Bungaroo Iron Ore Mine and Infrastructure Project
Level 2 Vegetation and Flora Assessment

August 2015

Prepared for
Rio Tinto



astron

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Abbreviations

Abbreviation	Definition
BAM Act	*Biosecurity and Agriculture Management Act 2007* (State)
BoM	Bureau of Meteorology
DAFWA	Department of Agriculture and Food Western Australia (State)
DRF	Declared Rare Flora
EPA	Environmental Protection Authority (State)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
ESA	Environmentally Sensitive Area
ha	Hectares
GDA	Geocentric Datum of Australia
GPS	Global Positioning System
IBRA	Interim Biogeographic Regionalisation for Australia
km	Kilometres
km^2	Kilometres squared
m	Metres
m^2	Metres squared
MGA	Map Grid of Australia
mm	Millimetres
MNES	Matters of National Environmental Significance
Parks and Wildlife	Department of Parks and Wildlife (State)
P	Priority
PEC	Priority Ecological Community
RNE	Register of the National Estate
sp.	Species (singular)
spp.	Species (plural)
T	Threatened
The 'survey area'	Bungaroo Development Envelope
TEC	Threatened Ecological Community
TPFL	Threatened and Priority Flora Database (administered by Parks and Wildlife)
TP List	Threatened and Priority Flora List (administered by Parks and Wildlife)
WAHerb	Western Australian Herbarium
WC Act	*Wildlife Conservation Act 1950* (State)
WoNS	Weeds of National Significance
°C	Degrees Celsius

Executive Summary

Astron was engaged to undertake a Level 2 vegetation and flora assessment for the Bungaroo Iron Ore Mine and Infrastructure Project. The survey area for the proposed Bungaroo Development Envelope is located approximately 17 kilometres south of Pannawonica, Western Australia and is 9,795 hectares. This report presents information relating to the combined Phase 1 and Phase 2 vegetation and flora surveys to assist in the environmental assessment process.

Approximately two-thirds of the survey area had been previously surveyed (Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). Thirty-eight vegetation associations were recorded during the current survey; 11 of these had been described and mapped during earlier surveys. None of the recorded vegetation associations represent a Threatened or Priority Ecological Community.

Vegetation condition ranged from 'very poor' to 'excellent'. Vegetation condition on the alluvial plains appeared to have declined in a number of areas since earlier surveys, with **Cenchrus* species displacing the native *Triodia* species that had been previously mapped. Vegetation associated with hills was generally intact with low weed occurrence and little to no other signs of disturbance. The main flow line of Bungaroo Creek was similarly of high quality with few signs of disturbance and relatively low weed diversity. Approximately 29% of the survey area had been burnt within the past two years, which limited the ability to accurately map or verify vegetation, and complete targeted flora searches in these areas. Vegetation within and surrounding a soak, on the eastern edge of the survey area, is considered locally significant. Vegetation association EcAcGOrCsppTeCv occurs within the soak and is surrounded by ExAscCsppTe. These vegetation associations and the landform they occur on are considered under-represented in the broader region.

Three hundred and thirty one species of flora representing 156 genera from 52 families were recorded in the survey area. The most represented families were Fabaceae, Poaceae and Malvaceae. No Threatened flora was recorded during the surveys. Five state-listed Priority (P) flora species were recorded in the survey area; *Dicladanthera glabra* P2, *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3, *Sida* sp. Barlee Range (S. van Leeuwen 1642) P3, *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 and *Rhynchosia bungarensis* P4. *Dicladanthera glabra* P2 and *S*. sp. Barlee Range (S. van Leeuwen 1642) P3 are new records for the survey area. Vegetation association ElCfAprEm had multiple records of each of the five Priority flora species recorded within it and is therefore considered locally significant. The locations of *Dicladanthera glabra* P2 within the survey area are considerably west of the usual distribution of this species. As such the one vegetation association it was recorded from, ChAtuAmoSsGOrTe, may be considered locally significant.

Seventeen introduced flora species (weeds) were recorded in the survey area, none of which are listed as a declared pest for the Shire of Ashburton nor are they Weeds of National Significance. None of the weed species recorded represent a range extension or were atypical to a survey of this scale in the Robe Valley. **Acetosa vesicaria* (Ruby Dock), **Bidens bipinnata* (Bipinnate Beggartick), **Citrullus colocynthis* and **Sonchus oleraceus* (Common Sowthistle) are new records for the survey area. All other species have been previously recorded within the survey area.

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1 Introduction

1.1 Project Background

Rio Tinto engaged Astron to undertake a Level 2 vegetation and flora assessment for the Bungaroo Iron Ore Mine and Infrastructure Project. The proposed Bungaroo Development Envelope, herein referred to as the 'survey area', is located approximately 17 kilometres (km) south of Pannawonica, Western Australia and covers 9,795 hectares (ha) (Figure 1).

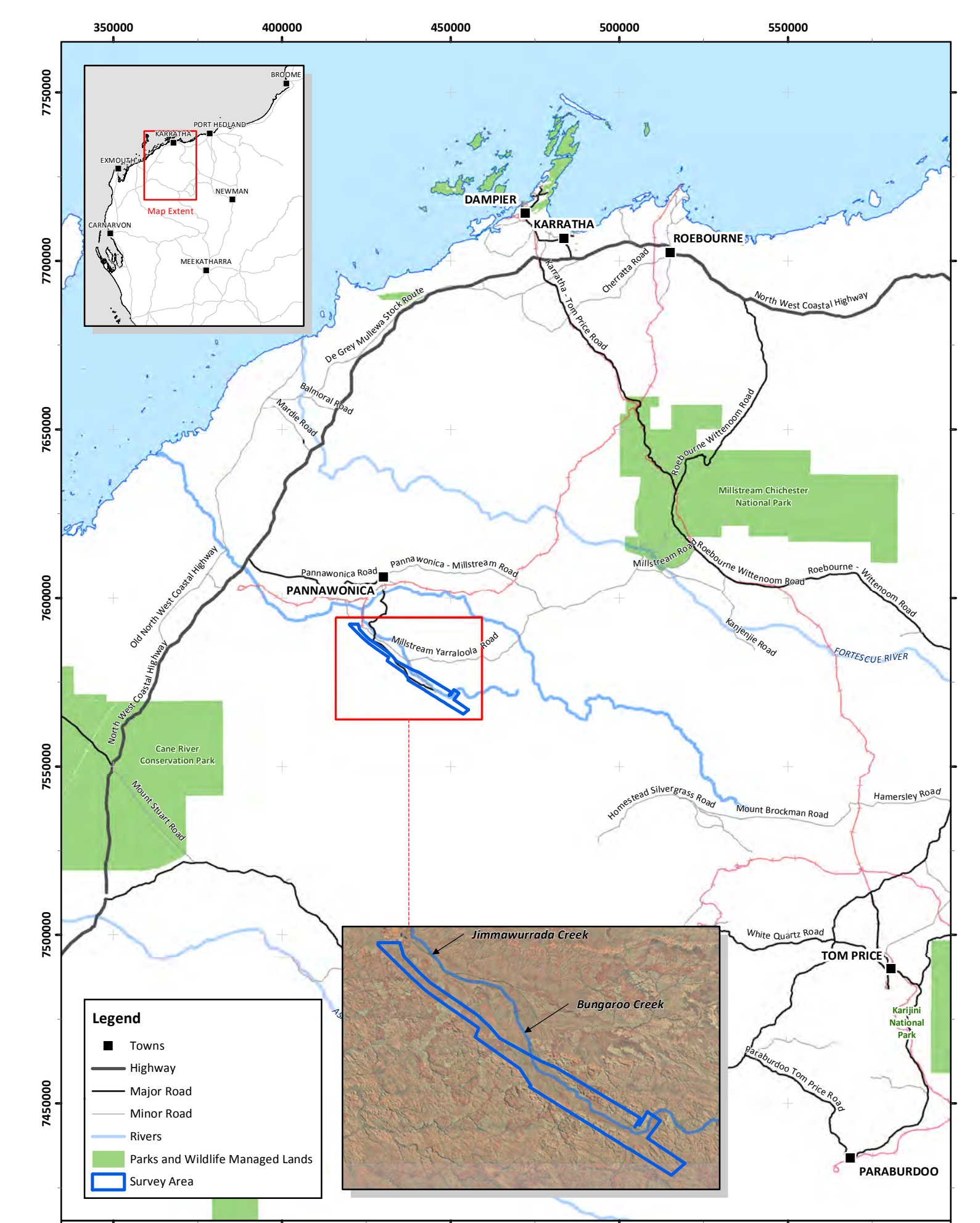
1.2 Scope and Objectives

The objective of the assessment was to provide a two-phase Level 2 assessment of vegetation and flora values through a desktop assessment and field survey. The resultant data was to be utilised to produce a report to support and inform the environmental assessment forthe Bungaroo project.

The scope of works was to:

- Conduct a desktop assessment, including database searches and literature review of available contextual and project related resources.
- Undertake a two-phase vegetation and flora assessment, including:
    - resurvey of previously established quadrats (Biota Environmental Sciences 2012) and establishment of new quadrats to ensure adequate replication within vegetation associations
    - ground-truthing, verification and refinement of existing vegetation mapping (Biota Environmental Sciences 2012) using quadrats, relevés and mapping notes
    - targeted searches for the presence of Threatened and Priority flora and weeds
    - mapping of vegetation condition and disturbance within the survey area
    - generation of a vascular flora species list for the survey area.
- Prepare an interim (succeeding Phase 1) and final (succeeding Phase 2) report.

This report presents information pertaining to both the Phase 1 and Phase 2 surveys of the vegetation and flora assessment. Table 1 summarises the scope and key limitations. Section 3.5 of this report provides more detail on the limitations of the survey.



Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure 1: Survey Area Regional Location

Author: D. Roocke	Date: 02-03-2016	Datum: GDA 1994 - Projection: MGA Zone 50
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160302_Fig01_Location	0 10 20 30 40 50 Km

N

Table 1: Vegetation and flora assessment scope summary.

Level of survey	Survey area size (ha)	Survey timing	Relevant regulatory guidance documents	Key survey limitations
Level 2 – two phase vegetation and flora survey	9,795	28 April – 12 May 2015 (Phase 1) 11 – 21 August 2015 (Phase 2)	• EPA Position Statement No. 3 (Environmental Protection Authority 2002) • EPA Guidance Statement No. 51 (Environmental Protection Authority 2004)	• Multiple fires within the survey area had resulted in a number of non-climax vegetation communities, which limited the interpretation of some vegetation units present and the ability to complete targeted surveys. • Vegetation throughout the central part of the survey area appeared to have had considerable structural changes since earlier surveys which limited the use of previous mapping and contextual information.

2 Environmental Context

2.1 Physical Environment

2.1.1 Climate

The climate of the Pilbara region of Western Australia is classified as arid tropical with two distinct seasons: a hot, wet summer (October – April) and a mild, dry winter (May – September) (Bureau of Meteorology (BoM) 2015).

Based on long-term climatic data from the nearest BoM weather station at Pannawonica (Station 5069) (approximately 17 km north-east of the survey area) the mean annual rainfall since 1971 is 403.5 millimetres (mm) (Bureau of Meteorology 2015). The mean maximum daily temperatures range between 26.7 degrees Celsius (°C) and 41°C, and exceed 30°C for much of the year (Bureau of Meteorology 2015) (Figure 2).

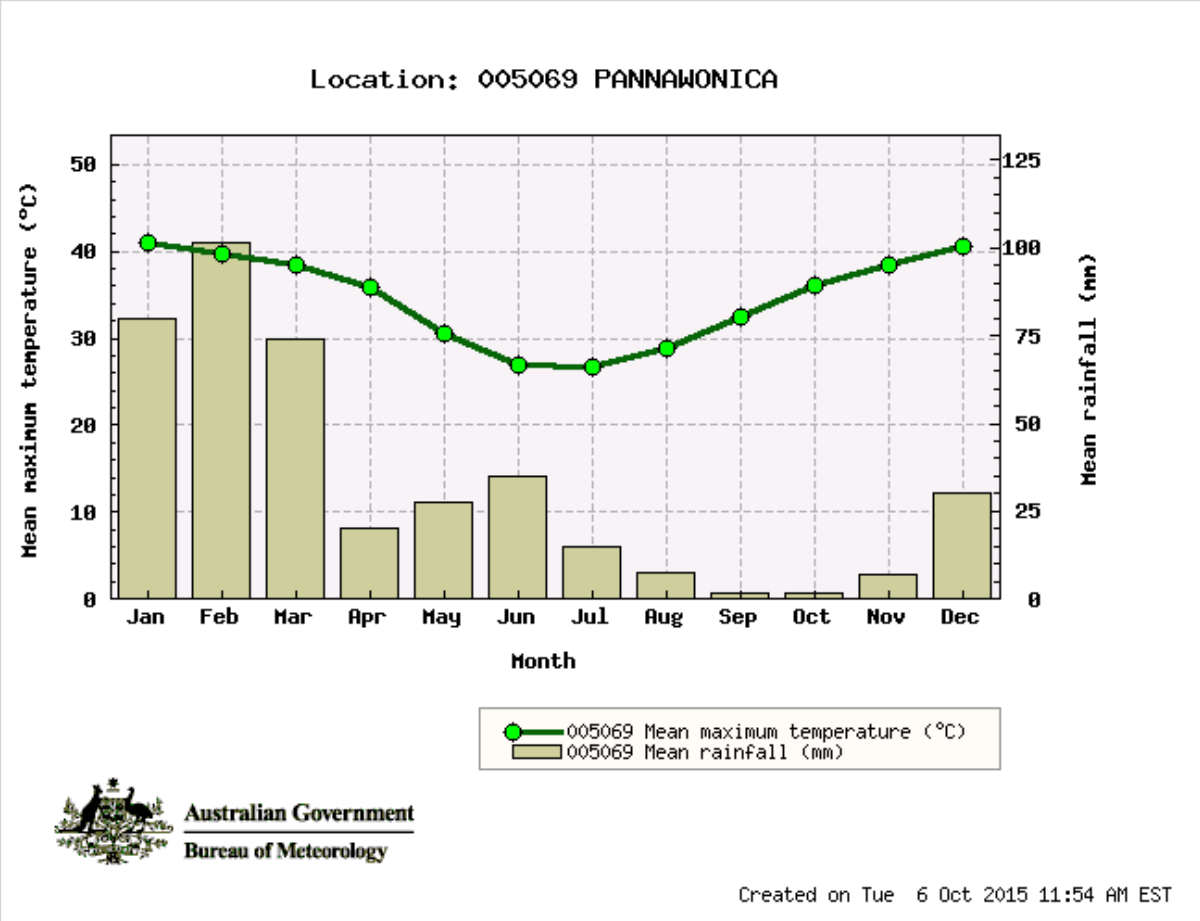


Figure 2: Climate data for Pannawonica (Station 5069) (Bureau of Meteorology 2015).

2.1.2 Geology and Soils

The survey area occurs on the Hamersley Basin which overlies the older Archaean Pilbara Craton. The Hamersley Basin comprises mafic and felsic volcanics, shale, siltstone, sandstone and conglomerate, as well as dolomite and banded iron formation. The sequence is extensively deformed with the rocks being folded and faulted (Van Vreeswyk et al. 2004).

The surface geology of the survey area is comprised of six units (Stewart et al. 2008) as presented in Table 2. Geology mapping of the survey area and surrounds is presented in Figure A.1 (Appendix A).

Table 2: Geological units of the survey area.

Geological name (Stewart et al. 2008)	Label	Area within survey area (ha)
Marra Mamba Iron Formation: chert, ferruginous chert, jaspilite, banded iron formation, minor shale, siltstone, mudstone	Achm	318
Mount McRae Shale and Mount Sylvia Formation: interbedded shale, chert and banded ironstone	Ashm	1,247
Robe Pisolite: pisolitic, oolitic and massive limonite, goethite and hematite deposits containing fossil wood fragments; iron ore	Czlr	329
Brockman Iron Formation: banded iron formation, chert, mudstone and siltstone	Lchk	3,024
Alluvium 38485: channel and flood plain alluvium; gravel, sand, silt, clay, locally calcreted	Qa	1,820
Colluvium 38491: colluvial sediments	Qrc	3,057

The survey area is mapped as soil landscape zone 285 – Hamersley Plateaux of the Fortescue Province. This soil unit is described as hills and plateaux, with some stony plains and hardwash plains, on sedimentary and volcanic rocks of the Hamersley Basin. Stony soils with red shallow loams and some red brown non-cracking clays and red loamy earths predominate (Tille 2006).

2.1.3 Surface Water and Hydrology

The entire survey area occurs within the Bungaroo Creek valley, with the southern portion intersected by approximately 15 km of Bungaroo Creek. This ephemeral creek is a tributary of the Robe River and flows in a north-westerly direction. Other watercourses within the vicinity of the survey area include Jimmawurrada Creek, located approximately 2 km east of the survey area, and Kallawia Creek, which is approximately 8 km to the north-east at its nearest point. Each of these watercourses form part of the Robe River catchment zone. The Robe River, at its nearest point, lies approximately 4.5 km north of the survey area.

The survey area is within a Public Drinking Water Source Area: the Bungaroo Water Reserve (Department of Water 2008).

2.2 Biological Environment

2.2.1 Interim Biogeographic Regionalisation of Australia

The Interim Biogeographic Regionalisation for Australia (IBRA version 7) divides the Australian continent into 89 bioregions and 419 subregions (Department of the Environment 2015a). The IBRA regions represent a landscape-based approach to classifying the land surface, including attributes of climate, geomorphology, landform, lithology, and characteristic flora and fauna. The survey area occurs in the Pilbara Bioregion, of which 5% to 10% is represented in the national reserve system (Department of the Environment 2015b).

The biodiversity of the 53 subregions recognised in Western Australia was documented as part of a national audit to provide priorities for conservation action (Department of Conservation and Land Management 2002). The survey area occurs in the Hamersley subregion of the Pilbara region. The Hamersley subregion was described in the audit as:

Hamersley PIL3 – dissected bold plateaux and ranges of flat lying or moderately folded sandstone and quartzite with vegetation described as Mulga low woodland over tussock grasses occurring on fine textured soils in valley floors, with scattered Snappy Gum (*Eucalyptus leucophloia*) over *Triodia brizoides* on skeletal soils of the ranges (Kendrick 2001).

2.2.2 Land Systems

Land systems of the Western Australian rangelands were mapped by the Department of Agriculture (now the Department of Agriculture and Food (DAFWA)) with comprehensive descriptions of biophysical resources, including soil and vegetation condition. A total of 102 land systems occur in the Pilbara bioregion covering 181,723 km^2 of which four occur in the survey area. These four land systems are described as:

- Boolgeeda – stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and Mulga shrublands
- Newman – rugged jaspilite plateaux, ridges and mountains with hard spinifex
- Robe – low limonite mesas and buttes supporting soft spinifex (and occasionally hard spinifex) grasslands
- Urandy – stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands (Van Vreeswyk et al. 2004).

The total area of these land systems within the survey area and the Pilbara bioregion is presented in Table 3. Land system mapping for the survey area is presented in Figure A.2 (Appendix A).

Table 3: Distribution of land systems within the survey area and Pilbara bioregion (Van Vreeswyk et al. 2004).

Land system	Total area within Pilbara bioregion (ha)	Total area within survey area (ha)	Proportion within survey area (%)
Boolgeeda	961,847	2,834	0.29
Newman	1,994,339	4,559	0.23
Robe	128,680	326	0.25
Urandy	132,039	2,076	1.57

2.2.3 Pre-European Vegetation

Pre-European vegetation was described and mapped across the Pilbara region at a scale of 1: 1,000,000 (Beard 1975). The survey area is located in the Hamersley Plateau physiographic unit of the Fortescue Botanical District (Figure A.3, Appendix A). This physiographic unit is described as:

Hamersley Plateau: a compact unit defined by the outcropping of jaspilite and dolomite, with some shale, siltstone and volcanics. Vegetation is described as:

- ranges – tree steppe of *Eucalyptus brevifolia* (likely to represent *E. leucophloia*) over *Triodia wiseana* hummock grasslands
- valley plains – Mulga (*Acacia aneura* complex) low woodlands, or tussock grasslands on cracking clay soils
- basalt hills – mosaic of Mulga low woodland and *Acacia pyrifolia* and *Triodia* species shrub steppe.

Two vegetation units 82 and 609 (Shepherd et al. 2002), are associated with the Bungaroo survey area and represent 3,898 ha (40% of the survey area) and 5,897 ha (60% of the survey area) respectively:

> 82: 'Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*'
>
> 609: 'Mosaic: hummock grasslands, open low tree steppe; Bloodwood with sparse Kanji shrubs over soft spinifex/hummock grasslands, open low tree steppe; Snappy Gum over *Triodia wiseana*'

Table 4 summarises the current and pre-European extent of these two vegetation units. Greater than 98% of the pre-European area of each of these vegetation associations were estimated to remain in the Pilbara bioregion in 2014 (Government of Western Australia 2014).

Table 4: Extent of pre-European vegetation in the survey area.

Vegetation association	Mapping unit (Beard 1975)	Extent in survey area (ha)	Current extent in Pilbara bioregion (ha)	Pre-European extent (ha)	Proportion of pre-European extent remaining (%)
82	e16Lr t3Hi	3,898	2,550,899.98	2,563,583.23	99.51
609	e24Lr a2Sp t1Hi /e16Lr t3Hi	5,897	72,765.18	74,186.11	98.08

2.3 State and Commonwealth Conservation Categories and Management

Commonwealth and State regulatory authorities maintain databases of the locations and conservation status of significant flora, fauna and ecological communities in Western Australia.

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework to protect and manage Matters of National Environmental Significance (MNES) including listed flora, fauna and ecological communities. These listed flora, fauna and ecological communities are allocated a conservation category, which are outlined in Tables B.1 and B.2 (Appendix B).

Ecological communities may be subject to processes that threaten to destroy or significantly modify it across much of its range. These communities are identified as Threatened Ecological Communities (TECs) and are listed at both Commonwealth level under the EPBC Act and State level by the Western Australian Minister for Environment (Table B.3, Appendix B). The Department of Parks and Wildlife (Parks and Wildlife) maintains a list of Priority Ecological Communities (PECs), which may also be under threat and are assigned one of four Priority rankings according to the criteria outlined in Table B.4 (Appendix B).

Under Western Australian legislation, all native flora is protected and it is an offence to 'take' protected flora. The *Wildlife Conservation Act 1950* (WC Act) also provides for native plant species to be specially protected when they are under identifiable threat of extinction, are rare, or otherwise in need of special protection (Department of Parks and Wildlife 2015a). Such specially protected flora is considered under the WC Act to be 'declared rare' (Threatened) (Table B.5, Appendix B). In addition, due to the diversity of Western Australia's flora, many species are known from only a few collections or locations, but have not been adequately surveyed. Such flora may be rare or threatened, but cannot be considered for declaration as Threatened flora until adequate surveys have been undertaken. These flora species are included on a supplementary conservation list managed by Parks and Wildlife called the *Priority Flora List*. Priority flora are categorised according

to level of threat and other information; the conservation categories are described in Table B.6 (Appendix B).

2.4 Introduced Flora (Weeds)

Significant weed species are identified at both the state and national level. The Australian Weeds Strategy (Australian Weeds Committee 2012) identifies 'Weeds of National Significance' (WoNS) which have the potential to impact primary industry and/or environmental and social values. The management of weeds in Western Australia is primarily regulated through the *Biosecurity and Agriculture Management Act 2007* (BAM Act). Species listed under this act are allocated one of three declared pest categories which define the required level of management (Department of Agriculture and Food 2015). Declared pest categories and listed weed species' priority ratings are presented in Table B.7 (Appendix B).

2.5 Land Use and Tenure

The survey area is located within the Shire of Ashburton. Approximately one-third of the survey area is on the Yalleen Station pastoral lease, with the remainder on unallocated Crown land. The local area is used for pastoralism, mineral exploration and mining activity.

The Cane River Conservation Park is the nearest conservation reserve to the survey area, located approximately 44 km to the south-west (Figure 1). Millstream-Chichester National Park is located approximately 74 km to the north-east (Figure 1). The survey area is approximately 146 km west of Karijini National Park.

3 Methodology

3.1 Desktop Assessment

3.1.1 Database Searches

A search for Environmentally Sensitive Areas (ESAs) in the vicinity of the survey area was conducted using the WA Atlas (Landgate 2015a) and Register of the National Estate (RNE) spatial database (Australian Government 2008). Despite all references to the RNE being removed from Commonwealth legislation in 2012, current State regulations (*Environmental Protection (Clearing of Native Vegetation) Regulations 2004*) declare any area registered on the RNE as an ESA (Department of the Environment 2015c).

In addition, database searches were conducted to identify listed conservation significant ecological communities and flora species within, or in close proximity to, the survey area. Search results are presented in Appendix C and details are summarised in Table 5. Conservation categories for ecological communities and flora are presented in Appendix B. Introduced flora species were compared to the DAFWA list to determine if any have been listed as declared pests (Department of Agriculture and Food 2015) and the WoNS list (Australian Weeds Committee 2012). Introduced flora categories are also presented in Appendix B.

Table 5: Database searches requested.

Database name	Date search results received	Search focus	Search area
Protected Matters Search Tool (Department of the Environment 2015d)	24/9/2015	MNES flora	50 km radius from an approximate survey area centre point defined by the coordinates: 21°53’21 S, 116°22’37 E
Threatened and Priority Ecological Communities database (Department of Parks and Wildlife 2015b)	25/5/2015	Listed Threatened and Priority Ecological Communities	20 km radius surrounding survey area boundary
Threatened and Priority Flora Database (TPFL) (Department of Parks and Wildlife 2015c)	14/4/2015	Threatened and Priority flora	20 km radius surrounding survey area boundary
Threatened and Priority Flora Species List (TP list) (Department of Parks and Wildlife 2015d)			
Western Australian Herbarium flora (Department of Parks and Wildlife 2015e)			
NatureMap (Department of Parks and Wildlife 2015f)	7/4/2015	Terrestrial flora and fauna of conservation significance	40 km radius from an approximate survey area centre point, defined by the coordinates: 21°53’21 S, 116°22’37 E

3.1.2 Vegetation and Flora

The 30 PECs listed by Parks and Wildlife for the Pilbara region (Department of Parks and Wildlife 2015b) were reviewed to determine if any were analogous with ecological communities recorded in the survey area.

Prior to conducting the field survey, aerial imagery was interpreted to identify potential habitat types. The conservation significant flora species returned from the database searches were then categorised according to the criteria in Table 6 for potential occurrence within the survey area.

Table 6: Pre-survey criteria used to assess the likely presence of conservation significant flora in the survey area.

Likelihood of occurrence	Pre-survey
Likely	Species previously recorded within the survey area or within 10 km of the survey area and suitable habitat appears to be present in the survey area
Potential	Species previously recorded within 10 to 20 km of the survey area and/or suitable habitat appears to be present in the survey area
Unlikely	No suitable habitat appears to be present in the survey area

Following the field survey, the conservation significant flora species identified during the desktop assessment as having the highest potential to occur within the survey area, but were not recorded during the current survey, were again assessed to determine their likelihood of occurrence within the survey area. Post-field survey likelihood of occurrence was primarily based on validating the presence (and thorough inspection) of suitable habitats within the survey area, combined with life form, habitat and flowering information for each flora species.

3.1.3 Literature Review

Vegetation and flora surveys have previously been commissioned by Rio Tinto within the vicinity of the survey area and were supplied to Astron for the desktop assessment. The reports reviewed as part of this assessment were:

- Astron Environmental Services 2011, '*Mesa J Tail Track Extension Vegetation, Flora and Fauna Survey*', unpublished report to Rio Tinto
- Biota Environmental Sciences 2006a, '*Bungaroo Trial Pit and Transport Corridor to Mesa J, near Pannawonica: Vegetation and Flora Survey*', unpublished report to Rio Tinto
- Biota Environmental Sciences 2006b, '*A Vegetation and Flora Survey of the Proposed Mesa A Transport Corridor, Warramboo Deposit and Yarraloola Borefield*', unpublished report to Rio Tinto
- Biota Environmental Sciences 2007, '*A Vegetation and Seasonal Flora Survey of the Bungaroo Trial Pit and Transport Corridor to Mesa J, near Pannawonica and Sampling of the Broader Bungaroo Valley*', unpublished report to Rio Tinto
- Biota Environmental Sciences 2009, '*Interim Summary of the Greater Bungaroo Flora and Vegetation Survey*', unpublished letter report to Rio Tinto
- Biota Environmental Sciences 2012, '*Greater Bungaroo Flora and Vegetation Survey*', unpublished report to Rio Tinto
- Rio Tinto 2014, '*Flora Vegetation and Fauna Habitat Assessment at Jimmawurrada*', unpublished report.

The Biota Environmental Sciences (2006a, 2006b, 2007, 2009, 2012) and Rio Tinto (2014) survey areas overlap part of the current survey area. These reports were most relevant for obtaining contextual information relating to vegetation and flora values recorded within, or in close proximity to, the survey area. Survey area locations for the above listed reports are presented in Figure D.1 (Appendix D). Biota Environmental Sciences (2007, 2012) are the Phase 2 reports for Biota Environmental Sciences (2006a, 2009) respectively and contain the final combined Phase 1 and Phase 2 results for those surveys. Although Biota Environmental Sciences (2006a, 2009) were reviewed, results from these reports are not necessarily presented separately to avoid duplication and misrepresentation of information.

Two vegetation and flora surveys in the vicinity of the survey area were completed concurrently by Astron at the time of the current surveys:

- Astron Environmental Services 2015a, '*Middle Robe and East Deepdale, Level 2 Vegetation and Flora Assessment*', report in preparation for Rio Tinto
- Astron Environmental Services 2015b, '*Mesa H Project Level 2 Vegetation, Flora and Fauna Assessment, Phase 1 Summary*', report in preparation for Rio Tinto.

Key findings of these surveys had not been finalised in time for inclusion in the desktop assessment, although species data were able to be incorporated into the floristic analysis to provide regional context.

3.2 Field Survey

Phase 1 of the field survey was conducted from 28 April to 12 May 2015, and Phase 2 from 11 to 21 August 2015 by Astron Senior Environmental Scientist Janelle Atkinson (Flora permit SL011215; DRF 141-1415) and Environmental Scientists Daniel Roocke (Flora permit SL011212; DRF 142-1415), Linda Vaughan (Flora permit SL011214) and Dr Kellie McMaster (Flora permit SL011404).

Daily weather observations recorded from Bungaroo were used to describe local rainfall and temperatures preceding the surveys (Figure 3). Prior to the Phase 1 survey, recorded rainfall was 236 mm above the average between January and May 2015, and 130 mm above the long-term mean for the 12 months preceding the survey. During the Phase 1 survey, 66 mm of rain was recorded on 2 May, and maximum daily temperatures were lower than the long-term mean, ranging between 25.5°C and 31.6°C (Figure 3). A further 50.9 mm of rain was recorded between the end of the Phase 1 survey and the commencement of the Phase 2 survey; the majority of which (48.3 mm) was recorded in late May. This is approximately double the long-term mean rainfall for the same period. Less than 4 mm of rain was recorded in the eight weeks preceding the Phase 2 survey.

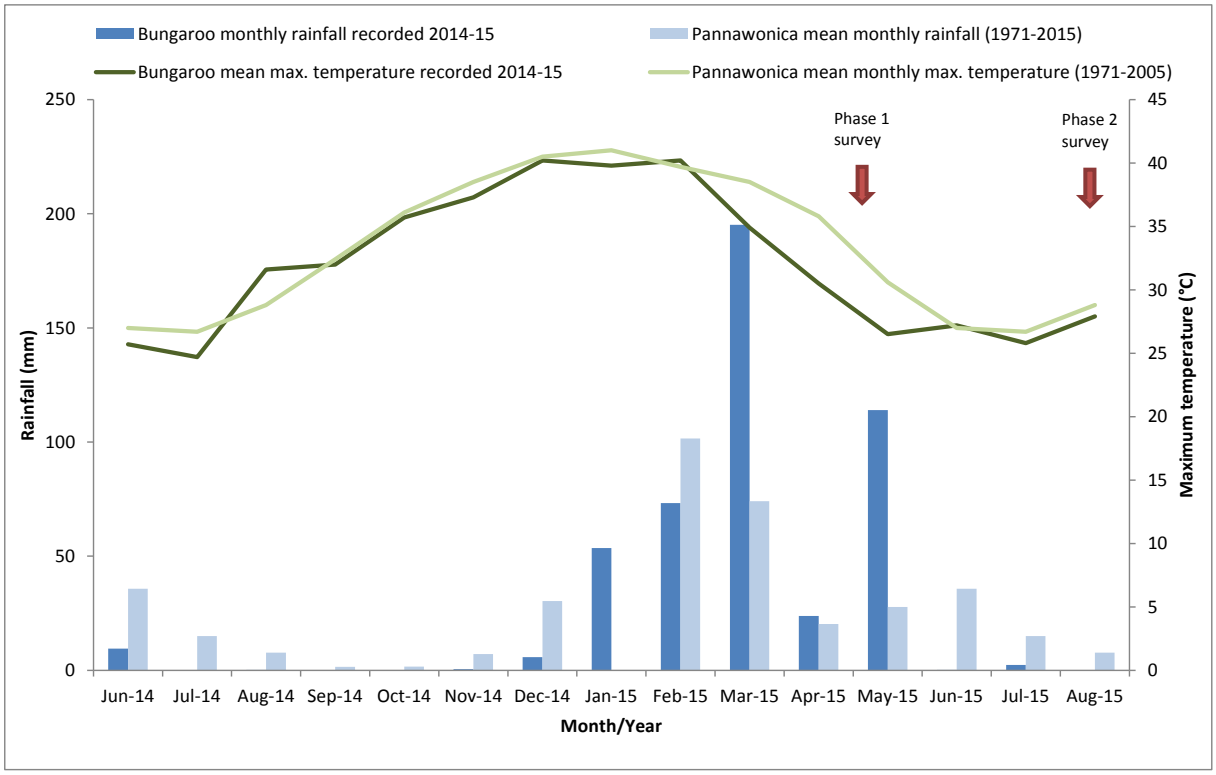


Figure 3: Mean monthly (Pannawonica station; (2015)) and total recorded rainfall (June 2014 to August 2015) (Bungaroo weather station; Rio Tinto supplied data), and mean monthly maximum temperatures (°C) (Pannawonica station; (Bureau of Meteorology 2015)) and recorded daily maximum temperatures (June 2014 to August 2015) (Bungaroo weather station; Rio Tinto supplied data).

3.2.1 Vegetation and Flora Assessment

The vegetation and flora field survey was undertaken in accordance with the requirements outlined in the Environmental Protection Authority (EPA) and Rio Tinto policy and guidance documents (Environmental Protection Authority 2002, 2004; Rio Tinto 2015a).

Information acquired during the desktop assessment assisted in the design of the field survey. Pre-survey planning involved the examination of 1:10,000 scale aerial photography to identify potentially different landforms, habitat and vegetation types. It also involved a review of the flora and vegetation assessment previously completed at Bungaroo (Biota Environmental Sciences 2012) to provide context and identify data gaps. Proposed quadrat locations were identified prior to the field survey according to the replicates required to support the previous vegetation mapping (Biota Environmental Sciences 2012).

One hundred and forty-two sites, comprising 112 quadrats and 30 relevés were sampled within the survey area. Sixty-eight quadrats and 20 relevés were installed and surveyed during the current surveys. In addition, 17 quadrats and five relevés previously sampled by Biota Environmental Sciences (2007, 2012) were resurveyed. The resurvey involved verification of site details, and listing of flora species recorded. One quadrat and five relevés previously sampled by Biota Environmental Sciences (2007, 2012) were not resurveyed as they had been recently burnt. The fourteen quadrats and 6 relevés installed during the Phase 2 survey had a single season of survey only. A further 26 quadrats installed by Biota Environmental Sciences within the survey area have previously had two phases of survey (Biota Environmental Sciences 2007, 2012) and were not resampled during the current survey. Survey effort is detailed in Table 7. The data from each of these sites were used for mapping and floristic analysis purposes.

Newly installed quadrats were positioned by measuring a square of 50 metres (m) x 50 m, in suitable terrain, with the four corners of the quadrat permanently marked with fence droppers. Dimensions of the quadrat were adjusted according to terrain, drainage and landform features, to represent an estimated 2,500 m^2. Data from relevé locations was sampled from an area of approximately 2,500 m^2; in challenging terrain, visual estimation was used to approximate the area.

The following information was collected at each quadrat and relevé:

- Location – coordinates measured using a handheld GPS (MGA50, GDA94). One set of coordinates taken from the north-west corner of each unmarked quadrat and relevé.
- Recorder and date – personnel involved in sampling that location and the survey date.
- Species – representative vascular plant species present. The inventory of associated species was more comprehensive for a quadrat location, with each flora species present recorded; at relevés the species most typical of the vegetation unit and represented at that location were recorded. Species that could not be identified in the field were collected for later identification at the Astron herbarium or Western Australian Herbarium (WAHerb).
- Weeds – the coordinates and density of any introduced flora.
- Foliar cover – the percentage cover was estimated for each flora species.
- Vegetation description – vegetation was described according to the Aplin (1979) modification of the vegetation classification system of (Specht 1970) (Table E.1, Appendix E) and the National Vegetation Information System, level 5 (Department of the Environment 2015e). At this level, vegetation is described to 'association' where up to three dominant genera for each of the upper, middle and ground strata are categorised based on dominant growth form, cover and height.
- Vegetation condition – assessed according to the vegetation condition classification adapted from Trudgen (1988) (Table E.2, Appendix E).
- Habitat – a broad description of the surrounding landscape based on landform, topography and soil.
- Photographs – a representative photograph was taken of each quadrat and relevé.
- Disturbances – records of any obvious disturbances such as fire, tracks or grazing.
- Geology – rock type and abundance.
- Soil – including colour and texture.

Quadrat and relevé locations are presented in Figure F.1 (Appendix F).

Table 7: Survey effort for existing and newly installed quadrats and relevés occurring within the survey area.

Author; phase of survey	Number of sites	Name of sites
Astron Environmental Services (2015) – 2 phases	54 quadrats 14 relevés	BA03, BA04, BA05, BA07, BA10, BA12, BA17, BA18, BA21, BA22, BA27, BA31, BA32, BA33, BA34, BA36, BA39, BA40, BA41, BA42a, BA44, BA45, BA46, BA52, BA53, BA54, BA57, BA58a, BA59, BA101, BA102r, BA105r, BA106, BA107, BA108, BA109, BA110, BA111, BA113, BAKM01, BAKM03, BAKM05, BAKM10, BAKM11, BAKM12, BAKM15, BAKMr16, BAKM18, BAKM19, BALVr04, BAR112, BADRr02, BADRr04, BADRr05 BA101r, BA103r, BA104r, BALVr01, BALVr02, BALVr03,BALVr05, BALVr06, BALVr07, BADRr01, BADRr03, BAKM02, BAKM07, BAKM09
Astron Environmental Services (2015) – 1 phase	14 quadrats 6 relevés	BA200, BA201, BA207, BA209, BA210, BA211, BA212, BA213, BA214, BA215, BA216, BA218, BA219, BA221 BA217r, BA220r, BA223r, BA2KMr01, BA2DRr06, BA2LVr-02
Biota Environmental Sciences (2007, 2012) – 2 phases	26 quadrats 0 relevés	BUN01, BUN02, BUN03, BUN04, BUN05, BUN10, BUN06, BUN12, BUN13, BUN14, BUN15, BUN16, BUN17, BUN18, BUN20, BUN21, BUN22, BUN53, BUN54, BUN58, GBR05, GBR06, GBR07, GBR13, GBR19, GBR23
Biota Environmental Sciences (2007, 2012) – 1 phase^	1 quadrat 5 relevés	BUN74 BUN-MA, BUN-MW, BUN-MX, BUN-MY, BUN-MZ
Biota Environmental Sciences (2007, 2012) -1 Phase; and Astron Environmental Services (2015) – 1 phase	17 quadrats 5 relevés	BUN11, BUN56, BUN57, BUN61, BUN62, BUN63, BUN67, BUN70, BUN71, BUN72, BUN73, BUN75 BUN19, BUN50, BUN59, BUN60, BUN68 BUN-BA, BUN-MB, BUN-MC, BUN-MD, BUN-RA

^ Sites had been burnt and were unable to be resurveyed.

3.2.2 Vegetation Description and Mapping

Where appropriate, vegetation was described and mapped to be consistent with the descriptions and mapping previously conducted in and adjacent to the survey area (Biota Environmental Sciences 2007, 2012). Astron adopted these vegetation codes and descriptions, and reconciled vegetation polygon boundaries to maintain consistency with those datasets. The vegetation description for some codes was updated to reflect current nomenclature. Where vegetation was observed to no longer represent previous mapping, vegetation polygon boundaries were adjusted and new vegetation descriptions assigned. Vegetation units were described and mapped using the data collected from quadrats and relevés, and followed the same convention as that previously used; the vegetation association code is described according to the initials of the dominant flora species defining the community. Mapping notes were also used to mark changes in vegetation throughout the survey area. The details collected at mapping note locations included coordinate, photograph and vegetation description.

Fire had recently burnt approximately half of the survey area. Fire-responsive regenerator species occurred in these areas and climax vegetation was difficult to infer. Where previous surveys had been completed in those recently burnt areas and were supported by quadrat and relevé data, the previous vegetation mapping was generally retained. In some cases, quadrat data better matched a

new vegetation association and in these areas the new code was assigned. In areas without any previous survey, the vegetation mapping was extrapolated from surrounding unburnt areas consistent with the relevant landform features.

3.2.2.1 Vegetation Condition Mapping

Vegetation condition was mapped according to vegetation association boundaries throughout the survey area, using a combination of quadrat and relevé data, opportunistic observations and the mean condition rating for each vegetation association. Vegetation condition was rated at each survey site using the five point Trudgen (1988) scale, and then applied to the whole vegetation association polygon in which it was mapped. A mean condition rating was calculated for each vegetation association using the data collected from survey sites and this was applied to any polygons not already attributed with a rating. Recent fire scars were also mapped according to vegetation association boundaries, based on field observations. Climax vegetation condition was unable to be inferred in burnt areas. Where existing sites (Biota Environmental Sciences 2007, 2012) occurred in these burnt areas the condition that had been previously recorded was used.

3.2.3 Targeted Flora Survey

Previously recorded conservation significant flora records (Biota Environmental Sciences 2007, 2012; Department of Parks and Wildlife 2015c, 2015d, 2015e, 2015f; Rio Tinto 2014) and associated habitat preference information were used to identify vegetation associations and habitat within the survey area that have the potential to support conservation significant flora. The habitats and vegetation associations considered to have the potential to support conservation significant flora were located within the survey area from 1:10,000 colour aerial imagery and on-ground observations. These areas were then targeted in the field to record the presence or absence of Priority flora. Where conservation significant flora were observed, the area was traversed to record the extent of the population. Limited targeted searches were completed in recently burnt areas as vegetation structure had changed and fire responsive species dominated these areas.

Population information for conservation significant flora was captured electronically using ArcPad (Esri) on a handheld device. The information recorded included population size, density, landform, soil and reproductive characteristics.

3.3 Taxonomy and Nomenclature

Plant specimens that were not identified in the field were later identified in Perth by Botanist Johan Hurter. Mr Hurter has worked extensively in the Pilbara and is very familiar with the flora of the region. The assigned nomenclature is consistent with the current listing of scientific names recognised by the WAHerb and was used for the species list and associated species information collected. Where specimens had inadequate descriptive material to allow confident identification, they were assigned a 'sp.' (species) epithet, indicating that identification could not be confirmed beyond genus level. Data from each quadrat, relevé and mapping note were entered into a customised database.

3.4 Floristic Analysis

A species accumulation curve was created in order to examine the adequacy of survey effort, while a numerical analysis using species presence/absence was conducted to identify statistically significant floristic groups. The species accumulation curve and cluster analysis were completed by Astron Senior Scientist Dr Aaron Gove using R 3.2.1 (R Development Core Team 2015) and PRIMER v6

software (Clarke and Gorley 2006), respectively. Following normal convention, statistically significant clusters were those distinguished by a P-value <0.05.

Cluster analyses were completed to test the relationship between:

- floristic groups and structural vegetation associations within the survey area
- survey area quadrats and relevés and regional quadrats and relevés.

The 142 quadrats and relevés sampled from the survey area were included in the analysis and treated as a single project area. A further 260 sites from appropriate surveys (Astron Environmental Services 2015a, 2015b; Biota Environmental Sciences 2006b, 2007, 2012) were included in a separated analysis in order to provide a regional comparison.

The species lists from all projects were reconciled to provide consistency in nomenclature. Any taxa not confirmed to species level were removed from the analyses. Singletons (species recorded from only one site) were retained. Most annual and ephemeral species were included as the majority of sites were surveyed at least once following good rainfall; however, some species, such as *Dysphania glomerata* and *D. melanocarpa* which are rainfall dependent annuals and preferentially grazed, were removed.

3.5 Limitations

Following completion of the desktop assessment and field surveys, a review of any limitations that may have affected a complete assessment of the data collected was conducted. Table 8 lists survey limitations which are based on those suggested as considerations in Guidance Statement 51 (Environmental Protection Authority 2004).

Table 8: Statement of limitations.

Potential limitation	Degree of limitation	Statement regarding potential limitations
(i) Sources of information and availability of contextual information Is the region well documented?	No limitation	Broad-scale contextual information is available from Van Vreeswyk et al. (2004), IBRA (Kendrick 2001) and Beard (1975) mapping. Numerous consultants' reports have been completed within a 50 km radius of the survey area, many of which intersect the Bungaroo survey area.
(ii) Scope The level of survey and detail required to undertake the survey. Was there adequate time to complete the survey to the desired standard?	Minor limitation	Following assessment and gap analysis of the Phase 1 data, a further 14 quadrats and 6 relevés were sampled during the Phase 2 survey. These sites had only a single phase of survey. Given the reasonable seasonal conditions the lack of a second phase of survey is not likely to have affected the floristic analysis or interpretation of data significantly. Recent fire limited the ability to complete targeted surveys in some areas with potential to support conservation significant flora. A high abundance of Priority flora points were recorded in unburnt areas which indicates the spatial distribution of the species present and their potential to occur in burnt parts of the survey area.

Potential limitation	Degree of limitation	Statement regarding potential limitations
(iii) Proportion of flora collected and identified Was the survey sampling, timing and intensity considered adequate? Was the survey conducted at what was considered an appropriate time of the year for plant identification? Were any taxonomic groups considered to be under-represented?	No limitation	Phase 1 of the field survey was conducted between late April and mid-May 2015, and Phase 2 was conducted from 11 to 21 August 2015. Seasonal conditions for the Phase 1 survey were considered excellent, with approximately 292 mm falling in the three months prior to the survey. A further 51 mm of rain was recorded before the Phase 2 survey, with only 4 mm of this being recorded in the eight weeks prior to the survey. The observed drier conditions and change in species composition indicate that the requirement for surveys in two seasons was fulfilled. The specimens collected from both phases were of high quality and with good flowering and fruiting material available; few specimens were unable to be confidently identified to species level. The taxonomic groups expected within the survey area were well represented, and floristic richness was considered high. The species accumulation curve had reached an asymptote indicating that sampling had been near exhaustive.
(iv) Completeness Is there further work which may be required i.e. was the relevant area fully surveyed?	Minor limitation	The survey area was adequately surveyed to compile a representative list of species, (including Priority and introduced flora species), as well as describe and map vegetation at a level appropriate for possible future management decisions. Due to recent fire (<2 years) some gullies and breakaways with the potential to support conservation significant flora were not comprehensively searched.
(v) Mapping reliability Were the aerial photographs, satellite images and site maps available considered adequate to fully understand the area surveyed? Was the mapping generated considered to have a high degree of reliability?	Minor limitation	Colour aerial photography at a scale of 1:10,000 was used to locate the survey area and to assist in navigation and delineation of vegetation boundaries. The aerial photography was of good resolution, however given the significant disturbance to vegetation of the Bungaroo valley, resulting from flood in 2004 and recent fire, the 2007 imagery did not accurately reflect the current vegetation patterns in large areas of the valley and floodplains. Some extrapolation and interpretation was therefore required and as such the mapping in some areas, in particular previously flooded or burnt areas, should be considered as indicative.
(vi) Timing When was the survey conducted in terms of season, rainfall, severe weather events etc. Was the survey conducted at an appropriate time for access, observation of the optimal suite of species and for identification of flowering and fruiting species?	No limitation	The two surveys represented two different seasonal captures of data. Seasonal conditions were considered excellent for the Phase 1 survey. Above average rainfall prior to, and during the Phase 1 survey, resulted in considerable species diversity at many sample sites, with >70 species recorded from some quadrats. Many of the annual species present in high abundance during the Phase 1 survey had senesced and a later suite of herbaceous ephemeral species were present for the Phase 2 survey. The plant families that most comprise the Eremaean flora (Fabaceae, Poaceae, Malvaceae and Amaranthaceae) were well represented at the time of the surveys and specimens with flowering and/ or fruiting material were able to be collected for most plants therefore assisting the identification process.

Potential limitation	Degree of limitation	Statement regarding potential limitations
(vii) Disturbance Had the survey area been impacted by any disturbance which may have limited the survey, i.e. fire, flood, accidental human intervention etc?	Moderate limitation	It was noted by Biota Environmental Sciences (2007) that heavy rainfall and flooding in 2004 had scoured vegetation of the Bungaroo Valley and disturbed previously mapped vegetation. The impacts of this event were evident during the current survey as climax vegetation patterns and structural composition often differed to what had been previously mapped throughout much of the valley area (Biota Environmental Sciences 2007). Weed species, in particular **Cenchrus ciliaris* (Buffel Grass) and **C. setiger* (Birdwood Grass), have become a much more characteristic component of the vegetation in the floodplain areas, in particular in vegetation associations that had previously been dominated by *Triodia epactia*. This resulted in changes to a number of the previously described vegetation associations and vegetation mapping. Approximately half of the survey area had been burnt within the past two years. The floodplain in the central part of Bungaroo Valley was the habitat most significantly affected; however, burnt areas also extended to the top of the ranges on the eastern and western edges of the survey area, including gullies and breakaways. The targeted survey and mapping verification in these areas was limited; where vegetation had begun to regenerate it was dominated by post-fire colonising species; climax communities and species were difficult to extrapolate. These habitats have potential to support conservation significant species. The multiple disturbances of scoured vegetation, weed invasion and fire combined with a naturally complex drainage system from the ranges has resulted in many fine scale mosaic vegetation units in the survey area which complicated mapping. In areas where vegetation was too fine to map the component vegetation associations were identified and mapped as a mosaic.
(viii) Intensity In retrospect, was the intensity considered to be adequate?	No limitation	The intensity of the survey was considered adequate to compile a representative species list and map the vegetation of the survey area to association level.
(ix) Resources Were the appropriate tools and materials available to complete the task effectively?	No limitation	Resources were adequate to complete the survey and all appropriate tools and materials required to complete the task were available.
(x) Access Were there any factors limiting access to the survey area?	Minor limitation	Much of the survey area was able to be accessed by vehicle; areas that were unable to be reached by vehicle were accessed and traversed by foot. Exploration tracks were generally overgrown and mostly unable to be used. This resulted in greater on-foot access which reduced efficiency and compromised some time that had been proposed for targeted surveys. Despite the access limitations the coverage and intensity of targeted survey undertaken are considered adequate.

Potential limitation	Degree of limitation	Statement regarding potential limitations
(xi) Experience Were personnel undertaking the field survey and plant identification trained and/or experienced in undertaking the required tasks?	No limitation	The botanists responsible for undertaking the field survey have had considerable experience in conducting vegetation and flora surveys in the Pilbara. The identification of specimens brought back from the field was conducted by a taxonomist with extensive Pilbara experience.

4 Results

4.1 Desktop Assessment

4.1.1 Vegetation and Flora

No State or Commonwealth listed TECs are known to occur within or adjacent to the survey area (Department of Parks and Wildlife 2015b).

Two State listed PECs, '*Triodia sp. Robe River assemblages of mesas of the West Pilbara*' Priority (P) 3 and '*Four plant assemblages of the Wona Land System*' P1, (previously '*Cracking Clays of the Chichester and Mungaarroo Ranges*') have been previously recorded within 50 km of the survey area (Department of Parks and Wildlife 2015b) (Figure G.1, Appendix G,). Several mapped occurrences of '*Triodia sp. Robe River assemblages of mesas of the West Pilbara*' are located between approximately 16 km and 20 km west of the survey area. The '*Four plant assemblages of the Wona Land System*' PEC is mapped as occurring approximately 20 km north-east of the survey area (Department of Parks and Wildlife 2015b).

Neither of these PECs have been identified during previous surveys which, at least partially, intersect the survey area (Table 9) (Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014).

The Parks and Wildlife TPFL (Department of Parks and Wildlife 2015c) and WAHerb (Department of Parks and Wildlife 2015e) database searches indicated that no species listed as Threatened (T) have been recorded within 20 km of the survey area. The Parks and Wildlife TP List (Department of Parks and Wildlife 2015d), which is searched according to place names rather than coordinates, lists one Threatened species: *Thryptomene wittweri* T. A review of recorded specimens held by the WAHerb (Western Australian Herbarium 1998-2015) indicates that the closest occurrence of this species to the survey area is approximately 160 km to the east. In addition, *T. wittweri* has not been identified during previous surveys conducted within, or in close proximity to, the survey area (Astron Environmental Services 2011; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). *Lepidium catapycnon* was also identified from the TP database search, but has recently been removed from the Threatened flora list and listed as P4 (Western Australian Government 2015).

Twenty-one Priority flora species have been previously recorded within 20 km of the survey area (Appendix H) (Department of Parks and Wildlife 2015c, 2015d, 2015e, 2015f). Of these, two are P1, three are P2, 12 are P3 and four are P4 status. The pre-survey desktop assessment indicated that six of the listed Priority flora species were considered likely to occur within the survey area; a further ten were considered to have the potential to occur (Appendix H).

4.1.2 Literature Review

Results of the literature review indicate that no TECs or PECs have been previously recorded within, or in the vicinity of, the survey area (Biota Environmental Sciences 2007, 2009, 2012; Rio Tinto 2014).

Five currently listed Priority flora species have been previously recorded within, or within close proximity to, the survey area: *Stylidium weeliwolli* P2, *Eragrostis surreyana* P3, *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3, *Rhynchosia bungarensis* P4 and *Triodia* sp. Robe River (M.E. Trudgen et al. 12367) P3 (Table 9) (Astron Environmental Services 2011; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014).

Of these species, *Triodia* sp. Robe River (M.E. Trudgen et al. 12367) P3, was recorded during the greatest number of surveys (Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014) (Table 9). Only one individual of *Stylidium weeliwolli* P2 has been previously recorded (Biota Environmental Sciences 2007). The locality of this specimen was again surveyed by Biota in 2012; however, no individuals were identified.

Table 9: Summary of relevant vegetation and flora surveys in the vicinity of the current survey area.

Survey parameter	Rio Tinto (2014)	Biota Environmental Sciences (2012)	Astron Environmental Services (2011)	Biota Environmental Sciences (2009)	Biota Environmental Sciences (2007)	Biota Environmental Sciences (2006a)	Biota Environmental Sciences (2006b)
Survey area size (ha)	4,323	8,765	79	8,765	5,678	1,089	Not specified
Survey focus	Targeted flora	Two phase Level 2	Level 1	Two phase Level 2	Two phase Level 2	Two phase Level 2	Baseline vegetation and flora
Survey timing	July and October 2013	July 2009 and June 2011	June 2011	July 2009	March 2005 and July 2006	March 2005	7 surveys between July 2004 and September 2005
Seasonal conditions	Adequate	Excellent	Excellent	Excellent	Poor (2005) Excellent (2006)	Poor	Excellent (all surveys)
Survey effort (quadrats/relevés)	30 relevés	37 quadrats	9 relevés	31 quadrats	45 quadrats	22 quadrats	50 quadrats
Total vegetation associations mapped	14	16	9	23	28	21	72
Conservation significant ecological communities recorded	0	0	0	0	0	0	0
Total species recorded	116	284	73	167	364	240	437
Conservation significant flora species recorded (currently listed)	2	3	0	3	3	1	1
***Eragrostis surreyana* P3**	✓	✓		✓			
***Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3**		✓		✓			
***Rhynchosia bungarensis* P4**^					✓	✓	✓
***Stylidium weeliwolli* P2**					✓		
***Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3**	✓	✓		✓	✓	✓	✓

^ *Rhynchosia bungarensis* was formerly classified as Priority 3 flora; listed as Priority 4 since 2007.

Within the survey area, three Priority flora species have been previously recorded: *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3, *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 and *Rhynchosia bungarensis* P4 (Biota Environmental Sciences 2006b, 2007, 2012; Rio Tinto 2014). A summary of recorded abundance and habitat is provided in Table 10.

Table 10: Conservation significant flora previously recorded in the survey area.

Species	Author	Estimated abundance	Habitat
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	Biota Environmental Sciences 2012	>146	Creeklines
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	Rio Tinto 2014	3,347	Skeletal soils on ironstone, is association with mesas and hills
	Biota Environmental Sciences 2012	>10,880	Crests of mesas and rocky margins and flowlines of mesas
	Biota Environmental Sciences 2007	Not recorded	Creek and gully systems dissecting ranges of hills
	Biota Environmental Sciences 2006b	Not recorded	Rocky upper edges/crests of mesas
Rhynchosia bungarensis P4^	Biota Environmental Sciences 2006b	4	Creeklines and floodplains
	Biota Environmental Sciences 2007	>68	Gullies, creekbed and surrounding floodplains

^*Rhynchosia bungarensis* was formerly classified as Priority 3 flora; listed as Priority 4 since 2007.

Limitations affecting the results of previous surveys were minimal and are summarised below:

- (Biota Environmental Sciences 2006a): seasonal conditions for the 2005 survey were considered poor (Table 9). Although substantial rainfall occurred in the month prior to the field survey, negligible rainfall was recorded for the 10 months prior to the survey.
- (Biota Environmental Sciences 2012): some access constraints were experienced during the July 2009 field survey, due to some areas being inundated with water.
- (Biota Environmental Sciences 2012): large sections of this survey area were noted as having been subject to recent intense fires and, as such, vegetation mapping for these areas was not an exact representation of the vegetation, rather an indicative account of the most common vegetation.

4.1.3 Environmentally Sensitive Areas

No ESAs occur within or adjacent to the survey area (Figure 1). The nearest ESA to the survey area is Millstream-Chichester National Park, located 74 km north-east (Figure 1). At its nearest point, Karijini National Park is located approximately 146 km east of the survey area (Australian Government 2008; Landgate 2015a).

4.2 Field Survey

4.2.1 Vegetation

Thirty eight vegetation associations were described within the survey area. Of these, 27 are new vegetation descriptions and 11 have been previously described within the survey area (Biota Environmental Sciences 2007, 2012; Rio Tinto 2014). The vegetation associations recorded are summarised in Table 11. Vegetation association mapping is provided in Appendix I and the data collected from each quadrat and relevé is presented in Appendix J. Approximately 218 ha (2.2%) of the survey area has been previously cleared and is mapped as disturbed.

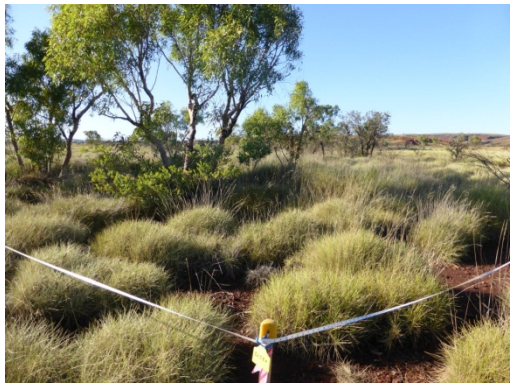
Fifteen mosaic combinations were mapped in the survey area. Mosaic vegetation typically represented the fine scale interaction of drainage systems and alluvial plains; the constituent vegetation associations within mosaics were unable to be mapped due to their fine scale. Together, the mosaic vegetation accounts for 1,697.2 ha within the survey area; 499.8 ha (29.4%) of this is recently burnt. Mosaic vegetation units are shown on the vegetation mapping (Appendix I) and are described according to the separate vegetation associations which they comprise, in Table 11.

Table 11: Vegetation associations recorded in the survey area.

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
Hilltops, hillcrests and breakaways				
AaAbTwTspR *Acacia ancistrocarpa, A. bivenosa* scattered shrubs to open shrubland over *Triodia wiseana* (*T.* sp. Robe River (M.E. Trudgen et al. MET 12367)) open hummock grassland. **Associated species:** *Acacia tumida* var. *pilbarensis, Dampiera candicans, Goodenia stobbsiana, Grevillea wickhamii, Indigofera monophylla, Ptilotus calostachyus*	BA07, BADRr05	Very good – Excellent (39%)	73.2	 **Plate 1: Vegetation representing AaAbTwTspR – facing north-west from GPS coordinate 421430mE and 7591345mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
AbTw *Acacia bivenosa* open shrubland over *Triodia wiseana* open hummock grassland. **Associated species:** *Dysphania rhadinostachya* subsp. *rhadinostachya, Indigofera monophylla, Ptilotus fusiformis*	BA10, BA210	Very good – Excellent (0.2%)	43.5	 **Plate 2: Vegetation representing AbTw – facing south-east from GPS coordinate 421815mE and 7590790mN (MGA Zone 50).**
AiAptTw *Acacia inaequilatera* scattered shrubs over *A. ptychophylla* low open shrubland over *Triodia wiseana* hummock grassland. **Associated species:** *Acacia bivenosa, Bonamia media, Goodenia stobbsiana, Grevillea wickhamii, Ptilotus calostachyus*	GBR13, BA42a	Excellent (61.7%)	178.9	 **Plate 3: Vegetation representing AiAptTw – facing south-east from GPS coordinate 421881mE and 7590978mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
AiTw *Acacia inaequilatera* tall open shrubland over *Triodia wiseana* hummock grassland. **Associated species:** *Bulbostylis barbata, Eriachne pulchella* subsp. *pulchella, Goodenia stobbsiana, Mollugo molluginea, Ptilotus calostachyus, Senna glutinosa* subsp. *glutinosa, Sida* sp. Pilbara (A.A. Mitchell PRP 1543)	BA53, BUN63, GBR19	Very good – Excellent (29.1%)	373.5	 Plate 4: Vegetation representing AiTw – facing south-east from GPS coordinate 448689mE and 7568977mN (MGA Zone 50).
ChAtuAmoSsGOrTe *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis, A. monticola, Stylobasium spathulatum, Gossypium robinsonii* tall open shrubland to tall shrubland over *Triodia epactia* open hummock grassland. *Grevillea wickhamii* and/ or *Acacia maitlandii* may also be dominant or characteristic species in this vegetation. **Associated species:** *Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618), *Acacia inaequilatera, A. maitlandii, Clerodendrum floribundum* var. *angustifolium, Cucumis variabilis, Cymbopogon ambiguus, Gomphrena cunninghamii, Grevillea wickhamii, Indigofera* sp. Bungaroo Creek (S. van Leeuwen 3773) P3, *Senna glutinosa* subsp. *glutinosa, Themeda triandra*	BA103r, BA105r, BA106, BAKM01, BA45, BA40, BA41	Excellent (2.6%)	68.6	 Plate 5: Vegetation representing ChAtuAmoSsGOrTe – facing south-east from GPS coordinate 453882mE and 7565836mN (MGA Zone 50).

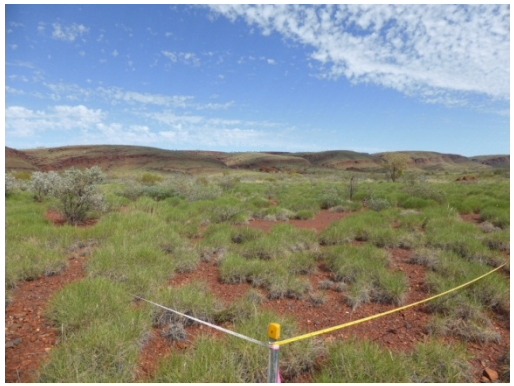
Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ChAiTw *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over mixed scattered shrubs over *Triodia wiseana* open hummock grassland. **Associated species:** *Corchorus lasiocarpus* subsp. *parvus, Dysphania rhadinostachya* subsp. *rhadinostachya, Gossypium australe, Rhynchosia minima*	BUN13, BUN15, BUN54, BUN59, BUN-MX, BUN70, BA58a, BUN72	Good – Excellent (67.4%)	776.4	 **Plate 6: Vegetation representing ChAiTw – facing south-east from GPS coordinate 429873mE and 7584624mN (MGA Zone 50).**
ElAbTw *Eucalyptus leucophloia* subsp. *leucophloia* scattered trees to low open woodland over *Acacia bivenosa* scattered low shrubs over *Triodia wiseana* hummock grassland. **Associated species:** *Cleome viscosa, Cymbopogon ambiguus, Eriachne mucronata, Jasminum didymum* subsp. *lineare, Paspalidium clementii, Ptilotus calostachyus, Senna glutinosa* subsp. *glutinosa, S. glutinosa* subsp. *pruinosa*	BA44, BADRr04	Good – Excellent (72.1%)	391.1	 **Plate 7: Vegetation representing ElAbTw – facing south-east from GPS coordinate 451011mE and 7569196mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ElAiAbTw *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia inaequilatera, A. bivenosa* scattered tall shrubs over *Triodia wiseana* hummock grassland. **Associated species:** *Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618), *Acacia pruinocarpa, Cymbopogon ambiguus, Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3, *Stylobasium spathulatum*	BUN74, BAKM09	Very good – Excellent (9%)	93.7	 **Plate 8: Vegetation representing ElAiAbTw – facing south-east from GPS coordinate 448462mE and 7568928mN (MGA Zone 50).**
ElAiTwTspR *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees to low open woodland over *Acacia inaequilatera* scattered tall shrubs to tall open shrubland over *Triodia wiseana* and *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) hummock grassland. **Associated species:** *Acacia maitlandii, Bulbostylis barbata, Corymbia hamersleyana, Eriachne pulchella* subsp. *pulchella, Indigofera monophylla, Senna glutinosa* subsp. *glutinosa, S. glutinosa* subsp. *pruinosa*	BA102r, BADRr01, BADRr02, BADRr03, BAKM03, BAKM05, BALVr-01, BALVr02, BUN-MB, BUN-MC, BUN16, BUN04	Excellent (16.9%)	2,112.9	 **Plate 9: Vegetation representing ElAiTwTspR – facing south-east from GPS coordinate 453174mE and 7567264mN (MGA Zone 50).**

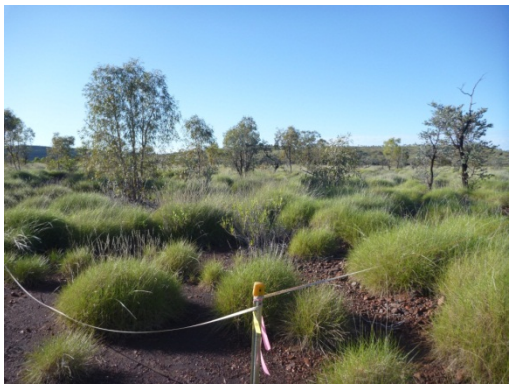
Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ElAprTwTspR *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees to low open woodland over *Acacia pruinocarpa* tall open shrubland over *Triodia wiseana* (*T.* sp. Robe River (M.E. Trudgen et al. MET 12367) open hummock grassland. **Associated species:** *Bulbostylis barbata, Dysphania rhadinostachya* subsp. *rhadinostachya, Eriachne pulchella* subsp. *pulchella, Jasminum didymum* subsp. *lineare*	BAKM18, BAR112, BA2KMr01, BA211	Excellent (0.1%)	27.3	 **Plate 10: Vegetation representing ElAprTwTspR – facing south-east from GPS coordinate 446100mE and 7570949mN (MGA Zone 50).**
ElCfAprEm *Eucalyptus leucophloia* subsp. *leucophloia, Corymbia ferriticola, Acacia pruinocarpa* scattered low trees to low open woodland over *Triodia epactia* very open hummock grassland and *Eriachne mucronata, Themeda triandra, Cymbopogon ambiguus* very open tussock grassland. **Associated species:** *Acacia bivenosa, A. inaequilatera, Bulbostylis barbata, Corchorus sidoides, Eriachne pulchella* subsp. *pulchella, Ptilotus calostachyus, Senna glutinosa* subsp. *glutinosa*	BA104r, BALVr-03, BALVr-06, BUN-RA	Very good – Excellent (24.8%)	61.4	 **Plate 11: Vegetation representing ElCfAprEm – facing east from GPS coordinate 444607mE and 7575050mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ElTw *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Triodia wiseana* open hummock grassland to hummock grassland. **Associated species:** *Acacia bivenosa, A. inaequilatera, Bulbostylis barbata, Corchorus sidoides, Eriachne pulchella* subsp. *pulchella, Gomphrena cunninghamii, Ptilotus calostachyus, Senna glutinosa* subsp. *glutinosa*	BAKM07, BALVr-05, BA39, GBR07	Excellent (25.3%)	167.1	 Plate 12: Vegetation representing ElTw – facing south-east from GPS coordinate 451345mE and 7568212mN (MGA Zone 50).
Tw *Triodia wiseana* hummock grassland. **Associated species:** *Acacia bivenosa, Bulbostylis barbata, Polycarpaea holtzei, Ptilotus calostachyus, Senna glutinosa* subsp. *glutinosa*	BA108, BA110, GBr06	Very good – Excellent (42.5%)	485.9	 Plate 13: Vegetation representing Tw – facing south-east from GPS coordinate 445444mE and 7571600mN (MGA Zone 50).

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
TwTspR *Triodia wiseana, T.* sp. Robe River (M.E. Trudgen et al. MET 12367). **Associated species:** *Acacia bivenosa, Senna glutinosa* subsp. *glutinosa, S. glutinosa* subsp. *pruinosa*	BAKM02, BA2DRr06, BA200, BA2LVr-02	Excellent (0.1%)	31.7	 **Plate 14: Vegetation representing TwTspR – facing south-east from GPS coordinate 452006mE and 7567517mN (MGA Zone 50).**
Plains				
AaTeTw *Acacia ancistrocarpa* tall open shrubland over *Triodia epactia* (*T. wiseana*) hummock grassland. **Associated species:** *Acacia inaequilatera, A. tumida* var. *pilbarensis, Cleome viscosa, Corchorus lasiocarpus* subsp. *parvus, Corymbia hamersleyana, Goodenia microptera, Mollugo molluginea, Rhynchosia minima, Senna notabilis, Solanum diversiflorum*	BA111, BA209, BUN57, BA31	Good – Excellent (0.2%)	25.8	 **Plate 15: Vegetation representing AaTeTw – facing south-east from GPS coordinate 422434mE and 7591231mN (MGA Zone 50).**

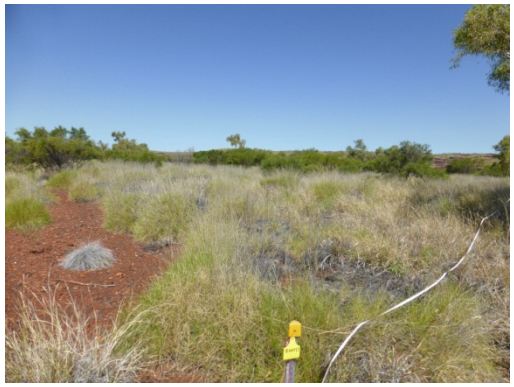
Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ChAcGOaCspp *Corymbia hamersleyana* scattered low trees over *Acacia colei* var. *ileocarpa* tall open scrub over *Gossypium australe* scattered shrubs over **Cenchrus ciliaris, *C. setiger* open tussock grassland. **Associated species:** *Acacia pyrifolia* var. *pyrifolia, Chrysopogon fallax, Dysphania rhadinostachya* subsp. *rhadinostachya, Gossypium australe, Ptilotus axillaris, Sida arsiniata, S. fibulifera, Triodia epactia*	BA03, BALVr07, BA217r	Very poor – Excellent (9.8%)	17.1	 **Plate 16: Vegetation representing ChAcGOaCspp – facing east from GPS coordinate 443074mE and 7573255mN (MGA Zone 50).**
AiAaAbTw *Acacia bivenosa, A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland. *Corymbia hamersleyana* is often present as occasional to scattered low trees throughout this vegetation. **Associated species:** *Corymbia hamersleyana, Grevillea wickhamii, Hakea chordophylla, Mollugo molluginea, Ptilotus astrolasius, P. axillaris, Senna artemisioides* subsp. *oligophylla*	BA59, BA207, BUN67, BA219, GBR23, BUN68, BUN06	Very good – Excellent (31.6%)	170.8	 **Plate 17: Vegetation representing AiAaAbTw – facing south-east from GPS coordinate 424229mE and 7588216mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
AiTe *Acacia inaequilatera* tall open shrubland over *Triodia epactia* hummock grassland. **Associated species:** *Boerhavia coccinea, Cucumis variabilis, Gossypium australe, Senna artemisioides* subsp. *oligophylla, S. glutinosa* subsp. *glutinosa, Stylobasium spathulatum, Triodia wiseana*	BALVr04, BA12, BUN61, BA101, BUN75, BA214	Poor – Excellent (1.3%)	249.3	 **Plate 18: Vegetation representing AiTe – facing south-east from GPS coordinate 449086mE and 7572705mN (MGA Zone 50).**
AxTe *Acacia xiphophylla* tall open shrubland over *Triodia epactia* (*T. wiseana*) open hummock grassland. **Associated species:** *Acacia synchronicia, *Cenchrus ciliaris, Gossypium australe, Ptilotus astrolasius, P. axillaris, P. nobilis* subsp. *nobilis, Senna artemisioides* subsp. *oligophylla, Sida arsiniata*	BA18, BA220r	Very good (1.0%)	1.7	 **Plate 19: Vegetation representing AxTe – facing south-east from GPS coordinate 434177mE and 7581072mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ChAbTe *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa* open shrubland over *Triodia epactia* hummock grassland. **Associated species:** *Acacia inaequilatera, Corchorus lasiocarpus* subsp. *parvus, Cullen martinii, Gossypium australe, Hakea lorea* subsp. *lorea, Senna artemisioides* subsp. *oligophylla, Tephrosia* sp. Bungaroo Creek (M.E. Trudgen 11601)	BUN10, BA221	Very good (0.3%)	5.5	 **Plate 20: Vegetation representing ChAbTe – facing south-east from GPS coordinate 430093mE and 7584798mN (MGA Zone 50).**
ChAiTe *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered shrubs over *Triodia epactia* hummock grassland. **Associated species:** *Acacia pyrifolia* var. *pyrifolia, Bonamia media, Bulbostylis barbata, Gossypium australe, Indigofera colutea, Polycarpaea corymbosa* var. *corymbosa*	BAKM19, BUN56, BUN53	Good – Excellent (0.0%)	70.4	 **Plate 21: Vegetation representing ChAiTe – facing south-east from GPS coordinate 448851mE and 7569396mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
Floodplains				
AcTe *Acacia colei* var. *ileocarpa* tall open shrubland over *Triodia epactia* hummock grassland. **Associated species:** *Acacia bivenosa, Alysicarpus muelleri, *Cenchrus setiger, Chrysopogon fallax, Dysphania rhadinostachya* subsp. *rhadinostachya, Gossypium australe, Hakea lorea* subsp. *lorea, Senna artemisioides* subsp. *oligophylla, Sida arsiniata, S. fibulifera*	BA04, BA05	Good (0.1%)	19.2	 **Plate 22: Vegetation representing AcTe – facing south-east from GPS coordinate 450076mE and 7570119mN (MGA Zone 50).**
ApyGOaGpyTeTw *Acacia pyrifolia, Gossypium australe, Grevillea pyramidalis* shrubland to tall shrubland over *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia, T. wiseana* open hummock grassland. **Associated species:** *Boerhavia coccinea, *Cenchrus ciliaris, *C. setiger, Clerodendrum floribundum* var. *angustifolium, Gossypium robinsonii, Hybanthus aurantiacus, Pentalepis trichodesmoides* subsp. *trichodesmoides, Stylobasium spathulatu*	BA46, BUN17, BUN-MZ, BA223r, GBr05, BUN71	Good – Excellent (53.8%)	154.6	 **Plate 23: Vegetation representing ApyGOaGpyTeTw – facing north from GPS coordinate 439945mE and 7577439mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ApyTeCspp *Acacia pyrifolia* scattered tall shrubs over *Triodia epactia* hummock grassland **Cenchrus setiger, *C. ciliaris* scattered tussock grasses. *Corymbia hamersleyana* may form a scattered to low open woodland overstorey and *Grevillea pyramidalis* subsp. *leucadendron* may also be characteristic in the tall shrub stratum of this vegetation. **Associated species:** *Adriana tomentosa, A. inaequilatera, A. trachycarpa, Corchorus crozophorifolius, Corymbia hamersleyana*, *Eucalyptus victrix, Gossypium robinsonii, Grevillea pyramidalis* subsp. *leucadendron*, *Indigofera monophylla*	BAKM10, BUN-MW	Good – Very good (10.9%)	122.3	 **Plate 24: Vegetation representing ApyTeCspp – facing south-east from GPS coordinate 449215mE and 7569432mN (MGA Zone 50).**
AscAsyCsppTe *Acacia sclerosperma, A. synchronicia* scattered tall shrubs to tall open shrubland over **Cenchrus setiger, *C. ciliaris* open tussock grassland and *Triodia epactia* very open hummock grassland. **Associated species:** *Acacia bivenosa, Cyperus vaginatus, Dactyloctenium radulans, Gossypium australe, G. robinsonii, Sida arsiniata, *Vachellia farnesiana*	BA33, BA34	Poor – Good (18.9%)	36.0	 **Plate 25: Vegetation representing AscAsyCsppTe – facing south-east from GPS coordinate 434366mE and 7581037mN (MGA Zone 50).**

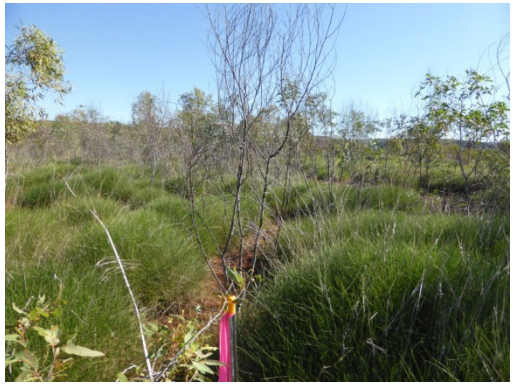
Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
AtrTeCspp *Acacia trachycarpa* scattered tall shrubs to tall open shrubland over *Triodia epactia* open hummock grassland and **Cenchrus setiger, *C. ciliaris* open tussock grassland. **Associated species:** *Bulbostylis barbata, Corymbia hamersleyana, Gossypium robinsonii, Grevillea pyramidalis* subsp. *leucadendron, Indigofera colutea, Ptilotus fusiformis, Tephrosia* var. Fortescue creeks (M.I.H. Brooker 2186), *Urochloa piligera*	BA54, BAKM12, BUN-MD	Poor – Excellent (6.0%)	460.2	 **Plate 26: Vegetation representing AtrTeCspp – facing south-east from GPS coordinate 446014mE and 7572452mN (MGA Zone 50).**
ChGpTe *Corymbia hamersleyana* scattered low trees over *Grevillea pyramidalis* subsp. *leucadendron* scattered tall shrubs over *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) scattered low shrubs over *Triodia epactia* hummock grassland. *Acacia trachycarpa* and/ or *A. pyrifolia* var. *pyrifolia* are often characteristic species in the mid-stratum of this vegetation. **Associated species:** *Acacia inaequilatera, A. pyrifolia* var. *pyrifolia, Acacia trachycarpa*, *Bonamia erecta, B. media, Bulbostylis barbata, Corchorus crozophorifolius, Eragrostis eriopoda, Gossypium australe, G. robinsonii, Stylobasium spathulatum*	BUN12, BUN18, BUN21, BUN50, BUN58, BUN-BA, BUN-MY, BUN62	Good – Excellent (34.3%)	499.7	 **Plate 27: Vegetation representing ChGpTe – facing south-east from GPS coordinate 442971mE and 7573670mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
CsppTe **Cenchrus setiger, *C. ciliaris* tussock grassland and *Triodia epactia* scattered hummock grasses to very open hummock grassland. **Associated species:** *Acacia bivenosa, Alternanthera nana, Gossypium australe, G. robinsonii, Senna notabilis, Solanum diversiflorum, Stylobasium spathulatum*	BA101r, BA17, BUN19	Very poor – Good (10.1%)	50.1	 **Plate 28: Vegetation representing CsppTe – facing south-east from GPS coordinate 443183mE and 7573121mN (MGA Zone 50).**
ExAscCsppTe *Eucalyptus xerothermica* open woodland over *Acacia sclerosperma* tall open shrubland over **Cenchrus setiger, *C. ciliaris* open tussock grassland over *Triodia epactia* very open hummock grassland. **Associated species:** *Capparis spinosa* var. *nummularia, Cullen lachnostachys, Cyperus vaginatus, Sida arsiniata, S. fibulifera, Solanum diversiflorum, Stylobasium spathulatum*	BUN02, BA201	Good (0.1%)	13.2	 **Plate 29: Vegetation representing ExAscCsppTe – facing south-east from GPS coordinate 434968mE and 7580681mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
Minor and major drainage				
CcTeTw *Corymbia candida* low woodland over *Triodia epactia* and/or *T. wiseana* open hummock grassland. **Associated species:** *Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618), *Acacia ancistrocarpa, A. colei* var. *ileocarpa, A. synchronicia, Goodenia forrestii, Gossypium australe, Ptilotus appendiculatus, Senna artemisioides* subsp. *oligophylla, Sesbania cannabina, Sida rohlenae*	BA21, BA22	Good – Very good (0.7%)	2.3	 **Plate 30: Vegetation representing CcTeTw – facing south-east from GPS coordinate 422512mE and 7591494mN (MGA Zone 50).**
ChAiApyTe *Corymbia hamersleyana* open woodland over *Acacia inaequilatera, A. pyrifolia* tall open shrubland over *Triodia epactia* hummock grassland. **Associated species:** *Acacia colei* var. *ileocarpa, Bonamia erecta, *Cenchrus ciliaris, Corchorus lasiocarpus* subsp. *parvus, Eremophila longifolia, Gossypium australe, Grevillea pyramidalis* subsp. *leucadendron, Tephrosia* var. Fortescue creeks (M.I.H. Brooker 2186), *Triodia wiseana*	BUN03, BA27, BUN11	Good – Excellent (86.2%)	130.2	 **Plate 31: Vegetation representing ChAiApyTe – facing south-east from GPS coordinate 440385mE and 7574858mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ChAtuGOrAcTeCspp *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis, Gossypium robinsonii, A. colei* var. *ileocarpa* tall open shrubland to tall shrubland over *Triodia epactia* very open hummock grassland and **Cenchrus setiger, *C. ciliaris* open tussock grassland. *Grevillea wickhamii* and *A. pyrifolia* var. *pyrifolia* are often characteristic species in the mid stratum of this vegetation. **Associated species:** *Acacia pyrifolia* var. *pyrifolia, Corchorus lasiocarpus* subsp. *parvus, Cyperus vaginatus, Eulalia aurea, Grevillea wickhamii*, *Hybanthus aurantiacus, Isotropis atropurpurea, Notoleptopus decaisnei* var. Orbicularis (A.B. Craig 428), *Rhynchosia minima, Sida fibulifera, Themeda triandra*	BA113, BA213, BA215, BA218	Poor – Excellent (0.1%)	26.7	 **Plate 32: Vegetation representing ChAtuGOrAcTeCspp – facing north-east from GPS coordinate 435764mE and 7578495mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ChAsppTeTwCspp *Corymbia hamersleyana* scattered low trees over *Acacia* species tall shrubland over *Triodia epactia, T. wiseana* very open hummock grassland and **Cenchrus setiger, *C. ciliaris* very open tussock grassland. *Acacia colei* var. *ileocarpa* and/or *A. eleachantha* and/or *A. tumida* var. *pilabrensis* and/or *A. inaequilatera* are the characteristic tall *Acacia* species in this vegetation. *Gossypium robinsonii* and *Grevillea wickhamii* are other commonly occurring tall shrubs species. **Associated species:** *Acacia colei* var. *ileocarpa, A. eleachantha, A. inaequilatera, A. tumida* var. *pilabrensis*, *Bonamia erecta, Goodenia microptera, Gossypium australe, Gossypium robinsonii, Grevillea wickhamii, Hakea lorea* subsp. *lorea, Indigofera colutea, Paraneurachne muelleri, Senna notabilis, Triodia wiseana*	BA216, BUN73	Good – Excellent (38.2%)	51.3	 **Plate 33: Vegetation representing ChAsppTeTwCspp – facing south-east from GPS coordinate 436167mE and 7578099mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
ChAtuTe *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* closed heath over *Triodia epactia* hummock grassland. **Associated species:** *Acacia ancistrocarpa, A. bivenosa, A. pyrifolia* var. *pyrifolia, Aristida holathera* var. *holathera, Bonamia erecta, Chrysopogon fallax, Corchorus lasiocarpus* subsp. *parvus, Gossypium australe, Triodia wiseana*	BA212, BAKMr16, BUN14	Good – Excellent (38.2%)	99.1	 **Plate 34: Vegetation representing ChAtuTe – facing south-east from GPS coordinate 451179mE and 7568626mN (MGA Zone 50).**
ChAtuTw *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis* (*A. ancistrocarpa*) open shrubland to shrubland over *Triodia wiseana* open hummock grassland. **Associated species:** *Corchorus lasiocarpus* subsp. *parvus, Cucumis variabilis, Goodenia microptera, Heliotropium ovalifolium, Indigofera monophylla, Isotropis atropurpurea, Ptilotus nobilis, Senna notabilis, Solanum diversiflorum, Stylobasium spathulatum*	BA32, BA57, BAKM15	Very good – Excellent (27.2%)	139.6	 **Plate 35: Vegetation representing ChAtuTw – facing south-east from GPS coordinate 426293mE and 7587064mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
EcAcGOrCsppTeCv *Eucalyptus camaldulensis* subsp. *refulgens* woodland over *Acacia colei* var. *ileocarpa, Gossypium robinsonii* tall shrubland over **Cenchrus setiger, Eulalia aurea, *C. ciliaris* tussock grassland, *Triodia epactia* very open hummock grassland and *Cyperus vaginatus* scattered sedges. **Associated species:** *Acacia pyrifolia* var. *pyrifolia, Corchorus sidoides, Eriachne mucronata, Gossypium australe, Sida fibulifera, Themeda triandra, Triodia wiseana, Triumfetta johnstonii*	BA36, BUN01	Good – Excellent (0.3%)	5.9	 **Plate 36: Vegetation representing EcAcGOrCsppTeCv – facing south-east from GPS coordinate 434980mE and 7580573mN (MGA Zone 50).**
EcEvApyAtrTeCspp *Eucalyptus camaldulensis* subsp. *refulgens* and/or *E. victrix* scattered low trees over *Acacia pyrifolia, A. trachycarpa* open shrubland over *Triodia epactia* open hummock grassland and **Cenchrus setiger, *C. ciliaris* open tussock grassland. **Associated species:** *Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618), *Acacia colei* var. *ileocarpa, *Argemone ochroleuca* subsp. *ochroleuca, Corchorus crozophorifolius, Euphorbia schultzii, Gossypium australe, G. robinsonii, Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186)	BA52, BAKM11, BUN05, BUN22, BUN60	Poor – Excellent (28.0%)	72.4	 **Plate 37: Vegetation representing EcEvApyAtrTeCspp – facing south-west from GPS coordinate 448347mE and 7571793mN (MGA Zone 50).**

Vegetation association code and description	Site(s)	Vegetation condition (proportion recently burnt)	Total area (ha)	Representative photograph
TspFCEs *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) scattered low shrubs to low shrubland over *Euphorbia schultzii, Cleome viscosa, Gomphrena cunninghamii* very open herbland. **Associated species:** *Acacia trachycarpa, *Argemone ochroleuca* subsp. *ochroleuca, Bulbostylis barbata, *Cenchrus ciliaris, Digitaria ctenantha, Eriachne pulchella* subsp. *pulchella, Hybanthus aurantiacus, Triodia epactia*	BA107, BA109, BUN20, BUN-MA	Good – Excellent (1.1%)	570.6	 **Plate 38: Vegetation representing TspFCEs – facing south-east from GPS coordinate 450907mE and 7571342mN (MGA Zone 50).**

4.2.1.1 Vegetation Condition

Vegetation in the survey area ranged from 'very poor' to 'excellent' (Trudgen 1988) condition (Table 12; Figure K.1, Appendix K). Remnant vegetation unaffected by fire on the slopes and crests of the ranges and low hills was generally of high quality ('very good' to 'excellent' condition), with almost no weeds present nor signs of grazing. Similarly, the shingled flow channel of Bungaroo Creek was generally intact with low weed abundance and few other signs of disturbance, other than occasional exploration tracks. Vegetation surrounding the main flow channel typically occurred on deeper soils and weed species such as **Cenchrus* species (spp.) (Birdwood and Buffel Grass) were a more typical component of the vegetation. Approximately 68% of the survey area was rated as 'excellent' condition, and 1% was rated as 'poor' or 'very' poor condition. Approximately 218 ha (2.2%) has been cleared and is described as 'disturbed' (Table 12).

Table 12: Vegetation condition recorded for the survey area.

Vegetation condition	Total mapped area within the survey area (ha)	Proportion of the survey area (%)
Excellent	6,662	68.0
Very Good	1,710	17.5
Good	1,121	11.4
Poor	75	0.8
Very Poor	9	0.1
Disturbed	218	2.2

An estimated 29% of the survey area had been recently burnt, with at least two fires occurring within Bungaroo Valley and the fringing ranges within the past two years (Landgate 2015b). The alluvial plains and hills in the centre of the survey area were most affected by the recent fires, in particular vegetation associations AiAptTw, ApyGOaGpyTeTw, ChAiApyTe, ChAiTw and ElAbTw, with each having more than half of their total area recently burnt (Table 11 and Appendix K). During the Phase 1 survey, very few flora species were observed in areas affected by the 2015 fire (Plate 39), however a greater abundance and diversity of fire responsive species were observed in these areas during the Phase 2 surveys. It was often difficult to extrapolate which climax vegetation occurred in these areas pre-fire.

A number of other disturbances were noted within the survey area, including grazing, weed incursion and vegetation clearing resulting from exploration activities. Together, these disturbances have resulted in a decline in vegetation condition, particularly on alluvial plain habitats surrounding Bungaroo Creek. Vegetation condition appeared to have declined considerably since previous surveys (Biota Environmental Sciences 2007, 2012; Rio Tinto 2014), particularly on the lowlands in the centre of the survey area, and as such the vegetation observed often did not match what had previously been mapped. At many locations throughout this area *Triodia* hummock grasslands had been displaced by **Cenchrus* spp. which now dominate the lower vegetation stratum (Plate 40).



Plate 39: Low hills affected by recent fire.



Plate 40: Alluvial plains dominated by **Cenchrus* spp.

Cleared areas, such as the Bungaroo camp and unsealed roads, were mapped as 'disturbed'. An extensive grid pattern of tracks have been previously cleared within the survey area, particularly in the central valley. There was considerable vegetation regrowth on the majority of tracks, although some drill pads and cleared areas still retain low species diversity and abundance. At the time of the Phase 2 survey drilling had recommenced on the alluvial plains and as such some overgrown tracks had been re-cleared. The occurrence of some weed species, in particular **Aerva javanica* (Kapok Bush), was often higher along tracks in the survey area.

4.2.1.2 Conservation Significance of Vegetation

No TECs were recorded in the survey area.

Vegetation association ElAprTwTspR has affinities to the State-listed PEC '*Triodia sp. Robe River assemblages of mesas of the West Pilbara*' ('*Triodia* sp. Robe River PEC') (Department of Parks and Wildlife 2015b). This vegetation was recorded at eight locations, in association with hillcrest and hillslope landforms of the Hamersley Ranges, and accounted for 27.3 ha within the survey area (Appendix I). Vegetation association ElAprTwTspR consists of scattered to low open woodland of *Eucalyptus leucophloia* subsp. *leucophloia* over *Acacia pruinocarpa* tall open shrubland over a mixed hummock grassland of *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) and *T. wiseana*.

The *Triodia* sp. Robe River PEC is associated with inverted landscapes, such as mesa and cordillos, with *Acacia pruinocarpa, A. citrinoviridis* and *Triodia* sp. Robe River considered indicative species (Department of Parks and Wildlife 2015b). Given that vegetation association ElAprTwTspR did not occur on a conforming landform within the survey area it is considered unlikely to represent the PEC.

A stand of dense vegetation occurring on a soak has been previously reported as restricted in distribution and therefore of high local significance (Biota Environmental Sciences 2012; Rio Tinto 2014). The *Eucalyptus camaldulensis* subsp. *refulgens* which dominates this vegetation (vegetation association EcAcGOrCsppTeCv) appeared stressed, with considerable defoliation evident at the time of both phases of survey. Vegetation condition also appears to have declined in this area since previous surveys (Biota Environmental Sciences 2012) with **Cenchrus* spp. replacing *Cyperus vaginatus* as the dominant understorey species.



Plate 41: Stressed *Eucalyptus camaldulensis* subsp. *refulgens* associated with soak vegetation EcAcGOrCsppTeCv.

One vegetation association, ElCfAprEm, had multiple records of each of the five recorded Priority flora species within it. Vegetation association ElCfAprEm is associated with steep rocky gullies in the ranges that fringe the Bungaroo valley. Four vegetation associations; ChAiTe, ChAtuAmoSsGOrTe, ElAiTwTspR and ElTw, each had four Priority flora recorded within them. These vegetation associations may be considered locally significant due to their association with a high number of Priority flora species.

The majority of vegetation recorded in the survey area is typical of what may be expected on similar landforms in the broader Hamersley ranges subregion.

4.2.1.3 Floristic Groups

The results of the floristic analysis are presented in Appendix L. Thirty-three floristic groups were identified within the survey area. Of the 142 sites assessed from the survey area, all except five grouped with other survey sites (Table 13). One of these five sites, BA212, was also identified as a statistically distinct site at a regional level. The five sites that did not group with other sites showed structural similarities with other quadrats and relevés within the survey area at the vegetation association level. The statistically significant clusters were similar in composition to the structural vegetation associations defined in the vegetation mapping. Vegetation associations from similar landforms also grouped together.

Table 13: Floristic groups identified by one site in the survey area and corresponding vegetation association.

Quadrat/ relevé	Quadrat/relevé description	Structural vegetation association
BA2LVr-02	*Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 open hummock grassland	TwTspR
BUN01	*Eucalyptus camaldulensis* open forest over *Cyperus vaginatus* sedgeland^	EcAcGOrCsppTeCv
BA212	*Acacia tumida* var. *pilbarensis* tall open scrub over *Triodia epactia* very open hummock grassland and *Themeda triandra, Chrysopogon fallax* very open tussock grassland	ChAtuTe
BUN-MW	*Corymbia hamersleyana* scattered low trees over *Acacia pyrifolia* tall shrubland over *Triodia epactia* hummock grassland^	ApyTeCspp

Quadrat/ relevé	Quadrat/relevé description	Structural vegetation association
BUN75	*Acacia inaequilatera* scattered tall shrubs over *Gossypium australe* scattered shrubs over *Triodia epactia* open hummock grassland and **Cenchrus setiger, *C. ciliaris* very open tussock grassland	AiTe

^Description obtained from Biota Environmental Sciences (2007) as sites were not sampled as part of the current survey.

Site BA2LVr-02 was species poor, with only two taxa recorded; this is likely to explain why it did not group with other quadrats or relevés in the survey area. Sites BUN01 and BUN-MW were previously surveyed by Biota Environmental Sciences (2007) and were not resampled during the current survey; as such the species composition of these sites may be more reflective of the survey area prior to the multiple disturbances that have occurred over decades prior to the current surveys. Sites BUN75 and BA212 had an assemblage of species that were different to other sites, yet were structurally similar to other sites within the survey area.

4.2.2 Flora

Three hundred and thirty one plant taxa from 52 families and 156 genera were recorded in the survey area. A further 15 records were unable to be identified to species level due to insufficient diagnostic material and therefore may represent additional taxa. As different nomenclatural classifications were used for some previous surveys, it is difficult to put the number of taxa recorded into a regional context (Astron Environmental Services 2011; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). It appears, however, that the 331 flora species recorded is comparatively higher than other previous surveys in the broader locality and reflects the excellent seasonal conditions, the broad spatial distribution of the survey area and the variety of landforms encountered.

The dominant plant family was Fabaceae, with 60 taxa recorded, while *Acacia* was the most frequently recorded genus (Table 14). This is commensurate with results of previous regional surveys, with Fabaceae being identified as the dominant family during all surveys, and Malvaceae and Poaceae containing either the second or third highest number of taxa (Astron Environmental Services 2011; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). Fifty-five confirmed species recorded in the current survey have not been previously recorded within or adjacent to the survey area; however, three of these are due to nomenclatural changes between the surveys (Astron Environmental Services 2011; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). Results of the species accumulation curve indicate that the total number of species recorded had reached an asymptote and that between 77% and 92% of the entire species pool in the survey area had been sampled from quadrats and relevés, and approximately 87% of the total flora was sampled when opportunistic records were considered.

A species list and a site by species matrix for the survey area are presented in Appendix M. A combined species list, tabling flora species from both the current and previous surveys reviewed as part of this assessment, is also presented in Appendix M.

Table 14: Taxa most frequently recorded in the survey area.

Family	Number of taxa
Fabaceae	60
Poaceae	52
Malvaceae	42
Genus	**Number of taxa**
Acacia	19
Ptilotus	12
Sida	11

4.2.2.1 Conservation Significant Flora

Five state-listed Priority flora species were recorded within the survey area; *Dicladanthera glabra* P2, *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3, *Sida* sp. Barlee Range (S. van Leeuwen 1642) P3, *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 and *Rhynchosia bungarensis* P4. Habitat and abundance details for these species are summarised in the below text and Table 15. Detailed location information and abundance data for each recorded occurrence, along with representative photographs of each species, are presented in Tables N.1 and N.2 (Appendix N). Conservation significant flora locations for both this survey and previous surveys are also mapped in Appendix N.

Approximately 80 individuals of *Dicladanthera glabra* P2 were opportunistically recorded within a rocky gully which intersects the south-eastern portion of the survey area. All plants were recorded from brown, loamy sand and all were flowering at the time of survey. *Dicladanthera glabra* P2 has not been previously recorded within the survey area or surrounding it (Astron Environmental Services 2011; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014) and its location in the survey area is considered to be significantly west of its usual distribution. It was recorded from three vegetation associations within the survey area.

Sida sp. Barlee Range (S. van Leeuwen 1642) P3, was recorded from seven locations, with an abundance of approximately 120 individuals. It occurred in rocky gully, hillcrest and hillslope habitats and was recorded from four vegetation associations. *Sida* sp. Barlee Range (S. van Leeuwen 1642) P3 has not been previously recorded within the survey area or surrounding it (Astron Environmental Services 2011; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014) and its location in the survey area is considerably north-west of its usual distribution.

More than 6,880 *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3 individuals were recorded from predominately drainage, plain and gully habitats throughout most of the survey area, with minor occurrences on hillslopes. Large quantities of juvenile plants were identified in areas that had been burnt within the past few years. This species was recorded from 26 vegetation associations and five mosaic vegetation units within the survey area. *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3 has previously been recorded within the survey area (Biota Environmental Sciences 2012).

Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 was widespread on crests and upper slopes of hills, and also frequently occurred within rocky gullies in the survey area. It was typically recorded in conjunction with *T. wiseana* in the lower stratum of vegetation and was associated with 19 vegetation associations and two mosaic vegetation units. *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 has previously been recorded within the survey area (Biota Environmental Sciences 2006b, 2007, 2012; Rio Tinto 2014).

Approximately 910 individuals of *Rhynchosia bungarensis* P4 were recorded along drainage lines and in gullies and gorges within the survey area. It was associated with 15 vegetation associations and one mosaic vegetation unit in the survey area. *Rhynchosia bungarensis* P4 has previously been recorded within the survey area (Biota Environmental Sciences 2006b, 2007).

Locations of Priority flora previously recorded within the survey area are presented in Table N.5 (Appendix N).

Table 15: Conservation significant flora recorded in the survey area.

Species	Estimated abundance	Habitat	Vegetation associations
Dicladanthera glabra P2	80	Rocky gully	ChAiTe, ChAtuAmoSsGOrTe, ElCfAprEm
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	6880	Drainage lines, floodplains, gorges/gullies, breakaways, hillslopes/crests	AiAptTw, AiTe, ApyGOaGpyTeTw, ApyTeCspp, AscAsyCsppTe, AtrTeCspp, ChAbTe, ChAiApyTe, ChAiTe, ChAiTw, ChAsppTeTwCspp, ChAtuAmoSsGOrTe, ChAtuGOrAcTeCspp, ChAtuTw, ChGpTe, CsppTe, EcAcGOrCsppTeCv, EcEvApyAtrTeCspp, ElAbTw, ElAiAbTw, ElAiTwTspR, ElAprTwTspR, ElCfAprEm, ElTw, TspFCEs, Tw, AiAaAbTw/ChAtuTe, AiAaAbTw/ChAtuTw, AiAaAbTw/ChAtuTe/ChAbTe, AiTw/ChAtuTw, ChAiTw/ChAiTe, ChAtuTe/AiTw.
Sida sp. Barlee Range (S. van Leeuwen 1642) P3	120	Rocky gully, hillcrests, hillslopes	ElAbTw, ElAiTwTspR, ElCfAprEm, ElTw
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	46,850	Hillcrests, hillslopes, breakaways gorges/gullies, drainage lines	AaAbTwTspR, AbTw, AiAaAbTw, AiAptTw, AiTw, AtrTeCspp, ChAiTe, ChAiTw, ChAtuAmoSsGOrTe, ChAtuTw, EcEvApyAtrTeCspp, ElAbTw, ElAiAbTw, ElAiTwTspR, ElAprTwTspR, ElCfAprEm, ElTw, Tw, TwTspR, AiAaAbTw/ChAtuTe/ChAbTe, AiAaAbTw/ChAtuTw
Rhynchosia bungarensis P4	910	Drainage lines, rocky gullies, gorges, breakaways, hillslopes, floodplains	ApyGOaGpyTeTw, ApyTeCspp, ChAiApyTe, ChAiTe, ChAiTw, ChAtuAmoSsGOrTe, ChGpTe, EcAcGOrCsppTeCv, EcEvApyAtrTeCspp, ElAiTwTspR, ElAprTwTspR, ElCfAprEm, ElTw, TspFCEs, Tw, AiAaAbTw/ChAtuTw

4.2.2.2 Post-survey Likelihood of Occurrence of Conservation Significant Flora

Following the field surveys and assessment of observed habitats and previous collection data, two species identified from the database searches (Section 4.1); *Stylidium weeliwolli* P2 and *Eragrostis surreyana* P3, are considered to have potential to occur within the survey area, as they have been previously recorded within close proximity and suitable habitat exists. Survey effort, as shown by tracklog traverses within the survey area, is presented in Figure O.1 (Appendix O).

4.2.2.3 Introduced Flora (Weeds)

Seventeen weed species were recorded in the survey area (Table 16). Generally weeds were scarce on the ranges and low hills within the survey area. Many minor drainage lines and alluvial plains in the central section of the survey area were dominated by **Cenchrus ciliaris* and **C. setiger.*

**Argemone ochroleuca* subsp. *ochroleuca* is listed as a declared pest under the BAM Act; however, it is excluded for the Shire of Ashburton (Department of Agriculture and Food 2015). A high number of **A. ochroleuca* subsp. *ochroleuca* seedlings were recorded in the main flow line of Bungaroo Creek. None of the remaining weeds recorded are listed as a declared pest nor are they WoNS (Australian Weeds Committee 2012; Department of Agriculture and Food 2015). Descriptions and recorded locations of introduced flora within the survey area are presented in Tables N.3 and N.4 (Appendix N). The locations of weed records from the current survey are also mapped in Figure N.2 (Appendix N). Recorded locations of weeds identified during previous surveys are provided in Table N.6 (Appendix N).

Table 16: Introduced flora species (weeds) recorded during the survey.

Species	Estimated abundance	Habitat	Vegetation associations
**Acetosa vesicaria* (Ruby Dock)	120	Floodplains, disturbed soil	AiAaAbTw/ChAtuTw, ChAiApyTe, ChAiTe, disturbed, TspFCEs
**Aerva javanica* (Kapok Bush)	780	Floodplains	AiTe, ApyGOaGpyTeTw, ApyTeCspp, AtrTeCspp, ChAiTe, ChAiTw, ChAtuAmoSsGOrTe, ChGpTe, CsppTe, disturbed, EcEvApyAtrTeCspp, ElAiAbTw, ElAiTwTspR, ElCfAprEm, TspFCEs
**Argemone ochroleuca* subsp. *ochroleuca* (Mexican Poppy)	10,870	Floodplains, drainage lines	AcTe, ApyGOaGpyTeTw, ApyTeCspp, AtrTeCspp, ChAiTw, ChAtuAmoSsGOrTe, ChAtuTe, ChGpTe, CsppTe, disturbed, EcEvApyAtrTeCspp, ElAiTwTspR, TspFCEs
**Bidens bipinnata* (Bipinnate Beggartick)	25	Floodplains	ChAiTw, TspFCEs
**Cenchrus ciliaris* (Buffel Grass)	192,150	Floodplains, drainage lines	AcTe, AiAaAbTw/ChAtuTw, AiTe, AiTw, ApyGOaGpyTeTw, ApyTeCspp, AscAsyCsppTe, AtrTeCspp, AxTe, CcTeTw, ChAcGOaCspp, ChAiApyTe, ChAiTe, ChAiTw, ChAiTw/ChAiTe, ChAtuGOrAcTeCspp, ChAtuTe, ChAtuTe/AiTw, ChAtuTw, ChGpTe, ChGpTe/ApyTeCspp, CsppTe, disturbed, EcAcGOrCsppTeCv, EcEvApyAtrTeCspp, ElAiTwTspR, ElCfAprEm, ExAscCsppTe, TspFCEs, Tw
**Cenchrus setiger* (Birdwood Grass)	242,720	Floodplains, drainage lines	AcTe, AiAaAbTw/ChAtuTe, AiAaAbTw/ChAtuTw, AiTe, AiTw, ApyGOaGpyTeTw, ApyTeCspp, AscAsyCsppTe, AtrTeCspp, CcTeTw, ChAcGOaCspp, ChAiApyTe, ChAiTe, ChAiTw, ChAsppTeTwCspp, ChAtuAmoSsGOrTe, ChAtuGOrAcTeCspp, ChAtuTe, ChAtuTe/AiTw, ChGpTe, ChGpTe/ApyTeCspp, CsppTe, disturbed, EcAcGOrCsppTeCv, EcEvApyAtrTeCspp, ElAiTwTspR, ElCfAprEm, ExAscCsppTe, TspFCEs

Species	Estimated abundance	Habitat	Vegetation associations
**Chloris barbata* (Purpletop Chloris)	100	Floodplains	AscAsyCsppTe, EcAcGOrCsppTeCv, ExAscCsppTe
**Citrullus colocynthis* (Colocynth)	1	Floodplains	ChAtuTw
**Cynodon dactylon* (Couch Grass)	8 occurrences	Drainage lines	EcAcGOrCsppTeCv, ExAscCsppTe
**Echinochloa colona* (Awnless Barnyard Grass)	1	Floodplains	CcTeTw
**Flaveria trinervia* (Speedy Weed)	15	Drainage lines	AiAaAbTw/ChAtuTw, disturbed
**Lactuca serriola* (Prickly Lettuce)	50	Floodplains	ExAscCsppTe
**Malvastrum americanum* (Spiked Malvastrum)	1,030	Floodplains	AcTe, AiTe, AxTe, CcTeTw, ChAbTe, ChAiTw, ChAsppTeTwCspp, ChAtuGOrAcTeCspp, EcAcGOrCsppTeCv, ExAscCsppTe, TspFCEs
**Passiflora foetida* (Stinking Passion Flower)	10	Drainage lines	EcAcGOrCsppTeCv, ExAscCsppTe
**Setaria verticillata* (Whorled Pigeon Grass)	170	Floodplains, drainage lines	AscAsyCsppTe, AtrTeCspp, ChAbTe, ChAiTw, ChAtuGOrAcTeCspp, ChAtuTe, ChGpTe, disturbed, EcEvApyAtrTeCspp, ExAscCsppTe
**Sonchus oleraceus* (Common Sowthistle)	85	Floodplains, drainage lines	ApyGOaGpyTeTw, EcEvApyAtrTeCspp, ElAiTwTspR, ExAscCsppTe, TspFCEs
**Vachellia farnesiana* (Mimosa Bush)	200	Floodplains, drainage lines	AiAaAbTw/ChAtuTe, ApyTeCspp, AscAsyCsppTe, AxTe, CcTeTw, ChAbTe, ChAcGOaCspp, ChAsppTeTwCspp, ChAtuGOrAcTeCspp, ChAtuTw, disturbed, EcAcGOrCsppTeCvExAscCsppTe

Several vegetation associations were associated with relatively high diversity of weed species. Vegetation association ExAscCsppTe occurs on disturbed alluvial plains surrounding the soak, and had 10 weed species recorded within it. Nine weed species were recorded from vegetation association TspFCEs, which represents the shingled channels of Bungaroo Creek; and eight weed species were recorded from disturbed areas.

5 Discussion

5.1 Overview of Survey Area

The southern end and western edge of the survey area is flanked by the Hamersley Ranges. Water from the ranges drains into the main confluence and flow line of Bungaroo Creek through a number of gullies and minor drainage lines. In the north-east, the valley opens out to an open outwash area with a fine network of drainage tracts on the extensive alluvial plain.

The ranges of the survey area are dominated by *Eucalyptus leucophloia* subsp. *leucophloia* (Snappy Gum) scattered low trees over *Triodia wiseana* hummock grasslands. This vegetation is typical of the Hamersley Ranges and often includes a sparse shrub layer of *Acacia inaequilatera* or *A. bivenosa*.

Bungaroo Creek runs in a north-westerly orientation through the southern half of the survey area. The main flow line of Bungaroo Creek is essentially a shingle bed with a low open shrubland of herbaceous species. Trees, including *Eucalyptus camaldulensis* subsp. *refulgens* (River Red Gum) and *E. victrix*, and shrubs, such as *A. trachycarpa*, occur on the fringes of the creek. A number of long-senesced mature trees were observed to have been uprooted in the creek bed, likely due to significant rainfall and flow events. The outwash alluvial plains and creek islands were dominated by *Grevillea pyramidalis* (Caustic Bush), *Acacia inaequilatera* (Baderi) and *A. pyrifolia* (Kanji) over *Triodia epactia* hummock grasslands and **Cenchrus* spp. tussock grasslands. Frequent narrow drainage tracts characterised by *Acacia* species intersect these plains and the low rises at the northern end of the survey area.

5.2 Vegetation

The vegetation recorded generally represents what would be expected from similar landforms in the broader Hamersley subregion. Thirty-eight vegetation associations were mapped within the survey area and 33 statistically significant groups were identified from the floristic analysis; this indicates that the scale of mapping was appropriate for the floristic diversity of the survey area.

No vegetation communities that represent a Commonwealth or State listed TEC or PEC were recorded within the survey area.

One quadrat, BA212, did not group with other quadrats or relevés from within the survey area or other regional surveys in the floristic analysis. Although the assemblage of species recorded from BA212 differed from other sites, it had a similar structural composition to other quadrats and relevés within the survey area, did not occur on an under-represented landform and did not otherwise appear to be of local or regional significance.

Vegetation condition in the Bungaroo valley alluvial plains appeared to have deteriorated since earlier surveys (Biota Environmental Sciences 2007, 2012). Vegetation structure had changed from that previously mapped and **Cenchrus* spp. now forms a dominant part of the lower stratum, displacing the native *Triodia* spp. previously recorded in large areas. Vegetation condition was generally 'very good' to 'excellent' throughout other parts of the survey area, in particular for hill habitats. The main drainage channel of Bungaroo Creek had high diversity yet generally low abundance of weeds, and few other signs of disturbance.

Approximately 29% of the survey area had been burnt within the previous two years. Vegetation mapping was unable to be verified in recently burnt areas due to fire responsive species dominating and the difficulty in interpreting composition of pre-fire climax communities; in these areas, the previous vegetation mapping was retained, or refined according to previous site data (Biota Environmental Sciences 2006b, 2007, 2012; Rio Tinto 2014).

5.3 Flora

The suite of flora species recorded was considered typical of what may be expected in the area (Beard 1975; Payne et al. 1988) and aligns with what has been previously recorded in surrounding areas (Biota Environmental Sciences 2012). Rainfall in the 12 months preceding the survey was approximately 130 mm above the long-term mean. In addition, double the long-term mean rainfall was recorded in the 13 weeks between the two surveys. As a result, a high diversity of herbaceous species was captured by the two surveys and many species were flowering and/or fruiting, allowing for confident identification.

Areas considered 'likely' or 'potential' habitat for Threatened or Priority flora were targeted and searched. Opportunistic searches were also conducted in a proportion of all other landform and vegetation types observed whilst traversing the survey area. Five Priority flora species were recorded within the survey area: *Dicladanthera glabra* P2, *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3, *Sida* sp. Barlee Range (S. van Leeuwen 1642) P3, *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 and *Rhynchosia bungarensis* P4. Although scattered throughout the survey area, the highest abundance and distribution of Priority flora species occurred in the southern half of the survey area. Records occurred across alluvial plains, rocky gully, hill slope and hill crest habitats.

The P2 species, *Dicladanthera glabra*, was recorded in association with a rocky gully in the south-east of the survey area, with approximately 80 individuals noted at this location. This species has not previously been recorded within or adjacent to the survey area (Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Department of Parks and Wildlife 2015c, 2015e, 2015f; Rio Tinto 2014). There are currently ten vouchered records of *D. glabra* P2 at the WAHerb (Western Australian Herbarium 1998-2015), with nine of these records listed as occurring within close proximity to the town of Wittenoom, more than 170 km east of the survey area. The location of the remaining vouchered record, collected in 1966, cannot be verified as its locality is recorded only as "Robe River, between Onslow and Roebourne" (Western Australian Herbarium 1998-2015). The Rio Tinto database has records for five individuals of *D. glabra* P2, located approximately 195 km south-east of the survey area in Karijini National Park (Rio Tinto 2015b).

Sida sp. Barlee Range (S. van Leeuwen 1642) P3 was recorded from rocky gully, hillcrest and hillslope habitats and has not been previously recorded within the survey area or surrounding it (Astron Environmental Services 2011, 2015a, 2015b; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). There are 38 vouchers of *S.* sp. Barlee Range (S. van Leeuwen 1642) P3 at the WAHerb (Western Australian Herbarium 1998-2015), with the nearest vouchered specimen occurring approximately 110 km south-east of the survey area. The Rio Tinto database (Rio Tinto 2015b) lists 10,755 individuals from 1,580 locations spanning 275 km south-east of the survey area, and ranging between Ibis Siding in the north, to Channar in the west, Mount Wall in the south and Yandi to the east. The locations in the survey area are approximately 90 km north-west of this species known usual distribution.

Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3 was predominantly located on floodplains and in drainage gullies in the current study and has been previously recorded within and adjacent to the survey area (Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). There are 37 records of *I.* sp. Bungaroo Creek (S. van Leeuwen 4301) P3 listed at the WAHerb, with a range of approximately 215 km (Western Australian Herbarium 1998-2015). More than 12,000 *I.* sp. Bungaroo Creek (S. van Leeuwen 4301) P3 individuals from 1,554 locations are listed on the Rio Tinto database. These span from Mesa A in the west, to West Turner Syncline in the east and Heartbreak Ridge to the south, with a range of approximately 220 km (Rio Tinto 2015b). The locations in the survey area may represent the northern extent of this species.

Populations of *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 were also recorded in association with low hills and ranges in the survey area, particularly favouring rocky ledges, gullies and breakaways. This species has been previously recorded within and adjacent to the survey area (Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). Thirty-eight records of *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 are listed at the WAHerb, with a known range of approximately 175 km (Western Australian Herbarium 1998-2015). Rio Tinto holds records of more than 215,000 *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 individuals, with a geographical distribution spanning 30 km west, 108 km south and 74 km south-east of the survey area (Rio Tinto 2015b).

Rhynchosia bungarensis P4 was generally limited to drainage lines, gullies and gorges in the central to south-western section of the survey area. *Rhynchosia bungarensis* P4 has previously been recorded from a number of studies within the survey area (Biota Environmental Sciences 2006b, 2007). Seventy records of this species are listed at the WAHerb, with a known range of approximately 545 km (Western Australian Herbarium 1998-2015). The Rio Tinto database lists 8,481 individuals from 1,011 locations, distributed between Mesa B in the north-west, Mount Wall in the south and Caliwingina in the east, with a range of approximately 170 km (Rio Tinto 2015b).

Two Priority flora species not found in the survey are considered to have potential to occur; *Stylidium weeliwolli* P2 and *Eragrostis surreyana* P3. Seasonal conditions were excellent for locating these species; however, given the small and slender herbaceous habit of *S. weeliwolli* P2 and *E. surreyana* P3, there is potential that they may not have been observed. The historic record of *S. weeliwolli* P2 from a broad floodplain of Bungaroo Creek within the survey area was not able to be located during the current surveys. The historic location of *S. weeliwolli* P2 is from floodplains dominated by *Corymbia hamersleyana, Grevillea pyramidalis* subsp. *leucadendron* and *Triodia epactia* (vegetation association ChGpTe), however given this species preference for damp conditions, it would have potential to occur in the vicinity of the soak in the centre of the survey area. *Eragrostis surreyana* P3 has been previously recorded within 1.4 km of the survey area in wetland mosaic vegetation associated with seasonally wet areas (Western Australian Herbarium 1998-2015). As such, *E. surreyana* P3 also has potential to occur near the soak in the centre of the survey area or other seasonally damp areas.

None of the 17 weed species recorded represents a range extension or were atypical to a survey of this scale in the Robe Valley. **Acetosa vesicaria* (Ruby Dock), **Bidens bipinnata* (Bipinnate Beggartick), **Citrullus colocynthis* and **Sonchus oleraceus* (Common Sowthistle) are new records for the survey area. All other species have been previously recorded within the survey area (Biota Environmental Sciences 2007, 2012).

Weed density and distribution was greatest in the central third of the survey area, where multiple disturbances, particularly from flood, grazing and track clearing, have occurred. Weed species appear to have proliferated in this area characterised by large drainage systems and alluvial plains, in the years since previous surveys were conducted, and are now often a dominant part of the vegetation communities that occur.

5.4 Contextual Analysis

Four vegetation associations recorded within the survey area are considered to be of local significance because of uniqueness, restricted occurrence and strong association with Priority flora.

Although in poorer condition than has been previously recorded (Biota Environmental Sciences 2012), vegetation within and surrounding the soak is considered to be locally significant as it occurs on a landform considered under-represented in the broader region. The soak is represented by

vegetation association EcAcGOrCsppTeCv in the survey area. This landform and vegetation are not listed as typical of any of the land systems that occur in the survey area (Van Vreeswyk et al. 2004), nor any of the vegetation types in broad scale vegetation mapping of the Pilbara (Beard 1975) or Hamersley subregion descriptions (Kendrick 2001). No similar vegetation was reported from any previous surveys within 50 km of the survey area (Astron Environmental Services 2011; Biota Environmental Sciences 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). The vegetation that surrounds the soak, ExAscCsppTe (previously ExAscCYPvCEcTe (Biota Environmental Sciences 2007)) is also considered under-represented in the local area (Biota Environmental Sciences 2006b, 2007; Rio Tinto 2014). Although no Priority flora was recorded from this vegetation, there is potential that *Stylidium weeliwolli* P2 and *Eragrostis surreyana* P3 could occur there.

Vegetation association ElCfAprEm, typical of the sheltered gullies and rocky walls within the survey area, is considered locally significant because of its strong association with Priority flora. The steep, tiered gullies are major watershed areas from the Hamersley ranges into the Bungaroo Valley, and many support ephemeral rock pools and a unique assemblage of species not found on other landform types, including *Aristida burbidgeae, Astrotricha hamptonii, Brachychiton acuminatus, Corymbia ferriticola, Ficus platypoda, Hibiscus goldsworthii, Nicotiana benthamiana, Plumbago zeylanicum* and *Sida* sp. Barlee Range P3. The majority of *S.* sp. Barlee Range P3, which is considerably north-west of its known distribution in the survey area, were recorded from ElCfAprEm. Although gullies are widespread throughout the Hamersley Ranges they are not described for any of the land systems of the survey area, probably due to the broad scale of that mapping (Van Vreeswyk et al. 2004). Some of the gullies within the survey area are likely to be of greater local significance than others, depending on aspect, presence of semi-permanent water, floristic composition, Priority flora and fire history. No vegetation associations recorded from other surveys within a 50 km radius are considered comparable to ElCfAprEm. Approximately 15 ha (25%) of ElCfAprEm was burnt in the past two years and as such was not able to be searched for Priority flora in its entirety; it is likely that more individuals of the five Priority flora species recorded from this vegetation association may occur within the burnt areas.

Given that the *D. glabra* P2 individuals recorded during the current survey are the only confirmed specimens for this area, the vegetation association that they occur in, ChAtuAmoSsGOrTe, may be considered locally significant. The records from this survey extend the known range of this species. Vegetation synonymous with ChAtuAmoSsGOrTe is not listed for any of the land systems of the survey area (Van Vreeswyk et al. 2004), as part of the broad regional vegetation descriptions (Beard 1975) or in the subregional data (Kendrick 2001); however, vegetation association ElChAmoAtuTe (Biota Environmental Sciences 2007) previously recorded within the survey area and broader region is considered similar in composition and landform preference.

The remaining 34 vegetation associations recorded within the survey area are considered to be well represented beyond the survey area and do not support assemblages of species that are unique, on restricted landforms, or of high conservation significance.

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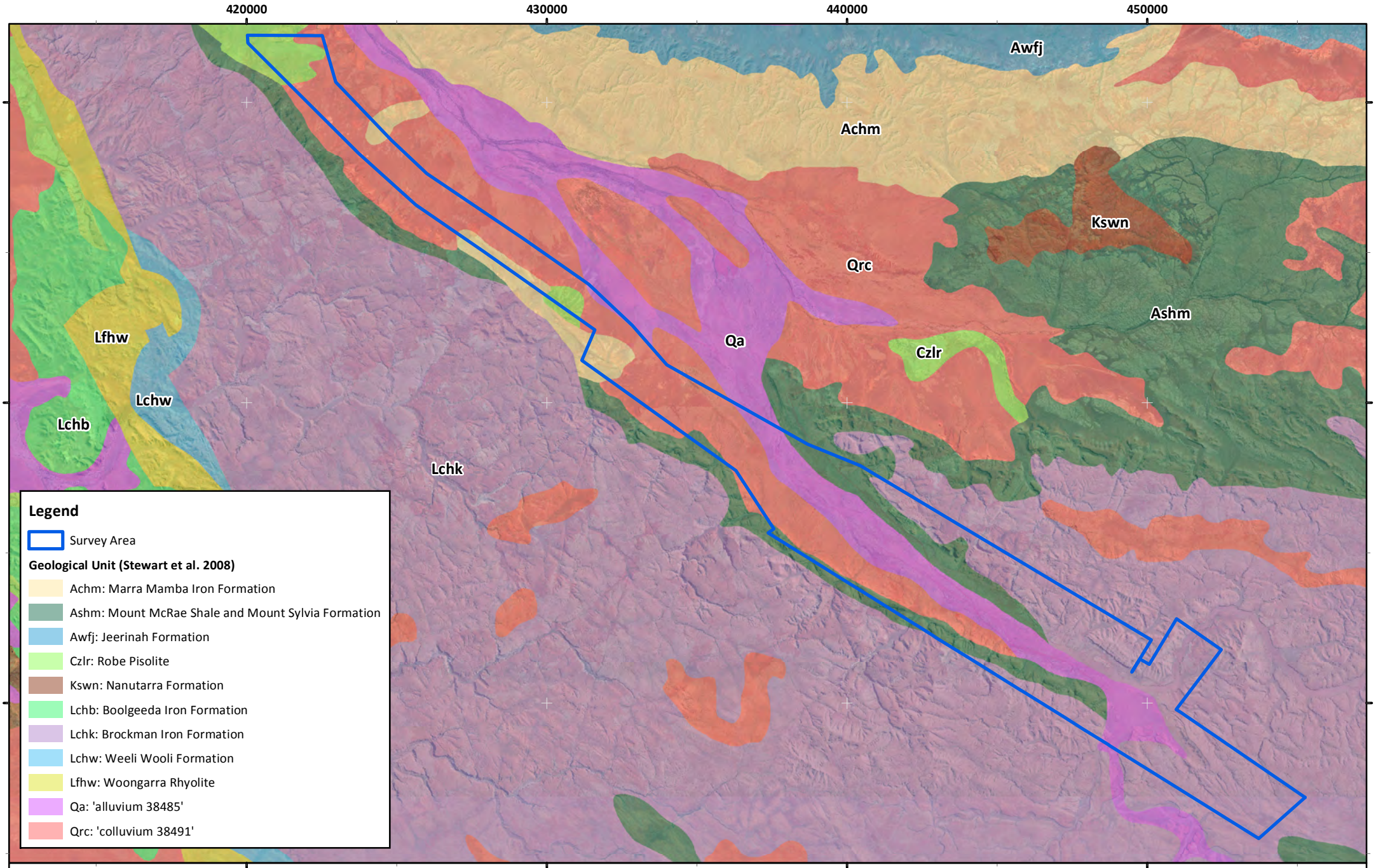
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Appendix A: Geology, Land Systems and Pre-European Vegetation Mapping of the Survey Area

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Bungaroo Level 2 Vegetation and Flora Assessment

Figure A.1: Geological Units of the Bungaroo Survey Area

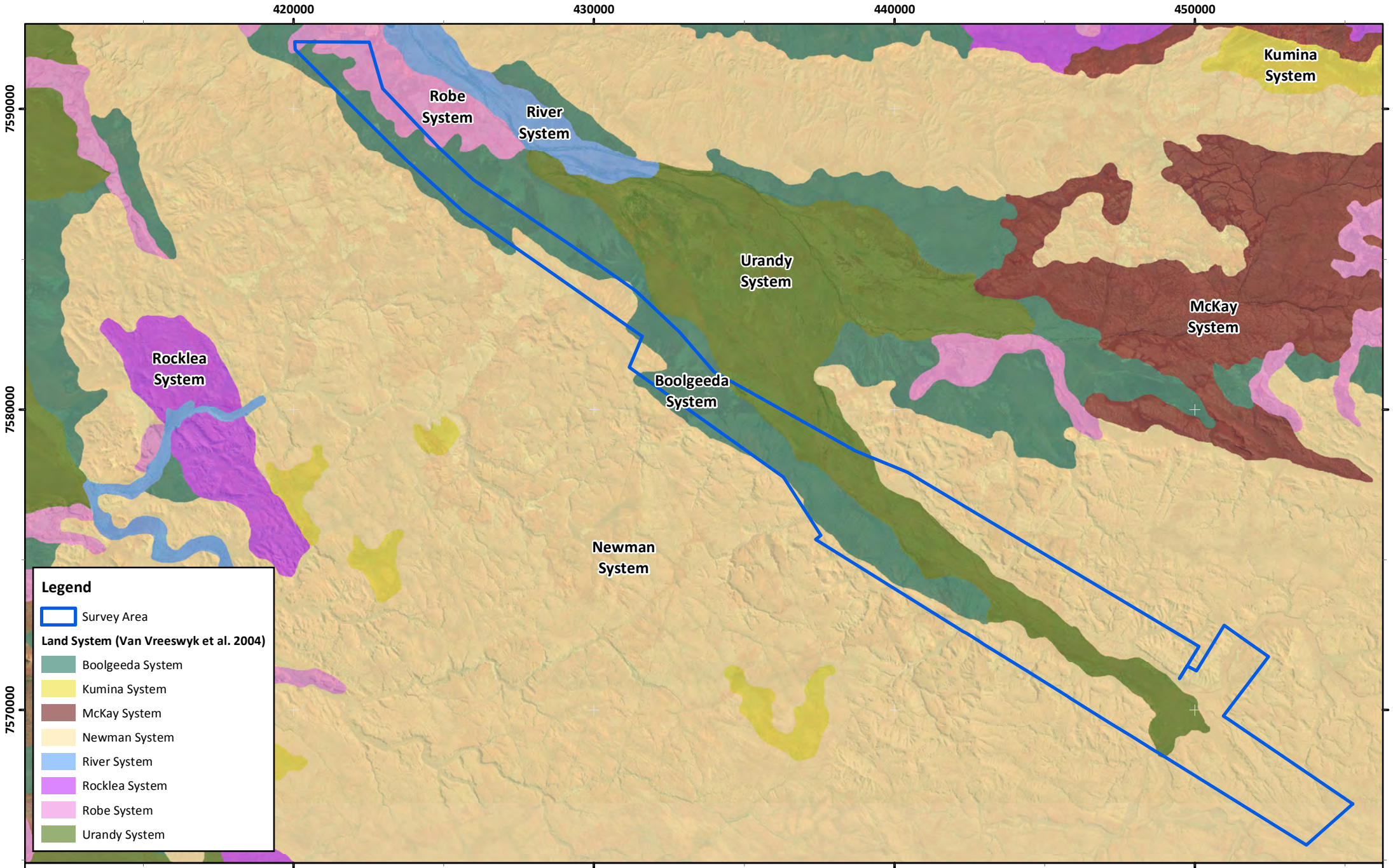
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Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigA1_Geology

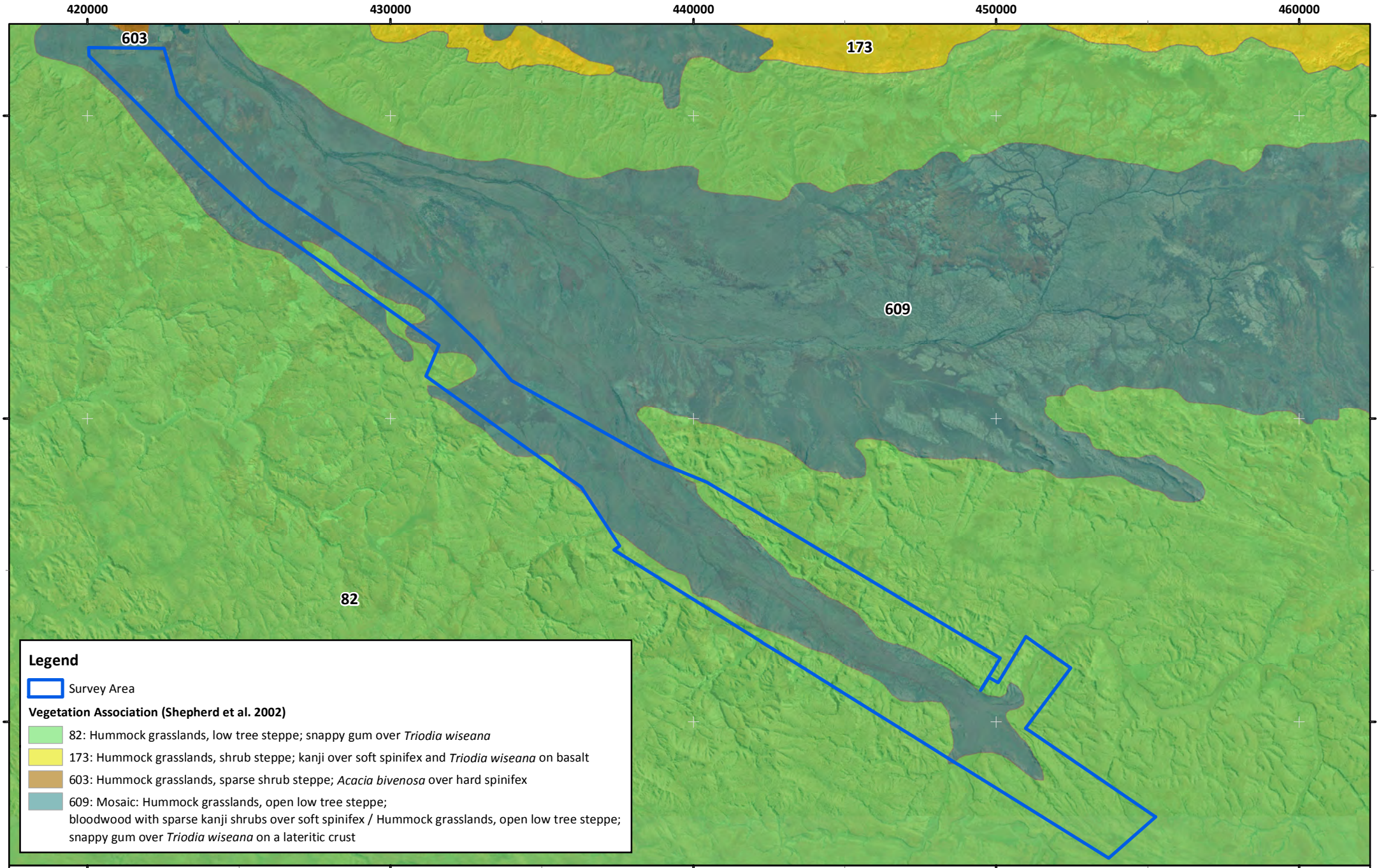


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Bungaroo Level 2 Vegetation and Flora Assessment

Figure A.2: Land Systems of the Bungaroo Survey Area

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigA2_LandSystems



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Bungaroo Level 2 Vegetation and Flora Assessment

Figure A.3: Pre-European Vegetation of the Bungaroo Survey Area

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigA3_PreEuro

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Appendix B: Conservation Categories for Flora, Fauna and Ecological Communities, and Categories for Introduced Flora

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Table B.1: Categories and definitions for threatened flora and fauna species listed under the *Environment Protection and Biodiversity Conservation Act 1999.*

Conservation category	Definition
Extinct	Taxa with no reasonable doubt that the last member of the species has died.
Extinct in the wild	Taxa known to survive only in cultivation, in captivity or as a naturalized population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriated seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically endangered (CR)	Taxa facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
Endangered (E)	Taxa are not critically endangered; and are facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
Vulnerable (V)	Taxa are not critically endangered or endangered; and are facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
Conservation dependent (CD)	Taxa are the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or the following subparagraphs are satisfied: i) the taxa is a species of fish; ii) the taxa is the focus of a management plan that provides management actions necessary to stop the decline of, and support the recovery of, the taxa so that its chances of long term survival in nature are maximized; iii) the management plan is in force under a law of the Commonwealth or of a State or Territory; iv) Cessation of the management plan would adversely affect the conservation status of the taxa Fish includes all taxa of bony fish, sharks, rays, crustaceans, molluscs and other marine organisms, but does not include marine mammals/reptiles.

Three categories exist for listing Threatened Ecological Communities under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Table B.2).

Table B.2: Definitions and criteria for threatened ecological communities under the *Environment Protection and Biodiversity Conservation Act 1999.*

Categories of ecological communities	
Critically endangered	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	If, at that time, it is not critically endangered and is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
Vulnerable	If, at that time, it is not critically endangered or endangered, and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

Table B.3: Categories of Threatened Ecological Communities (Department of Parks and Wildlife 2015b).

PD: Presumed Totally Destroyed
An ecological community that has been adequately searched for but for which no representative occurrences have been located. The community has been found to be totally destroyed or so extensively modified throughout its range that no occurrence of it is likely to recover its species composition and/or structure in the foreseeable future. An ecological community will be listed as presumed totally destroyed if there are no recent records of the community being extant **and either** of the following applies (A or B): A) Records within the last 50 years have not been confirmed despite thorough searches of known or likely habitats **or** B) All occurrences recorded within the last 50 years have since been destroyed.
CR : Critically Endangered
An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated. An ecological community will be listed as **Critically Endangered** when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future. This will be determined on the basis of the best available information, by it meeting **any one or more of** the following criteria (A, B or C): A) The estimated geographic range, and/or total area occupied, and/or number of discrete occurrences since European settlement have been reduced by at least 90% **and either or both** of the following apply (i or ii): i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is imminent (within approximately 10 years); ii) modification throughout its range is continuing such that in the immediate future (within approximately 10 years) the community is unlikely to be capable of being substantially rehabilitated. B) Current distribution is limited, **and one or more** of the following apply (i, ii or iii): i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the immediate future (within approximately 10 years); ii) there are very few occurrences, each of which is small and/or isolated and extremely vulnerable to known threatening processes; iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes. C) The ecological community exists only as highly modified occurrences that may be capable of being rehabilitated if such work begins in the immediate future (within approximately 10 years).

En: Endangered

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or was originally of limited distribution and is in danger of significant modification throughout its range or severe modification or destruction over most of its range in the near future.

An ecological community will be listed as **Endangered** when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. This will be determined on the basis of the best available information by it meeting **any one or more** of the following criteria (A, B, or C):

A) The geographic range, and/or total area occupied, and/or number of discrete occurrences have been reduced by at least 70% since European settlement **and either or both** of the following apply (i or ii):

i) the estimated geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is likely in the short term future (within approximately 20 years);

ii) modification throughout its range is continuing such that in the short term future (within approximately 20 years) the community is unlikely to be capable of being substantially restored or rehabilitated.

B) Current distribution is limited, **and one or more** of the following apply (i, ii or iii):

i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the short term future (within approximately 20 years);

ii) there are few occurrences, each of which is small and/or isolated and all or most occurrences are very vulnerable to known threatening processes;

iii) there may be many occurrences but total area is small and all or most occurrences are small and/or isolated and very vulnerable to known threatening processes.

C) The ecological community exists only as very modified occurrences that may be capable of being substantially restored or rehabilitated if such work begins in the short-term future (within approximately 20 years).

VU: Vulnerable

An ecological community that has been adequately surveyed and is found to be declining and/or has declined in distribution and/or condition and whose ultimate security has not yet been assured and/or a community that is still widespread but is believed likely to move into a category of higher threat in the near future if threatening processes continue or begin operating throughout its range.

An ecological community will be listed as **Vulnerable** when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing a high risk of total destruction or significant modification in the medium to long-term future. This will be determined on the basis of the best available information by it meeting **any one or more of** the following criteria (A, B or C):

A) The ecological community exists largely as modified occurrences that are likely to be capable of being substantially restored or rehabilitated.

B) The ecological community may already be modified and would be vulnerable to threatening processes, is restricted in area and/or range and/or is only found at a few locations.

C) The ecological community may be still widespread but is believed likely to move into a category of higher threat in the medium to long term future because of existing or impending threatening processes.

Possible Threatened Ecological Communities that do not meet survey criteria or that are not adequately defined are added to the Priority Ecological Community Lists under Priorities 1, 2 and 3. Ecological communities that are adequately known, and are rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5 (Table B.4).

Table B.4: Definitions and criteria for Priority Ecological Communities (Department of Parks and Wildlife 2015b).

P1: Priority One – Poorly-known ecological communities
Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤5 occurrences or a total area of ≤ 100ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.
P2: Priority Two – Poorly-known ecological communities
Communities that are known from few occurrences with a restricted distribution (generally ≤10 occurrences or a total area of ≤200ha). At least some occurrences are not believed to be under immediate threat of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.
P3: Priority Three – Poorly-known ecological communities
(i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: (ii) communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or; (iii) communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes. Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.
P4: Priority Four
Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring. (i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands. (ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. (iii) Ecological communities that have been removed from the list of threatened communities during the past five years.
P5: Priority Five – Conservation dependent ecological communities
Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Table B.5: Conservation codes for Western Australian flora and fauna under the *Wildlife Conservation Act 1950*.

Code	Conservation category	Definition
S1	Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice and Wildlife Conservation (Rare Flora) Notice under the Wildlife Conservation Act 1950.	Taxa that is rare or likely to become extinct, as critically endangered taxa.
S2	Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice and Wildlife Conservation (Rare Flora) Notice under the Wildlife Conservation Act 1950.	Taxa that is rare or likely to become extinct, as endangered taxa.
S3	Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice and Wildlife Conservation (Rare Flora) Notice under the Wildlife Conservation Act 1950.	Taxa that is rare or likely to become extinct, as vulnerable taxa.
S4	Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice and Wildlife Conservation (Rare Flora) Notice under the Wildlife Conservation Act 1950.	Taxa that is presumed to be extinct.
S5	Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice under the Wildlife Conservation Act 1950.	Birds that are subject to international agreements relating to the protection of migratory birds.
S6	Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice under the Wildlife Conservation Act 1950.	Fauna that are of special conservation need being species dependent on ongoing conservation intervention.
S7	Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice under the Wildlife Conservation Act 1950.	Declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned.

Note: Schedules 5, 6, and 7 are only related to conservation significant fauna.

Threatened fauna and flora (Schedule 1) are further ranked by the Department according to their level of threat using IUCN Red List criteria:

- CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.
- EN: Endangered - considered to be facing a very high risk of extinction in the wild.
- VU: Vulnerable - considered to be facing a high risk of extinction in the wild.

Taxa that have not yet been adequately surveyed to be listed under Schedule 1 or 2 are added to the Priority Flora and Priority Fauna 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 flora or fauna. Taxa that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list for other than taxonomic reasons, are placed in Priority 4. These taxa require regular monitoring. Conservation dependent species are placed in Priority 5.

Table B.6: Priority species under *Western Australian Wildlife Conservation Act 1950*

P1: Priority One – Poorly known taxa
Taxa that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
P2: Priority Two – Poorly known taxa
Taxa that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
P3: Priority Three – Poorly known taxa
Taxa that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Taxa may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
P4: Priority Four: Rare, near threatened and other taxa in need of monitoring
(a) Rare. Taxa 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 taxa are usually represented on conservation lands. (b) Near Threatened. Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. (c) Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
P5: Priority Five: Conservation dependent taxa
Taxa that are not threatened but are subject to a specific conservation program, the cessation of which would result in the taxa becoming threatened within five years.

The management of introduced flora species in Western Australia is now regulated through the Biosecurity and Agriculture Management Act 2007 (BAM Act). A list of declared pests, including 'pest' plants is provided under the BAM Act, which has been updated to incorporate a number of other Acts that are administered by DAFWA (2015). Declared pests can fall into two categories: one that relates to the prevention of introducing the species or eradicating it; and the other relates to managing the species and whether it can be kept (i.e. for scientific purposes, education or other purpose).

The threat and risk posed to site-specific biodiversity values, influences to rehabilitation success, primary production, infrastructure assets or human health will differ depending on the unique characteristics of each site and the associated land management practice or operation. Therefore site or project specific weed assessments and priorities should be reviewed for each project.

As per introduced flora species, the BAM Act seeks to establish a modern biosecurity regulatory scheme to prevent serious animal pests from entering the State and becoming established, and to minimise the spread and impact of any that are already present within the State. Declared animal pests fall into three categories as Gazetted under the BAM Act (DAFWA 2015). These categories are outlined in Table B.7.

Table B.7: Declared pests categories as gazetted under the *Biosecurity and Agriculture Management Act 2007* (Department of Agriculture and Food 2015).

Category	Description
C1 (Exclusion)	Pests will be assigned to this category if they are not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.
C2 (Eradication)	Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.
C3 (Management)	Pests will be assigned to this category if they are established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.

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Appendix C: Database Searches

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Australian Government
Department of the Environment

EPBC Act Protected Matters Report

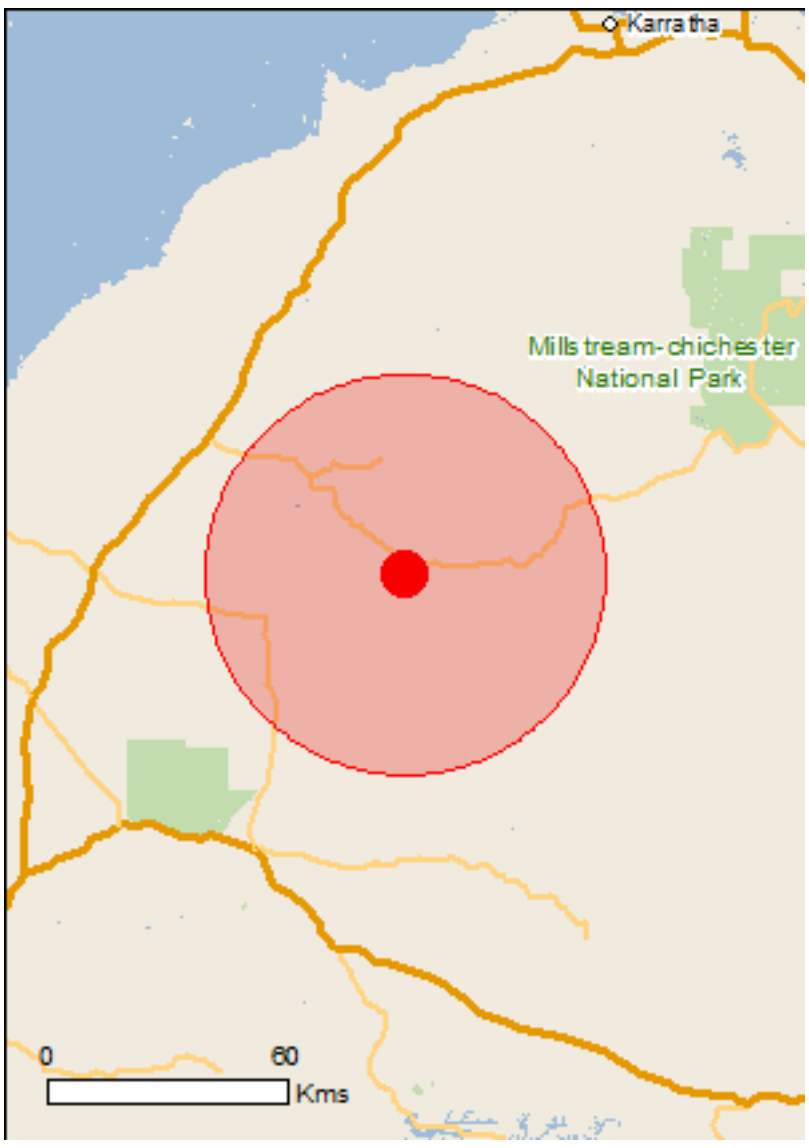
This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

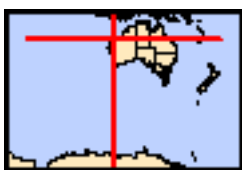
Report created: 24/09/15 12:52:16

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 50.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	8
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	12
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	12
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Mammals		
Dasyurus hallucatus Northern Quoll [331]	Endangered	Species or species habitat known to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
Notoryctes caurinus Kakarratul, Northern Marsupial Mole [295]	Endangered	Species or species habitat may occur within area
Rhinonicteris aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Roosting known to occur within area
Plants		
Lepidium catapycnon Hamersley Lepidium, Hamersley Catapycnon [9397]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Liasis olivaceus barroni Olive Python (Pilbara subspecies) [66699]	Vulnerable	Species or species habitat known to occur within area

Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.	
Name	Threatened	Type of Presence
Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Extra Information

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Mammals		
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus asinus Donkey, Ass [4]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-21.88917 116.37722

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Parks and Wildlife Commission NT, Northern Territory Government
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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NatureMap
Mapping Western Australia's biodiversity

NatureMap Species Report

Created By Guest user on 07/04/2015

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 116°22' 37" E,21°53' 21" S
Buffer 40km
Group By Kingdom

Kingdom	Species	Records
Animalia	360	4667
Plantae	389	784
TOTAL	**749**	**5451**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Animalia					
1.	24559	*Acanthagenys rufogularis (Spiny-cheeked Honeyeater)*			
2.	24260	*Acanthiza apicalis (Broad-tailed Thornbill, Inland Thornbill)*			
3.	24265	*Acanthiza uropygialis (Chestnut-rumped Thornbill)*			
4.	25332	*Acanthophis wellsi (Pilbara Death Adder)*			
5.	25535	*Accipiter cirrocephalus (Collared Sparrowhawk)*			
6.	25536	*Accipiter fasciatus (Brown Goshawk)*			
7.	24283	*Accipiter fasciatus subsp. didimus (Brown Goshawk)*			
8.	41323	*Actitis hypoleucos (Common Sandpiper)*		IA	
9.	25544	*Aegotheles cristatus (Australian Owlet-nightjar)*			
10.	30833	*Amphibolurus longirostris (Long-nosed Dragon)*			
11.	25647	*Amytornis striatus (Striated Grasswren)*			
12.	-12179	*Aname mellosa*			
13.	-13575	*Anapistula sp.*			Y
14.	24312	*Anas gracilis (Grey Teal)*			
15.	24316	*Anas superciliosa (Pacific Black Duck)*			
16.	25553	*Anhinga melanogaster (Darter)*			
17.	24332	*Anhinga melanogaster subsp. novaehollandiae (Darter)*			
18.	25318	*Antaresia perthensis (Pygmy Python)*			
19.	25448	*Antaresia stimsoni (Stimson's Python)*			
20.	25241	*Antaresia stimsoni subsp. stimsoni (Stimson's Python)*			
21.	25670	*Anthus australis (Australian Pipit)*			
22.	24285	*Aquila audax (Wedge-tailed Eagle)*			
23.	25538	*Aquila morphnoides (Little Eagle)*			
24.	25557	*Ardea garzetta (Little Egret)*			
25.	41324	*Ardea modesta (Eastern Great Egret)*		IA	
26.	24340	*Ardea novaehollandiae (White-faced Heron)*			
27.	24341	*Ardea pacifica (White-necked Heron)*			
28.	24610	*Ardeotis australis (Australian Bustard)*			
29.	25566	*Artamus cinereus (Black-faced Woodswallow)*			
30.	24352	*Artamus cinereus subsp. melanops (Black-faced Woodswallow)*			
31.	24355	*Artamus minor (Little Woodswallow)*			
32.	24356	*Artamus personatus (Masked Woodswallow)*			
33.	-1922	*Arthrorhabdus paucispinus*			
34.	-12062	*Asadipus yundamindra*			
35.	25320	*Aspidites melanocephalus (Black-headed Python)*			
36.	25236	*Aspidites ramsayi (Woma)*		S	
37.	24318	*Aythya australis (Hardhead)*			
38.	24251	*Bos taurus (European Cattle)*	Y		
39.	25331	*Brachyurophis approximans (North-western Shovel-nosed Snake)*			
40.	24359	*Burhinus grallarius (Bush Stone-curlew)*			
41.	25715	*Cacatua roseicapilla (Galah)*			
42.	24726	*Cacatua roseicapilla subsp. roseicapilla (Galah)*			
43.	25716	*Cacatua sanguinea (Little Corella)*			
44.	42307	*Cacomantis pallidus (Pallid Cuckoo)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
45.	24779	*Calidris acuminata (Sharp-tailed Sandpiper)*		IA	
46.	24254	*Camelus dromedarius (Dromedary, Camel)*	Y		
47.	25454	*Canis lupus (Dog, Dingo)*	Y		
48.	24039	*Canis lupus subsp. dingo (Dingo)*	Y		
49.	30883	*Canis lupus subsp. familiaris (Dog)*	Y		
50.	25015	*Carlia munda (Shaded-litter Rainbow Skink)*			
51.	25017	*Carlia triacantha (Desert Rainbow Skink)*			
52.	-12417	*Cavisternum clavatum*			
53.	25600	*Centropus phasianinus (Pheasant Coucal)*			
54.	24564	*Certhionyx variegatus (Pied Honeyeater)*			
55.	24181	*Chaerephon jobensis (Northern Freetail-bat)*			
56.	24186	*Chalinolobus gouldii (Gould's Wattled Bat)*			
57.	24373	*Charadrius melanops (Black-fronted Dotterel)*			
58.	24321	*Chenonetta jubata (Australian Wood Duck, Wood Duck)*			
59.	24488	*Cheramoeca leucosternus (White-backed Swallow)*			
60.	24431	*Chrysococcyx basalis (Horsfield's Bronze Cuckoo)*			
61.	24833	*Cincloramphus cruralis (Brown Songlark)*			
62.	24834	*Cincloramphus mathewsi (Rufous Songlark)*			
63.	24288	*Circus approximans (Swamp Harrier)*			
64.	24289	*Circus assimilis (Spotted Harrier)*			
65.	25582	*Climacteris melanura (Black-tailed Treecreeper)*			
66.	25675	*Colluricincla harmonica (Grey Shrike-thrush)*			
67.	24399	*Columba livia (Domestic Pigeon)*	Y		
68.	24361	*Coracina maxima (Ground Cuckoo-shrike)*			
69.	25568	*Coracina novaehollandiae (Black-faced Cuckoo-shrike)*			
70.	24363	*Coracina novaehollandiae subsp. subpallida (Black-faced Cuckoo-shrike)*			
71.	-1866	*Cormocephalus turneri*			
72.	24416	*Corvus bennetti (Little Crow)*			
73.	25593	*Corvus orru (Torresian Crow)*			
74.	24418	*Corvus orru subsp. cecilae (Western Crow)*			
75.	25701	*Coturnix ypsilophora (Brown Quail)*			
76.	24420	*Cracticus nigrogularis (Pied Butcherbird)*			
77.	25595	*Cracticus tibicen (Australian Magpie)*			
78.	24422	*Cracticus tibicen subsp. dorsalis (White-backed Magpie)*			
79.	25596	*Cracticus torquatus (Grey Butcherbird)*			
80.	24424	*Cracticus torquatus subsp. torquatus (Grey Butcherbird)*			
81.	24919	*Crenadactylus ocellatus subsp. horni (Clawless Gecko)*			
82.	30893	*Cryptoblepharus buchananii*			
83.	30892	*Cryptoblepharus ustulatus*			
84.	25458	*Ctenophorus caudicinctus (Ring-tailed Dragon)*			
85.	24865	*Ctenophorus caudicinctus subsp. caudicinctus (Ring-tailed Dragon)*			
86.	25459	*Ctenophorus isolepis (Crested Dragon, Military Dragon)*			
87.	24874	*Ctenophorus isolepis subsp. citrinus (Crested Dragon, Military Dragon)*			
88.	24875	*Ctenophorus isolepis subsp. gularis (Central Military Dragon)*			
89.	24876	*Ctenophorus isolepis subsp. isolepis (Crested Dragon, Military Dragon)*			
90.	24882	*Ctenophorus nuchalis (Central Netted Dragon)*			
91.	24886	*Ctenophorus reticulatus (Western Netted Dragon)*			
92.	25461	*Ctenotus brooksi*			
93.	25032	*Ctenotus calurus*			
94.	25036	*Ctenotus duricola*			
95.	25462	*Ctenotus grandis*			
96.	25041	*Ctenotus grandis subsp. grandis*			
97.	25043	*Ctenotus grandis subsp. titan*			
98.	25044	*Ctenotus hanloni*			
99.	25045	*Ctenotus helenae*			
100.	25463	*Ctenotus pantherinus (Leopard Ctenotus)*			
101.	25064	*Ctenotus pantherinus subsp. ocellifer (Leopard Ctenotus)*			
102.	25065	*Ctenotus pantherinus subsp. pantherinus (Leopard Ctenotus)*			
103.	25066	*Ctenotus quattuordecimlineatus*			
104.	25070	*Ctenotus robustus*			
105.	25072	*Ctenotus rubicundus*			
106.	25073	*Ctenotus saxatilis (Rock Ctenotus)*			
107.	25074	*Ctenotus schomburgkii*			
108.	25077	*Ctenotus serventyi*			
109.	25466	*Cyclodomorphus melanops (Slender Blue-tongue)*			
110.	25090	*Cyclodomorphus melanops subsp. melanops (Slender Blue-tongue)*			
111.	25375	*Cyclorana maini (Sheep Frog)*			
112.	24322	*Cygnus atratus (Black Swan)*			
113.	25547	*Dacelo leachii (Blue-winged Kookaburra)*			
114.	24304	*Dacelo leachii subsp. leachii (Blue-winged Kookaburra)*			

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115.	30903	*Dasycercus blythi (Brush-tailed Mulgara, Ampurta)*		P4	
116.	24091	*Dasykaluta rosamondae (Little Red Kaluta)*			
117.	24093	*Dasyurus hallucatus (Northern Quoll)*		T	
118.	30906	*Delma concinna (Javelin Legless Lizard)*			
119.	30905	*Delma concinna subsp. concinna (Javelin Legless Lizard)*			
120.	30904	*Delma concinna subsp. major (Javelin Legless Lizard)*		P1	
121.	24998	*Delma elegans*			
122.	25001	*Delma nasuta*			
123.	25002	*Delma pax*			
124.	25004	*Delma tincta*			
125.	25468	*Demansia psammophis (Yellow-faced Whipsnake)*			
126.	25295	*Demansia psammophis subsp. cupreiceps (Yellow-faced Whipsnake)*			
127.	25247	*Demansia psammophis subsp. psammophis (Yellow-faced Whipsnake)*			
128.	25297	*Demansia rufescens (Rufous Whipsnake)*			
129.	24325	*Dendrocygna eytoni (Plumed Whistling Duck)*			
130.	25607	*Dicaeum hirundinaceum (Mistletoebird)*			
131.	24926	*Diplodactylus conspicillatus (Fat-tailed Gecko)*			
132.	41404	*Diplodactylus galaxias (Northern Pilbara Beak-faced Gecko)*			
133.	24937	*Diplodactylus mitchelli*			
134.	24944	*Diplodactylus savagei (Southern Pilbara Beak-faced Gecko)*			
135.	34152	*Draculoides mesozeirus (Middle Robe Draculoides)*		T	Y
136.	24470	*Dromaius novaehollandiae (Emu)*			
137.	41406	*Egernia cygnitos (Western Pilbara Spiny-tailed Skink)*			
138.	25092	*Egernia depressa (Southern Pygmy Spiny-tailed Skink)*			
139.	25094	*Egernia formosa*			
140.	25101	*Egernia pilbarensis (Pilbara Skink)*			
141.	25540	*Elanus caeruleus (Black-shouldered Kite)*			
142.	24631	*Emblema pictum (Painted Finch)*			
143.	24570	*Epthianura tricolor (Crimson Chat)*			
144.	24257	*Equus asinus (Donkey)*	Y		
145.	24258	*Equus caballus (Horse)*	Y		
146.	42404	*Eremiascincus isolepis*			
147.	43381	*Eremiascincus pallidus (Western Narrow-banded Skink, Narrow-banded Sand Swimmer)*			
148.	25109	*Eremiascincus richardsonii (Broad-banded Sand Swimmer)*			
149.	24837	*Eremiornis carteri (Spinifex-bird)*			
150.	-1924	*Ethmostigmus curtipes*			
151.	24368	*Eurostopodus argus (Spotted Nightjar)*			
152.	25621	*Falco berigora (Brown Falcon)*			
153.	24471	*Falco berigora subsp. berigora (Brown Falcon)*			
154.	25622	*Falco cenchroides (Australian Kestrel)*			
155.	24472	*Falco cenchroides subsp. cenchroides (Australian Kestrel)*			
156.	25623	*Falco longipennis (Australian Hobby)*			
157.	24041	*Felis catus (Cat)*	Y		
158.	-11957	*Fissarena castanea*			
159.	25727	*Fulica atra (Eurasian Coot)*			
160.	25301	*Furina ornata (Moon Snake)*			
161.	25730	*Gallirallus philippensis (Buff-banded Rail)*			
162.	24956	*Gehyra pilbara*			
163.	24958	*Gehyra punctata*			
164.	24959	*Gehyra variegata*			
165.	24401	*Geopelia cuneata (Diamond Dove)*			
166.	25585	*Geopelia striata (Zebra Dove)*			
167.	24403	*Geopelia striata subsp. placida (Peaceful Dove)*			
168.	24404	*Geophaps plumifera (Spinifex Pigeon)*			
169.	25530	*Gerygone fusca (Western Gerygone)*			
170.	24271	*Gerygone fusca subsp. fusca (Western Gerygone)*			
171.	24443	*Grallina cyanoleuca (Magpie-lark)*			
172.	24293	*Haliaeetus leucogaster (White-bellied Sea-Eagle)*		IA	
173.	24295	*Haliastur sphenurus (Whistling Kite)*			
174.	24296	*Hamirostra isura (Square-tailed Kite)*			
175.	-12381	*Hanseniella sp. B18*			Y
176.	25232	*Hemidactylus frenatus (Asian House Gecko)*	Y		
177.	24961	*Heteronotia binoei (Bynoe's Gecko)*			
178.	24962	*Heteronotia spelea (Desert Cave Gecko)*			
179.	25734	*Himantopus himantopus (Black-winged Stilt)*			
180.	24489	*Hirundo ariel (Fairy Martin)*			
181.	25629	*Hirundo nigricans (Tree Martin)*			
182.	-12033	*Hogna crispipes*			
183.	-12832	*Isopedella tindalei*			

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184.	-12477	*Karaops martamarta*			
185.	24367	*Lalage tricolor (White-winged Triller)*			
186.	-13246	*Lampona scutata*			
187.	24217	*Leggadina lakedownensis (Short-tailed Mouse, Karekanga)*		P4	
188.	34042	*Leiopotherapon aheneus (Fortescue Grunter)*		P4	
189.	25125	*Lerista bipes*			
190.	25135	*Lerista flammicauda*			
191.	25142	*Lerista ips*			
192.	25155	*Lerista muelleri*			
193.	30925	*Lerista verhmens*			
194.	25005	*Lialis burtonis*			
195.	25238	*Liasis olivaceus subsp. barroni (Pilbara Olive Python)*		T	
196.	25661	*Lichmera indistincta (Brown Honeyeater)*			
197.	-13550	*Limnesia sp. B04*			Y
198.	-13172	*Linnaeolpium linnaei*			Y
199.	25392	*Litoria rubella (Little Red Tree Frog)*			
200.	30933	*Lucasium stenodactylum*			
201.	30934	*Lucasium wombeyi*			
202.	24180	*Macroderma gigas (Ghost Bat)*		P4	
203.	25489	*Macropus robustus (Euro)*			
204.	24135	*Macropus robustus subsp. erubescens (Euro, Biggada)*			
205.	24136	*Macropus rufus (Red Kangaroo, Marlu)*			
206.	25651	*Malurus lamberti (Variegated Fairy-wren)*			
207.	25652	*Malurus leucopterus (White-winged Fairy-wren)*			
208.	24583	*Manorina flavigula (Yellow-throated Miner)*			
209.	25665	*Melithreptus gularis (Black-chinned Honeyeater)*			
210.	24736	*Melopsittacus undulatus (Budgerigar)*			
211.	25184	*Menetia greyii*			
212.	25491	*Menetia surda*			
213.	25187	*Menetia surda subsp. surda*			
214.	24598	*Merops ornatus (Rainbow Bee-eater)*		IA	
215.	25542	*Milvus migrans (Black Kite)*			
216.	24298	*Milvus migrans subsp. affinis (Black Kite)*			
217.	25545	*Mirafra javanica (Horsfield's Bushlark, Singing Bushlark)*			
218.	-13642	*Missulena rutraspina*			
219.	25495	*Morethia ruficauda*			
220.	25193	*Morethia ruficauda subsp. exquisita*			
221.	24182	*Mormopterus beccarii (Beccari's Freetail-bat)*			
222.	24223	*Mus musculus (House Mouse)*	Y		
223.	33954	*Nedsia hurlberti (amphipod)*		T	
224.	33957	*Nedsia sculptilis (amphipod)*		T	
225.	25685	*Neochmia ruficauda (Star Finch)*			
226.	24639	*Neochmia ruficauda subsp. clarescens (Star Finch)*			
227.	24737	*Neophema bourkii (Bourke's Parrot)*			
228.	25498	*Nephrurus wheeleri*			
229.	24972	*Nephrurus wheeleri subsp. cinctus*			
230.	24973	*Nephrurus wheeleri subsp. wheeleri*			
231.	24094	*Ningaui ridei (Wongai Ningaui)*			
232.	24095	*Ningaui timealeyi (Pilbara Ningaui)*			
233.	25747	*Ninox connivens (Barking Owl)*			
234.	25748	*Ninox novaeseelandiae (Boobook Owl)*			
235.	24820	*Ninox novaeseelandiae subsp. boobook (Boobook Owl)*			
236.	-13025	*Nomindar jarrnarm*			Y
237.	24224	*Notomys alexis (Spinifex Hopping-mouse)*			
238.	25196	*Notoscincus butleri (Lined Soil-crevice Skink)*		P4	
239.	25499	*Notoscincus ornatus*			
240.	25197	*Notoscincus ornatus subsp. ornatus*			
241.	-12719	*Notsodipus barlee*			
242.	25564	*Nycticorax caledonicus (Rufous Night Heron)*			
243.	24194	*Nyctophilus geoffroyi (Lesser Long-eared Bat)*			
244.	24742	*Nymphicus hollandicus (Cockatiel)*			
245.	24407	*Ocyphaps lophotes (Crested Pigeon)*			
246.	24976	*Oedura marmorata (Marbled Velvet Gecko)*			
247.	-12621	*Omoedus orbiculatus*			
248.	-13229	*Opopaea ectognophus*			Y
249.	24618	*Oreoica gutturalis (Crested Bellbird)*			
250.	24085	*Oryctolagus cuniculus (Rabbit)*	Y		
251.	25680	*Pachycephala rufiventris (Rufous Whistler)*			
252.	34155	*Paradraculoides gnophicola (Mesa G Paradraculoides)*		T	Y
253.	35956	*Paradraculoides kryptus (Mesa K Paradraculoides)*		T	Y

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254.	25254	*Parasuta monachus*			
255.	25681	*Pardalotus punctatus (Spotted Pardalote)*			
256.	24627	*Pardalotus rubricatus (Red-browed Pardalote)*			
257.	25682	*Pardalotus striatus (Striated Pardalote)*			
258.	24628	*Pardalotus striatus subsp. murchisoni (Striated Pardalote)*			
259.	24648	*Pelecanus conspicillatus (Australian Pelican)*			
260.	-12485	*Pellenes bitaeniata*			
261.	24144	*Petrogale rothschildi (Rothschild's Rock-wallaby)*			
262.	24658	*Petroica cucullata (Hooded Robin)*			
263.	24659	*Petroica goodenovii (Red-capped Robin)*			
264.	25698	*Phalacrocorax melanoleucos (Little Pied Cormorant)*			
265.	24666	*Phalacrocorax melanoleucos subsp. melanoleucos (Little Pied Cormorant)*			
266.	24667	*Phalacrocorax sulcirostris (Little Black Cormorant)*			
267.	25699	*Phalacrocorax varius (Pied Cormorant)*			
268.	24409	*Phaps chalcoptera (Common Bronzewing)*			
269.	24411	*Phaps histrionica (Flock Bronzewing, Flock Pigeon)*			
270.	-13060	*Pilbarascutigera incola*			
271.	24101	*Planigale ingrami (Long-tailed Planigale)*			
272.	24102	*Planigale maculata (Common Planigale)*			
273.	25721	*Platycercus zonarius (Australian Ringneck, Ring-necked Parrot)*			
274.	25703	*Podargus strigoides (Tawny Frogmouth)*			
275.	25510	*Pogona minor (Dwarf Bearded Dragon)*			
276.	24907	*Pogona minor subsp. minor (Dwarf Bearded Dragon)*			
277.	24683	*Pomatostomus superciliosus (White-browed Babbler)*			
278.	25706	*Pomatostomus temporalis (Grey-crowned Babbler)*			
279.	24684	*Pomatostomus temporalis subsp. rubeculus (Grey-crowned Babbler)*			
280.	-12132	*Prethopalpus sp.*			Y
281.	24106	*Pseudantechinus woolleyae (Woolley's Pseudantechinus)*			
282.	25261	*Pseudechis australis (Mulga Snake)*			
283.	24233	*Pseudomys chapmani (Western Pebble-mound Mouse, Ngadji)*		P4	
284.	24234	*Pseudomys delicatulus (Delicate Mouse)*			
285.	24235	*Pseudomys desertor (Desert Mouse)*			
286.	24237	*Pseudomys hermannsburgensis (Sandy Inland Mouse)*			
287.	42416	*Pseudonaja mengdeni (Western Brown Snake)*			
288.	25263	*Pseudonaja modesta (Ringed Brown Snake)*			
289.	25264	*Pseudonaja nuchalis (Gwardar, Northern Brown Snake)*			
290.	25724	*Ptilonorhynchus maculatus (Spotted Bowerbird)*			
291.	24757	*Ptilonorhynchus maculatus subsp. guttatus (Western Bowerbird)*			
292.	25009	*Pygopus nigriceps*			
293.	24278	*Pyrrholaemus brunneus (Redthroat)*			
294.	43368	*Rhinonicteris aurantia (Orange Leafnosed-bat)*		T	
295.	25613	*Rhipidura fuliginosa (Grey Fantail)*			
296.	24452	*Rhipidura fuliginosa subsp. preissi (Grey Fantail)*			
297.	25614	*Rhipidura leucophrys (Willie Wagtail)*			
298.	24454	*Rhipidura leucophrys subsp. leucophrys (Willie Wagtail)*			
299.	24982	*Rhynchoedura ornata (Western Beaked Gecko)*			
300.	24174	*Saccolaimus flaviventris (Yellow-bellied Sheathtail-bat)*			
301.	-1828	*Scolopendra laeta*			
302.	-1982	*Scolopendra morsitans*			
303.	-17280	*Scorpaena sumptuosa*			
304.	24200	*Scotorepens greyii (Little Broad-nosed Bat)*			
305.	25305	*Simoselaps anomalus (Desert Banded Snake)*			
306.	30948	*Smicrornis brevirostris (Weebill)*			
307.	24115	*Sminthopsis longicaudata (Long-tailed Dunnart)*		P4	
308.	24116	*Sminthopsis macroura (Stripe-faced Dunnart)*			
309.	24120	*Sminthopsis youngsoni (Lesser Hairy-footed Dunnart)*			
310.	25656	*Stipiturus ruficeps (Rufous-crowned Emu-wren)*			
311.	24556	*Stipiturus ruficeps subsp. ruficeps (Rufous-crowned Emu-wren)*			
312.	25517	*Strophurus ciliaris*			
313.	24927	*Strophurus elderi*			
314.	24949	*Strophurus wellingtonae*			
315.	42310	*Sugomel niger (Black Honeyeater)*			
316.	-13323	*Supunna picta?*			Y
317.	25269	*Suta fasciata (Rosen's Snake)*			
318.	25307	*Suta punctata (Spotted Snake)*			
319.	-12787	*Symphyella sp. B16*			Y
320.	25705	*Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)*			
321.	24207	*Tachyglossus aculeatus (Short-beaked Echidna)*			
322.	24185	*Tadarida australis (White-striped Freetail-bat)*			
323.	30870	*Taeniopygia guttata (Zebra Finch)*			

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324.	30871	*Taeniopygia guttata subsp. castanotis (Zebra Finch)*			
325.	-13079	*Tamopsis occidentalis*			
326.	24175	*Taphozous georgianus (Common Sheathtail-bat)*			
327.	24845	*Threskiornis spinicollis (Straw-necked Ibis)*			
328.	25202	*Tiliqua multifasciata (Central Blue-tongue)*			
329.	42351	*Todiramphus pyrrhopygius (Red-backed Kingfisher)*			
330.	25549	*Todiramphus sanctus (Sacred Kingfisher)*			
331.	-13593	*Trachyspina capensis*			
332.	24157	*Trichosurus vulpecula subsp. arnhemensis (Northern Brushtail Possum)*			
333.	24806	*Tringa glareola (Wood Sandpiper)*		IA	
334.	24851	*Turnix velox (Little Button-quail)*			
335.	25762	*Tyto alba (Barn Owl)*			
336.	25445	*Uperoleia russelli (Northwest Toadlet)*			
337.	41428	*Uperoleia saxatilis (Pilbara Toadlet)*			
338.	24386	*Vanellus tricolor (Banded Lapwing)*			
339.	25209	*Varanus acanthurus (Spiny-tailed Monitor)*			
340.	25210	*Varanus brevicauda (Short-tailed Pygmy Monitor)*			
341.	30825	*Varanus bushi (Pilbara Mulga Monitor)*			
342.	25211	*Varanus caudolineatus*			
343.	25212	*Varanus eremius (Pygmy Desert Monitor)*			
344.	25216	*Varanus giganteus (Perentie)*			
345.	25218	*Varanus gouldii (Bungarra or Sand Monitor)*			
346.	25524	*Varanus panoptes (Yellow-spotted Monitor)*			
347.	25222	*Varanus panoptes subsp. panoptes*			
348.	25223	*Varanus panoptes subsp. rubidus*			
349.	25224	*Varanus pilbarensis (Pilbara Rock Monitor)*			
350.	25526	*Varanus tristis (Racehorse Monitor)*			
351.	25227	*Varanus tristis subsp. tristis (Racehorse Monitor)*			
352.	24205	*Vespadelus finlaysoni (Finlayson's Cave Bat)*			
353.	24040	*Vulpes vulpes (Red Fox)*	Y		
354.	24248	*Zyzomys argurus (Common Rock-rat)*			
355.	-12360	*nr Encoptarthria sp.*			Y
356.	-13279	*nr Geophilus sp. B02*			Y
Plantae					
357.	9080	*Abutilon cunninghamii*			
358.	4891	*Abutilon fraseri (Lantern Bush)*			
359.	16919	*Abutilon hannii*			
360.	4895	*Abutilon lepidum*			
361.	4901	*Abutilon otocarpum (Desert Chinese Lantern)*			
362.	4902	*Abutilon oxycarpum (Flannel Weed)*			
363.	42920	*Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)*			
364.	14113	*Abutilon sp. Pilbara (W.R. Barker 2025)*			
365.	3214	*Acacia ancistrocarpa (Fitzroy Wattle)*			
366.	3223	*Acacia arida*			
367.	3228	*Acacia atkinsiana*			
368.	3241	*Acacia bivenosa*			
369.	13403	*Acacia colei*			
370.	17013	*Acacia colei var. colei*			
371.	17014	*Acacia colei var. ileocarpa*			
372.	3300	*Acacia dictyophleba (Sandhill Wattle, Ngarkalya)*			
373.	16174	*Acacia elachantha*			
374.	3360	*Acacia hamersleyensis*			
375.	3377	*Acacia inaequilatera (Baderi)*			
376.	3471	*Acacia orthocarpa (Needleleaf Wattle)*			
377.	3501	*Acacia ptychophylla*			
378.	29016	*Acacia pyrifolia var. morrisonii*			
379.	29015	*Acacia pyrifolia var. pyrifolia*			
380.	13078	*Acacia sclerosperma subsp. sclerosperma*			
381.	29135	*Acacia sericophylla*			
382.	3553	*Acacia spondylophylla*			
383.	13070	*Acacia synchronicia*			
384.	3579	*Acacia trachycarpa (Minni Ritchi, Balgali)*			
385.	23521	*Acacia trudgeniana*			
386.	20319	*Acacia tumida var. pilbarensis*			
387.	3606	*Acacia xiphophylla*			
388.	172	*Acrachne racemosa*			
389.	17422	*Adriana tomentosa var. tomentosa*			
390.	3680	*Aeschynomene indica (Budda Pea)*			
391.	2647	*Alternanthera angustifolia*			
392.	2648	*Alternanthera denticulata (Lesser Joyweed)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
393.	2651	*Alternanthera nana (Hairy Joyweed)*			
394.	2653	*Alternanthera pungens (Khaki Weed)*	Y		
395.	17147	*Alysicarpus muelleri*			
396.	31076	*Amaranthus cochleitepalus*			
397.	2660	*Amaranthus cuspidifolius*			
398.	2663	*Amaranthus interruptus (Native Amaranth)*			
399.	5276	*Ammannia auriculata*			
400.	5277	*Ammannia baccifera*			
401.	13700	*Amyema bifurcata*			
402.	2385	*Amyema sanguinea*			
403.	17797	*Argemone ochroleuca subsp. ochroleuca*	Y		
404.	204	*Aristida burbidgeae*			
405.	207	*Aristida contorta (Bunched Kerosene Grass)*			
406.	210	*Aristida holathera*			
407.	12063	*Aristida holathera var. holathera*			
408.	217	*Aristida nitidula (Flat-awned Threeawn)*			
409.	1364	*Asphodelus fistulosus (Onion Weed)*	Y		
410.	6202	*Astrotricha hamptonii (Ironplant)*			
411.	6830	*Basilicum polystachyon*			
412.	5186	*Bergia trimera*			
413.	2769	*Boerhavia burbidgeana*			
414.	2770	*Boerhavia coccinea (Tar Vine, Wituka)*			
415.	2772	*Boerhavia gardneri*			
416.	2774	*Boerhavia repleta*			
417.	2775	*Boerhavia schomburgkiana*			
418.	6608	*Bonamia pannosa*			
419.	37721	*Bonamia sp. Dampier (A.A. Mitchell PRP 217)*			
420.	239	*Bothriochloa bladhii (Forest Bluegrass)*			
421.	16355	*Bothriochloa decipiens var. cloncurrensis*		P1	
422.	241	*Brachyachne convergens (Spider Grass)*			
423.	242	*Brachyachne prostrata*			
424.	750	*Bulbostylis barbata*			
425.	11055	*Cajanus cinereus*			
426.	11150	*Cajanus pubescens*			
427.	2864	*Calandrinia ptychosperma*			
428.	7893	*Calocephalus knappii*			
429.	7904	*Calotis latiuscula*		P3	
430.	2982	*Capparis umbonata (Wild Orange, Nanggalu)*			
431.	2949	*Cassytha capillaris*			
432.	259	*Cenchrus echinatus (Burrgrass)*	Y		
433.	29721	*Cenchrus setiger (Birdwood Grass)*	Y		
434.	30	*Ceratopteris thalictroides*			
435.	32	*Cheilanthes brownii*			
436.	37	*Cheilanthes lasiophylla (Woolly Cloak Fern)*			
437.	12818	*Cheilanthes sieberi subsp. sieberi*			
438.	270	*Chloris pumilio*			
439.	12612	*Chrysocephalum apiculatum*			
440.	7369	*Citrullus colocynthis*	Y		
441.	2988	*Cleome viscosa (Tickweed, Tjinduwadhu)*			
442.	13692	*Clerodendrum floribundum var. angustifolium*			
443.	13691	*Clerodendrum floribundum var. ovatum*			
444.	2778	*Codonocarpus cotinifolius (Native Poplar, Kundurangu)*			
445.	13560	*Corchorus crozophorifolius*			
446.	13659	*Corchorus laniflorus*			
447.	18408	*Corchorus lasiocarpus subsp. parvus*			
448.	4862	*Corchorus parviflorus*			
449.	4864	*Corchorus sidoides (Flannel Weed)*			
450.	18415	*Corchorus sidoides subsp. sidoides*			
451.	20242	*Corchorus sp. Hamersley Range hilltops (S. van Leeuwen 3826)*			
452.	17661	*Corchorus tectus*			
453.	4865	*Corchorus tridens*			
454.	16782	*Corymbia candida subsp. candida*			
455.	17077	*Corymbia ferriticola*			
456.	17093	*Corymbia hamersleyana*			
457.	17084	*Corymbia zygophylla*			
458.	3783	*Crotalaria medicaginea*			
459.	11231	*Crotalaria novae-hollandiae subsp. novae-hollandiae*			
460.	17439	*Cullen lachnostachys*			
461.	17119	*Cullen leucochaites*			
462.	17116	*Cullen martinii*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
463.	17120	*Cullen pogonocarpum*			
464.	279	*Cymbopogon ambiguus (Scentgrass)*			
465.	281	*Cymbopogon obtectus (Silkyheads)*			
466.	283	*Cynodon dactylon (Couch)*	Y		
467.	774	*Cyperus bifax (Downs Nutgrass)*			
468.	786	*Cyperus cunninghamii*			
469.	12811	*Cyperus cunninghamii subsp. cunninghamii*			
470.	788	*Cyperus dactylotes*			
471.	789	*Cyperus difformis (Rice Sedge)*			
472.	12808	*Cyperus hesperius*			
473.	798	*Cyperus iria*			
474.	799	*Cyperus ixiocarpus*			
475.	814	*Cyperus squarrosus*			
476.	818	*Cyperus vaginatus (Stiffleaf Sedge)*			
477.	290	*Dactyloctenium radulans (Button Grass)*			
478.	7424	*Dampiera candicans*			
479.	6218	*Daucus glochidiatus (Australian Carrot)*			
480.	3853	*Desmodium filiforme*			
481.	3856	*Desmodium muelleri*			
482.	303	*Dichanthium fecundum (Curly Bluegrass)*			
483.	13741	*Dichanthium sericeum subsp. humilius*			
484.	310	*Digitaria brownii (Cotton Panic Grass)*			
485.	313	*Digitaria ctenantha (Comb Finger Grass)*			
486.	11406	*Dodonaea lanceolata var. lanceolata*			
487.	4772	*Dodonaea pachyneura*			
488.	11202	*Dodonaea viscosa subsp. spatulata (Sticky Hop-bush)*			
489.	11632	*Dysphania glomulifera subsp. eremaea*			
490.	2506	*Dysphania rhadinostachya*			
491.	2508	*Dysphania sphaerosperma*			
492.	328	*Echinochloa colona (Awnless Barnyard Grass)*	Y		
493.	823	*Eleocharis atropurpurea*			
494.	826	*Eleocharis dulcis (Chinese Water Chestnut)*			
495.	827	*Eleocharis geniculata*			
496.	355	*Elytrophorus spicatus (Spikegrass)*			
497.	357	*Enneapogon caerulescens (Limestone Grass)*			
498.	375	*Eragrostis cumingii (Cuming's Love Grass)*			
499.	378	*Eragrostis dielsii (Mallee Lovegrass)*			
500.	16731	*Eragrostis exigua*			
501.	388	*Eragrostis leptocarpa (Drooping Lovegrass)*			
502.	38505	*Eragrostis surreyana*		P3	
503.	398	*Eragrostis tenellula (Delicate Lovegrass)*			
504.	15052	*Eremophila forrestii subsp. forrestii*			
505.	16696	*Eremophila fraseri subsp. fraseri*			
506.	7234	*Eremophila longifolia (Berrigan, Tulypurpa)*			
507.	23997	*Eremophila tietkensii*			
508.	400	*Eriachne aristidea*			
509.	403	*Eriachne benthamii (Swamp Wanderrie)*			
510.	407	*Eriachne festucacea (Plains Wandarrie Grass)*			
511.	411	*Eriachne helmsii (Buck Wanderrie Grass)*			
512.	413	*Eriachne mucronata (Mountain Wanderrie Grass)*			
513.	16485	*Eriachne pulchella subsp. dominii*			
514.	421	*Eriachne tenuiculmis*			
515.	35198	*Eriochloa pseudoacrotricha (Perennial Cupgrass)*			
516.	35343	*Eucalyptus camaldulensis subsp. refulgens*			
517.	5655	*Eucalyptus gamophylla (Twin-leaf Mallee, Warilu)*			
518.	18088	*Eucalyptus leucophloia subsp. leucophloia*			
519.	14548	*Eucalyptus victrix*			
520.	11011	*Eulalia aurea*			
521.	4617	*Euphorbia australis (Namana)*			
522.	35303	*Euphorbia australis var. subtomentosa*			
523.	4620	*Euphorbia boophthona (Gascoyne Spurge)*			
524.	9048	*Euphorbia careyi*			
525.	4629	*Euphorbia hirta (Asthma Plant)*	Y		
526.	4642	*Euphorbia schultzii*			
527.	4647	*Euphorbia tannensis*			
528.	12097	*Euphorbia tannensis subsp. eremophila (Desert Spurge)*			
529.	42879	*Euphorbia trigonosperma*			
530.	42877	*Euphorbia vaccaria var. erucoides*			
531.	4650	*Euphorbia wheeleri*			
532.	31578	*Ficus aculeata var. indecora (Ranji)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
533.	19648	*Ficus brachypoda*			
534.	851	*Fimbristylis dichotoma (Eight Day Grass)*			
535.	859	*Fimbristylis littoralis*			
536.	862	*Fimbristylis microcarya*			
537.	12159	*Fimbristylis simulans*			
538.	35558	*Flaveria trinervia (Speedy Weed)*	Y		
539.	3903	*Gastrolobium grandiflorum (Wallflower Poison)*			
540.	2835	*Glinus lotoides (Hairy Carpet Weed)*			
541.	2836	*Glinus oppositifolius*			
542.	7060	*Glossostigma diandrum*			
543.	3940	*Glycine falcata*		P3	
544.	2680	*Gomphrena cunninghamii*			
545.	7490	*Goodenia armitiana*			
546.	7509	*Goodenia forrestii*			
547.	7521	*Goodenia lamprosperma*			
548.	7526	*Goodenia microptera*			
549.	12552	*Goodenia muelleriana*			
550.	7530	*Goodenia nuda*		P4	
551.	10982	*Goodenia stobbsiana*			
552.	7556	*Goodenia tenuiloba*			
553.	4918	*Gossypium robinsonii (Wild Cotton)*			
554.	1963	*Grevillea berryana*			
555.	19570	*Grevillea pyramidalis subsp. leucadendron*			
556.	19074	*Grevillea wickhamii subsp. macrodonta*			
557.	2138	*Hakea chordophylla*			
558.	19137	*Hakea lorea subsp. lorea*			
559.	23465	*Haloragis gossei var. gossei*			
560.	29594	*Helichrysum luteoalbum (Jersey Cudweed)*			
561.	6706	*Heliotropium cunninghamii*			
562.	6712	*Heliotropium heteranthum*			
563.	17309	*Heliotropium pachyphyllum*			
564.	443	*Heteropogon contortus (Bunch Speargrass)*			
565.	29317	*Hibiscus austrinus var. austrinus*			
566.	4925	*Hibiscus coatesii*			
567.	4930	*Hibiscus goldsworthii*			
568.	4933	*Hibiscus leptocladus*			
569.	4941	*Hibiscus solanifolius*			
570.	11651	*Hibiscus sturtii var. campylochlamys*			
571.	11385	*Hibiscus sturtii var. grandiflorus*			
572.	11477	*Hibiscus sturtii var. platychlamys*			
573.	5215	*Hybanthus aurantiacus*			
574.	17113	*Indigofera boviperda subsp. boviperda*			
575.	3973	*Indigofera colutea (Sticky Indigo)*			
576.	3974	*Indigofera georgei (Bovine Indigo)*			
577.	3980	*Indigofera linifolia*			
578.	3982	*Indigofera monophylla*			
579.	29697	*Indigofera petraea*			
580.	3985	*Indigofera rugosa*			
581.	20317	*Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301)*		P3	
582.	41782	*Indigofera sp. Fractiflexa (S. van Leeuwen 3773)*			
583.	3987	*Indigofera trita*			
584.	6633	*Ipomoea muelleri (Poison Morning Glory, Yumbu)*			
585.	6637	*Ipomoea polymorpha*			
586.	458	*Iseilema dolichotrichum*			
587.	464	*Iseilema membranaceum (Small Flinders Grass)*			
588.	3989	*Isotropis atropurpurea (Poison Sage)*			
589.	12059	*Jasminum didymum subsp. lineare (Desert Jasmine)*			
590.	43521	*Josephinia sp. Style-topped fruit (M. Maier BES MM 1017)*			Y
591.	3037	*Lepidium phlebopetalum (Veined Peppercress)*			
592.	19061	*Leptochloa fusca*			
593.	952	*Lipocarpha microcephala*			
594.	37480	*Lobelia arnhemiaca*			
595.	4061	*Lotus cruentus (Redflower Lotus)*			
596.	6136	*Ludwigia perennis*			
597.	2396	*Lysiana casuarinae*			
598.	2544	*Maireana georgei (Satiny Bluebush)*			
599.	2556	*Maireana planifolia (Low Bluebush)*			
600.	76	*Marsilea hirsuta (Nardoo)*			
601.	5875	*Melaleuca argentea (Silver Cadjeput, Bandaran)*			
602.	5879	*Melaleuca bracteata (River Teatree)*			

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603.	5915	*Melaleuca glomerata*			
604.	5051	*Melhania oblongifolia*			
605.	5053	*Melochia pyramidata*	Y		
606.	6490	*Muellerolimon salicorniaceum*			
607.	6201	*Myriophyllum verrucosum (Red Water Milfoil)*			
608.	138	*Najas marina (Prickly Water Nymph)*			
609.	139	*Najas tenuifolia (Water Nymph)*			
610.	6971	*Nicotiana benthamiana (Tjuntiwari)*			
611.	11856	*Nicotiana occidentalis subsp. occidentalis*			
612.	7338	*Oldenlandia crouchiana*			
613.	7339	*Oldenlandia galioides*			
614.	12635	*Olearia fluvialis*			
615.	4517	*Owenia acidula (Gruie)*		P3	
616.	518	*Paspalidium clementii (Clements Paspalidium)*			
617.	523	*Paspalidium rarum (Rare Paspalidium)*			
618.	525	*Paspalidium tabulatum*			
619.	13494	*Pentalepis trichodesmoides*			
620.	42160	*Pentalepis trichodesmoides subsp. trichodesmoides*			
621.	12486	*Peplidium aithocheilum*			
622.	546	*Perotis rara (Comet Grass)*			
623.	3675	*Petalostylis labicheoides (Slender Petalostylis)*			
624.	1042	*Phoenix dactylifera (Date Palm)*	Y		
625.	17626	*Phyllanthus erwinii*			
626.	4680	*Phyllanthus maderaspatensis*			
627.	4684	*Phyllanthus reticulatus*			
628.	11990	*Phyllanthus reticulatus var. glaber*			
629.	5230	*Pimelea ammocharis*			
630.	42521	*Pleurocarpaea gracilis*		P3	
631.	17817	*Pluchea dunlopii*			
632.	8168	*Pluchea rubelliflora*			
633.	12075	*Polycarpaea corymbosa var. corymbosa*			
634.	2901	*Polycarpaea holtzei*			
635.	2903	*Polycarpaea longiflora*			
636.	6653	*Polymeria ambigua (Morning Glory)*			
637.	12964	*Pomax rupestris*			
638.	2878	*Portulaca conspicua*			
639.	2882	*Portulaca intraterranea*			
640.	2884	*Portulaca oleracea (Purslane, Wakati)*			
641.	2886	*Portulaca pilosa (Djanggara)*			
642.	113	*Potamogeton tricarinatus (Floating Pondweed)*			
643.	8192	*Pterocaulon sphacelatum (Apple Bush)*			
644.	8193	*Pterocaulon sphaeranthoides*			
645.	2690	*Ptilotus aervoides*			
646.	2694	*Ptilotus appendiculatus*			
647.	2696	*Ptilotus astrolasius*			
648.	2698	*Ptilotus auriculifolius*			
649.	2699	*Ptilotus axillaris (Mat Mulla Mulla)*			
650.	2704	*Ptilotus calostachyus (Weeping Mulla Mulla)*			
651.	2725	*Ptilotus fusiformis*			
652.	2728	*Ptilotus gomphrenoides*			
653.	2734	*Ptilotus incanus*			
654.	2738	*Ptilotus latifolius (Tangled Mulla Mulla)*			
655.	2747	*Ptilotus obovatus (Cotton Bush)*			
656.	2582	*Rhagodia eremaea (Thorny Saltbush)*			
657.	20862	*Rhynchosia bungarensis*		P4	
658.	4191	*Rhynchosia minima (Rhynchosia)*			
659.	12088	*Rostellularia adscendens var. clementii*			
660.	5285	*Rotala diandra*			
661.	5286	*Rotala mexicana*			
662.	963	*Schoenoplectus laevis*			
663.	964	*Schoenoplectus lateriflorus*			
664.	16257	*Schoenoplectus subulatus*			
665.	2604	*Sclerolaena costata*			
666.	12280	*Senna artemisioides subsp. oligophylla*			
667.	12305	*Senna glutinosa subsp. chatelainiana*			
668.	12307	*Senna glutinosa subsp. glutinosa*			
669.	12309	*Senna glutinosa subsp. pruinosa*			
670.	12308	*Senna glutinosa subsp. x luerssenii*			
671.	12312	*Senna notabilis*			
672.	12319	*Senna venusta*			

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673.	4198	*Sesbania formosa (White Dragon Tree)*			
674.	606	*Setaria dielsii (Diels' Pigeon Grass)*			
675.	31758	*Sida arsiniata*			
676.	4971	*Sida cardiophylla*			
677.	4972	*Sida clementii*			
678.	4976	*Sida echinocarpa*			
679.	4977	*Sida fibulifera (Silver Sida)*			
680.	4988	*Sida rohlenae*			
681.	18149	*Sida rohlenae subsp. rohlenae*			
682.	15227	*Sida sp. A Kimberley Flora (P.A. Fryxell & L.A. Craven 3900)*			
683.	33698	*Sida sp. Pilbara (A.A. Mitchell PRP 1543)*			
684.	16948	*Sida sp. verrucose glands (F.H. Mollemans 2423)*			
685.	4989	*Sida spinosa (Spiny Sida)*			
686.	6989	*Solanum ashbyae*			
687.	6995	*Solanum centrale (Desert Raisin, Kampurarpa)*			
688.	7002	*Solanum diversiflorum*			
689.	7009	*Solanum gabrielae*			
690.	7014	*Solanum horridum*			
691.	7022	*Solanum nigrum (Black Berry Nightshade)*	Y		
692.	7029	*Solanum phlomoides*			
693.	7036	*Solanum sturtianum (Thargomindah Nightshade)*			
694.	629	*Sporobolus australasicus (Fairy Grass)*			
695.	18405	*Stackhousia sp. swollen gynophore (W.R. Barker 2041)*			
696.	7098	*Stemodia grossa (Marsh Stemodia, Mindjaara)*			
697.	8240	*Streptoglossa odora*			
698.	18123	*Stylidium weeliwolli*		P2	
699.	3182	*Stylobasium spathulatum (Pebble Bush)*			
700.	13596	*Swainsona complanata*			
701.	4280	*Tephrosia rosea (Flinders River Poison, Bungoo'dah)*			
702.	41825	*Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)*			
703.	19531	*Tephrosia rosea var. clementii*			
704.	15947	*Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)*			
705.	17768	*Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)*			
706.	41811	*Tephrosia sp. Fortescue (A.A. Mitchell 606)*			
707.	42442	*Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)*			
708.	40060	*Tephrosia sp. clay soils (S. van Leeuwen et al. PBS 0273)*			
709.	4285	*Tephrosia supina*			
710.	4286	*Tephrosia uniovulata*			
711.	4287	*Tephrosia virens*			
712.	5300	*Terminalia canescens (Joolal)*			
713.	5313	*Terminalia supranitifolia*		P3	
714.	673	*Themeda triandra*			
715.	2942	*Tinospora smilacina (Snakevine, Oondala)*			
716.	6278	*Trachymene oleracea*			
717.	44241	*Trianthema glossostigmum*			
718.	44305	*Trianthema pilosum*			
719.	4368	*Tribulopis angustifolia*			
720.	4377	*Tribulus hirsutus*			
721.	4379	*Tribulus macrocarpus*			
722.	4380	*Tribulus occidentalis (Perennial Caltrop)*			
723.	4381	*Tribulus platypterus (Cork Hopbush)*			
724.	4383	*Tribulus terrestris (Caltrop)*	Y		
725.	11750	*Trichodesma zeylanicum var. zeylanicum*			
726.	7381	*Trichosanthes cucumerina*			
727.	12032	*Trichosanthes cucumerina var. cucumerina*			
728.	679	*Triodia angusta*			
729.	35843	*Triodia sp. Robe River (M.E. Trudgen et al. MET 12367)*		P3	
730.	704	*Triodia wiseana (Limestone Spinifex)*			
731.	706	*Triraphis mollis (Needle Grass)*			
732.	4875	*Triumfetta chaetocarpa (Urchins)*			
733.	14694	*Triumfetta clementii*			
734.	4878	*Triumfetta johnstonii*			
735.	14942	*Triumfetta maconochieana*			
736.	717	*Urochloa piligera*			
737.	7125	*Utricularia australis*			
738.	17868	*Vallisneria nana*			
739.	7654	*Velleia connata (Cup Velleia)*			
740.	4323	*Vigna lanceolata (Maloga Vigna, Wega)*			
741.	31391	*Vigna sp. Hamersley Clay (A.A. Mitchell PRP 113)*			
742.	5106	*Waltheria indica*			

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743.	5107	*Waltheria virgata*			
744.	732	*Yakirra australiensis*			
745.	11894	*Yakirra australiensis var. australiensis*			

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

Government of Western Australia
Department of Parks and Wildlife

Your Ref: **14623-15**
Our Ref: **18-0415FL**
Enquiries: Georgina Anderson
Phone: (08) 9219 8760
Email: flora.data@dpaw.wa.gov.au

Astron Environmental Services
129 Royal Street
East Perth WA 6004

Attention: Daniel Roocke

Dear Daniel Roocke,

REQUEST FOR THREATENED AND PRIORITY FLORA INFORMATION

I refer to your request of 10 April 2015 for Threatened (Declared Rare) and Priority Flora information in the Pannawonica, Hammersley Range area. The search was conducted within the area of the coordinates you submitted with an additional 20km buffer.

A search was undertaken for this area of **(1)** the Department's *Threatened (Declared Rare) and Priority Flora* database (for results, see "TPFL" – coordinates are GDA94), **(2)** the *Western Australian Herbarium Specimen* database for priority species opportunistically collected in the area of interest (for results, see "WAHERB"- coordinates are GDA94 – see condition number 9 in the attached 'Conditions in Respect of Supply' and **(3)**, the Department's *Threatened and Priority Flora List* [this list is searched using 'place names'. This list, which may also be used as a species target list, contains species that are declared rare (Conservation Code R or X for those presumed to be extinct), poorly known (Conservation Codes 1, 2 or 3), or require monitoring (Conservation Code 4) – for results, *if any*, see "TP List"]. The results are attached electronically to this email.

Attached also are the conditions under which this information has been supplied. Your attention is specifically drawn to the eighth point, which refers to the requirement to undertake field investigations for the accurate determination of Threatened and Priority flora occurrence at a site. *The information supplied should be regarded as an indication only of the Threatened and Priority flora that may be present and may be used as a target list in any surveys undertaken.*

The information provided does not preclude you from obtaining and complying with, where necessary, land clearing approvals from other agencies.

An invoice for $ 300 (plus GST) to supply this information will be forwarded.

It would be appreciated if any populations of Threatened and Priority flora you encounter in the area could be reported to this Department to ensure their ongoing management.

If you require any further details, or wish to discuss Threatened and Priority flora management, please contact Dr Ken Atkins, Manager, Species and Communities Branch, on (08) 9334 0455.

Yours faithfully

Georgina Anderson
.....
THREATENED FLORA DATABASE OFFICER
for the Director General

14 April 2015

Species and Communities Branch
17 Dick Perry Avenue, Technology Park, Kensington
Phone: (08) 9334 0455 Fax: (08) 9334 0278 Teletype: (08) 9334 0546
Postal Address: Locked Bag 104, Bentley Delivery Centre, Western Australia 6983
www.dpaw.wa.gov.au

Government of **Western Australia**
Department of **Parks and Wildlife**

THREATENED AND PRIORITY FLORA INFORMATION

Conditions with Respect to the Supply of Information

- The data supplied may not be provided to any other organisations, nor be used for any purpose other than for the project for which it has been originally provided for; without the prior consent of the Executive Director, Department of Parks and Wildlife.
- Specific locality information for threatened flora is regarded as confidential, and should be treated as such by receiving organisations. Specific locality information for threatened flora may not be used in reports without the written permission of the Executive Director, Department of Parks and Wildlife. Reports may only show generalised locations at a low resolution or, where necessary, show specific locations without identifying species. Species and Communities Branch is to be contacted for guidance on the presentation of threatened flora information.
- The Department of Parks and Wildlife respects the privacy of private landowners who may have threatened and priority flora on their property. Threatened and priority flora locations identified in the data as being on private property should be treated in confidence, and contact with property owners must only be made through the Department of Parks and Wildlife.
- The development of the Perth Herbarium database was not originally intended for electronic mapping (eg. GIS ArcView). The latitude and longitude coordinates for each entry are not verified prior to being data based. It is only in recent times that collections have been submitted with GPS coordinates. Therefore, be aware when using this data in ArcView that some records may not plot to the locality description given with each collection.
- Acknowledgment of the Department of Parks and Wildlife as the source of data is to be made in any published material and cited as Parks and Wildlife (2015) Threatened and Priority Flora Database Search for [search area] accessed on the [date of search]. Prepared by the Species and Communities Branch for [Requesters name and company] for [purpose of search].
- Copies of all such publications are to be forwarded to the Department of Parks and Wildlife, Attention; the Manager, Species and Communities Branch.

Disclaimers with Respect to the Supply of Information

- Receiving organisations should note that while every effort has been made to prevent errors and omissions in the data, they may be present. The Department of Parks and Wildlife accepts no responsibility for this.
- Receiving organisations must also recognise that the database is subject to continual updating and amendment, and such considerations should be taken into account by the user.
- It should be noted that the supplied data does not necessarily represent a comprehensive listing of the threatened flora of the area in question. Its comprehensiveness is dependent on the amount of surveys carried out within a specified area. The receiving organisation should consider engaging a botanist, if required, to undertake a survey of the area under consideration.

Species and Communities Branch
17 Dick Perry Avenue, Technology Park, Kensington
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Department of Parks and Wildlife

ABBREVIATIONS USED IN THREATENED AND PRIORITY FLORA DATABASE

VESTING

AAP	Aboriginal Planning Authority
AGR	Chief Executive, Dep. of Agriculture
ALT	Aboriginal Land Trust
APB	Agricultural Protection Board of WA
BGP	Botanical Gardens & Parks Authority
BSA	Boy Scouts Association
CC	Conservation Commission – NPNCA - LFC
CGT	Crown Grant in Trust
COM	Commonwealth of Australia
CRO	Crown Freehold-Govt Ownership
CRW	Crown
DAG	Dep. of Agriculture
DOW	Dep. of Water
DPI	Dep. of Planning
EXD	Exec Direc CALM
FES	Fire and Emergency Services Aust.
HOW	Dep. of Housing/State Housing Commission
ILD	Industrial Lands Develop. Auth
LAC	LandCorp
LGA	Shire/LGA
MAG	Minister for Agriculture
MCB	Metropolitan Cemeteries Board
MED	Ministry of Education
MHE	Minister for Health
MIN	Minister for Mines
MPL	Ministry for Planning
MPR	Minister for Prisons
MRD	Main Roads WA
MTR	Minister for Transport
MWA	Minister for Water Resources
MWO	Minister for Works
NAT	Natural Trust of Australia WA
NON	Not Vested
PLB	Pastoral Lands Board
PRI	Private/Freehold
RAI	Public Transport Authority
REL	Religious Organisation
SPC	State Planning Commission
SYN	Synergy (ex Western Power)
SWA	State of Western Australia
TEL	Telstra
UNK	Unknown
WAT	Water Corporation
WEL	Minister Community Welfare
WRC	Water & Rivers Commission
XPL	Ex-Pastoral Lease

PURPOSES

ABR	Aboriginal Reserve
ACC	Access Track
AER	Aerodrome
AIR	Airport
ARS	Agricultural Research Station
BAP	Baptist Union of WA
CAM	Camping
CAR	Caravan park
CEM	Cemetery
CFA	Conservation of Fauna
CFF	Conservation Of Flora & Fauna
CFL	Conservation of Flora
CHU	Church
CMN	Communications
COM	Common
CON	Conservation Park
CPK	Car Park
CRM	Conservation & Resource Management
DEF	Defence
DRA	Drain
EDE	Educational Endowment
EDU	Educational purposes
UWA	
ENE	Enjoyment of Natural Environ.
EPL	Ex-pastoral Lease (Sect 33(2) CALM Act)
EPS	Explosives
EXC	Excepted from sale
EXL	Exploration Lease
EXP	Experimental Farm
FIR	Firing Range
FOR	State Forest
FP	Foreshore Purposes
GE	General Lease
GHA	Grain Handling
GOL	Golf
GRA	Gravel Pit
GVT	Government Requirements
HAR	Harbour Purposes
HEP	Heritage Purposes
HER	Heritage trail
HOS	Hospital
KEN	Kennels
LGA	LGA/Shire Requirements
LPR	Landscape Protection
MIN	Mining lease
MUN	Municipal Purposes
NPK	National Park
NRE	Nature Reserve
OTH	Other
PAR	Parkland (& Recreation)
PAS	Pastoral lease
PCR	Proposed for Conservation
PFF	Protection of Flora & Fauna
PFL	Protection of Flora
PIC	Picnic ground
PLA	Plantation
PMC	Protection of Meteorite Crater
POS	Public Open Space
PPA	Public parkland
PRS	Prison site
PUR	Purchase Lease
PUT	Public Utility
QUA	Quarry
RAC	Racecourse
RAD	Radio Station
REC	Recreation
REH	Rehabilitation/Re-establish Native Plants
RRE	Railway Reserve
RUB	Rubbish
SAL	Saleyards
SAN	Sand
SCH	School-site
SET	Settlers requirements
SHO	Showgrounds
SNN	Sanitary
SOI	Soil Conservation
STO	Stopping place
STK	Stock Route
TIM	Timber
TOU	Tourism
TOW	Town-site
TRA	Training Ground
TRI	Trig station
UCL	Unallocated Crown Land
UNK	Unknown
VER	Road Verge
VPF	Vermin Proof Fence
WAT	Water
WLS	Wildlife Sanctuary
WOO	Firewood

ABBREVIATIONS USED IN THE WESTERN AUSTRALIAN HERBARIUM DATABASE

Geocode Method - The method that was used to record the latitude and longitude.

Auto - Indicates that the coordinate data in the record was created automatically (i.e. by software), usually by creating a coordinate from information provided in the Nearest Named Place or Locality textual description fields.

GAP - Acronym for "Generalised Arbitrary Point" as used in HISPID. GAP indicates that the coordinate data was obtained manually from the Nearest Named Place or Locality textual description fields.

GPS - Acronym for "Global Positioning System". GPS indicates that the coordinate data in the record was obtained from a GPS unit by the collector of the specimen.

MAN - Shorthand for manual. MAN indicates that the coordinate data was created by hand using some method not allowed for by one of the other manual Geocode Method values, in particular, TOPO, GAP, or GPS.

TOPO - Shorthand for topographic map. TOPO indicates that the coordinate data was obtained by plotting textual locality details against a topographic map.

None - Indicates that no coordinate data has been supplied by the collector.

Unknown - Indicates that there is no known method for determining the coordinate data. Should be used if the collector provided no indication of how they sampled the specimen's coordinate data.

PREC (Precision) - precision ratings for coordinates.

Precision 1: Absolutely precise (to nearest 100m or nearest second) and must be GPS determined. For example 35°26'42"S 123°40'26"E

Precision 2: Falling within a diameter of 3km (ca 2 minutes) or if no GPS mentioned in collecting notes. (The location must be able to be pinpointed on a 1:250 000 map, a spot locality. For example 35°26'42"S 123°40'26"E

Precision 3: Falling within a diameter of 10km (ca 7 minutes) or for degrees and minutes, where seconds have not been given. For example 35°26'_"S 123°40'_"E

Precision 4: Falling within a diameter of ca 50km (30 minutes). For example 35°26'_"S 123°40'_"E

Precision 5: Where a location is a prescribed large geographical area within a state or only the state is given. Diameter is greater than 50km. For example 35°_'_"S 123°_'_"E

Precision 6: used when localities are New Holland, Eastern Australia or Not given. Fields will be left blank.

Department of Parks and Wildlife

CONSERVATION CODES

For Western Australian Flora and Fauna

T Threatened species

Listed as Specially Protected under the *Wildlife Conservation Act 1950,* published under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

- Fauna that is rare or likely to become extinct are declared to be fauna that is in need of special protection
- Flora that are extant and considered likely to become extinct, or rare and therefore in need of special protection, are declared to be rare flora

Species* which have been adequately searched for and are deemed to be, in the wild, either rare, at risk of extinction, or otherwise in need of special protection, and have been gazetted as such.
The assessment of the conservation status of these species is based on their national extent.

X Presumed extinct species

Listed as Specially Protected under the *Wildlife Conservation Act 1950,* published under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).

Species which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such.

IA Migratory birds protected under an international agreement

Listed as Specially Protected under the *Wildlife Conservation Act 1950,* listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.

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), relating to the protection of migratory birds.

S Other specially protected fauna

Listed as Specially Protected under the *Wildlife Conservation Act 1950.* Fauna declared to be in need of special protection, otherwise than for the reasons mentioned for Schedules 1, 2 or 3, are published under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.

Threatened Fauna and Flora are ranked according to their level of threat using IUCN Red List categories and criteria. *For example:* Carnaby's Cockatoo (*Calyptorynchus latirostris*) is listed as 'Specially Protected' under the *Wildlife Conservation Act 1950,* published under Schedule 1, and referred to as a 'Threatened' species with a ranking of 'Endangered'.

CR Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.

EN Endangered - considered to be facing a very high risk of extinction in the wild.

VU Vulnerable - considered to be facing a high risk of extinction in the wild.

A list of the current rankings can be downloaded from the Parks and Wildlife Threatened Species and Communities webpage at http://dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/

P Priority species

Species that maybe threatened or near threatened but are data deficient, have not yet been adequately surveyed to be listed under the Schedules of the Wildlife Conservation (Specially Protected Fauna) Notice or the Wildlife Conservation (Rare Flora) Notice, 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 flora or fauna. 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 list for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Conservation dependent species that are subject to a specific conservation program are placed in Priority 5.

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.

1: Priority One: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

2: Priority Two: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

3: Priority Three: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

4: Priority Four: Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

5: Priority Five: Conservation Dependent species

Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

*Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies, variety or forma).

DEPARTMENT OF ENVIRONMENT AND CONSERVATION

THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES INFORMATION

CONDITIONS IN RESPECT OF SUPPLY OF INFORMATION

1. All requests for data are to be made in writing to the Director General, Department of Environment and Conservation Attention: Species and Communities Branch

2. The data supplied may not be supplied to other organisations, nor be used for any purpose other than for the project for which they have been provided, without the prior written consent of the data custodian (Val English), Species and Communities Branch.

3. Specific locality information for threatened and priority ecological communities (TECs/PECs) is regarded as confidential, and should be treated as such by receiving organisations. Specific locality information for TECs/PECs may not be used in public reports without the written permission of the Director General, Department of Environment and Conservation. Publicly available reports may only show generalised locations (ie buffer locations). The TEC database manager is to be contacted for guidance on the presentation of TEC/PEC information.

4. Note that the Department of Environment and Conservation respects the privacy of private landowners who may have threatened and priority ecological communities on their property. Locations of TECs/PECs identified in the data as being on private property should be treated in confidence, and contact with property owners made through the Department of Environment and Conservation.

5. Receiving organisations should note that while every effort has been made to prevent errors and omissions in the data provided, they may be present. The Department of Environment and Conservation accepts no responsibility for this.

6. Receiving organisations must also recognise that the Threatened Ecological Communities database is subject to continual updating and amendment, and such considerations should be taken into account by the user.

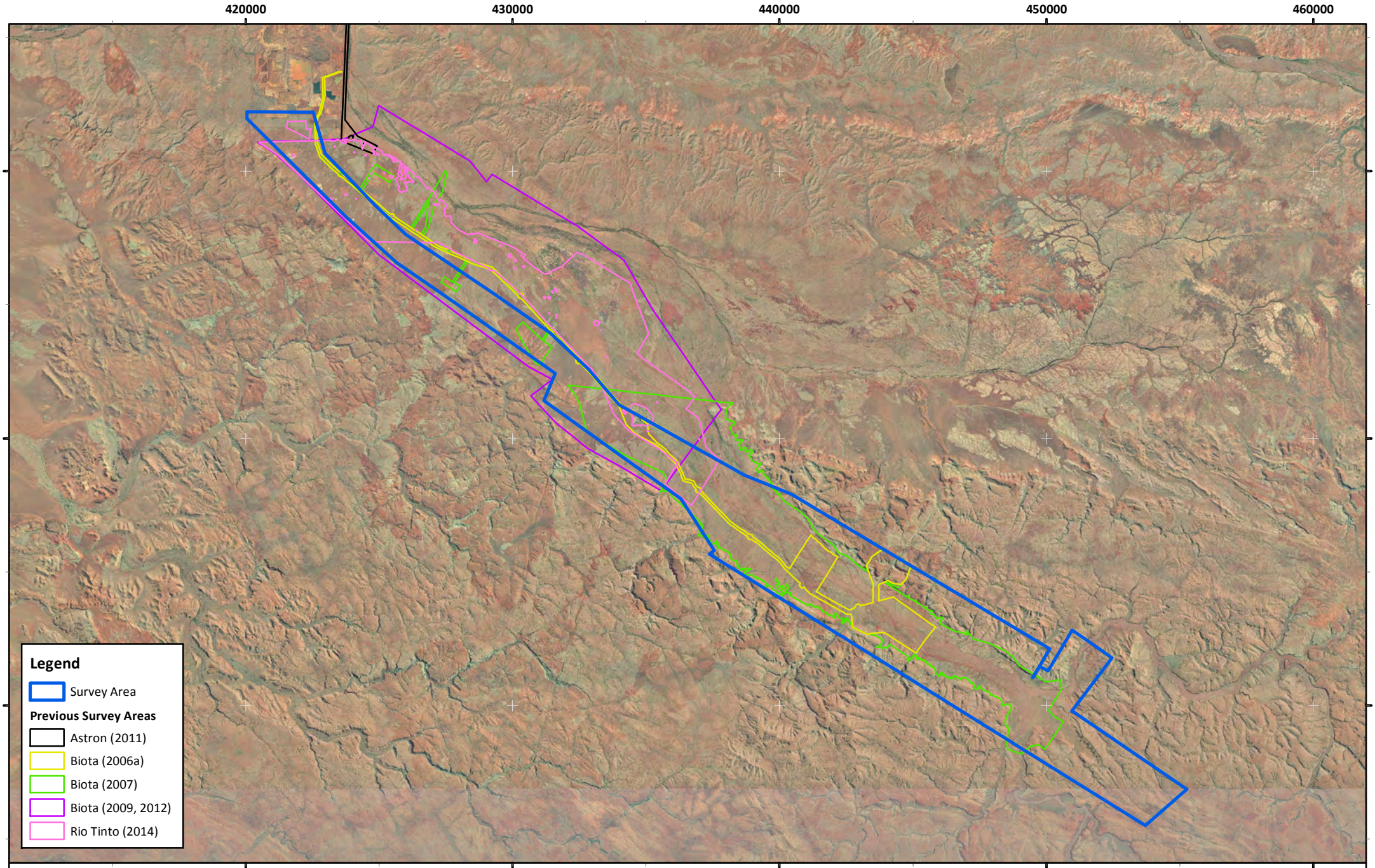
7. It should be noted that the supplied data do not necessarily represent a comprehensive listing of the threatened and priority ecological communities of the area in question. Its comprehensiveness is dependant on the amount of survey carried out within the specified area. Private property has been relatively little surveyed. The receiving organisation should employ a consultant, if there is any likelihood of the presence of any threatened or priority ecological community, to undertake a survey of the area under consideration.

8. Acknowledgment of the Department of Environment and Conservation as source of the data is to be made in any published material. Copies of all such publications are to be forwarded to the Department of Environment and Conservation, Attention: Manager, Species and Communities Branch.

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Appendix D: Previous Survey Area Locations

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Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure D.1: Previous Surveys Conducted Over the Bungaroo Survey Area

Datum: GDA 1994 - Projection: MGA Zone 50

0 5 10 Kilometres

N

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigD1_Previous_survey

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Appendix E: Vegetation Classification and Condition Scales

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Table E.1: Vegetation Classification System Specht (1970) as modified by Aplin (1979).

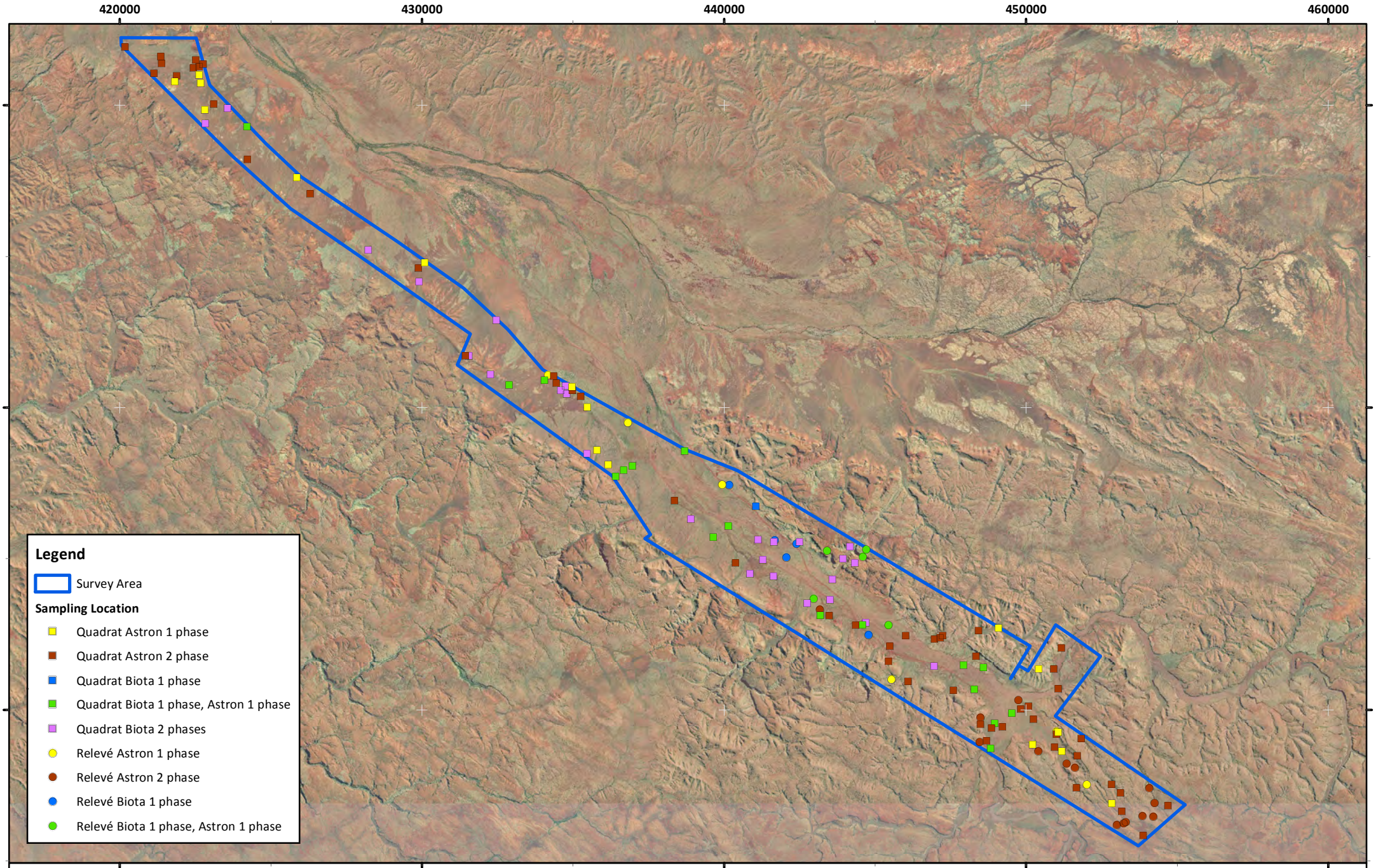
Stratum	70-100% cover	30-70% cover	10-30% cover	2-10% cover	<2% cover
Trees > 30 m	Tall closed forest	Tall open Forest	Tall woodland	Tall open woodland	Scattered tall trees
Trees 10-30 m	Closed forest	Open forest	Woodland	Open woodland	Scattered trees
Trees < 10 m	Low closed forest	Low open forest	Low woodland	Low open woodland	Scattered low trees
Shrubs > 2 m	Tall closed scrub	Tall open scrub	Tall shrubland	Tall open shrubland	Scattered tall shrubs
Shrubs 1-2 m	Closed heath	Open heath	Shrubland	Open shrubland	Scattered shrubs
Shrubs < 1 m	Low closed heath	Low open heath	Low shrubland	Low open shrubland	Scattered low shrubs
Hummock grasses	Closed hummock grassland	Hummock grassland	Open hummock grassland	Very open hummock grassland	Scattered hummock grasses
Grasses, sedges, herbs	Closed tussock grassland/ sedgeland/ herbland	Tussock grassland/ sedgeland/ herbland	Open tussock grassland/ sedgeland/ herbland	Very open tussock grassland/ sedgeland/ herbland	Scattered tussock grasses /sedges/herbs

Table E.2: Summary of adapted vegetation condition scale, as adapted from Trudgen (1988).

Vegetation condition	Condition description
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 to it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very Poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix F: Current (This Report) and Previous Sampling Locations

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Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure F.1: Astron (2015) and Previous Surveys Sampling Locations

Datum: GDA 1994 - Projection: MGA Zone 50

0 5 10 Kilometres

N

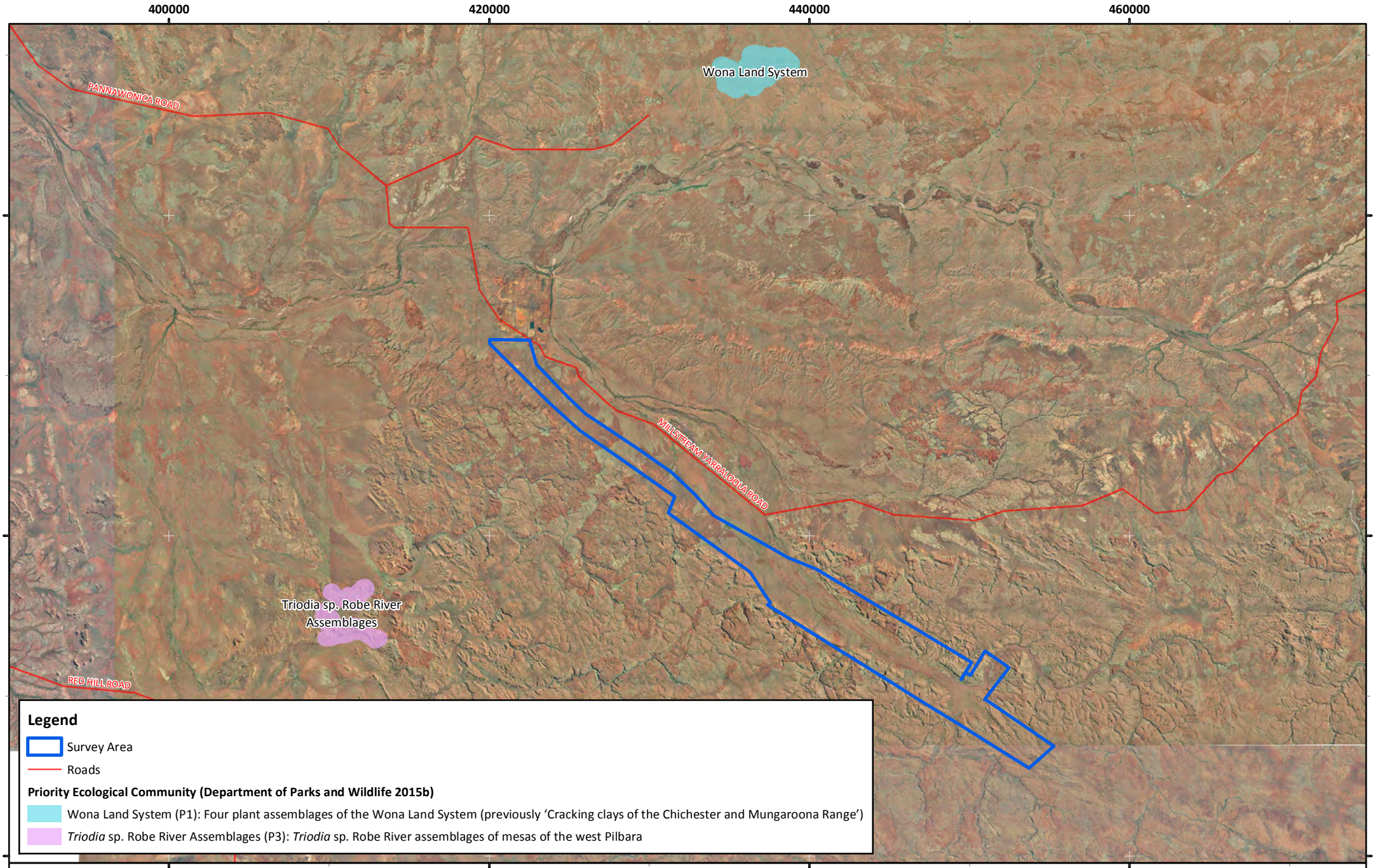
astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigF1_Quadrat

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Appendix G: Priority Ecological Communities Previously Recorded in Proximity to the Survey Area

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Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure G.1: Priority Ecological Communities of the Bungaroo Survey Area

Datum: GDA 1994 - Projection: MGA Zone 50

0 10 20 Kilometres

N

astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigG1_PECs

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Appendix H: Threatened and Priority Flora Species Likelihood of Occurrence within the Survey Area

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Table H.1: Likelihood of occurrence of Threatened and Priority flora recorded within 20 km of the survey area (*NatureMap* (Department of Parks and Wildlife 2015a), TPFL (Department of Parks and Wildlife 2015b), TP List (Department of Parks and Wildlife 2015c), WAHerb (Department of Parks and Wildlife 2015d)). The TP List database is searched using place names. As a result, many of the records obtained from this database may occur beyond 50 km of the survey area.

Species	Habit and flowering information	Life form	Habitat	Likelihood of occurrence	
				Pre-survey	Post-survey
Threatened					
Thyrptomene wittwerii	Spreading or rounded shrub, 0.5 m to 1.5 (-2.1) m high. White-cream flowers in April or July or August.	Perennial	Skeletal red stony soils. Breakaways, stony creek beds.	Unlikely	Unlikely
Priority 1					
Bothriochloa decipiens var. *cloncurrensis*	Herbaceous grass, to 1.4 m high.	Perennial	Seasonally damp depression. Stony clay plain.	Potential	Unlikely
Sida sp. Hamersley Range (K. Newbey 10692)	Shrub, to 1 m high. July to August.	Perennial	Skeletal, brown gritty soil over basalt. Summits of hills, steep hills.	Potential	Unlikely
Priority 2					
Dicladanthera glabra	Spreading herb or shrub, to 0.6 (-1) m high.	Perennial	Alluvium. Along watercourses, near rock pools.	Potential	Recorded
Euphorbia inappendiculata var. *inappendiculata*	Spreading procumbent herb.	Short-lived perennial	High in landscape, stony rich red clay.	Unlikely	Unlikely
Stylidium weeliwolli	Herb, 0.1 m to 0.25 m high, throat appendages 4, rod-shaped. Pink and red flowers from August to September.	Annual	Gritty sand soil, sandy clay. Edge of watercourses.	Likely	Potential

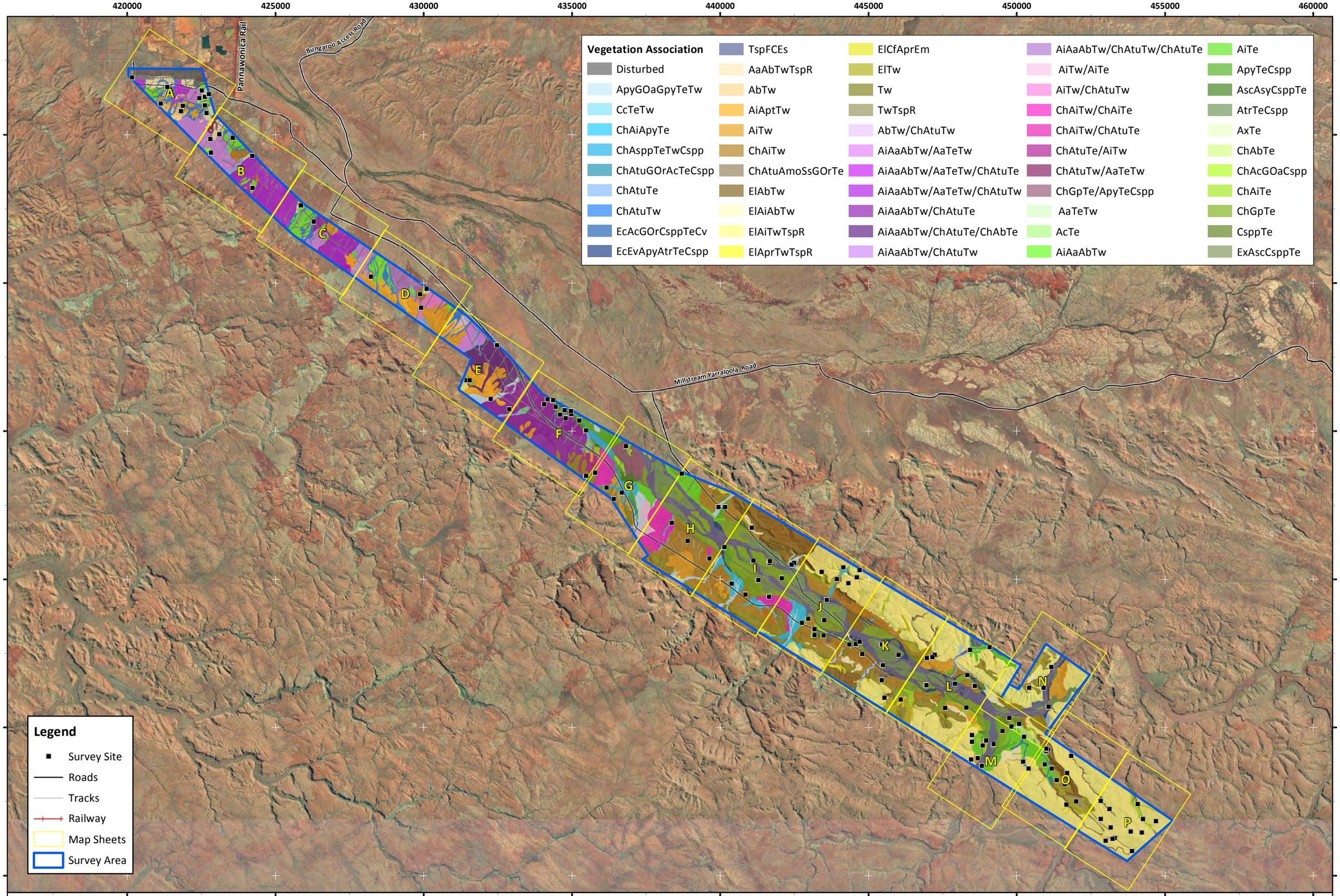
Species	Habit and flowering information	Life form	Habitat	Likelihood of occurrence	
				Pre-survey	Post-survey
Priority 3					
Calotis latiuscula	An erect herb that grows up to 0.50 m in height. Yellow flowers from June to October.	Short-lived perennial	Sand, loam. Rocky hillsides, floodplains, rocky creeks or river beds.	Potential	Unlikely
Dampiera anonyma	Multi-stemmed herb, to 1 m high. June to September.	Perennial	Skeletal red-brown to brown gravelly soil over banded ironstone, basalt, shale and jaspilite. Hill summits, upper slopes (above 1,000 m).	Unlikely	Unlikely
Eragrostis surreyana	Grass. Culms erect or decumbent, 5-8 (-13) cm tall. Panicle linear, 9 cm to 13 cm long; 0.5 cm to 1.3 cm wide.	Annual	Soak area. Red-brown sandy clay.	Likely	Potential
Fimbristylis sieberiana	Shortly rhizomatous tufted grass like or herb (sedge), 0.25 m to 0.6 m high. May to June.	Perennial	Mud, skeletal soil pockets, pool edges, sandstone cliffs.	Unlikely	Unlikely
Glycine falcata	Mat-forming herb.	Perennial	Drainage depressions in crabhole plains on river floodplains. Black clayey sand.	Potential	Unlikely
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301)	Shrub or herb 0.2 m to 2 m high. May to July.	Perennial	Drainage lines, creeks in hills or plains. Brown silty loam.	Likely	Recorded
Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)	Spreading herb to 0.1 m high. March.	Annual	Cracking clay, basalt. Gently undulating plains with large surface rocks, flat crabholed plains.	Potential	Unlikely
Pleurocarpaea gracilis	Rounded shrub to 0.5 m. June to October.	Perennial	Summit of rounded hill, slopes, skeletal red gritty soil over massive Brockman Iron Formation rock.	Potential	Unlikely

Species	Habit and flowering information	Life form	Habitat	Likelihood of occurrence	
				Pre-survey	Post-survey
Pentalepis trichodesmoides subsp. *hispida*	Multi-stemmed shrub to 0.8 m high. July to October.	Perennial	Summit of steep terrain, cobbled slopes, outcrops, high in landscape, skeletal brown gritty soil, banks of creeks and edges of basalt screes.	Potential	Unlikely
Solanum albostellatum	Low herb or shrub to 0.2 m high. March.	Perennial	Floodplains, slight bedrock outcrops. Red brown silty clay loam. Cracking clay.	Potential	Unlikely
Terminalia supranitifolia	Spreading tangled tree or shrub to 3 m high.	Perennial	Sandy soils or among basalt rocks.	Likely	Unlikely
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367)	Hummock grass. June, July, September.	Perennial	Mesa tops and edges; breakaways; hillsides and hilltops.	Likely	Recorded
Priority 4					
Acacia bromilowiana	Tree or shrub, to 12 m high, bark dark grey, fibrous; phyllodes more or less glaucous and slightly pruinose; inflorescence in spikes. Yellow/Pink flowers, July, August.	Perennial	Red skeletal stony loam, orange-brown pebbly, gravel loam, laterite, banded ironstone, basalt. Rocky hills, breakaways, scree slopes, gorges, creek beds.	Unlikely	Unlikely
Goodenia nuda	Erect to ascending herb to 0.5 m high. Yellow flowers, April to August.	Short-lived perennial	Alluvial soils over ironstone, floodplains, valleys, watercourses, orange-brown alluvial sand over ironstone.	Potential	Unlikely
Lepidium catapycnon	An open, woody herb or shrub with zigzag stems. It grows 0.20 m to 0.30 m in height. White flowers in October.	Perennial	Occurs on hillsides in skeletal soils, shale, ironstone.	Unlikely	Unlikely

Species	Habit and flowering information	Life form	Habitat	Likelihood of occurrence	
				Pre-survey	Post-survey
Rhynchosia bungarensis	Compact, prostrate shrub, to 0.5 m high. May to November.	Short-lived perennial	Pebbly, shingly coarse sand amongst boulders. Banks of flow line in the mouth of a gully in a valley wall.	Likely	Recorded

Appendix I: Vegetation Association Mapping

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Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1: Vegetation Association Mapping - Overview

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1_Overview

7592000 420000 7593000

7591000 420000 7590000 421000 422000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

BA31 BA32 BA10 BA07 BA42a BA210 BA111 BA18 BA22 BA219 BA209 BA21

AiAaAbTw AaAbTwTspR ChAtuTw AiAaAbTw/AaTeTw/ChAtuTe AbTw AiAaAbTw/AaTeTw AiAptTw AiAaAbTw/ChAtuTw AaTeTw ChAtuTw/AaTeTw AxTe CcTeTw Disturbed

Millstream Yarraloola Road

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1A: Vegetation Association Mapping

astron

Author: J. Atkinson	Date: 03-03-2016
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1A

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)

Metres

0 100 200 300 400 500

N

7589000 422000 7590000 423000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

BAKM15
BADRr05
GBR23
BUN06
BUN57
BA59

ChAtuTw/AaTeTw
AaAbTwTspR
AiAaAbTw/ChAtuTw
ChAtuTw
ChAiTw
Disturbed
ChAtuTe
AaTeTw
AiAaAbTw/AaTeTw/ChAtuTw
AiAaAbTw

422000 7588000 423000 424000

Rio Tinto
Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1B: Vegetation Association Mapping

astron

Author: J. Atkinson	Date: 03-03-2016
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1B

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)

Metres
0 100 200 300 400 500

N

7587000 425000 7588000

7586000 425000

426000

7585000

427000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

AiAaAbTw/AaTeTw/ChAtuTw

AaTeTw

BA207

AiAaAbTw

BA57

AbTw

ChAtuTw

AiAaAbTw/ChAtuTe

Disturbed

AiAaAbTw/ChAtuTw

AiTw

AiAptTw

ChAtuTe

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1C: Vegetation Association Mapping

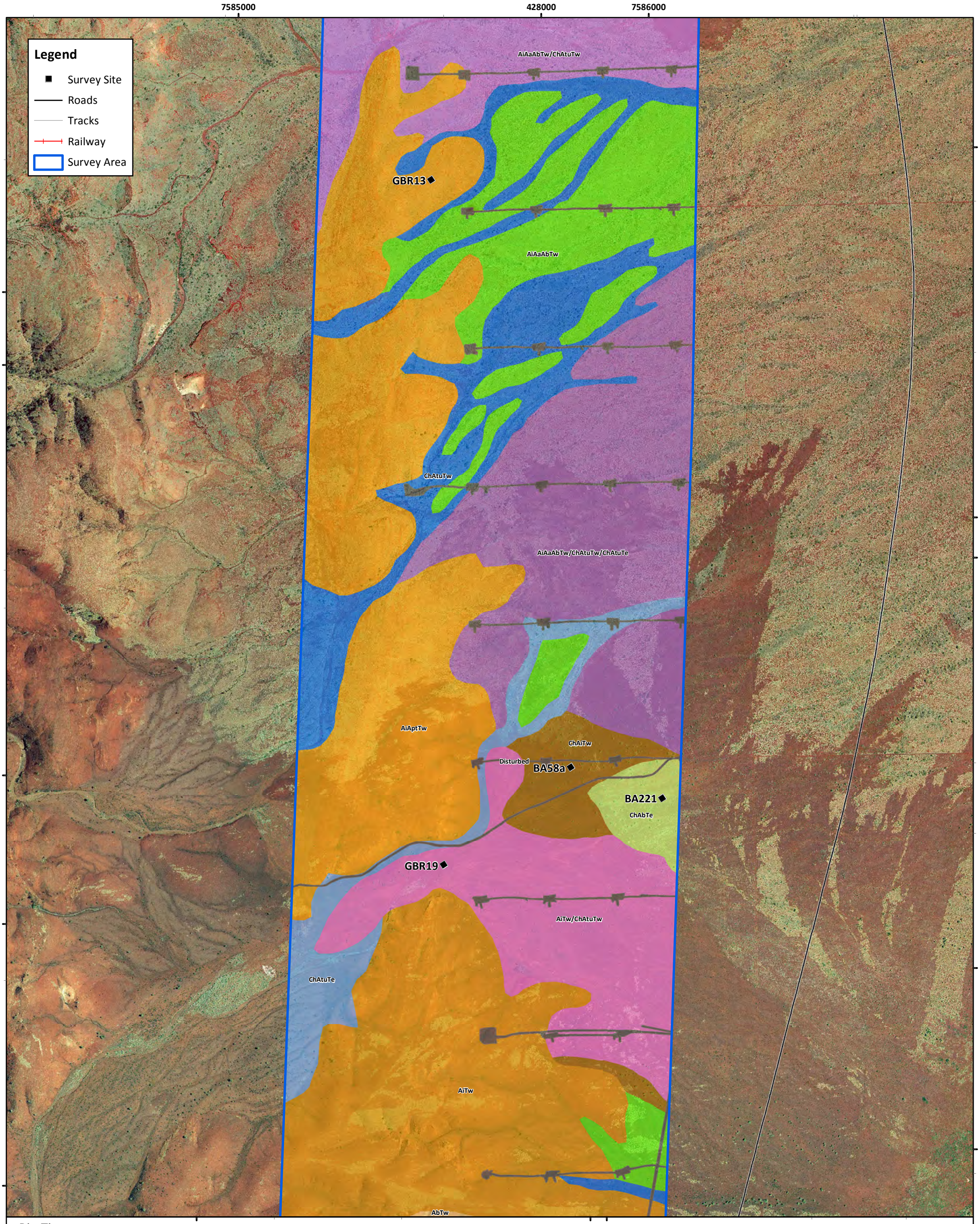
astron

Author: J. Atkinson	Date: 03-03-2016
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1C

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)

Metres

0 100 200 300 400 500

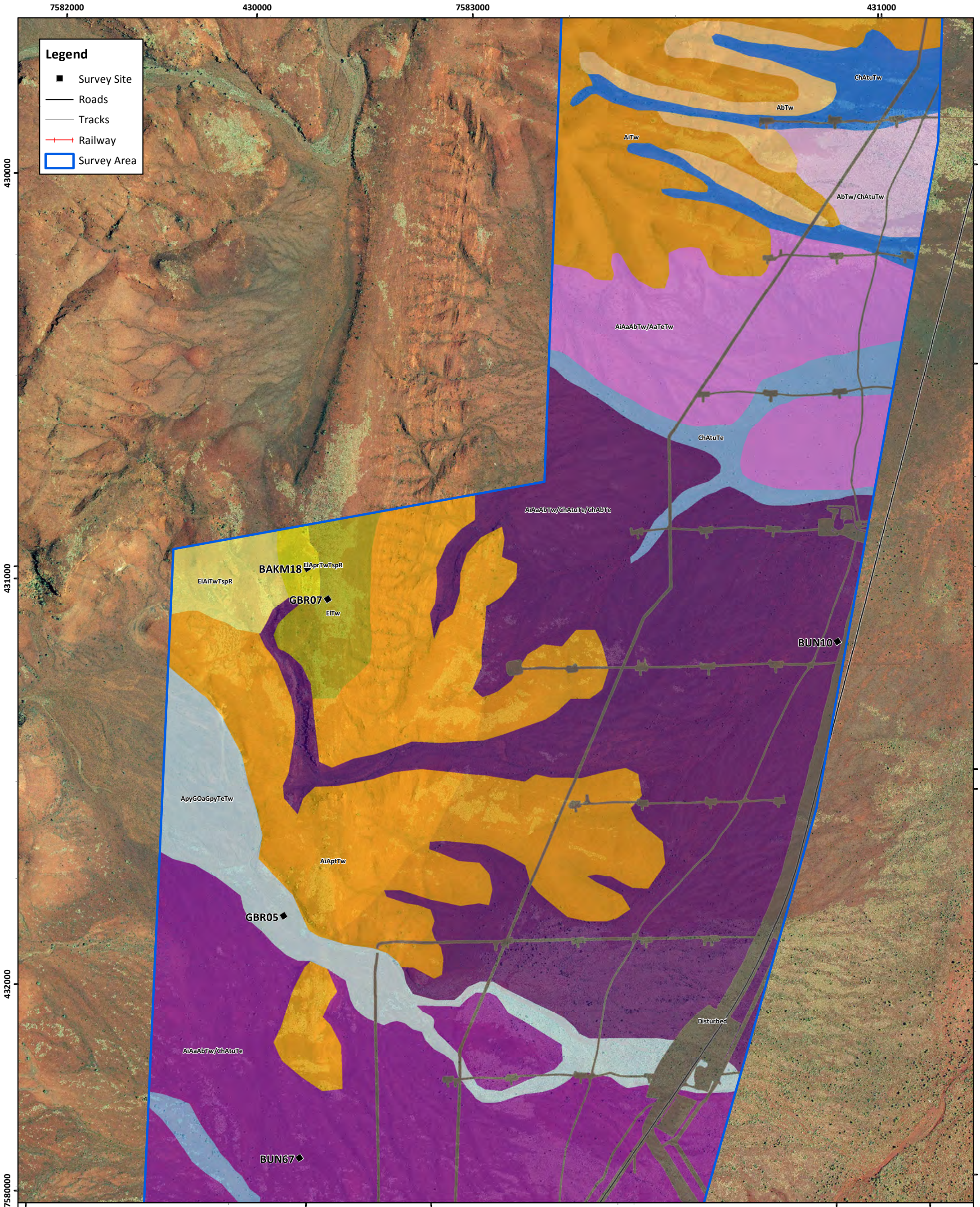


Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1D: Vegetation Association Mapping

Author: J. Atkinson	Date: 03-03-2016	Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1D	Metres 0 100 200 300 400 500



Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1E: Vegetation Association Mapping

Author: J. Atkinson	Date: 03-03-2016
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1E

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)

Metres

0 100 200 300 400 500

7580000 433000 7581000 7582000

433000 7579000 434000 435000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

AiAaAbTw
AiTw
AiAaAbTw/ChAtuTe
Disturbed
AscAsyCsppTe
ExAscCsppTe
EcAcGOrCsppTeCv
ChAtuGOrAcTeCspp
ApyGOaGpyTeTw
ChAtuTe
ChAiTw
ChAsppTeTwCspp
ChAiTe
ApyTeCspp
ChAtuTe/AiTw
ChAiTw/ChAiTe
ChAtuAmoSsGOrTe
Tw

BUN68 BA220r AxTe BA33 BA34 BUN02 BUN01 BUN13 BA201 BA36 BA113 BA215 GBR06

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1F: Vegetation Association Mapping

astron

Author: J. Atkinson	Date: 03-03-2016	Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1F	Metres 0 100 200 300 400 500

435000
7578000
7579000
436000
7580000
435000
7577000
436000
7576000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

ChAtuTe/AiTw
BA218
ChAtuAmoSsGOrTe
ChAiTw/ChAiTe
ApyTeCspp
BA217r
ChAcGOaCspp
BA216
ChAiTw
AiAptTw
ChAsppTeTwCspp
Disturbed
BUN72
AscAsyCsppTe
ChGpTe/ApyTeCspp
BUN73
ChAiApyTe
BUN11
ChAiTe
AiTw
ChGpTe
TspFCEs
ChAtuGOrAcTeCspp
Tw
AiTe
ApyGOaGpyTeTw
AtrTeCspp
AiTw/AiTe

Rio Tinto
Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1G: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1G

437000 7577000 438000 7578000 7579000

437000 438000 7575000 439000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

BUN75
AiTw/AiTe
AtrTeCspp
ChAiTw/ChAiTe
ChAtuTe
BAKMr16
AiTe
Tw
ElAiAbTw
Disturbed
BUN14
ElAprTwTspR
BA223r
ChAiTw
AiTw
ElAiTwTspR
ApyTeCspp
BUN-MW
EcEvApyAtrTeCspp
ApyGOaGpyTeTw
TspFCEs
ElAbTw
ChGpTe
BUN70
AscAsyCsppTe

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1H: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1H

7575000 440000 7577000 441000

7574000

440000

441000

BUN71
ApyTeCspp
AscAsyCsppTe
EcEvApyAtrTeCspp
ElTw
ElAlAbTw
BUN74
AiTw
BA27
TspFCEs
AtrTeCspp
CsppTe
ChAlApyTe
BUN20
Disturbed
ElAbTw
ChGpTe
BUN15
BUN-MA
BUN12
BUN21
ChAiTw
Tw
ChAtuTe
BUN53
BUN-MY
BUN-MZ
ApyGOaGpyTeTw
BUN54
ChAiTw/ChAlTe
ChAiTw/ChAtuTe
ElAiTwTspR

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1I: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

N

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1I

7574000 442000 7575000 443000 7576000

7573000

442000

443000

ChAiTw/ChAtuTe
ChAtuTe
ChAiTw/ChAiTe
ApyGOaGpyTeTw
ChAiApyTe
BUN17
BUN-BA
BUN-MC
ElTw
BUN03
BUN04
BUN22
EcEvApyAtrTeCspp
AtrTeCspp
ChAcGOaCspp
BALVr-07
BUN19
BUN18
BUN16
BUN-MB
BUN-RA
CsppTe
ChAiTe
ChGpTe
TspFCEs
BA17
ChAiTw
ElAiTwTspR
Disturbed
Tw
ElAbTw
ElCfAprEm
ElAiAbTw

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1J: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1J

7572000 444000 7573000 7574000 445000 7575000

444000

7571000

445000

ChAcGOaCspp

BA03

ElAprTwTspR

BUN50

BUN05

ElAiAbTw

ChAiApyTe

ChGpTe

ElAbTw

ChAiTw

BUN-MX

BUN-MD

EcAcGOrCsppTeCv

ApyGOaGpyTeTw

ElAiTwTspR

AtrTeCspp

BA109

ElCfAprEm

ChAtuAmoSsGOrTe

Tw

Disturbed

EcEvApyAtrTeCspp

BA108

BAKM12

ElTw

BA2KMr01

CsppTe

TspFCEs

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1K: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1K

7571000 446000 7572000 447000 7573000

446000 7570000 447000

BAR112 ElAprTwTspR AtrTeCspp ChAtuAmoSsGOrTe BA40 BA41 BA39 BUN58 ElTw AiTw ChAiTw TspFCEs ApyGOaGpyTeTw BA46 BUN60 ElAiTwTspR BA110 BAKM11 EcEvApyAtrTeCspp Disturbed BA214 ElAiAbTw Tw BUN59 ChAiTe BUN56 CsppTe AiTe ChGpTe ApyTeCspp ElCfAprEm

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1L: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1L

447000 7569000 448000 7570000 7571000 449000

447000 448000 7567000 449000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

BALVr-06
BA12
BAKM09
BAKM19
BUN63
BA53
BUN61
BAKM10
BUN62
BA101r
BA101
BA04
BA05
BA213
BALVr-03

EcEvApyAtrTeCspp
ElCfAprEm
ElAiTwTspR
ChAiTw
AtrTeCspp
Disturbed
AiTw
ChAiTe
TspFCEs
CsppTe
ApyTeCspp
ChGpTe
AiTe
ChAtuAmoSsGOrTe
ElAiAbTw
ChAtuGOrAcTeCspp
AcTe
Tw
ElAbTw
TwTspR
ChAtuTe

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Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1M: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1M

7571000 449000 7572000 450000 7573000

449000

7570000

450000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

AiTe

ElAiAbTw

ChAlTw

ApyTeCspp

ElCfAprEm

ElTw

CsppTe

BA101r

BA211

ElAprTwTspR

TwTspR

ChGpTe

BA101

BA52

BA04

BA107

ElAiTwTspR

TspFCEs

ChAiTe

BA05

AcTe

Disturbed

AlTw

BA54

Tw

EcEvApyAtrTeCspp

ChAtuTe

AtrTeCspp

ElAbTw

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1N: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1N

7568000 450000 7569000 451000 7570000

450000

451000

7566000

BALVr-03

BA2LVr-02

BADRr04

BA200

AiTw

AiTe

BALVr-04

ChAtuGOrAcTeCspp

BA212

ChAiTe

ChAtuTe

ElAiTwTspR

ElAbTw

BA106

BALVr-05

BA44

Tw

BAKM07

BA45 ChAtuAmoSsCOrTe

ElCfAprEm

BA2DRr06

TwTspR

ElTw

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1O: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1O

7566000 452000 7567000 453000 7569000

452000

453000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

BA105r
BAKM03
BADRr02
Tw
TwTspR
ElTw
BAKM05
EcAcGOrGsppTcCv
BALVr-01
ElAiTwTspR
BALVr-02
BAKM02
BA103r
ChAiTe
ChAtuAmoSsGOrTe
BADRr01
ElCfAprEm
BA104r
BADRr03
BAKM01
BA102r

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure I.1P: Vegetation Association Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: J. Atkinson | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1P

Hillslopes, hillcrests and breakaways

ChAtuAmoSsGOrTe — *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis, A. monticola, Stylobasium spathulatum, Gossypium robinsonii* tall open shrubland to tall shrubland over *Triodia epactia* open hummock grassland

AaAbTwTspR — *Acacia ancistrocarpa*, *A. bivenosa* scattered shrubs to open shrubland over *Triodia wiseana* (*T.* sp. Robe River (M.E. Trudgen et al. MET 12367)) open hummock grassland

AbTw — *Acacia bivenosa* open shrubland over *Triodia wiseana* open hummock grassland

AiAptTw — *Acacia inaequilatera* scattered shrubs over *A. ptychophylla* low open shrubland over *Triodia wiseana* hummock grassland

AiTw — *Acacia inaequilatera* tall open shrubland over *Triodia wiseana* hummock grassland

ChAiTw — *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over mixed scattered shrubs over *Triodia wiseana* open hummock grassland

ElAbTw — *Eucalyptus leucophloia* subsp. *leucophloia* scattered trees to low open woodland over *Acacia bivenosa* scattered low shrubs over *Triodia wiseana* hummock grassland

ElAiAbTw — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia inaequilatera, A. bivenosa* scattered tall shrubs over *Triodia wiseana* hummock grassland

ElAiTwTspR — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees to low open woodland over *Acacia inaequilatera* scattered tall shrubs to tall open shrubland over *Triodia wiseana* and *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) hummock grassland

ElAprTwTspR — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees to low open woodland over *Acacia pruinocarpa* tall open shrubland over *Triodia wiseana* (*T.* sp. Robe River (M.E. Trudgen et al. MET 12367)) open hummock grassland

ElCfAprEm — *Eucalyptus leucophloia* subsp. *leucophloia, Corymbia ferriticola, Acacia pruinocarpa* scattered low trees to low open woodland over *Triodia epactia* very open hummock grassland and *Eriachne mucronata*, *Themeda triandra, Cymbopogon ambiguus* very open tussock grassland

ElTw — *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Triodia wiseana* open hummock grassland to hummock grassland

Tw — *Triodia wiseana* hummock grassland

TwTspR — *Triodia wiseana, T.* sp. Robe River (M.E. Trudgen et al. MET 12367) hummock grassland

Plains

AaTeTw — *Acacia ancistrocarpa* tall open shrubland over *Triodia epactia* (*T. wiseana*) hummock grassland

AcTe — *Acacia colei* var. *ileocarpa* tall open shrubland over *Triodia epactia* hummock grassland

AiAaAbTw — *Acacia bivenosa*, *A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland

AiTe — *Acacia inaequilatera* tall open shrubland over *Triodia epactia* hummock grassland

ApyTeCspp — *Acacia pyrifolia* scattered tall shrubs over *Triodia epactia* hummock grassland and **Cenchrus setiger, *C. ciliaris*scattered tussock grasses

AscAsyCsppTe — *Acacia sclerosperma*, *A. synchronicia* scattered tall shrubs to tall open shrubland over **Cenchrus setiger, *C. ciliaris* open tussock grassland and *Trioda epactia* very open hummock grassland

AtrTeCspp — *Acacia trachycarpa* scattered tall shrubs to tall open shrubland over *Triodia epactia* open hummock grassland and **Cenchrus setiger*, **C. ciliaris* open tussock grassland

AxTe — *Acacia xiphophylla* tall open shrubland over *Triodia epactia (T. wiseana)*open hummock grassland

ChAbTe — *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa* open shrubland over *Triodia epactia* hummock grassland

ChAcGOaCspp — *Corymbia hamersleyana* scattered low trees over *Acacia colei* var. *ileocarpa* tall open scrub over *Gossypium australe* scattered shrubs over **Cenchrus ciliaris*, **C. setiger* open tussock grassland

ChAiTe — *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered shrubs over *Triodia epactia* hummock grassland

ChGpTe — *Corymbia hamersleyana* scattered low trees over *Grevillea pyramidalis* subsp. *leucadendron* scattered tall shrubs over *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) scattered low shrubs over *Triodia epactia* hummock grassland

CsppTe — **Cenchrus setiger*, **C. ciliaris* tussock grassland and *Triodia epactia* scattered hummock grasses to very open hummock grassland

ExAscCsppTe — *Eucalyptus xerothermica* open woodland over *Acacia sclerosperma* tall open shrubland over **Cenchrus setiger*, **C. ciliaris* open tussock grassland over *Triodia epactia* very open hummock grassland

Minor and major drainage

ApyGOaGpyTeTw — *Acacia pyrifolia*, *Gossypium australe*, *Grevillea pyramidalis* shrubland to tall shrubland over *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia*, *T. wiseana* open hummock grassland

CcTeTw — *Corymbia candida* low woodland over *Triodia epactia* and/or *T. wiseana* open hummock grassland

ChAiApyTe — *Corymbia hamersleyana* open woodland over *Acacia inaequilatera, A. pyrifolia* tall open shrubland over *Triodia epactia* hummock grassland

ChAsppTeTwCspp — *Corymbia hamersleyana* scattered low trees over *Acacia* species tall shrubland over *Triodia epactia, T. wiseana* very open hummock grassland and **Cenchrus setiger, *C. ciliaris* very open tussock grassland

Rio Tinto
Bungaroo Level 2 Vegetation and Flora Assessment

Legend: Vegetation Association Mapping

astron

Author: J. Atkinson | Drawn: W. An | Date: 03/03/2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1_Legend

Minor and major drainage cont'd

ChAtuTe — *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* closed heath over *Triodia epactia* hummock grassland

ChAtuTw — *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis* (*A. ancistrocarpa*) open shrubland to shrubland over *Triodia wiseana* open hummock grassland

ChAtuGOrAcTeCspp — *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis, Gossypium robinsonii, A. colei* var. *ileocarpa* tall open shrubland to tall shrubland over *Triodia epactia* very open hummock grassland and **Cenchrus setiger, *C. ciliaris* open tussock grassland

EcAcGOrCsppTeCv — *Eucalyptus camaldulensis* subsp. *refulgens* woodland over *Acacia colei* var. *ileocarpa, Gossypium robinsonii* tall shrubland over **Cenchrus setiger, Eulalia aurea*, **C. ciliaris* tussock grassland, *Triodia epactia* very open hummock grassland and *Cyperus vaginatus* scattered sedges

EcEvApyAtrTeCspp — *Eucalyptus camaldulensis subsp. refulgens*and/or *E. victrix* scattered low trees over *Acacia pyrifolia, A. trachycarpa* open shrubland over *Triodia epactia* open hummock grassland and **Cenchrus setiger*, **C. ciliaris* open tussock grassland

TspFCEs — *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) scattered low shrubs to low shrubland over *Euphorbia schultzii, Cleome viscosa, Gomphrena cunninghamii* very open herbland

Mosaics

AbTw/ChAtuTw — Mosaic of *Acacia bivenosa* open shrubland over *Triodia wiseana* open hummock grassland/ and *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis* (*A. ancistrocarpa*) open shrubland to shrubland over *Triodia wiseana* open hummock grassland

AiAaAbTw/AaTeTw — Mosaic of *Acacia bivenosa, A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland/ and *Acacia ancistrocarpa* tall open shrubland over *Triodia epactia* (*T. wiseana*) hummock grassland

AiAaAbTw/AaTeTw/ ChAtuTe — Mosaic of *Acacia bivenosa, A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland/ and *Acacia ancistrocarpa* tall open shrubland over *Triodia epactia* (*T. wiseana*) hummock grassland/ and *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* closed heath over *Triodia epactia* hummock grassland

AiAaAbTw/AaTeTw/ ChAtuTw — Mosaic of *Acacia bivenosa, A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland/ and *Acacia ancistrocarpa* tall open shrubland over *Triodia epactia* (*T. wiseana*) hummock grassland/ and *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis* (*A. ancistrocarpa*) open shrubland to shrubland over *Triodia wiseana* open hummock grassland

AiAaAbTw/ChAtuTe — Mosaic of *Acacia bivenosa, A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland/ and *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* closed heath over *Triodia epactia* hummock grassland

AiAaAbTw/ChAtuTe/ ChAbTe — Mosaic of *Acacia bivenosa, A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland/ and *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* closed heath over *Triodia epactia* hummock grassland/ and *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa* open shrubland over *Triodia epactia* hummock grassland

AiAaAbTw/ChAtuTw — Mosaic of *Acacia bivenosa, A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland/ and *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis* (*A. ancistrocarpa*) open shrubland to shrubland over *Triodia wiseana* open hummock grassland

AiAaAbTw/ChAtuTw /ChAtuTe — Mosaic of *Acacia bivenosa, A. ancistrocarpa* (*A. inaequilatera*) open shrubland over *Triodia wiseana* open hummock grassland/ and *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis* (*A. ancistrocarpa*) open shrubland to shrubland over *Triodia wiseana* open hummock grassland/ and *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* closed heath over *Triodia epactia* hummock grassland

AiTw/AiTe — Mosaic of *Acacia inaequilatera* tall open shrubland over *Triodia wiseana* hummock grassland/ and *Acacia inaequilatera* tall open shrubland over *Triodia epactia* hummock grassland

AiTw/ChAtuTw — Mosaic of *Acacia inaequilatera* tall open shrubland over *Triodia wiseana* hummock grassland/ and *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered shrubs over *Triodia epactia* hummock grassland

ChAiTw/ChAiTe — Mosaic of *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over mixed scattered shrubs over *Triodia wiseana* open hummock grassland/ and *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered shrubs over *Triodia epactia* hummock grassland

ChAiTw/ChAtuTe — Mosaic of *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over mixed scattered shrubs over *Triodia wiseana* open hummock grassland/ and *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* closed heath over *Triodia epactia* hummock grassland

ChAtuTe/AiTw — Mosaic of *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* closed heath over *Triodia epactia* hummock grassland/ and *Acacia inaequilatera* tall open shrubland over *Triodia wiseana* hummock grassland

ChAtuTw/AaTeTw — Mosaic of *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis* (*A. ancistrocarpa*) open shrubland to shrubland over *Triodia wiseana* open hummock grassland/ and *Acacia ancistrocarpa* tall open shrubland over *Triodia epactia* (*T. wiseana*) hummock grassland

ChGpTe/ApyTeCspp — Mosaic of *Corymbia hamersleyana* scattered low trees over *Grevillea pyramidalis* subsp. *leucadendron* scattered tall shrubs over *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) scattered low shrubs over *Triodia epactia* hummock grassland/ and *Acacia pyrifolia* scattered tall shrubs over *Triodia epactia* hummock grassland and **Cenchrus setiger*, **C. ciliaris* scattered tussock grasses

Disturbed

Disturbed

Rio Tinto
Bungaroo Level 2 Vegetation and Flora Assessment

Legend: Vegetation Association Mapping

astron

Author: J. Atkinson | Drawn: W. An | Date: 03/03/2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegAsso_FigI1_Legend

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Appendix J: Flora Survey Site Data

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Site: BA2DRr06

Location: map 15 **Type:** 30x75m Relevé

Date: 2015-08-15 **Described by:** DR

MGA Zone: 50 **Easting:** 452006 **Northing:** 7567517

Habitat: Hillcrest

Soil: Red brown clay loam

Rock type: Ironstone

Vegetation: *Triodia wiseana* and *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	0.4
Acacia ptychophylla	0.5	0.7
Corymbia hamersleyana	0.5	1.5
Dodonaea coriacea	0.5	0.7
Hakea lorea subsp. *lorea*	0.5	0.8
Senna glutinosa subsp. *glutinosa*	0.5	0.9
Senna glutinosa subsp. *pruinosa*	0.5	1.3
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	12	0.4
Triodia wiseana	28	0.4

* denotes weed species

Site: BA2KMr01

Location: Map 11 behind Bungaroo Camp **Type:** 50x50m Relevé

Date: 2015-08-13 **Described by:** KMc

MGA Zone: 50 **Easting:** 445539 **Northing:** 7571004

Habitat: Hillslope

Soil: Red brown silty clay loam

Rock type: CID

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia pruinocarpa* tall open shrubland over *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3, *T. wiseana* open hummock grassland with *Eriachne mucronata* very open tussock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia pruinocarpa	6	2.5
Bulbostylis barbata	0.5	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.25
Eriachne mucronata	4	0.25
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Eucalyptus leucophloia subsp. *leucophloia*	1	3.0
Polycarpaea holtzei	0.5	0.03
Triodia epactia	0.5	0.4
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	17	0.4
Triodia wiseana	8	0.4

* denotes weed species

Site: BA2LVr-02

Location: Map 15 **Type:** Relevé

Date: 2015-08-15 **Described by:** LV

MGA Zone: 50 **Easting:** 451007 **Northing:** 7569281

Habitat: Hillcrest

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 open hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia pruinocarpa	0.5	3.0
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	10	0.35

* denotes weed species

Site: BA03
Location: Mid area **Type:** 25x100m Quadrat
Date: 2015-08-13 **Described by:** DR
MGA Zone: 50 **Easting:** 444355 **Northing:** 7572795
Habitat: Plain
Soil: Red brown medium clay
Rock type: NA
Vegetation: *Corymbia hamersleyana* scattered low trees over *Stylobasium spathulatum*, *Acacia inaequilatera, A. colei* var. *ileocarpa* tall shrubland over *Gossypium australe* scattered shrubs over **Cenchrus ciliaris*, **C. setiger* tussock grassland with *Triodia epactia* very open hummock grassland.
Veg Condition: Good
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	20	0.45
**Cenchrus setiger*	30	0.45
Abutilon sp. Pilbara (W.R. Barker 2025)	0.5	0.4
Acacia colei var. *ileocarpa*	1	3.0
Acacia inaequilatera	1	2.2
Acacia pyrifolia var. *pyrifolia*	0.5	2.4
Acacia synchronicia	0.5	1.8
Alternanthera nana	0.5	0.1
Alysicarpus muelleri	0.5	0.3
Amaranthus sp.	0.5	0.05
Aristida holathera var. *holathera*	0.5	0.35
Boerhavia coccinea	0.5	0.05
Boerhavia schomburgkiana	0.5	0.05
Calocephalus knappii	0.5	0.05
Chrysopogon fallax	0.5	0.7
Cleome viscosa	0.5	0.2
Corymbia hamersleyana	1	8.0
Crotalaria medicaginea var. *neglecta*	0.5	0.3
Cucumis variabilis	0.5	0.2
Dysphania rhadinostachya subsp. *rhadinostachya*	1	0.3

Name	Cover (%)	Height (m)
Eragrostis cumingii	0.5	0.2
Eulalia aurea	0.5	0.5
Evolvulus alsinoides var. *villosicalyx*	0.5	0.2
Goodenia forrestii	0.5	0.3
Gossypium australe	1	1.4
Hakea chordophylla	0.5	2.1
Hibiscus sturtii var. *campylochlamys*	0.5	0.5
Hybanthus aurantiacus	0.5	0.3
Indigofera colutea	0.5	0.15
Ipomoea muelleri	0.5	0.2
Jasminum didymum subsp. *lineare*	0.5	2.1
Paraneurachne muelleri	0.5	0.4
Paspalidium rarum	0.5	0.1
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.8
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Portulaca oleracea	0.5	0.15
Pterocaulon sphaeranthoides	0.5	0.01
Ptilotus astrolasius	0.5	0.3
Ptilotus axillaris	0.5	0.05
Ptilotus nobilis	0.5	0.05
Rhynchosia minima	0.5	0.1
Salsola australis	0.5	0.1
Scaevola spinescens	0.5	0.4
Senna artemisioides subsp. *oligophylla*	0.5	0.6
Sida arsiniata	0.5	0.4
Sida echinocarpa	0.5	0.5
Sida fibulifera	0.5	0.25
Sida rohlenae subp. rohlenae	0.5	0.35
Stemodia grossa	0.5	0.4
Stylobasium spathulatum	8	3.5
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	1.0
Tephrosia supina	0.5	0.25
Tribulus macrocarpus	0.5	0.1
Triodia epactia	2	0.5
Waltheria indica	0.5	0.35
Zaleya galericulata	0.5	0.05

* denotes weed species

Site: BA04

Location: South end **Type:** 50x50m Quadrat

Date: 2015-08-12 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 450076 **Northing:** 7570119

Habitat: Plain

Soil: Red brown silty clay loam

Rock type: NA

Vegetation: *Acacia colei* var. *ileocarpa, A. bivenosa* tall open shrubland over *Triodia epactia* hummock grassland with **Cenchrus setiger* very open tussock grassland.

Veg Condition: Good

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.4
**Cenchrus setiger*	2	0.4
**Malvastrum americanum*	0.5	0.4
Acacia bivenosa	1	2.2
Acacia colei var. *ileocarpa*	7	2.5
Acacia inaequilatera	0.5	0.5
Acacia pyrifolia var. *pyrifolia*	0.5	1.7
Acacia tumida var. *pilbarensis*	0.5	2.2
Achyranthes aspera	0.5	1.0
Alternanthera nana	0.5	0.1
Alysicarpus muelleri	0.5	0.05
Amaranthus sp.	0.5	0.06
Amaranthus undulatus	0.5	0.06
Brachyachne convergens	0.5	0.07
Bulbostylis barbata	0.5	0.05
Calotis porphyroglossa	0.5	0.2
Centipeda minima subsp. *macrocephala*	0.5	0.1
Chrysopogon fallax	0.5	0.5
Cleome viscosa	0.5	0.03
Cucumis variabilis	0.5	0.4
Cullen lachnostachys	0.5	0.15
Cullen pustulatum	0.5	0.15

Name	Cover (%)	Height (m)
Cymbopogon ambiguus	0.5	0.5
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.5
Digitaria brownii	0.5	0.5
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.05
Eragrostis cumingii	0.5	0.06
Eragrostis tenellula	0.5	0.1
Eremophila longifolia	0.5	1.0
Euphorbia biconvexa	0.5	0.1
Euphorbia sp.	0.5	0.1
Evolvulus alsinoides var. *villosicalyx*	0.5	0.2
Gomphrena cunninghamii	0.5	0.15
Goodenia forrestii	0.5	0.2
Gossypium australe	0.5	0.3
Grevillea wickhamii	0.5	0.4
Hakea lorea subsp. *lorea*	0.5	2.5
Indigofera colutea	0.5	0.1
Ipomoea lonchophylla	0.5	0.1
Ipomoea muelleri	0.5	0.05
Lobelia heterophylla	0.5	0.6
Nicotiana occidentalis subsp. *occidentalis*	0.5	1.0
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Paraneurachne muelleri	0.5	0.6
Phyllanthus erwinii	0.5	0.05
Polycarpaea corymbosa var. *corymbosa*	0.5	0.05
Portulaca oleracea	0.5	0.05
Pterocaulon sp.	0.5	0.4
Pterocaulon sphaeranthoides	0.5	0.4
Ptilotus appendiculatus	0.5	0.1
Rhynchosia minima	0.5	0.05
Senna artemisioides subsp. *helmsii*	0.5	0.4
Senna artemisioides subsp. *oligophylla*	0.5	1.0
Sida arsiniata	0.5	0.3
Sida fibulifera	0.5	0.4
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.2
Sporobolus australasicus	0.5	0.05
Streptoglossa sp.	0.5	0.2
Trachymene oleracea subsp. *oleracea*	0.5	0.7
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.1
Triodia epactia	65	1.2

* denotes weed species

Site: BA05

Location: South end **Type:** 50x50m Quadrat

Date: 2015-08-12 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 450239.3 **Northing:** 7569684

Habitat: Plain

Soil: Red brown silty clay loam

Rock type: NA

Vegetation: *Acacia colei* var. *ileocarpa* tall open shrubland over *Sida echinocarpa, S. arsiniata* low open shrubland over *Triodia epactia* hummock grassland with **Cenchrus setiger* very open tussock grassland with *Dysphania rhadinostachya* subsp. *rhadinostachya* scattered herbs.

Veg Condition: Good

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.4
**Cenchrus ciliaris*	0.5	0.3
**Cenchrus setiger*	2	0.4
**Malvastrum americanum*	0.5	0.3
**Setaria verticillata*	0.5	0.8
Amaranthus sp.	0.5	0.25
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.35
Acacia bivenosa	0.5	2.2
Acacia colei var. *ileocarpa*	3	3.5
Acacia inaequilatera	0.5	2.1
Alternanthera nana	0.5	0.25
Alysicarpus muelleri	0.5	0.4
Blumea tenella	0.5	0.2
Boerhavia schomburgkiana	0.5	0.05
Bulbostylis barbata	0.5	0.05
Calocephalus knappii	0.5	0.1
Centipeda minima subsp. *macrocephala*	0.5	0.1
Chrysopogon fallax	0.5	0.4
Cleome viscosa	0.5	0.3
Cucumis variabilis	0.5	0.5
Dysphania melanocarpa	0.5	0.25

Name	Cover (%)	Height (m)
Dysphania rhadinostachya subsp. *rhadinostachya*	1	0.02
Eragrostis cumingii	0.5	0.06
Euphorbia biconvexa	0.5	0.03
Evolvulus alsinoides var. *villosicalyx*	0.5	0.25
Goodenia microptera	0.5	3.0
Gossypium australe	0.5	0.6
Gossypium robinsonii	0.5	2.1
Hakea lorea subsp. *lorea*	0.5	1.2
Ipomoea muelleri	0.5	0.05
Lepidium muelleri-ferdinandii	0.5	0.3
Nicotiana occidentalis subsp. *occidentalis*	0.5	0.4
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Perotis rara	0.5	0.1
Polycarpaea corymbosa var. *corymbosa*	0.5	0.2
Pterocaulon sp.	0.5	0.2
Pterocaulon sphaeranthoides	0.5	0.2
Ptilotus appendiculatus	0.5	0.25
Ptilotus astrolasius	0.5	0.4
Ptilotus nobilis	0.5	0.4
Rhynchosia minima	0.5	0.3
Senna artemisioides subsp. *oligophylla*	0.5	1.1
Senna venusta	0.5	0.05
Sida arsiniata	1	0.4
Sida echinocarpa	1	0.4
Sida fibulifera	0.5	0.25
Sida platycalyx	0.5	0.5
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.2
Sporobolus australasicus	0.5	0.1
Stylobasium spathulatum	0.5	2.1
Tribulus sp.	0.5	0.05
Triodia epactia	65	0.4

* denotes weed species

Site: BA07

Location: Map 1 **Type:** 50x50m Quadrat

Date: 2015-08-19 **Described by:** LV

MGA Zone: 50 **Easting:** 421386.3 **Northing:** 7591380

Habitat: Pediment

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Acacia ancistrocarpa* scattered tall shrubs to tall open shrubland over *A. bivenosa* open shrubland over *Triodia wiseana, T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	2	2.2
Acacia bivenosa	8	1.1
Acacia tumida var. *pilbarensis*	0.5	1.5
Dampiera candicans	0.5	0.5
Indigofera monophylla	0.5	0.38
Ptilotus calostachyus	0.5	0.8
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	1	0.8
Triodia wiseana	27	0.6

* denotes weed species

Site: BA10

Location: Map 1 **Type:** 50x50m Quadrat

Date: 2015-08-19 **Described by:** KMc

MGA Zone: 50 **Easting:** 421129.2 **Northing:** 7591059

Habitat: Pediment

Soil: Reddish brown sandy clay loam

Rock type: Ironstone

Vegetation: *Acacia bivenosa* open shrubland over *Triodia wiseana* open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	3	1.5
Acacia synchronicia	0.5	1.3
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.2
Gossypium australe	0.5	0.4
Grevillea wickhamii	0.5	3.5
Indigofera monophylla	0.5	0.4
Mollugo molluginea	0.5	0.2
Ptilotus astrolasius	0.5	0.25
Ptilotus axillaris	0.5	0.4
Ptilotus calostachyus	0.5	0.8
Ptilotus clementii	0.5	0.25
Ptilotus fusiformis	0.5	0.3
Triodia wiseana	20	0.8

* denotes weed species

Site: BA12

Location: South end **Type:** 70x30m Quadrat

Date: 2015-08-12 **Described by:** DR

MGA Zone: 50 **Easting:** 448489 **Northing:** 7569509

Habitat: Hillslope

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia inaequilatera* tall shrubland over *Triodia epactia, T. wiseana* hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	20	3.5
Cleome viscosa	0.5	0.05
Gossypium australe	0.5	0.01
Rhynchosia minima	0.5	0.01
Senna glutinosa subsp. *glutinosa*	0.5	1.1
Stylobasium spathulatum	0.5	2.0
Triodia epactia	40	0.9
Triodia wiseana	20	0.7

* denotes weed species

Site: BA17
Location: Mid area **Type:** 50x50m Quadrat
Date: 2015-08-13 **Described by:** DR
MGA Zone: 50 **Easting:** 443482 **Northing:** 7573101
Habitat: Plain
Soil: Reddish brown medium clay
Rock type: NA
Vegetation: *Corymbia hamersleyana* scattered low trees over **Cenchrus setiger* closed tussock grassland.
Veg Condition: Poor
Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.01
**Cenchrus ciliaris*	0.5	0.4
**Cenchrus setiger*	75	0.4
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.1
Acacia bivenosa	0.5	0.1
Acacia inaequilatera	0.5	1.8
Alternanthera nana	0.5	0.1
Ammannia multiflora	0.5	0.1
Boerhavia coccinea	0.5	0.2
Centipeda minima subsp. *macrocephala*	0.5	0.1
Cleome viscosa	0.5	0.4
Corchorus tridens	0.5	0.2
Corymbia hamersleyana	1	8.0
Cucumis variabilis	0.5	0.03
Cyperus vaginatus	0.5	0.6
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.08
Eragrostis cumingii	0.5	0.1
Eragrostis exigua	0.5	0.3
Eragrostis tenellula	0.5	0.3
Gomphrena cunninghamii	0.5	0.2
Gossypium australe	0.5	0.4
Gossypium robinsonii	0.5	0.03

Name	Cover (%)	Height (m)
Ipomoea lonchophylla	0.5	0.06
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.08
Pluchea rubelliflora	0.5	0.25
Portulaca oleracea	0.5	0.01
Ptilotus aervoides	0.5	0.05
Ptilotus auriculifolius	0.5	0.35
Ptilotus axillaris	0.5	0.05
Ptilotus nobilis	0.5	0.02
Rhynchosia minima	0.5	0.05
Senna notabilis	0.5	0.4
Sida sp.	0.5	0.1
Solanum diversiflorum	0.5	0.2
Solanum sp.	0.5	0.1
Streptoglossa sp.	0.5	0.01
Stylobasium spathulatum	0.5	0.5
Tephrosia sp.	0.5	0.05
Waltheria indica	0.5	0.1

* denotes weed species

Site: BA18

Location: NW end of survey area **Type:** 50x50m Quadrat

Date: 2015-08-18 **Described by:** LV

MGA Zone: 50 **Easting:** 422624 **Northing:** 7591284

Habitat: Plain

Soil: Orange brown sandy clay loam

Rock type: NA

Vegetation: *Acacia xiphophylla* tall open shrubland to tall shrubland over *Triodia epactia, T. wiseana* open hummock grassland.

Veg Condition: Very Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.2
**Flaveria trinervia*	0.5	0.45
**Malvastrum americanum*	0.5	0.2
**Vachellia farnesiana*	0.5	0.5
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.3
Abutilon sp. Pilbara (W.R. Barker 2025)	0.5	0.3
Acacia ancistrocarpa	0.5	2.1
Acacia synchronicia	0.5	2.1
Acacia xiphophylla	10	6.0
Amaranthus mitchellii	0.5	0.2
Boerhavia coccinea	0.5	0.1
Brachyachne prostrata	0.5	0.1
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.3
Corchorus lasiocarpus subsp. *parvus*	0.5	0.08
Corchorus sp.	0.5	0.1
Corchorus tridens	0.5	0.1
Cucumis variabilis	0.5	
Cynanchum floribundum	0.5	0.2
Dysphania kalpari	0.5	0.05
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.15
Eremophila longifolia	0.5	1.5
Euphorbia biconvexa	0.5	0.15

Name	Cover (%)	Height (m)
Euphorbia boophthona	0.5	0.15
Gomphrena cunninghamii	0.5	0.06
Goodenia forrestii	0.5	0.2
Goodenia microptera	0.5	0.1
Gossypium australe	0.5	0.2
Hakea lorea subsp. *lorea*	0.5	1.3
Heliotropium tanythrix	0.5	0.15
Hibiscus leptocladus	0.5	0.15
Hibiscus sturtii var. *campylochlamys*	0.5	0.1
Mollugo molluginea	0.5	0.1
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Paspalidium basicladum	0.5	0.1
Phyllanthus erwinii	0.5	0.1
Pluchea rubelliflora	0.5	0.1
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Portulaca oleracea	0.5	0.8
Pterocaulon sp.	0.5	0.1
Ptilotus astrolasius	0.5	0.3
Ptilotus axillaris	0.5	0.1
Ptilotus gomphrenoides var. *gomphrenoides*	0.5	0.01
Ptilotus nobilis	0.5	0.2
Ptilotus sp.	0.5	0.1
Rhynchosia minima	0.5	0.2
Salsola australis	0.5	0.1
Senna artemisioides subsp. *helmsii*	0.5	1.2
Senna artemisioides subsp. *oligophylla*	0.5	1.0
Senna notabilis	0.5	0.2
Sida arsiniata	0.5	0.1
Sida fibulifera	0.5	0.1
Sida sp. dark green fruits (S. van Leeuwen 2260)	0.5	0.15
Solanum diversiflorum	0.5	0.15
Sporobolus australasicus	0.5	0.05
Streptoglossa bubakii	0.5	0.3
Streptoglossa sp.	0.5	0.15
Swainsona formosa	0.5	0.15
Trianthema pilosum	0.5	0.05
Trianthema triquetrum	0.5	0.05
Tribulus astrocarpus	0.5	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.3
Triodia epactia	8	0.4
Triodia wiseana	4	0.4

* denotes weed species

Site: BA21

Location: New end of survey area **Type:** 50x50m Quadrat

Date: 2015-08-18 **Described by:** KMc

MGA Zone: 50 **Easting:** 422512 **Northing:** 7591494

Habitat: Floodplain

Soil: Brown clay loam

Rock type: Ironstone

Vegetation: *Corymbia candida* low open woodland over *Acacia ancistrocarpa* tall shrubland over *Senna artemisioides* subsp. *oligophylla* open shrubland over *Triodia epactia* hummock grassland.

Veg Condition: Very Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Malvastrum americanum*	0.5	0.3
**Vachellia farnesiana*	0.5	0.5
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.3
Acacia ancistrocarpa	18	2.7
Acacia bivenosa	0.5	1.7
Acacia colei var. *ileocarpa*	0.5	2.8
Acacia inaequilatera	0.5	1.8
Acacia synchronicia	0.5	3.0
Alternanthera nana	0.5	0.15
Amaranthus mitchellii	0.5	0.2
Boerhavia coccinea	0.5	0.1
Bulbostylis barbata	0.5	0.05
Cleome viscosa	0.5	0.2
Corchorus lasiocarpus subsp. *parvus*	0.5	0.3
Corchorus sp.	0.5	0.1
Corymbia candida	4	7.5
Crotalaria medicaginea var. *neglecta*	0.5	0.3
Cucumis variabilis	0.5	
Dichanthium sericeum subsp. *humilius*	0.5	0.3
Dysphania kalpari	0.5	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.05

Name	Cover (%)	Height (m)
Eragrostis cumingii	0.5	0.1
Eremophila longifolia	0.5	1.1
Euphorbia australis	0.5	0.05
Euphorbia biconvexa	0.5	0.1
Euphorbia boophthona	0.5	0.1
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Goodenia forrestii	0.5	0.2
Goodenia microptera	0.5	0.2
Gossypium australe	0.5	0.6
Hibiscus sturtii var. *campylochlamys*	0.5	0.3
Hybanthus aurantiacus	0.5	0.2
Jasminum didymum subsp. *lineare*	0.5	
Mollugo molluginea	0.5	0.1
Paspalidium basicladum	0.5	0.1
Phyllanthus erwinii	0.5	0.1
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Portulaca oleracea	0.5	0.05
Pterocaulon sp.	0.5	0.1
Ptilotus appendiculatus	0.5	0.1
Ptilotus astrolasius	0.5	0.3
Ptilotus sp.	0.5	0.1
Rhynchosia minima	0.5	0.2
Senna artemisioides subsp. *oligophylla*	3	2.0
Senna notabilis	0.5	0.1
Sesbania cannabina	0.5	0.1
Sida rohlenae subp. rohlenae	0.5	0.25
Sporobolus australasicus	0.5	0.05
Streptoglossa bubakii	0.5	0.4
Streptoglossa sp.	0.5	0.1
Stylobasium spathulatum	0.5	1.6
Triodia epactia	32	0.5

* denotes weed species

Site: BA22
Location: N end **Type:** 40x65m Quadrat
Date: 2015-08-18 **Described by:** KMc
MGA Zone: 50 **Easting:** 422756 **Northing:** 7591364
Habitat: Floodplain
Soil: Red brown medium clay
Rock type: Ironstone
Vegetation: *Corymbia candida* low woodland over *Acacia ancistrocarpa, A. colei, Senna artemisioides* subsp. *oligophylla* tall open shrubland over *A. trachycarpa* scattered low shrubs over **Cenchrus setiger* (**C. ciliaris*) open tussock grassland and Triodia wiseana very open hummock grassland.
Veg Condition: Good
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	2	0.35
**Cenchrus setiger*	25	0.4
**Echinochloa colona*	0.5	0.1
**Malvastrum americanum*	0.5	0.3
**Passiflora foetida*	0.5	
**Setaria verticillata*	0.5	0.4
**Vachellia farnesiana*	0.5	2.2
Abutilon malvifolium	0.5	0.2
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.2
Acacia ancistrocarpa	4	3.0
Acacia bivenosa	0.5	2.3
Acacia colei var. *ileocarpa*	1	4.0
Acacia synchronicia	0.5	0.05
Acacia trachycarpa	1	0.5
Acacia xiphophylla	0.5	1.3
Alternanthera nana	0.5	0.2
Amaranthus cuspidifolius	0.5	0.2
Austrobryonia pilbarensis	0.5	0.05
Boerhavia coccinea	0.5	0.05
Brachyachne convergens	0.5	0.05

Name	Cover (%)	Height (m)
Bulbostylis barbata	0.5	0.05
Centipeda minima subsp. *macrocephala*	0.5	0.1
Cleome viscosa	0.5	0.1
Corchorus sp.	0.5	0.1
Corchorus tridens	0.5	0.1
Corymbia candida	20	8.0
Cucumis variabilis	0.5	0.2
Cyperus iria	0.5	0.3
Desmodium filiforme	0.5	0.2
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eragrostis cumingii	0.5	0.1
Eragrostis tenellula	0.5	0.2
Eremophila forrestii subsp. *forrestii*	0.5	1.3
Eremophila longifolia	0.5	1.4
Eulalia aurea	0.5	0.8
Euphorbia biconvexa	0.5	0.2
Euphorbia boophthona	0.5	0.2
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Goodenia forrestii	0.5	0.2
Gossypium australe	0.5	0.6
Hibiscus sturtii var. *campylochlamys*	0.5	0.2
Hybanthus aurantiacus	0.5	0.2
Ipomoea lonchophylla	0.5	0.05
Jasminum didymum subsp. *lineare*	0.5	1.3
Melhania oblongifolia	0.5	0.2
Mollugo molluginea	0.5	0.1
Neptunia dimorphantha	0.5	0.4
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.2
Operculina aequisepala	0.5	0.1
Paspalidium basicladum	0.5	0.1
Phyllanthus erwinii	0.5	0.2
Phyllanthus maderaspatensis	0.5	0.2
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Portulaca oleracea	0.5	0.05
Pterocaulon sp.	0.5	0.2
Pterocaulon sphaeranthoides	0.5	0.2
Ptilotus appendiculatus	0.5	0.15
Ptilotus gomphrenoides var. *gomphrenoides*	0.5	0.1
Ptilotus nobilis	0.5	0.2
Rhynchosia minima	0.5	0.2
Rostellularia adscendens var. *clementii*	0.5	0.2
Salsola australis	0.5	0.1

Name	Cover (%)	Height (m)
Senna artemisioides subsp. *helmsii*	0.5	1.4
Senna artemisioides subsp. *oligophylla*	1	2.4
Sesbania cannabina	0.5	0.4
Sida fibulifera	0.5	0.2
Sida rohlenae subp. rohlenae	0.5	0.3
Sida sp.	0.5	0.2
Solanum cleistogamum	0.5	0.1
Solanum diversiflorum	0.5	0.2
Solanum sp.	0.5	0.1
Sporobolus australasicus	0.5	0.1
Streptoglossa bubakii	0.5	0.2
Streptoglossa sp.	0.5	0.2
Trianthema triquetrum	0.5	0.1
Triodia epactia	0.5	0.5
Triodia wiseana	6	0.5
Urochloa occidentalis	0.5	0.1
Waltheria indica	0.5	0.5

* denotes weed species

Site: BA27

Location: Middle of study area **Type:** 50x50m Quadrat

Date: 2015-08-16 **Described by:** JA/LV

MGA Zone: 50 **Easting:** 440385 **Northing:** 7574858

Habitat: Residual rise

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia inaequilatera* scattered tall shrubs over *A. pyrifolia* var. *pyrifolia* scattered shrubs over *Triodia epactia* hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.6
Abutilon cryptopetalum	0.5	0.4
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.3
Acacia colei var. *ileocarpa*	0.5	1.3
Acacia inaequilatera	2	4.5
Acacia pyrifolia var. *pyrifolia*	1	1.9
Alternanthera nana	0.5	0.15
Boerhavia coccinea	0.5	0.1
Bonamia erecta	0.5	0.5
Bonamia media	0.5	0.3
Bonamia pilbarensis	0.5	0.1
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.15
Corchorus lasiocarpus subsp. *parvus*	0.5	0.5
Cucumis variabilis	0.5	1.0
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.2
Eremophila longifolia	0.5	1.1
Eriachne pulchella subsp. *dominii*	0.5	0.1
Euphorbia boophthona	0.5	0.3
Euphorbia schultzii	0.5	0.35
Evolvulus alsinoides var. *villosicalyx*	0.5	0.2
Goodenia microptera	0.5	0.1

Name	Cover (%)	Height (m)
Gossypium australe	0.5	1.1
Grevillea pyramidalis subsp. *leucadendron*	0.5	0.5
Hybanthus aurantiacus	0.5	0.3
Indigofera colutea	0.5	0.2
Jasminum didymum subsp. *lineare*	0.5	1.0
Mollugo molluginea	0.5	0.1
Paspalidium clementii	0.5	0.4
Phyllanthus maderaspatensis	0.5	0.4
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Polycarpaea longiflora	0.5	0.15
Pterocaulon sp.	0.5	0.03
Ptilotus calostachyus	0.5	0.5
Rhynchosia minima	0.5	0.5
Sida fibulifera	0.5	0.2
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.8
Tephrosia supina	1	0.3
Tephrosia uniovulata	0.5	0.15
Trachymene oleracea subsp. *oleracea*	0.5	0.25
Triodia epactia	32	1.1
Triodia wiseana	0.5	0.4

* denotes weed species

Site: BA31

Location: Top NW end of study area **Type:** 25x100m Quadrat

Date: 2015-08-19 **Described by:** LV

MGA Zone: 50 **Easting:** 420166 **Northing:** 7591930

Habitat: Channel

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia ancistrocarpa*, *Stylobasium spathulatum* open heath over *Triodia wiseana* hummock grassland.

Veg Condition: Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	63	1.9
Acacia bivenosa	0.5	1.5
Acacia tumida var. *pilbarensis*	0.5	2.3
Aristida holathera var. *holathera*	0.5	0.4
Bulbostylis barbata	0.5	0.1
Cassytha capillaris	0.5	0.5
Chrysopogon fallax	0.5	1.0
Cleome viscosa	0.5	0.2
Corchorus lasiocarpus subsp. *parvus*	0.5	0.6
Corchorus sidoides	0.5	0.7
Corymbia hamersleyana	1	3.5
Cymbopogon ambiguus	0.5	1.2
Dampiera candicans	0.5	0.4
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.15
Eragrostis cumingii	0.5	0.1
Euphorbia biconvexa	0.5	0.15
Euphorbia boophthona	0.5	0.1
Evolvulus alsinoides var. *villosicalyx*	0.5	0.05
Goodenia forrestii	0.5	0.2
Goodenia microptera	0.5	0.35
Goodenia stobbsiana	0.5	0.5
Grevillea wickhamii	0.5	1.5

Name	Cover (%)	Height (m)
Haloragis gossei var. *gossei*	0.5	0.35
Heliotropium tanythrix	0.5	0.2
Hibiscus sturtii var. *campylochlamys*	0.5	0.3
Indigofera colutea	0.5	0.1
Isotropis atropurpurea	0.5	0.35
Jasminum didymum subsp. *lineare*	0.5	1.3
Keraudrenia velutina subsp. *elliptica*	0.5	0.6
Mollugo molluginea	0.5	0.1
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.38
Oldenlandia crouchiana	0.5	0.1
Paraneurachne muelleri	0.5	0.3
Paspalidium sp.	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.08
Polycarpaea corymbosa var. *corymbosa*	0.5	0.3
Pterocaulon sp.	0.5	0.02
Ptilotus astrolasius	0.5	0.6
Ptilotus axillaris	0.5	0.06
Ptilotus calostachyus	0.5	0.2
Ptilotus fusiformis	0.5	0.4
Ptilotus nobilis	0.5	0.2
Ptilotus obovatus var. *obovatus*	0.5	0.3
Rhynchosia minima	0.5	0.2
Scaevola spinescens	0.5	0.6
Senna artemisioides subsp. *helmsii*	0.5	1.6
Senna artemisioides subsp. *oligophylla*	0.5	0.4
Senna glutinosa subsp. *glutinosa*	0.5	1.0
Senna glutinosa subsp. x *luerssenii*	0.5	1.5
Senna notabilis	0.5	0.3
Sida fibulifera	0.5	0.3
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.3
Solanum cleistogamum	0.5	0.2
Solanum diversiflorum	0.5	0.3
Streptoglossa bubakii	0.5	0.03
Streptoglossa decurrens	0.5	1.0
Stylobasium spathulatum	1	1.9
Swainsona formosa	0.5	0.03
Trachymene oleracea subsp. *oleracea*	0.5	0.2
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.2
Triodia epactia	0.5	0.4
Triodia wiseana	55	1.3

* denotes weed species

Site: BA32

Location: Top NW end of study area map 1 **Type:** 50x50m Quadrat

Date: 2015-08-19 **Described by:** KMc

MGA Zone: 50 **Easting:** 421351 **Northing:** 7591622

Habitat: Drainage depression

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia ancistrocarpa, A. tumida* var. *pilbarensis* open shrubland over *Triodia wiseana* hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.1
Acacia ancistrocarpa	9	1.9
Acacia bivenosa	0.5	1.1
Acacia inaequilatera	0.5	2.6
Acacia tumida var. *pilbarensis*	1	2.5
Aristida holathera var. *holathera*	0.5	0.8
Bulbostylis barbata	0.5	0.1
Cassytha capillaris	0.5	0.5
Corchorus lasiocarpus subsp. *parvus*	0.5	0.8
Corchorus sidoides	0.5	0.8
Corymbia hamersleyana	2	5.0
Cucumis variabilis	0.5	0.8
Cymbopogon ambiguus	0.5	0.9
Dampiera candicans	0.5	0.3
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eragrostis cumingii	0.5	0.1
Eremophila longifolia	0.5	1.5
Eriachne mucronata	0.5	0.3
Euphorbia australis var. *subtomentosa*	0.5	0.1
Euphorbia boophthona	0.5	0.2
Goodenia microptera	0.5	0.2

Name	Cover (%)	Height (m)
Goodenia stobbsiana	0.5	0.5
Gossypium australe	0.5	0.7
Grevillea wickhamii	0.5	2.5
Hakea lorea subsp. *lorea*	0.5	1.2
Heliotropium ovalifolium	0.5	0.6
Hibiscus sturtii var. *campylochlamys*	0.5	1.0
Indigofera monophylla	0.5	0.3
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.3
Isotropis atropurpurea	0.5	0.3
Keraudrenia velutina subsp. *elliptica*	0.5	1.0
Mollugo molluginea	0.5	0.2
Oldenlandia crouchiana	0.5	0.25
Pterocaulon sp.	0.5	0.3
Pterocaulon sphaeranthoides	0.5	0.3
Ptilotus astrolasius	0.5	0.25
Ptilotus calostachyus	0.5	0.4
Ptilotus fusiformis	0.5	0.3
Ptilotus nobilis	0.5	0.45
Senna artemisioides subsp. *oligophylla*	0.5	1.1
Senna glutinosa subsp. *glutinosa*	0.5	1.4
Senna glutinosa subsp. *pruinosa*	0.5	1.7
Senna notabilis	0.5	0.3
Solanum cleistogamum	0.5	0.4
Solanum diversiflorum	0.5	0.3
Stylobasium spathulatum	0.5	1.4
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	0.5	0.2
Tephrosia uniovulata	0.5	1.2
Trachymene oleracea subsp. *oleracea*	0.5	0.5
Tribulus hirsutus	0.5	0.2
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.2
Triodia wiseana	50	1.1

* denotes weed species

Site: BA33
Location: Map 6. Centre of survey area **Type:** 50x50m Quadrat
Date: 2015-08-17 **Described by:** JA/DR
MGA Zone: 50 **Easting:** 434366 **Northing:** 7581037
Habitat: Floodplain
Soil: Reddish brown silty clay loam
Rock type: NA
Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia synchronicia, A. sclerosperma* subsp. *sclerosperma, *Vachellia farnesiana* tall open shrubland over *A. bivenosa* scattered low shrubs over **Cenchrus setiger*, **C. ciliaris* open tussock grassland and *Triodia epactia* very open hummock grassland.
Veg Condition: Good
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	2	0.4
**Cenchrus setiger*	25	0.4
**Vachellia farnesiana*	1	2.5
Acacia ampliceps x *sclerosperma* subsp. *sclerosperma*	0.5	1.8
Acacia bivenosa	1	0.5
Acacia pyrifolia var. *pyrifolia*	0.5	1.4
Acacia sclerosperma subsp. *sclerosperma*	1	2.2
Acacia synchronicia	2	2.3
Alysicarpus muelleri	0.5	0.2
Amaranthus mitchellii	0.5	0.1
Boerhavia coccinea	0.5	0.1
Boerhavia schomburgkiana	0.5	0.1
Corymbia hamersleyana	4	5.5
Cucumis variabilis	0.5	
Cullen lachnostachys	0.5	0.1
Cyperus vaginatus	0.5	0.4
Dactyloctenium radulans	0.5	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.05
Eragrostis setifolia	0.5	0.4
Eucalyptus sp.	0.5	6.5

Name	Cover (%)	Height (m)
Gossypium australe	0.5	1.5
Gossypium robinsonii	0.5	3.4
Hakea chordophylla	0.5	2.4
Hakea lorea subsp. *lorea*	0.5	2.4
Indigofera colutea	0.5	0.1
Indigofera linifolia	0.5	0.15
Indigofera linnaei	0.5	0.2
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Ptilotus auriculifolius	0.5	0.1
Rhynchosia minima	0.5	0.1
Salsola australis	0.5	0.1
Sida arsiniata	0.5	0.4
Sida fibulifera	0.5	0.1
Solanum diversiflorum	0.5	0.1
Sporobolus australasicus	0.5	0.05
Tephrosia sp.	0.5	0.05
Tephrosia supina	0.5	0.4
Trianthema triquetrum	0.5	0.05
Triodia epactia	6	0.5

* denotes weed species

Site: BA34
Location: Map 6 **Type:** 50x50m Quadrat
Date: 2015-08-17 **Described by:** JA/DR
MGA Zone: 50 **Easting:** 434449 **Northing:** 7580808
Habitat: Plain
Soil: Red brown silty clay loam
Rock type: NA
Vegetation: *Acacia synchronicia, A. sclerosperma* subsp. *sclerosperma* scattered tall shrubs to tall open shrubland over **Chloris barbata*,* *Cenchrus setiger*, **C. ciliaris* open tussock grassland with *Triodia epactia* very open hummock grassland.
Veg Condition: Poor
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	1	0.4
**Cenchrus setiger*	15	5.0
**Chloris barbata*	5	1.0
**Vachellia farnesiana*	0.5	2.1
Acacia bivenosa	0.5	2.0
Acacia inaequilatera	0.5	3.1
Acacia sclerosperma subsp. *sclerosperma*	1	3.0
Acacia synchronicia	2	2.2
Alysicarpus muelleri	0.5	0.3
Amaranthus mitchellii	0.5	0.1
Boerhavia coccinea	0.5	0.05
Cyperus vaginatus	0.5	0.5
Dactyloctenium radulans	0.5	0.06
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eragrostis dielsii	0.5	0.3
Eucalyptus xerothermica	0.5	5.0
Gossypium australe	0.5	0.5
Gossypium robinsonii	0.5	2.5
Hibiscus sturtii var. *campylochlamys*	0.5	0.35
Lepidium pholidogynum	0.5	0.1
Ptilotus astrolasius	0.5	0.2

Name	Cover (%)	Height (m)
Ptilotus nobilis	0.5	0.3
Rhynchosia minima	0.5	0.1
Salsola australis	0.5	0.2
Senna notabilis	0.5	0.2
Sesbania cannabina	0.5	0.3
Sida arsiniata	0.5	0.035
Sporobolus australasicus	0.5	0.05
Trianthema triquetrum	0.5	0.06
Tribulus sp.	0.5	0.04
Triodia epactia	6	0.4
Triodia wiseana	0.5	0.4

* denotes weed species

Site: BA36
Location: Map 6 **Type:** 50x50m Quadrat
Date: 2015-08-17 **Described by:** JA/DR
MGA Zone: 50 **Easting:** 434980 **Northing:** 7580573
Habitat: Drainage depression
Soil: Brown clay loam
Rock type: NA
Vegetation: *Eucalyptus camaldulensis* subsp. *refulgens* woodland over *Acacia colei* var. *ileocarpa, Gossypium robinsonii* tall shrubland over **Cenchrus setiger*, *Eulalia aurea*, **C. ciliaris* tussock grassland and *Triodia epactia* very open hummock grassland and *Cyperus vaginatus* scattered sedges.
Veg Condition: Good
Fire Age: No fire evident
Notes: *E. camaldulensis* subsp. *refulgens* looking stressed, epicormic growth, insect attack and bark shedding.



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	1	0.6
**Cenchrus setiger*	25	0.6
**Cynodon dactylon*	0.5	0.05
**Malvastrum americanum*	0.5	0.3
**Passiflora foetida*	0.5	1.0
**Vachellia farnesiana*	0.5	0.5
Abutilon otocarpum	0.5	0.3
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.8
Acacia ancistrocarpa	0.5	1.4
Acacia bivenosa	0.5	1.2
Acacia colei var. *ileocarpa*	6	3.0
Acacia elachantha	0.5	0.6
Acacia pyrifolia var. *pyrifolia*	0.5	0.5
Acacia sclerosperma subsp. *sclerosperma*	0.5	0.6
Acacia synchronicia	0.5	0.25
Acacia tumida var. *pilbarensis*	0.5	1.5
Amaranthus mitchellii	0.5	0.2
Corchorus lasiocarpus subsp. *parvus*	0.5	0.35

Name	Cover (%)	Height (m)
Corchorus sidoides	0.5	0.4
Crotalaria medicaginea var. *neglecta*	0.5	0.2
Cucumis variabilis	0.5	0.25
Cymbopogon ambiguus	0.5	0.4
Cyperus vaginatus	1	0.3
Duperreya commixta	0.5	
Eragrostis tenellula	0.5	0.15
Eriachne mucronata	0.5	0.1
Eucalyptus camaldulensis subsp. *refulgens*	18	11.0
Eulalia aurea	2	0.6
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Gossypium australe	0.5	1.5
Gossypium robinsonii	5	3.0
Hibiscus sturtii var. *campylochlamys*	0.5	0.5
Hybanthus aurantiacus	0.5	0.2
Indigofera colutea	0.5	0.1
Indigofera linifolia	0.5	0.1
Indigofera linnaei	0.5	0.25
Ipomoea sp.	0.5	0.05
Keraudrenia velutina subsp. *elliptica*	0.5	0.5
Phyllanthus maderaspatensis	0.5	0.2
Rhynchosia minima	0.5	0.08
Sesbania cannabina	0.5	0.1
Sida arsiniata	0.5	0.4
Sida echinocarpa	0.5	1.1
Sida fibulifera	0.5	0.1
Sida sp.	0.5	0.2
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.6
Themeda triandra	0.5	0.6
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.08
Triodia epactia	5	0.4
Triodia wiseana	0.5	0.4
Triumfetta johnstonii	0.5	0.25
Vigna lanceolata	0.5	0.02
Waltheria indica	0.5	0.25
Waltheria virgata	0.5	0.4

* denotes weed species

Site: BA39

Location: Map 12 **Type:** 50x50m Quadrat

Date: 2015-08-16 **Described by:** KMc

MGA Zone: 50 **Easting:** 447236.3 **Northing:** 7572448

Habitat: Breakaway

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Triodia wiseana* and *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 open hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.8
Acacia inaequilatera	0.5	1.0
Acacia maitlandii	0.5	0.5
Acacia monticola	0.5	0.4
Amaranthus undulatus	0.5	0.1
Bonamia media	0.5	0.1
Bulbostylis barbata	0.5	0.05
Cleome viscosa	0.5	0.2
Corchorus sidoides	0.5	0.4
Cucumis variabilis	0.5	0.01
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.25
Eriachne mucronata	0.5	0.3
Eriachne pulchella subsp. *pulchella*	0.5	0.02
Eucalyptus leucophloia subsp. *leucophloia*	1	6.0
Ficus brachypoda	0.5	1.2
Gomphrena cunninghamii	0.5	0.01
Gossypium robinsonii	0.5	1.4
Hakea chordophylla	0.5	4.0
Indigofera monophylla	0.5	0.15
Jasminum didymum subsp. *lineare*	0.5	0.4
Lobelia heterophylla	0.5	0.25
Oldenlandia crouchiana	0.5	0.1

Name	Cover (%)	Height (m)
Paspalidium clementii	0.5	0.08
Polycarpaea holtzei	0.5	0.01
Polygala sp.	0.5	0.02
Ptilotus calostachyus	0.5	1.1
Ptilotus nobilis	0.5	0.02
Rhodanthe margarethae	0.5	0.8
Rhynchosia minima	0.5	0.1
Senna glutinosa subsp. *glutinosa*	0.5	0.6
Themeda triandra	0.5	0.25
Trachymene oleracea subsp. *oleracea*	0.5	0.02
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	5	0.4
Triodia wiseana	24	0.5
Vigna lanceolata	0.5	0.2

* denotes weed species

Site: BA40
Location: Mid section **Type:** 100x25m Quadrat
Date: 2015-08-16 **Described by:** KMc
MGA Zone: 50 **Easting:** 446970 **Northing:** 7572344
Habitat: Minor creek
Soil: Red brown sandy clay loam
Rock type: Ironstone
Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia monticola, Gossypium robinsonii* tall open shrubland over *Triodia epactia, T. wiseana* open hummock grassland and *Eriachne tenuiculmis, Themeda triandra* very open tussock grassland.
Veg Condition: Excellent
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	2.2
Acacia inaequilatera	0.5	1.6
Acacia maitlandii	0.5	1.2
Acacia monticola	1	2.1
Alternanthera nana	0.5	0.4
Amaranthus mitchellii	0.5	0.1
Boerhavia coccinea	0.5	0.05
Bonamia erecta	0.5	0.1
Bulbostylis barbata	0.5	0.05
Cleome viscosa	0.5	0.1
Corchorus lasiocarpus subsp. *parvus*	0.5	0.05
Corymbia hamersleyana	5	7.0
Crotalaria medicaginea var. *neglecta*	0.5	0.1
Cucumis variabilis	0.5	
Cymbopogon ambiguus	0.5	1.6
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.1
Digitaria ctenantha	0.5	0.3
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eragrostis cumingii	0.5	0.06
Eriachne mucronata	0.5	0.3
Eriachne tenuiculmis	1	0.1

Name	Cover (%)	Height (m)
Euphorbia australis var. *hispidula*	0.5	0.05
Euphorbia biconvexa	0.5	0.1
Euphorbia boophthona	0.5	0.15
Euphorbia sp.	0.5	0.05
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Gomphrena cunninghamii	0.5	0.1
Gossypium australe	0.5	0.5
Gossypium robinsonii	1	2.5
Grevillea wickhamii	0.5	2.5
Hibiscus sturtii var. *campylochlamys*	0.5	0.25
Hybanthus aurantiacus	0.5	0.2
Indigofera colutea	0.5	0.05
Indigofera monophylla	0.5	
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.2
Jasminum didymum subsp. *lineare*	0.5	1.0
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Oldenlandia crouchiana	0.5	0.15
Paraneurachne muelleri	0.5	0.5
Paspalidium basicladum	0.5	0.15
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.5
Phyllanthus maderaspatensis	0.5	0.1
Polycarpaea holtzei	0.5	0.02
Polycarpaea longiflora	0.5	0.1
Pterocaulon sp.	0.5	0.05
Ptilotus auriculifolius	0.5	0.2
Ptilotus calostachyus	0.5	0.3
Ptilotus nobilis	0.5	0.2
Rhynchosia minima	0.5	0.1
Senna glutinosa subsp. *glutinosa*	0.5	0.7
Senna notabilis	0.5	0.1
Solanum lasiophyllum	0.5	0.4
Swainsona formosa	0.5	0.05
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.25
Tephrosia virens	0.5	0.6
Themeda triandra	2	0.4
Trachymene oleracea subsp. *oleracea*	0.5	0.05
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.8
Triodia epactia	10	0.4
Triodia wiseana	5	0.4
Waltheria virgata	0.5	0.5

* denotes weed species

Site: BA41

Location: Map 12 **Type:** 50x50m Quadrat

Date: 2015-08-16 **Described by:** KMc

MGA Zone: 50 **Easting:** 447151.9 **Northing:** 7572375

Habitat: Stream bed

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia, Corymbia hamersleyana* low open woodland over *Acacia monticola, Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618) tall open shrubland over *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3 scattered shrubs over *Triodia epactia* open hummock grassland with *Themeda triandra* scattered tussock grasses.

Veg Condition: Excellent

Fire Age: No fire evident



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	1	2.2
Acacia colei var. *ileocarpa*	0.5	2.0
Acacia elachantha	0.5	2.0
Acacia maitlandii	0.5	1.8
Acacia monticola	3	3.0
Acacia pyrifolia var. *pyrifolia*	0.5	2.1
Acacia trachycarpa	0.5	2.1
Amaranthus mitchellii	0.5	0.15
Amaranthus undulatus	0.5	0.3
Boerhavia coccinea	0.5	0.1
Bonamia media	0.5	0.1
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.4
Clerodendrum floribundum var. *angustifolium*	0.5	1.6
Corchorus sidoides	0.5	0.7
Corymbia hamersleyana	2	6.0
Cucumis variabilis	0.5	0.2
Cymbopogon ambiguus	0.5	1.6
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.7

Name	Cover (%)	Height (m)
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.2
Eriachne tenuiculmis	0.5	0.4
Eucalyptus leucophloia subsp. *leucophloia*	1	8.0
Euphorbia biconvexa	0.5	0.3
Euphorbia schultzii	0.5	0.2
Gomphrena cunninghamii	0.5	0.05
Gossypium australe	0.5	1.2
Gossypium robinsonii	0.5	3.0
Hibiscus coatesii	0.5	0.4
Hibiscus sturtii var. *campylochlamys*	0.5	0.8
Hybanthus aurantiacus	0.5	0.4
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	1	2.0
Jasminum didymum subsp. *lineare*	0.5	1.1
Lobelia heterophylla	0.5	0.2
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Oldenlandia crouchiana	0.5	0.1
Paspalidium basicladum	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.4
Polycarpaea longiflora	0.5	0.1
Pterocaulon sp.	0.5	0.3
Pterocaulon sphaeranthoides	0.5	0.3
Ptilotus auriculifolius	0.5	0.25
Ptilotus fusiformis	0.5	0.3
Rhynchosia minima	0.5	0.03
Senna glutinosa subsp. *glutinosa*	0.5	1.1
Senna venusta	0.5	1.8
Solanum lasiophyllum	0.5	1.2
Solanum phlomoides	0.5	0.2
Stylobasium spathulatum	0.5	0.5
Swainsona formosa	0.5	0.2
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.7
Tephrosia virens	0.5	2.2
Themeda triandra	1	0.5
Tinospora smilacina	0.5	0.4
Trachymene oleracea subsp. *oleracea*	0.5	0.05
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.1
Triodia epactia	12	1.1
Triodia wiseana	0.5	1.0
Triumfetta maconochieana	0.5	0.4

* denotes weed species

Site: BA42a

Location: Top NW end of study area **Type:** 50x50m Quadrat

Date: 2015-08-19 **Described by:** LV

MGA Zone: 50 **Easting:** 421881 **Northing:** 7590978

Habitat: Hillcrest

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia ptychophylla* scattered low shrubs over *Triodia wiseana* and *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 open hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	0.9
Acacia ptychophylla	1	0.6
Bonamia media	0.5	0.1
Goodenia stobbsiana	0.5	0.2
Grevillea wickhamii	0.5	2.6
Ptilotus calostachyus	0.5	0.4
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	1	0.8
Triodia wiseana	20	0.7

* denotes weed species

Site: BA44

Location: Map 15 North sector **Type:** 50x50m Relevé

Date: 2015-08-15 **Described by:** KMc

MGA Zone: 50 **Easting:** 451656 **Northing:** 7568469

Habitat: Hillslope

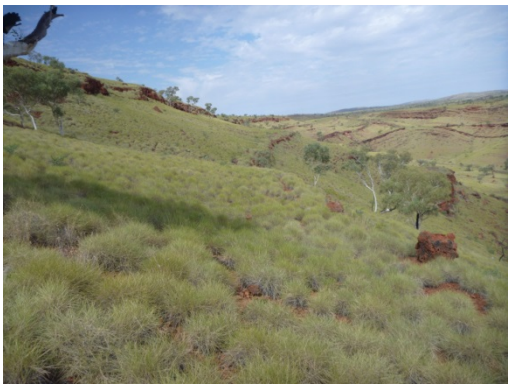
Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia bivenosa* scattered low shrubs over *Triodia wiseana* hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	1	0.8
Bulbostylis barbata	0.5	0.1
Cheilanthes sp.	0.5	0.1
Cleome viscosa	0.5	0.1
Cymbopogon ambiguus	0.5	1.0
Eriachne mucronata	0.5	0.2
Eucalyptus leucophloia subsp. *leucophloia*	5	4.5
Hakea chordophylla	0.5	1.0
Hibiscus coatesii	0.5	0.6
Jasminum didymum subsp. *lineare*	0.5	0.8
Paspalidium clementii	0.5	0.1
Ptilotus astrolasius	0.5	0.3
Ptilotus calostachyus	0.5	0.5
Senna glutinosa subsp. *glutinosa*	0.5	0.9
Senna glutinosa subsp. *pruinosa*	0.5	1.2
Themeda triandra	0.5	0.4
Trachymene oleracea subsp. *oleracea*	0.5	0.1
Triodia wiseana	60	0.4

* denotes weed species

Site: BA45

Location: SE end of study area **Type:** 10x250m Quadrat

Date: 2015-08-15 **Described by:** DR

MGA Zone: 50 **Easting:** 451672 **Northing:** 7567403

Habitat: Gully

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia tumida* var. *pilbarensis, A. pruinocarpa* tall shrubland over *Stylobasium spathulatum* scattered shrubs over *Triodia wiseana, T.epactia, T*. sp. Robe River (M.E. Trudgen et al. MET 12367) P3 very open hummock grassland with *Themeda triandra, Eriachne mucronata, Cymbopogon ambiguus* very open tussock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.2
Acacia maitlandii	0.5	1.2
Acacia monticola	0.5	2.5
Acacia pruinocarpa	3	4.0
Acacia tumida var. *pilbarensis*	9	4.0
Cassytha capillaris	0.5	0.4
Cleome viscosa	0.5	0.3
Corchorus crozophorifolius	0.5	0.7
Corymbia hamersleyana	0.5	5.0
Cucumis variabilis	0.5	0.2
Cymbopogon ambiguus	1	1.2
Cyperus hesperius	0.5	0.1
Eriachne mucronata	2	0.4
Eucalyptus leucophloia subsp. *leucophloia*	2	5.0
Euphorbia biconvexa	0.5	0.1
Euphorbia boophthona	0.5	0.2
Euphorbia schultzii	0.5	0.1
Gomphrena cunninghamii	0.5	0.1
Gossypium robinsonii	0.5	3.0

Name	Cover (%)	Height (m)
Grevillea wickhamii	0.5	3.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.0
Isotropis atropurpurea	0.5	0.5
Jasminum didymum subsp. *lineare*	0.5	1.5
Lobelia heterophylla	0.5	0.3
Paraneurachne muelleri	1	0.4
Polycarpaea corymbosa var. *corymbosa*	0.5	0.2
Ptilotus obovatus var. *obovatus*	0.5	0.6
Senna glutinosa subsp. *glutinosa*	0.5	1.0
Senna glutinosa subsp. *pruinosa*	0.5	1.1
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.4
Stylobasium spathulatum	1	1.5
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.3
Themeda triandra	3	0.4
Trachymene oleracea subsp. *oleracea*	0.5	0.5
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.3
Triodia epactia	2	0.5
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	1	0.5
Triodia wiseana	2	0.5

* denotes weed species

Site: BA46

Location: S end of study area **Type:** 50x50m Quadrat

Date: 2015-08-16 **Described by:** DR

MGA Zone: 50 **Easting:** 448421.5 **Northing:** 7572618

Habitat: Stream bed

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Acacia pyrifolia* var. *pyrifolia* tall open shrubland over *Gossypium australe*, *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia* open hummock grassland with *Amaranthus undulatus* scattered herbs.

Veg Condition: Very Good

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Aerva javanica*	0.5	1.0
**Cenchrus ciliaris*	0.5	0.8
**Cenchrus setiger*	0.5	1.2
**Malvastrum americanum*	0.5	0.3
**Setaria verticillata*	0.5	1.1
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	2.0
Acacia bivenosa	0.5	1.0
Acacia colei var. *ileocarpa*	0.5	3.1
Acacia pyrifolia var. *pyrifolia*	9	2.5
Acacia tumida var. *pilbarensis*	0.5	0.5
Alternanthera nana	0.5	0.15
Amaranthus mitchellii	0.5	0.4
Amaranthus undulatus	1	0.9
Boerhavia coccinea	0.5	0.1
Cleome viscosa	0.5	0.07
Clerodendrum floribundum var. *floribundum*	0.5	1.7
Corchorus crozophorifolius	0.5	1.0
Crotalaria medicaginea var. *neglecta*	0.5	0.1
Cucumis melo	0.5	0.1
Cucumis variabilis	0.5	0.2
Cymbopogon ambiguus	0.5	0.8

Name	Cover (%)	Height (m)
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Enneapogon lindleyanus	0.5	0.25
Eriachne helmsii	0.5	0.2
Euphorbia boophthona	0.5	0.3
Euphorbia schultzii	0.5	0.01
Fimbristylis dichotoma	0.5	0.1
Gomphrena cunninghamii	0.5	0.02
Goodenia forrestii	0.5	0.4
Gossypium australe	1	0.8
Gossypium robinsonii	0.5	1.8
Grevillea pyramidalis subsp. *leucadendron*	0.5	1.8
Hakea chordophylla	0.5	1.9
Hakea lorea subsp. *lorea*	0.5	3.0
Hibiscus sturtii var. *campylochlamys*	0.5	1.0
Hybanthus aurantiacus	0.5	0.4
Indigofera colutea	0.5	0.2
Indigofera linifolia	0.5	0.1
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.2
Jasminum didymum subsp. *lineare*	0.5	1.1
Lepidium pholidogynum	0.5	0.2
Mollugo molluginea	0.5	0.1
Nicotiana occidentalis subsp. *occidentalis*	0.5	0.3
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Paspalidium basicladum	0.5	0.1
Paspalidium tabulatum	0.5	0.3
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.4
Polycarpaea corymbosa var. *corymbosa*	0.5	0.2
Polycarpaea longiflora	0.5	0.2
Pterocaulon sphaeranthoides	0.5	0.2
Ptilotus auriculifolius	0.5	0.3
Ptilotus fusiformis	0.5	0.2
Ptilotus nobilis	0.5	0.3
Ptilotus sp.	0.5	0.1
Rhagodia eremaea	0.5	1.4
Rhynchosia minima	0.5	0.1
Salsola australis	0.5	0.1
Senna artemisioides subsp. *helmsii*	0.5	0.8
Senna artemisioides subsp. *oligophylla*	0.5	0.8
Senna glutinosa subsp. *glutinosa*	0.5	0.5
Senna venusta	0.5	0.1
Sida echinocarpa	0.5	0.6
Sida rohlenae subp. rohlenae	0.5	0.3

Name	Cover (%)	Height (m)
Swainsona formosa	0.5	0.2
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	1	0.6
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.5	0.7
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.5
Triodia epactia	15	1.0
Triodia wiseana	0.5	1.0

* denotes weed species

Site: BA52

Location: Map 14. SE end of survey area **Type:** 100x25m Quadrat

Date: 2015-08-13 **Described by:** JA/LV

MGA Zone: 50 **Easting:** 451163.8 **Northing:** 7572044

Habitat: Drainage channel within broad creek

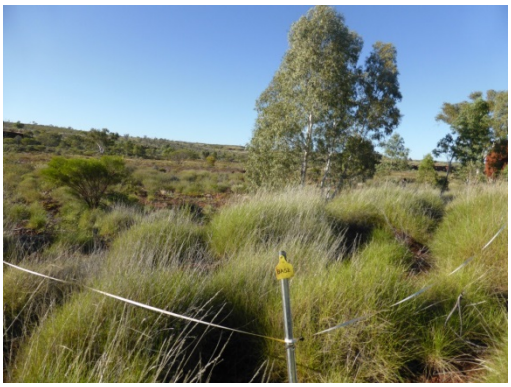
Soil: Brown loamy sand

Rock type: Ironstone

Vegetation: *Eucalyptus camaldulensis* subsp. *refulgens, E. victrix* low open woodland over *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia* very open hummock grassland and **Cenchrus setiger*, **C. ciliaris* very open tussock grassland.

Veg Condition: Very Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.1
**Cenchrus ciliaris*	0.5	0.4
**Cenchrus setiger*	2	0.3
**Setaria verticillata*	0.5	0.4
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.4
Acacia colei var. *ileocarpa*	0.5	2.2
Acacia pyrifolia var. *pyrifolia*	0.5	1.0
Acacia trachycarpa	0.5	3.5
Achyranthes aspera	0.5	0.3
Amaranthus cuspidifolius	0.5	0.4
Boerhavia burbidgeana	0.5	0.2
Boerhavia coccinea	0.5	0.2
Brachyachne convergens	0.5	0.15
Bulbostylis barbata	0.5	0.1
Capparis spinosa var. *nummularia*	0.5	0.3
Cleome viscosa	0.5	0.3
Corchorus crozophorifolius	0.5	0.9
Corchorus lasiocarpus subsp. *parvus*	0.5	0.8
Corchorus tridens	0.5	0.05
Cucumis melo	0.5	

Name	Cover (%)	Height (m)
Cucumis variabilis	0.5	
Cymbopogon ambiguus	0.5	0.8
Cyperus vaginatus	0.5	0.9
Digitaria ctenantha	0.5	0.4
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne mucronata	0.5	0.2
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Eucalyptus camaldulensis subsp. *refulgens*	4	12.0
Eucalyptus victrix	3	11.0
Euphorbia boophthona	0.5	0.3
Euphorbia schultzii	0.5	0.1
Flueggea virosa subsp. *melanthesoides*	0.5	1.1
Gomphrena cunninghamii	0.5	0.1
Gossypium australe	0.5	0.6
Gossypium robinsonii	0.5	2.5
Grevillea wickhamii	0.5	4.2
Hybanthus aurantiacus	0.5	0.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.2
Ipomoea muelleri	0.5	
Jasminum didymum subsp. *lineare*	0.5	1.1
Mnesithea formosa	0.5	0.2
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.2
Operculina aequisepala	0.5	0.3
Paraneurachne muelleri	0.5	0.3
Paspalidium clementii	0.5	0.1
Paspalidium tabulatum	0.5	0.15
Phyllanthus maderaspatensis	0.5	0.2
Phyllanthus reticulatus	0.5	0.5
Plumbago zeylanica	0.5	0.5
Polycarpaea longiflora	0.5	0.1
Portulaca oleracea	0.5	0.1
Pterocaulon sp.	0.5	0.1
Pterocaulon sphaeranthoides	0.5	0.1
Ptilotus incanus	0.5	0.15
Ptilotus nobilis	0.5	0.4
Ptilotus obovatus var. *obovatus*	0.5	0.15
Rhynchosia bungarensis P4	0.5	0.3
Rhynchosia minima	0.5	0.3
Senna artemisioides subsp. *oligophylla*	0.5	1.0
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	0.15
Solanum cleistogamum	0.5	0.15
Solanum diversiflorum	0.5	0.1

Name	Cover (%)	Height (m)
Swainsona formosa	0.5	0.15
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	4	0.5
Themeda triandra	0.5	0.7
Tinospora smilacina	0.5	
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.1
Triodia epactia	6	0.5
Triumfetta clementii	0.5	0.1
Urochloa piligera	0.5	0.2
Wahlenbergia tumidifructa	0.5	0.3
Zaleya galericulata	0.5	0.1

* denotes weed species

Site: BA53

Location: S end of study area **Type:** 50x50m Quadrat

Date: 2015-08-12 **Described by:** JA/LV

MGA Zone: 50 **Easting:** 448689 **Northing:** 7568977

Habitat: Hillslope

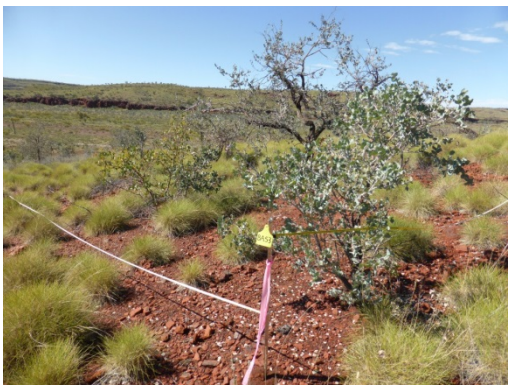
Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia inaequilatera* tall open shrubland over *Triodia wiseana* hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	3	2.8
Bonamia media	0.5	0.05
Bulbostylis barbata	0.5	0.1
Corchorus lasiocarpus subsp. *parvus*	0.5	0.8
Corchorus tectus	0.5	0.8
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Goodenia stobbsiana	0.5	0.05
Gossypium australe	0.5	0.3
Grevillea pyramidalis subsp. *leucadendron*	0.5	1.6
Hakea lorea subsp. *lorea*	0.5	2.0
Hibiscus sturtii var. *campylochlamys*	0.5	0.4
Indigofera monophylla	0.5	0.3
Mollugo molluginea	0.5	0.2
Polycarpaea holtzei	0.5	0.05
Polycarpaea longiflora	0.5	0.2
Polygala glaucifolia	0.5	0.05
Ptilotus calostachyus	0.5	1.0
Senna glutinosa subsp. *glutinosa*	0.5	1.7
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.5
Solanum phlomoides	0.5	0.5
Tephrosia supina	0.5	0.05

Name	Cover (%)	Height (m)
Triodia wiseana	35	1.0

* denotes weed species

Site: BA54

Location: Map 14 **Type:** 50x50m Quadrat

Date: 2015-08-13 **Described by:** LV

MGA Zone: 50 **Easting:** 451067.1 **Northing:** 7570695

Habitat: Major creek

Soil: Red brown loamy sand

Rock type: Ironstone

Vegetation: *Acacia trachycarpa* tall open shrubland over *Triodia epactia* open hummock grassland and **Cenchrus ciliaris*, **C. setiger* open tussock grassland.

Veg Condition: Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.1
**Cenchrus ciliaris*	6	0.8
**Cenchrus setiger*	6	0.8
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.2
Acacia colei var. *ileocarpa*	0.5	1.4
Acacia pyrifolia var. *pyrifolia*	0.5	0.4
Acacia trachycarpa	2	3.8
Acacia trachycarpa x *tumida* var. *pilbarensis*	0.5	3.8
Acacia tumida var. *pilbarensis*	0.5	1.5
Achyranthes aspera	0.5	0.3
Alternanthera nana	0.5	0.2
Amaranthus cuspidifolius	0.5	0.2
Boerhavia coccinea	0.5	0.2
Bonamia pilbarensis	0.5	0.1
Bulbostylis barbata	0.5	0.1
Chrysopogon fallax	0.5	0.8
Cleome viscosa	0.5	0.3
Cucumis melo	0.5	0.3
Cucumis variabilis	0.5	0.1
Cymbopogon ambiguus	0.5	1.0
Digitaria ctenantha	0.5	0.3
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1

Name	Cover (%)	Height (m)
Euphorbia australis var. *hispidula*	0.5	0.02
Euphorbia boophthona	0.5	0.1
Euphorbia sp.	0.5	0.05
Evolvulus alsinoides var. *villosicalyx*	0.5	0.2
Gomphrena cunninghamii	0.5	0.1
Gossypium australe	0.5	0.6
Gossypium robinsonii	0.5	0.8
Grevillea pyramidalis subsp. *leucadendron*	0.5	1.8
Hakea chordophylla	0.5	3.5
Hybanthus aurantiacus	0.5	0.2
Indigofera colutea	0.5	0.1
Indigofera linnaei	0.5	0.04
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.6
Ipomoea muelleri	0.5	0.1
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Paraneurachne muelleri	0.5	0.35
Paspalidium clementii	0.5	0.1
Paspalidium rarum	0.5	0.1
Perotis rara	0.5	0.3
Phyllanthus maderaspatensis	0.5	0.2
Portulaca oleracea	0.5	0.1
Pterocaulon sp.	0.5	0.05
Ptilotus auriculifolius	0.5	0.35
Ptilotus fusiformis	0.5	0.3
Ptilotus nobilis	0.5	0.1
Rhynchosia minima	0.5	0.1
Senna artemisioides subsp. *oligophylla*	0.5	1.0
Senna glutinosa subsp. *glutinosa*	0.5	1.9
Senna notabilis	0.5	0.05
Sida rohlenae subp. rohlenae	0.5	0.6
Sida sp.	0.5	0.1
Solanum diversiflorum	0.5	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.6
Themeda triandra	0.5	0.9
Triodia epactia	12	0.8
Triodia wiseana	0.5	0.6
Urochloa piligera	0.5	0.3
Wahlenbergia tumidifructa	0.5	0.25

* denotes weed species

Site: BA57

Location: Map 3. South end of survey area **Type:** 100x25m Quadrat

Date: 2015-08-18 **Described by:** LV/KMc

MGA Zone: 50 **Easting:** 426293.7 **Northing:** 7587064

Habitat: Minor creek

Soil: Brown sandy clay loam

Rock type: NA

Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia tumida* subsp. *pilbarensis* (*A. ancistrocarpa*) tall shrubland over *Trichodesma zeylanicum* var. *zeylanicum*, *Trachymene oleracea* subsp. *oleracea* very open herbland over *Triodia wiseana* open hummock grassland.

Veg Condition: Very Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.4
**Cenchrus setiger*	0.5	0.4
**Malvastrum americanum*	0.5	0.3
**Vachellia farnesiana*	0.5	0.5
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.25
Acacia ancistrocarpa	2	2.1
Acacia pyrifolia var. *pyrifolia*	0.5	2.5
Acacia tumida var. *pilbarensis*	20	4.2
Amaranthus mitchellii	0.5	0.05
Aristida holathera var. *holathera*	0.5	0.4
Boerhavia coccinea	0.5	0.1
Bonamia pannosa	0.5	0.05
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.3
Corchorus lasiocarpus subsp. *parvus*	0.5	0.2
Corchorus tridens	0.5	0.1
Corymbia hamersleyana	7	6.0
Crotalaria medicaginea var. *neglecta*	0.5	0.25
Cucumis variabilis	0.5	
Cullen martinii	0.5	0.1

Name	Cover (%)	Height (m)
Cymbopogon ambiguus	0.5	0.7
Dampiera candicans	0.5	0.15
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eragrostis cumingii	0.5	0.1
Eremophila longifolia	0.5	1.8
Eulalia aurea	0.5	0.5
Euphorbia australis	0.5	0.05
Euphorbia biconvexa	0.5	0.2
Euphorbia boophthona	0.5	0.2
Euphorbia sp.	0.5	0.2
Evolvulus alsinoides var. *villosicalyx*	0.5	0.2
Goodenia microptera	0.5	0.1
Gossypium australe	0.5	0.3
Gossypium robinsonii	0.5	0.5
Grevillea pyramidalis subsp. *leucadendron*	0.5	2.5
Heliotropium heteranthum	0.5	0.02
Heliotropium ovalifolium	0.5	0.1
Hibiscus leptocladus	0.5	0.4
Hibiscus sp.	0.5	0.25
Hibiscus sturtii var. *campylochlamys*	0.5	0.25
Hybanthus aurantiacus	0.5	0.2
Indigofera monophylla	0.5	0.3
Isotropis atropurpurea	0.5	0.3
Jasminum didymum subsp. *lineare*	0.5	
Melhania oblongifolia	0.5	0.25
Mollugo molluginea	0.5	0.1
Nicotiana occidentalis subsp. *occidentalis*	0.5	0.5
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.2
Oldenlandia crouchiana	0.5	0.15
Paspalidium basicladum	0.5	0.2
Paspalidium tabulatum	0.5	0.2
Phyllanthus erwinii	0.5	0.1
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Pterocaulon sp.	0.5	0.1
Pterocaulon sphaeranthoides	0.5	0.1
Ptilotus astrolasius	0.5	0.2
Ptilotus auriculifolius	0.5	0.6
Ptilotus axillaris	0.5	
Ptilotus calostachyus	0.5	0.35
Ptilotus fusiformis	0.5	0.6
Ptilotus nobilis	0.5	0.6
Ptilotus sp.	0.5	0.05

Name	Cover (%)	Height (m)
Rhynchosia minima	0.5	0.2
Senna glutinosa subsp. *glutinosa*	0.5	1.4
Senna notabilis	0.5	0.1
Sida arsiniata	0.5	0.4
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.1
Solanum cleistogamum	0.5	0.2
Solanum diversiflorum	0.5	0.1
Sporobolus australasicus	0.5	0.1
Stylobasium spathulatum	0.5	3.0
Swainsona formosa	0.5	0.2
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.8
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	0.5	0.1
Trachymene oleracea subsp. *oleracea*	1	1.2
Tribulus hirsutus	0.5	0.1
Tribulus sp.	0.5	0.1
Trichodesma zeylanicum var. *zeylanicum*	2	1.9
Triodia epactia	0.5	0.4
Triodia wiseana	15	0.9
Waltheria indica	0.5	0.5

* denotes weed species

Site: BA58a

Location: Top NW end of study area **Type:** 50x50m Quadrat

Date: 2015-08-20 **Described by:** DR

MGA Zone: 50 **Easting:** 429873.5 **Northing:** 7584624

Habitat: Plain

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia inaequilatera* tall scattered shrubs over *Triodia wiseana, T. epactia* open hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus setiger*	0.5	0.2
Acacia ancistrocarpa	0.5	1.2
Acacia bivenosa	0.5	1.4
Acacia inaequilatera	1	3.0
Acacia pyrifolia var. *pyrifolia*	0.5	2.2
Amaranthus sp.	0.5	0.1
Chrysopogon fallax	0.5	1.0
Cleome viscosa	0.5	0.3
Clerodendrum floribundum var. *angustifolium*	0.5	0.7
Corchorus sidoides	0.5	0.4
Corymbia hamersleyana	3	5.5
Cucumis variabilis	0.5	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eragrostis setifolia	0.5	0.4
Euphorbia boophthona	0.5	0.8
Goodenia forrestii	0.5	0.3
Gossypium australe	0.5	0.8
Jasminum didymum subsp. *lineare*	0.5	1.5
Paraneurachne muelleri	0.5	0.2
Phyllanthus maderaspatensis	0.5	0.6
Portulaca oleracea	0.5	0.05
Ptilotus astrolasius	0.5	0.3

Name	Cover (%)	Height (m)
Ptilotus auriculifolius	0.5	0.3
Ptilotus axillaris	0.5	0.1
Ptilotus nobilis	0.5	0.1
Rhynchosia minima	0.5	0.1
Senna artemisioides subsp. *oligophylla*	0.5	0.9
Stylobasium spathulatum	0.5	1.2
Trachymene oleracea subsp. *oleracea*	0.5	0.1
Tribulus hirsutus	0.5	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.4
Triodia epactia	3	0.6
Triodia wiseana	22	0.5

* denotes weed species

Site: BA59

Location: Map 2. North end of survey area **Type:** 50x50m Quadrat

Date: 2015-08-18 **Described by:** LV

MGA Zone: 50 **Easting:** 424229 **Northing:** 7588216

Habitat: Plain

Soil: Red brown clay loam

Rock type: Ironstone

Vegetation: *Acacia ancistrocarpa, A. bivenosa* open shrubland over *Triodia wiseana* open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	1	1.8
Acacia bivenosa	1	1.1
Acacia inaequilatera	0.5	2.4
Acacia pyrifolia var. *pyrifolia*	0.5	1.8
Cleome viscosa	0.5	0.2
Corchorus lasiocarpus subsp. *parvus*	0.5	0.1
Corchorus sp.	0.5	0.05
Corymbia hamersleyana	0.5	4.5
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.25
Euphorbia biconvexa	0.5	0.15
Euphorbia boophthona	0.5	0.1
Gossypium australe	0.5	0.05
Hakea lorea subsp. *lorea*	0.5	1.7
Jasminum didymum subsp. *lineare*	0.5	1.8
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.05
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Ptilotus astrolasius	0.5	0.3
Ptilotus auriculifolius	0.5	0.15
Ptilotus axillaris	0.5	0.1
Ptilotus calostachyus	0.5	0.1
Ptilotus fusiformis	0.5	0.3
Ptilotus nobilis	0.5	0.1

Name	Cover (%)	Height (m)
Ptilotus sp.	0.5	0.05
Senna artemisioides subsp. *oligophylla*	0.5	1.0
Sida fibulifera	0.5	0.15
Stylobasium spathulatum	0.5	1.5
Swainsona formosa	0.5	0.1
Trachymene oleracea subsp. *oleracea*	0.5	1.3
Tribulus hirsutus	0.5	0.1
Triodia wiseana	25	0.4

* denotes weed species

Site: BA101
Location: S end of survey area **Type:** 50x50m Quadrat
Date: 2015-08-12 **Described by:** JA/LV
MGA Zone: 50 **Easting:** 449823.2 **Northing:** 7570027
Habitat: Plain
Soil: Red brown sandy clay loam
Rock type: NA
Vegetation: *Acacia inaequilatera* tall open shrubland over *Sida echinocarpa* scattered low shrubs over **Cenchrus setiger* (**C. ciliaris*) tussock grassland and *Triodia epactia* very open hummock grassland.
Veg Condition: Poor
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Aerva javanica*	0.5	0.4
**Cenchrus ciliaris*	1	0.4
**Cenchrus setiger*	30	0.4
**Tribulus terrestris*	0.5	0.1
Abutilon otocarpum	0.5	0.15
Acacia colei var. *ileocarpa*	0.5	1.1
Acacia inaequilatera	3	4.0
Acacia pyrifolia var. *pyrifolia*	0.5	1.0
Aristida holathera var. *holathera*	0.5	0.2
Boerhavia coccinea	0.5	0.2
Bonamia erecta	0.5	0.3
Bulbostylis barbata	0.5	0.05
Cleome viscosa	0.5	0.3
Crotalaria medicaginea var. *neglecta*	0.5	0.1
Cucumis variabilis	0.5	0.1
Cullen lachnostachys	0.5	0.15
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.2
Enneapogon lindleyanus	0.5	0.05
Eragrostis eriopoda	0.5	0.3
Euphorbia boophthona	0.5	0.1
Euphorbia tannensis subsp. *eremophila*	0.5	0.15

Name	Cover (%)	Height (m)
Evolvulus alsinoides var. *villosicalyx*	0.5	0.2
Gossypium australe	0.5	0.3
Hakea lorea subsp. *lorea*	0.5	1.7
Indigofera colutea	0.5	0.1
Indigofera linnaei	0.5	0.1
Polycarpaea corymbosa var. *corymbosa*	0.5	0.05
Ptilotus nobilis	0.5	0.1
Senna notabilis	0.5	0.25
Sida echinocarpa	1	0.6
Sporobolus australasicus	0.5	0.1
Stylobasium spathulatum	0.5	1.3
Trianthema pilosum	0.5	0.05
Triodia epactia	7	0.5

* denotes weed species

Site: BA101r
Location: S end of survey area **Type:** 75x35m Relevé
Date: 2015-08-12 **Described by:** JA/LV
MGA Zone: 50 **Easting:** 449745.9 **Northing:** 7570317
Habitat: Minor drainage within floodplain
Soil: Red brown clay loam
Rock type: NA
Vegetation: **Cenchrus setiger* closed tussock grassland.
Veg Condition: Poor
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.4
**Cenchrus ciliaris*	0.5	0.5
**Cenchrus setiger*	78	0.5
Acacia colei var. *ileocarpa*	0.5	1.1
Acacia pyrifolia var. *pyrifolia*	0.5	1.3
Alternanthera nana	0.5	0.2
Boerhavia repleta	0.5	0.05
Calocephalus knappii	0.5	0.1
Chrysopogon fallax	0.5	0.3
Cleome viscosa	0.5	0.1
Corchorus crozophorifolius	0.5	0.8
Cucumis variabilis	0.5	0.6
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eremophila longifolia	0.5	0.6
Eucalyptus sp.	0.5	1.2
Goodenia microptera	0.5	0.2
Gossypium australe	0.5	1.1
Gossypium robinsonii	0.5	1.2
Grevillea pyramidalis subsp. *leucadendron*	0.5	2.7
Ipomoea muelleri	0.5	0.4
Jasminum didymum subsp. *lineare*	0.5	0.8
Portulaca oleracea	0.5	0.05

Name	Cover (%)	Height (m)
Pterocaulon serrulatum var. *serrulatum*	0.5	0.3
Pterocaulon sphaeranthoides	0.5	0.3
Ptilotus appendiculatus	0.5	0.2
Sida sp. dark green fruits (S. van Leeuwen 2260)	0.5	0.1
Sida sp. verrucose glands (F.H. Mollemans 2423)	0.5	0.2
Stemodia grossa	0.5	0.4
Stylobasium spathulatum	0.5	1.4
Triodia epactia	0.5	0.6

* denotes weed species

Site: BA102r

Location: SE corner of survey area **Type:** 50x50m Quadrat

Date: 2015-08-14 **Described by:** DR

MGA Zone: 50 **Easting:** 454697.1 **Northing:** 7566830

Habitat: Hillcrest

Soil: Reddish brown clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* (*Corymbia hamersleyana*) scattered low trees to low open woodland over *Acacia inaequilatera* tall open shrubland over *A. orthocarpa* scattered shrubs over *Triodia wiseana* (*T. epactia*) hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	2	4.0
Acacia maitlandii	0.5	2.3
Acacia orthocarpa	1	1.3
Corymbia hamersleyana	0.5	5.5
Eriachne pulchella subsp. *pulchella*	0.5	0.01
Eucalyptus leucophloia subsp. *leucophloia*	1	6.0
Fimbristylis dichotoma	0.5	0.1
Indigofera monophylla	0.5	0.4
Senna glutinosa subsp. *glutinosa*	0.5	1.3
Triodia epactia	1	0.4
Triodia wiseana	30	0.4

* denotes weed species

Site: BA103r

Location: SE corner of survey area **Type:** 30x75m Relevé

Date: 2015-08-14 **Described by:** DR

MGA Zone: 50 **Easting:** 454080.6 **Northing:** 7567410

Habitat: Drainage gully/creek

Soil: Reddish brown loamy sand

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia, Corymbia hamersleyana* low open woodland over *Acacia tumida* var. *pilbarensis, A. pyrifolia* var. *pyrifolia, Gossypium robinsonii, Stylobasium spathulatum* tall shrubland over *Triodia epactia* open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.2
Acacia inaequilatera	0.5	2.6
Acacia monticola	0.5	1.3
Acacia pyrifolia var. *pyrifolia*	3	4.5
Acacia tumida var. *pilbarensis*	8	4.0
Capparis spinosa var. *nummularia*	0.5	0.15
Cleome viscosa	0.5	0.2
Clerodendrum floribundum var. *angustifolium*	0.5	1.2
Corchorus crozophorifolius	0.5	1.1
Corymbia hamersleyana	1	6.0
Cucumis variabilis	0.5	1.2
Cymbopogon ambiguus	0.5	0.8
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.2
Enneapogon lindleyanus	0.5	0.3
Eriachne mucronata	0.5	0.2
Eucalyptus leucophloia subsp. *leucophloia*	2	6.0
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Gomphrena cunninghamii	0.5	0.1
Gossypium robinsonii	2	2.5
Grevillea pyramidalis subsp. *leucadendron*	0.5	4.0
Hibiscus leptocladus	0.5	0.4

Name	Cover (%)	Height (m)
Hibiscus sturtii var. *campylochlamys*	0.5	0.3
Hybanthus aurantiacus	0.5	0.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.2
Jasminum didymum subsp. *lineare*	0.5	1.4
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Paraneurachne muelleri	0.5	0.3
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.8
Phyllanthus maderaspatensis	0.5	0.3
Pterocaulon serrulatum var. *serrulatum*	0.5	0.2
Rhynchosia minima	0.5	0.2
Senna artemisioides subsp. *oligophylla*	0.5	1.2
Senna glutinosa subsp. *glutinosa*	0.5	1.3
Stemodia grossa	0.5	0.2
Stylobasium spathulatum	8	2.0
Tephrosia virens	0.5	0.8
Themeda triandra	0.5	0.5
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.3
Trichosanthes cucumerina	0.5	0.5
Triodia epactia	15	0.5
Triumfetta maconochieana	0.5	0.3
Waltheria virgata	0.5	0.4

* denotes weed species

Site: BA104r

Location: SE corner or survey area **Type:** 30x75m Relevé

Date: 2015-08-14 **Described by:** DR

MGA Zone: 50 **Easting:** 454259 **Northing:** 7566915

Habitat: Gully

Soil: Reddish brown loamy sand

Rock type: Ironstone

Vegetation: *Corymbia ferriticola, Eucalyptus leucophloia* subsp. *leucophloia, Ficus platypoda, Acacia pruinocarpa* low open woodland to low woodland over *A. tumida* var. *pilbarensis* scattered tall shrubs over *Triodia epactia* very open tussock grassland and *Eriachne mucronata* scattered tussock grasses.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia pruinocarpa	2	1.8
Acacia tumida var. *pilbarensis*	1	2.2
Cleome viscosa	0.5	0.01
Corymbia ferriticola	2	4.0
Cymbopogon ambiguus	0.5	0.3
Eriachne mucronata	1	0.2
Eucalyptus leucophloia subsp. *leucophloia*	2	4.5
Ficus platypoda	2	3.5
Themeda triandra	0.5	0.3
Trachymene oleracea subsp. *oleracea*	0.5	0.1
Triodia epactia	3	0.3

* denotes weed species

Site: BA105r

Location: SE of survey area **Type:** 30x75m Quadrat

Date: 2015-08-14 **Described by:** KMc

MGA Zone: 50 **Easting:** 452824 **Northing:** 7567516

Habitat: Gully

Soil: Reddish brown loamy sand

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana , Eucalyptus leucophloia* subsp. *leucophloia*, low open woodland over *Stylobasium spathulatum, Gossypium robinsonii, Acacia monticola* tall open shrubland over *Corchorus crozophorifolius* scattered shrubs over *Triodia epactia* open hummock grassland with *Themeda triandra , Cymbopogon ambiguus , Eriachne mucronata* open tussock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.2
Acacia inaequilatera	0.5	4.0
Acacia maitlandii	1	2.3
Acacia monticola	1	4.0
Acacia tumida var. *pilbarensis*	1	2.5
Amaranthus sp.	0.5	0.1
Bonamia pilbarensis	0.5	0.1
Capparis spinosa var. *nummularia*	0.5	0.1
Cleome viscosa	0.5	0.3
Corchorus crozophorifolius	1	1.1
Corymbia hamersleyana	3	7.0
Cucumis variabilis	0.5	0.4
Cymbopogon ambiguus	2	0.8
Eriachne benthamii	1	0.3
Eriachne mucronata	1	0.4
Eriachne tenuiculmis	1	0.3
Eucalyptus leucophloia subsp. *leucophloia*	1	8.0
Euphorbia biconvexa	0.5	0.1
Gomphrena cunninghamii	0.5	0.2

Name	Cover (%)	Height (m)
Gossypium australe	0.5	1.3
Gossypium robinsonii	2	4.0
Hybanthus aurantiacus	0.5	0.1
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	2.2
Isotropis atropurpurea	0.5	0.3
Jasminum didymum subsp. *lineare*	0.5	1.4
Nicotiana benthamiana	0.5	0.4
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.2
Oldenlandia crouchiana	0.5	0.08
Paraneurachne muelleri	0.5	0.3
Pluchea rubelliflora	0.5	0.25
Polycarpaea longiflora	0.5	0.4
Ptilotus astrolasius	0.5	0.3
Rhynchosia minima	0.5	0.2
Senna artemisioides subsp. *oligophylla*	0.5	1.7
Senna glutinosa subsp. *glutinosa*	0.5	1.4
Stemodia grossa	0.5	0.3
Stylobasium spathulatum	2	2.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.4
Themeda triandra	15	0.5
Trachymene oleracea subsp. *oleracea*	0.5	1.1
Trichosanthes cucumerina	0.5	0.15
Triodia epactia	12	0.5
Triumfetta maconochieana	0.5	0.4

* denotes weed species

Site: BA106
Location: SE of survey area **Type:** 20x125m Quadrat
Date: 2015-08-15 **Described by:** KMc
MGA Zone: 50 **Easting:** 451835 **Northing:** 7569040
Habitat: Gully
Soil: Reddish brown loamy sand
Rock type: Ironstone
Vegetation: *Acacia tumida* var. *pilbarensis, Stylobasium spathulatum, A. maitlandii* tall open shrubland over *Triodia epactia* very open hummock grassland over *Eriachne tenuiculmis* very open tussock grassland.
Veg Condition: Excellent
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia maitlandii	1	3.0
Acacia monticola	0.5	3.0
Acacia ptychophylla	0.5	1.1
Acacia pyrifolia var. *pyrifolia*	0.5	1.6
Acacia tumida var. *pilbarensis*	8	4.2
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.2
Corymbia hamersleyana	0.5	5.0
Cucumis variabilis	0.5	0.3
Cymbopogon ambiguus	0.5	0.8
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.15
Eragrostis cumingii	0.5	0.05
Eriachne tenuiculmis	3	0.2
Euphorbia biconvexa	0.5	0.05
Euphorbia boophthona	0.5	0.1
Euphorbia schultzii	0.5	0.1
Euphorbia sp.	0.5	0.1
Gomphrena cunninghamii	0.5	0.1
Gossypium robinsonii	0.5	2.0
Grevillea pyramidalis subsp. *leucadendron*	0.5	3.0
Grevillea wickhamii	0.5	4.2

Name	Cover (%)	Height (m)
Hybanthus aurantiacus	0.5	0.15
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.1
Jasminum didymum subsp. *lineare*	0.5	1.0
Paraneurachne muelleri	0.5	0.3
Phyllanthus maderaspatensis	0.5	0.2
Polycarpaea longiflora	0.5	0.1
Pterocaulon sphaeranthoides	0.5	0.6
Senna glutinosa subsp. *glutinosa*	0.5	1.2
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	0.4
Stemodia grossa	0.5	0.3
Stylobasium spathulatum	1	2.1
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.5	0.7
Themeda triandra	0.5	0.5
Trachymene oleracea subsp. *oleracea*	0.5	0.4
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.4
Triodia epactia	9	0.5
Triodia wiseana	0.5	0.4

* denotes weed species

Site: BA107

Location: Map 14. Se of survey area **Type:** 50x50m Quadrat

Date: 2015-08-12 **Described by:** JA/LV

MGA Zone: 50 **Easting:** 450907 **Northing:** 7571342

Habitat: Broad creek bed

Soil: Brown loamy sand

Rock type: Ironstone

Vegetation: *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) scattered low shrubs to low open shrubland over *Euphorbia schultzii, Cleome viscosa, Gomphrena cunninghamii* very open herbland.

Veg Condition: Very Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.05
**Cenchrus ciliaris*	0.5	0.6
**Cenchrus setiger*	0.5	0.6
Acacia trachycarpa	0.5	0.8
Amaranthus cuspidifolius	0.5	0.2
Boerhavia coccinea	0.5	0.15
Brachyachne convergens	0.5	0.2
Bulbostylis barbata	0.5	0.2
Cleome viscosa	1	0.2
Corchorus crozophorifolius	0.5	0.6
Corchorus lasiocarpus subsp. *parvus*	0.5	1.1
Corchorus sidoides	0.5	1.1
Cucumis variabilis	0.5	
Digitaria ctenantha	0.5	0.2
Enneapogon lindleyanus	0.5	0.4
Eriachne benthamii	0.5	0.5
Eriachne pulchella subsp. *dominii*	0.5	0.1
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Eucalyptus victrix	0.5	1.0
Euphorbia schultzii	2	0.5
Gomphrena cunninghamii	1	0.1

Name	Cover (%)	Height (m)
Grevillea wickhamii	0.5	2.2
Hybanthus aurantiacus	0.5	0.2
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Paspalidium clementii	0.5	0.2
Polycarpaea longiflora	0.5	0.2
Pterocaulon serrulatum var. *serrulatum*	0.5	0.4
Pterocaulon sphaeranthoides	0.5	0.4
Ptilotus astrolasius	0.5	0.4
Ptilotus fusiformis	0.5	0.2
Ptilotus incanus	0.5	0.3
Senna notabilis	0.5	0.2
Sida rohlenae subp. rohlenae	0.5	0.1
Solanum phlomoides	0.5	1.0
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	2	0.8
Trachymene oleracea subsp. *oleracea*	0.5	0.3
Triodia epactia	0.5	0.4
Urochloa piligera	0.5	0.2
Waltheria indica	0.5	0.5

* denotes weed species

Site: BA108

Location: Map 11. SW of Bungaroo camp **Type:** 50x50m Quadrat

Date: 2015-08-13 **Described by:** KMc

MGA Zone: 50 **Easting:** 445443.8 **Northing:** 7571600

Habitat: Hillslope

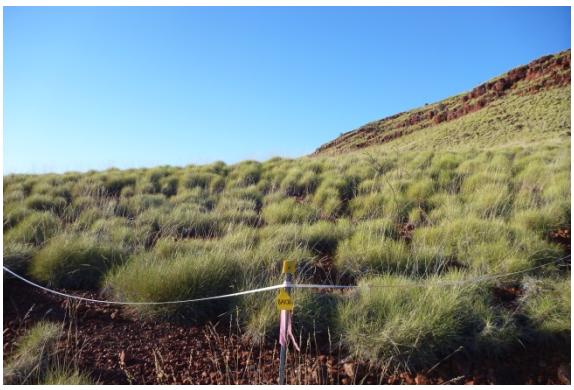
Soil: Red brown clay loam

Rock type: Ironstone

Vegetation: *Triodia wiseana* hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	0.5
Acacia synchronicia	0.5	1.7
Bonamia media	0.5	0.05
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.05
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne mucronata	0.5	0.4
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Goodenia stobbsiana	0.5	0.3
Lepidium pholidogynum	0.5	0.1
Oldenlandia crouchiana	0.5	0.03
Polycarpaea holtzei	0.5	0.01
Polycarpaea longiflora	0.5	0.1
Ptilotus calostachyus	0.5	0.5
Senna glutinosa subsp. *glutinosa*	0.5	1.1
Senna glutinosa subsp. *pruinosa*	0.5	0.6
Tephrosia supina	0.5	0.2
Triodia wiseana	33	0.5

* denotes weed species

Site: BA109

Location: Map 11 **Type:** 50x50m Quadrat

Date: 2015-08-13 **Described by:** DR

MGA Zone: 50 **Easting:** 445486 **Northing:** 7572095

Habitat: Broad creek bed

Soil: Dark reddish brown loamy sand

Rock type: Ironstone

Vegetation: *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) scattered low shrubs to very open shrubland over *Euphorbia schultzii* very open herbland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.2
**Cenchrus ciliaris*	0.5	0.4
Acacia trachycarpa	0.5	0.2
Amaranthus sp.	0.5	0.1
Amaranthus undulatus	0.5	0.1
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.2
Cymbopogon ambiguus	0.5	0.6
Digitaria ctenantha	0.5	0.2
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Eulalia aurea	0.5	0.7
Euphorbia schultzii	3	0.5
Gomphrena cunninghamii	0.5	0.1
Hybanthus aurantiacus	0.5	0.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.1
Ipomoea muelleri	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.2
Polycarpaea corymbosa var. *corymbosa*	0.5	0.6
Stemodia grossa	0.5	0.3
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	2	0.9
Triodia epactia	0.5	0.4

* denotes weed species

Site: BA110

Location: Map 12 **Type:** 50x50m Quadrat

Date: 2015-08-16 **Described by:** KMc

MGA Zone: 50 **Easting:** 447581.7 **Northing:** 7570648

Habitat: Hillslope

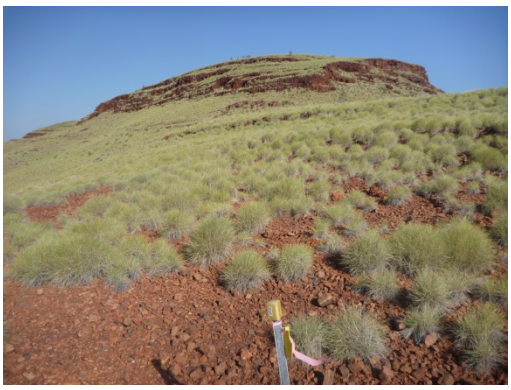
Soil: Brown clay loam

Rock type: Ironstone

Vegetation: *Triodia wiseana* hummock grassland.

Veg Condition: Very Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	0.9
Bulbostylis barbata	0.5	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Fimbristylis depauperata	0.5	0.1
Indigofera monophylla	0.5	0.2
Lepidium pholidogynum	0.5	0.1
Polycarpaea holtzei	0.5	0.01
Ptilotus calostachyus	0.5	0.6
Ptilotus nobilis	0.5	0.2
Senna glutinosa subsp. *glutinosa*	0.5	1.0
Triodia wiseana	35	0.5

* denotes weed species

Site: BA111
Location: Map 1 **Type:** 50x50m Quadrat
Date: 2015-08-18 **Described by:** LV
MGA Zone: 50 **Easting:** 422434.2 **Northing:** 7591231
Habitat: Alluvial plain
Soil: Red brown sandy clay loam
Rock type: NA
Vegetation: *Acacia ancistrocarpa* tall open shrubland over *Triodia epactia* hummock grassland.
Veg Condition: Excellent
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	2	2.5
Acacia bivenosa	0.5	1.6
Acacia inaequilatera	0.5	1.8
Acacia synchronicia	0.5	2.0
Acacia trachycarpa	0.5	2.0
Bulbostylis barbata	0.5	0.05
Cleome viscosa	0.5	0.2
Corchorus lasiocarpus subsp. *parvus*	0.5	0.25
Corchorus sp.	0.5	0.05
Cucumis variabilis	0.5	0.9
Cymbopogon ambiguus	0.5	0.4
Dysphania sp.	0.5	0.1
Eragrostis cumingii	0.5	0.05
Euphorbia australis	0.5	0.05
Euphorbia boophthona	0.5	0.15
Goodenia microptera	0.5	0.25
Gossypium australe	0.5	0.25
Indigofera colutea	0.5	0.1
Mollugo molluginea	0.5	0.06
Polycarpaea corymbosa var. *corymbosa*	0.5	0.15
Portulaca oleracea	0.5	0.05
Pterocaulon sphaeranthoides	0.5	0.35

Name	Cover (%)	Height (m)
Ptilotus astrolasius	0.5	0.1
Ptilotus axillaris	0.5	0.05
Ptilotus nobilis	0.5	0.35
Rhynchosia minima	0.5	0.15
Senna artemisioides subsp. *helmsii*	0.5	1.0
Senna artemisioides subsp. *oligophylla*	0.5	1.3
Senna notabilis	0.5	0.05
Sida sp.	0.5	0.2
Solanum diversiflorum	0.5	0.1
Swainsona formosa	0.5	0.25
Tephrosia supina	0.5	0.2
Trachymene oleracea subsp. *oleracea*	0.5	0.25
Trianthema pilosum	0.5	0.05
Tribulus macrocarpus	0.5	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.2
Triodia epactia	32	0.4

* denotes weed species

Site: BA113
Location: Mid section **Type:** 50x50m Quadrat
Date: 2015-08-17 **Described by:** JA/DR
MGA Zone: 50 **Easting:** 435248.1 **Northing:** 7580366
Habitat: Drainage depression
Soil: Red brown clay loam
Rock type: NA
Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia pyrifolia* var. *pyrifolia*, *Gossypium australe* tall open shrubland over **Cenchrus setiger*, **C. ciliaris, Eulalia aurea* closed tussock grassland and *Cyperus vaginatus* scattered sedges.
Veg Condition: Poor
Fire Age: >10 years



Species List

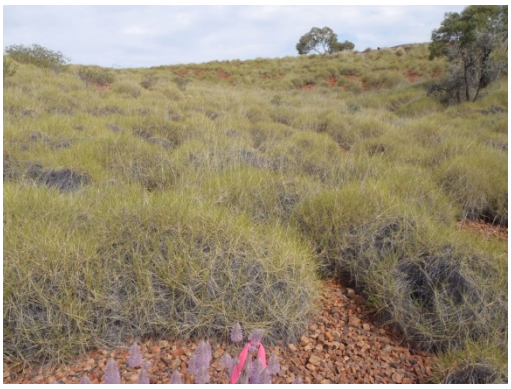
Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	20	0.4
**Cenchrus setiger*	25	0.1
**Malvastrum americanum*	0.5	0.3
**Vachellia farnesiana*	0.5	2.0
Acacia ancistrocarpa	0.5	0.4
Acacia colei var. *ileocarpa*	0.5	1.5
Acacia elachantha	0.5	1.7
Acacia pyrifolia var. *pyrifolia*	1	2.5
Acacia sclerosperma subsp. *sclerosperma*	0.5	1.0
Acacia synchronicia	0.5	0.4
Acacia tumida var. *pilbarensis*	0.5	2.1
Alysicarpus muelleri	0.5	0.3
Boerhavia coccinea	0.5	0.1
Boerhavia schomburgkiana	0.5	0.1
Carissa lanceolata	0.5	1.8
Chrysopogon fallax	0.5	0.8
Cleome viscosa	0.5	0.35
Corchorus lasiocarpus subsp. *parvus*	0.5	0.4
Corchorus tridens	0.5	0.3
Corymbia hamersleyana	15	8.0
Crotalaria medicaginea var. *neglecta*	0.5	0.3

Name	Cover (%)	Height (m)
Cucumis variabilis	0.5	0.5
Cymbopogon ambiguus	0.5	0.4
Cyperus vaginatus	1	0.3
Dysphania sp.	0.5	0.05
Eragrostis cumingii	0.5	0.3
Eucalyptus sp.	0.5	3.0
Eulalia aurea	1	0.6
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Goodenia forrestii	0.5	0.2
Gossypium australe	1	2.2
Gossypium robinsonii	0.5	3.0
Grevillea pyramidalis subsp. *leucadendron*	0.5	4.0
Hakea lorea subsp. *lorea*	0.5	1.7
Hibiscus sturtii var. *campylochlamys*	0.5	0.1
Hybanthus aurantiacus	0.5	0.3
Indigofera colutea	0.5	0.1
Indigofera linnaei	0.5	0.2
Isotropis atropurpurea	0.5	0.3
Jasminum didymum subsp. *lineare*	0.5	0.35
Melhania oblongifolia	0.5	0.1
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.3
Polymeria ambigua	0.5	0.2
Polymeria sp.	0.5	0.1
Portulaca oleracea	0.5	0.1
Ptilotus astrolasius	0.5	0.45
Ptilotus nobilis	0.5	0.12
Rhynchosia minima	0.5	0.05
Senna notabilis	0.5	0.35
Sesbania cannabina	0.5	0.5
Sida arsiniata	0.5	0.4
Sida echinocarpa	0.5	0.3
Sida fibulifera	0.5	0.1
Sida sp.	0.5	0.55
Sporobolus australasicus	0.5	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.3
Tephrosia supina	0.5	0.2
Themeda triandra	0.5	0.35
Triodia epactia	0.5	0.4
Triumfetta johnstonii	0.5	0.4
Waltheria indica	0.5	0.35

* denotes weed species

Site: BA200

Location: Map 15 **Type:** 50x50m Quadrat
Date: 2015-08-15 **Described by:** LV
MGA Zone: 50 **Easting:** 451064 **Northing:** 7569258
Habitat: Hillcrest
Soil: Brown loamy sand
Rock type: Shale
Vegetation: *Triodia wiseana, T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 hummock grassland.
Veg Condition: Excellent
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Abutilon lepidum	0.5	0.01
Acacia bivenosa	0.5	1.6
Acacia synchronicia	0.5	0.5
Eriachne mucronata	0.5	0.15
Eriachne pulchella subsp. *pulchella*	0.5	0.06
Eucalyptus leucophloia subsp. *leucophloia*	0.5	3.5
Oldenlandia crouchiana	0.5	0.04
Polycarpaea holtzei	0.5	0.02
Ptilotus calostachyus	0.5	0.4
Ptilotus nobilis	0.5	0.8
Senna artemisioides subsp. *oligophylla*	0.5	1.0
Senna glutinosa subsp. *glutinosa*	0.5	0.7
Senna glutinosa subsp. *pruinosa*	0.5	1.2
Senna symonii	0.5	1.2
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	2	0.35
Triodia wiseana	35	0.35

* denotes weed species

Site: BA201
Location: map 6 **Type:** 50x50m Quadrat
Date: 2015-08-17 **Described by:** DR
MGA Zone: 50 **Easting:** 434968 **Northing:** 7580681
Habitat: Floodplain
Soil: Red brown light clay
Rock type: NA
Vegetation: *Eucalyptus xerothermica* low woodland over *Acacia sclerosperma* subsp. *sclerosperma, Stylobasium spathulatum* tall open shrubland over **Cenchrus setiger*, **C. ciliaris* open tussock grassland.
Veg Condition: Good
Fire Age: No fire evident



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	5	0.5
**Cenchrus setiger*	20	0.5
**Chloris barbata*	0.5	0.8
**Cynodon dactylon*	0.5	0.1
**Lactuca serriola*	0.5	0.5
**Passiflora foetida*	0.5	0.8
**Setaria verticillata*	0.5	0.5
**Vachellia farnesiana*	0.5	1.5
Acacia sclerosperma subsp. *sclerosperma*	2	3.5
Capparis spinosa var. *nummularia*	0.5	0.8
Cucumis variabilis	0.5	0.5
Cullen lachnostachys	0.5	0.1
Cyperus vaginatus	0.5	0.5
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eucalyptus xerothermica	25	6.0
Lepidium pholidogynum	0.5	0.1
Sida arsiniata	0.5	0.4
Sida fibulifera	0.5	0.3
Solanum diversiflorum	0.5	0.3
Stylobasium spathulatum	2	3.5
Trianthema triquetrum	0.5	0.1

Name	Cover (%)	Height (m)
Triodia epactia	0.5	0.4

* denotes weed species

Site: BA207

Location: Map 3 **Type:** 50x50m Quadrat

Date: 2015-08-17 **Described by:** LV/KMc

MGA Zone: 50 **Easting:** 425858 **Northing:** 7587609

Habitat: Stony plain

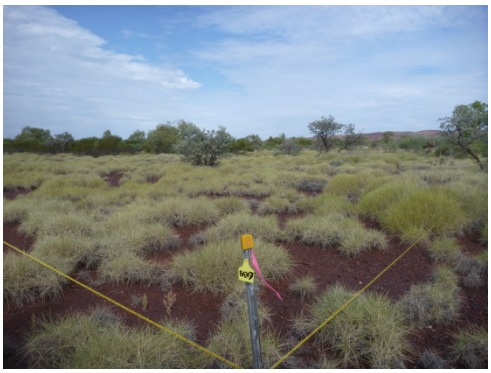
Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera, Acacia ancistrocarpa* tall open shrubland over *Triodia wiseana* hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years

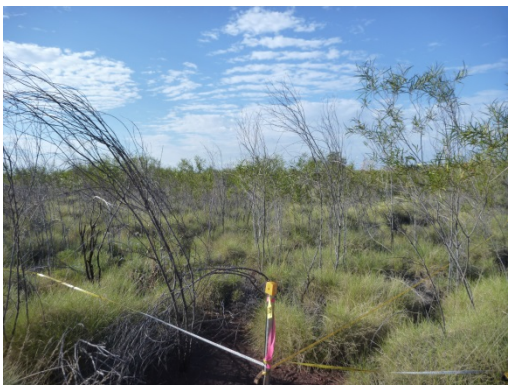


Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	2	2.5
Acacia bivenosa	0.5	1.8
Acacia inaequilatera	2	3.0
Corchorus lasiocarpus subsp. *parvus*	0.5	0.01
Corymbia hamersleyana	1	4.0
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.3
Euphorbia boophthona	0.5	0.1
Grevillea wickhamii	0.5	2.0
Hakea chordophylla	0.5	1.1
Heliotropium heteranthum	0.5	0.01
Jasminum didymum subsp. *lineare*	0.5	2.0
Ptilotus astrolasius	0.5	0.25
Ptilotus axillaris	0.5	0.06
Ptilotus fusiformis	0.5	0.35
Senna artemisioides subsp. *oligophylla*	0.5	0.4
Sida arsiniata	0.5	0.5
Streptoglossa bubakii	0.5	0.25
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.55
Triodia wiseana	33	0.35

* denotes weed species

Site: BA209
Location: Middle robe **Type:** 50x50m Quadrat
Date: 2015-08-19 **Described by:** KMc
MGA Zone: 50 **Easting:** 422677 **Northing:** 7590737
Habitat: Plain
Soil: Reddish brown silty clay loam
Rock type: Ironstone
Vegetation: *Acacia ancistrocarpa* shrubland over *Triodia epactia* and *T. wiseana* hummock grassland.
Veg Condition: Very Good
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	20	1.9
Acacia inaequilatera	0.5	2.5
Acacia tumida var. *pilbarensis*	0.5	0.2
Bonamia erecta	0.5	0.3
Corchorus lasiocarpus subsp. *parvus*	0.5	0.2
Corymbia hamersleyana	0.5	3.0
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Euphorbia australis	0.5	0.1
Euphorbia boophthona	0.5	0.45
Goodenia microptera	0.5	0.4
Hakea lorea subsp. *lorea*	0.5	0.6
Hibiscus sturtii var. *campylochlamys*	0.5	0.2
Jasminum didymum subsp. *lineare*	0.5	1.0
Mollugo molluginea	0.5	0.05
Paspalidium tabulatum	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.2
Ptilotus astrolasius	0.5	0.4
Ptilotus axillaris	0.5	0.2
Ptilotus fusiformis	0.5	0.5
Ptilotus nobilis	0.5	0.4
Rhynchosia minima	0.5	0.3
Senna notabilis	0.5	0.4

Name	Cover (%)	Height (m)
Solanum diversiflorum	0.5	0.4
Sporobolus australasicus	0.5	0.1
Trachymene oleracea subsp. *oleracea*	0.5	0.7
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.4
Triodia epactia	50	0.4
Triodia wiseana	7	0.6

* denotes weed species

Site: BA210

Location: Map 1 **Type:** 50x50m Quadrat

Date: 2015-08-19 **Described by:** LV

MGA Zone: 50 **Easting:** 421815 **Northing:** 7590790

Habitat: Hillcrest

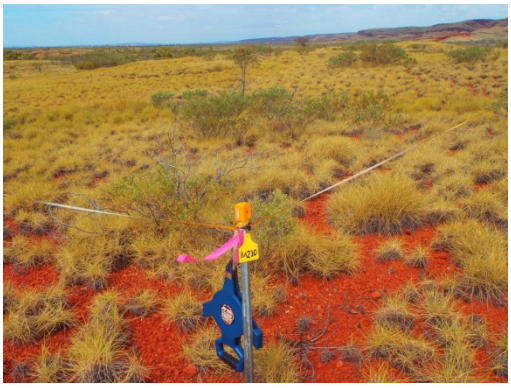
Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia bivenosa* scattered shrubs over *Triodia wiseana* hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	0.5	0.45
Acacia bivenosa	1	1.8
Acacia ptychophylla	0.5	0.4
Corymbia hamersleyana	0.5	2.3
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.25
Hakea chordophylla	0.5	2.5
Indigofera monophylla	0.5	0.35
Jasminum didymum subsp. *lineare*	0.5	0.06
Polycarpaea holtzei	0.5	0.01
Ptilotus aervoides	0.5	0.02
Ptilotus fusiformis	0.5	0.35
Ptilotus nobilis	0.5	0.35
Stemodia grossa	0.5	0.15
Triodia wiseana	35	0.35

* denotes weed species

Site: BA211

Location: South end **Type:** 50x50m Quadrat

Date: 2015-08-13 **Described by:** JA

MGA Zone: 50 **Easting:** 450420 **Northing:** 7571337

Habitat: Hillcrest

Soil: Brown clay loam

Rock type: Ironstone

Vegetation: *Acacia pruinocarpa* tall open shrubland over *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3, (*T. wiseana*) hummock grassland

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia pruinocarpa	5	2.5
Bulbostylis barbata	0.5	0.1
Clerodendrum floribundum var. *angustifolium*	0.5	3.0
Cymbopogon ambiguus	0.5	0.3
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.15
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne mucronata	0.5	0.2
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Ficus platypoda	0.5	2.5
Hibiscus coatesii	0.5	0.1
Jasminum didymum subsp. *lineare*	0.5	1.1
Oldenlandia crouchiana	0.5	0.1
Paspalidium clementii	0.5	0.1
Polycarpaea holtzei	0.5	0.05
Polycarpaea longiflora	0.5	0.1
Portulaca oleracea	0.5	0.05
Ptilotus obovatus var. *obovatus*	0.5	0.3
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	25	0.4
Triodia wiseana	5	0.4
Tripogon loliiformis	0.5	0.1
Triumfetta maconochieana	0.5	0.3

* denotes weed species

Site: BA212
Location: South end **Type:** 50x50m Quadrat
Date: 2015-08-15 **Described by:** JA
MGA Zone: 50 **Easting:** 451179 **Northing:** 7568626
Habitat: Minor creek
Soil: Brown silty loam
Rock type: Ironstone
Vegetation: *Acacia tumida* var. *pilbarensis* tall open scrub over *Triodia epactia* very open hummock grassland and *Themeda triandra, Chrysopogon fallax* very open tussock grassland.
Veg Condition: Excellent
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Malvastrum americanum*	0.5	0.2
Acacia bivenosa	0.5	1.1
Acacia pyrifolia var. *pyrifolia*	0.5	2.3
Acacia tumida var. *pilbarensis*	60	3.5
Alternanthera nana	0.5	0.1
Aristida holathera var. *holathera*	0.5	0.4
Bonamia erecta	0.5	0.4
Brachyachne convergens	0.5	0.15
Chrysopogon fallax	1	0.8
Corchorus lasiocarpus subsp. *parvus*	0.5	0.5
Cucumis variabilis	0.5	
Cymbopogon ambiguus	0.5	1.4
Eragrostis cumingii	0.5	0.1
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Gossypium australe	0.5	0.5
Gossypium robinsonii	0.5	3.5
Grevillea wickhamii subsp. *hispidula*	0.5	4.0
Hybanthus aurantiacus	0.5	0.3
Ipomoea muelleri	0.5	
Jasminum didymum subsp. *lineare*	0.5	
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Paspalidium clementii	0.5	0.1

Name	Cover (%)	Height (m)
Polymeria ambigua	0.5	0.05
Ptilotus appendiculatus	0.5	0.2
Rhynchosia minima	0.5	0.2
Sida arsiniata	0.5	0.4
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.2
Sida sp. verrucose glands (F.H. Mollemans 2423)	0.5	0.3
Themeda triandra	2	0.9
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.3
Triodia epactia	5	0.6
Triodia wiseana	0.5	0.4

* denotes weed species

Site: BA213

Location: South end **Type:** 20x125m Quadrat

Date: 2015-08-15 **Described by:** JA

MGA Zone: 50 **Easting:** 450212 **Northing:** 7568838

Habitat: Minor creek

Soil: Reddish brown clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* low woodland over *Acacia tumida* var. *pilbarensis, Gossypium robinsonii* tall open shrubland over *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3 scattered shrubs over *Triodia epactia* open hummock grassland and *Themeda triandra* scattered tussock grasses.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.2
Acacia colei var. *ileocarpa*	0.5	4.5
Acacia inaequilatera	0.5	2.0
Acacia monticola	0.5	2.5
Acacia orthocarpa	0.5	1.5
Acacia tumida var. *pilbarensis*	4	3.0
Bonamia erecta	0.5	0.3
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.3
Clerodendrum floribundum var. *angustifolium*	0.5	1.3
Corchorus lasiocarpus subsp. *parvus*	0.5	0.5
Corymbia hamersleyana	13	6.0
Cucumis variabilis	0.5	
Cymbopogon ambiguus	0.5	1.0
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.15
Eriachne mucronata	0.5	0.4
Euphorbia australis var. *hispidula*	0.5	0.1
Euphorbia tannensis subsp. *eremophila*	0.5	0.4
Gomphrena cunninghamii	0.5	0.1
Gossypium robinsonii	5	3.2

Name	Cover (%)	Height (m)
Grevillea wickhamii	0.5	5.0
Hakea chordophylla	0.5	2.0
Hibiscus sturtii var. *campylochlamys*	0.5	0.3
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	1	1.2
Isotropis atropurpurea	0.5	0.6
Jasminum didymum subsp. *lineare*	0.5	
Oldenlandia crouchiana	0.5	0.1
Paraneurachne muelleri	0.5	0.4
Paspalidium clementii	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.3
Polycarpaea longiflora	0.5	0.2
Polymeria ambigua	0.5	0.1
Pterocaulon sphaeranthoides	0.5	0.5
Rhynchosia minima	0.5	0.2
Senna glutinosa subsp. *glutinosa*	0.5	1.3
Solanum cleistogamum	0.5	0.4
Stylobasium spathulatum	0.5	1.5
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.5
Tephrosia virens	0.5	1.1
Themeda triandra	1	0.8
Trachymene oleracea subsp. *oleracea*	0.5	0.5
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.6
Triodia epactia	20	0.5

* denotes weed species

Site: BA214

Location: map 12 **Type:** 50x50m Quadrat

Date: 2015-08-16 **Described by:** DR

MGA Zone: 50 **Easting:** 449086 **Northing:** 7572705

Habitat: Floodplain

Soil: Red brown clay loam

Rock type: Ironstone

Vegetation: *Acacia inaequilatera* tall shrubland over *A. pyrifolia* var. *pyrifolia* scattered shrubs over *Triodia epactia* hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.8
Acacia inaequilatera	17	4.0
Acacia pyrifolia var. *pyrifolia*	1	2.0
Boerhavia coccinea	0.5	0.1
Cucumis variabilis	0.5	1.0
Cymbopogon ambiguus	0.5	0.3
Euphorbia boophthona	0.5	0.4
Gossypium australe	0.5	0.6
Indigofera colutea	0.5	0.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.7
Jasminum didymum subsp. *lineare*	0.5	2.2
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.4
Triodia epactia	40	0.6
Triodia wiseana	0.5	0.5

* denotes weed species

Site: BA215
Location: Map 6 **Type:** 25x100m Quadrat
Date: 2015-08-18 **Described by:** JA
MGA Zone: 50 **Easting:** 435474 **Northing:** 7580021
Habitat: Minor creek
Soil: Brown sandy loam
Rock type: NA
Vegetation: *Corymbia hamersleyana* low woodland over *Acacia colei* var. *ileocarpa, A. tumida* var. *pilbarensis, Gossypium robinsonii* tall shrubland over *Gossypium australe* scattered shrubs over **Cenchrus setiger*, **C. ciliaris*, *Themeda triandra* tussock grassland.
Veg Condition: Good
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	8	0.5
**Cenchrus setiger*	30	0.5
**Malvastrum americanum*	0.5	0.3
**Vachellia farnesiana*	0.5	3.5
Abutilon fraseri	0.5	0.3
Acacia ancistrocarpa	0.5	0.6
Acacia bivenosa	0.5	0.8
Acacia colei var. *ileocarpa*	8	2.8
Acacia elachantha	0.5	1.3
Acacia pyrifolia var. *pyrifolia*	0.5	1.8
Acacia sclerosperma subsp. *sclerosperma*	0.5	1.2
Acacia tumida var. *pilbarensis*	5	3.0
Alysicarpus muelleri	0.5	0.3
Aristida inaequiglumis	0.5	1.1
Chrysopogon fallax	0.5	1.1
Corchorus lasiocarpus subsp. *parvus*	0.5	0.5
Corymbia hamersleyana	12	7.0
Cullen lachnostachys	0.5	0.4
Cyperus vaginatus	0.5	0.8
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eragrostis cumingii	0.5	0.1

Name	Cover (%)	Height (m)
Eucalyptus camaldulensis subsp. *refulgens*	0.5	8.0
Eulalia aurea	0.5	1.2
Euphorbia biconvexa	0.5	0.2
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Goodenia forrestii	0.5	0.2
Gossypium australe	1	1.3
Gossypium robinsonii	2	4.0
Hakea lorea subsp. *lorea*	0.5	1.1
Hybanthus aurantiacus	0.5	0.25
Indigofera linifolia	0.5	0.2
Indigofera linnaei	0.5	0.15
Indigofera trita	0.5	0.3
Isotropis atropurpurea	0.5	0.4
Melhania oblongifolia	0.5	0.2
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.2
Polymeria ambigua	0.5	0.1
Pterocaulon sphaeranthoides	0.5	0.4
Rhynchosia minima	0.5	0.2
Sida arsiniata	0.5	0.6
Sida echinocarpa	0.5	1.1
Sida fibulifera	0.5	0.2
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	2.1
Sida sp. verrucose glands (F.H. Mollemans 2423)	0.5	0.2
Solanum diversiflorum	0.5	0.1
Sporobolus australasicus	0.5	0.1
Tephrosia supina	0.5	0.2
Themeda triandra	2	0.8
Triodia epactia	0.5	0.4
Triodia wiseana	0.5	0.3

* denotes weed species

Site: BA216

Location: Map 7 **Type:** 50x50m Quadrat

Date: 2015-08-18 **Described by:** DR

MGA Zone: 50 **Easting:** 436167 **Northing:** 7578099

Habitat: Floodplain

Soil: Red brown clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia elachantha, A. tumida* var. *pilbarensis, A. inaequilatera* tall shrubland over *Triodia epactia, T. wiseana* very open hummock grassland.

Veg Condition: Excellent

Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	0.5
Acacia elachantha	20	2.5
Acacia inaequilatera	1	2.2
Acacia tumida var. *pilbarensis*	5	2.9
Bonamia erecta	0.5	0.3
Corchorus sidoides	0.5	0.5
Corymbia hamersleyana	1	5.0
Crotalaria medicaginea var. *neglecta*	0.5	0.3
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eulalia aurea	0.5	0.4
Euphorbia australis	0.5	0.1
Goodenia microptera	0.5	0.3
Gossypium australe	0.5	0.8
Hakea lorea subsp. *lorea*	0.5	1.5
Indigofera colutea	0.5	0.2
Isotropis atropurpurea	0.5	0.3
Paraneurachne muelleri	0.5	0.3
Ptilotus astrolasius	0.5	0.5
Ptilotus axillaris	0.5	0.1
Ptilotus calostachyus	0.5	0.5
Rhynchosia minima	0.5	0.2

Name	Cover (%)	Height (m)
Senna notabilis	0.5	0.1
Sida arsiniata	0.5	0.4
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	0.5	0.2
Tephrosia supina	0.5	0.2
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.6
Triodia epactia	3	0.3
Triodia wiseana	2	0.3

* denotes weed species

Site: BA217r
Location: NA **Type:** 50x50m Relevé
Date: 2015-08-18 **Described by:** JA
MGA Zone: 50 **Easting:** 436813 **Northing:** 7579490
Habitat: Drainage depression
Soil: Red brown sandy loam
Rock type: NA
Vegetation: *Eucalyptus victrix, Corymbia hamersleyana* low woodland over *Acacia colei* var. *ileocarpa, Grevillea pyramidalis* subsp. *leucadendron* tall open shrubland over **Cenchrus setiger*, **C. ciliaris* tussock grassland and *Triodia epactia* scattered hummock grasses.
Veg Condition: Good
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	10	0.4
**Cenchrus setiger*	30	0.6
Acacia colei var. *ileocarpa*	2	5.0
Acacia pyrifolia var. *pyrifolia*	0.5	1.2
Boerhavia schomburgkiana	0.5	0.1
Corymbia hamersleyana	3	6.0
Cyperus vaginatus	0.5	0.6
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.15
Eucalyptus victrix	8	8.5
Gossypium australe	0.5	1.1
Grevillea pyramidalis subsp. *leucadendron*	1	3.0
Melaleuca glomerata	0.5	2.2
Ptilotus axillaris	0.5	0.1
Senna notabilis	0.5	0.8
Sida arsiniata	0.5	0.5
Sida fibulifera	0.5	0.1
Triodia epactia	1	0.5

* denotes weed species

Site: BA218
Location: Map 7 **Type:** 25x100m Quadrat
Date: 2015-08-18 **Described by:** DR
MGA Zone: 50 **Easting:** 435786 **Northing:** 7578592
Habitat: Minor creek
Soil: Red brown clay loam
Rock type: Ironstone
Vegetation: *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia tumida* var. *pilbarensis, Gossypium robinsonii, Grevillea wickhamii* tall shrubland over *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia* very open hummock grassland.
Veg Condition: Excellent
Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.5
**Cenchrus setiger*	0.5	0.3
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.5
Acacia pyrifolia var. *pyrifolia*	0.5	1.3
Acacia tumida var. *pilbarensis*	12	3.2
Boerhavia coccinea	0.5	0.1
Cajanus cinereus	0.5	1.2
Cleome viscosa	0.5	0.2
Corchorus sidoides	0.5	0.5
Corymbia hamersleyana	2	4.5
Cullen lachnostachys	0.5	1.5
Dysphania melanocarpa	0.5	0.2
Eriachne mucronata	0.5	0.3
Euphorbia australis	0.5	0.05
Gossypium robinsonii	5	3.0
Grevillea pyramidalis subsp. *leucadendron*	0.5	1.3
Grevillea wickhamii	1	2.0
Hybanthus aurantiacus	0.5	0.4
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.5
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1

Name	Cover (%)	Height (m)
Petalostylis labicheoides	0.5	2.5
Polycarpaea longiflora	0.5	0.2
Ptilotus astrolasius	0.5	0.2
Rhynchosia minima	0.5	0.1
Senna glutinosa subsp. *glutinosa*	0.5	0.7
Senna venusta	0.5	2.2
Sida fibulifera	0.5	0.3
Stylobasium spathulatum	0.5	1.8
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	6	0.6
Tephrosia virens	0.5	1.0
Themeda triandra	0.5	0.3
Trachymene oleracea subsp. *oleracea*	0.5	0.8
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.8
Triodia epactia	5	0.4
Triodia wiseana	0.5	0.4
Triumfetta johnstonii	0.5	0.5

* denotes weed species

Site: BA219

Location: Map 1 **Type:** 50x50m Quadrat

Date: 2015-08-19 **Described by:** KMc

MGA Zone: 50 **Easting:** 422621 **Northing:** 7591000

Habitat: Plain

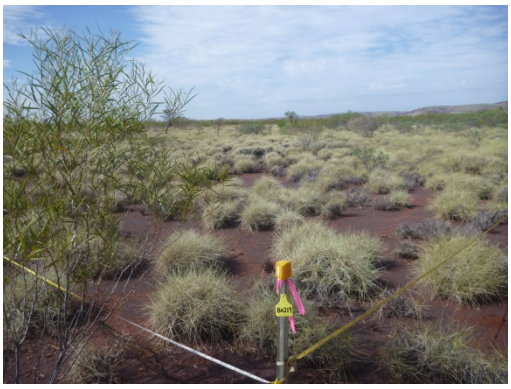
Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Acacia bivenosa, A. ancistrocarpa* and *A. synchronicia* open shrubland over *Triodia epactia* and *T. wiseana* open hummock grassland.

Veg Condition: Very Good

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.25
Acacia ancistrocarpa	1	1.7
Acacia bivenosa	2	1.6
Acacia inaequilatera	0.5	3.0
Acacia synchronicia	1	1.5
Bonamia erecta	0.5	0.4
Cleome viscosa	0.5	0.3
Cucumis variabilis	0.5	
Dysphania kalpari	0.5	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Euphorbia australis	0.5	0.05
Euphorbia boophthona	0.5	0.25
Goodenia microptera	0.5	0.25
Gossypium australe	0.5	0.1
Mollugo molluginea	0.5	0.1
Pterocaulon sp.	0.5	0.01
Ptilotus astrolasius	0.5	0.1
Ptilotus axillaris	0.5	0.1
Ptilotus fusiformis	0.5	0.5
Ptilotus nobilis	0.5	0.7
Senna artemisioides subsp. *oligophylla*	0.5	1.1
Senna notabilis	0.5	0.1

Name	Cover (%)	Height (m)
Solanum diversiflorum	0.5	0.3
Streptoglossa bubakii	0.5	0.4
Stylobasium spathulatum	0.5	1.6
Tribulus macrocarpus	0.5	0.05
Triodia epactia	14	0.5
Triodia wiseana	11	0.5

* denotes weed species

Site: BA220r

Location: Map 6 **Type:** 50x50m Relevé

Date: 2015-08-18 **Described by:** DR

MGA Zone: 50 **Easting:** 434177 **Northing:** 7581072

Habitat: Floodplain

Soil: Red brown clay loam

Rock type: Ironstone

Vegetation: *Acacia xiphophylla* scattered low trees to low open woodland over *Senna artemisioides* subsp. *oligophylla* scattered low shrubs over *Triodia epactia* open hummock grassland.

Veg Condition: Very Good

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.3
**Cenchrus setiger*	0.5	0.3
Acacia synchronicia	0.5	0.4
Acacia xiphophylla	2	3.8
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Enchylaena tomentosa var. *tomentosa*	0.5	0.1
Gossypium australe	0.5	0.2
Gossypium robinsonii	0.5	0.3
Lepidium pholidogynum	0.5	0.1
Portulaca oleracea	0.5	0.01
Ptilotus astrolasius	0.5	0.2
Ptilotus axillaris	0.5	0.1
Ptilotus nobilis	0.5	0.2
Salsola australis	0.5	0.1
Senna artemisioides subsp. *oligophylla*	1	0.6
Sida arsiniata	0.5	0.4
Sporobolus australasicus	0.5	0.1
Stylobasium spathulatum	0.5	1.2
Trianthema triquetrum	0.5	0.01
Triodia epactia	28	0.5
Triodia wiseana	0.5	0.4

* denotes weed species

Site: BA221

Location: Map 5 **Type:** 50x50m Quadrat

Date: 2015-08-20 **Described by:** JA

MGA Zone: 50 **Easting:** 430093 **Northing:** 7584798

Habitat: Plain

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees to low open woodland over *Acacia inaequilatera* scattered tall shrubs to tall open shrubland over *A. bivenosa* scattered shrubs over *Triodia epactia* (*T. wiseana*) open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Vachellia farnesiana*	0.5	0.4
Acacia ancistrocarpa	0.5	2.2
Acacia bivenosa	1	1.8
Acacia colei var. *ileocarpa*	0.5	4.0
Acacia inaequilatera	1	2.5
Alternanthera nana	0.5	0.15
Boerhavia coccinea	0.5	0.1
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.2
Corchorus lasiocarpus subsp. *parvus*	0.5	1.1
Corymbia hamersleyana	2	5.0
Cucumis variabilis	0.5	
Cullen martinii	0.5	0.4
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Euphorbia tannensis subsp. *eremophila*	0.5	0.15
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Goodenia microptera	0.5	0.3
Gossypium australe	0.5	0.6
Hakea lorea subsp. *lorea*	0.5	2.0
Hybanthus aurantiacus	0.5	0.2
Indigofera colutea	0.5	0.1

Name	Cover (%)	Height (m)
Jasminum didymum subsp. *lineare*	0.5	3.0
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.15
Oldenlandia crouchiana	0.5	0.1
Paspalidium clementii	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.15
Pterocaulon sp.	0.5	0.05
Ptilotus astrolasius	0.5	0.2
Ptilotus axillaris	0.5	0.1
Ptilotus nobilis	0.5	0.4
Rhynchosia minima	0.5	0.2
Senna artemisioides subsp. *oligophylla*	0.5	1.5
Solanum diversiflorum	0.5	0.4
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	0.5	0.5
Tribulus hirsutus	0.5	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.1
Trichosanthes cucumerina	0.5	
Triodia epactia	20	0.5
Triodia wiseana	3	0.5
Yakirra australiensis	0.5	0.05

* denotes weed species

Site: BA223r

Location: Middle robe **Type:** 20x125m Relevé

Date: 2015-08-20 **Described by:** JA

MGA Zone: 50 **Easting:** 439945 **Northing:** 7577439

Habitat: Minor creek

Soil: Reddish brown loamy sand

Rock type: Ironstone

Vegetation: *Grevillea pyramidalis* subsp. *leucadendron, Stylobasium spathulatum, Acacia pyrifolia* var. *pyrifolia* tall open shrubland over *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3, *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186), open shrubland over *Triodia epactia* open hummock grassland with **Cenchrus ciliaris*, **C. setiger* open tussock grassland.

Veg Condition: Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	7	0.5
**Cenchrus setiger*	7	0.5
**Flaveria trinervia*	0.5	0.2
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.4
Acacia inaequilatera	0.5	1.0
Acacia pyrifolia var. *pyrifolia*	2	3.0
Boerhavia coccinea	0.5	0.1
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.2
Corchorus lasiocarpus subsp. *parvus*	0.5	0.6
Cucumis variabilis	0.5	
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.2
Euphorbia australis	0.5	0.05
Euphorbia boophthona	0.5	0.2
Gomphrena cunninghamii	0.5	0.05
Gossypium australe	0.5	0.6
Gossypium robinsonii	0.5	4.0
Grevillea pyramidalis subsp. *leucadendron*	2	4.0
Grevillea wickhamii	1	4.0

Name	Cover (%)	Height (m)
Hybanthus aurantiacus	0.5	0.3
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	2	1.7
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.4
Phyllanthus maderaspatensis	0.5	0.2
Polycarpaea longiflora	0.5	0.2
Polymeria ambigua	0.5	0.05
Pterocaulon sp.	0.5	0.05
Stylobasium spathulatum	2	2.1
Tephrosia rosea var. *Fortescue creeks (M.I.H. Brooker 2186)*	1	1.2
Trachymene oleracea subsp. *oleracea*	0.5	0.5
Trichosanthes cucumerina	0.5	0.2
Triodia epactia	20	0.6

* denotes weed species

Site: BADRr01

Location: Map 16 **Type:** 50x50m Relevé

Date: 2015-08-14 **Described by:** KMc

MGA Zone: 50 **Easting:** 453847.3 **Northing:** 7566482

Habitat: Hillcrest

Soil: Reddish brown sandy clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over *Triodia wiseana, T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	1	2.2
Acacia maitlandii	0.5	1.2
Acacia ptychophylla	0.5	0.9
Bulbostylis barbata	0.5	0.05
Cassytha capillaris	0.5	0.3
Cheilanthes sieberi subsp. *sieberi*	0.5	0.1
Cymbopogon ambiguus	0.5	0.4
Eriachne mucronata	0.5	0.2
Eucalyptus leucophloia subsp. *leucophloia*	1	4.0
Hakea chordophylla	0.5	2.2
Hakea lorea subsp. *lorea*	0.5	2.0
Indigofera monophylla	0.5	0.4
Jasminum didymum subsp. *lineare*	0.5	0.8
Polycarpaea holtzei	0.5	0.02
Ptilotus fusiformis	0.5	0.25
Senna glutinosa subsp. *glutinosa*	0.5	1.8
Senna glutinosa subsp. *pruinosa*	0.5	0.7
Trachymene oleracea subsp. *oleracea*	0.5	0.2
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	3	0.6
Triodia wiseana	29	0.5

* denotes weed species

Site: BADRr02

Location: Map 16 **Type:** 50x50m Quadrat

Date: 2015-08-14 **Described by:** KMc

MGA Zone: 50 **Easting:** 453174 **Northing:** 7567264

Habitat: Hillslope

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia, Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* and *A. maitlandii* open shrubland over *Triodia epactia, T. wiseana* and *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	1	1.9
Acacia maitlandii	1	1.6
Acacia monticola	0.5	1.5
Acacia orthocarpa	0.5	1.2
Acacia ptychophylla	0.5	0.9
Bulbostylis barbata	0.5	0.05
Cheilanthes sieberi subsp. *sieberi*	0.5	0.1
Corymbia hamersleyana	1	3.2
Cucumis variabilis	0.5	0.8
Cymbopogon ambiguus	0.5	0.6
Eriachne pulchella subsp. *pulchella*	0.5	0.05
Eucalyptus leucophloia subsp. *leucophloia*	0.5	5.0
Gossypium robinsonii	0.5	1.8
Indigofera monophylla	0.5	0.3
Jasminum didymum subsp. *lineare*	0.5	1.1
Polycarpaea holtzei	0.5	0.02
Senna glutinosa subsp. *glutinosa*	0.5	0.9
Trachymene oleracea subsp. *oleracea*	0.5	0.5
Triodia epactia	11	0.5
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	8	0.5
Triodia wiseana	11	0.5

* denotes weed species

Site: BADRr03

Location: Map 16 **Type:** 50x50m Relevé
Date: 2015-08-14 **Described by:** KMc
MGA Zone: 50 **Easting:** 454218 **Northing:** 7566457
Habitat: Hillslope
Soil: Red brown sandy clay loam
Rock type: Ironstone
Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia inaequilatera* tall open shrubland over *Triodia wiseana, T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 hummock grassland.
Veg Condition: Excellent
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	3	2.2
Acacia orthocarpa	0.5	1.0
Bulbostylis barbata	0.5	0.05
Cassytha capillaris	0.5	0.1
Cheilanthes sieberi subsp. *sieberi*	0.5	0.1
Corymbia hamersleyana	0.5	5.0
Cymbopogon ambiguus	0.5	0.4
Eriachne mucronata	0.5	0.2
Eucalyptus leucophloia subsp. *leucophloia*	1	4.5
Hakea chordophylla	0.5	1.2
Indigofera monophylla	0.5	0.2
Jasminum didymum subsp. *lineare*	0.5	1.0
Polycarpaea holtzei	0.5	0.01
Senna glutinosa subsp. *glutinosa*	0.5	0.8
Senna glutinosa subsp. *pruinosa*	0.5	0.8
Themeda triandra	0.5	0.3
Trachymene oleracea subsp. *oleracea*	0.5	0.4
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	20	0.5
Triodia wiseana	20	0.5

* denotes weed species

Site: BADRr04

Location: Map 15 north sector **Type:** 50x50m Quadrat

Date: 2015-08-15 **Described by:** LV

MGA Zone: 50 **Easting:** 451011 **Northing:** 7569196

Habitat: Hillslope

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia bivenosa* scattered low shrubs over *Triodia wiseana* hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	1	0.5
Cheilanthes sieberi subsp. *sieberi*	0.5	0.1
Cleome viscosa	0.5	0.09
Cymbopogon ambiguus	0.5	0.35
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.12
Eriachne mucronata	0.5	0.3
Eucalyptus leucophloia subsp. *leucophloia*	2	4.0
Euphorbia australis var. *australis*	0.5	0.05
Hakea lorea subsp. *lorea*	0.5	0.5
Jasminum didymum subsp. *lineare*	0.5	1.0
Nicotiana benthamiana	0.5	0.25
Oldenlandia crouchiana	0.5	0.03
Paspalidium clementii	0.5	0.1
Polycarpaea longiflora	0.5	0.15
Pterocaulon sp.	0.5	0.02
Ptilotus calostachyus	0.5	0.5
Ptilotus nobilis	0.5	0.1
Senna artemisioides subsp. *oligophylla*	0.5	0.5
Senna glutinosa subsp. *glutinosa*	0.5	0.4
Senna glutinosa subsp. *pruinosa*	0.5	1.0
Senna symonii	0.5	0.8
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.4

Name	Cover (%)	Height (m)
Solanum cleistogamum	0.5	0.1
Triodia wiseana	40	0.3

* denotes weed species

Site: BADRr05
Location: Map2 **Type:** 50x50m Quadrat
Date: 2015-08-18 **Described by:** KMc
MGA Zone: 50 **Easting:** 423103 **Northing:** 7590041
Habitat: Risecrest
Soil: Red brown sandy clay loam
Rock type: Ironstone
Vegetation: *Acacia ancistrocarpa* scattered shrubs over *Triodia wiseana, T*. sp. Robe River (M.E. Trudgen et al. MET 12367) P3 open hummock grassland.
Veg Condition: Excellent
Fire Age: >10 years



Photo

Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	1	1.8
Acacia bivenosa	0.5	1.9
Acacia inaequilatera	0.5	1.9
Acacia tumida var. *pilbarensis*	0.5	1.9
Goodenia stobbsiana	0.5	0.2
Grevillea wickhamii	0.5	2.1
Petalostylis labicheoides	0.5	1.3
Ptilotus calostachyus	0.5	0.8
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	2	0.7
Triodia wiseana	20	0.4

* denotes weed species

Site: BAKM01

Location: SE end study **Type:** 20x125m Quadrat

Date: 2015-08-14 **Described by:** JA

MGA Zone: 50 **Easting:** 453882 **Northing:** 7565836

Habitat: Stream bed

Soil: Red brown loamy sand

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia tumida* var. *pilbarensis, Grevillea wickhamii* subsp. *hispidula, Stylobasium spathulatum* tall shrubland over *Triodia epactia* open hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	1.0
Acacia inaequilatera	0.5	2.2
Acacia orthocarpa	0.5	1.3
Acacia tumida var. *pilbarensis*	15	3.0
Bonamia erecta	0.5	0.4
Cassytha capillaris	0.5	1.8
Corymbia hamersleyana	6	4.0
Cymbopogon ambiguus	0.5	0.6
Dodonaea coriacea	0.5	0.4
Duperreya commixta	0.5	
Eriachne mucronata	0.5	0.4
Gossypium australe	0.5	0.4
Gossypium robinsonii	0.5	1.5
Grevillea wickhamii subsp. *hispidula*	3	3.5
Hybanthus aurantiacus	0.5	0.3
Jasminum didymum subsp. *lineare*	0.5	1.0
Keraudrenia velutina subsp. *elliptica*	0.5	0.6
Paraneurachne muelleri	0.5	0.4
Senna glutinosa subsp. x *luerssenii*	0.5	1.8
Stylobasium spathulatum	1	2.0
Tephrosia virens	0.5	1.3

Name	Cover (%)	Height (m)
Themeda triandra	0.5	0.4
Trachymene oleracea subsp. *oleracea*	0.5	0.2
Triodia epactia	15	0.6
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	0.5	1.0
Waltheria virgata	0.5	0.6

* denotes weed species

Site: BAKM02

Location: SE end study **Type:** 10x250m Relevé

Date: 2015-08-14 **Described by:** LV

MGA Zone: 50 **Easting:** 453301.3 **Northing:** 7566278

Habitat: Shallow gully

Soil: Red brown silty loam

Rock type: Ironstone

Vegetation: *Triodia wiseana, T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	1.2
Acacia inaequilatera	0.5	3.0
Acacia maitlandii	0.5	1.1
Acacia monticola	0.5	1.7
Bonamia pilbarensis	0.5	0.05
Clerodendrum floribundum var. *angustifolium*	0.5	1.1
Corymbia hamersleyana	0.5	3.0
Dodonaea coriacea	0.5	1.0
Eremophila forrestii subsp. *forrestii*	0.5	0.7
Eriachne mucronata	0.5	0.3
Eriachne pulchella subsp. *dominii*	0.5	0.1
Eucalyptus leucophloia subsp. *leucophloia*	0.5	3.0
Goodenia stobbsiana	0.5	0.7
Gossypium australe	0.5	1.2
Indigofera monophylla	0.5	0.3
Paraneurachne muelleri	0.5	0.4
Ptilotus calostachyus	0.5	1.0
Senna glutinosa subsp. *glutinosa*	0.5	1.0
Senna glutinosa subsp. *pruinosa*	0.5	1.5
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.2
Stemodia grossa	0.5	0.6
Triodia epactia	0.5	0.5

Name	Cover (%)	Height (m)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	12	1.0
Triodia wiseana	40	1.0

* denotes weed species

Site: BAKM03

Location: SE end of study area **Type:** 50x50m Quadrat

Date: 2015-08-14 **Described by:** LV

MGA Zone: 50 **Easting:** 452835.6 **Northing:** 7566904

Habitat: Hillcrest

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia inaequilatera* tall open shrubland over *Triodia wiseana* open hummock grassland.

Veg Condition: Excellent

Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	3	2.5
Acacia maitlandii	0.5	1.2
Acacia ptychophylla	0.5	0.8
Bulbostylis barbata	0.5	0.06
Corchorus lasiocarpus subsp. *parvus*	0.5	0.4
Corymbia hamersleyana	0.5	2.5
Dampiera candicans	0.5	0.4
Eriachne pulchella subsp. *dominii*	0.5	0.08
Eriachne pulchella subsp. *pulchella*	0.5	0.06
Eucalyptus leucophloia subsp. *leucophloia*	0.5	4.5
Euphorbia boophthona	0.5	0.2
Goodenia stobbsiana	0.5	0.45
Gossypium robinsonii	0.5	2.0
Indigofera monophylla	0.5	0.2
Jasminum didymum subsp. *lineare*	0.5	1.2
Oldenlandia crouchiana	0.5	0.1
Polycarpaea holtzei	0.5	0.05
Ptilotus calostachyus	0.5	0.6
Senna glutinosa subsp. *glutinosa*	0.5	1.5
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.15
Triodia wiseana	20	0.7

* denotes weed species

Site: BAKM05

Location: SE end of study area **Type:** 50x50m Quadrat

Date: 2015-08-14 **Described by:** LV

MGA Zone: 50 **Easting:** 453159.3 **Northing:** 7566623

Habitat: Hillcrest

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over *Triodia wiseana, T*. sp. Robe River (M.E. Trudgen et al. MET 12367) P3 open hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	1	3.0
Acacia maitlandii	0.5	3.0
Acacia ptychophylla	0.5	0.5
Corchorus lasiocarpus subsp. *parvus*	0.5	0.01
Corymbia hamersleyana	0.5	3.0
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.3
Eriachne pulchella subsp. *pulchella*	0.5	0.06
Eucalyptus leucophloia subsp. *leucophloia*	1	4.0
Hakea lorea subsp. *lorea*	0.5	2.4
Indigofera monophylla	0.5	0.35
Polycarpaea holtzei	0.5	0.02
Polygala glaucifolia	0.5	0.2
Ptilotus calostachyus	0.5	0.6
Senna glutinosa subsp. *pruinosa*	0.5	1.5
Senna glutinosa subsp. x *luerssenii*	0.5	1.2
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	8	0.8
Triodia wiseana	17	0.8

* denotes weed species

Site: BAKM07

Location: SE end of study area **Type:** 20x125m Relevé

Date: 2015-08-15 **Described by:** DR

MGA Zone: 50 **Easting:** 451619.4 **Northing:** 7568086

Habitat: Floodplain

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Triodia wiseana* open hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	1.0
Acacia inaequilatera	0.5	2.5
Acacia ptychophylla	0.5	0.6
Acacia tumida var. *pilbarensis*	0.5	2.1
Bulbostylis barbata	0.5	0.1
Corchorus sidoides	0.5	0.5
Corymbia hamersleyana	0.5	2.2
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Eucalyptus leucophloia subsp. *leucophloia*	3	6.0
Grevillea wickhamii	0.5	2.5
Ptilotus calostachyus	0.5	0.8
Triodia wiseana	33	0.4

* denotes weed species

Site: BAKM09

Location: S end of study area **Type:** 10x250m Relevé

Date: 2015-08-12 **Described by:** JA/LV

MGA Zone: 50 **Easting:** 448461.8 **Northing:** 7568928

Habitat: Gully

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Stylobasium spathulatum, Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3, *Acacia inaequilatera* tall shrubland over *Triodia wiseana* very open hummock grassland with *Cymbopogon ambiguus* scattered tussock grasses.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	2.0
Acacia bivenosa	0.5	1.8
Acacia inaequilatera	1	2.5
Acacia pruinocarpa	0.5	0.8
Achyranthes aspera	0.5	0.2
Bulbostylis barbata	0.5	0.2
Cleome viscosa	0.5	0.1
Cucumis variabilis	0.5	0.15
Cymbopogon ambiguus	1	1.0
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.15
Eriachne mucronata	0.5	0.1
Eucalyptus leucophloia subsp. *leucophloia*	1	8.0
Euphorbia boophthona	0.5	0.2
Gomphrena cunninghamii	0.5	0.2
Goodenia stobbsiana	0.5	0.2
Gossypium australe	0.5	0.5
Gossypium robinsonii	0.5	3.0
Grevillea pyramidalis subsp. *leucadendron*	0.5	1.5
Hybanthus aurantiacus	0.5	0.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	3	2.1

Name	Cover (%)	Height (m)
Jasminum didymum subsp. *lineare*	0.5	0.2
Lobelia heterophylla	0.5	0.35
Nicotiana benthamiana	0.5	0.4
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.5
Oldenlandia crouchiana	0.5	0.1
Paspalidium clementii	0.5	0.1
Paspalidium tabulatum	0.5	0.1
Polycarpaea holtzei	0.5	0.01
Polycarpaea longiflora	0.5	0.2
Ptilotus nobilis	0.5	0.5
Ptilotus obovatus var. *obovatus*	0.5	1.0
Rhodanthe margarethae	0.5	0.25
Rhynchosia minima	0.5	0.2
Senna artemisioides subsp. *oligophylla*	0.5	1.2
Senna glutinosa subsp. *glutinosa*	0.5	1.2
Stylobasium spathulatum	8	2.5
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.35
Tephrosia virens	0.5	1.5
Trachymene oleracea subsp. *oleracea*	0.5	0.15
Triodia epactia	0.5	1.0
Triodia wiseana	7	1.0

* denotes weed species

Site: BAKM10

Location: S end of study area **Type:** 50x50m Relevé

Date: 2015-08-20 **Described by:** KMc

MGA Zone: 50 **Easting:** 449215 **Northing:** 7569432

Habitat: Flood-out

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus victrix* low open woodland over *Acacia pyrifolia* scattered tall shrubs over *Triodia epactia* hummock grassland with **Cenchrus setiger* and **C. ciliaris* very open tussock grassland.

Veg Condition: Good

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.2
**Cenchrus ciliaris*	1	0.4
**Cenchrus setiger*	1	1.1
Abutilon lepidum	0.5	2.0
Acacia monticola	0.5	3.0
Acacia pyrifolia var. *pyrifolia*	1	2.1
Adriana tomentosa var. *tomentosa*	0.5	1.3
Amaranthus mitchellii	0.5	0.3
Amaranthus undulatus	0.5	0.4
Boerhavia coccinea	0.5	0.1
Bulbostylis barbata	0.5	0.15
Cleome viscosa	0.5	0.4
Corchorus crozophorifolius	0.5	0.9
Cucumis variabilis	0.5	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.3
Eriachne pulchella subsp. *dominii*	0.5	0.2
Eriachne tenuiculmis	0.5	0.4
Eucalyptus victrix	2	6.0
Euphorbia australis	0.5	0.1
Euphorbia schultzii	0.5	0.2
Gomphrena cunninghamii	0.5	0.1

Name	Cover (%)	Height (m)
Gossypium robinsonii	0.5	2.0
Hybanthus aurantiacus	0.5	0.25
Indigofera colutea	0.5	0.25
Indigofera linnaei	0.5	0.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.8
Ipomoea muelleri	0.5	0.2
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.2
Paspalidium tabulatum	0.5	0.2
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.9
Phyllanthus maderaspatensis	0.5	0.3
Polycarpaea holtzei	0.5	0.01
Polycarpaea longiflora	0.5	0.2
Pterocaulon sphaeranthoides	0.5	0.6
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.4
Trachymene oleracea subsp. *oleracea*	0.5	0.8
Trichodesma zeylanicum var. *zeylanicum*	0.5	1.6
Triodia epactia	60	1.2

* denotes weed species

Site: BAKM11
Location: S end of study area **Type:** 60x40m Quadrat
Date: 2015-08-16 **Described by:** DR
MGA Zone: 50 **Easting:** 448335.6 **Northing:** 7571757
Habitat: Channel
Soil: Red brown silty clay loam
Rock type: Ironstone
Vegetation: *Eucalyptus camaldulensis* subsp. *refulgens* low open woodland over *Acacia pyrifolia* var. *pyrifolia* scattered tall shrubs over *Acacia trachycarpa* open shrubland over *Triodia epactia* open hummock grassland with **Cenchrus setiger* tussock grassland.
Veg Condition: Poor
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.1
**Cenchrus ciliaris*	0.5	0.8
**Cenchrus setiger*	50	0.5
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.4
Acacia colei var. *ileocarpa*	0.5	2.2
Acacia pyrifolia var. *pyrifolia*	1	2.3
Acacia trachycarpa	5	1.8
Alternanthera nana	0.5	0.1
Amaranthus undulatus	0.5	0.1
Boerhavia coccinea	0.5	0.05
Cleome viscosa	0.5	0.1
Corchorus crozophorifolius	0.5	1.0
Cucumis variabilis	0.5	0.15
Cyperus vaginatus	0.5	0.7
Dysphania sp.	0.5	0.07
Eucalyptus camaldulensis subsp. *refulgens*	8	8.0
Euphorbia schultzii	0.5	0.1
Gomphrena cunninghamii	0.5	0.2
Gossypium australe	0.5	2.2
Gossypium robinsonii	0.5	2.3
Hybanthus aurantiacus	0.5	0.2

Name	Cover (%)	Height (m)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	0.8
Ipomoea muelleri	0.5	0.02
Lepidium muelleri-ferdinandii	0.5	0.1
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Pterocaulon sp.	0.5	0.01
Ptilotus astrolasius	0.5	0.35
Ptilotus calostachyus	0.5	0.8
Senna artemisioides subsp. *helmsii*	0.5	0.6
Sida echinocarpa	0.5	0.6
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.0
Stylobasium spathulatum	0.5	1.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.3
Themeda triandra	0.5	0.35
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.1
Triodia epactia	15	1.0
Triodia wiseana	0.5	0.5

* denotes weed species

Site: BAKM12

Location: Map 11 **Type:** 50x50m Quadrat

Date: 2015-08-20 **Described by:** JA

MGA Zone: 50 **Easting:** 446014.4 **Northing:** 7572452

Habitat: Flood-out

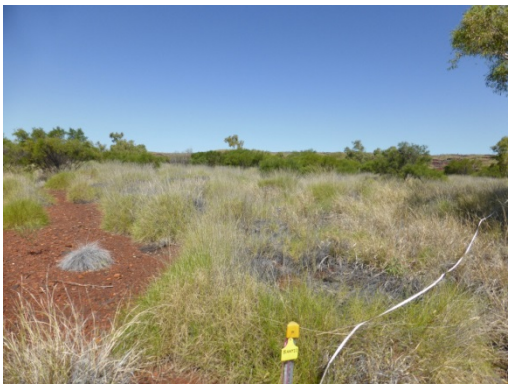
Soil: Red brown silty clay

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia trachycarpa* tall open shrubland over *Triodia epactia* open hummock grassland and **Cenchrus setiger*, **C. ciliaris* open tussock grassland.

Veg Condition: Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.05
**Cenchrus ciliaris*	7	0.8
**Cenchrus setiger*	7	0.8
Acacia pyrifolia var. *pyrifolia*	0.5	2.7
Acacia trachycarpa	7	2.2
Aristida holathera var. *holathera*	0.5	0.4
Boerhavia coccinea	0.5	0.1
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.2
Corymbia hamersleyana	1	6.0
Crotalaria medicaginea var. *neglecta*	0.5	0.3
Cucumis melo	0.5	0.1
Cucumis variabilis	0.5	
Digitaria ctenantha	0.5	0.2
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.05
Eragrostis setifolia	0.5	0.8
Euphorbia schultzii	0.5	0.2
Gossypium australe	0.5	0.6
Gossypium robinsonii	0.5	1.6
Hybanthus aurantiacus	0.5	0.4
Indigofera colutea	0.5	0.15

Name	Cover (%)	Height (m)
Indigofera linnaei	0.5	0.1
Ipomoea muelleri	0.5	0.1
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Paraneurachne muelleri	0.5	0.5
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	1.0
Phyllanthus maderaspatensis	0.5	0.2
Polycarpaea longiflora	0.5	0.3
Ptilotus fusiformis	0.5	0.4
Solanum cleistogamum	0.5	0.15
Solanum phlomoides	0.5	0.5
Swainsona formosa	0.5	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.5
Trachymene oleracea subsp. *oleracea*	0.5	0.05
Triodia epactia	20	0.8
Urochloa piligera	0.5	0.1

* denotes weed species

Site: BAKM15

Location: Top NW end of study area **Type:** 50x50m Quadrat

Date: 2015-08-20 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 422806.5 **Northing:** 7589844

Habitat: Stream bed

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia tumida* var. *pilbarensis* tall shrubland to tall open scrub over *A. ancistrocarpa* open shrubland over *Triodia wiseana* open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	5	1.9
Acacia bivenosa	0.5	1.1
Acacia inaequilatera	0.5	2.5
Acacia tumida var. *pilbarensis*	23	4.0
Amaranthus sp.	0.5	0.2
Cleome viscosa	0.5	0.3
Corchorus lasiocarpus subsp. *parvus*	0.5	0.6
Corchorus sp.	0.5	0.1
Corymbia hamersleyana	0.5	3.5
Cucumis melo	0.5	0.2
Cucumis variabilis	0.5	0.2
Dysphania sp.	0.5	0.1
Euphorbia australis var. *subtomentosa*	0.5	0.1
Euphorbia boophthona	0.5	0.2
Glycine canescens	0.5	0.2
Goodenia microptera	0.5	0.2
Grevillea wickhamii	0.5	2.5
Heliotropium ovalifolium	0.5	0.2
Hibiscus leptocladus	0.5	0.7
Hybanthus aurantiacus	0.5	0.4
Indigofera monophylla	0.5	0.2
Isotropis atropurpurea	0.5	0.4

Name	Cover (%)	Height (m)
Keraudrenia velutina subsp. *elliptica*	0.5	0.6
Oldenlandia crouchiana	0.5	0.2
Paspalidium sp.	0.5	0.1
Petalostylis labicheoides	0.5	2.0
Pterocaulon sp.	0.5	0.02
Ptilotus nobilis	0.5	0.1
Senna glutinosa subsp. *pruinosa*	0.5	1.6
Senna notabilis	0.5	0.3
Solanum diversiflorum	0.5	0.3
Stylobasium spathulatum	0.5	2.0
Trachymene oleracea subsp. *oleracea*	0.5	0.2
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.3
Triodia wiseana	20	0.9

* denotes weed species

Site: BAKM18

Location: Middle of study area Map 5 **Type:** 50x50m Quadrat

Date: 2015-08-17 **Described by:** KMc

MGA Zone: 50 **Easting:** 431437 **Northing:** 7581711

Habitat: Hillslope

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees to low open woodland over *Acacia pruinocarpa* tall open shrubland over *Triodia wiseana* and *T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 very open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia maitlandii	0.5	1.4
Acacia pruinocarpa	7	3.5
Acacia tumida var. *pilbarensis*	0.5	1.6
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.1
Clerodendrum floribundum var. *angustifolium*	0.5	1.2
Dodonaea coriacea	0.5	0.6
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne pulchella subsp. *pulchella*	0.5	0.05
Eucalyptus leucophloia subsp. *leucophloia*	3	4.5
Grevillea wickhamii	0.5	2.0
Indigofera monophylla	0.5	0.3
Jasminum didymum subsp. *lineare*	0.5	2.0
Oldenlandia crouchiana	0.5	0.1
Petalostylis labicheoides	0.5	1.3
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Polycarpaea holtzei	0.5	0.02
Polycarpaea longiflora	0.5	0.25
Portulaca oleracea	0.5	0.02
Ptilotus astrolasius	0.5	0.3
Ptilotus auriculifolius	0.5	0.1

Name	Cover (%)	Height (m)
Ptilotus calostachyus	0.5	0.2
Ptilotus fusiformis	0.5	0.35
Ptilotus nobilis	0.5	0.1
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.1
Solanum lasiophyllum	0.5	0.4
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	2	0.5
Triodia wiseana	7	0.6
Triumfetta maconochieana	0.5	0.5

* denotes weed species

Site: BAKM19

Location: S end of study area **Type:** 50x50m Quadrat

Date: 2015-08-12 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 448851 **Northing:** 7569396

Habitat: Floodplain

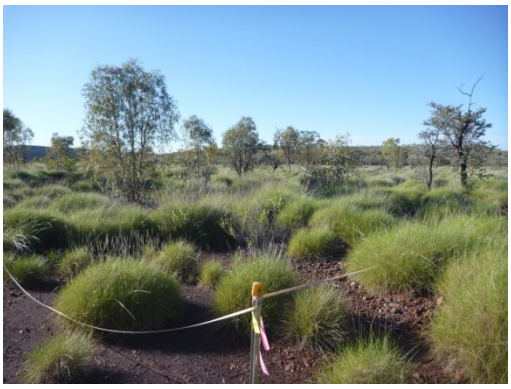
Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered tall shrubs to tall open shrubland over *Triodia epactia* open hummock grassland.

Veg Condition: Excellent

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	2	2.8
Acacia pyrifolia var. *pyrifolia*	0.5	1.3
Boerhavia coccinea	0.5	0.1
Bonamia erecta	0.5	0.1
Bonamia media	0.5	0.1
Bulbostylis barbata	0.5	0.1
Corymbia hamersleyana	2	3.3
Eriachne mucronata	0.5	0.4
Gossypium australe	0.5	1.0
Indigofera colutea	0.5	0.05
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.7
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Polycarpaea holtzei	0.5	0.02
Sida echinocarpa	0.5	0.9
Triodia epactia	27	1.0

* denotes weed species

Site: BAKMr16

Location: Middle of study area **Type:** 10x250m Quadrat

Date: 2015-08-17 **Described by:** LV/KMc

MGA Zone: 50 **Easting:** 438349 **Northing:** 7576906

Habitat: Stream bed

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia tumida* var. *pilbarensis* closed heath over *Tephrosia supina*, *Gossypium australe*, *Sida rohlenae subp. rohlenae* low shrubland over *Triodia epactia* very open hummock grassland.

Veg Condition: Excellent

Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.5
**Cenchrus setiger*	0.5	0.5
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	0.25
Abutilon sp. Pilbara (W.R. Barker 2025)	0.5	1.1
Acacia bivenosa	0.5	0.4
Acacia inaequilatera	0.5	2.2
Acacia pyrifolia var. *pyrifolia*	0.5	1.5
Acacia synchronicia	0.5	0.4
Acacia tumida var. *pilbarensis*	85	1.9
Alysicarpus muelleri	0.5	0.5
Amaranthus cuspidifolius	0.5	0.8
Aristida holathera var. *holathera*	0.5	0.4
Bonamia erecta	0.5	0.3
Bonamia media	1	0.3
Chrysopogon fallax	0.5	1.0
Cleome viscosa	0.5	0.4
Corchorus lasiocarpus subsp. *parvus*	1	0.4
Corymbia hamersleyana	8	6.0
Crotalaria medicaginea var. *neglecta*	0.5	0.9
Cucumis variabilis	0.5	2.0

Name	Cover (%)	Height (m)
Cullen lachnostachys	0.5	1.0
Cullen martinii	0.5	0.4
Cymbopogon ambiguus	0.5	0.35
Ehretia saligna	0.5	1.2
Euphorbia biconvexa	0.5	0.2
Goodenia forrestii	0.5	0.3
Goodenia microptera	0.5	0.2
Gossypium australe	8	0.8
Gossypium robinsonii	0.5	2.0
Grevillea pyramidalis subsp. *leucadendron*	0.5	1.1
Hakea lorea subsp. *lorea*	0.5	0.4
Hibiscus brachychlaenus	0.5	1.0
Hibiscus burtonii	0.5	0.6
Hybanthus aurantiacus	0.5	0.5
Indigofera colutea	0.5	0.2
Indigofera linnaei	0.5	0.1
Indigofera monophylla	0.5	0.5
Ipomoea muelleri	0.5	1.1
Jasminum didymum subsp. *lineare*	0.5	1.0
Paraneurachne muelleri	0.5	0.25
Perotis rara	0.5	0.2
Portulaca oleracea	0.5	0.1
Ptilotus appendiculatus	0.5	0.1
Ptilotus astrolasius	0.5	0.5
Ptilotus axillaris	0.5	0.08
Rhynchosia minima	0.5	0.5
Senna glutinosa subsp. *glutinosa*	0.5	1.1
Senna notabilis	0.5	0.5
Sida echinocarpa	0.5	0.7
Sida rohlenae subp. rohlenae	1	0.1
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.5
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.4
Swainsona formosa	0.5	0.3
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.6
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.5	1.2
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	0.5	0.1
Tephrosia supina	15	0.2
Triodia epactia	6	0.8
Triodia wiseana	0.5	0.35

* denotes weed species

Site: BALVr-01
Location: South end **Type:** 50x50m Relevé
Date: 2015-08-14 **Described by:** JA
MGA Zone: 50 **Easting:** 452995.5 **Northing:** 7566189
Habitat: Hillcrest
Soil: Dark reddish brown clay loam
Rock type: Ironstone
Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia maitlandii, A. inaequilatera* tall shrubland over *Triodia wiseana* (*T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3) hummock grassland.
Veg Condition: Excellent
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	3	2.5
Acacia maitlandii	15	2.3
Bulbostylis barbata	0.5	0.5
Clerodendrum floribundum var. *angustifolium*	0.5	0.7
Corymbia hamersleyana	2	4.0
Dampiera candicans	0.5	0.3
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne pulchella subsp. *dominii*	0.5	0.1
Eriachne pulchella subsp. *pulchella*	0.5	0.07
Euphorbia boophthona	0.5	0.15
Fimbristylis sp.	0.5	0.05
Goodenia stobbsiana	0.5	0.4
Hakea chordophylla	0.5	3.0
Indigofera monophylla	0.5	0.35
Keredrenia sp.	0.5	0.5
Oldenlandia crouchiana	0.5	0.05
Polycarpaea holtzei	0.5	0.05
Polycarpaea longiflora	0.5	0.2
Polygala glaucifolia	0.5	0.05
Ptilotus calostachyus	0.5	0.8

Name	Cover (%)	Height (m)
Senna glutinosa subsp. *pruinosa*	0.5	1.4
Senna glutinosa subsp. x *luerssenii*	0.5	0.7
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	1	0.4
Triodia wiseana	35	0.5

* denotes weed species

Site: BALVr-02
Location: South end **Type:** 50x50m Relevé
Date: 2015-08-14 **Described by:** JA
MGA Zone: 50 **Easting:** 453231.8 **Northing:** 7566235
Habitat: Footslope
Soil: Red brown sandy clay loam
Rock type: Ironstone
Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia maitlandii* tall open shrubland over *Triodia wiseana* (*T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3) hummock grassland.
Veg Condition: Excellent
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia bivenosa	0.5	0.8
Acacia inaequilatera	0.5	2.2
Acacia maitlandii	3	3.0
Cassytha capillaris	0.5	
Cymbopogon ambiguus	0.5	0.6
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Eucalyptus leucophloia subsp. *leucophloia*	3	7.0
Hibiscus sturtii var. *campylochlamys*	0.5	0.2
Indigofera monophylla	0.5	0.3
Jasminum didymum subsp. *lineare*	0.5	1.4
Paraneurachne muelleri	0.5	0.4
Ptilotus astrolasius	0.5	0.4
Ptilotus calostachyus	0.5	0.4
Senna glutinosa subsp. *glutinosa*	0.5	1.2
Senna symonii	0.5	0.8
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	2	0.4
Triodia wiseana	30	0.4

* denotes weed species

Site: BALVr-03

Location: South end **Type:** 100x25m Relevé

Date: 2015-08-15 **Described by:** JA

MGA Zone: 50 **Easting:** 450401 **Northing:** 7568619

Habitat: Gully

Soil: Reddish brown sandy clay loam

Rock type: BIF

Vegetation: *Corymbia ferriticola, Ficus brachypoda* low open woodland over *Acacia tumida* var. *pilbarensis* scattered tall shrubs over *Triodia epactia, T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3, *T. wiseana* very open hummock grassland and *Eriachne mucronata* scattered tussock grasses.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia orthocarpa	0.5	2.5
Acacia tumida var. *pilbarensis*	1	4.0
Brachychiton acuminatus	0.5	5.0
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.15
Corymbia ferriticola	2	4.5
Corymbia hamersleyana	0.5	3.0
Cucumis variabilis	0.5	0.2
Cymbopogon ambiguus	0.5	0.4
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.25
Cyperus hesperius	0.5	0.25
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne mucronata	1	0.35
Euphorbia australis	0.5	0.1
Euphorbia boophthona	0.5	0.15
Ficus brachypoda	1	2.1
Gomphrena cunninghamii	0.5	0.1
Gossypium robinsonii	0.5	2.1
Jasminum didymum subsp. *lineare*	0.5	0.15
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.05

Name	Cover (%)	Height (m)
Oldenlandia crouchiana	0.5	0.1
Paraneurachne muelleri	0.5	0.2
Paspalidium clementii	0.5	0.2
Polycarpaea involucrata	0.5	0.05
Polycarpaea longiflora	0.5	0.3
Pterocaulon sp.	0.5	0.4
Pterocaulon sphaeranthoides	0.5	0.4
Rhynchosia minima	0.5	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.3
Tephrosia sp.	0.5	0.3
Tephrosia virens	0.5	0.8
Themeda triandra	0.5	0.35
Triodia epactia	6	0.4
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	2	0.4
Triodia wiseana	1	0.4
Triumfetta maconochieana	0.5	0.7

* denotes weed species

Site: BALVr-04
Location: South **Type:** 50x50m Quadrat
Date: 2015-08-15 **Described by:** LV
MGA Zone: 50 **Easting:** 450943 **Northing:** 7568751
Habitat: Plain
Soil: Red brown sandy clay loam
Rock type: NA
Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* tall shrubland over *Gossypium australe, Bonamia erecta* low open shubland over *Triodia epactia* open hummock grassland.
Veg Condition: Excellent
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia colei var. *ileocarpa*	0.5	1.5
Acacia inaequilatera	20	2.2
Acacia tumida var. *pilbarensis*	0.5	0.5
Aristida holathera var. *holathera*	0.5	0.8
Bonamia erecta	1	0.3
Bonamia media	0.5	0.07
Corchorus lasiocarpus subsp. *parvus*	0.5	0.9
Corymbia hamersleyana	1	3.0
Cucumis variabilis	0.5	0.2
Euphorbia australis var. *australis*	0.5	0.15
Gomphrena cunninghamii	0.5	0.1
Gossypium australe	1	0.5
Hibiscus sturtii var. *campylochlamys*	0.5	0.45
Ptilotus calostachyus	0.5	0.5
Ptilotus nobilis	0.5	1.5
Senna artemisioides subsp. *oligophylla*	0.5	1.0
Senna glutinosa subsp. *glutinosa*	0.5	1.2
Senna glutinosa subsp. x *luerssenii*	0.5	1.0
Tinospora smilacina	0.5	0.15
Triodia epactia	20	0.4

* denotes weed species

Site: BALVr-05
Location: Sth **Type:** 50x50m Relevé
Date: 2015-08-15 **Described by:** DR
MGA Zone: 50 **Easting:** 451345 **Northing:** 7568212
Habitat: Hillslope
Soil: Red brown sandy clay loam
Rock type: Dolerite
Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low open woodland over *Triodia wiseana* hummock grassland.
Veg Condition: Excellent
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Abutilon lepidum	0.5	
Acacia bivenosa	0.5	0.8
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	
Eriachne mucronata	0.5	0.2
Eriachne pulchella subsp. *pulchella*	0.5	0.01
Eucalyptus leucophloia subsp. *leucophloia*	6	5.5
Gomphrena cunninghamii	0.5	0.1
Oldenlandia crouchiana	0.5	0.01
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Ptilotus calostachyus	0.5	1.0
Rhynchosia minima	0.5	0.01
Senna glutinosa subsp. *glutinosa*	0.5	0.9
Senna glutinosa subsp. *pruinosa*	0.5	1.2
Senna glutinosa subsp. x *luerssenii*	0.5	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	
Triodia wiseana	40	0.5

* denotes weed species

Site: BALVr-06

Location: South end **Type:** 100x20m Relevé

Date: 2015-08-12 **Described by:** DR

MGA Zone: 50 **Easting:** 448488.5 **Northing:** 7569743

Habitat: Cliff-footslope

Soil: Red brown loamy sand

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia pruinocarpa* scattered tall shrubs over *Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618), *Ptilotus obovatus* low open shrubland over *Triodia wiseana* open hummock grassland with *Themeda triandra* very open tussock grassland

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Aerva javanica*	0.5	0.8
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	1	0.8
Acacia colei var. *ileocarpa*	0.5	1.8
Acacia monticola	0.5	1.7
Acacia pruinocarpa	1	2.2
Acacia pyrifolia var. *pyrifolia*	0.5	1.6
Acacia tumida var. *pilbarensis*	0.5	1.2
Amaranthus undulatus	0.5	0.4
Bonamia sp.	0.5	0.05
Cheilanthes sieberi subsp. *sieberi*	0.5	0.1
Cleome viscosa	0.5	0.25
Corchorus sidoides	0.5	0.4
Corymbia hamersleyana	0.5	3.0
Cucumis variabilis	0.5	0.4
Cymbopogon ambiguus	0.5	0.35
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.2
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Enneapogon lindleyanus	0.5	
Eriachne mucronata	0.5	0.35
Eucalyptus leucophloia subsp. *leucophloia*	5	5.0

Name	Cover (%)	Height (m)
Euphorbia schultzii	0.5	0.2
Ficus brachypoda	0.5	1.5
Gomphrena cunninghamii	0.5	0.1
Gossypium australe	0.5	0.5
Gossypium robinsonii	0.5	1.3
Hibiscus goldsworthii	0.5	0.4
Hybanthus aurantiacus	0.5	0.3
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.5
Jasminum didymum subsp. *lineare*	0.5	0.5
Lobelia heterophylla	0.5	0.5
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.3
Oldenlandia crouchiana	0.5	0.1
Paspalidium clementii	0.5	0.1
Paspalidium tabulatum	0.5	0.3
Plumbago zeylanica	0.5	0.6
Polycarpaea longiflora	0.5	0.3
Pterocaulon sp.	0.5	0.1
Ptilotus obovatus var. *obovatus*	1	0.5
Rhynchosia minima	0.5	0.1
Senna glutinosa subsp. *glutinosa*	0.5	0.8
Senna venusta	0.5	0.2
Solanum cleistogamum	0.5	0.2
Solanum horridum	0.5	0.2
Stemodia grossa	0.5	0.1
Streptoglossa sp.	0.5	0.1
Stylobasium spathulatum	0.5	1.1
Tephrosia virens	0.5	1.2
Themeda triandra	8	0.4
Tinospora smilacina	0.5	0.7
Trachymene oleracea subsp. *oleracea*	0.5	0.1
Triodia wiseana	20	0.4

* denotes weed species

Site: BALVr-07
Location: Mid **Type:** 50x50m Relevé
Date: 2015-08-13 **Described by:** KMc
MGA Zone: 50 **Easting:** 443175.1 **Northing:** 7573315
Habitat: Minor creek
Soil: Red brown medium clay
Rock type: Ironstone
Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia colei* var. *ileocarpa* tall open shrubland over *Gossypium australe* scattered shrubs over **Cenchrus ciliaris*, **C. setiger* tussock grassland with *Alternanthera nana* scattered herbs.
Veg Condition: Poor
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	30	0.4
**Cenchrus setiger*	30	0.4
**Malvastrum americanum*	0.5	0.4
Acacia bivenosa	0.5	2.0
Acacia colei var. *ileocarpa*	5	3.0
Acacia inaequilatera	0.5	1.5
Acacia pyrifolia var. *pyrifolia*	0.5	1.0
Acacia synchronicia	0.5	0.4
Acacia trachycarpa	0.5	0.5
Alternanthera nana	1	0.3
Alysicarpus muelleri	0.5	0.35
Amaranthus sp.	0.5	0.1
Bergia ammannioides	0.5	0.05
Bergia trimera	0.5	0.05
Boerhavia coccinea	0.5	0.06
Boerhavia schomburgkiana	0.5	0.08
Brachyachne prostrata	0.5	0.1
Chloris pectinata	0.5	0.35
Chrysopogon fallax	0.5	0.6
Cleome viscosa	0.5	0.4
Corchorus lasiocarpus subsp. *parvus*	0.5	0.4

Name	Cover (%)	Height (m)
Corchorus tridens	0.5	0.2
Corymbia hamersleyana	3	5.0
Cucumis variabilis	0.5	0.2
Cullen lachnostachys	0.5	0.3
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.15
Eragrostis cumingii	0.5	0.1
Eragrostis tenellula	0.5	0.5
Eremophila longifolia	0.5	1.6
Eriachne aristidea	0.5	0.25
Eulalia aurea	0.5	0.6
Evolvulus alsinoides var. *villosicalyx*	0.5	0.08
Goodenia microptera	0.5	0.3
Gossypium australe	1	0.8
Hakea lorea subsp. *lorea*	0.5	1.7
Hibiscus sturtii var. *campylochlamys*	0.5	0.2
Ipomoea muelleri	0.5	0.05
Jasminum didymum subsp. *lineare*	0.5	0.4
Melhania oblongifolia	0.5	0.2
Paspalidium rarum	0.5	0.08
Phyllanthus maderaspatensis	0.5	0.4
Pluchea rubelliflora	0.5	0.4
Polycarpaea corymbosa var. *corymbosa*	0.5	0.05
Portulaca oleracea	0.5	0.05
Ptilotus astrolasius	0.5	0.5
Ptilotus axillaris	0.5	0.1
Rhynchosia minima	0.5	0.09
Salsola australis	0.5	0.06
Senna notabilis	0.5	0.3
Sida arsiniata	0.5	0.5
Sida fibulifera	0.5	0.35
Sida sp. verrucose glands (F.H. Mollemans 2423)	0.5	0.2
Sporobolus australasicus	0.5	0.05
Stemodia grossa	0.5	0.2
Triodia epactia	0.5	0.6
Waltheria indica	0.5	0.45

* denotes weed species

Site: BAR112

Location: map 12 **Type:** 50x50m Quadrat

Date: 2015-08-16 **Described by:** DR

MGA Zone: 50 **Easting:** 446100 **Northing:** 7570949

Habitat: Hillslope

Soil: Red brown clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia pruinocarpa* tall shrubland over *Triodia wiseana* (*T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3) open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia pruinocarpa	12	3.0
Acacia pyrifolia var. *pyrifolia*	0.5	2.8
Bulbostylis barbata	0.5	0.05
Cleome viscosa	0.5	0.1
Cucumis variabilis	0.5	0.1
Cymbopogon ambiguus	0.5	0.5
Dysphania sp.	0.5	0.05
Eriachne mucronata	0.5	0.2
Eriachne pulchella subsp. *pulchella*	0.5	0.05
Eucalyptus leucophloia subsp. *leucophloia*	1	6.5
Jasminum didymum subsp. *lineare*	0.5	1.0
Polycarpaea longiflora	0.5	0.2
Senna artemisioides subsp. *oligophylla*	0.5	0.3
Senna glutinosa subsp. *glutinosa*	0.5	0.5
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	5	0.4
Triodia wiseana	20	0.4

* denotes weed species

Site: BUN11
Location: Map 7 **Type:** 50x50m Quadrat
Date: 2015-08-20 **Described by:** KMc
MGA Zone: 50 **Easting:** 436964 **Northing:** 7578066
Habitat: Floodplain
Soil: Reddish brown silty clay loam
Rock type: Ironstone
Vegetation: *Acacia inaequilatera, Hakea lorea* subsp. *lorea* scattered shrubs over *Gossypium australe* scattered low shrubs over *Triodia epactia* open hummock grassland with **Cenchrus setiger* scattered tussock grasses.
Veg Condition: Very Good
Fire Age: 0-2 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.4
**Cenchrus setiger*	1	0.8
Acacia colei var. *ileocarpa*	0.5	1.2
Acacia inaequilatera	0.5	1.2
Acacia maitlandii	0.5	0.4
Bonamia erecta	0.5	0.25
Bonamia media	0.5	0.05
Corchorus lasiocarpus subsp. *parvus*	0.5	0.5
Cullen lachnostachys	0.5	0.9
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eremophila longifolia	0.5	1.0
Gossypium australe	1	0.6
Grevillea pyramidalis subsp. *leucadendron*	0.5	0.6
Hakea lorea subsp. *lorea*	0.5	1.1
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.8
Polycarpaea longiflora	0.5	0.1
Ptilotus astrolasius	0.5	0.45
Senna notabilis	0.5	0.4
Sida arsiniata	0.5	0.35
Sida echinocarpa	0.5	0.6
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.4

Name	Cover (%)	Height (m)
Stylobasium spathulatum	0.5	0.9
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.4
Triodia epactia	25	0.35
Triodia wiseana	0.5	0.5

* denotes weed species

Site: BUN19

Location: Middle of study area **Type:** 50x50m Relevé

Date: 2015-05-10 **Described by:** KMc

MGA Zone: 50 **Easting:** 443183 **Northing:** 7573121

Habitat: Claypan

Soil: Red brown silty clay

Rock type: Ironstone

Vegetation: **Cenchrus setiger*, **C. ciliaris* tussock grassland.

Veg Condition: Very Poor

Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	30	0.5
**Cenchrus setiger*	38	0.7
Acacia bivenosa	0.5	0.2
Acacia synchronicia	0.5	1.5
Cleome viscosa	0.5	0.4
Dactyloctenium radulans	0.5	0.2
Dysphania sp.	0.5	0.1
Gossypium australe	0.5	0.3
Paspalidium rarum	0.5	0.1
Portulaca oleracea	0.5	0.2
Sclerolaena cornishiana	0.5	0.3
Senna artemisioides subsp. *oligophylla*	0.5	0.2
Senna notabilis	0.5	0.5
Sida arsiniata	0.5	0.4
Sida fibulifera	0.5	0.2
Solanum diversiflorum	0.5	0.2
Sporobolus australasicus	0.5	0.3
Trianthema triquetrum	0.5	0.1

* denotes weed species

Site: BUN50
Location: Map11 **Type:** Relevé
Date: 2015-05-09 **Described by:** JA/LV
MGA Zone: 50 **Easting:** 444564 **Northing:** 7572798
Habitat: Plain
Soil: Red brown loamy sand
Rock type: NA
Vegetation: *Corymbia hamersleyana* scattered low trees over **Cenchrus ciliaris*, **C. setiger* open tussock grassland and *Triodia epactia* very open hummock grassland.
Veg Condition: Good
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	12	0.4
**Cenchrus setiger*	8	0.4
**Tribulus terrestris*	0.5	0.05
Acacia inaequilatera	0.5	1.5
Acacia pyrifolia var. *pyrifolia*	0.5	1.3
Aristida holathera var. *holathera*	0.5	0.4
Boerhavia coccinea	0.5	0.1
Bonamia erecta	0.5	0.4
Bulbostylis barbata	0.5	0.05
Cleome viscosa	0.5	0.1
Corchorus crozophorifolius	0.5	0.7
Corymbia hamersleyana	2	4.5
Dysphania sp.	0.5	0.1
Eragrostis eriopoda	0.5	0.4
Goodenia microptera	0.5	0.05
Gossypium australe	0.5	1.0
Gossypium robinsonii	0.5	1.8
Grevillea pyramidalis subsp. *leucadendron*	0.5	2.0
Hybanthus aurantiacus	0.5	0.2
Indigofera colutea	0.5	0.5
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	0.5
Ipomoea muelleri	0.5	0.1

Name	Cover (%)	Height (m)
Mollugo molluginea	0.5	0.05
Polymeria sp.	0.5	0.02
Senna glutinosa subsp. *x luerssenii*	0.5	1.3
Senna notabilis	0.5	0.5
Sida echinocarpa	0.5	0.45
Sida rohlenae subp. rohlenae	0.5	0.1
Stylobasium spathulatum	0.5	1.2
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.2
Tribulus sp.	0.5	0.08
Triodia epactia	5	0.4

* denotes weed species

Site: BUN56

Location: Middle of study area **Type:** 50x50m Quadrat

Date: 2015-05-10 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 448292.7 **Northing:** 7570668

Habitat: Low rise on valley floor floodplain

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered tall shrubs to tall open shrubland over *Triodia epactia* hummock grassland.

Veg Condition: Very Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Aerva javanica*	0.5	1.0
**Cenchrus ciliaris*	0.5	0.6
**Cenchrus setiger*	0.5	0.8
Acacia colei var. *ileocarpa*	0.5	2.1
Acacia inaequilatera	2	3.5
Acacia pyrifolia var. *pyrifolia*	0.5	2.0
Bonamia media	0.5	0.1
Bulbostylis barbata	0.5	0.1
Corchorus lasiocarpus subsp. *parvus*	0.5	0.4
Corymbia hamersleyana	1	3.5
Cucumis variabilis	0.5	0.5
Dysphania sp.	0.5	0.1
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Fimbristylis dichotoma	0.5	0.2
Gomphrena cunninghamii	0.5	0.1
Gossypium australe	0.5	0.9
Grevillea pyramidalis subsp. *leucadendron*	0.5	2.5
Hakea lorea subsp. *lorea*	0.5	2.1
Hybanthus aurantiacus	0.5	0.3
Indigofera colutea	0.5	0.1
Polycarpaea corymbosa var. *corymbosa*	0.5	0.1
Pterocaulon sp.	0.5	0.1

Name	Cover (%)	Height (m)
Senna glutinosa subsp. *glutinosa*	0.5	1.9
Sporobolus australasicus	0.5	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.6
Triodia epactia	33	1.0

* denotes weed species

Site: BUN57

Location: Top NW end of study area **Type:** 25x100m Quadrat

Date: 2015-05-08 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 424213.8 **Northing:** 7589293

Habitat: Broad shallow flow line between low rises

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* scattered tall shrubs over *A. ancistrocarpa* open shrubland over *Triodia epactia* open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	9	1.9
Acacia inaequilatera	0.5	1.0
Acacia tumida var. *pilbarensis*	1	2.2
Amaranthus sp.	0.5	0.1
Cleome viscosa	0.5	0.4
Corchorus lasiocarpus subsp. *parvus*	0.5	0.3
Corymbia hamersleyana	1	4.5
Cucumis variabilis	0.5	0.5
Cynanchum floribundum	0.5	0.2
Dysphania sp.	0.5	0.1
Euphorbia australis	0.5	0.3
Euphorbia boophthona	0.5	0.3
Goodenia microptera	0.5	0.2
Gossypium australe	0.5	
Grevillea wickhamii	0.5	1.7
Hibiscus sp.	0.5	0.4
Jasminum didymum subsp. *lineare*	0.5	1.8
Mollugo molluginea	0.5	0.1
Paspalidium clementii	0.5	0.2
Pterocaulon sp.	0.5	0.1
Ptilotus aervoides	0.5	0.1

Name	Cover (%)	Height (m)
Ptilotus auriculifolius	0.5	0.2
Ptilotus obovatus var. *obovatus*	0.5	0.2
Rhynchosia minima	0.5	0.4
Senna artemisioides subsp. *oligophylla*	0.5	1.2
Senna notabilis	0.5	0.2
Solanum diversiflorum	0.5	0.2
Tribulus sp.	0.5	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.3
Triodia epactia	27	1.0

* denotes weed species

Site: BUN59
Location: Mid section **Type:** Relevé
Date: 2015-05-09 **Described by:** JA/LV
MGA Zone: 50 **Easting:** 448586.4 **Northing:** 7571392
Habitat: Hillcrest
Soil: Red brown silty clay loam
Rock type: Ironstone
Vegetation: *Acacia inaequilatera* tall scattered shrubs over *Triodia wiseana* hummock grassland.
Veg Condition: Excellent
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	1	2.3
Bonamia media	0.5	0.04
Bulbostylis barbata	0.5	0.05
Corymbia hamersleyana	0.5	3.5
Dysphania sp.	0.5	0.02
Eriachne pulchella subsp. *pulchella*	0.5	0.05
Gomphrena cunninghamii	0.5	0.05
Jasminum didymum subsp. *lineare*	0.5	1.0
Mollugo molluginea	0.5	0.08
Rhynchosia minima	0.5	0.01
Senna glutinosa subsp. *glutinosa*	0.5	1.5
Triodia wiseana	35	0.35

* denotes weed species

Site: BUN60
Location: Middle robe **Type:** Relevé
Date: 2015-05-09 **Described by:** JA/LV
MGA Zone: 50 **Easting:** 447918.5 **Northing:** 7571470
Habitat: Scoured river bed
Soil: Brown sand
Rock type: Shale
Vegetation: *Eucalyptus victrix* open woodland over *Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia* scattered hummock grasses over *Euphorbia schultzii* very open herbland.
Veg Condition: Very Good
Fire Age: >10 years
Notes: Drill pad and track adjacent



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.05
**Cenchrus ciliaris*	1	0.4
**Cenchrus setiger*	0.5	0.4
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5	1.1
Acacia colei var. *ileocarpa*	0.5	1.7
Acacia trachycarpa	0.5	1.8
Achyranthes aspera	0.5	0.2
Alternanthera nana	0.5	0.2
Amaranthus cuspidifolius	0.5	0.2
Boerhavia coccinea	0.5	0.1
Brachyachne convergens	0.5	0.1
Bulbostylis barbata	0.5	0.1
Chrysopogon fallax	0.5	1.1
Cleome viscosa	0.5	0.2
Corchorus crozophorifolius	0.5	1.0
Corchorus lasiocarpus subsp. *parvus*	0.5	0.8
Cucumis variabilis	0.5	
Cymbopogon ambiguus	0.5	0.6
Diplatia grandibractea	0.5	
Dipteracanthus australasicus subsp. *australasicus*	0.5	0.3

Name	Cover (%)	Height (m)
Enneapogon lindleyanus	0.5	0.4
Eriachne pulchella subsp. *dominii*	0.5	0.1
Eriachne tenuiculmis	0.5	0.2
Eucalyptus victrix	5	11.0
Eulalia aurea	0.5	0.4
Euphorbia schultzii	2	0.2
Euphorbia sp.	0.5	0.05
Flueggea virosa subsp. *melanthesoides*	0.5	0.5
Gomphrena cunninghamii	0.5	0.05
Gossypium australe	0.5	0.4
Gossypium robinsonii	0.5	1.1
Hybanthus aurantiacus	0.5	0.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	0.5
Ipomoea muelleri	0.5	
Jasminum didymum subsp. *lineare*	0.5	1.2
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.2
Paspalidium basicladum	0.5	0.1
Paspalidium clementii	0.5	0.1
Phyllanthus maderaspatensis	0.5	0.3
Plumbago zeylanica	0.5	1.0
Polycarpaea longiflora	0.5	0.1
Ptilotus obovatus var. *obovatus*	0.5	0.3
Rhynchosia bungarensis P4	0.5	0.4
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	2	0.4
Trachymene oleracea subsp. *oleracea*	0.5	0.1
Triodia epactia	1	0.5
Triumfetta maconochieana	0.5	0.3
Waltheria indica	0.5	0.45

* denotes weed species

Site: BUN61
Location: S end of study area **Type:** 50x50m Quadrat
Date: 2015-05-09 **Described by:** KMc/DR
MGA Zone: 50 **Easting:** 448823 **Northing:** 7568712
Habitat: Hillslope
Soil: Red brown silty clay loam
Rock type: Ironstone
Vegetation: *Acacia inaequilatera* tall open shrubland over *Triodia epactia* open hummock grassland.
Veg Condition: Excellent
Fire Age: >10 years
Notes: Nearby road may affect drainage



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	0.5	0.8
**Cenchrus setiger*	0.5	0.8
Acacia colei var. *ileocarpa*	0.5	2.5
Acacia inaequilatera	4	3.2
Aristida holathera var. *holathera*	0.5	0.5
Boerhavia coccinea	0.5	0.2
Bonamia media	0.5	0.1
Bulbostylis barbata	0.5	0.1
Cleome viscosa	0.5	0.3
Corchorus crozophorifolius	0.5	0.7
Cucumis variabilis	0.5	0.9
Digitaria ctenantha	0.5	0.5
Dysphania sp.	0.5	0.3
Eremophila longifolia	0.5	1.2
Euphorbia boophthona	0.5	0.5
Evolvulus alsinoides var. *villosicalyx*	0.5	0.1
Gomphrena cunninghamii	0.5	0.1
Gossypium australe	0.5	0.3
Grevillea pyramidalis subsp. *leucadendron*	0.5	3.0
Indigofera colutea	0.5	0.1
Portulaca oleracea	0.5	0.05
Pterocaulon serrulatum var. *velutinum*	0.5	0.4

Name	Cover (%)	Height (m)
Ptilotus auriculifolius	0.5	0.2
Sida fibulifera	0.5	0.2
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.3
Triodia epactia	2	1.1

* denotes weed species

Site: BUN62

Location: S end of study area **Type:** 50x50m Quadrat

Date: 2015-05-09 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 449527 **Northing:** 7569882

Habitat: Floodplain near scoured riverbed

Soil: Red brown sandy loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over **Cenchrus setiger*, **C. ciliaris* closed tussock grassland and *Triodia epactia* scattered hummock grasses.

Veg Condition: Good

Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	20	1.0
**Cenchrus setiger*	55	1.2
Acacia inaequilatera	0.5	1.0
Acacia monticola	0.5	1.5
Boerhavia sp.	0.5	0.1
Bonamia erecta	0.5	0.3
Bonamia media	0.5	0.1
Cleome viscosa	0.5	0.3
Corchorus crozophorifolius	0.5	1.0
Corymbia hamersleyana	1	6.0
Dysphania sp.	0.5	0.1
Eragrostis eriopoda	0.5	1.0
Gossypium australe	0.5	1.1
Gossypium robinsonii	0.5	1.4
Hybanthus aurantiacus	0.5	0.3
Indigofera colutea	0.5	0.1
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.2
Ipomoea muelleri	0.5	0.1
Paraneurachne muelleri	0.5	0.4
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.9
Portulaca oleracea	0.5	0.1
Ptilotus obovatus var. *obovatus*	0.5	0.2

Name	Cover (%)	Height (m)
Stylobasium spathulatum	0.5	1.9
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.6
Trianthema pilosum	0.5	0.1
Tribulus sp.	0.5	0.1
Triodia epactia	1	0.5

* denotes weed species

Site: BUN63
Location: S end of study area **Type:** 50x50m Quadrat
Date: 2015-05-09 **Described by:** KMc/DR
MGA Zone: 50 **Easting:** 448962.9 **Northing:** 7569555
Habitat: Hillcrest
Soil: Red brown sandy loam
Rock type: Ironstone
Vegetation: *Acacia inaequilatera* scattered tall shrubs over *Triodia wiseana* open hummock grassland.
Veg Condition: Excellent
Fire Age: 5-10 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	1	2.5
Bulbostylis barbata	0.5	0.1
Dysphania sp.	0.5	0.05
Eriachne pulchella subsp. *pulchella*	0.5	0.1
Goodenia stobbsiana	0.5	0.2
Mollugo molluginea	0.5	0.1
Ptilotus astrolasius	0.5	0.3
Ptilotus calostachyus	0.5	1.0
Senna glutinosa subsp. *glutinosa*	0.5	1.1
Senna glutinosa subsp. *pruinosa*	0.5	1.2
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	0.6
Triodia wiseana	17	0.6

* denotes weed species

Site: BUN67

Location: Top NW end of study area **Type:** 50x50m Quadrat

Date: 2015-05-08 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 432880 **Northing:** 7580747

Habitat: Colluvial spur

Soil: Red brown sandy clay loam

Rock type: Ironstone

Vegetation: *Acacia inaequilatera* scattered tall shrubs over *A. ancistrocarpa* open shrubland over *Triodia wiseana* open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	3	1.7
Acacia bivenosa	0.5	1.5
Acacia inaequilatera	1	2.5
Acacia tumida var. *pilbarensis*	0.5	2.2
Bonamia erecta	0.5	0.4
Cleome viscosa	0.5	0.1
Dysphania sp.	0.5	0.1
Gossypium australe	0.5	0.5
Grevillea wickhamii	0.5	2.1
Hakea chordophylla	0.5	1.2
Indigofera monophylla	0.5	0.5
Isotropis atropurpurea	0.5	0.3
Mollugo molluginea	0.5	0.1
Paraneurachne muelleri	0.5	0.3
Senna artemisioides subsp. *oligophylla*	0.5	1.4
Senna glutinosa subsp. *glutinosa*	0.5	2.0
Triodia wiseana	15	1.0

* denotes weed species

Site: BUN68

Location: Centre survey area **Type:** 20m Relevé

Date: 2015-05-08 **Described by:** JA/DR

MGA Zone: 50 **Easting:** 434060.5 **Northing:** 7580906

Habitat: Flat alluvial floodplain

Soil: Red brown loamy sand

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over *A. ancistrocarpa* scattered shrubs over *Triodia epactia* open hummock grassland.

Veg Condition: Excellent

Fire Age: >10 years

Notes: Possibly track in original quadrat



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	2	2.5
Acacia bivenosa	0.5	1.3
Acacia inaequilatera	1	3.5
Acacia pyrifolia var. *pyrifolia*	0.5	1.8
Bonamia erecta	0.5	0.2
Corymbia hamersleyana	1	4.5
Cucumis variabilis	0.5	0.1
Dysphania sp.	0.5	0.02
Goodenia microptera	0.5	0.02
Grevillea wickhamii	0.5	3.0
Hakea chordophylla	0.5	3.0
Mollugo molluginea	0.5	0.5
Paraneurachne muelleri	0.5	0.3
Portulaca oleracea	0.5	0.02
Ptilotus astrolasius	0.5	0.4
Ptilotus axillaris	0.5	0.02
Senna artemisioides subsp. *oligophylla*	0.5	0.05
Triodia epactia	20	0.6

* denotes weed species

Site: BUN70

Location: Map 9 **Type:** 50x50m Quadrat

Date: 2015-08-20 **Described by:** KMc

MGA Zone: 50 **Easting:** 439640 **Northing:** 7575711

Habitat: Floodplain

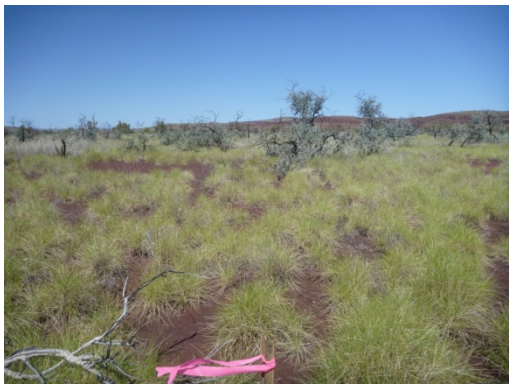
Soil: Reddish brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia inaequilatera, Sida echinocarpa* open shrubland over *Triodia epactia* open hummock grassland.

Veg Condition: Excellent

Fire Age: 0-2 years



Species List

Name	Cover (%)	Height (m)
Acacia colei var. *ileocarpa*	0.5	1.5
Acacia inaequilatera	3	1.8
Bonamia erecta	0.5	0.3
Corchorus lasiocarpus subsp. *parvus*	0.5	0.4
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.25
Gossypium australe	0.5	0.5
Hakea lorea subsp. *lorea*	0.5	1.6
Indigofera monophylla	0.5	0.4
Paraneurachne muelleri	0.5	0.35
Ptilotus astrolasius	0.5	0.35
Rhynchosia minima	0.5	0.9
Senna artemisioides subsp. *oligophylla*	0.5	0.6
Sida arsiniata	0.5	0.6
Sida echinocarpa	1	1.3
Sida rohlenae subp. rohlenae	0.5	0.6
Sida sp. Articulation below (A.A. Mitchell PRP 1605)	0.5	1.6
Solanum diversiflorum	0.5	0.25
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.7
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	0.5	0.4
Triodia epactia	20	0.5
Triodia wiseana	0.5	0.4

* denotes weed species

Site: BUN71
Location: Middle of study area **Type:** 50x50m Quadrat
Date: 2015-05-09 **Described by:** KMc/DR
MGA Zone: 50 **Easting:** 440146.4 **Northing:** 7576079
Habitat: Broad, flat floodplain adjacent to river bed
Soil: Red brown sandy clay loam
Rock type: Ironstone
Vegetation: *Grevillea pyramidalis* subsp. *leucadendron* scattered tall shrubs over *Acacia pyrifolia* var. *pyrifolia* scattered shrubs over *Triodia epactia* very open hummock grassland and **Cenchrus ciliaris*, **C. setiger* tussock grassland.
Veg Condition: Good
Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	31	1.0
**Cenchrus setiger*	31	1.2
Acacia pyrifolia var. *pyrifolia*	1	1.8
Boerhavia coccinea	0.5	0.2
Bonamia media	0.5	0.2
Corchorus crozophorifolius	0.5	0.8
Corchorus lasiocarpus subsp. *parvus*	0.5	0.4
Cyperus vaginatus	0.5	0.9
Eragrostis eriopoda	0.5	0.3
Eucalyptus camaldulensis subsp. *refulgens*	0.5	2.2
Goodenia microptera	0.5	0.3
Gossypium australe	0.5	1.5
Gossypium robinsonii	0.5	1.8
Grevillea pyramidalis subsp. *leucadendron*	1	2.2
Hybanthus aurantiacus	0.5	0.3
Indigofera colutea	0.5	0.1
Ipomoea muelleri	0.5	0.1
Mollugo molluginea	0.5	0.1
Paraneurachne muelleri	0.5	0.4
Polymeria ambigua	0.5	0.1
Sida echinocarpa	0.5	0.7

Name	Cover (%)	Height (m)
Sida fibulifera	0.5	0.2
Stylobasium spathulatum	0.5	1.0
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.4
Tribulus macrocarpus	0.5	0.1
Triodia epactia	3	1.0
Triumfetta clementii	0.5	0.3
Waltheria indica	0.5	0.6

* denotes weed species

Site: BUN72
Location: Map7 **Type:** 50x50m Quadrat
Date: 2015-08-20 **Described by:** LV
MGA Zone: 50 **Easting:** 436408 **Northing:** 7577708
Habitat: Plain
Soil: Red brown silty clay loam
Rock type: Ironstone
Vegetation: *Triodia wiseana* open hummock grassland.
Veg Condition: Excellent
Fire Age: 0-2 years



Species List

Name	Cover (%)	Height (m)
Acacia colei var. *ileocarpa*	0.5	2.0
Acacia inaequilatera	0.5	2.5
Acacia tumida var. *pilbarensis*	0.5	1.5
Corchorus lasiocarpus subsp. *parvus*	0.5	0.5
Corymbia hamersleyana	0.5	3.0
Cucumis variabilis	0.5	0.4
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.25
Gossypium australe	0.5	0.4
Gossypium robinsonii	0.5	2.2
Grevillea pyramidalis subsp. *leucadendron*	0.5	1.4
Grevillea wickhamii	0.5	0.08
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	0.5
Polycarpaea holtzei	0.5	0.02
Ptilotus auriculifolius	0.5	0.25
Ptilotus calostachyus	0.5	0.4
Ptilotus fusiformis	0.5	0.35
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.5
Triodia wiseana	20	0.35
Triumfetta johnstonii	0.5	0.45

* denotes weed species

Site: BUN73

Location: Map 7 **Type:** 20x125m Quadrat

Date: 2015-08-20 **Described by:** KMc

MGA Zone: 50 **Easting:** 486673 **Northing:** 7577914

Habitat: Floodplain

Soil: Reddish brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Acacia elachantha, Grevillea wickhamii* tall closed shrub over *Gossypium australe, Triumfetta johnstonii*, *Hibiscus leptocladus* shrubland over *Indigofera colutea, Tephrosia rosea* var. Fortescue creeks (M.I.H. Brooker 2186), *Corchorus lasiocarpus* subsp. *parvus* low open shrubland over *Triodia epactia* open hummock grassland.

Veg Condition: Excellent

Fire Age: 0-2 years



Species List

Name	Cover (%)	Height (m)
Acacia elachantha	95	2.2
Acacia inaequilatera	0.5	1.4
Acacia maitlandii	0.5	1.7
Aristida holathera var. *holathera*	0.5	0.4
Bonamia erecta	0.5	0.4
Chrysopogon fallax	0.5	0.8
Corchorus lasiocarpus subsp. *parvus*	1	0.8
Corymbia hamersleyana	1	4.0
Eremophila longifolia	0.5	1.6
Goodenia forrestii	0.5	0.3
Goodenia microptera	0.5	0.4
Goodenia stobbsiana	0.5	0.9
Gossypium australe	8	1.1
Gossypium robinsonii	0.5	2.1
Grevillea wickhamii	1	2.1
Hakea lorea subsp. *lorea*	0.5	1.0
Hibiscus brachychlaenus	1	1.4
Hibiscus goldsworthii	0.5	0.9
Hybanthus aurantiacus	0.5	1.0

Name	Cover (%)	Height (m)
Indigofera colutea	3	0.4
Jasminum didymum subsp. *lineare*	0.5	1.6
Paraneurachne muelleri	0.5	0.35
Ptilotus astrolasius	0.5	0.4
Ptilotus axillaris	0.5	0.1
Ptilotus fusiformis	0.5	0.6
Rhynchosia minima	0.5	0.6
Senna notabilis	0.5	0.8
Sida arsiniata	0.5	1.0
Sida echinocarpa	0.5	1.6
Sida fibulifera	0.5	0.3
Sida rohlenae subp. rohlenae	0.5	1.1
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.5	1.1
Solanum diversiflorum	0.5	0.4
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	1	0.8
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	0.5	0.3
Themeda triandra	0.5	0.7
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.8
Triodia epactia	15	0.5
Triodia wiseana	0.5	0.5
Triumfetta johnstonii	2	1.1

* denotes weed species

Site: BUN75

Location: Middle of study area **Type:** 50x50m Quadrat

Date: 2015-05-08 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 438702.8 **Northing:** 7578565

Habitat: Stony plain between colluvial slopes and floodplain

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Acacia inaequilatera* scattered tall shrubs over *Gossypium australe* scattered shrubs over *Triodia epactia* open hummock grassland and **Cenchrus setiger, *C. ciliaris* very open tussock grassland.

Veg Condition: Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Cenchrus ciliaris*	2	0.8
**Cenchrus setiger*	3	0.8
Abutilon lepidum	0.5	0.6
Acacia inaequilatera	2	2.5
Boerhavia coccinea	0.5	0.1
Bulbostylis barbata	0.5	0.05
Chrysopogon fallax	0.5	0.8
Cleome viscosa	0.5	0.2
Cucumis variabilis	0.5	0.1
Cullen lachnostachys	0.5	0.2
Cyperus vaginatus	0.5	1.0
Dysphania sp.	0.5	0.2
Euphorbia boophthona	0.5	0.3
Evolvulus alsinoides var. *villosicalyx*	0.5	0.2
Goodenia forrestii	0.5	0.2
Gossypium australe	1	0.9
Grevillea pyramidalis subsp. *leucadendron*	0.5	1.2
Hakea lorea subsp. *lorea*	0.5	1.9
Hibiscus sturtii var. *campylochlamys*	0.5	0.4
Hybanthus aurantiacus	0.5	0.4
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5	0.6

Name	Cover (%)	Height (m)
Pterocaulon sp.	0.5	0.1
Ptilotus obovatus var. *obovatus*	0.5	0.2
Rhynchosia minima	0.5	0.3
Sclerolaena cornishiana	0.5	0.1
Senna artemisioides subsp. *helmsii*	0.5	0.6
Senna artemisioides subsp. *oligophylla*	0.5	0.8
Sida fibulifera	0.5	0.5
Solanum diversiflorum	0.5	0.2
Solanum phlomoides	0.5	0.4
Trianthema triquetrum	0.5	0.1
Tribulus macrocarpus	0.5	0.1
Triodia epactia	28	1.0
Triumfetta clementii	0.5	0.3

* denotes weed species

Site: BUN-BA
Location: Map10 **Type:** 50x50m Relevé
Date: 2015-05-10 **Described by:** DR
MGA Zone: 50 **Easting:** 442972 **Northing:** 7573670
Habitat: Floodplain
Soil: Red brown sandy clay loam
Rock type: Ironstone
Vegetation: *Corymbia hamersleyana* scattered low trees over *Triodia epactia* open hummock grassland.
Veg Condition: Very Good
Fire Age: 0-2 years
Notes: Fire



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	0.5	2.1
Acacia pyrifolia var. *pyrifolia*	0.5	2.0
Bonamia media	0.5	0.1
Bulbostylis barbata	0.5	0.1
Corymbia hamersleyana	1	2.5
Dysphania sp.	0.5	0.1
Eremophila longifolia	0.5	1.2
Grevillea pyramidalis subsp. *leucadendron*	0.5	2.2
Mollugo molluginea	0.5	0.1
Oldenlandia crouchiana	0.5	0.1
Triodia epactia	29	0.7

* denotes weed species

Site: BUN-MB

Location: Map 10 **Type:** 50x50m Relevé

Date: 2015-08-16 **Described by:** JA

MGA Zone: 50 **Easting:** 444699 **Northing:** 7575293

Habitat: Hillcrest

Soil: Reddish brown clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Triodia wiseana* (*T.* sp. Robe River (M.E. Trudgen et al. MET 12367)P3) open hummock grassland.

Veg Condition: Excellent

Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
Acacia inaequilatera	0.5	2.0
Amphipogon sericeus	0.5	0.3
Bulbostylis barbata	0.5	0.1
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5	0.1
Eriachne pulchella subsp. *pulchella*	0.5	0.05
Eucalyptus leucophloia subsp. *leucophloia*	1	6.0
Fimbristylis dichotoma	0.5	0.1
Goodenia microptera	0.5	0.15
Goodenia stobbsiana	0.5	0.4
Hakea chordophylla	0.5	1.1
Hibiscus coatesii	0.5	0.3
Indigofera monophylla	0.5	0.15
Oldenlandia crouchiana	0.5	0.05
Polycarpaea holtzei	0.5	0.05
Polygala glaucifolia	0.5	0.05
Ptilotus axillaris	0.5	0.05
Ptilotus calostachyus	0.5	0.6
Ptilotus fusiformis	0.5	0.2
Ptilotus nobilis	0.5	0.3
Senna glutinosa subsp. *pruinosa*	0.5	0.8
Senna notabilis	0.5	0.2
Tephrosia supina	0.5	0.05

Name	Cover (%)	Height (m)
Trachymene oleracea subsp. *oleracea*	0.5	0.4
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	1	0.3
Triodia wiseana	18	0.3
Triumfetta maconochieana	0.5	0.4

* denotes weed species

Site: BUN-MC

Location: Map 10 **Type:** 50x50m Relevé

Date: 2015-08-16 **Described by:** LV

MGA Zone: 50 **Easting:** 443420 **Northing:** 7575256

Habitat: Hillcrest

Soil: Reddish brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana, Eucalyptus leucophloia* subsp. *leucophloia* scattered trees over *Acacia inaequilatera* scattered tall shrubs over *Triodia wiseana, T.* sp. Robe River (M.E. Trudgen et al. MET 12367) P3 hummock grassland

Veg Condition: Excellent

Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
Acacia ancistrocarpa	0.5	1.5
Acacia inaequilatera	1	3.0
Bonamia media	0.5	0.06
Bulbostylis barbata	0.5	0.15
Corymbia hamersleyana	2	5.0
Eriachne aristidea	0.5	0.08
Eriachne pulchella subsp. *pulchella*	0.5	0.08
Eucalyptus leucophloia subsp. *leucophloia*	1	4.5
Grevillea wickhamii	0.5	1.0
Hakea chordophylla	0.5	2.5
Indigofera monophylla	0.5	0.25
Oldenlandia crouchiana	0.5	0.03
Polycarpaea holtzei	0.5	0.02
Polygala glaucifolia	0.5	0.02
Trachymene oleracea subsp. *oleracea*	0.5	0.1
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	1	0.35
Triodia wiseana	39	0.4

* denotes weed species

Site: BUN-MD

Location: Middle of study area **Type:** 50x50m Relevé

Date: 2015-05-10 **Described by:** KMc/DR

MGA Zone: 50 **Easting:** 445450.6 **Northing:** 7572798

Habitat: Middle floodplain within riverbeds

Soil: Red brown silty clay loam

Rock type: Ironstone

Vegetation: *Corymbia hamersleyana* scattered low trees over *Grevillea pyramidalis* subsp. *leucadendron, Acacia trachycarpa* tall open shrubland over *Triodia epactia* open hummock grassland and **Cenchrus setiger*, **C. ciliaris* open tussock grassland.

Veg Condition: Good

Fire Age: >10 years



Species List

Name	Cover (%)	Height (m)
**Argemone ochroleuca* subsp. *ochroleuca*	0.5	0.1
**Cenchrus ciliaris*	8	0.8
**Cenchrus setiger*	15	1.0
Acacia trachycarpa	1	2.5
Bonamia erecta	0.5	0.3
Bulbostylis barbata	0.5	0.2
Cleome viscosa	0.5	0.2
Corymbia hamersleyana	2	6.0
Dysphania sp.	0.5	0.1
Eragrostis eriopoda	0.5	0.4
Euphorbia boophthona	0.5	0.2
Goodenia microptera	0.5	0.2
Gossypium robinsonii	0.5	2.0
Grevillea pyramidalis subsp. *leucadendron*	2	3.0
Hybanthus aurantiacus	0.5	0.5
Indigofera colutea	0.5	0.1
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	0.5	1.1
Ipomoea muelleri	0.5	0.1
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5	0.6
Trachymene oleracea subsp. *oleracea*	0.5	0.1

Name	Cover (%)	Height (m)
Triodia epactia	20	1.3

* denotes weed species

Site: BUN-RA

Location: Map 10 **Type:** 20x125m Relevé

Date: 2015-08-16 **Described by:** JA

MGA Zone: 50 **Easting:** 444607 **Northing:** 7575050

Habitat: Gully

Soil: Reddish brown sandy clay loam

Rock type: Ironstone

Vegetation: *Eucalyptus leucophloia* subsp. *leucophloia, Acacia pruinocarpa* low open woodland over *Abutilon* sp. Dioicum (A.A. Mitchell PRP 1618)*, Senna venusta, Gossypium robinsonii*, open shrubland over *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3 scattered shrubs over *Triodia epactia* very open hummock grassland and *Eriachne mucronata, Themeda triandra, Cymbopogon ambiguus* very open tussock grassland with *Trachymene oleracea* subsp. *oleracea* scattered herbs.

Veg Condition: Excellent

Fire Age: 2-5 years



Species List

Name	Cover (%)	Height (m)
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	1	1.7
Acacia inaequilatera	0.5	2.2
Acacia maitlandii	0.5	2.1
Acacia monticola	0.5	
Acacia pruinocarpa	1	4.0
Amaranthus undulatus	0.5	0.6
Aristida burbidgeae	0.5	0.4
Bulbostylis barbata	0.5	0.1
Capparis spinosa var. *nummularia*	0.5	0.4
Cleome viscosa	0.5	0.3
Cucumis variabilis	0.5	
Cymbopogon ambiguus	1	1.0
Cyperus cunninghamii subsp. *cunninghamii*	0.5	0.2
Eriachne mucronata	1	0.3
Eucalyptus leucophloia subsp. *leucophloia*	8	8.0
Euphorbia australis	0.5	0.05
Gomphrena cunninghamii	0.5	0.1
Gossypium robinsonii	1	1.2

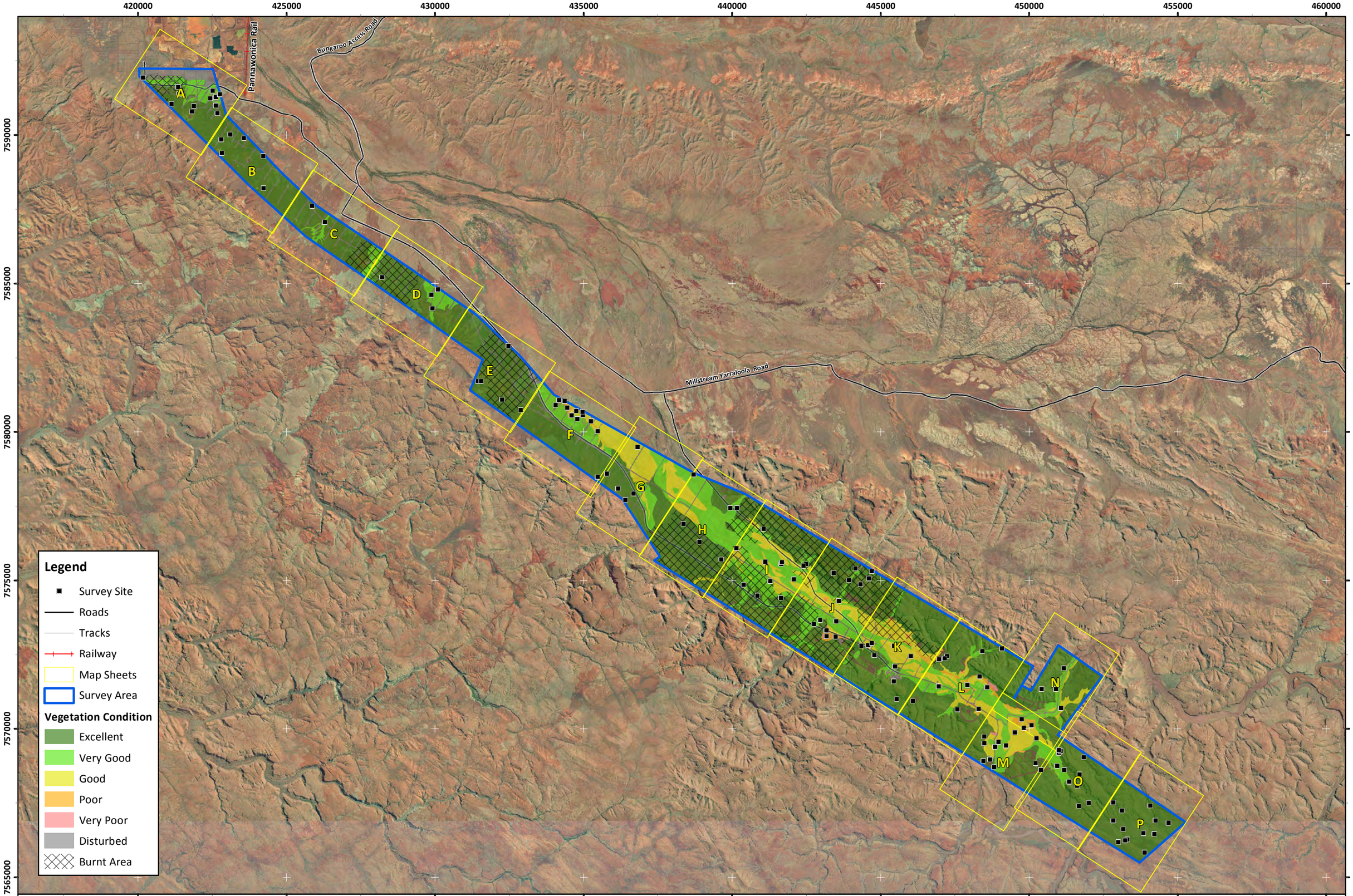
Name	Cover (%)	Height (m)
Grevillea pyramidalis subsp. *leucadendron*	0.5	2.1
Hibiscus sturtii var. *campylochlamys*	0.5	0.2
Hybanthus aurantiacus	0.5	0.2
Indigofera monophylla	0.5	0.2
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	1	0.6
Isotropis atropurpurea	0.5	0.4
Jasminum didymum subsp. *lineare*	0.5	1.1
Lobelia heterophylla	0.5	0.3
Nicotiana benthamiana	0.5	0.4
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5	0.1
Oldenlandia crouchiana	0.5	0.2
Paspalidium clementii	0.5	0.1
Paspalidium tabulatum	0.5	0.4
Polycarpaea longiflora	0.5	0.2
Pterocaulon sphaeranthoides	0.5	0.4
Ptilotus fusiformis	0.5	0.4
Ptilotus incanus	0.5	0.4
Rhodanthe margarethae	0.5	0.5
Rhynchosia minima	0.5	0.2
Senna notabilis	0.5	0.3
Senna venusta	1	1.1
Tephrosia virens	0.5	0.4
Themeda triandra	2	0.5
Tinospora smilacina	0.5	
Trachymene oleracea subsp. *oleracea*	1	0.4
Tribulus hirsutus	0.5	0.1
Trichodesma zeylanicum var. *zeylanicum*	0.5	0.5
Triodia epactia	8	0.5
Triumfetta maconochieana	0.5	0.5

* denotes weed species

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Appendix K: Vegetation Condition Mapping

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Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1: Vegetation Condition Mapping - Overview

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:115,000 (A3)

0 2 4 6 8 10 Kilometres

N

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1_Overview

7592000 420000 7593000

7591000

420000

7590000 421000

422000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Very Poor
- Disturbed
- Burnt Area

BA31
BA32
BA10
BA07
BA42a
BA210
BA21
BA111
BA18
BA22
BA219
BA209

Millstream Yarraloola Road

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1A: Vegetation Condition Mapping

astron

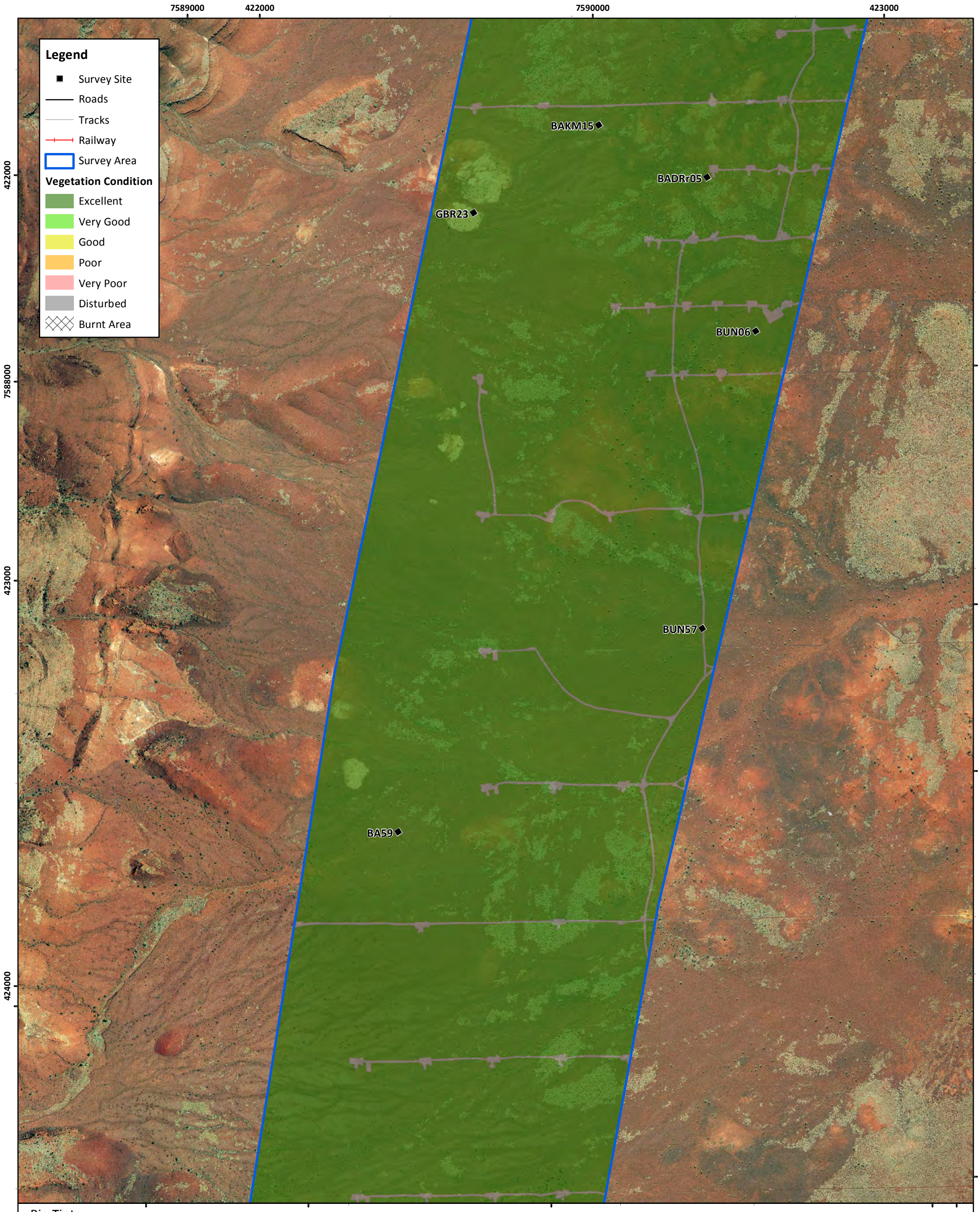
Author: D. Roocke	Date: 03-03-2016
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1A

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)

Metres

0 100 200 300 400 500

N



Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1B: Vegetation Condition Mapping

Author: D. Roocke	Date: 03-03-2016	Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1B	Metres 0 100 200 300 400 500

7587000 425000 7588000

7586000 425000

426000

7585000

427000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Very Poor
- Disturbed
- Burnt Area

BA207

BA57

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1C: Vegetation Condition Mapping

astron

Author: D. Roocke	Date: 03-03-2016
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1C

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)

Metres

0 100 200 300 400 500

N

7585000
428000
7586000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Very Poor
- Disturbed
- Burnt Area

GBR13
BA58a
BA221
GBR19

7584000
428000
429000
7583000
430000

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1D: Vegetation Condition Mapping

astron

Author: D. Roocke	Date: 03-03-2016
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1D

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)

Metres

0 100 200 300 400 500

7582000 430000 7583000 431000

430000 431000 432000 7580000

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Very Poor
- Disturbed
- Burnt Area

BAKM18
GBR07
BUN10
GBR05
BUN67

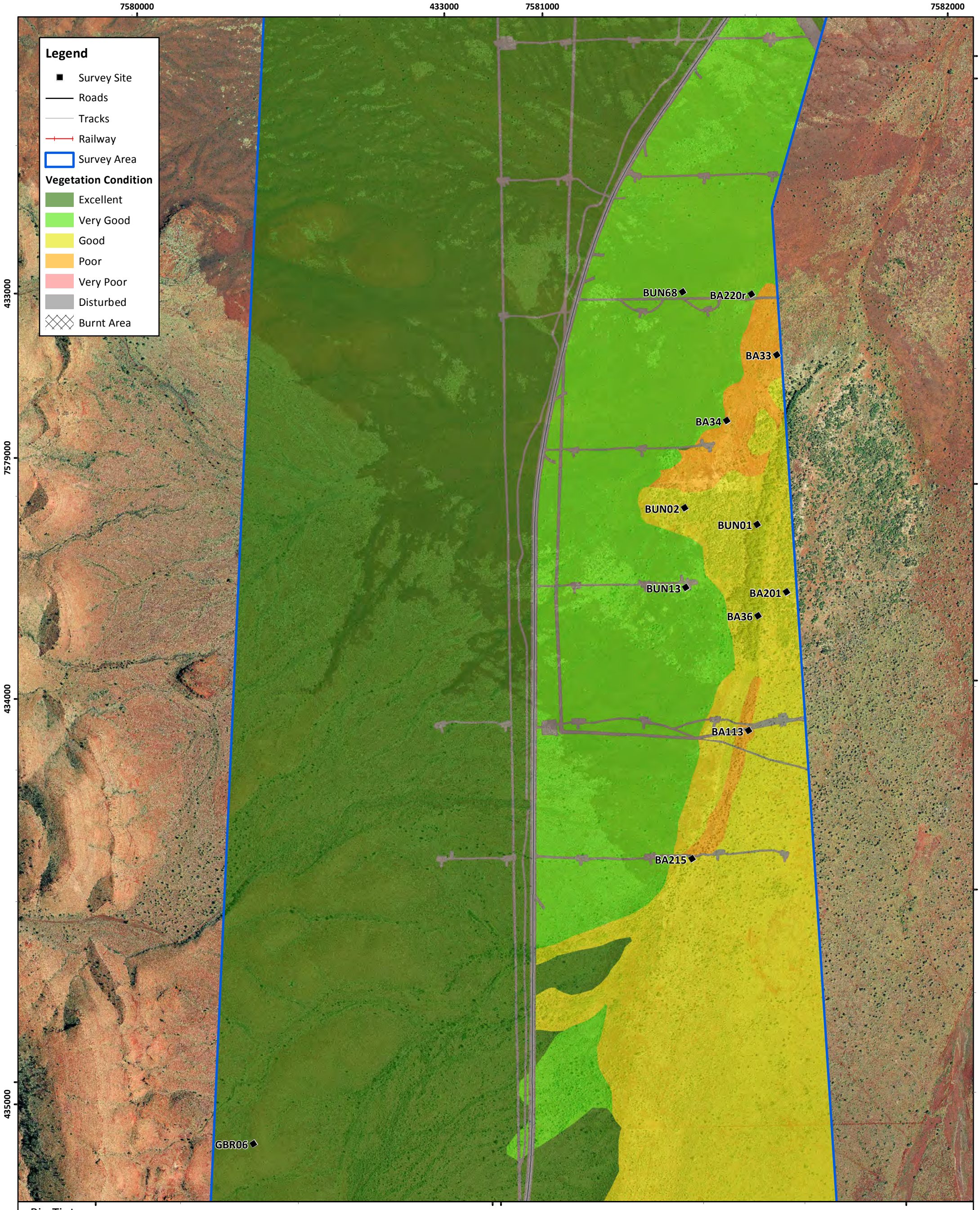
Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1E: Vegetation Condition Mapping

astron

Author: D. Roocke	Date: 03-03-2016	Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1E	Metres 0 100 200 300 400 500



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Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1F: Vegetation Condition Mapping

Author: D. Roocke	Date: 03-03-2016
Drawn: W. An	Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1F

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1: 10,000 (A3)

Metres

0 100 200 300 400 500

435000 7578000 7579000 436000 7580000

436000 435000 7577000 7576000

BA218 BA217r BA216 BUN72 BUN73 BUN11

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Very Poor
- Disturbed
- Burnt Area

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1G: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

N

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1G

437000
7577000
438000
7578000
7579000
437000
438000
7575000
439000
BUN75
BAKMr16
BUN14
BA223r
BUN-MW
BUN70

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1H: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

N

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1H

7575000
440000
7577000
441000
7574000
440000
441000
BUN71
BUN74
BA27
BUN20
BUN15
BUN-MA
BUN12
BUN21
BUN53
BUN-MY
BUN-MZ
BUN54

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1I: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1I

7574000 442000 7575000 443000 7576000

7573000

442000

443000

BUN17
BUN-BA
BALVr-07
BUN19
BUN18
BA17
BUN22
BUN-MC
BUN03
BUN04
BUN16
BUN-MB
BUN-RA

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1J: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1J

7572000 444000 7573000 7574000 445000 7575000

444000

7571000

445000

BA03
BUN50
BUN05
BUN-MX
BUN-MD
BA109
BA108
BAKM12
BA2KMr01

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1K: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1K

7571000 446000 7572000 447000 7573000

446000

7570000

447000

BAR112
BA40
BA41
BA39
BUN58
BA46
BUN60
BA110
BAKM11
BA214
BUN59
BUN56

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

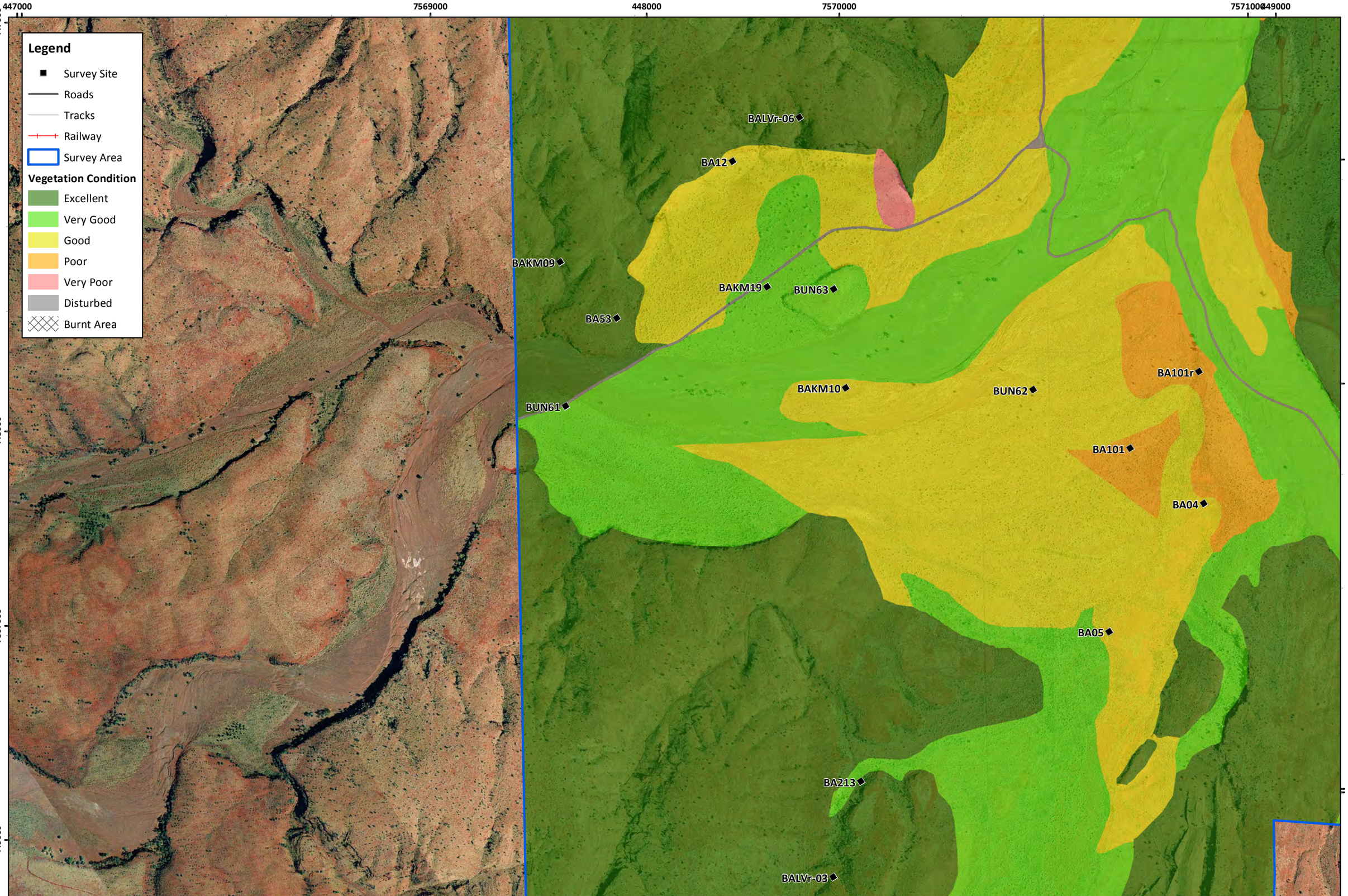
Figure K.1L: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1L



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Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1M: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1M

7571000 449000 7572000 450000 7573000

449000

7570000

450000

BA101r

BA101

BA04

BA05

BA211

BA107

BA52

BA54

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Very Poor
- Disturbed
- Burnt Area

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1N: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

N

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1N

7568000 450000 7569000 451000 7570000

450000

451000

7566000

BALVr-03
BA2LVr-02
BADRr04
BA200
BALVr-04
BA212
BA106
BALVr-05
BA44
BAKM07
BA45
BA2DRr06

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Very Poor
- Disturbed
- Burnt Area

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1O: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1O

7566000 452000 7567000 453000 7569000

452000

453000

BA105r
BAKM03
BADRr02
BAKM05
BALVr-01
BALVr-02
BAKM02
BA103r
BADRr01
BA104r
BADRr03
BAKM01
BA102r

Legend

- Survey Site
- Roads
- Tracks
- Railway
- Survey Area

Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Very Poor
- Disturbed
- Burnt Area

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure K.1P: Vegetation Condition Mapping

Datum: GDA 1994 - Projection: MGA Zone 50 - Scale: 1:10,000 (A3)

0 100 200 300 400 500 600 700 800 900 1,000 Metres

astron

Author: D. Roocke | Drawn: W. An | Date: 03-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160303_VegCond_FigK1P

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Appendix L: Floristic Analysis

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1 Floristic Analysis

1.1 Sampling Effort

Sampling effort was assessed using a species accumulation curves and modelled estimates of the total species pool. Species accumulation curves are created by randomly sampling an incremental number of quadrats, and plotting the mean number of species sampled at each sample size. Species estimators are particular statistical models of species accumulation which are employed to estimate the total species pool available. Four different species estimators were compared: Chao 2, Jackknife 1, Jacknife 2, and Bootstrap (Colwell and Coddington 1994). All analysis was performed in R 3.2.1 (R Development Core Team 2015) using the package "Vegan".

1.2 Vegetation Classification

Similarity amongst vegetation quadrats was assessed using a dendogram which was based on Sorensen's index of Similarity. The dendogram was constructed using the UPGMA (Unweighted Pair Group Method with Arithmetic Mean) method, within Primer. Significant clusters of samples were identified using the Simprof test (Clarke, Somerfield, and Gorley 2008). In order to understand the regional context of recent sampling, separate analyses were carried out to include the following surveys: Astron Mesa H (2014/2015), Astron Middle Robe (2015), Biota 2006b, Biota 2007, Biota 2012 (Owing to the size of this dendogram it is not displayed here).

1.3 Floristic Community Groups

1.3.1 Sampling Effort

A total of 292 species from the Astron 2015 survey were included in the floristic analysis (only quadrat and relevé data was included; opportunistic records were not included). The species accumulation curve indicates that the total number of species has reached an asymptote, and that sampling has been near-exhaustive (Figure L.1). This is highlighted by the fact that the final 10% increase in sampling effort only led to a 2% increase in species sampled.

The species estimators suggest that there are between 319 and 380 species in the entire pool. This suggests that between 77% and 92% of the total species pool has been sampled from quadrats and relevés (Table L.1). Including opportunistic observations, 330 species were recorded, indicating that approximately 87% of the potential total pool of species was observed.

Table L.1: Total number of taxa sampled in comparison to estimates of the total species pool based on several models.

	Observed	Estimated			
		Chao2	Jackknife 1	Jackknife 2	Bootstrap
Species	292	351.5	350.5	380.2	319.0
Est. % sampled		83.1	83.3	76.8	91.5

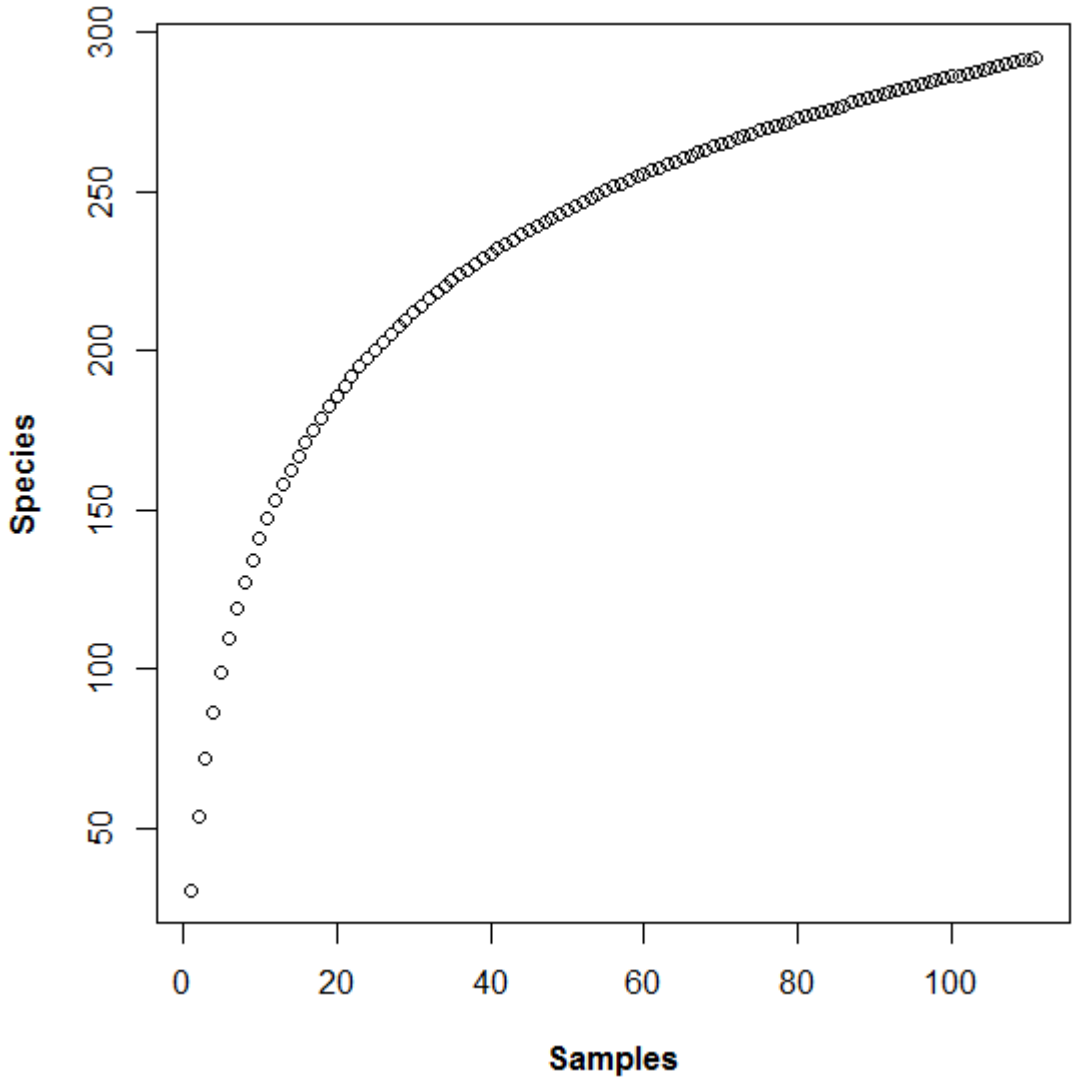


Figure L.1: Species accumulation curve for all Astron quadrats and relevés employed in the 2015 survey.

1.3.2 Vegetation Classification

Dendogram production combined with the Simprof statistical test for the Astron 2015 survey led to the identification of 33 distinct floristic clusters (Figure L.2). Clusters showed some pattern of grouping according to the structural vegetation associations, as well as similar landforms. Five of the clusters were represented by a single quadrat/relevé: BA2LVr02, BUN01, BA212, BUN-MW and BUN75.

Analysis of the clusters within a regional context led to identification of 82 significant clusters. Of these clusters, 24 were formed by individual quadrats, and of these, six were quadrats/ relevés from within the survey area: BA212, BA101r, BA109, BA46, BUN.RB, BAKM01. BA2LVr02 was also an outlier, paired only with one Astron Mesa H quadrat. BALVr.04 and BUN72 formed a lone pair. BA18, BA21 and BA22 formed a lone trio. BA201 formed a lone pair with GBR03. The composition of these quadrats was examined further and although there is floristic similarity between the sites they are structurally different.



Figure L.2: Dendogram showing relationship between Astron 2015 quadrats and relevés according to the degree of shared species (Sorensen's Index). Significant clusters are distinguished by solid black lines.

References

Clarke, KR, Somerfield, PJ & Gorley, RN 2008, 'Testing of null hypotheses in exploratory community analyses: similarity profiles and biota-environment linkage', *Journal of Experimental Marine Biology and Ecology*, vol. 366, no. 1–2, pp. 56-69.

Colwell, RK & Coddington, JA 1994, 'Estimating terrestrial biodiversity through extrapolation', *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, vol. 345, no. 1311, pp. 101-18.

R Development Core Team 2015, 'R: A language and environment for statistical computing', R Foundation for Statistical Computing, Vienna.

Appendix M: Vascular Flora Species Lists and Site x Species Matrix

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Table M.1: Vascular flora species recorded during the current survey.

Family	Species name	Conservation status	Weed
Acanthaceae	*Dicladanthera forrestii*		
	Dicladanthera glabra	P2	
	Dipteracanthus australasicus subsp. *australasicus*		
	Rostellularia adscendens var. *clementii*		
Aizoaceae	*Trianthema pilosum*		
	Trianthema triquetrum		
	Zaleya galericulata		
Amaranthaceae	*Achyranthes aspera*		
	Aerva javanica		*
	Alternanthera nana		
	Amaranthus cuspidifolius		
	Amaranthus mitchellii		
	Amaranthus undulatus		
	Amaranthus sp.		
	Gomphrena cunninghamii		
	Ptilotus aervoides		
	Ptilotus appendiculatus		
	Ptilotus astrolasius		
	Ptilotus auriculifolius		
	Ptilotus axillaris		
	Ptilotus calostachyus		
	Ptilotus clementii		
	Ptilotus fusiformis		
	Ptilotus gomphrenoides var. *gomphrenoides*		
	Ptilotus incanus		
	Ptilotus nobilis subsp. *nobilis*		
	Ptilotus obovatus var. *obovatus*		
	Ptilotus sp.		
Apocynaceae	*Carissa lanceolata*		
	Cynanchum floribundum		
	Sarcostemma viminale subsp. *australe*		
Araliaceae	*Astrotricha hamptonii*		
	Trachymene oleracea subsp. *oleracea*		
Asteraceae	*Bidens bipinnata*		*
	Blumea tenella		
	Calocephalus knappii		
	Calotis hispidula		
	Calotis porphyroglossa		

Family	Species name	Conservation status	Weed
Asteraceae	*Centipeda minima* subsp. *macrocephala*		
	Flaveria trinervia		*
	Lactuca serriola		*
	Pentalepis trichodesmoides subsp. *trichodesmoides*		
	Pluchea rubelliflora		
	Pterocaulon serrulatum var. *serrulatum*		
	Pterocaulon serrulatum var. *velutinum*		
	Pterocaulon sphaeranthoides		
	Rhodanthe margarethae		
	Sonchus oleraceus		*
	Streptoglossa bubackii		
	Streptoglossa decurrens		
	Streptoglossa liatroides		
	Streptoglossa sp.		
Boraginaceae	*Ehretia saligna*		
	Heliotropium heteranthum		
	Heliotropium ovalifolium		
	Heliotropium tanythrix		
	Trichodesma zeylanicum var. *zeylanicum*		
Brassicaceae	*Lepidium muelleri-ferdinandii*		
	Lepidium pholidogynum		
Campanulaceae	*Lobelia heterophylla*		
	Wahlenbergia tumidifructa		
Capparaceae	*Capparis spinosa* var. *nummularia*		
Caryophyllaceae	*Polycarpaea corymbosa* var. *corymbosa*		
	Polycarpaea holtzei		
	Polycarpaea involucrata		
	Polycarpaea longiflora		
Celastraceae	*Stackhousia intermedia*		
Chenopodiaceae	*Dysphania cristata*		
	Dysphania glomulifera subsp. *eremaea*		
	Dysphania kalpari		
	Dysphania melanocarpa		
	Dysphania rhadinostachya subsp. *rhadinostachya*		
	Enchylaena tomentosa var. *tomentosa*		
	Rhagodia eremaea		
	Salsola australis		
	Sclerolaena cornishiana		
Cleomaceae	*Cleome viscosa*		

Family	Species name	Conservation status	Weed
Convolvulaceae	*Bonamia erecta*		
	Bonamia media		
	Bonamia pannosa		
	Bonamia pilbarensis		
	Bonamia sp.		
	Duperreya commixta		
	Evolvulus alsinoides var. *villosicalyx*		
	Ipomoea lonchophylla		
	Ipomoea muelleri		
	Ipomoea sp.		
	Operculina aequisepala		
	Polymeria ambigua		
	Polymeria sp.		
Cucurbitaceae	*Austrobryonia pilbarensis*		
	Citrullus colocynth		*
	Cucumis melo		
	Cucumis variabilis		
	Trichosanthes cucumerina		
Cyperaceae	*Bulbostylis barbata*		
	Cyperus cunninghamii subsp. *cunninghamii*		
	Cyperus hesperius		
	Cyperus iria		
	Cyperus vaginatus		
	Fimbristylis depauperata		
	Fimbristylis dichotoma		
Elatinaceae	*Bergia ammannioides*		
	Bergia trimera		
Euphorbiaceae	*Adriana tomentosa* var. *tomentosa*		
	Euphorbia australis var. *australis*		
	Euphorbia australis var. *hispidula*		
	Euphorbia australis var. *subtomentosa*		
	Euphorbia biconvexa		
	Euphorbia boophthona		
	Euphorbia schultzii		
	Euphorbia sp.		
	Euphorbia tannensis subsp. *eremophlia*		
Fabaceae	*Acacia ampliceps x sclerosperma* subsp. *sclerosperma*		
	Acacia ancistrocarpa		
	Acacia atkinsiana		

Family	Species name	Conservation status	Weed
Fabaceae	*Acacia bivenosa*		
	Acacia colei var. *ileocarpa*		
	Acacia elacantha		
	Acacia inaequilatera		
	Acacia maitlandii		
	Acacia monticola		
	Acacia orthocarpa		
	Acacia pruinocarpa		
	Acacia ptychophylla		
	Acacia pyrifolia var. *pyrifolia*		
	Acacia sclerosperma subsp. *sclerosperma*		
	Acacia synchronicia		
	Acacia trachycarpa		
	Acacia trachycarpa x tumida var. *pilbarensis*		
	Acacia tumida var. *pilbarensis*		
	Acacia xiphophylla		
	Alysicarpus muelleri		
	Cajanus cinereus		
	Crotalaria medicaginea var. *neglecta*		
	Crotalaria novae-hollandiae subsp. *novae-hollandiae*		
	Cullen lachnostachys		
	Cullen martinii		
	Cullen pogonocarpum		
	Cullen pustulatum		
	Desmodium filiforme		
	Glycine canescens		
	Indigofera colutea		
	Indigofera linifolia		
	Indigofera linnaei		
	Indigofera monophylla		
	Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301)	P3	
	Indigofera fraxitiflexa		
	Indigofera trita		
	Isotropis atropurpurea		
	Lotus cruentus		
	Neptunia dimorphantha		
	Petalostylis labicheoides		
	Rhynchosia bungarensis	P4	
	Rhynchosia minima		

Family	Species name	Conservation status	Weed
Fabaceae	*Senna artemisioides* subsp. *helmsii*		
	Senna artemisioides subsp. *oligophylla*		
	Senna glutinosa subsp. *glutinosa*		
	Senna glutinosa subsp. *pruinosa*		
	Senna glutinosa subsp. x *luerssenii*		
	Senna notabilis		
	Senna symonii		
	Senna venusta		
	Sesbania cannabina		
	Swainsona formosa		
	Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)		
	Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)		
	Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)		
	Tephrosia supina		
	Tephrosia uniovulata		
	Tephrosia virens		
	Vachellia farnesiana		*
	Vigna lanceolata		
Goodeniaceae	*Dampiera candicans*		
	Goodenia forrestii		
	Goodenia microptera		
	Goodenia stobbsiana		
	Scaevola spinescens		
Gyrostemonaceae	*Codonocarpus cotinifolius*		
Haloragaceae	*Haloragis gossei* var. *gossei*		
Lamiaceae	*Basilicum polystachyon*		
	Clerodendrum floribundum var. *angustifolium*		
	Clerodendrum floribundum var. *floribundum*		
Lauraceae	*Cassytha capillaris*		
Loranthaceae	*Diplatia grandibractea*		
Lythraceae	*Ammannia multiflora*		
Malvaceae	*Abutilon cryptopetalum*		
	Abutilon fraseri		
	Abutilon lepidum		
	Abutilon malvifolium		
	Abutilon otocarpum		
	Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)		
	Abutilon sp. Pilbara (W.R. Barker 2025)		
	Brachychiton acuminatus		

Family	Species name	Conservation status	Weed
Malvaceae	*Brachychiton gregorii*		
	Corchorus crozophorifolius		
	Corchorus lasiocarpus subsp. *parvus*		
	Corchorus sidoides		
	Corchorus sp.		
	Corchorus tectus		
	Corchorus tridens		
	Gossypium australe		
	Gossypium robinsonii		
	Hibiscus brachychlaenus		
	Hibiscus burtonii		
	Hibiscus coatesii		
	Hibiscus goldsworthii		
	Hibiscus leptocladus		
	Hibiscus sp.		
	Hibiscus sturtii var. *campylochlamys*		
	Keraudrenia nephrosperma		
	Keraudrenia velutina subsp. *elliptica*		
	Malvastrum americanum		*
	Melhania oblongifolia		
	Sida arsiniata		
	Sida echinocarpa		
	Sida fibulifera		
	Sida platycalyx		
	Sida rohlenae subsp. *rohlenae*		
	Sida sp. Articulation below (A.A. Mitchell PRP 1605)		
	Sida sp. Barlee Range (S. van Leeuwen 1642)	P3	
	Sida sp. dark green fruits (S. van Leeuwen 2260)		
	Sida sp. Excedentifolia (J.L. Egan 1925)		
	Sida sp. Pilbara (A.A. Mitchell PRP 1543)		
	Sida sp. verrucuse glands (F.H. Mollemans 2423)		
	Triumfetta clementii		
	Triumfetta johnstonii		
	Triumfetta maconochieana		
	Waltheria indica		
	Waltheria virgata		
Menispermaceae	*Tinospora smilacina*		
Molluginaceae	*Mollugo molluginea*		
Moraceae	*Ficus aculeata* var. *indecora*		

Family	Species name	Conservation status	Weed
Moraceae	*Ficus brachypoda*		
	Ficus platypoda		
Myrtaceae	*Corymbia candida*		
	Corymbia ferriticola		
	Corymbia hamersleyana		
	Eucalyptus camaldulensis subsp. *refulgens*		
	Eucalyptus leucophloia subsp. *leucophloia*		
	Eucalyptus sp.		
	Eucalyptus victrix		
	Eucalyptus xerothermica		
	Melaleuca glomerata		
Nyctaginaceae	*Boerhavia burbidgeana*		
	Boerhavia coccinea		
	Boerhavia repleta		
	Boerhavia schomburgkiana		
	Boerhavia sp.		
Oleaceae	*Jasminum didymum* subsp. *lineare*		
Papaveraceae	*Argemone ochroleuca* subsp. *ochroleuca*		*
Passifloraceae	*Passiflora foetida* var. *hispida*		*
Phyllanthaceae	*Flueggea virosa* subsp. *melanthesoides*		
	Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)		
	Phyllanthus erwinii		
	Phyllanthus maderaspatensis		
	Phyllanthus reticulatus		
Plantaginaceae	*Stemodia grossa*		
Plumbaginaceae	*Plumbago zeylanica*		
Poaceae	*Amphipogon sericeus*		
	Aristida burbidgeae		
	Aristida holathera var. *holathera*		
	Aristida inaequiglumis		
	Brachyachne convergens		
	Brachyachne prostrata		
	Cenchrus ciliaris		*
	Cenchrus setiger		*
	Chloris barbata		*
	Chloris pectinata		
	Chrysopogon fallax		
	Cymbopogon ambiguus		
	Cynodon dactylon		*

Family	Species name	Conservation status	Weed
Poaceae	*Dactyloctenium radulans*		
	Dichanthium sericeum subsp. *humilius*		
	Digitaria brownii		
	Digitaria ctenantha		
	Echinochloa colona		*
	Enneapogon lindleyanus		
	Eragrostis cumingii		
	Eragrostis dielsii		
	Eragrostis eriopoda		
	Eragrostis exigua		
	Eragrostis leptocarpa		
	Eragrostis setifolia		
	Eragrostis tenellula		
	Eriachne aristidea		
	Eriachne benthamii		
	Eriachne mucronata		
	Eriachne helmsii		
	Eriachne pulchella subsp. *dominii*		
	Eriachne pulchella subsp. *pulchella*		
	Eriachne tenuiculmis		
	Eulalia aurea		
	Mnesithea formosa		
	Paraneurachne muelleri		
	Paspalidium basicladum		
	Paspalidium clementii		
	Paspalidium rarum		
	Paspalidium sp.		
	Paspalidium tabulatum		
	Perotis rara		
	Setaria verticillata		*
	Sporobolus australasicus		
	Themeda triandra		
	Triodia epactia		
	Triodia longiceps		
	Triodia sp. Robe River (M.E. Trudgen et al. MET 12367)	P3	
	Triodia wiseana		
	Tripogon loliiformis		
	Urochloa occidentalis		
	Urochloa piligera		

Family	Species name	Conservation status	Weed
Poaceae	*Yakirra australiensis*		
Polygalaceae	*Polygala glaucifolia*		
	Polygala sp.		
Polygonaceae	*Acetosa vesicaria*		*
Portulacaceae	*Portulaca oleracea*		
Proteaceae	*Grevillea pyramidalis* subsp. *leucadendron*		
	Grevillea wickhamii		
	Grevillea wickhamii subsp. *hispidula*		
	Hakea chordophylla		
	Hakea lorea subsp. *lorea*		
Pteridaceae	*Cheilanthes brownii*		
	Cheilanthes contigua		
	Cheilanthes sieberi subsp. *sieberi*		
	Cheilanthes sp.		
Rubiaceae	*Oldenlandia crouchiana*		
Sapindaceae	*Dodonaea coriacea*		
	Dodonaea lanceolata		
	Dodonaea pachyneura		
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii*		
	Eremophila fraseri		
	Eremophila longifolia		
Solanaceae	*Nicotiana benthamiana*		
	Nicotiana occidentalis subsp. *occidentalis*		
	Solanum cleistogamum		
	Solanum diversiflorum		
	Solanum horridum		
	Solanum lasiophyllum		
	Solanum phlomoides		
	Solanum sp.		
Surianaceae	*Stylobasium spathulatum*		
Violaceae	*Hybanthus aurantiacus*		
Zygophyllaceae	*Tribulus astrocarpus*		
	Tribulus hirsutus		
	Tribulus macrocarpus		
	Tribulus sp.		

Table M.2: Vascular flora species recorded during the current survey and during previously conducted surveys in the vicinity of the current survey area (Astron 2011, 2015; Biota 2006a, 2006b, 2007, 2009, 2012; Rio Tinto 2014). P = Priority ranking; * = weed status; 1 = species recorded.

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Acanthaceae	*Dicladanthera forrestii*								1
	Dicladanthera glabra	P2							1
	Dipteracanthus australasicus subsp. *australasicus*								1
	Rostellularia adscendens var. *clementii*						1		1
Aizoacea	*Trianthema glossostigmum*				1		1		
	Trianthema oxycalyptrum var. *oxycalyptrum*				1				
	Trianthema pilosum			1	1	1	1		1
	Trianthema triquetrum			1	1	1	1	1	1
	Trianthema turgidifolium						1		
	Zaleya galericulata			1		1			1
Amaranthaceae	*Achyranthes aspera*				1		1	1	1
	Aerva javanica		*		1	1	1		1
	Alternanthera angustifolia					1			
	Alternanthera nana			1	1	1	1	1	1
	Alternanthera nodiflora				1		1		
	Alternanthera sp.						1		
	Amaranthus cuspidifolius					1	1		1
	Amaranthus mitchellii								1
	Amaranthus aff. *interruptus*				1				
	Amaranthus sp.				1	1			1
	Amaranthus undulatus				1	1	1		1
	Gomphrena affinis subsp. *pilbarensis*				1				
	Gomphrena cunninghamii				1	1	1		1
	Ptilotus aervoides				1	1	1		1
	Ptilotus appendiculatus				1	1	1	1	1
	Ptilotus arthrolasius				1				
	Ptilotus astrolasius			1	1	1	1	1	1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Amaranthaceae	*Ptilotus auriculifolius*				1	1	1		1
	Ptilotus axillaris			1	1	1	1		1
	Ptilotus calostachyus			1	1	1	1		1
	Ptilotus clementii				1	1	1		
	Ptilotus fusiformis				1	1	1		1
	Ptilotus gaudichaudii subsp. *gaudichaudii*				1				
	Ptilotus gomphrenoides var. *gomphrenoides*				1				1
	Ptilotus helipteroides					1			
	Ptilotus incanus				1	1	1		1
	Ptilotus macrocephalus				1				
	Ptilotus murrayi				1				
	Ptilotus nobilis subsp. *nobilis*			1	1	1	1		1
	Ptilotus obovatus var. *obovatus*				1	1			1
	Ptilotus polystachyus				1	1			
	Ptilotus sp.								1
Apiaceae	*Daucus glochidiatus*					1			
Apocynacea	*Carissa lanceolata*						1		1
	Cynanchum floribundum					1			1
	Rhyncharrhena linearis					1			
	Sarcostemma viminale subsp. *australe*				1				1
	Tylophora flexuosa					1			
Araliaceae	*Trachymene oleracea* subsp. *oleracea*				1	1	1		1
Arecaceae	*Phoenix dactylifera*		*			1			
Asteraceae	*Angianthus acrohyalinus*				1				
	Bidens bipinnata		*		1				1
	Blumea tenella				1		1		
	Calocephalus beardii				1				
	Calocephalus knappii				1	1			1
	Calotis hispidula				1	1			
	Calotis plumulifera				1				

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Asteraceae	*Calotis porphyroglosa*								1
	Centipeda minima subsp. *macrocephala*				1	1	1		1
	Chrysocephalum sp.			1					
	Flaveria trinervia				1	1			1
	Gnephosis arachnoidea				1				
	Helichrysum luteoalbum					1	1		
	Ixiochlamys cuneifolia				1				
	Lactuca saligna		*			1	1		
	Lactuca serriola		*			1			1
	Pentalepis trichodesmoides				1	1	1		1
	Peripleura virgata					1			
	Pluchea dentex				1	1			
	Pluchea dunlopii				1	1	1		
	Pluchea ferdinandi-muelleri				1		1		
	Pluchea rubelliflora			1		1	1	1	1
	Pluchea tetranthera				1			1	
	Pterocaulon serrulatum var. *serrulatum*								1
	Pterocaulon serrulatum var. *velutinum*								1
	Pterocaulon sphaeranthoides				1	1	1		1
	Pterocaulon sphaeranthoides x sphacelatum				1	1			
	Pterocaulon sphacelatum			1			1		
	Pterocaulon sp.			1				1	1
	Rhodanthe floribunda				1				
	Rhodanthe margarethae				1	1	1		1
	Sonchus oleraceus		*		1	1	1	1	1
	Streptoglossa bubakii				1	1	1		1
	Streptoglossa decurrens				1	1	1		1
	Streptoglossa liatroides				1				1
	Streptoglossa odora				1		1		
	Streptoglossa sp.								1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Asteraceae	*Vittadinia* sp.				1				
Boraginaceae	*Ehretia saligna*								1
	Ehretia saligna var. *saligna*				1	1			
	Heliotropium chrysocarpum				1	1			
	Heliotropium crispatum				1		1		
	Heliotropium cunninghamii				1		1		
	Heliotropium heteranthum				1		1		1
	Heliotropium inexplicitum					1			
	Heliotropium ?inexplicitum				1				
	Heliotropium ovalifolium								1
	Heliotropium pachyphyllum						1		
	Heliotropium tenuifolium				1	1	1		
	Heliotropium transforme				1				
	Heliotropium tanythrix								1
	Trichodesma zeylanicum var. *zeylanicum*			1	1	1	1		1
Brassicaceae	*Lepidium muelleri-ferdinandii*				1	1			1
	Lepidium pedicellosum				1	1			
	Lepidium phlebopetalum				1		1		
	Lepidium pholidogynum				1	1	1		1
	Lepidium platypetalum				1				
Campanulaceae	*Lobelia arnhemiaca*					1	1	1	
	Lobelia heterophylla					1			1
	Lobelia quadrangularis				1				
	Wahlenbergia tumidifructa				1	1			1
Capparaceae	*Capparis spinosa* var. *nummularia*				1	1	1		1
	Capparis umbonata				1				
Caryophyllaceae	*Polycarpaea corymbosa* var. *corymbosa*				1	1	1		1
	Polycarpaea holtzei				1	1	1		
	Polycarpaea involucrata								1
	Polycarpaea longiflora				1	1	1		1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Celastraceae	*Stackhousia intermedia*				1	1	1		1
Chenopodiaceae	*?Chenopodium gaudichaudianum*				1				
	Dysphania cristata								1
	Dysphania glomulifera subsp. *eremaea*				1				1
	Dysphania kalpari				1	1			1
	Dysphania melanocarpa				1	1			1
	Dysphania plantaginella				1	1	1		
	Dysphania rhadinostachya			1	1				
	Dysphania rhadinostachya subsp. *inflata*						1		
	Dysphania rhadinostachya subsp. *rhadinostachya*				1	1	1		1
	Dysphania sp.								1
	Dysphania sphaerosperma					1			
	Enchylaena tomentosa var. *tomentosa*				1		1		1
	Maireana georgei					1	1		
	Maireana melanocoma				1		1		
	Maireana planifolia				1				
	Rhagodia eremaea				1	1	1		1
	Salsola australis				1	1	1		1
	Sclerolaena cornishiana								1
	Sclerolaena costata			1	1	1	1	1	
	Sclerolaena densiflora				1	1	1		
Cleomaceae	*Cleome viscosa*			1		1	1		1
	Cleome uncifera				1				
Convolvulaceae	*Bonamia erecta*			1	1	1	1		1
	Bonamia linearis				1				
	Bonamia media				1	1			1
	Bonamia pannosa				1	1	1		1
	Bonamia pilbarensis						1		1
	Bonamia sp.								1
	Duperreya commixta				1	1	1	1	1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Convolvulaceae	*Evolvulus alsinoides* var. *decumbens*				1	1			
	Evolvulus alsinoides var. *villosicalyx*			1	1	1	1	1	1
	Ipomoea lonchophylla								1
	Ipomoea muelleri				1	1	1		1
	Ipomoea sp.								1
	Operculina aequisepala				1	1			1
	Polymeria ambigua					1	1		1
	Polymeria ambigua/calycina					1			
	Polymeria aff. *ambigua*						1		
	Polymeria sp.								1
Cucurbitaceae	*Austrobryonia pilbarensis*								1
	Citrullus colocynthis		*					1	1
	Cucumis melo					1			1
	Cucumis variabilis			1	1	1	1	1	1
	Trichosanthes cucumerina					1			1
Cyperaceae	*Bulbostylis barbata*			1	1	1	1	1	1
	Cyperus cunninghamii subsp. *cunninghamii*				1	1	1		1
	Cyperus difformis					1	1		
	Cyperus hesperius				1	1			1
	Cyperus iria						1		1
	Cyperus squarrosus						1		
	Cyperus vaginatus			1	1	1	1	1	1
	Eleocharis atropurpurea					1			
	Eleocharis geniculata						1		
	Fimbristylis depauperata								1
	Fimbristylis dichotoma				1	1			1
	Fimbristylis microcarya					1	1		
	Fimbristylis rara					1			
	Lipocarpha microcephala					1			
	Schoenoplectus lateriflorus					1			

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Cyperaceae	*Schoenoplectus subulatus*						1	1	
Droseraceae	*Drosera indica*					1			
Elatinaceae	*Bergia ammannioides*								1
	Bergia pedicellaris				1	1			
	Bergia trimera				1	1	1		1
Euphorbiaceae	*Adriana tomentosa* var. *tomentosa*				1	1	1		1
	Euphorbia australis			1		1			1
	Euphorbia aff. *australis*					1	1		
	Euphorbia australis var. *australis*								1
	Euphorbia australis var. *hispidula*								1
	Euphorbia australis var. *subtomentosa*								1
	Euphorbia biconvexa					1	1		1
	Euphorbia boophthona					1	1	1	1
	Euphorbia boophthona (large seed form)					1	1		
	Euphorbia careyi				1	1	1		
	Euphorbia coghlanii				1	1			
	Euphorbia hirta		*				1		
	Euphorbia schultzii								1
	Euphorbia sp.				1	1	1		1
	Euphorbia tannensis subsp. *eremophila*			1	1		1		1
	Euphorbia tannensis subsp. *eremophila* (Hamersley form)					1			
	Euphorbia wheeleri						1		
Fabaceae	*Acacia ampliceps*						1		
	Acacia ampliceps × *sclerosperma* subsp. *sclerosperma*						1		1
	Acacia ancistrocarpa			1	1	1	1	1	1
	Acacia atkinsiana							1	1
	Acacia bivenosa			1	1	1	1	1	1
	Acacia colei			1				1	
	Acacia colei var. *ileocarpa*				1	1	1		1
	Acacia coriacea subsp. *sericophylla*				1				

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Fabaceae	*Acacia cowleana*				1	1			
	Acacia elachantha				1	1	1		1
	Acacia inaequilatera			1	1	1	1	1	1
	Acacia maitlandii				1	1	1		1
	Acacia monticola				1	1			1
	Acacia orthocarpa				1	1			1
	Acacia pruinocarpa				1	1	1		1
	Acacia ptychophylla			1	1	1	1		1
	Acacia pyrifolia			1	1	1		1	
	Acacia pyrifolia var. *morrisonii*					1	1		
	Acacia pyrifolia var. *pyrifolia*						1		1
	Acacia sclerosperma							1	
	Acacia sclerosperma subsp. *sclerosperma*				1	1	1		1
	Acacia sericophylla					1			
	Acacia synchronicia			1	1		1	1	1
	Acacia tenuissima					1			
	Acacia trachycarpa				1	1	1	1	1
	Acacia trachycarpa x tumida var. *pilbarensis*						1		1
	Acacia tumida var. *pilbarensis*				1	1	1	1	1
	Acacia xiphophylla				1	1	1		1
	Alysicarpus muelleri					1	1		1
	Cajanus cinereus					1			1
	Crotalaria medicaginea var. *neglecta*					1	1		1
	Crotalaria novae-hollandiae subsp. *novae-hollandiae*								1
	Cullen lachnostachys					1	1		1
	Cullen leucanthum					1			
	Cullen leucochaites			1		1	1		
	Cullen martinii			1		1	1		1
	Cullen pogonocarpum					1	1		1
	Cullen pustulatum								1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Fabaceae	*Desmodium filiforme*								1
	Glycine canescens					1			1
	Indigofera colutea					1	1	1	1
	Indigofera linifolia					1	1		1
	Indigofera linnaei					1	1		1
	Indigofera monophylla			1	1	1	1		1
	Indigofera monophylla (brown calyx form)						1		
	Indigofera rugosa					1			
	Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301)	P3					1		1
	Indigofera fraxtiflexa								1
	Indigofera trita				1	1	1	1	1
	Isotropis atropurpurea			1	1	1	1		1
	Lotus australis						1		
	Lotus cruentus					1			1
	Neptunia dimorphantha						1		1
	Parkinsonia aculeata		*		1				
	Petalostylis cassioides				1				
	Petalostylis labicheoides			1	1	1	1		1
	Rhynchosia bungarensis	P4			1	1			1
	Rhynchosia minima			1	1	1	1	1	1
	Senna charlesiana					1	1		
	Senna artemisioides subsp. *helmsii*					1	1		1
	Senna artemisioides subsp. *oligophylla*			1	1	1	1	1	1
	Senna artemisioides subsp. *oligophylla* (thinly sericeous)							1	
	Senna glutinosa					1	1		
	Senna glutinosa subsp. *glutinosa*			1					1
	Senna glutinosa subsp. *pruinosa*			1	1				1
	Senna glutinosa subsp. *x luerssenii*			1	1	1	1	1	1
	Senna notabilis			1		1	1	1	1
	Senna sp.					1			

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Fabaceae	*Senna* sp. Meekatharra (E. Bailey 1-26)						1		
	Senna symonii								1
	Senna venusta			1	1	1			1
	Sesbania cannabina			1	1	1	1		1
	Swainsona formosa				1	1	1		1
	Swainsona kingii						1		
	Tephrosia oxalidea					1			
	Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)			1	1	1			1
	Tephrosia aff. *rosea* var. Fortescue creeks (M.I.H. Brooker 2186)					1	1		
	Tephrosia sp.					1	1		1
	Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)				1	1			1
	Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)			1	1	1	1		
	Tephrosia spechtii				1	1			
	Tephrosia supina			1	1	1			1
	Tephrosia aff. *supina*					1	1	1	
	Tephrosia uniovulata				1	1			1
	Tephrosia virens								1
	Vachellia farnesiana		*	1	1	1	1	1	1
	Vigna lanceolata						1		1
	Vigna lanceolata var. *lanceolata*				1	1			
Gentianaceae	*Schenkia australis*						1		
	Schenkia clementii					1			
Goodeniaceae	*Dampiera candicans*			1	1	1	1		1
	Goodenia forrestii				1	1	1	1	1
	Goodenia lamprosperma				1	1			
	Goodenia microptera			1	1	1	1		1
	Goodenia muelleriana						1		
	Goodenia stellata						1		
	Goodenia stobbsiana			1	1	1	1	1	1
	Goodenia tenuiloba						1		

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Goodeniaceae	*Scaevola spinescens*				1	1		1	1
Gyrostemonaceae	*Codonocarpus cotinifolius*			1	1	1	1		1
Lamiaceae	*Basilicum polystachyon*					1	1		1
	Clerodendrum floribundum var. *angustifolium*				1	1			1
	Clerodendrum tomentosum var. *lanceolatum*						1		1
Lauraceae	*Cassytha capillaris*			1	1	1	1	1	1
Loranthaceae	*Amyema preissii*				1	1	1		
	Diplatia grandibractea								1
Lythraceae	*Ammannia auriculata*					1			
	Ammannia baccifera					1	1	1	
	Ammannia multiflora								1
	Ammannia sp.				1	1			
	Rotala diandra					1			
Malvaceae	*Abutilon amplum*				1	1			
	Abutilon cryptopetalum								1
	Abutilon cunninghamii					1			
	Abutilon fraseri				1	1	1		1
	Abutilon aff. *hannii*						1		
	Abutilon lepidum					1	1	1	1
	Abutilon aff. *lepidum*					1	1		
	Abutilon malvifolium								1
	Abutilon macrum						1		
	Abutilon otocarpum						1		1
	Abutilon otocarpum (acute leaf form)					1			
	Abutilon oxycarpum subsp. Prostrate (A.A. Mitchell PRP 1266)						1		
	Abutilon sp.			1	1	1	1		
	Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)				1	1	1		1
	Abutilon sp. Pilbara (W.R. Barker 2025)			1	1	1	1	1	1
	Brachychiton acuminatus				1	1			1
	Brachychiton gregorii								1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Malvaceae	*Corchorus crozophorifolius*				1	1	1		1
	Corchorus lasiocarpus subsp. *parvus*					1		1	1
	Corchorus aff. *parviflorus*			1			1		
	Corchorus sidoides			1					1
	Corchorus sidoides subsp. *sidoides*				1	1	1		
	Corchorus sp.								1
	Corchorus tectus						1		1
	Corchorus tridens						1		1
	Gossypium australe (Burrup Peninsula form)				1	1	1		
	Gossypium australe (Whim Creek form)					1	1		
	Gossypium australe			1			1	1	1
	Gossypium robinsonii			1	1	1	1	1	1
	Hibiscus brachychlaenus					1			1
	Hibiscus burtonii				1	1			1
	Hibiscus coatesii				1	1		1	1
	Hibiscus goldsworthii				1	1			1
	Hibiscus leptocladus			1	1	1			1
	Hibiscus sp.								1
	Hibiscus sturtii var. *campylochlamys*				1	1	1		1
	Hibiscus sturtii var. aff. *grandiflorus*				1	1	1		
	Hibiscus sturtii var. *platychlamys*					1	1		
	Hibiscus sturtii var. aff. *platychlamys*					1			
	Keraudrenia nephrosperma				1	1			1
	Keraudrenia velutina subsp. *elliptica*			1			1		1
	Malvastrum americanum		*	1	1	1	1	1	1
	Melhania oblongifolia				1	1	1		1
	Sida arsiniata			1	1	1	1	1	1
	Sida aff. *cardiophylla*				1	1			
	Sida clementii			1		1			
	Sida echinocarpa				1	1	1		1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Malvaceae	*Sida fibulifera*				1	1	1	1	1
	Sida kingii					1			
	Sida platycalyx								1
	Sida rohlenae subsp. *rohlenae*				1	1			1
	Sida sp.			1					1
	Sida sp. Articulation below (A.A. Mitchell PRP 1605)					1			1
	Sida sp. Barlee Range (S. van Leeuwen 1642)	P3							1
	Sida sp. dark green fruits (S. van Leeuwen 2260)								1
	Sida sp. Excedentifolia (J.L. Egan 1925)								1
	Sida sp. Pilbara (A.A. Mitchell PRP 1543)			1		1	1		1
	Sida aff. sp. *Pilbara (A.A. Mitchell PRP 1543)*						1		
	Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)			1	1	1	1		
	Sida sp. verrucose glands (F.H. Mollemans 2423)			1			1		1
	Sida spinosa						1		
	Triumfetta chaetocarpa				1	1	1		
	Triumfetta clementii				1	1		1	1
	Triumfetta johnstonii			1	1	1	1		1
	Triumfetta maconochieana				1	1			1
	Triumfetta sp.				1	1			
	Waltheria indica				1	1	1		1
	Waltheria virgata					1			1
Menispermaceae	*Tinospora smilacina*				1	1			1
Molluginaceae	*Glinus lotoides*					1			
	Glinus oppositifolius					1	1		
	Mollugo molluginea			1	1	1	1		1
Moraceae	*Ficus aculeata* var. *indecora*				1	1			1
	Ficus brachypoda				1	1			1
	Ficus platypoda								1
Myrtaceae	*Corymbia aspera*			1					
	Corymbia candida				1		1		1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Myrtaceae	*Corymbia candida* subsp. *candida*					1			
	Corymbia ferriticola				1	1			1
	Corymbia flavescens				1	1			
	Corymbia hamersleyana			1	1	1	1	1	1
	Eucalyptus camaldulensis			1	1			1	
	Eucalyptus camaldulensis subsp. *obtusa*					1			
	Eucalyptus camaldulensis subsp. *refulgens*						1		1
	Eucalyptus leucophloia subsp. *leucophloia*			1	1	1	1		1
	Eucalyptus sp.								1
	Eucalyptus victrix			1	1	1	1	1	1
	Eucalyptus xerothermica				1	1	1		1
	Melaleuca bracteata			1			1		
	Melaleuca glomerata			1			1		1
	Melaleuca linophylla					1			
Nyctaginaceae	*Boerhavia burbidgeana*				1	1			1
	Boerhavia coccinea			1	1	1	1		1
	Boerhavia gardneri				1	1	1		
	Boerhavia repleta					1	1		1
	Boerhavia schomburgkiana								1
	Boerhavia sp.						1		1
Oleaceae	*Jasminum didymum* subsp. *lineare*			1	1	1	1		1
Onagraceae	*Ludwigia perennis*					1	1		
Orobanchaceae	*Striga squamigera*					1			
Papaveraceae	*Argemone ochroleuca* subsp. *ochroleuca*		*		1	1	1		1
Passifloraceae	*Passiflora foetida* var. *hispida*		*	1			1	1	1
Pedaliaceae	*Josephinia* sp.					1			
Phrymaceae	*Mimulus gracilis*					1			
	Peplidium sp. E Evol. Fl. Fauna Arid Aust. (A.S. Weston 12768)						1		
Phyllanthaceae	*Flueggea virosa* subsp. *melanthesoides*					1	1		1
	Notoleptopus decaisnei						1		

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Phyllanthaceae	*Notoleptopus decaisnei* var. *decaisnei*					1			
	Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)						1		1
	Phyllanthus erwinii				1	1	1		1
	Phyllanthus exilis					1			
	Phyllanthus maderaspatensis			1	1	1	1	1	1
	Phyllanthus reticulatus				1	1			1
Plantaginaceae	*Stemodia grossa*			1	1	1	1	1	1
	Stemodia sp.			1					
Plumbaginaceae	*Plumbago zeylanica*					1			1
Poaceae	*Amphipogon sericeus*			1		1			1
	Aristida burbidgeae				1	1			1
	Aristida holathera var. *holathera*				1	1	1		1
	Aristida inaquilglumis								1
	Aristida latifolia			1					
	Bothriochloa bladhii						1		
	Brachyachne convergens				1	1	1		1
	Brachyachne prostrata						1		1
	Cenchrus ciliaris		*	1	1	1	1	1	1
	Cenchrus setiger		*	1	1	1	1		1
	Cenchrus sp.		*				1		
	Chloris barbata		*	1			1		1
	Chloris pectinata								1
	Chloris virgata		*	1					
	Chrysopogon fallax			1	1	1	1		1
	Cymbopogon ambiguus				1	1	1	1	1
	Cymbopogon obtectus					1			
	Cynodon dactylon		*	1		1	1		1
	Dactyloctenium radulans						1	1	1
	Dichanthium sericeum subsp. *humilius*					1	1		
	Digitaria brownii								1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Poaceae	*Digitaria ctenantha*					1			1
	Echinochloa colona		*			1		1	1
	Enneapogon caerulescens					1			
	Enneapogon lindleyanus				1	1	1		1
	Enneapogon polyphyllus					1			
	Enneapogon robustissimus				1	1			
	Enteropogon ramosus					1			
	Eragrostis cumingii			1		1	1		1
	Eragrostis dielsii			1		1	1		1
	Eragrostis eriopoda			1	1	1	1		1
	Eragrostis exigua					1			1
	Eragrostis leptocarpa					1			1
	Eragrostis setifolia								1
	Eragrostis surreyana			1			1		
	Eragrostis tenellula				1	1	1		1
	Eriachne aristidea					1	1		1
	Eriachne benthamii								1
	Eriachne ciliata					1			
	Eriachne helmsii				1	1	1		
	Eriachne mucronata				1	1			1
	Eriachne pulchella						1		
	Eriachne pulchella subsp. *dominii*				1	1			1
	Eriachne pulchella subsp. *pulchella*								1
	Eriachne tenuiculmis				1	1			1
	Eriochloa pseudoacrotricha					1			
	Eulalia aurea					1			1
	Iseilema dolichotrichum					1			
	Mnesithea formosa								1
	Paraneurachne muelleri			1	1	1	1		1
	Paspalidium basicladum								1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Poaceae	*Paspalidium clementii*					1	1		1
	Paspalidium constrictum						1		
	Paspalidium rarum								1
	Paspalidium sp.						1		1
	Paspalidium tabulatum				1	1	1		1
	Perotis rara				1	1	1		1
	Setaria dielsii					1	1		
	Setaria verticillata		*			1	1		1
	Sporobolus australasicus			1		1	1	1	1
	Themeda triandra				1	1	1		1
	Triodia angusta						1		
	Triodia epactia			1	1	1	1	1	1
	Triodia longiceps			1	1	1	1		1
	Triodia pungens			1					
	Triodia sp.					1	1		
	Triodia sp. Robe River (M.E. Trudgen et al. MET 12367)	P3		1	1		1		1
	Triodia wiseana			1	1	1	1	1	1
	Tripogon loliiformis								1
	Urochloa occidentalis								1
	Urochloa piligera								1
	Yakirra australiensis var. *australiensis*					1	1		1
Polygalaceae	*Acetosa vesicaria*					1			1
	Polygala aff. *isingii*					1			
	Polygala glaucifolia								1
	Polygala sp.			1					1
Portulacaceae	*Calandrinia ptychosperma*					1	1		
	Portulaca oleracea				1	1	1		1
Proteaceae	*Grevillea berryana*						1		
	Grevillea pyramidalis			1	1	1			
	Grevillea pyramidalis subsp. *leucadendron*						1		1

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Proteaceae	*Grevillea wickhamii*			1	1				1
	Grevillea wickhamii subsp. *aprica*						1		
	Grevillea wickhamii subsp. *hispidula*			1		1	1	1	1
	Hakea chordophylla			1	1	1	1		1
	Hakea lorea			1	1			1	
	Hakea lorea subsp. *lorea*					1	1		1
	Proteaceae sp.						1		
Pteridaceae	*Ceratopteris thalictroides*				1		1		
	Cheilanthes brownii					1			1
	Cheilanthes contigua								1
	Cheilanthes sieberi subsp. *sieberi*				1	1			1
	Cheilanthes sp.								1
Rubiaceae	*Oldenlandia crouchiana*				1	1	1		1
	Psydrax suaveolens			1					
	Synaptantha tillaeacea var. *tillaeacea*				1	1	1		
Sapindaceae	*Dodonaea coriacea*			1	1	1	1	1	1
	Dodonaea lanceolata								1
	Dodonaea pachyneura								1
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii*				1	1		1	1
	Eremophila fraseri								1
	Eremophila longifolia			1	1	1	1		1
Solanaceae	*Nicotiana benthamiana*				1	1			1
	Nicotiana occidentalis subsp. *occidentalis*					1			1
	Nicotiana occidentalis subsp. *obliqua*						1		
	Nicotiana sp.					1			
	Solanum ashbyae					1			
	Solanum centrale				1	1			
	Solanum cleistogamum								1
	Solanum diversiflorum			1	1	1	1		1
	Solanum aff. *gabrielae*						1		

Family	Species	Conservation status	Weed	RTIO 2014	Biota 2006b	Biota 2007 (incl. 2006a)	Biota 2012 (incl.2009)	Astron 2011	Astron 2015
Solanaceae	*Solanum horridum*				1	1			
	Solanum lasiophyllum				1	1			1
	Solanum phlomoides			1	1	1	1		1
	Solanum sp.								1
Stylidiaceae	*Stylidium fluminense*					1			
	Stylidium spathulatum			1					
	Stylidium weeliwolli					1			
Surianaceae	*Stylobasium spathulatum*				1	1	1	1	1
Typhaceae	*Typha domingensis*				1	1	1		
Urticaceae	*Parietaria cardiostegia*					1			
Violaceae	*Hybanthus aurantiacus*			1	1	1	1	1	1
Zygophyllaceae	*Tribulopis angustifolia*						1		
	Tribulus astrocarpus						1		1
	Tribulus hirsutus				1	1	1		1
	Tribulus aff. *hirsutus*					1			
	Tribulus macrocarpus			1	1	1	1		1
	Tribulus platypterus				1	1	1		
	Tribulus sp.								1

Table M.3: Site x species matrix for vascular flora species recorded during the current survey.

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
**Acetosa vesicaria*																																								
**Aerva javanica*						0.5																																			
**Argemone ochroleuca* subsp. *ochroleuca*			0.5				0.5						0.5		0.5					0.5																					
**Cenchrus ciliaris*	20	0.5	0.5			1	0.5						0.5		0.5			20		0.5	0.5		5							0.5		8		10	0.5		2	0.5		7
**Cenchrus setiger*	30	2	2			30	78						0.5					25		75			20									30		30	0.5		25	0.5		7
**Chloris barbata*																							0.5																	
**Cynodon dactylon*																							0.5																	
**Echinochloa colona*																																					0.5			
**Flaveria trinervia*																					0.5																			0.5
**Lactuca serriola*																							0.5																	
**Malvastrum americanum*		0.5	0.5															0.5			0.5					0.5			0.5			0.5					0.5			
**Passiflora foetida*																							0.5														0.5			
**Setaria verticillata*			0.5																				0.5														0.5			
**Sonchus oleraceus*																																								
**Tribulus terrestris*						0.5																																		
**Vachellia farnesiana*																		0.5			0.5		0.5			0.5						0.5					0.5		0.5	
Abutilon cryptopetalum																																								
Abutilon fraseri																																0.5								
Abutilon lepidum																						0.5																		
Abutilon malvifolium																																					0.5			
Abutilon otocarpum						0.5																																		
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)			0.5						0.5		0.5									0.5	0.5					0.5					0.5			0.5	0.5	0.5			0.5
Abutilon sp. Pilbara (W.R. Barker 2025)	0.5																				0.5																		
Acacia ampliceps x sclerosperma subsp. *sclerosperma*																																								
Acacia ancistrocarpa				2													2	0.5			0.5			2	20	18	0.5				0.5				1	4		0.5	
Acacia atkinsiana																																								
Acacia bivenosa		1	0.5	8	3									0.5		0.5	0.5			0.5		0.5		0.5		0.5	1		0.5		0.5	0.5			2	0.5		1	
Acacia colei var. *ileocarpa*	1	7	3			0.5	0.5											0.5								0.5				0.5		8		2			1		0.5	
Acacia elachantha																		0.5														0.5	20							
Acacia inaequilatera	1	0.5	0.5			3		2	0.5		0.5						0.5		20	0.5				2	0.5	0.5				0.5	17		1			0.5		1	0.5
Acacia maitlandii								0.5			1	1																												
Acacia monticola									0.5		1	0.5																		0.5										
Acacia orthocarpa								1																						0.5										
Acacia pruinocarpa										2																		5												
Acacia ptychophylla												0.5															0.5													
Acacia pyrifolia var. *pyrifolia*	0.5	0.5				0.5	0.5		3			0.5						1											0.5		1	0.5		0.5	0.5					2
Acacia sclerosperma subsp. *sclerosperma*																		0.5					2								0.5								
Acacia synchronicia	0.5				0.5									0.5			0.5	0.5			0.5	0.5				0.5									1	0.5	0.5			
Acacia trachycarpa													0.5		0.5		0.5																			1				
Acacia trachycarpa x tumida var. *pilbarensis*																																								

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
Acacia tumida var. *pilbarensis*		0.5		0.5					8	1	1	8						0.5							0.5				60	4		5	5		12					
Acacia xiphophylla																					10																0.5	2		
Achyranthes aspera		0.5																																						
Adriana tomentosa var. *tomentosa*																																								
Alternanthera nana	0.5	0.5	0.5				0.5													0.5						0.5			0.5								0.5		0.5	
Alysicarpus muelleri	0.5	0.5	0.5															0.5														0.5								
Amaranthus cuspidifolius													0.5																								0.5			
Amaranthus mitchellii																					0.5					0.5														
Amaranthus sp.	0.5	0.5	0.5								0.5				0.5																									
Amaranthus undulatus		0.5													0.5																									
Ammannia multiflora																				0.5																				
Amphipogon sericeus																																								
Aristida burbidgeae																																								
Aristida holathera var. *holathera*	0.5					0.5																							0.5											
Aristida inaequiglumis																																0.5								
Astrotricha hamptonii																																								
Austrobryonia pilbarensis																																					0.5			
Basilicum polystachyon																																								
Bergia ammannioides																																								
Bergia trimera																																								
Blumea tenella			0.5																																					
Boerhavia burbidgeana																																								
Boerhavia coccinea	0.5					0.5							0.5					0.5		0.5	0.5					0.5					0.5				0.5		0.5		0.5	0.5
Boerhavia repleta							0.5																												0.5					
Boerhavia schomburgkiana	0.5		0.5															0.5															0.5							
Boerhavia sp.																																								
Bonamia erecta						0.5																			0.5				0.5	0.5			0.5			0.5				
Bonamia media														0.5																										
Bonamia pannosa																																								
Bonamia pilbarensis											0.5																													
Bonamia sp.																																								
Brachyachne convergens		0.5											0.5																0.5								0.5			
Brachyachne prostrata																					0.5																			
Brachychiton acuminatus																																								
Brachychiton gregorii																																								
Bulbostylis barbata		0.5	0.5			0.5						0.5	0.5	0.5	0.5	0.5	0.5				0.5					0.5		0.5		0.5							0.5		0.5	0.5
Cajanus cinereus																																			0.5					
Calocephalus knappii	0.5		0.5				0.5																																	
Calotis hispidula																																								
Calotis porphyroglossa		0.5																																						
Capparis spinosa var. *nummularia*									0.5		0.5												0.5																	
Carissa lanceolata																		0.5																						
Cassytha capillaris																																								

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
Centipeda minima subsp. *macrocephala*		0.5	0.5																	0.5																	0.5			
Cheilanthes brownii																																								
Cheilanthes contigua																																								
Cheilanthes sieberi subsp. *sieberi*																																								
Cheilanthes sp.																																								
Chloris pectinata																																								
Chrysopogon fallax	0.5	0.5	0.5				0.5											0.5											1			0.5								
Cleome viscosa	0.5	0.5	0.5			0.5	0.5		0.5	0.5	0.5	0.5	1	0.5	0.5		0.5	0.5	0.5	0.5	0.5					0.5				0.5					0.5	0.5	0.5		0.5	0.5
Clerodendrum floribundum var. angustifolium									0.5																			0.5		0.5										
Clerodendrum floribundum var. floribundum																																								
Codonocarpus cotinifolius																																								
Corchorus crozophorifolius							0.5		0.5		1		0.5																											
Corchorus lasiocarpus subsp. parvus													0.5				0.5	0.5			0.5			0.5	0.5	0.5			0.5	0.5		0.5						0.5	0.5
Corchorus sidoides													0.5																				0.5		0.5					
Corchorus sp.																	0.5				0.5					0.5											0.5			
Corchorus tectus																																								
Corchorus tridens																		0.5		0.5	0.5																0.5			
Corymbia candida																										4											20			
Corymbia ferriticola										2																														
Corymbia hamersleyana	1							0.5	1		3	0.5						15		1				1	0.5		0.5			13		12	1	3	2			2		
Crotalaria medicaginea var. neglecta	0.5					0.5												0.5								0.5							0.5							
Crotalaria novae-hollandiae subsp. novae-hollandiae																																								
Cucumis melo																																								
Cucumis variabilis	0.5	0.5	0.5			0.5	0.5		0.5		0.5	0.5	0.5				0.5	0.5		0.5	0.5		0.5			0.5			0.5	0.5	0.5					0.5	0.5		0.5	0.5
Cullen lachnostachys		0.5				0.5																	0.5									0.5			0.5					
Cullen martinii																																							0.5	
Cullen pogonocarpum																																								
Cullen pustulatum		0.5																																						
Cymbopogon ambiguus		0.5							0.5	0.5	2	0.5			0.5		0.5	0.5										0.5	0.5	0.5	0.5								
Cynanchum floribundum																					0.5																			
Cyperus cunninghamii subsp. *cunninghamii*		0.5							0.5			0.5																0.5												
Cyperus hesperius																																								
Cyperus iria																																					0.5			
Cyperus sp.																																								
Cyperus vaginatus																		1		0.5			0.5									0.5		0.5						
Dactyloctenium radulans																																								
Dampiera candicans				0.5																																				
Desmodium filiforme																																					0.5			
Dichanthium sericeum subsp. *humilius*																										0.5														
Dicladanthera forrestii																																								
Dicladanthera glabra P2																																								
Digitaria brownii		0.5																																						

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
Digitaria ctenantha													0.5		0.5																									
Diplatia grandibractea																																								
Dipteracanthus australasicus subsp. *australasicus*																																								
Dodonaea coriacea																																								
Dodonaea lanceolata																																								
Dodonaea pachyneura																																								
Duperreya commixta																																								
Dysphania cristata																																								
Dysphania glomulifera subsp. eremaea																																								
Dysphania kalpari																					0.5					0.5										0.5				
Dysphania melanocarpa			0.5																																0.5					
Dysphania rhadinostachya subsp. *rhadinostachya*	1	0.5	1		0.5	0.5	0.5							0.5	0.5	0.5				0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5		0.5		0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5
Dysphania sp.																	0.5	0.5																						
Ehretia saligna																																								
Enchylaena tomentosa var. *tomentosa*																																						0.5		
Enneapogon lindleyanus						0.5			0.5				0.5																											
Eragrostis cumingii	0.5	0.5	0.5									0.5					0.5	0.5		0.5						0.5			0.5			0.5					0.5			
Eragrostis dielsii																																								
Eragrostis eriopoda						0.5																																		
Eragrostis exigua																				0.5																				
Eragrostis leptocarpa																																								
Eragrostis setifolia																																								
Eragrostis tenellula		0.5																		0.5																	0.5			
Eremophila forrestii subsp. *forrestii*																																					0.5			
Eremophila fraseri																																								
Eremophila longifolia		0.5					0.5														0.5					0.5										0.5				
Eriachne aristidea																																								
Eriachne benthamii											1		0.5																											
Eriachne helmsii																																								
Eriachne mucronata									0.5	1	1			0.5								0.5						0.5		0.5						0.5				
Eriachne pulchella subsp. *dominii*													0.5																											
Eriachne pulchella subsp. *pulchella*								0.5					0.5	0.5	0.5							0.5						0.5												
Eriachne tenuiculmis											1	3																												
Eucalyptus camaldulensis subsp. *refulgens*																																0.5								
Eucalyptus leucophloia subsp. *leucophloia*								1	2	2	1											0.5																		
Eucalyptus sp.							0.5											0.5																						
Eucalyptus victrix													0.5																					8						
Eucalyptus xerothermica																							25																	
Eulalia aurea	0.5														0.5			1														0.5	0.5			0.5			
Euphorbia australis																	0.5								0.5	0.5							0.5		0.5	0.5			0.5
Euphorbia australis var. *australis*																																								

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
Euphorbia australis var. *hispidula*																														0.5										
Euphorbia australis var. *subtomentosa*																																								
Euphorbia biconvexa		0.5	0.5								0.5	0.5									0.5					0.5						0.5					0.5			
Euphorbia boophthona						0.5						0.5					0.5				0.5			0.5	0.5	0.5					0.5				0.5	0.5			0.5
Euphorbia schultzii												0.5	2		3																									
Euphorbia sp.		0.5										0.5																												
Euphorbia tannensis subsp. eremophila						0.5																								0.5								0.5	
Evolvulus alsinoides var. *villosicalyx*	0.5	0.5	0.5			0.5			0.5									0.5								0.5			0.5			0.5				0.5		0.5	
Ficus aculeata var. *indecora*																																								
Ficus brachypoda																																								
Ficus platypoda										2																		0.5												
Fimbristylis depauperata																0.5																								
Fimbristylis dichotoma								0.5																																
Fimbristylis sp.																																								
Flueggea virosa subsp. *melanthesoides*																																								
Glycine canescens																																								
Gomphrena cunninghamii		0.5							0.5		0.5	0.5	1		0.5					0.5	0.5									0.5										0.5
Goodenia forrestii	0.5	0.5																0.5			0.5					0.5						0.5					0.5			
Goodenia microptera			0.5				0.5										0.5				0.5				0.5	0.5							0.5				0.5		0.5	
Goodenia stobbsiana														0.5																										
Gossypium australe	1	0.5	0.5		0.5	0.5	0.5				0.5						0.5	1	0.5	0.5	0.5					0.5			0.5		0.5	1	0.5	0.5		0.5	0.5	0.5	0.5	0.5
Gossypium robinsonii			0.5				0.5		2		2	0.5						0.5		0.5									0.5	5		2			5			0.5		0.5
Grevillea pyramidalis subsp. *leucadendron*							0.5		0.5			0.5						0.5																1	0.5					2
Grevillea wickhamii		0.5			0.5							0.5	0.5											0.5						0.5				1					1
Grevillea wickhamii subsp. *hispidula*																													0.5											
Hakea chordophylla	0.5																							0.5			0.5			0.5										
Hakea lorea subsp. *lorea*		0.5	0.5			0.5												0.5			0.5				0.5						0.5	0.5					0.5		
Haloragis gossei var. *gossei*																																								
Heliotropium heteranthum																								0.5																
Heliotropium ovalifolium																																								
Heliotropium tanythrix																					0.5																			
Hibiscus brachychlaenus																																								
Hibiscus burtonii																																								
Hibiscus coatesii																												0.5												
Hibiscus goldsworthii																																								
Hibiscus leptocladus									0.5												0.5																			
Hibiscus sp.																																								
Hibiscus sturtii var. *campylochlamys*	0.5								0.5									0.5			0.5				0.5	0.5				0.5							0.5			
Hybanthus aurantiacus	0.5								0.5		0.5	0.5	0.5		0.5			0.5								0.5			0.5			0.5				0.5		0.5		0.5	0.5
Indigofera colutea	0.5	0.5				0.5											0.5	0.5													0.5		0.5					0.5	
Indigofera linifolia																																0.5								
Indigofera linnaei						0.5												0.5														0.5								

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
Indigofera monophylla				0.5	0.5			0.5								0.5											0.5													
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3									0.5		0.5	0.5			0.5															1	0.5				0.5				2
Indigofera fractiflexa																																							
Indigofera trita																															0.5								
Ipomea sp.																																							
Ipomoea lonchophylla		0.5																		0.5																0.5			
Ipomoea muelleri	0.5	0.5	0.5				0.5								0.5														0.5										
Isotropis atropurpurea											0.5							0.5												0.5		0.5	0.5						
Jasminum didymum subsp. *lineare*	0.5						0.5		0.5		0.5	0.5						0.5						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5						0.5		0.5	
Keraudrenia nephrosperma																																							
Keraudrenia velutina subsp. *elliptica*																																							
Keredrenia sp.																																							
Lepidium muelleri-ferdinandii			0.5																																				
Lepidium pholidogynum														0.5		0.5							0.5														0.5			
Lobelia heterophylla		0.5																																					
Lotus cruentus																																							
Melaleuca glomerata																																		0.5					
Melhania oblongifolia																		0.5													0.5					0.5			
Mnesithea formosa																																							
Mollugo molluginea					0.5												0.5				0.5				0.5	0.5										0.5	0.5			
Neptunia dimorphantha																																				0.5			
Nicotiana benthamiana											0.5																												
Nicotiana occidentalis subsp. *occidentalis*		0.5	0.5																																				
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)		0.5	0.5						0.5		0.5		0.5					0.5		0.5	0.5								0.5		0.5			0.5		0.5		0.5	0.5
Oldenlandia crouchiana											0.5			0.5								0.5						0.5		0.5							0.5		
Operculina aequisepala																																				0.5			
Paraneurachne muelleri	0.5	0.5							0.5		0.5	0.5																	0.5			0.5							
Paspalidium basicladum																					0.5					0.5										0.5			
Paspalidium clementii													0.5															0.5	0.5	0.5							0.5		
Paspalidium rarum	0.5																																						
Paspalidium sp.																																							
Paspalidium tabulatum																									0.5														
Pentalepis trichodesmoides subsp. *trichodesmoides*	0.5								0.5																														0.5
Perotis rara			0.5																																				
Petalostylis labicheoides																																				0.5			
Phyllanthus erwinii		0.5																			0.5					0.5										0.5			
Phyllanthus maderaspatensis									0.5			0.5			0.5			0.5							0.5				0.5		0.5					0.5		0.5	0.5
Phyllanthus reticulatus																																							
Pluchea rubelliflora											0.5									0.5	0.5																		
Plumbago zeylanica																																							
Polycarpaea corymbosa var. *corymbosa*	0.5	0.5	0.5			0.5									0.5		0.5				0.5					0.5										0.5			
Polycarpaea holtzei														0.5		0.5						0.5					0.5	0.5											

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
Polycarpaea involucrata																																								
Polycarpaea longiflora											0.5	0.5	0.5	0.5														0.5		0.5					0.5					0.5
Polygala glaucifolia																																								
Polygala sp.																																								
Polymeria ambigua																		0.5											0.5	0.5		0.5								0.5
Polymeria sp.																		0.5																						
Portulaca oleracea	0.5	0.5					0.5										0.5	0.5		0.5	0.5					0.5		0.5									0.5	0.5		
Pterocaulon serrulatum var. *serrulatum*							0.5		0.5				0.5																											
Pterocaulon serrulatum var. *velutinum*																																								
Pterocaulon sp.		0.5	0.5																		0.5					0.5										0.5	0.5		0.5	0.5
Pterocaulon sphaeranthoides	0.5	0.5	0.5				0.5					0.5	0.5				0.5													0.5		0.5					0.5			
Ptilotus aervoides																				0.5							0.5													
Ptilotus appendiculatus		0.5	0.5				0.5																			0.5			0.5								0.5			
Ptilotus astrolasius	0.5		0.5		0.5						0.5		0.5				0.5	0.5			0.5			0.5	0.5	0.5						0.5		0.5	0.5		0.5	0.5	
Ptilotus auriculifolius																				0.5																				
Ptilotus axillaris	0.5				0.5												0.5			0.5	0.5			0.5	0.5							0.5	0.5		0.5		0.5	0.5	
Ptilotus calostachyus				0.5	0.5									0.5		0.5						0.5										0.5							
Ptilotus clementii					0.5																																		
Ptilotus fusiformis					0.5								0.5											0.5	0.5		0.5									0.5			
Ptilotus gomphrenoides var. *gomphrenoides*																					0.5																0.5			
Ptilotus incanus													0.5																											
Ptilotus nobilis subsp. *nobilis*	0.5		0.5			0.5										0.5	0.5	0.5		0.5	0.5	0.5			0.5		0.5									0.5	0.5	0.5	0.5	
Ptilotus obovatus var. *obovatus*																												0.5											
Ptilotus sp.																					0.5					0.5													
Rhagodia eremaea																																							
Rhodanthe margarethae																																							
Rhynchosia bungarensis P4																																							
Rhynchosia minima	0.5	0.5	0.5						0.5		0.5						0.5	0.5	0.5	0.5	0.5				0.5	0.5			0.5	0.5		0.5	0.5		0.5		0.5		0.5	
Rostellularia adscendens var. *clementii*																																					0.5			
Salsola australis	0.5																				0.5																0.5	0.5		
Sarcostemma viminale subsp. *australe*																																								
Scaevola spinescens	0.5																																							
Sclerolaena cornishiana																																								
Senna artemisioides subsp. *helmsii*		0.5															0.5				0.5																0.5			
Senna artemisioides subsp. *oligophylla*	0.5	0.5	0.5						0.5		0.5						0.5				0.5	0.5		0.5		3										0.5	1	1	0.5	
Senna glutinosa subsp. *glutinosa*								0.5	0.5		0.5	0.5		0.5		0.5			0.5			0.5								0.5					0.5					
Senna glutinosa subsp. *pruinosa*														0.5								0.5																		
Senna glutinosa subsp. x *luerssenii*																																								
Senna notabilis						0.5							0.5				0.5	0.5		0.5	0.5				0.5	0.5							0.5	0.5		0.5				
Senna symonii																						0.5																		
Senna venusta			0.5																																	0.5				
Sesbania cannabina																		0.5								0.5											0.5				

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
Sida arsiniata	0.5	0.5	1															0.5			0.5		0.5	0.5					0.5			0.5	0.5	0.5				0.5		
Sida echinocarpa	0.5		1			1												0.5														0.5								
Sida fibulifera	0.5	0.5	0.5															0.5			0.5		0.5									0.5		0.5	0.5		0.5			
Sida platycalyx			0.5																																					
Sida rohlenae subsp. *rohlenae*	0.5												0.5													0.5											0.5			
Sida sp.																	0.5	0.5		0.5																	0.5			
Sida sp. Articulation below (A.A. Mitchell PRP 1605)		0.5	0.5									0.5																	0.5			0.5								
Sida sp. Barlee Range (S. van Leeuwen 1642) P3																																								
Sida sp. dark green fruits (S. van Leeuwen 2260)							0.5														0.5																			
Sida sp. Excedentifolia (J.L. Egan 1925)																																								
Sida sp. Pilbara (A.A. Mitchell PRP 1543)																																								
Sida sp. verrucose glands (F.H. Mollemans 2423)							0.5																						0.5			0.5								
Solanum cleistogamum																														0.5							0.5			
Solanum diversiflorum																	0.5			0.5	0.5		0.5		0.5							0.5				0.5	0.5		0.5	
Solanum horridum																																								
Solanum lasiophyllum																																								
Solanum phlomoides													0.5																											
Solanum sp.																				0.5																	0.5			
Sporobolus australasicus		0.5	0.5			0.5												0.5			0.5				0.5	0.5						0.5				0.5	0.5			
Stackhousia intermedia																																								
Stemodia grossa	0.5						0.5		0.5		0.5	0.5			0.5												0.5														
Streptoglossa bubakii																					0.5			0.5		0.5											0.5	0.5			
Streptoglossa decurrens																																								
Streptoglossa liatroides																																								
Streptoglossa sp.		0.5																		0.5	0.5					0.5											0.5			
Stylobasium spathulatum	8		0.5			0.5	0.5		8		2	1							0.5	0.5			2			0.5				0.5					0.5	0.5		0.5		2
Swainsona formosa																	0.5				0.5																			
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5										0.5		2		2			0.5												0.5	0.5				6				1
Tephrosia sp.																				0.5																				
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)												0.5																											
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)																																	0.5					0.5	
Tephrosia supina	0.5													0.5			0.5	0.5														0.5	0.5							
Tephrosia uniovulata																																								
Tephrosia virens									0.5																					0.5					0.5					
Themeda triandra									0.5	0.5	15	0.5						0.5											2	1		2			0.5					
Tinospora smilacina																																								
Trachymene oleracea subsp. *oleracea*		0.5								0.5	0.5	0.5	0.5				0.5								0.5					0.5					0.5					0.5
Trianthema pilosum						0.5											0.5				0.5																			
Trianthema triquetrum																					0.5		0.5														0.5	0.5			
Tribulus astrocarpus																					0.5																			
Tribulus hirsutus																																							0.5	

Species	BA03	BA04	BA05	BA07	BA10	BA101	BA101r	BA102r	BA103r	BA104r	BA105r	BA106	BA107	BA108	BA109	BA110	BA111	BA113	BA12	BA17	BA18	BA200	BA201	BA207	BA209	BA21	BA210	BA211	BA212	BA213	BA214	BA215	BA216	BA217r	BA218	BA219	BA22	BA220r	BA221	BA223r
Tribulus macrocarpus	0.5																0.5																			0.5				
Tribulus sp.			0.5																																					
Trichodesma zeylanicum var. *zeylanicum*		0.5							0.5			0.5					0.5				0.5			0.5	0.5				0.5	0.5			0.5		0.5				0.5	
Trichosanthes cucumerina									0.5		0.5																												0.5	0.5
Triodia epactia	2	65	65			7	0.5	1	15	3	12	9	0.5		0.5		32	0.5	40		8		0.5		50	32			5	20	40	0.5	3	1	5	14	0.5	28	20	20
Triodia longiceps																																								
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3				1																		2						25												
Triodia wiseana				27	20			30				0.5		33		35			20		4	35		33	7		35	5	0.5		0.5	0.5	2		0.5	11	6	0.5	3	
Tripogon loliiformis																												0.5												
Triumfetta clementii																																								
Triumfetta johnstonii																		0.5																	0.5					
Triumfetta maconochieana									0.5		0.5																	0.5												
Urochloa occidentalis																																					0.5			
Urochloa piligera													0.5																											
Vigna lanceolata																																								
Wahlenbergia tumidifructa																																								
Waltheria indica	0.5												0.5					0.5		0.5																	0.5			
Waltheria virgata									0.5																															
Yakirra australiensis																																						0.5	
Zaleya galericulata	0.5																																							

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
**Acetosa vesicaria*																																										
**Aerva javanica*																0.5																											
**Argemone ochroleuca* subsp. *ochroleuca*																	0.5		0.5														0.5	0.5	0.5							
**Cenchrus ciliaris*	0.5						2	1	1							0.5	0.5		6	0.5													1	0.5	7				0.5		
**Cenchrus setiger*							25	15	25							0.5	2		6	0.5	0.5												1	50	7				0.5		
**Chloris barbata*								5																																	
**Cynodon dactylon*									0.5																																
**Echinochloa colona*																																									
**Flaveria trinervia*																																									
**Lactuca serriola*																																									
**Malvastrum americanum*									0.5							0.5				0.5																						
**Passiflora foetida*									0.5																																
**Setaria verticillata*																0.5	0.5																								
**Sonchus oleraceus*																																									
**Tribulus terrestris*																																									
**Vachellia farnesiana*							1	0.5	0.5											0.5																						
Abutilon cryptopetalum	0.5																																								
Abutilon fraseri																																									
Abutilon lepidum																																		0.5							
Abutilon malvifolium																																									
Abutilon otocarpum									0.5																																
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	0.5					0.5			0.5	0.5	0.5	1			0.5	0.5	0.5		0.5	0.5													0.5		0.5				0.5		
Abutilon sp. Pilbara (W.R. Barker 2025)																																							0.5		
Acacia ampliceps x *sclerosperma* subsp. *sclerosperma*							0.5																																		
Acacia ancistrocarpa					63	9			0.5											2	0.5	1					1									5						
Acacia atkinsiana																																									
Acacia bivenosa		0.5			0.5	0.5	1	0.5	0.5				0.5	1		0.5					0.5	1				1	0.5	0.5	0.5			0.5	0.5				0.5		0.5		0.5
Acacia colei var. *ileocarpa*	0.5								6			0.5				0.5	0.5		0.5															0.5							
Acacia elachantha									0.5			0.5																														
Acacia inaequilatera	2					0.5		0.5		0.5	0.5							3			1	0.5	1	1	3		0.5	0.5	0.5	3	1	0.5	1			0.5		2	0.5	3	0.5
Acacia maitlandii										0.5	0.5	0.5			0.5							0.5	1					0.5	0.5	0.5						0.5			15	3
Acacia monticola										0.5	1	3			0.5								0.5					0.5		0.5			0.5								
Acacia orthocarpa																								0.5	0.5			0.5														
Acacia pruinocarpa			6	0.5											3																	0.5				7					
Acacia ptychophylla		0.5											1										0.5	0.5						0.5	0.5	0.5									
Acacia pyrifolia var. pyrifolia	1						0.5		0.5			0.5				9	0.5		0.5	0.5	0.5	0.5											1	1	0.5			0.5	0.5		
Acacia sclerosperma subsp. *sclerosperma*							1	1	0.5																																
Acacia synchronicia							2	2	0.5																															0.5		

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Acacia trachycarpa												0.5					0.5		2																5	7							
Acacia trachycarpa x *tumida* var. *pilbarensis*																			0.5																							
Acacia tumida var. *pilbarensis*					0.5	1			0.5						9	0.5			0.5	20							0.5	15				0.5					23	0.5		85		
Acacia xiphophylla																																										
Achyranthes aspera																	0.5		0.5														0.5									
Adriana tomentosa var. *tomentosa*																																		0.5								
Alternanthera nana	0.5										0.5					0.5			0.5																0.5							
Alysicarpus muelleri							0.5	0.5																																0.5		
Amaranthus cuspidifolius																	0.5		0.5																					0.5		
Amaranthus mitchellii							0.5	0.5	0.5		0.5	0.5				0.5				0.5															0.5							
Amaranthus sp.																					0.5																0.5					
Amaranthus undulatus										0.5		0.5				1																		0.5	0.5							
Ammannia multiflora																																										
Amphipogon sericeus																																										
Aristida burbidgeae																																										
Aristida holathera var. *holathera*					0.5	0.5														0.5																0.5				0.5		
Aristida inaequiglumis																																										
Astrotricha hamptonii																																										
Austrobryonia pilbarensis																																										
Basilicum polystachyon																																										
Bergia ammannioides																																										
Bergia trimera																																										
Blumea tenella																																										
Boerhavia burbidgeana																	0.5																									
Boerhavia coccinea	0.5						0.5	0.5			0.5	0.5				0.5	0.5		0.5	0.5														0.5	0.5	0.5			0.5			
Boerhavia repleta																																										
Boerhavia schomburgkiana							0.5																																			
Boerhavia sp.																																										
Bonamia erecta	0.5										0.5																	0.5											0.5	0.5		
Bonamia media	0.5									0.5		0.5	0.5					0.5																					0.5	1		
Bonamia pannosa																				0.5																						
Bonamia pilbarensis	0.5																		0.5										0.5													
Bonamia sp.																																										
Brachyachne convergens																	0.5																									
Brachyachne prostrata																																										
Brachychiton acuminatus																																										
Brachychiton gregorii																																										
Bulbostylis barbata	0.5		0.5		0.5	0.5				0.5	0.5	0.5		0.5			0.5	0.5	0.5	0.5			0.5	0.5	0.5					0.5		0.5	0.5	0.5		0.5		0.5	0.5		0.5	

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Cajanus cinereus																																										
Calocephalus knappii																																										
Calotis hispidula																																										
Calotis porphyroglossa																																										
Capparis spinosa var. *nummularia*																	0.5																										
Carissa lanceolata																																										
Cassytha capillaris					0.5	0.5									0.5								0.5		0.5			0.5														0.5
Centipeda minima subsp. *macrocephala*																																										
Cheilanthes brownii																																										
Cheilanthes contigua																																										
Cheilanthes sieberi subsp. *sieberi*																							0.5	0.5	0.5	0.5																
Cheilanthes sp.														0.5																												
Chloris pectinata																																										
Chrysopogon fallax					0.5														0.5		0.5																			0.5		
Cleome viscosa	0.5				0.5					0.5	0.5	0.5		0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5				0.5						0.5	0.5	0.5	0.5	0.5	0.5		0.5		
Clerodendrum floribundum var. angustifolium												0.5									0.5								0.5									0.5			0.5	
Clerodendrum floribundum var. floribundum																0.5																										
Codonocarpus cotinifolius																																										
Corchorus crozophorifolius															0.5	0.5	0.5																	0.5	0.5							
Corchorus lasiocarpus subsp. *parvus*	0.5				0.5	0.5			0.5		0.5						0.5	0.5		0.5		0.5								0.5	0.5					0.5			1		
Corchorus sidoides					0.5	0.5			0.5	0.5		0.5									0.5											0.5									
Corchorus sp.																						0.5															0.5					
Corchorus tectus																		0.5																								
Corchorus tridens																	0.5			0.5																						
Corymbia candida																																										
Corymbia ferriticola																																										
Corymbia hamersleyana		0.5			1	2	4				5	2			0.5					7	3	0.5		1	0.5			6	0.5	0.5	0.5	0.5				1	0.5		2	8	2	
Crotalaria medicaginea var. *neglecta*									0.5		0.5					0.5				0.5																0.5				0.5		
Crotalaria novae-hollandiae subsp. *novae-hollandiae*																																										
Cucumis melo																0.5	0.5		0.5																	0.5	0.5				
Cucumis variabilis	0.5					0.5	0.5		0.5	0.5	0.5	0.5			0.5	0.5	0.5		0.5	0.5	0.5			0.5									0.5	0.5	0.5	0.5	0.5			0.5		
Cullen lachnostachys							0.5																																	0.5		
Cullen martinii																				0.5																				0.5		
Cullen pogonocarpum																																										
Cullen pustulatum																																										
Cymbopogon ambiguus					0.5	0.5			0.5		0.5	0.5		0.5	1	0.5	0.5		0.5	0.5			0.5	0.5	0.5	0.5		0.5					1							0.5		0.5

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Cynanchum floribundum																																										
Cyperus cunninghamii subsp. *cunninghamii*											0.5	0.5																														
Cyperus hesperius															0.5																											
Cyperus iria																																										
Cyperus sp.																																										
Cyperus vaginatus							0.5	0.5	1								0.5																		0.5							
Dactyloctenium radulans							0.5	0.5																																		
Dampiera candicans					0.5	0.5														0.5										0.5										0.5	
Desmodium filiforme																																										
Dichanthium sericeum subsp. *humilius*																																										
Dicladanthera forrestii																																										
Dicladanthera glabra P2																																										
Digitaria brownii																																										
Digitaria ctenantha											0.5						0.5		0.5																	0.5						
Diplatia grandibractea																																										
Dipteracanthus australasicus subsp. *australasicus*																																										
Dodonaea coriacea		0.5																										0.5	0.5									0.5				
Dodonaea lanceolata																																										
Dodonaea pachyneura																																										
Duperreya commixta									0.5																			0.5														
Dysphania cristata																																										
Dysphania glomulifera subsp. *eremaea*																																										
Dysphania kalpari																																										
Dysphania melanocarpa																																										
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5		0.5		0.5	0.5	0.5	0.5		0.5	0.5	0.5				0.5	0.5	0.5	0.5	0.5	0.5	0.5				0.5					0.5		0.5	0.5		0.5		0.5			0.5	
Dysphania sp.																																			0.5		0.5					
Ehretia saligna																																							0.5			
Enchylaena tomentosa var. *tomentosa*																																										
Enneapogon lindleyanus																0.5																										
Eragrostis cumingii					0.5	0.5					0.5									0.5																						
Eragrostis dielsii								0.5																																		
Eragrostis eriopoda																																										
Eragrostis exigua																																										
Eragrostis leptocarpa																																										
Eragrostis setifolia							0.5														0.5															0.5						

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Eragrostis tenellula									0.5																																
Eremophila forrestii subsp. *forrestii*																													0.5													
Eremophila fraseri																																										
Eremophila longifolia	0.5					0.5														0.5																							
Eriachne aristidea																																										
Eriachne benthamii																																										
Eriachne helmsii																0.5																											
Eriachne mucronata			4			0.5			0.5	0.5	0.5			0.5	2		0.5						0.5		0.5	0.5		0.5	0.5				0.5						0.5			
Eriachne pulchella subsp. *dominii*	0.5																												0.5	0.5				0.5							0.5	
Eriachne pulchella subsp. *pulchella*			0.5							0.5							0.5	0.5						0.5						0.5	0.5	0.5						0.5		0.5	0.5
Eriachne tenuiculmis											1	0.5																					0.5								
Eucalyptus camaldulensis subsp. *refulgens*									18								4																	8							
Eucalyptus leucophloia subsp. *leucophloia*			1							1		1		5	2								1	0.5	1	2			0.5	0.5	1	3	1					3			3
Eucalyptus sp.							0.5																																		
Eucalyptus victrix																	3																	2							
Eucalyptus xerothermica								0.5																																	
Eulalia aurea									2											0.5																						
Euphorbia australis																				0.5														0.5								
Euphorbia australis var. *australis*																										0.5																
Euphorbia australis var. *hispidula*											0.5								0.5																							
Euphorbia australis var. *subtomentosa*						0.5																															0.5				
Euphorbia biconvexa					0.5						0.5	0.5			0.5					0.5		0.5																		0.5		
Euphorbia boophthona	0.5				0.5	0.5					0.5				0.5	0.5	0.5		0.5	0.5	0.5	0.5								0.5			0.5				0.5			0.5	
Euphorbia schultzii	0.5											0.5			0.5	0.5	0.5																	0.5	0.5	0.5					
Euphorbia sp.											0.5								0.5	0.5																						
Euphorbia tannensis subsp. *eremophila*																																									
Evolvulus alsinoides var. *villosicalyx*	0.5				0.5				0.5		0.5								0.5	0.5																						
Ficus aculeata var. *indecora*																																									
Ficus brachypoda										0.5																																
Ficus platypoda																																									
Fimbristylis depauperata																																									
Fimbristylis dichotoma																0.5																										
Fimbristylis sp.																																									0.5	
Flueggea virosa subsp. *melanthesoides*																	0.5																									
Glycine canescens																																					0.5				
Gomphrena cunninghamii										0.5	0.5	0.5			0.5	0.5	0.5		0.5															0.5	0.5	0.5					

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Goodenia forrestii					0.5											0.5					0.5																			0.5		
Goodenia microptera	0.5				0.5	0.5														0.5																	0.5			0.5		
Goodenia stobbsiana					0.5	0.5							0.5					0.5									0.5		0.5	0.5			0.5								0.5	
Gossypium australe	0.5					0.5	0.5	0.5	0.5		0.5	0.5				1	0.5	0.5	0.5	0.5	0.5	0.5						0.5	0.5				0.5		0.5	0.5			0.5	8		
Gossypium robinsonii							0.5	0.5	5	0.5	1	0.5			0.5	0.5	0.5		0.5	0.5				0.5				0.5		0.5			0.5	0.5	0.5	0.5				0.5		
Grevillea pyramidalis subsp. *leucadendron*	0.5															0.5		0.5	0.5	0.5													0.5							0.5		
Grevillea wickhamii					0.5	0.5					0.5		0.5		0.5		0.5										0.5					0.5				0.5	0.5				
Grevillea wickhamii subsp. *hispidula*																												3														
Hakea chordophylla							0.5			0.5				0.5		0.5			0.5				0.5		0.5																0.5	
Hakea lorea subsp. *lorea*		0.5				0.5	0.5									0.5		0.5				0.5	0.5			0.5					0.5								0.5		
Haloragis gossei var. *gossei*					0.5																																				
Heliotropium heteranthum																				0.5																						
Heliotropium ovalifolium						0.5														0.5																0.5					
Heliotropium tanythrix					0.5																																				
Hibiscus brachychlaenus																																								0.5		
Hibiscus burtonii																																								0.5		
Hibiscus coatesii												0.5		0.5																												
Hibiscus goldsworthii																																										
Hibiscus leptocladus																				0.5																	0.5					
Hibiscus sp.																				0.5																						
Hibiscus sturtii var. *campylochlamys*					0.5	0.5		0.5	0.5		0.5	0.5				0.5		0.5		0.5																						0.5
Hybanthus aurantiacus	0.5								0.5		0.5	0.5				0.5	0.5		0.5	0.5								0.5					0.5	0.5	0.5	0.5	0.5			0.5		
Indigofera colutea	0.5				0.5		0.5		0.5		0.5					0.5			0.5															0.5				0.5	0.5		
Indigofera linifolia							0.5		0.5							0.5																										
Indigofera linnaei							0.5		0.5										0.5															0.5		0.5				0.5		
Indigofera monophylla						0.5				0.5	0.5							0.5		0.5			0.5	0.5	0.5				0.5	0.5	0.5						0.5	0.5		0.5	0.5	0.5
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3						0.5					0.5	1			0.5	0.5	0.5		0.5														3	0.5	0.5							
Indigofera fractiflexa																																										
Indigofera trita																																										
Ipomea sp.									0.5																																	
Ipomoea lonchophylla																																										
Ipomoea muelleri																	0.5		0.5															0.5	0.5	0.5				0.5		
Isotropis atropurpurea					0.5	0.5									0.5					0.5																	0.5					
Jasminum didymum subsp. *lineare*	0.5				0.5					0.5	0.5	0.5		0.5	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5		0.5			0.5						0.5		0.5		0.5
Keraudrenia nephrosperma																																										
Keraudrenia velutina subsp. *elliptica*					0.5	0.5			0.5																			0.5									0.5					

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Keredrenia sp.																																									0.5	
Lepidium muelleri-ferdinandii																																			0.5							
Lepidium pholidogynum								0.5								0.5																										
Lobelia heterophylla										0.5		0.5			0.5																		0.5								
Lotus cruentus																																									
Melaleuca glomerata																																									
Melhania oblongifolia																				0.5																					
Mnesithea formosa																	0.5																								
Mollugo molluginea	0.5				0.5	0.5										0.5		0.5		0.5																					
Neptunia dimorphantha																																									
Nicotiana benthamiana																										0.5							0.5								
Nicotiana occidentalis subsp. *occidentalis*																0.5				0.5																					
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)					0.5		0.5				0.5	0.5				0.5	0.5		0.5	0.5		0.5											0.5	0.5	0.5	0.5						
Oldenlandia crouchiana					0.5	0.5				0.5	0.5	0.5								0.5						0.5				0.5			0.5				0.5	0.5			0.5	
Operculina aequisepala																	0.5																								
Paraneurachne muelleri					0.5						0.5				1		0.5		0.5		0.5							0.5	0.5							0.5				0.5		0.5
Paspalidium basicladum											0.5	0.5				0.5				0.5																					
Paspalidium clementii	0.5									0.5				0.5			0.5		0.5							0.5							0.5								
Paspalidium rarum																			0.5																					
Paspalidium sp.					0.5																															0.5					
Paspalidium tabulatum																0.5	0.5			0.5													0.5	0.5							
Pentalepis trichodesmoides subsp. *trichodesmoides*											0.5					0.5																		0.5		0.5			0.5			
Perotis rara																			0.5																				0.5		
Petalostylis labicheoides																											0.5									0.5	0.5				
Phyllanthus erwinii																				0.5																					
Phyllanthus maderaspatensis	0.5				0.5				0.5		0.5	0.5					0.5		0.5		0.5													0.5		0.5					
Phyllanthus reticulatus																	0.5																								
Pluchea rubelliflora																																									
Plumbago zeylanica																	0.5																								
Polycarpaea corymbosa var. *corymbosa*	0.5				0.5										0.5	0.5				0.5		0.5																0.5	0.5			
Polycarpaea holtzei			0.5							0.5	0.5							0.5					0.5	0.5	0.5					0.5	0.5		0.5	0.5				0.5	0.5		0.5	
Polycarpaea involucrata																																									
Polycarpaea longiflora	0.5										0.5	0.5				0.5	0.5	0.5								0.5							0.5	0.5		0.5		0.5			0.5	
Polygala glaucifolia																		0.5												0.5										0.5	

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Polygala sp.										0.5																																
Polymeria ambigua																																										
Polymeria sp.																																										
Portulaca oleracea																	0.5		0.5		0.5																	0.5		0.5		
Pterocaulon serrulatum var. *serrulatum*																																										
Pterocaulon serrulatum var. *velutinum*																																										
Pterocaulon sp.	0.5				0.5	0.5					0.5	0.5					0.5		0.5	0.5						0.5								0.5		0.5					
Pterocaulon sphaeranthoides						0.5						0.5				0.5	0.5			0.5													0.5								
Ptilotus aervoides																																										
Ptilotus appendiculatus																																								0.5		
Ptilotus astrolasius					0.5	0.5		0.5						0.5						0.5	0.5	0.5													0.5			0.5		0.5		0.5
Ptilotus auriculifolius							0.5				0.5	0.5				0.5			0.5	0.5	0.5	0.5																0.5				
Ptilotus axillaris					0.5															0.5	0.5	0.5																	0.5			
Ptilotus calostachyus	0.5				0.5	0.5				0.5	0.5		0.5	0.5				0.5		0.5		0.5				0.5	0.5		0.5	0.5	0.5	0.5			0.5			0.5			0.5	0.5
Ptilotus clementii																																										
Ptilotus fusiformis					0.5	0.5						0.5				0.5			0.5	0.5		0.5	0.5													0.5		0.5				
Ptilotus gomphrenoides var. *gomphrenoides*																																										
Ptilotus incanus																	0.5																									
Ptilotus nobilis subsp. nobilis					0.5	0.5		0.5		0.5	0.5					0.5	0.5		0.5	0.5	0.5	0.5				0.5							0.5				0.5	0.5				
Ptilotus obovatus var. *obovatus*					0.5										0.5		0.5																0.5								
Ptilotus sp.																0.5				0.5		0.5																				
Rhagodia eremaea																0.5																										
Rhodanthe margarethae										0.5																							0.5								
Rhynchosia bungarensis P4																	0.5																									
Rhynchosia minima	0.5				0.5		0.5	0.5	0.5	0.5	0.5	0.5				0.5	0.5		0.5	0.5	0.5													0.5						0.5		
Rostellularia adscendens var. *clementii*																																										
Salsola australis							0.5	0.5								0.5																											
Sarcostemma viminale subsp. *australe*																																										
Scaevola spinescens					0.5																																				
Sclerolaena cornishiana																																										
Senna artemisioides subsp. *helmsii*					0.5											0.5																			0.5							
Senna artemisioides subsp. *oligophylla*					0.5	0.5										0.5	0.5		0.5		0.5	0.5				0.5							0.5								
Senna glutinosa subsp. *glutinosa*		0.5			0.5	0.5				0.5	0.5	0.5		0.5	0.5	0.5		0.5	0.5	0.5			0.5	0.5	0.5	0.5			0.5	0.5		0.5		0.5					0.5		0.5	0.5
Senna glutinosa subsp. *pruinosa*		0.5				0.5								0.5	0.5								0.5		0.5	0.5			0.5		0.5						0.5				0.5	
Senna glutinosa subsp. x *luerssenii*					0.5																							0.5			0.5									0.5	

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Senna notabilis					0.5	0.5		0.5			0.5								0.5	0.5																	0.5			0.5		
Senna symonii																										0.5															0.5
Senna venusta												0.5				0.5																										
Sesbania cannabina								0.5	0.5																																	
Sida arsiniata							0.5	0.5	0.5											0.5																						
Sida echinocarpa									0.5							0.5																			0.5				0.5	0.5		
Sida fibulifera	0.5				0.5		0.5		0.5													0.5																				
Sida platycalyx																																									
Sida rohlenae subsp. *rohlenae*																0.5			0.5																					1		
Sida sp.									0.5										0.5																							
Sida sp. Articulation below (A.A. Mitchell PRP 1605)									0.5								0.5												0.5						0.5				0.5		
Sida sp. Barlee Range (S. van Leeuwen 1642) P3																																									
Sida sp. dark green fruits (S. van Leeuwen 2260)																																									
Sida sp. Excedentifolia (J.L. Egan 1925)																																									
Sida sp. Pilbara (A.A. Mitchell PRP 1543)					0.5										0.5			0.5		0.5						0.5											0.5		0.5		
Sida sp. verrucose glands (F.H. Mollemans 2423)																																									
Solanum cleistogamum					0.5	0.5											0.5			0.5						0.5									0.5						
Solanum diversiflorum					0.5	0.5	0.5										0.5		0.5	0.5																	0.5				
Solanum horridum																																									
Solanum lasiophyllum											0.5	0.5																										0.5			
Solanum phlomoides												0.5						0.5																	0.5						
Solanum sp.																																									
Sporobolus australasicus							0.5	0.5												0.5																						
Stackhousia intermedia																																									
Stemodia grossa																													0.5												
Streptoglossa bubakii					0.5																																				
Streptoglossa decurrens					0.5																																				
Streptoglossa liatroides																																									
Streptoglossa sp.																																									
Stylobasium spathulatum					1	0.5						0.5			1					0.5	0.5	0.5						1					8		0.5		0.5				
Swainsona formosa					0.5						0.5	0.5				0.5	0.5			0.5		0.5														0.5				0.5		
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5										0.5	0.5			0.5	1	4		0.5	0.5														0.5	0.5	0.5	0.5			0.5		
Tephrosia sp.							0.5																																		
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)																0.5																								0.5		

Species	BA27	BA2DRr06	BA2KMr01	BA2LVr.02	BA31	BA32	BA33	BA34	BA36	BA39	BA40	BA41	BA42a	BA44	BA45	BA46	BA52	BA53	BA54	BA57	BA58a	BA59	BADRr01	BADRr02	BADRr03	BADRr04	BADRr05	BAKM01	BAKM02	BAKM03	BAKM05	BAKM07	BAKM09	BAKM10	BAKM11	BAKM12	BAKM15	BAKM18	BAKM19	BAKMr16	BALVr.01	BALVr.02
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)						0.5														0.5																				0.5		
Tephrosia supina	1						0.5											0.5																						15		
Tephrosia uniovulata	0.5					0.5																																				
Tephrosia virens											0.5	0.5																0.5					0.5										
Themeda triandra									0.5	0.5	2	1		0.5	3		0.5		0.5						0.5			0.5							0.5							
Tinospora smilacina												0.5					0.5																									
Trachymene oleracea subsp. *oleracea*	0.5				0.5	0.5				0.5	0.5	0.5		0.5	0.5					1	0.5	0.5	0.5	0.5	0.5			0.5					0.5	0.5		0.5	0.5					
Trianthema pilosum																																										
Trianthema triquetrum							0.5	0.5																																		
Tribulus astrocarpus																																									
Tribulus hirsutus						0.5														0.5	0.5	0.5																			
Tribulus macrocarpus																																									
Tribulus sp.								0.5												0.5																						
Trichodesma zeylanicum var. *zeylanicum*					0.5	0.5			0.5		0.5	0.5			0.5	0.5	0.5			2	0.5									0.5				0.5	0.5		0.5				
Trichosanthes cucumerina																																									
Triodia epactia	32		0.5		0.5		6	6	5		10	12			2	15	6		12	0.5	3			11				15	0.5				0.5	60	15	20			27	6		
Triodia longiceps																																									
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3		12	17	10						5			1		1								3	8	20		2	0.5	12		8							2			1	2
Triodia wiseana	0.5	28	8		55	50		0.5	0.5	24	5	0.5	20	60	2	0.5		35	0.5	15	22	25	29	11	20	40	20		40	20	17	33	7		0.5		20	7		0.5	35	30
Tripogon loliiformis																																									
Triumfetta clementii																	0.5																								
Triumfetta johnstonii									0.5																																
Triumfetta maconochieana												0.5																											0.5			
Urochloa occidentalis																																									
Urochloa piligera																	0.5		0.5																0.5						
Vigna lanceolata									0.5	0.5																																
Wahlenbergia tumidifructa																	0.5		0.5																						
Waltheria indica									0.5											0.5																						
Waltheria virgata									0.5		0.5																	0.5														
Yakirra australiensis																																									
Zaleya galericulata																	0.5																								

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
**Acetosa vesicaria*																													0.5
**Aerva javanica*				0.5											0.5														0.5
**Argemone ochroleuca* subsp. *ochroleuca*										0.5								0.5											0.5
**Cenchrus ciliaris*					30					8		0.5	30	12	0.5			1	0.5	20					31			2	
**Cenchrus setiger*					30					15		1	38	8	0.5			0.5	0.5	55					31			3	
**Chloris barbata*																													0.5
**Cynodon dactylon*																													0.5
**Echinochloa colona*																													
**Flaveria trinervia*																													0.5
**Lactuca serriola*																													0.5
**Malvastrum americanum*					0.5																								
**Passiflora foetida*																													
**Setaria verticillata*																													0.5
**Sonchus oleraceus*																													0.5
**Tribulus terrestris*														0.5															
**Vachellia farnesiana*																													
Abutilon cryptopetalum																													
Abutilon fraseri																													0.5
Abutilon lepidum			0.5																									0.5	
Abutilon malvifolium																													
Abutilon otocarpum																													
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)				1							1							0.5											0.5
Abutilon sp. Pilbara (W.R. Barker 2025)																													0.5
Acacia ampliceps x *sclerosperma* subsp. *sclerosperma*																													
Acacia ancistrocarpa									0.5							9						3	2						
Acacia atkinsiana																													0.5
Acacia bivenosa			0.5		0.5								0.5									0.5	0.5						
Acacia colei var. *ileocarpa*		0.5		0.5	5							0.5			0.5			0.5	0.5					0.5		0.5			
Acacia elachantha																											95		0.5
Acacia inaequilatera		20			0.5		0.5	0.5	1		0.5	0.5		0.5	2	0.5	1		4	0.5	1	1	1	3		0.5	0.5	2	
Acacia maitlandii											0.5	0.5															0.5		
Acacia monticola				0.5							0.5									0.5									0.5
Acacia orthocarpa	0.5																												0.5
Acacia pruinocarpa				1		12					1																		0.5
Acacia ptychophylla																													0.5
Acacia pyrifolia var. *pyrifolia*				0.5	0.5	0.5	0.5							0.5	0.5								0.5		1				
Acacia sclerosperma subsp. *sclerosperma*																													
Acacia synchronicia					0.5								0.5																
Acacia trachycarpa					0.5					1								0.5											
Acacia trachycarpa x *tumida* var. *pilbarensis*																													
Acacia tumida var. *pilbarensis*	1	0.5		0.5												1						0.5				0.5			0.5
Acacia xiphophylla																													

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
Achyranthes aspera																		0.5											
Adriana tomentosa var. *tomentosa*																													0.5
Alternanthera nana					1													0.5											
Alysicarpus muelleri					0.5																								
Amaranthus cuspidifolius																		0.5											
Amaranthus mitchellii																													
Amaranthus sp.					0.5											0.5													
Amaranthus undulatus				0.5							0.5																		
Ammannia multiflora																													
Amphipogon sericeus								0.5																					
Aristida burbidgeae											0.5																		0.5
Aristida holathera var. *holathera*		0.5												0.5					0.5								0.5		
Aristida inaequiglumis																													
Astrotricha hamptonii																													0.5
Austrobryonia pilbarensis																													
Basilicum polystachyon																													0.5
Bergia ammannioides					0.5																								
Bergia trimera					0.5																								
Blumea tenella																													
Boerhavia burbidgeana																													
Boerhavia coccinea					0.5									0.5				0.5	0.5						0.5			0.5	
Boerhavia repleta																													
Boerhavia schomburgkiana					0.5																								
Boerhavia sp.																				0.5									
Bonamia erecta		1								0.5		0.5		0.5						0.5		0.5	0.5	0.5			0.5		
Bonamia media		0.5					0.5		0.5			0.5			0.5		0.5		0.5	0.5					0.5				
Bonamia pannosa																													0.5
Bonamia pilbarensis																													0.5
Bonamia sp.				0.5																									
Brachyachne convergens																		0.5											
Brachyachne prostrata					0.5																								
Brachychiton acuminatus	0.5																												0.5
Brachychiton gregorii																													0.5
Bulbostylis barbata	0.5		0.5			0.5	0.5	0.5	0.5	0.5	0.5			0.5	0.5		0.5	0.5	0.5		0.5							0.5	
Cajanus cinereus																													
Calocephalus knappii																													
Calotis hispidula																													0.5
Calotis porphyroglossa																													
Capparis spinosa var. *nummularia*											0.5																		
Carissa lanceolata																													
Cassytha capillaris																													0.5
Centipeda minima subsp. *macrocephala*																													

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
Cheilanthes brownii																													0.5
Cheilanthes contigua																													0.5
Cheilanthes sieberi subsp. *sieberi*				0.5																									0.5
Cheilanthes sp.																													
Chloris pectinata					0.5																								
Chrysopogon fallax					0.5													0.5								0.5	0.5		
Cleome viscosa	0.5		0.5	0.5	0.5	0.5				0.5	0.5		0.5	0.5		0.5		0.5	0.5	0.5		0.5					0.5		
Clerodendrum floribundum var. *angustifolium*																													
Clerodendrum floribundum var. *floribundum*																													
Codonocarpus cotinifolius																													0.5
Corchorus crozophorifolius														0.5				0.5	0.5	0.5					0.5				
Corchorus lasiocarpus subsp. *parvus*		0.5			0.5							0.5			0.5	0.5		0.5						0.5	0.5	0.5	1		
Corchorus sidoides				0.5																									
Corchorus sp.																													
Corchorus tectus																													
Corchorus tridens					0.5																								0.5
Corymbia candida																													
Corymbia ferriticola	2																												0.5
Corymbia hamersleyana	0.5	1		0.5	3		1		2	2				2	1	1	0.5			1			1			0.5	1		0.5
Crotalaria medicaginea var. *neglecta*																													
Crotalaria novae-hollandiae subsp. *novae-hollandiae*																													0.5
Cucumis melo																													
Cucumis variabilis	0.5	0.5		0.5	0.5	0.5					0.5				0.5	0.5		0.5	0.5				0.5			0.5		0.5	
Cullen lachnostachys					0.5							0.5																0.5	
Cullen martinii																													
Cullen pogonocarpum																													0.5
Cullen pustulatum																													
Cymbopogon ambiguus	0.5			0.5		0.5					1							0.5											
Cynanchum floribundum																0.5													0.5
Cyperus cunninghamii subsp. *cunninghamii*	0.5			0.5							0.5																		
Cyperus hesperius	0.5																												
Cyperus iria																													
Cyperus sp.																													0.5
Cyperus vaginatus																									0.5			0.5	
Dactyloctenium radulans													0.5																
Dampiera candicans																													0.5
Desmodium filiforme																													
Dichanthium sericeum subsp. *humilius*																													
Dicladanthera forrestii																													0.5
Dicladanthera glabra P2																													0.5
Digitaria brownii																													
Digitaria ctenantha																			0.5										

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
Diplatia grandibractea																		0.5											
Dipteracanthus australasicus subsp. *australasicus*																		0.5											0.5
Dodonaea coriacea																													0.5
Dodonaea lanceolata																													0.5
Dodonaea pachyneura																													0.5
Duperreya commixta																													0.5
Dysphania cristata																													0.5
Dysphania glomulifera subsp. *eremaea*																													0.5
Dysphania kalpari																													
Dysphania melanocarpa																													
Dysphania rhadinostachya subsp. *rhadinostachya*	0.5			0.5	0.5			0.5				0.5												0.5		0.5			
Dysphania sp.						0.5	0.5			0.5			0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5					0.5	
Ehretia saligna																													0.5
Enchylaena tomentosa var. *tomentosa*																													
Enneapogon lindleyanus				0.5														0.5											
Eragrostis cumingii					0.5																								
Eragrostis dielsii																													
Eragrostis eriopoda										0.5				0.5						0.5					0.5				
Eragrostis exigua																													
Eragrostis leptocarpa																													0.5
Eragrostis setifolia																													
Eragrostis tenellula					0.5																								0.5
Eremophila forrestii subsp. *forrestii*																													
Eremophila fraseri																													0.5
Eremophila longifolia					0.5		0.5					0.5							0.5								0.5		
Eriachne aristidea					0.5				0.5																				0.5
Eriachne benthamii																													
Eriachne helmsii																													
Eriachne mucronata	1		0.5	0.5		0.5					1																		
Eriachne pulchella subsp. *dominii*																		0.5											0.5
Eriachne pulchella subsp. *pulchella*			0.5			0.5		0.5	0.5						0.5		0.5				0.5								
Eriachne tenuiculmis																		0.5											
Eucalyptus camaldulensis subsp. *refulgens*																									0.5				
Eucalyptus leucophloia subsp. *leucophloia*			6	5		1		1	1		8																		
Eucalyptus sp.																													
Eucalyptus victrix																		5											
Eucalyptus xerothermica																													
Eulalia aurea					0.5													0.5											
Euphorbia australis	0.5										0.5					0.5													
Euphorbia australis var. *australis*		0.5																											
Euphorbia australis var. *hispidula*																													
Euphorbia australis var. *subtomentosa*																													

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
Euphorbia biconvexa																													
Euphorbia boophthona	0.5									0.5						0.5			0.5								0.5	
Euphorbia schultzii				0.5														2										
Euphorbia sp.																		0.5										
Euphorbia tannensis subsp. *eremophila*																												
Evolvulus alsinoides var. *villosicalyx*					0.5														0.5								0.5	
Ficus aculeata var. *indecora*																												0.5
Ficus brachypoda	1			0.5																								
Ficus platypoda																												0.5
Fimbristylis depauperata																												
Fimbristylis dichotoma								0.5							0.5													
Fimbristylis sp.																												
Flueggea virosa subsp. *melanthesoides*																		0.5										0.5
Glycine canescens																												0.5
Gomphrena cunninghamii	0.5	0.5	0.5	0.5							0.5				0.5		0.5	0.5	0.5									
Goodenia forrestii																										0.5	0.5	
Goodenia microptera					0.5			0.5		0.5				0.5		0.5							0.5		0.5		0.5		
Goodenia stobbsiana								0.5													0.5						0.5		0.5
Gossypium australe		1		0.5	1							1	0.5	0.5	0.5	0.5		0.5	0.5	0.5		0.5		0.5	0.5	0.5	8	1	
Gossypium robinsonii	0.5			0.5						0.5	1			0.5				0.5		0.5					0.5	0.5	0.5		
Grevillea pyramidalis subsp. *leucadendron*							0.5			2	0.5	0.5		0.5	0.5				0.5						1	0.5		0.5	0.5
Grevillea wickhamii									0.5							0.5						0.5	0.5			0.5	1		
Grevillea wickhamii subsp. *hispidula*																													
Hakea chordophylla								0.5	0.5													0.5	0.5						
Hakea lorea subsp. *lorea*					0.5							0.5			0.5									0.5			0.5	0.5	
Haloragis gossei var. *gossei*																													0.5
Heliotropium heteranthum																													
Heliotropium ovalifolium																													
Heliotropium tanythrix																													0.5
Hibiscus brachychlaenus																										1			
Hibiscus burtonii																													
Hibiscus coatesii																													0.5
Hibiscus goldsworthii				0.5																						0.5			0.5
Hibiscus leptocladus																													
Hibiscus sp.																0.5													
Hibiscus sturtii var. *campylochlamys*		0.5			0.5						0.5																	0.5	0.5
Hybanthus aurantiacus				0.5						0.5	0.5			0.5	0.5			0.5		0.5					0.5		0.5	0.5	
Indigofera colutea										0.5				0.5	0.5				0.5	0.5					0.5		3		
Indigofera linifolia																													
Indigofera linnaei																													
Indigofera monophylla								0.5	0.5		0.5											0.5		0.5					0.5
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3				0.5						0.5	1			0.5				0.5		0.5						0.5			0.5

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
Indigofera fractiflexa																													0.5
Indigofera trita																													0.5
Ipomea sp.																													
Ipomoea lonchophylla																													
Ipomoea muelleri					0.5					0.5				0.5				0.5		0.5					0.5				
Isotropis atropurpurea											0.5											0.5							
Jasminum didymum subsp. *lineare*	0.5			0.5	0.5	0.5					0.5					0.5	0.5	0.5								0.5			
Keraudrenia nephrosperma																													0.5
Keraudrenia velutina subsp. *elliptica*																													
Keredrenia sp.																													
Lepidium muelleri-ferdinandii																													0.5
Lepidium pholidogynum																													0.5
Lobelia heterophylla				0.5							0.5																		0.5
Lotus cruentus																													0.5
Melaleuca glomerata																													
Melhania oblongifolia					0.5																								
Mnesithea formosa																													
Mollugo molluginea							0.5							0.5		0.5	0.5				0.5	0.5	0.5		0.5				0.5
Neptunia dimorphantha																													
Nicotiana benthamiana											0.5																		
Nicotiana occidentalis subsp. *occidentalis*																													
Notoleptopus decaisnei var. Orbicularis (A.B. Craig 428)	0.5			0.5							0.5							0.5											
Oldenlandia crouchiana	0.5		0.5	0.5			0.5	0.5	0.5		0.5																		
Operculina aequisepala																													
Paraneurachne muelleri	0.5																			0.5		0.5	0.5	0.5	0.5		0.5		
Paspalidium basicladum																		0.5											
Paspalidium clementii	0.5			0.5							0.5					0.5		0.5											
Paspalidium rarum					0.5								0.5																
Paspalidium sp.																													
Paspalidium tabulatum				0.5							0.5																		0.5
Pentalepis trichodesmoides subsp. *trichodesmoides*												0.5								0.5								0.5	0.5
Perotis rara																													
Petalostylis labicheoides																													0.5
Phyllanthus erwinii																													
Phyllanthus maderaspatensis					0.5													0.5											
Phyllanthus reticulatus																													0.5
Pluchea rubelliflora					0.5																								0.5
Plumbago zeylanica				0.5														0.5											0.5
Polycarpaea corymbosa var. *corymbosa*			0.5		0.5										0.5														
Polycarpaea holtzei								0.5	0.5																	0.5			
Polycarpaea involucrata	0.5																												0.5
Polycarpaea longiflora	0.5			0.5		0.5					0.5	0.5						0.5											

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
Polygala glaucifolia								0.5	0.5																				
Polygala sp.																													
Polymeria ambigua																									0.5				
Polymeria sp.														0.5															
Portulaca oleracea					0.5								0.5						0.5	0.5			0.5						
Pterocaulon serrulatum var. *serrulatum*																													
Pterocaulon serrulatum var. *velutinum*																			0.5										
Pterocaulon sp.	0.5			0.5											0.5	0.5											0.5		
Pterocaulon sphaeranthoides	0.5										0.5																		
Ptilotus aervoides																0.5													
Ptilotus appendiculatus																													
Ptilotus astrolasius					0.5							0.5									0.5		0.5	0.5			0.5		
Ptilotus auriculifolius																0.5			0.5							0.5			
Ptilotus axillaris					0.5			0.5															0.5				0.5		
Ptilotus calostachyus		0.5	0.5					0.5													0.5					0.5			
Ptilotus clementii																													
Ptilotus fusiformis								0.5			0.5															0.5	0.5		
Ptilotus gomphrenoides var. *gomphrenoides*																													
Ptilotus incanus											0.5																		
Ptilotus nobilis subsp. *nobilis*		0.5						0.5																					
Ptilotus obovatus var. *obovatus*				1												0.5		0.5		0.5								0.5	0.5
Ptilotus sp.																													
Rhagodia eremaea																													
Rhodanthe margarethae											0.5																		0.5
Rhynchosia bungarensis P4																		0.5											0.5
Rhynchosia minima	0.5		0.5	0.5	0.5						0.5					0.5	0.5							0.5			0.5	0.5	
Rostellularia adscendens var. *clementii*																													
Salsola australis					0.5																								
Sarcostemma viminale subsp. *australe*																													0.5
Scaevola spinescens																													
Sclerolaena cornishiana													0.5															0.5	
Senna artemisioides subsp. *helmsii*																												0.5	
Senna artemisioides subsp. *oligophylla*		0.5				0.5							0.5			0.5						0.5	0.5	0.5				0.5	
Senna glutinosa subsp. *glutinosa*		0.5	0.5	0.5		0.5									0.5		0.5				0.5	0.5							
Senna glutinosa subsp. *pruinosa*			0.5					0.5													0.5								
Senna glutinosa subsp. x *luerssenii*		0.5	0.5											0.5															
Senna notabilis					0.5			0.5			0.5	0.5	0.5	0.5		0.5										0.5			
Senna symonii																													
Senna venusta				0.5							1																		
Sesbania cannabina																													
Sida arsiniata					0.5							0.5	0.5													0.5			
Sida echinocarpa												0.5		0.5										1	0.5		0.5		

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
Sida fibulifera					0.5								0.5						0.5						0.5		0.5	0.5	
Sida platycalyx																													
Sida rohlenae subsp. *rohlenae*														0.5										0.5			0.5		
Sida sp.																													
Sida sp. Articulation below (A.A. Mitchell PRP 1605)												0.5												0.5					
Sida sp. Barlee Range (S. van Leeuwen 1642) P3																													0.5
Sida sp. dark green fruits (S. van Leeuwen 2260)																													
Sida sp. Excedentifolia (J.L. Egan 1925)																													0.5
Sida sp. Pilbara (A.A. Mitchell PRP 1543)			0.5																		0.5						0.5		0.5
Sida sp. verrucose glands (F.H. Mollemans 2423)					0.5																								
Solanum cleistogamum				0.5																									
Solanum diversiflorum													0.5			0.5								0.5			0.5	0.5	0.5
Solanum horridum				0.5																									
Solanum lasiophyllum																													
Solanum phlomoides																												0.5	0.5
Solanum sp.																													
Sporobolus australasicus					0.5								0.5		0.5														
Stackhousia intermedia																													0.5
Stemodia grossa				0.5	0.5																								
Streptoglossa bubakii																													
Streptoglossa decurrens																													0.5
Streptoglossa liatroides																													0.5
Streptoglossa sp.				0.5																									0.5
Stylobasium spathulatum				0.5								0.5		0.5						0.5					0.5				
Swainsona formosa																													0.5
Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	0.5									0.5		0.5		0.5	0.5			2	0.5	0.5				0.5	0.5	0.5	1		0.5
Tephrosia sp.	0.5																												
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)																													0.5
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)																								0.5			0.5		0.5
Tephrosia supina								0.5																					
Tephrosia uniovulata																													
Tephrosia virens	0.5			0.5							0.5																		
Themeda triandra	0.5			8							2																0.5		
Tinospora smilacina		0.5		0.5							0.5																		0.5
Trachymene oleracea subsp. *oleracea*				0.5				0.5	0.5	0.5	1							0.5											
Trianthema pilosum																				0.5									0.5
Trianthema triquetrum													0.5															0.5	
Tribulus astrocarpus																													
Tribulus hirsutus											0.5																		0.5
Tribulus macrocarpus																									0.5			0.5	
Tribulus sp.														0.5		0.5				0.5									
Trichodesma zeylanicum var. *zeylanicum*											0.5					0.5											0.5		

Species	BALVr.03	BALVr.04	BALVr.05	BALVr.06	BALVr.07	BAR112	BUN.BA	BUN.MB	BUN.MC	BUN.MD	BUN.RA	BUN11	BUN19	BUN50	BUN56	BUN57	BUN59	BUN60	BUN61	BUN62	BUN63	BUN67	BUN68	BUN70	BUN71	BUN72	BUN73	BUN75	OPPS
Trichosanthes cucumerina																													0.5
Triodia epactia	6	20			0.5		29			20	8	25		5	33	27		1	2	1			20	20	3		15	28	
Triodia longiceps																													0.5
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	2					5		1	1																				0.5
Triodia wiseana	1		40	20		20		18	39			0.5					35				17	15		0.5		20	0.5		
Tripogon loliiformis																													
Triumfetta clementii																									0.5			0.5	
Triumfetta johnstonii																										0.5	2		0.5
Triumfetta maconochieana	0.5							0.5			0.5							0.5											0.5
Urochloa occidentalis																													
Urochloa piligera																													
Vigna lanceolata																													
Wahlenbergia tumidifructa																													
Waltheria indica					0.5													0.5							0.5				
Waltheria virgata																													0.5
Yakirra australiensis																													
Zaleya galericulata																													0.5

Appendix N: Conservation Significant Flora and Introduced Flora Species Locations and Descriptions

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420000 423000 426000 429000 432000

7590000

7587000

7584000

Map Extent

Legend

Survey Area

Priority Flora (Astron (2015))

- *Dicladanthera glabra* P2
- *Sida* sp. Barlee Range (S. van Leeuwen 1642) P3
- *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3
- *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3
- *Rhynchosia bungarensis* P4

Previously Recoded Priority Flora

- *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3
- *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3
- *Rhynchosia bungarensis* P4
- *Solanum* aff. *gabrielae*

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure N.1A: Priority Flora Locations

Datum: GDA 1994
Projection: MGA Zone 50

0 1 2 Km

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astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigN1A_ConSigFlora

429000 432000 435000 438000 441000

7581000

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7575000

Legend

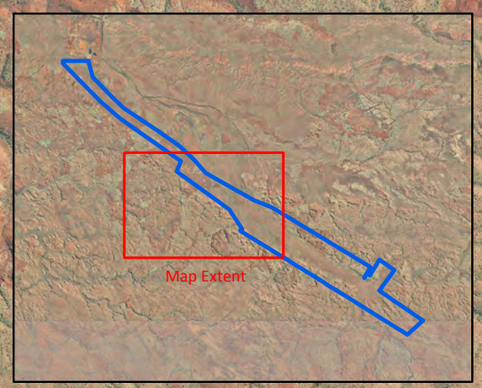
Survey Area

Priority Flora (Astron (2015))

- *Dicladanthera glabra* P2
- *Sida* sp. Barlee Range (S. van Leeuwen 1642) P3
- *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3
- *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3
- *Rhynchosia bungarensis* P4

Previously Recoded Priority Flora

- *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3
- *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3
- *Rhynchosia bungarensis* P4
- *Solanum* aff. *gabrielae*



Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure N.1B: Priority Flora Locations

Datum: GDA 1994
Projection: MGA Zone 50

0 1 2 Km

N

astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigN1B_ConSigFlora

441000 444000 447000 450000 453000 456000

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7569000

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Legend

Survey Area

Priority Flora (Astron (2015))

- *Dicladanthera glabra* P2
- *Sida* sp. Barlee Range (S. van Leeuwen 1642) P3
- *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3
- *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3
- *Rhynchosia bungarensis* P4

Previously Recoded Priority Flora

- *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) P3
- *Triodia* sp. Robe River (M.E. Trudgen et al. MET 12367) P3
- *Rhynchosia bungarensis* P4
- *Solanum* aff. *gabrielae*

Map Extent

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure N.1C: Priority Flora Locations

Datum: GDA 1994
Projection: MGA Zone 50

0 1 2 Km

N

astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigN1C_ConSigFlora

420000 423000 426000 429000 432000

7590000

7587000

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Legend

Survey Area

Introduced Plant Species

- **Acetosa vesicaria* (Ruby Dock)
- **Aerva javanica* (Kapok Bush)
- **Argemone ochroleuca* (Mexican Poppy)
- **Bidens bipinnata* (Bipinnate Beggartick)
- **Cenchrus ciliaris* (Buffel Grass)
- **Cenchrus setiger* (Birdwood Grass)
- **Chloris barbata* (Purpletop Chloris)
- **Citrullus colocynthis*
- **Cynodon dactylon* (Couch Grass)
- **Echinochloa colona* (Awnless Barnyard Grass)
- **Flaveria trinervia* (Speedy Weed)
- **Lactuca serriola* (Prickly Lettuce)
- **Malvastrum americanum* (Spiked Malvastrum)
- **Passiflora foetida* var. *hispida* (Stinking Passion Flower)
- **Setaria verticillata* (Whorled Pigeon Grass)
- **Sonchus oleraceus* (Common Sowthistle)
- **Vachellia farnesiana* (Mimosa Bush)

Map Extent

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure N.2A: Astron (2015) Introduced Plant Species (Weed) Locations

Datum: GDA 1994
Projection: MGA Zone 50

0 1 2 Km

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astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigN2A_Weed

429000 432000 435000 438000 441000

7581000

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Map Extent

Legend

Survey Area

Introduced Plant Species

- **Acetosa vesicaria* (Ruby Dock)
- **Aerva javanica* (Kapok Bush)
- **Argemone ochroleuca* (Mexican Poppy)
- **Bidens bipinnata* (Bipinnate Beggartick)
- **Cenchrus ciliaris* (Buffel Grass)
- **Cenchrus setiger* (Birdwood Grass)
- **Chloris barbata* (Purpletop Chloris)
- **Citrullus colocynthis*
- **Cynodon dactylon* (Couch Grass)
- **Echinochloa colona* (Awnless Barnyard Grass)
- **Flaveria trinervia* (Speedy Weed)
- **Lactuca serriola* (Prickly Lettuce)
- **Malvastrum americanum* (Spiked Malvastrum)
- **Passiflora foetida* var. *hispida* (Stinking Passion Flower)
- **Setaria verticillata* (Whorled Pigeon Grass)
- **Sonchus oleraceus* (Common Sowthistle)
- **Vachellia farnesiana* (Mimosa Bush)

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure N.2B: Astron (2015) Introduced Plant Species (Weed) Locations

Datum: GDA 1994
Projection: MGA Zone 50

0 1 2 Km

N

astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigN2B_Weed

441000 444000 447000 450000 453000 456000

7575000

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Legend

Survey Area

Introduced Plant Species

- **Acetosa vesicaria* (Ruby Dock)
- **Aerva javanica* (Kapok Bush)
- **Argemone ochroleuca* (Mexican Poppy)
- **Bidens bipinnata* (Bipinnate Beggartick)
- **Cenchrus ciliaris* (Buffel Grass)
- **Cenchrus setiger* (Birdwood Grass)
- **Chloris barbata* (Purpletop Chloris)
- **Citrullus colocynthis*
- **Cynodon dactylon* (Couch Grass)
- **Echinochloa colona* (Awnless Barnyard Grass)
- **Flaveria trinervia* (Speedy Weed)
- **Lactuca serriola* (Prickly Lettuce)
- **Malvastrum americanum* (Spiked Malvastrum)
- **Passiflora foetida* var. *hispida* (Stinking Passion Flower)
- **Setaria verticillata* (Whorled Pigeon Grass)
- **Sonchus oleraceus* (Common Sowthistle)
- **Vachellia farnesiana* (Mimosa Bush)

Map Extent

Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure N.2C: Astron (2015) Introduced Plant Species (Weed) Locations

Datum: GDA 1994
Projection: MGA Zone 50

0 1 2 Km

N

astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigN2C_Weed

Table N. 1: Locations of Priority flora recorded by Astron in the survey area (MGA50, GDA94).

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Dicladanthera glabra P2	3	0.5	454050	7567440		1	0.5	449676	7570527
	3	0.5	454233	7566943		1	0.5	454489	7567293
	3	0.5	454219	7566977		1	0.5	454372	7567314
	5	0.5	454207	7567001		3	0.5	454204	7567313
	20	5	454200	7567051		3	0.5	454140	7567373
	8	1	454172	7567162		1	0.5	454123	7567384
	2	0.5	454146	7567196		3	0.5	454039	7567485
	2	0.5	454070	7567360		1	0.5	454019	7567519
	10	1	454055	7567398		2	0.5	454043	7567429
	10	1	454030	7567498		2	0.5	454145	7567230
	4	0.5	454019	7567550		3	0.5	454352	7566784
	10	1	454014	7567586		5	1	454455	7566730
	2	0.5	453918	7567728		2	0.5	454492	7566703
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	1	0.5	447893	7571302		4	0.5	454516	7566684
	8	1	448438	7570856		6	1	451504	7567124
	5	1	448666	7571364		6	0.5	452806	7567644
	4	1	448540	7570949		3	0.5	452809	7567644
	1	0.5	446416	7571704		1	0.5	452482	7567989
	2	0.5	446212	7571186		7	1	452570	7568076
	4	0.5	446174	7571091		4	0.5	452595	7568102
	3	0.5	445216	7572151		2	0.5	451844	7569017
	2	0.5	450939	7568326		2	0.5	450521	7567208
	4	0.5	451084	7568443		4	0.5	451679	7571014
	2	0.5	451429	7568484		2	0.5	451715	7571074
	1	0.5	451454	7568502		3	0.5	451700	7571221
	4	0.5	451899	7568609		2	0.5	451727	7571257
	1	0.5	451927	7568632		2	0.5	451779	7571297
	1	0.5	451964	7568648		5	0.5	451863	7571283
	1	0.5	451592	7569009		2	0.5	451935	7571235
	7	0.5	451592	7569009		2	0.5	451997	7571225
	2	0.5	451592	7569009		6	0.5	452039	7571276
	10	0.5	451592	7569009		1	0.5	451484	7570947
	1	0.5	451592	7569009		7	0.5	451528	7570919
	3	0.5	451591	7569244		4	0.5	451578	7570945
	2	0.5	451591	7569244		3	0.5	451284	7571671
	2	0.5	450712	7568073		5	0.5	451295	7571700
	3	0.5	450645	7568019		2	0.5	451273	7571771
	6	0.5	450609	7567983		3	0.5	451293	7571845
	1	0.5	435351	7580106		2	0.5	450940	7571661

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	10	1	451174	7570673		2	0.5	451128	7571856
	3	0.5	451112	7570670		7	0.5	451128	7571857
	6	0.5	451156	7570657		2	0.5	451128	7571856
	10	0.5	451229	7570621		3	0.5	451126	7571855
	10	0.5	451253	7570583		7	0.5	451126	7571901
	4	0.5	451267	7570553		3	0.5	451100	7571368
	3	0.5	451285	7570517		3	0.5	451047	7571334
	2	0.5	451620	7570945		1	0.5	448608	7570514
	5	0.5	448607	7570512		5	0.5	446456	7570827
	3	0.5	447850	7570982		3	0.5	446455	7571361
	10	0.5	447742	7570998		5	0.5	446456	7571520
	1	0.5	447711	7570949		1	0.5	445451	7571944
	6	0.5	447568	7570858		3	0.5	445935	7572676
	5	0.5	447511	7570842		6	0.5	445452	7573757
	8	0.5	447471	7570803		10	0.5	445420	7573788
	2	0.5	447418	7570756		10	0.5	445408	7573797
	3	0.5	447391	7570693		20	2	445378	7573789
	10	0.5	447347	7570689		5	0.5	445452	7573873
	10	0.5	447313	7570645		1	0.5	445468	7573939
	7	0.5	446887	7570647		2	0.5	445465	7574042
	8	0.5	446887	7570647		2	0.5	445574	7574262
	8	0.5	446868	7570647		5	0.5	445986	7573237
	10	1	446840	7570615		4	0.5	445923	7573155
	3	0.5	446819	7570585		20	1	445874	7573095
	3	0.5	446805	7570603		5	0.5	445849	7573057
	10	0.5	446807	7570612		2	0.5	445715	7572091
	4	0.5	446795	7570643		2	0.5	445320	7572047
	20	1	446721	7570688		4	0.5	445216	7572148
	4	0.5	446655	7570710		9	0.5	445125	7572281
	2	0.5	446514	7571047		1	0.5	442763	7574613
	2	0.5	446521	7570957		7	0.5	442577	7575352
	2	0.5	446519	7570957		10	0.5	442602	7575388
	1	0.5	446479	7570788		50	1	442621	7575445
	10	0.5	442677	7575524		7	0.5	437848	7576312
	50	2	442720	7575546		10	1	440458	7574706
	20	1	442778	7575565		5	0.5	440456	7574744
	10	1	442827	7575573		3	0.5	440455	7574802
	2	0.5	442882	7575519		2	0.5	440437	7574612
	4	0.5	442928	7575484		10	0.5	440466	7574587

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	5	0.5	442970	7575449		8	0.5	440408	7574417
	30	3	443058	7575778		2	0.5	444321	7573027
	5	0.5	443019	7575793		2	0.5	441692	7575903
	10	0.5	442487	7575436		3	0.5	440020	7577440
	3	0.5	421377	7591601		3	0.5	439916	7577532
	2	0.5	429990	7584589		5	0.5	441137	7575147
	2	0.5	430028	7584716		5	0.5	444621	7572820
	1	0.5	432162	7581908		1	0.5	446687	7571582
	1	0.5	432128	7581841		10	0.5	448819	7568731
	2	0.5	432071	7581746		20	1	448923	7569521
	2	0.5	432037	7581686		4	0.5	449195	7569856
	3	0.5	432042	7581540		6	0.5	449187	7569856
	1	0.5	432012	7581455		2	0.5	449165	7569864
	4	0.5	431933	7581405		4	0.5	449365	7569877
	2	0.5	431792	7581468		1	0.5	449449	7569876
	20	1	431749	7581476		1	0.5	449531	7569871
	3	0.5	431618	7581525		1	0.5	449261	7569981
	10	1	431705	7581779		1	0.5	449257	7569981
	5	0.5	438334	7576906		1	0.5	449197	7569968
	8	1	449066	7569942		20	0.5	448278	7569267
	2	0.5	448998	7569943		4	0.5	448243	7569292
	2	0.5	448957	7570132		10	0.5	448197	7569331
	1	0.5	446496	7571644		7	0.5	448150	7569367
	4	0.5	442986	7573647		20	0.5	448121	7569387
	6	0.5	442862	7573605		20	0.5	448108	7569420
	7	0.5	442825	7573539		1	0.5	448412	7569192
	1	0.5	445451	7572821		10	0.5	448441	7569211
	1	0.5	450983	7570933		3	0.5	448493	7569213
	6	0.5	450586	7567227		3	0.5	448541	7569256
	3	0.5	451672	7568108		10	0.5	448598	7569223
	2	0.5	451685	7567401		3	0.5	448636	7569221
	20	0.5	448582	7569227		10	0.5	449038	7569430
	30	2	448612	7569201		1	0.5	449080	7569494
	1	0.5	448706	7569056		2	0.5	449051	7569619
	30	3	448717	7569024		1	0.5	448135	7571721
	30	3	448769	7569006		4	0.5	447886	7571823
	4	0.5	448798	7568986		2	0.5	447925	7571907
	30	1	448559	7568892		1	0.5	447940	7571952
	30	5	448518	7568911		2	0.5	447951	7571967
	30	5	448482	7568923		1	0.5	447959	7571998
	10	0.5	448436	7568916		1	0.5	447966	7572056

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	20	0.5	448186	7569192		3	0.5	447953	7572078
	2	0.5	448308	7569202		1	0.5	447889	7572133
	2	0.5	448322	7569219		5	0.5	447856	7572229
	2	0.5	447865	7572248		7	0.5	448765	7572503
	3	0.5	447882	7572269		20	0.5	448776	7572487
	20	1	447918	7572298		30	0.5	448797	7572460
	20	1	447932	7572305		30	2	448805	7572447
	30	1	447937	7572316		10	1	448814	7572436
	10	1	447958	7572339		10	1	448807	7572420
	5	1	447976	7572354		1	0.5	448803	7572410
	5	1	447981	7572367		4	0.5	448813	7572395
	3	1	448017	7572396		9	0.5	448830	7572368
	1	1	448064	7572420		20	2	448828	7572346
	1	1	448083	7572412		20	2	448830	7572300
	3	0.5	448135	7572421		10	2	448838	7572273
	1	0.5	448152	7572423		1	0.5	448641	7572212
	1	0.5	448266	7572477		9	0.5	448658	7572256
	6	0.5	448311	7572487		6	0.5	448650	7572264
	3	0.5	448330	7572494		6	0.5	448632	7572276
	5	0.5	448353	7572516		10	0.5	448617	7572287
	2	0.5	448390	7572542		10	0.5	448609	7572306
	1	0.5	448456	7572595		10	0.5	448618	7572331
	1	0.5	448482	7572560		1	0.5	448608	7572359
	5	0.5	448520	7572589		1	0.5	448600	7572389
	1	0.5	448573	7572613		2	0.5	448588	7572428
	4	0.5	448615	7572618		4	0.5	448582	7572449
	2	0.5	448720	7572552		2	0.5	448554	7572526
	1	0.5	448743	7572527		6	0.5	448520	7572533
	3	0.5	445973	7572671		40	2	442322	7575613
	2	0.5	446006	7572776		2	2	442334	7575632
	5	0.5	445988	7573235		40	2	442342	7575658
	4	0.5	446037	7573239		40	2	442341	7575680
	2	0.5	446090	7573254		60	2	442341	7575696
	1	0.5	446127	7573292		40	2	442361	7575707
	2	0.5	446152	7573290		30	1	442370	7575721
	3	0.5	446216	7573288		10	0.5	442386	7575733
	3	0.5	446264	7573311		10	0.5	442402	7575744
	2	0.5	446285	7573315		30	0.5	442420	7575759
	1	0.5	446332	7573356		30	0.5	442440	7575764
	5	0.5	446326	7573369		40	2	442455	7575776
	3	0.5	446321	7573387		40	2	442477	7575784

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	2	0.5	446292	7573421		40	2	442493	7575802
	1	0.5	446278	7573448		40	2	442514	7575812
	2	0.5	446257	7573504		20	1	442528	7575836
	3	0.5	446249	7573512		6	0.5	442507	7575849
	7	0.5	446221	7573592		60	0.5	442491	7575869
	3	0.5	446212	7573607		60	0.5	442467	7575887
	2	0.5	446184	7573652		2	0.5	442441	7575904
	1	0.5	446171	7573676		30	0.5	442427	7575923
	20	0.5	442396	7575368		20	0.5	442426	7575945
	5	0.5	442308	7575555		10	0.5	442428	7575967
	40	2	442305	7575577		5	0.5	442425	7575982
	40	2	442311	7575595		40	2	442572	7575721
	40	2	442556	7575710		1	0.5	453522	7565705
	60	2	442534	7575698		2	0.5	453341	7565782
	50	2	442520	7575682		1	0.5	453003	7565982
	30	2	442504	7575667		4	0.5	452976	7566161
	30	2	442475	7575663		1	0.5	452925	7566256
	20	2	442453	7575649		2	0.5	452645	7566471
	40	2	442446	7575608		1	0.5	450300	7567670
	30	2	442433	7575420		1	0.5	450032	7568070
	2	0.5	442450	7575358		4	0.5	450005	7568114
	1	0.5	421679	7591028		10	0.5	449974	7568138
	9	0.5	432370	7581141		1	0.5	449975	7568156
	7	0.5	432298	7581087		10	0.5	449913	7568220
	20	0.5	432280	7581065		9	0.5	449893	7568234
	1	0.5	432543	7580879		1	0.5	449836	7568288
	3	0.5	449055	7569806		6	0.5	449820	7568328
	2	0.5	449091	7569798		4	0.5	449805	7568348
	1	0.5	449377	7569792		10	0.5	449768	7568392
	1	0.5	448944	7569798		2	0.5	451082	7568449
	1	0.5	449356	7569503		1	0.5	451215	7567957
	1	0.5	449595	7569320		1	0.5	448588	7569423
	1	0.5	445340	7572758		1	0.5	448501	7569434
	1	0.5	453703	7565700		40	30	448524	7569582
	2	0.5	453458	7565835		2	0.5	448526	7569606
	2	0.5	453517	7565813		1	0.5	448545	7569695
	4	0.5	453542	7565823		1	0.5	448598	7569669
	20	10	448599	7569668		4	0.5	448416	7572906
	1	0.5	448616	7569664		4	0.5	448395	7572922
	1	0.5	448598	7569595		1	0.5	448363	7572869
	20	10	447839	7571847		5	0.5	448192	7572867

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	20	5	447854	7571875		20	2	448160	7572879
	6	0.5	447936	7572019		3	0.5	448155	7572923
	20	5	447894	7572102		3	0.5	448159	7572796
	1	5	447876	7572123		2	0.5	448156	7572766
	8	1	447919	7572346		6	0.5	448163	7572762
	30	8	447941	7572400		6	1	448148	7572695
	20	9	447963	7572415		6	0.5	448090	7572624
	20	9	448027	7572431		10	0.5	448092	7572576
	30	20	448042	7572451		6	0.5	448094	7572471
	1	0.5	448067	7572436		20	1	447224	7572319
	4	0.5	448108	7572466		1	0.5	447220	7572356
	1	0.5	448187	7572474		3	0.5	447156	7572370
	8	0.5	448241	7572478		6	0.5	447240	7572354
	6	0.5	448272	7572488		8	0.5	447271	7572361
	1	0.5	448348	7572542		1	0.5	447286	7572359
	9	0.5	448370	7572588		10	0.5	447323	7572380
	1	0.5	448497	7572648		3	0.5	444194	7572895
	10	1	448424	7572735		3	0.5	443535	7572923
	10	1	448404	7572785		1	0.5	443620	7572751
	4	0.5	448396	7572811		1	0.5	443720	7572724
	7	0.5	448419	7572856		10	1	443867	7572352
	2	0.5	443839	7572303		35	0.5	448187	7569930
	20	1	443690	7572212		5	0.5	447778	7570186
	3	0.5	443567	7572173		30	0.5	447564	7570305
	3	0.5	443800	7572207		15	0.5	447522	7570389
	3	0.5	443902	7572256		6	0.5	447420	7570627
	4	0.5	444161	7572868		15	0.5	447454	7570770
	1	0.5	443364	7573781		2	0.5	445858	7571318
	1	0.5	444563	7572798		1	0.5	445854	7571257
	3	0.5	447638	7571104		4	0.5	445821	7571139
	1	0.5	447901	7571449		2	0.5	445808	7571128
	1	0.5	447894	7571266		1	0.5	445792	7571098
	1	0.5	447748	7571077		1	0.5	445785	7571092
	1	0.5	448537	7571095		3	0.5	445757	7571091
	10	0.5	448428	7570774		1	0.5	445724	7571082
	5	0.5	448380	7570699		5	0.5	445676	7571070
	5	0.5	447054	7572340		6	0.5	445651	7571079
	4	0.5	446551	7571826		1	0.5	445637	7571071
	1	0.5	446535	7571604		2	0.5	445564	7571092
	1	0.5	446620	7571556		30	0.5	445520	7571126
	1	0.5	446680	7571498		20	0.5	445622	7570961

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	1	0.5	446702	7571474		10	0.5	445612	7570943
	2	0.5	448694	7570262		10	0.5	445603	7570909
	20	0.5	448569	7570141		10	0.5	445596	7570881
	50	0.5	448292	7569986		10	0.5	445588	7570870
	10	0.5	448237	7569964		5	0.5	445567	7570847
	10	1	445239	7571903		10	0.5	448069	7572824
	8	0.5	451123	7567590		10	0.5	448084	7572751
	2	0.5	451185	7567650		1	0.5	438772	7575545
	20	0.5	451729	7568974		10	0.5	438461	7575253
	20	0.5	451796	7569008		20	0.5	438439	7575190
	1	0.5	451852	7568803		20	0.5	438418	7575171
	4	0.5	451708	7568431		20	0.5	438362	7575156
	2	0.5	450875	7567878		20	0.5	438317	7575147
	10	0.5	450896	7567846		20	0.5	438271	7575124
	5	0.5	450913	7567827		10	0.5	438346	7575118
	7	0.5	450933	7567779		10	0.5	438394	7575133
	10	0.5	450968	7567724		3	0.5	438531	7575325
	2	0.5	447378	7572417		4	0.5	438557	7575351
	3	0.5	447429	7572429		10	0.5	438591	7575385
	6	0.5	447476	7572446		10	0.5	438616	7575422
	8	0.5	447512	7572501		10	0.5	438651	7575440
	8	0.5	447537	7572533		10	0.5	438689	7575470
	8	0.5	447567	7572591		5	0.5	438701	7575514
	8	0.5	447595	7572619		4	0.5	449636	7568903
	20	0.5	447618	7572667		4	0.5	450043	7568905
	20	0.5	447659	7572710		4	0.5	450093	7568892
	3	0.5	447758	7572848		3	0.5	450233	7568805
	8	0.5	447978	7573069		3	0.5	450208	7568838
	2	0.5	448070	7572900		20	0.5	449734	7568557
	10	0.5	448068	7572879		20	0.5	449718	7568589
	20	0.5	449705	7568623		4	0.5	454096	7567411
	20	0.5	449705	7568660		2	0.5	454003	7567610
	2	0.5	449428	7568315		3	0.5	453816	7567934
	3	0.5	449402	7568313		2	0.5	453932	7567700
	50	10	449199	7568514		6	1	451219	7567502
	5	0.5	449181	7568541		6	1	451273	7567495
	5	0.5	449147	7568559		5	1	451328	7567614
	10	0.5	449113	7568585		2	0.5	451334	7567819
	5	0.5	448543	7569694		2	0.5	451348	7567850
	8	0.5	445212	7572068		20	2	451262	7567924
	10	0.5	445129	7572060		1	0.5	451196	7568033

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	7	0.5	445072	7572086		5	0.5	451157	7568103
	10	1	445014	7572020		9	0.5	451185	7568166
	5	0.5	445026	7571977		1	0.5	451104	7568275
	8	0.5	444952	7571961		2	0.5	451077	7568292
	6	0.5	444876	7571854		2	0.5	451037	7568347
	5	0.5	444940	7571604		1	0.5	451133	7568316
	9	0.5	444885	7571668		4	0.5	451201	7568305
	5	0.5	444829	7571689		3	0.5	451493	7568159
	30	5	444741	7571593		3	0.5	451539	7568121
	20	5	444701	7571461		2	0.5	451592	7568114
	10	1	444611	7571563		1	0.5	451644	7568054
	10	1	444629	7571410		3	0.5	451718	7568002
	8	0.5	444558	7571313		7	1	451779	7567953
	1	0.5	454257	7566914		4	0.5	451845	7567907
	4	0.5	448585	7571673		5	0.5	437003	7577567
	1	0.5	448223	7571683		6	0.5	436953	7577682
	2	0.5	446169	7571046		7	0.5	437107	7577463
	5	0.5	446119	7570989		10	0.5	437197	7577340
	2	0.5	435773	7578551		5	0.5	437190	7577209
	5	0.5	435774	7578499		5	0.5	437161	7577126
	6	0.5	435738	7578435		10	0.5	437164	7576956
	20	5	435724	7578353		8	0.5	437129	7577030
	20	5	435731	7578274		3	0.5	439656	7575155
	20	5	435745	7578203		4	0.5	446825	7572516
	30	10	435785	7578182		5	0.5	446956	7572532
	5	1	435965	7578143		10	0.5	446995	7572557
	2	0.5	436138	7578141		10	0.5	447039	7572638
	10	1	435727	7578623		10	0.5	446975	7572752
	1	0.5	435574	7578973		5	0.5	446902	7572871
	4	0.5	427980	7585697		10	0.5	446770	7572983
	1	0.5	428026	7585721		4	0.5	446948	7572869
	5	0.5	427856	7585516		4	0.5	447013	7572659
	10	0.5	427825	7585450		6	0.5	446199	7570706
	3	0.5	427825	7585258		10	1	445923	7570742
	5	0.5	429892	7584222		1	0.5	446535	7571361
	1	0.5	429930	7584627		30	1	448557	7568868
	6	0.5	437133	7577247		1	0.5	451242	7572139
	4	0.5	437119	7577332		1	0.5	451345	7572243
	4	0.5	437060	7577522		7	0.5	451387	7572279
	10	1	451269	7572285		5	0.5	450357	7568668
	10	1	451212	7572320		3	0.5	450317	7568692

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3	3	0.5	451181	7572415		20	0.5	443529	7575099
	30	1	450254	7571335		4	0.5	450289	7568724
	3	0.5	450717	7571117		7	1	450241	7568803
	10	1	450758	7571042		20	1	450211	7568834
	10	0.5	449818	7571036		5	0.5	443682	7574411
	5	0.5	449772	7570866		80	2	443734	7574493
	10	1	449774	7570771		50	1	443806	7574673
	5	1	453076	7565945		80	2	443817	7574743
	5	0.5	452813	7566421		60	2	443940	7574914
	2	0.5	452731	7566434		100	3	444040	7575063
	10	1	452682	7566482		80	2	444070	7575055
	20	2	452580	7566536		8	1	444123	7575136
	10	2	452488	7566589		30	3	444129	7575207
	4	0.5	452323	7566659		3	0.5	444206	7575248
	3	0.5	452238	7566661		30	2	444286	7575339
	7	1	452191	7566605		100	5	444242	7575356
	10	1	450974	7567727		20	1	444357	7575172
	10	1	450914	7567835		40	2	444483	7575122
	5	0.5	450765	7568147		100	5	444572	7575073
	5	0.5	450836	7568175		100	1	444607	7575052
	5	0.5	450925	7568303		5	0.5	445155	7574507
	3	0.5	451055	7568318		1	0.5	444974	7574232
	5	0.5	451093	7568502		8	0.5	444827	7574080
	20	2	444628	7574029		20	3	444693	7573992
	10	1	443719	7574393		30	0.5	444127	7575207
	3	0.5	437169	7576761		10	0.5	444129	7575199
	20	2	437288	7577362		50	0.5	444067	7575133
	20	1	440005	7577535		20	0.5	443728	7574493
	40	1	440047	7577592		10	0.5	438469	7575214
	10	2	439934	7577505		20	0.5	438468	7575127
	3	0.5	441250	7576379		2	0.5	451275	7571675
	2	0.5	443822	7573702		10	0.5	436455	7577658
	10	0.5	448639	7568780	*Sida* sp. Barlee Range (S. van Leeuwen 1642) P3	2	0.5	452277	7567121
	4	0.5	451640	7572304		20	0.5	450817	7568156
	10	0.5	451111	7570653		20	0.5	450874	7568208
	2	0.5	451126	7570633		50	1	450894	7568221
	2	0.5	450646	7568045		20	0.5	450760	7568569
	3	0.5	443614	7574532		7	0.5	450837	7568462
	70	0.5	443538	7574890		2	0.5	450856	7568356
	30	0.5	443511	7574957					

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	30	10	445588	7571619		100	5	450475	7568772
	5	10	445606	7571601		100	5	450408	7568706
	30	10	445656	7571567		100	5	450123	7568752
	60	10	445673	7571511		90	5	449652	7568711
	100	10	445405	7570716		70	2	449516	7568624
	100	10	445377	7570747		100	20	449526	7568572
	70	10	445364	7570821		50	10	449495	7568438
	100	40	453707	7566495		100	20	449465	7568408
	100	30	453638	7566581		500	20	449230	7568439
	100	30	453583	7566613		1	0.5	444948	7571592
	100	30	453484	7566746		10	0.5	444972	7571545
	100	30	453429	7566762		5	0.5	444407	7571362
	100	30	453381	7566810		10	0.5	444467	7571534
	100	30	453402	7566857		10	0.5	444394	7571526
	100	20	453361	7566942		50	5	444242	7571528
	50	5	453330	7566981		5	0.5	454680	7566727
	100	10	452914	7567568		5	0.5	454630	7566739
	100	40	453476	7567107		5	0.5	454418	7566759
	100	20	453530	7566985		3	0.5	454309	7566818
	100	30	453584	7566952		10	1	454191	7567077
	50	4	453718	7566836		30	8	454074	7567313
	500	10	453717	7566717		20	5	454044	7567382
	100	40	454186	7566345		20	2	453898	7567663
	100	40	454218	7566216		80	30	453889	7567613
	10	1	451092	7567530		80	30	453851	7567591
	10	0.5	451142	7567637		80	30	453844	7567639
	100	5	451300	7567700		80	30	453829	7567721
	100	10	451543	7567861		80	30	453761	7567853
	100	10	451607	7567842		20	2	453663	7567884
	30	2	451714	7567741		70	30	453563	7567873
	100	40	453735	7566451		100	5	451874	7567745
	50	2	451855	7568418		20	2	444212	7571579
	500	10	450973	7568104		70	20	444187	7571638
	100	10	450926	7567917		10	1	444166	7571742
	7	0.5	450953	7567741		20	1	444135	7571796
	8	0.5	450988	7567687		40	3	443974	7571831
	20	1	450753	7567373		30	2	443895	7571851
	50	0.5	447399	7572423		30	2	443802	7571876
	50	1	423244	7590188		20	1	443796	7572034
	100	10	422856	7590408		10	0.5	443806	7572097
	100	10	450446	7568813		10	0.5	443629	7572097

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	10	0.5	443582	7571915		30	10	452121	7567422
	10	0.5	443445	7571905		20	5	452233	7567389
	20	0.5	443361	7572085		80	30	452219	7567489
	10	0.5	443206	7572338		70	40	452289	7567332
	10	0.5	443238	7572449		70	40	452341	7567274
	10	0.5	443226	7572512		70	40	452388	7567223
	20	0.5	443174	7572605		10	1	452316	7567174
	20	5	454436	7566173		30	10	452353	7567107
	80	30	454589	7566339		40	10	452404	7567077
	10	1	454538	7566623		5	0.5	452277	7567006
	40	20	454527	7566723		3	0.5	452210	7567002
	80	40	454557	7566748		5	0.5	452147	7566930
	70	30	454631	7566803		10	1	451930	7567118
	5	0.5	454735	7566780		50	10	451868	7567143
	5	0.5	454732	7566731		50	10	451853	7567202
	70	30	453054	7567870		10	1	451521	7567575
	70	30	453024	7567798		30	10	451522	7567480
	80	40	453080	7567677		30	10	451517	7567419
	70	30	453127	7567655		30	10	451493	7567358
	50	20	453249	7567642		10	1	451326	7567219
	30	10	453374	7567649		60	20	451240	7567189
	40	20	453569	7567630		10	1	451115	7567204
	30	10	453737	7567523		70	30	449123	7572182
	50	20	453936	7567300		70	30	449114	7572122
	50	20	453984	7567242		100	2	450834	7572487
	50	20	454038	7567168		100	30	450776	7572334
	60	30	454125	7567081		500	10	450712	7572251
	40	20	454148	7567014		500	10	450610	7572108
	30	5	454181	7566879		500	10	450618	7571918
	40	10	454219	7566753		100	30	450473	7571759
	10	1	453128	7568184		30	10	454335	7566629
	20	1	453163	7568215		50	20	454460	7566548
	80	30	453221	7568205		50	20	451130	7567465
	100	40	453264	7568215		30	10	451188	7567435
	50	20	453359	7568114		6	1	451273	7567556
	30	10	453460	7568044		10	2	451323	7567682
	30	10	453452	7567921		20	5	451823	7567799
	5	0.5	453315	7567867		30	10	451783	7567831
	40	10	453233	7567866		40	10	451970	7567541
	70	30	453153	7567861		40	10	452009	7567518
	40	10	452025	7567504		10	1	448759	7571935

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	10	1	448618	7571763		100	30	453689	7565760
	20	8	446134	7570958		100	5	454010	7565931
	60	8	446092	7570946		100	30	454095	7565897
	10	1	423064	7590350		100	4	453983	7565856
	10	1	421210	7591651		100	5	453835	7565888
	10	1	421899	7591310		500	10	453645	7565933
	30	10	421242	7591682		100	30	453362	7566105
	20	5	421198	7591708		100	3	452367	7566471
	30	5	421168	7591744		50	1	453184	7566175
	50	10	423263	7589924		50	5	453468	7566189
	20	5	423287	7589812		80	5	453407	7566246
	10	2	423425	7589587		80	5	453312	7566341
	5	0.5	423352	7589577		40	1	453158	7566481
	5	0.5	427814	7585335		50	2	452585	7566999
	50	40	446146	7570863		50	2	452501	7567075
	70	20	446040	7570341		50	3	453182	7566178
	20	5	446024	7570719		80	5	453124	7566066
	50	10	445915	7570861		50	1	453070	7565967
	500	5	448589	7568811		30	0.5	450692	7568236
	50	1	448493	7568967		50	0.5	443517	7575065
	100	5	451254	7572307		30	0.5	443432	7575326
	70	4	451218	7572455		50	1	443411	7575464
	100	20	451145	7572620		30	0.5	443436	7575585
	100	30	450936	7572631		30	0.5	443486	7575684
	500	30	452545	7566419		10	0.5	443604	7575568
	500	10	452699	7566332		10	0.5	443616	7575455
	500	10	452768	7566240		30	0.5	422863	7590397
	100	40	452842	7566152		100	1	422807	7590379
	20	1	450961	7567702		70	0.5	422534	7590457
	50	2	450844	7568405		70	0.5	422394	7590646
	100	2	450306	7571635		30	0.5	444816	7575041
	50	20	450373	7571353		50	1	444901	7574967
	50	3	450503	7571289		100	1	444953	7574695
	100	4	450333	7570707		100	20	444931	7574626
	90	5	450238	7570803		100	3	445120	7574539
	30	1	449894	7570982		100	20	444522	7574119
	100	4	453201	7565955		100	10	444277	7574252
	100	30	453282	7565935		100	20	443943	7574572
	100	30	453370	7565993		100	20	422441	7590880
	100	30	453508	7565989		100	0.5	421220	7591603
	100	3	453676	7565823		50	1	421130	7591567

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	20	1	421229	7591650		50	10	453156	7567251
	100	5	423042	7590369		20	1	453182	7567384
	50	1	423190	7590293		2	0.5	453430	7567517
	50	1	423888	7589485		10	0.5	453515	7567446
	6	0.5	428928	7584750		10	0.5	453536	7567339
	20	1	428974	7584549		10	0.5	453595	7567256
	50	1	428990	7584533		50	30	453639	7567186
	50	0.5	429050	7584503		40	20	453680	7567155
	60	6	454666	7566329		60	30	453725	7567089
	50	3	454771	7566440		10	1	453772	7567015
	30	2	454713	7566894		10	1	453973	7566862
	50	4	454640	7567058		50	20	454051	7566790
	30	3	454654	7567172		30	10	454088	7566709
	20	3	454729	7567148		30	10	454095	7566661
	40	3	454211	7567326		50	30	454162	7566645
	10	0.5	454438	7566736		50	30	454180	7566607
	40	2	454499	7566699		50	30	454219	7566573
	5	0.5	454584	7566548		10	0.5	451042	7569519
	100	6	454581	7566455		10	0.5	450923	7569629
	100	20	454538	7566377		30	5	450879	7569538
	100	20	454395	7566103		30	5	450895	7569501
	100	20	454310	7565976		5	0.5	450940	7569464
	20	1	451485	7567118		20	3	450964	7569429
	100	20	452274	7567381		50	10	450992	7569376
	100	20	452260	7567439		3	0.5	451028	7569210
	60	10	452406	7567435		20	2	451015	7569256
	60	10	452547	7567471		30	3	451055	7569197
	100	20	452630	7567631		30	3	451111	7569129
	10	1	454211	7565956		20	2	451125	7569063
	20	5	454107	7566052		20	2	450696	7568222
	1	0.5	451904	7571491		10	2	454092	7566187
	30	0.5	452016	7571559		50	20	454060	7566245
	50	1	452095	7571593		10	0.5	453910	7566416
	40	5	453873	7566452		40	20	454223	7566518
	20	5	453777	7566535		30	10	454303	7566492
	30	5	453742	7566619		30	10	454359	7566532
	10	1	453523	7566836		30	10	454389	7566480
	100	20	453501	7566901		20	5	454392	7566393
	100	20	453478	7566974		40	10	454510	7566324
	10	1	453305	7567228		20	2	454548	7566287
	10	2	453237	7567163		10	0.5	454314	7566217

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	10	0.5	454294	7566196		10	0.5	452066	7571340
	40	10	454252	7566145		20	1	446885	7570647
	7	1	454254	7566001		10	1	446885	7570647
	1	0.5	450693	7567699		40	3	446884	7570647
	1	0.5	451867	7568594		30	2	446883	7570648
	5	0.5	451908	7569036		10	0.5	446811	7570600
	20	1	451571	7569029		10	0.5	446768	7570664
	20	1	451571	7569029		10	0.5	446714	7570709
	1	0.5	451591	7569244		8	0.5	446557	7570755
	3	0.5	451519	7569080		8	0.5	446758	7570834
	10	0.5	451594	7569245		30	5	446851	7570892
	40	2	451578	7569273		50	10	446787	7571003
	10	0.5	451363	7569284		40	8	446547	7571103
	10	0.5	451042	7569521		30	5	446557	7571102
	10	0.5	451218	7569348		100	20	447745	7570716
	20	1	451042	7569521		30	10	445694	7573250
	10	0.5	451070	7569494		10	0.5	445720	7573415
	30	2	452013	7571353		20	2	445652	7573474
	20	1	452010	7571399		20	2	445614	7573485
	10	1	451954	7571431		3	0.5	445573	7573562
	30	3	451902	7571398		30	5	445441	7573721
	20	2	451853	7571360		10	1	445680	7574383
	20	2	451788	7571404		70	30	445711	7574356
	20	2	451718	7571381		50	20	445722	7574362
	50	10	451699	7571388		50	20	445710	7574329
	10	0.5	451683	7571184		50	20	445750	7574306
	10	0.5	451655	7571117		20	5	442890	7575512
	40	5	451644	7571088		20	5	442915	7575483
	2	0.5	451456	7570888		30	10	443004	7575404
	10	0.5	451432	7570874		30	10	443053	7575335
	20	1	450661	7567930		6	0.5	451350	7570856
	20	1	450798	7567837		10	0.5	451080	7571069
	20	1	450659	7567456		10	0.5	451118	7571126
	10	0.5	451401	7570504		40	5	451109	7571152
	40	2	451414	7570518		30	3	451103	7571247
	50	8	451451	7570527		7	0.5	451154	7571428
	10	1	451538	7570502		40	3	451181	7571487
	30	5	451599	7570492		10	0.5	451196	7571563
	20	2	451621	7570450		10	0.5	447238	7570692
	50	20	451698	7570444		30	5	447244	7570720
	70	20	451775	7570461		30	3	447274	7570767

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	10	1	446885	7570647		30	10	442903	7575882
	50	20	445755	7574265		50	20	442822	7575930
	50	20	445768	7574238		50	20	442393	7576120
	50	20	445769	7574229		30	10	442394	7576122
	40	20	445735	7574207		30	5	442394	7576123
	70	30	445697	7574211		80	30	442394	7576120
	30	10	445678	7574210		10	1	442392	7576118
	30	10	445655	7574179		40	10	421258	7591655
	40	20	445643	7574122		50	20	421240	7591231
	30	10	445616	7574073		50	20	421194	7591099
	30	10	445658	7574022		100	30	453744	7565672
	20	5	445725	7574036		100	30	453856	7565895
	50	30	445736	7574037		80	10	453890	7565832
	20	8	445738	7573967		100	20	453748	7565942
	30	10	445879	7573910		60	9	453598	7566031
	20	8	445955	7573874		60	10	453521	7566087
	50	30	445914	7573777		100	10	453254	7566309
	50	20	445916	7573717		80	5	453090	7566475
	50	20	445948	7573669		100	9	452999	7566599
	30	10	445989	7573575		100	10	452893	7566692
	30	10	446011	7573402		50	9	452610	7567269
	10	2	445973	7573410		100	8	452813	7567155
	10	2	445940	7573394		20	2	452845	7567024
	10	2	445932	7573361		500	20	452947	7566839
	10	1	445894	7573257		40	3	453033	7566750
	40	10	446003	7573212		100	10	453077	7566690
	50	20	421275	7591092		40	2	453160	7566582
	30	10	421496	7591657		50	5	453224	7566529
	40	20	421793	7591299		100	10	453297	7566441
	9	1	421857	7591296		100	10	453354	7566399
	20	2	443064	7575280		50	1	421896	7590941
	30	5	443258	7575271		40	10	421920	7591012
	50	20	443263	7575352		30	10	421771	7591312
	50	20	443177	7575405		20	5	423530	7590051
	50	20	443131	7575460		30	10	423215	7590010
	50	20	443086	7575522		5	1	423015	7589958
	50	20	443063	7575566		30	10	422940	7589875
	60	30	442956	7575641		30	10	422892	7589858
	40	20	442941	7575684		40	20	423131	7589972
	30	10	442983	7575723		30	3	431845	7581428
	10	1	442934	7575850		20	2	431841	7581431

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	20	3	450327	7570038		100	10	452184	7567282
	50	10	450391	7570021		100	10	452141	7567188
	10	2	450507	7570002		100	10	452115	7567190
	30	5	450567	7569972		100	10	452089	7567191
	50	20	450611	7569950		100	10	452057	7567208
	50	20	450633	7569887		100	10	452033	7567213
	30	10	450506	7569882		1	0.5	451409	7567470
	30	10	450454	7569896		100	10	451308	7567304
	40	2	448299	7570645		10	0.5	448274	7569042
	60	8	453745	7565576		10	0.5	448245	7569095
	100	20	453783	7566160		50	0.5	448230	7569130
	500	30	453840	7566105		100	8	446003	7573057
	1000	30	453898	7566069		70	2	446034	7573172
	50	1	451017	7567592		70	2	446007	7573205
	100	2	451082	7567631		3	0.5	446053	7573243
	500	2	451054	7567704		30	2	446154	7573289
	80	0.5	451288	7568025		9	0.5	446302	7573323
	500	10	451367	7568034		1	0.5	446171	7573678
	100	2	451416	7567987		3	0.5	446145	7573702
	3	0.5	451914	7568188		30	1	442425	7576017
	50	0.5	451948	7568213		50	1	421384	7591393
	50	0.5	452007	7568071		100	10	421214	7591266
	20	0.5	452031	7568028		100	10	421202	7591203
	5	0.5	452071	7567854		20	1	421211	7591082
	100	20	452072	7567817		40	5	421751	7591086
	50	5	452097	7567781		100	2	423206	7590042
	50	10	452138	7567764		20	0.5	423100	7590008
	50	5	452175	7567744		20	0.5	423082	7589993
	50	5	452243	7567731		20	0.5	423050	7589969
	50	5	452312	7567714		10	0.5	423005	7589909
	50	9	453419	7566352		50	5	452354	7567687
	50	3	453496	7566310		50	5	452405	7567569
	100	5	453547	7566290		10	0.5	452434	7567530
	100	5	453587	7566245		100	5	452452	7567500
	500	10	453721	7566201		50	2	452510	7567470
	50	5	452520	7567451		30	1	446185	7573718
	100	5	452447	7567401		500	5	446249	7573719
	500	20	452163	7567513		500	5	446270	7573790
	50	2	452130	7567487		500	5	446289	7573801
	10	0.5	452154	7567432		100	2	446296	7573839
	500	20	452162	7567377		5	0.5	446433	7573804

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3	60	2	446464	7573752		20	5	453487	7565850
	500	20	446445	7573737		20	5	453515	7565836
	500	20	446420	7573711		40	10	453550	7565800
	500	20	446358	7573710		5	0.5	452864	7566535
	500	20	446292	7573705		50	20	453510	7565954
	500	10	446270	7573646		10	0.5	453717	7565708
	500	10	446303	7573612		70	20	453753	7565653
	500	10	446337	7573569		1	0.5	450369	7567566
	500	10	446331	7573509		10	0.5	450110	7567783
	500	10	446360	7573469		5	0.5	450055	7567806
	500	10	446372	7573427		20	1	450432	7568528
	500	10	446391	7573390		90	60	450623	7568633
	500	10	446426	7573310		20	5	443637	7572792
	500	10	446478	7573111		50	0.5	447814	7569825
	500	10	446509	7573070		30	0.5	447778	7570021
	100	10	446549	7573038	*Rhynchosia bungarensis* P4	20	0.5	447805	7571160
	50	2	446582	7573003		6	0.5	446233	7571211
	90	2	442385	7576150		5	0.5	446480	7570867
	30	1	442409	7576053		5	0.5	446516	7570903
	70	50	453536	7565848		2	0.5	446522	7570935
	80	50	453570	7565747		1	0.5	446010	7572437
	50	30	453525	7565710		3	0.5	445723	7573283
	10	3	453340	7565793		3	0.5	445370	7573764
	7	0.5	453218	7565918		10	0.5	445399	7573796
	30	5	453156	7565916		5	0.5	445417	7573822
	1	0.5	452904	7566021		10	0.5	443506	7575141
	90	30	452893	7566093		2	0.5	443640	7575356
	4	0.5	452976	7566160		8	0.5	443890	7575336
	10	1	452643	7566656		8	0.5	443891	7575333
	4	0.5	452736	7566568		8	0.5	443886	7575328
	50	0.5	422967	7589865		2	0.5	443953	7575346
	20	0.5	423149	7589926		20	0.5	443988	7575358
	70	50	453694	7565692		5	0.5	445551	7574232
	50	30	453570	7565966		8	0.5	445570	7574256
	10	1	453395	7565939		10	0.5	445594	7574282
	30	10	453348	7565811		3	0.5	445633	7574309
	20	4	453377	7565830		1	0.5	429971	7584583
	5	0.5	453391	7565851		1	0.5	445449	7572816
	100	50	453389	7565818		6	0.5	443581	7572182
	100	50	453446	7565825		4	0.5	443558	7572168
	10	2	453444	7565851		4	0.5	443566	7572169

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Rhynchosia bungarensis P4	6	0.5	448195	7569940		30	1	444932	7571638
	1	0.5	445862	7571313		40	0.5	444968	7571580
	5	0.5	445840	7571301		3	0.5	445013	7571543
	2	0.5	445857	7571262		10	0.5	444900	7571622
	2	0.5	445859	7571231		1	0.5	444861	7571683
	1	0.5	445854	7571215		8	0.5	444799	7571656
	5	0.5	445852	7571167		5	0.5	444706	7571563
	1	0.5	445811	7571133		10	1	444651	7571477
	1	0.5	445786	7571093		20	1	444591	7571367
	2	0.5	445612	7570942		20	1	444526	7571260
	7	0.5	445608	7570928		2	0.5	453815	7567921
	5	0.5	445603	7570910		2	0.5	453852	7567858
	10	0.5	445596	7570881		3	0.5	453870	7567815
	7	0.5	445584	7570869		5	0.5	448734	7572670
	20	0.5	445566	7570843		4	0.5	446191	7571073
	10	0.5	445542	7570827		2	0.5	451529	7572164
	5	0.5	446178	7570962		60	1	443775	7575374
	10	0.5	446162	7570928		8	0.5	443873	7575351
	2	0.5	428015	7585699		3	0.5	443948	7575341
	1	0.5	427819	7585421		5	0.5	443975	7575347
	3	0.5	427787	7585286		3	0.5	444107	7575234
	6	0.5	427861	7585215		10	0.5	444105	7575213
	1	0.5	437188	7577185		3	0.5	444062	7575126
	5	0.5	446163	7570817		5	0.5	446169	7570763
	10	0.5	445449	7573871		3	0.5	446181	7570724
	20	0.5	445460	7573919		8	0.5	446221	7570646
	10	0.5	445455	7573996		20	1	446211	7570535
	30	1	445463	7574062		40	3	446236	7570436
	20	1	445467	7574089		30	2	446145	7570318
	10	1	445476	7574129		5	0.5	445934	7570777
	10	1	445515	7574196		5	0.5	443762	7574552
	10	0.5	445524	7570802		10	0.5	443793	7574624
	10	0.5	445505	7570772		10	0.5	443894	7574829
	10	0.5	445519	7570752		3	0.5	444005	7575013
	4	0.5	445480	7570714		30	1	444067	7575058
	5	0.5	445465	7570695		10	0.5	444111	7575137
	5	0.5	445470	7570668		30	1	444151	7575186
	4	0.5	445475	7570647		10	0.5	444261	7575321
	1	0.5	445254	7572096		5	0.5	444214	7575334
	1	0.5	445041	7572049		4	0.5	451172	7572038
	10	0.5	444914	7571668		100	10	445383	7570863

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
Rhynchosia bungarensis P4	10	4	445427	7570891		100	10	445391	7571709
	50	5	445458	7570912		50	10	445399	7571782
	100	10	445481	7570927		100	40	453963	7566184
	100	10	445499	7570957		100	30	453893	7566145
	100	10	445512	7570978		100	10	453854	7566199
	100	10	445482	7571006		30	5	453829	7566249
	100	10	445452	7571037		100	10	453803	7566295
	100	10	445414	7571113		100	30	453779	7566342
	30	3	445418	7571142		100	40	453754	7566409
	100	10	445407	7571235		20	0.5	443974	7575074
	100	10	445425	7571302		10	0.5	443859	7574884
	100	10	445438	7571341		2	0.5	443755	7574709
	100	10	445429	7571384					

Table N.2: Descriptions of Priority flora recorded in the survey area.

Species	Description	Habitat
Dicladanthera glabra P2 	Perennial spreading herb or shrub growing to approximately 0.6 m high. Flowers are white, from either April or August through to October (Western Australian Herbarium 1998-2015).	Along water course, near rock pools and in gorges.
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3 	Shrub or herb 0.2 m to 2 m high with pink/purple flowers (Western Australian Herbarium 1998-2015).	Drainage lines, creeks in hills or plains. Brown silty loam.
Sida sp. Barlee Range (S. van Leeuwen 1642) P3 	Spreading shrub to 0.5m high Yellow flowers in August.	Skeletal red soil pockets, steep slopes (Western Australian Herbarium 1998-2015).

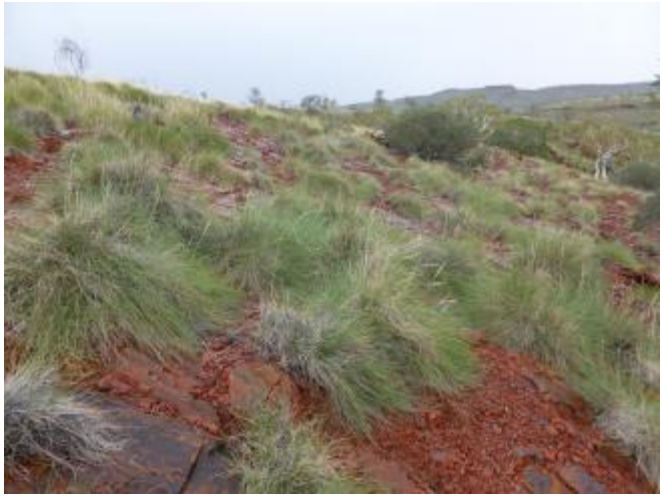
Species	Description	Habitat
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 	Hummock grass.	Rocky outcrops, breakaways, hillslopes and crests, and drainage lines.
Rhynchosia bungarensis P4 	Compact, prostrate shrub to 0.5 m high. Flowers yellow (Western Australian Herbarium 1998-2015).	Pebbly, shingle coarse sand amongst boulders. Banks of flow line in the mouth of a gully in a valley wall (Western Australian Herbarium 1998-2015).

Table N.3: Location of introduced flora recorded by Astron in the survey area.

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Acetosa vesicaria* (Ruby Dock)	1	0.5	420182	7591948		15	2	448963	7570308
	2	0.5	446409	7571250		50	30	450130	7570410
	2	0.5	428011	7585724		5	0.5	446934	7571503
	50	0.5	443668	7574385		2	0.5	448288	7570676
	3	0.5	444110	7575202		1	0.5	448341	7570663
	4	0.5	444270	7575325		20	2	450152	7570388
	3	0.5	422347	7591481		8	0.5	450249	7570359
	50	1	422333	7591857		1	0.5	447910	7571879
	6	0.5	444030	7575118		1	0.5	447931	7571925
**Aerva javanica* (Kapok Bush)	4	0.5	447702	7571132		1	0.5	447951	7571968
	1	0.5	447843	7571198		2	0.5	447959	7571999
	2	0.5	448439	7570905		10	0.5	447968	7572043
	2	0.5	446606	7572094		2	0.5	447949	7572085
	1	0.5	450035	7569766		2	0.5	447915	7572110
	1	0.5	450016	7569603		15	0.5	447903	7572126
	4	0.5	449835	7570010		20	1	447882	7572173
	1	0.5	449541	7570762		15	1	447863	7572209
	2	0.5	449515	7570726		25	0.5	447855	7572230
	10	1	449631	7570632		2	0.5	447882	7572270
	15	1	448920	7570267		4	0.5	448456	7572595
	1	0.5	451099	7570950		3	0.5	446981	7571745
	7	0.5	450945	7571365		4	0.5	447059	7571859
	10	0.5	450960	7571661		1	0.5	442477	7575784
	10	1	448696	7570456		2	0.5	449205	7569820
	25	1	448369	7570658		25	0.5	449160	7569745
	10	0.5	445252	7572109		15	0.5	449104	7569740
	3	0.5	439782	7577649		5	0.5	449005	7569747
	10	1	439853	7577587		5	0.5	449196	7569603
	10	1	446829	7571536		6	0.5	449725	7570300
	5	1	447655	7571187		1	0.5	448545	7569698
	5	1	448597	7570519		1	0.5	447867	7572286
	3	0.5	449125	7570209		3	0.5	448114	7572465
	6	1	448844	7569061		50	10	448093	7572504
	4	0.5	449107	7569850		1	0.5	447907	7571296
	2	0.5	449215	7569863		15	1	448491	7570926
	5	0.5	449447	7569880		50	1	448502	7570993
	5	0.5	449413	7569971		1	0.5	448511	7570888
	2	1	449053	7569957		10	0.5	448380	7570701
	3	0.5	448890	7569848		15	0.5	448349	7570668

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Aerva javanica* (Kapok Bush)	2	0.5	446621	7571556		50	0.5	445451	7572802
	1	0.5	446669	7571402		100	0.5	445495	7572750
	5	0.5	448711	7570286		50	0.5	447818	7571780
	3	0.5	445861	7571245		4	0.5	447950	7571967
	1	0.5	448538	7569698		9	0.5	447959	7571998
	3	0.5	444889	7571877		7	0.5	447967	7572049
	50	10	444865	7571704		25	0.5	447859	7572219
	10	2	448148	7571772		50	0.5	448126	7572426
	25	10	447911	7572156		50	0.5	446964	7571661
	2	0.5	435193	7580532		4	0.5	447041	7571821
	1	0.5	446405	7571276		1	0.5	442394	7575385
	25	2	450575	7570582		10	1	449215	7569816
	50	2	449720	7569598		10	0.5	449325	7569821
	10	0.5	451506	7572140		50	0.5	449341	7569827
	3	0.5	450981	7570328		25	0.5	449348	7569785
**Argemone ochroleuca* subsp. *ochroleuca* (Mexican Poppy)	50	0.5	447777	7571140		25	0.5	449261	7569737
	25	0.5	447753	7571114		10	0.5	449136	7569742
	5	1	446554	7571997		75	0.5	449920	7570434
	15	0.5	446383	7571576		10	0.5	449962	7570468
	1	0.5	449770	7570314		75	0.5	450047	7570522
	50	0.5	449703	7570399		1	0.5	447972	7571591
	20	0.5	449670	7570409		25	0.5	447858	7572198
	100	0.5	451115	7570678		15	0.5	447079	7571846
	75	0.5	451611	7570900		75	0.5	447916	7571463
	100	0.5	451465	7570944		20	0.5	447814	7571150
	50	0.5	451245	7571936		15	0.5	448497	7570955
	500	0.5	451100	7571838		100	0.5	448458	7570821
	100	0.5	451151	7571536		4	0.5	446594	7571888
	5	0.5	445926	7572439		1	0.5	446674	7571501
	50	0.5	446019	7572432		75	0.5	446741	7571385
	20	0.5	445942	7572656		4	0.5	446756	7571363
	100	0.5	445995	7572775		25	0.5	446566	7571591
	250	0.5	445812	7573011		4	0.5	445627	7571017
	50	0.5	445880	7572970		1	0.5	451398	7567699
	25	0.5	442495	7575358		50	0.5	451137	7568284
	250	0.5	440016	7575922		100	5	449326	7570496
	10	0.5	449199	7569857		2	0.5	450297	7569662
	10	0.5	449339	7569872		50	1	445174	7572080
	20	0.5	449392	7569982		5	0.5	451339	7567746
	75	0.5	450048	7570518		20	0.5	451177	7568070
	50	0.5	445369	7572807		250	1	451151	7568168

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Argemone ochroleuca* subsp. *ochroleuca* (Mexican Poppy)	500	2	451131	7568254		75	10	448527	7571615
	250	1	451032	7568336		75	5	448500	7571702
	10	1	447926	7571557		100	5	448689	7571505
	50	0.5	448023	7571729		10	0.5	446511	7571935
	100	0.5	437103	7577390		250	20	435017	7580609
	50	0.5	436970	7577650		250	20	435292	7580474
	20	0.5	437162	7577101		50	20	449791	7570277
	50	1	446354	7572341		250	10	450066	7569536
	10	0.5	446954	7572520		15	1	449750	7570318
	1000	0.5	448691	7568770		500	80	449883	7570240
	500	0.5	449069	7570303		1000	70	449941	7570197
	500	0.5	449283	7570432		100	10	450067	7569993
	500	0.5	449402	7570472		500	30	450065	7569881
	50	0.5	450935	7571322		250	5	450075	7569680
	500	0.5	451284	7572184		250	20	450119	7569505
	250	0.5	451528	7572417		250	20	450040	7569518
	500	0.5	451485	7572322		20	2	449835	7570009
	500	0.5	450897	7570922		250	10	448921	7570268
	500	0.5	450922	7570801		250	6	451107	7570673
	500	0.5	450434	7570569		2	0.5	451603	7570901
	25	0.5	451044	7568320		2	0.5	451402	7570939
	50	0.5	451047	7568436		1000	0.5	450975	7571498
	100	0.5	449360	7569702		100	5	450956	7571617
	75	0.5	443593	7574120		100	10	448774	7570408
	100	0.5	443532	7574072		100	8	447894	7570955
	100	0.5	442679	7574793		100	30	446609	7571202
	25	0.5	445756	7572158		3	0.5	445452	7571944
	250	0.5	446112	7572681		100	60	445990	7572569
	100	0.5	441229	7576381		500	20	446020	7572433
	100	0.5	444563	7573028		250	30	445938	7572582
	100	0.5	444788	7572864		2500	70	445905	7572893
	3	0.5	451068	7570222		1000	60	445915	7573016
	15	0.5	450958	7570356		2500	80	445755	7572985
**Bidens bipinnata* (Bipinnate Beggartick)	5	0.5	447939	7572017		1000	60	445680	7573076
	20	0.5	448568	7571265		100	40	445446	7573898
						100	30	445453	7573976
**Cenchrus ciliaris* (Buffel Grass)	250	20	435017	7580609		2500	90	445889	7572932
	100	10	435189	7580448		500	50	445985	7572532
	10	0.5	447896	7571305		250	20	443331	7574134
	75	1	448457	7571019		2500	90	442616	7574995
	75	10	448525	7571254		2500	90	442615	7574995

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass)	2500	90	442613	7574992		5000	10	446255	7572538
	100	20	438334	7576906		5000	10	446341	7572553
	10	0.5	438350	7576901		500	10	445961	7572563
	50	10	440456	7574765		500	10	445969	7572605
	10	0.5	440416	7574675		75	6	446000	7572738
	500	20	440463	7574542		5000	50	446009	7572823
	500	50	444291	7572856		2500	30	446006	7572881
	500	40	439288	7578216		250	10	446003	7572956
	500	2	438705	7578570		2500	50	446373	7572616
	250	50	444489	7572773		2500	50	446334	7572590
	100	30	436647	7578160		2500	50	446285	7572581
	250	50	439675	7575320		1000	20	446239	7572561
	100	10	439823	7575489		1000	20	446180	7572537
	100	10	439877	7575690		1000	20	446146	7572536
	1000	60	440026	7575771		1000	20	446118	7572536
	500	30	440096	7575895		100	10	446068	7572520
	1000	40	440151	7576014		100	10	446024	7572503
	1000	30	440141	7576077		15	6	442398	7575372
	100	10	442407	7573701		500	20	442384	7575409
	500	30	443276	7573293		500	30	442350	7575484
	500	30	444409	7572792		2500	30	442322	7575513
	100	10	449410	7569898		20	0.5	442449	7575581
	1000	20	449532	7569849		2500	30	442443	7575456
	10	0.5	448340	7570661		2500	30	442433	7575429
	500	10	445456	7572802		25	1	440392	7574845
	10	2	450095	7569873		50	1	440347	7574969
	5	0.5	448685	7569381		50	1	440355	7575008
	50	5	448902	7569417		250	3	440355	7575034
	100	5	448978	7569427		20	1	440366	7575054
	50	100	449020	7569633		20	1	440381	7575084
	250	20	448053	7571671		2500	30	440401	7575109
	100	5	447880	7572177		2500	30	440421	7575128
	100	5	447864	7572209		2500	30	440445	7575157
	75	0.5	447882	7572270		2500	30	440471	7575201
	75	0.5	448019	7572397		2500	30	440514	7575218
	75	0.5	448057	7572404		2500	30	440540	7575204
	250	0.5	448152	7572424		2500	30	440566	7575187
	10	0.5	448456	7572595		2500	30	440593	7575166
	50	0.5	447106	7571945		2500	30	440626	7575137
	500	10	447129	7571984		2500	30	440638	7575091
	500	10	445989	7572446		2500	30	440641	7575038

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass)	2500	30	440652	7574998		1000	10	449721	7570056
	20	1	440633	7574952		2500	30	449711	7570080
	50	3	440610	7574918		75	1	449647	7570151
	2500	30	440594	7574881		5000	30	449693	7570265
	1000	20	440568	7574839		50	1	449717	7570289
	250	5	440515	7574780		2500	30	449737	7570314
	1000	20	439973	7575922		2500	30	449752	7570335
	2500	30	439989	7575938		2500	30	443177	7573113
	100	2	440015	7575964		10	0.5	450104	7570088
	100	2	440058	7575995		15	5	449999	7570081
	100	2	440087	7576024		100	30	450010	7569908
	100	2	440109	7576042		10	1	450074	7569834
	1000	20	440130	7576055		1	0.5	450262	7569664
	500	5	448976	7569835		50	20	448550	7569475
	2500	30	448999	7569824		20	3	447876	7572127
	2500	30	449030	7569814		5	0.5	447880	7572308
	2500	30	449058	7569804		10	0.5	447926	7572355
	500	2	449115	7569796		15	1	448053	7572443
	1000	10	449139	7569799		4	0.5	447129	7571941
	1000	10	449175	7569811		25	5	447148	7571986
	250	2	449205	7569820		50	30	444377	7572754
	10	0.5	449299	7569812		75	20	444221	7572741
	500	10	449353	7569831		25	0.5	442747	7573430
	2500	30	449374	7569842		10	0.5	422774	7591327
	2500	30	449407	7569845		7	0.5	422641	7591250
	500	10	449436	7569848		1	0.5	426314	7587116
	5000	30	449300	7569555		75	1	434980	7580545
	5000	30	449325	7569534		5	0.5	435144	7580476
	100	2	449434	7569442		4	0.5	435206	7580387
	100	0.5	449498	7569384		75	4	434473	7580787
	2500	30	449595	7569320		100	5	434388	7581001
	50	1	450080	7569464		5	0.5	447746	7571223
	500	1	450079	7569516		25	0.5	447918	7571464
	2500	30	450090	7569572		6	0.5	447902	7571293
	75	2	450100	7569612		3	0.5	447822	7571160
	2500	30	450103	7569655		50	1	447767	7571087
	2500	30	450023	7569748		10	0.5	447736	7571085
	50	0.5	449871	7569859		10	0.5	448448	7570839
	2500	30	449808	7569911		500	30	443147	7573285
	2500	30	449795	7569936		15	1	446622	7572086
	250	2	449740	7570024		100	10	446712	7572180

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass)	25	1	446723	7572131		25	2	434331	7581070
	4	0.5	446625	7571926		75	10	448508	7571493
	1	0.5	446507	7571795		500	70	448599	7571662
	25	1	446726	7571480		500	70	448688	7571532
	25	1	446742	7571397		500	70	448664	7571393
	2	0.5	446919	7571188		250	20	446373	7571221
	25	0.5	435261	7580326		75	5	446461	7571272
	500	50	448750	7570333		250	20	435705	7580220
	500	2	447647	7571833		250	20	435844	7579967
	500	2	447406	7571878		500	70	435740	7579872
	2500	40	447365	7571904		500	50	435286	7580199
	5000	60	447364	7571904		500	50	435214	7580213
	10	0.5	449087	7568590		500	80	449725	7570317
	2500	20	449032	7568607		75	3	450070	7569456
	100	2	448991	7568633		250	80	449983	7569512
	50	0.5	437013	7578030		50	90	449991	7569586
	250	40	448130	7571669		500	70	449991	7569714
	250	70	448091	7571641		500	80	449872	7570035
	100	50	434653	7580794		250	70	449755	7570316
	250	10	435013	7580686		100	80	449807	7570301
	500	80	435113	7580616		100	70	450058	7569804
	250	30	435217	7580502		500	80	450029	7569597
	10	1	435781	7578588		1000	30	449835	7570009
	10	1	434190	7581058		1000	90	449833	7570280
	75	10	435532	7579212		250	40	449775	7570612
	100	10	427908	7585590		1000	80	449553	7570769
	50	5	437078	7577523		100	20	449634	7570620
	10	0.5	437170	7576959		250	6	451102	7570676
	250	1	451413	7572300		50	0.5	451476	7570942
	2	0.5	450211	7568834		10	0.5	451242	7570836
	100	10	449516	7569686		75	0.5	451219	7570863
	250	3	440244	7574919		250	30	451221	7570935
	250	2	440236	7574838		250	6	451102	7570676
	250	7	435446	7580355		2500	90	451100	7570952
	500	10	436500	7579459		5	0.5	451300	7571696
	1000	8	435474	7580016		1000	80	451268	7571717
	10	0.5	439958	7577485		1000	90	451269	7571759
	1000	10	439972	7577488		250	30	451286	7571819
**Cenchrus setiger* (Birdwood Grass)	500	30	435006	7580638		1000	90	450942	7571469
	500	50	435092	7580467		1000	0.5	450950	7571534
	250	20	434469	7580688		500	90	450977	7571685

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass)	250	70	451207	7571602		500	80	450096	7570153
	500	80	451130	7571423		100	9	450005	7570014
	500	70	447704	7570901		250	20	450096	7569873
	500	20	445960	7572477		250	10	450247	7570360
	500	50	445937	7572641		500	30	448663	7569132
	1000	50	445657	7573165		500	20	448702	7569080
	500	20	445402	7573809		250	10	448755	7569015
	100	70	445444	7573900		10	1	448690	7569255
	250	30	445556	7574245		50	1	448699	7569324
	100	20	445621	7571886		20	1	448690	7569353
	100	20	444287	7573096		50	5	448902	7569418
	2500	90	442896	7574467		100	5	448978	7569427
	2500	90	442459	7575280		2500	100	449060	7569488
	1000	40	442487	7575468		2500	100	449034	7569637
	500	30	442495	7575399		250	20	447982	7571598
	50	1	430134	7584739		250	20	448054	7571671
	1000	30	430009	7584900		2500	20	448254	7571805
	250	20	441403	7576158		500	10	447873	7571647
	1000	80	441059	7575020		500	10	447818	7571767
	500	3	438709	7578568		100	5	447932	7571926
	500	70	438751	7578651		75	0.5	447959	7571998
	250	80	444549	7572808		500	2	447968	7572043
	75	10	439838	7575581		25	0.5	447953	7572079
	1000	30	440148	7576095		75	0.5	447915	7572110
	1000	90	449053	7569504		500	20	447902	7572127
	1000	70	448932	7569832		500	20	447882	7572173
	1000	50	449178	7569856		250	0.5	448056	7572404
	250	30	449347	7569874		100	0.5	448372	7572541
	2500	60	449527	7569854		10	0.5	448456	7572595
	1000	80	449463	7569946		50	0.5	447106	7571946
	250	20	449120	7569931		500	0.5	447130	7571984
	1000	30	448970	7569927		5000	10	446257	7572538
	1000	100	448856	7569878		5000	10	446342	7572553
	1000	80	450202	7570251		500	10	445962	7572563
	1000	90	450144	7570155		500	10	445971	7572610
	500	70	450077	7570400		75	6	446000	7572737
	5	0.5	448336	7570659		5000	40	446007	7572822
	100	10	445231	7572796		2500	30	446006	7572881
	500	30	445319	7572814		250	10	446002	7572956
	500	10	445450	7572801		2500	50	446373	7572617
	50	10	450112	7570291		2500	50	446333	7572590

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass)	2500	50	446285	7572581		500	5	448976	7569835
	1000	20	446239	7572562		2500	30	448999	7569823
	1000	20	446180	7572538		2500	30	449030	7569814
	1000	20	446146	7572536		2500	30	449058	7569804
	1000	20	446118	7572536		500	2	449113	7569795
	100	10	446067	7572520		1000	10	449139	7569799
	100	10	446024	7572503		1000	10	449175	7569811
	500	30	442381	7575413		250	2	449205	7569820
	500	30	442350	7575483		10	0.5	449245	7569804
	2500	30	442321	7575514		10	0.5	449294	7569811
	20	0.5	442449	7575579		500	10	449354	7569831
	2500	30	442444	7575455		2500	30	449374	7569841
	2500	30	442434	7575429		2500	30	449407	7569845
	1	0.5	429920	7584601		500	10	449436	7569848
	4	0.5	440420	7574689		5000	30	449300	7569555
	25	1	440347	7574969		5000	30	449325	7569534
	15	0.5	440367	7575053		100	2	449434	7569443
	20	1	440381	7575084		50	0.5	449499	7569384
	2500	30	440401	7575108		2500	30	449595	7569320
	2500	30	440421	7575128		50	1	450080	7569463
	2500	30	440445	7575157		50	1	450080	7569515
	2500	30	440471	7575200		2500	30	450090	7569572
	2500	30	440514	7575218		75	2	450101	7569612
	2500	30	440539	7575204		2500	30	450103	7569654
	2500	30	440566	7575187		2500	30	450023	7569748
	2500	30	440593	7575166		50	0.5	449871	7569859
	2500	30	440627	7575137		2500	30	449808	7569911
	2500	30	440638	7575091		2500	30	449795	7569936
	2500	30	440641	7575038		250	2	449740	7570024
	2500	30	440652	7574998		1000	10	449721	7570056
	10	0.5	440631	7574951		2500	30	449711	7570080
	50	3	440610	7574918		75	1	449647	7570151
	2500	30	440594	7574882		5000	30	449693	7570265
	1000	20	440569	7574838		50	1	449717	7570288
	250	5	440516	7574778		2500	30	449736	7570314
	1000	20	439973	7575922		2500	40	443178	7573113
	2500	30	439989	7575938		15	30	450151	7570339
	100	2	440015	7575963		75	80	450157	7570277
	100	2	440087	7576024		100	90	450127	7570073
	100	2	440109	7576042		75	1	450105	7570092
	1000	20	440130	7576055		75	40	449998	7570081

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass)	100	60	450073	7569835		500	2	447646	7571834
	20	1	450263	7569664		1000	2	447406	7571878
	100	70	450202	7570085		5000	40	449031	7568606
	100	40	448216	7571743		250	5	448990	7568633
	75	70	448276	7571812		100	1	437014	7578029
	75	40	447823	7571645		100	20	447962	7571670
	50	10	447938	7572019		500	30	448082	7571771
	25	8	447877	7572126		500	30	448201	7571814
	20	2	447880	7572306		500	80	448273	7571680
	50	3	447843	7571651		500	80	448195	7571676
	25	4	447148	7571985		250	70	448013	7571617
	50	30	444376	7572755		500	50	434620	7580853
	250	10	441409	7574828		50	20	435027	7580450
	100	40	422774	7591326		250	30	434967	7580681
	500	10	434977	7580550		10	1	434193	7581066
	500	20	435159	7580438		100	20	435544	7579243
	500	50	435218	7580391		100	20	427936	7585632
	500	10	434475	7580785		500	50	428071	7585778
	2500	20	434388	7581002		25	1	437137	7577257
	50	2	447709	7571134		100	10	437118	7577363
	10	0.5	447916	7571458		100	0.5	437094	7577455
	3	0.5	447902	7571293		100	30	436929	7577692
	8	0.5	447822	7571159		500	80	446452	7572417
	10	0.5	447767	7571087		100	80	446364	7571261
	75	10	447737	7571084		1000	4	451368	7572256
	50	10	448449	7570840		500	5	450800	7571009
	2	0.5	448484	7570932		500	4	450836	7570706
	15	0.5	448522	7571037		5000	80	449715	7570683
	250	70	448560	7571246		1000	70	449843	7569413
	500	20	443147	7573283		1000	60	449769	7569500
	15	1	446623	7572084		500	20	434901	7580616
	500	80	446712	7572181		500	10	434453	7580923
	1	0.5	446860	7572269		500	20	435488	7580272
	250	50	446751	7572171		1000	20	436733	7579259
	8	0.5	446535	7571600		1000	30	436661	7578665
	75	2	446660	7571510		1000	20	437054	7578294
	100	10	446716	7571467		5000	30	435474	7580017
	500	60	446742	7571395		250	1	445857	7572317
	3	0.5	446935	7571254		1000	10	439972	7577488
	25	1	446923	7571186		100	40	451617	7572300
	5000	70	435260	7580325		75	20	451519	7572184

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
**Chloris barbata* (Purpletop Chloris)	10	0.5	434531	7580741		1	0.5	422544	7591408
	50	2	434476	7580785		50	0.5	422654	7591370
	10	0.5	434883	7580581		100	1	422696	7591378
	10	1	434635	7580822		8	0.5	450125	7570119
	15	0.5	435012	7580667		6	0.5	450247	7569677
	5	0.5	434601	7580905		15	0.5	448150	7572471
**Citrullus colocynthis* (Colocynth)	1	0.5	421410	7591675		100	0.5	451063	7568451
						100	0.5	451098	7568517
**Cynodon dactylon* (Couch Grass)	1	0.5	435008	7580543		20	0.5	434798	7580708
	1	0.5	434979	7580549		20	0.5	434714	7580776
	50	0.5	435106	7580496		25	0.5	435476	7579997
	5	0.5	434991	7580528		50	0.5	435855	7579727
	1	0.5	434611	7580627		100	0.5	435475	7580018
	3	0.5	434974	7580661	**Passiflora foetida* (Stinking Passion Flower)	2	0.5	435016	7580543
	20	0.5	434683	7580802		2	0.5	434979	7580547
	20	0.5	434636	7580860		4	0.5	434631	7580614
**Echinochloa colona* (Awnless Barnyard Grass)	1	0.5	422757	7591364		1	0.5	434986	7580675
						1	0.5	434670	7580836
					**Setaria verticillata* (Whorled Pigeon Grass)	1	0.5	422757	7591364
**Flaveria trinervia* (Speedy Weed)	2	0.5	448300	7572550		1	0.5	448422	7572572
	1	0.5	427972	7585689		1	0.5	448671	7571458
	2	0.5	427872	7585529		1	0.5	451164	7572044
	5	0.5	427830	7585464		10	0.5	451502	7570950
	2	0.5	427817	7585369		8	0.5	429961	7584573
	1	0.5	439976	7577485		75	1	429996	7584848
	1	0.5	422665	7591243		5	0.5	435071	7580074
**Lactuca serriola* (Prickly Lettuce)	10	0.5	434531	7580924		10	1	447598	7570907
	5	0.5	434634	7580593		4	0.5	450253	7569643
	25	0.5	434603	7580569		10	0.5	434473	7580935
	5	0.5	434977	7580634		10	0.5	434647	7580564
	5	0.5	434504	7580894		15	0.5	434822	7580515
**Malvastrum americanum* (Spiked Malvastrum)	20	0.5	435595	7579923		15	0.5	434997	7580656
	5	0.5	430133	7584740		3	0.5	451494	7572117
	2	0.5	429905	7584560		5	0.5	451065	7570231
	50	5	430002	7584886	**Sonchus oleraceus* (Common Sowthistle)	1	0.5	447925	7572382
	20	0.5	422775	7591327		1	0.5	448035	7572439
	5	0.5	422529	7591459		25	0.5	448099	7572458
	25	0.5	435113	7580494		4	0.5	434584	7580618
	50	0.5	435185	7580420		1	0.5	451390	7572274

Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)	Species	Estimated abundance	Density (%)	Easting (mE)	Northing (mN)
	250	0.5	435261	7580322		3	0.5	451454	7572350
	50	0.5	435060	7580633		5	6	434453	7580821
**Vachellia farnesiana* (Mimosa Bush)	2	0.5	435022	7580586		20	1	434388	7580999
	3	0.5	435076	7580505		6	4	435223	7580292
	5	1	435211	7580422		6	7	435211	7580277
	1	0.5	434429	7580628		4	0.5	422507	7591460
	1	0.5	435763	7579887		1	1	422564	7591456
	1	0.5	435659	7579868		20	10	422654	7591369
	6	1	435582	7579941		5	1	422696	7591378
	4	1	435200	7580242		15	5	434422	7580958
	3	0.5	430117	7584696		3	1	434919	7580496
	1	0.5	431288	7583413		3	1	435216	7580280
	3	0.5	422774	7591328		3	0.5	434996	7580629
	1	0.5	426317	7587114		5	2	435151	7580565
	7	0.5	435091	7580494		5	0.5	434821	7580685
	6	0.5	435098	7580497		2	0.5	435469	7580130
	1	0.5	435140	7580477		9	1	435750	7579655
	4	1	435170	7580464		10	0.5	436498	7578990
	4	0.5	435159	7580438		6	0.5	436753	7578731
	3	0.5	435218	7580393		10	0.5	435475	7580017
	4	1	435210	7580289					

Table N.4: Description of introduced flora recorded in the survey area.

Species	Description	Habitat
**Aerva javanica* (Kapok Bush) 	Short-lived, soft-wooded perennial, broad-leaved, multi-stemmed, erect or diffuse herbs, up to 1.6 m high with white flowers between January and October (Western Australian Herbarium 1998-2015).	Outcrops, coastal areas, in rocky or stony soil, gravelly soil, sand, loam, clay; occupying sand-dunes; floodplains; river-banks; creeklines; drainage-lines; and growing in disturbed native vegetation (Western Australian Herbarium 1998-2015).
**Acetosa vesicaria* (Ruby Dock) 	An erect, stout, fleshy, hollow-stemmed annual herb between 0.2 and 1.0 m high with succulent ovate to triangular leaves, 5-11 cm long. It has inconspicuous pinkish red flowers between July and September, and inflated winged pink-red fruit valves (^Hussey et al. 2007, Western Australian Herbarium 1998-2015).	Commonly occurs on sandy alluvial and gravelly ironstone soils; along roadsides and in disturbed areas (Western Australian Herbarium 1998-2015).
**Argemone ochroleuca* (Mexican Poppy) 	Erect, glaucous annual herb. 0.2 m to 1 m high, spiny with white/cream-yellow flowers (Western Australian Herbarium 1998-2015).	Sandy soils, red-brown clay loam. Creek edges, riverbanks, roadsides (Western Australian Herbarium 1998-2015).

Species	Description	Habitat
**Bidens bipinnata* (Bipinnate Beggartick) 	An erect annual herb growing to 1 m high. Produces yellow flowers from March to September (Western Australian Herbarium 1998-2015).	Occurs in a variety of soils including alluvium, clay, loam over sandstone and limestone. Habitat preferences include rivers, creeks, coastal areas and rocky hillsides (Western Australian Herbarium 1998-2015).
**Cenchrus ciliaris* (Buffel Grass) 	Buffel Grass is a tufted or sometimes stoloniferous perennial grass between 0.2 m and 1.5 m in height with purple, ciliate flowers between February and October (Western Australian Herbarium 1998-2015).	Buffel Grass occurs on floodplains creeklines, river edges, and in many Pilbara vegetation types
**Cenchrus setiger* (Birdwood Grass) 	An erect, tussocky stoloniferous perennial grass to 0.5 m high. Cream-purple flowers (Western Australian Herbarium 1998-2015).	Commonly occurs on sandy, rocky, stony loam, clay and wet soils; often in floodplains and disturbed areas such as graded roadsides (Western Australian Herbarium 1998-2015).

Species	Description	Habitat
**Chloris barbata* (Purpletop Chloris) 	Annual or perennial (short-lived), grass-like or herb, between 0.4 m and 1.1 m high. It has purple flowers in February or between April and October (Western Australian Herbarium 1998-2015).	Occurs on white or red sand, loam, and black clay, often on sand dunes and river levees (Western Australian Herbarium 1998-2015).
**Citrullus colocynthis* (Colocynth) 	A trailing perennial herb or climber with yellow flowers between January and October (Western Australian Herbarium 1998-2015).	Commonly occurs on sandy, rocky, stony loam, clay and wet soils. Often found on disturbed areas and floodplains (Western Australian Herbarium 1998-2015).
**Cynodon dactylon* (Couch Grass) 	Rhizomatous or stoloniferous prostrate perennial grass, 0.05 m to 0.3 m high. Flowers green-purple from June to February (Western Australian Herbarium 1998-2015).	Sand, loam and clay soils (Western Australian Herbarium 1998-2015).

Species	Description	Habitat
**Echinochloa colona* (Awnless Barnyard Grass) 	A tufted annual grass between 0.2 m and 0.9 m high. It has a green/purple inflorescence between February and July (Western Australian Herbarium 1998-2015).	Occurs on black sand and black clay, near watercourses and swamps (Western Australian Herbarium 1998-2015).
**Flaveria trinervia* (Speedy Weed) 	An erect annual herb, with ovate leaves. It has yellow flowers clustered to form a dense inflorescence (Western Australian Herbarium 1998-2015).	Occurs in a variety of soils, particularly sandy and clayey sites. Typically occurs in drainage lines (Western Australian Herbarium 1998-2015).
**Lactuca serriola* (Prickly Lettuce) 	Erect annual or biennial herb, between 0.4 and 2 m high. Yellow flowers between October and February. It has prickly stems and prickly, deeply lobed leaves (Hussey et al. 2007, Western Australian Herbarium 1998-2015).	Occurs in a variety of habitats including roadsides, gardens, cultivated fields and disturbed sites (Western Australian Herbarium 1998-2015).

Species	Description	Habitat
**Malvastrum americanum* (Spiked Malvastrum) 	An erect perennial herb to 1.3 m high. Produces yellow-orange flowers from April to July (Western Australian Herbarium 1998-2015).	Occurs in a variety of habitats and soils (Western Australian Herbarium 1998-2015).
**Passiflora foetida* (Stinking Passion Flower) 	Woody climber (vine with an unpleasant smell) to 9 m high. Flowers cream-white-blue, February to November (Western Australian Herbarium 1998-2015).	Coastal areas, river and creek banks (Western Australian Herbarium 1998-2015).
**Setaria verticillata* (Whorled Pigeon Grass) 	Loosely tufted annual, grass-like or herb, 0.1 m to 1.3 m high. Flowers December to June (Western Australian Herbarium 1998-2015).	Sand, clay and loam soils (Western Australian Herbarium 1998-2015).

Species	Description	Habitat
**Sonchus oleraceus* (Common Sowthistle) 	An erect annual or short-lived perennial herb to 1.5 m high. Its yellow flowers bloom throughout the whole year. Leaves are generally flaccid and are either weakly prickled or not at all (Hussey et al. 2007, Western Australian Herbarium 1998-2015).	**S. oleraceus* occurs in a variety of soils, it is a weed of waste places and disturbed ground (Western Australian Herbarium 1998-2015).
**Vachellia farnesiana* (Mimosa Bush) 	Erect, spreading, thicket-forming, thorny tree or shrub, to 4 m high, bark dark grey, rough; leaves pinnate. Yellow flowers from June to August (Western Australian Herbarium 1998-2015).	Stony sandy, clay or loam soils and gravel. In low-lying areas, river and creek banks and disturbed sites (Western Australian Herbarium 1998-2015).

^Hussey, B, Keighery, G, Dodd, J, Lloyd, S & Cousens, R 2007, Western Weeds: *A guide to the weeds of Western Australia*, 2nd edn., The Weed Society of Western Australia, Perth.

Table N.5: Locations of previously recorded Priority flora (Rio Tinto 2014, Biota 2012, Biota 2007, Biota 2006b). Note: ^ symbol indicates data presented is not modified from the source; some population estimates remain unavailable, as indicated by blank cells.

Species	Estimated abundance/density	Easting (mE)	Northing (mN)
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301) P3 (Biota 2012)	NR	434365	7579778
	NR	435760	7578926
	NR	432258	7581095
	NR	429910	7584159
	NR	429910	7584159
	30	435718	7578812
	18	435785	7578967
	NR	432516	7581258
	frequent	432258	7581095
	NR	429910	7584159
	NR	435761	7578992
	30	432505	7581246
	1	435743	7578912
	1	435785	7578967
	30	435748	7578836
	5	447848	7571729
	11	435725	7578942
	NR	435748	7578975
	3	435744	7578999
	13	447848	7570980
	1	435718	7578812
	1	429990	7584146
	1	432516	7581258
	1	429928	7584126
Rhynchosia bungarensis P4 (Biota 2012) (originally recorded in 2006 and reported in Biota 2007)	1	427868	7585551
	1	427949	7585653
	1	427953	7585675
	1	428002	7585721
Rhynchosia bungarensis P4 (Biota 2007)	scattered	442758	7573529
	4; scattered	443615	7575293
	scattered	443713	7574553
	20+	443755	7575363
	scattered	443907	7575108
	scattered	443935	7574996
	scattered	443940	7575123
	scattered	443959	7575328
	7	444102	7575015

Species	Estimated abundance/density	Easting (mE)	Northing (mN)
Rhynchosia bungarensis P4 (Biota 2007)	scattered	444110	7575211
	3	444209	7575111
	3	444276	7575345
	1	444338	7575354
	10	444352	7575419
	1	444373	7575469
	scattered	444601	7575058
	1	444669	7574963
	1	427868	7585551
	1	427949	7585653
	1	427953	7585675
	1	428002	7585721
	1	436882	7578061
	scattered	440147	7576079
	1	448227	7571709
	3	448500	7570100
	1	448554	7570090
	1	448616	7570075
	1	448773	7568723
	1	449324	7570042
	1	449384	7570043
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 (Biota 2012)	500	422332	7590721
	50	422436	7590877
	500	422303	7590703
	1	422247	7591607
	12	422190	7591632
	50	422155	7591678
	30	422160	7591814
	35	422141	7591817
	6	422192	7591825
	2	422220	7591777
	10	422187	7591774
	50	422140	7591716
	50	422222	7591722
	1	422242	7591707
	30	422237	7591681
	35	422220	7591676
	35	422196	7591676
	50	422180	7591677

Species	Estimated abundance/density	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 (Biota 2012)	60	422141	7591673
	60	422101	7591672
	8	422189	7591625
	25	422211	7591627
	25	422238	7591628
	50	422248	7591606
	30	422261	7591569
	25	421924	7591764
	35	422090	7591820
	50	422055	7591672
	50	422032	7591674
	50	422006	7591681
	70	422001	7591663
	70	422000	7591624
	50	422031	7591640
	44	421951	7591829
	45	421958	7591731
	20	421972	7591707
	5	421948	7591703
	14	421926	7591696
	6	421953	7591661
	10	421959	7591657
	18	421922	7591830
	3	421910	7591827
	11	421857	7591762
	20	421910	7591766
	35	421960	7591760
	5	422045	7591163
	6	421968	7591118
	10	422012	7591138
	200	421894	7591129
	100	421906	7591066
	100	421908	7591015
	1	421907	7590982
	30	421767	7590955
	100	421779	7590996
	20	421565	7591736
	10	421555	7591709
	11	421567	7591803

Species	Estimated abundance/density	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 (Biota 2012)	18	421562	7591782
	200	421408	7591023
	100	421271	7591062
	100	421192	7591080
	NR	431629	7581523
	NR	431629	7581523
	10	431547	7581711
	50	422453	7590884
	300	431852	7581903
	10000	431814	7581733
	500	431643	7581534
	NR	431629	7581523
	20	431677	7581612
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 (Biota 2007)	scattered	422680	7591604
	scattered	423110	7590270
	scattered	423177	7590193
	scattered	423252	7590108
	scattered	423566	7589901
	scattered	443289	7575189
	scattered	443382	7575110
	scattered	443405	7575359
	scattered	443420	7575256
	scattered	443461	7575217
	scattered	443490	7574933
	scattered	443627	7574753
	scattered	443640	7572772
	scattered	443708	7572742
	scattered	443792	7575743
	scattered	444051	7574810
	scattered	444118	7574730
	scattered	444126	7574951
	scattered	444239	7574978
	scattered	444241	7574898
	scattered	444255	7574817
	scattered	444324	7574862
	scattered	444325	7574862
	scattered	444329	7574963
	scattered	444403	7574915
	scattered	444411	7574835

Species	Estimated abundance/density	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 (Biota 2007)	scattered	444446	7574661
	scattered	444481	7574857
	scattered	444489	7575519
	scattered	444506	7574550
	scattered	444507	7574826
	scattered	444700	7575300
	scattered	444736	7574812
	scattered	444746	7574924
	scattered	444873	7575134
	scattered	427463	7585842
	scattered	427463	7585873
	scattered	427500	7585961
	scattered	427506	7585937
	scattered	427521	7585950
	scattered	427562	7585910
	scattered	427673	7585839
	scattered	427687	7585813
	scattered	427707	7585804
	scattered	433135	7580056
	scattered	433306	7579994
	scattered	436569	7577380
	scattered	436654	7577274
	scattered	436720	7577395
	scattered	436760	7577146
	scattered	436782	7577144
	scattered	440988	7573806
	scattered	446968	7571063
	scattered	446991	7571043
	scattered	447033	7572526
	scattered	447035	7572377
	scattered	447081	7572577
	scattered	447082	7570999
	scattered	447095	7572323
	scattered	447098	7572607
	scattered	447104	7572414
	scattered	447107	7572393
	scattered	447167	7572495
	scattered	447175	7572422
	scattered	447220	7572320

Species	Estimated abundance/density	Easting (mE)	Northing (mN)
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 (Biota 2007)	scattered	447235	7572452
	scattered	447236	7572412
	scattered	447281	7572321
	scattered	447302	7572308
	scattered	448398	7570140
	scattered	448727	7570035
	scattered	448728	7569906
	scattered	448734	7569927
	scattered	449083	7568827
	scattered	449130	7568808
	scattered	449137	7568781
	scattered	449146	7568835
	scattered	449322	7568702
	scattered	449578	7568624
	scattered	449703	7568713
	scattered	449729	7568626
	scattered	449869	7568629
	scattered	449876	7568972
	scattered	449893	7568835
	scattered	449927	7568833
	scattered	449953	7568832
	scattered	449974	7568972
	scattered	450046	7568970
	scattered	450125	7568961
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) P3 (Biota 2006b)	patch	421098	7591272
	scattered	421433	7591110
	scattered	421497	7591075
	scattered	421609	7591022
	scattered	421645	7590992
	scattered	421997	7590812
	scattered	422051	7590780
	scattered	422244	7590807
	scattered	422474	7591727
	scattered	422613	7591671

Table N.6: Locations of weed species previously recorded within the survey area (Biota 2012, Biota 2007). Note: ^ symbol indicates data presented is not modified from the source; some population estimates remain unavailable, as indicated by blank cells.

Species	Abundance	Easting (mE)	Northing (mN)
**Aerva javanica* (Kapok Bush) (Biota 2012; 2007)	15	446927	7571451
	3	446941	7571475
	5	446949	7571431
	2	446950	7571446
	1	446955	7571485
	10	447111	7571169
	1	448582	7570469
	scattered	448761	7570414
	scattered	448999	7570266
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	common	441243	7576118
	scattered	441619	7575096
	scattered	441683	7575705
	scattered	441767	7575133
	scattered	441796	7575602
	scattered	442065	7575553
	scattered	443343	7573420
	1	443545	7573663
	1	443592	7574307
	1	443949	7573150
	1	444210	7573575
	scattered	444254	7573971
	scattered	444275	7573661
	1	444330	7573105
	scattered	444397	7573232
	very scattered	444469	7572999
	scattered	444497	7573696
	scattered	444557	7572948
	scattered	444627	7573038
	1	444672	7573130
	1	444699	7572884
	scattered	444879	7572987
	scattered	444979	7572873
	scattered	445025	7572940
	common	445083	7572830
	common	445122	7572704
	scattered	445148	7572930
	scattered	445164	7572578

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	scattered	445274	7572952
	scattered	445283	7572411
	scattered	445345	7572867
	scattered	445468	7572877
	common	445542	7572992
	scattered	445573	7572862
	scattered	437217	7579146
	scattered	437224	7578500
	scattered	437224	7579163
	scattered	437294	7579232
	scattered	437310	7579290
	scattered	437321	7579315
	scattered	437346	7579343
	scattered	437355	7578348
	scattered	437360	7578543
	scattered	437388	7578574
	100	437414	7579097
	scattered	437428	7579318
	40	437448	7579026
	scattered	437480	7579060
	scattered	437521	7578991
	scattered	437535	7578816
	scattered	437579	7578961
	scattered	437581	7578718
	scattered	437595	7578500
	dense	437627	7578750
	scattered	437678	7578835
	scattered	437689	7578875
	scattered	437730	7579059
	scattered	437735	7578974
	dense	437739	7579100
	scattered	437742	7579130
	scattered	437760	7578988
	scattered	437772	7578578
	scattered	439730	7576282
	scattered	439923	7576158
	scattered	439963	7576192
	scattered	439967	7576265
	scattered	439995	7576162
	scattered	439997	7576323

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	scattered	440030	7576259
	scattered	440043	7576409
	scattered	440044	7575921
	scattered	440071	7576451
	30	440086	7576083
	scattered	440088	7575821
	scattered	440094	7576000
	scattered	440095	7576367
	200	440104	7576253
	scattered	440122	7575871
	30	440132	7576437
	scattered	440135	7576045
	scattered	440147	7576079
	scattered	440150	7575909
	150	440152	7576348
	scattered	440169	7576480
	300	440172	7576244
	scattered	440193	7575994
	scattered	440203	7576162
	scattered	440212	7576639
	scattered	440217	7576013
	scattered	440232	7576716
	scattered	440236	7576213
	1	440257	7576623
	scattered	440273	7576295
	1	440278	7576651
	300	440291	7576354
	5	440303	7576691
	scattered	440307	7576809
	dense	440312	7576326
	scattered	440324	7576209
	scattered	440328	7576850
	scattered	440331	7576361
	scattered	440350	7576900
	scattered	440352	7576776
	scattered	440355	7576242
	scattered	440375	7576274
	scattered	440376	7576940
	100	440383	7576701
	scattered	440396	7576451

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	scattered	440399	7576875
	scattered	440400	7576965
	dense	440402	7576314
	scattered	440438	7576374
	50	440442	7576677
	20	440455	7576556
	scattered	440456	7576413
	20	440472	7576739
	scattered	440489	7576467
	20	440529	7576709
	50	440551	7576853
	scattered	440557	7576590
	1	440569	7576866
	45	440576	7576751
	scattered	440582	7576635
	scattered	440606	7576669
	scattered	440624	7576699
	50	440635	7576819
	scattered	440661	7576775
	scattered	440684	7576795
	scattered	440714	7576782
	scattered	440813	7576458
	scattered	440885	7576434
	scattered	440892	7576335
	scattered	440919	7576374
	scattered	441118	7575625
	scattered	441283	7574967
	scattered	441651	7575554
	scattered	442070	7575042
	scattered	442071	7575042
	scattered	442097	7575083
	scattered	442115	7575118
	scattered	442150	7575144
	scattered	442180	7575197
	scattered	442253	7575309
	scattered	442297	7575368
	scattered	442337	7575445
	scattered	442341	7575457
	scattered	442365	7575312
	scattered	443509	7573625

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	scattered	444579	7572812
	scattered	446945	7571774
	scattered	446950	7571446
	dense	446953	7571925
	very scattered	446955	7571229
	scattered	446956	7571434
	scattered	446957	7571971
	10	446960	7571377
	scattered	446960	7571719
	very scattered	446961	7571361
	scattered	446963	7571513
	scattered	446969	7571564
	scattered	446977	7571822
	scattered	447029	7571210
	scattered	447032	7571866
	scattered	447033	7571749
	scattered	447034	7571442
	dense	447035	7571837
	scattered	447035	7571921
	scattered	447036	7571538
	scattered	447039	7571682
	scattered	447094	7571705
	scattered	447097	7571449
	scattered	447097	7571965
	scattered	447099	7571983
	scattered	447100	7571283
	scattered	447100	7571455
	scattered	447102	7571858
	scattered	447102	7571901
	scattered	447102	7571934
	scattered	447105	7571479
	scattered	447105	7571667
	scattered	447106	7571237
	scattered	447106	7571259
	scattered	447106	7571360
	scattered	447106	7571787
	dense	447111	7571629
	scattered	447162	7571963
	scattered	447163	7571800
	dense	447164	7571916

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	scattered	447170	7571760
	scattered	447171	7571670
	dense	447171	7571881
	scattered	447172	7571291
	scattered	447173	7571254
	scattered	447177	7571837
	dense	447189	7571402
	scattered	447189	7571471
	scattered	447211	7571786
	scattered	447217	7571735
	scattered	447221	7571201
	scattered	447225	7571285
	scattered	447227	7571229
	scattered	447227	7571613
	scattered	447227	7571643
	dense	447227	7571857
	scattered	447229	7571834
	scattered	447231	7571383
	scattered	447231	7571931
	scattered	447232	7571768
	scattered	447234	7571790
	dense	447235	7571899
	scattered	447236	7571255
	scattered	447294	7571723
	scattered	447295	7571284
	dense	447296	7571841
	scattered	447297	7571326
	scattered	447298	7571468
	scattered	447299	7571560
	scattered	447299	7571775
	scattered	447300	7571599
	scattered	447302	7571914
	dense	447306	7571888
	scattered	447366	7571300
	scattered	447461	7571251
	scattered	447483	7571237
	scattered	447499	7571209
	scattered	447565	7571177
	dense	447586	7571167
	scattered	447633	7571134

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	scattered	447664	7571121
	scattered	447688	7571110
	scattered	447768	7571021
	scattered	447812	7570998
	scattered	447890	7570943
	scattered	447924	7570935
	scattered	447933	7571465
	scattered	448162	7571279
	dense	448169	7571575
	scattered	448170	7571440
	scattered	448170	7571785
	scattered	448171	7571679
	scattered	448172	7571475
	dense	448174	7571586
	scattered	448176	7571073
	scattered	448176	7571401
	scattered	448177	7571738
	scattered	448178	7571034
	dense	448179	7571619
	scattered	448180	7571205
	scattered	448181	7571536
	scattered	448182	7570970
	scattered	448184	7571509
	scattered	448219	7571846
	scattered	448220	7571741
	scattered	448222	7571433
	scattered	448224	7571686
	scattered	448226	7571372
	scattered	448227	7571810
	dense	448231	7571633
	scattered	448232	7571296
	scattered	448233	7571032
	scattered	448233	7571137
	scattered	448233	7571467
	scattered	448237	7570964
	scattered	448237	7571224
	dense	448237	7571602
	scattered	448240	7571089
	scattered	448290	7571044
	scattered	448294	7571368

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	scattered	448297	7570953
	scattered	448298	7571296
	scattered	448299	7571003
	scattered	448299	7571604
	scattered	448301	7571248
	scattered	448302	7571389
	scattered	448303	7571742
	scattered	448304	7571654
	scattered	448304	7571774
	scattered	448306	7571629
	scattered	448310	7571145
	scattered	448313	7571813
	5	448369	7571370
	30	448370	7571575
	30	448373	7571558
	3	448374	7571012
	15	448374	7571179
	25	448374	7571243
	50	448377	7571216
	20	448378	7571108
	30	448378	7571271
	50	448380	7571595
	100	448381	7571709
	60	448386	7571757
	30	448387	7571657
	150	448441	7571022
	500	448441	7571210
	300	448442	7571559
	5	448444	7570849
	500	448445	7571710
	25	448494	7571716
	60	448504	7571050
	50	448507	7571177
	5	448507	7571560
	40	448508	7571667
	40	448510	7570876
	150	448510	7571690
	50	448512	7571144
	25	448512	7571494
	60	448514	7571505

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	30	448515	7571272
	250	448515	7571272
	100	448580	7571448
	50	448586	7571184
	200	448587	7571062
	15	448594	7570851
	scattered	448595	7568690
	dense	448630	7568768
	dense	448635	7568804
	scattered	448644	7571626
	scattered	448646	7571034
	scattered	448646	7571477
	scattered	448648	7571542
	scattered	448649	7571587
	scattered	448650	7570911
	scattered	448650	7571426
	scattered	448653	7571381
	scattered	448654	7570994
	scattered	448666	7570861
	scattered	448677	7568826
	scattered	448685	7568758
	scattered	448700	7568691
	scattered	448717	7568757
	scattered	448738	7568696
	dense	448739	7568827
	scattered	448749	7568637
	scattered	448760	7568701
	dense	448767	7568890
	dense	448778	7568825
	scattered	448779	7568751
	scattered	448811	7568972
	dense	448826	7568895
	dense	448845	7568974
	dense	448855	7568847
	dense	448871	7568900
	dense	448876	7568973
	scattered	448899	7568839
	25	448927	7569761
	scattered	448929	7568912
	scattered	448936	7570045

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	dense	448952	7568972
	scattered	448953	7568837
	scattered	448966	7568623
	10	448969	7569760
	scattered	448976	7568841
	scattered	448977	7569022
	scattered	448987	7570044
	scattered	448988	7569069
	30	448996	7569969
	scattered	448998	7568976
	10	449016	7569757
	scattered	449030	7569684
	scattered	449044	7568641
	scattered	449058	7568640
	dense	449060	7569130
	scattered	449063	7569691
	scattered	449071	7570037
	scattered	449080	7569696
	scattered	449086	7569269
	20	449086	7569757
	scattered	449088	7568980
	20	449090	7569981
	dense	449091	7569232
	edge scoured	449100	7570042
	scattered	449114	7570004
	scattered	449118	7569325
	25	449120	7569982
	scattered	449129	7569693
	scattered	449135	7570045
	10	449137	7569764
	scattered	449156	7568983
	scattered	449172	7569690
	20	449175	7569768
	scattered	449178	7570034
	100	449192	7569829
	100	449197	7569892
	scattered	449199	7569439
	scattered	449214	7569692
	scattered	449223	7569486
	60	449223	7569770

Species	Abundance	Easting (mE)	Northing (mN)
**Argemone ochroleuca* (Mexican Poppy) (Biota 2012; 2007)	scattered	449246	7569690
	scattered	449257	7570037
	scattered	449265	7569534
	scattered	449283	7569692
	30	449287	7569760
	20	449287	7569826
	scattered	449299	7570041
	scattered	449336	7570043
	scattered	449341	7568832
	scattered	449342	7569662
	scattered	449346	7569687
	scattered	449357	7569683
	80	449371	7569763
	scattered	449395	7569688
	10	449408	7569761
	10	449408	7569974
	scattered	449412	7569692
	scattered	449527	7569880
	scattered	449600	7569686
	1	449712	7569758
	15	449739	7569838
	40	449739	7569838
	1	449740	7569903
	scattered	449799	7569679
**Cenchrus ciliaris* (Buffel Grass) (Biota 2012)	scattered	434863	7580587
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	422694	7591396
	scattered	434419	7580850
	scattered	434532	7580689
	scattered	434555	7580652
	scattered	434597	7580564
	scattered	434666	7580570
	2% cover	434754	7580717
	scattered	434795	7580440
	scattered	435647	7579613
	scattered	435850	7579400
	scattered	435863	7579373
	scattered	435893	7579340
	scattered	436135	7579108
	scattered	436203	7578978
	scattered	436218	7578939

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	436317	7578763
	scattered	436321	7578719
	scattered	436348	7578655
	5	436628	7578414
	large patch	436823	7578283
	2-3% cover	436963	7578064
	Scattered	437121	7577916
	Scattered	439799	7575584
	Scattered	440410	7575028
	10-30% cover	440583	7574933
	10-30% cover	440613	7574917
	scattered	440679	7574858
	dense infestation	440850	7574910
	2	441118	7575625
	scattered	441283	7574967
	scattered	441345	7574650
	scattered	441381	7575782
	scattered	441499	7575976
	scattered	441569	7576023
	scattered	441619	7575096
	5% cover	441651	7575554
	scattered	441671	7575616
	scattered	441688	7575421
	scattered	441796	7575602
	scattered	441815	7575626
	scattered	442118	7575575
	scattered	442393	7573550
	scattered	442512	7573503
	scattered	442518	7573546
	1-2% cover	442758	7573529
	scattered	443076	7573001
	scattered	443116	7573067
	scattered	443153	7573737
	scattered	443173	7573067
	1	443188	7573119
	scattered	443203	7573590
	scattered	443223	7573633
	scattered	443273	7573747
	scattered	443323	7573525
	scattered	443357	7573563

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	443418	7573048
	scattered	443476	7573537
	1-2% cover	443509	7573625
	scattered	443588	7573342
	1	443592	7574307
	scattered	443831	7573349
	scattered	443904	7573083
	scattered	443939	7573128
	scattered	444050	7573305
	scattered	444217	7572952
	scattered	444287	7572892
	scattered	444428	7572946
	dense infestation	444497	7573696
	dense infestation	444514	7573725
	scattered	444576	7573171
	scattered	444672	7573208
	NR	444699	7572884
	scattered	444879	7572987
	scattered	445025	7572940
	scattered	445454	7572803
	dense infestation	445456	7572856
	scattered	427860	7585532
	scattered	427890	7585579
	dense	427918	7585621
	dense	427949	7585653
	dense	427962	7585692
	dense	428002	7585721
	dense	428025	7585707
	1	433508	7580638
	scattered	434308	7580995
	dense	434337	7580990
	scattered	434352	7580922
	dense	434376	7580995
	dense	434401	7580855
	dense	434416	7580992
	dense	434441	7580857
	dense	434451	7580986
	scattered	434456	7580786
	scattered	434481	7580716
	dense	434517	7580857

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	dense	434530	7580798
	dense	434548	7580708
	scattered	434578	7580706
	dense	434578	7580797
	dense	434598	7580856
	open grassland	434658	7580668
	dense	434658	7580710
	dense	434658	7580780
	dense	434673	7580847
	dense	434804	7580787
	dense	434888	7580726
	scattered	436609	7578137
	scattered	436623	7578176
	scattered	436642	7578208
	dense	436662	7578243
	scattered	436675	7577922
	dense	436683	7578281
	dense	436702	7578316
	dense	436716	7578337
	5m*2	436730	7578102
	scattered	436731	7578217
	dense	436741	7578376
	dense	436744	7578253
	dense	436752	7578395
	dense	436770	7578437
	very dense	436775	7578302
	dense	436785	7577953
	dense	436792	7578463
	scattered	436798	7577971
	50m*2	436807	7578228
	dense	436813	7578335
	dense	436827	7578508
	scattered	436833	7577866
	dense	436849	7578556
	scattered	436860	7577889
	dense	436861	7578425
	scattered	436867	7578585
	scattered	436879	7577760
	scattered	436891	7578620
	scattered	436895	7577805

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	436896	7577949
	dense	436908	7578647
	dense	436910	7577818
	scattered	436911	7578513
	dense	436917	7577848
	scattered	436929	7578539
	scattered	436930	7578676
	dense	436935	7577844
	dense	436942	7577878
	scattered	436946	7578043
	scattered	436950	7578718
	scattered	436955	7577860
	scattered	436955	7578184
	scattered	436964	7578590
	scattered	436970	7577894
	scattered	436974	7578112
	scattered	436999	7577958
	scattered	436999	7578780
	very dense	437005	7578260
	scattered	437015	7578823
	dense	437024	7578302
	scattered	437037	7578861
	dense	437038	7578200
	dense	437048	7578218
	600m*2	437058	7578524
	scattered-dense	437060	7578361
	scattered	437069	7578913
	dense	437077	7578257
	dense	437081	7578397
	scattered	437082	7578940
	scattered	437103	7578821
	dense	437109	7578317
	3	437111	7578465
	scattered	437131	7578506
	scattered	437132	7578092
	dense	437140	7578376
	scattered	437146	7579025
	scattered	437172	7578416
	1	437183	7578576
	scattered	437195	7578132

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	437217	7579146
	scattered	437224	7578500
	scattered	437224	7579163
	scattered	437244	7578548
	scattered	437248	7578359
	scattered	437274	7578595
	scattered	437277	7578415
	scattered	437283	7579099
	scattered	437299	7578285
	scattered	437300	7578447
	scattered	437300	7578623
	scattered	437321	7579315
	scattered	437324	7578297
	scattered	437326	7578493
	scattered	437346	7579343
	scattered	437353	7578715
	scattered	437355	7578348
	dense	437355	7579363
	scattered	437372	7578399
	scattered	437388	7578574
	scattered	437393	7578310
	scattered	437399	7578429
	scattered	437404	7578940
	scattered	437442	7578503
	scattered	437456	7578868
		437462	7579298
	scattered	437512	7578588
	700m*2	437517	7579246
	scattered	437573	7579056
	scattered	437592	7579106
	scattered	437600	7579235
	scattered	437635	7579150
	scattered	437664	7579199
	scattered	437689	7578875
	scattered	437729	7579001
	scattered	437772	7578578
	2-3% cover	438713	7578592
	scattered	439469	7576094
	scattered	439548	7576223
	scattered	439568	7576194

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	439594	7576277
	scattered	439602	7576174
	scattered	439623	7576327
	scattered	439627	7576249
	scattered	439637	7575711
	scattered	439649	7576148
	scattered	439657	7576356
	dense	439686	7576193
	scattered	439747	7576277
	scattered	439748	7576066
	dense	439771	7576148
	dense	439815	7576102
	scattered	439840	7575888
	scattered	439844	7576038
	dense	439853	7576083
	dense	439858	7575910
	dense	439861	7576055
	scattered	439875	7575950
	scattered	439899	7575998
	1	439916	7575734
	scattered	439923	7576158
	scattered	439957	7576074
	dense	439967	7576265
	200m*2	439977	7575928
	scattered	439997	7576323
	scattered	440017	7575884
	dense	440035	7575733
	dense	440060	7575777
	dense	440072	7575799
	scattered	440088	7575821
	dense	440125	7576542
	scattered	440130	7575876
	scattered	440147	7576079
	scattered	440150	7575909
	300m*2	440150	7576209
	2	440151	7576071
	dense	440153	7576569
	scattered	440170	7575951
	scattered	440170	7576487
	scattered	440185	7576122

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	440193	7575994
	scattered	440202	7576544
	scattered	440212	7576639
	scattered	440217	7576013
	scattered	440218	7576566
	scattered	440224	7576677
	dense	440225	7576195
	50m*2	440229	7576453
	scattered	440239	7576047
	scattered	440248	7576756
	scattered	440259	7576762
	scattered	440271	7576104
	scattered	440272	7576640
	dense	440287	7576778
	200m*2	440296	7576432
	scattered	440303	7576691
	dense	440307	7576809
	scattered	440327	7576737
		440339	7576508
	scattered	440350	7576900
	scattered	440352	7576776
	scattered	440376	7576940
	500m*2	440383	7576701
	scattered	440399	7576875
	dense	440415	7576504
	scattered	440418	7576361
	scattered	440440	7577011
	scattered-dense	440444	7576533
	scattered	440452	7576543
	scattered	440456	7576413
	scattered	440468	7576446
	1	440469	7576936
	scattered	440473	7577043
	scattered	440501	7576481
	scattered	440515	7576680
	scattered	440518	7576515
	800m*2	440534	7576826
	scattered	440536	7576538
	dense	440557	7576590
	scattered	440582	7576635

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	dense	440624	7576699
	dense	440635	7576819
	dense	440661	7576775
	scattered	440684	7576795
	scattered	440695	7576907
	scattered	440706	7576830
	scattered	440740	7576799
	scattered	440813	7576458
	scattered	440892	7576335
	scattered	440919	7576374
	scattered	440995	7576606
		441641	7574414
	scattered	442070	7575042
	scattered	442071	7575042
	scattered	442097	7575083
	scattered	442115	7575118
	scattered	442150	7575144
	scattered	442180	7575197
	scattered	442206	7575240
	scattered	442207	7575111
	dense	442231	7575266
	dense	442253	7575309
	dense	442282	7575173
	dense	442282	7575331
	dense	442309	7575214
	dense	442317	7575403
	scattered	442330	7575253
	dense	442337	7575445
	dense	442351	7575282
	dense	442353	7575488
	dense	442365	7575312
	scattered	442404	7575487
	scattered	442495	7575554
	scattered	444579	7572812
	scattered	446949	7571293
	scattered	446949	7571996
	scattered	446950	7571446
	1-2% cover	446956	7571434
	scattered	446959	7571669
	scattered	446960	7571439

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	446961	7571361
	scattered	446962	7571243
	scattered	447004	7571793
	scattered	447023	7571334
	scattered	447027	7571379
	scattered	447030	7571735
	scattered	447034	7571442
	scattered	447094	7571705
	scattered	447099	7571983
	scattered	447102	7571858
	scattered	447105	7571479
	scattered	447106	7571360
	scattered	447144	7571424
	scattered	447168	7571710
	scattered	447169	7571973
	scattered	447171	7571193
	dense	447173	7571994
	scattered	447189	7571402
	scattered	447227	7571643
	scattered	447231	7571383
	scattered	447231	7571936
	scattered	447234	7571790
	scattered	447237	7571302
	scattered	447299	7571560
	scattered	447302	7571914
	scattered	447306	7571895
	scattered	447483	7571237
	scattered	447499	7571209
	scattered	447924	7570935
	scattered	448222	7571433
	scattered	448233	7571467
	scattered	448240	7571089
	scattered	448295	7571597
	scattered	448303	7571677
	scattered	448369	7571370
	scattered	448373	7571557
	scattered	448381	7571625
	scattered	448386	7571782
	scattered	448494	7571716
	scattered	448512	7571284

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus ciliaris* (Buffel Grass) (Biota 2007)	scattered	448512	7571494
	40 m*2	448582	7570469
	40 m*2	448582	7570717
	scattered	448635	7568804
	scattered	448645	7570522
	dense	448647	7570498
	dense	448653	7570466
	dense	448654	7570437
	scattered	448655	7570606
	scattered	448845	7568974
	400m*2	448854	7569840
	dense	448866	7569763
	200 m*2	448912	7569898
	scattered	448924	7569974
	scattered	448927	7569761
	dense	448935	7569824
	scattered	448987	7569682
	scattered	448987	7570044
	scattered	448996	7569969
	dense	449034	7569825
	scattered	449054	7569971
	scattered	449169	7569984
	10	449175	7569768
	scattered	449178	7570034
	scattered	449199	7569439
	scattered	449214	7569692
	scattered	449299	7570041
	scattered	449323	7569902
	scattered	449336	7570043
	scattered	449357	7569683
	3	449358	7569972
	very open grassland	449382	7569824
	scattered	449410	7569905
	2	449431	7569760
	scattered	449443	7569974
	scattered	449488	7569695
	1	449527	7569880
	5	449543	7569901
**Cenchrus setiger* (Birdwood Grass) (Biota 2012)	scattered	435718	7578812
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	scattered	427860	7585532

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	scattered	427890	7585579
	dense	427915	7585620
	dense	427918	7585621
	dense	427930	7585607
	dense	427949	7585653
	dense	427962	7585692
	dense	427978	7585674
	dense	428002	7585721
	dense	428025	7585707
	scattered	434308	7580995
	dense	434337	7580990
	very open grassland	434352	7580922
	dense	434376	7580995
	dense	434416	7580992
	scattered	434420	7580855
	scattered	434421	7580784
	dense	434441	7580857
	dense	434451	7580986
	dense	434530	7580798
	scattered	434537	7580854
	scattered	434548	7580708
	dense	434578	7580797
	scattered	434658	7580710
	dense	434658	7580780
	dense	434673	7580847
	scattered	434754	7580717
	dense	434804	7580787
	dense	434822	7580712
	scattered	434836	7580671
	dense	434888	7580726
	scattered	436605	7578139
	scattered	436623	7578176
	scattered	436642	7578208
	dense	436662	7578243
	dense	436683	7578281
	dense	436702	7578316
	dense	436716	7578337
	dense	436741	7578376
	scattered	436744	7578253
	dense	436752	7578395

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	dense	436770	7578437
	dense	436792	7578463
	50m*2	436816	7578256
	dense	436827	7578508
	5m*2	436828	7578136
	scattered	436833	7577866
	dense	436849	7578556
	scattered	436860	7577889
	scattered	436861	7578425
	scattered	436867	7578585
	scattered	436879	7577760
	dense	436888	7578413
	scattered	436891	7578620
	scattered	436895	7577805
	scattered	436896	7577949
	dense	436908	7578647
	dense	436910	7577818
	scattered	436911	7578513
	dense	436917	7577848
	scattered	436930	7578676
	dense	436935	7577844
	dense	436942	7577878
	scattered	436944	7578562
	scattered	436946	7578043
	scattered	436950	7578718
	scattered	436955	7577860
	scattered	436963	7578064
	scattered	436964	7578590
	scattered	436970	7577894
	dense	436972	7577921
	scattered	436974	7578112
	scattered	436999	7577958
	scattered	436999	7578780
	scattered	437015	7578823
	scattered	437037	7578861
	dense	437038	7578200
	dense	437048	7578218
	scattered	437069	7578913
	dense	437077	7578257
	scattered	437082	7578940

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	dense	437109	7578317
	dense	437140	7578376
	scattered	437146	7579025
	4m*2	437152	7578770
	scattered	437195	7578132
	scattered	437217	7579146
	scattered	437224	7578500
	scattered	437224	7579163
	scattered	437244	7578548
	scattered	437248	7578359
	scattered	437277	7578415
	scattered	437299	7578285
	scattered	437300	7578447
	scattered	437324	7578297
	scattered	437326	7578493
	scattered	437346	7579343
	scattered	437353	7578715
	scattered	437355	7578348
	dense	437355	7579363
	scattered	437372	7578399
	1-2%	437393	7578310
	dense	437399	7578429
	scattered	437456	7578868
	scattered	437462	7579298
		437517	7579246
	scattered	437573	7579056
	scattered	437635	7579150
	scattered	437664	7579199
	scattered	437689	7578875
	scattered	437729	7579001
	scattered	437735	7578974
	scattered	437738	7579110
	scattered	437772	7578578
	1-2%	438713	7578592
	scattered	439548	7576223
	scattered	439568	7576194
	scattered	439602	7576174
	scattered	439623	7576327
	scattered	439627	7576249
	scattered	439657	7576356

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	dense	439686	7576193
	scattered	439747	7576277
	scattered	439748	7576066
	dense	439771	7576148
	dense	439815	7576102
	scattered	439844	7576038
	dense	439853	7576083
	dense	439861	7576055
	scattered	439957	7576074
	dense	439967	7576265
		439977	7575928
	scattered	439997	7576323
	dense	440035	7575733
	scattered	440043	7576409
	dense	440060	7575777
	dense	440072	7575799
	1	440076	7576334
	scattered	440088	7575821
	scattered	440094	7576491
	dense	440125	7576542
	scattered	440130	7575876
	scattered	440147	7576079
	scattered	440150	7575909
		440150	7576209
	dense	440153	7576569
	scattered	440170	7575951
	scattered	440193	7575994
	scattered	440212	7576639
	scattered	440224	7576677
	scattered	440239	7576047
	scattered	440259	7576762
	scattered	440271	7576104
	scattered	440272	7576640
	dense	440287	7576778
	dense	440307	7576809
	scattered	440314	7576717
	scattered	440328	7576850
	600m*2	440339	7576508
	scattered	440350	7576900
	scattered	440352	7576776

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	200m*2	440374	7576571
	scattered	440375	7576274
	scattered	440376	7576940
	scattered	440402	7576314
	scattered	440415	7576504
	scattered	440418	7576361
	scattered	440440	7577011
	5	440444	7576533
	scattered	440456	7576413
	scattered	440468	7576446
	scattered	440473	7577043
	500m*2	440493	7576929
	scattered	440501	7576481
	scattered	440518	7576515
	scattered	440536	7576538
	15m*2	440551	7576853
	dense	440557	7576590
	scattered	440582	7576635
	dense	440595	7576795
	dense	440624	7576699
	dense	440661	7576775
	scattered	440684	7576795
	scattered	440740	7576799
	scattered	440813	7576458
	scattered	440892	7576335
	scattered	440919	7576374
	scattered	441641	7574414
	scattered	441651	7575554
	scattered	442070	7575042
	scattered	442071	7575042
	scattered	442097	7575083
	scattered	442115	7575118
	scattered	442150	7575144
	scattered	442180	7575197
	scattered	442206	7575240
	scattered	442207	7575111
	dense	442231	7575266
	dense	442253	7575309
	dense	442282	7575173
	dense	442282	7575331

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	dense	442309	7575214
	dense	442317	7575403
	scattered	442330	7575253
	dense	442337	7575445
	dense	442351	7575282
	dense	442353	7575488
	dense	442365	7575312
	scattered	442404	7575487
	scattered	442758	7573529
	scattered	443188	7573119
	scattered	444579	7572812
	scattered	446927	7571451
	scattered	446941	7571475
	scattered	446949	7571293
	scattered	446949	7571431
	scattered	446949	7571996
	scattered	446953	7571827
	scattered	446956	7571434
	scattered	447024	7571306
	dense patch	447027	7571351
	scattered	447034	7571442
	1	447036	7571693
	scattered	447094	7571705
	scattered	447099	7571983
	scattered	447102	7571858
	scattered	447105	7571479
	scattered	447107	7571205
	scattered	447111	7571629
	scattered	447144	7571424
	scattered	447168	7571710
	scattered	447169	7571973
	scattered	447172	7571291
	dense	447173	7571994
	scattered	447183	7571632
	scattered	447211	7571786
	scattered	447227	7571643
	scattered	447231	7571383
	scattered	447231	7571936
	scattered	447297	7571418
	scattered	447299	7571625

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	scattered	447299	7571662
	scattered	447366	7571300
	scattered	447461	7571251
	scattered	447483	7571237
	scattered	447499	7571209
	scattered	447565	7571177
	scattered	447812	7570998
	scattered	447890	7570943
	scattered	448172	7571475
	scattered	448184	7571509
	scattered	448220	7571741
	scattered	448222	7571433
	scattered	448240	7571089
	scattered	448302	7571704
	scattered	448306	7571629
	scattered	448313	7571813
	scattered	448381	7571625
	30m*2	448444	7570849
	scattered	448635	7568804
	dense	448645	7570522
	scattered	448647	7570498
	dense	448649	7570662
	dense	448653	7570466
	dense	448654	7570437
	dense	448654	7570641
	scattered	448655	7570606
	scattered	448657	7570327
	dense	448663	7570561
	scattered	448767	7568890
	scattered	448834	7570046
	1000m*2	448852	7569881
	scattered	448854	7570055
	dense	448879	7569977
	scattered	448890	7570048
	dense	448911	7570049
	500 m*2	448964	7569898
	scattered	448966	7568623
	dense in 5m*5m	448969	7569760
	dense	448975	7569973
	scattered	448976	7568841

Species	Abundance	Easting (mE)	Northing (mN)
**Cenchrus setiger* (Birdwood Grass) (Biota 2007)	scattered	448987	7570044
	dense	448990	7569822
	scattered	449016	7569757
	dense	449022	7570047
	scattered	449030	7569684
	scattered	449039	7570041
	dense	449054	7569971
	scattered	449063	7569691
	dense	449064	7569829
	scattered	449080	7569696
	scattered	449085	7570036
	scattered	449086	7569758
	scattered	449114	7570004
	scattered	449129	7569693
	scattered	449135	7570045
	10	449169	7569984
	5	449175	7569768
	scattered	449178	7570034
	10	449207	7569770
	scattered	449214	7569692
	scattered	449223	7569486
	scattered	449299	7570041
	scattered	449336	7570043
	scattered	449342	7569662
	scattered	449346	7569687
	5	449373	7569976
	scattered	449395	7569688
	scattered	449412	7569692
	5	449436	7569969
	scattered	449470	7570046
	scattered	449505	7570045
	2	449527	7569880
	scattered	449538	7569965
	5	449599	7569896
	scattered	449711	7570044
	scattered	449792	7569754
**Echinochloa colona* (Awnless Barnyard Grass) (Biota 2007)	20	440582	7576881
**Flaveria trinervia* (Speedy Weed) (Biota 20012)	scattered	434629	7580574
**Lactuca serriola* (Prickly Lettuce) (Biota 2007)	scattered	434597	7580564

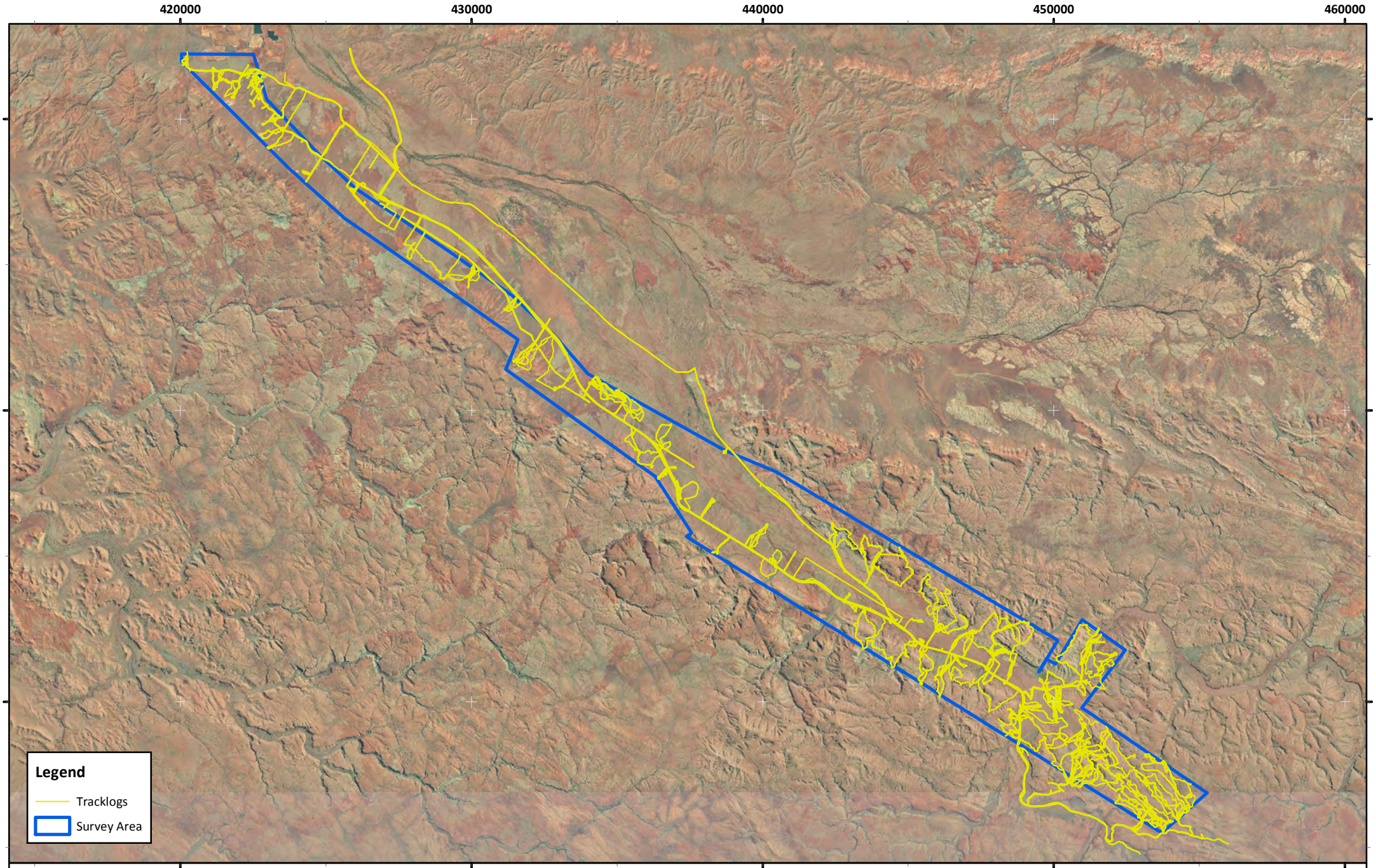
Species	Abundance	Easting (mE)	Northing (mN)
**Malvastrum americanum* (Spiked Malvastrum) (Biota 2012)	46	429910	7584159
	scattered	429928	7584126
	scattered	434854	7580554
	scattered	422694	7591396
	scattered	441345	7574650
	1	443949	7573150
	scattered	427978	7585674
	scattered	428025	7585707
	scattered	432469	7582901
	scattered	434537	7580854
	scattered	434597	7580564
	scattered	434604	7580860
	1	434658	7580668
	scattered	434754	7580717
	1	434800	7580760
	scattered	434804	7580787
	scattered	436675	7577922
	scattered	437388	7578574
	scattered	437472	7578560
	scattered	441651	7575554
	scattered	442404	7575487
	very scattered	446961	7571361
	scattered	447900	7570945
	scattered	448313	7571813
	1	448436	7571761
	scattered	448491	7571724
	scattered	448647	7570498
	scattered	449044	7568641
	scattered	449443	7568995
	scattered	449515	7570040
	scattered	450198	7570041
**Setaria verticillata* (Whorled Pigeon Grass) (Biota 2012)	scattered	429928	7584126
	scattered	434597	7580564
	2	434604	7580704
	2	440181	7576503
	scattered	442115	7575118
	scattered	447171	7571193
	scattered	448225	7571829
	scattered	448389	7571786
	scattered	448493	7571734

Species	Abundance	Easting (mE)	Northing (mN)
**Setaria verticillata* (Whorled Pigeon Grass) (Biota 2012)	scattered	448653	7571381
	scattered	449443	7568995
	scattered	449470	7570046

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Appendix O: Survey Effort (Tracklogs)

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Rio Tinto

Bungaroo Level 2 Vegetation and Flora Assessment

Figure O.1: Survey Effort

Datum: GDA 1994 - Projection: MGA Zone 50

0 5 10 Kilometres

N

astron

Author: D. Roocke | Drawn: W. An | Date: 02-03-2016 | Figure Ref: 14263-15-BIDR-2Rev0_160302_FigO1_Effort

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