorges and creek lines.	Role of refuge for Priority Flora.	
		Calcrete hills.		
		Shrublands, Hummock Grasslands, Woodlands and Forests Associated with lower slopes to hill crests and gorges.		
	RGP 5: Jimblebar Junction to Yandi Junction Railway Reserve Flora and Vegetation Assessment (ENV Australia, 2008).	Plains and floodplains with varying vegetation assemblages.	Role of refuge for Priority Flora.	0 km
		Acacia pruinocarpa low woodland.		
		Acacia aneura open woodland/shrubland on sandplains.		
		Eucalyptus xerothermica low open woodland on major drainage line – riparian		
	Flora and Vegetation Survey - Jinidi to Mainline (Onshore Environmental Consultants, 2012b).	Open Forest of *Melaleuca argentea* and *Eucalyptus camaldulensis* over Low Woodland of *Acacia citrinoviridis*, *Acacia coriacea* subsp. *pendens* and *Acacia ampliceps* over Open Sedges of *Typha domingensis*, *Cyperus vaginatus* and *Fimbristylis sieberiana* (P3) in brown loamy or clayey sand along major drainage channel of Weeli Wolli Creek.	Represents the Priority 1 Weeli Wolli Spring PEC and is refuge for Priority Flora.	0 km

Pre-Survey Likelihood	Report	Description	Significance	Distance from Survey Area
Recorded	Flora and Vegetation Survey - Jinidi to Mainline (Onshore Environmental Consultants, 2012b).	Open Hummock Grassland of *Triodia schinzii* and *Triodia basedowii* with High Open Shrubland of *Acacia dictyophleba* over Low Open Shrubland of *Corchorus tectus*, *Crotalaria cunninghamii* and *Sida cardiophylla* in red sand on narrow linear dunes.	Represents Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes"; Priority 3).	0 km
	Mindy North Tenement Level 2 Flora and Vegetation Survey (Onshore Environmental, 2016).	Shrubland of *Crotalaria cunninghamii*, *Trichodesma zeylanicum* and *Acacia dictyophleba* over Open Hummock Grassland of *Triodia schinzii* with Low Open Shrubland of *Sida cardiophylla*, *Corchorus tectus* and *Scaevola parvifolia* var. *pilbarae* on sand dunes.	Represents Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes"; Priority 3).	0 km
High	Flora and Vegetation on the Hope Downs 4 Mile Infrastructure Corridor (Mattiske Consulting, 2008).	Tall Shrubland of *Acacia arida*, *Acacia bivenosa*, *Acacia ancistrocarpa*, *Acacia maitlandii*, *Acacia monticola* with occasional emergent *Corymbia deserticola* subsp. *deserticola*, *Eucalyptus gamophylla* and *Eucalyptus leucophloia* over *Gompholobium polyzygum*, *Indigofera monophylla*, *Androcalva luteiflora* over mixed *Triodia* species on sandy-loam soils in minor gullies.	Role of refuge for Priority Flora.	2 km S
		Hummock Grasslands of mixed *Triodia* species with emergent *Corymbia hamersleyana*, *Eucalyptus gamophylla*, *Eucalyptus leucophloia* over mixed *Acacia* species on ranges, hills and hillslopes.		
		Open Woodland of *Eucalyptus victrix*, *Eucalyptus camaldulensis* var. *obtusa*, *Melaleuca argentea* over *Acacia citrinoviridis*, *Acacia coriacea* subsp. *sericophylla* and *Melaleuca lasiandra* over *Cyperus vaginatus* on major creek lines with pools with sandy soils.	Represents the Priority 1 Weeli Wolli Spring Community PEC.	
	Jinayri to Area C Access Corridor Flora and Vegetation Assessment (ENV Australia, 2010c).	*Eucalyptus* Open Woodland.	Represents the Priority 1 Weeli Wolli Spring Community PEC.	2.5 km S
		Hummock Grassland of *Triodia wiseana* with open shrubland of *Acacia bivenosa* and *Acacia pyrifolia* with scattered low trees of *Corymbia hamersleyana* and *Eucalyptus trivalva* (mallee) on light brown loam on calcrete plains/low rises.	Role of refuge for Priority Flora.	
	South Flank to Jinidi Level 2 Flora and Vegetation Survey (Biota Environmental Sciences, 2012b).	Hummock grasslands with an overstorey of *Eucalyptus leucophloia* and *Acacia* species on skeletal soils on hillsides.	Role of refuge for Priority Flora.	3.5 km S
		Open Hummock Grasslands of *Triodia wiseana* with scattered shrubs and trees on undulating calcrete plains and low hills.		

Pre-Survey Likelihood	Report	Description	Significance	Distance from Survey Area
High	Ministers North and Yandi Vegetation Association and Condition Mapping (Onshore Environmental, 2020).	Open Forest of *Eucalyptus camaldulensis* var. *refulgens*, Eucalyptus victrix and *Melaleuca argentea* over Low Open Forest of *Acacia coriacea* subsp. *pendens*, *Acacia ampliceps* and *Atalaya hemiglauca* over Open Sedges of *Typha domingensis* and *Cyperus vaginatus*.	Contains the obligate phreatophytic tree species, *Melaleuca argentea* pertaining to the Weeli Wolli Spring Community (Priority 1).	7 km W
	Ministers North Miscellaneous Licence Area Amendment Surveys, Sanders Seep and Yandicoogina Creek Flora and Vegetation (Biologic Environmental Survey, 2020).	Mid open woodland (to mid woodland) of *Eucalyptus camaldulensis* subsp. *obtusa* (with occasional *Melaleuca argentea*) over high to mid open tussock grassland of *Eulalia aurea*, *Themeda triandra* and *Sorghum plumosum* with high sparse shrubland of *Acacia tumida*.	Has affinities with the Priority 2 Riparian communities of springs and pools Pilbara PEC. Role of refuge to *Fimbristylis sieberiana* (P3) and numerous other priority species, as well as numerous permanent to semi-permanent pools.	7 km W
	Newman to Yandi Transmission Line Flora and Vegetation Assessment (ENV Australia, 2009).	Hummock Grassland of *Triodia wiseana* with Open Shrubland of *Acacia bivenosa*, *Androcalva luteiflora* and *Petalostylis labicheoides* with Very Open Mallee of *Eucalyptus socialis* subsp. *eucentrica*, *Corymbia hamersleyana* and *E. trivalva* on Red-brown Loam on Calcrete Rises/Outcrops.	Role of refuge for Priority Flora.	7.5 km SE
Medium	Reconnaissance Flora and Vegetation Survey and Fauna Assessment Newman to Mining Area C Powerline Corridor (Onshore Environmental, 2017).	Low Woodland of *Acacia aptaneura*, *Grevillea berryana* and *Acacia catenulata* subsp. *occidentalis* over High Shrubland of *Acacia aptaneura* over Open Tussock Grassland of *Aristida contorta*, *Aristida inaequiglumis* and *Enneapogon polyphyllus* on stony plains with brown sandy clay loam.	Representative of the vulnerable Valley Floor Mulga in the Hamersley Subregion	18 km S

4.2. Vegetation Types

A total of 19 VTs were described from the Survey Area, including 18 derived from floristic analysis of quadrat data (Figure 4.1), with one group split to represent two structurally based VTs (HC1 and HC2; Table 4.3;

Map 4.1). One additional VT derived floristically was classed as an ecotone and manually merged with 'SP' and 'SA1'. Quadrat data from a previous assessment of Weeli Wolli Creek (Spectrum, 2021) and an additional Spectrum survey (Spectrum, 2025) in the vicinity of the Survey Area, were used in the floristic analysis for regional comparison. Quadrats from the regional dataset grouped with VTs HC1, HC2, HS1, FS1, ME, FP1, WWFP, and WWHS and were used to describe VTs in areas where access restrictions were limiting.

The plains in the Survey Area formed six floristic groups. These groups were represented as three sandy plains (SA1, SA2, and SA3), two sandy/stony plains (SS1 and SS2), and one stony plain (SP). The sandy plains covered 19.2% of the Survey Area and were characterised by Hummock Grasslands of *Triodia basedowii*, and *Triodia pungens* or *Triodia schinzii* with Low Woodlands/Shrublands of various *Acacia* spp. on flat plains of red/red-orange clayey or loamy sand. The sandy/stony plains covered 18.6% of the Survey Area and were characterised by Hummock Grasslands of *Triodia pungens* and *Triodia basedowii* or Tussock Grasslands of "*Cenchrus ciliaris*, **Cenchrus setiger*, and *Chrysopogon fallax* with Low Woodlands/High Shrublands of various *Acacia* spp. on flat plains of red/dark red-orange sandy clay with ironstone gravel. The stony plains were characterised by Hummock Grasslands of *Triodia pungens* and *Triodia basedowii* with Open Shrubland of *Acacia ancistrocarpa*, *Senna artemisioides* subsp. *oligophylla*, and *Acacia sclerosperma* subsp. *sclerosperma* with Very Open Woodlands of *Eucalyptus gamophylla* and *Acacia inaequilatera* on red-orange sandy loam on flat plains with ironstone gravel and covered 13.1% of the Survey Area.

The hill crests and slopes of the Survey Area were split into seven floristic groups, with one of these groups split structurally to represent two different VTs (HC1 and HC2). These groups were represented as two hill crest VTs (HC1, HC2), basalt outcrops (BO), sand dunes (SD), two hill slope VTs (HS1 and WWHS), and foot slopes (FS1). The hill crests covered 22.5% of the Survey Area and were characterised by Hummock Grasslands of Triodia *vanleeuwenii* and *Triodia pungens* and/or *Triodia wiseana* with Low Open Woodlands of *Eucalyptus leucophloia* subsp. *leucophloia*, and/or *Corymbia hamersleyana* and/or *Hakea chordophylla* over various *Senna* and *Acacia* spp. BO covered 0.3% of the Survey Area and was characterised by Open Hummock Grasslands of *Triodia wiseana* with Shrublands of various *Senna* and *Acacia* spp., over Open Tussock Grasslands of *Aristida contorta*, *Themeda triandra* and *Eriachne mucronata* on hill crests with basalt cobbles and boulders. SD was characterised by Open Hummock Grasslands of *Triodia schinzii* and *Triodia basedowii* with Open shrubland of *Acacia dictyophleba* over Very Open Tussock Grasslands of **Cenchrus ciliaris*, *Eragrostis eriopoda* and *Aristida holathera* var. *holathera* on dark red-orange sand on dune crests and covered 0.7% of the Survey Area.

HS1 covered less than 0.1% of the Survey Area and was characterised by Low Open Forest of *Acacia aptaneura* and *Acacia catenulata* subsp. *occidentalis* over Open Hummock Grassland of *Triodia pungens* and *Triodia brizoides* with High Open Shrubland of *Eremophila latrobei* subsp. *latrobei* on steep hillslopes. FS1 were characterised as Hummock Grasslands of *Triodia vanleeuwenii* and *Triodia pungens* with Open Woodlands of *Eucalyptus leucophloia* subsp. *leucophloia* over Open Shrublands of *Acacia bivenosa*, *Acacia tenuissima* and *Acacia inaequilatera* on low hill slopes of red-orange sandy clay loam with continuous coarse ironstone gravel and covered 6.5% of the Survey Area. WWHS covered 0.3% of the Survey Area and was described and mapped from regional quadrats (Spectrum, 2021). The VT was characterised as Shrublands of *Acacia synchronicia* and *Acacia inaequilatera* over Very Open Hummock Grassland of *Triodia wiseana* and/or *Triodia angusta* with Scattered Low trees of +/- *Corymbia hamersleyana* or *Acacia aneura* on red clayey sand on hillslopes.

The drainage lines, floodplains, and creeklines were grouped into six floristic groups, represented as, medium drainage areas (ME), four floodplains (FP1, FP2, FP3, and WWFP), and major drainage areas (MA). ME covered 4.8% of the Survey Area and were characterised as Open Scrubs of *Acacia tumida* var. *pilbarensis*, *Petalostylis labicheoides* and *Acacia pyrifolia* var. *pyrifolia* with Open Hummock Grasslands of *Triodia pungens* and *Triodia wiseana* with Very Open Tussock Grasslands of *Themeda triandra* with Low Open Woodlands of *Corymbia hamersleyana* on medium drainage lines. FP1 covered 0.3% of the Survey Area and was described and mapped from regional quadrats (Spectrum, 2021; 2025). FP1 was characterised as Woodlands of *Eucalyptus camaldulensis* subsp. *refulgens* over High Shrubland of *Acacia citrinoviridis*, *Acacia pyrifolia* var. *pyrifolia* and *Atalaya hemiglauca* over Very Open Tussock Grassland of *Themeda triandra* and **Cenchrus ciliaris* on floodplains. FP2 included two quadrats, an unbound relevé from within the Survey Area and an additional regional quadrat (Spectrum, 2025). The VT was characterised as Very Open Hummock Grassland of *Triodia pungens* with Scattered Trees of Corymbia hamersleyana over Scattered Shrubs of *Acacia dictyophleba*, *Hakea chordophylla* and *Acacia inaequilatera* gravel on floodplains, covering 0.9% of the survey area. FP3 covered 10.3% of the Survey Area and was characterised as Low Woodlands of *Acacia aptaneura* and *A. pruinocarpa* over Open Tussock Grassland of **Cenchrus ciliaris* and *Chrysopogon fallax* with Open Hummock Grasses of *Triodia pungens* with Open Shrubland of *Psydrax latifolia*, *Acacia synchronicia* and *Eremophila forrestii* subsp. *forrestii* on drainage areas with red-orange sandy clay loam and ironstone gravel. MA was characterised as Woodland of *Eucalyptus camaldulensis* subsp. *refulgens*, *Acacia citrinoviridis* and *Atalaya hemiglauca* over Very Open Tussock Grassland of **Cenchrus ciliaris* with Scattered Shrubs of *Acacia pyrifolia* var. *pyrifolia* and *Corchorus crozophorifolius* on red-orange sand with continuous creekstone within major drainage lines and covered 0.3% of the Survey Area. WWFP covered less than 0.1% of the Survey Area and was described and mapped from regional quadrats (Spectrum, 2021). The VT was characterised as High Shrubland of *Acacia bivenosa* over Very Open Tussock Grasslands of **Cenchrus ciliaris* and/or Very Open Hummock Grassland of *Triodia wiseana* and/or *Triodia angusta* on red clayey sand on drainage areas/floodplains.

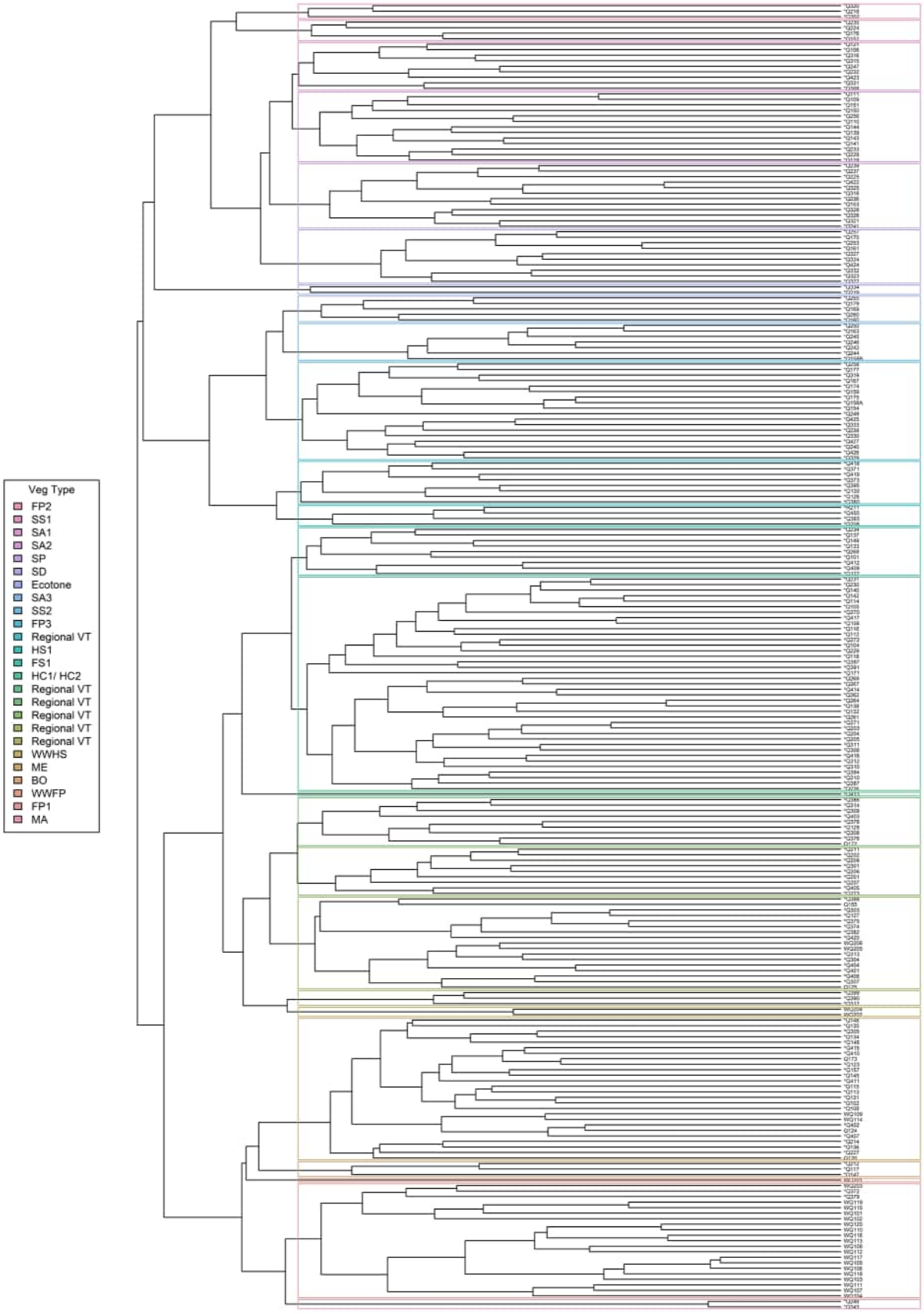


Figure 4.1: Dendrogram of Floristic Analysis

Table 4.3: Vegetation Types

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
Plains						
SA1	**BHP: SA TbTp AancApaHc BeScp**: Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with Low Scattered Shrubs of *Acacia pachyacra, Acacia ancistrocarpa* and *Hakea chordophylla* over scattered herbs of *Bonamia erecta* and *Scaevola parvifolia* subsp. *pilbarae* on red-orange loamy sand on flat plains. **NVIS**: *Acacia pachyacra, Acacia ancistrocarpa* and +/- *Hakea chordophylla* mid sparse shrubland, over *Bonamia erecta* and *Scaevola parvifolia* subsp. *pilbarae* low isolated shrubs with *Triodia basedowii* and Triodia *pungens* low open hummock grassland.	*Acacia melleodora* *Acacia sericophylla* *Acacia dictyophleba* *Aristida holathera* var. *holathera* *Corymbia hamersleyana* *Dicrastylis cordifolia* *Eragrostis eriopoda*	Flat plains of red-orange loamy sand. Good to Excellent condition.	**Q106, Q121, Q168, Q232, Q247, Q315, Q316, Q331, Q423, R124.**	2,358.0 ha 9.5 %	
SA2	**BHP: SA TbTscPamu EgAiCh AancAdPec**: Hummock Grassland of *Triodia basedowii* and *Triodia schinzii* with *Neurachne muelleri* Scattered Tussock Grass with Low Open Woodland of *Acacia inaequilatera, Corymbia hamersleyana* and Very Open Mallee of *Eucalyptus gamophylla* over Open Shrubland of *Acacia ancistrocarpa, Acacia dictyophleba* and *Petalostylis cassioides* on red clayey sand on flat plains. **NVIS**: *Acacia inaequilatera* and +/- *Corymbia hamersleyana* low open woodland with *Eucalyptus gamophylla* low open mallee woodland, over *Acacia ancistrocarpa, Acacia dictyophleba* and *Petalostylis cassioides* mid sparse shrubland, over *Neurachne muelleri* low isolated tussock grasses with *Triodia basedowii* and +/- *Triodia schinzii* mid hummock grassland.	*Acacia pachyacra* *Acacia tenuissima* *Aristida holathera* var. *holathera* *Bonamia erecta* **Cenchrus ciliaris* *Eragrostis eriopoda* *Grevillea wickhamii* subsp. *hispidula* *Neurachne muelleri* *Petalostylis cassioides* *Ptilotus astrolasius* *Scaevola parvifolia* subsp. *pilbarae* *Senna artemisioides* subsp. *oligophylla* *Trigastrotheca molluginea*	Flat plains of red clayey sand. Good to Excellent condition.	**Q109, Q110, Q111, Q119, Q139, Q141, Q143, Q144, Q150, Q151, Q228, Q233, Q256, R103, R104, R105, R110, R117, R203.**	1,964.6 ha 7.9 %	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
SA3	**BHP: SA TbTpCc AanAa AsySeaoRhe**: Open Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with Very Open Tussock Grassland of **Cenchrus ciliaris* with Low Woodland of *Acacia aneura* and *Acacia aptaneura* over Shrubland of *Acacia synchronicia, Senna artemisioides* subsp. *oligophylla* and *Rhagodia eremaea* on red clayey sand on flat plains. **NVIS**: *Acacia aneura* and *Acacia aptaneura* low open woodland, over *Acacia synchronicia, Senna artemisioides* subsp. *oligophylla* and *Rhagodia eremaea* mid sparse shrubland, over **Cenchrus ciliaris* low sparse tussock grassland with *Triodia basedowii* and *Triodia pungens* low open hummock grassland.	*Acacia tetragonophylla* *Arivela viscosa* *Eremophila longifolia* *Hakea lorea* subsp. *lorea* *Hibiscus sturtii* var. *campylochlamys* *Portulaca oleracea* *Ptilotus obovatus* *Sclerolaena cornishiana* *Senna artemisioides* subsp. *helmsii* *Sida platycalyx*	Flat plain and dunes of red clayey sand. Good condition.	**Q160, Q169, Q179, Q255, Q260, R125, R131.**	467.9 ha 1.9 %	
SP	**BHP: SP TpTb AancSeaoAss EgAi**: Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with Open Shrubland of *Acacia ancistrocarpa, Senna artemisioides* subsp. *oligophylla* and *Acacia sclerosperma* subsp. *sclerosperma* with Very Open Mallee of *Eucalyptus gamophylla* and Low Open Woodland of *Acacia inaequilatera* on red-orange sandy loam on flat plains with ironstone gravel. **NVIS**: *Acacia inaequilatera* low open woodland with *Eucalyptus gamophylla* low open mallee woodland, over *Acacia ancistrocarpa, Senna artemisioides* subsp. *oligophylla* and +/- *Acacia sclerosperma* subsp. *sclerosperma* mid sparse shrubland, over *Triodia pungens* and *Triodia basedowii* mid hummock grassland.	*Acacia sclerosperma* subsp. *sclerosperma* *Acacia sericophylla* *Arivela viscosa* **Cenchrus ciliaris* *Enneapogon polyphyllus* *Eriachne aristidea* *Euphorbia australis* var. *hispidula* *Goodenia microptera* *Hibiscus sturtii* var. *campylochlamys* *Neurachne muelleri* *Panicum australiense* var. *australiense* *Senna notabilis* *Tribulus hirsutus*	Flat Plains of red-orange sandy loam with common ironstone gravel. Good to Excellent condition.	**Q153, Q225, Q236, Q237, Q239, Q241, Q318, Q321, Q325, Q326, Q328, Q422, R302.**	3,256.2 ha 13.1 %	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
SS1	**BHP: SS TpTb AprAiHall AbAsiSeah**: Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with High Open Shrubland of *Acacia pruinocarpa*, *Acacia inaequilatera* and *Hakea lorea* subsp. *lorea* over Open Shrubland of *Acacia bivenosa*, *Acacia sibirica* and *Senna artemisioides* subsp. *helmsii* on dark red-orange sandy clay loam on plains with ironstone gravel. **NVIS**: *Acacia inaequilatera*, *Hakea lorea* subsp. *lorea* and +/- *Acacia pruinocarpa* tall sparse shrubland, over *Acacia bivenosa*, *Senna artemisioides* subsp. *helmsii* and +/- *Acacia sibirica* mid sparse shrubland, over *Triodia pungens* and +/- *Triodia basedowii* low hummock grassland.	*Acacia dictyophleba* *Acacia pruinocarpa* *Aristida holathera* var. *holathera* *Arivela viscosa* *Indigofera monophylla* *Panicum australiense* var. *australiense* *Ptilotus obovatus* *Sida cardiophylla* *Solanum lasiophyllum*	Flat plains of dark red-orange sandy clay loam with few to abundant coarse ironstone gravel. Very Good to Excellent condition.	**Q152**, **Q176**, **Q224**, **Q235**.	1,091.7 ha 4.4 %	
SS2	**BHP: SS CcCsChf AprAa AsyAiAsy**: Tussock Grassland of **Cenchrus ciliaris*, **Cenchrus setiger* and *Chrysopogon fallax* with Low Woodland of *Acacia pruinocarpa* and *Acacia aptaneura* over Open Shrubland of *Acacia synchronicia* and *Acacia inaequilatera* on red sandy clay loam on flat plains with ironstone gravel. **NVIS**: *Acacia pruinocarpa* and *Acacia aptaneura* low open woodland, over *Acacia synchronicia* and *Acacia inaequilatera* mid sparse shrubland, over **Cenchrus ciliaris*, **Cenchrus setiger* and *Chrysopogon fallax* low open tussock grassland.	*Arivela viscosa* *Boerhavia coccinea* *Enneapogon polyphyllus* *Portulaca oleracea* *Sclerolaena cornishiana* *Sporobolus australasicus* *Tribulus terrestris*	Flat plain of red sandy clay loam with common medium ironstone gravel. Poor to Very Good condition.	**Q158B**, **Q163**, **Q242**, **Q244**, **Q245**, **Q246**, **Q250**, **R111**, **R112**, **R113**, **R116**, **R122**, **R123**.	3,532.6 ha 14.2 %	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
Hill Crests						
HC1	**BHP: HC TvTwTp ColsSeggAar EllHcCh**: Hummock Grassland of *Triodia vanleeuwenii*, *Triodia wiseana* and *Triodia pungens* with Low Open Shrubland of *Corchorus lasiocarpus* var. *parvus*, *Senna glutinosa* subsp. *glutinosa* and *Acacia arida* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Hakea chordophylla* and *Corymbia hamersleyana* on red-orange, brown sandy clay on hill crests with ironstone gravel. **NVIS**: *Eucalyptus leucophloia* subsp. *leucophloia*, *Hakea chordophylla* and +/- *Corymbia hamersleyana* low open woodland, over *Corchorus lasiocarpus* var. *parvus*, *Senna glutinosa* subsp. *glutinosa* and +/- *Acacia arida* low sparse shrubland, over *Triodia vanleeuwenii*, *Triodia wiseana* and *Triodia pungens* mid open hummock grassland.	*Acacia adoxa* var. *adoxa* *Acacia hilliana* *Acacia pruinocarpa* *Eriachne lanata* *Eriachne mucronata* *Goodenia triodiophila* *Ptilotus calostachyus* *Scaevola browniana* subsp. *browniana*	Hill crests and mid to upper slopes of red-orange, brown sandy clay with continuous coarse ironstone gravel. Excellent condition.	**Q132**, **Q138**, **Q226**, **Q261**, **Q262**, **Q264**, **Q267**, **Q269**, **Q416**, Q203, Q204, Q205, Q210, Q271, Q306, Q310, Q311, Q312, Q387, Q394, Q414.	2,075.2 ha 8.3 %	
HC2	**BHP: HC TvTw AhiAbSegp EllHc**: Hummock Grassland of *Triodia vanleeuwenii* and *Triodia wiseana* with Low Open Shrubland of *Acacia hilliana*, *Acacia bivenosa* and *Senna glutinosa* subsp. *pruinosa* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Hakea chordophylla* on red-orange clayey sand on hill crests with ironstone cobbles. **NVIS**: *Eucalyptus leucophloia* subsp. *leucophloia* and *Hakea chordophylla* low open woodland, over *Acacia bivenosa*, *Senna glutinosa* subsp. *pruinosa* and *Acacia hilliana* low sparse shrubland, over *Triodia vanleeuwenii* and *Triodia wiseana* low open hummock grassland.	*Acacia inaequilatera* *Acacia pruinocarpa* *Amphipogon sericeus* *Goodenia stobbsiana* *Goodenia triodiophila* *Grevillea wickhamii* subsp. *hispidula* *Ptilotus astrolasius* *Ptilotus calostachyus* *Senna artemisioides* subsp. *oligophylla* *Senna glutinosa* subsp. *glutinosa*, *Senna glutinosa* subsp. x *luerssenii*, *Solanum lasiophyllum* *Tribulus suberosus*	Hill crests of red-orange clayey sand with continuous ironstone cobbles. Excellent condition.	**Q104**, **Q105**, **Q112**, **Q114**, **Q116**, **Q118**, **Q140**, **Q142**, **Q229**, **Q230**, **Q231**, **R101**, **R102**, **R106**, **R107**, **R126**, **R129**, **R130**, **R202**, **R206**, Q156, Q171, Q270, Q272, Q391, Q397, Q417.	3,532.5 ha 14.2 %	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
BO	**BHP: BO Tw SeggAiSeao ArcTtErmu**: Open Hummock Grassland of *Triodia wiseana* with Shrubland of *Senna glutinosa* subsp. *glutinosa*, *Acacia inaequilatera*, *Senna artemisioides* subsp. *oligophylla* over Open Tussock Grassland of *Aristida contorta*, *Themeda triandra* and *Eriachne mucronata* on red clayey sand on hill crests with basalt cobbles and boulders. **NVIS**: *Acacia inaequilatera*, *Senna glutinosa* subsp. *glutinosa* and *Senna artemisioides* subsp. *oligophylla* mid sparse shrubland, over *Themeda triandra*, *Aristida contorta* and *Eriachne mucronata* low sparse tussock grassland with *Triodia wiseana* low open hummock grassland.	*Acacia dictyophleba* *Aristida holathera* var. *holathera* *Eremophila fraseri* subsp. *fraseri* *Corchorus lasiocarpus* var. *parvus* *Cymbopogon ambiguus* *Enneapogon robustissimus* *Eremophila latrobei* subsp. *latrobei* *Gossypium australe* *Indigofera rugosa* *Neurachne muelleri* *Senna artemisioides* subsp. *helmsii* *Senna glutinosa* subsp. *pruinosa* ***Sida* sp. Barlee Range (S. van Leeuwen 1642; P4)**	Hill crests of red clayey sand with continuous basalt cobbles and boulders. Excellent condition.	**Q117, Q147, Q212, R120.**	68.5 ha 0.3 %	
SD	**BHP: SD TscTb Ad CcErerArhh**: Open Hummock Grassland of *Triodia schinzii* and *Triodia basedowii* with Open shrubland of *Acacia dictyophleba* over Very Open Tussock Grassland of **Cenchrus ciliaris*, *Eragrostis eriopoda* and *Aristida holathera* var. *holathera* on dark red-orange sand on dune crests. **NVIS**: *Acacia dictyophleba* tall sparse shrubland, over *Eragrostis eriopoda*, **Cenchrus ciliaris* and *Aristida holathera* var. *holathera* low isolated tussock grasses with *Triodia schinzii* and *Triodia basedowii* mid open hummock grassland.	*Bonamia erecta* *Crotalaria cunninghamii* subsp. *sturtii* *Eriachne aristidea* *Ptilotus polystachyus* *Scaevola parvifolia* subsp. *pilbarae* *Senna notabilis* *Sida cardiophylla* *Solanum lasiophyllum* *Trianthema pilosum*	Dune crests of dark red-orange sand. Good to Very Good condition. **Priority 3 Fortescue Valley Sand Dunes vegetation assemblage PEC. Resembles the Priority 3 Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes")**	**Q161, Q170, Q253, Q257, Q322, Q323, Q324, Q327, Q332, Q424.**	184.4 ha 0.7%	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
Hill Slopes						
HS1	**BHP**: **HS AaAcao TpTbr GrsaErll**: Low Forest of *Acacia aptaneura* and *Acacia catenulata* subsp. *occidentalis* over Open Hummock Grassland of *Triodia pungens* and *Triodia brizoides* with High Open Shrubland of *Eremophila latrobei* subsp. *latrobei* on red-orange sandy clay loam with ironstone gravel on steep hillslopes. **NVIS**: *Acacia aptaneura* and *Acacia catenulata* subsp. *occidentalis* low woodland, over *Eremophila latrobei* subsp. *latrobei* tall sparse shrubland, over *Triodia pungens* and *Triodia brizoides* low sparse hummock grassland.	*Acacia ayersiana* *Acacia tumida* var. *pilbarensis* *Dolichocarpa crouchiana* *Enneapogon polyphyllus* *Eriachne aristidea* *Eriachne mucronata* *Eriachne pulchella* subsp. *pulchella* *Euphorbia drummondii* *Paspalidium clementii* *Ptilotus exaltatus*	Steep hill slopes of red-orange sandy clay loam with continuous ironstone coarse gravel. Excellent condition.	No quadrats present in Survey Area, vegetation type was identified from aerial analysis of steep, south-facing mulga slopes and relevés; **R108**, **R109**, **R201**.	1.7 ha <0.1%	
FS1	**BHP**: **FS TvTp AbAtenAi Ell**: Hummock Grassland of *Triodia vanleeuwenii* and *Triodia pungens* with Open Shrubland of *Acacia bivenosa*, *Acacia tenuissima* and *Acacia inaequilatera* with Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* on red-orange sandy clay loam on foot slopes with ironstone gravel. **NVIS**: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland, over *Acacia tenuissima*, *Acacia bivenosa* and *Acacia inaequilatera* tall sparse shrubland, over *Triodia vanleeuwenii* and +/- *Triodia pungens* low open hummock grassland.	*Acacia adoxa* var. *adoxa* *Acacia ancistrocarpa* *Acacia hilliana* *Amphipogon sericeus* *Corymbia deserticola* subsp. *deserticola* *Goodenia triodiophila* *Grevillea wickhamii* subsp. *hispidula* *Hakea lorea* subsp. *lorea* *Indigofera monophylla* *Neurachne muelleri* *Ptilotus calostachyus* *Senna artemisioides* subsp. *oligophylla* *Senna glutinosa* subsp. *glutinosa*	Low hill slopes of red-orange sandy clay loam with continuous coarse ironstone gravel. Excellent condition.	**Q101**, **Q133**, **Q137**, **Q149**, **Q234**, **Q268**, Q122, Q409, Q412.	1,618.1 ha 6.5%	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
WWHS	**BHP: HS AsyAi TwTrag ChAan** Shrubland of *Acacia synchronicia* and *Acacia inaequilatera* over Very Open Hummock Grassland of *Triodia wiseana* and/or *Triodia angusta* with Scattered Low trees of +/- *Corymbia hamersleyana* or *Acacia aneura* on red clayey sand on hillslopes. **NVIS:** +/- *Corymbia hamersleyana* or *Acacia aneura* isolated low trees, over *Acacia synchronicia, Acacia inaequilatera* tall mid shrubland, over *Triodia wiseana* and/or *Triodia angusta* mid sparse hummock grassland.	*Acacia bivenosa* *Aristida inaequiglumis* **Cenchrus ciliaris* *Eucalyptus socialis* subsp. *eucentrica* *Hakea lorea subsp. lorea* *Sclerolaena deserticola* *Senna artemisioides* subsp. *oligophylla* *Senna glutinosa* subsp. x *luerssenii*	Low slopes and plains. Excellent condition.	No quadrats present in the Survey Area due to heritage access restrictions, VT was identified from aerial analysis of Weeli Wolli Creekline and regional quadrats; WQ202, WQ204.	65.3 ha 0.3%	
Creeks & Drainage Lines						
ME	**BHP: ME AtpPlApyp TpTwTt Ch**: Open Scrub of *Acacia tumida* var. *pilbarensis, Petalostylis labicheoides* and *Acacia pyrifolia* var. *pyrifolia* with Open Hummock Grassland of *Triodia pungens* and *Triodia wiseana* with Very Open Tussock Grassland of *Themeda triandra* with Low Open Woodland of *Corymbia hamersleyana* on red-orange, brown clayey sand on medium drainage lines with creek stone/ironstone cobbles. **NVIS**: *Corymbia hamersleyana* low open woodland, over *Acacia tumida* var. *pilbarensis, Petalostylis labicheoides* and *Acacia pyrifolia* var. *pyrifolia* tall open shrubland, over *Themeda triandra* low sparse tussock grassland with *Triodia pungens*, +/- *Triodia wiseana* low sparse hummock grassland.	*Acacia bivenosa* *Acacia monticola* **Cenchrus ciliaris* *Corchorus lasiocarpus* var. *parvus* ***Eremophila naaykensii* (P3)** ***Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3)** *Eulalia aurea* *Gossypium robinsonii* *Grevillea wickhamii* subsp. *hispidula* *Indigofera monophylla* *Jasminum didymum* subsp. *lineare* *Ptilotus obovatus* *Santalum lanceolatum* *Senna artemisioides* subsp. *oligophylla* *Senna glutinosa* subsp. *glutinosa* *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186)	Creek lines or drainage on lower slopes of red-orange, brown clayey sand with continuous creekstone/ironstone cobble. Good to Excellent condition.	**Q102, Q108, Q113, Q115, Q131, Q134, Q135, Q136, Q145, Q148, Q214, Q227, Q415, Q120, Q124, Q173, R118, R118, R119, R127, R128, R205, R208, R209,** WQ109, WQ114, Q123, Q146, Q157, Q305, Q402, Q407, Q410, Q411.	1,203.1 ha 4.8%	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
FP1	**BHP**: **FP Ecr AciApypAthe TtCc**: Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* over High Shrubland of *Acacia citrinoviridis*, *Acacia pyrifolia* var. *pyrifolia* and *Atalaya hemiglauca* over Very Open Tussock Grassland of *Themeda triandra* and **Cenchrus ciliaris* on red-orange, brown loamy sand with abundant coarse creekstone on floodplains. **NVIS**: *Eucalyptus camaldulensis* subsp. *refulgens* mid open woodland, over *Acacia citrinoviridis*, *Acacia pyrifolia* var. *pyrifolia* and *Atalaya hemiglauca* low open woodland, over *Themeda triandra* and +/- **Cenchrus ciliaris* mid sparse tussock grassland.	*Arivela viscosa* *Afrohybanthus aurantiacus* *Euphorbia australis* var. *subtomentosa* *Euphorbia biconvexa* **Malvastrum americanum* *Nellica maderaspatensis* *Notoleptopus decaisnei* *Ptilotus exaltatus* *Rhynchosia minima* *Stylobasium spathulatum*	Floodplain/creekline of red-orange, brown loamy sand with abundant coarse creekstone. Very Good condition. **Priority 1 Weeli Wolli Spring Community vegetation assemblage PEC**.	No quadrats present in the Survey Area due to heritage access restrictions, VT was identified from aerial analysis of Weeli Wolli Creekline and regional quadrats; Q372, Q379, WQ101, WQ102, WQ103, WQ104, WQ105, WQ106, WQ107, WQ108, WQ110, WQ111, WQ112, WQ113, WQ115, WQ116, WQ117, WQ118, WQ119, WQ120, WQ203.	69.4 ha 0.3%	
FP2	**BHP**: **FP Tp Ch AdHcAi**: Very Open Hummock Grassland of *Triodia pungens* with Scattered Trees of *Corymbia hamersleyana* over Scattered Shrubs of *Acacia dictyophleba*, *Hakea chordophylla* and *Acacia inaequilatera* on dark red-orange clay loam with ironstone gravel on floodplains. **NVIS**: *Corymbia hamersleyana* low open woodland, over *Acacia dictyophleba*, *Hakea chordophylla* and *Acacia inaequilatera* mid isolated shrubs, over *Triodia pungens* mid sparse hummock grassland.	*Acacia bivenosa* *Acacia pruinocarpa* *Arivela viscosa* **Cenchrus ciliaris* **Cenchrus setiger* *Ptilotus obovatus* *Senna artemisioides* subsp. *oligophylla*	Drainage on flats with dark red-orange clay loam with common medium ironstone gravel. Good and Excellent condition.	**Q218**, **Q320**, **R102**, Q302.	236.2 ha 0.9%	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
FP3	**BHP: FP AaApr CcChfTp PslAsyErff**: Low Woodland of *Acacia aptaneura* and *A. pruinocarpa* over Open Tussock Grassland of **Cenchrus ciliaris* and *Chrysopogon fallax* with Open Hummock Grasses of *Triodia pungens* with Open Shrubland of *Psydrax latifolia, Acacia synchronicia* and *Eremophila forrestii* subsp. *forrestii* on red-orange sandy clay loam on drainage areas with ironstone gravel. **NVIS**: *Acacia aptaneura* and *Acacia pruinocarpa* low woodland, over *Acacia synchronicia, Eremophila forrestii* subsp. *forrestii* and +/- *Psydrax latifolia* mid sparse shrubland, over *Chrysopogon fallax* and **Cenchrus ciliaris* low sparse tussock grassland with +/- *Triodia pungens* low sparse hummock grassland.	*Aristida contorta* *Aristida inaequiglumis* *Arivela viscosa* ***Corchorus* aff. *elachocarpus* (novel)** *Evolvulus alsinoides* var. *villosicalyx* *Gomphrena affinis* subsp. *pilbarensis* *Ptilotus obovatus* *Sclerolaena cornishiana* *Senna artemisioides* subsp. *oligophylla* *Senna notabilis* *Solanum lasiophyllum* *Sporobolus australasicus*	Flat plain or drainage of red-orange sandy clay loam with common medium ironstone gravel. Poor to Excellent condition.	**Q154, Q158A, Q159, Q167, Q174, Q175, Q177, Q238, Q240, Q249, Q258, Q319, Q329, Q330, Q333, Q425, Q426, Q427, R114, R115.**	2,564.6 ha 10.3%	
MA	**BHP: MA EcAciAthe Cc ApyCocr**: Woodland of *Eucalyptus camaldulensis* subsp. *refulgens, Acacia citrinoviridis* and *Atalaya hemiglauca* over Very Open Tussock Grassland of **Cenchrus ciliaris* with Scattered Shrubs of *Acacia pyrifolia* var. *pyrifolia* and *Corchorus crozophorifolius* on red-orange sand with continuous creekstone within major drainage lines. **NVIS**: *Eucalyptus camaldulensis* subsp. *refulgens, Acacia citrinoviridis, Atalaya hemiglauca* mid woodland, over *Acacia pyrifolia* var. *pyrifolia* and *Corchorus crozophorifolius* low isolated shrubs, over **Cenchrus ciliaris* low sparse tussock grassland.	*Acacia pyrifolia* **Aerva javanica* *Boerhavia coccinea* *Cymbopogon ambiguus* *Euphorbia coghlanii* *Dendrophyllanthus erwinii* *Duperreya commixta* *Euphorbia australis* var. *subtomentosa*	Creekline of red-orange sand with continuous creekstone. Good to Very Good condition. **Priority 1 Weeli Wolli Spring Community vegetation assemblage PEC.**	**Q162, Q243, Q248.**	82.4 ha 0.3%	

VT	Vegetation Description (BHP/NVIS)	Associated Species	Landform & Condition	Sites*	Area & %	Representative Photo
WWFP	**BHP: FP Ab Cc TwTrag** High Shrubland of *Acacia bivenosa* over Very Open Tussock Grassland of **Cenchrus ciliaris* and/or Very Open Hummock Grassland of *Triodia wiseana* and/or *Triodia angusta* on red clayey sand on drainage areas/floodplains. **NVIS:** *Acacia bivenosa* tall shrubland, over **Cenchrus ciliaris* low sparse tussock grassland and/or Triodia *wiseana* and/or *Triodia angusta* sparse hummock grassland.	*Abutilon otocarpum* *Acacia pyrifolia var. pyrifolia* *Acacia synchronicia* *Atalaya hemiglauca* *Corymbia hamersleyana* *Duperreya commixta* **Malvastrum americanum* *Paraneurachne muelleri* *Senna artemisioides* subsp. *oligophylla* *Senna ferraria* *Stylobasium spathulatum*	Floodplain/drainage on red clayey sand. Very Good condition.	No quadrats present in the Survey Area due to heritage access restrictions, VT was identified from aerial analysis of Weeli Wolli Creekline and regional quadrats; WQ201.	15.5 ha 0.1%	

*Sites sampled within Survey Area represented in bold. Regional sites sampled outside of the Survey Area and used in the floristic analysis for the VT are not bolded.

720000 730000 740000 750000 760000 770000

7500000 7490000 7480000 7470000 7460000

Q168 Q169 Q170 Q260 Q256 Q257 Q255 Q161 R124 R125 Q254 R131 Q162 R116 Q249 Q247 Q250 R115 R114 Q163 Q246 Q245 Q319 R112 Q167 Q243 Q244 Q242 Q179 R113 R111 Q320 Q177 R123 Q160 Q176 Q159 R122 Q175 Q174 Q158B Q158A Q241 Q240 Q239 Q238 Q237 Q236 Q153 Q152 Q154 Q235 Q225 R203 Q150 Q151 Q149 Q234 Q148 R110 Q233 Q118 Q119 Q110 Q140 R126 Q141 Q232 R205 R206 Q230 Q109 R119 Q111 Q139 R102 Q227 Q226 Q224 Q142 Q231 R117 Q107 Q112 Q229 Q218 Q143 R128 Q137 Q106 Q136 Q113 Q228 Q261 Q105 R106 Q114 R103 R202 R118 Q144 Q134 Q135 R104 Q145 Q214 Q103 Q104 Q116 Q115 Q133 R127 Q262 Q146 R109 Q132 Q147 R120 Q102 R209 Q212 Q101 Q269 Q131 Q268 Q138 Q108 Q267 Q264

Q329 Q328 Q330 Q331 Q427 Q333 Q426 R302 Q327 Q332 Q322 Q334 Q316 Q323 Q422 Q325 Q424 Q421 Q324 Q321 Q423 Q326

Legend

- Survey Area
- Sample Sites
  - Quadrat
  - Releve
- Vegetation Types
  - BO
  - FP1
  - FP2
  - FP3
  - FS1
  - HC1
  - HC2
  - HS1
  - MA
  - ME
  - SA1
  - SA2
  - SA3
  - SD
  - SP
  - SS1
  - SS2
  - WWFP
  - WWHS
  - Cleared

N

0 1 2 3 4 5 km

Scale 1:175,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Types

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP 4.1

Prepared for BHP WAIO

730000

740000

7500000

7490000

Q168 Q169 Q170 Q260 Q258 Q257 Q256 R124 Q255 Q161 Q254 Q253 R125 R131 Q162 R116 Q248 Q250 Q249 Q247 R115 R114 Q163 Q246 Q245 Q319 Q167 R112 Q244 Q243 Q242 Q179 R113 R111 Q177 R123 Q320 Q160 Q176 Q159 Q241

Legend

- Survey Area
- Sample Sites
  - Quadrat
  - Releve
- Vegetation Types
  - FP2
  - FP3
  - MA
  - SA1
  - SA2
  - SA3
  - SD
  - SP
  - SS1
  - SS2
  - Cleared

N

0 1 2 3 km

Scale 1:70,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY • SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Types

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP

Prepared for BHP WAIO

4.2

740000

750000

7490000

7480000

Q320 Q160 Q177 R123 Q176 Q159 Q175 Q174 R122 Q158B Q158A Q241 Q240 Q238 Q239 Q237 Q152 Q154 Q236 Q153 Q235 Q225 R203 Q150 Q149 Q151 Q234 Q148 R110 Q233 Q119 Q118 Q110 R126 Q141 Q140 Q232 R205 R206 Q109 Q230 Q139 R119 Q111

Legend

- Survey Area

Sample Sites

- Quadrat
- Releve

Vegetation Types

- FP2
- FP3
- FS1
- HC1
- HC2
- MA
- ME
- SA1
- SA2
- SA3
- SD
- SP
- SS1
- SS2
- Cleared

N

0 1 2 3 km

Scale 1:70,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Types

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP

Prepared for BHP WAIO

4.3

730000

740000

7470000

7460000

R206 Q109 Q230 Q139 R119 Q111 Q227 R102 R101 Q226 Q142 Q231 Q224 R130 R208 R117 Q107 R129 Q112 Q229 Q218 Q143 R128 Q137 Q106 Q113 Q136 Q228 Q105 Q261 Q144 R103 R202 Q114 R106 R118 R105 Q214 R104 Q145 R107 Q134 Q135 Q115 Q104 Q116 Q103 R127 Q133 Q262 Q146 R108 R109 Q132 Q147 Q217 R120 Q102 R209 Q117 Q212 Q101 Q269 Q268 Q131 Q138 Q108 Q267 Q264

Legend

- Survey Area
- Sample Sites
  - Quadrat
  - Releve
- Vegetation Types
  - BO
  - FP1
  - FP2
  - FS1
  - HC1
  - HC2
  - HS1
  - ME
  - SA1
  - SA2
  - SS1
  - WWFP
  - WWHS
  - Cleared

N

0 1 2 3 km

Scale 1:70,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Types

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP

Prepared for BHP WAIO

4.4

770000

Q329
Q328
Q427
Q330
Q331
Q333
Q426
R302
Q425
Q334
Q332
Q327
Q322
Q318
Q316
Q323
Q325
Q422
Q315
Q421
Q324
Q321
Q326
Q424
Q423

Legend

- Survey Area
- Sample Sites
  - Quadrat
  - Releve
- Vegetation Types
  - FP3
  - SA1
  - SD
  - SP
  - Cleared

N

0 0.5 1 km

Scale 1:25,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Types

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP

Prepared for BHP WAIO

4.5

4.3. Significant Vegetation

No VTs recorded within the Survey Area resemble any known TECs. Two VTs (FP1 and MA) recorded within the Survey Area represent the Priority 1 Weeli Wolli Spring Communities PEC, and one VT (SD) represents the Priority 3 Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes") PEC. Based on the definitions of significant vegetation listed in section 2.4.4 (Environmental Protection Authority, 2016a), the VTs that may be considered significant at the Survey Area are discussed in Table 4.4.

Table 4.4: Significant Vegetation Discussion

Significance	VT	Details
Identified as TEC	-	-
Identified as PEC	SD	Priority 3 Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes") vegetation assemblage with an Open Shrubland of *Acacia dictyophleba* on dark red-orange sand on Dune Crests.
	MA FP1	Priority 1 Weeli Wolli Spring Community vegetation assemblage as a Woodland of *Eucalyptus camaldulensis* subsp. *refulgens*, *Acacia citrinoviridis* and *Atalaya hemiglauca*.
Restricted distribution^ ^for the purpose of this assessment, there was a discussion for VTs with less than a 100 ha mapped extent within the Survey Area.	HS1	HS1 has a restricted extent at the Survey Area (1.7 ha. <0.1%). HS1 is found on the steep hill slopes of ironstone scree and is considered significant at a local scale.
	WWFP	WWFP had a restricted extent at the Survey Area (15.5 ha, 0.1%). This VT is found on the floodplain landform and is not widespread in the local area and is considered significant locally.
	WWHS	WWHS had a restricted extent at the Survey Area (65.3 ha, 0.3%). The hillslopes that this VT occurs on are not widespread in the local area and therefore this VT is considered significant locally.
	BO	BO had a restricted extent at the Survey Area (68.5 ha, 0.3%). The basalt crest landforms that this VT is associated with is relatively widespread in the local area and therefore this VT is not considered significant.
	FP1	FP1 had a restricted extent at the Survey Area (69.4 ha, 0.3%) and is associated with the Priority 1 Weeli Wolli Spring Community vegetation assemblage. This VT is found on the creek landform and is not widespread in the local area and therefore this VT is considered significant.
	MA	MA had a restricted extent at the Survey Area (82.4 ha, 0.3%) and is associated with the Priority 1 Weeli Wolli Spring Community vegetation assemblage. This VT is found on the drainage line landform and is not widespread in the local area and therefore this VT is considered significant.
Degree of historical impact from threatening processes	SD	Parts of this VT, particularly areas close to Marillana station homestead, showed signs of increased grazing pressure from cattle. Native grasses in these areas had been replaced with the introduced species (**Cenchrus ciliaris* and **C. setiger*).
A role as a refuge	HC2	Provides a role as refuge for: • *Lepidium catapycnon* (P4); 100% of individuals occur on this VT

Significance	VT	Details
	ME	Provides a role as refuge for: • *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3); 100% of individuals occur on this VT; • *Sida* sp. Barlee Range (S. van Leeuwen 1642; P4); 73.7% of individuals occur on this VT
Providing an important function required to maintain ecological integrity of a significant ecosystem	FP1 MA	FP1 and MA are considered GDEs as they contain the phreatophytic species *Eucalyptus camaldulensis* subsp. *refulgens*. GDEs are susceptible to impacts associated with water draw down.
Other – vegetation at risk from mining activities	FP3 SS2	FP1 and SS2 have some areas that display Banded Mulga patterning. Banded Mulga is a Sheet Flow Dependent Vegetation (SFDV) community and may be suspectable to impacts associated with alteration to surface water flow from clearing and construction.

4.3.1. Post Survey Review of Desktop Significant Vegetation

The post survey likelihood of occurrence for significant vegetation identified in the desktop assessment are detailed in Table 4.5. The significant vegetation assigned 'Recorded', 'High' or 'Medium' likelihood of occurrence during the desktop assessment that were not identified within the Survey Area, were assigned a 'Low' likelihood of occurrence post survey. Table 4.5 mentions "Vegetation Assemblages" which refers to either a single vegetation type or multiple vegetation types that are characteristic of an ecological community.

Table 4.5: Post Survey Likelihood of Occurrence of Desktop Significant Vegetation

Likelihood of Occurrence		Significance	Vegetation assemblage	Details
Pre-survey	Post-survey			
Recorded	Recorded	P1	Weeli Wolli Creek	VT MA and FP1 resemble this vegetation assemblage and were recorded within Survey Area.
		P3	Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes")	VT SD resembles this vegetation assemblage and was recorded within Survey Area.
		Role of refuge	Minor and large drainage lines, gorges and creek lines.	VTs identified from the survey resembled this vegetation assemblage but no significant taxa were recorded within these VTs in the Survey Area.
	Low		Calcrete hills.	VT not identified within the Survey Area. Additionally, this VT is visible through aerial analysis, and it was not detected during post survey mapping or on-ground and has been re-classified to 'Low' likelihood.
	Recorded		Shrublands, Hummock Grasslands, Woodlands and Forests associated with lower slopes to hill crests and gorges.	VTs identified from the survey resembled this vegetation assemblage but no significant taxa were recorded within these VTs in the Survey Area.
			Plains and floodplains with varying vegetation assemblages.	VTs identified from the survey resembled this vegetation assemblage and some contained the novel species *Corchorus* aff. *elachocarpus*.
		Role of refuge	*Acacia pruinocarpa* low woodland.	VTs identified from the survey resembled this vegetation assemblage and some contained the novel species *Corchorus* aff. *elachocarpus*.
			Acacia aneura open woodland/shrubland on sandplains.	VTs identified from the survey resembled this vegetation assemblage but no significant taxa were recorded within these VTs in the Survey Area.
			Eucalyptus xerothermica low open woodland on major drainage line – riparian	Quadrats (Q328, Q329, and Q427) sampled during the survey resembled this vegetation assemblage with Q328 containing the novel species *Corchorus* aff. *elachocarpus* in the Survey Area.

Likelihood of Occurrence		Significance	Vegetation assemblage	Details
Pre-survey	Post-survey			
High	Low	P2	Riparian communities of springs and Pools Pilbara	Vegetation assemblage not identified within the Survey Area.
		P3	Kumina Land System	Vegetation assemblage not identified within the Survey Area.
	Recorded	Role of refuge	Tall Shrubland of *Acacia arida*, *Acacia bivenosa*, *Acacia ancistrocarpa*, *Acacia maitlandii*, *Acacia monticola* with occasional emergent *Corymbia deserticola* subsp. *deserticola*, *Eucalyptus gamophylla* and *Eucalyptus leucophloia* over *Gompholobium polyzygum*, *Indigofera monophylla*, *Androcalva luteiflora* over mixed *Triodia* species on sandy-loam soils in minor gullies.	VTs identified from the survey resembled this vegetation assemblage but no significant taxa were recorded within these VTs in the Survey Area.
			Hummock Grasslands of mixed *Triodia* species with emergent *Corymbia hamersleyana*, *Eucalyptus gamophylla*, *Eucalyptus leucophloia* over mixed *Acacia* species on ranges, hills and hillslopes.	VTs identified from the survey resembled this vegetation assemblage but no significant taxa were recorded within these VTs in the Survey Area.
	Low		Hummock Grassland of *Triodia wiseana* with open shrubland of *Acacia bivenosa* and *Acacia pyrifolia* with scattered low trees of *Corymbia hamersleyana* and *Eucalyptus trivalva* (mallee) on light brown loam on calcrete plains/low rises.	VT not identified within the Survey Area. Additionally, this VT is easily visible through aerial analysis, it was not detected on-ground or during post-survey mapping and aerial analysis and has been re-classified to 'Low' likelihood.
	Recorded		Hummock grasslands with an overstorey of *Eucalyptus leucophloia* and *Acacia* species on skeletal soils on hillsides.	VTs identified from the survey resembled this vegetation assemblage but no significant taxa were recorded within these VTs in the Survey Area.
	Low		Open Hummock Grasslands of *Triodia wiseana* with scattered shrubs and trees on undulating calcrete plains and low hills.	VT not identified within the Survey Area. Additionally, this VT is easily visible through aerial analysis, it was not detected on-ground or during post-survey mapping and aerial analysis and has been re-classified to 'Low' likelihood.
Medium		Valley Floor Mulga in the Hamersley Subregion	Low Woodland of *Acacia aptaneura*, *Grevillea berryana* and *Acacia catenulata* subsp. *occidentalis* over High Shrubland of *Acacia aptaneura* over Open Tussock Grassland of *Aristida contorta*, *Aristida inaequiglumis* and *Enneapogon polyphyllus* on stony plains with brown sandy clay loam	Vegetation assemblage not identified within the Survey Area.

4.3.2. Local & Regional Context of Vegetation Types

The VTs have been further considered at a local and regional context in Table 4.6. Local significance was determined if the VTs were locally restricted (by using vegetation mapping and/or landforms in the local vicinity), and/or were associated with locally significant flora taxa. Regional significance was determined if the VTs were regionally restricted (by using BSAs and/or land system mapping to determine a potential regional extent), and/or were associated with regionally significant flora taxa. VTs were matched using the approximate spatial extent of the land systems and BSAs, and/or the species present. As the BSAs and land system mapping were undertaken at a broad scale, some VTs may not be matched, or some species may be outdated and/or generalised. The following VTs may be considered significant at a local or regional scale:

- SD had a restricted extent in the Survey Area (184.4 ha, 0.7%) and this VT forms part of the Priority 3 Vegetation of sand dunes of the Hamersley Range/ Fortescue Valley (previously "Fortescue Valley Sand Dunes". SD is considered locally and regionally significant.
- HS1 had a restricted extent at the Survey Area (1.7 ha, <0.1%), occurring on steep ironstone hill slopes that appear limited in the local vicinity. HS1 may be considered locally significant.
- WWHS had a restricted extent at the Survey Area (65.3 ha, 0.3%), occurring on hill slopes directly adjacent to Weeli Wolli Creek. WWHS may be considered locally significant.
- WWFP had a restricted extent at the Survey Area (15.5 ha, 0.1%), occurring on floodplains associated with Priority 1 Weeli Wolli Spring Community that were limited in the local vicinity. WWHS is considered locally significant.
- FP1 had a restricted extent in the Survey Area (69.4 ha, 0.3%) and this VT forms part of the Priority 1 Weeli Wolli Spring Community. FP1 is considered locally and regionally significant.
- MA had a restricted extent in the Survey Area (82.4 ha, 0.3%) and forms part of the Priority 1 Weeli Wolli Spring Community. MA is considered locally and regionally significant.
- WWFP had a restricted extent in the Survey Area (15.5 ha, 0.1%) and is associated with the Priority 1 Weeli Wolli Spring Community. WWFP is considered locally and regionally significant.

Table 4.6: Local & Regional Context & Discussion of Vegetation Types

.Vegetation Type	Associated Beard Sub-association (BSA)	Associated Land System	Local Context & Discussion	Regional Context & Discussion
SA1: SA TbTp AancApaHc BeScp: Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with Low Scattered Shrubs of *Acacia ancistrocarpa*, *Acacia ancistrocarpa* and *Hakea chordophylla* over scattered herbs of *Bonamia erecta* and *Scaevola parvifolia* subsp. *pilbarae* on red-orange loamy sand on flat plains.	**111.1**: Low open woodland of *Eucalyptus gamophylla*, *Eucalyptus dichromophloia* and *Eucalyptus setosa* over, tall sparse shrubland of *Acacia pachycarpa*, *Acacia pyrifolia* and *Senna* sp. over, low open hummock grassland and forbland of *Triodia basedowii*, *Triodia pungens* and *Ptilotus axillaris*.	**Fan Land System**: Wash plains and gilgie plains supporting groved mulga tall shrublands and minor tussock grasslands. **Divide Land System**: Gently undulating sandplains with minor dunes, supporting hard spinifex hummock grasslands with numerous shrubs.	SA1 was widespread across the Survey Area (2358.0 ha, 9.5%) and the flat plains landform it occurs on are also widespread throughout the Survey Area and local vicinity. Not considered locally significant.	Associated with a widespread BSA 111.1 and the widespread Fan land system. Not considered regionally significant.
SA2: SA TbTscPamu EgAiCh AancAdPec: Hummock Grassland of *Triodia basedowii* and *Triodia schinzii* with *Neurachne muelleri* Scattered Tussock Grass with Low Open Woodland of *Acacia inaequilatera*, *Corymbia hamersleyana* and Very Open Mallee of *Eucalyptus gamophylla* over Open Shrubland of *Acacia ancistrocarpa*, *Acacia dictyophleba* and *Petalostylis cassioides* on red clayey sand on flat plains.	**111.1**: Low open woodland of *Eucalyptus gamophylla* and *Hakea lorea* over, tall sparse shrubland of *Acacia pyrifolia* over, mid open hummock grassland of *Triodia basedowii*.	**Fan Land System**: Wash plains and gilgie plains supporting groved mulga tall shrublands and minor tussock grasslands.	SA2 was widespread across the Survey Area (1964.6 ha, 7.9%), particularly in the central section. The flat plains landform it occurs on were widespread throughout the Survey Area and local vicinity. Not considered locally significant.	Associated with widespread BSA: 111.1 and widespread Fan land system. Not considered regionally significant.
SA3: SA TbTpCc AanAa AsySeaoRhe: Open Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with Very Open Tussock Grassland of **Cenchrus ciliaris* with Low Woodland of *Acacia aneura* and *Acacia aptaneura* over Shrubland of *Acacia synchronicia*, *Senna artemisioides* subsp. *oligophylla* and *Rhagodia eremaea* on red clayey sand on flat plains.	**29**: Mid isolated clumps of shrubs of *Acacia aneura*.	**Fan Land System**: Wash plains and gilgie plains supporting groved mulga tall shrublands and minor tussock grasslands.	SA3 had a slightly lower cover than other VTs in the Survey Area (467.9 ha, 1.9%) and was restricted to the swales and sandplains in the north-west section of the Survey Area. The flat plains this VT occurred on are common, and the vegetation condition of SA3 was mostly ranked as Good with large numbers of weed species present. Not considered locally significant.	This VT occurs on a restricted geological unit (LI-PIP) which is associated with lacustrine plains landform. However, it is associated with widespread BSA 29, and associated with the Fan land system, which is also widespread. Not considered regionally significant

.Vegetation Type	Associated Beard Sub-association (BSA)	Associated Land System	Local Context & Discussion	Regional Context & Discussion
SS1: SS TpTb AprAiHall AbAsiSeah: Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with High Open Shrubland of *Acacia pruinocarpa*, *Acacia inaequilatera* and *Hakea lorea* subsp. *lorea* over Open Shrubland of *Acacia bivenosa*, *Acacia sibirica* and *Senna artemisioides* subsp. *helmsii* on dark red-orange sandy clay loam on plains with ironstone gravel.	**29**: Mid isolated clumps of shrubs of *Acacia aneura*. **111.1**: Low open woodland of *Eucalyptus gamophylla* and *Hakea lorea* over, tall sparse shrubland of *Acacia pyrifolia* over, mid open hummock grassland of *Triodia basedowii*.	**Urandy Land System**: Stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands.	SS1 was a widespread VT throughout the Survey Area (1091.7 ha. 4.4%) and the flat plain landforms it occurs on are widespread throughout the Survey Area and local vicinity. Not considered locally significant.	Associated with widespread BSAs 111.1 and 29 and the widespread Urandy land system. Not considered regionally significant.
SS2: SS CcCsChf AprAa AsyAiAsy: Tussock Grassland of **Cenchrus ciliaris*, **Cenchrus setiger* and *Chrysopogon fallax* with Low Woodland of *Acacia pruinocarpa* and *Acacia aptaneura* over Open Shrubland of *Acacia synchronicia* and *Acacia inaequilatera* on red sandy clay loam on flat plains with ironstone gravel.	**29**: Mid isolated clumps of shrubs of *Acacia aneura*.	**Fan Land System**: Wash plains and gilgie plains supporting groved mulga tall shrublands and minor tussock grasslands. **Fortescue Land System**: Alluvial plains and flood plains supporting patchy grassy eucalypt and acacia woodlands and shrublands and tussock grasslands.	SS2 was widespread throughout the Survey Area (3532.6 ha, 14.2%), the flat plains this VT occurs on are also widespread throughout the Survey Area and local vicinity. Not considered locally significant.	Associated with widespread BSA 29 and the widespread Fan and Fortescue land systems. Not considered regionally significant.
SP: SP TpTb AancSeaoAss EgAi: Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with Open Shrubland of *Acacia ancistrocarpa*, *Senna artemisioides* subsp. *oligophylla* and *Acacia sclerosperma* subsp. *sclerosperma* with Very Open Mallee of *Eucalyptus gamophylla* and Low Open Woodland of *Acacia inaequilatera* on red-orange sandy loam on flat plains with ironstone gravel.	**111.1**: Low open woodland of *Eucalyptus gamophylla* and *Hakea lorea* over, tall sparse shrubland of *Acacia pyrifolia* over, mid open hummock grassland of *Triodia basedowii*.	**Urandy Land System**: Stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands.	SP was widespread throughout the Survey Area (3265.2 ha, 13.1%). The flat plains this VT occurs on were widespread throughout the Survey Area and local vicinity. Not considered locally significant.	Associated with widespread BSA 111.1 and the widespread Urandy land system. Not considered regionally significant.

.Vegetation Type	Associated Beard Sub-association (BSA)	Associated Land System	Local Context & Discussion	Regional Context & Discussion
HC1: HC TvTwTp ColsSeggAar EllHcCh: Hummock Grassland of *Triodia vanleeuwenii*, *Triodia wiseana* and *Triodia pungens* with Low Open Shrubland of *Corchorus lasiocarpus* var. *parvus*, *Senna glutinosa* subsp. *glutinosa* and *Acacia arida* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Hakea chordophylla* and *Corymbia hamersleyana* on red-orange, brown sandy clay on hill crests with ironstone gravel.	**82.3**: Low open woodland of *Eucalyptus leucophloia* and *Eucalyptus gamophylla* over, tall sparse shrubland of *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa* and *Grevillea wickhamii* over, mid open hummock grassland, open shrubland and open forbland of *Triodia wiseana*, *Ptilotus rotundifolius* and *Acacia lycopodiifolia*.	**Newman Land System**: Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	HC1 was widespread throughout the Survey Area (2075.2 ha, 8.3%). The hill crests this VT occurs on were relatively widespread throughout the Survey Area. Not considered locally significant.	Associated with widespread BSA 82.3 and the widespread Newman land system. Not considered regionally significant.
HC2: HC TvTw AhiAbSegp EllHc: Hummock Grassland of *Triodia vanleeuwenii* and *Triodia wiseana* with Low Open Shrubland of *Acacia hilliana*, *Acacia bivenosa* and *Senna glutinosa* subsp. *pruinosa* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Hakea chordophylla* on red-orange clayey sand on hill crests with ironstone cobbles.			HC2 was widespread throughout the Survey Area (3532.5 ha, 14.2%), the hill crests this VT occurs on were widespread throughout the Survey Area. Not considered locally significant.	Associated with widespread BSA 82.3 and the widespread Newman land system. Not considered regionally significant.
BO: BO Tw SeggAiSeao ArcTtErmu: Open Hummock Grassland of *Triodia wiseana* with Shrubland of Senna *glutinosa* subsp. *glutinosa*, *Acacia inaequilatera*, *Senna artemisioides* subsp. *oligophylla* over Open Tussock Grassland of *Aristida contorta*, *Themeda triandra* and *Eriachne mucronata* on red clayey sand on hill crests with basalt cobbles and boulders.	Not associated with a Beard SA but occurs on: **82.3**: Low open woodland of *Eucalyptus leucophloia* and *Eucalyptus gamophylla* over, tall sparse shrubland of *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa* and *Grevillea wickhamii* over, mid open hummock grassland, open shrubland and open forbland of *Triodia wiseana*, *Ptilotus rotundifolius* and *Acacia lycopodiifolia*.	**Rocklea Land System**: Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs.	BO had a restricted extent at the Survey Area (68.5 ha, 0.3%). The basalt crest landforms that this VT is associated with were fairly restricted in the Survey Area but relatively widespread in the local area. Not considered locally significant.	Associated with widespread BSA 82.3 and the widespread Rocklea land system. Not considered regionally significant.

.Vegetation Type	Associated Beard Sub-association (BSA)	Associated Land System	Local Context & Discussion	Regional Context & Discussion
SD: SD TscTb Ad CcErerArhh: Open Hummock Grassland of *Triodia schinzii* and *Triodia basedowii* with Open shrubland of *Acacia dictyophleba* over Very Open Tussock Grassland of **Cenchrus ciliaris*, *Eragrostis eriopoda* and *Aristida holathera* var. *holathera* on dark red-orange sand on dune crests.	**111.1**: Low open woodland of *Eucalyptus gamophylla* and *Hakea lorea* over, tall sparse shrubland of *Acacia pyrifolia* over, mid open hummock grassland of *Triodia basedowii*.	**Divide Land System**: Gently undulating sandplains with minor dunes, supporting hard spinifex hummock grasslands with numerous shrubs.	SD had a restricted extent at the Survey Area (184.4 ha, 0.7%). The dunes landform that this VT is associated with represents the Priority 3 Vegetation of sand dunes of the Hamersley Range/ Fortescue Valley (previously "Fortescue Valley Sand Dunes") PEC. **Considered locally significant.**	SD is associated with widespread BSA: 111.1 and the widespread Divide land system. This VT represents the Priority 3 Vegetation of sand dunes of the Hamersley Range/ Fortescue Valley (previously "Fortescue Valley Sand Dunes") PEC. **Considered regionally significant.**
HS1: HS AaAcao TpTbr GrsaErll: Low Open Forest of *Acacia aptaneura* and *Acacia catenulata* subsp. *occidentalis* over Open Hummock Grassland of *Triodia pungens* and *Triodia brizoides* with High Open Shrubland of *Eremophila latrobei* subsp. *latrobei* on red-orange sandy clay loam with ironstone gravel on steep hillslopes.	Not associated with a Beard SA but occurs on; **82.3**: Low open woodland of *Eucalyptus leucophloia* and *Eucalyptus gamophylla* over, tall sparse shrubland of *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa* and *Grevillea wickhamii* over, mid open hummock grassland, open shrubland and open forbland of *Triodia wiseana*, *Ptilotus rotundifolius* and *Acacia lycopodiifolia*.	**Newman Land System**: Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	HS1 had a restricted extent at the Survey Area (1.7 ha, <0.1%), occurring on steep ironstone hill slopes that also appear limited in the local vicinity based on aerial imagery. If a VT appears to be rare it **may be considered locally significant** until its extent can be mapped further.	Associated with the widespread BSA 82.3 and the widespread Newman land system. Not considered regionally significant.
FS1: FS *TvTp AbAtenAi Ell*: Hummock Grassland of *Triodia vanleeuwenii* and *Triodia pungens* with Open Shrubland of *Acacia bivenosa*, *Acacia tenuissima* and *Acacia inaequilatera* with Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* on red-orange sandy clay loam on foot slopes with ironstone gravel.	**29**: Mid isolated clumps of shrubs of *Acacia aneura*. **82.3**: Low open woodland of *Eucalyptus leucophloia* and *Eucalyptus gamophylla* over, tall sparse shrubland of *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa* and *Grevillea wickhamii* over, mid open hummock grassland, open shrubland and open forbland of *Triodia wiseana*, *Ptilotus rotundifolius* and *Acacia lycopodiifolia*.	**Newman Land System**: Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. **Boolgeeda Land System**: Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	FS1 is widespread throughout the Survey Area (1618.1 ha, 6.5%). The low hill slopes landform that this VT were associated with were widespread in the local area. Not considered locally significant.	Associated with widespread BSA 29, 82.3 and the widespread Boolgeeda land system. Not considered regionally significant.

.Vegetation Type	Associated Beard Sub-association (BSA)	Associated Land System	Local Context & Discussion	Regional Context & Discussion
WWHS: HS AsyAi TwTrag ChAan: Shrubland of *Acacia synchronicia* and *Acacia inaequilatera* over Very Open Hummock Grassland of *Triodia wiseana* and/or *Triodia angusta* with Scattered Low trees of +/- *Corymbia hamersleyana* or *Acacia aneura* on red clayey sand on hillslopes.	**29**: Mid isolated clumps of shrubs of *Acacia aneura*.	**Boolgeeda Land System**: Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	WWHS had a restricted extent at the Survey Area (65.3 ha, 0.3%) and only appears to be recorded adjacent to Weeli Wolli Creek. Given its restricted extent and association with the Priority 1 Weeli Wolli Spring Community, the VT **may be considered locally significant.**	WWHS is associated with widespread BSA 29, and the widespread Boolgeeda land system. Not considered regionally significant.
ME: ME AtpPlApyp TpTwTt Ch: Open Scrub of *Acacia tumida* var. *pilbarensis*, *Petalostylis labicheoides* and *Acacia pyrifolia* var. *pyrifolia* with Open Hummock Grassland of *Triodia pungens* and *Triodia wiseana* with Very Open Tussock Grassland of *Themeda triandra* with Low Open Woodland of *Corymbia hamersleyana* on red-orange, brown clayey sand on medium drainage lines with creek stone/ironstone cobbles.	**82.3**: Low open woodland of *Eucalyptus leucophloia* and *Eucalyptus gamophylla* over, tall sparse shrubland of *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa* and *Grevillea wickhamii* over, mid open hummock grassland, open shrubland and open forbland of *Triodia wiseana*, *Ptilotus rotundifolius* and *Acacia lycopodiifolia*.	**Boolgeeda Land System**: Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands. **Newman Land System**: Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	ME is widespread throughout the Survey Area (1203.1 ha, 4.8%). The lower slope creek lines and drainage lines landforms that this VT is associated with are widespread in the local area. Not considered locally significant.	Associated with widespread BSA 82.3 and the widespread Boolgeeda and Newman land systems. Not considered regionally significant.
FP1: FP Ecr AciApypAthe TtCc: Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* over High Shrubland of *Acacia citrinoviridis*, *Acacia pyrifolia* var. *pyrifolia* and *Atalaya hemiglauca* over Very Open Tussock Grassland of *Themeda triandra* and **Cenchrus ciliaris* on red-orange, brown loamy sand with abundant coarse creekstone on floodplains.	**82.3**: Low woodland of *Eucalyptus camaldulensis*, *Eucalyptus microtheca* and *Eucalyptus dichromophloia* over, mid sparse shrubland and sparse forbland of *Hibiscus goldsworthii* and *Cleome viscosa* over, mid sparse forbland, sparse shrubland and sparse vineland of *Swainsona stenodonta*, *Tephrosia bidwillii* and *Jasminum lineare*.	**River Land System**: Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex.	FP1 had a restricted extent at the Survey Area (69.4 ha, 0.3%). The floodplain landform that this VT is associated with signifies the Priority Weeli Wolli Spring Community vegetation assemblage. **Considered locally significant.**	FP1 is associated with widespread BSA 82.3 and the widespread River land system. This VT is associated with creeklines that signify the Priority Weeli Wolli Spring Community vegetation assemblage. **Considered regionally significant.**

.Vegetation Type	Associated Beard Sub-association (BSA)	Associated Land System	Local Context & Discussion	Regional Context & Discussion
FP2: FP Tp Ch AdHcAi: Very Open Hummock Grassland of *Triodia pungens* with Scattered Trees of *Corymbia hamersleyana* over Scattered Shrubs of *Acacia dictyophleba*, *Hakea chordophylla* and *Acacia inaequilatera* on dark red-orange clay loam with ironstone gravel on floodplains.	**82.3**: Low open woodland of *Eucalyptus leucophloia* and *Eucalyptus gamophylla* over, tall sparse shrubland of *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa* and *Grevillea wickhamii* over, mid open hummock grassland, open shrubland and open forbland of *Triodia wiseana*, *Ptilotus rotundifolius* and *Acacia lycopodiifolia*. **29**: Mid isolated clumps of shrubs of *Acacia aneura*.	**Fan Land System**: Wash plains and gilgie plains supporting groved mulga tall shrublands and minor tussock grasslands. **Urandy Land System**: Stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands. **Fortescue Land System**: Alluvial plains and flood plains supporting patchy grassy eucalypt and acacia woodlands and shrublands and tussock grasslands.	FP2 is relatively widespread throughout the Survey Area (236.2 ha, 0.9%). The drainage lines on flats landforms that this VT is associated with are widespread in the local area. Not considered locally significant.	Associated with widespread BSA 82.3 and the widespread Fan, Urandy, and Fortescue land systems. Not considered regionally significant.
FP3: FP AaApr CcChfTp PslAsyErff: Low Woodland of *Acacia aptaneura* and *Acacia pruinocarpa* over Open Tussock Grassland of **Cenchrus ciliaris* and *Chrysopogon fallax* with Open Hummock Grasses of *Triodia pungens* with Open Shrubland of *Psydrax latifolia*, *Acacia synchronicia* and *Eremophila forrestii* subsp. *forrestii* on red-orange sandy clay loam on drainage areas with ironstone gravel.	**111.1**: Low open woodland of *Eucalyptus gamophylla* and *Hakea lorea* over, tall sparse shrubland of *Acacia pyrifolia* over, mid open hummock grassland of *Triodia basedowii*. **29**: Mid isolated clumps of shrubs of *Acacia aneura*.	**Fan Land System**: Wash plains and gilgie plains supporting groved mulga tall shrublands and minor tussock grasslands. **Urandy Land System**: Stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands. **Divide Land System**: Gently undulating sandplains with minor dunes, supporting hard spinifex hummock grasslands with numerous shrubs. **Fortescue Land System**: Alluvial plains and flood plains supporting patchy grassy eucalypt and acacia woodlands and shrublands and tussock grasslands.	FP3 is widespread throughout the Survey Area (2564.6 ha, 10.3%). The drainage lines on flats landform that this VT is associated with are widespread in the local area. Not considered locally significant.	Associated with widespread BSA 111.1 and the widespread Fan, Urandy, Divide and Fortescue land systems. Not considered regionally significant.
MA: MA EcAciAthe Cc ApyCocr: Woodland of *Eucalyptus camaldulensis* subsp. *refulgens*, *Acacia citrinoviridis* and *Atalaya hemiglauca* over Very Open Tussock Grassland of **Cenchrus ciliaris* with Scattered Shrubs of *Acacia pyrifolia* var. *pyrifolia* and *Corchorus crozophorifolius* on	Occurs on SA 29 but is associated with; **82.3**: Low woodland of *Eucalyptus camaldulensis*, *Eucalyptus microtheca* and *Eucalyptus dichromophloia* over, mid sparse shrubland and sparse forbland of *Hibiscus goldsworthii* and *Cleome viscosa* over, mid sparse forbland, sparse shrubland and sparse vineland of	**River Land System**: Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex.	MA had a restricted extent at the Survey Area (82.4 ha, 0.3%). The creekline landform that this VT is associated with, represent the Priority 1 Weeli Wolli Spring Community. **Considered locally significant.**	MA is associated with widespread BSA 82.3 and the widespread River land system. This VT is associated with creeklines that represent the Priority Weeli Wolli Spring Community. **Considered regionally significant.**

.Vegetation Type	Associated Beard Sub-association (BSA)	Associated Land System	Local Context & Discussion	Regional Context & Discussion
red-orange sand with continuous creekstone within major drainage lines.	*Swainsona stenodonta, Tephrosia bidwillii* and *Jasminum lineare.*			
WWFP: FP Ab Cc TwTrag: High Shrubland of *Acacia bivenosa* over Very Open Tussock Grassland of **Cenchrus ciliaris* and/or Very Open Hummock Grassland of *Triodia wiseana* and/or *Triodia angusta* on red clayey sand on drainage areas/floodplains.	Not associated with any Beard SA but occurs on; **82.3**: Low woodland of *Eucalyptus camaldulensis, Eucalyptus microtheca* and *Eucalyptus dichromophloia* over, mid sparse shrubland and sparse forbland of *Hibiscus goldsworthii* and *Cleome viscosa* over, mid sparse forbland, sparse shrubland and sparse vineland of *Swainsona stenodonta, Tephrosia bidwillii* and *Jasminum lineare.*	**River Land System:** Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex.	WWFP had a restricted extent at the Survey Area (15.5 ha, 0.1%) and is associated with the Priority 1 Weeli Wolli Spring Community. **Considered locally significant.**	WWFP is associated with widespread BSA 82.3 and the widespread River land system. This VT is associated with floodplains associated with the Priority 1 Weeli Wolli Spring Community. **Considered regionally significant.**

4.4. Vegetation Condition

The majority of the Survey Area was mapped as 'Excellent' (51.6%) showing no obvious signs of disturbance. Vegetation in 'Excellent' condition included the hills and plains in the south of the Survey Area. Areas mapped as 'Very Good' (29.9%) were affected by minor grazing and low to medium weed cover. Vegetation in 'Very Good' condition included banded Mulga vegetation to the north-east of the survey area and larger creeks to the south.

Areas mapped as 'Good' (5.7%) and 'Poor' (10.6%) were affected by clearing for tracks and drill lines intersecting areas of 'Very Good' native vegetation or showed a moderate amount of grazing and weed cover, with a reduced or absent native understory. Areas in a 'Good' to 'Poor' condition included areas of banded mulga, dunes (adjacent to the rail and close to pastoral bores), drainage lines in the north, and plains to the northwest of the Survey Area. Areas cleared for roads, drill lines or infrastructure were mapped as cleared and covered 2.2% of the Survey Area.

Table 4.7: Vegetation Condition

Condition	Area (ha)	%	Disturbance Detail in Survey Area
Excellent	12,864.1	51.6	No obvious disturbance.
Very Good	7,459.0	29.9	Scattered weeds, low levels of grazing.
Good	1,422.3	5.7	Moderate weed cover, grazing or common clearing for tracks and drill lines
Poor	2,642.6	10.6	Vegetation affected by a high level of grazing, reduced native understory, and a high cover of weed species,
Cleared	547.1	2.2	No vegetation or plant species present, including roads, tracks, and areas cleared for infrastructure.

720000 730000 740000 750000 760000 770000

7500000 7490000 7480000 7470000 7460000

Q168 Q169 Q170 Q260 Q256 Q257 Q255 Q161 R124 R125 Q254 R131 Q162 R116 Q249 Q247 Q250 R115 R114 Q163 Q246 Q245 Q319 R112 Q167 Q243 Q244 Q242 Q179 R113 R111 Q320 R123 Q177 Q160 Q176 Q159 Q175 R122 Q174 Q158B Q158A Q241 Q240 Q239 Q238 Q237 Q236 Q153 Q152 Q154 Q235 Q225 Q150 R203 Q151 Q149 Q234 Q148 R110 Q233 Q118 Q119 Q110 R126 Q141 Q140 Q232 R205 R206 Q230 Q109 R119 Q111 Q139 R102 Q227 Q226 Q224 Q142 Q231 R117 Q107 Q112 Q229 Q218 Q143 R128 Q137 Q106 Q136 Q228 Q113 Q261 Q105 R106 Q114 R103 Q144 R202 R118 R104 Q145 Q214 Q134 Q135 Q116 Q115 Q103 Q104 R127 Q133 Q146 R109 Q262 Q147 R120 Q132 Q102 R209 Q212 Q101 Q269 Q131 Q268 Q138 Q108 Q267 Q264 Q329 Q328 Q330 Q331 Q427 Q333 Q426 R302 Q327 Q332 Q322 Q334 Q316 Q323 Q422 Q325 Q424 Q421 Q324 Q321 Q423 Q326

Legend

- Survey Area
- Sample Sites
  - Quadrat
  - Releve
- Vegetation Condition
  - Excellent
  - Very Good
  - Good
  - Poor
  - Cleared

N

0 1 2 3 4 5 km

Scale 1:175,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author [redacted] Date: 06-03-2025

Vegetation Condition

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP 4.6

Prepared for BHP WAIO

730000

740000

7500000

7490000

Q168
Q169
Q170
Q260
Q258
Q257
Q256
R124
Q255
Q161
Q254
Q253
R125
R131
Q162
R116
Q248
Q250
Q249
R115
R114
Q163
Q247
Q246
Q245
Q319
Q167
R112
Q244
Q243
Q242
R113
Q179
R111
Q177
Q320
Q160
R123
Q176
Q159
Q241

Legend

- Survey Area

Sample Sites

- Quadrat
- Releve

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Cleared

N

0 1 2 3 km

Scale 1:70,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Condition

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP

Prepared for BHP WAIO

4.7

740000

750000

7490000

7480000

Q320 Q160 Q177 R123 Q176 Q159 Q175 Q174 R122 Q158B Q158A Q241 Q240 Q238 Q239 Q237 Q152 Q154 Q236 Q153 Q235 Q225 R203 Q150 Q149 Q151 Q234 Q148 R110 Q233 Q119 Q118 Q110 R126 Q141 Q140 Q232 R205 R206 Q109 Q230 Q139 R119 Q111

Legend

- Survey Area

Sample Sites

- Quadrat
- Releve

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Cleared

N

0 1 2 3 km

Scale 1:70,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Condition

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP

Prepared for BHP WAIO

4.8

730000

740000

7470000

7460000

R206 Q109 Q230 Q139 R119 Q111 Q227 R102 R101 Q226 Q142 Q231 Q224 R130 R208 R129 R117 Q107 Q112 Q229 Q143 R128 Q218 Q137 Q106 Q113 Q136 Q228 Q105 Q261 Q114 Q144 R103 R202 R106 R118 R105 Q214 R104 Q145 R107 Q134 Q135 Q115 Q104 Q116 Q103 R127 Q133 Q262 Q146 R108 R109 Q132 Q147 Q217 R120 Q102 R209 Q117 Q212 Q101 Q269 Q268 Q131 Q138 Q108 Q267 Q264

Legend

- Survey Area
- Sample Sites
  - Quadrat
  - Releve
- Vegetation Condition
  - Excellent
  - Very Good
  - Good
  - Cleared

N

0 1 2 3 km

Scale 1:70,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Condition

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP 4.9

Prepared for BHP WAIO

770000

Q329
Q328
Q427
Q330
Q331
Q426
Q333
R302
Q425
Q332
Q334
Q327
Q322
Q318
Q316
Q323
Q325
Q422
Q315
Q421
Q324
Q321
Q424
Q326
Q423

Legend

- Survey Area
- Sample Sites
  - Quadrat
  - Releve
- Vegetation Condition
  - Excellent
  - Very Good
  - Cleared

N

0 0.5 1 km

Scale 1:25,000 @ A3

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator
Units: Metre

Spectrum ECOLOGY + SPATIAL

Author: [redacted]

Date: 06-03-2025

Vegetation Condition

Jinidi Rail Corridor: Detailed Flora & Vegetation Assessment

MAP

Prepared for BHP WAIO

4.10

5. CONCLUSION

5.1. Flora

No Threatened flora were recorded or considered likely to occur within the Survey Area. Four Priority Flora taxa were recorded:

- Priority 3 (P3): *Eremophila naaykensii*, *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727);
- Priority 4 (P4): *Lepidium catapycnon*, *Sida* sp. Barlee Range (S. van Leeuwen 1642).

All of these taxa were assigned a low local and regional significance.

One range extension was recorded in the Survey Area:

- *Corchorus elachocarpus*

One novel species was recorded in the Survey Area:

- *Corchorus* aff. *elachocarpus*

Eleven introduced flora species were recorded at the Survey Area of which one, **Calotropis procera* is a Declared Pest - s22. **Calotropis procera* was recorded from one location in the Survey Area with a total abundance of two individuals. **Cenchrus ciliaris* was the most abundant introduced flora species across the Survey Area.

5.2. Vegetation

No TECs were recorded in the Survey Area. Based on the definitions of significant vegetation listed in section 2.4.4 (EPA, 2016a), Nine potentially significant VTs were recorded in the Survey Area:

- SD represents the Priority 3 Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes"), susceptible to weed invasion (**Cenchrus ciliaris*), grazing by cattle, altered fire regimes, erosion and clearing for mining and infrastructure.
- MA has a restricted extent in the Survey Area (82.4 ha, 0.3%), with affinities to the Priority 1 Weeli Wolli Spring Community and is considered a GDE that is impacted by dewatering and re-watering altering patterns of inundation, weed invasion, and increased visitation;
- FP1 has affinities to the Priority 1 Weeli Wolli Spring Community and is considered a GDE that is impacted by dewatering and re-watering altering patterns of inundation, weed invasion, and increased visitation.
- HS1 is found on steep hill slopes and has a restricted extent at the Survey Area (1.7 ha. <0.1%).
- ME provides a role of refuge for the Priority Flora taxa, *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727; P3) and *Sida* sp. Barlee Range (S. van Leeuwen 1642; P4);
- WWFP had a restricted extent at the Survey Area (15.5 ha, 0.1%);
- WWHS had a restricted extent at the Survey Area (65.3 ha, 0.3%);
- FP3 and SS2 both display Banded Mulga patterning, which are susceptible to impacts from mining activities.

From a local and regional context, seven VTs were considered to have high local and/or regional significance in the Survey Area:

- SD had a restricted extent in the Survey Area (184.4 ha, 0.7%) and this VT represents the Priority 3 Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (previously "Fortescue Valley Sand Dunes"). SD is considered locally and regionally significant.

- HS1 had a restricted extent at the Survey Area (1.7 ha, <0.1%), occurring on steep ironstone hill slopes that appear limited in the local vicinity. HS1 may be considered locally significant.
- WWHS had a restricted extent at the Survey Area (65.3 ha, 0.3%), occurring on hill slopes directly adjacent to, and associated with the Priority 1 Weeli Wolli Spring Community. WWHS may be considered locally significant.
- WWFP had a restricted extent at the Survey Area (15.5 ha, 0.1%), occurring on floodplains associated with the Priority 1 Weeli Wolli Spring Community and appeared limited in the local vicinity. WWHS is considered locally significant.
- FP1 had a restricted extent at the Survey Area (69.4 ha, 0.3%) and this VT represents the Priority 1 Weeli Wolli Spring Community. FP1 is considered locally and regionally significant.
- MA had a restricted extent in the Survey Area (82.4 ha, 0.3%) and represents the Priority 1 Weeli Wolli Spring Community. MA is considered locally and regionally significant.
- WWFP had a restricted extent in the Survey Area (15.5 ha, 0.1%) and is associated with the Priority 1 Weeli Wolli Spring Community. WWFP is considered locally and regionally significant.

Vegetation condition varied within VTs based on previous disturbances and proximity to cleared roads and infrastructure. Weeds were common, with **Cenchrus ciliaris* (Buffel Grass) recorded commonly across the Survey Area, forming the dominant understory species in five VTs (FP1, SS2, SA3, SD, and MA), and **Cenchrus setiger* (Birdwood Grass) forming the dominant structural overstorey component in VT SS2.

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Appendix A: Conservation Codes

Appendix A1: Definitions of Conservation Categories under the EPBC Act

Category	Definition
Extinct	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.
Extinct in the Wild	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.
Critically Endangered	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.
Endangered	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.
Vulnerable	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.
Conservation Dependent	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; (iv) cessation of the plan of management would adversely affect the conservation status of the species.

Appendix A2: Definitions of Conservation Categories Under the BC Act

Code	Definition (BC Act)
Threatened Species (T) Listed by order of the Minister as Threatened in the category of critically endangered, endangered, or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the Biodiversity Conservation Act 2016 (BC Act). **Threatened fauna** is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for Threatened Fauna. **Threatened flora** is that subset of 'Rare Flora' listed under schedules 1 to 3 of the Wildlife Conservation (Rare Flora) Notice 2018 for Threatened Flora. The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.	
Critically Endangered (CR)	Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under **schedule 1** of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for critically endangered fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for critically endangered flora.
Endangered (EN)	Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under **schedule 2** of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for endangered fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for endangered flora.
Vulnerable (VU)	Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under **schedule 3** of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for vulnerable fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for vulnerable flora.

Code	Definition (BC Act)
Extinct species Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.	
Extinct species (EX)	Species where "there is no reasonable doubt that the last member of the species has died", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act). Published as presumed extinct under **schedule 4** of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for extinct fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for extinct flora.
Extinct in the wild species (EW)	Species that "is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act). Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.
Specially protected species Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as threatened species (critically endangered, endangered, or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.	
Migratory species (MI)	Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species. Published as migratory birds protected under an international agreement under **schedule 5** of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.
Conservation Dependent (CD)	Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act). Published as conservation dependent fauna under **schedule 6** of the Wildlife Conservation (Specially Protected Fauna) Notice 2018
Other specially protected fauna (OS)	Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act). Published as other specially protected fauna under **schedule 7** of the Wildlife Conservation (Specially Protected Fauna) Notice 2018
Priority species (P) Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.	
Priority 1: Poorly known species (P1)	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.

Code	Definition (BC Act)
Priority 2: Poorly known species (P2)	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.
Priority 3: Poorly known species (P3)	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 need further survey.
Priority 4: Rare, Near Threatened and other species in need of monitoring (P4)	(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Appendix A3: Legal Status Definition 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 may only be imported and kept 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 than 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 pest that are recognised as 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 for public display, education, or scientific purposes.
Restricted keeping	Kept under a permit by private individuals due to a 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 (WCA, 1950).

Appendix B: Flora Site Data

Site: Q101	Type: Quadrat	Size: 50x50m	Date: 12/10/2023	Botanist: Melissa Hay
Landform:	Hill crest; Simple			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	FS1			
Condition:	Excellent			
Location:	50 738945 mE 7463679 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	12.0	*Duperreya commixta*	0.2	0.1
Acacia hilliana	0.4	2.0	*Jasminum didymum* subsp. *lineare*	0.5	0.1
Corymbia deserticola subsp. *deserticola*	4.0	2.0	*Amphipogon sericeus*	0.3	0.1
Eucalyptus leucophloia subsp. *leucophloia*	2.0	0.5	*Acacia adoxa* var. *adoxa*	0.1	0.1
Lamarchea sulcata	0.5	0.3	*Acacia adsurgens*	0.5	0.1
Acacia bivenosa	1.0	0.2	*Acacia tetragonophylla*	1.0	0.1
Acacia tenuissima	1.1	0.2	*Indigofera monophylla*	0.1	0.1
Hakea chordophylla	1.0	0.2	*Senna artemisioides* subsp. *oligophylla*	1.0	0.1
Sida sp. dark green fruits (S. van Leeuwen 2260)	1.0	0.2	*Senna glutinosa* subsp. x *luerssenii*	1.2	0.1
Aristida holathera var. *holathera*	0.2	0.1	*Solanum lasiophyllum*	0.1	0.1

Site: Q102	Type: Quadrat	Size: 15x170m	Date: 12/10/2023	Botanist: Melissa Hay
Landform:	Drainage line on flat			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	50-90% Abundant			
Size:	200-600 mm - Stones			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Very Good			
Location:	50 739808 mE 7465347 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	2.2	30.0	*Cyperus ?cunninghamii*	0.1	0.1
Themeda triandra	0.8	10.0	*Acacia adoxa* var. *adoxa*	0.1	0.1
Dodonaea lanceolata var. *lanceolata*	1.7	10.0	*Acacia hilliana*	0.3	0.1
Grevillea wickhamii subsp. *hispidula*	1.9	10.0	*Acacia tenuissima*	1	0.1
Corymbia hamersleyana	5.0	7.0	*Androcalva luteiflora*	1	0.1
Eriachne mucronata	0.3	6.0	*Bonamia erecta*	0.3	0.1
Gossypium robinsonii	1.5	2.0	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.1
Triodia pungens	0.3	2.0	*Eremophila longifolia*	0.3	0.1
Acacia pyrifolia var. *morrisonii*	2.0	1.0	*Gompholobium oreophilum*	0.3	0.1
Triodia wiseana	0.3	1.0	*Mirbelia viminalis*	0.3	0.1
Aristida holathera var. *holathera*	0.3	0.1	*Petalostylis labicheoides*	2	0.1
Goodenia stobbsiana	0.1	0.1	*Santalum lanceolatum*	1	0.1
Duperreya commixta	0.5	0.1	*Scaevola amblyanthera* var. *centralis*	0.2	0.1
*Cenchrus ciliaris	0.3	0.1	*Sida fibulifera*	0.3	0.1
Amphipogon sericeus	0.3	0.1	*Sida* sp. Articulation below (A.A. Mitchell PRP 1605)	0.2	0.1
Chrysopogon fallax	0.3	0.1	*Solanum lasiophyllum*	0.3	0.1
Eragrostis eriopoda	0.3	0.1	*Tephrosia virens*	0.5	0.1
Eriachne lanata	0.2	0.1	*Triodia vanleeuwenii*	0.3	0.1

Site: Q103	Type: Quadrat	Size: 50x50m	Date: 12/10/2023	Botanist: Melissa Hay
Landform:	Lower hill slope			
Slope & Aspect:	Low; South			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	FS1			
Condition:	Excellent			
Location:	50 741639 mE 7468479 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.5	35.0	*Acacia adoxa* var. *adoxa*	0.3	0.1
Eucalyptus gamophylla	3.0	12.0	*Acacia adsurgens*	0.3	0.1
Acacia hilliana	0.3	3.0	*Senna glutinosa* subsp. *pruinosa*	1	0.1
Hakea chordophylla	3.0	0.2	*Senna glutinosa* subsp. x *luerssenii*	1	0.1
Senna glutinosa subsp. *glutinosa*	1.0	0.2	*Triodia pungens*	0.3	0.1
Bonamia media	0.1	0.1			

Site: Q104	Type: Quadrat	Size: 50x50m	Date: 13/10/2023	Botanist: Melissa Hay
Landform:	Hill crest; Simple			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 741751 mE 7469204 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	50	*Hakea chordophylla*	3	1.5
Acacia bivenosa	1.9	5	*Acacia hilliana*	1	0.1
Acacia hilliana	0.3	2	*Senna glutinosa* subsp. *pruinosa*	2	0.1
Eucalyptus leucophloia subsp. *leucophloia*	4.0	2			

Site: Q105	Type: Quadrat	Size: 50x50m	Date: 13/10/2023	Botanist: Melissa Hay
Landform:	Hill crest; Simple			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 742876 mE 7471522 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.5	35.0	*Amphipogon sericeus*	0.2	0.1
Acacia bivenosa	1.0	2.0	*Eriachne helmsii*	0.1	0.1
Senna glutinosa subsp. *pruinosa*	1.5	2.0	*Calytrix carinata*	0.4	0.1
Acacia pruinocarpa	1.5	1.0	*Goodenia stobbsiana*	0.1	0.1
Eucalyptus leucophloia subsp. *leucophloia*	6.0	0.7	*Grevillea wickhamii* subsp. *hispidula*	1.0	0.1
Acacia hilliana	0.5	0.5	*Ptilotus rotundifolius*	0.6	0.1
Goodenia triodiophila	0.1	0.1	*Solanum lasiophyllum*	0.3	0.1
Ptilotus fusiformis	0.2	0.1	*Tribulus suberosus*	0.5	0.1
Trianthema glossostigmum	0.1	0.1	*Triodia wiseana*	0.3	0.1

Site: Q106	Type: Quadrat	Size: 50x50m	Date: 13/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 741402 mE 7469601 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	0.5	35.0	*Acacia melleodora*	1	0.1
Acacia sibirica	2.1	3.0	*Acacia pachyacra*	1	0.1
Grevillea wickhamii subsp. *hispidula*	1.8	1.0	*Acacia sericophylla*	1.3	0.1
Acacia elachantha	2.0	0.4	*Dicrastylis cordifolia*	0.2	0.1
Hakea chordophylla	1.0	0.3	*Gompholobium oreophilum*	0.2	0.1
Bonamia erecta	0.2	0.2	*Senna artemisioides* subsp. *oligophylla*	0.5	0.1
Cymbopogon obtectus	0.3	0.1	*Corymbia hamersleyana*	1	0.1
Eragrostis eriopoda	0.2	0.1	*Triodia pungens*	0.5	0.1
Acacia adoxa var. *adoxa*	0.2	0.1			

Site: Q107	Type: Quadrat	Size: 50x50m	Date: 13/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC1			
Condition:	Excellent			
Location:	50 744100 mE 7474808 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.4	30.0	*Euploca pachyphylla*	0.1	0.1
Lamarchea sulcata	3.0	12.0	*Amphipogon sericeus*	0.2	0.1
Triodia vanleeuwenii	0.3	5.0	*Eriachne helmsii*	0.2	0.1
Corymbia hamersleyana	6.0	1.5	*Acacia dictyophleba*	1	0.1
Acacia hilliana	0.4	1.0	*Bonamia erecta*	0.3	0.1
Indigofera monophylla	0.2	0.3	*Calytrix carinata*	0.2	0.1
Triodia basedowii	0.4	0.3	*Corchorus sidoides* subsp. *sidoides*	0.2	0.1
Acacia adoxa var. *adoxa*	0.2	0.2	*Dicrastylis cordifolia*	0.3	0.1
Acacia inaequilatera	2.0	0.2	*Eremophila latrobei* subsp. *latrobei*	0.5	0.1
Petalostylis cassioides	0.6	0.2	*Gompholobium oreophilum*	0.3	0.1
Ptilotus fusiformis	0.2	0.1			

Site: Q108	Type: Quadrat	Size: 20x125m	Date: 14/10/2023	Botanist: Melissa Hay
Landform:	Creek/Riverbed			
Slope & Aspect:	Moderate; East			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	>600 mm - Boulders			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 739333 mE 7461852 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	1.9	35.0	*Grevillea wickhamii* subsp. *hispidula*	1.5	0.2
Themeda triandra	0.3	5.0	*Dolichocarpa crouchiana*	0.1	0.1
Petalostylis labicheoides	1.9	5.0	*Duperreya commixta*	1.0	0.1
Corymbia opaca	5.0	5.0	*Jasminum didymum* subsp. *lineare*	1.0	0.1
Triodia biflora	0.3	5.0	*Indigofera fractiflexa* subsp. *fractiflexa*	0.7	0.1
Triodia pungens	0.5	5.0	*Sida* sp. Shovelanna Hill (S. van Leeuwen 3842)	0.2	0.1
Eucalyptus victrix	5.0	3.0	**Cenchrus ciliaris*	0.5	0.1
Chrysopogon fallax	0.3	2.0	*Aristida inaequiglumis*	0.5	0.1
Eriachne helmsii	0.3	2.0	*Cymbopogon obtectus*	0.2	0.1
Corymbia candida subsp. *candida*	5.0	2.0	*Eriachne lanata*	0.3	0.1
Clerodendrum floribundum var. *angustifolium*	1.1	1.3	*Eulalia aurea*	0.3	0.1
Acacia pyrifolia var. *morrisonii*	1.8	1.0	*Afrohybanthus aurantiacus*	0.1	0.1
Santalum lanceolatum	1.0	1.0	*Bonamia erecta*	0.3	0.1
Androcalva luteiflora	0.5	0.5	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.1
Neurachne muelleri	0.2	0.3	*Gompholobium oreophilum*	0.3	0.1
Ficus brachypoda	1.0	0.3	*Newcastelia clavipetala*	0.5	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.3	*Tephrosia virens*	0.5	0.1
Acacia hamersleyensis	1.0	0.2	*Solanum cleistogamum*	0.3	0.1
Gossypium robinsonii	3.0	0.2	*Atalaya hemiglauca*	2.0	0.1

Site: Q109	Type: Quadrat	Size: 50x50m	Date: 14/10/2023	Botanist: Melissa Hay
Landform:	Floodplain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 741172 mE 7477746 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.4	15.0	*Ptilotus exaltatus*	0.2	0.1
Eucalyptus gamophylla	3.0	8.0	*Ptilotus fusiformis*	0.3	0.1
Aristida inaequiglumis	0.5	5.0	*Trigastrotheca molluginea*	0.1	0.1
Petalostylis cassioides	1.5	5.0	*Scaevola parvifolia* subsp. *pilbarae*	0.1	0.1
Neurachne muelleri	0.3	3.0	*Acacia dictyophleba*	1.0	0.1
Bonamia erecta	0.3	2.0	*Acacia pruinocarpa*	1.2	0.1
Eragrostis eriopoda	0.3	1.0	*Acacia pyrifolia* var. *pyrifolia*	1.2	0.1
Senna artemisioides subsp. *oligophylla*	1.2	1.0	*Afrohybanthus aurantiacus*	0.2	0.1
Acacia adoxa var. adoxa	0.5	0.5	*Corchorus* aff. *elachocarpus*	0.3	0.1
Acacia inaequilatera	1.8	0.5	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.1
Acacia pachyacra	1.0	0.5	*Dicrastylis cordifolia*	0.2	0.1
Ptilotus astrolasius	0.3	0.5	*Dodonaea coriacea*	1.0	0.1
Corymbia hamersleyana	1.3	0.5	*Gossypium australe*	1.0	0.1
Triodia schinzii	0.5	0.5	*Sida arenicola*	0.1	0.1
Aristida holathera var. *holathera*	0.3	0.3	*Sida cardiophylla*	0.2	0.1

Site: Q110	Type: Quadrat	Size: 50x50m	Date: 14/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 742025 mE 7479671 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	40.0	*Acacia adsurgens*	2.0	0.2
Acacia inaequilatera	2.1	8.0	*Enneapogon polyphyllus*	0.2	0.1
Acacia pachyacra	1.2	2.0	*Scaevola parvifolia* subsp. *pilbarae*	0.2	0.1
Acacia pyrifolia var. *pyrifolia*	2.0	2.0	*Eragrostis eriopoda*	0.2	0.1
Petalostylis cassioides	0.5	1.0	*Neurachne muelleri*	0.3	0.1
Senna artemisioides subsp. *oligophylla*	1.0	1.0	*Acacia dictyophleba*	1.0	0.1
Ptilotus obovatus	0.3	0.5	*Rhagodia eremaea*	0.5	0.1
**Cenchrus ciliaris*	0.3	0.3	*Senna glutinosa* subsp. *chatelainiana*	1.0	0.1
Hakea lorea subsp. *lorea*	2.0	0.3	*Senna glutinosa* subsp. x *luerssenii*	1.2	0.1
Eucalyptus gamophylla	1.5	0.2	*Corymbia hamersleyana*	1.0	0.1

Site: Q111	Type: Quadrat	Size: 50x50m	Date: 14/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 740085 mE 7476686 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.3	15.0	*Trigastrotheca molluginea*	1	0.1
Eragrostis eriopoda	0.3	5.0	*Aristida holathera* var. *holathera*	0.3	0.1
Triodia schinzii	0.3	5.0	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Acacia inaequilatera	2.5	3.0	*Scaevola parvifolia* subsp. *pilbarae*	0.2	0.1
Acacia dictyophleba	1.0	2.0	*Acacia adoxa* var. *adoxa*	0.3	0.1
Eucalyptus gamophylla	3.0	1.0	*Acacia sibirica*	1	0.1
Acacia pachyacra	1.2	1.0	*Afrohybanthus aurantiacus*	0.1	0.1
Bonamia erecta	0.3	1.0	*Corchorus* sp. indet	0.2	0.1
Neurachne muelleri	0.3	0.5	*Gossypium australe*	0.2	0.1
Petalostylis cassioides	0.5	0.5	*Hakea chordophylla*	1	0.1
Senna artemisioides subsp. *oligophylla*	1.0	0.5	*Ptilotus astrolasius*	0.3	0.1
Ptilotus exaltatus	0.3	0.1	*Senna artemisioides* subsp. *helmsii*	1	0.1
Ptilotus fusiformis	0.3	0.1			

Site: Q112	Type: Quadrat	Size: 50x50m	Date: 15/10/2023	Botanist: Melissa Hay
Landform:	Mid hill slope			
Slope & Aspect:	Steep; South			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 739179 mE 7474421 mN			
Notes:	-			

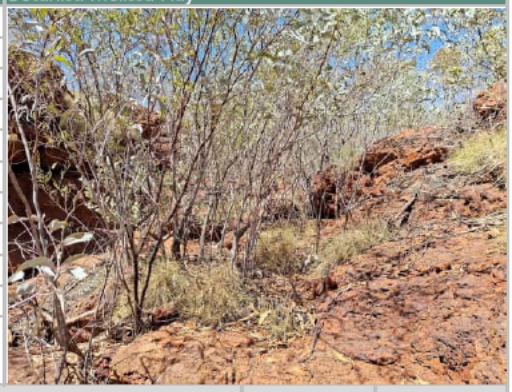
Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia wiseana	0.3	40.0	*Grevillea wickhamii* subsp. *hispidula*	0.3	0.1
Acacia bivenosa	1.2	8.0	*Ptilotus obovatus*	0.2	0.1
Eucalyptus leucophloia subsp. *leucophloia*	6.0	3.0	*Ptilotus rotundifolius*	0.5	0.1
Themeda triandra	0.3	1.0	*Senna artemisioides* subsp. *oligophylla*	1	0.1
Acacia arida	1.0	0.2	*Senna glutinosa* subsp. *glutinosa*	1	0.1
Amphipogon sericeus	0.1	0.1	*Senna glutinosa* subsp. *pruinosa*	1	0.1
Eriachne helmsii	0.3	0.1	*Senna glutinosa* subsp. x *luerssenii*	0.5	0.1
Acacia elachantha	1.2	0.1	*Solanum lasiophyllum*	0.1	0.1
Acacia tumida var. *pilbarensis*	0.6	0.1	*Tribulus suberosus*	0.2	0.1
Eremophila latrobei subsp. *latrobei*	1.0	0.1			

Site: Q113	Type: Quadrat	Size: 20x125m	Date: 15/10/2023	Botanist: Melissa Hay
Landform:	Drainage line on flat			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 736544 mE 7471831 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	3.0	40.0	*Acacia spondylophylla*	1	0.2
Triodia pungens	0.5	20.0	*Ptilotus exaltatus*	0.2	0.1
Eulalia aurea	0.2	5.0	*Trigastrotheca molluginea*	0.1	0.1
Grevillea wickhamii subsp. *hispidula*	3.0	4.0	*Jasminum didymum* subsp. *lineare*	1	0.1
Eucalyptus gamophylla	3.0	3.0	*Acacia adsurgens*	1	0.1
Themeda triandra	0.5	2.0	*Acacia arida*	1	0.1
Triodia wiseana	0.2	2.0	*Afrohybanthus aurantiacus*	0.2	0.1
Eragrostis eriopoda	0.4	1.0	*Androcalva luteiflora*	0.1	0.1
Acacia monticola	2.0	1.0	*Dicrastylis cordifolia*	0.2	0.1
Acacia pyrifolia var. *morrisonii*	3.0	1.0	*Hibiscus sturtii* var. *campylochlamys*	1	0.1
Petalostylis labicheoides	2.0	1.0	*Indigofera monophylla*	0.5	0.1
Senna artemisioides subsp. *oligophylla*	1.0	1.0	*Mirbelia viminalis*	1	0.1
Corymbia hamersleyana	5.0	1.0	*Ptilotus astrolasius*	0.3	0.1
Aristida holathera var. *holathera*	0.5	0.5	*Santalum lanceolatum*	1	0.1
Eriachne mucronata	0.2	0.5	*Senna glutinosa* subsp. *glutinosa*	1	0.1
Corchorus lasiocarpus subsp. *parvus*	0.5	0.5	*Senna glutinosa* subsp. *pruinosa*	1	0.1
Gossypium robinsonii	1.5	0.5	*Sida cardiophylla*	0.2	0.1
Neurachne muelleri	0.5	0.2	*Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186)	1	0.1
Acacia ancistrocarpa	2.0	0.2	*Atalaya hemiglauca*	2	0.1
Acacia dictyophleba	1.3	0.2			

Site: Q114	Type: Quadrat	Size: 50x50m	Date: 15/10/2023	Botanist: Melissa Hay
Landform:	Hill crest; Simple			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 733840 mE 7470676 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	20.0	*Corchorus lasiocarpus* subsp. *parvus*	0.1	0.1
Acacia hilliana	0.5	10.0	*Eremophila latrobei* subsp. *latrobei*	0.1	0.1
Acacia bivenosa	1.0	1.0	*Goodenia stobbsiana*	0.1	0.1
Acacia spondylophylla	0.4	1.0	*Grevillea wickhamii* subsp. *hispidula*	1.4	0.1
Eucalyptus leucophloia subsp. *leucophloia*	4.0	1.0	*Ptilotus astrolasius*	0.2	0.1
Hakea chordophylla	3.0	0.5	*Ptilotus rotundifolius*	0.8	0.1
Acacia pruinocarpa	0.2	0.4	*Senna artemisioides* subsp. *oligophylla*	0.1	0.1
Triodia wiseana	0.2	0.3	*Senna glutinosa* subsp. *glutinosa*	0.6	0.1
Ptilotus fusiformis	0.3	0.1	*Senna glutinosa* subsp. *pruinosa*	1	0.1
Amphipogon sericeus	0.1	0.1	*Solanum lasiophyllum*	0.1	0.1
Eriachne helmsii	0.1	0.1			

Site: Q115	Type: Quadrat	Size: 10x250m	Date: 16/10/2023	Botanist: Melissa Hay
Landform:	Drainage line on mid slope			
Slope & Aspect:	Low; East			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 734285 mE 7469156 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	3.0	40.0	*Triodia vanleeuwenii*	0.2	0.2
Grevillea wickhamii subsp. *hispidula*	3.0	10.0	*Duperreya commixta*	1	0.1
Triodia pungens	0.5	10.0	*Jasminum didymum* subsp. *lineare*	1	0.1
Eriachne helmsii	0.3	5.0	*Acacia arida*	0.5	0.1
Petalostylis labicheoides	1.0	5.0	*Acacia monticola*	2	0.1
Corymbia hamersleyana	5.0	3.0	*Acacia spondylophylla*	0.3	0.1
Themeda triandra	0.3	2.0	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.1
Neurachne muelleri	0.3	1.0	*Gompholobium oreophilum*	1	0.1
Acacia pyrifolia var. *morrisonii*	1.5	1.0	*Santalum lanceolatum*	1	0.1
Eucalyptus leucophloia subsp. *leucophloia*	5.0	1.0	*Senna glutinosa* subsp. *glutinosa*	1	0.1
Tephrosia virens	0.5	0.3	*Sida* sp. Articulation below (A.A. Mitchell PRP 1605)	1.5	0.1
Gossypium robinsonii	2.0	0.2			

Site: Q116	Type: Quadrat	Size: 50x50m	Date: 16/10/2023	Botanist: Melissa Hay
Landform:	Hill crest; Simple			
Slope & Aspect:	Low; North			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 732704 mE 7468508 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.2	15.0	*Corchorus lasiocarpus* subsp. *parvus*	0.1	0.1
Acacia arida	0.1	2.0	*Grevillea wickhamii* subsp. *hispidula*	0.3	0.1
Eucalyptus leucophloia subsp. *leucophloia*	5.0	1.0	*Ptilotus astrolasius*	0.2	0.1
Triodia wiseana	0.1	1.0	*Senna glaucifolia*	1	0.1
Acacia hilliana	0.5	0.4	*Senna glutinosa* subsp. *glutinosa*	1	0.1
Ptilotus fusiformis	0.1	0.1	*Senna glutinosa* subsp. *pruinosa*	0.3	0.1
Amphipogon sericeus	0.1	0.1	*Senna glutinosa* subsp. x *luerssenii*	0.1	0.1
Acacia pyrifolia var. *morrisonii*	0.1	0.1	*Solanum lasiophyllum*	0.2	0.1
Acacia spondylophylla	0.1	0.1			

Site: Q117	Type: Quadrat	Size: 50x50m	Date: 16/10/2023	Botanist: Melissa Hay
Landform:	Hill crest; Simple			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Basalt			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	BO			
Condition:	Excellent			
Location:	50 730276 mE 7465909 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia wiseana	0.4	30.0	*Polycarpaea longiflora*	0.1	0.1
Themeda triandra	0.3	3.0	*Aristida contorta*	0.1	0.1
Acacia inaequilatera	2.1	3.0	*Enneapogon polyphyllus*	0.1	0.1
Acacia dictyophleba	1.0	1.0	*Enneapogon robustissimus*	0.1	0.1
Senna artemisioides subsp. *oligophylla*	0.6	0.8	*Corchorus lasiocarpus* subsp. *parvus*	0.2	0.1
Chrysopogon fallax	0.5	0.3	*Gossypium australe*	0.3	0.1
Eriachne mucronata	0.3	0.3	*Senna artemisioides* subsp. *helmsii*	0.3	0.1
Hakea lorea subsp. *lorea*	1.0	0.3	*Senna glutinosa* subsp. *glutinosa*	1.0	0.1
Aristida holathera var. *holathera*	0.2	0.2	*Senna glutinosa* subsp. *pruinosa*	1.0	0.1
Neurachne muelleri	0.3	0.2	*Sida* ?sp. Barlee Range (S. van Leeuwen 1642)	0.2	0.1
Eremophila fraseri subsp. *fraseri*	0.5	0.2	*Solanum lasiophyllum*	0.2	0.1
Indigofera rugosa	0.3	0.2	*Solanum cleistogamum*	0.1	0.1

Site: Q118	Type: Quadrat	Size: 50x50m	Date: 17/10/2023	Botanist: Melissa Hay/ Adam Crosby-Clark
Landform:	Hill crest; Simple			
Slope & Aspect:	Moderate; South			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 744367 mE 7480271 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	35.0	*Trigastrotheca molluginea*	0.1	0.1
Eucalyptus leucophloia subsp. *leucophloia*	3.0	4.0	*Paspalidium clementii*	0.1	0.1
Acacia hilliana	0.3	1.0	*Fimbristylis simulans*	0.1	0.1
Grevillea wickhamii subsp. *hispidula*	1.0	0.6	*Acacia pyrifolia* var. *pyrifolia*	1.0	0.1
Acacia pachyacra	1.0	0.5	*Calytrix carinata*	0.5	0.1
Senna glutinosa subsp. *glutinosa*	1.0	0.5	*Capparis spinosa* subsp. *nummularia*	0.2	0.1
Acacia bivenosa	1.0	0.2	*Hakea chordophylla*	1.0	0.1
Ptilotus fusiformis	0.2	0.1	*Senna artemisioides* subsp. *oligophylla*	1.0	0.1

Site: Q119	Type: Quadrat	Size: 50x50m	Date: 17/10/2023	Botanist: Adam Crosby-Clark
Landform:	Undulating plain			
Slope & Aspect:	Low; East			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 728617 mE 7504277 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.5	70.0	*Trigastrotheca molluginea*	0.2	0.1
Acacia ancistrocarpa	2.4	1.0	*Aristida holathera* var. *holathera*	0.3	0.1
Eucalyptus gamophylla	1.8	0.4	*Ptilotus calostachyus*	0.3	0.1
Acacia tenuissima	1.8	0.3	*Afrohybanthus aurantiacus*	0.4	0.1
Grevillea wickhamii subsp. *hispidula*	1.4	0.3	*Corchorus* aff. *elachocarpus*	0.4	0.1
Aristida inaequiglumis	0.4	0.2	*Dicrastylis cordifolia*	0.3	0.1
Acacia pachyacra	1.4	0.2	*Indigofera monophylla*	0.4	0.1
Bonamia erecta	0.3	0.2	*Leiocarpa semicalva* subsp. *semicalva*	0.4	0.1
Hakea chordophylla	2.4	0.2	*Petalostylis cassioides*	0.4	0.1
Hakea lorea subsp. *lorea*	0.8	0.2	*Senna glutinosa* subsp. *pruinosa*	0.8	0.1
Ptilotus exaltatus	0.3	0.1	*Sida cardiophylla*	0.5	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.1	*Tribulus suberosus*	0.4	0.1

Site: Q131	Type: Quadrat	Size: 10x250m	Date: 12/10/2023	Botanist: Scott Hitchcock
Landform:	Drainage line on lower slope			
Slope & Aspect:	Low; West			
Soil:	Clay Loam			
Rocks:	Creek stones			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 738803 mE 7463031 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	2.0	30.0	*Acacia monticola*	1.2	0.5
Themeda triandra	0.3	15.0	*Gastrolobium grandiflorum*	0.8	0.5
Eriachne mucronata	0.3	2.0	*Mirbelia viminalis*	0.3	0.5
Santalum lanceolatum	1.5	2.0	*Duperreya commixta*	0.8	0.1
Corymbia hamersleyana	5.0	2.0	*Jasminum didymum* subsp. *lineare*	1	0.1
Triodia pungens	0.5	2.0	*Acacia adoxa* var. *adoxa*	0.3	0.1
Androcalva luteiflora	1.2	1.0	*Acacia arida*	0.3	0.1
Ehretia saligna	1.5	1.0	*Acacia pyrifolia* var. *pyrifolia*	0.8	0.1
Gompholobium oreophilum	0.5	1.0	*Bonamia erecta*	0.4	0.1
Grevillea wickhamii subsp. *hispidula*	2.0	1.0	*Hibiscus sturtii* var. *campylochlamys*	0.3	0.1
Petalostylis labicheoides	1.5	1.0	*Ptilotus astrolasius*	0.3	0.1
Eulalia aurea	0.5	0.5	*Triodia wiseana*	0.2	0.1
Acacia hilliana	0.3	0.5			

Site: Q132	Type: Quadrat	Size: 50x50m	Date: 12/10/2023	Botanist: Scott Hitchcock
Landform:	Hill crest; Simple			
Slope & Aspect:	Low; North			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC1			
Condition:	Excellent			
Location:	50 741201 mE 7465948 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.1	20.0	*Corymbia hamersleyana*	1.3	0.5
Acacia hilliana	0.1	8.0	*Bonamia pilbarensis*	0.1	0.1
Hakea chordophylla	3.0	3.0	*Amphipogon sericeus*	0.2	0.1
Corymbia deserticola subsp. *deserticola*	4.0	3.0	*Acacia tumida* var. *pilbarensis*	0.3	0.1
Ptilotus calostachyus	0.5	1.0	*Indigofera monophylla*	0.3	0.1
Acacia adoxa var. *adoxa*	0.2	1.0	*Leiocarpa semicalva* subsp. *semicalva*	0.3	0.1
Corchorus lasiocarpus subsp. *parvus*	0.3	1.0	*Scaevola browniana* subsp. *browniana*	0.1	0.1
Santalum lanceolatum	1.2	1.0	*Senna glutinosa* subsp. *glutinosa*	0.8	0.1
Acacia arida	0.3	0.5	*Senna glutinosa* subsp. *pruinosa*	0.3	0.1
Acacia pruinocarpa	2.0	0.5	*Solanum lasiophyllum*	0.3	0.1
Grevillea wickhamii subsp. *hispidula*	1.4	0.5			

Site: Q133	Type: Quadrat	Size: 50x50m	Date: 12/10/2023	Botanist: Scott Hitchcock
Landform:	Hill crest; Simple			
Slope & Aspect:	Low; North			
Soil:	Loamy Sand			
Rocks:	Basalt			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	FS1			
Condition:	Excellent			
Location:	50 741802 mE 7467425 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	30.0	*Acacia bivenosa*	3	0.5
Triodia wiseana	0.3	10.0	*Acacia elachantha*	1	0.5
Acacia adoxa var. *adoxa*	0.5	1.0	*Grevillea wickhamii* subsp. *hispidula*	1.5	0.5
Acacia dictyophleba	2.0	1.0	*Senna artemisioides* subsp. *oligophylla*	1.2	0.5
Acacia inaequilatera	2.0	1.0	*Fimbristylis dichotoma*	0.1	0.1
Eucalyptus leucophloia subsp. *leucophloia*	6.0	1.0	*Senna glutinosa* subsp. *glutinosa*	1.2	0.1
Goodenia stobbsiana	0.2	0.5			

Site: Q134	Type: Quadrat	Size: 25x100m	Date: 13/10/2023	Botanist: Scott Hitchcock
Landform:	Creek/Riverbed			
Slope & Aspect:	Low; North			
Soil:	Loamy Sand			
Rocks:	Creek stones			
Abundance:	10 -20% Common			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Good			
Location:	50 741459 mE 7469689 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Themeda triandra	0.3	20.0	*Hakea lorea* subsp. *lorea*	3	1
Eremophila longifolia	2.0	20.0	*Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186)	0.3	1
Melaleuca linophylla	3.0	10.0	*Atalaya hemiglauca*	3	1
Acacia tumida var. *pilbarensis*	2.0	5.0	*Triodia pungens*	0.5	1
Androcalva luteiflora	1.0	2.0	**Bidens bipinnata*	0.1	0.1
Petalostylis labicheoides	1.3	2.0	*Amaranthus undulatus*	0.1	0.1
Santalum lanceolatum	1.2	2.0	*Salsola australis*	0.3	0.1
Eucalyptus victrix	6.0	2.0	**Setaria verticillata*	0.1	0.1
Acacia dictyophleba	1.0	1.1	*Duperreya commixta*	1	0.1
Pterocaulon sphacelatum	0.3	1.0	*Acacia bivenosa*	1.5	0.1
**Cenchrus ciliaris*	0.3	1.0	*Clerodendrum floribundum* var. *angustifolium*	2	0.1
Cymbopogon ambiguus	1.0	1.0	*Gossypium robinsonii*	1	0.1
Eriachne mucronata	0.3	1.0	*Indigofera monophylla*	0.6	0.1
Eulalia aurea	0.3	1.0	*Ptilotus obovatus*	0.3	0.1
Acacia sericophylla	3.0	1.0	*Senna artemisioides* subsp. *oligophylla*	1	0.1
Gossypium australe	1.0	1.0			

Site: Q135	Type: Quadrat	Size: 25x100m	Date: 19/10/2023 Resampled: 06/05/2024	Botanist: Adam Crosby-Clark
Landform:	Creek/Riverbed			
Slope & Aspect:	Flat			
Soil:	Sandy clay loam			
Rocks:	Creek stones			
Abundance:	50-90% Abundant			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Poor			
Location:	50 741476 mE 7469668 mN			
Notes:	-			

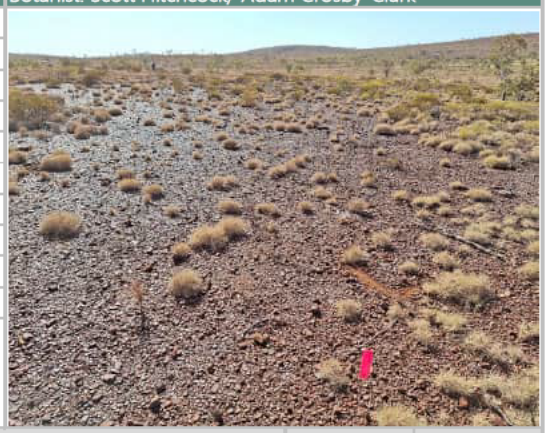
Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia wiseana	0.4	45.0	*Abutilon fraseri* subsp. *fraseri*	1.3	0.1
Santalum acuminatum	2.6	7.0	*Acacia bivenosa*	2.6	0.1
Cymbopogon ambiguus	0.6	5.0	*Acacia coriacea* subsp. *pendens*	0.7	0.1
Themeda triandra	0.3	4.0	*Acacia* sp. indet	2.6	0.1
Acacia pyrifolia var. morrisonii	2.3	4.0	*Androcalva luteiflora*	0.7	0.1
Arivela viscosa	0.3	3.0	*Capparis spinosa* subsp. *nummularia*	0.8	0.1
Eriachne mucronata	0.4	2.0	*Clerodendrum floribundum* var. *angustifolium*	3.1	0.1
Eriachne tenuiculmis	0.4	2.0	*Corchorus lasiocarpus* subsp. *parvus*	0.4	0.1
Acacia arida	0.5	1.1	*Eremophila longifolia*	0.5	0.1
Acacia adoxa var. *adoxa*	0.4	1.0	*Gossypium australe*	0.7	0.1
Acacia ancistrocarpa	2.6	1.0	*Grevillea wickhamii* subsp. *hispidula*	2.6	0.1
Acacia inaequilatera	4.1	1.0	*Hakea lorea* subsp. *lorea*	1.4	0.1
Acacia pruinocarpa	2.3	1.0	*Hibiscus coatesii*	0.2	0.1
Gossypium robinsonii	3.6	1.0	*Senna artemisioides* subsp. *oligophylla*	0.7	0.1
Ptilotus obovatus	0.4	1.0	*Solanum lasiophyllum*	0.3	0.1
Enneapogon robustissimus	0.3	1.0	*Solanum phlomoides*	0.3	0.1
Indigofera monophylla	1.0	1.0	*Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.1
Acacia dictyophleba	2.6	0.4	*Tribulus suberosus*	0.5	0.1
Gomphrena cunninghamii	0.2	0.1	*Cucumis variabilis*	0.2	0.1
Eriachne pulchella subsp. *pulchella*	0.1	0.1	*Alternanthera nana*	0.1	0.1
Duperreya commixta	0.3	0.1	*Polycarpaea longiflora*	0.1	0.1
Jasminum didymum subsp. *lineare*	0.6	0.1	*Boerhavia coccinea*	0.1	0.1
Rhynchosia minima	0.2	0.1	*Eragrostis cumingii*	0.1	0.1
Neurachne muelleri	0.3	0.1	*Paspalidium clementii*	0.1	0.1
Evolvulus alsinoides var. *villosicalyx*	0.1	0.1	*Trichodesma zeylanicum* var. *zeylanicum*	0.1	0.1

Site: Q136	Type: Quadrat	Size: 50x50m	Date: 13/10/2023	Botanist: Scott Hitchcock/ Adam Crosby-Clark
Landform:	Floodplain			
Slope & Aspect:	Flat			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	<6 mm - Fine gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	ME			
Condition:	Poor			
Location:	50 744008 mE 7471949 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.4	40.0	*Trigastrotheca molluginea*	0.1	0.1
**Cenchrus ciliaris*	0.3	10.0	*Duperreya commixta*	0.5	0.1
Corymbia hamersleyana	4.0	4.0	*Chrysopogon fallax*	0.3	0.1
Scaevola spinescens	0.5	3.0	*Themeda triandra*	0.2	0.1
Senna artemisioides subsp. *oligophylla*	0.5	3.0	*Bonamia erecta*	0.2	0.1
Eragrostis eriopoda	0.3	2.0	*Gossypium australe*	0.5	0.1
Acacia pyrifolia var. *morrisonii*	1.3	2.0	*Gossypium robinsonii*	1.5	0.1
Eremophila longifolia	1.5	2.0	*Hakea lorea* subsp. *lorea*	1	0.1
Jasminum didymum subsp. *lineare*	1.2	1.0	*Leiocarpa semicalva* subsp. *semicalva*	0.3	0.1
Acacia dictyophleba	1.0	1.0	*Ptilotus astrolasius*	0.3	0.1
Indigofera monophylla	0.5	1.0	*Santalum lanceolatum*	1.3	0.1
Ptilotus obovatus	0.5	1.0	*Solanum lasiophyllum*	0.1	0.1
Senna artemisioides subsp. *helmsii*	0.5	1.0	*Atalaya hemiglauca*	1	0.1
Eulalia aurea	0.2	0.5			

Site: Q137	Type: Quadrat	Size: 50x50m	Date: 13/10/2023 Resampled: 06/05/2024	Botanist: Scott Hitchcock/Adam Crosby-Clark
Landform:	Lower hill slope			
Slope & Aspect:	Low; North			
Soil:	Sandy clay			
Rocks:	Ironstone			
Abundance:	50-90% Abundant			
Size:	6-20 mm - medium gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	FS1			
Condition:	Very Good			
Location:	50 744614 mE 7473142 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.4	60.0	*Trianthema glossostigmum*	0.1	0.1
Acacia inaequilatera	4.3	4.0	*Cassytha capillaris*	0.3	0.1
Hakea lorea subsp. *lorea*	3.1	4.0	*Ptilotus calostachyus*	0.5	0.1
Acacia tenuissima	2.2	2.1	*Amphipogon sericeus*	0.4	0.1
Acacia ancistrocarpa	2.4	2.0	*Cymbopogon ambiguus*	0.4	0.1
Acacia hilliana	0.4	2.0	*Eriachne mucronata*	0.3	0.1
Triodia schinzii	0.4	2.0	*Acacia melleodora*	1.4	0.1
Acacia bivenosa	2.8	1.0	*Gompholobium oreophilum*	0.4	0.1
Acacia dictyophleba	3.3	1.0	*Goodenia stobbsiana*	0.4	0.1
Goodenia stobbsiana	0.3	1.0	*Indigofera monophylla*	0.3	0.1
Triodia pungens	0.4	1.0	*Leiocarpa semicalva* subsp. *semicalva*	0.2	0.1
Senna artemisioides subsp. *oligophylla*	0.7	0.2	*Senna sericea*	0.8	0.1
Goodenia triodiophila	0.2	0.1	*Sida arenicola*	1.2	0.1
Senna glutinosa subsp. *glutinosa*	2.1	0.1	*Solanum lasiophyllum*	0.3	0.1

Site: Q138	Type: Quadrat	Size: 50x50m	Date: 14/10/2023	Botanist: Scott Hitchcock/ Adam Crosby-Clark
Landform:	Lower hill slope			
Slope & Aspect:	Low; West			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	50-90% Abundant			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC1			
Condition:	Excellent			
Location:	50 738348 mE 7461951 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.2	15.0	*Gompholobium oreophilum*	0.3	0.1
Eucalyptus leucophloia subsp. *leucophloia*	5.0	3.0	*Goodenia stobbsiana*	0.3	0.1
Lamarchea sulcata	0.4	2.0	*Grevillea wickhamii* subsp. *hispidula*	1.0	0.1
Acacia arida	0.3	1.0	*Hakea lorea* subsp. *lorea*	0.2	0.1
Ptilotus calostachyus	0.8	0.5	*Indigofera monophylla*	0.2	0.1
Amphipogon sericeus	0.1	0.2	*Scaevola browniana* subsp. *browniana*	0.1	0.1
Bonamia pilbarensis	0.1	0.1	*Senna artemisioides* subsp. *helmsii*	0.5	0.1
Fimbristylis dichotoma	0.1	0.1	*Senna artemisioides* subsp. *oligophylla*	0.8	0.1
Acacia adoxa var. *adoxa*	0.2	0.1	*Senna glutinosa* subsp. *glutinosa*	0.5	0.1
Acacia hilliana	0.2	0.1	*Sida arenicola*	1.2	0.1
Corchorus lasiocarpus subsp. *parvus*	0.3	0.1	*Corymbia hamersleyana*	0.3	0.1

Site: Q139	Type: Quadrat	Size: 50x50m	Date: 14/10/2023	Botanist: Scott Hitchcock/ Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 742984 mE 7476929 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	20.0	*Duperreya commixta*	0.1	0.1
Eucalyptus gamophylla	2.5	5.0	**Cenchrus ciliaris*	0.2	0.1
Acacia inaequilatera	2.2	2.0	*Abutilon otocarpum*	0.1	0.1
Corymbia hamersleyana	6.0	2.0	*Acacia adsurgens*	1.2	0.1
Acacia pachyacra	1.5	1.0	*Acacia bivenosa*	1.5	0.1
Petalostylis cassioides	1.0	1.0	*Acacia melleodora*	1.3	0.1
Eremophila longifolia	1.0	0.5	*Bonamia erecta*	0.4	0.1
Ptilotus astrolasius	0.3	0.3	*Corchorus elachocarpus*	0.1	0.1
Eragrostis eriopoda	0.3	0.2	*Petalostylis labicheoides*	1	0.1
Ptilotus exaltatus	0.1	0.1	*Senna artemisioides* subsp. *oligophylla*	0.5	0.1
Aristida holathera var. *holathera*	0.1	0.1			

Site: Q140	Type: Quadrat	Size: 25x100m	Date: 14/10/2023 Resampled: 07/05/2024	Botanist: Scott Hitchcock/Adam Crosby-Clark
Landform:	Hill crest; Simple			
Slope & Aspect:	Moderate; West			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 743224 mE 7479117 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	45.0	*Ptilotus rotundifolius*	0.6	0.1
Hakea chordophylla	4.6	3.0	*Senna artemisioides* subsp. *helmsii*	0.4	0.1
Acacia hilliana	0.4	2.0	*Senna artemisioides* subsp. *oligophylla*	1.6	0.1
Eucalyptus leucophloia subsp. *leucophloia*	5.2	2.0	*Senna glutinosa* subsp. *pruinosa*	0.6	0.1
Senna glutinosa subsp. *glutinosa*	2.4	1.1	*Tribulus suberosus*	0.5	0.1
Acacia tenuissima	1.6	0.6	*Goodenia muelleriana*	0.1	0.1
Acacia adoxa var. *adoxa*	0.2	0.2	*Dolichocarpa crouchiana*	0.1	0.1
Ptilotus calostachyus	0.4	0.1	*Euphorbia boophthona*	0.2	0.1
Amphipogon sericeus	0.3	0.1	*Enneapogon lindleyanus*	0.2	0.1
Acacia pruinocarpa	0.5	0.1	*Fimbristylis dichotoma*	0.1	0.1
Goodenia stobbsiana	0.2	0.1	*Sida cardiophylla*	0.1	0.1
Grevillea wickhamii subsp. *hispidula*	0.4	0.1	*Triodia wiseana*	0.4	0.1

Site: Q141	Type: Quadrat	Size: 50x50m	Date: 14/10/2023 Resampled: 07/05/2024	Botanist: Scott Hitchcock/Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay loam			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 741294 mE 7479079 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.5	50.0	*Acacia tenuissima*	0.5	0.1
Eucalyptus gamophylla	3.2	8.0	*Acacia tumida var. pilbarensis*	1.6	0.1
Triodia pungens	0.4	3.0	*Bonamia erecta*	0.3	0.1
Scaevola parvifolia subsp. *pilbarae*	0.3	1.0	*Dicrastylis cordifolia*	0.3	0.1
Eragrostis eriopoda	0.3	0.2	*Dodonaea coriacea*	0.8	0.1
Ptilotus exaltatus	0.3	0.1	*Indigofera georgei*	0.4	0.1
Trigastrotheca molluginea	0.2	0.1	*Leiocarpa semicalva* subsp. *semicalva*	0.3	0.1
Leichhardtia australis	1.4	0.1	*Petalostylis labicheoides*	0.4	0.1
Evolvulus alsinoides var. *villosicalyx*	0.4	0.1	*Ptilotus astrolasius*	0.3	0.1
**Cenchrus ciliaris*	0.3	0.1	*Senna artemisioides* subsp. *helmsii*	0.5	0.1
Neurachne muelleri	0.4	0.1	*Sida* sp. Pilbara (A.A. Mitchell PRP 1543)	0.3	0.1
Themeda triandra	0.3	0.1	*Euphorbia coghlanii*	0.2	0.1
Abutilon otocarpum	0.2	0.1	*Aristida holathera* var. *holathera*	0.2	0.1
Acacia adsurgens	0.8	0.1	*Triodia schinzii*	0.4	0.1

Site: Q142	Type: Quadrat	Size: 50x50m	Date: 15/10/2023	Botanist: Scott Hitchcock
Landform:	Upper hill slope			
Slope & Aspect:	Moderate; South			
Soil:	Loamy Sand			
Rocks:	Shale			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 738856 mE 7475413 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia wiseana	0.3	30	*Amphipogon sericeus*	0.2	0.1
Acacia bivenosa	1.0	10	*Goodenia stobbsiana*	0.2	0.1
Triodia vanleeuwenii	0.3	2	*Hakea chordophylla*	0.6	0.1
Eremophila latrobei subsp. *latrobei*	0.8	1	*Ptilotus astrolasius*	0.2	0.1
Senna glutinosa subsp. *pruinosa*	1.0	1	*Ptilotus rotundifolius*	0.3	0.1
Tribulus suberosus	0.4	1	*Senna glutinosa* subsp. *glutinosa*	1	0.1
Eucalyptus leucophloia subsp. *leucophloia*	5.0	1			

Site: Q143	Type: Quadrat	Size: 50x50m	Date: 15/10/2023 Resampled: 08/05/2024	Botanist: Scott Hitchcock/Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 738154 mE 7473612 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	55.0	*Abutilon otocarpum*	0.4	0.1
Triodia pungens	0.5	5.0	*Acacia adoxa* var. *adoxa*	0.4	0.1
Acacia tumida var. *pilbarensis*	3.8	4.0	*Acacia ancistrocarpa*	0.6	0.1
Gompholobium oreophilum	0.5	4.0	*Acacia dictyophleba*	0.5	0.1
Acacia inaequilatera	2.6	3.0	*Acacia hilliana*	0.4	0.1
Corymbia hamersleyana	4.8	3.0	*Bonamia erecta*	0.3	0.1
Eucalyptus gamophylla	4.0	2.9	*Dicrastylis cordifolia*	0.4	0.1
Acacia pruinocarpa	2.8	1.0	*Grevillea wickhamii* subsp. *hispidula*	0.6	0.1
Dodonaea coriacea	0.4	1.0	*Hakea lorea* subsp. *lorea*	4.6	0.1
Acacia tenuissima	1.3	1.0	*Indigofera georgei*	0.4	0.1
Eucalyptus trivalva	3.0	1.0	*Leiocarpa semicalva* subsp. *semicalva*	0.3	0.1
Acacia bivenosa	1.7	0.4	*Petalostylis labicheoides*	0.6	0.1
Goodenia triodiophila	0.1	0.1	*Ptilotus astrolasius*	0.3	0.1
Trigastrotheca molluginea	0.2	0.1	*Senna artemisioides* subsp. *helmsii*	0.4	0.1
Aristida holathera var. *holathera*	0.3	0.1	*Senna glutinosa* subsp. *glutinosa*	1.6	0.1
Ptilotus calostachyus	0.3	0.1	*Sida arenicola*	0.5	0.1
Scaevola parvifolia subsp. *pilbarae*	0.3	0.1	*Solanum lasiophyllum*	0.3	0.1
Amphipogon sericeus	0.3	0.1	*Tribulus suberosus*	0.4	0.1
Eragrostis eriopoda	0.3	0.1	*Dendrophyllanthus erwinii*	0.1	0.1
Neurachne muelleri	0.3	0.1	*Afrohybanthus aurantiacus*	0.3	0.1
Arivela viscosa	0.1	0.1			

Site: Q144	Type: Quadrat	Size: 50x50m	Date: 15/10/2023	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Basalt			
Abundance:	10 -20% Common			
Size:	6-20 mm - medium gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 734760 mE 7470747 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.3	15.0	*Senna artemisioides* subsp. *oligophylla*	1.0	1.0
Corymbia hamersleyana	7.0	10.0	*Hakea lorea* subsp. *lorea*	1.3	0.5
Bonamia erecta	0.3	8.0	*Eragrostis eriopoda*	0.2	0.2
Eucalyptus gamophylla	4.0	3.0	*Duperreya commixta*	1.0	0.1
Acacia sericophylla	3.0	3.0	*Jasminum didymum* subsp. *lineare*	1.0	0.1
Eriachne mucronata	0.6	2.5	*Vincetoxicum lineare*	1.0	0.1
Aristida holathera var. *holathera*	0.8	1.0	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Enneapogon robustissimus	0.8	1.0	*Ptilotus calostachyus*	0.8	0.1
Neurachne muelleri	0.5	1.0	**Cenchrus ciliaris*	0.3	0.1
Themeda triandra	0.4	1.0	*Aristida inaequiglumis*	1.0	0.1
Acacia adsurgens	1.2	1.0	*Cymbopogon ambiguus*	0.4	0.1
Acacia bivenosa	0.8	1.0	*Acacia ancistrocarpa*	0.8	0.1
Acacia inaequilatera	2.0	1.0	*Acacia pachyacra*	1.0	0.1
Acacia pyrifolia var. *pyrifolia*	1.5	1.0	*Acacia tumida* var. *pilbarensis*	1.0	0.1
Grevillea wickhamii subsp. *hispidula*	2.0	1.0	*Anthobolus leptomerioides*	1.0	0.1
Ptilotus astrolasius	0.3	1.0	*Leiocarpa semicalva* subsp. *semicalva*	0.5	0.1
Senna artemisioides subsp. *helmsii*	1.0	1.0	*Senna glutinosa* subsp. *glutinosa*	1.0	0.1

Site: Q145	Type: Quadrat	Size: 25x100m	Date: 16/10/2023 Resampled: 04/05/2024	Botanist: Scott Hitchcock/Adam Crosby-Clark
Landform:	Drainage line on flat			
Slope & Aspect:	Flat			
Soil:	Sandy Clay Loam			
Rocks:	Creek stones			
Abundance:	10 -20% Common			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Very Good			
Location:	50 732531 mE 7470068 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	3.0	60.0	*Indigofera monophylla*	1	0.2
Arivela viscosa	0.3	3.0	*Ptilotus exaltatus*	0.2	0.1
Themeda triandra	0.5	2.0	*Aristida holathera* var. *holathera*	0.2	0.1
Acacia pyrifolia var. *morrisonii*	2.0	2.0	*Enneapogon robustissimus*	0.3	0.1
Corchorus crozophorifolius	0.5	2.0	*Jasminum didymum* subsp. *lineare*	1	0.1
Petalostylis labicheoides	2.0	2.0	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Afrohybanthus aurantiacus	0.3	2.0	*Neurachne muelleri*	0.3	0.1
Duperreya commixta	1.0	1.0	*Leiocarpa semicalva* subsp. *semicalva*	0.5	0.1
**Cenchrus ciliaris*	0.8	1.0	*Ptilotus obovatus*	1	0.1
Eriachne mucronata	0.4	1.0	*Senna glutinosa* subsp. *glutinosa*	1.3	0.1
Androcalva luteiflora	1.0	1.0	*Senna glutinosa* subsp. *pruinosa*	1	0.1
Gossypium australe	0.8	1.0	*Solanum lasiophyllum*	0.3	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.8	1.0	*Atalaya hemiglauca*	1.3	0.1
Aristida holathera var. *holathera*	0.1	1.0	*Triodia pungens*	0.2	0.1
**Cenchrus ciliaris*	0.4	1.0	*Triodia wiseana*	0.1	0.1

Site: Q146	Type: Quadrat	Size: 50x50m	Date: 16/10/2023	Botanist: Adam Crosby-Clark
Landform:	Creek/Riverbed			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Creek stones			
Abundance:	<2% Very few			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	ME			
Condition:	Poor			
Location:	50 726672 mE 7458079 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Corchorus crozophorifolius	1.0	15	*Acacia bivenosa*	1.3	1.0
Acacia tumida var. *pilbarensis*	2.0	10	*Acacia pruinocarpa*	2.0	1.0
Themeda triandra	0.5	8	*Acacia sericophylla*	2.0	1.0
Eucalyptus victrix	8.0	8	*Androcalva luteiflora*	1.2	1.0
Gossypium robinsonii	2.0	6	*Dodonaea lanceolata* var. *lanceolata*	1.5	1.0
Acacia citrinoviridis	2.0	5	*Indigofera monophylla*	1.2	1.0
Acacia pyrifolia var. *morrisonii*	2.0	4	*Enneapogon robustissimus*	0.8	0.1
Grevillea wickhamii subsp. *hispidula*	2.0	4	*Waltheria indica*	1.0	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	3	*Abutilon lepidum*	0.5	0.1
**Cenchrus ciliaris*	0.3	2	*Ptilotus obovatus*	0.5	0.1
Eriachne mucronata	0.3	2	*Rhagodia eremaea*	1.2	0.1
Cymbopogon ambiguus	0.8	1	*Senna glutinosa* subsp. *glutinosa*	1.2	0.1
Eulalia aurea	0.3	1	*Stylobasium spathulatum*	1.2	0.1

Site: Q147	Type: Quadrat	Size: 40x62.4m	Date: 16/10/2023	Botanist: Adam Crosby-Clark
Landform:	Hill Crest			
Slope & Aspect:	Steep; North			
Soil:	Sandy Clay Loam			
Rocks:	Basalt			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	BO			
Condition:	Excellent			
Location:	50 729632 mE 7465834 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia wiseana	0.4	31.0	*Themeda triandra*	0.3	0.1
Acacia spondylophylla	0.4	10.0	*Acacia dictyophleba*	1.5	0.1
Eriachne mucronata	0.4	3.0	*Eremophila latrobei* subsp. *latrobei*	0.4	0.1
Neurachne muelleri	0.3	2.0	*Gossypium robinsonii*	2.2	0.1
Acacia monticola	1.5	2.0	*Indigofera rugosa*	0.3	0.1
Ptilotus exaltatus	0.3	0.1	*Senna artemisioides* subsp. *helmsii*	0.6	0.1
Ptilotus calostachyus	0.5	0.1	*Senna glutinosa* subsp. x *luerssenii*	1.4	0.1
Cymbopogon ambiguus	0.4	0.1	*Sida* sp. Pilbara (A.A. Mitchell PRP 1543)	0.3	0.1

Site: Q148	Type: Quadrat	Size: 25x100m	Date: 17/10/2023 Resampled: 07/05/2024	Botanist: Scott Hitchcock
Landform:	Creek/Riverbed			
Slope & Aspect:	Low; South			
Soil:	Sandy clay			
Rocks:	Creek stones			
Abundance:	50-90% Abundant			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Very Good			
Location:	50 743543 mE 7481294 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	1.0	30.0	*Euphorbia australis* var. *subtomentosa*	0.1	0.1
**Cenchrus ciliaris*	0.8	3.0	*Polycarpaea corymbosa*	0.1	0.1
Acacia tenuissima	1.5	3.0	*Ptilotus clementii*	0.3	0.1
Eriachne mucronata	0.3	2.0	*Dysphania rhadinostachya* subsp. *rhadinostachya*	0.3	0.1
Gossypium robinsonii	2.0	2.0	*Enneapogon polyphyllus*	0.1	0.1
Grevillea wickhamii subsp. *hispidula*	2.0	2.0	*Swainsona formosa*	0.2	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.3	1.0	*Duperreya commixta*	1	0.1
Cymbopogon ambiguus	0.8	1.0	*Jasminum didymum* subsp. *lineare*	1	0.1
Themeda triandra	0.3	1.0	*Pterocaulon sphacelatum*	0.5	0.1
Acacia adsurgens	2.0	1.0	*Cynanchum floribundum*	0.2	0.1
Acacia bivenosa	2.0	1.0	*Abutilon lepidum*	0.1	0.1
Acacia inaequilatera	2.5	1.0	*Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618)	0.1	0.1
Acacia pruinocarpa	1.8	1.0	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.1
Petalostylis labicheoides	1.2	1.0	*Dicrastylis cordifolia*	0.5	0.1
Ptilotus obovatus	0.5	1.0	*Goodenia scaevolina*	0.5	0.1
Santalum lanceolatum	2.0	1.0	*Hibiscus ?coatesii*	0.2	0.1
Senna glutinosa subsp. *pruinosa*	1.2	1.0	*Senna artemisioides* subsp. *helmsii*	1	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	1.0	*Senna artemisioides* subsp. *oligophylla*	1	0.1
Corymbia hamersleyana	6.0	1.0	*Senna glutinosa* subsp. *glutinosa*	1.2	0.1
Arivela viscosa	0.1	1.0	*Solanum lasiophyllum*	0.3	0.1
Trigastrotheca molluginea	0.1	1.0	*Gomphrena cunninghamii*	0.1	0.1
Enneapogon robustissimus	0.3	1.0	*Triumfetta maconochieana*	0.3	0.1
Paspalidium clementii	0.1	1.0			

Site: Q149	Type: Quadrat	Size: 50x50m	Date: 17/10/2023	Botanist: Scott Hitchcock
Landform:	Undulating plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	FS1			
Condition:	Excellent			
Location:	50 745227 mE 7483575 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	15.0	*Acacia adoxa* var. *adoxa*	0.3	0.1
Triodia pungens	0.3	8.0	*Acacia inaequilatera*	2	0.1
Acacia bivenosa	2.0	5.0	*Dodonaea coriacea*	0.2	0.1
Grevillea wickhamii subsp. *hispidula*	1.5	1.0	*Hakea lorea* subsp. *lorea*	2	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.1	0.1	*Petalostylis cassioides*	1	0.1
Trigastrotheca molluginea	0.1	0.1	*Ptilotus astrolasius*	0.1	0.1
Ptilotus calostachyus	0.3	0.1	*Senna artemisioides* subsp. *oligophylla*	1	0.1
Fimbristylis dichotoma	1.0	0.1			

Site: Q150	Type: Quadrat	Size: 50x50m	Date: 17/10/2023	Botanist: Scott Hitchcock
Landform:	Dune swale			
Slope & Aspect:	Low; South			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Excellent			
Location:	50 745901 mE 7483976 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	1.0	15	*Trigastrotheca molluginea*	0.1	0.1
Acacia dictyophleba	1.8	5	*Aristida holathera* var. *holathera*	0.2	0.1
Acacia ancistrocarpa	1.5	3	*Scaevola parvifolia* subsp. *pilbarae*	0.3	0.1
Corymbia hamersleyana	5.0	2	*Neurachne muelleri*	0.3	0.1
Calytrix carinata	0.3	1	*Acacia sericophylla*	1	0.1
Dodonaea coriacea	1.0	1	*Acacia spondylophylla*	0.5	0.1
Grevillea wickhamii subsp. *hispidula*	1.6	1	*Bonamia erecta*	0.3	0.1
Hakea chordophylla	1.8	1	*Petalostylis cassioides*	1.3	0.1
Leiocarpa semicalva subsp. *semicalva*	0.6	1			

Site: Q151	Type: Quadrat	Size: 50x50m	Date: 17/10/2023	Botanist: Scott Hitchcock
Landform:	Undulating plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Very Good			
Location:	50 747541 mE 7483609 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	0.3	30	*Senna artemisioides* subsp. *oligophylla*	0.5	1
**Cenchrus ciliaris*	0.3	3	*Aristida contorta*	0.1	0.5
Acacia dictyophleba	1.8	3	*Eragrostis eriopoda*	0.3	0.5
Corymbia hamersleyana	5.0	2	*Scaevola parvifolia* subsp. *pilbarae*	0.3	0.1
Aristida holathera var. *holathera*	0.2	1	*Acacia pachyacra*	1.3	0.1
Neurachne muelleri	0.3	1	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.1
Acacia sericophylla	2.0	1	*Solanum lasiophyllum*	0.3	0.1
Corchorus sidoides subsp. *sidoides*	0.3	1			

Site: Q152	Type: Quadrat	Size: 50x50m	Date: 18/10/2023	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	Basalt			
Abundance:	50-90% Abundant			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SS1			
Condition:	Very Good			
Location:	50 748061 mE 7487159 mN			
Notes:	-			

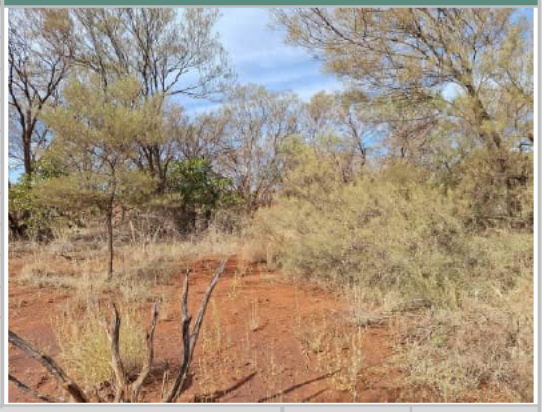
Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.3	20.0	*Acacia inaequilatera*	2.0	0.1
Triodia pungens	0.4	10.0	*Hakea lorea* subsp. *lorea*	3.0	0.1
Acacia pruinocarpa	4.0	3.0	*Indigofera monophylla*	0.3	0.1
**Cenchrus ciliaris*	0.2	1.0	*Senna artemisioides* subsp. *helmsii*	0.8	0.1
Acacia bivenosa	1.2	0.1	*Solanum lasiophyllum*	0.3	0.1

Site: Q153	Type: Quadrat	Size: 50x50m	Date: 18/10/2023	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	6-20 mm - medium gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SP			
Condition:	Very Good			
Location:	50 746275 mE 7486735 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.3	15	**Cenchrus ciliaris*	0.3	0.1
Acacia inaequilatera	3.0	3	*Eragrostis eriopoda*	0.3	0.1
Acacia pachyacra	1.0	1	*Neurachne muelleri*	0.3	0.1
Acacia sclerosperma subsp. *sclerosperma*	1.2	1	*Hibiscus sturtii* var. *campylochlamys*	0.1	0.1
Acacia sericophylla	4.0	1	*Indigofera monophylla*	0.3	0.1
Hakea lorea subsp. *lorea*	5.0	1	*Solanum elatius*	0.1	0.1

Site: Q154	Type: Quadrat	Size: 50x50m	Date: 18/10/2023	Botanist: Scott Hitchcock
Landform:	Floodplain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SS1			
Condition:	Very Good			
Location:	50 748113 mE 7487159 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia macraneura	5.0	30.0	*Duperreya commixta*	1	0.1
Psydrax latifolia	3.0	5.0	*Cheilanthes sieberi* subsp. *sieberi*	0.1	0.1
Chrysopogon fallax	1.0	3.0	*Evolvulus alsinoides* var. *villosicalyx*	0.2	0.1
Dodonaea petiolaris	0.8	2.0	**Cenchrus ciliaris*	0.3	0.1
Eremophila forrestii subsp. *forrestii*	0.8	2.0	*Aristida inaequiglumis*	0.3	0.1
Sclerolaena cornishiana	0.3	1.0	*Abutilon ?oxycarpum* subsp. Prostrate (A.A. Mitchell PRP 1266)	0.5	0.1
Aristida contorta	0.2	1.0	*Acacia ancistrocarpa*	1.5	0.1
Enneapogon polyphyllus	0.1	1.0	*Anthobolus leptomerioides*	1.5	0.1
Sida platycalyx	0.3	1.0	*Hibiscus burtonii*	0.5	0.1
Eulalia aurea	0.3	1.0	*Maireana* sp. indet	0.3	0.1
Acacia pruinocarpa	5.0	1.0	*Ptilotus obovatus*	0.5	0.1
Solanum lasiophyllum	0.3	1.0	*Senna artemisioides* subsp. *helmsii*	1	0.1
Acacia aptaneura	5.0	1.0	*Senna artemisioides* subsp. *oligophylla*	0.3	0.1
Salsola australis	0.3	0.1			

Site: Q158A	Type: Quadrat	Size: 20x125m	Date: 20/10/2023 Resampled: 12/05/2024	Botanist: Scott Hitchcock
Landform:	Drainage line on flat			
Slope & Aspect:	Flat			
Soil:	Sandy Clay Loam			
Rocks:	Creek stones			
Abundance:	10 -20% Common			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Very Good			
Location:	50 749032 mE 7491458 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia incurvaneura	4.0	22.0	*Hakea lorea* subsp. *lorea*	4.0	1.0
Aristida inaequiglumis	1.0	10.0	*Ptilotus obovatus*	0.3	0.1
Acacia aptaneura	5.0	8.0	*Cucumis variabilis*	1	0.1
Sida platycalyx	0.3	5.0	*Sporobolus australasicus*	0.1	0.1
Psydrax latifolia	3.0	3.0	*Eriachne obtusa*	0.4	0.1
Chrysopogon fallax	1.0	2.0	*Maireana planifolia*	0.2	0.1
Eriachne helmsii	0.3	2.0	**Bidens bipinnata*	0.1	0.1
Acacia pruinocarpa	4.0	2.0	*Arivela viscosa*	0.1	0.1
Dodonaea petiolaris	1.2	2.0	*Trichodesma zeylanicum* var. *zeylanicum*	0.3	0.1
Gomphrena affinis subsp. *pilbarensis*	0.1	2.0	*Abutilon lepidum*	0.3	0.1
Abutilon ?oxycarpum subsp. Prostrate (A.A. Mitchell PRP 1266)	0.3	1.1	*Gomphrena cunninghamii*	0.1	0.1
Salsola australis	0.5	1.0	*Pterocaulon sphacelatum*	0.3	0.1
Sclerolaena cornishiana	0.1	1.0	*Acacia synchronicia*	2	0.1
Aristida contorta	0.4	1.0	*Corchorus sidoides* subsp. *sidoides*	0.3	0.1
Aristida holathera var. *holathera*	0.4	1.0	*Hibiscus burtonii*	0.5	0.1
Enneapogon polyphyllus	0.3	1.0	*Rhagodia eremaea*	1	0.1
Enneapogon robustissimus	0.4	1.0	*Senna artemisioides* subsp. *oligophylla*	1	0.1
Duperreya commixta	2.0	1.0	*Senna glutinosa* subsp. *glutinosa*	1	0.1
Cheilanthes sieberi subsp. *sieberi*	0.1	1.0	*Senna glutinosa* subsp. x *luerssenii*	1	0.1
Evolvulus alsinoides var. *villosicalyx*	0.1	1.0	*Senna notabilis*	0.4	0.1
**Cenchrus ciliaris*	0.3	1.0	*Solanum lasiophyllum*	0.3	0.1
Eulalia aurea	0.5	1.0	*Ptilotus gaudichaudii*	0.1	0.1
Anthobolus leptomerioides	2.0	1.0	*Ptilotus helipteroides*	0.1	0.1
Eremophila forrestii subsp. *forrestii*	1.0	1.0			

Site: Q158B	Type: Quadrat	Size: 25x100m	Date: 20/10/2023	Botanist: Scott Hitchcock
Landform:	Drainage line on flat			
Slope & Aspect:	Flat			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Very Good			
Location:	50 749009 mE 7491522 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia pruinocarpa	5.0	1.0	*Acacia synchronicia*	2.0	0.1
Acacia aptaneura	3.0	1.0	*Ptilotus obovatus*	0.4	0.1
Sclerolaena cornishiana	0.1	0.1	*Solanum lasiophyllum*	0.3	0.1

Site: Q159	Type: Quadrat	Size: 50x50m	Date: 20/10/2023	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	50-90% Abundant			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Good			
Location:	50 745912 mE 7493439 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.5	20.0	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Acacia inaequilatera	3.0	8.0	*Eulalia aurea*	0.4	0.1
Acacia pruinocarpa	4.0	8.0	*Acacia synchronicia*	2.0	0.1
**Cenchrus ciliaris*	0.3	5.0	*Acacia tetragonophylla*	1.5	0.1
Sclerolaena cornishiana	0.1	1.0	*Anthobolus leptomerioides*	0.8	0.1
Aristida inaequiglumis	0.6	1.0	*Eremophila forrestii* subsp. *forrestii*	1.3	0.1
Acacia ancistrocarpa	2.0	1.0	*Indigofera monophylla*	0.3	0.1
Hakea lorea subsp. *lorea*	4.0	1.0	*Ptilotus obovatus*	0.6	0.1
Hibiscus sturtii var. *campylochlamys*	0.6	1.0	*Senna glutinosa* subsp. *x luerssenii*	0.8	0.1
Salsola australis	0.3	0.1	*Sida arenicola*	1.3	0.1
Sida platycalyx	0.2	0.1	*Solanum lasiophyllum*	0.6	0.1
Duperreya commixta	1.0	0.1	*Acacia incurvaneura*	3.0	0.1

Site: Q160	Type: Quadrat	Size: 50x50m	Date: 20/10/2023	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Medium Clay			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA3			
Condition:	Good			
Location:	50 740593 mE 7495441 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia synchronicia	3.0	8	*Sida platycalyx*	0.3	1.0
Triodia pungens	0.4	5	*Corymbia hamersleyana*	5.0	1.0
**Cenchrus ciliaris*	0.3	2	*Aristida contorta*	0.1	0.1
Chrysopogon fallax	0.2	2	*Ptilotus obovatus*	0.5	0.1
Acacia incurvaneura	2.5	2	*Rhagodia eremaea*	0.8	0.1
Sclerolaena cornishiana	0.1	1	*Senna artemisioides* subsp. *helmsii*	1.0	0.1

Site: Q161	Type: Quadrat	Size: 15x170m	Date: 21/10/2023 Resampled: 11/05/2024	Botanist: Scott Hitchcock
Landform:	Dune crest			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Good			
Location:	50 728461 mE 7504366 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	0.4	15.0	*Trianthema pilosum*	0.1	0.2
Acacia dictyophleba	3.0	12.0	*Bonamia erecta*	0.3	0.1
**Cenchrus ciliaris*	0.3	8.0	*Solanum lasiophyllum*	0.3	0.1
Triodia basedowii	0.3	1.2	*Ptilotus polystachyus*	0.1	0.1
Eragrostis eriopoda	0.3	1.0	*Aristida holathera* var. *holathera*	0.2	0.1
Crotalaria cunninghamii subsp. *sturtii*	0.8	1.0	*Panicum australiense* var. *australiense*	0.1	0.1
Sida cardiophylla	0.4	0.5	*Corchorus* aff. *elachocarpus*	0.3	0.1
**Cenchrus setiger*	0.3	0.4			

Site: Q162	Type: Quadrat	Size: 15x170m	Date: 21/10/2023	Botanist: Scott Hitchcock
Landform:	Creek/Riverbank			
Slope & Aspect:	Moderate; West			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	MA			
Condition:	Poor			
Location:	50 731951 mE 7501489 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia citrinoviridis	4.0	20	*Hakea lorea* subsp. *lorea*	6.0	1.0
Eucalyptus victrix	10.0	10	*Atalaya hemiglauca*	4.0	1.0
**Cenchrus ciliaris*	0.3	6	*Ptilotus exaltatus*	0.1	0.1
Acacia sericophylla	5.0	1	*Acacia synchronicia*	3.0	0.1

Site: Q163	Type: Quadrat	Size: 50x50m	Date: 21/10/2023	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy Clay Loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Poor			
Location:	50 734166 mE 7499899 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	4.0	15	*Acacia synchronicia*	2.0	1.0
Chrysopogon fallax	0.2	10	*Hakea lorea* subsp. *lorea*	3.0	1.0
**Cenchrus ciliaris*	0.3	4	*Sclerolaena cornishiana*	0.1	0.1
Acacia pruinocarpa	4.0	2	*Acacia inaequilatera*	0.4	0.1

Site: Q167	Type: Quadrat	Size: 50x50m	Date: 21/10/2023 Resampled: 11/05/2024	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Poor			
Location:	50 737155 mE 7498362 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia incurvaneura	7.0	40.0	*Pterocaulon sphacelatum*	0.1	0.1
**Cenchrus ciliaris*	0.5	20.0	*Amyema fitzgeraldii*	5	0.1
Chrysopogon fallax	0.2	10.0	**Vachellia farnesiana*	0.3	0.1
**Cenchrus setiger*	0.3	5.0	*Corchorus sidoides* subsp. *sidoides*	0.1	0.1
Eulalia aurea	0.5	3.0	*Gossypium australe*	0.5	0.1
Acacia pruinocarpa	6.0	3.0	*Rhagodia eremaea*	1	0.1
Acacia inaequilatera	2.0	2.0	*Senna artemisioides* subsp. *helmsii*	0.5	0.1
Acacia synchronicia	1.5	2.0	*Senna artemisioides* subsp. *oligophylla*	1	0.1
Arivela viscosa	0.3	0.5	*Cucumis melo*	0.5	0.1
Sclerolaena cornishiana	0.1	0.2	*Gomphrena affinis* subsp. *pilbarensis*	0.1	0.1
Hakea lorea subsp. *lorea*	2.0	0.2	*Trichodesma zeylanicum* var. *zeylanicum*	0.4	0.1
Indigofera linifolia	0.3	0.2	*Enneapogon polyphyllus*	0.2	0.1
Dactyloctenium radulans	0.2	0.2	*Sporobolus australasicus*	0.1	0.1
Iseilema vaginiflorum	0.2	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Polymeria mollis	0.1	0.2	*Abutilon lepidum*	0.4	0.1
Ipomoea muelleri	1	0.1	*Ptilotus obovatus*	0.4	0.1

Site: Q168	Type: Quadrat	Size: 50x50m	Date: 21/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA1			
Condition:	Excellent			
Location:	50 724170 mE 7506338 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	60.0	*Ptilotus exaltatus*	0.1	0.1
Acacia sclerosperma subsp. *sclerosperma*	1.9	12.0	*Scaevola parvifolia* subsp. *pilbarae*	0.1	0.1
Eucalyptus gamophylla	4.0	6.0	*Eragrostis eriopoda*	0.3	0.1
Stylobasium spathulatum	1.0	1.0	*Bonamia erecta*	0.3	0.1
Acacia pachyacra	1.0	0.3	*Dicrastylis cordifolia*	0.3	0.1
Acacia sericophylla	3.0	0.3			

Site: Q169	Type: Quadrat	Size: 50x50m	Date: 21/10/2023 Resampled: 11/05/2024	Botanist: Adam Crosby-Clark
Landform:	Dune swale			
Slope & Aspect:	Low; East			
Soil:	Clayey sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA3			
Condition:	Poor			
Location:	50 725704 mE 7506465 mN			
Notes:	Quadrat resampled in phase 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	28.0	Acacia pachyacra	2.4	0.2
Acacia sclerosperma subsp. sclerosperma	2.4	7.0	Acacia tetragonophylla	1.2	0.1
**Cenchrus ciliaris*	0.3	6.0	Enchylaena tomentosa var. tomentosa	0.3	0.1
Acacia synchronicia	2.7	4.0	Ptilotus obovatus	0.4	0.1
Acacia aneura	4.8	2.0	Senna artemisioides subsp. helmsii	0.4	0.1
Eremophila longifolia	0.6	1.0	Solanum lasiophyllum	0.3	0.1
Rhagodia eremaea	1.0	1.0	Tribulus macrocarpus	0.1	0.1
Senna artemisioides subsp. oligophylla	0.1	1.0	Hibiscus sturtii var. *campylochlamys*	0.1	0.1
Acacia coriacea subsp. pendens	3.2	0.3	Indigofera monophylla	0.1	0.1

Site: Q170	Type: Quadrat	Size: 20x125m	Date: 21/10/2023	Botanist: Melissa Hay
Landform:	Dune crest			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Good			
Location:	50 726089 mE 7506078 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	0.5	35.0	*Hibiscus brachychlaenus*	1.5	0.1
Acacia dictyophleba	2.5	8.0	*Scaevola parvifolia* subsp. *pilbarae*	0.3	0.1
Triodia basedowii	0.5	5.0	*Eragrostis eriopoda*	0.3	0.1
Crotalaria cunninghamii subsp. *sturtii*	1.0	2.0	*Acacia pachyacra*	1.0	0.1
Corchorus sidoides subsp. *sidoides*	0.3	0.5	*Acacia sericophylla*	3.0	0.1
Stylobasium spathulatum	1.2	0.5	*Bonamia erecta*	0.1	0.1
Aristida holathera var. *holathera*	0.3	0.1	*Senna notabilis*	0.3	0.1
Eriachne aristidea	0.3	0.1	*Sida cardiophylla*	1.2	0.1

Site: Q174	Type: Quadrat	Size: 50x50m	Date: 20/10/2023 Resampled: 12/05/2024	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey sand			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Excellent			
Location:	50 749347 mE 7493008 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.4	65.0	*Dodonaea petiolaris*	0.4	0.1
Acacia pruinocarpa	4.6	4.0	*Hakea lorea* subsp. *lorea*	1.2	0.1
Acacia inaequilatera	4.1	3.0	*Hibiscus sturtii* var. *campylochlamys*	0.4	0.1
Acacia incurvaneura	4.8	3.0	*Ptilotus astrolasius*	0.4	0.1
Acacia ancistrocarpa	3.8	1.2	*Ptilotus obovatus*	1.2	0.1
Duperreya commixta	2.2	0.4	*Senna glutinosa* subsp. *glutinosa*	1.2	0.1
Eremophila forrestii subsp. *forrestii*	0.6	0.2	*Solanum lasiophyllum*	0.4	0.1
Eragrostis eriopoda	0.3	0.2	*Cucumis variabilis*	0.5	0.1
Indigofera monophylla	0.2	0.2	*Rhynchosia minima*	0.2	0.1
Eremophila jucunda subsp. *pulcherrima*	0.8	0.1	*Digitaria brownii*	0.3	0.1
Ptilotus exaltatus	0.3	0.1	*Arivela viscosa*	0.2	0.1
Trichodesma zeylanicum var. *zeylanicum*	1.2	0.1	*Euphorbia australis* var. *hispidula*	0.2	0.1
Aristida holathera var. *holathera*	0.2	0.1	*Enneapogon polyphyllus*	0.2	0.1
Enneapogon robustissimus	0.2	0.1	*Jasminum didymum* subsp. *lineare*	0.4	0.1
Evolvulus alsinoides var. *villosicalyx*	0.2	0.1	*Abutilon lepidum*	0.2	0.1
Ptilotus calostachyus	0.5	0.1	*Tephrosia* sp. Newman (A.A. Mitchell PRP 29)	0.2	0.1
Aristida inaequiglumis	0.5	0.1	*Corchorus* sp. indet	0.3	0.1
Neurachne muelleri	0.3	0.1	*Senna notabilis*	0.1	0.1

Site: Q175	Type: Quadrat	Size: 50x50m	Date: 20/10/2023 Resampled: 12/05/2024	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Excellent			
Location:	50 748759 mE 7493232 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	5.0	50.0	*Aristida contorta*	0.1	0.1
Acacia pruinocarpa	6.0	5.0	*Cheilanthes sieberi* subsp. *sieberi*	0.1	0.1
Psydrax latifolia	1.9	4.0	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Acacia incurvaneura	4.0	3.0	**Cenchrus ciliaris*	0.3	0.1
Dodonaea petiolaris	1.2	2.0	*Aristida inaequiglumis*	0.3	0.1
Arivela viscosa	0.1	2.0	*Eriachne helmsii*	0.3	0.1
Abutilon fraseri subsp. *fraseri*	0.2	2.0	*Abutilon* sp. indet	0.1	0.1
Enneapogon polyphyllus	0.1	1.0	*Corchorus sidoides* subsp. *sidoides*	0.2	0.1
Cucumis variabilis	1.0	1.0	*Eremophila forrestii* subsp. *forrestii*	1.0	0.1
Chrysopogon fallax	0.3	1.0	*Ptilotus obovatus*	0.3	0.1
Eriachne mucronata	0.2	1.0	*Anthobolus leptomerioides*	2.0	0.1
Gomphrena affinis subsp. *pilbarensis*	0.1	1.0	**Bidens bipinnata*	0.1	0.1
Sida platycalyx	0.1	1.0	*Abutilon lepidum*	0.1	0.1
Sida sp. L (A.M. Ashby 4202)	0.2	0.2	*Triodia pungens*	0.3	0.1
Duperreya commixta	1.0	0.1	*Sclerolaena cornishiana*	0.2	0.1

Site: Q176	Type: Quadrat	Size: 50x50m	Date: 20/10/2023	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SS1			
Condition:	Excellent			
Location:	50 743016 mE 7495261 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.4	60.0	*Hakea lorea* subsp. *lorea*	1.4	0.3
Acacia inaequilatera	1.6	0.7	*Acacia dictyophleba*	0.8	0.2
Acacia pruinocarpa	1.6	0.7	*Acacia sclerosperma* subsp. *sclerosperma*	1.4	0.2
Acacia synchronicia	1.4	0.6			

Site: Q177	Type: Quadrat	Size: 50x50m	Date: 20/10/2023 Resampled: 11/05/2024	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Medium Clay			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Very Good			
Location:	50 742326 mE 7495774 mN			
Notes:	Quadrat resampled in Survey 2.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia macraneura	5.0	60.0	*Eulalia aurea*	0.3	0.1
Paspalidium rarum	0.2	20.0	*Abutilon* sp. indet	0.1	0.1
Chrysopogon fallax	0.3	6.0	*Hakea lorea* subsp. *lorea*	1	0.1
Psydrax latifolia	1.5	4.0	*Ptilotus obovatus*	0.3	0.1
Eremophila forrestii subsp. *forrestii*	1.0	0.5	*Solanum lasiophyllum*	0.1	0.1
Acacia synchronicia	2.0	0.3	*Ptilotus fusiformis*	0.1	0.1
Arivela viscosa	0.3	0.3	**Bidens bipinnata*	0.1	0.1
Euploca cunninghamii	0.2	0.2	*Euphorbia coghlanii*	0.2	0.1
Ptilotus helipteroides	0.1	0.2	*Gomphrena affinis* subsp. *pilbarensis*	0.1	0.1
Aristida inaequiglumis	0.3	0.2	*Dactyloctenium radulans*	0.1	0.1
Aristida contorta	0.1	0.1	*Enneapogon polyphyllus*	0.1	0.1
Enneapogon polyphyllus	0.1	0.1	*Iseilema vaginiflorum*	0.1	0.1
Cheilanthes sieberi subsp. *sieberi*	0.2	0.1	*Sporobolus australasicus*	0.1	0.1
Evolvulus alsinoides var. *villosicalyx*	0.1	0.1	*Eragrostis setifolia*	0.3	0.1
Eragrostis xerophila	0.3	0.1	*Abutilon otocarpum*	0.3	0.1

Site: Q179	Type: Quadrat	Size: 50x50m	Date: 20/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA3			
Condition:	Good			
Location:	50 739623 mE 7496657 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus setiger*	0.3	20.0	*Sclerolaena cornishiana*	0.3	0.1
Triodia pungens	0.4	18.0	*Chrysopogon fallax*	0.1	0.1
**Cenchrus ciliaris*	0.3	13.0	*Acacia elachantha*	2.0	0.1
Acacia synchronicia	3.0	6.0	*Eremophila longifolia*	1.0	0.1
Acacia aptaneura	5.0	6.0	*Ptilotus obovatus*	0.5	0.1
Acacia pruinocarpa	5.0	4.0	*Senna artemisioides* subsp. *oligophylla*	0.3	0.1
Hakea lorea subsp. *lorea*	2.0	0.2			

Site: Q212	Type: Quadrat	Size: 40x62.4m	Date: 4/05/2024	Botanist: Tia Berard, Zane Gates
Landform:	Hill crest; Ridge			
Slope & Aspect:	Moderate; Northeast			
Soil:	Clayey sand			
Rocks:	Basalt			
Abundance:	50-90% Abundant			
Size:	200-600 mm - Stones			
Fire:	Old (6+ yr)			
Vegetation:	BO			
Condition:	Excellent			
Location:	50 730678 mE 7465502 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.5	20.0	*Euphorbia biconvexa*	0.3	0.1
Triodia wiseana	0.3	15.0	*Euphorbia boophthona*	0.2	0.1
Senna glutinosa subsp. *glutinosa*	1.4	10.0	*Striga curviflora*	0.2	0.1
Aristida contorta	0.2	5.0	*Aristida holathera* var. *holathera*	0.3	0.1
Themeda triandra	0.5	3.0	*Sporobolus australasicus*	0.1	0.1
Senna artemisioides subsp. *oligophylla*	1.3	3.0	*Rhynchosia minima*	0.2	0.1
Hakea chordophylla	2.0	3.0	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Eriachne mucronata	0.4	2.0	*Goodenia microptera*	0.3	0.1
Gossypium australe	1.0	2.0	*Goodenia muelleriana*	0.2	0.1
Arivela viscosa	0.3	1.5	*Euphorbia vaccaria* var. *erucoides*	0.1	0.1
Acacia bivenosa	1.0	1.0	*Cymbopogon ambiguus*	0.5	0.1
Acacia inaequilatera	1.5	1.0	*Acacia elachantha*	1	0.1
Ptilotus astrolasius	1.0	0.5	*Acacia maitlandii*	1.2	0.1
Ptilotus auriculifolius	0.4	0.5	*Acacia tenuissima*	1.2	0.1
Indigofera rugosa	0.7	0.3	*Eremophila latrobei* subsp. *latrobei*	1.3	0.1
Tribulus hirsutus	0.1	0.2	*Senna notabilis*	0.3	0.1
Neurachne muelleri	0.4	0.2	*Tephrosia densa*	0.3	0.1
Senna glutinosa subsp. *pruinosa*	1.2	0.2	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.1
Enneapogon robustissimus	0.3	0.1	*Grevillea wickhamii* subsp. *hispidula*	1.5	0.1
Eremophila fraseri subsp. *fraseri*	0.8	0.1			

Site: Q214	Type: Quadrat	Size: 50x50m	Date: 4/05/2024	Botanist: Adam Crosby-Clark
Landform:	Floodplain			
Slope & Aspect:	Low; Northwest			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	10 -20% Common			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	ME			
Condition:	Poor			
Location:	50 734165 mE 7470063 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.6	65.0	*Ptilotus obovatus*	0.5	0.2
Triodia wiseana	0.6	6.0	*Ptilotus auriculifolius*	0.2	0.2
Acacia pyrifolia var. *morrisonii*	1.8	3.5	*Eriachne mucronata*	0.4	0.2
Grevillea wickhamii subsp. *hispidula*	2.0	2.1	*Afrohybanthus aurantiacus*	0.2	0.2
Senna artemisioides subsp. *oligophylla*	4.5	2.0	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.2
Corymbia hamersleyana	4.8	2.0	*Gossypium australe*	0.6	0.2
Acacia pruinocarpa	1.5	1.7	*Senna glutinosa* subsp. *pruinosa*	1.4	0.2
Atalaya hemiglauca	1.7	0.6	*Euploca cunninghamii*	0.1	0.1
Acacia citrinoviridis	1.7	0.4	*Trichodesma zeylanicum* var. *zeylanicum*	0.3	0.1
Gossypium robinsonii	2.2	0.4	*Boerhavia coccinea*	0.2	0.1
Acacia tumida var. *pilbarensis*	2.4	0.3	*Tragus australianus*	0.1	0.1
Senna artemisioides subsp. *helmsii*	0.5	0.3	*Portulaca intraterranea*	0.1	0.1
Arivela viscosa	0.2	0.3	*Stylobasium spathulatum*	0.2	0.1
Jasminum didymum subsp. *lineare*	0.7	0.2	*Gomphrena cunninghamii*	0.3	0.1
Eragrostis eriopoda	0.3	0.2	*Ptilotus fusiformis*	0.3	0.1
Indigofera monophylla	0.3	0.2	*Tribulus suberosus*	0.2	0.1
Ptilotus astrolasius	0.3	0.2			

Site: Q217	Type: Quadrat	Size: 50x50m	Date: 4/05/2024	Botanist: Adam Crosby-Clark
Landform:	Hill crest; Simple			
Slope & Aspect:	Low; Northwest			
Soil:	Clayey sand			
Rocks:	Basalt			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	BO			
Condition:	Excellent			
Location:	50 730272 mE 7465921 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Ptilotus auriculifolius	0.4	1.5	*Striga curviflora*	0.1	0.1
Tribulus hirsutus	0.1	0.4	*Enneapogon polyphyllus*	0.1	0.1
Arivela viscosa	0.3	0.3	*Paspalidium clementii*	0.1	0.1
Euphorbia boophthona	0.2	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Euploca inexplicita	0.1	0.2	*Goodenia microptera*	0.1	0.1
Gomphrena cunninghamii	0.2	0.2	*Goodenia muelleriana*	0.2	0.1
Enneapogon caerulescens	0.2	0.2	*Tephrosia densa*	0.2	0.1
Euphorbia vaccaria var. *erucoides*	0.1	0.2	*Abutilon lepidum*	0.2	0.1
Dolichocarpa crouchiana	0.2	0.1			

Site: Q218	Type: Quadrat	Size: 50x50m	Date: 6/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy Loam			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP2			
Condition:	Excellent			
Location:	50 744408 mE 7473609 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	0.5	25.0	*Acacia adoxa* var. *adoxa*	0.4	0.2
Triodia pungens	1.0	10.0	*Bonamia erecta*	0.3	0.2
Androcalva loxophylla	1.0	5.0	*Grevillea wickhamii* subsp. *hispidula*	2.0	0.2
Acacia sericophylla	1.6	3.0	*Trigastrotheca molluginea*	0.1	0.1
Eucalyptus socialis subsp. *eucentrica*	2.0	3.0	*Rhynchosia minima*	0.2	0.1
Corymbia hamersleyana	2.0	3.0	*Eulalia aurea*	0.3	0.1
Acacia bivenosa	1.5	2.0	*Ptilotus obovatus*	0.5	0.1
Acacia tumida var. *pilbarensis*	2.3	1.0	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Acacia ancistrocarpa	1.0	1.0	*Acacia inaequilatera*	0.5	0.1
Chrysopogon fallax	0.3	0.5	*Hakea chordophylla*	1.0	0.1
Acacia dictyophleba	1.6	0.5	*Melhania oblongifolia*	0.3	0.1
Senna artemisioides subsp. *oligophylla*	1.1	0.3	*Petalostylis labicheoides*	0.7	0.1
Jasminum didymum subsp. *lineare*	1.2	0.2	*Senna glutinosa* subsp. x *luerssenii*	1.7	0.1

Site: Q219	Type: Quadrat	Size: 50x50m	Date: 7/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey sand			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 745496 mE 7481073 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Eucalyptus gamophylla	1.8	0.4	*Trichodesma zeylanicum* var. *zeylanicum*	0.5	0.1
Aristida holathera var. *holathera*	0.2	0.2	*Ptilotus calostachyus*	0.6	0.1
Aristida inaequiglumis	0.5	0.2	*Corchorus* aff. *elachocarpus*	0.4	0.1
Cymbopogon obtectus	1.0	0.1	*Senna notabilis*	0.1	0.1

Site: Q224	Type: Quadrat	Size: 50x50m	Date: 6/05/2024	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Low; North			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SS1			
Condition:	Excellent			
Location:	50 742652 mE 7475193 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.3	36.0	*Solanum lasiophyllum*	0.4	0.3
Acacia bivenosa	2.3	5.0	*Aristida inaequiglumis*	0.3	0.2
Acacia inaequilatera	2.6	2.6	*Petalostylis cassioides*	0.4	0.2
Eucalyptus leucophloia subsp. *leucophloia*	6.3	2.1	*Scaevola spinescens*	0.4	0.2
Corymbia hamersleyana	5.2	1.8	*Ptilotus obovatus*	0.3	0.2
Acacia sibirica	1.6	1.2	*Senna artemisioides* subsp. *helmsii*	0.5	0.2
Acacia tenuissima	1.4	0.6	*Panicum australiense* var. *australiense*	0.1	0.1
Grevillea wickhamii subsp. *hispidula*	2.4	0.6	*Euphorbia australis* var. *hispidula*	0.1	0.1
Santalum lanceolatum	1.8	0.5	*Aristida holathera* var. *holathera*	0.1	0.1
Acacia elachantha	1.9	0.4	*Trichodesma zeylanicum* var. *zeylanicum*	0.2	0.1
Acacia dictyophleba	1.4	0.3	*Arivela viscosa*	0.1	0.1
Acacia tumida var. *pilbarensis*	2.2	0.3	*Abutilon lepidum*	0.2	0.1
Hakea lorea subsp. *lorea*	2.4	0.3	*Sida cardiophylla*	0.2	0.1

Site: Q225	Type: Quadrat	Size: 50x50m	Date: 7/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	10 -20% Common			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Excellent			
Location:	50 745932 mE 7485220 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	35.0	*Ptilotus exaltatus*	0.1	0.1
Eucalyptus gamophylla	2.5	6.0	*Boerhavia coccinea*	0.1	0.1
Acacia bivenosa	1.6	5.0	*Trianthema pilosum*	0.1	0.1
Acacia inaequilatera	1.5	4.0	*Enneapogon polyphyllus*	0.3	0.1
Acacia ancistrocarpa	1.2	3.5	*Panicum australiense* var. *australiense*	0.1	0.1
Arivela viscosa	0.3	3.0	*Paspalidium clementii*	0.1	0.1
Corymbia hamersleyana	3.0	3.0	*Duperreya commixta*	0.4	0.1
Senna notabilis	0.2	2.0	**Cenchrus ciliaris*	0.3	0.1
Acacia sericophylla	1.7	1.0	*Sida echinocarpa*	0.3	0.1
Aristida holathera var. *holathera*	0.3	0.5	*Ptilotus helipteroides*	0.1	0.1
Eriachne aristidea	0.3	0.5	*Tribulus hirsutus*	0.1	0.1
Euphorbia coghlanii	0.3	0.3	*Neurachne muelleri*	0.3	0.1
Acacia melleodora	1.5	0.2	*Corchorus* aff. *elachocarpus*	0.3	0.1
Goodenia vilmoriniae	0.3	0.1	*Indigofera monophylla*	0.4	0.1
Gomphrena affinis subsp. *pilbarensis*	0.2	0.1	*Sida arenicola*	0.2	0.1

Site: Q226	Type: Quadrat	Size: 50x50m	Date: 6/05/2024	Botanist: Tia Berard
Landform:	Mid hill slope			
Slope & Aspect:	Moderate; West			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC1			
Condition:	Excellent			
Location:	50 742678 mE 7475865 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia wiseana	0.3	20.0	*Grevillea wickhamii* subsp. *hispidula*	1.3	0.5
Acacia hilliana	0.4	10.0	*Ptilotus rotundifolius*	0.7	0.2
Triodia pungens	0.4	5.0	*Corymbia hamersleyana*	1.4	0.2
Eucalyptus leucophloia subsp. *leucophloia*	3.0	5.0	*Goodenia triodiophila*	0.3	0.1
Senna glutinosa subsp. *pruinosa*	1.2	2.0	*Eriachne lanata*	0.4	0.1
Senna glutinosa subsp. x *luerssenii*	1.2	2.0	*Acacia ancistrocarpa*	0.7	0.1
Eriachne mucronata	0.3	1.0	*Acacia sibirica*	1.5	0.1
Acacia pruinocarpa	1.3	1.0	*Acacia tumida* var. *pilbarensis*	1.2	0.1
Acacia monticola	1.5	0.5	*Eremophila latrobei* subsp. *latrobei*	1.1	0.1
Acacia adoxa var. *adoxa*	0.5	0.5	*Indigofera monophylla*	0.3	0.1

Site: Q227	Type: Quadrat	Size: 50x50m	Date: 8/05/2024	Botanist: Zane Gates
Landform:	Creek/Riverbed			
Slope & Aspect:	Low; Northwest			
Soil:	Sand			
Rocks:	Creek stones			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 739240 mE 7476080 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	3.0	30.0	*Fimbristylis simulans*	0.1	0.1
Themeda triandra	0.6	10.0	*Rhynchosia minima*	0.2	0.1
Gomphrena cunninghamii	0.2	3.0	*Dendrophyllanthus erwinii*	0.1	0.1
Eriachne mucronata	0.5	3.0	*Evolvulus alsinoides* var. *villosicalyx*	0.2	0.1
Eriachne benthamii	0.6	1.0	*Goodenia muelleriana*	0.1	0.1
Eulalia aurea	0.9	1.0	*Polymeria mollis*	0.1	0.1
Arivela viscosa	0.5	1.0	*Eragrostis eriopoda*	0.4	0.1
Enneapogon polyphyllus	0.2	1.0	*Afrohybanthus aurantiacus*	0.2	0.1
Gossypium robinsonii	2.0	1.0	*Euphorbia coghlanii*	0.1	0.1
Triodia pungens	0.9	0.5	*Aristida holathera* var. *holathera*	0.2	0.1
Bonamia erecta	0.4	0.5	*Jasminum didymum* subsp. *lineare*	0.1	0.1
Neurachne muelleri	0.3	0.5	*Goodenia microptera*	0.3	0.1
Androcalva luteiflora	1.2	0.5	*Tephrosia* sp. Newman (A.A. Mitchell PRP 29)	0.2	0.1
Grevillea wickhamii subsp. *hispidula*	2.0	0.5	*Tribulus hirsutus*	0.1	0.1
Indigofera georgei	1.0	0.2	*Abutilon lepidum*	0.3	0.1
Senna artemisioides subsp. *oligophylla*	1.5	0.2	*Acacia pachyacra*	1.2	0.1
Indigofera monophylla	0.5	0.2	*Corchorus lasiocarpus* subsp. *parvus*	0.5	0.1
Dolichocarpa crouchiana	0.1	0.1	*Ptilotus obovatus*	0.5	0.1
Ptilotus auriculifolius	0.3	0.1	*Sida* ?sp. Articulation below (A.A. Mitchell PRP 1605)	0.6	0.1
Trigastrotheca molluginea	0.1	0.1	*Solanum gabrielae*	0.5	0.1

Site: Q228	Type: Quadrat	Size: 50x50m	Date: 4/05/2024	Botanist: Tia Berard, Zane Gates
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Very Good			
Location:	50 734913 mE 7471337 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.5	30.0	*Acacia inaequilatera*	1.2	0.2
Acacia ancistrocarpa	1.0	10.0	*Grevillea wickhamii* subsp. *hispidula*	0.6	0.2
Bonamia erecta	0.3	5.0	*Senna artemisioides* subsp. *oligophylla*	0.8	0.2
Eucalyptus gamophylla	2.1	3.0	*Aristida inaequiglumis*	0.5	0.1
Petalostylis labicheoides	0.4	3.0	*Eragrostis eriopoda*	0.3	0.1
Neurachne muelleri	0.3	2.0	*Acacia adsurgens*	0.4	0.1
Eriachne mucronata	0.4	1.5	*Acacia hilliana*	0.5	0.1
Scaevola parvifolia subsp. *pilbarae*	0.3	1.0	*Afrohybanthus aurantiacus*	0.3	0.1
Acacia adoxa var. *adoxa*	0.5	1.0	*Indigofera monophylla*	0.3	0.1
Acacia tumida var. *pilbarensis*	2.0	1.0	*Acacia tenuissima*	1.0	0.1
Hakea chordophylla	1.5	0.3	*Gossypium australe*	0.8	0.1

Site: Q229	Type: Quadrat	Size: 50x50m	Date: 8/05/2024	Botanist: Adam Crosby-Clark
Landform:	Hill crest; Simple			
Slope & Aspect:	Moderate; Northwest			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 739429 mE 7474383 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	45.0	*Dodonaea coriacea*	0.3	0.2
Acacia hilliana	0.4	35.0	*Acacia inaequilatera*	1.7	0.2
Eucalyptus leucophloia subsp. *leucophloia*	5.4	3.2	*Ptilotus rotundifolius*	0.4	0.2
Acacia bivenosa	2.1	1.2	*Senna artemisioides* subsp. *helmsii*	0.4	0.2
Triodia wiseana	0.3	1.1	*Senna glutinosa* subsp. *pruinosa*	1.4	0.2
Hakea lorea subsp. *lorea*	2.3	0.3	*Goodenia triodiophila*	0.2	0.1
Senna glutinosa subsp. *glutinosa*	1.2	0.3	*Fimbristylis dichotoma*	0.1	0.1

Site: Q230	Type: Quadrat	Size: 50x50m	Date: 6/05/2024	Botanist: Zane Gates
Landform:	Hill crest; Simple			
Slope & Aspect:	Low; North			
Soil:	Sandy clay			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 743309 mE 7477536 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.5	40.0	*Ptilotus rotundifolius*	0.4	0.2
Acacia bivenosa	3.0	12.0	*Senna glutinosa* subsp. x *luerssenii*	1.2	0.2
Acacia inaequilatera	3.0	1.5	*Tribulus suberosus*	0.5	0.2
Eucalyptus leucophloia subsp. *leucophloia*	4.0	1.0	*Trachymene oleracea* subsp. *oleracea*	0.1	0.1
Grevillea wickhamii subsp. *hispidula*	1.1	1.0	*Schizachyrium fragile*	0.1	0.1
Acacia pruinocarpa	2.0	0.5	*Goodenia microptera*	0.3	0.1
Senna glutinosa subsp. *pruinosa*	1.1	0.5	*Fimbristylis dichotoma*	0.1	0.1
Hakea chordophylla	2.0	0.5	*Goodenia stobbsiana*	0.1	0.1
Triodia wiseana	0.5	0.5	*Senna artemisioides* subsp. *oligophylla*	1.1	0.1
Fimbristylis simulans	0.5	0.3	*Senna notabilis*	0.1	0.1
Acacia hilliana	0.4	0.2	*Sida arenicola*	0.5	0.1
Acacia pachyacra	1.2	0.2			

Site: Q231	Type: Quadrat	Size: 50x50m	Date: 8/05/2024	Botanist: Tia Berard
Landform:	Hill crest; Simple			
Slope & Aspect:	Low; Southeast			
Soil:	Loam			
Rocks:	Shale			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 738918 mE 7475375 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	35.0	*Grevillea wickhamii* subsp. *hispidula*	0.4	0.2
Eucalyptus leucophloia subsp. *leucophloia*	4.0	4.0	*Senna artemisioides* subsp. *oligophylla*	0.4	0.2
Acacia bivenosa	1.0	3.0	*Goodenia triodiophila*	0.3	0.1
Senna glutinosa subsp. x *luerssenii*	1.0	2.5	*Goodenia stobbsiana*	0.2	0.1
Senna glutinosa subsp. *pruinosa*	1.2	1.0	*Ptilotus calostachyus*	0.5	0.1
Tribulus suberosus	0.6	0.5	*Acacia hilliana*	0.3	0.1
Fimbristylis simulans	0.1	0.3	*Hakea chordophylla*	0.5	0.1
Ptilotus rotundifolius	0.5	0.3	*Ptilotus astrolasius*	0.2	0.1

Site: Q232	Type: Quadrat	Size: 50x50m	Date: 8/05/2024	Botanist: Tia Berard, Zane Gates
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Very Good			
Location:	50 740484 mE 7478300 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	30.0	*Acacia dictyophleba*	0.6	0.1
Triodia pungens	0.4	5.0	*Solanum lasiophyllum*	0.5	0.1
Acacia inaequilatera	2.0	5.0	*Trigastrotheca molluginea*	0.1	0.1
Acacia pachyacra	1.6	3.0	*Dicrastylis cordifolia*	0.2	0.1
Senna artemisioides subsp. *oligophylla*	1.0	3.0	*Gossypium australe*	0.9	0.1
Solanum elatius	0.8	0.2	*Petalostylis cassioides*	0.6	0.1
Acacia ancistrocarpa	0.7	0.2	*Ptilotus obovatus*	0.6	0.1
Bonamia erecta	0.2	0.2			

Site: Q233	Type: Quadrat	Size: 50x50m	Date: 7/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 746392 mE 7481399 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	20.0	*Euploca pachyphylla*	0.4	0.1
Acacia bivenosa	2.3	15.0	*Ptilotus calostachyus*	0.4	0.1
Triodia pungens	0.4	10.0	*Eriachne mucronata*	0.3	0.1
Acacia pruinocarpa	2.3	5.0	*Dicrastylis cordifolia*	0.6	0.1
Neurachne muelleri	0.3	3.0	*Tribulus suberosus*	0.6	0.1
Grevillea wickhamii subsp. *hispidula*	1.6	1.0	*Trigastrotheca molluginea*	0.1	0.1
Acacia sericophylla	1.0	0.3	*Eragrostis eriopoda*	0.4	0.1
Cassytha capillaris	0.4	0.2	*Acacia adoxa* var. *adoxa*	0.4	0.1
Afrohybanthus aurantiacus	0.6	0.2	*Indigofera monophylla*	0.3	0.1
Acacia ancistrocarpa	1.0	0.2	*Senna artemisioides* subsp. *oligophylla*	1.0	0.1
Acacia tumida var. *pilbarensis*	1.6	0.2	*Senna glutinosa* subsp. *pruinosa*	1.3	0.1
Senna glutinosa subsp. x *luerssenii*	1.3	0.2	*Triodia schinzii*	0.5	0.1

Site: Q234	Type: Quadrat	Size: 50x50m	Date: 7/05/2024	Botanist: Adam Crosby-Clark
Landform:	Mid hill slope			
Slope & Aspect:	Steep; Southeast			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	FS1			
Condition:	Excellent			
Location:	50 746536 mE 7482790 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	58.0	*Acacia adsurgens*	1.4	0.2
Acacia hilliana	0.4	14.0	*Ptilotus calostachyus*	0.3	0.2
Eucalyptus leucophloia subsp. *leucophloia*	4.8	5.0	*Acacia dictyophleba*	0.5	0.2
Acacia bivenosa	2.4	3.2	*Grevillea wickhamii* subsp. *hispidula*	2.3	0.2
Acacia monticola	1.5	2.3	*Hakea lorea* subsp. *lorea*	0.3	0.2
Triodia pungens	0.3	0.4	*Tribulus suberosus*	1.2	0.2
Cassytha capillaris	0.2	0.3	*Goodenia triodiophila*	0.2	0.1
Acacia adoxa var. *adoxa*	0.3	0.3	*Eriachne mucronata*	0.2	0.1
Senna glutinosa subsp. *glutinosa*	1.4	0.3	*Neurachne muelleri*	0.3	0.1
Eriachne obtusa	0.3	0.2			

Site: Q235	Type: Quadrat	Size: 50x50m	Date: 7/05/2024	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay loam			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	SS1			
Condition:	Excellent			
Location:	50 747345 mE 7486015 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	55.0	*Neurachne muelleri*	0.2	0.2
Acacia bivenosa	2.1	3.4	*Bonamia erecta*	0.3	0.2
Hakea lorea subsp. lorea	3.1	3.2	*Senna notabilis*	0.1	0.2
Acacia inaequilatera	2.2	2.7	*Gomphrena affinis* subsp. *pilbarensis*	0.2	0.1
Senna artemisioides subsp. *helmsii*	0.7	1.4	*Goodenia vilmoriniae*	0.2	0.1
Acacia sibirica	1.7	0.6	*Boerhavia coccinea*	0.2	0.1
Corchorus lasiocarpus subsp. *parvus*	0.2	0.3	*Enneapogon polyphyllus*	0.3	0.1
Trianthema pilosum	0.2	0.2	*Panicum australiense* var. *australiense*	0.2	0.1
Aristida holathera var. *holathera*	0.4	0.2	*Indigofera monophylla*	0.2	0.1
Tribulus hirsutus	0.2	0.2	*Ptilotus obovatus*	0.4	0.1
Dicrastylis cordifolia	0.2	0.2	*Sida arenicola*	0.2	0.1
Arivela viscosa	0.3	0.2	*Sida cardiophylla*	0.2	0.1
Eriachne aristidea	0.3	0.2			

Site: Q236	Type: Quadrat	Size: 50x50m	Date: 7/05/2024	Botanist: Zane Gates
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Very Good			
Location:	50 744387 mE 7486787 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.9	25.0	*Euphorbia australis* var. *hispidula*	0.2	0.1
Acacia inaequilatera	3.0	6.0	*Euphorbia coghlanii*	0.3	0.1
Trianthema pilosum	0.3	2.0	*Indigofera colutea*	0.2	0.1
Grevillea wickhamii subsp. *hispidula*	2.0	2.0	*Enneapogon polyphyllus*	0.2	0.1
Arivela viscosa	0.3	1.0	*Panicum australiense* var. *australiense*	0.1	0.1
Senna notabilis	0.5	1.0	*Cucumis variabilis*	1	0.1
Aristida holathera var. *holathera*	0.3	0.5	*Cassytha capillaris*	2	0.1
Acacia sclerosperma subsp. *sclerosperma*	1.5	0.5	*Goodenia microptera*	0.2	0.1
Indigofera monophylla	0.9	0.5	*Ptilotus obovatus*	0.3	0.1
Acacia pachyacra	1.5	0.5	*Ptilotus gomphrenoides*	0.3	0.1
Hakea chordophylla	3.0	0.5	*Neurachne muelleri*	0.3	0.1
Eriachne aristidea	0.2	0.2	*Corchorus* aff. *elachocarpus*	0.3	0.1
Tribulus hirsutus	0.2	0.2	*Hibiscus sturtii* var. *platychlamys*	0.5	0.1
Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	0.2	0.2			

Site: Q237	Type: Quadrat	Size: 50x50m	Date: 12/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	10 -20% Common			
Size:	6-20 mm - medium gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SP			
Condition:	Excellent			
Location:	50 752416 mE 7489198 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.4	30.0	*Gomphrena affinis* subsp. *pilbarensis*	0.3	0.1
Triodia basedowii	0.4	7.0	*Goodenia vilmoriniae*	0.2	0.1
Acacia inaequilatera	1.7	5.0	*Trichodesma zeylanicum* var. *zeylanicum*	0.2	0.1
Eucalyptus gamophylla	1.6	3.0	*Tribulus macrocarpus*	0.1	0.1
Indigofera monophylla	0.3	1.0	*Aristida contorta*	0.2	0.1
Arivela viscosa	0.3	0.5	*Aristida holathera* var. *holathera*	0.2	0.1
Tribulus hirsutus	0.1	0.2	*Enneapogon polyphyllus*	0.3	0.1
Acacia pachyacra	2.0	0.2	*Eriachne aristidea*	0.2	0.1
Hibiscus sturtii var. *platychlamys*	0.4	0.2	*Panicum australiense* var. *australiense*	0.1	0.1
Sida cardiophylla	0.4	0.2	*Acacia pruinocarpa*	0.2	0.1
Ptilotus polystachyus	0.6	0.1	*Acacia sericophylla*	0.8	0.1
Cullen martinii	0.4	0.1	*Corchorus* aff. *elachocarpus*	0.3	0.1
Euphorbia australis var. *hispidula*	0.1	0.1	*Senna notabilis*	0.1	0.1

Site: Q238	Type: Quadrat	Size: 40x62.4m	Date: 12/05/2024	Botanist: Zane Gates
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay			
Rocks:	Ironstone			
Abundance:	10 -20% Common			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Very Good			
Location:	50 751806 mE 7489816 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia ?incurvaneura	6.0	30.0	*Euploca heterantha*	0.1	0.1
Acacia aneura	4.0	7.0	*Maireana planifolia*	0.6	0.1
Acacia pruinocarpa	6.0	5.0	*Euphorbia coghlanii*	0.2	0.1
Enneapogon polyphyllus	0.1	5.0	*Gomphrena affinis* subsp. *pilbarensis*	0.1	0.1
Triodia pungens	0.5	3.0	*Ptilotus fusiformis*	0.1	0.1
Paspalidium rarum	0.1	3.0	*Ptilotus helipteroides*	0.1	0.1
Psydrax latifolia	1.9	1.0	*Sclerolaena cornishiana*	0.2	0.1
Eremophila forrestii subsp. *forrestii*	1.2	1.0	*Trichodesma zeylanicum* var. *zeylanicum*	0.3	0.1
Senna glutinosa subsp. x *luerssenii*	1.2	0.5	*Aristida holathera* var. *holathera*	0.1	0.1
Abutilon lepidum	0.3	0.3	*Sporobolus australasicus*	0.1	0.1
Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	0.1	0.2	*Duperreya commixta*	0.5	0.1
Acacia tetragonophylla	1.2	0.2	*Cheilanthes sieberi* subsp. *sieberi*	0.1	0.1
Eremophila latrobei subsp. *latrobei*	1.2	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Cucumis melo	0.5	0.2	*Abutilon otocarpum*	0.2	0.1
Arivela viscosa	0.3	0.2	*Corchorus* aff. *elachocarpus*	0.2	0.1
Senna notabilis	0.3	0.2	*Senna artemisioides* subsp. *helmsii*	0.1	0.1
**Bidens bipinnata*	0.1	0.1	*Senna artemisioides* subsp. *oligophylla*	0.1	0.1
Ptilotus exaltatus	0.1	0.1	*Sida* sp. L (A.M. Ashby 4202)	0.1	0.1

Site: Q239	Type: Quadrat	Size: 50x50m	Date: 12/05/2024	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	Basalt			
Abundance:	2-10% Few			
Size:	<6 mm - Fine gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SP			
Condition:	Very Good			
Location:	50 754073 mE 7489795 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.3	40	*Trianthema pilosum*	0.1	1.0
Acacia inaequilatera	2.0	8	*Goodenia microptera*	0.1	1.0
Bonamia erecta	0.3	3	*Acacia ancistrocarpa*	1.0	1.0
Eriachne aristidea	0.3	2	*Dicrastylis cordifolia*	0.2	1.0
Tribulus hirsutus	0.1	2	*Arivela viscosa*	0.2	1.0
Aristida holathera var. *holathera*	0.2	2	*Scaevola parvifolia* subsp. *pilbarae*	0.1	1.0
Eucalyptus gamophylla	2.0	2	*Corchorus* aff. *elachocarpus*	0.2	1.0
**Cenchrus ciliaris*	0.4	2	*Euphorbia australis* var. *hispidula*	0.1	0.1
Acacia pruinocarpa	2.0	2	*Enneapogon polyphyllus*	0.2	0.1
Hakea chordophylla	1.0	2	*Panicum australiense* var. *australiense*	0.1	0.1
Indigofera monophylla	0.2	2	*Senna notabilis*	0.3	0.1
Senna artemisioides subsp. *oligophylla*	0.3	2	*Gomphrena affinis* subsp. *pilbarensis*	0.1	0.1
Ptilotus polystachyus	0.6	1	*Hibiscus sturtii* var. *platychlamys*	0.1	0.1

Site: Q240	Type: Quadrat	Size: 50x50m	Date: 12/05/2024	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	50-90% Abundant			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SS2			
Condition:	Very Good			
Location:	50 750716 mE 7490163 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	4.6	2.4	*Ptilotus helipteroides*	0.1	0.1
Acacia synchronicia	3.2	1.4	*Sclerolaena cornishiana*	0.2	0.1
Ptilotus obovatus	0.5	0.8	*Goodenia prostrata*	0.1	0.1
Acacia sibirica	2.4	0.6	*Maireana planifolia*	0.2	0.1
Senna glutinosa subsp. *glutinosa*	1.4	0.3	*Maireana villosa*	0.2	0.1
Senna sp. Meekatharra (E. Bailey 1-26)	0.5	0.2	*Arivela viscosa*	0.2	0.1
**Cenchrus ciliaris*	0.3	0.2	*Gomphrena affinis* subsp. *pilbarensis*	0.2	0.1
Acacia pruinocarpa	4.6	0.2	*Aristida inaequiglumis*	0.2	0.1
Acacia tetragonophylla	0.4	0.2	*Corchorus* sp. indet	0.1	0.1
Rhagodia eremaea	0.6	0.2	*Senna notabilis*	0.1	0.1
Senna artemisioides subsp. helmsii	0.5	0.2	*Sida* sp. L (A.M. Ashby 4202)	0.1	0.1

Site: Q241	Type: Quadrat	Size: 50x50m	Date: 12/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Very Good			
Location:	50 743386 mE 7490711 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.4	40.0	*Panicum australiense* var. *australiense*	0.1	0.1
Acacia ancistrocarpa	1.4	5.0	*Tephrosia* sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	0.2	0.1
Acacia pachyacra	1.6	5.0	*Cullen leucochaites*	0.3	0.1
Corchorus aff. *elachocarpus*	0.3	3.0	*Gomphrena affinis* subsp. *pilbarensis*	0.1	0.1
Indigofera colutea	0.2	1.0	*Ptilotus helipteroides*	0.3	0.1
Indigofera linifolia	0.2	1.0	*Enneapogon polyphyllus*	0.3	0.1
Tribulus macrocarpus	0.1	1.0	*Eriachne aristidea*	0.1	0.1
Acacia sericophylla	1.6	1.0	*Goodenia microptera*	0.1	0.1
Arivela viscosa	0.3	0.5	*Tribulus hirsutus*	0.1	0.1
Acacia sclerosperma subsp. *sclerosperma*	1.4	0.5	*Acacia dictyophleba*	0.4	0.1
Gossypium australe	0.2	0.5	*Acacia synchronicia*	1	0.1
Euphorbia biconvexa	0.4	0.2	*Senna artemisioides* subsp. *oligophylla*	0.5	0.1
Trianthema pilosum	0.2	0.2	*Senna notabilis*	0.1	0.1
Aristida holathera var. *holathera*	0.3	0.2	*Sida echinocarpa*	0.3	0.1
Euphorbia australis var. *hispidula*	0.1	0.1	*Solanum lasiophyllum*	0.3	0.1
Euploca inexplicita	0.2	0.1			

Site: Q242	Type: Quadrat	Size: 50x50m	Date: 12/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Degraded			
Location:	50 735085 mE 7497237 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.4	30	*Atalaya hemiglauca*	2	1
**Cenchrus setiger*	0.4	10	*Sclerolaena cornishiana*	0.3	0.5
Acacia synchronicia	1.6	10	**Tribulus terrestris*	0.2	0.2
Acacia sericophylla	5.0	7	*Boerhavia coccinea*	0.1	0.2
Acacia pruinocarpa	5.0	6	*Dactyloctenium radulans*	0.1	0.1
Arivela viscosa	0.4	5	*Cucumis variabilis*	0.2	0.1
Acacia catenulata subsp. *occidentalis*	3.5	4	*Chrysopogon fallax*	0.4	0.1
Acacia inaequilatera	1.4	3	*Eulalia aurea*	0.4	0.1
Acacia aptaneura	6.0	2	*Abutilon otocarpum*	0.2	0.1
Corymbia hamersleyana	7.0	2			

Site: Q243	Type: Quadrat	Size: 50x50m	Date: 12/05/2024	Botanist: Zane Gates
Landform:	Creek/Riverbed			
Slope & Aspect:	Low; South			
Soil:	Clayey sand			
Rocks:	Creek stones			
Abundance:	>90% Continuous			
Size:	200-600 mm - Stones			
Fire:	Old (6+ yr)			
Vegetation:	MA			
Condition:	Good			
Location:	50 734445 mE 7497291 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Eucalyptus camaldulensis subsp. *obtusa*	12.0	15.0	*Cymbopogon ambiguus*	0.3	0.2
Acacia citrinoviridis	11.0	12.0	*Crotalaria medicaginea* var. *neglecta*	0.1	0.1
Atalaya hemiglauca	7.0	3.0	*Cucumis melo*	0.1	0.1
**Cenchrus ciliaris*	0.5	2.0	*Euphorbia australis* var. *subtomentosa*	0.1	0.1
Corchorus crozophorifolius	1.2	0.5	*Gomphrena cunninghamii*	0.1	0.1
Arivela viscosa	0.2	0.3	*Aristida holathera* var. *holathera*	0.1	0.1
Euphorbia coghlanii	0.2	0.2	*Enneapogon polyphyllus*	0.1	0.1
Boerhavia coccinea	0.2	0.2	*Duperreya commixta*	0.3	0.1
Eriachne pulchella subsp. *dominii*	0.1	0.2	*Dendrophyllanthus erwinii*	0.1	0.1

Site: Q244	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clay Loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Degraded			
Location:	50 737603 mE 7497951 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.4	50.0	*Cucumis variabilis*	1	0.1
Acacia pruinocarpa	7.0	15.0	*Convolvulus clementii*	0.1	0.1
Arivela viscosa	0.3	10.0	*Euphorbia boophthona*	0.2	0.1
Acacia sclerosperma subsp. *sclerosperma*	2.0	5.0	*Gomphrena affinis* subsp. *pilbarensis*	0.2	0.1
Chrysopogon fallax	0.5	5.0	*Sclerolaena cornishiana*	0.1	0.1
Rhagodia eremaea	1.0	1.0	*Portulaca oleracea*	0.1	0.1
Acacia citrinoviridis	1.0	0.5	*Aristida contorta*	0.2	0.1
**Tribulus terrestris*	0.1	0.5	*Dactyloctenium radulans*	0.1	0.1
Boerhavia coccinea	0.1	0.5	*Enneapogon polyphyllus*	0.2	0.1
Sporobolus australasicus	0.1	0.2	**Aerva javanica*	1	0.1
**Malvastrum americanum*	0.3	0.2	*Eragrostis setifolia*	0.3	0.1
Abutilon fraseri subsp. *fraseri*	0.4	0.2	*Acacia synchronicia*	1.2	0.1
Abutilon otocarpum	0.4	0.2	*Corchorus* aff. *elachocarpus*	0.1	0.1
Senna notabilis	0.1	0.2	*Solanum lasiophyllum*	0.3	0.1
Acacia aptaneura	2.1	0.2			

Site: Q245	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Tia Berard, Zane Gates
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Degraded			
Location:	50 733407 mE 7499058 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.4	20.0	*Trianthema pilosum*	0.1	0.2
Arivela viscosa	0.3	10.0	*Sporobolus australasicus*	0.1	0.2
Acacia pruinocarpa	5.5	7.0	*Chrysopogon fallax*	0.5	0.2
**Cenchrus setiger*	0.3	5.0	*Rhagodia eremaea*	0.5	0.1
Acacia aptaneura	3.0	5.0	*Gomphrena affinis subsp. pilbarensis*	0.2	0.1
**Tribulus terrestris*	0.1	2.0	*Portulaca oleracea*	0.1	0.1
Acacia inaequilatera	2.5	1.0	*Enneapogon polyphyllus*	0.1	0.1
Boerhavia coccinea	0.1	0.5	*Aristida inaequiglumis*	0.4	0.1
Sclerolaena cornishiana	0.1	0.2	*Eragrostis setifolia*	0.3	0.1

Site: Q246	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Tia Berard, Zane Gates
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	10 -20% Common			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Degraded			
Location:	50 735765 mE 7499292 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Arivela viscosa	0.4	15.0	*Portulaca oleracea*	0.1	0.1
Acacia aptaneura	4.0	5.0	*Aristida contorta*	0.2	0.1
Acacia synchronicia	1.0	3.0	*Enneapogon polyphyllus*	0.1	0.1
**Cenchrus setiger*	0.3	2.0	*Sporobolus australasicus*	0.1	0.1
Acacia pruinocarpa	3.5	2.0	*Chrysopogon fallax*	0.3	0.1
Dactyloctenium radulans	0.1	1.0	*Abutilon otocarpum*	0.3	0.1
Boerhavia coccinea	0.1	1.0	*Acacia inaequilatera*	1	0.1
**Cenchrus ciliaris*	0.2	1.0	*Acacia sericophylla*	3	0.1
Sclerolaena cornishiana	0.1	0.2	*Rhagodia eremaea*	1	0.1
**Tribulus terrestris*	0.1	0.2	*Senna notabilis*	0.2	0.1
Gomphrena affinis subsp. *pilbarensis*	0.2	0.1			

Site: Q247	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Tia Berard, Zane Gates
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA1			
Condition:	Good			
Location:	50 730581 mE 7499861 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	35	*Bonamia erecta*	0.3	0.2
Acacia ancistrocarpa	1.0	7	*Acacia sericophylla*	2.5	0.1
Acacia dictyophleba	0.8	5	*Gossypium australe*	0.4	0.1
Acacia pachyacra	1.6	3	*Grevillea wickhamii* subsp. *hispidula*	0.5	0.1

Site: Q248	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Zane Gates
Landform:	Creek/Riverbed			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	Creek stones			
Abundance:	50-90% Abundant			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	MA			
Condition:	Poor			
Location:	50 731585 mE 7500185 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Eucalyptus camaldulensis subsp. *obtusa*	12.0	15.0	*Euphorbia coghlanii*	0.2	0.1
Acacia citrinoviridis	8.0	8.0	*Eriachne pulchella* subsp. *dominii*	0.1	0.1
**Cenchrus ciliaris*	0.5	4.0	*Dolichocarpa crouchiana*	0.1	0.1
Atalaya hemiglauca	6.0	3.0	*Duperreya commixta*	0.1	0.1
Acacia pyrifolia var. *morrisonii*	2.0	0.3	*Dendrophyllanthus erwinii*	0.1	0.1
**Aerva javanica*	0.5	0.2	*Waltheria indica*	0.6	0.1
Arivela viscosa	0.3	0.2	*Polymeria mollis*	0.2	0.1
Euphorbia australis var. *subtomentosa*	0.1	0.1	*Corchorus crozophorifolius*	0.3	0.1

Site: Q249	Type: Quadrat	Size: 40x62.4m	Date: 11/05/2024	Botanist: Zane Gates
Landform:	Creek/Riverbed			
Slope & Aspect:	Low; South			
Soil:	Sandy clay			
Rocks:	Creek stones			
Abundance:	2-10% Few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Poor			
Location:	50 733278 mE 7500206 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia citrinoviridis	9.0	25.0	*Centipeda minima* subsp. *macrocephala*	0.1	0.1
Acacia aptaneura	9.0	15.0	*Euphorbia boophthona*	0.2	0.1
**Cenchrus ciliaris*	0.5	10.0	*Gomphrena affinis* subsp. *pilbarensis*	0.2	0.1
Chrysopogon fallax	0.9	5.0	*Gomphrena cunninghamii*	0.1	0.1
**Cenchrus setiger*	0.5	2.0	*Portulaca oleracea*	0.1	0.1
Eulalia aurea	0.9	2.0	*Iseilema vaginiflorum*	0.1	0.1
**Malvastrum americanum*	0.3	1.0	*Marsilea hirsuta*	0.1	0.1
Cucumis melo	0.5	0.5	*Pterocaulon serrulatum* var. *velutinum*	0.1	0.1
Corchorus tridens	0.1	0.5	*Euphorbia coghlanii*	0.3	0.1
Hakea lorea subsp. *lorea*	3.0	0.5	*Sporobolus australasicus*	0.1	0.1
Ipomoea muelleri	0.2	0.3	*Duperreya commixta*	0.5	0.1
Eragrostis tenellula	0.2	0.2	*Rhynchosia minima*	0.2	0.1
Eriachne benthamii	0.5	0.2	*Dendrophyllanthus erwinii*	0.1	0.1
Arivela viscosa	0.3	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Abutilon otocarpum	0.3	0.2	*Waltheria indica*	0.3	0.1
**Datura leichhardtii* subsp. *leichhardtii*	0.3	0.1	*Senna artemisioides* subsp. *oligophylla*	0.8	0.1
Alternanthera denticulata	0.1	0.1	*Senna notabilis*	0.3	0.1
Alysicarpus muelleri	0.2	0.1			

Site: Q250	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Tia Berard
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Completely Degraded			
Location:	50 732124 mE 7500278 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus setiger*	0.4	15	*Trianthema pilosum*	0.1	0.5
**Cenchrus ciliaris*	0.3	15	*Portulaca oleracea*	0.1	0.2
Arivela viscosa	0.3	6	*Acacia catenulata* subsp. *occidentalis*	4.0	0.2
Acacia aptaneura	5.0	5	*Sporobolus australasicus*	0.2	0.1
Acacia pruinocarpa	5.0	5	*Eragrostis setifolia*	0.4	0.1
Acacia synchronicia	1.0	4	*Monachather paradoxus*	0.4	0.1
Boerhavia coccinea	0.1	2	*Enneapogon polyphyllus*	0.1	0.1
Sclerolaena cornishiana	0.1	1	*Chrysopogon fallax*	0.3	0.1

Site: Q253	Type: Quadrat	Size: 30x83.3m	Date: 11/05/2024	Botanist: Adam Crosby-Clark
Landform:	Dune crest			
Slope & Aspect:	Moderate; South			
Soil:	Clayey sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Poor			
Location:	50 728854 mE 7504109 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.3	9.0	*Corchorus* aff. *elachocarpus*	0.3	0.2
Triodia schinzii	0.4	8.2	*Sida cardiophylla*	0.2	0.2
**Cenchrus ciliaris*	0.4	6.0	*Panicum australiense* var. *australiense*	0.1	0.1
Acacia dictyophleba	3.2	4.8	*Arivela viscosa*	0.1	0.1
Acacia sclerosperma subsp. *sclerosperma*	3.4	1.0	*Boerhavia coccinea*	0.1	0.1
Trianthema pilosum	0.1	0.3	*Aristida holathera* var. *holathera*	0.2	0.1
Eragrostis eriopoda	0.3	0.2			

Site: Q254	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	FP3			
Condition:	Poor			
Location:	50 728958 mE 7504318 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.3	15	*Portulaca oleracea*	0.1	2.0
Acacia aneura	5.0	15	*Arivela viscosa*	0.2	1.0
**Cenchrus setiger*	0.3	5	*Boerhavia coccinea*	0.1	1.0
Acacia synchronicia	2.0	5	*Enneapogon polyphyllus*	0.1	1.0
Hakea lorea subsp. *lorea*	6.0	3	*Gomphrena affinis* subsp. *pilbarensis*	0.1	0.1

Site: Q255	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Scott Hitchcock
Landform:	Dune swale			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA3			
Condition:	Good			
Location:	50 728232 mE 7504409 mN			
Notes:	-			

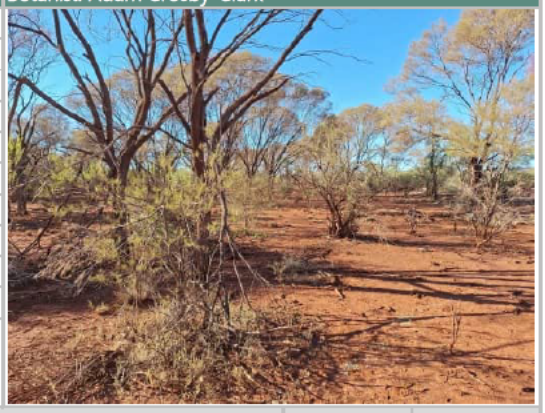
Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.3	40	*Acacia tetragonophylla*	2	1
Acacia synchronicia	2.0	15	*Hakea lorea* subsp. *lorea*	1.5	1
Acacia inaequilatera	2.0	10	*Dactyloctenium radulans*	0.1	0.1
Senna artemisioides subsp. *oligophylla*	1.0	6	*Acacia citrinoviridis*	3	0.1
Ptilotus obovatus	0.3	3	*Portulaca oleracea*	0.1	0.1
**Cenchrus ciliaris*	0.3	2	*Enneapogon caerulescens*	0.1	0.1
**Cenchrus setiger*	0.3	2	*Sida platycalyx*	0.1	0.1
Acacia tenuissima	1.5	2	*Chrysopogon fallax*	1	0.1
Stylobasium spathulatum	1.2	1	*Eragrostis eriopoda*	0.3	0.1
Acacia aptaneura	3.0	1	*Eremophila longifolia*	1.2	0.1
Arivela viscosa	0.1	1	*Hibiscus sturtii* var. *platychlamys*	0.1	0.1
Acacia dictyophleba	1.0	1			

Site: Q256	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Scott Hitchcock
Landform:	Dune swale			
Slope & Aspect:	Flat			
Soil:	Sandy clay			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA2			
Condition:	Very Good			
Location:	50 727077 mE 7505397 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.3	40	*Rhagodia eremaea*	0.5	1
Acacia inaequilatera	2.0	5	*Scaevola spinescens*	1.2	1
Acacia sclerosperma subsp. *sclerosperma*	2.0	3	*Vincetoxicum lineare*	1	0.1
Eremophila longifolia	1.0	3	*Scaevola parvifolia* subsp. *pilbarae*	0.1	0.1
**Cenchrus setiger*	0.3	2	*Petalostylis cassioides*	1	0.1
**Cenchrus ciliaris*	0.3	2	*Arivela viscosa*	0.2	0.1
Hakea lorea subsp. *lorea*	3.0	2	*Euphorbia boophthona*	0.1	0.1
Ptilotus obovatus	0.3	2	*Portulaca oleracea*	0.1	0.1
Bonamia erecta	0.2	1	*Tribulus macrocarpus*	0.1	0.1
Eragrostis eriopoda	0.3	1	*Aristida contorta*	0.1	0.1
Acacia dictyophleba	2.0	1	*Enneapogon polyphyllus*	0.1	0.1
Aristida holathera var. *holathera*	0.2	1	*Duperreya commixta*	0.8	0.1
Neurachne muelleri	0.3	1	*Indigofera monophylla*	0.2	0.1
Acacia tenuissima	1.0	1			

Site: Q257	Type: Quadrat	Size: 30x83.3m	Date: 11/05/2024	Botanist: Adam Crosby-Clark
Landform:	Dune crest			
Slope & Aspect:	Steep; South			
Soil:	Sandy clay			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Very Good			
Location:	50 726727 mE 7505484 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia dictyophleba	2.6	23.0	*Petalostylis cassioides*	1.4	0.2
Triodia schinzii	0.4	13.0	*Panicum australiense* var. *australiense*	0.1	0.1
Stylobasium spathulatum	2.1	2.7	*Duperreya commixta*	1.7	0.1
Corymbia hamersleyana	5.6	1.6	*Aristida holathera* var. *holathera*	0.2	0.1
Triodia basedowii	0.4	0.7	*Eriachne lanata*	0.2	0.1
**Cenchrus ciliaris*	0.4	0.4	*Bonamia erecta*	0.2	0.1
Eragrostis eriopoda	0.3	0.4	*Corchorus aff. elachocarpus*	0.2	0.1
Scaevola parvifolia subsp. *pilbarae*	0.2	0.2	*Senna notabilis*	0.1	0.1
Trianthema pilosum	0.1	0.2	*Sida cardiophylla*	0.1	0.1

Site: Q258	Type: Quadrat	Size: 30x83.3m	Date: 11/05/2024	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Poor			
Location:	50 726058 mE 7505488 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	7.6	63.0	*Rhagodia eremaea*	0.8	0.2
Acacia synchronicia	2.6	6.7	*Arivela viscosa*	0.3	0.2
Scaevola spinescens	4.2	5.4	**Malvastrum americanum*	0.3	0.2
Hakea lorea subsp. *lorea*	5.3	2.5	*Trianthema triquetrum*	0.1	0.1
**Cenchrus ciliaris*	0.3	1.2	*Dactyloctenium radulans*	0.1	0.1
Acacia sclerosperma subsp. *sclerosperma*	3.2	0.4	*Urochloa occidentalis*	0.2	0.1
Acacia tetragonophylla	1.6	0.4	*Sclerolaena costata*	0.1	0.1
Eragrostis setifolia	0.2	0.3	*Maireana tomentosa*	0.2	0.1
Iseilema membranaceum	0.2	0.2	*Psydrax latifolia*	0.4	0.1
**Cenchrus setiger*	0.3	0.2	*Boerhavia coccinea*	0.1	0.1
Chrysopogon fallax	0.4	0.2	*Portulaca intraterranea*	0.1	0.1
Eremophila forrestii subsp. *forrestii*	0.5	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Eremophila longifolia	0.7	0.2	*Sida fibulifera*	0.1	0.1
Eulalia aurea	0.3	0.2			

Site: Q260	Type: Quadrat	Size: 50x50m	Date: 11/05/2024	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA3			
Condition:	Poor			
Location:	50 726066 mE 7505710 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aneura	5.0	30	*Abutilon lepidum*	0.2	1
**Cenchrus ciliaris*	0.2	15	*Ptilotus obovatus*	0.2	1
Acacia synchronicia	2.0	5	*Boerhavia coccinea*	0.1	0.1
Triodia basedowii	0.2	2	*Portulaca oleracea*	0.1	0.1
Sclerolaena cornishiana	0.1	2	*Trianthema triquetrum*	0.1	0.1
Arivela viscosa	0.1	2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Rhagodia eremaea	1.0	2	*Maireana planifolia*	0.1	0.1
Scaevola spinescens	1.3	1	*Sida platycalyx*	0.1	0.1
Chrysopogon fallax	1.0	1			

Site: Q261	Type: Quadrat	Size: 50x50m	Date: 6/05/2024	Botanist: Adam Crosby-Clark
Landform:	Hill crest; Ridge			
Slope & Aspect:	Flat			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC1			
Condition:	Excellent			
Location:	50 742101 mE 7471107 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	55.0	*Triodia wiseana*	0.4	0.3
Acacia hilliana	0.3	8.0	*Ptilotus rotundifolius*	0.5	0.2
Acacia arida	1.4	3.6	*Acacia adoxa* var. *adoxa*	0.3	0.2
Corymbia deserticola subsp. *deserticola*	3.6	1.6	*Gompholobium oreophilum*	0.4	0.2
Calytrix carinata	0.3	1.3	*Solanum lasiophyllum*	0.4	0.2
Hakea lorea subsp. *lorea*	2.5	0.4	*Scaevola browniana* subsp. *browniana*	0.3	0.1
Corymbia hamersleyana	1.7	0.3			

Site: Q262	Type: Quadrat	Size: 50x50m	Date: 5/05/2024	Botanist: Zane Gates
Landform:	Hill crest; Simple			
Slope & Aspect:	Low; North			
Soil:	Sandy clay			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC1			
Condition:	Very Good			
Location:	50 741733 mE 7466882 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.5	30.0	*Goodenia triodiophila*	0.1	0.1
Acacia arida	0.5	5.0	*Fimbristylis simulans*	0.1	0.1
Acacia adoxa var. *adoxa*	0.3	1.0	*Eriachne mucronata*	0.2	0.1
Hakea chordophylla	3.0	1.0	*Calytrix carinata*	0.4	0.1
Gompholobium oreophilum	0.3	0.5	*Goodenia stobbsiana*	0.1	0.1
Eriachne lanata	0.3	0.2	*Scaevola browniana* subsp. *browniana*	0.3	0.1
Senna glutinosa subsp. *glutinosa*	1.2	0.2	*Corchorus lasiocarpus* subsp. *parvus*	0.2	0.1
Grevillea wickhamii subsp. *hispidula*	0.5	0.2			

Site: Q264	Type: Quadrat	Size: 50x50m	Date: 5/05/2024	Botanist: Adam Crosby-Clark
Landform:	Mid hill slope			
Slope & Aspect:	Moderate; Northwest			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC1			
Condition:	Excellent			
Location:	50 737293 mE 7459787 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	34.0	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.2
Triodia wiseana	0.3	4.0	*Indigofera monophylla*	0.3	0.2
Acacia hilliana	0.3	3.5	*Senna glutinosa* subsp. *pruinosa*	0.7	0.2
Acacia arida	0.6	3.2	*Goodenia triodiophila*	0.2	0.1
Eucalyptus leucophloia subsp. *leucophloia*	5.2	2.6	*Schizachyrium fragile*	0.2	0.1
Corymbia hamersleyana	5.2	0.8	*Fimbristylis simulans*	0.1	0.1
Hakea lorea subsp. *lorea*	2.6	0.7	*Ptilotus calostachyus*	0.3	0.1
Acacia adoxa var. *adoxa*	0.3	0.4	*Scaevola browniana* subsp. *browniana*	0.2	0.1
Senna glutinosa subsp. *glutinosa*	0.8	0.3	*Dolichocarpa crouchiana*	0.1	0.1
Grevillea wickhamii subsp. *hispidula*	0.9	0.3	*Senna artemisioides* subsp. *oligophylla*	0.3	0.1
Eremophila latrobei subsp. *latrobei*	1.4	0.2	*Sida arenicola*	0.3	0.1
Gompholobium oreophilum	0.3	0.2			

Site: Q267	Type: Quadrat	Size: 50x50m	Date: 5/05/2024	Botanist: Scott Hitchcock
Landform:	Upper hill slope			
Slope & Aspect:	Moderate; South			
Soil:	Sandy clay			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC1			
Condition:	Excellent			
Location:	50 737366 mE 7461504 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.1	40	*Dolichocarpa crouchiana*	0.1	1.0
Eucalyptus leucophloia subsp. *leucophloia*	5.0	5	*Amphipogon sericeus*	0.1	1.0
Corymbia hamersleyana	4.0	2	*Acacia hilliana*	0.2	1.0
Eriachne mucronata	0.1	2	*Calytrix carinata*	0.2	1.0
Acacia adoxa var. *adoxa*	0.2	2	*Corchorus lasiocarpus* subsp. *parvus*	0.4	1.0
Gompholobium oreophilum	0.1	2	*Hakea chordophylla*	2.0	1.0
Goodenia triodiophila	0.1	1	*Senna glutinosa* subsp. *x luerssenii*	1.0	1.0
Triodia pungens	0.3	1	*Sida arenicola*	1.2	1.0
Eriachne lanata	0.2	1	*Bonamia pilbarensis*	0.1	0.1
Acacia adsurgens	0.4	1	*Afrohybanthus aurantiacus*	0.1	0.1
Acacia inaequilatera	1.0	1	*Dodonaea coriacea*	0.3	0.1
Scaevola browniana subsp. *browniana*	0.2	1	*Goodenia stobbsiana*	0.1	0.1
Schizachyrium fragile	0.1	1	*Fimbristylis dichotoma*	0.1	0.1

Site: Q268	Type: Quadrat	Size: 50x50m	Date: 5/05/2024	Botanist: Adam Crosby-Clark
Landform:	Undulating plain			
Slope & Aspect:	Moderate; Southeast			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	6-20 mm - medium -gravel			
Fire:	Old (6+ yr)			
Vegetation:	FS1			
Condition:	Excellent			
Location:	50 740031 mE 7463248 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	45.0	*Acacia adoxa* var. *adoxa*	0.4	0.4
Acacia tenuissima	1.6	6.5	*Bonamia erecta*	0.3	0.3
Corymbia deserticola subsp. *deserticola*	6.2	4.0	*Androcalva loxophylla*	0.3	0.3
Acacia sibirica	1.3	3.4	*Amphipogon sericeus*	0.3	0.2
Acacia bivenosa	1.6	1.2	*Neurachne muelleri*	0.3	0.2
Grevillea wickhamii subsp. *hispidula*	2.4	0.6	*Acacia elachantha*	2.4	0.2
Hakea lorea subsp. *lorea*	1.9	0.6	*Indigofera monophylla*	0.3	0.2
Acacia hilliana	0.4	0.5			

Site: Q269	Type: Quadrat	Size: 50x50m	Date: 5/05/2024	Botanist: Scott Hitchcock
Landform:	Hill slope; Simple			
Slope & Aspect:	Low; West			
Soil:	Sandy clay			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC1			
Condition:	Excellent			
Location:	50 740295 mE 7463716 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.1	30.0	*Schizachyrium fragile*	0.1	0.5
Acacia hilliana	0.3	3.0	*Dolichocarpa crouchiana*	0.1	0.1
Eucalyptus leucophloia subsp. *leucophloia*	5.0	3.0	*Euploca cunninghamii*	0.3	0.1
Acacia adoxa var. *adoxa*	0.3	2.0	*Acacia atkinsiana*	0.3	0.1
Goodenia triodiophila	0.2	1.0	*Calytrix carinata*	0.2	0.1
Aristida holathera var. *holathera*	0.1	1.0	*Gompholobium oreophilum*	0.3	0.1
Eriachne pulchella subsp. *pulchella*	0.1	1.0	*Senna artemisioides* subsp. *oligophylla*	0.5	0.1
Amphipogon sericeus	0.1	1.0	*Senna glutinosa* subsp. *pruinosa*	1	0.1
Eriachne mucronata	0.1	1.0	*Senna glutinosa* subsp. x *luerssenii*	1	0.1
Fimbristylis dichotoma	0.1	1.0	*Solanum lasiophyllum*	0.2	0.1
Hakea chordophylla	2.0	1.0	*Grevillea wickhamii* subsp. *hispidula*	0.5	0.1
Indigofera monophylla	0.3	0.6			

Site: Q315	Type: Quadrat	Size: 50x50m	Date: 27/05/2024	Botanist: Emily Crowther, Julia Mattner
Landform:	Undulating plain			
Slope & Aspect:	Low; North			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA1			
Condition:	Very Good			
Location:	50 766491 mE 7472186 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	0.5	30.0	*Cymbopogon obtectus*	1	0.2
**Cenchrus ciliaris*	0.5	3.0	*Eragrostis eriopoda*	0.4	0.2
Acacia melleodora	1.6	3.0	*Scaevola parvifolia* subsp. *pilbarae*	0.3	0.2
Acacia ancistrocarpa	1.6	2.0	*Anthobolus leptomerioides*	0.5	0.2
Acacia inaequilatera	2.0	1.0	*Chrysopogon fallax*	1.3	0.1
Neurachne muelleri	0.5	0.6	*Dicrastylis cordifolia*	0.4	0.1
Acacia pachyacra	1.6	0.5	*Eremophila longifolia*	0.5	0.1
Acacia sericophylla	2.0	0.4	*Rhagodia eremaea*	0.5	0.1
Corymbia deserticola subsp. *deserticola*	2.3	0.4	*Aristida holathera* var. *holathera*	0.3	0.1
Triodia basedowii	0.5	0.3	*Hibiscus sturtii* var. *platychlamys*	0.3	0.1
Eriachne aristidea	0.4	0.3	*Ptilotus obovatus*	0.3	0.1
Hakea chordophylla	2.0	0.3	*Solanum lasiophyllum*	0.3	0.1
Trianthema pilosum	0.1	0.2			

Site: Q316	Type: Quadrat	Size: 50x50m	Date: 27/05/2024	Botanist: Emily Crowther, Julia Mattner
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA1			
Condition:	Very Good			
Location:	50 765606 mE 7472548 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	0.5	45.0	*Acacia pachyacra*	1.6	0.2
Acacia melleodora	1.7	4.0	*Aristida holathera* var. *holathera*	3.0	0.1
Grevillea eriostachya	2.0	1.0	*Eriachne aristidea*	0.3	0.1
Corymbia hamersleyana	5.0	1.0	*Cucumis variabilis*	0.5	0.1
Acacia ancistrocarpa	1.5	0.8	*Vincetoxicum lineare*	1.0	0.1
Acacia inaequilatera	1.5	0.8	*Eulalia aurea*	0.3	0.1
Eriachne helmsii	0.3	0.3	*Anthobolus leptomerioides*	1.0	0.1
Acacia sericophylla	2.0	0.3	*Enneapogon caerulescens*	0.3	0.1
Hakea chordophylla	2.0	0.3	*Enneapogon polyphyllus*	0.3	0.1
Bonamia erecta	0.3	0.2	*Eragrostis eriopoda*	0.5	0.1
Scaevola parvifolia subsp. *pilbarae*	0.3	0.2	*Abutilon otocarpum*	0.2	0.1

Site: Q318	Type: Quadrat	Size: 50x50m	Date: 27/05/2024	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SP			
Condition:	Very Good			
Location:	50 766339 mE 7473173 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	1.0	30	*Tribulus hirsutus*	0.1	1
Acacia inaequilatera	2.0	5	*Eragrostis eriopoda*	0.3	1
Eucalyptus victrix	4.0	5	*Acacia balsamea*	2	1
Arivela viscosa	0.3	3	*Acacia sericophylla*	2	1
Trianthema pilosum	0.1	2	*Acacia incurvaneura*	1.5	1
Eriachne aristidea	0.2	2	*Euphorbia australis* var. *hispidula*	0.1	0.1
**Cenchrus ciliaris*	0.3	2	*Goodenia microptera*	0.2	0.1
**Cenchrus setiger*	0.4	2	*Dicrastylis cordifolia*	0.2	0.1
Neurachne muelleri	0.3	2	*Solanum elatius*	0.4	0.1
Acacia ancistrocarpa	1.0	2	*Ptilotus exaltatus*	0.1	0.1
Acacia dictyophleba	0.5	2	*Panicum australiense* var. *australiense*	0.1	0.1
Corchorus aff. *elachocarpus*	0.2	2	*Scaevola parvifolia* subsp. *pilbarae*	0.1	0.1
Senna artemisioides subsp. *oligophylla*	0.8	2	*Eulalia aurea*	0.3	0.1
Aristida inaequiglumis	1.0	1	*Bonamia erecta*	0.3	0.1
Acacia adsurgens	2.0	1	*Petalostylis cassioides*	1	0.1
Aristida holathera var. *holathera*	0.2	1	*Solanum lasiophyllum*	0.3	0.1
Enneapogon polyphyllus	0.1	1			

Site: Q319	Type: Quadrat	Size: 50x50m	Date: 29/05/2024	Botanist: Adam Crosby-Clark, Julia Mattner
Landform:	Flat plain			
Slope & Aspect:	Low			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Good			
Location:	50 736179 mE 7498622 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.4	47.0	*Abutilon lepidum*	0.3	0.2
Acacia pruinocarpa	4.3	7.0	*Acacia synchronicia*	0.3	0.2
Acacia catenulata subsp. *occidentalis*	6.3	2.2	*Eulalia aurea*	0.3	0.2
Acacia aptaneura	6.2	2.2	**Tribulus terrestris*	0.1	0.1
**Cenchrus setiger*	0.3	1.2	*Ipomoea muelleri*	0.2	0.1
Acacia sclerosperma subsp. *sclerosperma*	2.2	0.8	**Citrullus colocynthis*	0.2	0.1
Chrysopogon fallax	0.4	0.5	*Eragrostis eriopoda*	0.3	0.1
**Vachellia farnesiana*	2.2	0.4	*Alysicarpus muelleri*	0.2	0.1
Boerhavia coccinea	0.1	0.3	*Gomphrena affinis* subsp. *pilbarensis*	0.2	0.1
Hakea chordophylla	0.5	0.3	*Ptilotus exaltatus*	0.1	0.1
Rhagodia eremaea	0.7	0.3	*Sporobolus australasicus*	0.1	0.1
Senna artemisioides subsp. *oligophylla*	0.6	0.3	*Cucumis variabilis*	1.1	0.1
Sclerolaena cornishiana	0.3	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.2	0.1
Arivela viscosa	0.3	0.2	*Stemodia grossa*	0.2	0.1
Dactyloctenium radulans	0.1	0.2	*Hakea lorea* subsp. *lorea*	0.7	0.1
Enneapogon polyphyllus	0.3	0.2	*Solanum lasiophyllum*	0.2	0.1
**Aerva javanica*	0.5	0.2			

Site: Q320	Type: Quadrat	Size: 50x50m	Date: 29/05/2024	Botanist: Adam Crosby-Clark, Julia Mattner
Landform:	Drainage line on flat			
Slope & Aspect:	Low			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	10 -20% Common			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP2			
Condition:	Good			
Location:	50 740055 mE 7495567 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.5	27.0	*Hakea chordophylla*	1.8	0.4
Arivela viscosa	0.3	12.0	*Acacia inaequilatera*	1.4	0.3
Triodia pungens	0.3	7.2	*Atalaya hemiglauca*	1.3	0.3
Acacia pruinocarpa	6.2	7.0	*Gomphrena affinis* subsp. *pilbarensis*	0.2	0.2
**Cenchrus setiger*	0.3	3.2	*Indigofera linifolia*	0.2	0.1
Acacia catenulata subsp. *occidentalis*	7.2	3.2	*Enneapogon polyphyllus*	0.2	0.1
Corymbia hamersleyana	6.7	2.8	*Sporobolus australasicus*	0.2	0.1
Boerhavia coccinea	0.1	2.1	*Ptilotus obovatus*	0.1	0.1
Acacia dictyophleba	1.2	0.7	*Senna artemisioides* subsp. *oligophylla*	0.2	0.1

Site: Q321	Type: Quadrat	Size: 50x50m	Date: 28/05/2024	Botanist: Emily Crowther, Julia Mattner
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SP			
Condition:	Excellent			
Location:	50 770439 mE 7471854 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.5	40.0	*Senna artemisioides* subsp. *oligophylla*	1.1	0.2
Acacia ancistrocarpa	1.4	2.0	*Ptilotus polystachyus*	0.3	0.1
Acacia pruinocarpa	6.0	2.0	*Goodenia microptera*	0.5	0.1
Acacia tenuissima	1.1	1.3	*Eremophila longifolia*	1.3	0.1
Triodia basedowii	0.4	1.0	*Solanum elatius*	0.6	0.1
Acacia pachyacra	1.3	1.0	*Euphorbia australis* var. *subtomentosa*	0.3	0.1
Acacia melleodora	1.3	0.7	*Euphorbia boophthona*	0.3	0.1
Acacia synchronicia	1.5	0.4	*Enneapogon polyphyllus*	0.2	0.1
Eremophila forrestii subsp. *forrestii*	1.2	0.3	*Vincetoxicum lineare*	1.2	0.1
Aristida holathera var. *holathera*	0.5	0.3	*Eulalia aurea*	0.6	0.1
Grevillea wickhamii subsp. *hispidula*	1.6	0.2	*Corchorus* aff. *elachocarpus*	0.3	0.1
Arivela viscosa	0.6	0.2	*Senna glutinosa* subsp. x *luerssenii*	1.3	0.1
Eragrostis eriopoda	0.5	0.2	*Senna notabilis*	0.1	0.1
Acacia sclerosperma subsp. *sclerosperma*	1.3	0.2	*Solanum lasiophyllum*	0.1	0.1
Acacia tetragonophylla	1.1	0.2			

Site: Q322	Type: Quadrat	Size: 50x50m	Date: 28/05/2024	Botanist: Adam Crosby-Clark, Julia Mattner
Landform:	Flat plain			
Slope & Aspect:	Low; West			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	50-90% Abundant			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Excellent			
Location:	50 769208 mE 7473521 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.5	46.0	*Solanum elatius*	0.3	0.1
Acacia sibirica	1.7	24.0	*Aristida holathera* var. *holathera*	0.2	0.1
Seringia exastia	0.3	0.8	*Goodenia microptera*	0.2	0.1
Acacia inaequilatera	1.9	0.4	*Pterocaulon sphacelatum*	0.2	0.1
Hakea lorea subsp. *lorea*	3.2	0.4	*Scaevola parvifolia*	0.2	0.1
Acacia tenuissima	1.4	0.3	*Aristida inaequiglumis*	0.4	0.1
Anthobolus leptomerioides	1.7	0.3	*Corchorus* aff. *elachocarpus*	0.2	0.1
Neurachne muelleri	0.3	0.2	*Ptilotus astrolasius*	0.2	0.1
Acacia dictyophleba	0.5	0.2	*Senna notabilis*	0.2	0.1
Seringia sp. indet	0.3	0.2	*Solanum lasiophyllum*	0.4	0.1
Bonamia erecta	0.3	0.1			

Site: Q323	Type: Quadrat	Size: 20x125m	Date: 28/05/2024	Botanist: Emily Crowther, Julia Mattner
Landform:	Dune crest			
Slope & Aspect:	Low; West			
Soil:	Sandy Loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SD			
Condition:	Good			
Location:	50 767282 mE 7472471 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia melleodora	1.8	6.0	*Euphorbia wheeleri*	0.2	0.1
Triodia basedowii	0.8	5.0	*Tribulopis angustifolia*	0.1	0.1
Eragrostis eriopoda	0.5	5.0	*Eriachne aristidea*	0.5	0.1
Trianthema pilosum	0.1	3.0	*Afrohybanthus aurantiacus*	0.3	0.1
**Cenchrus ciliaris*	0.5	3.0	*Anthobolus leptomerioides*	1.2	0.1
Triodia pungens	0.5	2.0	*Arivela viscosa*	0.5	0.1
Hakea chordophylla	0.5	2.0	*Aristida contorta*	0.3	0.1
Aristida inaequiglumis	1.1	0.3	*Scaevola parvifolia* subsp. *pilbarae*	0.1	0.1
Aristida holathera var. *holathera*	0.5	0.3	*Bonamia erecta*	0.3	0.1
Corchorus aff. *elachocarpus*	0.3	0.3	*Hibiscus leptocladus*	0.2	0.1
Crotalaria cunninghamii subsp. *sturtii*	0.7	0.3	*Hibiscus sturtii* var. *platychlamys*	0.6	0.1
Neurachne muelleri	0.5	0.2	*Senna artemisioides* subsp. *oligophylla*	0.5	0.1
Acacia pachyacra	1.2	0.2	*Senna notabilis*	0.1	0.1
Grevillea eriostachya	0.5	0.2	*Sida cardiophylla*	1.0	0.1
Ptilotus polystachyus	0.3	0.1	*Solanum lasiophyllum*	0.5	0.1

Site: Q324	Type: Quadrat	Size: 50x50m	Date: 27/05/2024 Resampled: 17/09/2024	Botanist: Adam Crosby-Clark
Landform:	Dune crest			
Slope & Aspect:	Moderate; South			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Very Good			
Location:	50 768626 mE 7472016 mN			
Notes:	Quadrat resampled in Survey 4.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	0.5	31.0	*Eriachne helmsii*	0.4	0.1
**Cenchrus ciliaris*	0.4	1.5	*Cullen martinii*	0.5	0.1
Acacia dictyophleba	1.5	1.5	*Euphorbia wheeleri*	0.1	0.1
Trianthema pilosum	0.1	1.0	*Tribulopis angustifolia*	0.1	0.1
Aristida holathera var. *holathera*	0.3	1.0	*Afrohybanthus aurantiacus*	0.2	0.1
Eragrostis eriopoda	0.3	1.0	*Dicrastylis cordifolia*	0.3	0.1
Grevillea eriostachya	2.8	1.0	*Dodonaea coriacea*	0.5	0.1
Arivela viscosa	0.4	0.5	*Salsola australis*	0.5	0.1
Bonamia erecta	0.2	0.3	*Enneapogon polyphyllus*	0.2	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.2	*Rhynchosia minima*	0.1	0.1
Aristida contorta	0.5	0.2	*Hibiscus brachychlaenus*	0.4	0.1
Eriachne aristidea	0.3	0.2	*Sida* sp. Rabbit Flat (B.J. Carter 626)	0.1	0.1
Crotalaria cunninghamii	0.8	0.2	*Corchorus* aff. *elachocarpus*	0.3	0.1
Senna notabilis	0.3	0.2	*Hibiscus sturtii* var. *platychlamys*	0.5	0.1
Ptilotus polystachyus	1	0.2	*Solanum lasiophyllum*	0.2	0.1

Site: Q325	Type: Quadrat	Size: 50x50m	Date: 27/05/2024 Resampled: 17/09/2024	Botanist: Adam Crosby-Clark
Landform:	Dune swale			
Slope & Aspect:	Flat			
Soil:	Sandy Loam			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Very Good			
Location:	50 768669 mE 7472555 mN			
Notes:	Quadrat resampled in Survey 4.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.5	55.0	*Enneapogon polyphyllus*	0.2	0.1
Acacia ancistrocarpa	2.1	22.0	*Eriachne aristidea*	0.3	0.1
Triodia basedowii	0.3	2.1	*Goodenia microptera*	0.2	0.1
Eucalyptus gamophylla	2.5	1.0	*Neurachne muelleri*	0.1	0.1
Acacia inaequilatera	1.9	0.2	*Abutilon otocarpum*	0.1	0.1
Bonamia erecta	0.3	0.1	*Acacia sericophylla*	2.1	0.1
Scaevola parvifolia	0.2	0.1	*Corchorus* aff. *elachocarpus*	0.2	0.1
Haloragis gossei var. *gossei*	0.1	0.1	*Eulalia aurea*	0.3	0.1
Aristida holathera var. *holathera*	0.2	0.1	*Hibiscus sturtii* var. *platychlamys*	0.4	0.1
Aristida inaequiglumis	0.6	0.1	*Senna artemisioides* subsp. *oligophylla*	0.8	0.1
Euphorbia australis var. *subtomentosa*	0.1	0.1	*Senna notabilis*	0.3	0.1
Aristida contorta	0.1	0.1			

Site: Q326	Type: Quadrat	Size: 50x50m	Date: 28/05/2024	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy Loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SP			
Condition:	Very Good			
Location:	50 769688 mE 7471686 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.3	30.0	*Euploca inexplicita*	0.1	0.1
Eucalyptus gamophylla	3.0	10.0	*Ptilotus schwartzii*	0.1	0.1
Senna artemisioides subsp. *oligophylla*	1.0	8.0	*Neurachne muelleri*	0.1	0.1
Acacia ancistrocarpa	2.0	5.0	*Abutilon otocarpum*	0.1	0.1
Stylobasium spathulatum	2.0	5.0	*Solanum elatius*	0.2	0.1
Acacia synchronicia	2.0	3.0	*Euphorbia australis* var. *hispidula*	0.1	0.1
Arivela viscosa	0.1	1.0	*Ptilotus exaltatus*	0.1	0.1
Eriachne aristidea	0.1	1.0	*Aristida holathera* var. *holathera*	0.1	0.1
Tribulus hirsutus	0.1	1.0	*Enneapogon polyphyllus*	0.1	0.1
Acacia sclerosperma subsp. *sclerosperma*	2.0	1.0	*Paspalidium clementii*	0.1	0.1
Corchorus aff. *elachocarpus*	0.1	1.0	*Sporobolus australasicus*	0.1	0.1
Eremophila forrestii subsp. *forrestii*	1.0	1.0	*Duperreya commixta*	1	0.1
Ptilotus obovatus	0.4	1.0	*Goodenia microptera*	0.1	0.1
Senna notabilis	0.1	1.0	**Cenchrus ciliaris*	0.4	0.1
Solanum lasiophyllum	0.3	1.0	*Anthobolus leptomerioides*	0.8	0.1
Goodenia triodiophila	0.1	0.1	*Eremophila latrobei* subsp. *filiformis*	1	0.1
Euphorbia boophthona	0.1	0.1			

Site: Q327	Type: Quadrat	Size: 40x62.4m	Date: 27/05/2024	Botanist: Scott Hitchcock
Landform:	Dune swale			
Slope & Aspect:	Low			
Soil:	Sandy Loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SD			
Condition:	Very Good			
Location:	50 765377 mE 7473704 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	1.0	20	*Anthobolus leptomerioides*	1.3	2
Triodia basedowii	0.5	5	*Bonamia erecta*	0.3	1
Acacia dictyophleba	1.5	5	*Corynotheca pungens*	0.3	1
Trianthema pilosum	0.1	3	*Sida* sp. Rabbit Flat (B.J. Carter 626)	0.1	1
Corchorus aff. *elachocarpus*	0.1	3	*Grevillea eriostachya*	1.3	1
Eragrostis eriopoda	0.4	2	*Panicum australiense* var. *australiense*	0.1	0.1
Arivela viscosa	0.3	2	*Tribulus hirsutus*	0.1	0.1
Ptilotus polystachyus	0.6	2	*Dodonaea coriacea*	0.4	0.1
Aristida holathera var. *holathera*	0.2	2	*Petalostylis cassioides*	0.3	0.1
Eriachne aristidea	0.1	2	*Senna notabilis*	0.3	0.1
Hibiscus brachychlaenus	1.5	2			

Site: Q328	Type: Quadrat	Size: 50x50m	Date: 27/05/2024	Botanist: Adam Crosby-Clark, Julia Mattner
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy Loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Excellent			
Location:	50 771475 mE 7476405 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.5	45.0	*Goodenia microptera*	0.2	0.1
Corymbia candida subsp. *candida*	3.5	11.0	*Scaevola parvifolia*	0.2	0.1
Acacia ancistrocarpa	1.5	4.0	**Cenchrus ciliaris*	0.4	0.1
Acacia sclerosperma subsp. *sclerosperma*	1.8	4.0	*Neurachne muelleri*	0.2	0.1
Senna artemisioides subsp. *oligophylla*	1.4	3.0	*Acacia dictyophleba*	1.1	0.1
Eucalyptus xerothermica	4.5	3.0	*Acacia synchronicia*	0.8	0.1
Triodia brizoides	0.3	1.0	*Corchorus* aff. *elachocarpus*	0.2	0.1
Acacia adsurgens	1.5	0.2	*Grevillea wickhamii* subsp. *hispidula*	0.9	0.1
Acacia tetragonophylla	1.2	0.2	*Hakea chordophylla*	0.4	0.1
Vincetoxicum lineare	1.5	0.1	*Indigofera georgei*	0.4	0.1
Eremophila lanceolata	0.3	0.1	*Ptilotus obovatus*	0.5	0.1
Euphorbia boophthona	0.4	0.1	*Senna artemisioides* subsp. x *sturtii*	0.8	0.1
Aristida holathera var. *holathera*	0.3	0.1	*Solanum lasiophyllum*	0.3	0.1
Duperreya commixta	1.5	0.1	*Stylobasium spathulatum*	1.2	0.1
Rhynchosia minima	0.2	0.1			

Site: Q329	Type: Quadrat	Size: 50x50m	Date: 27/05/2024	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy Loam			
Rocks:	Ironstone			
Abundance:	10 -20% Common			
Size:	6-20 mm - medium gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	FP3			
Condition:	Very Good			
Location:	50 769296 mE 7476364 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.2	20	*Triodia angusta*	0.4	1.0
Acacia aptaneura	2.0	10	*Sclerolaena cornishiana*	0.1	0.1
Acacia sclerosperma subsp. *sclerosperma*	2.0	7	*Eremophila cuneifolia*	0.5	0.1
Stylobasium spathulatum	1.5	5	*Euphorbia biconvexa*	0.1	0.1
Acacia synchronicia	2.0	5	*Ptilotus exaltatus*	0.1	0.1
Eremophila forrestii subsp. *forrestii*	1.0	2	*Enneapogon polyphyllus*	0.1	0.1
Acacia tetragonophylla	2.0	2	*Ptilotus obovatus*	0.2	0.1
Senna artemisioides subsp. *oligophylla*	0.3	2	*Rhagodia eremaea*	1.0	0.1
Eucalyptus xerothermica	4.0	2	*Senna notabilis*	0.1	0.1

Site: Q330	Type: Quadrat	Size: 50x50m	Date: 27/05/2024	Botanist: Emily Crowther, Julia Mattner
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay loam			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	6-20 mm - medium gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	FP3			
Condition:	Very Good			
Location:	50 768751 mE 7475590 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	3.0	20.0	*Corchorus* aff. *elachocarpus*	0.3	0.2
Triodia pungens	0.3	4.0	*Euphorbia australis* var. *hispidula*	0.2	0.1
Acacia aneura	3.0	3.0	*Portulaca oleracea*	0.1	0.1
Triodia basedowii	0.3	1.5	*Tribulus macrocarpus*	0.1	0.1
Eucalyptus gamophylla	4.0	1.0	*Aristida contorta*	0.2	0.1
Eremophila forrestii subsp. *forrestii*	1.3	1.0	*Enneapogon polyphyllus*	0.2	0.1
Acacia pruinocarpa	2.0	0.3	*Evolvulus alsinoides* var. *villosicalyx*	0.2	0.1
Acacia synchronicia	2.0	0.3	*Streptoglossa bubakii*	0.2	0.1
Senna notabilis	0.1	0.3	*Abutilon otocarpum*	0.3	0.1
Sporobolus australasicus	0.3	0.2	*Arivela viscosa*	0.5	0.1
Paspalidium clementii	0.3	0.2	*Acacia tenuissima*	1	0.1
Scaevola parvifolia subsp. *pilbarae*	0.1	0.2	*Hibiscus sturtii* var. *campylochlamys*	0.2	0.1
Acacia ancistrocarpa	1.5	0.2			

Site: Q331	Type: Quadrat	Size: 50x50m	Date: 27/05/2024	Botanist: Adam Crosby-Clark, Julia Mattner
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Loamy Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA1			
Condition:	Excellent			
Location:	50 769162 mE 7475246 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.6	55.0	*Jasminum didymum* subsp. *lineare*	0.5	0.1
Acacia sclerosperma subsp. *sclerosperma*	2.2	8.0	*Scaevola parvifolia*	0.2	0.1
Stylobasium spathulatum	1.3	4.0	*Eragrostis eriopoda*	0.3	0.1
Acacia dictyophleba	1.4	0.5	*Neurachne muelleri*	0.2	0.1
Triodia basedowii	0.4	0.2	*Eulalia aurea*	0.5	0.1
Aristida holathera var. *holathera*	0.3	0.1	*Hakea chordophylla*	2.5	0.1

Site: Q332	Type: Quadrat	Size: 30x83.3m	Date: 27/05/2024	Botanist: Adam Crosby-Clark, Julia Mattner
Landform:	Dune crest			
Slope & Aspect:	Moderate; South			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Very Good			
Location:	50 767883 mE 7473990 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Trianthema pilosum	0.1	15.0	*Triodia brizoides*	0.3	0.2
Acacia dictyophleba	1.6	7.0	*Ptilotus polystachyus*	0.4	0.2
Aristida holathera var. *holathera*	0.3	6.0	*Hibiscus brachychlaenus*	0.4	0.2
Sida cardiophylla	0.8	5.0	*Anthobolus leptomerioides*	0.9	0.1
Triodia schinzii	0.6	3.0	*Tribulopis angustifolia*	0.1	0.1
Eriachne aristidea	0.3	3.0	*Scaevola parvifolia*	0.2	0.1
Aristida contorta	0.1	1.0	*Aristida inaequiglumis*	0.6	0.1
**Cenchrus ciliaris*	0.6	1.0	*Neurachne muelleri*	0.2	0.1
Eragrostis eriopoda	0.4	1.0	*Afrohybanthus aurantiacus*	0.3	0.1
Corynotheca pungens	0.5	0.5	*Corchorus* aff. *elachocarpus*	0.4	0.1
Arivela viscosa	0.5	0.5	*Senna notabilis*	0.4	0.1
Crotalaria cunninghamii	0.7	0.3	*Solanum lasiophyllum*	0.6	0.1

Site: Q333	Type: Quadrat	Size: 50x50m	Date: 28/05/2024 Resampled: 17/09/2024	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Low			
Soil:	Sandy Loam			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Excellent			
Location:	50 768922 mE 7474516 mN			
Notes:	Quadrat resampled in Survey 4.			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	7.3	36.0	*Trichodesma zeylanicum* var. *zeylanicum*	0.1	0.1
Triodia pungens	0.4	12.1	*Euphorbia wheeleri*	0.1	0.1
Triodia basedowii	0.3	2.4	*Aristida contorta*	0.2	0.1
Acacia pruinocarpa	3.8	1.4	*Aristida holathera* var. *holathera*	0.1	0.1
Acacia aneura	2.1	0.8	*Enneapogon lindleyanus*	0.2	0.1
Acacia rhodophloia	1.7	0.6	*Eriachne aristidea*	0.2	0.1
Enneapogon polyphyllus	0.2	0.4	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Triodia vanleeuwenii	0.2	0.4	*Goodenia microptera*	0.2	0.1
Haloragis gossei var. *gossei*	0.2	0.2	*Chrysopogon fallax*	0.4	0.1
Maireana planifolia	0.4	0.2	*Neurachne muelleri*	0.2	0.1
Afrohybanthus aurantiacus	0.3	0.2	*Acacia inaequilatera*	0.7	0.1
Eremophila forrestii subsp. *forrestii*	1.4	0.2	*Corchorus* aff. *elachocarpus*	0.2	0.1
Eremophila latrobei subsp. *filiformis*	1.3	0.2	*Hibiscus burtonii*	0.2	0.1
Psydrax suaveolens	1.1	0.2	*Senna artemisioides* subsp. *oligophylla*	0.1	0.1
Ptilotus obovatus	0.3	0.2	*Senna notabilis*	0.1	0.1
Solanum lasiophyllum	0.3	0.2	*Sida* sp. L (A.M. Ashby 4202)	0.2	0.1
Dysphania kalpari	0.1	0.1	*Corchorus sidoides* subsp. *sidoides*	0.1	0.1
Goodenia prostrata	0.1	0.1	*Euploca inexplicita*	0.1	0.1
Tribulus macrocarpus	0.1	0.1	*Goodenia connata*	0.1	0.1
Ptilotus xerophilus	0.3	0.1	*Streptoglossa bubakii*	0.2	0.1
Polygala glaucifolia	0.1	0.1	*Ptilotus exaltatus*	0.5	0.1
Eremophila lanceolata	0.2	0.1	*Ptilotus polystachyus*	0.5	0.1
Arivela viscosa	0.2	0.1	*Sporobolus australasicus*	0.1	0.1
Euphorbia boophthona	0.2	0.1	*Acacia tetragonophylla*	2.0	0.1

Site: Q334	Type: Quadrat	Size: 50x50m	Date: 28/05/2024 Resampled: 17/09/2024	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Low			
Soil:	Sandy clay loam			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Excellent			
Location:	50 769733 mE 7473908 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia angusta	0.6	43.0	*Goodenia microptera*	0.1	0.1
Triodia basedowii	0.3	0.4	*Pterocaulon sphacelatum*	0.2	0.1
Acacia synchronicia	0.5	0.3	*Corchorus* aff. *elachocarpus*	0.2	0.1
Senna notabilis	0.2	0.2	*Ptilotus exaltatus*	0.3	0.1
Aristida contorta	0.2	0.1	*Streptoglossa bubakii*	0.1	0.1
Eriachne aristidea	0.1	0.1			

Site: Q421	Type: Quadrat	Size: 50x50m	Date: 17/09/2024	Botanist: Adam Crosby-Clark, Emily Crowther, Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Poor			
Location:	50 767884 mE 7472143 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	3.0	35.0	*Salsola australis*	0.5	0.1
Triodia pungens	0.7	3.0	*Sclerolaena cornishiana*	0.5	0.1
**Cenchrus setiger*	0.3	3.0	*Boerhavia coccinea*	0.1	0.1
Abutilon otocarpum	0.3	0.3	*Portulaca oleracea*	0.1	0.1
Calocephalus knappii	0.1	0.1	*Trianthema triquetrum*	0.1	0.1
Calotis plumulifera	0.3	0.1	*Aristida contorta*	0.1	0.1
Dysphania melanocarpa forma melanocarpa	0.2	0.1	*Aristida holathera* var. *holathera*	0.3	0.1
Gomphrena kanisii	0.1	0.1	*Enneapogon caerulescens*	0.1	0.1
Goodenia prostrata	0.1	0.1	*Enneapogon polyphyllus*	0.1	0.1
Eragrostis leptocarpa	0.5	0.1	*Iseilema vaginiflorum*	0.1	0.1
Nicotiana occidentalis	0.3	0.1	*Sporobolus australasicus*	0.3	0.1
Abutilon oxycarpum subsp. Prostrate (A.A. Mitchell PRP 1266)	0.1	0.1	*Sida platycalyx*	0.3	0.1
Eragrostis setifolia	0.5	0.1	*Eragrostis dielsii*	0.1	0.1
Abutilon lepidum	0.3	0.1	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Dodonaea petiolaris	0.5	0.1	**Cenchrus ciliaris*	0.5	0.1
Maireana planifolia	0.1	0.1	*Chrysopogon fallax*	0.3	0.1
Maireana villosa	0.2	0.1	*Ptilotus astrolasius*	0.3	0.1
Arivela viscosa	0.5	0.1	*Sida fibulifera*	0.2	0.1
Calandrinia ptychosperma	0.1	0.1	*Solanum lasiophyllum*	0.3	0.1
Ptilotus exaltatus	0.3	0.1			

Site: Q422	Type: Quadrat	Size: 50x50m	Date: 17/09/2024	Botanist: Samuel Hetherington
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Very Good			
Location:	50 768353 mE 7472398 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.5	60.0	*Aristida holathera* var. *holathera*	0.3	0.1
Acacia ancistrocarpa	2.1	15.0	*Enneapogon polyphyllus*	0.3	0.1
Eucalyptus gamophylla	4.0	8.0	*Goodenia microptera*	0.1	0.1
Acacia adsurgens	2.0	2.0	*Scaevola parvifolia*	0.1	0.1
Acacia inaequilatera	2.0	1.0	*Eragrostis eriopoda*	0.1	0.1
Acacia sericophylla	1.5	1.0	*Eulalia aurea*	0.4	0.1
Corymbia hamersleyana	5.0	1.0	*Neurachne muelleri*	0.3	0.1
Triodia basedowii	0.3	0.5	*Corchorus sidoides* subsp. *sidoides*	0.1	0.1
Aristida inaequiglumis	0.5	0.3	*Hibiscus sturtii* var. *platychlamys*	0.2	0.1
Seringia exastia	0.3	0.2	*Ptilotus astrolasius*	0.5	0.1
*Cenchrus ciliaris	0.3	0.2	*Senna artemisioides* subsp. *oligophylla*	1	0.1
Arivela viscosa	0.2	0.1	*Senna notabilis*	0.1	0.1
Ptilotus exaltatus	0.1	0.1			

Site: Q423	Type: Quadrat	Size: 50x50m	Date: 17/09/2024	Botanist: Adam Crosby-Clark
Landform:	Undulating plain			
Slope & Aspect:	Low; Northwest			
Soil:	Sandy Loam			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA1			
Condition:	Very Good			
Location:	50 765924 mE 7471602 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.4	38.0	*Scaevola parvifolia*	0.3	0.2
Acacia ancistrocarpa	1.8	3.2	*Codonocarpus cotinifolius*	1.6	0.2
Androcalva loxophylla	0.4	1.4	*Grevillea wickhamii* subsp. *hispidula*	1.6	0.2
Acacia pachyacra	1.7	0.6	*Panicum australiense* var. *australiense*	0.2	0.1
Dicrastylis cordifolia	0.5	0.3	*Bonamia erecta*	0.2	0.1
Hakea lorea subsp. *lorea*	1.4	0.3	*Corchorus sidoides* subsp. *sidoides*	0.2	0.1
Ptilotus polystachyus	0.3	0.2	*Sida* sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.1
Acacia dictyophleba	0.6	0.2	*Trichodesma zeylanicum* var. *zeylanicum*	0.2	0.1
Grevillea eriostachya	0.8	0.2	*Trianthema pilosum*	0.2	0.1
Aristida holathera var. *holathera*	0.2	0.2	*Afrohybanthus aurantiacus*	0.2	0.1
Eriachne aristidea	0.2	0.2	*Senna notabilis*	0.1	0.1

Site: Q424	Type: Quadrat	Size: 25x100m	Date: 17/09/2024	Botanist: Emily Crowther
Landform:	Dune crest			
Slope & Aspect:	Low; West			
Soil:	Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SD			
Condition:	Good			
Location:	50 765871 mE 7471771 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.6	15.0	*Triodia basedowii*	0.6	0.2
Aristida holathera var. *holathera*	0.5	0.7	*Grevillea eriostachya*	1.2	0.2
Indigofera rugosa	0.5	0.6	*Dicrastylis cordifolia*	0.6	0.2
Hibiscus brachychlaenus	1.3	0.6	*Senna notabilis*	0.4	0.2
Trianthema pilosum	0.1	0.5	*Tribulopis angustifolia*	0.1	0.1
Acacia dictyophleba	1.0	0.5	*Tribulus macrocarpus*	0.1	0.1
Eriachne aristidea	0.4	0.5	*Corchorus tectus*	0.3	0.1
Bonamia erecta	0.5	0.5	*Petalostylis cassioides*	0.5	0.1
Triodia schinzii	0.7	0.3	*Ptilotus polystachyus*	0.5	0.1
Eriachne gardneri	0.6	0.3	*Salsola australis*	0.5	0.1
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.3	*Scaevola parvifolia*	0.3	0.1
Sida sp. Rabbit Flat (B.J. Carter 626)	1.0	0.3	*Senna artemisioides* subsp. *oligophylla*	0.6	0.1
Crotalaria cunninghamii	1.0	0.3	*Solanum lasiophyllum*	0.5	0.1

Site: Q425	Type: Quadrat	Size: 50x50m	Date: 17/09/2024	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Low			
Soil:	Sandy clay loam			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Excellent			
Location:	50 770265 mE 7474027 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	7.2	23.0	*Ptilotus exaltatus*	0.4	0.1
Triodia basedowii	0.3	18.0	*Aristida contorta*	0.1	0.1
Acacia pruinocarpa	6.2	4.8	*Aristida holathera* var. *holathera*	0.2	0.1
Eremophila forrestii subsp. *forrestii*	1.4	2.5	*Enneapogon lindleyanus*	0.2	0.1
Eremophila cuneifolia	0.8	0.2	*Enneapogon polyphyllus*	0.2	0.1
Hakea chordophylla	2.3	0.2	*Paspalidium clementii*	0.1	0.1
Maireana planifolia	0.4	0.2	*Sporobolus australasicus*	0.1	0.1
Psydrax latifolia	1.2	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.2	0.1
Ptilotus obovatus	0.3	0.2	*Pluchea dentex*	0.2	0.1
Tribulus macrocarpus	0.1	0.1	*Abutilon otocarpum*	0.2	0.1
Sida platycalyx	0.2	0.1	*Arivela viscosa*	0.1	0.1
Goodenia microptera	0.1	0.1	*Corchorus sidoides* subsp. *sidoides*	0.2	0.1
Eriachne obtusa	0.2	0.1	*Senna artemisioides* subsp. *oligophylla*	0.1	0.1
Hibiscus burtonii	0.4	0.1	*Senna notabilis*	0.2	0.1
Indigofera georgei	0.1	0.1	*Sida* sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.1
Sida sp. L (A.M. Ashby 4202)	0.2	0.1	*Solanum lasiophyllum*	0.2	0.1

Site: Q426	Type: Quadrat	Size: 50x50m	Date: 17/09/2024	Botanist: Emily Crowther
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Very Good			
Location:	50 770376 mE 7474629 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	3.0	10.0	*Triodia longiceps*	0.3	0.1
Triodia basedowii	0.6	7.0	*Maireana georgei*	0.3	0.1
Eremophila cuneifolia	1.0	3.0	*Senna* sp. Meekatharra (E. Bailey 1-26)	0.3	0.1
Triodia angusta	0.5	2.0	*Dysphania melanocarpa forma melanocarpa*	0.3	0.1
Acacia synchronicia	1.0	2.0	*Ptilotus exaltatus*	0.3	0.1
Acacia ayersiana	4.0	1.0	*Ptilotus fusiformis*	0.3	0.1
Enneapogon polyphyllus	0.5	1.0	*Ptilotus polystachyus*	0.5	0.1
Ptilotus obovatus	1.0	0.5	*Sclerolaena cornishiana*	0.3	0.1
Rhagodia eremaea	1.5	0.3	*Portulaca oleracea*	0.1	0.1
Sida fibulifera	0.4	0.3	*Aristida contorta*	0.3	0.1
Grevillea striata	2.0	0.2	*Eragrostis leptocarpa*	0.3	0.1
Arivela viscosa	0.5	0.2	*Paspalidium rarum*	0.2	0.1
Aristida holathera var. *holathera*	0.3	0.2	*Sporobolus australasicus*	0.3	0.1
Enneapogon caerulescens	0.3	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Sida platycalyx	0.3	0.2	*Abutilon lepidum*	0.3	0.1
Acacia tetragonophylla	1.5	0.2	*Abutilon otocarpum*	0.3	0.1
Enchylaena tomentosa var. *tomentosa*	0.5	0.2	*Eremophila forrestii* subsp. *forrestii*	1.1	0.1
Eremophila latrobei subsp. *filiformis*	1.1	0.2	*Maireana planifolia*	0.3	0.1
Psydrax latifolia	1.0	0.2	*Maireana villosa*	0.5	0.1
Senna artemisioides subsp. *oligophylla*	1.0	0.2	*Ptilotus astrolasius*	0.3	0.1
Senna glutinosa subsp. x *luerssenii*	2.0	0.2	*Senna notabilis*	0.3	0.1

Site: Q427	Type: Quadrat	Size: 50x50m	Date: 17/09/2024	Botanist: Samuel Hetherington
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy clay loam			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Good			
Location:	50 771349 mE 7476055 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	6.0	30.0	*Gomphrena affinis* subsp. *pilbarensis*	0.1	0.1
Abutilon macrum	1.3	15.0	*Goodenia prostrata*	0.1	0.1
Enneapogon polyphyllus	0.2	12.0	*Dichanthium sericeum* subsp. *humilius*	0.2	0.1
Acacia pruinocarpa	5.0	8.0	*Cucumis melo*	0.1	0.1
Aristida inaequiglumis	0.3	4.0	*Convolvulus clementii*	0.1	0.1
Paspalidium clementii	0.3	3.0	*Ptilotus gomphrenoides*	0.1	0.1
**Cenchrus ciliaris*	0.3	3.0	*Ptilotus schwartzii*	0.2	0.1
Eremophila forrestii subsp. *forrestii*	1.5	3.0	*Streptoglossa bubakii*	0.5	0.1
Indigofera georgei	0.4	2.0	*Streptoglossa odora*	0.2	0.1
Senna artemisioides subsp. *helmsii*	1.0	2.0	*Enchylaena tomentosa* var. *tomentosa*	0.5	0.1
Sida fibulifera	0.3	2.0	*Maireana villosa*	0.2	0.1
Triodia pungens	0.3	1.0	*Rhagodia eremaea*	2.0	0.1
Ptilotus obovatus	0.5	1.0	*Dysphania rhadinostachya* subsp. *rhadinostachya*	0.1	0.1
Eucalyptus xerothermica	4.0	1.0	*Ptilotus helipteroides*	0.1	0.1
Ptilotus exaltatus	0.5	0.5	*Trichodesma zeylanicum* var. *zeylanicum*	1.0	0.1
Tribulus macrocarpus	0.1	0.5	*Aristida contorta*	0.2	0.1
Abutilon otocarpum	0.3	0.5	*Aristida holathera* var. *holathera*	0.3	0.1
Acacia tetragonophylla	3.0	0.5	*Iseilema vaginiflorum*	0.1	0.1
Senna notabilis	0.2	0.5	*Duperreya commixta*	0.5	0.1
Ptilotus gaudichaudii	0.2	0.4	*Rhynchosia minima*	0.1	0.1
Maireana planifolia	0.3	0.3	**Malvastrum americanum*	0.2	0.1
Ptilotus xerophilus	0.3	0.3	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Senna stricta	1.0	0.2	*Pterocaulon sphacelatum*	0.1	0.1
Portulaca oleracea	0.1	0.2	*Chrysopogon fallax*	0.5	0.1
Sporobolus australasicus	0.1	0.2	*Enteropogon ramosus*	0.3	0.1
Hakea lorea subsp. *lorea*	4.0	0.2	*Eriachne lanata*	0.3	0.1
Cucumis variabilis	0.5	0.1	*Capparis lasiantha*	0.5	0.1
Amaranthus cuspidifolius	0.1	0.1	*Senna artemisioides* subsp. *oligophylla*	1.0	0.1
Euphorbia biconvexa	0.2	0.1	*Solanum lasiophyllum*	0.5	0.1

Site: R101	Type: Releve	Size: -	Date: 15/10/2023	Botanist: Adam Crosby-Clark
Landform:	Lower hill slope			
Slope & Aspect:	Moderate; North			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 738721 mE 7475770 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	40	*Hakea lorea* subsp. *lorea*	3.2	1.0
Triodia wiseana	0.3	5	*Grevillea wickhamii* subsp. *hispidula*	0.4	0.1
Acacia hilliana	0.4	1	*Ptilotus rotundifolius*	0.6	0.1
Acacia inaequilatera	2.6	1	*Senna glutinosa* subsp. *glutinosa*	1.5	0.1

Site: R102	Type: Releve	Size: -	Date: 15/10/2023	Botanist: Adam Crosby-Clark
Landform:	Drainage line on lower slope			
Slope & Aspect:	Low; North			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 738719 mE 7475887 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	3.8	65	*Themeda triandra*	0.4	1
Triodia pungens	0.5	15	*Acacia adoxa* var. *adoxa*	0.4	1
Acacia hilliana	0.4	4	*Acacia inaequilatera*	2.6	1
Neurachne muelleri	0.4	3	*Ptilotus astrolasius*	0.3	1
Grevillea wickhamii subsp. *hispidula*	1.6	2	*Corymbia hamersleyana*	5.8	1

Site: R103	Type: Releve	Size: -	Date: 15/10/2023	Botanist: Adam Crosby-Clark
Landform:	Drainage line on flat			
Slope & Aspect:	Low			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	6-20 mm - medium gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 735131 mE 7470742 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	2.8	60	*Corymbia hamersleyana*	4.8	3
Triodia pungens	0.4	20	*Acacia adoxa* var. *adoxa*	0.5	1
Eucalyptus gamophylla	2.6	4	*Bonamia erecta*	0.4	0.1
Themeda triandra	0.5	4			

Site: R104	Type: Releve	Size: -	Date: 16/10/2023	Botanist: Adam Crosby-Clark
Landform:	Hill crest; Simple			
Slope & Aspect:	Moderate; Flat			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 732316 mE 7470080 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.2	35	*Acacia inaequilatera*	0.4	2
Acacia spondylophylla	0.4	11			

Site: R105	Type: Releve	Size: -	Date: 16/10/2023	Botanist: Adam Crosby-Clark
Landform:	Hill crest; Simple			
Slope & Aspect:	Moderate; North			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 732282 mE 7470167 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.4	26	*Corymbia hamersleyana*	4.6	1
Eucalyptus leucophloia subsp. *leucophloia*	5.3	6	*Triodia wiseana*	0.4	1

Site: R106	Type: Releve	Size: -	Date: 16/10/2023	Botanist: Adam Crosby-Clark
Landform:	Hill crest; Simple			
Slope & Aspect:	Moderate; North			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Recent (0 to 2 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 732647 mE 7470337 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia wiseana	0.2	20	*Acacia hilliana*	0.3	6
Triodia vanleeuwenii	0.2	15	*Eucalyptus leucophloia* subsp. *leucophloia*	5.8	5

Site: R107	Type: Releve	Size: -	Date: 16/10/2023	Botanist: Adam Crosby-Clark
Landform:	Hill crest; Ridge			
Slope & Aspect:	Steep			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	>600 mm - Boulders			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 733303 mE 7469946 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.3	30	*Eucalyptus leucophloia* subsp. *leucophloia*	4.8	3
Eragrostis eriopoda	0.3	6			

Site: R108	Type: Releve	Size: -	Date: 16/10/2023	Botanist: Adam Crosby-Clark
Landform:	Hill Slope, Breakaway			
Slope & Aspect:	Cliff; South			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HS1			
Condition:	Excellent			
Location:	50 729566 mE 7466744 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia catenulata subsp. *occidentalis*	6.4	80	*Acacia incurvaneura*	4.8	4
Triodia wiseana	0.4	6	*Eucalyptus leucophloia* subsp. *leucophloia*	4.8	2

Site: R109	Type: Releve	Size: -	Date: 16/10/2023	Botanist: Adam Crosby-Clark
Landform:	Hill Slope, Breakaway			
Slope & Aspect:	Cliff; South			
Soil:	Sandy Clay Loam			
Rocks:	Ironstone			
Abundance:	50-90% Abundant			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	HS1			
Condition:	Excellent			
Location:	50 729922 mE 7466628 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia incurvaneura	4.8	40	*Triodia wiseana*	0.3	7
Acacia catenulata subsp. *occidentalis*	5.4	25			

Site: R110	Type: Releve	Size: -	Date: 17/10/2023	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Low			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	50-90% Abundant			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 745533 mE 7481248 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia wiseana	0.4	31	*Neurachne muelleri*	0.3	0.1
Eucalyptus gamophylla	3.2	2	*Acacia ancistrocarpa*	0.4	0.1
Grevillea wickhamii subsp. *hispidula*	2.4	1	*Ptilotus astrolasius*	0.3	0.1

Site: R111	Type: Releve	Size: -	Date: 20/10/2023	Botanist: Adam Crosby-Clark
Landform:	Drainage/Depression			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Very Good			
Location:	50 740753 mE 7496104 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia pruinocarpa	3.1	1	*Acacia synchronicia*	0.4	0.2

Site: R112	Type: Releve	Size: -	Date: 21/10/2023	Botanist: Adam Crosby-Clark
Landform:	Clay pan			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Good			
Location:	50 737389 mE 7498154 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia synchronicia	2.2	6	*Acacia incurvaneura*	2.4	1
Acacia aptaneura	6.3	3	*Sclerolaena cornishiana*	0.2	0.3
**Cenchrus ciliaris*	0.3	2			

Site: R113	Type: Releve	Size: -	Date: 20/10/2023	Botanist: Adam Crosby-Clark
Landform:	Clay pan			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Good			
Location:	50 740917 mE 7496780 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.3	6	*Acacia pruinocarpa*	4.5	1
Acacia synchronicia	2.6	5	*Senna artemisioides* subsp. *helmsii*	0.8	1
Acacia aneura	3.8	2			

Site: R114	Type: Releve	Size: -	Date: 22/10/2023	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Good			
Location:	50 733405 mE 7499799 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia incurvaneura	5.8	40	*Acacia pruinocarpa*	6.8	3.0
**Cenchrus ciliaris*	0.4	4	*Acacia synchronicia*	1.3	0.3

Site: R115	Type: Releve	Size: -	Date: 22/10/2023	Botanist: Adam Crosby-Clark
Landform:	Drainage line on flat			
Slope & Aspect:	Low			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	FP3			
Condition:	Good			
Location:	50 733189 mE 7499982 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia incurvaneura	6.0	19	*Acacia pruinocarpa*	6.6	2
**Cenchrus ciliaris*	0.3	12	*Acacia synchronicia*	1.5	0.4
Acacia citrinoviridis	6.2	6			

Site: R116	Type: Releve	Size: -	Date: 22/10/2023	Botanist: Adam Crosby-Clark
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Good			
Location:	50 732070 mE 7500891 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.3	11.0	*Hakea lorea* subsp. *lorea*	4.6	1
Acacia pruinocarpa	5.1	2.0	*Salsola australis*	0.3	0.1
Acacia inaequilatera	4.2	1.2	*Sclerolaena cornishiana*	0.4	0.1
Acacia synchronicia	1.9	1.0			

Site: R117	Type: Releve	Size: -	Date: 13/10/2023	Botanist: Melissa Hay
Landform:	Drainage line on lower slope			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 741893 mE 7479536 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	2.0	70	*Indigofera monophylla*	0.3	0.5
Eucalyptus leucophloia subsp. *leucophloia*	4.0	3	*Corymbia hamersleyana*	1	0.1
Triodia pungens	0.3	2			

Site: R118	Type: Releve	Size: -	Date: 13/10/2023	Botanist: Melissa Hay
Landform:	Drainage line on upper slope			
Slope & Aspect:	Steep			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	200-600 mm - Stones			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 730393 mE 7468203 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia pungens	0.5	30	*Eucalyptus leucophloia* subsp. *leucophloia*	6.0	5.0
Themeda triandra	0.5	5	*Acacia arida*	1.5	4.0
Grevillea wickhamii subsp. *hispidula*	2.0	5	*Corymbia candida* subsp. *candida*	5.0	1.0
Santalum lanceolatum	1.8	5	*Ficus brachypoda*	0.6	0.1

Site: R119	Type: Releve	Size: -	Date: 14/10/2023	Botanist: Melissa Hay
Landform:	Hill slope; Simple			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 738253 mE 7473735 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia hilliana	0.5	8	*Triodia vanleeuwenii*	0.3	1.0
Acacia inaequilatera	2.0	2	*Ptilotus rotundifolius*	0.3	0.1

Site: R120	Type: Releve	Size: -	Date: 16/10/2023	Botanist: Melissa Hay
Landform:	Hill slope; Simple			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Basalt			
Abundance:	>90% Continuous			
Size:	200-600 mm - Stones			
Fire:	Old (6+ yr)			
Vegetation:	BO			
Condition:	Excellent			
Location:	50 725998 mE 7458998 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	4.0	45.0	*Eremophila fraseri* subsp. *fraseri*	0.5	0.1
Triodia wiseana	0.4	15.0	*Eremophila latrobei* subsp. *latrobei*	1	0.1
Enneapogon lindleyanus	0.3	3.0	*Eremophila longifolia*	0.5	0.1
Chrysopogon fallax	0.5	0.5			

Site: R122	Type: Releve	Size: -	Date: 20/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	20-50% Many			
Size:	6-20 mm - medium gravel			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Very Good			
Location:	50 748685 mE 7492774 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	3.0	0.5	*Sclerolaena cornishiana*	0.2	0.1
Triodia pungens	0.2	0.1			

Site: R123	Type: Releve	Size: -	Date: 20/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Ironstone			
Abundance:	2-10% Few			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SS2			
Condition:	Very Good			
Location:	50 742368 mE 7495510 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia synchronicia	1.5	1.0	*Triodia pungens*	0.3	0.2
Acacia aptaneura	4.0	0.5			

Site: R124	Type: Releve	Size: -	Date: 22/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sandy Clay Loam			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA1			
Condition:	Excellent			
Location:	50 726157 mE 7504518 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia basedowii	0.5	60	*Acacia inaequilatera*	2	1
Acacia ancistrocarpa	1.5	2	*Acacia pachyacra*	1	0.1
Acacia dictyophleba	1.5	2	*Acacia pruinocarpa*	1	0.1
Hakea lorea subsp. *lorea*	2.0	2			

Site: R125	Type: Releve	Size: -	Date: 22/10/2023	Botanist: Melissa Hay
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Old (6+ yr)			
Vegetation:	SA3			
Condition:	Good			
Location:	50 728304 mE 7503522 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia synchronicia	1.5	0.5	**Cenchrus ciliaris*	0.3	0.1
Acacia incurvaneura	3.0	0.5			

Site: R126	Type: Releve	Size: -	Date: 14/10/2023	Botanist: Scott Hitchcock
Landform:	Hill crest; Ridge			
Slope & Aspect:	Low; North			
Soil:	Loamy Sand			
Rocks:	Shale			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 741115 mE 7479041 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.2	15	*Ptilotus rotundifolius*	0.5	0.1
Acacia hilliana	0.2	10	*Hakea chordophylla*	0.8	0.1
Eucalyptus leucophloia subsp. *leucophloia*	5.0	2			

Site: R127	Type: Releve	Size: -	Date: 15/10/2023	Botanist: Scott Hitchcock
Landform:	Drainage line on flat			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Creek stones			
Abundance:	>90% Continuous			
Size:	200-600 mm - Stones			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Very Good			
Location:	50 730585 mE 7467938 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Themeda triandra	0.5	10	*Eucalyptus victrix*	8	4
Melaleuca linophylla	3.0	6	*Acacia sericophylla*	4	1
Eriachne helmsii	0.4	5	*Grevillea wickhamii subsp. hispidula*	2	1

Site: R128	Type: Releve	Size: -	Date: 15/10/2023	Botanist: Scott Hitchcock
Landform:	Drainage line on flat			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	Creek stones			
Abundance:	50-90% Abundant			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 738253 mE 7473735 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	2.0	30	*Triodia pungens*	0.4	1
Androcalva luteiflora	1.2	10	*Eriachne mucronata*	0.6	1
Themeda triandra	0.3	2	*Grevillea wickhamii* subsp. *hispidula*	2.0	1

Site: R129	Type: Releve	Size: -	Date: 18/10/2023	Botanist: Scott Hitchcock
Landform:	Hill crest; Ridge			
Slope & Aspect:	Low; East			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 738390 mE 7475077 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.2	15	*Hakea chordophylla*	3	1
Acacia hilliana	0.3	4	*Eucalyptus leucophloia* subsp. *leucophloia*	6	1
Acacia bivenosa	1.5	2			

Site: R130	Type: Releve	Size: -	Date: 18/10/2023	Botanist: Scott Hitchcock
Landform:	Drainage			
Slope & Aspect:	Steep			
Soil:	Loamy Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	200-600 mm - Stones			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 738337 mE 7475204 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	15	*Atalaya hemiglauca*	2	2
Eucalyptus leucophloia subsp. *leucophloia*	5.0	3			

Site: R131	Type: Releve	Size: -	Date: 22/10/2023	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Clayey Sand			
Rocks:	-			
Abundance:	No rocks			
Size:	-			
Fire:	Moderate (3 to 5 yr)			
Vegetation:	SA3			
Condition:	Good			
Location:	50 728331 mE 7503546 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia aptaneura	4.5	15.0	*Enneapogon lindleyanus*	0.2	0.1
Chrysopogon fallax	0.3	3.0	*Hakea lorea* subsp. *lorea*	0.8	0.1
Sclerolaena cornishiana	0.1	0.1			

Site: R201	Type: Releve	Size: -	Date: 4/05/2024	Botanist: Adam Crosby-Clark
Landform:	Hill Slope, Breakaway			
Slope & Aspect:	Precipitous; Southeast			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	HS1			
Condition:	Excellent			
Location:	50 729567 mE 7466697 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia catenulata subsp. *occidentalis*	6.7	70.0	*Boerhavia coccinea*	0.2	0.1
Arivela viscosa	0.4	3.0	*Enneapogon lindleyanus*	0.2	0.1
Acacia aptaneura	6.2	2.0	*Sporobolus australasicus*	0.1	0.1
Acacia pruinocarpa	5.3	1.4	*Duperreya commixta*	0.2	0.1
Eriachne mucronata	0.4	0.7	*Cheilanthes contigua*	0.1	0.1
Capparis lasiantha	2.6	0.3	*Goodenia muelleriana*	0.1	0.1
Triodia wiseana	0.2	0.3	*Senna notabilis*	0.2	0.1
Triodia pungens	0.3	0.2	*Solanum lasiophyllum*	0.3	0.1
Maireana villosa	0.3	0.2	*Solanum perarmatum0*	0.2	0.1
Senna artemisioides subsp. *oligophylla*	1.4	0.2	*Euphorbia boophthona*	0.2	0.1
Senna glutinosa subsp. *pruinosa*	1.6	0.2	*Gomphrena cunninghamii*	0.1	0.1
Eucalyptus leucophloia subsp. *leucophloia*	0.6	0.2	*Enneapogon polyphyllus*	0.1	0.1
Ptilotus auriculifolius	0.2	0.2	*Paspalidium clementii*	0.2	0.1
Gossypium australe	0.2	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Amaranthus cuspidifolius	0.2	0.1	*Ptilotus obovatus*	0.2	0.1
Euphorbia biconvexa	0.1	0.1	*Tribulus suberosus*	0.5	0.1
Ptilotus fusiformis	0.1	0.1			

Site: R202	Type: Releve	Size: -	Date: 6/05/2024	Botanist: Adam Crosby-Clark
Landform:	Mid hill slope			
Slope & Aspect:	Very steep; Northwest			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	60-200 mm - Cobbles			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 742541 mE 7470957 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia vanleeuwenii	0.3	64.0	*Acacia adoxa* var. *adoxa*	0.3	0.2
Acacia arida	0.8	8.0	*Gompholobium oreophilum*	0.4	0.2
Eucalyptus leucophloia subsp. *leucophloia*	5.2	4.0	*Senna artemisioides* subsp. *oligophylla*	1.2	0.2
Grevillea wickhamii subsp. *hispidula*	1.2	0.3	*Senna glutinosa* subsp. *pruinosa*	0.7	0.2
Eriachne mucronata	0.2	0.2	*Fimbristylis dichotoma*	0.2	0.1

Site: R203	Type: Releve	Size: -	Date: 7/05/2024	Botanist: Scott Hitchcock
Landform:	Flat plain			
Slope & Aspect:	Flat			
Soil:	Sand			
Rocks:	Ironstone			
Abundance:	<2% Very few			
Size:	<6 mm - Fine gravel			
Fire:	Old (6+ yr)			
Vegetation:	SA2			
Condition:	Excellent			
Location:	50 746792 mE 7484263 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia schinzii	1	40	*Acacia ancistrocarpa*	2	2
Hakea lorea subsp. *lorea*	3	5	*Eucalyptus gamophylla*	2	1
Corymbia hamersleyana	5	3			

Site: R205	Type: Releve	Size: -	Date: 8/05/2024	Botanist: Tia Berard
Landform:	Creek/Riverbed			
Slope & Aspect:	Flat			
Soil:	Sandy Loam			
Rocks:	Creek stones			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Good			
Location:	50 740657 mE 7478317 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
**Cenchrus ciliaris*	0.5	20	*Indigofera monophylla*	1	3
Triodia pungens	0.5	10	*Arivela viscosa*	0.3	2
Acacia tumida var. *pilbarensis*	2.5	6	*Corymbia hamersleyana*	4	0.1
Acacia pyrifolia var. *morrisonii*	2.3	4			

Site: R206	Type: Releve	Size: -	Date: 8/05/2024	Botanist: Tia Berard, Zane Gates
Landform:	Mid hill slope			
Slope & Aspect:	Moderate; Northeast			
Soil:	Loam			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	HC2			
Condition:	Excellent			
Location:	50 740270 mE 7477959 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia hilliana	0.4	35.0	*Ptilotus astrolasius*	0.3	0.2
Ptilotus rotundifolius	0.5	1.0	*Senna glutinosa* subsp. *glutinosa*	1	0.1
Eucalyptus leucophloia subsp. *leucophloia*	4.0	1.0	*Senna glutinosa* subsp. *pruinosa*	0.8	0.1
Acacia adoxa var. *adoxa*	0.3	0.2			

Site: R208	Type: Releve	Size: -	Date: 8/05/2024	Botanist: Tia Berard
Landform:	Creek/Riverbed			
Slope & Aspect:	Flat			
Soil:	Sandy Loam			
Rocks:	Creek stones			
Abundance:	2-10% Few			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Excellent			
Location:	50 739049 mE 7474980 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Acacia tumida var. *pilbarensis*	3.0	20.0	*Trachymene oleracea* subsp. *oleracea*	0.2	0.1
Triodia pungens	1.0	15.0	*Goodenia muelleriana*	0.2	0.1
Petalostylis cassioides	0.8	3.0	*Dampiera candicans*	0.3	0.1
Corymbia hamersleyana	5.0	2.0	*Tephrosia* sp. Bungaroo Creek (M.E. Trudgen 11601)	0.2	0.1
Afrohybanthus aurantiacus	0.4	1.0	*Arivela viscosa*	0.2	0.1
Aristida holathera var. *holathera*	0.3	1.0	*Trichodesma zeylanicum* var. *zeylanicum*	0.2	0.1
Senna notabilis	0.2	0.3	*Eriachne aristidea*	0.2	0.1
Fimbristylis simulans	0.2	0.2	*Paspalidium clementii*	0.2	0.1
Grevillea wickhamii subsp. *hispidula*	1.0	0.2	*Evolvulus alsinoides* var. *villosicalyx*	0.1	0.1
Dolichocarpa crouchiana	0.1	0.1	*Corchorus lasiocarpus* subsp. *parvus*	0.3	0.1
Euphorbia australis var. *hispidula*	0.1	0.1	*Dicrastylis cordifolia*	0.3	0.1

Site: R209	Type: Releve	Size: -	Date: 5/05/2024	Botanist: Zane Gates
Landform:	Drainage			
Slope & Aspect:	Low; East			
Soil:	Sand			
Rocks:	Ironstone			
Abundance:	>90% Continuous			
Size:	>600 mm - Boulders			
Fire:	Old (6+ yr)			
Vegetation:	ME			
Condition:	Very Good			
Location:	50 741203 mE 7465248 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Corymbia ferriticola	6.0	10.0	*Neurachne muelleri*	0.3	0.2
Acacia tumida var. *pilbarensis*	5.0	8.0	*Acacia monticola*	1.0	0.2
Eriachne mucronata	0.5	5.0	*Arivela viscosa*	0.2	0.1
Corymbia hamersleyana	9.0	5.0	*Euphorbia coghlanii*	0.1	0.1
Ficus brachypoda	3.0	3.0	*Trichodesma zeylanicum* var. *zeylanicum*	0.5	0.1
Themeda triandra	0.9	2.0	*Cucumis variabilis*	0.1	0.1
Petalostylis labicheoides	2.0	2.0	*Jasminum didymum* subsp. *lineare*	0.1	0.1
Androcalva luteiflora	1.2	1.1	*Tinospora smilacina*	1.0	0.1
Cymbopogon ambiguus	0.9	1.0	*Pluchea dentex*	0.2	0.1
Clerodendrum floribundum var. *anqustifolium*	3.0	1.0	*Tephrosia* sp. Newman (A.A. Mitchell PRP 29)	0.3	0.1
Aristida burbidgeae	0.4	0.5	*Polymeria mollis*	0.3	0.1
Grevillea wickhamii subsp. *hispidula*	1.5	0.5	*Ptilotus obovatus*	0.5	0.1
Kirganelia baccata	2.0	0.3	*Solanum gabrielae*	0.3	0.1
Triodia pungens	0.5	0.2	*Abutilon cunninghamii*	1.0	0.1
Duperreya commixta	0.1	0.2	*Clerodendrum tomentosum* var. *lanceolatum*	0.5	0.1
**Cenchrus ciliaris*	0.5	0.2	*Sida* ?sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	0.1

Site: R302	Type: Releve	Size: -	Date: 28/05/2024	Botanist: Adam Crosby-Clark, Julia Mattner
Landform:	Clay pan			
Slope & Aspect:	Low			
Soil:	Clay Loam			
Rocks:	Ironstone			
Abundance:	10 -20% Common			
Size:	20-60 mm - Coarse gravel			
Fire:	Old (6+ yr)			
Vegetation:	SP			
Condition:	Excellent			
Location:	50 769839 mE 7474050 mN			
Notes:	-			

Species	Height (m)	Cover (%)	Species	Height (m)	Cover (%)
Triodia angusta	0.5	70.0	*Ptilotus exaltatus*	0.2	0.1
Stylobasium spathulatum	1.4	0.3	*Aristida holathera* var. *holathera*	0.2	0.1
Sclerolaena cornishiana	0.4	0.2	*Eriachne aristidea*	0.2	0.1
Acacia sibirica	1.4	0.2	*Goodenia microptera*	0.2	0.1
Corchorus aff. *elachocarpus*	0.2	0.2	*Pterocaulon sphacelatum*	0.2	0.1
Eremophila cuneifolia	1.2	0.2	*Abutilon otocarpum*	0.2	0.1
Senna notabilis	0.3	0.2	*Abutilon* sp. Pilbara (W.R. Barker 2025)	0.2	0.1
Euphorbia australis var. *hispidula*	0.1	0.1	*Acacia synchronicia*	0.5	0.1
Maireana melanocoma	0.3	0.1	*Eulalia aurea*	0.2	0.1
Euphorbia boophthona	0.2	0.1			

Appendix C: Likelihood of Occurrence Assessment – Flora

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Recorded	High	*Fimbristylis sieberiana*	P3	Cyperaceae	Shortly rhizomatous, tufted perennial, grass-like or herb (sedge), 0.25-0.6 m high. Fl. Brown.	Mud, skeletal soil pockets. Pool edges. Sandstone cliffs.	0.0	Previously found within the Survey Area.	Perennial	May to Jun.
	Recorded	*Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727)	P3	Goodeniaceae	Open, erect annual or biennial, herb, to 0.2 m high. Fl. yellow.	Red-brown clay soil. Calcrete pebbles. Low undulating plain, swampy plains.	0.0	Previously found within the Survey Area.	Annual	Feb to Oct.
	Medium	*Bulbostylis burbidgeae*	P4	Cyperaceae	Tufted, erect to spreading annual, grass-like or herb (sedge), 0.03-0.25 m high, spikelets in a simple umbel or rarely solitary; stamens 3; involucral bracts long, hairy. Fl. Brown.	Rocky outcrops and boulders.	0.0	Previously found within the Survey Area.	Annual	Mar or Jun to Aug.
	Recorded	*Lepidium catapycnon*	P4	Brassicaceae	Open, woody perennial, herb or shrub, 0.2-0.3 m high, stems zigzag. Fl. white, Oct.	Skeletal soils. Hillsides.	0.0	Previously found within the Survey Area.	Perennial	Oct.
		Sida sp. Barlee Range (S. van Leeuwen 1642)	P4	Malvaceae	Spreading shrub, to 0.5 m high. Fl. Yellow.	Skeletal red soils pockets. Steep slope.	0.0	Previously found within the Survey Area.	Perennial	Aug.

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
High	Medium	*Calotis squamigera*	P1	Asteraceae	Procumbent annual, herb, to 0.21 m high.	Pebbly loam. Flat. Red brown loam clay.	3.5	Found within 10km of the Survey Area and similar habitat present. Only one record nearby.	Annual	Jul.
	Low	*Cladium procerum*	P2	Cyperaceae	Densely tufted perennial, grass-like or herb (sedge), 2 m high. Fl.	Perennial pools.	0.7	Found within 10km of the Survey Area and similar habitat present. Found along major drainage lines in nearby area. Found around perennial pools.	Perennial	Nov.
		Acacia subtiliformis	P3	Fabaceae	Spindly, slender, erect shrub, to 3.5 m high, phyllodes green, new growth slightly viscid, resinous, aromatic; inflorescence in heads to 6 mm diameter; peduncles red. Fl. yellow, Jun.	Rocky calcrete plateau.	0.3	Found within 10km of the Survey Area and similar habitat present.	Perennial	Jun.
		Atriplex flabelliformis	P3	Chenopodiaceae	Monoecious, erect, rounded perennial, herb, to 0.35 m high.	Clay loam, loam. Saline flats or marshes.	6.7	Found within 10km of the Survey Area and similar habitat present to the north near the F. Marsh.	Perennial	-

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
High	Recorded	*Eremophila naaykensii*	P3	Scrophulariaceae	Shrub to 2m tall. Rounded crowded canopy. Flowers white-cream-yellow-pink-purple.	Hill crest. Creek embankments. Gullies.	2.8	Found within 10km of the Survey Area and similar habitat present. Found along similar vegetation, land systems and geology in the area.	Perennial	Jun to Sep.
	Low	*Eremophila spongiocarpa*	P3	Scrophulariaceae	Compact succulent-leaved shrub to 1m.	Alluvial semi saline clay plain.	3.7	Found within 10km of the Survey Area and similar habitat present in the north around the F. Marsh.	Perennial	May, Jul to Sep.
		Euphorbia australis var. *glabra*	P3	Euphorbiaceae	Prostrate annual or perennial, herb, 0.02-0.1 m high. Fl. red-pink, Apr to Nov.	Broad, flat plain calcrete platform. Plains.	8.6	Found within 10km of the Survey Area and similar habitat present.	Annual/Perennial	May, Sep.
	Medium	*Grevillea saxicola*	P3	Proteaceae	Tall shrub to 2.5 m.	Breakaway. Scree slope.	3.4	Found within 10km of the Survey Area and similar habitat present.	Perennial	Feb to Jun, Sep.
	Low	*Gymnanthera cunninghamii*	P3	Apocynaceae	Erect shrub, 1-2 m high. Fl. cream-yellow-green	Sandy soils. Drainage lines.	2.3	Found within 10km of the Survey Area and similar habitat present. Found along major drainage lines in nearby area.	Perennial	Jan to Dec.

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
High	Low	*Indigofera gilesii*	P3	Fabaceae	Shrub, to 1.5 m high. Fl. purple-pink, May or Aug.	Pebbly loam. Amongst boulders & outcrops, hills.	6.0	Found within 10km of the Survey Area and similar habitat present.	Perennial	May or August.
		Isotropis parviflora	P3	Fabaceae	Shrub, 0.1 m high. Fl. white/pink, Mar.	Low rocky hill. Red-brown loam soils and ironstone gravel.	2.0	Found within 10km of the Survey Area and similar habitat present. Found along similar vegetation and geology and land systems in the area.	Perennial	Mar.
		Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	Chenopodiaceae	Erect shrub to 1.5m.	Flat plain. Floodplain. Hillslope. Red sandy loam with surface cobbles.	1.4	Found within 10km of the Survey Area and similar habitat present. Found along similar vegetation and geology in the area.	Perennial	Mar, May, Nov
		Rostellularia adscendens var. *latifolia*	P3	Acanthaceae	Herb or shrub, 0.1-0.3 m high. Fl. blue-purple-violet.	Drainage area with red-brown loam soils. Ironstone soils. Creeks. Rocky hills.	0.5	Found within 10km of the Survey Area and similar habitat present. Found along major drainage lines in nearby area.	Perennial	Apr to May.

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
High	Low	*Sida* sp. Hamersley Range (K. Newbey 10692)	P3	Malvaceae	Herb or shrub. Stems hairy.	Scree. skeletal soils. Gorge. Cliff.	2.7	Found within 10km of the Survey Area and similar habitat present. Found along similar vegetation and geology in the area.	Perennial	May, Aug to Oct.
		Streptoglossa sp. Cracking clays (S. van Leeuwen et al. PBS 7353)	P3	Asteraceae	Erect annual herb. Light green stems and mid-green leaves with slightly greyish hairs.	Cracking clay.	8.9	Found within 10km of the Survey Area and similar habitat present.	Annual	Jun
		Stylidium weeliwolli	P3	Stylidiaceae	Annual, herb, 0.1-0.25 m high, throat appendages 4, rod-shaped. Fl. pink & red.	Gritty sand soil, sandy clay. Edge of watercourses.	0.6	Found within 10km of the Survey Area and similar habitat present. Found along major drainage lines in nearby area.	Annual	Aug to Sep.
		Themeda sp. Hamersley Station (M.E. Trudgen 11431)	P3	Poaceae	Tussock grass.	Flat terrain, low in landscape. Red loamy soil with some alluvial sand material and stones.	6.4	Found within 10km of the Survey Area and similar habitat present.	Perennial	Aug
		Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	Poaceae	Perennial, grass-like or herb, 0.4 m high.	Gullies. Hill slopes. Drainage lines.	3.5	Found within 10km of the Survey Area and similar habitat present.	Perennial	Sep.

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
High	Low	*Eremophila magnifica* subsp. *magnifica*	P4	Scrophulariaceae	Shrub, 0.5-1.5 m high. Fl. blue, Aug to Nov.	Skeletal soils over ironstone. Rocky screes.	7.6	Found within 10km of the Survey Area and similar habitat present.	Perennial	Aug. to Nov.
		Rhynchosia bungarensis	P4	Fabaceae	Compact, prostrate or spreading shrub, to 0.5 m high.	Gently inclined drainage depression. Brown silty loam soil.	5.4	Found within 10km of the Survey Area and similar habitat present along northern breakaway country.	Perennial	May, July, Nov.
		Synostemon hamersleyensis	T	Phyllanthaceae	Glabrous monoecious or dioecious subshrub from a perennating, woody rootstock with stems much branched, to 50 cm high, bright green when fresh, becoming grey green on drying with cuticular wax shed in flakes.	Narrow gorge in upper hillslope.	5.5	Found within 10km of the Survey Area and similar habitat present along northern breakaway country.	Perennial	-
Medium		*Lindernia* sp. Pilbara (M.N. Lyons & L. Lewis FV 1069)	P1	Linderniaceae	-	Water's edge, base of dunes.	21.5	Found within 30km of the Survey Area and similar habitat present.	-	-

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Medium	Low	*Myriocephalus scalpellus*	P1	Asteraceae	Semi-erect herb, 0.03-0.08 m high.	Clay. Depression on flood plain.	21.1	Found within 30km of the Survey Area and similar habitat present.	Annual	-
		Eragrostis sp. Mt Robinson (S. van Leeuwen 4109)	P2	Poaceae	Tussock-forming perennial, grass-like or herb, to 0.3 m high. Fl. Sep.	Red-brown skeletal soils. Ironstone. Steep slopes. Summits.	14.6	Found within 30km of the Survey Area and similar habitat present.	Perennial	Sep.
		Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	Malvaceae	Spindly upright shrub to 3 m tall, purple flower.	Rocky (boulder) slope below low cliffs. Gully. Gravelly, pebbly red-brown loam.	19.3	Found within 30km of the Survey Area and similar habitat present.	Perennial	Apr to Oct.
		Oxalis sp. Pilbara (M.E. Trudgen 12725)	P2	Oxalidaceae	Small herb to 10 cm tall. Leaves green above, purple below; yellow flowers.	Gully. Brown-red loam.	22.6	Found within 30km of S the Survey Area and similar habitat present.	Annual/Perennial	May, Jun to Jul.
		Aristida jerichoensis var. *subspinulifera*	P3	Poaceae	Compactly tufted perennial, grass-like or herb, 0.3-0.8 m high, lemma groove muricate.	Flat terrain. Red clay loam, low in landscape. Hardpan plains.	4.8	Single nearby record but limited standard habitat in the Survey Area.	Perennial	Mar to Jul, Sep.
		Aristida lazaridis	P3	Poaceae	Tufted perennial, grass-like or herb, 0.4-1.5 m high. Fl. green/purple, Apr.	Clay plains of an ephemeral lake. Floodplain/drainage zone. Sand or loam.	11.7	Found within 30km of the Survey Area and similar habitat present.	Perennial	Apr.

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Medium	Low	*Dampiera metallorum*	P3	Goodeniaceae	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.	23.7	Found within 30km of the Survey Area and similar habitat present.	Perennial	Apr/Jun - Oct.
		Euphorbia inappendiculata var. *inappendiculata*	P3	Euphorbiaceae	Herb to 2 cm.	Flat, red brown loam. Cracking clay.	7.7	Single nearby record but limited standard habitat in the Survey Area.	Annual	-
		Ipomoea racemigera	P3	Convolvulaceae	Creeping annual, herb or climber. Fl. white.	Fringing vegetation of river.	14.7	Found within 30km of the Survey Area and similar habitat present, previously found downstream of same major drainage line.	Annual	Apr, Jun
		Pilbara trudgenii	P3	Asteraceae	Gnarled, aromatic shrub, to 1 m high. Fl. Sep.	Skeletal, red stony soil over ironstone. Hill summits. Steep slopes. Screes. Cliff faces.	28.0	Found within 30km of the Survey Area and similar habitat present.	Perennial	Sep.
		Stackhousia clementii	P3	Celastraceae	Dense broom-like perennial, herb, to 0.45 m high. Fl. green/yellow/brown.	Skeletal soils. Sandstone hills.	23.4	Found within 30km of the Survey Area and similar habitat present.	Perennial	Feb to Jun, Nov.

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Medium	Low	*Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684)	P3	Asteraceae	Tall daisy to 1 m , open canopy, in late flower and dehiscing fruit, cream/white flowers.	Flat terrain, low in landscape. Red clay loam with some stone. Gilgai. Drainage lines.	22.2	Found within 30km of the Survey Area and similar habitat present.	Annual/Perennial	Jul
		Acacia bromilowiana	P4	Fabaceae	Tree or shrub, to 12 m high, bark dark grey, fibrous; phyllodes more or less glaucous & slightly pruinose; inflorescence in spikes. Fl. yellow/pink, Jul to Aug.	High in landscape. Edge of cliff. Rocky ironstone scree. Skeletal soil.	12.1	Found within 30km of the Survey Area and similar habitat present.	Perennial	Jul.- Aug.
		Eremophila youngii subsp. *lepidota*	P4	Scrophulariaceae	Eremophila youngii is an erect, highly branched, shrub which grows to a height of between 1 and 4 m.	Stony red sandy loam. Flats plains. Floodplains, sometimes semi-saline. Clay flats.	12.7	Found within 30km of the Survey Area and similar habitat present on the north around F. Marsh.	Perennial	Jan or Mar or Jun or Aug to Sep.
		Ptilotus mollis	P4	Amaranthaceae	Compact, perennial shrub, to 0.5 m high, soft grey foliage. Fl. white/pink.	Moderately steep midslope of BIF.	21.2	Found within 30km of the Survey Area and similar habitat present.	Perennial	May or Sep.
Low		*Eremophila pilosa*	P1	Scrophulariaceae	Shrub, ca 0.8 m high. Fl. Purple	Grows in red-brown clay loam on sandy plains between Jigalong and Roy Hill	47.1	-	Perennial	Sep

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Low	Low	*Gompholobium* sp. Roy Hill (G. Buller ATF08 AQ14)	P1	Fabaceae	-	-	33.4	-	Perennial	-
		Helichrysum oligochaetum	P1	Asteraceae	Erect annual, herb, to ca 0.25 m high. Fl. yellow,	Red clay. Alluvial plains.	29.9	Single record found within 30km of the Survey Area with limited similar habitat present.	Annual	Aug to Nov.
		Paranotis sp. Pilbara (H. Ajduk HAOP04a)	P1	Rubiaceae	Erect ephemeral herb to 0.25 m tall with white flowers and mature fruit.	Drainage lines.	30.3	-	Annual	Feb to Mar
		Rorippa sp. Fortescue Valley (M.N. Lyons & R.A. Coppen FV 0760)	P1	Brassicaceae	-	Riparian slope at water's edge.	21.5	Single record found within 30km of the Survey Area with limited similar habitat present.	Annual	-
		Samolus sp. Fortescue Marsh (A. Markey & R. Coppen FM 9702)	P1	Primulaceae	Domed, mid-dense, perennial, leafless, woody shrub.	Lake margins.	22.0	Found within 30km of the Survey Area but previously found along the edge of the F. Marsh saline flats.	Perennial	May, Jul, Sep to Oct.

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Low	Low	*Tecticornia globulifera*	P1	Chenopodiaceae	Perennial shrub to 0.3-0.5 m high. Vegetative articles globular to obovoid, not compressed green or pink to red.	Moderately saline flats on red-brown gritty clay.	14.7	Found within 30km of the Survey Area but previously found along the edge of the F. Marsh saline flats.	Perennial	-
		Tecticornia sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	P1	Chenopodiaceae	Perennial shrub.	Moderately saline flats on red-brown gritty clay.	11.1	Found within 30km of the Survey Area but previously found along the edge of the F. Marsh saline flats.	Perennial	Aug to Oct.
		Triodia veniciae	P1	Poaceae	Resinous perennial, strongly aromatic. Leaves dark green.	Low hills.	36.0	-	Perennial	Aug
		Eremophila pusilliflora	P2	Scrophulariaceae	Semi prostrate, yellowish green, hairy shrub.	Ironstone.	47.6	-	Perennial	Mar to Jul.
		Eremophila sp. West Angelas (S. van Leeuwen 4068)	P2	Scrophulariaceae	Spindly shrub to 3 m high.	Summits of hills. Slopes.	31.8	-	Perennial	Aug to Oct.
		Kohautia australiensis	P2	Rubiaceae	Erect sparsely or much-branched annual, herb, 0.1-0.5 m high. Fl. blue.	Low stony calcrete hill.	32.1	-	Annual	-

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Low	Low	*Teucrium pilbaranum*	P2	Lamiaceae	Upright shrub, 0.2 m high. Fl. white, May or Sep.	Clay. Crab hole plain in a river floodplain, margin of calcrete table.	39.8	-	Perennial	May or Sep.
		Triodia karijini	P2	Poaceae	Hummock grass to 1 m high.	Upper hill slope. Moderately steep ridgeline. Ironstone outcropping with boulders and cobbles. Skeletal dark orange-brown loam soil.	35.6	-	Perennial	Aug to Sep
		Acacia effusa	P3	Fabaceae	Low, dense, spreading, somewhat viscid shrub, 0.3-1 m high, bark 'minni-ritchi'. Fl. yellow, May to Aug.	Gently inclined foot slope. Brown sandy loam soil.	42.3	-	Perennial	May to Aug.
		Amaranthus centralis	P3	Amaranthaceae	Erect, to 60 cm high. Stems angular, sometimes reddish, sparsely hairy with glandular or multicellular hairs or becoming glabrous; with male and female flowers.	Red sand in ephemeral watercourses. Sandy to clayey loam. River banks. Edges of permanent pools in eucalypt lined channels.	15.9	Single record, found within 30km of the Survey Area and similar habitat present, previously found downstream of same major drainage line.	Annual	Flowers throughout the year

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Low	Low	*Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3	Rubiaceae	Prostrate herb, leaves fleshy, petals blue-mauve, spreading, whitish red below, immature fruit brown.	Cracking clay.	34.1	-	Annual	May, Jun, Sep
		Dysphania congestiflora	P3	Chenopodiaceae	Annual herb 5 - 10 cm tall.	Edge of saline flood plain and lake bed, on deep red - brown saline clays.	15.9	Found within 30km of the Survey Area but previously found along the edge of the F. Marsh saline flats.	Annual	Jul.
		Eleocharis papillosa	P3	Cyperaceae	Annual, herb. Fl. brown,	Red clay over granite, open clay flats. Claypans.	20.8	Found within 30km of the Survey Area but previously found along the edge of the F. Marsh saline flats.	Annual	Nov.
		Eragrostis sp. Erect spikelets (P.K. Latz 2122)	P3	Poaceae	Tufted perennial grass to ca 30 cm high.	Saline areas.	26.1	-	Perennial	-
		Eremophila magnifica subsp. *velutina*	P3	Scrophulariaceae	Shrub, 0.5-1.5 m high. Fl. blue-purple, Aug to Sep.	Skeletal soils over ironstone. Summits.	48.8	-	Perennial	Aug. to Sept.
		Euphorbia inappendiculata var. *queenslandica*	P3	Euphorbiaceae	Upright to prostrate herb to 11 cm.	Drainage, clay, flat.	40.1	-	Annual	Oct.

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Low	Low	*Glycine falcata*	P3	Fabaceae	Mat forming perennial herb to 0.2 m. Fl blue, purple.	Minor drainage line. Brown medium clay soil. Floodplains.	29.4	Single record found within 30km of the Survey Area with limited similar habitat present.	Perennial	May or Jul.
		Goodenia lyrata	P3	Goodeniaceae	Prostrate herb, with lyrate leaves. Fl. yellow, Aug.	Red sandy loam. Near claypan. Clay soiled broad drainage tract in hardpan plain.	17.8	Found within 30km of the Survey Area limited similar habitat.	Annual	Aug.
		Goodenia purpurascens	P3	Goodeniaceae	Erect perennial or annual, herb, 0.1-0.3 m high. Fl. blue purple/white/yellow,	Clay, mud. Swamps & seasonally wet depressions.	29.7	Found within 30km of the Survey Area with limited similar habitat present.	Annual/Perennial	Jan or Apr or Jun or Sep or Dec.
		Iotasperma sessilifolium	P3	Asteraceae	Erect herb. Fl. pink.	Cracking clay, black loam. Edges of waterholes, plains.	41.4	-	Annual	Jul to Sep
		Nicotiana umbratica	P3	Solanaceae	Erect, short-lived annual or perennial, herb, 0.3-0.7 m high. Fl. White.	Shallow soils. Rocky outcrops.	25.1	Single record found within 30km of the Survey Area with similar habitat.	Annual/Perennial	Apr to Jun.
		Solanum kentrocaule	P3	Solanaceae	Shrub to 1.5 m high, extremely prickly. Purple flowers.	Brown/rocky soil. Gorge. Drainage line.	37.5	-	Perennial	Jul to Sep

Likelihood		Taxon	Status	Family	Description	Habitat	Closest Record to Project (km)	Likelihood Notes	Longevity	Flowering Period
Pre-survey	Post-survey									
Low	Low	*Swainsona thompsoniana*	P3	Fabaceae	Erect, herb. Stems terete, not spiny, glabrous.	Flat crabhole plain.	47.9	-	Perennial	Mar, Jun, Aug
		Tecticornia medusa	P3	Chenopodiaceae	Erect shrub. Articles bright green.	Saline plains	13.0	Found within 30km of the Survey Area but previously found along the edge of the F. Marsh saline flats.	Perennial	Nov
		Triodia basitricha	P3	Poaceae	Spinifex to 0.5 m. Curly leaves.	Hill slopes. Crest of range. Skeletal clay loam over ironstone.	34.5	-	Perennial	Unknown.
		Xerochrysum boreale	P3	Asteraceae	Erect perennial, branched herb to 50 cm high. Stems glandular-hirtellus.	Stony surface. Red brown clay loam.	19.9	Found within 30km of the Survey Area limited similar habitat.	Perennial	Sep

Appendix D: Flora Species List

Family	Taxon	Comment
Aizoaceae	*Trianthema glossostigmum*	Native
	Trianthema pilosum	Native
	Trianthema triquetrum	Native
Amaranthaceae	*Aerva javanica*	Weed
	Alternanthera denticulata var. *denticulata*	Native
	Alternanthera nana	Native
	Amaranthus cuspidifolius	Native
	Amaranthus undulatus	Native
	Gomphrena affinis subsp. *pilbarensis*	Native
	Gomphrena cunninghamii	Native
	Gomphrena kanisii	Native
	Ptilotus astrolasius	Native
	Ptilotus auriculifolius	Native
	Ptilotus calostachyus	Native
	Ptilotus clementii	Native
	Ptilotus exaltatus	Native
	Ptilotus fusiformis	Native
	Ptilotus gaudichaudii	Native
	Ptilotus gomphrenoides	Native
	Ptilotus helipteroides	Native
	Ptilotus latifolius	Native
	Ptilotus obovatus var. *obovatus*	Native
	Ptilotus polystachyus	Native
	Ptilotus rotundifolius	Native
	Ptilotus schwartzii var. *schwartzii*	Native
	Ptilotus xerophilus	Native
Apocynaceae	*Calotropis procera*	Weed
	Cynanchum floribundum	Native
	Leichhardtia australis	Native
	Vincetoxicum lineare	Native
Araliaceae	*Astrotricha hamptonii*	Native
	Trachymene oleracea subsp. *oleracea*	Native
Asteraceae	*Bidens bipinnata*	Weed
	Calocephalus knappii	Native
	Calotis plumulifera	Native
	Centipeda minima subsp. *macrocephala*	Native
	Leiocarpa semicalva subsp. *semicalva*	Native
	Pluchea dentex	Native
	Pterocaulon serrulatum var. *velutinum*	Native
	Pterocaulon sphacelatum	Native
	Rhodanthe margarethae	Native
	Streptoglossa bubakii	Native
	Streptoglossa odora	Native
Boraginaceae	*Ehretia saligna* var. *saligna*	Native

Family	Taxon	Comment
	Euploca cunninghamii	Native
	Euploca heterantha	Native
	Euploca inexplicita	Native
	Euploca pachyphylla	Native
	Trichodesma zeylanicum var. *zeylanicum*	Native
Brassicaceae	*Lepidium catapycnon*	Native - P4
Capparaceae	*Capparis lasiantha*	Native
	Capparis spinosa subsp. *nummularia*	Native
Caryophyllaceae	*Polycarpaea corymbosa* var. *corymbosa*	Native
	Polycarpaea longiflora	Native
Chenopodiaceae	*Dysphania kalpari*	Native
	Dysphania melanocarpa forma melanocarpa	Native
	Dysphania rhadinostachya	Native
	Enchylaena tomentosa var. *tomentosa*	Native
	Maireana georgei	Native
	Maireana melanocoma	Native
	Maireana planifolia	Native
	Maireana tomentosa subsp. *tomentosa*	Native
	Maireana villosa	Native
	Rhagodia eremaea	Native
	Salsola australis	Native
	Sclerolaena cornishiana	Native
	Sclerolaena costata	Native
Cleomaceae	*Arivela viscosa*	Native
Convolvulaceae	*Bonamia erecta*	Native
	Bonamia media	Native
	Bonamia pilbarensis	Native
	Convolvulus clementii	Native
	Duperreya commixta	Native
	Evolvulus alsinoides var. *villosicalyx*	Native
	Ipomoea muelleri	Native
	Polymeria mollis	Native
Cucurbitaceae	*Citrullus colocynthis*	Weed
	Cucumis melo	Native
	Cucumis variabilis	Native
Cyperaceae	*Cyperus cunninghamii* subsp. *cunninghamii*	Native
	Fimbristylis dichotoma	Native
	Fimbristylis simulans	Native
Euphorbiaceae	*Euphorbia australis* var. *hispidula*	Native
	Euphorbia australis var. *subtomentosa*	Native
	Euphorbia biconvexa	Native
	Euphorbia boophthona	Native
	Euphorbia coghlanii	Native
	Euphorbia vaccaria var. *erucoides*	Native

Family	Taxon	Comment
	Euphorbia wheeleri	Native
Fabaceae	*Acacia adoxa* var. *adoxa*	Native
	Acacia adsurgens	Native
	Acacia ancistrocarpa	Native
	Acacia aneura	Native
	Acacia aptaneura	Native
	Acacia arida	Native
	Acacia atkinsiana	Native
	Acacia ayersiana	Native
	Acacia balsamea	Native
	Acacia bivenosa	Native
	Acacia catenulata subsp. *occidentalis*	Native
	Acacia citrinoviridis	Native
	Acacia coriacea subsp. *pendens*	Native
	Acacia dictyophleba	Native
	Acacia elachantha	Native
	Acacia hamersleyensis	Native
	Acacia hilliana	Native
	Acacia inaequilatera	Native
	Acacia incurvaneura	Native
	Acacia macraneura	Native
	Acacia maitlandii	Native
	Acacia marramamba	Native
	Acacia melleodora	Native
	Acacia monticola	Native
	Acacia pachyacra	Native
	Acacia pruinocarpa	Native
	Acacia pyrifolia var. *morrisonii*	Native
	Acacia pyrifolia var. *pyrifolia*	Native
	Acacia rhodophloia	Native
	Acacia sclerosperma subsp. *sclerosperma*	Native
	Acacia sericophylla	Native
	Acacia sibirica	Native
	Acacia spondylophylla	Native
	Acacia synchronicia	Native
	Acacia tenuissima	Native
	Acacia tetragonophylla	Native
	Acacia tumida var. *pilbarensis*	Native
	Alysicarpus muelleri	Native
	Crotalaria cunninghamii subsp. *sturtii*	Native
	Crotalaria medicaginea var. *neglecta*	Native
	Cullen leucochaites	Native
	Cullen martinii	Native
	Gastrolobium grandiflorum	Native

Family	Taxon	Comment
	Gompholobium oreophilum	Native
	Indigofera colutea	Native
	Indigofera fractiflexa subsp. *fractiflexa*	Native
	Indigofera georgei	Native
	Indigofera linifolia	Native
	Indigofera monophylla	Native
	Indigofera rugosa	Native
	Mirbelia viminalis	Native
	Petalostylis cassioides	Native
	Petalostylis labicheoides	Native
	Rhynchosia minima	Native
	Senna artemisioides subsp. *helmsii*	Native
	Senna artemisioides subsp. *oligophylla*	Native
	Senna artemisioides subsp. *x sturtii*	Native
	Senna glaucifolia	Native
	Senna glutinosa subsp. *chatelainiana*	Native
	Senna glutinosa subsp. *glutinosa*	Native
	Senna glutinosa subsp. *pruinosa*	Native
	Senna glutinosa subsp. *x luerssenii*	Native
	Senna notabilis	Native
	Senna sericea	Native
	Senna sp. Meekatharra (E. Bailey 1-26)	Native
	Senna stricta	Native
	Senna venusta	Native
	Swainsona formosa	Native
	Tephrosia densa	Native
	Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	Native
	Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	Native
	Tephrosia sp. Newman (A.A. Mitchell PRP 29)	Native
	Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	Native
	Tephrosia virens	Native
	Vachellia farnesiana var. *farnesiana*	Weed
Goodeniaceae	*Dampiera candicans*	Native
	Goodenia connata	Native
	Goodenia microptera	Native
	Goodenia muelleriana	Native
	Goodenia prostrata	Native
	Goodenia scaevolina	Native
	Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	Native - P3
	Goodenia stobbsiana	Native
	Goodenia triodiophila	Native
	Goodenia vilmoriniae	Native
	Scaevola amblyanthera var. *centralis*	Native
	Scaevola browniana subsp. *browniana*	Native

Family	Taxon	Comment
	Scaevola parvifolia subsp. *pilbarae*	Native
	Scaevola spinescens	Native
Gyrostemonaceae	*Codonocarpus cotinifolius*	Native
Haloragaceae	*Haloragis gossei* var. *gossei*	Native
Hemerocallidaceae	*Corynotheca pungens*	Native
Lamiaceae	*Clerodendrum floribundum* var. *angustifolium*	Native
	Clerodendrum tomentosum var. *lanceolatum*	Native
	Dicrastylis cordifolia	Native
	Newcastelia clavipetala	Native
Lauraceae	*Cassytha capillaris*	Native
Loranthaceae	*Amyema fitzgeraldii*	Native
Malvaceae	*Abutilon cunninghamii*	Native
	Abutilon fraseri subsp. *fraseri*	Native
	Abutilon lepidum	Native
	Abutilon macrum	Native
	Abutilon otocarpum	Native
	Abutilon oxycarpum subsp. *prostrate (A.A. Mitchell PRP 1266)*	Native
	Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	Native
	Abutilon sp. Pilbara (W.R. Barker 2025)	Native
	Androcalva loxophylla	Native
	Androcalva luteiflora	Native
	Corchorus aff. *elachocarpus*	Native
	Corchorus crozophorifolius	Native
	Corchorus elachocarpus	Native - Range Extension
	Corchorus lasiocarpus subsp. *parvus*	Native
	Corchorus sidoides subsp. *sidoides*	Native
	Corchorus tectus	Native
	Corchorus tridens	Native
	Gossypium australe	Native
	Gossypium robinsonii	Native
	Hibiscus brachychlaenus	Native
	Hibiscus burtonii	Native
	Hibiscus coatesii	Native
	Hibiscus leptocladus	Native
	Hibiscus sp. Mt Robinson (G. Byrne 3537)	Native
	Hibiscus sturtii var. *campylochlamys*	Native
	Hibiscus sturtii var. *platychlamys*	Native
	Malvastrum americanum	Weed
	Melhania oblongifolia	Native
	Seringia exastia	Native
	Seringia nephrosperma	Native
	Sida arenicola	Native
	Sida cardiophylla	Native
	Sida echinocarpa	Native

Family	Taxon	Comment
	Sida fibulifera	Native
	Sida platycalyx	Native
	Sida sp. Articulation below (A.A. Mitchell PRP 1605)	Native
	Sida sp. Barlee Range (S. van Leeuwen 1642)	Native - P4
	Sida sp. dark green fruits (S. van Leeuwen 2260)	Native
	Sida sp. L (A.M. Ashby 4202)	Native
	Sida sp. Pilbara (A.A. Mitchell PRP 1543)	Native
	Sida sp. Rabbit Flat (B.J. Carter 626)	Native
	Sida sp. Shovelanna Hill (S. van Leeuwen 3842)	Native
	Triumfetta leptacantha	Native
	Triumfetta maconochieana	Native
	Waltheria indica	Native
Marsileaceae	*Marsilea hirsuta*	Native
Menispermaceae	*Tinospora smilacina*	Native
Molluginaceae	*Trigastrotheca molluginea*	Native
Montiaceae	*Calandrinia ptychosperma*	Native
Moraceae	*Ficus brachypoda*	Native
Myrtaceae	*Calytrix carinata*	Native
	Corymbia candida	Native
	Corymbia deserticola subsp. *deserticola*	Native
	Corymbia ferriticola	Native
	Corymbia hamersleyana	Native
	Corymbia opaca	Native
	Eucalyptus camaldulensis subsp. *obtusa*	Native
	Eucalyptus camaldulensis subsp. *refulgens*	Native
	Eucalyptus gamophylla	Native
	Eucalyptus leucophloia subsp. *leucophloia*	Native
	Eucalyptus socialis subsp. *eucentrica*	Native
	Eucalyptus trivalva	Native
	Eucalyptus victrix	Native
	Eucalyptus xerothermica	Native
	Lamarchea sulcata	Native
	Melaleuca linophylla	Native
Nyctaginaceae	*Boerhavia coccinea*	Native
Oleaceae	*Jasminum didymum* subsp. *lineare*	Native
Orobanchaceae	*Striga curviflora*	Native
Phyllanthaceae	*Dendrophyllanthus erwinii*	Native
	Kirganelia baccata	Native
Plantaginaceae	*Stemodia grossa*	Native
Poaceae	*Amphipogon sericeus*	Native
	Aristida burbidgeae	Native
	Aristida contorta	Native
	Aristida holathera var. *holathera*	Native
	Aristida inaequiglumis	Native

Family	Taxon	Comment
	Cenchrus ciliaris	Weed
	Cenchrus setiger	Weed
	Chrysopogon fallax	Native
	Cymbopogon ambiguus	Native
	Cymbopogon obtectus	Native
	Dactyloctenium radulans	Native
	Dichanthium sericeum subsp. *humilius*	Native
	Digitaria brownii	Native
	Enneapogon caerulescens	Native
	Enneapogon lindleyanus	Native
	Enneapogon polyphyllus	Native
	Enneapogon robustissimus	Native
	Enteropogon ramosus	Native
	Eragrostis cumingii	Native
	Eragrostis dielsii	Native
	Eragrostis eriopoda	Native
	Eragrostis leptocarpa	Native
	Eragrostis setifolia	Native
	Eragrostis tenellula	Native
	Eragrostis xerophila	Native
	Eriachne aristidea	Native
	Eriachne benthamii	Native
	Eriachne gardneri	Native
	Eriachne helmsii	Native
	Eriachne lanata	Native
	Eriachne mucronata	Native
	Eriachne obtusa	Native
	Eriachne pulchella subsp. *dominii*	Native
	Eriachne pulchella subsp. *pulchella*	Native
	Eriachne tenuiculmis	Native
	Eulalia aurea	Native
	Iseilema membranaceum	Native
	Iseilema vaginiflorum	Native
	Monachather paradoxus	Native
	Neurachne muelleri	Native
	Panicum australiense var. *australiense*	Native
	Paspalidium clementii	Native
	Paspalidium rarum	Native
	Schizachyrium fragile	Native
	Setaria verticillata	Weed
	Sporobolus australasicus	Native
	Themeda triandra	Native
	Tragus australianus	Native
	Triodia angusta	Native

Family	Taxon	Comment
	Triodia basedowii	Native
	Triodia biflora	Native
	Triodia brizoides	Native
	Triodia longiceps	Native
	Triodia pungens	Native
	Triodia schinzii	Native
	Triodia vanleeuwenii	Native
	Triodia wiseana	Native
	Urochloa occidentalis	Native
Polygalaceae	*Polygala glaucifolia*	Native
Portulacaceae	*Portulaca intraterranea*	Native
	Portulaca oleracea	Native
Proteaceae	*Grevillea eriostachya*	Native
	Grevillea pyramidalis subsp. *leucadendron*	Native
	Grevillea striata	Native
	Grevillea wickhamii subsp. *hispidula*	Native
	Hakea chordophylla	Native
	Hakea lorea subsp. *lorea*	Native
Pteridaceae	*Cheilanthes contigua*	Native
	Cheilanthes sieberi subsp. *sieberi*	Native
Rubiaceae	*Dolichocarpa crouchiana*	Native
	Psydrax latifolia	Native
	Psydrax suaveolens	Native
Santalaceae	*Anthobolus leptomerioides*	Native
	Santalum acuminatum	Native
	Santalum lanceolatum	Native
Sapindaceae	*Atalaya hemiglauca*	Native
	Dodonaea coriacea	Native
	Dodonaea lanceolata var. *lanceolata*	Native
	Dodonaea petiolaris	Native
Scrophulariaceae	*Eremophila cuneifolia*	Native
	Eremophila forrestii subsp. *forrestii*	Native
	Eremophila fraseri subsp. *fraseri*	Native
	Eremophila jucunda subsp. *pulcherrima*	Native
	Eremophila lanceolata	Native
	Eremophila latrobei subsp. *filiformis*	Native
	Eremophila latrobei subsp. *latrobei*	Native
	Eremophila longifolia	Native
	Eremophila naaykensii	Native -P3
Solanaceae	*Datura leichhardtii* subsp. *leichhardtii*	Weed
	Nicotiana occidentalis	Native
	Solanum cleistogamum	Native
	Solanum elatius	Native
	Solanum gabrielae	Native

Family	Taxon	Comment
	Solanum lasiophyllum	Native
	Solanum perarmatum	Native
	Solanum phlomoides	Native
Surianaceae	*Stylobasium spathulatum*	Native
Violaceae	*Afrohybanthus aurantiacus*	Native
Zygophyllaceae	*Tribulopis angustifolia*	Native
	Tribulus hirsutus	Native
	Tribulus macrocarpus	Native
	Tribulus suberosus	Native
	Tribulus terrestris	Weed