



# Robe Mesa Project Detailed Flora and Vegetation Survey





**Biota**  
Environmental  
Sciences



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# 1.0 Executive Summary

CZR Resources Ltd (CZR) is proposing to develop the Robe Mesa Iron Ore Project (the project), located in the west Pilbara, 29 km southwest of Pannawonica. To service the planned mine, the project will require development of associated infrastructure and a haul road.

CZR engaged Biota Environmental Sciences (Biota) to carry out a single-phase detailed vegetation and flora survey to inform the environmental impact assessment (EIA) of the project.

## Vegetation

Seventeen vegetation types were mapped in the survey area. The most widespread vegetation type was A4, which accounted for 712.1 ha (23.3% of the survey area).

No State or Commonwealth listed TECs were encountered in the survey area, and no vegetation communities that comprise PECs were identified.

Seven of the vegetation types mapped for the survey area are considered to be locally significant. Six of these units (A1, A4, C1, C2, C5 and E2) are of conservation significance due to the presence of the Priority 3 species, *Eragrostis crateriformis*, and unit E2 also represents GDV. One further unit (A6) has the potential to support individuals of the Priority 3 species *Triodia pisolitica*, however this could not be confirmed due to access constraints. Additionally, this same area was aerially assessed as being unlikely to support the Priority 3 PEC '*Triodia pisolitica* (previously *Triodia* sp. Robe River) assemblages of mesas of the West Pilbara' based on the habitat and vegetation not being representative of the PEC.

Over 95% of the vegetation in the survey area was rated as being in 'Very Good' condition or better, with only 18.0 ha (0.6%) having been cleared and considered 'Completely Degraded'. The most common causes of disturbance were weeds and clearing, with the habitats of most concern being associated with drainages and lower-lying areas in the landscape.

## Flora

No Threatened flora were recorded during the survey and none would occur, based on their habitat preferences and distribution in the Pilbara.

One Priority 3 flora species, *Eragrostis crateriformis*, was recorded during the survey with a total of 681 individuals recorded within the A1, A4, C1, C2, C5 and E2 vegetation types.

Two additional Priority species may occur in the survey area, the Priority 3 *Triodia pisolitica* and the Priority 4 *Rhynchosia bungarensis*.

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## 2.0 Introduction

### 2.1 Project Background

CZR Resources Ltd (CZR) is proposing to develop the Robe Mesa Iron Ore Project (the project), located in the west Pilbara, 29 km southwest of Pannawonica. To service the planned mine, the project will require development of associated infrastructure and a haul road.

CZR engaged Biota Environmental Sciences (Biota) to carry out a single-phase detailed vegetation and flora survey to inform the environmental impact assessment (EIA) of the project.

As summarised in Table 2.1 and presented in Figure 2.1, the 'survey area' comprised:

- the Mine Associated Infrastructure;
- two haul road options that run from the Mine Associated Infrastructure northwest (CZR) or west (CZR/RHI) to meet the North West Coastal Highway; and
- the East Additional Area (EAA), located east of the Mine Associated Infrastructure.

The area of each component is detailed in Table 2.1.

**Table 2.1: Spatial scope of the survey area.**

Section	Area (ha)
Mine Associated Infrastructure	1,204.0
Upper Haul Rd option (CZR)	477.5
Lower Haul Rd option (CZR/RHI)	606.2
East Additional Area (EAA)	762.3
<b>Total Area</b>	<b>3,050.0</b>

## 2.2 Significance Framework

The focus of the field surveys was to identify features of significance within the survey area, including flora and ecological communities. The framework for formal listing of species and communities of significance in Western Australia (WA) is detailed in Appendix 1 and summarised below.

### 2.2.1 Communities

Threatened Ecological Communities (TECs) are described by the WA Department of Biodiversity, Conservation and Attractions (DBCA) as biological assemblages occurring in a particular habitat, which are under threat of modification or destruction from various processes. TECs are significant at State level, being protected under the WA *Biodiversity Conservation Act 2016* (the BC Act), as well as having protection as Environmentally Sensitive Areas (ESAs) under the WA *Environmental Protection Act 1986* (the EP Act). Some TECs are also protected at Commonwealth level under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). Further information regarding the classification of TECs is provided in Appendix 1.

Priority Ecological Communities (PECs) are ecological communities that are recognised by the DBCA to be of significance, but do not meet the criteria for listing as a TEC. There are five categories of PECs, none of which are currently protected under legislation (see Appendix 1).

Groundwater dependent ecosystems (GDEs) and groundwater dependent vegetation (GDVs) are also generally considered to be of significance. Some are listed as TECs or PECs, particularly organic mound springs and particular riparian systems with high water permanence.

## **2.2.2 Species**

Native flora species that are rare, threatened with extinction, or have high conservation value, are specially protected by law as Threatened species under the BC Act and/or the EPBC Act.

In addition, the DBCA maintains a list of species that are deemed a priority for conservation, which have not been assigned statutory protection under the BC Act but are still considered to be of conservation priority, or are considered to be rare but not threatened and are in need of monitoring. Appendix 1 details categories of significance recognised under the above frameworks.

## **2.3 Study Scope and Objectives**

The specific objectives of this study were to:

- complete a flora desktop study of relevant background information to identify key biological features and constraints; in particular existing records of significant (Threatened or Priority) communities and species that may be relevant to the survey area;
- carry out a detailed flora and vegetation survey as per the WA Environmental Protection Authority (EPA) Technical Guidance (2016) to map the vegetation types and their condition, assess whether any of the communities present are significant, and document the flora of the survey area; and
- carry out targeted searches for Threatened and Priority flora.

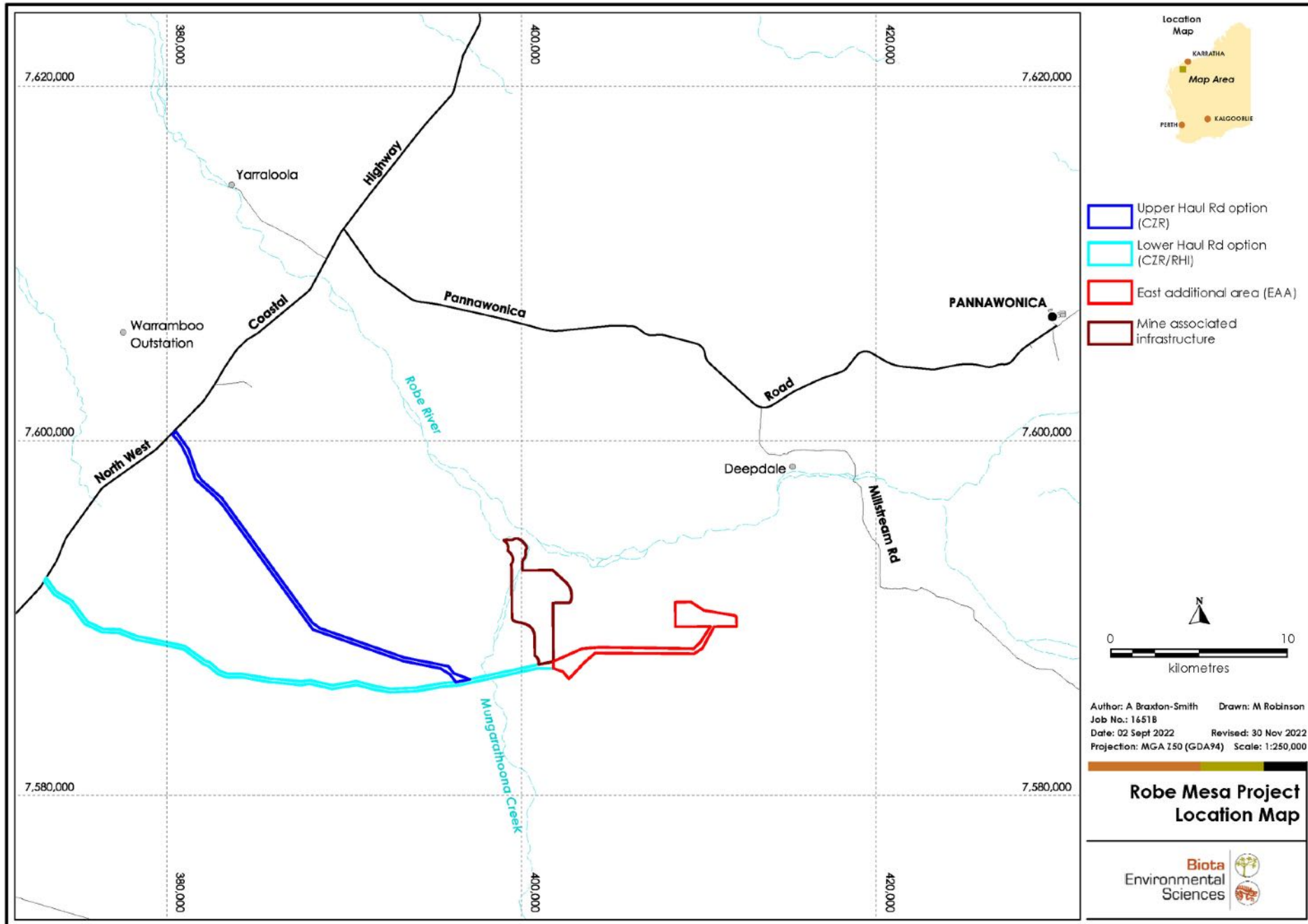


Figure 2.1: Location of the survey area.

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## 3.0 Methodology

### 3.1 Desktop Study

A desktop study was undertaken to identify features of significance known from a 40 km radius of the survey area. The desktop study was also used to assess the level of biological survey work that had previously been completed in the survey area, which informed the design of the current survey.

The desktop study incorporated regional information, the results of database searches (Section 3.1.1, Appendix 2), and previous biological surveys in the survey area and locality (Section 3.1.2). The results of the desktop study were used as the basis for compiling lists of flora species and ecological communities of significance potentially occurring in the survey area.

#### 3.1.1 Database Searches

The following databases were searched for records of flora and vegetation of significance previously recorded from, or potentially occurring in the survey area:

- NatureMap database. This database was a joint project of the DBCA and the WA Museum, and represented the most comprehensive source of information on the distribution of Western Australia's flora and fauna before it was taken offline in December 2021; after this date, summary information was still provided by DBCA on request. NatureMap contained flora records from the WA Threatened Flora Database and the WA Herbarium Specimen Database. Records were returned by DBCA in April 2022 from a 40 km buffer around the survey area, and are provided in Appendix 2.
- The DBCA databases of TECs and PECs, and Threatened and Priority flora. These searches returned records from a 40 km buffer around the survey area boundary for significant flora species, TECs and PECs.
- The Commonwealth EPBC Act Protected Matters database. The database was searched to request the return of records of Matters of National Environmental Significance (MNES) from a 40 km buffer around the survey area (Appendix 2).

#### 3.1.2 Literature Review

Publicly available literature (including previous surveys completed by Biota) was searched for relevant flora and vegetation surveys (Table 3.1) conducted in or near the survey area. The reports were used to inform the likelihood assessments of significant communities and species occurring within or in the locality of the survey area, and to determine potential habitats and methods for targeting these.

**Table 3.1: Previous relevant flora and vegetation surveys.**

Report Title (Author)	Type of Survey/Study and Survey Effort	Survey Timing	No. of Native Flora Species	No. of Introduced Species †	Features of Significance: TECs and PECs / Threatened and Priority Species †
A Vegetation and Flora Survey of the Proposed Mesa A Transport Corridor, Warramboe Deposit and Yarraloola Borefield (Biota 2006a)	<ul style="list-style-type: none"> <li>Detailed and targeted flora and vegetation survey.</li> <li>50 quadrats and nine relevés.</li> <li>Systematic searches for significant flora.</li> </ul>	July 2004 – September 2005	437	20 species: * <i>Acetosa vesicaria</i> , * <i>Aerva javanica</i> , * <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i> , * <i>Bidens bipinnata</i> , * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , * <i>Chloris barbata</i> , * <i>Citrullus colocynthis</i> , * <i>Datura leichhardtii</i> , * <i>Echinochloa colona</i> , * <i>Euphorbia hirta</i> , * <i>Indigofera oblongifolia</i> , * <i>Malvastrum americanum</i> , * <i>Melochia pyramidata</i> , * <i>Ocimum basilicum</i> , * <i>Parkinsonia aculeata</i> (Declared Pest), * <i>Passiflora foetida</i> , * <i>Phoenix dactylifera</i> , * <i>Setaria verticillata</i> and * <i>Sonchus oleraceus</i> .	One Priority species: <ul style="list-style-type: none"> <li><i>Rhynchosia bungarensis</i> (P4)</li> </ul>
A Vegetation and Flora Survey of the Mesa A Southern Transport Corridor, near Pannawonica (Biota 2006b)	<ul style="list-style-type: none"> <li>Detailed and targeted flora and vegetation survey (overlapped part of the Mine Associated Infrastructure area).</li> <li>30 quadrats.</li> <li>Systematic searches for significant flora.</li> </ul>	April 2005 – July 2006	350	12 species: * <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i> , * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , * <i>Citrullus colocynthis</i> , * <i>Cynodon dactylon</i> , * <i>Echinochloa colona</i> , * <i>Euphorbia hirta</i> , * <i>Flaveria trinervia</i> , * <i>Malvastrum americanum</i> , * <i>Setaria verticillata</i> , * <i>Sonchus oleraceus</i> and * <i>Vachellia farnesiana</i> .	One Priority species: <ul style="list-style-type: none"> <li><i>Rhynchosia bungarensis</i> (P4)</li> </ul>
Mesa J Extension Vegetation, Flora and Fauna Assessment (Biota 2003)	<ul style="list-style-type: none"> <li>Detailed and targeted flora and vegetation survey.</li> <li>10 quadrats.</li> <li>Targeted searches for significant flora.</li> </ul>	17 <sup>th</sup> – 19 <sup>th</sup> September 2003	119	5 species: * <i>Argemone ochroleuca</i> , * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , * <i>Malvastrum americanum</i> , * <i>Setaria verticillata</i> .	Two Priority species: <ul style="list-style-type: none"> <li><i>Triodia pisolitica</i> (P3)</li> <li><i>Rhynchosia bungarensis</i> (P4)</li> </ul>
A Biological Survey of the Mesa J Mine Expansion Area (Biota 2009)	<ul style="list-style-type: none"> <li>Relevés were used to record flora species in the study area.</li> <li>Targeted searches for significant flora.</li> </ul>	7 <sup>th</sup> – 10 <sup>th</sup> October 2008	70	None.	None.



Report Title (Author)	Type of Survey/Study and Survey Effort	Survey Timing	No. of Native Flora Species	No. of Introduced Species †	Features of Significance: TECs and PECs / Threatened and Priority Species †
A Vegetation and Flora Survey of Mesa G (Biota 2011a)	<ul style="list-style-type: none"> <li>• Desktop study.</li> <li>• Single-phase detailed flora and vegetation survey.</li> <li>• 10 quadrats.</li> <li>• Targeted searches for significant flora.</li> </ul>	August 2009	255	17 species: * <i>Aerva javanica</i> , * <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i> , * <i>Bidens bipinnata</i> , * <i>Cenchrus ciliaris</i> , * <i>Ceratopteris thalictroides</i> , * <i>Citrullus colocynthis</i> , * <i>Cucumis melo</i> subsp. <i>agrestis</i> , * <i>Cynodon dactylon</i> , * <i>Datura leichhardtii</i> , * <i>Echinochloa colona</i> , * <i>Euphorbia hirta</i> , * <i>Malvastrum americanum</i> , * <i>Passiflora foetida</i> var. <i>hispida</i> , * <i>Phoenix dactylifera</i> , * <i>Portulaca oleracea</i> , * <i>Setaria verticillata</i> and * <i>Vachellia farnesiana</i> .	Two Priority species: <ul style="list-style-type: none"> <li>• <i>Triodia pisolitica</i> (P3)</li> <li>• <i>Rhynchosia bungarensis</i> (P4)</li> </ul>
Baseline Flora and Vegetation Assessment of the Robe Valley Mesas (Mesas B, C, D, E, F, H and I) (Biota 2011b). ¥	<ul style="list-style-type: none"> <li>• Baseline flora and vegetation survey.</li> <li>• 51 quadrats and 2 relevés.</li> <li>• Systematic searches for significant flora.</li> </ul>	11 <sup>th</sup> – 19 <sup>th</sup> October 2010	221	15 species: * <i>Acetosa vesicaria</i> , * <i>Aerva javanica</i> , * <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i> , * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , * <i>Citrullus colocynthis</i> , * <i>Cynodon dactylon</i> , * <i>Datura leichhardtii</i> , * <i>Euphorbia hirta</i> , * <i>Malvastrum americanum</i> , * <i>Passiflora foetida</i> var. <i>hispida</i> , * <i>Setaria verticillata</i> , * <i>Solanum nigrum</i> , * <i>Sonchus oleraceus</i> and * <i>Vachellia farnesiana</i> .	Three Priority species: <ul style="list-style-type: none"> <li>• <i>Triodia pisolitica</i> (P3)</li> <li>• <i>Ptilotus mollis</i> (P4)</li> <li>• <i>Rhynchosia bungarensis</i> (P4)</li> </ul>
Mesa A Sand Sheet Environmental Monitoring Report – Baseline Survey to 2016 (Biota 2016)	<ul style="list-style-type: none"> <li>• Annual resampling of 12 permanent flora quadrats.</li> <li>• Monitoring of populations of introduced species.</li> <li>• Targeted searches for significant flora.</li> </ul>	2008 – 2016	136	Five species: * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , * <i>Flaveria trinervia</i> , * <i>Malvastrum americanum</i> , * <i>Setaria verticillata</i> .	One PEC: <ul style="list-style-type: none"> <li>• Sand Sheet vegetation (Robe Valley).</li> </ul>
Detailed Flora and Vegetation Assessment: Robe Mesa and Robe East Extension Deposits (RPS 2021). ¥	<ul style="list-style-type: none"> <li>• Desktop study.</li> <li>• Two-phase detailed flora and vegetation survey.</li> <li>• 50 quadrats and four relevés.</li> <li>• Targeted searches for significant flora.</li> </ul>	21 <sup>st</sup> – 25 <sup>th</sup> June 2021 27 <sup>th</sup> August - 7 <sup>th</sup> September 2021	343	11 species: * <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , * <i>Cynodon dactylon</i> , * <i>Datura leichhardtii</i> subsp. <i>leichhardtii</i> , * <i>Echinochloa colona</i> , * <i>Euphorbia hirta</i> , * <i>Malvastrum americanum</i> , * <i>Passiflora foetida</i> var. <i>hispida</i> , * <i>Pseudognaphalium luteoalbum</i> , * <i>Setaria verticillata</i> .	Two Priority species: <ul style="list-style-type: none"> <li>• <i>Eragrostis crateriformis</i> (P3)</li> <li>• <i>Triodia pisolitica</i> (P3)</li> </ul>

† Names and status of species have been updated to match current nomenclature and significance rankings; species that are no longer listed as significant are not presented.

¥ Previous biological survey area intersects the boundary of the current survey area.

### 3.1.3 Assessment of Likelihood of Occurrence

For previously recorded significant communities and species identified in the desktop study, an assessment of the likelihood of occurrence in the survey area was made prior to and following the field survey. This assessment was based on the proximity of previous records to the survey area; knowledge of the associated landforms (for communities) or habitat preferences (for species); the assessment of the habitats present within the survey area made during the field survey; and any records obtained during the field survey.

A guide to ranking likelihood of occurrence is outlined in Table 3.2. For the purposes of this report, the term “close proximity” is defined as within 20 km of the survey area, while “locality” is within 40 km of the survey area. The likelihood assessment is summarised in Appendix 3.

**Table 3.2: Likelihood ranking guide for species that may occur in the survey area.**

Rank	Criteria
Recorded	1. The species has been recorded in the survey area.
Likely to occur	1. There are existing records of the species in close proximity to the survey area (within 20 km); and <ul style="list-style-type: none"> <li>• the species is strongly linked to a specific habitat, which is present in the survey area; or</li> <li>• the species has more general habitat preferences, and suitable habitat is present.</li> </ul>
May occur	1. There are existing records of the species from the locality (within 40 km), however <ul style="list-style-type: none"> <li>• the species is strongly linked to a specific habitat, of which only a small amount is present in the survey area; or</li> <li>• the species has more general habitat preferences, but only some suitable habitat is present.</li> </ul> 2. There is suitable habitat in the survey area, but the species is recorded infrequently in the locality.
Unlikely to occur	1. The species is linked to a specific habitat, which is absent from the survey area; or 2. Suitable habitat is present, however there are no existing records of the species from the locality despite reasonable previous search effort in suitable habitat; or 3. There is some suitable habitat in the survey area, however the species is very infrequently recorded in the locality or the only records are historical (>40 years ago).
Would not occur	1. The species is strongly linked to a specific habitat, which is absent from the survey area; or 2. The species' range is very restricted and does not include the survey area; or 3. The species is not considered extant in the locality.

## 3.2 Field Survey

### 3.2.1 Timing and Personnel

The field survey was completed by six botanists from Biota over 12 days (20 June - 1 July 2022), with qualifications and experience for the team members summarised in Table 3.3. The survey was led by Aster Braxton-Smith, with support from Scott Werner as required.

**Table 3.3: Survey team qualifications and experience.**

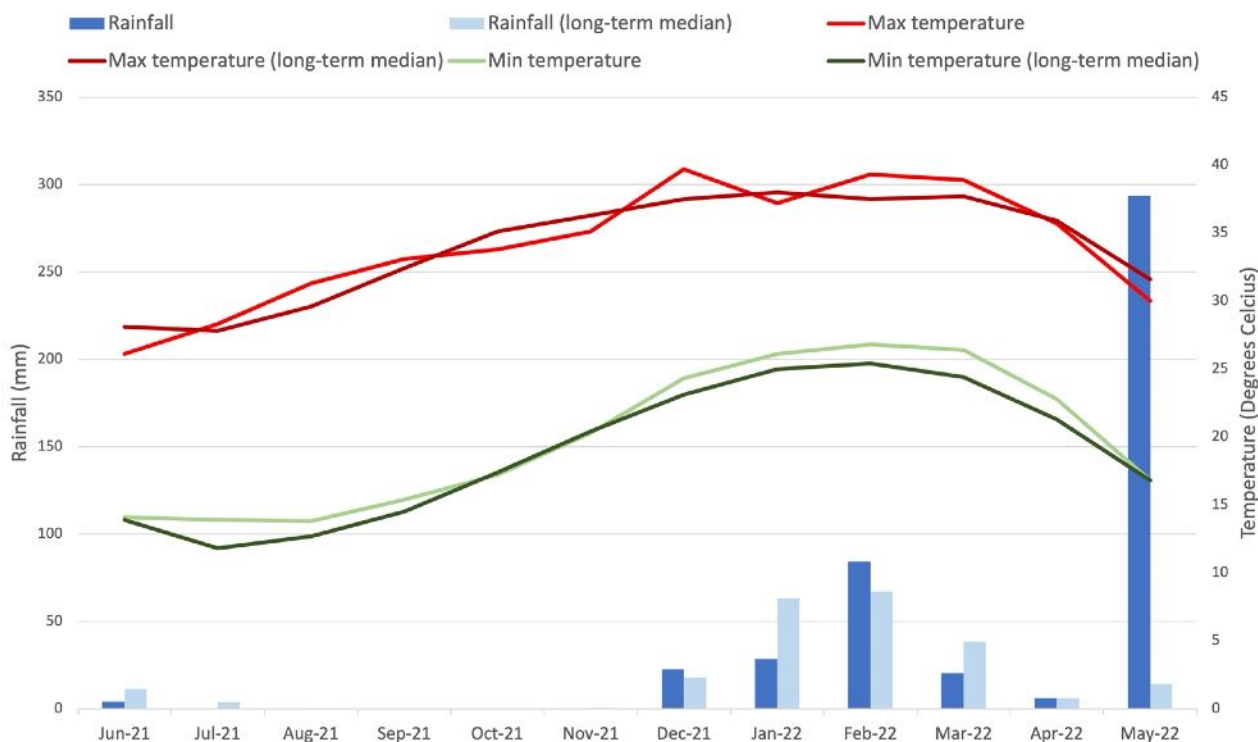
Name	Position	Survey Role	Qualification	Years of Experience	DBCA Licence #
Aster Braxton-Smith	Botanist	Flora quadrat/relevé sampling, vegetation mapping (team lead)	BSc.	4	FB62000269
Scott Werner	Senior Biologist	Flora quadrat/relevé sampling, vegetation mapping, targeted flora searches (support to team lead)	BSc. (Hons.)	12	FB62000038-2
Ayesha Lapinski	Botanist	Flora quadrat/relevé sampling, vegetation mapping	GradDipSc.	4	FB62000106
Jason Teuber	Botanist	Flora quadrat/relevé sampling, targeted flora searches	BSc.	2	FB62000286
Tom Hounsham	Graduate Botanist	Flora quadrat/relevé sampling	BSc.	1	FB62000390
Rob Hooper	Graduate Biologist	Flora quadrat/relevé sampling	BSc.	1	FB62000401

### 3.2.2 Rainfall and Temperature

The amount of rainfall preceding a botanical survey has a direct relationship with flora, influencing the presence certain species that germinate after rainfall events, the condition of flora (dry or otherwise healthy), and the condition of vegetation to be sampled, particularly those that are susceptible to drought (e.g. cracking clay grass communities).

Long-term rainfall data were obtained from the Bureau of Meteorology weather station in Pannawonica (No.#005069), located approximately 25 km northeast of the survey area. Long-term temperature data were obtained from Mardie (No.#005008), located approximately 58 km north of the survey area.

Rainfall data for the 12 months preceding the survey were compared to the monthly median rainfall for the years 1971-2022 from the same station. Monthly rainfall totals followed a similar pattern to the long-term median rainfall for the area, however significantly more rainfall was received in May 2022 (293.6 mm) compared to the long-term monthly median for this month (14.2 mm) (Figure 3.1). A total of 455.6 mm of rainfall was received in the six months prior to the field survey (December 2021 to May 2022), which is more than double the long-term median for the same period (206.7 mm; 1971-2022). Conditions at the time of the survey were therefore considered optimal for flora sampling.



**Figure 3.1:** Rainfall and temperature measurements from BOM weather station at Pannawonica (#005069) and Mardie (#005008) in the year preceding the surveys, compared with long-term averages. Data from <http://www.bom.gov.au/>.

### 3.3 Detailed and Targeted Flora and Vegetation Survey

#### 3.3.1 Floristic Data Collection: Assessment of Quadrats and Relevés

Indicative sites were selected prior to the field survey, based on the broad habitats and vegetation types apparent from aerial imagery. Once in the field, the actual locations of the sites were adjusted as necessary (e.g. to be placed in an area more representative of the broader vegetation type, to avoid recently burnt areas, etc.).

Sampling sites were established as either:

1. **Quadrats:** bounded floristic sampling sites. The standard for the Pilbara bioregion comprises a 50 m x 50 m square (or a modified shape with an equivalent area). Quadrats were measured out using optical squares and measuring tapes, and were permanently marked with a steel fence dropper at each corner; or
2. **Relevés:** unbounded floristic sampling sites with a similar search area to a quadrat. Relevés were typically used where the target vegetation was too small or too narrow to effectively establish a quadrat. The relevés during the current survey were thoroughly surveyed for flora, but were not permanently marked.

The following parameters were recorded for all quadrats and relevés:

1. Location coordinates ( $\pm 2$  m) were recorded using a hand-held Global Positioning System (GPS) unit; coordinates were recorded for all four corners of a quadrat. A central point was recorded as a minimum for the relevés, with a start and end point recorded for relevés that were undertaken in linear habitats such as narrow creek lines;
2. Habitat: A description of the landform and habitat;
3. Soil: A broad description of the soil and any stony surface mantle or rocky outcrops;
4. Fire history: An estimate of time since last fire;

5. Disturbance details: Vegetation condition was ranked according to the scale from EPA (2016), which was based on that developed by Trudgen (1988); this considered evidence of grazing, physical disturbance, weed invasion etc. (see Appendix 5);
6. Vegetation description: A broad description based on the height and estimated cover of dominant species after Aplin's (1979) modification of the vegetation classification system of Specht (1970) (see Appendix 5);
7. Flora species: The estimated percentage foliar cover of each flora species present within the quadrat, or in the vicinity of the relevé (if not a linear site, then within a ~30 m radius of the centre point); and
8. Photograph: A representative digital photograph of the vegetation was taken, typically from the north or northwest corner of the quadrat or the central point of a relevé.

The survey area was sampled with 102 sites, comprising 87 quadrats and 15 relevés (Figure 3.2). A minimum of three sampling sites was established within each vegetation type, where possible, consistent with the EPA (2016) requirements for a detailed flora and vegetation survey. Where less than three sampling sites were present in a vegetation type, this was due to the vegetation type in question being uncommon and occurrences being minor. Locations of the sampling sites are also shown on the vegetation mapping in Appendix 5, while a summary of the raw data from the sites is provided in Appendix 6.

### 3.3.2 Vegetation Description and Mapping

The scale of vegetation mapping is influenced by a range of factors including spatial characteristics of the survey area (e.g. the size and variety of habitats present), and other factors such as the scope of the survey and the availability of current, high-resolution aerial photography. The vegetation types for this study were described at the association level (level V as per the National Vegetation Information System; NVIS)<sup>1</sup>. This level of detail would be considered fine-scale (intra-locality) delineation of vegetation types as per EPA (2016). In general, minor variations in the vegetation that were not clearly defined on aerial photography or were not practical to accurately map in the field (e.g. minor flowlines) were incorporated into the surrounding 'parent' vegetation type.

Vegetation sampling focussed on the quadrat and relevé sampling. Mapping notes were also utilised to mark the boundaries of vegetation types in the field, to allow for more accurate delineation of these boundaries following the survey.

Vegetation types and boundaries were subsequently verified using both the data collected in the field and digital imagery. Each vegetation type mapped for this assessment was given a unique alphanumeric code, comprising a character representing the dominant genus of the vegetation group (i.e. 'A' for *Acacia*, 'E' for *Eucalyptus*, 'C' for *Corymbia*, 'T' for *Triodia*, and 'S' for *Senna*), followed by a number sequence. The codes and a full description of each vegetation type are presented in Section 4.2.2, with their distribution mapped in Appendix 7.

Vegetation condition mapping was also prepared using the condition categories from EPA (2016), and is provided in Appendix 8.

Vegetation maps were created and consolidated using Geographical Information System (GIS) software (QGIS and MapInfo Professional). All maps in this report were produced by Melissa Robinson (Senior GIS Cartographer at Biota).

<sup>1</sup> <http://www.environment.gov.au/land/publications/nvis-taxonomic-review/introduction#del>

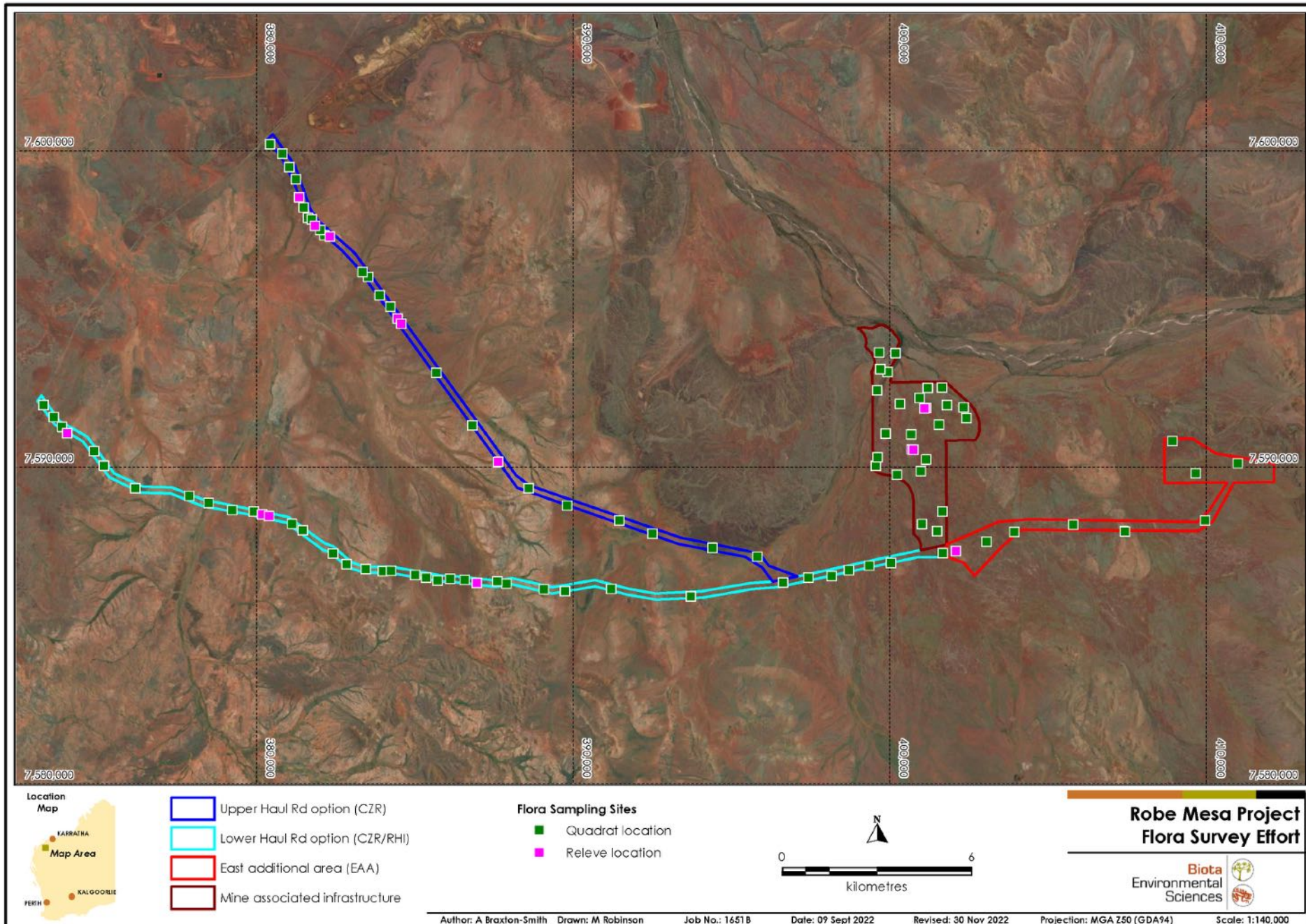


Figure 3.2: Location of the flora sampling sites.

### **3.3.3 Searches for Significant Flora**

The survey focussed on quadrat and relevé sampling however, when possible, targeted non-systematic searches were conducted in areas considered to be potential habitat for significant flora (i.e. Threatened or Priority listed species).

Locations of species of significance or unknown taxa were recorded using a hand-held GPS unit. The number of individuals and extent of the population were also recorded for each location, together with the habitat and associated species. Locations of introduced flora species (weeds) were also recorded during the foot traverses, along with an estimate of their population size.

Significant flora locations and weed locations are provided in Appendices 9 and 10 respectively.

### **3.3.4 Specimen Identification, Nomenclature and Data Entry**

Common taxa that were well known to the survey botanists were confirmed in the field. A voucher specimen was collected if the taxon was either difficult to determine without closer examination, belonged to a recognised species complex, was poorly collected or otherwise unusual. Each voucher specimen was assigned a unique internal code to facilitate tracking of data. Specimens were pressed in the field and then returned to Perth for further examination and confirmation.

Voucher specimens were identified using all available flora keys, and comparison with reference collections of specimens at the WA Herbarium and in-house at Biota. Specimens were identified by Biota botanists with assistance from Pierre-Louis de Kock (consultant specialist taxonomist, and Director of DK Botanical). Mike Hislop (Identification Botanist at the WA Herbarium) is also gratefully acknowledged for his assistance to further resolve some specimen identifications.

A full flora species list is provided in Appendix 11. Nomenclature and significance rankings used in this report are consistent with the current listing of WA flora recognised by the WA Herbarium on Florabase<sup>2</sup> at the time of preparation of this report.

All data were entered into a Microsoft Access database maintained at Biota, which was developed by Ted Griffin at the request of Malcolm Trudgen (M.E. Trudgen & Associates).

### **3.3.5 Analysis of Flora Data**

#### **3.3.5.1 Sampling Adequacy**

Plots of species accumulation curves can be used to assess sampling adequacy. When a survey has sampled an adequate proportion of the floristic assemblage, the curve should plateau and approach asymptote. EstimateS (Colwell 2013) was used to calculate smoothed species accumulation curves based on 999 random permutations of the species data; only quadrat and relevé data were used (opportunistic records were excluded).

Species accumulation curves alone cannot be reliably used to extrapolate predicted species richness for future biological sampling. In order to estimate asymptotic richness (i.e. an extrapolation of species richness) for the incidence data (i.e. presence, rather than abundance data), the Chao 2 Mean and ICE Mean estimators were calculated using EstimateS.

#### **3.3.5.2 Floristic Analysis**

To assist with defining the vegetation types from the survey area, hierarchical clustering analyses were conducted in PRIMER v6 (Clarke and Gorley 2006) to investigate the similarity of sampling sites based on their floristic composition.

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<sup>2</sup> <http://florabase.dpaw.wa.gov.au>

A combined species list was generated from all sites in the data set from the current survey area. Taxon names and records were then rationalised as follows:

- Species that were present at only a single site were removed to reduce 'noise' in the data set.
- Some taxa were merged, where considered appropriate (e.g. records of both *Evolvulus alsinoides* varieties were merged).
- Taxa that could potentially refer to more than one entity (e.g. "*Sida* sp.") were removed.
- All weeds were removed except for \**Cenchrus* species, which were combined and referred to as "*Cenchrus* spp." due to their dominance in several sampling sites.

The analysis was run using percent cover data (square-root transformed). The Bray-Curtis measure of similarity was used to produce a similarity matrix and the group average method cluster analysis was used to determine floristic groups. Statistically different groups were identified through similarity profile analysis (SIMPROF). The similarity percentage test (SIMPER) was used to determine which species contributed most to the similarities between sites in particular groups.

Results were investigated through outputs including dendrograms (tree diagrams) of site similarity, and Non-metric Multi-Dimensional Scaling plots (NMDS plots). Selected outputs from the analyses are provided in Appendix 12.

### 3.4 Survey Limitations

In accordance with the EPA Technical Guidance for 'Flora and Vegetation Surveys for Environmental Impact Assessment' (EPA 2016) potential constraints and limitations of this biological survey are addressed in Table 3.4.

**Table 3.4: Potential constraints and limitations of the biological survey.**

Potential Constraint	Statement of Limitations
1. Availability of contextual information at a regional and local scale	<ul style="list-style-type: none"> <li>• Extensive previous survey work has been undertaken in the region, including several studies previously completed in close proximity to the survey area. Contextual information was readily available at the locality scale.</li> <li>• Contextual information was not a limitation for the study.</li> </ul>
2. Competency/ experience of the team carrying out the survey, including experience in the bioregion surveyed	<ul style="list-style-type: none"> <li>• All field personnel were suitably qualified and have extensive experience in the Pilbara region. While the field team leader had four years of relevant experience in the Pilbara, rather than the five years recommended in EPA (2016), she was supported on the survey by a senior botanist with over a decade of experience in the region.</li> <li>• Competency was not considered to be a limitation.</li> </ul>
3. Proportion of species recorded and/or collected, any identification issues	<ul style="list-style-type: none"> <li>• All vascular flora encountered in the survey area were recorded, with collections made of any taxa that were unusual, or difficult to identify without microscopic examination. The majority (85%) of the flora taxa were able to be identified to the lowest level possible within the current taxonomic framework.</li> <li>• Overall, identification and proportion of species recorded was not considered to be a limitation.</li> </ul>



Potential Constraint	Statement of Limitations
4. Appropriate area fully surveyed (effort and extent)	<ul style="list-style-type: none"> <li>• Flora and vegetation sampling was completed through the majority of representative habitats in the survey area. At least three replicate sites were set up in each vegetation type except for:               <ul style="list-style-type: none"> <li>○ A6 – this vegetation unit was very restricted with only 14.2 ha mapped in the survey area and restricted on ground access.</li> <li>○ A7 – this vegetation unit covers 78 ha of the survey area however predominantly fell within the Rio Tinto tenure that had restricted on ground access.</li> <li>○ C3 – this vegetation unit was restricted with only 11.3 ha mapped in the survey area.</li> <li>○ C4 – this vegetation unit was restricted with only 33.9 ha mapped in the survey area.</li> <li>○ T1 – this vegetation unit was mapped over 46.9 ha of the survey area, but was separated from the A5 vegetation type during mapping and analysis due to lack of <i>Acacia</i> spp. in the upper stratum.</li> <li>○ T2 – this vegetation unit was very restricted with only 10.2 ha mapped in the survey area.</li> </ul> </li> <li>• Targeted searches for significant flora were completed along the length of the survey area in habitats considered to be prospective for Priority flora, however the entire survey area was not systematically searched.</li> <li>• The survey comprised a single phase of sampling, and additional sampling would lead to additional taxa being recorded.</li> <li>• Overall, survey effort and extent were not considered to be limitations for the survey.</li> </ul>
5. Access restrictions within the survey and contextual areas	<ul style="list-style-type: none"> <li>• The majority of the survey area was readily accessible by helicopter, and an existing haul road was used to access the most western sites along the Upper Haul Rd option area by vehicle.</li> <li>• A small area (under Rio Tinto tenure) at the northernmost point of the Mine Associated Infrastructure had restricted on foot access. Biota was granted permission to observe the vegetation from the helicopter during a fly-over as it potentially represented the P3 "<i>Triodia pisoliticola</i> (previously <i>Triodia</i> sp. Robe River) assemblages of mesas of the West Pilbara" PEC. The lack of on-ground access to this area comprised a minor limitation for the survey.</li> </ul>
6. Survey timing, rainfall, season of survey	<ul style="list-style-type: none"> <li>• The flora survey was undertaken in June 2022 and followed particularly high rainfall in May. Survey timing was within the EPA (2016) recommended primary survey season for flora and vegetation in the Pilbara.</li> <li>• Survey timing, season and rainfall were not considered to be limitations.</li> </ul>
7. Disturbance that may have affected the results of survey such as fire, flood or clearing	<ul style="list-style-type: none"> <li>• Some parts of the survey area had recently been burnt (fire age 3-5 years) or were previously cleared. As a result, some indicative flora and vegetation sampling locations had to be moved, sampled as relevés, or mapping notes were taken.</li> <li>• Disturbance is not considered to have been a limitation for the survey, with only 0.6% of the survey area rated as 'Completely Degraded'.</li> </ul>

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## 4.0 Results

### 4.1 Desktop Study

#### 4.1.1 IBRA Bioregion and Subregion

The Interim Biogeographic Regionalisation for Australia (IBRA) recognises 89 bioregions and 419 subregions within Australia (DSEWPaC 2012). The survey area lies within the Hamersley subregion of the Pilbara bioregion. A description of the Hamersley subregion and its extent in the survey area is provided in Table 4.1.

The Pilbara bioregion is a major centre for biodiversity within Western Australia. In recognition of this high species diversity and the high levels of endemism in the region, the Hamersley subregion is considered one of the 15 national biodiversity hotspots in Australia. This appears to be related to the diversity of geological, altitudinal and climatic elements in the region, as well as being a function of its location in a transitional zone between the floras of the Eyrean (central desert) and southern Torresian (tropical) bioclimatic regions (see for example van Leeuwen and Bromilow (2002) for a detailed discussion of the significance of the Hamersley Range).

**Table 4.1: Description of the IBRA subregion within the survey area.**

IBRA Subregion	Description (Reference)	Extent in the Pilbara Bioregion (ha)	Extent in Survey Area	
			Area (ha)	Proportion (%)
Hamersley subregion (PIL 3)	Mountainous area of Proterozoic sedimentary ranges and plateaus, dissected by gorges (basalt, shale and dolerite). Mulga low woodland over bunch grasses on fine textured soils in valley floors, and <i>Eucalyptus leucophloia</i> over <i>Triodia brizoides</i> on skeletal soils of the ranges (Kendrick 2003).	6,215,092	3,050.0	0.05

#### 4.1.2 Land Systems

Land systems are composed of repeating patterns of topography, soils and vegetation, which are described as a series of land units (Christian and Stewart 1953). A total of 105 land systems have been identified and mapped in the Pilbara bioregion by the then Department of Agriculture. Land systems mapping covering the survey area was prepared by van Vreeswyk et al. (2004).

A total of nine land systems are mapped within the survey area (Table 4.2, Figure 4.1). The most extensive of these are as follows:

- The Sherlock land system accounts for 38.5% of the total survey area and dominates the Mine Associated Infrastructure area.
- The Urandy land system accounts for 24.1% of the survey area and dominates the EAA; and
- The Stuart land system accounts for 22.5% of the survey area and dominates the haul road corridors.

The survey area intersects only a small proportion of the extent of each land system in the Pilbara bioregion.

#### 4.1.3 Geology

Geological units for the locality (the Yarraloola region) were mapped at 1:250,000 scale by the Geological Survey of Western Australia (1968) as part of the Geological Survey of WA series. The survey area intersects 13 geological units (Figure 4.2, with the most widespread being the units Qp, Qg and Ql, which together comprise over 82% of the survey area (Table 4.3).

**Table 4.2: Description of land systems in the survey area.**

Data from Department of Agriculture WA (van Vreeswyk et al. 2004).

Land System	Description	Extent in Pilbara Bioregion (ha)	Extent in Survey Area		Extent in Survey Area as a Proportion of the Bioregion (%)
			Area (ha)	Proportion (%)	
Sherlock (SRK)	Stony alluvial plains supporting snakewood shrublands with patchy tussock grasses and spinifex grasslands.	38,638.9	1,173.9	38.5	3.0
Urandy (URY)	Stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands.	131,975.6	734.6	24.1	0.6
Stuart (STT)	Undulating plains with snakewood; low hills with spinifex; stony chenopod and hard spinifex pastures in fair to excellent condition; no erosion.	276,684.8	687.2	22.5	0.2
Nanutarra (NNT)	Low mesas and hills of sedimentary rocks supporting soft and hard spinifex grasslands.	77,383.8	125.1	4.1	0.2
Robe (ROB)	Low plateaux, mesas and buttes of limonite supporting soft spinifex and occasionally hard spinifex grasslands.	128,859.4	98.5	3.2	<0.1
River (RIV)	Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex.	482,175.6	94.2	3.1	<0.1
Capricorn (CPN)	Rugged sandstone hills and ridges; hard spinifex or stony short grass forb pasture in fair to good condition; no erosion.	698,530.6	65.2	2.1	<0.1
Peedamulla (PED)	Gravelly plains supporting hard spinifex grasslands and minor snakewood shrublands.	59,200.7	55.8	1.9	<0.1
Boolgeeda (BGD)	Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	961,634.8	15.5	0.5	<0.01
		<b>Total</b>	<b>3,050.0</b>	<b>100.0</b>	

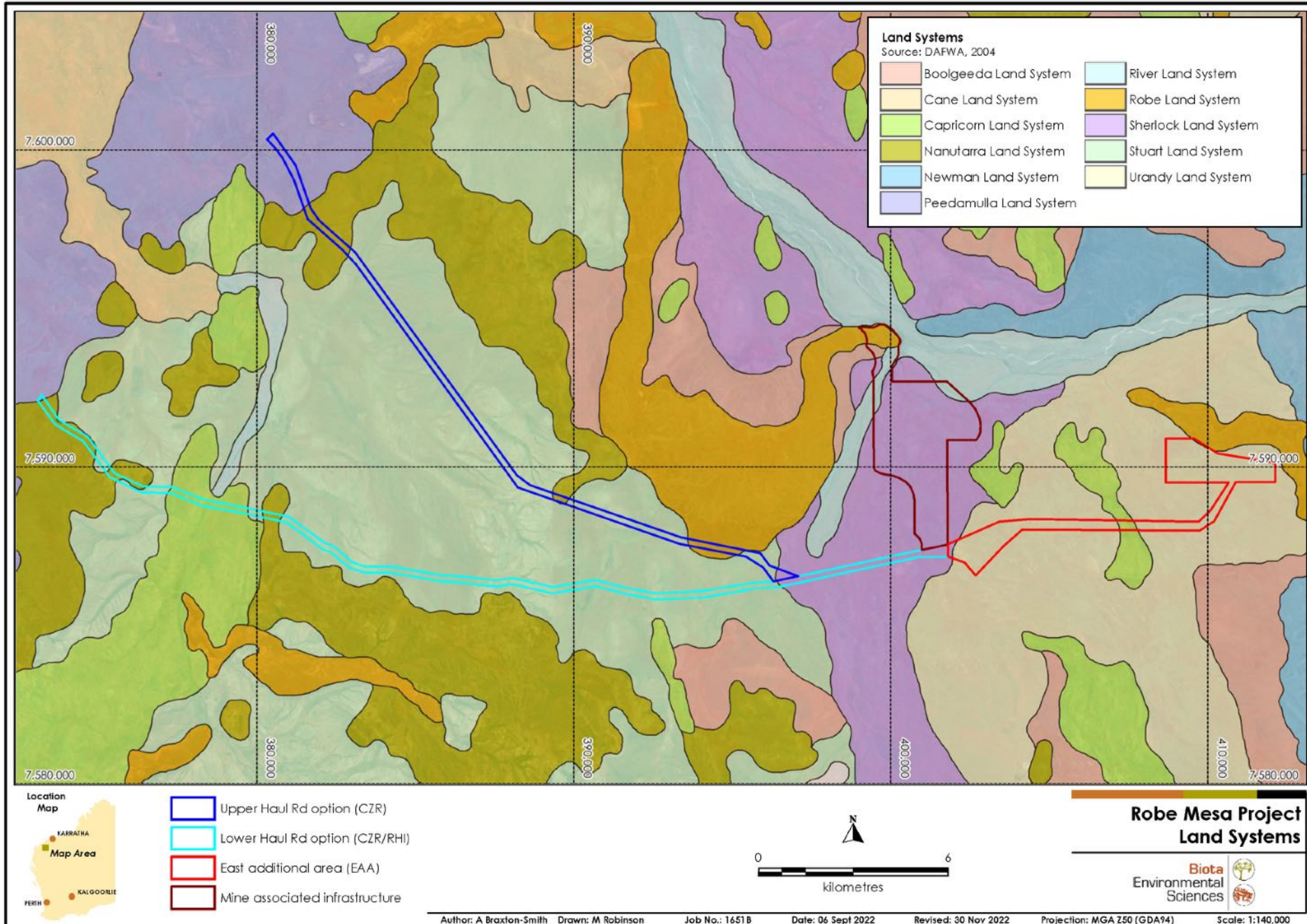


Figure 4.1: Land systems mapping of the survey area.

**Table 4.3: Description and extent of geological units in the survey area.**

Data from Geoscience Australia (Stewart et al. 2008).

Geological Unit	Description	Extent in Survey Area	
		Area (ha)	Proportion (%)
Qp	Eluvium and alluvium. Residual 'high level' clay and sandy clay plain with gilgais; intermittent veneer of alluvium; residual deposits of sand, gravel, and pebbles; sheet kunkar in places.	1,004.2	32.9
Qg	Colluvium. Unconsolidated to loosely consolidated slope deposits; calcareous and ferruginous cement in older parts.	813.4	26.8
Ql	Lacustrine deposits - clay, silt; saline in part, flood deposits. Unconsolidated fluvial and sheet - flood deposits in levees and river terraces.	686.8	22.6
Qpt	Eluvium. Residual, unconsolidated or loosely consolidated, low angle slope deposits; angular to subrounded shale and ironstone fragments; quartz and quartzite pebbles.	188.7	6.2
Tp	Pisolitic limonite deposits with fossil wood fragments. Occurs along old river channels. Contains iron ore.	102.1	3.3
Qr	Alluvium. Unconsolidated fluvial deposits, mostly sand.	67.5	2.2
Kn	Nanutarra formation. Shale, siltstone, micaceous siltstone; ferruginous and glauconitic quartz sandstone; some conglomerate; contains plant and marine fossils.	40.9	1.3
Wd	Duck Creek dolomite. Calcitic dolomite, minor shale; with <i>Collenia</i> .	40.9	1.3
Ma	Warramboe sandstone. Interbedded massive and flaggy quartz sandstone, and shale.	28.1	0.9
Wa	Ashburton formation. Interbedded shale, fine grained sandstone, greywacke; ferruginous and siliceous shale, thin dolomite; phyllite, quartz-mica schist and mica schist.	24.0	0.8
Wdc	Chert, chert breccia.	25.8	0.8
Kny	Yarraloola conglomerate. Poorly sorted conglomerate with shale, claystone lenses and interbedded sandstone; contains plant fossils.	22.1	0.7
Mk	Katanga conglomerate. Poorly sorted conglomerate with interbedded quartz sandstone.	5.5	0.2
	<b>Total</b>	<b>3,050.0</b>	<b>100.0</b>

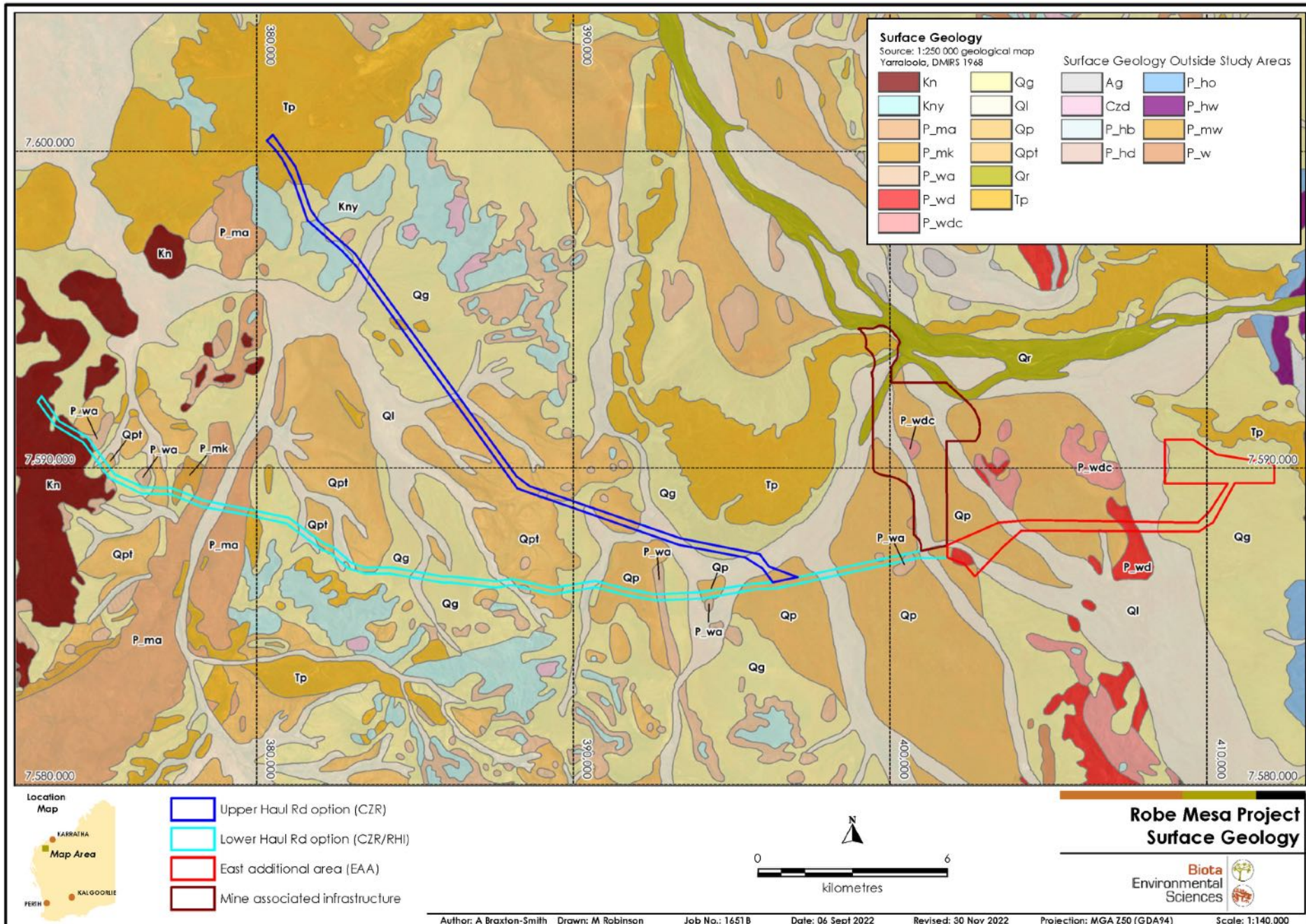


Figure 4.2: Geological units of the survey area.

#### **4.1.4 Soils**

Five broad soil types have been mapped within the survey area by Northcote et al. (1960) (see Figure 4.3). The most abundant are Oc66 and Oc67, which together account for 75.5% of the total survey area: these comprise mainly hard alkaline red soils on pediplains and plains, with small areas associated with occasional patches of calcrete (Table 4.4).

#### **4.1.5 Conservation and Heritage Areas**

The closest conservation reserve to the survey area is the Cane River Conservation Park, which is 17.4 km south at its closest point (Figure 4.4).

#### **4.1.6 Pre-European Vegetation**

Broad-scale vegetation mapping for the locality has been prepared at the 1:1,000,000 scale based on the work of J.S. Beard for the Pilbara (Beard 1975a). The survey area includes four of Beard's vegetation associations (Figure 4.5, Table 4.5). Sparse Mulga (*Acacia aneura* complex) woodlands of the Stuart Hills 29 association dominate the Mine Associated Infrastructure area and the western half of the EAA; the eastern half of the EAA is mapped as the Stuart Hills 620 association, which comprises Snakewood (*Acacia xiphophylla*) shrubs over soft spinifex (*Triodia epactia*) hummock grasslands. The haul road corridors are dominated by the Stuart Hills 583 association, which comprises sparse Kanji (*Acacia pyrifolia*) shrubs over hard spinifex (*Triodia basedowii* and *T. wiseana*) hummock grasslands.



**Table 4.4: Description and extent of soil units within the survey area.**

Data from Northcote et al. (1960).

Soil Unit	Description	Extent in Survey Area (ha)	
		Area (ha)	Proportion (%)
Oc66	Gently undulating pediplains extending out from breakaways capped by Robe pisolite deposits and other related formations. There may be a few small flat-topped residuals rising above the pediplains: chief soils are hard alkaline red soils (Dr2.33). Small areas of (Um5.11) soils may be associated with occasional patches of calcrete (kunkar). Minor soil occurrences include (Uf6.71), (Ug5.37), (Gn2.13), and stony (Gn2.12) soils.	1,517.1	49.8
Oc67	Plains: dominant soils are hard alkaline red soils (Dr2.33). Associated are extensive areas of (Um5.52) soils with (Ug5.38) soils in central landscape positions. Small areas of (Gn2.12) soils also occur as well as (Um5.11) on calcrete (kunkar).	786.1	25.8
B27	Low terrace associated with main stream channels: chief soils are loose sands (Uc1.22) with some (Um5.11) soils on patches of calcrete (kunkar).	358.1	11.7
Oc65	Low stony hills and steeply dissected pediments in areas of fine-grained sandstone, shale, and dolomite. There may be small areas of ferruginous duricrust and Robe pisolite as a capping. The soils are often shallow and stony: chief soils are hard alkaline red soils (Dr2.33) with some (Uc5.11) soils. (Um5.11) soils may occur on calcrete (kunkar) in the narrow valley plains and on exposures of calcareous rocks. (KS-Gn2.11) soils occur on the small area of ferruginous duricrust and Robe pisolite.	344.7	11.3
MY1	Gently undulating plateau elements sometimes sharply incised by narrow valleys. The boundary of this unit is frequently formed by breakaways but it may at times merge beneath the adjacent plain. These areas are capped by the Robe pisolite iron ore formation. The chief soils are gravelly acid red earths (KS-Gn2.11) with (Dr2.33) soils on the pediments.	44.0	1.4
	<b>Total</b>	<b>3,050.0</b>	<b>100.0</b>

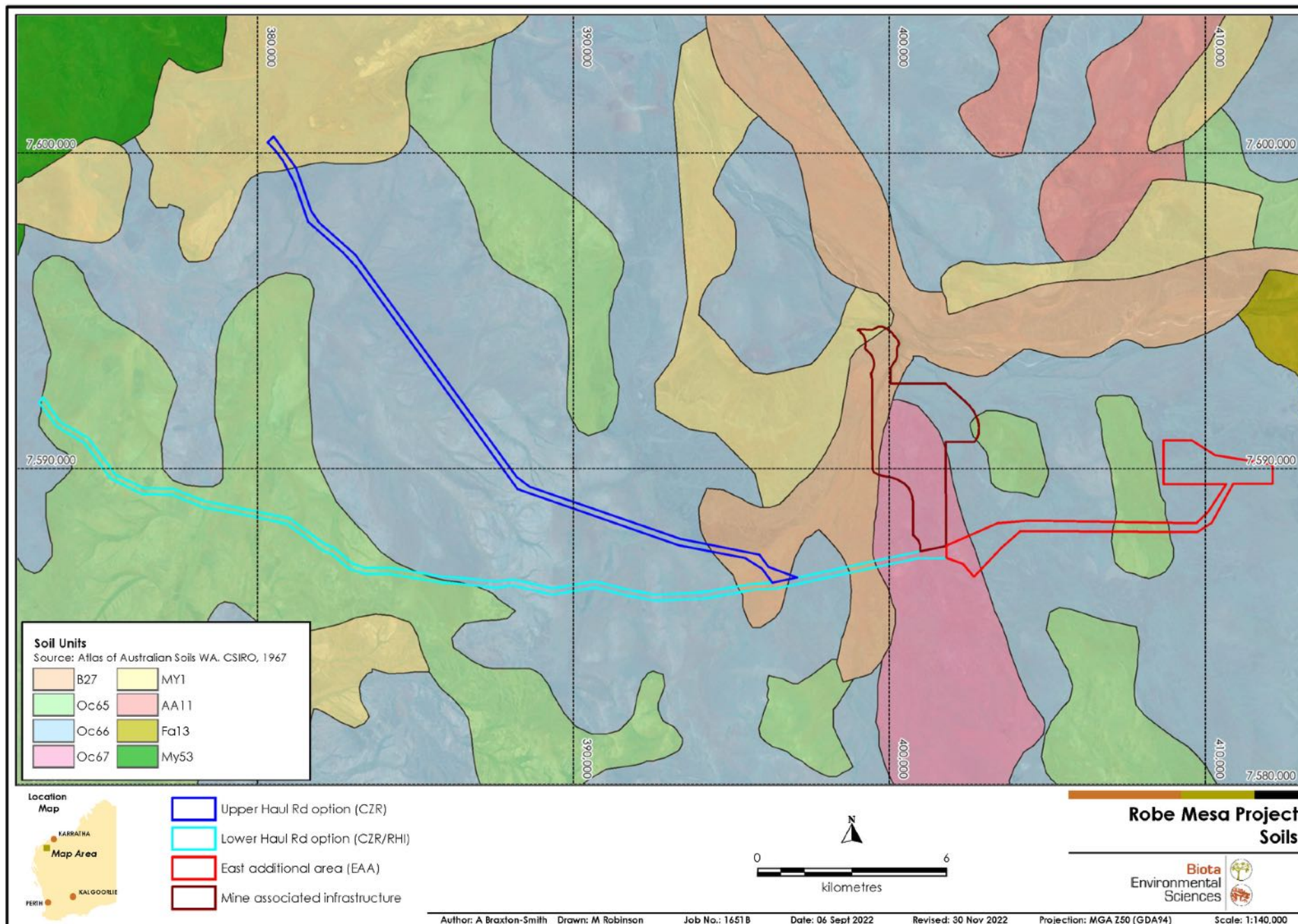


Figure 4.3: Soil units of the survey area.

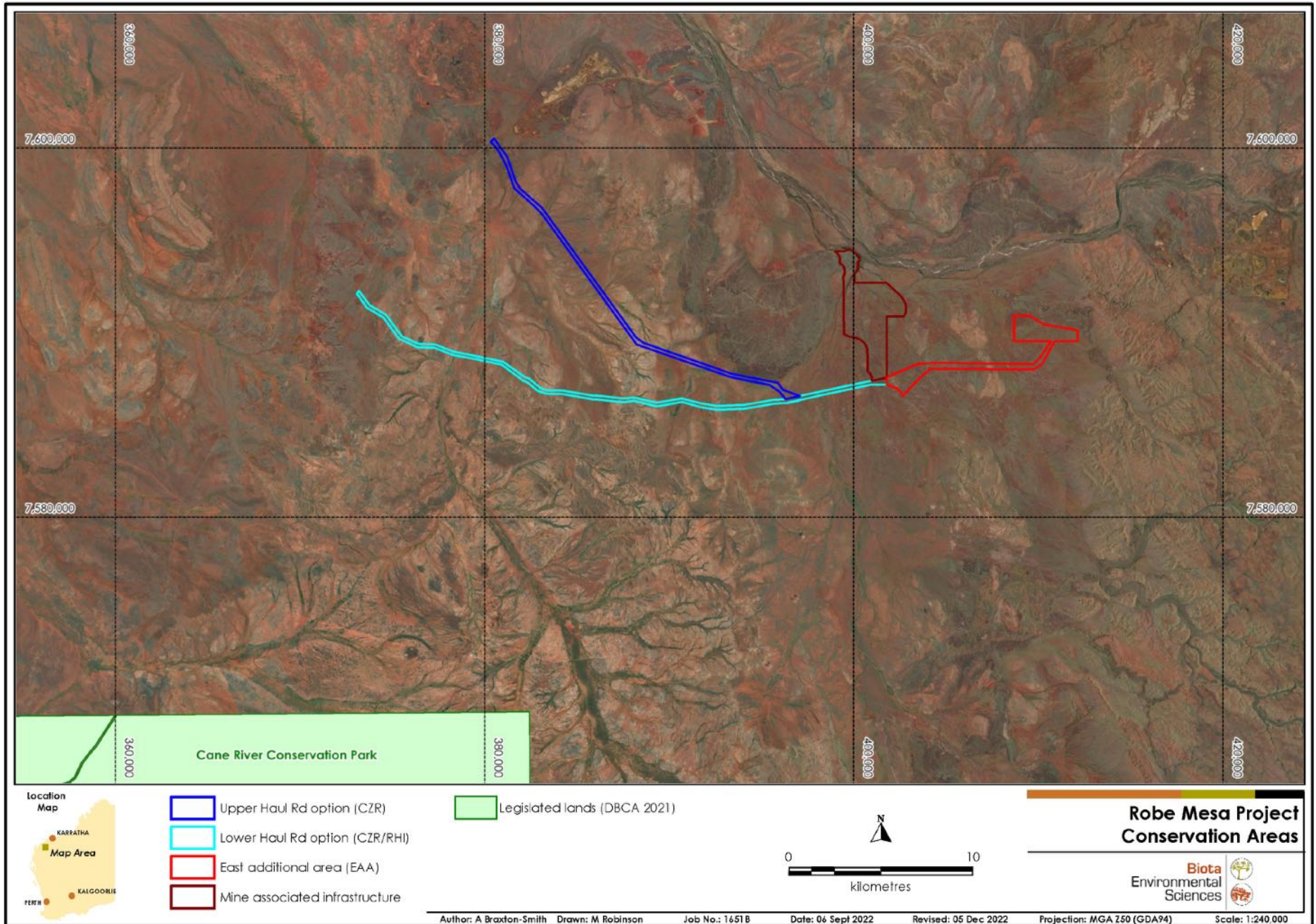


Figure 4.4: Closest conservation reserves to the survey area.

**Table 4.5: Description and extent of Beard's vegetation associations in the survey area.**

Data from Beard (1975b).

Vegetation Association	Description	Extent in Survey Area		Extent in Pilbara Bioregion (ha)	Extent in Survey Area as a Proportion of the Pilbara Bioregion (%)
		Area (ha)	Proportion (%)		
Stuart Hills 29	Sparse low woodland; mulga, discontinuous in scattered groups.	1,395.6	45.8	17,221.6	8.1
Stuart Hills 583	Hummock grasslands, sparse shrub steppe; kanji and <i>Acacia bivenosa</i> over hard spinifex <i>Triodia basedowii</i> and <i>T. wiseana</i> .	1,018.5	33.4	242,297.5	0.4
Stuart Hills 620	Hummock grasslands, shrub steppe; snakewood over soft spinifex.	633.1	20.8	15,530.1	4.1
Stuart Hill 93	Hummock grasslands, shrub steppe; kanji over soft spinifex.	2.8	0.1	55,510.2	<0.01
<b>Total</b>		<b>3,050.0</b>	<b>100</b>		

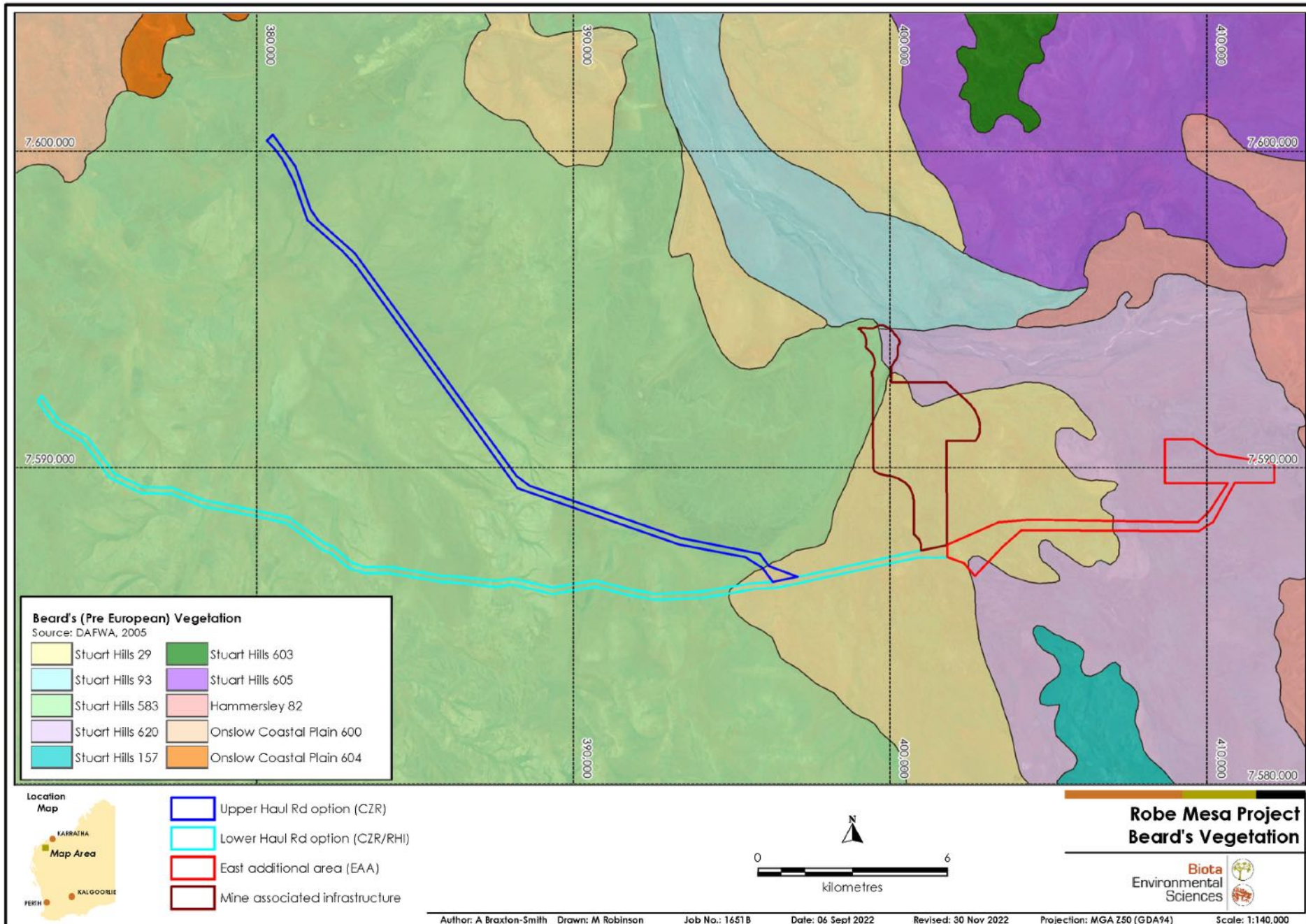


Figure 4.5: Beard's vegetation association mapping in the survey area.

## 4.1.7 Significant Communities in the Locality

This section describes vegetation of significance previously recorded within the survey area, or known from the survey area locality, based on the desktop assessment (see Section 3.1 and Table 3.1).

### 4.1.7.1 Threatened Ecological Communities

Only two TECs are listed for the Pilbara: the “*Themeda grasslands on cracking clays (Hamersley Station, Pilbara)*”, and the “*Ethel Gorge aquifer stygobiont community*”. Neither of these occur within the locality and they therefore do not occur within the survey area.

### 4.1.7.2 Priority Ecological Communities

Forty-three PECs are listed for the Pilbara bioregion (DBCA 2022). Three of these are mapped within the survey area (Figure 4.6):

- The Priority 1 “*Subterranean invertebrate community of pisolitic hills in the Pilbara*” PEC intersects the western end of the CZR section of the survey area. This PEC comprises “a series of isolated low undulating hills occur in the state’s Pilbara region. The troglofauna are being identified as having very short-range distributions” (DBCA 2022).
- The Priority 1 “*Subterranean invertebrate communities of mesas in the Robe Valley region*” PEC intersects the northern part of the Mine Associated Infrastructure area. This PEC comprises “a series of isolated mesas occur in the Robe Valley in the state’s Pilbara Region. The mesas are remnants of old valley infill deposits of the palaeo Robe River. The troglobitic faunal communities occur in an extremely specialised habitat and appear to require the particular structure and hydrogeology associated with mesas to provide a suitable humid habitat. Short range endemism is common in the fauna. The habitat is the humidified pisolitic strata” (DBCA 2022).
- The Priority 3 “*Triodia pisolitica (previously Triodia sp. Robe River) assemblages of mesas of the West Pilbara*” PEC intersects the EAA. “This community is typically restricted to mesas and cordillo landforms where the plant assemblages are dominated by or contain *Triodia pisolitica* and are indicative of inverted landscapes; that is, where *Triodia pisolitica* occurs in combination with species that are considered ‘out-of-context’ from their normal habitat. The community is a combination of *Triodia pisolitica* with *Acacia pruinocarpa*, *A. citrinoviridis* on slopes or peaks of mesas. These two *Acacias* are generally found associated with Pilbara creeklines, and their occurrence is probably indicative of the genesis of the mesa surfaces in wetlands, then erosion of the landscape and ‘inversion of the landscape’ such that the mesa slopes and peaks that were previously low in the landscape become high points” (DBCA 2022).

It should be noted that the mapped occurrences of PECs provided by the DBCA typically include a “management buffer around the actual community.

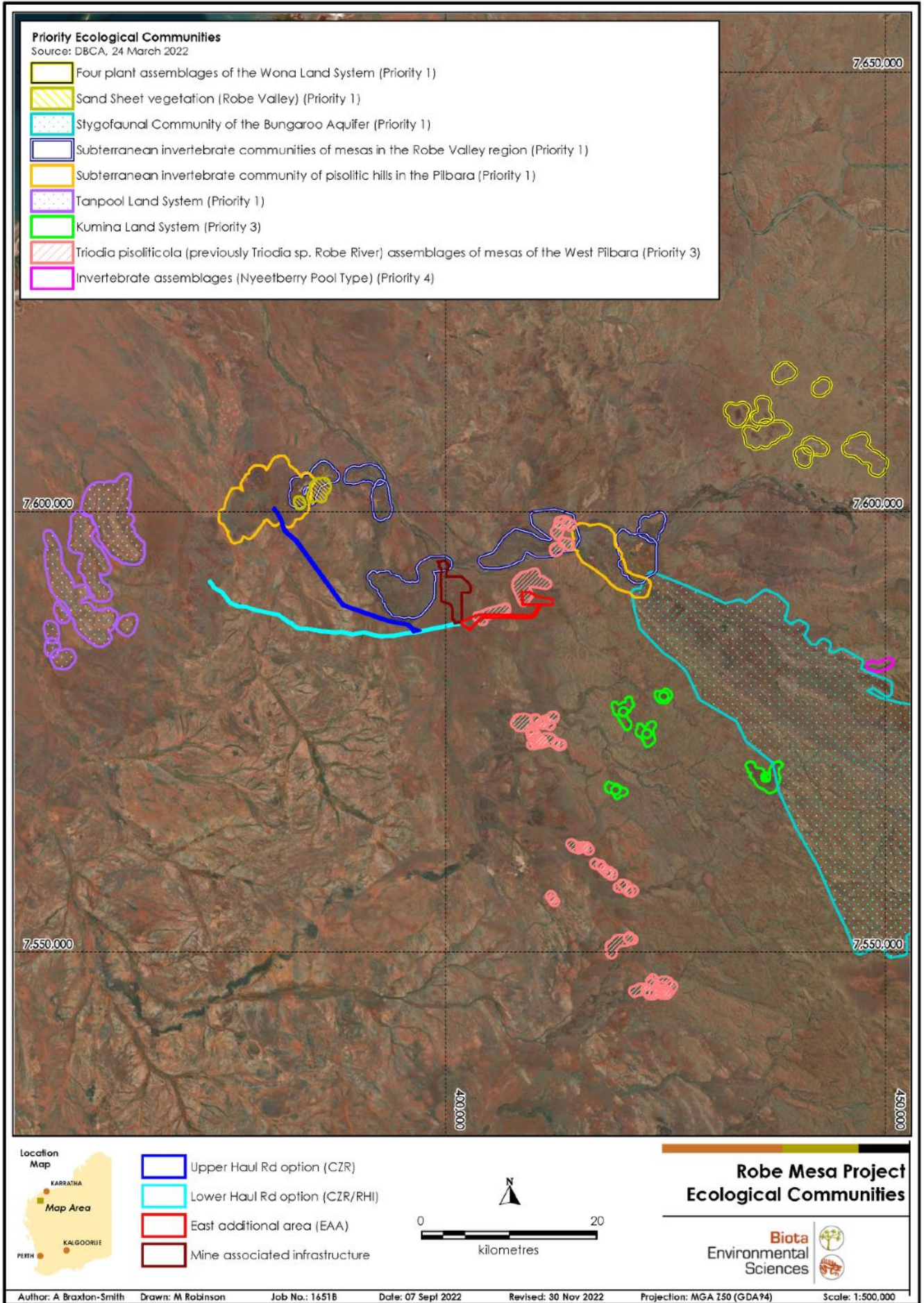


Figure 4.6: TECs and PECs in the vicinity of the survey area.

#### 4.1.8 Significant Flora Known from the Locality

This section describes species of significance previously recorded within the survey area or assessed as having the potential to occur in the survey area (see Section 3.1.3, Figure 4.7 and Appendix 3).

##### 4.1.8.1 Threatened Flora

Three flora species, *Aluta quadrata*, *Quoya zonalis* and *Thryptomene wittweri*, are listed as Threatened for the Pilbara bioregion (Table 4.6). Based on their known distribution and habitat preferences, none of these species would occur within the survey area; they all have restricted distributions and occur in habitats that are not present in the survey area.

**Table 4.6: Threatened flora species listed for the Pilbara bioregion.**

Species (Common Name)	Significance †		Distribution Overlaps Survey Area?
	State	Commonwealth	
<i>Aluta quadrata</i>	EN	–	No – restricted to southern Pilbara / northern Gascoyne (>200 km southeast).
<i>Quoya zonalis</i> (Pilbara Foxglove)	EN	EN	No – restricted to ranges of hills west of Marble Bar.
<i>Thryptomene wittweri</i> (Mountain Thryptomene)	VU	VU	No – known from a few widely separated locations on mountain tops in the southern Pilbara, western Gascoyne, and western Little Sandy Desert (>200 km southeast).

† CR = Critically Endangered, EN = Endangered, VU = Vulnerable.

##### 4.1.8.2 Priority Flora

A total of 23 Priority flora species were identified from the desktop study as having been previously recorded from the locality of the survey area (within 40 km). An assessment of their likelihood to occur in the survey area is presented in Appendix 3 and summarised below.

One Priority 3 species was known from the survey area prior to the current field survey: RPS (2021) had recorded *Eragrostis crateriformis* from an area overlapping the Mine Associated Infrastructure.

One Priority 4 species was ranked as “likely to occur” in the survey area prior to the field survey: *Rhynchosia bungarensis* had been recorded from numerous locations in the vicinity, particularly along the Robe River and associated floodplains. This species was considered likely to occur in the tributary of the Robe River intersected by the Mine Associated Infrastructure area.

It was considered that four other Priority species “may occur”:

- Although only known from the type location near Pannawonica, the Priority 1 spinifex *Triodia mallota* was considered to have some potential to occur, if suitable shale habitat was present.
- The Priority 3 small annual grass *Eragrostis surreyana* was considered to have some potential to occur in the same areas as *Rhynchosia bungarensis*.
- The Priority 3 shrub *Solanum* sp. Red Hill (S. van Leeuwen et al. PBS 5415) had been recorded to the north and south of the survey area, and may occur if suitable hills habitat was found to be present.
- The Priority 3 spinifex *Triodia pisoliticola* is not uncommon on the edges of mesas around Pannawonica. While no distinct mesas were apparent in the survey area, some occur to the west of the Mine Associated Infrastructure area, and this species has occasionally been recorded on lower slopes below similar habitats.

The species listed above formed the key significant species targeted during the survey. The remaining species were still searched for, but were considered “unlikely to occur”.



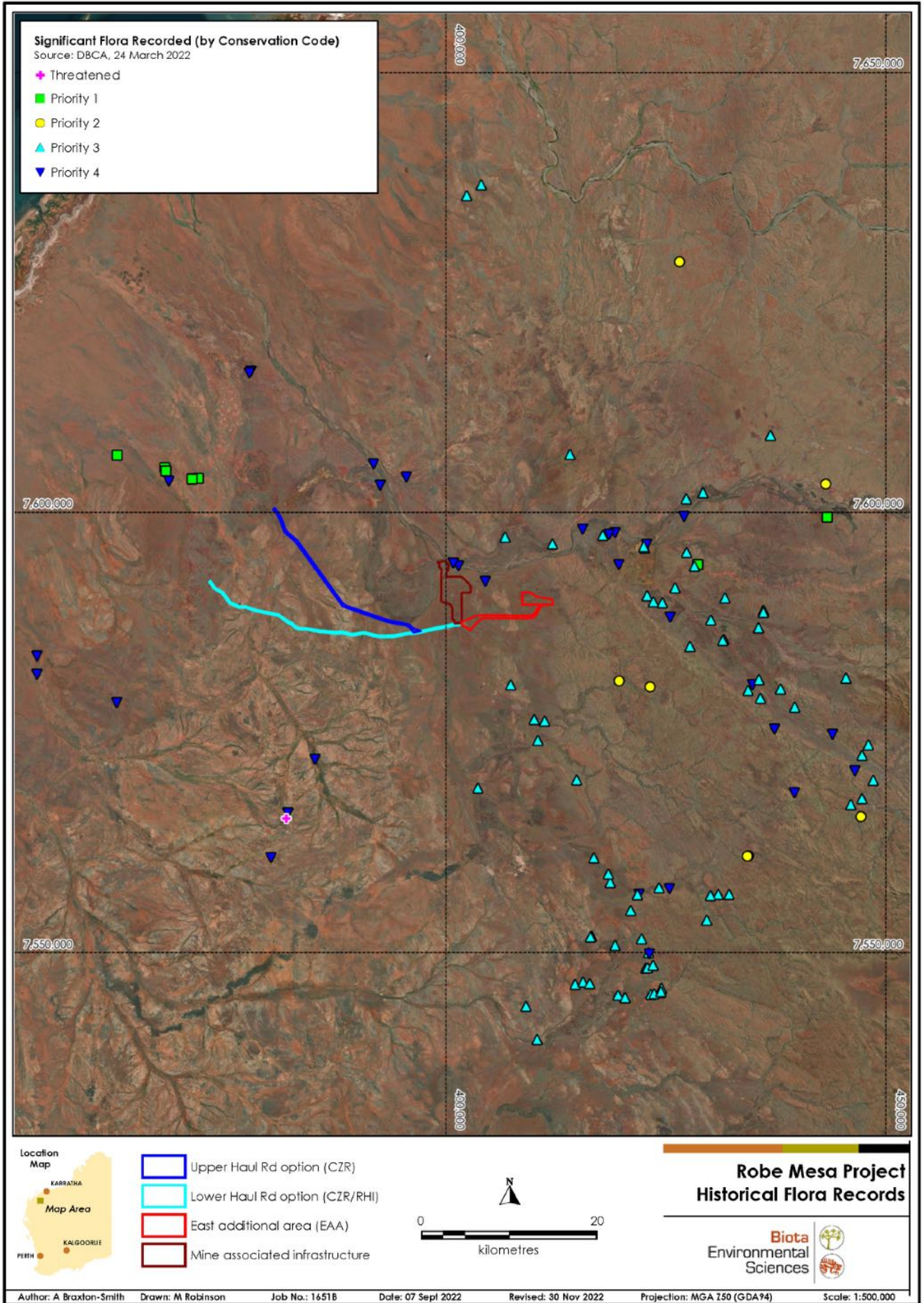


Figure 4.7: Historical significant flora records in the vicinity of the survey area (based on records supplied by DBCA).

## 4.2 Vegetation Results

### 4.2.1 Overview

The primary landforms found throughout the survey area comprised:

- Drainage lines, ranging in scale from major drainages supporting riparian *Eucalyptus*, *Acacia* and *Melaleuca* open forests and woodlands, through to minor drainages of scattered *Corymbia hamersleyana* over mixed *Acacia* shrubs and *Triodia epactia* (Plate 4.1);
- Hills and slopes with stony substrates supporting spinifex hummock grasslands; these usually had an overstorey of *Acacia* spp. and *Senna* spp. shrubs over a hummock grassland typically dominated by *Triodia wiseana* (Plate 4.2);
- Stony or gravelly plains, sometimes with clay soils, supporting Snakewood (*Acacia xiphophylla*) shrublands over tussock/annual grasses (Plate 4.3); and
- Stony or gravelly plains higher in the landscape supporting spinifex hummock grasslands with a sparse to open cover of shrubs and occasional *Corymbia* trees (Plate 4.4 and Plate 4.5).

For the purpose of mapping, vegetation types were grouped into five major types based on the dominant genus of the vegetation (i.e. 'A' for *Acacia*, 'E' for *Eucalyptus*, 'C' for *Corymbia*, 'T' for *Triodia*, and 'S' for *Senna*), and subsequently mapped as 17 discrete units. Cleared areas were mapped separately. Equivalent RPS vegetation mapping units from the 2021 report (RPS 2021) are detailed in Table 4.8.

The extent of each mapping unit is presented in Table 4.7 and maps are provided in Appendix 7. Each vegetation unit is further described in Section 4.2.2.



Plate 4.1: Vegetation of drainage lines (E2: CRM46 and C5: CRM44).



Plate 4.2: Vegetation of hills and slopes (E1: CRM18 and A6: CRM97R).



Plate 4.3: Snakewood vegetation on plains (A1: CRM06 and A2: CRM40R).



Plate 4.4: Vegetation of stony plains (T1: CRM55 and T2: CRM104).



Plate 4.5: Vegetation of stony plains (C2: CRM07 and C3: CRM84).

**Table 4.7: Extent of vegetation mapping units and other mapping units in the survey area.**

Code	Mapping Unit	Extent in Survey Area	
		Area (ha)	Proportion of Survey Area (%)
<b>Vegetation of Drainages</b>			
E2	<i>Eucalyptus victrix</i> ( <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> ) and <i>Melaleuca</i> spp. over mixed <i>Acacia</i> spp. over * <i>Cenchrus</i> spp.	87.7	2.9
C5	<i>Corymbia hamersleyana</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	246.4	8.1
T2	<i>Triodia epactia</i> hummock grassland.	10.0	0.3
<b>Vegetation of Hills and Slopes</b>			
A6	<i>Acacia arida</i> over <i>Triodia wiseana</i> .	14.2	0.5
A7	<i>Acacia bivenosa</i> over <i>Triodia wiseana</i> .	78.0	2.6
E1	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over mixed <i>Acacia</i> spp. over <i>Triodia wiseana</i> .	40.3	1.3
S1	<i>Senna</i> spp. and <i>Acacia bivenosa</i> over <i>Triodia wiseana</i> .	55.0	1.8
T1	<i>Triodia longiceps</i> open hummock grassland.	46.9	1.5
<b>Vegetation of Plains</b>			
A1	<i>Acacia xiphophylla</i> tall shrubland over <i>Triodia epactia</i> open hummock grassland.	387.4	12.7
A2	<i>Acacia xiphophylla</i> tall shrubland over <i>Triodia wiseana</i> very open hummock grassland.	26.9	0.9
A3	Mixed <i>Acacia</i> spp. over <i>Triodia wiseana</i> .	402.7	13.2
A4	Mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	712.1	23.3
A5	Mixed <i>Acacia</i> spp. over <i>Triodia longiceps</i> .	204.1	6.7
C1	<i>Corymbia hamersleyana</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	402.1	13.2
C2	<i>Corymbia candida</i> subsp. <i>candida</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	273.0	9.0
C3	<i>Corymbia deserticola</i> subsp. <i>deserticola</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	11.3	0.4
C4	<i>Corymbia zygophylla</i> over mixed <i>Acacia</i> spp. over <i>Triodia</i> spp.	33.9	1.1
<b>Other Mapping Units</b>			
D1	Cleared areas.	18.0	0.6
<b>Total</b>		<b>3,050.0</b>	<b>100.0</b>

Table 4.8: Biota vegetation mapping units from the current survey and equivalent RPS vegetation mapping units from the 2021 report (RPS 2021).

Biota Mapping Code	Biota Mapping Unit	RPS Mapping Code	RPS Mapping Unit
<b>Vegetation of Drainages</b>			
E2	<i>Eucalyptus victrix</i> ( <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> ) and <i>Melaleuca</i> spp. over mixed <i>Acacia</i> spp. over * <i>Cenchrus</i> spp.	EcEv.Mg	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> and <i>E. victrix</i> Mid Closed Forest over <i>Melaleuca glomerata</i> , <i>Gossypium robinsonii</i> and <i>Acacia trachycarpa</i> Tall Sparse Shrubland over <i>Eulalia aurea</i> , and other mixed species Grassland / Forbland
C5	<i>Corymbia hamersleyana</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	NA	NA
T2	<i>Triodia epactia</i> hummock grassland.	NA	NA
<b>Vegetation of Hills and Slopes</b>			
A6	<i>Acacia arida</i> over <i>Triodia wiseana</i> .	Aar.Tw	<i>Acacia arida</i> Mid Sparse Shrubland over <i>Triodia wiseana</i> Hummock Grassland
A7	<i>Acacia bivenosa</i> over <i>Triodia wiseana</i> .	Ab.Tw	<i>Acacia bivenosa</i> and <i>Acacia</i> spp. Mid Open Shrubland over <i>Ptilotus</i> spp. and <i>Senna</i> spp. Low Sparse Shrubland over <i>Triodia wiseana</i> Hummock Grassland
E1	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over mixed <i>Acacia</i> spp. over <i>Triodia wiseana</i> .	El.Ab.Tw	<i>Eucalyptus leucophloia</i> Low Isolated Trees over <i>Acacia bivenosa</i> Mid Open Shrubland to Isolated Shrubs over <i>Triodia wiseana</i> Hummock Grassland
S1	<i>Senna</i> spp. and <i>Acacia bivenosa</i> over <i>Triodia wiseana</i> .	NA	NA
T1	<i>Triodia longiceps</i> open hummock grassland.	NA	NA
<b>Vegetation of Plains</b>			
A1	<i>Acacia xiphophylla</i> tall shrubland over <i>Triodia epactia</i> open hummock grassland.	Ax.Te	<i>Acacia xiphophylla</i> Tall Open Shrubland over <i>A. synchronicia</i> Mid Sparse Shrubland over a mixed Low Open Shrubland / Forbland over <i>Triodia epactia</i> Sparse Hummock Grassland
A2	<i>Acacia xiphophylla</i> tall shrubland over <i>Triodia wiseana</i> very open hummock grassland.	NA	NA
A3	Mixed <i>Acacia</i> spp. over <i>Triodia wiseana</i> .	Aspp.Tw	<i>Acacia</i> spp. Mid Isolated Shrubs over a mixed Low Open to Sparse Shrubland over <i>Triodia wiseana</i> Open Hummock Grassland
A4	Mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	Aat.Te	<i>Acacia atkinsiana</i> , <i>A. ancistrocarpa</i> and <i>A. sclerosperma</i> subsp. <i>sclerosperma</i> Tall Shrubland to Sparse Shrubland over mixed species Low Sparse Shrubland over <i>Triodia epactia</i> Hummock Grassland
A5	Mixed <i>Acacia</i> spp. over <i>Triodia longiceps</i> .	NA	NA

Biota Mapping Code	Biota Mapping Unit	RPS Mapping Code	RPS Mapping Unit
C1	<i>Corymbia hamersleyana</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	Ch.Ai.Te	<i>Corymbia hamersleyana</i> Low Isolated Trees over <i>Acacia inaequilatera</i> Mid to Tall Sparse Shrubland over <i>Triodia epactia</i> Hummock Grassland
C2	<i>Corymbia candida</i> subsp. <i>candida</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	Cc.Te	<i>Corymbia candida</i> subsp. <i>candida</i> Low Woodland to Open Forest over <i>Acacia synchronicia</i> , <i>A. ancistrocarpa</i> and <i>A. trachycarpa</i> Tall Open Shrubland over a mixed Low Open Shrubland / Forbland over <i>Triodia epactia</i> Open Hummock Grassland
C3	<i>Corymbia deserticola</i> subsp. <i>deserticola</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i> .	NA	NA
C4	<i>Corymbia zygophylla</i> over mixed <i>Acacia</i> spp. over <i>Triodia</i> spp.	NA	NA
<b>Other Mapping Units</b>			
D1	Cleared areas.	NA	NA

## 4.2.2 Description of Vegetation Types

### 4.2.2.1 Vegetation of Drainages

<b>E2</b>	<b><i>Eucalyptus victrix</i> (<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>) and <i>Melaleuca</i> spp. over mixed <i>Acacia</i> spp. over *<i>Cenchrus</i> spp.</b>
Typical vegetation association description	<i>Eucalyptus victrix</i> ( <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> ) open woodland to forest over <i>Melaleuca glomerata</i> ( <i>Melaleuca argentea</i> ) low open woodland over <i>Acacia trachycarpa</i> ( <i>Acacia</i> spp.), <i>Petalostylis labicheoides</i> tall shrubland to open shrubland over <i>Triodia epactia</i> very open hummock grassland over * <i>Cenchrus</i> spp. and <i>Cyperus</i> spp. closed grassland/sedgeland to grassland/sedgeland.
Distribution and habitat	This vegetation type occurred predominantly on soils containing a higher clay content (e.g. clay loam and silty clay loam) in major drainages in the landscape (tributaries of the Robe River). This vegetation made up 87.7 ha within the survey area.
Other associated species	<u>Trees:</u> <i>Corymbia candida</i> subsp. <i>candida</i> , <i>C. hamersleyana</i> . <u>Shrubs:</u> <i>Acacia ampliceps</i> , <i>A. ancistrocarpa</i> , <i>A. atkinsiana</i> , <i>A. bivenosa</i> , <i>A. citrinoviridis</i> , <i>A. pyrifolia</i> var. <i>pyrifolia</i> , <i>A. tumida</i> var. <i>pilbarensis</i> , <i>Gossypium australe</i> , <i>G. robinsonii</i> , <i>Melaleuca lasiandra</i> , <i>Stylobasium spathulatum</i> and <i>Tephrosia rosea</i> var. <i>Fortescue creeks</i> (M.I.H. Brooker 2186). <u>Grasses/Sedges:</u> * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , <i>Chrysopogon fallax</i> , <i>Cyperus vaginatus</i> , <i>Eriachne benthamii</i> , <i>Eulalia aurea</i> and <i>Paspalidium clementii</i> . <u>Herbs:</u> <i>Alternanthera nana</i> , <i>Amaranthus undulatus</i> , <i>Euphorbia careyi</i> , <i>Goodenia lamprosperma</i> , <i>Ipomoea muelleri</i> , <i>Nellica maderaspatensis</i> and <i>Pluchea rubelliflora</i> .
Vegetation condition	'Good to Poor' to 'Excellent': high cover of * <i>Cenchrus</i> spp. in CRM29 and CRM47.
Sampling sites	CRM17, CRM29, CRM31R, CRM46, CRM47, CRM63 and CRM101R.
<b>C5</b>	<b><i>Corymbia hamersleyana</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i></b>
Typical vegetation association description	<i>Corymbia hamersleyana</i> scattered low trees to low open woodland over <i>Acacia tumida</i> var. <i>pilbarensis</i> , <i>A. atkinsiana</i> ( <i>A. ancistrocarpa</i> ) tall open shrubland to tall closed scrub over <i>Triodia epactia</i> hummock grassland to very open hummock grassland.
Distribution and habitat	This vegetation type occurred on minor to broad flat drainages with predominantly sandy clay loam soils. This vegetation made up 246.4 ha within the survey area.
Other associated species	<u>Shrubs:</u> <i>Abutilon lepidum</i> , <i>A. sp. Pilbara</i> (W.R. Barker 2025), <i>Acacia bivenosa</i> , <i>A. trachycarpa</i> , <i>A. sericophylla</i> , <i>A. synchronicia</i> , <i>A. wanyu</i> , <i>Bonamia erecta</i> , <i>Corchorus laniflorus</i> , <i>Gossypium australe</i> , <i>G. robinsonii</i> , <i>Grevillea wickhamii</i> , <i>Indigofera boviparda</i> subsp. <i>boviparda</i> , <i>I. monophylla</i> , <i>Isotropis atropurpurea</i> , * <i>Malvastrum americanum</i> , <i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90), <i>Solanum cleistogamum</i> , <i>S. diversiflorum</i> , <i>Tephrosia uniovulata</i> , <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> and <i>Waltheria indica</i> . <u>Grasses/Sedges:</u> <i>Aristida holathera</i> var. <i>holathera</i> , <i>A. pruinosa</i> , <i>Bulbostylis barbata</i> , * <i>Cenchrus ciliaris</i> , * <i>C. echinatus</i> , <i>Chrysopogon fallax</i> , <i>Cymbopogon obtectus</i> , <i>Eulalia aurea</i> , <i>Paraneurachne muelleri</i> , <i>Paspalidium clementii</i> and <i>Triodia wiseana</i> . <u>Herbs:</u> <i>Afrohybanthus aurantiacus</i> , <i>Alternanthera nana</i> , <i>Amaranthus cuspidifolius</i> , <i>Arivela viscosa</i> , <i>Boerhavia coccinea</i> , <i>Corchorus tridens</i> , <i>Cucumis variabilis</i> , <i>Dendrophyllanthus erwinii</i> , <i>Dysphania kalpari</i> , <i>D. rhadinostachya</i> , <i>Evolvulus alsinoides</i> , <i>Goodenia stobbsiana</i> , <i>Ipomoea muelleri</i> , <i>Ptilotus exaltatus</i> , <i>Rhynchosia minima</i> and <i>Sida</i> sp. L (A.M. Ashby 4202).

Vegetation condition	'Excellent' to 'Very Good': little to no obvious signs of disturbance with weeds present at only four sites (CRM38, CRM44, CRM52 and CRM70).
Sampling sites	CRM01R, CRM10, CRM16, CRM33, CRM38, CRM44, CRM52, CRM62, CRM64, CRM70 and CRM82R.
<b>T2</b>	<b><i>Triodia epactia</i> hummock grassland</b>
Typical vegetation association description	<i>Triodia epactia</i> hummock grassland.
Distribution and habitat	This vegetation type occurred on paleo-drainages with predominantly clayey sand soils. This vegetation made up 10.0 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia bivenosa</i> , <i>A. inaequilatera</i> , <i>A. trachycarpa</i> , <i>A. trudgeniana</i> , <i>Indigofera monophylla</i> and <i>Tephrosia supina</i> . <u>Grasses/Sedges</u> : <i>Bulbostylis barbata</i> , <i>Chrysopogon fallax</i> , <i>Cynodon prostratus</i> , <i>Eragrostis desertorum</i> and <i>Triodia wiseana</i> . <u>Herbs/Sedges</u> : <i>Arivela viscosa</i> and <i>Dysphania rhadinostachya</i> .
Vegetation condition	'Excellent': no signs of disturbance.
Sampling sites	CRM104 and CRM105.

#### 4.2.2.2 Vegetation of Hills and Slopes

<b>A6</b>	<b><i>Acacia arida</i> over <i>Triodia wiseana</i></b>
Typical vegetation association description	<i>Acacia arida</i> open shrubland to tall shrubland over <i>Triodia wiseana</i> hummock grassland to very open hummock grassland.
Distribution and habitat	This vegetation type occurred on slopes and crests of low hills with soils predominantly of sandy clay loam. This vegetation made up 14.2 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia bivenosa</i> , <i>Acacia inaequilatera</i> , <i>Hibiscus coatesii</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> , <i>Senna glutinosa</i> subsp. <i>pruinosa</i> x subsp. x <i>luerssenii</i> , <i>Ptilotus astrolasius</i> , <i>P. calostachyus</i> and <i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543). <u>Grasses</u> : <i>Aristida holathera</i> var. <i>holathera</i> and <i>Eriachne pulchella</i> . <u>Herbs</u> : <i>Dysphania</i> spp., <i>Goodenia microptera</i> , <i>Ptilotus exaltatus</i> and <i>Trigastrotheca molluginea</i> .
Vegetation condition	'Excellent': no signs of disturbance.
Sampling sites	CRM50 and CRM97R.
<b>A7</b>	<b><i>Acacia bivenosa</i> over <i>Triodia wiseana</i></b>
Typical vegetation association description	<i>Acacia bivenosa</i> open shrubland over <i>Triodia wiseana</i> open to very open hummock grassland.
Distribution and habitat	This vegetation type occurred on slopes and undulating stony plains with predominantly sandy (clay) loam soils. This vegetation made up 78.0 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia synchronicia</i> , <i>A. inaequilatera</i> , <i>Corchorus laniflorus</i> , <i>Hakea lorea</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> and <i>Senna glutinosa</i> subsp. <i>pruinosa</i> . <u>Grasses/Sedges</u> : <i>Bulbostylis barbata</i> , <i>*Cenchrus ciliaris</i> , <i>Cynodon prostratus</i> ,



	<i>Eriachne pulchella</i> and <i>Paspalidium clementii</i> . <u>Herbs</u> : <i>Goodenia microptera</i> , <i>Sclerolaena densiflora</i> and <i>Trianthema triquetrum</i> .
Vegetation condition	'Very Good' to 'Excellent': little to no signs of disturbance (* <i>Cenchrus ciliaris</i> present in CRM54).
Sampling sites	CRM49 and CRM54.
<b>E1</b>	<b><i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over mixed <i>Acacia</i> spp. over <i>Triodia wiseana</i></b>
Typical vegetation association description	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees to low open woodland over <i>Acacia atkinsiana</i> , <i>A. bivenosa</i> scattered shrubs to tall open shrubland over <i>Triodia wiseana</i> very open hummock grassland.
Distribution and habitat	This vegetation type occurred on gentle slopes of small rises with soils predominantly composed of sandy clay loam. This vegetation made up 40.3 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia ancistrocarpa</i> , <i>A. arida</i> , <i>Ptilotus astrolasius</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i> and <i>S. glutinosa</i> subsp. <i>pruinosa</i> . <u>Grasses/Sedges</u> : <i>Bulbostylis barbata</i> , <i>Cynodon prostratus</i> , <i>Eriachne pulchella</i> and <i>Paraneurachne muelleri</i> . <u>Herbs</u> : <i>Dysphania rhadinostachya</i> , <i>Euphorbia boophthona</i> , <i>Goodenia tenuiloba</i> , <i>Ptilotus calostachyus</i> and <i>P. exaltatus</i> .
Vegetation condition	'Excellent': No signs of disturbance.
Sampling sites	CRM18, CRM75R and CRM98.
<b>S1</b>	<b><i>Senna</i> spp. and <i>Acacia bivenosa</i> over <i>Triodia wiseana</i></b>
Typical vegetation association description	<i>Senna glutinosa</i> subsp. <i>pruinosa</i> , <i>S. glutinosa</i> subsp. <i>glutinosa</i> , <i>Acacia bivenosa</i> open shrubland to tall open shrubland over <i>Triodia wiseana</i> hummock grassland to open hummock grassland.
Distribution and habitat	This vegetation type occurred on slopes on small rocky rises with soils predominantly composed of sandy clay loam. This vegetation made up 55.0 ha within the survey area.
Other associated species	<u>Trees</u> : <i>Corymbia hamersleyana</i> . <u>Shrubs</u> : <i>Acacia ancistrocarpa</i> , <i>A. synchronicia</i> , <i>A. trachycarpa</i> , <i>A. wanyu</i> , <i>Gossypium australe</i> , <i>Sida echinocarpa</i> , <i>Triumfetta clementii</i> and <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> . <u>Grasses</u> : * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , <i>Cymbopogon ambiguus</i> , <i>Enneapogon caerulescens</i> , <i>E. polyphyllus</i> , <i>Eriachne mucronata</i> and <i>Paspalidium clementii</i> . <u>Herbs</u> : <i>Dysphania rhadinostachya</i> , <i>Evolvulus alsinoides</i> , <i>Nicotiana karijini</i> , <i>Polycarpaea longiflora</i> , <i>Ptilotus calostachyus</i> , <i>P. exaltatus</i> and <i>Trachymene oleracea</i> subsp. <i>oleracea</i> .
Vegetation condition	'Very Good' to 'Excellent': little to no signs of disturbance, minimal cover of * <i>Cenchrus</i> spp. within four sites (CRM25R, CRM26R, CRM83R and CRM106R).
Sampling sites	CRM23R, CRM24R, CM25R, CRM26R, CRM34R, CRM83R, CRM90R and CRM106R.
<b>T1</b>	<b><i>Triodia longiceps</i> open hummock grassland</b>
Typical vegetation association description	<i>Triodia longiceps</i> open hummock grassland.

Distribution and habitat	This vegetation type occurred on stony plains with slight elevation or gentle slopes and contained soils predominantly composed of sandy clay (loam). This vegetation made up 46.9 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Maireana melanocoma</i> and <i>Solanum cleistogamum</i> . <u>Grasses</u> : <i>Triodia wiseana</i> . <u>Herbs</u> : <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i> , <i>Dysphania rhadinostachya</i> , <i>Ptilotus exaltatus</i> and <i>Sclerolaena densiflora</i> .
Vegetation condition	'Very Good' to 'Excellent': little to no signs of disturbance, minimal cover of * <i>Cenchrus ciliaris</i> within one site (CRM55).
Sampling sites	CRM55 and CRM85.

#### 4.2.2.3 Vegetation of Plains

<b>A1</b>	<b>Acacia xiphophylla tall shrubland over Triodia epactia open hummock grassland</b>
Typical vegetation association description	<i>Acacia xiphophylla</i> ( <i>A. synchronicia</i> ) tall shrubland over <i>Triodia epactia</i> open to very open hummock grassland over <i>Cynodon prostratus</i> scattered tussock grasses and mixed chenopods.
Distribution and habitat	This vegetation type occurred on flat stony plains with soils predominantly composed of sandy clay loam. This vegetation made up 387.4 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Maireana planifolia</i> , <i>Ptilotus astrolasius</i> , <i>Senna artemisioides</i> subsp. <i>oligophylla</i> and <i>Sida arsinata</i> . <u>Grasses/Sedges</u> : <i>Bulbostylis barbata</i> , <i>Paspalidium clementii</i> and <i>Sporobolus australasicus</i> . <u>Herbs</u> : <i>Amaranthus cuspidifolius</i> , <i>Cucumis variabilis</i> , <i>Dysphania rhadinostachya</i> subsp. <i>inflata</i> , <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> , <i>Portulaca oleracea/intraterranea</i> , <i>Ptilotus exaltatus</i> , <i>Sclerolaena costata</i> and <i>Trianthema triquetrum</i> .
Vegetation condition	'Very Good' to 'Very Good to Excellent': no aggressive weeds present and no obvious signs of disturbance.
Sampling sites	CRM02R, CRM06, CRM21, CRM22, CRM41, CRM87, CRM88 and CRM89.
<b>A2</b>	<b>Acacia xiphophylla tall shrubland over Triodia wiseana very open hummock grassland</b>
Typical vegetation association description	<i>Acacia xiphophylla</i> tall shrubland over <i>Triodia wiseana</i> very open hummock grassland.
Distribution and habitat	This vegetation type occurred on slightly elevated stony plains with predominantly sandy clay loam soils. This vegetation made up 26.9 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia synchronicia</i> and <i>Senna glutinosa</i> subsp. <i>glutinosa</i> . <u>Grasses</u> : <i>Cynodon prostratus</i> , <i>Eriachne pulchella</i> and <i>Triodia epactia</i> . <u>Herbs</u> : <i>Dysphania rhadinostachya</i> , <i>Sclerolaena densiflora</i> , <i>Ptilotus exaltatus</i> and <i>Trianthema triquetrum</i> .
Vegetation condition	'Excellent to Very Good' to 'Excellent': no aggressive weeds present and no signs of disturbance.
Sampling sites	CRM40R, CRM69, CRM91, CRM93 and CRM96R.
<b>A3</b>	<b>Mixed Acacia spp. over Triodia wiseana</b>
Typical	<i>Acacia ancistrocarpa</i> , <i>A. atkinsiana</i> , <i>A. bivenosa</i> tall shrubland to open shrubland

vegetation association description	over <i>Triodia wiseana</i> open to very open hummock grassland.
Distribution and habitat	This vegetation type occurred on flat to undulating ironstone and quartz stony plains, with soils predominantly composed of sandy clay loam. This vegetation made up 402.7 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia inaequilatera</i> , <i>A. synchronicia</i> , <i>Bonamia erecta</i> , <i>Indigofera bovipерda</i> subsp. <i>bovipерda</i> , <i>Ptilotus astrolasius</i> , <i>Senna notabilis</i> , <i>S. glutinosa</i> subsp. <i>pruinosa</i> and <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> . <u>Grasses</u> : <i>Aristida holathera</i> var. <i>holathera</i> , <i>Eriachne pulchella</i> , <i>Paraneurachne muelleri</i> and <i>Triodia epactia</i> . <u>Herbs</u> : <i>Dysphania rhadinostachya</i> , <i>Euphorbia boophthona</i> , <i>Goodenia microptera</i> , <i>Ptilotus exaltatus</i> , <i>P. calostachyus</i> and <i>Trigastrotheca molluginea</i> .
Vegetation condition	'Very Good' to 'Excellent': three sites had been burnt in the last 3-5 years (CRM19, CRM65 and CRM71), with no other obvious signs of disturbance.
Sampling sites	CRM19, CRM37, CRM39, CRM48, CRM61, CRM65, CRM68, CRM71, CRM73, CRM81, CRM94, CRM95 and CRM107.
<b>A4</b>	<b>Mixed Acacia spp. over <i>Triodia epactia</i></b>
Typical vegetation association description	<i>Acacia ancistrocarpa</i> , <i>A. atkinsiana</i> and <i>A. bivenosa</i> tall open shrubland to tall shrubland over <i>Triodia epactia</i> open hummock grassland to hummock grassland.
Distribution and habitat	This vegetation type occurred on lower-lying flat to slightly undulating stony and clayey plains. This vegetation made up 712.1 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia inaequilatera</i> , <i>A. synchronicia</i> , <i>A. trachycarpa</i> , <i>Bonamia erecta</i> , <i>Indigofera bovipерda</i> , <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Gossypium australe</i> , <i>Ptilotus astrolasius</i> and <i>Hibiscus sturtii</i> . <u>Grasses/Sedges</u> : <i>Bulbostylis barbata</i> , <i>Chrysopogon fallax</i> , <i>Eriachne pulchella</i> and <i>Sporobolus australasicus</i> . <u>Herbs</u> : <i>Arivela viscosa</i> , <i>Dendrophyllanthus erwinii</i> , <i>Dysphania rhadinostachya</i> , <i>Euphorbia boophthona</i> , <i>Evolvulus alsinoides</i> , <i>Pterocaulon sphacelatum</i> , <i>Ptilotus calostachyus</i> , <i>P. exaltatus</i> , <i>Portulaca oleracea</i> , <i>Goodenia microptera</i> , <i>Rhynchosia minima</i> , <i>Trigastrotheca molluginea</i> and <i>Sida</i> sp. L (A.M. Ashby 4202).
Vegetation condition	'Good' to 'Excellent': two sites had been burnt in the last 4-5 years (CRM58 and CRM66), with no other obvious signs of disturbance.
Sampling sites	CRM04, CRM05, CRM14, CRM28, CRM30, CRM32, CRM36, CRM51, CRM52, CRM53, CRM58, CRM66, CRM67, CRM102, and CRM103.
<b>A5</b>	<b>Mixed Acacia spp. over <i>Triodia longiceps</i></b>
Typical vegetation association description	<i>Acacia synchronicia</i> , <i>A. bivenosa</i> scattered shrubs to tall open shrubland over <i>Triodia longiceps</i> ( <i>T. wiseana</i> ) very open hummock grassland.
Distribution and habitat	This vegetation type occurred on flat to undulating stony plains with soils predominantly composed of sandy clay loam. This vegetation made up 204.1 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Maireana melanocoma</i> and <i>Solanum cleistogamum</i> . <u>Grasses</u> : <i>Cynodon prostratus</i> , * <i>Cenchrus</i> spp., <i>Eriachne pulchella</i> , <i>Paspalidium clementii</i> and <i>Sporobolus australasicus</i> . <u>Herbs</u> : <i>Dysphania rhadinostachya</i> , <i>Goodenia microptera</i> , <i>Lepidium</i> ? <i>pholidogynum</i> , <i>Portulaca oleracea</i> , <i>Ptilotus exaltatus</i> and <i>Sclerolaena densiflora</i> .

Vegetation condition	'Very Good' to 'Excellent': two sites (CRM57 and CRM02R) had been burnt within the last 3-5 years with no other obvious signs of disturbance.
Sampling sites	CRM02R, CRM12, CRM13, CRM20, CRM35R, CRM56, CRM57 and CRM61.
<b>C1</b>	<b><i>Corymbia hamersleyana</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i></b>
Typical vegetation association description	<i>Corymbia hamersleyana</i> scattered low trees to low open woodland over <i>Acacia inaequilatera</i> , <i>A. synchronicia</i> , <i>A. ancistrocarpa</i> scattered shrubs to tall open scrub over <i>Acacia bivenosa</i> scattered shrubs over <i>Triodia epactia</i> very open to open hummock grassland.
Distribution and habitat	This vegetation type occurred on flat to gently undulating stony plains with soils predominantly composed of sandy clay (some loam). This vegetation made up 402.1 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia atkinsiana</i> , <i>Indigofera bovipерda</i> subsp. <i>bovipерda</i> and <i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035). <u>Grasses/Sedges</u> : <i>Bulbostylis barbata</i> , <i>Cynodon prostratus</i> , <i>Paspalidium clementii</i> , <i>Sporobolus australasicus</i> and <i>Triodia wiseana</i> . <u>Herbs</u> : <i>Calandrinia</i> ? <i>ptychosperma</i> , <i>Dendrophyllanthus erwinii</i> , <i>Dysphania rhadinostachya</i> , <i>Euphorbia boophthona</i> , <i>Goodenia forrestii</i> , <i>G. microptera</i> and <i>Sclerolaena costata</i> .
Vegetation condition	'Very Good': little to no obvious signs of disturbance, with weed species present in only one site (CRM30).
Sampling sites	CRM02, CRM04, CRM30 and CRM45.
<b>C2</b>	<b><i>Corymbia candida</i> subsp. <i>candida</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i></b>
Typical vegetation association description	<i>Corymbia candida</i> subsp. <i>candida</i> scattered low trees to low open woodland over <i>Acacia atkinsiana</i> , <i>A. ancistrocarpa</i> tall open scrub to tall shrubland over <i>Senna artemisioides</i> subsp. <i>oligophylla</i> low open shrubland over <i>Triodia epactia</i> hummock grassland to very open hummock grassland.
Distribution and habitat	This vegetation type occurred on lower-lying stony plains and depressions with soils predominantly containing clay. This vegetation made up 273.0 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Abutilon lepidum</i> , <i>Acacia bivenosa</i> , <i>A. synchronicia</i> , <i>Gossypium australe</i> , <i>Hibiscus sturtii</i> var. <i>grandiflorus</i> and * <i>Malvastrum americanum</i> . <u>Grasses</u> : * <i>Cenchrus ciliaris</i> , * <i>C. setiger</i> , <i>Chrysopogon fallax</i> , <i>Eulalia aurea</i> and <i>Paspalidium clementii</i> . <u>Herbs</u> : <i>Arivela viscosa</i> , <i>Dysphania rhadinostachya</i> and <i>Evolvulus alsinoides</i> .
Vegetation condition	'Excellent' to 'Good to Poor': little to no signs of obvious disturbance within most sites except one (CRM27), where there was a high density of weed species.
Sampling sites	CRM01, CRM03, CRM07, CRM15, CRM27, CRM42, CRM43, CRM60 and CRM86.
<b>C3</b>	<b><i>Corymbia deserticola</i> subsp. <i>deserticola</i> over mixed <i>Acacia</i> spp. over <i>Triodia epactia</i></b>
Typical vegetation association description	<i>Corymbia deserticola</i> subsp. <i>deserticola</i> scattered low trees over <i>Acacia ancistrocarpa</i> , <i>A. atkinsiana</i> , <i>A. bivenosa</i> scattered shrubs to open shrubland over <i>Triodia epactia</i> open to very open hummock grassland.
Distribution and habitat	This vegetation type occurred on flat plains with soils predominantly composed of sandy clay loam. This vegetation made up 11.3 ha within the survey area.
Other associated species	<u>Shrubs</u> : <i>Acacia trachycarpa</i> , <i>Bonamia erecta</i> , <i>Indigofera bovipерda</i> subsp. <i>bovipерda</i> , <i>I. monophylla</i> , <i>Ptilotus astrolasius</i> and <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> .

	<u>Grasses:</u> <i>Chrysopogon fallax</i> , <i>Cynodon prostratus</i> , <i>Eriachne pulchella</i> and <i>Triodia wiseana</i> . <u>Herbs:</u> <i>Dysphania rhadinostachya</i> , <i>Goodenia tenuiloba</i> , <i>Portulaca oleracea</i> , <i>Ptilotus exaltatus</i> and <i>Trigastrotheca molluginea</i> .
Vegetation condition	'Excellent': no signs of disturbance.
Sampling sites	CRM84 and CRM92.
<b>C4</b>	<b><i>Corymbia zygomphylla</i> over mixed <i>Acacia</i> spp. over <i>Triodia</i> spp.</b>
Typical vegetation association description	<i>Corymbia zygomphylla</i> scattered low trees over <i>Acacia atkinsiana</i> over <i>Triodia wiseana</i> ( <i>T. epactia</i> ) open to very open hummock grassland.
Distribution and habitat	This vegetation type occurred on stony plains with soils predominantly comprising loamy sand and sandy clay loam. This vegetation made up 33.9 ha within the survey area.
Other associated species	<u>Trees:</u> <i>Corymbia hamersleyana</i> . <u>Shrubs:</u> <i>Acacia ancistrocarpa</i> , <i>A. bivenosa</i> , <i>A. inaequilatera</i> , <i>A. synchronica</i> , <i>A. trudgeniana</i> , <i>Bonamia erecta</i> , <i>Corchorus</i> ? <i>tectus</i> , <i>Indigofera boviparda</i> subsp. <i>boviparda</i> and <i>Ptilotus astrolasius</i> . <u>Grasses/Sedges:</u> <i>Aristida holathera</i> var. <i>holathera</i> , <i>Bulbostylis barbata</i> , <i>Enneapogon caeruleus</i> , <i>Paraneurachne muelleri</i> and <i>Paspalidium clementii</i> . <u>Herbs:</u> <i>Dysphania rhadinostachya</i> , <i>Goodenia microptera</i> , <i>Ptilotus axillaris</i> and <i>P. calostachyus</i> .
Vegetation condition	'Excellent': no signs of disturbance.
Sampling sites	CRM59 and CRM72.

### 4.2.3 Results of the Floristic Analysis

At a 30% level of similarity the sampling sites were divided into 14 groups (Table 4.9; Appendix 12). These showed relatively clear associations of the vegetation units with particular habitat types and could be broadly discriminated based on the presence and abundance of various *Acacia* and *Triodia* species. On a practical mapping level however, some adjustments to groupings were made to account for anomalies, such as recently burnt sites showing a post-fire suite and abundance of species; instances where there were too few sample sites per floristic group and mapping relied heavily on field observations; or where field observations and aerial imagery were found to be more representative of the differences in vegetation than the analysis groupings. Similarly, some groupings were adjusted based on differences in the vegetation that were too minor for these to be mapped as different units at the scale of this mapping.

#### 4.2.3.1 Floristic Groups

The 14 floristic groups (FG<sub>a</sub> to FG<sub>n</sub>) are briefly described below:

- FG<sub>a</sub> contained drainage sites (exclusively E2) comprising riparian Eucalypt (*Eucalyptus victrix* and *E. camaldulensis*) forests or woodlands over *Melaleuca* spp. and *Acacia* spp. tall shrublands.
- FG<sub>b</sub> contained a single C2 site of *Corymbia candida* subsp. *candida* over *Acacia trachycarpa* tall shrubland.
- FG<sub>c</sub> contained the majority of C5 sites with one C2 site and one E2 site, which were generally associated with minor drainages and broad drainage plains that were situated lower in the landscape. This floristic group generally comprised sites with scattered *Corymbia hamersleyana* over mixed *Acacia* spp. tall shrublands over *Triodia epactia* hummock grasslands.

- *FG<sub>d</sub>* contained a single C5 site of *Corymbia hamersleyana* scattered low trees over *Triodia epactia* very open hummock grassland. This floristic group was separated based on the minimal cover of *Acacia* species.
- *FG<sub>e</sub>* contained five A4 sites, a single C1, C2, C3 and E2 site, two C5 sites and both the T2 sites. A high cover of *Triodia epactia* within each of these sites was the primary characteristic of this floristic group. They were mapped differently based on their respective dominant overstorey species.
- *FG<sub>f</sub>* contained three sites, all from the C2 vegetation type.
- *FG<sub>g</sub>* contained two C2 sites and one C5 site (CRM64); *Corymbia candida* subsp. *candida*, *Acacia atkinsiana* and *Triodia epactia* were the main distinguishing species in this floristic group, with CRM64 being mapped as C5 based on the presence of *Corymbia hamersleyana*.
- *FG<sub>h</sub>* contained two A4 sites, and a single site each from C1, C4 and C5. These sites were grouped due to the presence of three *Acacia* species (*Acacia atkinsiana*, *Acacia ancistrocarpa* and *Acacia synchronicia*) along with the presence of *Triodia epactia*. In terms of mapping, they were separated due to the presence of different *Corymbia* species (and with the A4, absence of a *Corymbia* species in the upper stratum).
- *FG<sub>i</sub>* contained two A3 sites, and a single site each from A6, S1 and E1. This floristic group contained sites located on hills and slopes, with *Triodia wiseana* being a distinguishing factor. These sites were mapped separately based on the presence of different dominant upper stratum species.
- *FG<sub>j</sub>* contained sites from multiple vegetation types, including 11 sites from A3, eight sites from A4, seven sites from S1, two sites each from A7, E1 and C1, and a single site each from A2, A5, A6, C3 and C4. These sites were grouped based on the presence and cover of *Triodia wiseana* and two *Acacia* species; *Acacia bivenosa* and *A. atkinsiana*. It is a broad floristic group as *Triodia epactia* was also present in some sites as a dominant and co-dominant hummock grass with *Triodia wiseana*. These were mapped separately based on the presence or absence of dominant upper stratum species (*Corymbia* and *Eucalyptus* units) and the dominant *Acacia* and *Triodia* species.
- *FG<sub>k</sub>* contained exclusively A2 sites, distinguished by the presence of *Acacia xiphophylla* over *Triodia wiseana*.
- *FG<sub>l</sub>* contained all the A1 sites, with a single C2 site. This floristic group was distinguished by the presence of *Acacia xiphophylla* and *Triodia epactia*, with the C2 site mapped separately based on the presence of *Corymbia candida* subsp. *candida* in the upper stratum.
- *FG<sub>m</sub>* contained a single A5 site consisting of *Acacia synchronicia* over *Triodia epactia*; this was mapped as A5 based on the broader landscape and presence of *Triodia longiceps* within the site.
- *FG<sub>n</sub>* contained six A5 sites and all the T1 sites. *Triodia longiceps* was the main distinguishing factor of this floristic group. A5 and T1 were mapped separately based on the presence or absence of *Acacia* shrubs in the upper stratum.

**Table 4.9: Floristic groups at 30% minimum level of similarity and the top five indicator species for each.**

Floristic Group	Avg. Similarity	Top 5 Species Contributing to Similarity (Cumulative Similarity %)	Vegetation Types
a	40.5	<i>Eucalyptus victrix</i> , <i>Melaleuca glomerata</i> , <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , * <i>Cenchrus</i> spp., <i>Acacia trachycarpa</i> (68%)	E2
b	<2 samples	NA (<2 samples)	C2 (1 site)
c	40.9	<i>Acacia tumida</i> var. <i>pillbarensis</i> , <i>Triodia epactia</i> , <i>Corymbia hamersleyana</i> , <i>Chrysopogon fallax</i> , <i>Isotropis atropurpurea</i> (55%)	C2, C5, E2
d	<2 samples	NA (<2 samples)	C5 (1 site)
e	49.2	<i>Triodia epactia</i> , <i>Acacia ancistrocarpa</i> , <i>Acacia bivenosa</i> , <i>Dysphania rhadinostachya</i> , <i>Indigofera boviparda</i> (75%)	A4, C1, C2, C3, C5, E2, T2
f	55.1	<i>Triodia epactia</i> , <i>Corymbia candida</i> subsp. <i>candida</i> , <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Acacia synchronicia</i> , <i>Acacia atkinsiana</i> (62%)	C2

Floristic Group	Avg. Similarity	Top 5 Species Contributing to Similarity (Cumulative Similarity %)	Vegetation Types
g	58.1	<i>Triodia epactia</i> , <i>Acacia atkinsiana</i> , <i>Corymbia candida</i> subsp. <i>candida</i> , <i>Goodenia microptera</i> , <i>Indigofera boviparda</i> (74%)	C2, C5
h	54.7	<i>Triodia epactia</i> , <i>Acacia atkinsiana</i> , <i>Acacia synchronicia</i> , <i>Acacia ancistrocarpa</i> , <i>Ptilotus astrolasius</i> (63%)	A4, C1, C4, C5
i	43.2	<i>Triodia wiseana</i> , <i>Eriachne pulchella</i> , <i>Aristida holathera</i> var. <i>holathera</i> , <i>Ptilotus calostachyus</i> , <i>Ptilotus exaltatus</i> (75%)	A3, A6, E1, S1
j	40.6	<i>Triodia wiseana</i> , <i>Acacia bivenosa</i> , <i>Acacia atkinsiana</i> , <i>Triodia epactia</i> , <i>Dysphania rhadinostachya</i> (64%)	A2, A3, A4, A5, A6, A7, C1, C3, C4, E1, S1
k	67.1	<i>Acacia xiphophylla</i> , <i>Cynodon prostratus</i> , <i>Triodia wiseana</i> , <i>Sclerolaena densiflora</i> , <i>Dysphania rhadinostachya</i> (76%)	A2
l	58.5	<i>Acacia xiphophylla</i> , <i>Triodia epactia</i> , <i>Acacia synchronicia</i> , <i>Sclerolaena costata</i> , <i>Trianthema triquetrum</i> (65%)	A1, C2
m	<2 samples	NA (<2 samples)	A5 (1 site)
n	48.0	<i>Triodia longiceps</i> , <i>Triodia wiseana</i> , <i>Acacia synchronicia</i> , <i>Maireana melanocoma</i> , <i>Cynodon prostratus</i> (44%)	A5, T1

#### 4.2.4 Vegetation Condition

Mapping of vegetation condition is provided in Appendix 8 using condition categories from EPA (2016). The condition of the vegetation in the survey area ranged from 'Excellent' to 'Completely Degraded', with most (over 95%) ranked from 'Very Good' or better condition (Table 4.10).

The most common disturbance factors in the survey area comprised weeds, and clearing associated with road upgrades and other construction; current and historical mining exploration tracks and drill pads; and tracks, drains and other infrastructure associated with the road. The areas in 'Good to Poor' condition were associated with drainage lines; these usually supported high densities of weeds, which were often a dominant feature of the vegetation (e.g. *Cenchrus ciliaris* tussock grasslands and *Vachellia farnesiana* in major drainages). Areas rated as 'Excellent', 'Excellent to Very Good' and 'Very Good' were often associated with hills vegetation. Although some areas rated as 'Excellent to Very Good' contained weeds, they were generally in low densities and were not impacting vegetation structure. Areas completely devoid of vegetation were assigned a condition rating of 'Completely Degraded'.

**Table 4.10: Extent of vegetation condition categories in the survey area.**

Condition Rating	Area (ha)	Proportion of Survey Area (%)
Excellent	759.5	24.9
Excellent to Very Good	829.8	27.2
Very Good	1,337.1	43.8
Good	69.7	2.3
Good to Poor	37.4	1.2
Completely Degraded (cleared)	18.1	0.6
<b>Total</b>	<b>3,050.0</b>	<b>100.0</b>

#### 4.2.5 Significant Vegetation

##### 4.2.5.1 Threatened Ecological Communities

Only two TECs are listed for the Pilbara: the "*Themeda* grasslands on cracking clays (Hamersley Station, Pilbara)", and the "*Ethel Gorge* aquifer stygobiont community". Neither occurs in the locality of the survey area.

**4.2.5.2 Priority Ecological Communities**

The desktop study identified that occurrences of three PECs were intersected by the survey area; the western end of the Upper Haul Rd option intersected the Priority 1 “Subterranean invertebrate community of pisolitic hills in the Pilbara” PEC; the northern part of the Mine Associated Infrastructure intersected the Priority 1 “Subterranean invertebrate communities of mesas in the Robe Valley region” PEC; and the EAA intersected the Priority 3 “*Triodia pisolitica* (previously *Triodia* sp. Robe River) assemblages of mesas of the West Pilbara” PEC. Only the latter comprises a vegetation community, and this is specifically discussed below.

Vegetation in the most northern section of the Mine Associated Infrastructure area was considered to have the greatest potential to represent the “*Triodia pisolitica* (previously *Triodia* sp. Robe River) assemblages of mesas of the West Pilbara” PEC. Due to restricted access from the ground, this area could only be assessed using a helicopter. Following the aerial inspection, it was considered that based on the habitat and the vegetation that appeared to be present, the area was unlikely to support the PEC. This community typically occurs on the edges and upper slopes of geologically distinct mesas immediately below the mesa edge breakaway. The elevated area that was assessed presented as more of a steep rocky hill with large boulders, rather than a mesa with exposed vertical faces on the margins. The vegetation was also mapped as A6, and appeared to comprise an *Acacia arida*, *Senna glutinosa* subsp. *pruinosa* tall open shrubland over *Triodia wiseana* open hummock grassland; characteristic indicator species of the PEC, such as *Acacia pruinocarpa* and *A. citrinoviridis*, were not observed.

**4.2.5.3 Local Conservation Significance**

Seven of the vegetation types mapped for the survey area are considered to be locally significant (Table 4.11, Figure 4.8 and Figure 4.9).

Six of the units (A1, A4, C1, C2, C5 and E2) are of conservation significance due to the presence of the Priority 3 species, *Eragrostis crateriformis*. Three of these units (A1, C1 and C2) within the Mine Associated Infrastructure, Lower Haul Road (CZR/RHI) and the EAA supported particularly high densities.

One of these vegetation types (E2) also represents groundwater dependent vegetation (GDV), comprising major drainages supporting *Eucalyptus victrix* (low to moderate dependence), *E. camaldulensis* subsp. *refulgens* (moderate dependence) and *Melaleuca argentea* (high dependence). These three species are all indicator species of GDV (Rio Tinto 2020). The entire area (87.7 ha) of this vegetation type is considered to be GDV.

One additional unit (A6) has the potential to support the Priority 3 species *Triodia pisolitica*, but this could not be confirmed due to access restrictions. It is worth noting that no distinct populations of *Triodia pisolitica* were identified during the fly-over (mature flowering hummocks of *Triodia wiseana* and *T. pisolitica* are easily differentiated from a suitable distance given correct sunlight).

**Table 4.11: Locally significant vegetation in the survey area.**

Vegetation Code	Description	Significance
A1	<i>Acacia xiphophylla</i> ( <i>A. synchronica</i> ) tall shrubland over <i>Triodia epactia</i> open to very open hummock grassland over <i>Cynodon prostratus</i> scattered tussock grasses and mixed chenopods.	Presence of P3 <i>Eragrostis crateriformis</i> .
A4	<i>Acacia ancistrocarpa</i> , <i>A. atkinsiana</i> and <i>A. bivenosa</i> tall open shrubland to tall shrubland over <i>Triodia epactia</i> open hummock grassland to hummock grassland.	Presence of P3 <i>Eragrostis crateriformis</i> .
C1	<i>Corymbia hamersleyana</i> scattered low trees to low open woodland over <i>Acacia inaequilatera</i> , <i>A. synchronica</i> , <i>A. ancistrocarpa</i> scattered shrubs to tall open scrub over <i>Acacia bivenosa</i> scattered shrubs over <i>Triodia epactia</i> very open to open hummock grassland.	Presence of P3 <i>Eragrostis crateriformis</i> .



Vegetation Code	Description	Significance
C2	<i>Corymbia candida</i> subsp. <i>candida</i> scattered low trees to low open woodland over <i>Acacia atkinsiana</i> , <i>A. ancistrocarpa</i> tall open scrub to tall shrubland over <i>Senna artemisioides</i> subsp. <i>oligophylla</i> low open shrubland over <i>Triodia epactia</i> hummock grassland to very open hummock grassland.	Presence of P3 <i>Eragrostis crateriformis</i> .
C5	<i>Corymbia hamersleyana</i> scattered low trees to low open woodland over <i>Acacia tumida</i> var. <i>pillbarensis</i> , <i>A. atkinsiana</i> ( <i>A. ancistrocarpa</i> ) tall open shrubland to tall closed scrub over <i>Triodia epactia</i> hummock grassland to very open hummock grassland.	Presence of P3 <i>Eragrostis crateriformis</i> .
E2	<i>Eucalyptus victrix</i> ( <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> ) open woodland to forest over <i>Melaleuca glomerata</i> ( <i>M. argentea</i> ) low open woodland over <i>Acacia trachycarpa</i> ( <i>Acacia</i> spp.), <i>Petalostylis labicheoides</i> tall shrubland to open shrubland over <i>Triodia epactia</i> very open hummock grassland over * <i>Cenchrus</i> spp. and <i>Cyperus</i> spp. closed grassland/sedgeland to grassland/sedgeland.	Presence of P3 <i>Eragrostis crateriformis</i> ; and GDV.
A6	<i>Acacia arida</i> open shrubland to tall shrubland over <i>Triodia wiseana</i> hummock grassland to very open hummock grassland.	Potential presence of P3 <i>Triodia pisoliticola</i> .

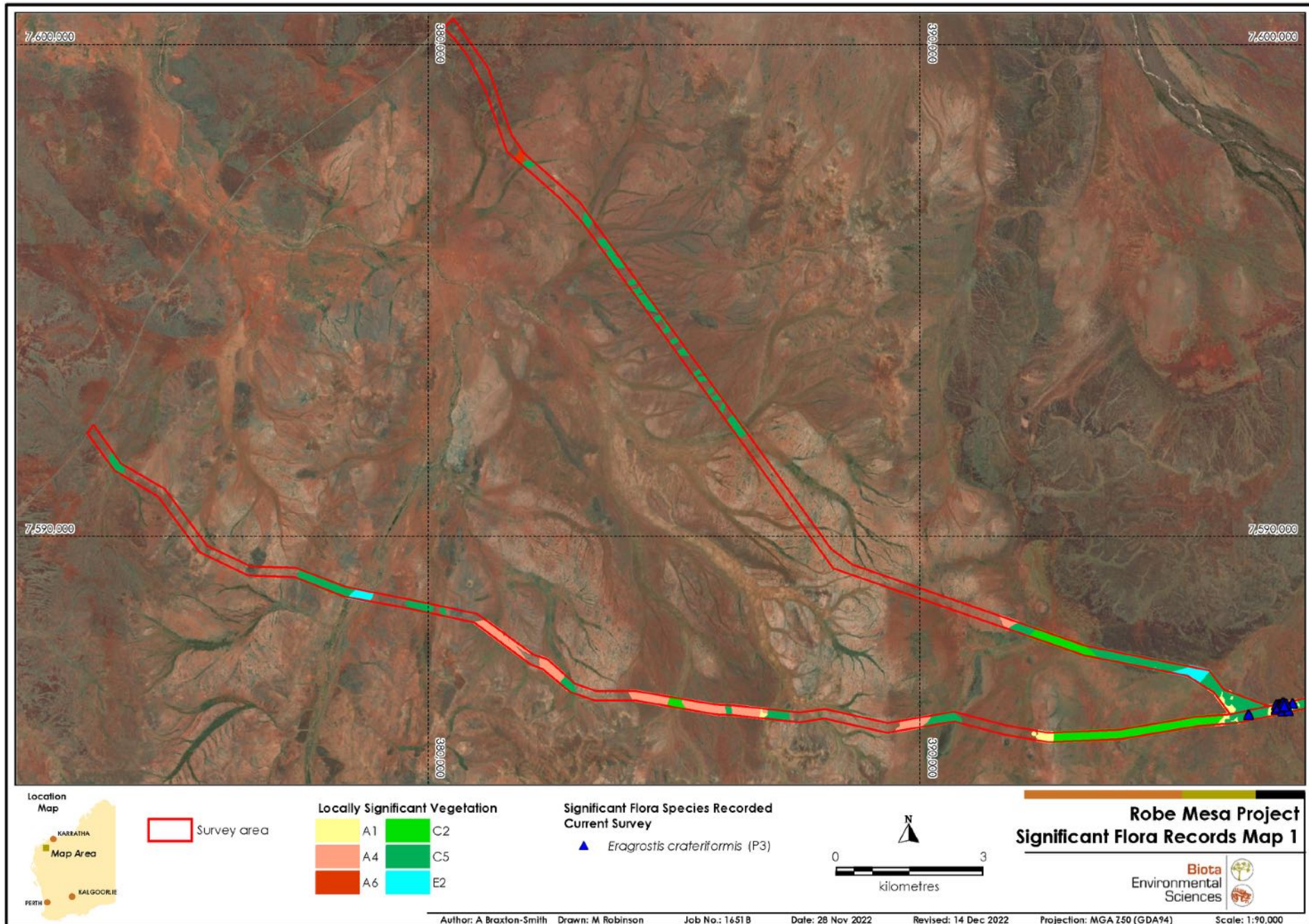


Figure 4.8: Significant flora records and locally significant vegetation of the survey area (Haul Rd).

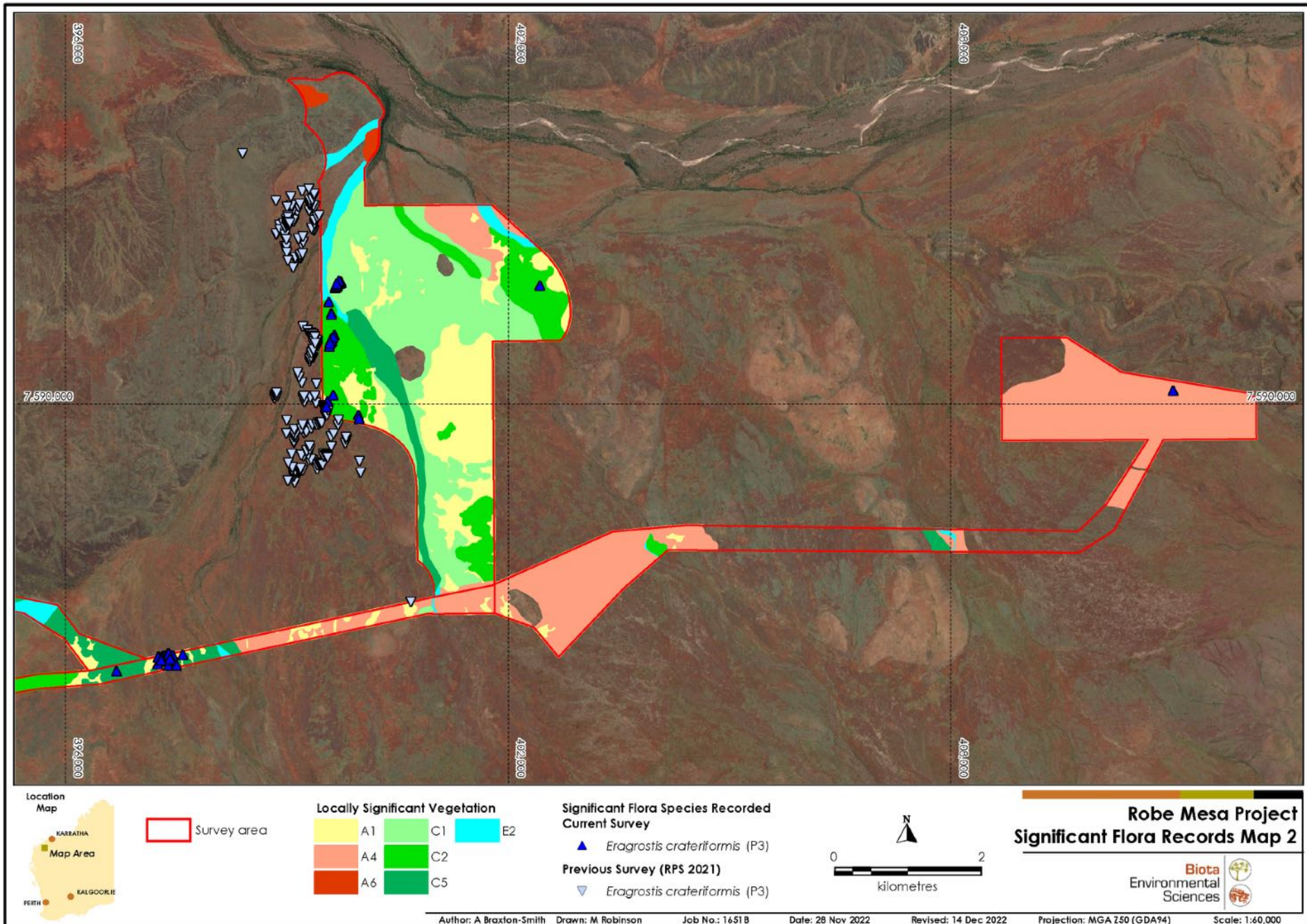


Figure 4.9: Significant flora records and locally significant vegetation of the survey area (Mine Associated Infrastructure and EAA).

## 4.3 Flora Results

### 4.3.1 Flora Taxa Recorded from the Survey Area

A total of 366 native flora species from 123 genera and 45 families were recorded in the survey area. The dominant native plant families and genera recorded from the survey area are presented in Table 4.12. These families and genera are typical of species lists from this region.

Additionally, 13 introduced flora (weeds) were recorded (see Section 4.3.4).

**Table 4.12: Dominant families and genera recorded from the survey area.**

Family	No. of Native Species	Genus	No. of Native Species
Fabaceae (wattles, peas, cassias)	64	<i>Acacia</i> (wattles)	26
Malvaceae (lantern-flowers, hibiscus, etc.)	52	<i>Ptilotus</i> (mulla-mullas)	13
Poaceae (grasses)	50	<i>Corchorus</i>	12
Amaranthaceae (mulla-mullas, amaranths, etc.)	24	<i>Sida</i> (sidas)	11
Convolvulaceae	17	<i>Senna</i> (cassias)	11
Chenopodiaceae (chenopods)	17	<i>Euphorbia</i> (spurges)	11

#### 4.3.1.1 Unresolved Taxa

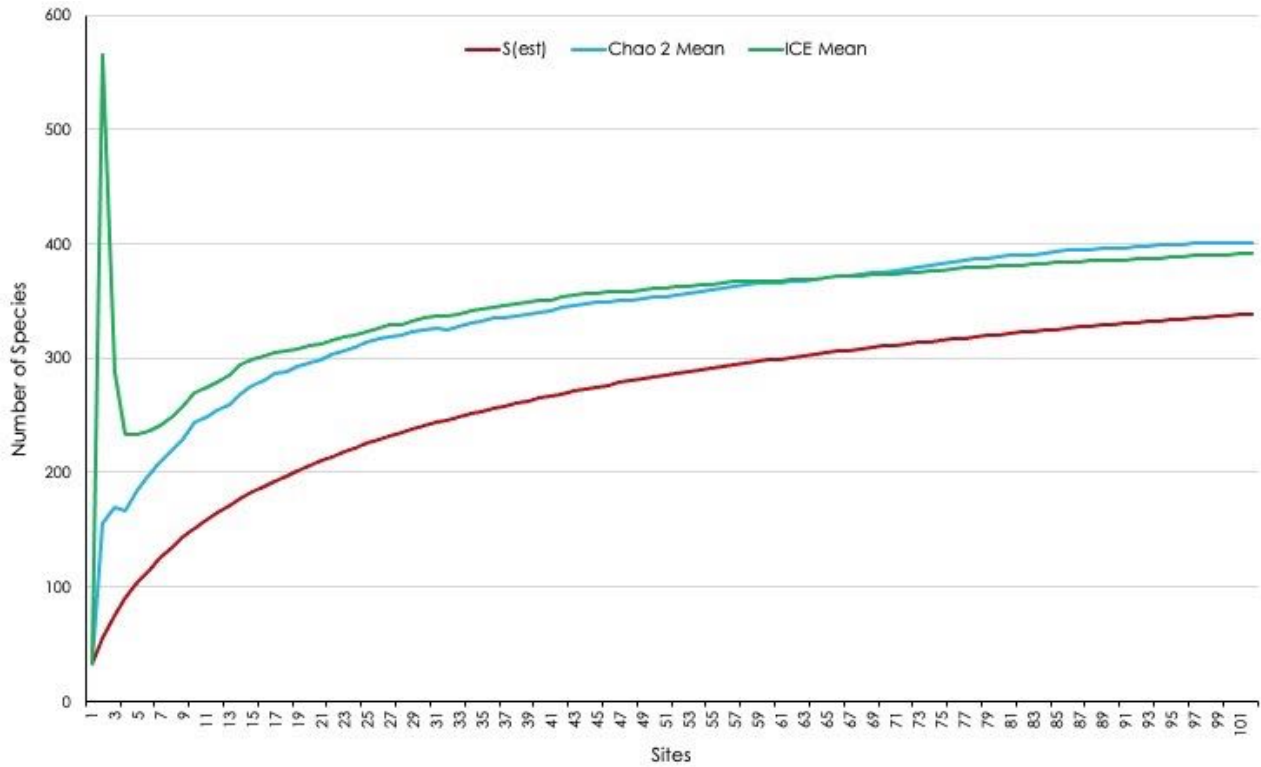
The majority (85%) of the flora taxa were able to be identified to the lowest level possible within the current taxonomic framework. The remainder comprised those specimens for which insufficient material was present to confirm the species (being either juveniles; in poor condition; or lacking fruit, flowers or seeds where these were needed for identification). None of these are considered to represent significant species.

#### 4.3.1.2 Sampling Adequacy

The species accumulation curve generated from the quadrat and relevé survey data is approaching a plateau, indicating that sampling of the survey area was relatively thorough (Figure 4.10). However, the two estimates of species richness (ICE and Chao2) suggested that the actual number of species present in the sampled area was between 391 and 402, which would mean that 84-87% of the total flora (native and introduced species) was recorded during sampling in the survey area (see Table 4.13). This proportion is similar to those reported for other surveys of a similar nature (e.g. 83% (Ecoedge 2014); 84% (Ecologia 2016), 82-88% (Ecologia 2009); 81% (Biota 2021a); and 86-87% (Biota 2018)). It should be noted that an additional 22 taxa were recorded through the opportunistic sampling in the survey area; with the inclusion of these taxa, the current survey work has recorded 90-92% of the predicted total number of taxa.

**Table 4.13: Recorded species richness compared with predicted species richness using incidence-based estimators (without opportunistic records).**

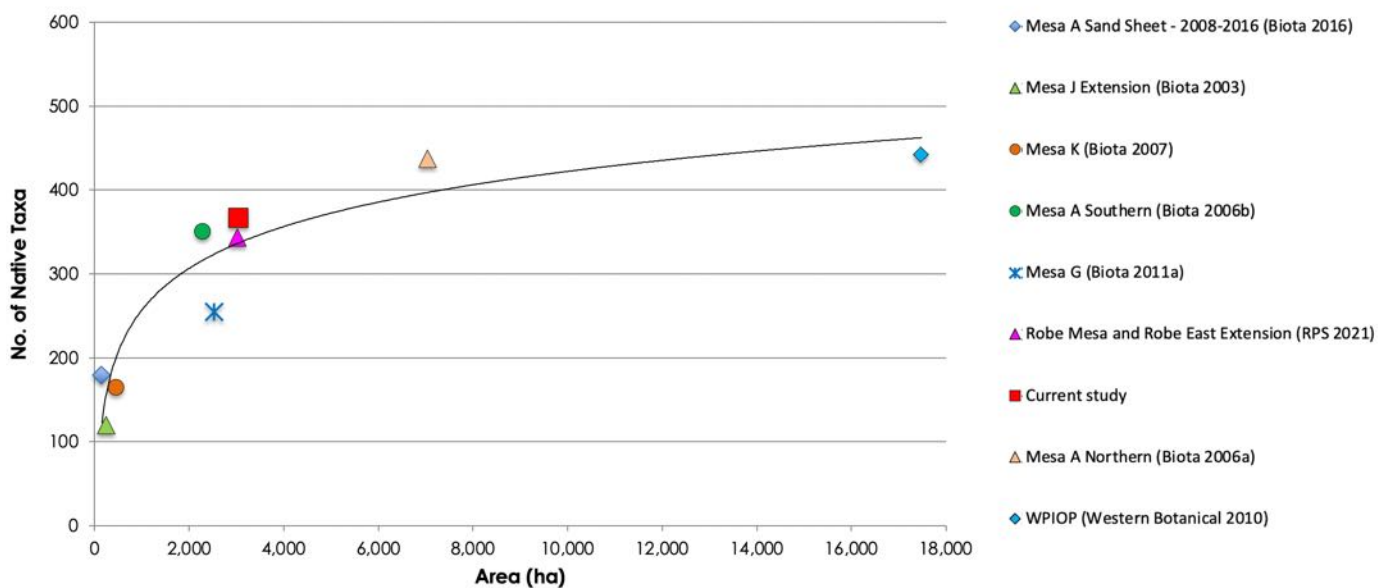
Parameter	Number of Species	Percent of Estimated Richness Recorded
Number of species recorded (from quadrats and relevés only)	339	
Estimated number of species	Chao 2 Mean	84.4
	ICE Mean	86.6



**Figure 4.10** Randomised species accumulation curves for sites sampled in the survey area.

**4.3.1.3 Species Richness**

Species richness typically shows a positive relationship with various factors, including the biogeographic region, the size of the survey area, the diversity of habitats present, the amount of rainfall received by the locality, and the survey effort expended. The total number of native species recorded during the current study is shown in Figure 4.11, compared to various other survey areas in the western Pilbara: the Mesa A sand sheet (monitoring from 2008-2016; Biota 2016), Mesa J Extension (Biota 2003), Mesa K (Biota 2007), Mesa A Transport Corridor and associated areas (Biota 2006a), Mesa A Southern Transport Corridor (Biota 2006b), Mesa G (Biota 2011a), Robe Mesa and Robe East Extension (RPS 2021), and the West Pilbara Iron Ore Project (Western Botanical 2010). The number of species recorded from the current survey area was in line with other survey areas of a similar size in the locality.



**Figure 4.11:** Species richness for the current survey area, compared to other survey areas in the west Pilbara.

## 4.3.2 Significant Flora

### 4.3.2.1 Threatened Flora

No Threatened flora species were recorded from the survey area, and none would occur based on their distribution and preferred habitats.

### 4.3.2.2 Priority Flora

One Priority 3 species, *Eragrostis crateriformis*, was recorded in the survey area. This annual grass grows to 40 cm tall and is commonly found growing in clayey loam or clay on creek banks and depressions in the landscape (Plate 4.6). This species was recorded from 73 locations, primarily in the Mine Associated Infrastructure and haul road, with one additional record in the EEA. A total of 681 individuals were recorded within vegetation types A1, A4, C1, C2, C5 and E2. A total of 2,800 individuals were recorded at 302 locations by RPS (2021), a small number of which are located in the Mine Associated Infrastructure area (Figure 4.8).



Plate 4.6: *Eragrostis crateriformis* (P3).

## 4.3.3 Species of Interest

### *Polymeria* sp. nov (KTF 39-05)

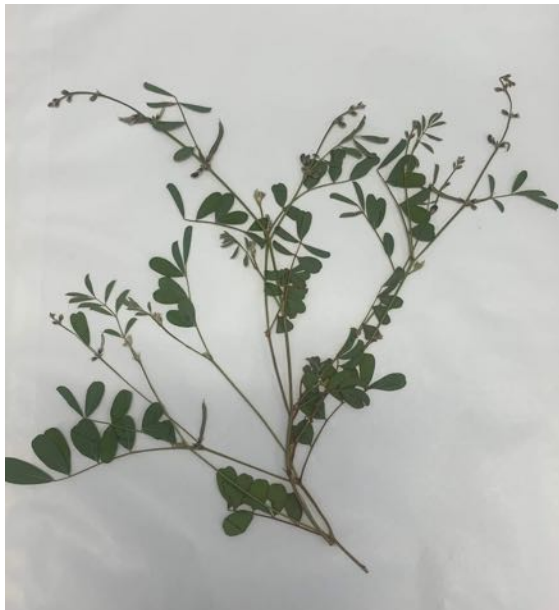
This creeper with heart-shaped leaves (Plate 4.7) was recorded at CRM15, CRM36, CRM51 and CRM53. It appears to be the same taxon collected along the Manuwarra to Red Dog Highway by Biota in 2021 (Biota 2021b), which was considered 'undescribed' by the WA Herbarium identification botanist. A specimen from CRM36 was submitted to the WA Herbarium for identification and has been returned with the same conclusion. The identifying botanist, Mike Hislop, considers this to be an undescribed species that is widespread but poorly collected. A revision of the genus was being carried out; although this work has stalled, a phrase name will soon be applied to this morphotype (Mike Hislop, WA Herbarium, pers. comm.).



**Plate 4.7:** *Polymeria* sp. nov (KTF 39-05).

***Tephrosia* aff. *remotiflora* 'Peedamulla form'**

This pea species (Plate 4.8) was collected opportunistically in the survey area. A specimen was submitted to the WA Herbarium for identification and was returned with this tentative name. The identifying botanist, Mike Hislop, noted that the species seems to be a distinctive entity and may require a phrase-name; he has commenced this process (Mike Hislop, WA Herbarium, pers. comm.).



**Plate 4.8:** *Tephrosia* aff. *remotiflora* 'Peedamulla form'.

#### **4.3.4 Weed Species**

Thirteen weed species were recorded from the survey area (as well as sterile material referred to as *\*Cenchrus* sp., which is assumed to represent one of the three recorded *\*Cenchrus* species). None of the species recorded are listed as WoNS (Thorp and Lynch 2000) or are Declared Pests under the WA Biosecurity and Agriculture Management Act 2007 (the BAM Act) (DPIRD 2022). However, *\*Cenchrus* spp. (e.g. *\*C. ciliaris* and *\*C. setiger*) and Mimosa Bush (*\*Vachellia farnesiana*) are considered to be serious environmental weeds in WA (CALM 1999). The significant threat posed by *\*Cenchrus* spp. in particular has also been recognised by the Commonwealth, with ecosystem degradation, habitat loss and species decline in arid and semi-arid Australia caused by the invasion of these spp. nominated for inclusion as a key threatening process under

the EPBC Act. Although this was ultimately considered to be recognised in the overarching key threatening process 'Novel biota and their impact on biodiversity', a specific threat abatement advice was prepared (see Department of the Environment 2015).

The then Department of Parks and Wildlife's Weed Species Ranking, which was derived from the Department's Weed Prioritisation Process (WPP) (Department of Parks and Wildlife 2013a), took into account the potential distribution, current distribution, ecological impact, invasiveness and feasibility of control to derive a broad qualitative weed species ranking corresponding to specific management actions (see Department of Parks and Wildlife 2013b). One species, *Melochia pyramidata*, recorded from the survey area was not ranked as part of this process (see Table 4.14). However, six of the species recorded have a 'High' ranking for Ecological Impact (*Cenchrus ciliaris*, *C. setiger*, *Echinochloa colona*, *Malvastrum americanum*, *Setaria verticillata* and *Vachellia farnesiana*), and 10 have a 'Rapid' ranking for Invasiveness (*Argemone ochroleuca* subsp. *ochroleuca*, *Bidens bipinnata*, *Cenchrus ciliaris*, *C. echinatus*, *C. setiger*, *Echinochloa colona*, *Malvastrum americanum*, *Setaria verticillata*, *Solanum nigrum* and *Vachellia farnesiana*) (Department of Parks and Wildlife 2013c).

Several species (*Cenchrus ciliaris*, *C. setiger*, *Echinochloa colona*, *Malvastrum americanum*, *Setaria verticillata* and *Vachellia farnesiana*) were ranked by the Department of Parks and Wildlife as priority widespread weeds (Department of Parks and Wildlife 2013c). These comprise weed species that are considered to have the potential for high ecological impact and are rapidly invasive, but which are already too widespread in the region to be feasible to control at the species level. Management of these species is targeted at the protection of specific assets on high conservation areas.



**Table 4.14: Summary of weeds recorded within the survey area, including WPP rankings.**

Descriptions from WA Herbarium (2022), unless otherwise cited.

Species	Description	WPP – Weed Species Ranking †		Distribution in Survey Area
		Impact	Invasiveness	
* <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i> (Mexican Poppy)	Robust annual growing to 1 m tall, with yellow, cream and white flowers and deeply divided, large, prickly leaves. It is widespread throughout the Pilbara and grows in sand and red-brown clay loam on creek edges, riverbanks and roadsides.	U	R	Recorded at one location in the Mine Associated Infrastructure, in vegetation type A4.
* <i>Bidens bipinnata</i> (Bipinnate Beggartick)	Annual daisy growing to 90 cm tall, with yellow flowers between March and September. Commonly observed in association with Mulga vegetation and creeklines in the Pilbara. May occur in high densities within suitable habitats and given appropriate conditions, but on its own does not appear to cause exclusion of native flora species.	U	R	Recorded at two locations, in the Mine Associated Infrastructure in vegetation type C2, and in the CZR/RHI in A1.
* <i>Cenchrus ciliaris</i> (Buffel Grass)	Perennial tussock grass growing to 1 m tall and flowering for most of the year. Introduced by pastoralists as a fodder species and now widespread through WA. This species has demonstrated allelopathic capacities, whereby it releases chemicals that inhibit the growth of other plants (Cheam 1984a, 1984b, Hussain et al. 2010), and it competes aggressively and effectively with native flora species. Commonly found along drainage lines, floodplains, in sandy coastal areas and disturbed sites, where it can form dense tussock grasslands. Reproduces by seed and short rhizomes and thought to be dispersed primarily by wind and water, but can also be spread through the movement of mammals, birds and vehicles.	H	R	Recorded at 38 locations throughout the survey area in a variety of vegetation types. Was a dominant species in the understorey at seven sites, most notably at CRM47 and CRM38.
* <i>Cenchrus echinatus</i> (Burrgrass)	Perennial tussock grass growing up to 1.2 m tall, and flowering from January to August. Less common in the Pilbara than other <i>Cenchrus</i> species, but similarly found in sand, red loam and black peaty clay.	M	R	Recorded at two locations along the CZR, in vegetation types A3 and C5.
* <i>Cenchrus setiger</i> (Birdwood Grass)	Erect tussocky perennial grass; grows in the same habitats as Buffel Grass but is usually less common. Similarly introduced as a fodder species in pastoral areas and has since become a common weed in watercourses from Carnarvon to the Kimberley (Hussey et al. 2007).	H	R	Recorded at 13 locations mainly in the Mine Associated Infrastructure with a few records along the CZR/RHI, in a variety of vegetation types.
* <i>Echinochloa colona</i> (Awnless Barnyard Grass)	Tufted annual grass growing to 60 cm, and flowering from February to July. It is a common weed of creeklines and other damp habitats, particularly in the Pilbara and Kimberley. It can occur in moderate densities, but does not appear to exclude other native species.	H	R	Recorded at three locations in the northeast of the Mine Associated Infrastructure in vegetation types C1/C2, C2 and E2.

Species	Description	WPP – Weed Species Ranking †		Distribution in Survey Area
		Impact	Invasiveness	
* <i>Euphorbia hirta</i> (Asthma Plant)	Annual decumbent herb growing to 80 cm tall, and flowering from January to October. Found in alluvial soils, often along watercourses, mostly in the Kimberley but with records from the Pilbara and Carnarvon.	L	S	Recorded at four locations in the Mine Associated Infrastructure in vegetation types C1/C2, C2 and E2.
* <i>Malvastrum americanum</i> (Spiked Malvastrum)	Erect, perennial herb or shrub to 1.3 m tall, with yellow or orange flowers from April to July. A common introduced species associated with mulga vegetation, hills, rockpiles, plains, drainage lines and floodplains. This species is widespread throughout the Kimberley, Pilbara, Gascoyne and Carnarvon bioregions.	H	R	Recorded at 37 locations mainly in the Mine Associated Infrastructure with a few records along both haul roads, in a variety of vegetation types. It was a dominant low shrub at CRM27.
* <i>Melochia pyramidata</i>	Sprawling annual or shrub growing to 1.5 m tall, with white-purple flowers from March to October. Grows in alluvium, sand and black clay. It is common in watercourses of the Pilbara and Kimberley regions of Western Australia (Hussey et al. 2007).	Not assessed		Recorded at four locations in the Mine Associated Infrastructure in vegetation types C1/C2, C2, A4 and E2.
* <i>Setaria verticillata</i> (Whorled Pigeon Grass)	Loosely tufted annual grass to 1.3 m tall. Commonly occurs in disturbed areas, in shrublands, and on the edges of rivers and creeks from the Kimberley to the Pilbara (Hussey et al. 2007).	H	R	Recorded at 11 locations mainly in the Mine Associated Infrastructure with a few records along the CZR/RHI, in a variety of vegetation types.
* <i>Solanum nigrum</i> (Blackberry Nightshade)	An erect perennial herb or shrub growing to 1 m tall, with white flowers all year. Recorded occasionally in the Pilbara from sheltered habitats such as Mulga vegetation and drainage lines.	L	R	Recorded at one location in the Mine Associated Infrastructure in vegetation type A1.
* <i>Tribulus terrestris</i> (Caltrop)	Prostrate vine with greyish pinnate leaves and small yellow flowers. Widespread in the Eremaean and Northern botanical provinces, often growing on sandy soils and waste places.	U	M	Recorded at one location along the CZR/RHI in vegetation type A1.
* <i>Vachellia farnesiana</i> (Mimosa Bush)	Spreading, thorny shrub to 4 m tall, with dark grey bark, pinnate leaves, and yellow flowers in winter. Widespread from the Kimberley to near Perth, typically occurring along drainage systems and in adjacent low-lying areas (Hussey et al. 2007).	H	R	Recorded at 22 locations in the Mine Associated Infrastructure in a variety of vegetation types. It was a dominant shrub at CRM27.

† Ecological impact rankings: L = Low; M = Medium; H = High; U = Unknown.

Invasiveness rankings: S = Slow; M = Moderate; R = Rapid; U = Unknown.

## 5.0 Conclusions

### 5.1 Vegetation

A total of 17 vegetation types were mapped in the survey area (Section 4.2.2), comprising:

- Three units in broad to major drainages:
  - E2 – *Eucalyptus victrix* (*E. camaldulensis* subsp. *refulgens*) and *Melaleuca* spp. over mixed *Acacia* spp. over \**Cenchrus* spp.
  - C5 – *Corymbia hamersleyana* over mixed *Acacia* over *Triodia epactia*.
  - T2 – *Triodia epactia* hummock grassland.
- Five units on hills and slopes:
  - A6 – *Acacia arida* over *Triodia wiseana*.
  - A7 – *Acacia bivenosa* over *Triodia wiseana*.
  - E1 – *Eucalyptus leucophloia* subsp. *leucophloia* over mixed *Acacia* spp. over *Triodia wiseana*.
  - S1 – *Senna* spp. and *Acacia* spp. over *Triodia wiseana*.
  - T1 – *Triodia longiceps* hummock grassland.
- Nine units on plains:
  - A1 – *Acacia xiphophylla* tall shrubland over *Triodia epactia* open hummock grassland.
  - A2 – *Acacia xiphophylla* tall shrubland over *Triodia wiseana* very open hummock grassland.
  - A3 – Mixed *Acacia* spp. over *Triodia wiseana*.
  - A4 – Mixed *Acacia* spp. over *Triodia epactia*.
  - A5 – Mixed *Acacia* spp. over *Triodia longiceps*.
  - C1 – *Corymbia hamersleyana* over mixed *Acacia* spp. over *Triodia epactia*.
  - C2 – *Corymbia candida* subsp. *candida* over mixed *Acacia* spp. over *Triodia epactia*.
  - C3 – *Corymbia deserticola* subsp. *deserticola* over mixed *Acacia* spp. over *Triodia epactia*.
  - C4 – *Corymbia zygophylla* over *Triodia* spp.

The most widespread vegetation type in the survey area was A4, which accounted for 712.1 ha (23.3%). Over 95% of the vegetation in the survey area was rated as being in 'Very Good' condition or better, with only 18.0 ha (0.6%) having been cleared and considered 'Completely Degraded'. The most common causes of disturbance were weeds and clearing, with the habitats of most concern being associated with drainages and lower-lying areas in the landscape.

#### 5.1.1 Significant Vegetation

No State or Commonwealth listed TECs were encountered in the survey area, and no vegetation communities that comprise PECs were identified.

Seven of the vegetation types mapped for the survey area are considered to be locally significant (Table 4.11). Six of these units (A1, A4, C1, C2, C5 and E2) are of conservation significance due to the presence of the Priority 3 species, *Eragrostis crateriformis*, and unit E2 also represents GDV. One further unit (A6) has the potential to support individuals of the Priority 3 species *Triodia pisoliticola*, however this could not be confirmed due to access constraints. Additionally this same area was aerially assessed as being unlikely to support the Priority 3 PEC '*Triodia pisoliticola* (previously *Triodia* sp. Robe River) assemblages of mesas of the West Pilbara' based on the habitat and vegetation not being representative of the PEC.

## 5.2 Flora

A total of 366 native flora species from 123 genera and 45 families were recorded from the survey area. An additional 13 weed species were also recorded, none of which are listed as WONS (Thorp and Lynch 2000) or Declared Pests under the BAM Act (DPIRD 2022).

### 5.2.1 Significant Flora

No Threatened flora were recorded during the survey and none would occur, based on their habitat preferences and distribution in the Pilbara (Section 4.1.8.1 and 4.3.2.1).

One Priority 3 flora species, *Eragrostis crateriformis*, was recorded during the survey (Section 4.3.2.2), with a total of 681 individuals recorded within the A1, A4, C1, C2, C5 and E2 vegetation types. This species had previously been recorded at a small number of locations in the Mine Associated Infrastructure area during the survey by RPS (2021).

Two additional Priority species may occur in the survey area:

- *Triodia pisoliticola* (Priority 3): The survey by RPS (2021) identified populations of this species along the edge of a mesa approximately 1.2 km west of the Mine Associated Infrastructure area. With on-ground access to the most prospective habitat restricted (i.e. the northern section of the Mine Associated Infrastructure area, which was on Rio Tinto tenure), no targeted searches could be conducted in the area that had the highest likelihood of this species occurring. To compensate, an aerial assessment was made from a helicopter by a Senior Biologist from Biota (Scott Werner). Although no individuals were observed from the aerial assessment, the potential for this species to be present remains (Section 4.2.5.2). Targeted searches were conducted in prospective habitat within the remainder of the survey area (that was accessible by foot), with no individuals recorded.
- *Rhynchosia bungarensis* (Priority 4): This species has been frequently recorded in the locality, particularly from the Robe River and associated floodplains, as well as from tributaries through gullies and gorges. Vegetation type E2 in the Mine Associated Infrastructure area would comprise suitable habitat for this species, and while no individuals were identified during the field survey, there are records as close as 650 m north, and known occurrences upstream of the survey area.

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# Appendix 1

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## Framework for Significance Ranking of Species and Communities in WA





## **A. Categories for Threatened and Priority Ecological Communities**

### **A1. Categories and Criteria for Threatened Ecological Communities under the BC Act**

#### **Division 2**

##### **Subdivision 1 — Threatened ecological communities**

#### **27. Listing of threatened ecological communities**

- (1) The Minister may, by order, list an ecological community as a threatened ecological community in one of the following categories —
  - (a) critically endangered ecological community;
  - (b) endangered ecological community;
  - (c) vulnerable ecological community.
- (2) An ecological community is not eligible for listing as a threatened ecological community if it is a collapsed ecological community.
- (3) When deciding whether or not to list an ecological community as a threatened ecological community or to amend or repeal such a listing, the Minister must have regard only to matters relating to the survival of the ecological community.
- (4) An order made under subsection (1) may describe or identify an ecological community by reference to a map or plan held in the Department.
- (5) Section 258 applies to an order made under subsection (1).

#### **28. Criteria for categorisation as critically endangered ecological community**

An ecological community is eligible for listing in the category of critically endangered ecological community at a particular time if, at that time —

- (a) it is facing an extremely high risk of becoming eligible for listing as a collapsed ecological community in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines; and
- (b) listing in that category is otherwise in accordance with the ministerial guidelines.

#### **29. Criteria for categorisation as endangered ecological community**

An ecological community is eligible for listing in the category of endangered ecological community at a particular time if, at that time —

- (a) it is not a critically endangered ecological community; and
- (b) it is facing a very high risk of becoming eligible for listing as a collapsed ecological community in the near future, as determined in accordance with criteria set out in the ministerial guidelines; and
- (c) listing in that category is otherwise in accordance with the ministerial guidelines.

#### **30. Criteria for categorisation as vulnerable ecological community**

An ecological community is eligible for listing in the category of vulnerable ecological community at a particular time if, at that time —

- (a) it is not a critically endangered ecological community or an endangered ecological community; and
- (b) it is facing a high risk of becoming eligible for listing as a collapsed ecological community in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines; and
- (c) listing in that category is otherwise in accordance with the ministerial guidelines.

## **Subdivision 2 — Collapsed ecological communities**

### **31. Listing of collapsed ecological communities**

- (1) The Minister may, by order, list an ecological community as a collapsed ecological community.
- (2) Section 258 applies to an order made under subsection (1).

### **32. Criteria for listing as collapsed ecological community**

An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time —

- (a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed; or
- (b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover —
  - (i) its species composition or structure; or
  - (ii) its species composition and structure.

### **33. Rediscovered ecological communities**

If a collapsed ecological community is discovered in a state that no longer makes it eligible for listing as a collapsed ecological community, it is to be regarded as a threatened ecological community for the purposes of this Act until —

- (a) it is listed as a threatened ecological community; or
- (b) the Minister declares, by instrument published in the Gazette, that it is not to be so listed.

## **A2. Categories and Criteria for Priority Ecological Communities (DEC 2010)**

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the DBCA Priority Ecological Community Lists under Priorities 1, 2 and 3. These three categories are ranked in order of priority for survey and/or definition of the community, and evaluation of conservation status, so that consideration can be given to their declaration as threatened ecological communities. 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.

### **Priority One:** Poorly-known ecological communities

Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist. 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.

### **Priority Two:** Poorly-known ecological communities

Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State Forest, unallocated Crown land, water reserves, etc.) and not under imminent 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.

**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.

**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.

- (a) 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.
- (b) 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.
- (c) Ecological communities that have been removed from the list of threatened communities during the past five years.

**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.

## **B. Categories for Flora and Fauna Species**

### **B1. Western Australian BC Act, and Priority Species Classification**

In Western Australia, 'Threatened', 'Extinct' and 'Specially Protected' fauna and flora species are protected under the *Biodiversity Conservation Act 2016* (the BC Act), making it an offence to take or disturb these species without Ministerial approval. The definition of 'take' is broad, and includes killing, injuring, harvesting or capturing fauna, and gathering, cutting, destroying, harvesting or damaging flora.

Such species are classified within a framework of several categories.

Species of the highest significance are designated as Threatened species and are protected under sections 19(1)(a), 19(1)(b) and 19(1)(c) of the BC Act. Species are listed within one of three categories:

- Critically endangered (CR), Endangered (EN), or Vulnerable (V), representing those species listed in Schedules 1 to 3 respectively of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* or the *Wildlife Conservation (Rare Flora) Notice 2018*.

Presumed extinct species are protected under sections 24 and 25 of the BC Act and are listed in one of two categories:

- Extinct (EX), representing those species listed in Schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* or the *Wildlife Conservation (Rare Flora) Notice 2018*; or
- Extinct in the wild (EW); there are currently no listed species under this category.

Specially protected species are protected under section 13(1) of the BC Act, and include species of special conservation interest, migratory species, cetaceans, species subject to international agreement, or species otherwise in need of special protection. Of these:

- Migratory species (MI) are those listed under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*;
- Species of special conservation interest (conservation dependent fauna) (CD) are those listed under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*; and
- Other specially protected fauna (OS) are those listed under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*;

In addition to the species formally designated as protected under the BC Act, the WA Department of Biodiversity, Conservation and Attractions (DBCA) also maintains a list of 'Priority species'.

Species that appear to be rare or threatened, but for which there is insufficient information to properly evaluate their significance, are assigned to one of three Priority categories (Priority 1 to Priority 3), while species that are adequately known but require regular monitoring are assigned to Priority 4.

Note that of the above classifications, only 'Threatened', 'Extinct' and 'Specially Protected' species have statutory standing. The Priority flora and fauna classifications are employed by the WA DBCA to manage and classify their database of species considered potentially rare or at risk, but these categories have no legislative status.

Further explanations of the categories is provided in more detail in the following pages.

# CONSERVATION CODES

## For Western Australian Fauna and Flora

Threatened, Extinct and Specially Protected fauna or flora<sup>1</sup> are species<sup>2</sup> which have been adequately searched for and are deemed to be, in the wild, threatened, extinct or in need of special protection, and have been gazetted as such.

**The *Wildlife Conservation (Specially Protected Fauna) Notice 2018* and the *Wildlife Conservation (Rare Flora) Notice 2018* have been transitioned under regulations 170, 171 and 172 of the *Biodiversity Conservation Regulations 2018* to be the lists of Threatened, Extinct and Specially Protected species<sup>3</sup> under Part 2 of the *Biodiversity Conservation Act 2016*.**

Categories of Threatened, Extinct and Specially Protected fauna and flora are:

### **T**     **Threatened species**

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

**Threatened fauna** is the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species.

**Threatened flora** is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species.

The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of Ministerial Guideline (Number 1) and Ministerial Guideline (Number 2) that adopts the use of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species Categories and Criteria<sup>4</sup>, and is based on the national distribution of the species.

### **CR**     **Critically endangered species**

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.

Examples of use:

- The western ringtail possum (*Pseudocheirus occidentalis*) is listed as a critically endangered threatened species under the *Biodiversity Conservation Act 2016*.
- Western ringtail possum is listed as critically endangered under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: CR.

### **EN**     **Endangered species**

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.

Examples of use:

- *Caladenia hopperiana* is listed as an endangered threatened species under the *Biodiversity Conservation Act 2016*.
- *Caladenia hopperiana* is listed as endangered under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: EN.

**VU Vulnerable species**

Threatened species considered to be “facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.

Examples of use:

- The forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) is listed as a vulnerable threatened species under the *Biodiversity Conservation Act 2016*.
- Forest red-tailed black cockatoo is listed as vulnerable under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: VU.

**Extinct species**

Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.

**EX Extinct species**

Species where “there is no reasonable doubt that the last member of the species has died”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Examples of use:

- *Acacia kingiana* is listed as an extinct species under the *Biodiversity Conservation Act 2016*.
- *Acacia kingiana* is listed as extinct under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: EX.

**EW Extinct in the wild species**

Species that “is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no fauna or flora species listed as extinct in the wild.

**SP Specially protected species**

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered, or vulnerable) or extinct species under the BC Act cannot also be listed as specially protected species.

**MI Migratory species**

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Migratory species include birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA)<sup>5</sup>, China (CAMBA)<sup>6</sup> or The Republic of Korea (ROKAMBA)<sup>7</sup>, and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention)<sup>8</sup>, an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Examples of use:

- The wedge-tailed shearwater (*Ardenna pacifica*) is listed as a specially protected migratory species under the *Biodiversity Conservation Act 2016*.
- Wedge-tailed shearwater is listed as migratory under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: MI.



**CD Species of special conservation interest (conservation dependent)**

Species of special conservation need that are dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Currently only fauna are listed as species of special conservation interest.

Examples of use:

- The wambenger, south-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) is listed as a specially protected species of special conservation interest under the *Biodiversity Conservation Act 2016*.
- Wambenger, south-western brush-tailed phascogale, is listed as conservation dependent under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: CD.

**OS Species otherwise in need of special protection (other specially protected)**

Species otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Currently only fauna are listed as species otherwise in need of special protection.

Examples of use:

- The dugong (*Dugong dugon*) is listed as a specially protected species otherwise in need of special protection under the *Biodiversity Conservation Act 2016*.
- Dugong is listed as other specially protected fauna under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: OS.

**P Priority species**

Priority is not a listing category under the BC Act.

All fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land).

Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened.

Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of priority status 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 1: Poorly-known species - known from few locations, none on conservation lands**

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, for example, 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 for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.

Examples of use:

- *Borya stenophylla* is listed as a Priority 1 species by the Department of Biodiversity, Conservation and Attractions.
- *Borya stenophylla* is listed as Priority 1 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P1.

## 2 Priority 2: Poorly-known species - known from few locations, some on conservation lands

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, for example, 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 for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.

Examples of use:

- *Caladenia nivalis* is listed as a Priority 2 species by the Department of Biodiversity, Conservation and Attractions.
- *Caladenia nivalis* is listed as Priority 2 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P2.

## 3 Priority 3: Poorly-known species - known from several locations

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. These species need further survey.

Examples of use:

- *Acacia nitidula* is listed as a Priority 3 species by the Department of Biodiversity, Conservation and Attractions.
- *Acacia nitidula* is listed as Priority 3 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P3.

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

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as a conservation dependent specially protected species.

(c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy.

(d) Other species in need of monitoring.

Examples of use:

- *Banksia aculeata* is listed as a Priority 4 species by the Department of Biodiversity, Conservation and Attractions.
- *Banksia aculeata* is listed as Priority 4 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P4.

<sup>1</sup> The definition of flora includes algae, fungi, and lichens.

<sup>2</sup> 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 or variety, or a distinct population).

<sup>3</sup> Schedules are not referred to when stating the listing status of threatened, extinct or specially protected species under the BC Act. See the examples provided under each listing category.

<sup>4</sup> Western Australia has assigned species to threat categories using the *IUCN Red List of Threatened Species Categories and Criteria* since 1996 (referencing all criteria). At the national level, threatened species listings under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) reference only some of the IUCN criteria (<http://www.environment.gov.au/biodiversity/threatened/nominations/forms-and-guidelines>).

<sup>5</sup> JAMBA - first included in the WA migratory species list in 1980.

<sup>6</sup> CAMBA - first included in the WA migratory species list in 2010.

<sup>7</sup> ROKAMBA - first included in the WA migratory species list in 2010.

<sup>8</sup> Bonn Convention (Birds) - first included in the WA migratory species list in 2015.

## **B2. Commonwealth Environment Protection and Biodiversity Conservation Act 1999**

Many of the species that are specially protected at State level are also listed as Threatened species at the Federal level, as one of the Matters of National Environmental Significance (MNES) identified under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). These may be classified as 'critically endangered', 'endangered', 'vulnerable' or 'lower risk', consistent with IUCN categories:

1. **Critically Endangered (CR):** a taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future.
2. **Endangered (EN):** a taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future.
3. **Vulnerable (VU):** a taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future.
4. **Lower Risk (LR):** a taxon is Lower Risk when it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:
  - **Conservation Dependent (CD).** Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation program targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.
  - **Near Threatened (NT).** Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.
  - **Least Concern (LC).** Taxa which do not qualify for Conservation Dependent or Near Threatened.

In addition, numerous **Migratory (MI)** species are listed as MNES under the EPBC Act (some of which are also listed as Threatened). Migratory species are those animals that migrate to Australia and its external territories, or pass through or over Australian waters during their annual migrations. The list of migratory species consists of those species listed under the following international conventions:

1. Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention);
2. China-Australia Migratory Bird Agreement (CAMBA);
3. Japan-Australia Migratory Bird Agreement (JAMBA); and,
4. Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

**Marine (MA)** species are also protected under the EPBC Act, and are listed to ensure the long-term conservation of the species. Marine species include all Australian sea snakes, seals, crocodiles, dugongs, marine turtles, seahorses and seabirds that naturally occur in the Commonwealth marine area.

Under the terms of the EPBC Act, an action (e.g. a project or development) is required to be referred to the Australian Government Environment Minister for approval if it has, will have, or is likely to have, a significant impact on an MNES. The term 'action' includes projects and developments subsequent to commencement of the Act, however there are a number of exemptions (e.g. projects in Commonwealth areas). According to Department of the Environment (2013), a 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts.

### **References:**

Department of the Environment (2013). Matters of National Environmental Significance - Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999*. Department of the Environment, Canberra, Australia.



## Appendix 2

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# EPBC Act Protected Matters and NatureMap Database Searches







# 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. Please see the caveat for interpretation of information provided here.

Report created: 03-Aug-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

# Summary

## Matters of National Environment 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](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance (Ramsar)</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	None
<a href="#">Listed Threatened Species:</a>	11
<a href="#">Listed Migratory Species:</a>	12

## 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

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.

<a href="#">Commonwealth Lands:</a>	None
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	17
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	None

## Extra Information

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

<a href="#">State and Territory Reserves:</a>	1
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">EPBC Act Referrals:</a>	13
<a href="#">Key Ecological Features (Marine):</a>	None
<a href="#">Biologically Important Areas:</a>	1
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None



# Details

## Matters of National Environmental Significance

### Listed Threatened Species [\[ Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.  
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
<b>BIRD</b>			
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Erythrotriorchis radiatus</a> Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area	In feature area
<a href="#">Falco hypoleucos</a> Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Pezoporus occidentalis</a> Night Parrot [59350]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area
<b>FISH</b>			
<a href="#">Ophisternon candidum</a> Blind Cave Eel [66678]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

### MAMMAL

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Dasyurus hallucatus</a> Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Rhinonicteris aurantia (Pilbara form)</a> Pilbara Leaf-nosed Bat [82790]	Vulnerable	Roosting known to occur within area	In feature area

## REPTILE

<a href="#">Liasis olivaceus barroni</a> Olive Python (Pilbara subspecies) [66699]	Vulnerable	Species or species habitat known to occur within area	In feature area
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## Listed Migratory Species [ [Resource Information](#) ]

Scientific Name	Threatened Category	Presence Text	Buffer Status
-----------------	---------------------	---------------	---------------

### Migratory Marine Birds

<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
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### Migratory Terrestrial Species

<a href="#">Hirundo rustica</a> Barn Swallow [662]		Species or species habitat may occur within area	In feature area
---	--	--	-----------------

<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
---	--	--	-----------------

<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
---	--	--	-----------------

### Migratory Wetlands Species

<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
--	--	--	-----------------

<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
--	--	--	-----------------

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area	In feature area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]		Species or species habitat may occur within area	In feature area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area	In buffer area only

## Other Matters Protected by the EPBC Act

Listed Marine Species			[ Resource Information ]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
<a href="#">Bubulcus ibis as Ardea ibis</a> Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Chalcites osculans as Chrysococcyx osculans</a> Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
<a href="#">Hirundo rustica</a> Barn Swallow [662]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area	In buffer area only
<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area

## Extra Information

State and Territory Reserves			[ Resource Information ]
Protected Area Name	Reserve Type	State	Buffer Status
Cane River	Conservation Park	WA	In buffer area only

EPBC Act Referrals					[ Resource Information ]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	
<a href="#">Controlled action</a>					
<a href="#">Ashburton Infrastructure Project</a>	2021/9064	Controlled Action	Guidelines Issued	In buffer area only	
<a href="#">Development of the Mesa H iron ore mining operations, WA</a>	2017/8017	Controlled Action	Post-Approval	In buffer area only	
<a href="#">Extension of Mesa A/Warramboe Iron Ore Project, west of Pannawonica, WA</a>	2016/7843	Controlled Action	Post-Approval	In buffer area only	
<a href="#">Gorgon Gas Development</a>	2003/1294	Controlled Action	Post-Approval	In buffer area only	
<a href="#">Greater Gorgon Development - Optical Fibre Cable, Mainland to Barrow Island</a>	2005/2141	Controlled Action	Completed	In buffer area only	
<a href="#">Proposed West Pilbara Iron Ore Project</a>	2009/4706	Controlled Action	Post-Approval	In buffer area only	
<a href="#">Yannarie Solar Salt Project</a>	2004/1679	Controlled Action	Completed	In buffer area only	

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
<b>Controlled action</b>				
<b>Not controlled action</b>				
<a href="#">Construction and Operation of Iron Ore Mine</a>	2006/2698	Not Controlled Action	Completed	In buffer area only
<a href="#">Fortescue River Gas Pipeline, Pilbara Region, WA</a>	2014/7118	Not Controlled Action	Completed	In buffer area only
<a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>	2015/7522	Not Controlled Action	Completed	In feature area
<a href="#">Northern Looping project, Karratha to Gingin</a>	2005/2251	Not Controlled Action	Completed	In buffer area only
<b>Not controlled action (particular manner)</b>				
<a href="#">Buckland Iron Ore Mining Project, Pilbara region, WA</a>	2013/6867	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
<a href="#">Iron Ore Mining Operation of Bungaroo deposit in Robe River Valley, Pilbara</a>	2006/2771	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

## Biologically Important Areas

Scientific Name	Behaviour	Presence	Buffer Status
<b>Seabirds</b>			
<a href="#">Ardenna pacifica</a>			
Wedge-tailed Shearwater [84292]	Breeding	Known to occur	In feature area

# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

## 3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

# 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](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-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, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- 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 Flora Data Search

40 km search radius from a central point (-21.784662, 116.042380) (DBCA 2022).

Species	Status
<i>Abutilon dioicum</i>	
<i>Abutilon fraseri</i>	
<i>Abutilon hannii</i>	
<i>Abutilon lepidum</i>	
<i>Abutilon macrum</i>	
<i>Abutilon otocarpum</i>	
<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)	
<i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61)	Priority 3
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	
<i>Acacia ampliceps</i>	
<i>Acacia ampliceps</i> x <i>sclerosperma</i> subsp. <i>sclerosperma</i>	
<i>Acacia ancistrocarpa</i>	
<i>Acacia aptaneura</i>	
<i>Acacia arida</i>	
<i>Acacia atkinsiana</i>	
<i>Acacia bivenosa</i>	
<i>Acacia bivenosa</i> x <i>sclerosperma</i>	
<i>Acacia citrinoviridis</i>	
<i>Acacia colei</i>	
<i>Acacia colei</i> var. <i>colei</i>	
<i>Acacia colei</i> var. <i>ileocarpa</i>	
<i>Acacia coriacea</i> subsp. <i>pendens</i>	
<i>Acacia dictyophleba</i>	
<i>Acacia elachantha</i>	
<i>Acacia elachantha</i> (Golden hairy variant)	
<i>Acacia inaequilatera</i>	
<i>Acacia ligulata</i>	
<i>Acacia maitlandii</i>	
<i>Acacia orthocarpa</i>	
<i>Acacia pyrifolia</i>	
<i>Acacia pyrifolia</i> var. <i>morrisonii</i>	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	
<i>Acacia sclerosperma</i>	
<i>Acacia synchronicia</i>	
<i>Acacia tetragonophylla</i>	
<i>Acacia trachycarpa</i>	
<i>Acacia trudgeniana</i>	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	
<i>Acacia wanyu</i>	
<i>Acacia xiphophylla</i>	
<i>Achyranthes aspera</i>	
<i>Acrachne racemosa</i>	
<i>Afrohybanthus aurantiacus</i>	
<i>Alternanthera angustifolia</i>	
<i>Alternanthera denticulata</i>	
<i>Alternanthera nana</i>	
<i>Alternanthera nodiflora</i>	
<i>Alysicarpus muelleri</i>	
<i>Amaranthus cuspidifolius</i>	
<i>Amaranthus interruptus</i>	
<i>Amaranthus mitchellii</i>	
<i>Amaranthus undulatus</i>	
<i>Ammannia auriculata</i>	
<i>Ammannia baccifera</i>	
<i>Amyema preissii</i>	

Species	Status
<i>Angianthus acrohyalinus</i>	
<i>Angianthus tomentosus</i>	
* <i>Argemone ochroleuca</i>	Weed
* <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	Weed
<i>Aristida contorta</i>	
<i>Aristida holathera</i>	
<i>Aristida pruinosa</i>	
<i>Aristida</i> sp.	
<i>Arivela uncifera</i>	
<i>Arivela viscosa</i>	
<i>Basilicum polystachyon</i>	
<i>Bergia trimeria</i>	
<i>Blumea tenella</i>	
<i>Boerhavia burbridgeana</i>	
<i>Boerhavia coccinea</i>	
<i>Boerhavia gardneri</i>	
<i>Boerhavia repleta</i>	
<i>Bonamia erecta</i>	
<i>Bonamia pannosa</i>	
<i>Bothriochloa bladhii</i>	
<i>Bothriochloa ewartiana</i>	
<i>Bulbostylis barbata</i>	
<i>Calandrinia holtumii</i>	
<i>Calandrinia ptychosperma</i>	
<i>Calocephalus beardii</i>	
<i>Calocephalus knappii</i>	
<i>Calotis plumulifera</i>	
<i>Capparis spinosa</i> subsp. <i>nummularia</i>	
<i>Cassytha capillaris</i>	
<i>Cassytha filiformis</i>	
* <i>Cenchrus ciliaris</i>	Weed
* <i>Cenchrus echinatus</i>	Weed
* <i>Cenchrus setiger</i>	Weed
<i>Centipeda minima</i>	
<i>Centipeda minima</i> subsp. <i>minima</i>	
* <i>Ceratopteris thalictroides</i>	Weed
<i>Cheilanthes austrotenuifolia</i>	
<i>Cheilanthes lasiophylla</i>	
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	
* <i>Chloris barbata</i>	Weed
<i>Chloris pectinata</i>	
<i>Chrysopogon fallax</i>	
* <i>Citrullus colocynthis</i>	Weed
<i>Clerodendrum floribundum</i> var. <i>ovatum</i>	
<i>Codonocarpus cotinifolius</i>	
<i>Convolvulus angustissimus</i>	
<i>Corchorus laniflorus</i>	
<i>Corchorus parviflorus</i>	
<i>Corchorus sidoides</i>	
<i>Corchorus sidoides</i> subsp. <i>sidoides</i>	
<i>Corchorus tectus</i>	
<i>Corchorus tridens</i>	
<i>Corymbia candida</i>	
<i>Corymbia candida</i> subsp. <i>candida</i>	
<i>Corymbia candida</i> subsp. <i>candida</i> / <i>C. flavescens</i>	
<i>Corymbia deserticola</i>	
<i>Corymbia ferriticola</i>	

Species	Status
<i>Corymbia hamersleyana</i>	
<i>Corymbia opaca</i>	
<i>Corymbia zygophylla</i>	
<i>Crotalaria novae-hollandiae</i> subsp. <i>novae-hollandiae</i>	
<i>Cucumis melo</i>	
<i>Cucumis variabilis</i>	
<i>Cullen cinereum</i>	
<i>Cullen lachnostachys</i>	
<i>Cullen leucanthum</i>	
<i>Cullen leucochaites</i>	
<i>Cullen pogonocarpum</i>	
<i>Cymbopogon ambiguus</i>	
<i>Cymbopogon obtectus</i>	
<i>Cymbopogon procerus</i>	
<i>Cynodon convergens</i>	
<i>Cynodon prostratus</i>	
<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>	
<i>Cyperus difformis</i>	
<i>Cyperus hesperius</i>	
<i>Cyperus iria</i>	
<i>Cyperus squarrosus</i>	
<i>Cyperus vaginatus</i>	
<i>Dactyloctenium radulans</i>	
<i>Dampiera candicans</i>	
<i>Daucus glochidiatus</i>	
<i>Dendrophyllanthus erwinii</i>	
<i>Dichanthium fecundum</i>	
<i>Dichanthium sericeum</i>	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	
<i>Dichromochlamys dentatifolia</i>	
<i>Dicladantha glabra</i>	Priority 2
<i>Digitaria brownii</i>	
<i>Digitaria ctenantha</i>	
<i>Dodonaea coriacea</i>	
<i>Dolichocarpa crouchiana</i>	
<i>Drosera finlaysoniana</i>	
<i>Duperreya commixta</i>	
<i>Dysphania kalpari</i>	
<i>Dysphania melanocarpa</i>	
<i>Dysphania plantaginella</i>	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	
<i>*Echinochloa colona</i>	Weed
<i>Ehretia saligna</i>	
<i>Eleocharis atropurpurea</i>	
<i>Eleocharis geniculata</i>	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	
<i>Enneapogon caerulescens</i>	
<i>Enteropogon ramosus</i>	
<i>Eragrostis cumingii</i>	
<i>Eragrostis dielsii</i>	
<i>Eragrostis eriopoda</i>	
<i>Eragrostis surreyana</i>	Priority 3
<i>Eragrostis tenellula</i>	
<i>Eragrostis xerophila</i>	
<i>Eremophila cuneifolia</i>	
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	
<i>Eremophila longifolia</i>	

Species	Status
<i>Eremophila maculata</i> subsp. <i>brevifolia</i>	
<i>Eriachne aristidea</i>	
<i>Eriachne benthamii</i>	
<i>Eriachne helmsii</i>	
<i>Eriachne mucronata</i>	
<i>Eriachne pulchella</i>	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	
<i>Eriachne tenuiculmis</i>	
<i>Eriachne</i> sp.	
<i>Erythrina vespertilio</i>	
<i>Eucalyptus camaldulensis</i>	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	
<i>Eucalyptus victrix</i>	
<i>Eulalia aurea</i>	
<i>Euphorbia australis</i> var. <i>australis</i>	
<i>Euphorbia australis</i> var. <i>glabra</i>	Priority 3
<i>Euphorbia boophthona</i>	
<i>Euphorbia careyi</i>	
<i>Euphorbia coghlanii</i>	
* <i>Euphorbia hirta</i>	Weed
<i>Euphorbia tannensis</i>	
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	
<i>Euphorbia vaccaria</i> var. <i>erucoides</i>	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	
<i>Euploca heterantha</i>	
<i>Euploca inexplicita</i>	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	
<i>Ficus aculeata</i> var. <i>indecora</i>	
<i>Ficus brachypoda</i>	
<i>Ficus virens</i>	
<i>Fimbristylis dichotoma</i>	
* <i>Flaveria trinervia</i>	Weed
<i>Glinus oppositifolius</i>	
<i>Gnephosis arachnoidea</i>	
<i>Gomphrena canescens</i>	
<i>Gomphrena cunninghamii</i>	
<i>Goodenia armitiana</i>	
<i>Goodenia forrestii</i>	
<i>Goodenia lamprosperma</i>	
<i>Goodenia discophora</i>	
<i>Goodenia microptera</i>	
<i>Goodenia nuda</i>	
<i>Goodenia stobbsiana</i>	
<i>Goodenia tenuiloba</i>	
<i>Goodenia triodiophila</i>	
<i>Gossypium australe</i>	
<i>Gossypium robinsonii</i>	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	
<i>Grevillea wickhamii</i> subsp. <i>aprica</i>	
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	
<i>Grevillea wickhamii</i> subsp. <i>macrodonta</i>	
<i>Hakea lorea</i>	
<i>Hakea lorea</i> subsp. <i>lorea</i>	
<i>Haloragis gossei</i>	
<i>Haloragis gossei</i> var. <i>gossei</i>	
<i>Haloragis trigonocarpa</i>	

Species	Status
<i>Helichrysum luteoalbum</i>	
<i>Heliotropium inexplicitum</i>	
<i>Hibiscus austrinus</i> var. <i>austrinus</i>	
<i>Hibiscus coatsii</i>	
<i>Hibiscus goldsworthii</i>	
<i>Hibiscus leptocladus</i>	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	
<i>Indigofera bovipерda</i>	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	
<i>Indigofera colutea</i>	
<i>Indigofera linifolia</i>	
<i>Indigofera linnaei</i>	
<i>Indigofera monophylla</i>	
<i>Indigofera trita</i>	
<i>Ipomoea lonchophylla</i>	
<i>Ipomoea muelleri</i>	
<i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i>	
<i>Ipomoea polymorpha</i>	
<i>Iseilema dolichotrichum</i>	
<i>Iseilema vaginiflorum</i>	
<i>Isotropis atropurpurea</i>	
<i>Ixiochlamys cuneifolia</i>	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	
<i>Kirganelia baccata</i>	
<i>Lepidium oxytrichum</i>	
<i>Lepidium phlebopetalum</i>	
<i>Lepidium pholidogynum</i>	
<i>Livistona alfredii</i>	Priority 4
<i>Lobelia arnhemiaca</i>	
<i>Lobelia heterophylla</i> subsp. <i>pilbarensis</i>	
<i>Lotus cruentus</i>	
<i>Ludwigia perennis</i>	
<i>Lysiana casuarinae</i>	
<i>Maireana georgei</i>	
<i>Maireana melanocoma</i>	
<i>Maireana planifolia</i>	
<i>Malvastrum americanum</i>	
<i>Marsilea drummondii</i>	
<i>Marsilea</i> sp.	
<i>Melaleuca argentea</i>	
<i>Melaleuca bracteata</i>	
<i>Melaleuca glomerata</i>	
<i>Melhania oblongifolia</i>	
<i>Mimulus gracilis</i>	
<i>Myriophyllum verrucosum</i>	
<i>Najas tenuifolia</i>	
<i>Nellica maderaspatensis</i>	
<i>Neptunia dimorphantha</i>	
<i>Nicotiana benthamiana</i>	
<i>Nicotiana obliqua</i>	
<i>Nicotiana occidentalis</i>	
<i>Panicum australiense</i>	
<i>Panicum laevinode</i>	
<i>Paraneurachne muelleri</i>	
<i>Peripleura obovata</i>	
<i>Paspalidium clementii</i>	

Species	Status
<i>Paspalidium rarum</i>	
<i>Pentalepis trichodesmoides</i> subsp. <i>trichodesmoides</i>	
<i>Peripleura obovata</i>	
<i>Perotis rara</i>	
<i>Petalostylis labicheoides</i>	
<i>Physalis angulata</i>	
<i>Pimelea ammocharis</i>	
<i>Pluchea dentex</i>	
<i>Pluchea dunlopii</i>	
<i>Pluchea rubelliflora</i>	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	
<i>Polycarpaea holtzei</i>	
<i>Polycarpaea longiflora</i>	
<i>Polygala glaucifolia</i>	
<i>Polygala longifolia</i>	
<i>Polymeria ambigua</i>	
<i>Pomax rupestris</i>	
<i>Portulaca conspicua</i>	
<i>Portulaca intraterranea</i>	
<i>Portulaca oleracea</i>	
<i>*Portulaca pilosa</i>	Weed
<i>Portulaca</i> sp.	
<i>*Pseudognaphalium luteoalbum</i>	
<i>Psydrax latifolia</i>	
<i>Pteris vittata</i>	
<i>Pterocaulon serrulatum</i>	
<i>Pterocaulon sphacelatum</i>	
<i>Pterocaulon sphaeranthoides</i>	
<i>Ptilotus aervoides</i>	
<i>Ptilotus appendiculatus</i>	
<i>Ptilotus astrolasius</i>	
<i>Ptilotus auriculifolius</i>	
<i>Ptilotus axillaris</i>	
<i>Ptilotus calostachyus</i>	
<i>Ptilotus clementii</i>	
<i>Ptilotus exaltatus</i>	
<i>Ptilotus fusiformis</i>	
<i>Ptilotus gaudichaudii</i>	
<i>Ptilotus gomphrenoides</i>	
<i>Ptilotus helipteroides</i>	
<i>Ptilotus incanus</i>	
<i>Ptilotus macrocephalus</i>	
<i>Ptilotus mollis</i>	Priority 4
<i>Ptilotus nobilis</i>	
<i>Ptilotus obovatus</i>	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	
<i>Ptilotus polystachyus</i>	
<i>Ptilotus villosiflorus</i>	
<i>Rhagodia preissii</i> subsp. <i>obovata</i>	
<i>Rhynchosia bungarensis</i>	Priority 4
<i>Rhynchosia minima</i>	
<i>Rotala diandra</i>	
<i>Rotala mexicana</i>	
<i>Salsola australis</i>	
<i>Scaevola spinescens</i>	
<i>Schoenoplectiella laevis</i>	
<i>Schoenoplectus subulatus</i>	

Species	Status
<i>Sclerolaena costata</i>	
<i>Sclerolaena densiflora</i>	
<i>Sclerolaena eriacantha</i>	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x <i>glutinosa</i>	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	
<i>Senna glutinosa</i> subsp. x <i>luerksenii</i>	
<i>Senna notabilis</i>	
<i>Senna venusta</i>	
<i>Seringia elliptica</i>	
<i>Seringia nephrosperma</i>	
<i>Sesbania cannabina</i>	
<i>Sesbania formosa</i>	
<i>Setaria dielsii</i>	
* <i>Setaria verticillata</i>	Weed
<i>Sida arsinata</i>	
<i>Sida clementii</i>	
<i>Sida echinocarpa</i>	
<i>Sida fibulifera</i>	
<i>Sida rohlenae</i>	
<i>Sida</i> sp. L (A.M. Ashby 4202)	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	
<i>Sida</i> sp. Supplejack Station (T.S. Henshall 2345)	
<i>Sida</i> sp. verrucose glands (F.H. Mollemans 2423)	
<i>Solanum cleistogamum</i>	
<i>Solanum diversiflorum</i>	
<i>Solanum elatius</i>	
<i>Solanum ferocissimum</i>	
<i>Solanum gabrielae</i>	
<i>Solanum horridum</i>	
<i>Solanum lasiophyllum</i>	
<i>Solanum morrisonii</i>	
<i>Solanum phlomoides</i>	
<i>Solanum</i> sp. Red Hill (S. van Leeuwen et al. PBS 5415)	Priority 3
<i>Sporobolus australasicus</i>	
<i>Stackhousia muricata</i>	
<i>Stemodia grossa</i>	
<i>Stemodia kingii</i>	
<i>Stemodia viscosa</i>	
<i>Streptoglossa bubakii</i>	
<i>Streptoglossa decurrens</i>	
<i>Streptoglossa liatroides</i>	
<i>Streptoglossa odora</i>	
<i>Striga curviflora</i>	
<i>Stylidium weeliwollii</i>	Priority 3
<i>Swainsona complanata</i>	
<i>Swainsona formosa</i>	
<i>Swainsona forrestii</i>	
<i>Swainsona maccullochiana</i>	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	
<i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i>	
<i>Tephrosia clementii</i>	
<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	
<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)	



Species	Status
<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	
<i>Tephrosia supina</i>	
<i>Tephrosia uniovulata</i>	
<i>Tephrosia virens</i>	
<i>Terminalia supranitifolia</i>	Priority 3
<i>Themeda triandra</i>	
<i>Tinospora smilacina</i>	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	
<i>Trianthema pilosum</i>	
<i>Trianthema triquetrum</i>	
<i>Tribulopsis angustifolia</i>	
<i>Tribulus astrocarpus</i>	
<i>Tribulus hirsutus</i>	
<i>Tribulus macrocarpus</i>	
<i>Tribulus occidentalis</i>	
<i>Tribulus platypterus</i>	
<i>Tribulus terrestris</i>	
<i>Trichodesma zeylanicum</i>	
<i>Trigastrotheca molluginea</i>	
<i>Triodia epactia</i>	
<i>Triodia mallota</i>	Priority 1
<i>Triodia melvillei</i>	
<i>Triodia pisoliticola</i>	Priority 3
<i>Triodia pungens</i>	
<i>Triodia wiseana</i>	
<i>Triumfetta chaetocarpa</i>	
<i>Triumfetta clementii</i>	
<i>Triumfetta johnstonii</i>	
<i>Typha domingensis</i>	
<i>Urochloa occidentalis</i>	
* <i>Vachellia farnesiana</i>	Weed
<i>Vallisneria nana</i>	
<i>Vigna lanceolata</i>	
<i>Vigna lanceolata</i> var. <i>lanceolata</i>	
<i>Wahlenbergia tumidifruca</i>	
<i>Waltheria indica</i>	
<i>Xerochloa barbata</i>	
<i>Xerochloa imberbis</i>	

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## Appendix 3

# Likelihood of Significant Flora Occurring in the Survey Area





Taxon	Habit and Habitat (WA Herbarium 2022)	Database Searches			Previous Surveys		Likelihood of Occurrence Within the Survey Area	
		NatureMap	DBCA TPFL	WAH	Biota Surveys in Locality †	RPS Flora Survey 2021	Initial Ranking Based on Desktop Study (NR = nearest record)	Final Ranking Based on Results of Survey
<b>Priority 1</b>								
<i>Bothriochloa decipiens</i> var. <i>cloncurrans</i>	Perennial grass to 1.4 m tall. Seasonally damp depressions, clay plains.	-	-	✓	-	-	<b>Unlikely to occur:</b> suitable habitat in the survey area but this species is rarely recorded; a single WAH record from the locality, not in close proximity (NR 33 km E).	<b>Unlikely to occur.</b>
<i>Triodia mallota</i>	Hard spinifex with non-resinous foliage, and densely woolly leaf sheath surfaces. Single known population is restricted to an area of shale (metasandstone and chert) adjacent to a pisolitic mesa.	✓	-	✓	-	-	<b>May occur:</b> Some suitable habitat may be present in the survey area; single population known, S of Pannawonica (NR 17 km E).	<b>Unlikely to occur:</b> Very limited suitable habitat in the survey area, and species was not recorded.
<b>Priority 2</b>								
<i>Dicladantha glabra</i> (R.M.Barker)	Spreading perennial herb or shrub to 0.6 m tall. On alluvium along watercourses, often through rocky gorges; near rock pools.	✓	-	✓	-	-	<b>Unlikely to occur:</b> No particularly suitable habitat in the survey area; two WAH records from the locality (NR 12 km E).	<b>Unlikely to occur.</b>
<i>Pentalepis trichodesmoides</i> subsp. <i>hispida</i>	Erect perennial shrub to 1 m. Skeletal red-brown gravelly loam. Hilltops, hill slopes, creeklines.	-	-	✓	-	-	<b>Unlikely to occur:</b> Suitable habitat in the survey area, however only one WAH record from the locality, and this is the furthest west to date (NR 34 km E).	<b>Unlikely to occur.</b>
<i>Trianthema</i> sp. Python Pool (G.R. Guerin & M.E. Trudgen GG 1023)	Spreading annual herb to 10 cm tall. Plains with a substrate of loam to clay loam with a gravelly/cobbly surface.	-	-	✓	-	-	<b>Unlikely to occur:</b> Suitable habitat in the survey area, however only one WAH record from the locality, and this is the furthest west to date (NR 41 km NE).	<b>Unlikely to occur.</b>
<b>Priority 3</b>								
<i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61)	Shrub to 0.5 m tall. Sand or loam. Limestone rises.	✓	✓	✓	-	-	<b>Unlikely to occur:</b> 1 DBCA and 4 WAH records within the locality, all from the Cane and Uaroo land systems, neither of which is present in the survey area; species typically occurs closer to the coast than the survey area (NR 17 km NW).	<b>Unlikely to occur.</b>
<i>Dolichocarpa</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	Spreading annual herb to 10 cm tall. Clay plains.	-	-	✓	-	-	<b>Unlikely to occur:</b> Suitable habitat in the survey area, however only one WAH record in the locality and this is the furthest west to date (NR 31 km N).	<b>Unlikely to occur.</b>
<i>Eragrostis crateriformis</i>	Annual grass to 0.4 m tall, flowering from Jan to Jul. Clayey loam or clay. Creek banks, depressions.	-	-	-	-	✓	<b>Occurs:</b> Recorded from a few locations in the Mine Associated Infrastructure area, and numerous locations immediately west (RPS 2021).	<b>Occurs:</b> 681 individuals recorded within the survey area; recorded from the Mine Associated Infrastructure Area, the eastern end of the EAA, and at the junction of the haul road corridors.
<i>Eragrostis surreyana</i>	Tufted annual grass to 15 cm. Seasonally wet, shallow, grey alluvial soils over rock, with some records from deeper soils in seasonal drainage areas.	✓	-	✓	-	-	<b>May occur:</b> Limited suitable habitat may occur in the survey area. Only two WAH records in the locality, which are the furthest west to date (NR 18 km E).	<b>Unlikely to occur:</b> Limited suitable habitat present and species was not recorded.
<i>Euphorbia australis</i> var. <i>glabra</i>	Prostrate annual herb to 1 cm tall. Moderately drained, red clay loam. Extensive sub-saline flats.	✓	-	✓	-	-	<b>Unlikely to occur:</b> Suitable habitat in the survey area, however only one WAH voucher in the locality and this is the furthest west to date (NR 24 km E).	<b>Unlikely to occur.</b>
<i>Euphorbia stevenii</i>	Somewhat succulent perennial herb to 0.5 m tall. Clay, sandy soils.	-	-	✓	-	-	<b>Unlikely to occur:</b> Suitable habitat in the survey area, however only one WAH voucher in the locality and this is the furthest west to date (NR 31 km NE).	<b>Unlikely to occur.</b>
<i>Gymnanthera cunninghamii</i>	Erect shrub to 2 m tall, with cream-yellow-green flowers. Sandy soils.	-	-	-	-	✓?	<b>Unlikely to occur:</b> Suitable habitat in the survey area but this species is rarely recorded, and there are no confirmed records from the locality. Figure 1 in RPS (2021) shows one unconfirmed record approximately 400 m W of the current survey area, however this species is not mentioned anywhere else in the report; we assume that the specimen was subsequently redetermined (possibly <i>Ehretia saligna</i> ).	<b>Unlikely to occur.</b>

Taxon	Habit and Habitat (WA Herbarium 2022)	Database Searches			Previous Surveys		Likelihood of Occurrence Within the Survey Area	
		NatureMap	DBCA TPFL	WAH	Biota Surveys in Locality †	RPS Flora Survey 2021	Initial Ranking Based on Desktop Study (NR = nearest record)	Final Ranking Based on Results of Survey
<i>Indigofera rivularis</i>	Erect shrub to 2.5 m tall. In rocky creeklines and on broad floodplains in open low woodland of eucalypts and acacias on ironstone substrates.	-	-	✓	-	-	<b>Unlikely to occur:</b> Suitable habitat is present, however the species has not been recorded in close proximity to the survey area; three WAH records in the locality, which are the furthest west to date (NR 25 km SE).	<b>Unlikely to occur.</b>
<i>Owenia acidula</i>	Tree to 8 m tall. Clay.	-	-	✓	-	-	<b>Unlikely to occur:</b> Suitable habitat is likely to be present, however species is rarely recorded; two WAH records in the locality, neither in close proximity (NR 37 km SE).	<b>Unlikely occur.</b>
<i>Solanum</i> sp. Red Hill (S. van Leeuwen et al. PBS 5415)	Perennial, upright or spreading resinous shrub to 30 cm tall. Hillslopes, summits or gorges.	✓	-	✓	-	-	<b>May occur:</b> Some suitable habitat may be present in the survey area; three WAH vouchers collected in the locality, from north and south of the survey area (NR 16 km NE).	<b>Unlikely to occur:</b> Limited suitable habitat present and the species was not recorded.
<i>Stylidium weeliwollii</i>	Delicate annual herb to 25 cm tall with pink flowers. Gritty, sandy soil or sandy clay on edges of major watercourses.	✓	-	✓	-	-	<b>Unlikely to occur:</b> Limited suitable habitat present in the survey area; only one WAH voucher from the locality, which is the only record from the west Pilbara (NR 10 km E).	<b>Unlikely to occur.</b>
<i>Swainsona thompsoniana</i>	Small, prostrate annual herb with mauve flowers. Clay plains.	-	-	✓	-	-	<b>Unlikely to occur:</b> Suitable habitat may be present in the survey area, however only one WAH voucher from the locality and this is the furthest west to date (NR 31 km ENE).	<b>Unlikely to occur.</b>
<i>Terminalia supranitifolia</i>	Spreading, tangled shrub or tree to 3 m tall. Sand. Among basalt rocks.	✓	✓	✓	-	-	<b>Unlikely to occur:</b> Species is typically associated with basalt rockpiles, however there are two outlying records from gullies draining into the Bungaroo Valley to the east; these are the only records from the locality. No particularly suitable habitat in the survey area (NR 16 km E).	<b>Unlikely to occur.</b>
<i>Triodia pisoliticola</i>	Soft spinifex with non-resinous foliage. Rocky skeletal slopes and free-faces of mesas and hills.	✓	-	✓	✓	✓	<b>May occur:</b> Species is frequently recorded in the locality, however suitable habitat appears limited in the survey area. A total of 23 WAH vouchers from the locality, and previously recorded along the edge of the mesa ~1.2 km west of the Mine Associated Infrastructure area by RPS (2021).	<b>May occur:</b> Limited habitat is present in the north of the Mine Associated Infrastructure; while this did not appear particularly suitable from the air, access to this area was restricted, so no on-ground searches could be conducted. The presence of this species therefore cannot be ruled out.
<b>Priority 4</b>								
<i>Livistona alfredii</i>	Palm to 10 m tall. Edges of permanent pools.	✓	-	✓	-	-	<b>Unlikely to occur:</b> Limited suitable habitat appears to be present; only one WAH record from the locality (NR 18 km NE).	<b>Unlikely to occur:</b> No particularly suitable habitat and species was not recorded.
<i>Ptilotus mollis</i>	Low shrub with white-grey felty foliage and white-pink flowers. Low stony hills, scree slopes.	✓	-	✓	✓	-	<b>Unlikely to occur:</b> Limited suitable habitat appears to be present in the survey area; only two WAH records from the locality, which are the furthest NW to date (NR 20 km S).	<b>Unlikely to occur.</b>
<i>Rhynchosia bungarensis</i>	Compact prostrate herb or shrub to 0.5 m tall. Pebbly, shingly coarse sand amongst boulders. Banks of drainage lines, gullies.	✓	-	✓	✓	-	<b>Likely to occur:</b> Some suitable habitat in the survey area; numerous records from the locality, including some in close proximity in the Robe River (NR 650 m N of the Mine Associated Infrastructure area).	<b>May occur:</b> Limited suitable habitat present (tributary of the Robe River); species was not recorded during the survey but is known to occur in areas upstream.
<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Low shrub to 50 cm tall. Skeletal red soil pockets on steep slopes and other rocky ironstone areas.	-	-	✓	-	-	<b>Unlikely to occur:</b> No particularly suitable habitat in the survey area; four WAH vouchers from the locality, which are the furthest northwest to date (NR 37 km SE).	<b>Unlikely to occur.</b>

† Data from the most relevant (e.g., survey area size and location) and most comprehensive previous surveys have been utilised for this purpose.



# Appendix 4

## Vegetation Structural Classification and Condition Ranking







Vegetation structural classes based on modifications of the vegetation classification system of Specht (1970) by Muir (1977) and Aplin (1979).

Stratum	Canopy Cover (%)				
	70-100%	30-70%	10-30%	2-10%	<2%
Trees over 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 under 10 m	Low closed forest	Low open forest	Low woodland	Low open woodland	Scattered low trees
Shrubs over 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 under 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 / bunch grassland / sedgeland / herbland	Tussock grassland / bunch grassland / sedgeland / herbland	Open tussock grassland / bunch grassland / sedgeland / herbland	Very open tussock grassland / bunch grassland / sedgeland / herbland	Scattered tussock grasses / bunch grasses / sedges / herbs

**Extracts from the NVIS framework (see NVIS Technical Working Group 2017) of relevance to the current study.**

**Table 1: The NVIS Information Hierarchy.**

Hierarchical Level	Description	NVIS structural/floristic components required
I	<b>Class*</b>	Dominant growth form for the ecologically or structurally dominant stratum
II	<b>Structural Formation*</b>	Dominant growth form, cover and height for the ecologically or structurally dominant stratum.
III	<b>Broad Floristic Formation**</b>	Dominant growth form, cover, height and dominant land cover genus for the upper most or the ecologically or structurally dominant stratum.
IV	<b>Sub-Formation**</b>	Dominant growth form, cover, height and dominant genus for each of the three traditional strata. (i.e. Upper, Mid and Ground)
V	<b>Association**</b>	Dominant growth form, height, cover and species (3 species) for the three traditional strata. (i.e. Upper, Mid and Ground)
VI	<b>Sub-Association**</b>	Dominant growth form, height, cover and species (5 species) for all layers/sub-strata.

\* Walker & Hopkins (1990)

\*\* NVIS (defined for the NVIS Information Hierarchy)

**Table 4: NVIS structural Formation Terminology.**

Cover Characteristics								
Foliage cover *	70-100	30-70	10-30		» 0	0-5	unknown	
Crown cover **	>80	50-80	20-50	0.25-20		0-5	unknown	
% Cover ***	>80	50-80	20-50	0.25-20		0-5	unknown	
Cover code	d	c	i	r	bi	bc	unknown	
Growth Form	Height Ranges (m)	Structural Formation Classes						
tree, palm	30	closed forest	open forest	woodland	open woodland	isolated trees	isolated clumps of trees	trees
shrub, cycad, grass-tree, tree-fern	2	closed shrubland	shrubland	open shrubland	sparse shrubland	isolated shrubs	isolated clumps of shrubs	shrubs
heath shrub	2	closed heathland	heathland	open heathland	sparse heathland	isolated heath shrubs	isolated clumps of heath shrubs	heath shrubs
tussock grass	0.5	closed tussock grassland	tussock grassland	open tussock grassland	sparse tussock grassland	isolated tussock grasses	isolated clumps of tussock grasses	tussock grasses
other grass	0.5	closed grassland	grassland	open grassland	sparse grassland	isolated grasses	isolated clumps of grasses	other grasses
sedge	0.5	closed sedgeland	sedgeland	open sedgeland	sparse sedgeland	isolated sedges	isolated clumps of sedges	sedges
rush	0.5	closed rushland	rushland	open rushland	sparse rushland	isolated rushes	isolated clumps of rushes	rushes
forb	0.5	closed forbland	forbland	open forbland	sparse forbland	isolated forbs	isolated clumps of forbs	forbs
fern	2	closed fernland	fernland	open fernland	sparse fernland	isolated ferns	isolated clumps of ferns	ferns
vine	30	closed vineland	vineland	open vineland	sparse vineland	isolated vines	isolated clumps of vines	vines

\* Foliage Cover is defined for each stratum as 'the proportion of the ground that would be shaded if sunshine came from directly overhead'. It includes branches and leaves and is similar to the Crown type of Walker & Hopkins (1990) but is applied to a stratum or plot rather than an individual crown. It is generally not directly measured in the field for the upper stratum, although it can be measured by various line interception methods for ground layer vegetation. For the attribute COVER CODE in the Stratum table, the ground cover category refers to ground foliage cover not percentage cover.

\*\* Crown Cover (canopy cover) as per Walker & Hopkins (1990). Although relationships between the two are dependent on season, species, species age etc (Walker & Hopkins (1990), the crown cover category classes have been adopted as the defining measure.

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

**Table 6: Example usage of the NVIS Information Hierarchy (\*\*Note: For definitions of U, M, G, U1, U2, U3, M1, M2, M3, G1, and G2 refer to Table 1.)**

Level	Description	Species	Growth form	Cover	Height
I	<b>CLASS</b>	-	1 dominant growth form for the dominant stratum	-	-
	Example	<i>Tree</i>			
II	<b>STRUCTURAL FORMATION</b>	-	1 dominant growth form for the dominant stratum	1 cover class for the dominant stratum	1 height class for the dominant stratum
	Example	<i>Open woodland</i>			
III	<b>BROAD FLORISTIC FORMATION</b>	1 dominant genus name for the dominant stratum	1 dominant growth form for dominant stratum	1 cover class for dominant stratum	1 height class for dominant stratum
	Example	<i>Eucalyptus open woodland</i>			
IV	<b>SUB-FORMATION</b>	1 dominant genus name for each stratum ((max 3 strata; i.e. for U, M, G where substantially present)	1 dominant growth form for each stratum (max 3 strata)	1 cover class for each stratum (max 3 strata)	1 height class for each stratum (max 3 strata)
	Example	<i>+Eucalyptus open woodland\Acacia tall sparse shrubland\Aristida open tussock grassland</i>			
V	<b>ASSOCIATION</b>	Up to 3 dominant species for each stratum (max 3 strata; i.e. for U, M, G where present)	Up to 3 dominant growth forms for each stratum (max 3 strata; i.e. for U, M, G where present)	1 cover class code for each stratum (max 3 strata; i.e. for U, M, G where present)	1 height class code for each stratum (max 3 strata; i.e. for U, M, G where present)
	Example	<i>U+ ^Eucalyptus coolabah,Casuarina cristata,Flindersia maculosa\^tree\7\r;M ^Acacia salicina,Alectryon oleifolius,Acacia stenophylla\^shrub\4\r;G ^Aristida ramosa,Astrebla squarrosa,Bothriochloa decipiens\^tussock grass,forb,sedge\2\i</i>			
VI	<b>SUB-ASSOCIATION</b>	Up to 5 dominant species for each sub-stratum (i.e. for U1, U2, U3, M1, M2, M3, G1, G2 where present) <ul style="list-style-type: none"> <li>Indicate characteristic genus in each sub-stratum with an up arrow or hat "^". Must match characteristic growth form.</li> </ul>	Up to 5 dominant growth forms for each sub-stratum. <ul style="list-style-type: none"> <li>Indicate characteristic growth form with an up arrow or hat "^". Must match characteristic genus</li> </ul>	1 cover class code for each sub-stratum	1 height class code for each sub-stratum
	Example	<i>U1+ ^Eucalyptus coolabah,Casuarina cristata,Flindersia maculosa\Eucalyptus\^tree\7\r;M1 ^Acacia salicina,Alectryon oleifolius ,Acacia stenophylla,Acacia victoriae subsp. victoriae,Eremophila bignoniiflora\Acacia\^shrub\4\bi;M2 Eremophila longifolia,Muehlenbeckia florulenta\Eremophila\shrub\3\r;G1 ^Aristida ramosa,Astrebla squarrosa,Bothriochloa decipiens,Dichanthium sericeum,Enteropogon acicularis\Aristida\^tussock grass,forb,sedge\2\</i>			

Vegetation condition scale taken from EPA (2016), based on scales developed by Keighery (1994) and Trudgen (1988).

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

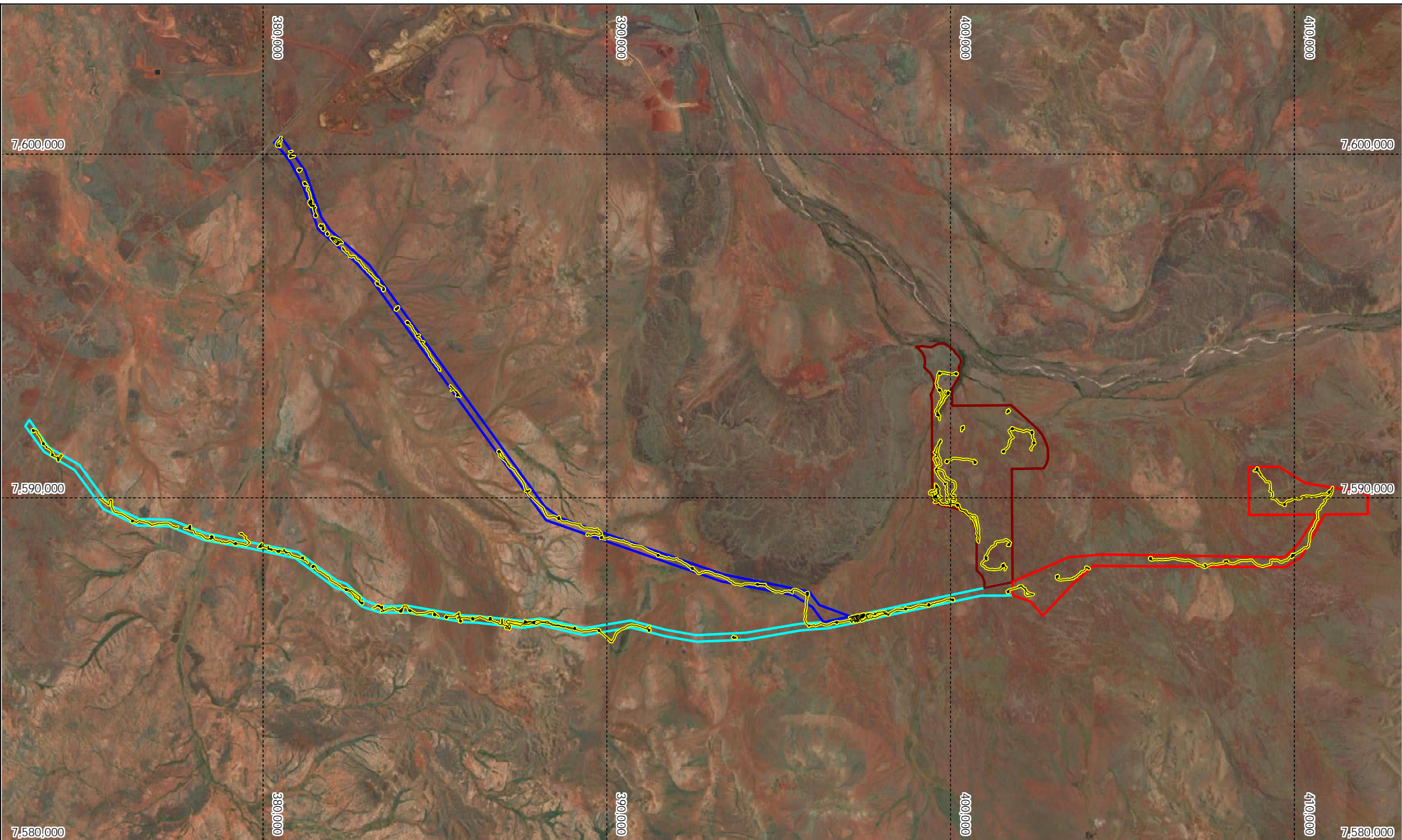
# Appendix 5





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## Survey Effort

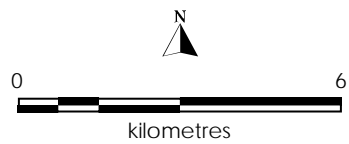







-  Upper Haul Rd option (CZR)
-  Lower Haul Rd option (CZR/RHI)
-  East additional area (EAA)
-  Mine associated infrastructure

 Tracklog (GPS recorded)



**Robe Mesa Project  
Flora Survey Effort**

Biota  
Environmental  
Sciences







## Appendix 6

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### Raw Data from Flora Sampling Sites





**CZR Robe Valley Flora Site** CRM01  
**Described by** ALRH **Date** 21/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401505 mE 7588005mN

**Habitat** Flat plain.

**Soil** Dusky red (10R 3/4) sandy clay.

**Vegetation** *Corymbia candida* subsp. *candida* low open woodland; over *Acacia synchronica* tall open shrubland; over *Acacia atkinsiana*, *Gossypium australe* open shrubland; over *Senna artemisioides* subsp. *oligophylla*, *Hibiscus sturtii* var. *grandiflorus* low open shrubland; over *Triodia epactia* very open hummock grassland; *Dysphania rhadinostachya* scattered herbs.

**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\^*Corymbia*\^tree\6\; M1 ^*Acacia synchronica*\^*Acacia*\^shrub\4\; M2^*Acacia atkinsiana*,*Gossypium australe*\^*Acacia*\^shrub\3\; M3^*Senna artemisioides* subsp. *oligophylla*,*Hibiscus sturtii* var. *grandiflorus*\^*Senna*\^shrub\2\; G1^*Triodia epactia*\^*Triodia*\^hummock grass\2\c; G2^*Dysphania rhadinostachya*\^*Dysphania*\^forb\1\bc

**Veg Condition** Very good - \**Cenchrus ciliaris* present.

**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	20	CRM01-14=	Sens. lat
<i>Acacia ancistrocarpa</i>	0.1	210		
<i>Acacia atkinsiana</i>	2	220	CRM01-02	
<i>Acacia bivenosa</i>	0.1	170		
<i>Acacia inaequilatera</i>	0.1	210		
<i>Acacia synchronica</i>	3	310		
<i>Arivela viscosa</i>	0.1	20		
<i>Boerhavia coccinea</i>	0.1	5		
<i>Boerhavia repleta</i>	0.1	10	CRM01-10	
* <i>Cenchrus ciliaris</i>	0.1	20		
<i>Chrysopogon fallax</i>	0.1	50		
<i>Corchorus ? tectus</i>	0.1	60	CRM01-11	IM; sterile
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	25	CRM01-15=	
<i>Corymbia candida</i> subsp. <i>candida</i>	3	590	CRM01-01	
<i>Cucumis variabilis</i>	0.1	5		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.5	15		
<i>Eremophila longifolia</i>	0.1	90		
<i>Euphorbia boophthona</i>	0.1	5		
<i>Euphorbia</i> sp. ( <i>biconvexa</i> / <i>coghlanii</i> / <i>trigonosperma</i> ; sterile)	0.1	5		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		
<i>Goodenia forrestii</i>	0.1	20	CRM01-09	
<i>Goodenia microptera</i>	0.1	15	CRM01-17=	
<i>Gossypium australe</i>	1	160		
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	1	50	CRM01-08	
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	35	CRM01-06=	
<i>Paspalidium clementii</i>	0.1	15	CRM01-13=	
<i>Polycarphaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM01-12	
<i>Portulaca oleracea</i>	0.1	1		
<i>Pterocaulon</i> sp.	0.1	1		IM; sterile
<i>Ptilotus appendiculatus</i>	0.1	15	CRM01-19=	
<i>Ptilotus astrolasius</i>	0.1	45		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Rhynchosia minima</i>	0.1	2		
<i>Salsola australis</i>	0.1	5		
<i>Scaevola spinescens</i>	0.1	30	CRM01-16=	Broad leaf form
<i>Sclerolaena costata</i>	0.1	5	ALOP01=	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	2	90	CRM01-04	
<i>Sida fibulifera</i>	0.1	30	CRM01-03	Sens. lat
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	20	CRM01-07	
<i>Sporobolus australasicus</i>	0.1	3		
<i>Trianthema triquetrum</i>	0.1	3	CRM01-18=	

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Triodia epactia</i>	8	60	CRM01-05	Sens. lat



**CZR Robe Valley Flora Site** CRM01R  
**Described by** ALRH **Date** 23/06/22 **Type** Relevé 25 x 100 m  
**MGA Zone** 50 386962 mE 7586378mN  
**Habitat** Drainage/ floodplain.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy loam.  
**Rock Type** Ironstone.  
**Vegetation** *Corymbia candida* subsp. *candida* (*Corymbia hamersleyana*) scattered low trees; over *Acacia tumida* var. *pilbarensis* tall closed scrub; over *Vigna lanceolata* var. *lanceolata* scattered herbs; over *Tephrosia supina* (*Triodia epactia*) scattered low shrubs.  
**NVIS** U1+ ^*Corymbia candida* subsp. *candida*, *Corymbia hamersleyana* \ *Corymbia* \ ^tree\6\bc; M1 ^*Acacia tumida* var. *pilbarensis* \ *Acacia* \ ^shrub\4\d; G1 ^*Vigna lanceolata* var. *lanceolata* \ *Vigna* \ ^forb\2\bc; G2 ^*Tephrosia supina*, *Triodia epactia* \ *Tephrosia* \ ^shrub\2\bc  
**Veg Condition** Excellent.  
**Fire Age** Burnt 3-5 years ago.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	120		
<i>Acacia ancistrocarpa</i>	0.1	160	CRM11=	
<i>Acacia bivenosa</i>	0.1	130		
<i>Acacia sericophylla</i>	0.1	210	ALOP06=	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	71	420	CRM10=	
<i>Afrohybanthus aurantiacus</i>	0.1	35		
<i>Alternanthera nana</i>	0.1	20		
<i>Alysicarpus muelleri</i>	0.1	35		
<i>Boerhavia coccinea</i>	0.1	20		
<i>Bonamia erecta</i>	0.1	40		
* <i>Cenchrus ciliaris</i>	0.1	60	R01-08	N=2
<i>Chrysopogon fallax</i>	0.1	80		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	30	CRM01R-11	
<i>Corymbia candida</i> subsp. <i>candida</i>	0.5	750		
<i>Corymbia hamersleyana</i>	0.5	550		
<i>Cucumis variabilis</i>	0.1	300		
<i>Cullen martinii</i>	0.1	90	R01-10	
<i>Cymbopogon obtectus</i>	0.1	90	R01-09	
<i>Dendrophyllanthus erwinii</i>	0.1	20	R01-06	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Eragrostis cumingii</i>	0.1	25	R01-04	
<i>Eremophila longifolia</i>	0.1	80		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euphorbia trigonosperma</i>	0.1	30	R01-05	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	30	CRM10=	
<i>Indigofera monophylla</i>	0.1	35		
<i>Ipomoea muelleri</i>	0.1	20	R01-02	
<i>Isotropis atropurpurea</i>	0.1	80	CRM10=	
<i>Paraneurachne muelleri</i>	0.1	50		
<i>Paspalidium rarum</i>	0.1	15	R01-03	
<i>Rhynchosia minima</i>	0.1	220		
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25		
<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)	0.1	35	R01-12	
<i>Tephrosia supina</i>	1	25	R01-07	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	20		
<i>Triodia epactia</i>	0.5	30		
<i>Vigna lanceolata</i> var. <i>lanceolata</i>	2	200	R01-01	



**CZR Robe Valley Flora Site** CRM02  
**Described by** ALRH **Date** 21/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401037 mE 7588227 mN  
**Habitat** Gently undulating plain dissected by minor drainage channels.  
**Soil** Dusky red (10R 3/5) sandy clay.  
**Vegetation** *Corymbia hamersleyana* low open woodland; over *Acacia synchronica*,  
*A. bivenosa*, *A. ancistrocarpa* tall open scrub; over *A. atkinsiana* open  
shrubland; over *Triodia epactia* very open hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\^*Corymbia*\^tree\6\r; M1 ^*Acacia synchronica*,*Acacia*  
*bivenosa*,*Acacia ancistrocarpa*\^*Acacia*\^shrub\4\c; M2 ^*Acacia*  
*atkinsiana*\^*Acacia*\^shrub\3\r; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\r  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.5	250		
<i>Acacia atkinsiana</i>	4	150		
<i>Acacia bivenosa</i>	1.5	220	CRM02-10	
<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>	0.1	120	CRM02-13	
<i>Acacia synchronica</i>	3	250		
<i>Afrohybanthus aurantiacus</i>	0.1	70		
Asteraceae sp.	0.1	3	CRM02-02	IM; sterile
<i>Bonamia erecta</i>	0.1	50		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	5	CRM02-03	IM; juvenile
<i>Corymbia hamersleyana</i>	2.5	580		
<i>Cynodon prostratus</i>	0.1	8	CRM02-04	
<i>Cyperus squarrosus</i>	0.1	5	CRM02-05	
<i>Dendrophyllanthus erwinii</i>	0.1	5	CRM02-06	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Euphorbia boophthona</i>	0.1	5		
<i>Euphorbia</i> sp.	0.1	10	CRM02-07	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		
<i>Goodenia forrestii</i>	0.1	15	CRM01-09=	
<i>Goodenia microptera</i>	0.1	5		
<i>Gossypium australe</i>	0.1	120		
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	25	CRM01-06=	
<i>Nicotiana</i> sp.	0.1	5	CRM02-09	IM; seedling
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM01-12=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Pterocaulon</i> sp.	0.1	1		IM; sterile
<i>Ptilotus astrolasius</i>	0.1	20		
<i>Ptilotus calostachyus</i>	0.1	10		
<i>Ptilotus exaltatus</i>	0.1	60		
<i>Sclerolaena costata</i>	0.1	2	ALOP01=	
<i>Seringia</i> ? <i>nephrosperma</i>	0.1	80	CRM02-11	IM
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	70	CRM02-08	
<i>Sporobolus australasicus</i>	0.1	5		
<i>Trianthema triquetrum</i>	0.1	2	CRM01-18=	
<i>Trigastrotheca molluginea</i>	0.1	5		
<i>Triodia epactia</i>	9	70	CRM02-01	Sens. lat
<i>Waltheria indica</i>	0.1	65	CRM02-12	





**CZR Robe Valley Flora Site** CRM02R  
**Described by** ALTH **Date** 26/06/22 **Type** Relevé 83 x 30 m  
**MGA Zone** 50 387638 mE 7590187mN  
**Habitat** low point on otherwise gently undulating stony plain.  
**Soil** Dark reddish brown sandy clay loam.  
**Vegetation** *Acacia synchronica* scattered shrubs; over *Triodia epactia* very open hummock grassland.  
**NVIS** M1+ ^*Acacia synchronica*\Acacia\^shrub\3\bc; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\r  
**Veg Condition** Very good. \**Cenchrus ciliaris* present.  
**Fire Age** Burnt 3-5 years ago.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	15		
<i>Acacia synchronica</i>	0.5	150		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	5		IM; juvenile
* <i>Cenchrus ciliaris</i>	0.1	60		
<i>Corchorus</i> ? <i>tectus</i>	0.1	30	CRM19-01=	IM; sterile
<i>Cynodon prostratus</i>	0.1	5	CRM20-06=	
<i>Dendrophyllanthus erwinii</i>	0.1	5		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Eriachne pulchella</i>	0.1	3		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>	0.1	15	CRM20=	
<i>Goodenia forrestii</i>	0.1	25		
<i>Goodenia microptera</i>	0.1	15		
<i>Goodenia prostrata</i>	0.1	15		
<i>Hibiscus coatesii</i>	0.1	25	CRM19-04=	
<i>Indigofera monophylla</i>	0.1	50		
<i>Maireana melanocoma</i>	0.1	50		
<i>Portulaca oleracea</i>	0.1	3		
<i>Ptilotus astrolasius</i>	0.1	25		
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Rhynchosia minima</i>	0.1	35		
<i>Salsola australis</i>	0.1	20		
<i>Scaevola spinescens</i>	0.1	40		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	120		
<i>Sporobolus australasicus</i>	0.1	5		
<i>Stemodia grossa</i>	0.1	5		
<i>Trianthema triquetrum</i>	0.1	5		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Triodia epactia</i>	7	70		
<i>Triodia longiceps</i>	0.1	65		



**CZR Robe Valley Flora Site** CRM03  
**Described by** ALRH **Date** 21/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401668 mE 7588616mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Vegetation** *Corymbia candida* subsp. *candida* scattered low trees; over *Acacia atkinsiana* tall shrubland; over *Triodia epactia* open hummock grassland  
**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia atkinsiana*\^*Acacia*\^shrub\4\i; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\i  
**Veg Condition** Very good. Weeds present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	50	CRM03-09	Sens. lat
<i>Abutilon</i> sp.	0.1	5	CRM03-05	IM; seedling
<i>Acacia atkinsiana</i>	16	280		
<i>Acacia inaequilatera</i>	0.1	310		
<i>Acacia synchronica</i>	0.1	220		
<i>Afrohybanthus aurantiacus</i>	0.1	20		
<i>Alternanthera</i> ? <i>nana</i>	0.1	20	CRM03-08	IM; sterile
<i>Amaranthus</i> sp.	0.1	5	CRM03-04	IM; sterile
<i>Arivela viscosa</i>	0.1	5		
<i>Boerhavia burbridgeana</i>	0.1	5	CRM03-03	
<i>Calocephalus pilbarensis</i>	0.1	7	CRM03-01	
* <i>Cenchrus ciliaris</i>	0.1	60		N=2
<i>Corchorus</i> ? <i>tectus</i>	0.1	70	CRM01=	IM; sterile
<i>Corymbia candida</i> subsp. <i>candida</i>	1	650	CRM01-01=	
<i>Dendrophyllanthus erwinii</i>	0.1	5	CRM02-06=	
<i>Duperreya commixta</i>	0.1	140		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Euphorbia boophthona</i>	0.1	20		
<i>Euphorbia</i> sp.	0.1	10	CRM02-07=	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	5		
<i>Goodenia forrestii</i>	0.1	15		
<i>Goodenia microptera</i>	0.1	20	CRM01=	
<i>Gossypium australe</i>	0.1	30		
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	25	CRM03-06	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	35	CRM01-06=	
* <i>Malvastrum americanum</i>	0.1	50		N=2
<i>Nicotiana</i> sp.	0.1	5	CRM02-09=	IM; seedling
<i>Paspalidium clementii</i>	0.1	15	CRM01-13=	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM01-12=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus astrolasius</i>	0.1	75		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena costata</i>	0.1	3	ALOP01=	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	110	CRM01-04=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	110		
<i>Sida arsiniata</i>	0.1	30	CRM03-02	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25	CRM03-07	
<i>Solanum diversiflorum</i>	0.1	20		
<i>Sporobolus australasicus</i>	0.1	10		
<i>Streptoglossa</i> sp.	0.1	5		IM; sterile
<i>Trianthema triquetrum</i>	0.1	2	CRM01-18=	
<i>Triodia epactia</i>	16	90		



**CZR Robe Valley Flora Site** CRM04  
**Described by** ALRH **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401565 mE 7591371 mN  
**Habitat** Flat plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay.  
**Vegetation** *Acacia inaequilatera* scattered low trees; over *Acacia synchronica*, *A. ancistrocarpa* scattered shrubs; over *Triodia epactia* open hummock grassland.  
**NVIS** U1+ ^*Acacia inaequilatera*\^*Acacia*\^tree\6\bc; M1 ^*Acacia synchronica*,*Acacia ancistrocarpa*\^*Acacia*\^shrub\3\bc; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\i  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.5	140	CRM04-02	
<i>Acacia atkinsiana</i>	0.1	140		
<i>Acacia bivenosa</i>	0.1	160		
<i>Acacia inaequilatera</i>	1	350		
<i>Acacia synchronica</i>	0.5	180		
<i>Acacia trachycarpa</i>	0.1	90	CRM04-04	
<i>Bulbostylis barbata</i>	0.1	5		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	2		IM; juvenile
<i>Calocephalus pilbarensis</i>	0.1	5	CRM04-03	
<i>Dendrophyllanthus erwinii</i>	0.1	3	CRM02-06=	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Grevillea wickhamii</i>	0.1	170		
<i>Hibiscus sturtii</i>	0.1	5		IM: seedling
<i>Indigofera</i> ? <i>boviperda</i>	0.1	5	CRM04-05	IM
<i>Paspalidium clementii</i>	0.1	5	CRM01-13=	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM01-12=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus astrolasius</i>	0.1	10		
<i>Ptilotus calostachyus</i>	0.1	25		
<i>Ptilotus exaltatus</i>	0.1	3		
<i>Scaevola spinescens</i>	0.1	15		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	50	CRM01-04=	
<i>Senna notabilis</i>	0.1	5		
<i>Solanum</i> sp.	0.1	7	CRM04-06	IM; sterile
<i>Triodia epactia</i>	25	70	CRM04-01	Sens. lat



**CZR Robe Valley Flora Site** CRM05  
**Described by** ALRH **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401818 mE 7591981 mN  
**Habitat** Clayey plain.  
**Soil** Dusky red (10R 3/4) medium clay.  
**Vegetation** *Acacia ancistrocarpa*, *A. synchronica* scattered tall shrubs; over *Pterocaulon sphacelatum*, \**Cenchrus ciliaris* scattered shrubs/tussock grasses; over *Triodia epactia* hummock grassland.  
**NVIS** M1+ ^*Acacia ancistrocarpa*,*Acacia synchronica*\*Acacia*\^shrub\4\bc; G1 ^*Pterocaulon sphacelatum*,\**Cenchrus ciliaris*\*Pterocaulon*\^shrub\3\bc; G2 ^*Triodia epactia*\*Triodia*\^hummock grass\2\c  
**Veg Condition** Very good. Weeds present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	50	CRM05-02	Sens. lat
<i>Acacia ancistrocarpa</i>	0.5	220		
<i>Acacia bivenosa</i>	0.1	120		
<i>Acacia ligulata</i>	0.1	95	CRM05-04	
<i>Acacia synchronica</i>	0.5	220		
<i>Acacia trachycarpa</i>	0.1	210	CRM05-10	
<i>Afrohybanthus aurantiacus</i>	0.1	30		
<i>Alternanthera nana</i>	0.1	20	CRM05-08	
<i>Amaranthus</i> sp.	0.1	5	CRM03-04=	IM; sterile
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	5	CRM01=	IM; juvenile
* <i>Cenchrus ciliaris</i>	0.5	70		
* <i>Cenchrus setiger</i>	0.1	75	CRM05-05	
<i>Corchorus</i> ? <i>tectus</i>	0.1	95	CRM05-17	IM; sterile
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	25	CRM05-20	
<i>Cucumis variabilis</i>	0.1	110		
<i>Cyperus iria</i>	0.1	15	CRM05-11	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	25		
<i>Goodenia forrestii</i>	0.1	20	CRM05-16	
<i>Gossypium australe</i>	0.1	190		
<i>Gossypium robinsonii</i>	0.1	230		
<i>Ipomoea muelleri</i>	0.1	15	CRM05-09	
* <i>Malvastrum americanum</i>	0.1	50		N=5
<i>Marsilea hirsuta</i>	0.1	10	ALOP02=	
<i>Nelica maderaspatensis</i>	0.1	35	CRM05-15	
<i>Pluchea dunlopii</i>	0.1	60	CRM05-07	
<i>Pterocaulon sphacelatum</i>	0.5	90		
<i>Ptilotus appendiculatus</i>	0.1	15	CRM05-03	
<i>Rhynchosia minima</i>	0.1	55		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	210	CRM05-01	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	120	CRM05-14	
<i>Senna notabilis</i>	0.1	65		
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	20	CRM05-13	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	210	CRM05-12	
<i>Solanum cleistogamum</i>	0.1	50	CRM05-06	
<i>Stemodia grossa</i>	0.1	15	CRM05-19	
<i>Streptoglossa bubakii</i>	0.1	60	CRM05-18	
<i>Triodia epactia</i>	55	80	CRM04-01=	Sens. lat



**CZR Robe Valley Flora Site** CRM06  
**Described by** ALRH **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 402344 mE 7591917mN  
**Habitat** Low ironstone plain; undulating, with minor flowlines.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia xiphophylla* tall shrubland; over *Acacia synchronica* scattered tall shrubs; over *Triodia wiseana*, *T. epactia* very open hummock grassland.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\; M2 ^*Acacia synchronica*\Acacia\^shrub\4\bc; G1 ^*Triodia wiseana*,*Triodia epactia*\Triodia\^hummock grass\2\  
**Veg Condition** Very good. Weeds present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	50	CRM05-02=	Sens. lat
<i>Acacia synchronica</i>	0.5	250		
<i>Acacia xiphophylla</i>	12	400		
<i>Alternanthera nana</i>	0.1	5		
<i>Amaranthus cochleitepalus</i>	0.1	5	CRM06-11	
<i>Bulbostylis barbata</i>	0.1	2		
<i>Calotis</i> sp.	0.1	5	CRM06-10	IM; Sterile
* <i>Cenchrus ciliaris</i>	0.1	60		
<i>Corchorus</i> sp.	0.1	20	CRM06-13	IM
<i>Cucumis variabilis</i>	0.1	5		
<i>Cyperus iria</i>	0.1	10	CRM05-11=	
<i>Dysphania melanocarpa</i> (form not determined)	0.1	5	CRM06-03	IM; tepals immature
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	20	CRM06-07	
<i>Maireana planifolia</i>	0.1	80	CRM06-05	
<i>Paspalidium clementii</i>	0.1	10	CRM06-12	
<i>Portulaca oleracea/intraterranea</i>	0.1	5	CRM06-04	Seeds nipped
<i>Pterocaulon sphacelatum</i>	0.1	5		
<i>Ptilotus appendiculatus</i>	0.1	10	CRM04=	
<i>Ptilotus astrolasius</i>	0.1	40		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena</i> ? <i>costata</i>	0.1	5	CRM06-09	IM; sterile
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	100	CRM06-02	
<i>Solanum cleistogamum</i>	0.1	5	CRM05=	
* <i>Solanum nigrum</i>	0.1	5	CRM06-14	
<i>Sporobolus australasicus</i>	0.1	10		
<i>Trianthema triquetrum</i>	0.1	2	CRM01-18=	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Trigastrotheca molluginea</i>	0.1	5		
<i>Triodia epactia</i>	2	100	CRM06-01	Sens. lat
<i>Triodia wiseana</i>	3	60	CRM06-06, -08	
* <i>Vachellia farnesiana</i>	0.1	5		





**CZR Robe Valley Flora Site** CRM07  
**Described by** ALRH **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 402431 mE 7591565mN  
**Habitat** Low-lying area in undulating terrain; signs of recent inundation.  
**Soil** Dark reddish brown (2.5YR 2.5/4) clay loam.  
**Rock Type** None present.  
**Vegetation** *Corymbia candida* subsp. *candida* low open woodland; over *Acacia atkinsiana*, *A. ancistrocarpa*, *A. trachycarpa* (*A. synchronica*, *A. bivenosa*) tall open shrubland; over *Senna artemisioides* subsp. *oligophylla* open shrubland; over *Rhynchosia minima*, *\*Malvastrum americanum* scattered Herbs; over *Triodia epactia* open hummock grassland.  
**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\*Corymbia*\^tree\6\; M1 ^*Acacia atkinsiana*,*Acacia ancistrocarpa*,*Acacia trachycarpa*,*Acacia synchronica*,*Acacia bivenosa*\*Acacia*\^shrub\4\; M2 ^*Senna artemisioides* subsp. *oligophylla*\*Senna*\^shrub\3\; G1 ^*Triodia epactia*\*Triodia*\^hummock grass\2\; G2 ^*Rhynchosia minima*,*\*Malvastrum americanum*\*Rhynchosia*\^forb\1\bc  
**Veg Condition** Very good. Weeds present.  
**Fire Age** Very long unburnt.  
**Notes** Bryophytes present.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	50	CRM05=	
<i>Acacia ancistrocarpa</i>	1	250		
<i>Acacia atkinsiana</i>	1	400		
<i>Acacia bivenosa</i>	0.5	220	CRM02-10=	
<i>Acacia inaequilatera</i>	0.1	250		
<i>Acacia synchronica</i>	0.5	200		
<i>Acacia trachycarpa</i>	1	300	CRM07-04	
<i>Acacia xiphophylla</i>	0.1	150		
<i>Afrohybanthus aurantiacus</i>	0.1	40		
<i>Alternanthera nana</i>	0.1	10	CRM07-03	
<i>Alysicarpus muelleri</i>	0.1	30		
<i>Amaranthus</i> sp.	0.1	5	CRM05=	IM; sterile
<i>Arivela viscosa</i>	0.1	20		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	5	CRM01=	IM; juvenile
<i>Calocephalus pilbarensis</i>	0.1	5	CRM04-03=	
<i>Calotis</i> sp.	0.1	30	CRM06=	IM; sterile
<i>Cathetus exilis</i>	0.1	5	CRM07-20	
<i>Chloris pectinata</i>	0.1	20	CRM07-08	
<i>Chrysopogon fallax</i>	0.1	30		
<i>Convolvulus clementii</i>	0.1	100	CRM07-16	
<i>Corymbia candida</i> subsp. <i>candida</i>	3	700	CRM01-01=	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	0.1	200		
<i>Cucumis variabilis</i>	0.1	180		
<i>Cynodon prostratus</i>	0.1	10	CRM07-09	
<i>Cyperus iria</i>	0.1	5	CRM05-11=	
<i>Dactyloctenium radulans</i>	0.1	20		
<i>Digitaria bicornis</i>	0.1	30	CRM07-21	
<i>Dysphania melanocarpa</i> (form not determined)	0.1	5	CRM06-03=	
<i>*Echinochloa colona</i>	0.1	30	CRM07-02	N=10
<i>Eragrostis crateriformis</i>	0.1	15	CRM07-15	
<i>Eragrostis cumingii</i>	0.1	18	CRM07-14	
<i>*Euphorbia hirta</i>	0.1	10		N=30
<i>Euphorbia</i> sp.	0.1	15	CRM07-10	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		
<i>Fimbristylis dichotoma</i>	0.1	30	CRM07-17	Sens. lat
<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>	0.1	20	CRM07-12	
<i>Gossypium australe</i>	0.1	100		
<i>Hakea chordophylla</i>	0.1	200		
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	15	CRM07-11	
<i>Ipomoea coptica</i>	0.1	20	CRM07-18	

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Ipomoea muelleri</i>	0.1	5	CRM07-19	
* <i>Malvastrum americanum</i>	0.5	50		N=100
<i>Marsilea hirsuta</i>	0.1	5	ALOP02=	
* <i>Melochi pyramidata</i>	0.1	20	CRM07-06	
<i>Nelica maderaspatensis</i>	0.1	20	CRM07-05	
<i>Pterocaulon sphacelatum</i>	0.1	10		
<i>Ptilotus appendiculatus</i>	0.1	10	CRM06=	
<i>Rhynchosia minima</i>	0.5	100		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	3	170	CRM07-01	
<i>Sida fibulifera</i>	0.1	20	CRM07-07	Sens. lat
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	10	CRM05-13=	
<i>Triodia epactia</i>	12	80	CRM07-13	Sens. lat
<i>Urochloa occidentalis</i> var. <i>occidentalis</i>	0.1	20	CRM07-22	
* <i>Vachellia farnesiana</i>	0.1	280		N=10



**CZR Robe Valley Flora Site** CRM08  
**Described by** ALRH **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 385370 mE 7586544 mN  
**Habitat** Plain; very gentle slope to NE.  
**Soil** Dusky red (10R 3/4) sandy clay loam.  
**Rock Type** Ironstone; with pebble cover.  
**Vegetation** *Corymbia deserticola* subsp. *deserticola* scattered low trees; over *Acacia atkinsiana* (*A. bivenosa*) tall open shrubland; over *Triodia wiseana*, *T. epactia* open hummock grassland.  
**NVIS** U1+ ^*Corymbia deserticola* subsp. *deserticola*\^tree\6\bc; M1 ^*Acacia atkinsiana*,*Acacia bivenosa*\^shrub\4\r; G1 ^*Triodia wiseana*,*Triodia epactia*\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	6	230		
<i>Acacia bivenosa</i>	1.5	230		
<i>Acacia synchronicia</i>	0.1	140	CRM08-07	
<i>Aristida contorta</i>	0.1	15	CRM08-08	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	25	CRM08-04	
<i>Bonamia erecta</i>	0.1	60		
<i>Corchorus</i> sp.	0.1	15	CRM08-06	IM
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	0.5	250		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	7		
<i>Eriachne pulchella</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	15		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	150		
<i>Haloragis</i> sp.	0.1	10	CRM08-01	IM; sterile
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM01-12=	
<i>Ptilotus calostachyus</i>	0.1	15		
<i>Ptilotus clementii</i>	0.1	6	CRM08-05	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	190		
<i>Senna notabilis</i>	0.1	2		
<i>Stenopetalum anfractum</i>	0.1	10	CRM08-03	
<i>Triodia epactia</i>	3	65	CRM08-02	Sens. lat
<i>Triodia wiseana</i>	8	3		



**CZR Robe Valley Flora Site** CRM09  
**Described by** ALRH **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 385727 mE 7586448mN  
**Habitat** Gently sloping plain; NE aspect.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia atkinsiana*,  
*A. sericophylla* tall open shrubland; over *Triodia wiseana* open  
hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\^tree\6\bc; M1 ^*Acacia atkinsiana*,*Acacia*  
*sericophylla*\^shrub\4\; G1 ^*Triodia wiseana*\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.  
**Notes** NE corner of quadrat intersects a small drainage channel.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	2.5	320		
<i>Acacia bivenosa</i>	0.1	130		
<i>Acacia sericophylla</i>	0.5	245	ALOP06=	
<i>Aristida contorta</i>	0.1	10	CRM09-02	
<i>Corchorus tectus</i>	0.1	75	CRM09-06	
<i>Corymbia hamersleyana</i>	1	450		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Eriachne pulchella</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Grevillea wickhamii</i> subsp. <i>macrodonta</i>	0.1	420	CRM09-08	Occasional glandular hairs on outer perianth
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	170		
<i>Haloragis</i> sp.	0.1	8	CRM08-01=	IM; sterile
<i>Indigofera boviperda</i> subsp. <i>boviperda</i>	0.1	60	CRM09-05	
<i>Portulaca oleracea</i>	0.1	1		
<i>Ptilotus calostachyus</i>	0.1	80		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena costata</i>	0.1	5	ALOP01=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	130		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	140	CRM09-01	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	190		
<i>Senna glutinosa</i> subsp. <i>x luerssenii</i> x <i>S. stricta</i>	0.1	130	CRM09-07	
<i>Senna notabilis</i>	0.1	75		
<i>Seringia nephrosperma</i>	0.1	120	CRM09-04	
<i>Tribulus macrocarpus</i>	0.1	5	CRM09-03	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	50		
<i>Triodia wiseana</i>	12	100		



**CZR Robe Valley Flora Site** CRM10  
**Described by** ALRH **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 386124 mE 7586503mN  
**Habitat** Minor drainage line.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia tumida* var. *pilbarensis* tall closed scrub; over *Acacia sericophylla* open shrubland; over *Bonamia erecta* scattered low shrubs; over *Triodia epactia* open hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia tumida* var. *pilbarensis*\^*Acacia*\^shrub\4\bc; M2 ^*Acacia sericophylla*\^*Acacia*\^shrub\3\bc; M3 ^*Bonamia erecta*\^*Bonamia*\^shrub\2\bc; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\bc  
**Veg Condition** Excellent.  
**Fire Age** Burnt 3-5 years ago.

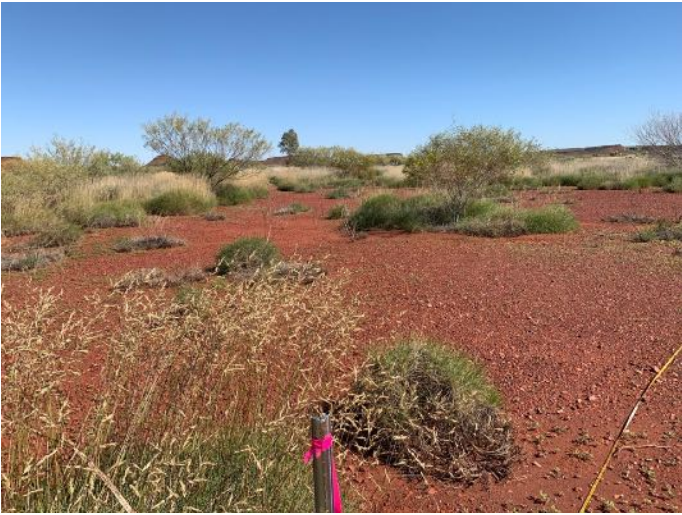
Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	0.1	90		
<i>Acacia inaequilatera</i>	0.1	210		
<i>Acacia sericophylla</i>	4	160	CRM10-04	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	71	320	CRM10-01	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	25	CRM10-03	
<i>Arivela viscosa</i>	0.1	20		
<i>Bonamia</i> ? <i>alatisemina</i>	0.1	10	CRM10-06	IM; sterile
<i>Bonamia erecta</i>	1	75		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Chrysopogon fallax</i>	0.1	30		
<i>Corchorus tectus</i>	0.1	80	CRM09=	
<i>Corymbia hamersleyana</i>	1	420		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Eriachne pulchella</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	20		
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	0.1	230		
<i>Haloragis</i> sp.	0.1	8	CRM08-01=	IM; sterile
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	90	CRM10-05	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	50	CRM10-07	
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	25	CRM09=	
<i>Isotropis atropurpurea</i>	0.1	60	CRM10-02	
<i>Paraneurachne muelleri</i>	0.1	50		
<i>Paspalidium clementii</i>	0.1	15	CRM10-08	
<i>Portulaca oleracea</i>	0.1	2		
<i>Sida echinocarpa</i>	0.1	50		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Triodia epactia</i>	11	70		
<i>Triodia wiseana</i>	0.1	50		



**CZR Robe Valley Flora Site** CRM11  
**Described by** ALRH **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 386588 mE 7586465mN  
**Habitat** Gently sloping plain; NW aspect.  
**Soil** Dark reddish brown (2.5YR 2.5/3) sandy clay loam.  
**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia atkinsiana*, *A. bivenosa*, *A. synchronica* scattered tall shrubs; over *Triodia epactia*, *T. wiseana* open hummock grassland; over *Bonamia erecta* scattered low shrubs.  
**NVIS** U1+ ^*Corymbia hamersleyana*\*Corymbia*\^tree\6\bc; M1+ ^*Acacia atkinsiana*,*Acacia bivenosa*,*Acacia synchronica*\*Acacia*\^shrub\4\bc; G1 ^*Triodia epactia*,*Triodia wiseana*\*Triodia*\^hummock grass\2\i; G2 ^*Bonamia erecta*\*Bonamia*\^shrub\2\bc  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	320	CRM11-03	
<i>Acacia atkinsiana</i>	2	320	CRM11-01	
<i>Acacia bivenosa</i>	0.5	250		
<i>Acacia synchronica</i>	0.5	320		
<i>Aristida contorta</i>	0.1	10	CRM11-06	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	75	CRM11-05	
<i>Bonamia erecta</i>	1	80		
<i>Corchorus tectus</i>	0.1	70	CRM11-09	
<i>Corymbia hamersleyana</i>	0.5	550		
<i>Cynodon prostratus</i>	0.1	5	CRM11-07	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5		
<i>Eriachne pulchella</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	20		
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	40	CRM09=	
<i>Paspalidium clementii</i>	0.1	20	CRM10-08=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus aevroides</i>	0.1	5	CRM11-04	
<i>Ptilotus astrolasius</i>	0.1	5		
<i>Ptilotus calostachyus</i>	0.1	130		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena eriacantha</i>	0.1	15	CRM11-08	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	210		
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>	0.1	130	CRM11-10	
<i>Senna notabilis</i>	0.1	30		
<i>Seringia nephrosperma</i>	0.1	130	CRM09=	
<i>Sida echinocarpa</i>	0.1	75		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	120	CRM11-02	
<i>Solanum diversiflorum</i>	0.1	40		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	20		
<i>Triodia epactia</i>	8	120	CRM11-11	Sens. lat
<i>Triodia wiseana</i>	8	95		





**CZR Robe Valley Flora Site** CRM12  
**Described by** ALRH **Date** 24/06/22 **Type** Quadrat 25 x 100 m  
**MGA Zone** 50 383426 mE 7586835mN  
**Habitat** Stony quartz/ironstone plain, gentle slope to SW.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Basalt, ironstone, quartz.  
**Vegetation** *Acacia synchronica* scattered tall shrubs; over *Triodia longiceps*, *T. wiseana* very open hummock grassland; over *Eremophila cuneifolia* scattered low shrubs; over *Aristida contorta* scattered tussock grasses.  
**NVIS** M1+ ^*Acacia synchronica*\^*Acacia*\^shrub\4\bc; G1 ^*Triodia longiceps*,*Triodia wiseana*,*Eremophila cunefolia*\^*Triodia*\^hummock grass\2\r; G2 ^*Aristida contorta*\^*Aristida*\^tussock grass\1\bc  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	20		
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	50	CRM12-13	
<i>Acacia ancistrocarpa</i>	0.1	30		
<i>Acacia bivenosa</i>	0.1	100		
<i>Acacia synchronica</i>	0.5	250		
<i>Aristida contorta</i>	0.5	20	CRM12-17	
<i>Bulbostylis barbata</i>	0.1	5		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	5	CRM01=	IM; juvenile
<i>Cassytha capillaris</i>	0.1	80	CRM12-06	
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	30	CRM12-01	
<i>Cynodon prostratus</i>	0.1	2	CRM0?=	
<i>Dendrophyllanthus erwinii</i>	0.1	10	CRM12-10	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5	CRM01=	
<i>Enneapogon caeruleus</i>	0.1	20	CRM12-26	
<i>Eremophila cuneifolia</i>	1	60	CRM12-20	
<i>Eremophila</i> sp.	0.1	10	CRM12-25	IM
<i>Eriachne pulchella</i>	0.1	15	CRM12-21	
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	0.1	20	CRM12-29	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	20	CRM12-22	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		
<i>Fimbristylis dichotoma</i>	0.1	30	CRM12-18	
<i>Gomphrena cunninghamii</i>	0.1	10	CRM12-23	
<i>Goodenia microptera</i>	0.1	20		
<i>Goodenia tenuiloba</i>	0.1	30	CRM12-09	
<i>Hibiscus brachychlaenus</i>	0.1	30	CRM12-28	
<i>Hibiscus leptocladus</i>	0.1	50	CRM12-14	Sens. lat
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	10	CRM12-05	
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	5	CRM12-15	IM; sterile
<i>Maireana melanocoma</i>	0.1	50	ALOP08=	
<i>Paspalidium clementii</i>	0.1	10	CRM12-08	
<i>Portulaca cyclophylla</i>	0.1	1	CRM12-16	
<i>Portulaca oleracea</i>	0.1	2		
<i>Pterocaulon sphacelatum</i>	0.1	2		
<i>Ptilotus exaltatus</i>	0.1	50		
<i>Ptilotus fusiformis</i>	0.1	30	CRM12-12	
<i>Sclerolaena costata</i>	0.1	30	CRM12-03	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	40	CRM12-04	
<i>Senna notabilis</i>	0.1	15		
<i>Solanum cleistogamum</i>	0.1	40	CRM12-11	
<i>Solanum diversiflorum</i>	0.1	30		
<i>Sporobolus australasicus</i>	0.1	5		
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5		

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Trianthema triquetrum</i>	0.1	2	CRM0? =	
<i>Tribulus hirsutus</i>	0.1	5		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Triodia longiceps</i>	4	120	CRM12-27	
<i>Triodia longiceps</i>	4	100	CRM12-02	
<i>Triodia wiseana</i>	1	60	CRM12-24	Long lemma lobe form
<i>Tripogonella loliformis</i>	0.1	15	CRM12-19	
<i>Triumfetta clementii</i>	0.1	20	CRM12-07	



**CZR Robe Valley Flora Site** CRM13  
**Described by** ALRH **Date** 24/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 383996 mE 7586672mN  
**Habitat** Stony plain alongside a minor flowline, 200m from base of a mesa.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia synchronica* tall open shrubland; over *Acacia atkinsiana* scattered shrubs; over *Triodia longiceps*, *T. wiseana* very open hummock grassland.  
**NVIS** M1+ ^*Acacia synchronica*\^*Acacia*\^shrub\4\r; M2 ^*Acacia atkinsiana*\^*Acacia*\^shrub\3\bc; G1 ^*Triodia longiceps*,*Triodia wiseana*\^*Triodia*\^hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	45	CRM13-02
<i>Acacia atkinsiana</i>	0.5	150	
<i>Acacia bivenosa</i>	0.1	150	
<i>Acacia synchronica</i>	2.5	250	
<i>Bulbostylis barbata</i>	0.1	5	
<i>Cynodon prostratus</i>	0.1	2	CRM=
<i>Dendrophyllanthus erwinii</i>	0.1	5	CRM12-0? =
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10	CRM01=
<i>Eriachne pulchella</i>	0.1	15	CRM12-0? =
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	0.1	10	CRM12-29=
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	10	CRM12-0? =
<i>Euploca heterantha</i>	0.1	5	CRM13-03
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	5	
<i>Goodenia microptera</i>	0.1	20	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	40	CRM13-01
<i>Maireana melanocoma</i>	0.1	20	ALOP08=
<i>Paspalidium clementii</i>	0.1	20	CRM12-08=
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM01-12=
<i>Portulaca oleracea</i>	0.1	2	
<i>Pterocaulon sphacelatum</i>	0.1	30	
<i>Ptilotus calostachyus</i>	0.1	65	
<i>Ptilotus exaltatus</i>	0.1	10	
<i>Sclerolaena costata</i>	0.1	15	CRM12-03=
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	90	
<i>Sida echinocarpa</i>	0.1	70	
<i>Solanum cleistogamum</i>	0.1	25	CRM12-0? =
<i>Solanum diversiflorum</i>	0.1	40	
<i>Sporobolus australasicus</i>	0.1	5	
<i>Stemodia grossa</i>	0.1	5	
<i>Triodia longiceps</i>	6	100	CRM12-02/27=
<i>Triodia wiseana</i>	2	100	
<i>Triumfetta clementii</i>	0.1	20	CRM12-0? =



**CZR Robe Valley Flora Site** CRM14  
**Described by** ALRH **Date** 24/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 384267 mE 7586755mN  
**Habitat** Flat stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia atkinsiana* (*A. bivenosa*) tall open shrubland; over *Triodia epactia* very open hummock grassland.  
**NVIS** M1+ ^*Acacia atkinsiana*,*Acacia bivenosa*\Acacia\shrub\4\r; G1 ^*Triodia epactia*\Triodia\hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	4	300		
<i>Acacia bivenosa</i>	0.5	210		
<i>Acacia synchronicia</i>	0.1	250		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Cassytha capillaris</i>	0.1	50	CRM12-0? =	
<i>Corchorus soides</i> subsp. <i>vermicularis</i>	0.1	30	CRM14-03	
<i>Cynodon prostratus</i>	0.1		CRM =	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	10	CRM14-01	
<i>Eremophila</i> sp.	0.1	10	CRM12-25 =	IM; juvenile
<i>Eriachne pulchella</i>	0.1	5		
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	0.1	10	CRM12-29	
<i>Goodenia microptera</i>	0.1	30		
<i>Goodenia tenuiloba</i>	0.1	20	CRM12-0? =	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	20	CRM12 =	
<i>Maireana melanocoma</i>	0.1	30	ALOP08 =	
<i>Paspalidium clementii</i>	0.1	10	CRM0 =	
<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM01-12 =	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus calostachyus</i>	0.1	50		
<i>Ptilotus clementii</i>	0.1	10		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena costata</i>	0.1	10	CRM12-0? =	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160		
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	220		
<i>Senna notabilis</i>	0.1	5		
<i>Solanum cleistogamum</i>	0.1	10	CRM12-0? =	
<i>Solanum diversiflorum</i>	0.1	20		
<i>Sporobolus australasicus</i>	0.1	5		
<i>Tribulus hirsutus</i>	0.1	5		
<i>Tribulus macrocarpus</i>	0.1	5	CRM09-03 =	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Triodia epactia</i>	5	100	CRM14-02	Sens. lat



**CZR Robe Valley Flora Site** CRM15  
**Described by** ALRH **Date** 24/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 384973 mE 7586639 mN  
**Habitat** Floodplain/drainage; only slightly lower than surrounding plains.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Vegetation** *Corymbia candida* subsp. *candida* scattered low trees; over *Acacia tumida* var. *pilbarensis* tall open scrub; over *Acacia sericophylla* shrubland; over *Triodia epactia* open hummock grassland and *Chrysopogon fallax* open tussock grassland.  
**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia tumida* var. *pilbarensis*\^*Acacia*\^shrub\4\c; M2 ^*Acacia sericophylla*\^*Acacia*\^shrub\3\i; G1 ^*Triodia epactia*,*Chrysopogon fallax*\^*Triodia*\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** Burnt 3-5 years ago.

Species	Cover (%)	Height (cm)	Specimen
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	60	CRM12-13=
<i>Acacia ancistrocarpa</i>	0.1	100	CRM15-11
<i>Acacia atkinsiana</i>	0.1	210	
<i>Acacia bivenosa</i>	0.1	100	
<i>Acacia inaequilatera</i>	0.1	320	CRM15-08
<i>Acacia inaequilatera</i>	0.1	310	CRM15-07
<i>Acacia sericophylla</i>	12	190	ALOP06=
<i>Acacia tumida</i> var. <i>pilbarensis</i>	55	200	CRM15-01
<i>Bonamia erecta</i>	0.1	60	
<i>Bulbostylis barbata</i>	0.1	5	
<i>Cassutha capillaris</i>	0.1	130	CRM15-10
<i>Chrysopogon fallax</i>	12	60	
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	20	CRM15-05
<i>Corymbia candida</i> subsp. <i>candida</i>	1	700	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5	
<i>Euphorbia boophthona</i>	0.1	10	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	5	CRM13=
<i>Goodenia tenuiloba</i>	0.1	10	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	50	CRM15-04
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	60	CRM15-03
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	25	CRM15-02
<i>Isotropis atropurpurea</i>	0.1	100	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	ALOP10=
<i>Polymeria</i> sp. nov. (KTF39-05)	0.1	10	CRM15-06
<i>Ptilotus astrolasius</i>	0.1	60	
<i>Ptilotus exaltatus</i>	0.1	10	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	138	CRM15-09
<i>Solanum diversiflorum</i>	0.1	30	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5	
<i>Trigastrotheca molluginea</i>	0.1	10	
<i>Triodia epactia</i>	20	70	
<i>Triodia wiseana</i>	0.1	60	





**CZR Robe Valley Flora Site** CRM16  
**Described by** ALRH **Date** 25/06/22 **Type** Quadrat 83 x 25 m  
**MGA Zone** 50 377880 mE 7589114mN  
**Habitat** Minor drainage line off small hill.  
**Soil** Dark red (2.5YR 3/6) clayey sand.  
**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia tumida* var. *pilbarensis* (*Gossypium robinsonii*, *Grevillea wickhamii* subsp. *aprica*) tall open scrub; over *Tephrosia univolata* scattered shrubs; over *Hibiscus sturtii* var. *platyklamys* (*Indigofera monophylla*, *Isotropis atropurpurea*) low open shrubland; over *Triodia wiseana* very open hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia tumida* var. *pilbarensis*,*Gossypium robinsonii*,*Grevillea wickhamii* subsp. *aprica*\^*Acacia*\^shrub\4\c; M2 ^*Tephrosia univolata*\^*Tephrosia*\^shrub\3\bc; M3 ^*Hibiscus sturtii* var. *platyklamys*,*Indigofera monophylla*,*Isotropis atropurpurea*\^*Hibiscus*\^shrub\2\r; G1 ^*Triodia wiseana*\^*Triodia*\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.  
**Notes** *Triodia wiseana* extends partway into drainage and is found on the rises in the drainage, otherwise *Triodia epactia* in lowest parts.

Species	Cover (%)	Height (cm)	Specimen
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	50	CRM16-28
<i>Acacia ancistrocarpa</i>	0.1	130	
<i>Acacia arida</i>	0.1	130	CRM16-07
<i>Acacia atkinsiana</i>	0.1	110	
<i>Acacia inaequilatera</i>	0.1	180	
<i>Acacia synchronicia</i>	0.1	20	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	55	320	
<i>Afrohybanthus aurantiacus</i>	0.1	65	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	50	CRM16-02
<i>Arivela viscosa</i>	0.1	10	
<i>Boerhavia coccinea</i>	0.1	20	CRM16-22
<i>Bonamia erecta</i>	0.1	50	
<i>Bonamia pannosa</i>	0.1	20	CRM16-03
<i>Bulbostylis barbata</i>	0.1	20	CRM16-08
<i>Chrysopogon fallax</i>	0.1	60	
<i>Codonocarpus cotinifolius</i>	0.1	110	
<i>Corchorus laniflorus</i>	0.1	30	CRM16-13
<i>Corymbia hamersleyana</i>	1	390	
<i>Cynodon prostratus</i>	0.1	5	
<i>Dolichocarpa crouchiana</i>	0.1	15	CRM16-20
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	20	CRM16-25
<i>Eragrostis cumingii</i>	0.1	15	CRM16-17
<i>Eriachne aristidea</i>	0.1	20	
<i>Eriachne pulchella</i>	0.1	10	
<i>Euphorbia boophthona</i>	0.1	5	
<i>Euphorbia</i> sp.	0.1	15	CRM16-04
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	0.1	25	CRM16-18
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	5	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10	
<i>Goodenia microptera</i>	0.1	20	CRM16-19
<i>Goodenia stobbsiana</i>	0.1	20	CRM16-05
<i>Goodenia tenuiloba</i>	0.1	20	
<i>Gossypium robinsonii</i>	2	210	
<i>Grevillea wickhamii</i> subsp. <i>aprica</i>	0.5	240	CRM16-16
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	80	CRM16-09
<i>Hibiscus sturtii</i> var. <i>platyklamys</i>	1.5	90	
<i>Indigofera monophylla</i>	0.5	60	
<i>Isotropis atropurpurea</i>	0.5	70	
<i>Panicum australiense</i> var. <i>australiense</i>	0.1	5	CRM16-10
<i>Paraneurachne muelleri</i>	0.1	70	
<i>Paspalidium clementii</i>	0.1	20	
<i>Paspalidium rarum</i>	0.1	20	CRM16-12

Species	Cover (%)	Height (cm)	Specimen
<i>Petalostylis labicheoides</i>	0.1	230	
<i>Polycarpaea holtzei</i>	0.1	2	CRM16-11
<i>Portulaca oleracea</i>	0.1	3	
<i>Pterocaulon sphacelatum</i>	0.1	5	
<i>Ptilotus aevroides</i>	0.1	10	ALOP=
<i>Ptilotus astrolasius</i>	0.1	50	
<i>Ptilotus axillaris</i>	0.1	10	CRM16-15
<i>Ptilotus calostachyus</i>	0.1	90	
<i>Ptilotus exaltatus</i>	0.1	15	
<i>Ptilotus fusiformis</i>	0.1	25	CRM16-27
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	70	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	70	CRM16-23
<i>Senna notabilis</i>	0.1	50	
<i>Seringia nephrosperma</i>	0.1	110	CRM16-06
<i>Sida echinocarpa</i>	0.1	20	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	85	CRM16-21
<i>Solanum diversiflorum</i>	0.1	50	
<i>Tephrosia supina</i>	0.1	20	CRM16-24
<i>Tephrosia uniovulata</i>	1	120	CRM16-01
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	15	
<i>Trigastrotheca molluginea</i>	0.5	15	
<i>Triodia wiseana</i>	6	65	
<i>Waltheria indica</i>	0.1	70	



**CZR Robe Valley Flora Site** CRM17  
**Described by** ALRH **Date** 25/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 378539 mE 7588874mN  
**Habitat** River bed and banks; moderate drainage.  
**Soil** Dark reddish brown (2.5YR 2.5/3) clay loam.  
**Vegetation** *Eucalyptus victrix*, *E. camaldulensis* subsp. *refulgens* open woodland; over *Corymbia hamersleyana* low open woodland; over *Gossypium robinsonii*, *Acacia tumida* var. *pilbarensis*, *A. citrinoviridis*, *Petalostylis labicheoides* tall shrubland; over *Stylobasium spathulatum* (*Acacia bivenosa*) open shrubland; over *Triodia epactia* very open hummock grassland and *Chrysopogon fallax* scattered tussock grasses.  
**NVIS** U1+ ^*Eucalyptus victrix*,*Eucalyptus camaldulensis* subsp. *refulgens*\*Eucalyptus*\^tree\7\r; U2 ^*Corymbia hamersleyana*\*Corymbia*\^tree\6\r; M1 ^*Gossypium robinsonii*,*Acacia tumida* var. *pilbarensis*,*Acacia citrinoviridis*,*Petalostylis labicheoides*\*Gossypium*\^shrub\4\r; M2 ^*Stylobasium spathulatum*,*Acacia bivenosa*\*Stylobasium*\^shrub\3\r; G1 ^*Triodia epactia*,*Chrysopogon fallax*\*Triodia*\^hummock grass\2\r  
**Veg Condition** Very good. \**Cenchrus ciliaris* present.  
**Fire Age** Burnt 3-5 years ago.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon cunninghamii</i>	1	120	CRM17-18, -28	
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	60	CRM17-29	
<i>Acacia ancistrocarpa</i>	0.1	210		
<i>Acacia bivenosa</i>	0.5	110		
<i>Acacia citrinoviridis</i>	2	390	CRM17-08	
<i>Acacia trachycarpa</i>	0.1	110	CRM17-05, -24	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	3	380		
<i>Afrohybanthus aurantiacus</i>	0.1	30		
<i>Alternanthera denticulata</i>	0.1	25	CRM17-13	
<i>Amaranthus</i> sp.	0.1	5		IM; sterile
<i>Arivela viscosa</i>	0.1	20		
<i>Boerhavia burbidgeana</i>	0.1	5	CRM17-27	
<i>Bonamia erecta</i>	0.1	50		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	5		IM; juvenile
* <i>Cenchrus ciliaris</i>	0.5	60		
<i>Cheilanthes austrotenuifolia</i>	0.1	15	CRM17-04	
<i>Chrysopogon fallax</i>	1.5	60		
<i>Corymbia hamersleyana</i>	2.5	450		
<i>Cyperus dactylotes</i>	0.1	60	CRM17-01	
<i>Cyperus pulchellus</i>	0.1	10	CRM17-10	
<i>Duperreya commixta</i>	0.1	190		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Enteropogon ramosus</i>	0.1	65	CRM17-15	
<i>Eragrostis cumingii</i>	0.1	25	CRM16-17=	
<i>Eragrostis tenellula</i>	0.1	20	CRM17-16	
<i>Eriachne benthamii</i>	0.1	70	CRM17-06	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	2	1500		
<i>Eucalyptus victrix</i>	3	2000		
<i>Eulalia simonii</i>	1	35	CRM17-22	
<i>Euphorbia</i> sp.	0.1	20	CRM17-23	
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	0.1	25		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		
<i>Fimbristylis littoralis</i>	0.1	20	CRM17-14	
<i>Goodenia lamprosperma</i>	0.1	35	CRM17-03	
<i>Goodenia microptera</i>	0.1	15		
<i>Gossypium australe</i>	0.1	110		
<i>Gossypium robinsonii</i>	5	350		
<i>Grevillea wickhamii</i> subsp. <i>aprica</i>	0.1	60	CRM16=	
<i>Heteropogon contortus</i>	0.1	60	CRM17-12	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	70	CRM16=	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	60	CRM17-20	
<i>Ipomoea muelleri</i>	0.1	15	CRM17-09	
<i>Nellica maderaspatensis</i>	0.1	35		

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Paspalidium clementii</i>	0.1	20		
<i>Perotis rara</i>	0.1	10	CRM17-17	
<i>Petalostylis labicheoides</i>	2	350		
<i>Pluchea dentex</i>	0.1	25	CRM17-02	
<i>Polymeria</i> sp.	0.1	25	CRM17-21	IM; sterile
<i>Ptilotus appendiculatus</i>	0.1	10	CRM17-26	
<i>Ptilotus astrolasius</i>	0.1	20		
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Rhynchosia minima</i>	0.1	250		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	70	CRM17-19	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	140		
<i>Senna notabilis</i>	0.1	80		
<i>Sesbania cannabina</i>	0.1	20		
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25	CRM17-11	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	180	CRM17-25	
<i>Solanum diversiflorum</i>	0.1	40		
<i>Stemodia grossa</i>	0.1	5		
<i>Stylobasium spathulatum</i>	2	160	CRM17-28	
<i>Tephrosia uniovulata</i>	0.1	80	CRM16-1=	
<i>Triodia epactia</i>	2.5	50		
<i>Vigna lanceolata</i> var. <i>lanceolata</i>	0.1	15	CRM17-07	
<i>Waltheria indica</i>	0.1	50		



**CZR Robe Valley Flora Site** CRM18  
**Described by** ALRH **Date** 25/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 379243 mE 7588677 mN  
**Habitat** Gentle slope off small rise; S aspect.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland; over *Acacia bivenosa*, *A. atkinsiana* tall open shrubland; over *Triodia wiseana* very open hummock grassland.  
**NVIS** U1+ ^*Eucalyptus leucophloia* subsp. *leucophloia*\^*Eucalyptus*\^tree\6\r; M1^*Acacia bivenosa*,*Acacia atkinsiana*\^*Acacia*\^shrub\4\r; G1 ^*Triodia wiseana*\^*Triodia*\^hummock\2\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia arida</i>	0.1	190	CRM18-05	
<i>Acacia atkinsiana</i>	2.5	230		
<i>Acacia bivenosa</i>	3	210		
<i>Bonamia</i> sp. ( <i>pillbarensis</i> / <i>media</i> indet)	0.1	10	CRM18-04	IM; sterile
<i>Bulbostylis barbata</i>	0.1	5		
<i>Cassutha capillaris</i>	0.1	5		
<i>Corchorus laniflorus</i>	0.1	25	CRM16-13=	
<i>Cynodon prostratus</i>	0.1	5		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5		
<i>Eriachne pulchella</i>	0.1	20		
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	2.5	650		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	20	CRM18-01	
<i>Hibiscus coatesii</i>	0.1	20	CRM18-02	
<i>Indigofera monophylla</i>	0.1	25		
<i>Maireana</i> ? <i>georgei</i>	0.1	40	CRM18-03	IM; sterile
<i>Polycarpaea holtzei</i>	0.1	4		
<i>Ptilotus aevroides</i>	0.1	5	ALOP=	
<i>Ptilotus astrolasius</i>	0.1	25		
<i>Ptilotus calostachyus</i>	0.1	80		
<i>Ptilotus clementii</i>	0.1	40		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena costata</i>	0.1	15		
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	220		
<i>Senna notabilis</i>	0.1	15		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	25	CRM18-06	
<i>Solanum diversiflorum</i>	0.1	20		
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5		
<i>Tribulus hirsutus</i>	0.1	5		
<i>Triodia wiseana</i>	8	50		



**CZR Robe Valley Flora Site** CRM19  
**Described by** ALTH **Date** 26/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 385691 mE 7593003mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Vegetation** *Acacia atkinsiana* scattered tall shrubs; over *Triodia wiseana* very open hummock grassland.  
**NVIS** M1+ ^*Acacia atkinsiana*\Acacia\^shrub\4\bc; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** Burnt 3-5 years ago.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	0.5	320		
<i>Acacia bivenosa</i>	0.1	130		
<i>Acacia synchronicia</i>	0.1	15		
<i>Acacia wanyu</i>	0.1	180	CRM19-05	
<i>Corchorus ? tectus</i>	0.1	20	CRM19-01	IM; sterile
<i>Dysphania radinostachya</i> (subsp. not determined)	0.1	5		
<i>Eriachne pulchella</i>	0.1	5		
<i>Euphorbia boophthona</i>	0.1	5		
<i>Goodenia microptera</i>	0.1	15		
<i>Hibiscus brachychaenus</i>	0.1	110	CRM19-06	
<i>Hibiscus coatesii</i>	0.1	60	CRM19-04	
<i>Paraneurachne muelleri</i>	0.1	70		
<i>Ptilotus astrolasius</i>	0.1	35		
<i>Sclerolaena ericantha</i>	0.1	20	CRM19-02	
<i>Senna notabilis</i>	0.1	25		
<i>Sida arsinata</i>	0.1	20	CRM19-03	
<i>Sida echinocarpa</i>	0.1	70		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia wiseana</i>	3	30		



**CZR Robe Valley Flora Site** CRM20  
**Described by** ALTH **Date** 26/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 386828 mE 7591347 mN  
**Habitat** Stony plain.  
**Soil** Dusky red (10R 3/4) sandy clay loam.  
**Rock Type** Quartz.  
**Vegetation** *Acacia bivenosa* (*A. atkinsiana*) tall open shrubland; over *Triodia longiceps*, *T. epactia* open hummock grassland; over *Maireana melanocoma* (*Sclerolaena eriacantha*) scattered herbs.  
**NVIS** M1+ ^*Acacia bivenosa*,*Acacia atkinsiana*\^shrub\4\r; G1 ^*Triodia longiceps*,*Triodia epactia*\^hummock grass\2\i; G2 ^*Maireana melanocoma*,*Sclerolaena eriacantha*\^Maireana\^forb\1\bc  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	35	CRM20-04	
<i>Acacia atkinsiana</i>	0.5	220		
<i>Acacia bivenosa</i>	2	220		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	2		IM; juvenile
* <i>Cenchrus ciliaris</i>	0.1	20		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	15	CRM20-01	
<i>Cucumis variabilis</i>	0.1	5		
<i>Cynodon prostratus</i>	0.1	3	CRM20-06	
<i>Dendrophyllanthus erwinii</i>	0.1	2		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5		
<i>Eriachne pulchella</i>	0.1	5		
<i>Euphorbia boophthona</i>	0.1	15		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		
<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>	0.1	20	CRM20-07	
<i>Goodenia microptera</i>	0.1	20		
<i>Goodenia prostrata</i>	0.1	10		
<i>Hibiscus coatesii</i>	0.1	25	CRM19-04=	
<i>Iseilema dolichotrichum</i>	0.1	15	CRM20-05	
<i>Maireana melanocoma</i>	0.5	50		
<i>Paraneurachne muelleri</i>	0.1	15		
<i>Paspalidium clementii</i>	0.1	20		
<i>Pluchea rubelliflora</i>	0.1	25	CRM20-02	
<i>Portulaca oleracea</i>	0.1	2		
<i>Pterocaulon sphacelatum</i>	0.1	25		
<i>Ptilotus astrolasius</i>	0.1	50		
<i>Ptilotus exaltatus</i>	0.1	15		
<i>Sclerolaena eriacantha</i>	0.5	20	CRM19-02=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	250		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	130	CRM20-08	
<i>Solanum cleistogamum</i>	0.1	20	CRM20-03	
<i>Sporobolus australasicus</i>	0.1	10		
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5		
<i>Trianthema triquetrum</i>	0.1	5		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	10		
<i>Triodia epactia</i>	3	80		
<i>Triodia longiceps</i>	8	90		
<i>Triodia wiseana</i>	0.1	70		





**CZR Robe Valley Flora Site** CRM21  
**Described by** ABSTH **Date** 21/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 400997 mE 7589902mN  
**Habitat** Flat plain.  
**Soil** Reddish brown (2.5YR 4/4) sandy loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia xiphophylla* tall shrubland; over *Triodia epactia* very open hummock grassland; over *Cynodon prostratus* scattered tussock grasses and *Maireana planifolia* scattered Herbs.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\i; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\r; G2 ^*Cynodon prostratus*,*Maireana planifolia*\Cynodon\^tussock grass\1\bc  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp.	0.1	3	CRM21-15	IM; seedling
<i>Acacia xiphophylla</i>	12	380	CRM21-05	
<i>Amaranthus cuspidifolius</i>	0.1	12	CRM21-18	
Asteraceae sp.	0.1	2	CRM21-09b	IM; sterile
<i>Bulbostylis barbata</i>	0.1	2	CRM21-06	
<i>Cynodon prostratus</i>	1.5	10	CRM21-07	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	3	CRM21-02	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	70	CRM21-14	
<i>Gossypium australe</i>	0.1	15	CRM21-17	Burru Peninsula form
<i>Maireana planifolia</i>	0.5	60	CRM21-04	
<i>Paspalidium</i> sp.	0.1	7	CRM21-16	IM
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	10	CRM21-12	
<i>Ptilotus</i> sp.	0.1	2	CRM21-11	IM; seedling
<i>Salsola australis</i>	0.1	3	CRM21-09	
<i>Sclerolaena costata</i>	0.1	5	CRM21-01	
<i>Solanum</i> sp.	0.1	10	CRM21-03	
<i>Sporobolus australasicus</i>	0.1	9	CRM21-13	
<i>Trianthema triquetrum</i>	0.1	3	CRM21-08	
<i>Triodia epactia</i>	4	90	CRM21-10	Sens. lat



**CZR Robe Valley Flora Site** CRM22  
**Described by** ABSTH **Date** 21/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401166 mE 7590263mN  
**Habitat** Flat plain.  
**Soil** Red (2.5YR 4/6) sandy clay.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia xiphophylla* tall shrubland; over *Senna artemisioides* subsp. *oligophylla* open shrubland; over *Triodia epactia* very open hummock grassland; *Dysphania rhadinostachya* subsp. *inflata* (*Amaranthus cuspidifolius*, *Sclerolaena costata*) very open hermland.  
**NVIS** M1+ ^*Acacia xiphophylla*\^*Acacia*\^shrub\4\; M2 ^*Senna artemisioides* subsp. *oligophylla*\^*Senna*\^shrub\3\; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\; G2 ^*Dysphania rhadinostachya* subsp. *inflata*,*Amaranthus cuspidifolius*,*Sclerolaena costata*\^*Dysphania*\^forb\1\;r  
**Veg Condition** Very good. Weeds present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	25	CRM22-19	Sens. lat
<i>Abutilon</i> sp.	0.1	10	CRM21-15=	IM; seedling
<i>Acacia atkinsiana</i>	0.1	90	CRM22-15	
<i>Acacia bivenosa</i>	0.1	110		
<i>Acacia synchronicia</i>	0.1	210	CRM22-14	
<i>Acacia xiphophylla</i>	16	390	CRM21-05=	
<i>Alternanthera nana</i>	0.1	8	CRM22-11	
<i>Amaranthus cuspidifolius</i>	0.5	20	CRM21-18=	
<i>Arivela viscosa</i>	0.1	10		
<i>Calocephalus pilbarensis</i>	0.1	5	CRM22-09b, -18	
<i>Cucumis variabilis</i>	0.1	25		
<i>Cyperus iria</i>	0.1	15	CRM22-21	
<i>Dendrophyllanthus erwinii</i>	0.1	5	CRM22-22	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	2	3	CRM21-02=	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.5	80	CRM21-14=	
<i>Euphorbia boophthona</i>	0.1	15	CRM22-07	
<i>Goodenia forrestii</i>	0.1	20	CRM22-01	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	20	CRM22-10	
* <i>Malvastrum americanum</i>	0.1	15	CRM22-13=	
<i>Paspalidium</i> sp.	0.1	15	CRM21-16=	IM
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	15	CRM21-12=	
<i>Ptilotus appendiculatus</i>	0.1	5	CRM22-17	
<i>Ptilotus astrolasius</i>	0.1	20	CRM22-03	
<i>Ptilotus</i> sp.	0.1	8	CRM22-09	IM
<i>Sclerolaena costata</i>	0.5	5	CRM21-01	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	2	110	CRM22-16	
<i>Sida arsiniata</i>	0.1	25	CRM22-06	
<i>Sida fibulifera</i>	0.1	20	CRM22-08	Sens. lat
<i>Sida fibulifera</i>	0.1	25	CRM22-12	Sens. lat
<i>Streptoglossa</i> sp.	0.1	3	CRM22-04	IM; juvenile
<i>Trianthema triquetrum</i>	0.1	1	CRM21-08=	
<i>Tribulus</i> sp.	0.1	1	CRM22-02	IM; sterile
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	10	CRM22-20	
<i>Triodia epactia</i>	6	75	CRM21-10=	Sens. lat
* <i>Vachellia farnesiana</i>	0.1	15	CRM22-05	



**CZR Robe Valley Flora Site** CRM23R  
**Described by** ABSTH **Date** 21/06/22 **Type** Relevé 25 x 100 m  
**MGA Zone** 50 400696 mE 7590588mN  
**Habitat** Slope; NE-facing.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Senna glutinosa* subsp. *pruinosa* scattered shrubs; over *Acacia bivenosa*,  
*Senna glutinosa* subsp. *glutinosa* x subsp. *luerssenii* low open shrubland;  
over *Triodia wiseana* hummock grassland.  
**NVIS** M1+ ^*Senna glutinosa* subsp. *pruinosa*\Senna\^shrub\3\bc; M2 ^*Acacia bivenosa*,*Senna glutinosa* subsp. *glutinosa* x subsp. *luerssenii*\Acacia\^shrub\2\r; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	2	90	
<i>Acacia synchronicia</i>	0.1	45	CRM23R-03=
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=
<i>Polycarpaea longiflora</i>	0.1	20	CRM23-R-04
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>luerssenii</i>	1	80	CRM23-R-01
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	1	150	ABSOPP12=
<i>Trianthema oxycalyptum</i> var. <i>oxycalyptum</i>	0.1	10	ABSOPP15
<i>Triodia wiseana</i>	42	80	CRM23-R-02



**CZR Robe Valley Flora Site** CRM24R  
**Described by** ABSTH **Date** 21/06/22 **Type** Relevé 25 x 100 m  
**MGA Zone** 50 400766 mE 7590580mN  
**Habitat** Slope; NE-facing.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Senna glutinosa* subsp. *pruinosa* tall open shrubland; over *Acacia bivenosa*,  
*Senna glutinosa* subsp. *glutinosa* x subsp. x *luerssenii* low open shrubland;  
over *Triodia wiseana* hummock grassland.  
**NVIS** M1+ ^*Senna glutinosa* subsp. *pruinosa*\Senna\^shrub\4\; M2 ^*Acacia bivenosa*,*Senna*  
*glutinosa* subsp. *glutinosa* x subsp. x *luerssenii*\Acacia\^shrub\2\; G1 ^*Triodia*  
*wiseana*\Triodia\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	3	90	
<i>Acacia synchronicia</i>	0.1	45	CRM23-R-03
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	1	80	CRM23R-01=
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	2	220	ABSOPP12=
<i>Triodia wiseana</i>	35	80	CRM23R-02=



**CZR Robe Valley Flora Site** CRM25R  
**Described by** ABSTH **Date** 22/06/22 **Type** Relevé 50 x 50 m  
**MGA Zone** 50 401167 mE 7591888mN  
**Habitat** Slope of small hill; E aspect.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia bivenosa* open shrubland; over *Triodia wiseana* open hummock grassland.  
**NVIS** M1+ ^*Acacia bivenosa*\Acacia\^shrub\3\r; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\i  
**Veg Condition** Very good. Weeds present.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	15	CRM25R-15	Sens. lat
<i>Abutilon</i> sp.	0.1	5	CRM25R-13	IM; seedling
<i>Acacia bivenosa</i>	3	150		
<i>Acacia synchronicia</i>	0.1	150	CRM25R-25	
<i>Arivela viscosa</i>	0.1	3		
<i>Boerhavia burbridgeana</i>	0.1	5	CRM25R-11	
<i>Bulbostylis barbata</i>	0.1	3	CRM21-06=	
* <i>Cenchrus ciliaris</i>	0.1	60		
* <i>Cenchrus setiger</i>	0.1	80		
<i>Corchorus</i> ? <i>tectus</i>	0.1	80	CRM25R-20	IM; sterile
<i>Cymbopogon ambiguus</i>	0.1	120	ABSOPP06=	
<i>Dendrophyllanthus erwinii</i>	0.1	5	CRM22-22=	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>Eriachne mucronata</i>	0.1	50	CRM25R-09	
<i>Euphorbia boophthona</i>	0.1	5	CRM22-07=	
<i>Gossypium australe</i>	0.1	70	CRM25R-12	Burrup Peninsula form
<i>Indigofera monophylla</i>	0.1	40	CRM25R-03	
<i>Nicotiana</i> sp.	0.1	10	CRM25R-06	IM; sterile
<i>Paspalidium clementii</i>	0.1	20	CRM25R-10	
<i>Perotis rara</i>	0.1	10	CRM25R-07	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	15	CRM21-12=	
<i>Polycarpaea longiflora</i>	0.1	20	CRM25R-17	
<i>Ptilotus astrolasius</i>	0.1	15	CRM25R-22	
<i>Scaevola spinescens</i>	0.1	45	CRM25R-01, -14	Broad leaf form
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	210	ABSOPP12=	
<i>Sida</i> ? <i>echinocarpa</i>	0.1	180	CRM25R-04	
<i>Sida arsinata</i>	0.1	25	CRM25R-23	
<i>Solanum cleistogamum</i>	0.1	8	CRM25R-24	
<i>Solanum diversiflorum</i>	0.1	30	CRM25R-18	
<i>Tephrosia</i> sp.	0.1	70	CRM25R-16	IM
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5	CRM25R-08	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5	CRM22-20=	
<i>Triodia epactia</i>	1	80	CRM25R-05	Sens. lat
<i>Triodia wiseana</i>	26	80	CRM25R-02	
<i>Triumfetta clementii</i>	0.1	30	CRM25R-19	
* <i>Vachellia farnesiana</i>	0.1	10	CRM22-05=	





**CZR Robe Valley Flora Site** CRM26R  
**Described by** ABSTH **Date** 22/06/22 **Type** Relevé 50 x 50 m  
**MGA Zone** 50 401106 mE 7591877 mN  
**Habitat** Slope of small rocky hill; W aspect.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Senna glutinosa* subsp. *glutinosa*, *Acacia ancistrocarpa*, *A. bivenosa* tall shrubland; over *Triodia wiseana* open hummock and *Eriachne mucronata* scattered tussock grasses.  
**NVIS** M1+ ^*Senna glutinosa* subsp. *glutinosa*, *Acacia ancistrocarpa*, *Acacia bivenosa* \ *Senna* \ ^shrub \ 4 \ i; G1 ^*Triodia wiseana*, *Eriachne mucronata* \ *Triodia* \ ^hummock grass \ 2 \ i  
**Veg Condition** Very good. \**Cenchrus ciliaris* present.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	50	CRM25r-15=	Sens. lat
<i>Acacia ancistrocarpa</i>	1	300	CRM26R-02	
<i>Acacia bivenosa</i>	2	210		
<i>Acacia trachycarpa</i>	0.1	120	CRM26R-07	
<i>Bonamia</i> sp. ( <i>pillbarensis</i> /media indet)	0.1	15	CRM26R-04	Sterile
* <i>Cenchrus ciliaris</i>	0.1	30		
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>Eriachne mucronata</i>	1	35	CRM25-05=	Typical form
<i>Euphorbia boophthona</i>	0.1	5	CRM22-07=	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15	CRM26R-06	
<i>Indigofera monophylla</i>	0.1	40	CRM25R-03=	
<i>Nicotiana</i> sp.	0.1	2	CRM25R-06=	IM; sterile
<i>Paraneurachne muelleri</i>	0.1	50	CRM26R-03	
<i>Paspalidium clementii</i>	0.1	15	CRM25-10=	
<i>Polycarpaea longiflora</i>	0.1	15	CRM25-17=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	7	210	CRM26R-01	
<i>Solanum cleistogamum</i>	0.1	50	CRM26R-05	
<i>Solanum diversiflorum</i>	0.1	20	CRM25R-18=	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5	CRM25-08=	
<i>Trianthema oxycalyptum</i> var. <i>oxycalyptum</i>	0.1	5	ABSOPP-15	
<i>Triodia wiseana</i>	11	80	CRM25-02	
<i>Triumfetta clementii</i>	0.1	20	CRM25R-19=	



**CZR Robe Valley Flora Site** CRM27  
**Described by** ABSTH **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 400941 mE 7592193mN  
**Habitat** Minor flowline.  
**Soil** Reddish brown (2.5YR 4/4) clay loam.  
**Rock Type** None present.  
**Vegetation** *Corymbia candida* subsp. *candida* woodland; over *Acacia trachycarpa* tall shrubland; pver *\*Vachellia farnesiana*, *Gossypium robinsonii*, *Acacia colei* var. *ileocarpa* (*A. ancistrocarpa*, *Hakea lorea* subsp. *lorea*) tall open shrubland; over *\*Malvastrum americanum* low open shrubland over *Triodia epactia* very open hummock grassland and *\*Cenchrus setiger* very open tussock grassland and *Cyperus bifax* scattered Sedges.

**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\^*Corymbia*\^tree\7\i; M1 ^*Acacia trachycarpa*\^*Acacia*\^shrub\4\i; M2 ^*\*Vachellia farnesiana*,*Gossypium robinsonii*,*Acacia colei* var. *ileocarpa*.*Acacia ancistrocarpa*,*Hakea lorea* subsp. *lorea*\^*Vachellia*\^shrub\4\r; G1^*\*Malvastrum americanum*,*\*Cenchrus ciliaris*,*Cyperus bifax*\^*Malvastrum*\^forb\2\r; G2 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\r

**Veg Condition** Good to poor. Dominant weeds.

**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
? <i>Fimbristylis dichotoma</i>	0.1	15	CRM27-27	IM; sterile
<i>Acacia ancistrocarpa</i>	0.5	210	CRM26R=	
<i>Acacia bivenosa</i>	0.1	170		
<i>Acacia colei</i> var. <i>ileocarpa</i>	1	300	CRM27-01	
<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>	0.1	220	CRM27-28	
<i>Acacia synchronicia</i>	0.1	200		
<i>Acacia trachycarpa</i>	17	700	CRM27-09	
<i>Alternanthera nana</i>	0.5	5	CRM27-17	
<i>Alternanthera</i> sp.	0.1	5	CRM27-13	IM; indet
<i>Alysicarpus muelleri</i>	0.1	30	CRM27-33	
<i>Arivela viscosa</i>	0.1	40		
<i>*Bidens bipinnata</i>	0.1	10		N=30
<i>Cathetus exilis</i>	0.1	20	CRM27-23	
<i>*Cenchrus ciliaris</i>	0.1	40		
<i>*Cenchrus setiger</i>	2	60		
<i>Chrysopogon fallax</i>	0.1	50	CRM27-04	
<i>Corymbia candida</i> subsp. <i>candida</i>	14	1400	CRM27-26	
<i>Cyperus bifax</i>	1	100	CRM27-25	
<i>Cyperus iria</i>	0.1	5	CRM27-14	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>*Echinochloa colona</i>	0.1	50	CRM27-03	
<i>Ehretia saligna</i> var. <i>saligna</i>	0.1	100	CRM27-31	N=4.
<i>Eulalia aurea</i>	0.1	100	CRM27-08	
<i>*Euphorbia hirta</i>	0.1	5	CRM27-24	
<i>Goodenia lamprosperma</i>	0.1	40	CRM27-29	
<i>Gossypium australe</i>	0.1	170	CRM25R-12	Burrup Peninsula form
<i>Gossypium robinsonii</i>	1	300		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.5	500	CRM27-02	
<i>Indigofera boviperda</i> subsp. <i>boviperda</i>	0.1	30	CRM27-22	
<i>Ipomoea muelleri</i>	0.1	30	CRM27-12	
<i>*Malvastrum americanum</i>	2	90		
<i>Marsilea hirsuta</i>	0.1	20	CRM27-19	
<i>*Melochia pyramidata</i>	0.1	80	CRM27-05	
<i>Pterocaulon sphacelatum</i>	0.1	25	CRM27-34	
<i>Ptilotus appendiculatus</i>	0.1	15	CRM27-32	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	150	CRM27-	
<i>*Setaria verticillata</i>	0.1	30	CRM27-10	

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Sida fibulifera</i>	0.1	20	CRM27-11	Sens. lat
<i>Triodia epactia</i>	5	50	CRM27-18	Sens. lat
* <i>Vachellia farnesiana</i>	1.5	340	CRM27-20	
<i>Vigna lanceolata</i> var. <i>lanceolata</i>	0.1	120	CRM27-06	
<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	0.5	180	CRM27-07	
<i>Waltheria indica</i>	0.1	100	CRM27-21	



**CZR Robe Valley Flora Site** CRM28  
**Described by** ABSTH **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401216 mE 7592525mN  
**Habitat** Flat plain.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay.  
**Rock Type** None present.  
**Vegetation** *Acacia ancistrocarpa*, *A. inaequilatera*, *Hakea lorea* subsp. *lorea* tall open shrubland; over *Triodia epactia* hummock grassland.  
**NVIS** M1+ ^*Acacia ancistrocarpa*,*Acacia inaequilatera*,*Hakea lorea* subsp. *lorea*\*Acacia*\^shrub\4r; G1 ^*Triodia epactia*\*Triodia*\^hummock grass\2\c  
**Veg Condition** Good. Weeds present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp.	0.1	2	CRM21-15	IM; seedling
<i>Acacia ancistrocarpa</i>	1.5	300	CRM26R=	
<i>Acacia inaequilatera</i>	0.5	250		
<i>Acacia synchronicia</i>	0.1	100	CRM22-14=	
* <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	0.1	1		
<i>Arivela viscosa</i>	0.1	40		
<i>Bonamia erecta</i>	0.1	20	CRM28-01	
<i>Bulbostylis barbata</i>	0.1	5	CRM21-06	
<i>Calandrinia</i> sp.	0.1	3	CRM27-16=	
* <i>Cenchrus setiger</i>	0.1	40		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	15	CRM28-06	
<i>Cyperus squarrosus</i>	0.1	3	CRM28-05	
<i>Dendrophyllanthus erwinii</i>	0.1	2	CRM22-22=	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02	
<i>Eragrostis desertorum</i>	0.1	20	ABSOPP20=	N=16
<i>Euphorbia boophthona</i>	0.1	15	CRM22-07=	
<i>Goodenia forrestii</i>	0.1	20	CRM22-01	
<i>Goodenia microptera</i>	0.1	15	CRM28-03	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.5	300	CRM28-07	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	15	CRM27-22=	
* <i>Melochia pyramidata</i>	0.1	3	CRM27-05	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM21-12=	
<i>Pterocaulon sphacelatum</i>	0.1	1	CRM27-34=	
<i>Ptilotus appendiculatus</i>	0.1	10	CRM27-32	
<i>Ptilotus</i> sp.	0.1	3	CRM28-04	IM; seedling
<i>Sida</i> ? <i>echinocarpa</i>	0.1	80	CRM25R-04=	
<i>Sida arsinata</i>	0.1	30	CRM28-02	
<i>Solanum</i> sp.	0.1	5	CRM21-03=	
<i>Trianthema triquetrum</i>	0.1	3	CRM21-08=	
<i>Tribulus</i> sp.	0.1	1	CRM22-02	IM; sterile
<i>Triodia epactia</i>	41	120	CRM27-18=	Sens. lat



**CZR Robe Valley Flora Site** CRM29  
**Described by** ABSTH **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401654 mE 7592536mN  
**Habitat** Moderate drainage line.  
**Soil** Reddish brown (2.5YR 4/3) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Eucalyptus victrix*, *E. camaldulensis* subsp. *refulgens* open forest; over *Acacia trachycarpa*, *Petalostylis labicheoides* tall open shrubland; over *\*Cenchrus setiger* (*\*Cenchrus ciliaris*) tussock grassland and *Triodia epactia* Very open hummock grassland.  
**NVIS** U1+ ^*Eucalyptus victrix*,*Eucalyptus camaldulensis* subsp. *refulgens*\*Eucalyptus*\^tree\7\c; M1 ^*Acacia trachycarpa*,*Petalostylis labicheoides*\*Acacia*\^shrub\4\r; G1 ^*\*Cenchrus setiger*,*\*Cenchrus ciliaris*\*\*Cenchrus*\^tussock grass\2\c; G2 ^*Triodia epactia*\*Triodia*\^hummock grass\2\r  
**Veg Condition** Good to poor. Dominant weeds.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	90	CRM29-07	Sens. lat
<i>Acacia ancistrocarpa</i>	0.1	220		
<i>Acacia coleii</i> var. <i>ileocarpa</i>	0.1	140	CRM27-01=	
<i>Acacia pyrifolia</i> var. <i>morrisonii</i>	0.1	180	CRM29-13	
<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>	0.1	210	CRM29-14	
<i>Acacia synchronicia</i>	0.1	190	CRM29-09	
<i>Acacia trachycarpa</i>	2	210	CRM27-09=	
<i>Afrohybanthus aurantiacus</i>	0.1	20	CRM29-03	
<i>Alternanthera nana</i>	0.1	20	CRM27-17=	
<i>Bulbostylis barbata</i>	0.1	5	CRM21-06=	
<i>Calandrinia</i> sp.	0.1	5	CRM27-16=	
<i>*Cenchrus ciliaris</i>	1	40		
<i>*Cenchrus setiger</i>	38	45		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	20	CRM29-08	
<i>Corymbia candida</i> subsp. <i>candida</i>	0.1	1100		
<i>Corymbia hamersleyana</i>	0.1	790		
<i>Cucumis variabilis</i>	0.1	15		
<i>Cymbopogon ambiguus</i>	0.1	110	CRM29-16	
<i>Cyperus bifax</i>	0.5	60	CRM27-25=	
<i>Cyperus iria</i>	0.1	15	CRM27-14=	
<i>Cyperus vaginatus</i>	0.1	80	CRM29-05	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>*Echinochloa colona</i>	0.1	20	CRM27-03	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	18	1800		
<i>Eucalyptus victrix</i>	40	820	CRM29-06	
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	0.1	20	CRM29-12	
<i>Goodenia lamprosperma</i>	0.1	30	CRM27-29=	
<i>Goodenia microptera</i>	0.1	25	CRM29-11	
<i>Gossypium australe</i>	0.1	60	CRM25R-12=	Burrup Peninsula form
<i>Gossypium robinsonii</i>	0.1	180		
<i>Ipomoea muelleri</i>	0.1	20	CRM27-12=	
<i>*Malvastrum americanum</i>	0.5	80		
<i>Marsilea</i> ? <i>hirsuta</i>	0.1	20	CRM29-04	IM; sterile
<i>Marsilea hirsuta</i>	0.1	15	CRM27-19=	
<i>*Melochia pyramidata</i>	0.1	60	CRM27-05=	
<i>Nelica maderaspatensis</i>	0.1	45	CRM29-02	
<i>Paspalidium clementii</i>	0.1	25	CRM29-15	
<i>Petalostylis labicheoides</i>	1.5	380	CRM29-01	
<i>Pterocaulon sphacelatum</i>	0.1	40	CRM27-34=	
<i>Ptilotus appendiculatus</i>	0.5	15	CRM27-32=	
<i>*Setaria verticillata</i>	0.1	60	CRM27-10=	
<i>Sida fibulifera</i>	0.1	30	CRM29-17, -11	Sens. lat

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25	CRM29-10	
<i>Triodia epactia</i>	5	90	CRM27-18=	Sens. lat
* <i>Vachellia farnesiana</i>	0.1	210		N=2 mature, 8 seedlings
<i>Vigna lanceolata</i> var. <i>lanceolata</i>	0.1	60	CRM27-06=	
<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	0.1	60	CRM27-07=	



**CZR Robe Valley Flora Site** CRM30  
**Described by** ABSTH **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 400337 mE 7592016mN  
**Habitat** Flat stony plain.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia inaequilatera*, *A. atkinsiana*, *A. synchronica* tall open shrubland; over *A. bivenosa* scattered shrubs; over *Triodia epactia*, *T. wiseana* hummock grassland; over *Sida arsinata* scattered low Herbs.  
**NVIS** M1+ ^*Acacia inaequilatera*,*Acacia atkinsiana*,*Acacia synchronica*\Acacia\^shrub\4\r; M2 ^*Acacia bivenosa*\Acacia\^shrub\3\bc; G1 ^*Triodia epactia*,*Triodia wiseana*\Triodia\^hummock grass\2\c; G2 ^*Sida arsinata*\Sida\^shrub\2\bc  
**Veg Condition** Very good. Weeds present.  
**Fire Age** No sign of recent fire.  
**Notes** *Corymbia candida* and *C. hamersleyana* adjacent.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	20		
<i>Acacia atkinsiana</i>	2	310		
<i>Acacia bivenosa</i>	0.5	170		
<i>Acacia inaequilatera</i>	4	320	ABSOPP01=	
<i>Acacia synchronica</i>	0.5	220	CRM22-14=	
<i>Alternanthera ? nana</i>	0.1	25	CRM30-10	IM; sterile
<i>Amaranthus cuspidifolius</i>	0.1	5	CRM21-18=	
<i>Boerhavia burbridgeana</i>	0.1	5	CRM25-11=	
<i>Bonamia erecta</i>	0.1	35	CRM28-01=	
<i>Bulbostylis barbata</i>	0.1	5	CRM21-06=	
<i>Calandrinia</i> sp.	0.1	5	CRM27-16=	
* <i>Cenchrus setiger</i>	0.1	80		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	20	CRM30-04	
<i>Corymbia candida</i> subsp. <i>candida</i>	0.1	260		
<i>Corymbia hamersleyana</i>	0.1	110		
<i>Cucumis variabilis</i>	0.1	60		
<i>Cyperus squarrosus</i>	0.1	15	CRM28-05=	
<i>Dendrophyllanthus erwinii</i>	0.1	5	CRM22-22=	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>Euphorbia boophthona</i>	0.1	15	CRM22-07=	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20	CRM30-01	
<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>	0.1	30	CRM30-14	
<i>Goodenia forrestii</i>	0.1	20	CRM30-12	
<i>Goodenia microptera</i>	0.1	5	CRM29-11=	
<i>Gossypium australe</i>	0.1	20		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	230	CRM30-09	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	20	CRM30-07	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	25	CRM30-08	
<i>Ipomoea muelleri</i>	0.1	20	CRM27-12=	
<i>Iseilema membranaceum</i>	0.1	20	CRM30-15	
* <i>Malvastrum americanum</i>	0.1	20		
<i>Petalostylis labicheoides</i>	0.1	220	CRM29-01=	
<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	0.1	15	CRM21-12=	
<i>Pterocaulon sphacelatum</i>	0.1	75	CRM30-11	
<i>Ptilotus astrolasius</i>	0.1	60	CRM30-03	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Ptilotus</i> sp.	0.1	5	CRM21-11=	IM; seedling
<i>Rhynchosia minima</i>	0.1	110		
<i>Sclerolaena costata</i>	0.1	25	CRM21-01=	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	60		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	250		
<i>Sida arsinata</i>	1	40	CRM30-06	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	50	CRM30-02	
<i>Solanum cleistogamum</i>	0.1	40	CRM26R=	
<i>Solanum diversiflorum</i>	0.1	50	CRM25-18=	

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Sporobolus australasicus</i>	0.1	20		
<i>Trianthema triquetrum</i>	0.1	2	CRM21-08=	
<i>Tribulus astrocarpus</i>	0.1	3	CRM30-05	
<i>Trigastrotheca molluginea</i>	0.1	15	CRM30-13	
<i>Triodia epactia</i>	19	80	CRM21-10=	Sens. lat
<i>Triodia wiseana</i>	19	110		
<i>Triumfetta clementii</i>	0.1	30	CRM25-19=	





**CZR Robe Valley Flora Site** CRM31R  
**Described by** ABSTH **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 403946 mE 7587981 mN  
**Habitat** Major drainage line.  
**Soil** Dark reddish brown (2.5yr 3/4) clayey sand.  
**Rock Type** Ironstone, quartz, river rocks.  
**Vegetation** *Eucalyptus victrix* open woodland; over *Melaleuca glomerata* scattered low trees; over *Acacia trachycarpa* tall open shrubland; over *Corchorus* sp. (*tectus/sidoides*; indet) scattered shrubs; over *\*Cenchrus ciliaris* scattered tussock grasses.  
**NVIS** U1+ ^*Eucalyptus victrix*\^*Eucalyptus*\^tree\7\r; U2 ^*Melaleuca glomerata*\^*Melaleuca*\^tree\6\bc; M1 ^*Acacia trachycarpa*\^*Acacia*\^shrub\4\r; M2 ^*Corchorus* sp. (*tectus/sidoides*; indet)\^*Corchorus*\^shrub\3\bc; G1 ^*\*Cenchrus ciliaris*\^*\*Cenchrus*\^tussock grass\2\bc  
**Veg Condition** Very good. High *\*Cenchrus ciliaris* cover.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	170	CRM31-01	
<i>Acacia trachycarpa</i>	3	350	CRM27-09=	
<i>Afrohybanthus aurantiacus</i>	0.1	80		
<i>Alternanthera nana</i>	0.1	20	CRM31-08	
<i>Amaranthus undulatus</i>	0.1	20	CRM31-10	Sens. lat
<i>Boerhavia coccinea</i>	0.1	5	CRM31-06	
<i>Cathetus exilis</i>	0.1	35	CRM27-23=	
<i>*Cenchrus ciliaris</i>	1	35		
<i>*Cenchrus setiger</i>	0.1	40		
<i>Corchorus</i> sp. ( <i>tectus/sidoides</i> ; indet)	0.5	140	CRM31-04	
<i>Cyperus vaginatus</i>	0.1	80	CRM29-05=	
<i>Eucalyptus victrix</i>	7	1300	Euc victrix;	
<i>Euphorbia boophthona</i>	0.1	5	CRM22-07=	
<i>Euphorbia careyi</i>	0.1	10	CRM31-05	Sens. lat
<i>Euphorbia trigonosperma</i>	0.1	25	CRM31-12	
<i>Goodenia lamprosperma</i>	0.1	30	CRM27-29=	
<i>Gossypium robinsonii</i>	0.1	80		
<i>Ipomoea muelleri</i>	0.1	5	CRM27-12=	
<i>Melaleuca glomerata</i>	1.5	550	CRM31-03	
<i>Paspalidium clementii</i>	0.1	15	CRM31-02	
<i>Pluchea rubelliflora</i>	0.1	15	CRM31-11	
<i>Portulaca oleracea/intraterranea</i>	0.1	5	CRM31-09	Seeds nipped
<i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186)	0.1	60	CRM31-07	
<i>Triodia epactia</i>	0.1	60		



**CZR Robe Valley Flora Site** CRM32  
**Described by** ABSTH **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 403080 mE 7587679 mN  
**Habitat** Flat plain.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia atkinsiana*, *A. ancistrocarpa*, *A. inaequilatera* tall shrubland; over *A. synchronica* scattered shrubs; over *Sida arsinata*, *Ptilotus astrolasius* scattered low shrubs; over *Triodia epactia* hummock grassland.  
**NVIS** M1+ ^*Acacia atkinsiana*,*Acacia ancistrocarpa*,*Acacia inaequilatera*\Acacia\^shrub\4\; M2 ^*Acacia synchronica*\Acacia\^shrub\3\bc; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\c; G2 ^*Sida arsinata*,*Ptilotus astrolasius*\Sida\^shrub\2\bc  
**Veg Condition** Excellent to very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	2	210		
<i>Acacia atkinsiana</i>	7	480		
<i>Acacia inaequilatera</i>	1	380	ABSOPP01	
<i>Acacia synchronica</i>	1	180		
<i>Bulbostylis barbata</i>	0.1	5	CRM21-06=	
<i>Chrysopogon fallax</i>	0.1	150	CRM30-04	
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	30	CRM32-02	
<i>Cucumis variabilis</i>	0.1	80		
<i>Dendrophyllanthus erwinii</i>	0.1	5	CRM30=	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>Goodenia forrestii</i>	0.1	25	CRM30-12=	
<i>Gossypium australe</i>	0.1	190		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	175	CRM30-09=	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	50	CRM30-07=	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	35	CRM30=	
<i>Ipomoea muelleri</i>	0.1	15	CRM27-12=	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	12	CRM21-12=	
<i>Pterocaulon sphacelatum</i>	0.1	80	CRM30-11=	
<i>Ptilotus appendiculatus</i>	0.1	20	CRM27-32=	
<i>Ptilotus astrolasius</i>	1	45	CRM30-03=	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	150		
<i>Senna notabilis</i>	0.1	50		
<i>Sida</i> ? <i>echinocarpa</i>	0.1	150	CRM32-01	IM; sterile
<i>Sida arsinata</i>	1	50	CRM30-06=	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25	CRM32-03	
<i>Solanum cleistogamum</i>	0.1	50	CRM26R=	
<i>Solanum diversiflorum</i>	0.1	60	CRM25R=	
<i>Trigastrotheca molluginea</i>	0.1	15	CRM30=	
<i>Triodia epactia</i>	36	140		



**CZR Robe Valley Flora Site** CRM33  
**Described by** ABSTH **Date** 24/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 379920 mE 7588630mN  
**Habitat** Flat plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Triodia epactia* very open hummock grassland; over *Ptilotus astrolasius* scattered low shrubs; over *Eragrostis eriopoda* very open tussock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\*Corymbia*\^tree\6\bc; G1 ^*Triodia epactia*\*Triodia*\^hummock grass\2\r; G2 ^*Ptilotus astrolasius*\*Ptilotus*\^shrub\2\bc\; G3 ^*Eragrostis eriopoda*\*Eragrostis*\^tussock grass\1\r  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia bivenosa</i>	0.1	4		
<i>Acacia trachycarpa</i> x <i>tumida</i> var. <i>pilberensis</i>	0.1	15	CRM33-14	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40	CRM33-04	
<i>Arivela viscosa</i>	0.1	30		
<i>Bonamia erecta</i>	0.1	45	CRM28-01=	
<i>Bulbostylis barbata</i>	0.1	3	CRM21-06=	
<i>Bulbostylis barbata</i>	0.1	10	CRM33-10	
<i>Chrysopogon fallax</i>	0.1	50		
<i>Corymbia hamersleyana</i>	0.5	550		
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	3	CRM21-02	
<i>Eragrostis eriopoda</i>	10	40	CRM33-01	
<i>Eriachne aristidea</i>	0.1	40	CRM33-02	
<i>Eriachne helmsii</i>	0.1	50	CRM33-03	
<i>Eriachne pulchella</i>	0.1	5	CRM33-12	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	2	CRM33-07	
<i>Goodenia microptera</i>	0.1	30	CRM33-09	
<i>Goodenia tenuiloba</i>	0.1	5	CRM33-05	
<i>Grevillea eriostachya</i>	0.1	150	CRM33-	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	10	CRM27-22=	
<i>Panicum australiense</i> var. <i>australiense</i>	0.1	8	CRM33-11	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	3	CRM21-12	
<i>Polycarpaea holtzei</i>	0.1	1	CRM33-13	
<i>Ptilotus astrolasius</i>	2	40	CRM30-03=	
<i>Scaevola spinescens</i>	0.1	40	CRM25R-01	Broad leaf form
<i>Sporobolus australasicus</i>	0.1	2		
<i>Trigastrotheca molluginea</i>	0.1	4		
<i>Triodia epactia</i>	9	80		
<i>Triodia wiseana</i>	0.1	60	CRM33-06	



**CZR Robe Valley Flora Site** CRM34R  
**Described by** ABSTH **Date** 24/06/22 **Type** Relevé 25 x 100 m  
**MGA Zone** 50 380158 mE 7588601 mN  
**Habitat** Rocky rise.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Senna glutinosa* subsp. *glutinosa* scattered shrubs; over *Triodia wiseana* very open hummock grassland.  
**NVIS** M1+ ^*Senna glutinosa* subsp. *glutinosa*\Senna\^shrub\3\bc; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	25	CRM34R-09	
<i>Acacia atkinsiana</i>	0.1	20		Seedling
<i>Acacia inaequilatera</i>	0.1	190		
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	20	CRM33-04=	
<i>Bonamia pannosa</i>	0.1	5	CRM34R-08	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	10	CRM21-02=	
<i>Eriachne pulchella</i>	0.1	10	CRM34R-01	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	15	CRM33-07=	
<i>Goodenia tenuiloba</i>	0.1	15	CRM33-08=	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	175		
<i>Nelica maderaspatensis</i>	0.1	3	CRM34R-02	
<i>Panicum australiense</i> var. <i>australiense</i>	0.1	10	CRM33-11=	
<i>Polycarpaea holtzei</i>	0.1	3	CRM34R-03	
<i>Ptilotus astrolasius</i>	0.1	50	CRM30-03=	
<i>Ptilotus axillaris</i>	0.1	5	CRM34R-07	
<i>Ptilotus calostachyus</i>	0.1	100	CRM34R-06	
<i>Ptilotus exaltatus</i>	0.1	80	MBS1501=	
<i>Ptilotus fusiformis</i>	0.1	50	CRM34R-10	
<i>Ptilotus polystachyus</i>	0.1	100		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.5	150		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	50	CRM34R-05	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	80	CRM34R-11	
<i>Sida</i> ? <i>echinocarpa</i>	0.1	110	CRM34R-05	
<i>Trianthema pilosum</i>	0.1	3	CRM34R-04	
<i>Tribulus hirsutus</i>	0.1	5		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia wiseana</i>	5	70		



**CZR Robe Valley Flora Site** CRM35R  
**Described by** ABSTH **Date** 24/06/22 **Type** Relevé 25 x 100 m  
**MGA Zone** 50 380410 mE 7588469 mN  
**Habitat** Slope; W aspect.  
**Soil** Red (2.5 YR 4/6) sandy loam.  
**Rock Type** Quartz.  
**Vegetation** *Acacia synchronica* scattered shrubs; over *Triodia longiceps*, *T. wiseana* very open hummock grassland; over *Cynodon prostratus*, open bunch grassland and *Sclerolaena densiflora*, *Lepidium* ? *pholidogynum* very open herbland.  
**NVIS** M1+ ^*Acacia synchronica*\^*Acacia*\^shrub\3\bc; G1 ^*Triodia longiceps*,*Triodia wiseana*\^*Triodia*\^hummock grass\ 2\r; G2 ^*Cynodon prostratus*,*Sclerolaena densiflora*,*Lepidium* ? *Pholidogynum*\^*Cynodon*\^tussock grass\1\r  
**Veg Condition** Excellent to very good. \**Cenchrus ciliaris* present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon otocarpum</i>	0.1	15		
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	30	CRM35R-10, -04	
<i>Acacia synchronica</i>	0.5	150		
<i>Cassutha capillaris</i>	0.1	150	CRM35R-11	
* <i>Cenchrus ciliaris</i>	0.1	40		
<i>Corchorus laniflorus</i>	0.1	100	ABSOP23=	
<i>Cynodon prostratus</i>	16	3	CRM35R-05	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	3	CRM21-02=	
<i>Euphorbia boophthona</i>	0.1	5	CRM22-07=	
<i>Goodenia microptera</i>	0.1	20	CRM29-11=	
<i>Goodenia tenuiloba</i>	0.1	15	CRM33-08=	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	80	CRM35R-09	
<i>Lepidium</i> ? <i>pholidogynum</i>	3	3	CRM35R-06	IM; sterile
<i>Maireana melanocoma</i>	0.1	20	CRM35R-02	
<i>Paspalidium clementii</i>	0.1	15	CRM29-15=	
<i>Pterocaulon sphacelatum</i>	0.1	75	CRM30-11	
<i>Ptilotus astrolasius</i>	0.1	40	CRM30-03=	
<i>Ptilotus calostachyus</i>	0.1	30	CRM34=	
<i>Ptilotus exaltatus</i>	0.1	40	CRM34=	
<i>Sclerolaena densiflora</i>	2	20	CRM35R-03	
<i>Senna notabilis</i>	0.1	40		
<i>Solanum cleistogamum</i>	0.1	30	CRM35R-08	
<i>Solanum diversiflorum</i>	0.1	40		
<i>Trianthema triquetrum</i>	0.1	3	CRM35R-07	
<i>Triodia longiceps</i>	5	60	CRM35R-01	
<i>Triodia wiseana</i>	4	70		



**CZR Robe Valley Flora Site** CRM36  
**Described by** ABSTH **Date** 24/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 381125 mE 7588230mN  
**Habitat** Flat plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy loam.  
**Rock Type** Quartz.  
**Vegetation** *Acacia bivenosa* tall open scrub; over *Triodia epactia*, *T. wiseana* hummock grassland.  
**NVIS** M1+ ^*Acacia bivenosa*\Acacia\^shrub\4\c; G1 ^*Triodia epactia*, *Triodia wiseana*\Triodia\\*hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	200		
<i>Acacia bivenosa</i>	31	160		
<i>Acacia inaequilatera</i>	0.1	190		
<i>Bonamia ? alatisemina</i>	0.1	20	CRM36-02	IM; sterile
<i>Bonamia erecta</i>	0.1	30		
<i>Bulbostylis barbata</i>	0.1	7	CRM33-10=	
<i>Corchorus</i> sp. ( <i>tectus/sidoides</i> ; indet)	0.1	20	CRM36-04	IM
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>Eragrostis eriopoda</i>	0.1	40	CRM33-01=	
<i>Euphorbia australis</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	25	CRM33-09=	
<i>Goodenia prostrata</i>	0.1	10		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	150		
<i>Panicum australiense</i> var. <i>australiense</i>	0.1	5	CRM33-11=	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	10	CRM21-12=	
<i>Polymeria</i> sp.	0.1	5	CRM36-01	IM; sterile
<i>Polymeria</i> sp. nov. (KTF39-05)	0.1	2	CRM36-06	Mike H: Undescribed.
<i>Ptilotus astrolasius</i>	0.1	30	CRM30-03=	
<i>Ptilotus calostachyus</i>	0.1	100	CRM34R-06=	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	110	CRM36-05	
<i>Solanum diversiflorum</i>	0.1	15		
<i>Tribulus macrocarpus</i>	0.1	10	CRM36-03	
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia epactia</i>	25	120		
<i>Triodia wiseana</i>	16	150		



**CZR Robe Valley Flora Site** CRM37  
**Described by** ABSTH **Date** 25/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 373290 mE 7591982mN  
**Habitat** Stony undulating plain.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia inaequilatera* scattered tall shrubs; over *A. atkinsiana* scattered shrubs; over *Ptilotus helipteroides* scattered low shrubs; over *Triodia wiseana* very open hummock grassland; over *Eriachne pulchella* open tussock grassland.  
**NVIS** M1+ ^*Acacia inaequilatera*\Acacia\^shrub\4\bc; M2 ^*Acacia atkinsiana*\Acacia\^shrub\3\bc; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\r; G2 ^*Eriachne pulchella*,*Ptilotus helipteroides*\Eriachne\^tussock grass\1\i  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	0.5	150	
<i>Acacia inaequilatera</i>	0.5	220	
<i>Afrohybanthus aurantiacus</i>	0.1	5	CRM29-03=
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40	CRM33-04=
<i>Corchorus laniflorus</i>	0.1	20	ABSOPP23=
<i>Dolichocarpa crouchiana</i>	0.1	35	CRM37-06
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=
<i>Eriachne pulchella</i>	12	8	CRM37-03
<i>Fimbristylis simulans</i>	0.1	12	CRM37-02
<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>	0.1	15	THOP15=
<i>Goodenia tenuiloba</i>	0.1	15	CRM33-08=
<i>Polycarpaea holtzei</i>	0.1	3	CRM37-05
<i>Ptilotus astrolasius</i>	0.1	20	CRM30-03=
<i>Ptilotus calostachyus</i>	0.1	70	CRM34R-06=
<i>Ptilotus exaltatus</i>	0.1	5	
<i>Ptilotus helipteroides</i>	0.5	20	CRM37-01
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5	CRM37-04
<i>Trianthema triquetrum</i>	0.1	5	CRM21-08=
<i>Trigastrotheca molluginea</i>	0.1	15	
<i>Triodia wiseana</i>	4	60	



**CZR Robe Valley Flora Site** CRM38  
**Described by** ABSTH **Date** 25/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 373597 mE 7591607 mN  
**Habitat** Flowline.  
**Soil** Dark reddish brown (2.5YR 3/3) silty clay loam.  
**Vegetation** *Corymbia hamersleyana* low open woodland; over *Acacia ancistrocarpa*, *Grevillea wickhamii* subsp. *macrodonta* tall open shrubland; over *A. tumida* var. *pilbarensis* scattered shrubs; over *Sida arsiniata* (*S. sp.* spiciform panicles (E. Leyland s.n. 14/8/1990), *S. sp.* L (A.M. Ashby 4202), *Corchorus sp.*) low open shrubland; over *Chrysopogon fallax* (*\*Cenchrus ciliaris*) tussock grassland; over *Triodia epactia* open hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\^*Corymbia*\^tree\6\r; M1 ^*Acacia ancistrocarpa*,*Grevillea wickhamii* subsp. *macrodonta*\^*Acacia*\^shrub\4\r; M2 ^*Acacia tumida* var. *pilbarensis*\^*Acacia*\^shrub\3\bc; M3 ^*Sida arsiniata*,*Sida sp.* spiciform panicles (E. Leyland s.n. 14/8/1990),*Sida sp.* L (A.M. Ashby 4202),*Corchorus sp.*\^*Sida*\^shrub\2\r; G1 ^*Chrysopogon fallax*\^*Chrysopogon*\^tussock grass\2c; G2 ^*Triodia epactia*\^*Triodia*\^hummock grass\2i; G3 ^*\*Cenchrus ciliaris*\^*\*Cenchrus*\^tussock grass\1\r  
**Veg Condition** Very good. Weeds, high density of *\*Cenchrus ciliaris*.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	7	280		
<i>Acacia bivenosa</i>	0.1	85		
<i>Acacia sericophylla</i>	0.1	190	CRM38-10	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	2	150	MBS18-01	
<i>Afrohybanthus aurantiacus</i>	0.1	65		
<i>Alternanthera nana</i>	0.1	35	CRM38-19	
<i>Aristida contorta</i>	0.1	40	MBS19-3=	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30	CRM38-12	
<i>Boerhavia coccinea</i>	0.1	5	CRM38-08	
<i>Bonamia erecta</i>	0.1	30	CRM28-01=	
<i>Calandrinia sp.</i>	0.1	5	CRM27-16=	
<i>*Cenchrus ciliaris</i>	6	40		
<i>Chrysopogon fallax</i>	45	110		
<i>Corchorus sp.</i>	0.5	50	CRM38-05	IM
<i>Corymbia hamersleyana</i>	6	600		
<i>Digitaria ctenantha</i>	0.1	25	CRM38-03	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>Euphorbia boophthona</i>	0.1	15	CRM22-07=	
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	0.1	15	CRM38-20	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20	CRM30-01=	
<i>Goodenia forrestii</i>	0.1	25	CRM38-18	
<i>Goodenia microptera</i>	0.1	40		
<i>Goodenia nuda</i>	0.1	45	CRM38-11	
<i>Gossypium australe</i>	0.1	60		
<i>Grevillea wickhamii</i> subsp. <i>macrodonta</i>	1	400	MBS16-02	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	40	CRM38-09	
<i>Indigofera monophylla</i>	0.1	40		
<i>Isotropis atropurpurea</i>	3	50	CRM38-14	
<i>*Malvastrum americanum</i>	0.1	50		
<i>Paraneurachne muelleri</i>	0.1	40		
<i>Paspalidium rarum</i>	0.1	20	CRM38-17	
<i>Perotis rara</i>	0.1	15		
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	10	CRM21-12=	
<i>Pterocaulon ? sphacelatum</i>	0.1	12	CRM38-15	IM; juvenile
<i>Pterocaulon sphacelatum</i>	0.1	75	CRM30-11=	
<i>Ptilotus appendiculatus</i>	2	25	CRM27-32=	
<i>Ptilotus astrolasius</i>	0.1	40	CRM30-03=	
<i>Ptilotus calostachyus</i>	0.1	50	CRM34R-06=	
<i>Ptilotus exaltatus</i>	0.1	15		
<i>Rhynchosia minima</i>	0.1	150		
<i>Scaevola spinescens</i>	0.1	90	CRM25R-01=	Broad leaf form



Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	45		
<i>Sida arsinata</i>	1	50	CRM38-06, -21	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.5	20	CRM38-02	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.5	80	CRM38-04	
<i>Sporobolus australasicus</i>	0.1	20		
<i>Tephrosia supina</i>	0.1	50	CRM38-22, -01	
<i>Tephrosia uniovulata</i>	0.1	35	CRM38-13	
<i>Themeda triandra</i>	0.1	80	CRM38-07	
<i>Trianthema triquetrum</i>	0.1	5	CRM21-08=	
<i>Tribulus macrocarpus</i>	0.1	5		
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia epactia</i>	16	90		
<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	0.1	40	CRM38-16	
<i>Waltheria indica</i>	0.1	60		



**CZR Robe Valley Flora Site** CRM39  
**Described by** ABSTH **Date** 25/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 373874 mE 7591290mN  
**Habitat** Stony undulating plain.  
**Soil** Dark reddish brown (2.5YR 3/3) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia atkinsiana*, *Senna glutinosa* subsp. *pruinosa* scattered tall shrubs; over *A. bivenosa* scattered shrubs; over *Triodia wiseana* very open hummock grassland; over *Ptilotus helipteroides* scattered herbs.  
**NVIS** M1+ ^*Acacia atkinsiana*,*Senna glutinosa* subsp. *pruinosa*\*Acacia*\^shrub\4\bc; M2 ^*Acacia bivenosa*\*Acacia*\^shrub\3\bc; G1 ^*Triodia wiseana*\*Triodia*\^hummock grass\2\r; G2 ^*Ptilotus helipteroides*\*Ptilotus*\^forb\1\bc  
**Veg Condition** Excellent to very good. \**Cenchrus setiger* present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	1	290		
<i>Acacia bivenosa</i>	2	100		
<i>Acacia synchronicia</i>	0.5	110		
<i>Aristida contorta</i>	0.1	25	MNABS19=	
* <i>Cenchrus setiger</i>	0.1	40		
<i>Corchorus ? tectus</i>	0.1	50	CRM39-03	IM; sterile
<i>Corchorus laniflorus</i>	0.1	20	ABSOPP23=	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	5	CRM21-02=	
<i>Eremophila cuneifolia</i>	0.1	30	MNABS19-02	
<i>Eriachne pulchella</i>	0.1	2	CRM37-03	
<i>Euphorbia boophthona</i>	0.1	5	CRM22-07=	
<i>Goodenia microptera</i>	0.1	25		
<i>Grevillea wickhamii</i> subsp. <i>macrodonta</i>	0.1	50	CRM38=	
<i>Paraneurachne muelleri</i>	0.1	50		
<i>Ptilotus astrolasius</i>	0.1	15	CRM30-03=	
<i>Ptilotus axillaris</i>	0.1	5	CRM34R-07=	
<i>Ptilotus calostachyus</i>	0.1	50	CRM34R-06=	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Ptilotus helipteroides</i>	0.5	15	CRM37-01=	
<i>Sclerolaena densiflora</i>	0.1	15	CRM35R-03=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	30	CRM39-04	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	1	280	CRM39-01	
<i>Senna</i> sp.	0.1	5	CRM39-02	IM; seedling
<i>Sida ? echinocarpa</i>	0.1	50	CRM25R-04=	
<i>Triodia wiseana</i>	8	110		



**CZR Robe Valley Flora Site** CRM40R  
**Described by** ABSTH **Date** 25/06/22 **Type** Relevé 50 x 50 m  
**MGA Zone** 50 374035 mE 7591099 mN  
**Habitat** low rise between two rocky hills.  
**Soil** Red (2.5YR 4/6) sandy clay loam.  
**Rock Type** Calcrete, ironstone.  
**Vegetation** *Acacia xiphophylla* tall shrubland; over *Triodia wiseana* (*T. epactia*) very open hummock grassland; over *Sclerolaena densiflora* scattered herbs; over *Cynodon prostratus* open tussock grassland.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\i; G1 ^*Triodia wiseana*,*Triodia epactia*\Triodia\^hummock grass\2\i; G2 ^*Sclerolaena densiflora*\Sclerolaena\^forb\2\bc; G3 ^*Cynodon prostratus*\Cynodon\^tussock grass\1\i  
**Veg Condition** Excellent to very good. \**Cenchrus ciliaris* present.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia bivenosa</i>	0.1	110		
<i>Acacia synchronicia</i>	0.1	230		
<i>Acacia xiphophylla</i>	12	350		
* <i>Cenchrus ciliaris</i>	0.1	30		
<i>Cynanchum viminale</i> subsp. <i>australe</i>	0.1	180	CRM40R-01	
<i>Cynodon prostratus</i>	12	2	CRM35R-05=	
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	10	CRM21-02=	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	50	CRM21-14=	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	30	CRM38=	
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	5	CRM35R-06=	IM; sterile
<i>Maireana melanocoma</i>	0.1	50	CRM35R-02=	
<i>Ptilotus astrolasius</i>	0.1	40	CRM30-03=	
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Salsola australis</i>	0.1	25		
<i>Sclerolaena densiflora</i>	2	25	CRM35R-03=	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	90		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	50	CRM39-04=	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	60	CRM39-01=	
<i>Sporobolus australasicus</i>	0.1	10		
<i>Trianthema triquetrum</i>	0.1	10	CRM35R-07=	
<i>Triodia epactia</i>	0.5	80		
<i>Triodia wiseana</i>	7	30		



**CZR Robe Valley Flora Site** CRM41  
**Described by** SWJT **Date** 21/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 400240 mE 7589776mN  
**Habitat** Flat stony plain.  
**Soil** Dark reddish brown (2.5YR 3/4) loamy sand.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia xiphophylla* tall open shrubland; over *Triodia epactia* very open hummock grassland; over *Cynodon prostratus* scattered tussock grasses.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\r; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\r; G2 ^*Cynodon prostratus*\Cynodon\^tussock grass\1\bc  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia synchronicia</i>	0.25	200		
<i>Acacia xiphophylla</i>	4	350		
Asteraceae sp.	0.1	2	CRM41-09	IM; sterile
<i>Cucumis variabilis</i>	0.1	6		
<i>Cynodon prostratus</i>	1	2		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	3	CRM41-05	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	60	CRM41-02	
<i>Hibiscus</i> ? <i>burtonii</i>	0.1	30	CRM41-13	IM; sterile
<i>Maireana melanocoma</i>	0.1	30	CRM41-03	
<i>Maireana planifolia</i>	0.1	40	CRM41-14	
<i>Paspalidium clementii</i>	0.1	20	CRM41-07	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	2	CRM41-10	
<i>Portulaca oleracea</i> /intra <sup>ter</sup> anea	0.1	3	CRM41-06	Sterile
<i>Ptilotus exaltatus</i>	0.1	4		
<i>Salsola australis</i>	0.1	5	CRM41-12	
<i>Sclerolaena</i> ? <i>costata</i>	0.1	3	CRM41-15	IM; sterile
<i>Sida</i> ? <i>arsiniata</i>	0.1	15	CRM41-11	IM
<i>Solanum</i> sp.	0.1	3	CRM41-08	
<i>Sporobolus australasicus</i>	0.1	6		
<i>Trianthema triquetrum</i>	0.1	1	CRM41-04	
<i>Triodia epactia</i>	3	60	CRM41-01	Sens. lat



**CZR Robe Valley Flora Site** CRM42  
**Described by** SWJT **Date** 21/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 399572 mE 7590058mN  
**Habitat** Flat stony plain.  
**Soil** Dark reddish brown sandy clay loam/clay loam  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Corymbia candida* subsp. *candida* scattered low trees; over *Acacia xiphophylla*, *A. synchronica* tall shrubland; over *Triodia epactia* open hummock grassland; over *Cynodon prostratus* scattered tussock grasses.  
**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\*Corymbia*\^tree\6\bc; M1 ^*Acacia xiphophylla*,*Acacia synchronica*\*Acacia*\^shrub\4\i; G1 ^*Triodia epactia*\*Triodia*\^hummock grass\2\i; G2 ^*Cynodon prostratus*\*Cynodon*\^tussock grass\1\bc  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia synchronica</i>	1	510		
<i>Acacia xiphophylla</i>	9	480		
<i>Afrohybanthus aurantiacus</i>	0.1	10		
<i>Amaranthus cuspidifolius</i>	0.1	5	CRM42-4	
<i>Arivela viscosa</i>	0.1	10		
Asteraceae sp.	0.1	2	CRM41-09=	IM; sterile
<i>Bulbostylis barbata</i>	0.1	10		
<i>Corymbia candida</i> subsp. <i>candida</i>	1	750	CRM42-13	
<i>Cucumis variabilis</i>	0.1	5		
<i>Cynodon prostratus</i>	1	5	CRM42-01	
<i>Cyperus iria</i>	0.1	15	CRM42-7	
<i>Dactyloctenium radulans</i>	0.1	15		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5	CRM41-05=	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	60		
<i>Eragrostis crateriformis</i>	0.1	15	CRM42-3	
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euphorbia</i> sp. ( <i>biconvexa</i> / <i>coghlanii</i> / <i>trigonosperma</i> ; sterile)	0.1	5		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	25		
<i>Gossypium australe</i>	0.1	100		Burru Peninsula form.
<i>Hibiscus</i> sp.	0.1	5	CRM42-10	IM; juvenile
<i>Hibiscus sturtii</i>	0.1	50		IM; sterile
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	40	CRM42-12	
<i>Maireana planifolia</i>	0.1	60	CRM41-14=	
<i>Paspalidium clementii</i>	0.1	15		
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	10	CRM41-10=	
<i>Portulaca oleracea</i> / <i>intraterranea</i>	0.1	2		IM; sterile
<i>Ptilotus astrolasius</i>	0.1	45	CRM42-8	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena</i> ? <i>costata</i>	0.1	5	CRM41-15=	IM; sterile
<i>Sclerolaena costata</i>	0.1	20	CRM42-5	
<i>Sida arsiniata</i>	0.1	35	CRM42-9	
<i>Solanum cleistogamum</i>	0.1	35	CRM42-11	
<i>Trianthema triquetrum</i>	0.1	3	CRM41-04=	
<i>Trigastrotheca molluginea</i>	0.1	25		
<i>Triodia epactia</i>	18	65	CRM42-2, -6	Sens. lat

No photo.

**CZR Robe Valley Flora Site** CRM43  
**Described by** SWJT **Date** 21/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 399620 mE 7590331 mN  
**Habitat** Clayey plain.  
**Soil** Dark reddish brown (2.5YR 3/4) light clay.  
**Vegetation** *Corymbia candida* subsp. *candida* low open woodland; over *Acacia atkinsiana*, *A. sclerosperma* subsp. *sclerosperma* tall open scrub; over *A. synchronica*, *Senna artemisioides* subsp. *oligophylla* scattered low shrubs; over *Triodia epactia* hummock grassland.  
**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\^*Corymbia*\^tree\6\r; M1 ^*Acacia atkinsiana*,*Acacia sclerosperma* subsp. *sclerosperma*\^*Acacia*\^shrub\4\c; M2 ^*Acacia synchronica*,*Senna artemisioides* subsp. *oligophylla*\^*Acacia*\^shrub\2\bc; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\c  
**Veg Condition** Very good. Weeds present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia</i> ? <i>ancistrocarpa</i>	0.1	230	CRM43-12	Pods narrow; atypical
<i>Acacia ancistrocarpa</i>	0.1	190		
<i>Acacia aptaneura</i>	0.1	200	CRM43-16	
<i>Acacia atkinsiana</i>	0.1	200	CRM43-09	
<i>Acacia atkinsiana</i>	63	250	CRM43-01	
<i>Acacia bivenosa</i>	0.1	260	CRM43-14	
<i>Acacia inaequilatera</i>	0.1	210		
<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>	3	220		
<i>Acacia synchronica</i>	2	140		
<i>Afrohybanthus aurantiacus</i>	0.1	10		
<i>Alternanthera</i> ? <i>nana</i>	0.1	8	CRM43-08	IM; sterile
<i>Arivela viscosa</i>	0.1	1		
<i>Boerhavia coccinea</i>	0.1	10		
<i>Boerhavia repleta</i>	0.1	10	CRM43-15	
<i>Bonamia pannosa</i>	0.1	10		
<i>Bulbostylis barbata</i>	0.1	3		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	4	CRM43-05	IM; juvenile
<i>Calocephalus pilbarensis</i>	0.1	4	CRM43-06	
* <i>Cenchrus ciliaris</i>	0.1	45	25	
<i>Corymbia candida</i> subsp. <i>candida</i>	5	850	CRM42-13=	
<i>Dendrophyllanthus erwinii</i>	0.1	10		
<i>Duperreya commixta</i>	0.1	25		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	2	CRM41-05=	
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	0.1	100	CRM43-10	
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euphorbia</i> sp.	0.1	3	CRM43-03	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		
<i>Goodenia forrestii</i>	0.1	20	CRM43-04	
<i>Gossypium australe</i>	0.1	10		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	400		
<i>Hibiscus sturtii</i>	0.1	30		IM; sterile
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	25		
<i>Maireana melanocoma</i>	0.1	5	CRM41-03=	
* <i>Malvastrum americanum</i>	0.1	40		N=4
<i>Notoleptopus decaisnei</i> var. <i>decaisnei</i>	0.1	5		
<i>Paspalidium clementii</i>	0.1	12		
<i>Pluchea rubelliflora</i>	0.1	10		
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	10	CRM41-10=	WAH ID:
<i>Portulaca oleracea</i> /intraterranea	0.1	3	CRM41-06=	Sterile
<i>Pterocaulon sphaeranthoides</i>	0.1	5		
<i>Ptilotus exaltatus</i>	0.1	50		
<i>Rhynchosia minima</i>	0.1	100	CRM43-11	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	1.5	95	CRM43-02	
<i>Triodia epactia</i>	62	90	CRM43-07	Sens. lat



**CZR Robe Valley Flora Site** CRM44  
**Described by** SWJT **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 399889 mE 7591085mN  
**Habitat** Drainage; floodout side.  
**Soil** Dark reddish brown clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Corymbia hamersleyana* low open woodland; over *Acacia synchronica*, *A. ancistrocarpa*, *A. trachycarpa* tall shrubland; over *A. sclerosperma* subsp. *sclerosperma* open shrubland; over *Triodia epactia* hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\^*Corymbia*\^tree\6\r; M1 ^*Acacia synchronica*,*Acacia ancistrocarpa*,*Acacia trachycarpa*\^*Acacia*\^shrub\4\i; M2 ^*Acacia sclerosperma* subsp. *sclerosperma*\^*Acacia*\^shrub\3\r; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\c  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	4	260		
<i>Acacia colei</i>	0.1	300	CRM44-14	var. indet; IM; sterile
<i>Acacia inaequilatera</i>	0.1	70		
<i>Acacia ligulata</i>	0.1	160	CRM44-12	
<i>Acacia pyrifolia</i> var. <i>morrisonii</i>	0.1	85		
<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>	3	190		
<i>Acacia synchronica</i>	9	260		
<i>Acacia trachycarpa</i>	1	220		
<i>Afrohybanthus aurantiacus</i>	0.1	15		
<i>Alternanthera</i> ? <i>nana</i>	0.1	40	CRM44-11	IM; sterile
<i>Arivela viscosa</i>	0.1	10		
<i>Boerhavia coccinea</i>	0.1	10		
<i>Bulbostylis barbata</i>	0.1	7		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	4	CRM44-04	IM; juvenile
* <i>Cenchrus ciliaris</i>	0.1	40		N=3
<i>Chrysopogon fallax</i>	0.1	65		
<i>Corymbia hamersleyana</i>	5	460		
<i>Cynodon prostratus</i>	0.1	6	CRM44-15	
<i>Cyperus iria</i>	0.1	20	CRM44-02	
<i>Cyperus squarrosus</i>	0.1	8	CRM44-06	
<i>Eragrostis</i> sp.	0.1	20	CRM44-08	IM; Sterile
<i>Evolvulus alsinoides</i>	0.1	15		
<i>Goodenia microptera</i>	0.1	20	CRM44-09	
<i>Gossypium australe</i>	0.1	130		Burrup Peninsula form.
<i>Gossypium robinsonii</i>	0.1	380		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	300		
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	40	CRM44-07	
<i>Isotropis atropurpurea</i>	0.1	55		
<i>Marsilea hirsuta</i>	0.1	10	CRM44-03	
<i>Peplidium muelleri</i>	0.1	2	CRM44-05	
<i>Pluchea rubelliflora</i>	0.1	5		
<i>Polycarpaea</i> sp.	0.1	5		
<i>Rhynchosia minima</i>	0.1	40		
<i>Sclerolaena costata</i>	0.1	10	CRM42=	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	65		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	110	CRM44-13	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	30	CRM44-10	
<i>Triodia epactia</i>	54	65	CRM44-01	Sens. lat





**CZR Robe Valley Flora Site** CRM45  
**Described by** SWJT **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 400688 mE 7591055mN

**Habitat** Gravelly plain.

**Soil** Dark reddish brown loamy sand.

**Rock Type** Ironstone, quartz.

**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia inaequilatera* tall open shrubland; over *A. atkinsiana*, *A. bivenosa* scattered shrubs; over *Triodia wiseana*, *T. epactia* open hummock grassland.

**NVIS** U1+ ^*Corymbia hamersleyana*\*Corymbia*\^tree\6\bc; M1 ^*Acacia inaequilatera*\*Acacia*\^shrub\4\; M2 ^*Acacia atkinsiana*,*Acacia bivenosa*\*Acacia*\^shrub\3\bc; G1 ^*Triodia wiseana*,*Triodia epactia*\*Triodia*\^hummock grass\2\i

**Veg Condition** Very good.

**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	80		
<i>Acacia atkinsiana</i>	0.5	180	CRM45-03	
<i>Acacia bivenosa</i>	0.5	175		
<i>Acacia inaequilatera</i>	5	430		
<i>Acacia synchronicia</i>	0.1	15		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Corymbia hamersleyana</i>	0.5	550		
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	8	CRM45-01	
<i>Dysphania</i> sp.	0.1	2		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euphorbia</i> sp.	0.1	4		Sterile
<i>Goodenia microptera</i>	0.1	10		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	110		
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	4	CRM45-02	WAH ID
<i>Portulaca oleracea</i> / <i>inraterranea</i>	0.1	4		Sterile
<i>Ptilotus astrolasius</i>	0.1	35		
<i>Senna notabilis</i>	0.1	5		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	10	50		
<i>Triodia wiseana</i>	15	50		



**CZR Robe Valley Flora Site** CRM46  
**Described by** SWJT **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 399937 mE 7593030mN

**Habitat** Major river banks (Robe River).

**Soil** Dark reddish brown silty clay.

**Rock Type** Ironstone.

**Vegetation** *Eucalyptus camaldulensis* subsp. *refulgens* (*E. victrix*), *Melaleuca argentea* open forest; over *M. glomerata* low woodland; *Acacia ampliceps* scattered tall shrubs; over *Cyperus vaginatus*, \**Cenchrus ciliaris*, \**C. setiger* closed sedgeland/grassland.

**NVIS** U1+ ^*Eucalyptus camaldulensis* subsp. *refulgens*, *Eucalyptus victrix*, *Melaleuca argentea* \ *Eucalyptus* \ ^tree\7\c; U2 ^*Melaleuca glomerata* \ *Melaleuca* \ ^tree\6\i; M1 ^*Acacia ampliceps* \ *Acacia* \ ^shrub\4\bc; G1 ^*Cyperus vaginatus*, \**Cenchrus ciliaris*, \**Cenchrus setiger* \ *Cyperus* \ ^sedge\2\d

**Veg Condition** Very good. Weeds present.

**Fire Age** No sign of recent fire.

**Notes** Flash flooded recently to 3.5m.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ampliceps</i>	0.5	350	CRM46-01	
<i>Alternanthera ? nana</i>	0.1	40	CRM46-04	IM; sterile
* <i>Cenchrus ciliaris</i>	0.5	55		
* <i>Cenchrus setiger</i>	0.5	70		
<i>Cyperus vaginatus</i>	72	90		
<i>Eriachne</i> sp.	0.1	25	CRM46-05	IM; sterile
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	36	2450		
<i>Eucalyptus victrix</i>	8	2500		
<i>Eulalia aurea</i>	0.1	170	CRM46-03	
* <i>Euphorbia hirta</i>	0.1	25		
<i>Gossypium robinsonii</i>	0.1	120		
<i>Melaleuca argentea</i>	24	2400		
<i>Melaleuca glomerata</i>	28	620		
<i>Melaleuca lasiandra</i>	0.1	220		
<i>Nelica maderaspatensis</i>	0.1	30		
<i>Petalostylis labicheoides</i>	0.1	250		
<i>Pluchea rubelliflora</i>	0.1	3		
<i>Stemodia grossa</i>	0.1	60		
* <i>Vachellia farnesiana</i>	0.1	45	CRM46-02	N=1



**CZR Robe Valley Flora Site** CRM47  
**Described by** SWJT **Date** 22/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 399614 mE 7592447 mN  
**Habitat** Robe River; off main drainage line.  
**Soil** Dark reddish brown silty clay loam.  
**Rock Type** Ironstone, riverstone.  
**Vegetation** *Eucalyptus victrix*, *E. camaldulensis* subsp. *refulgens* open forest;  
*Melaleuca glomerata*, *M. lasiandra* tall shrubland; over \**Cenchrus ciliaris*, \**C. setiger*, *Cyperus vaginatus*, *Eulalia aurea* tussock grassland.  
**NVIS** U1+ ^*Eucalyptus victrix*,*Eucalyptus camaldulensis* subsp. *refulgens*\^tree\7\c; M1  
^*Melaleuca glomerata*,*Melaleuca lasiandra*\^shrub\4\i; G1 ^\**Cenchrus ciliaris*,\**Cenchrus setiger*,*Cyperus vaginatus*,*Eulalia aurea*\\**Cenchrus*\^tussock grass\2\c  
**Veg Condition** Good. Dominant weeds.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia coleii</i>	0.1	65	CRM47-04	var. indet; IM; sterile
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	140		
<i>Acacia trachycarpa</i>	0.1	270		
<i>Afrohybanthus aurantiacus</i>	0.1	25		
<i>Alternanthera</i> ? <i>denticulata</i>	0.1	20	CRM47-12	
<i>Alternanthera nana</i>	0.1	25	CRM-JT01	
<i>Amaranthus</i> sp.	0.1	5	CRM47-08	IM; sterile
<i>Bergia</i> sp.	0.1	6	CRM47-14	IM
<i>Boerhavia coccinea</i>	0.1	5		
<i>Boerhavia repleta</i>	0.1	15	CRM47-01	
<i>Bulbostylis barbata</i>	0.1	25	CRM47-07	
<i>Cathetus exilis</i>	0.1	20	CRM47-05	
* <i>Cenchrus ciliaris</i>	18	60		
* <i>Cenchrus setiger</i>	18	65		
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	0.1	45		
<i>Corchorus</i> sp.	0.1	35	CRM47-03	IM
<i>Cucumis variabilis</i>	0.1	45		
<i>Cymbopogon ambiguus</i>	0.1	45		
<i>Cyperus vaginatus</i>	3	75		
<i>Dactyloctenium radicans</i>	0.1	15		IM; sterile
<i>Dysphania</i> sp.	0.1	5		
<i>Eriachne benthamii</i>	0.1	65	CRM47-11	
<i>Eriachne pulchella</i>	0.1	8		
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	20	2200		
<i>Eucalyptus victrix</i>	29	2400		
<i>Eulalia aurea</i>	3	65		
* <i>Euphorbia hirta</i>	0.1	20	N=1.	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	25		
<i>Goodenia lamprosperma</i>	0.1	30		
<i>Gossypium robinsonii</i>	0.1	300		
<i>Ipomoea muelleri</i>	0.1	25	CRM47-10	
* <i>Malvastrum americanum</i>	0.1	45		N=32
<i>Marsilea hirsuta</i>	0.1	5		
<i>Melaleuca glomerata</i>	20	420		
<i>Melaleuca lasiandra</i>	8	440		
<i>Nelica maderaspatensis</i>	0.1	40		
<i>Paspalidium clementii</i>	0.1	25	CRM47-06	
<i>Petalostylis labicheoides</i>	0.1			
<i>Pluchea dentex</i>	0.1	25		
<i>Pluchea rubelliflora</i>	0.1	12	CRM47-06	
<i>Portulaca oleracea</i> /intraterranea	0.1	10		IM; sterile
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	30		
* <i>Setaria verticillata</i>	0.1	40		N=1
<i>Sida fibulifera</i>	0.1	25	CRM47-02	Sens. lat
<i>Sporobolus australasicus</i>	0.1	10		
<i>Stemodia grossa</i>	0.1	20		

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	0.1	15	CRM47-13	
<i>Triodia wiseana</i>	0.1	65		
* <i>Vachellia farnesiana</i>	0.1	45		N=3
<i>Vigna lanceolata</i> var. <i>lanceolata</i>	0.5	20	CRM47-09	



**CZR Robe Valley Flora Site** CRM48  
**Described by** SWJT **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 399715 mE 7593120mN  
**Habitat** Sandy loam rocky plain with clayey sections.  
**Soil** Dark reddish brown (5YR 3/4) sandy clay loam.  
**Rock Type** Calcrete, ironstone, mudstone.  
**Vegetation** *Acacia synchronica*, *A. inaequilatera*, *Hakea lorea* subsp. *lorea* tall open shrubland; over *A. bivenosa* scattered shrubs; over *Triodia wiseana* open hummock grassland.  
**NVIS** M1+ ^*Acacia synchronica*,*Acacia inaequilatera*,*Hakea lorea* subsp. *lorea*\Acacia\^shrub\4\r; M2 ^*Acacia bivenosa*\Acacia\^shrub\3\bc; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\i  
**Veg Condition** Very good. Weeds present.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia bivenosa</i>	1	200		
<i>Acacia inaequilatera</i>	2	320		
<i>Acacia ligulata</i>	0.1	160	CRM48-08	WAH ID
<i>Acacia synchronica</i>	4	300		
<i>Amaranthus</i> sp.	0.1	8	CRM47-08=	IM; sterile
<i>Boerhavia coccinea</i>	0.1	10		
<i>Bonamia</i> sp. ( <i>pilbarensis/media</i> indet)	0.1	8	CRM48-09	Sterile
<i>Bulbostylis barbata</i>	0.1	10		
* <i>Cenchrus ciliaris</i>	0.1	45		
* <i>Cenchrus setiger</i>	0.1	45		
<i>Corchorus</i> ? <i>sidoides</i> subsp. <i>sidoides</i>	0.1	65	CRM48-05	
<i>Cucumis variabilis</i>	0.1	280		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5		
<i>Euphorbia australis</i> var. <i>subtomentosa</i>	0.1	8	CRM48-11	
<i>Euphorbia</i> sp. ( <i>boophthona/tannensis</i> )	0.1	10		Sterile
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	0.1	15		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	40		
<i>Goodenia forrestii</i>	0.1	25	CRM48-01	
<i>Goodenia microptera</i>	0.1	10		
<i>Gossypium australe</i>	0.1	60		Burrup Peninsula form
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.5	380		
<i>Iseilema dolichotrichum</i>	0.1	20	CRM48-02	
* <i>Malvastrum americanum</i>	0.1	1		
<i>Nellica maderaspatensis</i>	0.1	8		
<i>Paraneurachne muelleri</i>	0.1	40		
<i>Paspalidium clementii</i>	0.1	35	CRM48-04	
<i>Perotis rara</i>	0.1	10		
<i>Portulaca oleracea/intraterranea</i>	0.1	5		Sterile
<i>Pterocaulon</i> sp.	0.1	2		IM; sterile
<i>Ptilotus astrolasius</i>	0.1	40		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	40		
<i>Rhynchosia minima</i>	0.1	15		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	25		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	150		
<i>Senna notabilis</i>	0.1	5		
<i>Sida arsinata</i>	0.1	56	CRM48-03	
<i>Solanum cleistogamum</i>	0.1	45	CRM48-07	;
<i>Solanum diversiflorum</i>	0.1	25		
<i>Solanum</i> sp.	0.1	45		Dead
<i>Sporobolus australasicus</i>	0.1	10		

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Stemodia grossa</i>	0.1	5		
<i>Tribulus macrocarpus</i>	0.1	5	CRM48-10	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	10		
<i>Triodia wiseana</i>	24	50		
<i>Triumfetta clementii</i>	0.1	30	CRM48-06	



**CZR Robe Valley Flora Site** CRM49  
**Described by** SWJT **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 399678 mE 7593650mN  
**Habitat** Slope of low hillcrest.  
**Soil** Dark reddish brown (5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia bivenosa* open shrubland; over *Triodia wiseana* open hummock grassland.  
**NVIS** M1+ ^*Acacia bivenosa*\Acacia\^shrub\3\r; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia bivenosa</i>	6	190		
<i>Acacia inaequilatera</i>	0.1	220		
<i>Acacia synchronicia</i>	0.1	120		
<i>Bonamia pilbarensis</i>	0.1	5		
<i>Corchorus</i> ? <i>sidoides</i> subsp. <i>sidoides</i>	0.1	45	CRM48-05=	
<i>Dysphania</i> sp.	0.1	1		IM; sterile
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	0.1	101		
<i>Goodenia microptera</i>	0.1	10		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	180		
<i>Polycarpaea</i> sp.	0.1	1		IM; sterile
<i>Ptilotus calostachyus</i>	0.1	60		
<i>Ptilotus clementii</i>	0.1	45		
<i>Ptilotus exaltatus</i>	0.1	2		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	160		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	45	CRM49-01	
<i>Solanum horridum</i>	0.1	45	CRM49-02	
<i>Triodia wiseana</i>	28	50		





**CZR Robe Valley Flora Site** CRM50  
**Described by** SWJT **Date** 23/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 400194 mE 7593625mN  
**Habitat** Crest and slope of low hill; slope has W aspect.  
**Soil** Dark reddish brown (5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia arida* tall shrubland; over *Triodia wiseana* hummock grassland  
**NVIS** M1+ ^*Acacia arida*\Acacia\^shrub\4\i; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	50	CRM50-04	
<i>Acacia arida</i>	13	220	CRM50-07	
<i>Acacia bivenosa</i>	0.1	120		
<i>Acacia inaequilatera</i>	0.1	175		
<i>Boerhavia coccinea</i>	0.1	5		
<i>Bonamia pilbarensis</i>	0.1	15		
<i>Corchorus</i> ? <i>sidoides</i> subsp. <i>sidoides</i>	0.1	45	CRM48-05=	
<i>Corchorus</i> ? <i>tectus</i>	0.1	65	CRM50-02	IM; sterile
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	3		
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	25	CRM50-01	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	25		
<i>Gossypium australe</i>	0.1	65		Burrup Peninsula form.
<i>Gossypium robinsonii</i>	0.1	120		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	45		
<i>Hibiscus coatesii</i>	0.1	60	CRM50-06	
<i>Paspalidium clementii</i>	0.1	25	CRM50-05	
<i>Paspalidium</i> sp.	0.1	5		IM; sterile
<i>Petalostylis labicheoides</i>	0.1	65		
<i>Polycarpaea longiflora</i>	0.1	60		
<i>Polycarpaea</i> sp.	0.1	4		IM; sterile
<i>Portulaca oleracea/intraterranea</i>	0.1	2		Sterile
<i>Pterocaulon sphacelatum</i>	0.1	30		
<i>Ptilotus astrolasius</i>	0.1	45		
<i>Ptilotus calostachyus</i>	0.1	60		
<i>Ptilotus exaltatus</i>	0.1	3		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	150		
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x subsp. <i>x luerssenii</i>	0.1	120		
<i>Senna notabilis</i>	0.1	25		
<i>Sida arsinjata</i>	0.1	50	CRM48-03=	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	25	CRM49-01=	
<i>Solanum diversiflorum</i>	0.1	25		
<i>Solanum horridum</i>	0.1	55	CRM50-03	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5		
<i>Tribulus macrocarpus</i>	0.1	10	CRM48-10=	
<i>Trigastrotheca molluginea</i>	0.1	25		
<i>Triodia wiseana</i>	38	60		
<i>Triumfetta clementii</i>	0.1	25	CRM48-06=	



**CZR Robe Valley Flora Site** CRM51  
**Described by** SWJT **Date** 24/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 381470 mE 7588037 mN  
**Habitat** Plain.  
**Soil** Dark brown loamy sand.  
**Rock Type** Calcrete, ironstone, quartz.  
**Vegetation** *Acacia ancistrocarpa*, *A. trachycarpa* tall open shrubland; over *A. atkinsiana*, *A. bivenosa*, *A. sericophylla* scattered shrubs; over *Triodia epactia* hummock grassland.  
**NVIS** M1+ ^*Acacia ancistrocarpa*,*Acacia trachycarpa*\Acacia\^shrub\4\r; M2 ^*Acacia atkinsiana*,*Acacia bivenosa*,*Acacia sericophylla*\Acacia\^shrub\3\bc; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	8	CRM51-05	
<i>Acacia ancistrocarpa</i>	4	230		
<i>Acacia atkinsiana</i>	0.5	160		
<i>Acacia bivenosa</i>	0.5	180		
<i>Acacia elachantha</i>	0.1	70	CRM51-18	
<i>Acacia inaequilatera</i>	0.1	400		
<i>Acacia sericophylla</i>	0.5	15	CRM51-06	
<i>Acacia trachycarpa</i>	1	250		
<i>Acacia trachycarpa</i> x <i>tumida</i> var. <i>pilbarensis</i>	0.1	260	CRM51-20	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	0.1	110	CRM51-21	
<i>Arivela viscosa</i>	0.1	45		
<i>Bonamia erecta</i>	0.1	10	CRM51-04	
<i>Bulbostylis barbata</i>	0.1	8	CRM51-10	
<i>Chrysopogon fallax</i>	0.1	100		
<i>Codonocarpus cotinifolius</i>	0.1	280		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	20	CRM51-01	
<i>Cullen martinii</i>	0.1	60	CRM51-16	
<i>Dendrophyllanthus erwinii</i>	0.1	10		
<i>Dysphania</i> sp.	0.1	3		IM; sterile
<i>Euphorbia boophthona</i>	0.1	20		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		
<i>Goodenia microptera</i>	0.1	40		
<i>Grevillea wickhamii</i> subsp. <i>macrodonta</i>	0.1	240	CRM51-11	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	6	CRM51-03	
<i>Isotropis atropurpurea</i>	0.1	65		
<i>Nellica maderaspatensis</i>	0.1	25		
<i>Paspalidium clementii</i>	0.1	25	CRM51-08	
<i>Polycarpaea</i> sp.	0.1	2		IM; sterile
<i>Polymeria ambigua</i>	0.1	8		
<i>Polymeria</i> sp. nov. (KTF39-05)	0.1	8	CRM51-13	
<i>Portulaca oleracea</i> /intra-terranea	0.1	4		
<i>Pterocaulon sphacelatum</i>	0.1	8		
<i>Ptilotus astrolasius</i>	0.1	35		
<i>Ptilotus axillaris</i>	0.1	10	CRM51-19	
<i>Ptilotus calostachyus</i>	0.1	90		
<i>Ptilotus exaltatus</i>	0.1	40		
<i>Ptilotus polystachyus</i>	0.1	35		
<i>Rhynchosia minima</i>	0.1	50		
<i>Senna notabilis</i>	0.1	10		
<i>Sida echinocarpa</i>	0.1	45		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	15	CRM51-12	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	150	CRM51-17	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	40	CRM51-02	
<i>Solanum cleistogamum</i>	0.1	20	CRM51-09	
<i>Solanum diversiflorum</i>	0.1	45		
<i>Stemodia grossa</i>	0.1	60		

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)	0.1	15	CRM51-07	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	45		
<i>Trigastrotheca molluginea</i>	0.1	20		
<i>Triodia epactia</i>	62	50		
<i>Triodia wiseana</i>	0.1	60		
<i>Triumfetta chaetocarpa</i>	0.1	45	CRM51-15	
<i>Triumfetta johnstonii</i>	0.1	60	CRM51-14	



**CZR Robe Valley Flora Site** CRM52  
**Described by** SWJT **Date** 24/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 382856 mE 7586965mN  
**Habitat** Broad flowline.  
**Soil** Dark reddish brown (5YR 3/4) sandy loam.  
**Rock Type** Ironstone; minimal.  
**Vegetation** *Acacia tumida* var. *pilbarensis*, *A. bivenosa* (*Rhynchosia minima*) tall open scrub; over *A. ancistrocarpa* open shrubland; over *Indigofera bovipерda* subsp. *bovipерda*, *Bonamia erecta* low open shrubland; *Triodia epactia* (*T. wiseana*) closed hummock grassland.  
**NVIS** M1+ ^*Acacia tumida* var. *pilbarensis*, *Acacia bivenosa*, *Rhynchosia minima* \ *Acacia* \ ^shrub \ 4 \ c; M2 ^*Acacia ancistrocarpa* \ *Acacia* \ ^shrub \ 3 \ r; M3 ^*Indigofera bovipерda* subsp. *bovipерda*, *Bonamia erecta* \ *Indigofera* \ ^shrub \ 2 \ r; G1 ^*Triodia epactia*, *Triodia wiseana* \ *Triodia* \ ^hummock grass \ 2 \ d  
**Veg Condition** Very good. \**Malvastrum americanum* present.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	35	CRM52-03	
<i>Acacia ancistrocarpa</i>	8	140		
<i>Acacia atkinsiana</i>	0.1	250		
<i>Acacia bivenosa</i>	10	260		
<i>Acacia inaequilatera</i>	0.1	70		
<i>Acacia synchronicia</i>	0.1	160		
<i>Acacia tumida</i> var. <i>pilbarensis</i>	55	350		
<i>Afrohybanthus aurantiacus</i>	0.1	25		
<i>Alternanthera nana</i>	0.1	10	CRM52-10	
<i>Arivela viscosa</i>	0.1	30		
<i>Bonamia erecta</i>	1	60	CRM52-09	
<i>Bulbostylis barbata</i>	0.1	10		
<i>Chrysopogon fallax</i>	0.1	85		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	25	CRM51-01=	
<i>Cucumis variabilis</i>	0.1	50		
<i>Cullen martinii</i>	0.1	50	CRM51-16=	
<i>Dactyloctenium radulans</i>	0.1	10		
<i>Dendrophyllanthus erwinii</i>	0.1	20		
<i>Dysphania</i> sp.	0.1	2		
<i>Eragrostis cumingii</i>	0.1	40	CRM52-04	
<i>Eragrostis tenellula</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euphorbia trigonosperma</i>	0.1	25	CRM52-06	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	25		
<i>Goodenia microptera</i>	0.1	25		
<i>Gossypium robinsonii</i>	0.1	140		
<i>Hibiscus coatesii</i>	0.1	30	CRM51=	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	50	CRM52-05	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	4	70	CRM51-03=	
<i>Isotropis atropurpurea</i>	0.1	75	CRM52-01	
* <i>Malvastrum americanum</i>	0.1	25		N=1
<i>Paraneurachne muelleri</i>	0.1	60		
<i>Paspalidium clementii</i>	0.1	20	CRM52-08	
<i>Paspalidium rarum</i>	0.1	25	CRM52-02	
<i>Polycarpha</i> sp.	0.1	1		IM; sterile
<i>Pterocaulon sphacelatum</i>	0.1	5		
<i>Rhynchosia minima</i>	3	380		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	75	CRM52-07	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	200		
<i>Solanum cleistogamum</i>	0.1	45	CRM51=	
<i>Solanum diversiflorum</i>	0.1	60		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	35		
<i>Triodia epactia</i>	82	65		
<i>Triodia wiseana</i>	1	60		



**CZR Robe Valley Flora Site** CRM53  
**Described by** SWJT **Date** 24/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 382424 mE 7587299 mN  
**Habitat** Slightly elevated plain.  
**Soil** Dark reddish brown (5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia bivenosa* (*A. ancistrocarpa*) open shrubland; over *Triodia epactia* very open hummock grassland.  
**NVIS** M1+ ^*Acacia bivenosa*,*Acacia ancistrocarpa*\*Acacia*\^shrub\3\r; G1 ^*Triodia epactia*\*Triodia*\^hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.  
**Notes** Broader veg unit has *Acacia ancistrocarpa* scattered tall shrubland over *A. bivenosa* open shrubland over *Triodia epactia* open hummock grassland.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	45	CRM53-04	
<i>Acacia ancistrocarpa</i>	0.5	180		
<i>Acacia atkinsiana</i>	0.1	200		
<i>Acacia bivenosa</i>	2	160		
<i>Acacia inaequilatera</i>	0.1	260		
<i>Acacia synchronicia</i>	0.1	280		
<i>Arivela viscosa</i>	0.1	25		
<i>Bulbostylis barbata</i>	0.1	25		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	25	CRM53-05	
<i>Duperreya commixta</i>	0.1	10		
<i>Dysphania</i> sp.	0.1	2		IM; sterile
<i>Eriachne aristidea</i>	0.1	40		
<i>Eriachne pulchella</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	15		
<i>Euphorbia</i> sp. ( <i>boophthona/tannensis</i> )	0.1	8		IM; sterile
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		
<i>Gomphrena cunninghamii</i>	0.1	15	CRM53-01	
<i>Goodenia microptera</i>	0.1	15		
<i>Haloragis</i> sp.	0.1	10	CRM53-02	IM; sterile;
<i>Hibiscus sturtii</i>	0.1	20		IM; sterile
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	20	CRM51-03=	
<i>Indigofera colutea</i>	0.1	10	CRM53-09	
<i>Panicum australiense</i> var. <i>australiense</i>	0.1	10		
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	20		
<i>Polycarpaea</i> sp.	0.1	1		IM; sterile
<i>Polymeria</i> sp. nov. (KTF39-05)	0.1	4	CRM53-08	
<i>Ptilotus astrolasius</i>	0.1	25		
<i>Ptilotus axillaris</i>	0.1	5	CRM51-19=	
<i>Ptilotus calostachyus</i>	0.1	25		
<i>Ptilotus fusiformis</i>	0.1	40	CRM53-07	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	10		
<i>Ptilotus polystachyus</i>	0.1	15		
<i>Senna notabilis</i>	0.1	20		
<i>Sida echinocarpa</i>	0.1	20		
<i>Solanum diversiflorum</i>	0.1	50		
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)	0.1		CRM53-03	
<i>Trianthema pilosum</i>	0.1	4	CRM53-06	
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia epactia</i>	9	60		





**CZR Robe Valley Flora Site** CRM54  
**Described by** SWJT **Date** 25/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 374875 mE 7590522mN  
**Habitat** Undulating plain.  
**Soil** Dark reddish brown (5YR 3/4) sandy loam.  
**Rock Type** Basalt, ironstone, quartz.  
**Vegetation** *Acacia bivenosa* open shrubland; over *Triodia wiseana* very open hummock grassland; over *Sclerolaena densiflora* scattered herbs.  
**NVIS** M1+ ^*Acacia bivenosa*\Acacia\^shrub\3\r; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\r; G2 ^*Sclerolaena densiflora*\Sclerolaena\^forb\1\bc  
**Veg Condition** Very good. \**Cenchrus ciliaris* present.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia bivenosa</i>	3	165		
<i>Acacia synchronicia</i>	0.5	50		
<i>Bulbostylis barbata</i>	0.1	5		
* <i>Cenchrus ciliaris</i>	0.1	45	CRM54-03	
<i>Corchorus laniflorus</i>	0.1	75	CRM54-05	
<i>Cynodon prostratus</i>	0.1	4	CRM54-01	
<i>Eriachne pulchella</i>	0.1	15		
<i>Euploca pachyphylla</i>	0.1	40	CRM54-09	
<i>Goodenia microptera</i>	0.1	10		
<i>Lawrencia densiflora</i>	0.1	15	CRM54-04	
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1		CRM54-08	IM; sterile
<i>Maireana</i> ? <i>melanocoma</i>	0.1	20	CRM54-06	IM; sterile
<i>Paspalidium clementii</i>	0.1	35	CRM54-02	
<i>Portulaca oleracea/intraterranea</i>	0.1	5		Sterile
<i>Ptilotus astrolasius</i>	0.1	25		
<i>Ptilotus calostachyus</i>	0.1	99		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	25		
<i>Sclerolaena densiflora</i>	1	40	CRM54-07	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160		
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	80		
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	8		
<i>Trianthema triquetrum</i>	0.1	5		
<i>Triodia wiseana</i>	9	65		



**CZR Robe Valley Flora Site** CRM55  
**Described by** SWJT **Date** 25/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 375186 mE 7590074mN  
**Habitat** Slightly elevated plain.  
**Soil** Light brown to brown sandy clay loam.  
**Rock Type** Calcrete, quartz.  
**Vegetation** *Triodia longiceps* (*T. wiseana*) open hummock grassland.  
**NVIS** G1+ ^*Triodia longiceps*,*Triodia wiseana*\^*Triodia*\^hummock grass\2\i  
**Veg Condition** Very good. \**Cenchrus ciliaris* present.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	110	CRM55-04	
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	60	CRM55-05	
<i>Acacia synchronicia</i>	0.1	30		
<i>Cassytha capillaris</i>	0.1	40		
* <i>Cenchrus ciliaris</i>	0.1		CRM54-03=	
<i>Corchorus laniflorus</i>	0.1	60	CRM54-05=	
<i>Cymbopogon obtectus</i>	0.1	65		
<i>Cynodon prostratus</i>	0.1	3	CRM54-01=	
<i>Dysphania</i> sp.	0.1	4		IM; sterile
<i>Eremophila cuneifolia</i>	0.1	120		
<i>Eriachne aristidea</i>	0.1	40		
<i>Eriachne pulchella</i>	0.1	5		
<i>Euphorbia boophthona</i>	0.1	15		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		
<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>	0.1	25	CRM55-06	
<i>Goodenia microptera</i>	0.1	45		
<i>Iseilema dolichotrichum</i>	0.1	25	CRM55-02	
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	5	CRM54-08=	IM; sterile
<i>Maireana melanocoma</i>	0.1	45		
<i>Paspalidium clementii</i>	0.1		CRM54-02=	
<i>Portulaca oleracea</i> /intra <sup>ter</sup> anea	0.1	4	CRM55-01	
<i>Pterocaulon sphacelatum</i>	0.1	55		
<i>Ptilotus calostachyus</i>	0.1	65		
<i>Ptilotus exaltatus</i>	0.1	40		
<i>Sclerolaena densiflora</i>	0.1	20	CRM54-07=	
<i>Sida echinocarpa</i>	0.1	25		
<i>Solanum cleistogamum</i>	0.1	58	CRM55-03	
<i>Solanum diversiflorum</i>	0.1	45		
<i>Sporobolus australasicus</i>	0.1	15		
<i>Streptoglossa decurrens</i>	0.1	50		
<i>Trianthema triquetrum</i>	0.1	5		
<i>Triodia longiceps</i>	11	55		
<i>Triodia wiseana</i>	2	45		
<i>Triumfetta clementii</i>	0.1	45	CRM48-06=	



**CZR Robe Valley Flora Site** CRM56  
**Described by** SWJT **Date** 25/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 376185 mE 7589355mN  
**Habitat** Elevated area on calcrete/quartz plain.  
**Soil** Brown to dark brown sandy clay loam; small amount of surface cracking clay.  
**Rock Type** Calcrete, quartz.  
**Vegetation** *Acacia bivenosa*, *A. synchronica*, *A. ancistrocarpa* tall open shrubland;  
over *Triodia longiceps*, *T. wiseana* very open hummock grassland.  
**NVIS** M1+ ^*Acacia bivenosa*,*Acacia synchronica*,*Acacia ancistrocarpa*\Acacia\^shrub\4\r; G1  
^*Triodia longiceps*,*Triodia wiseana*\Triodia\^hummock grass\2\r  
**Veg Condition** Very good. \**Cenchrus ciliaris* present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.5	240		
<i>Acacia atkinsiana</i>	0.1	140		
<i>Acacia bivenosa</i>	3	200		
<i>Acacia synchronica</i>	1	210		
* <i>Cenchrus ciliaris</i>	0.1	45	CRM54-03=	
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	20	CRM56-01	
<i>Cynodon prostratus</i>	0.1	4	CRM54-01=	
<i>Dysphania</i> sp.	0.1	4		IM; sterile
<i>Eremophila cuneifolia</i>	0.1	85		
<i>Eriachne pulchella</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euploca heterantha</i>	0.1		CRM56-03	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		
<i>Goodenia microptera</i>	0.1	10		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	200		
<i>Hibiscus sturtii</i>	0.1	5		IM; sterile
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	5	CRM54-08=	IM; sterile
<i>Maireana melanocoma</i>	0.1	65		
<i>Paspalidium clementii</i>	0.1	35	CRM54-02=	
<i>Portulaca oleracea</i> /intra <sup>ter</sup> anea	0.1	2		Sterile
<i>Ptilotus astrolasius</i>	0.1	45		
<i>Ptilotus calostachyus</i>	0.1	40		
<i>Ptilotus clementii</i>	0.1	25		
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Ptilotus fusiformis</i>	0.1	39		
<i>Scaevola spinescens</i>	0.1	55	CRM56-02	Broad leaf form
<i>Sclerolaena densiflora</i>	0.1	25	CRM54-07=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	120		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	160		
<i>Solanum diversiflorum</i>	0.1	45		
<i>Sporobolus australasicus</i>	0.1	10		
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	8		
<i>Triodia longiceps</i>	4	65		
<i>Triodia wiseana</i>	2	50		



**CZR Robe Valley Flora Site** CRM57  
**Described by** SWJT **Date** 26/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 389084 mE 7586177 mN  
**Habitat** Stony floodplain, sloping W.  
**Soil** Dark reddish brown (2.5YR 3/4) loamy sand.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia bivenosa* scattered low shrubs; over *Triodia longiceps* (*T. wiseana*) scattered hummock grasses.  
**NVIS** M1+ ^*Acacia bivenosa*\^*Acacia*\^shrub\2\bc; G1 ^*Triodia longiceps*,*Triodia wiseana*\^*Triodia*\^hummock grass\2\bc  
**Veg Condition** Very good. \**Cenchrus* sp. present.  
**Fire Age** Burnt 3-5 years ago/No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia bivenosa</i>	2	95		
<i>Acacia synchronicia</i>	0.1	90		
* <i>Cenchrus</i> sp.	0.1	35	CRM57-07	IM; sterile
<i>Cullen</i> sp.	0.1	3	CRM57-14	IM; seedling
<i>Cynodon prostratus</i>	0.1	1	CRM57-08	
<i>Dendrophyllanthus erwinii</i>	0.1	10	CRM57-05	
<i>Dysphania kalpari</i>	0.1	7	CRM57-09	
<i>Dysphania rhadinostachya</i>	0.1	12	CRM57-03	
<i>Eriachne pulchella</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	15		
<i>Goodenia microptera</i>	0.1	5		
<i>Haloragis</i> sp.	0.1	5	CRM57-10	IM; sterile
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	4	CRM54-08=	IM; sterile
<i>Maireana melanocoma</i>	0.1	25		
<i>Paspalidium clementii</i>	0.1	15	CRM57-06	
<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	0.1	10	CRM57-04	WAH ID
<i>Portulaca cyclophylla</i>	0.1	1	CRM57-11	
<i>Portulaca oleracea</i> /intra-terrestrial	0.1	2	CRM57-12	sterile, not collected.
<i>Ptilotus astrolasius</i>	0.1	50		
<i>Ptilotus calostachyus</i>	0.1	5		
<i>Ptilotus exaltatus</i>	0.1	3		
<i>Sclerolaena densiflora</i>	0.1	4	CRM54-07=	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	95		
<i>Sporobolus australasicus</i>	0.1	4		
<i>Stemodia grossa</i>	0.1	3		
<i>Swainsona</i> sp.	0.1	10	CRM57-13	IM; sterile
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	8		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Triodia epactia</i>	0.1	75	CRM57-01	Sens. lat
<i>Triodia longiceps</i>	1	70	CRM57-02	
<i>Triodia wiseana</i>	0.5	25		



**CZR Robe Valley Flora Site** CRM58  
**Described by** SWJT **Date** 26/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 389752 mE 7586117mN  
**Habitat** Sandy plain.  
**Soil** Dark reddish brown (5YR 3/4) sand.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia atkinsiana* scattered tall shrubs; over *A. synchronica*, *A. bivenosa* scattered shrubs; over *Triodia epactia* (*T. wiseana*) very open hummock grassland.  
**NVIS** M1+ ^*Acacia atkinsiana*\Acacia\^shrub\4\bc; M2 ^*Acacia synchronica*,*Acacia bivenosa*\Acacia\^shrub3\bc; G1 ^*Triodia epactia*,*Triodia wiseana*\Triodia\^hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** Burnt 3-7 years ago.  
**Notes** Patchily burnt 5-7 years ago.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	0.5	210		
<i>Acacia bivenosa</i>	0.5	170		
<i>Acacia synchronica</i>	0.5	180		
<i>Arivela viscosa</i>	0.1	45		
<i>Bulbostylis barbata</i>	0.1	8		
<i>Cullen</i> sp.	0.1	5	CRM57-14=	IM; seedling
<i>Dysphania kalpari</i>	0.1	8	CRM57-09=	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	8	CRM57-03=	
<i>Eriachne pulchella</i>	0.1	8		
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	2	CRM58-2	
<i>Goodenia microptera</i>	0.1	15		
<i>Haloragis</i> sp.	0.1	10	CRM57-10=	IM; sterile
<i>Panicum australiense</i> var. <i>australiense</i>	0.1	8		
<i>Polycarpaea</i> sp.	0.1	4		IM; seedling
<i>Portulaca oleracea</i> / <i>intraterranea</i>	0.1	5	CRM57-12=	Sterile
<i>Ptilotus astrolasius</i>	0.1	50		
<i>Ptilotus calostachyus</i>	0.1	40		
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Sclerolaena eriacantha</i>	0.1	45	CRM58-01	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	200		
<i>Stemodia grossa</i>	0.1	2		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	6	45		
<i>Triodia wiseana</i>	1	45		





**CZR Robe Valley Flora Site** CRM59  
**Described by** SWJT **Date** 26/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 391212 mE 7586179 mN  
**Habitat** Paleodrainage.  
**Soil** Dark reddish brown (5YR 3/4) loamy sand.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Corymbia zygophylla* scattered low trees; over *Acacia atkinsiana* open shrubland; *Triodia epactia* very open hummock grassland; over *Ptilotus astrolasius* (*Bonamia erecta*) scattered low shrubs.  
**NVIS** U1+ ^*Corymbia zygophylla*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia atkinsiana*\^*Acacia*\^shrub\3\r; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\r; M2 ^*Ptilotus astrolasius*,*Bonamia erecta*\^*Ptilotus*\^shrub\2\bc  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.  
**Notes** Evidence of recent sheet water flow from NE to SW.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	150		
<i>Acacia atkinsiana</i>	4	170	CRM59-02	
<i>Acacia bivenosa</i>	0.1	160		
<i>Acacia synchronicia</i>	0.1	35		
<i>Acacia trudgeniana</i>	0.1	110	CRM59-08	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	45		
<i>Bonamia erecta</i>	0.5	50	CRM59-04	
<i>Bulbostylis barbata</i>	0.1	5		
<i>Cassutha capillaris</i>	0.1	60		
<i>Corchorus</i> ? <i>tectus</i>	0.1	35	CRM59-07	IM; sterile
<i>Corymbia hamersleyana</i>	0.1	240		
<i>Corymbia zygophylla</i>	2	400	CRM59-05	
<i>Dysphania kalpari</i>	0.1	8		
<i>Dysphania</i> sp.	0.1	2		IM; sterile
<i>Goodenia microptera</i>	0.1	30		
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	30	CRM59-01	
<i>Portulaca oleracea</i> / <i>intraterranea</i>	0.1	2		IM; sterile
<i>Ptilotus astrolasius</i>	2	45		
<i>Ptilotus axillaris</i>	0.1	10	CRM59-06	
<i>Ptilotus calostachyus</i>	0.1	60		
<i>Scaevola spinescens</i>	0.1	60		
<i>Seringia</i> ? <i>nephrosperma</i>	0.1	60	CRM59-03	
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia epactia</i>	8	60		



**CZR Robe Valley Flora Site** CRM60  
**Described by** SWJT **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 393729 mE 7585947 mN  
**Habitat** Depression in cracking clay plain.  
**Soil** Dark reddish brown (5YR 3/4) light clay; cracking clay surface.  
**Rock Type** Ironstone; 1% scattered ironstone.  
**Vegetation** *Corymbia candida* subsp. *candida* scattered low trees; over *Acacia atkinsiana* tall shrubland; over *A. bivenosa*, *A. wanyu* shrubland; over *Triodia epactia* open hummock grassland.  
**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\^tree\6\bc; M1 ^*Acacia atkinsiana*\^shrub\4\i; M2 ^*Acacia bivenosa*,*Acacia wanyu*\^shrub\3\i; G1 ^*Triodia epactia*\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	40	CRM60-02	Sens. lat
<i>Acacia ancistrocarpa</i>	0.1	140		
<i>Acacia atkinsiana</i>	29	260		
<i>Acacia bivenosa</i>	11	190		
<i>Acacia synchronicia</i>	0.1	110		
<i>Acacia wanyu</i>	4	160	CRM60-08	
<i>Acacia wanyu</i>	4	160	CRM60-12	
<i>Alternanthera nana</i>	0.1	15	CRM60-06	
<i>Boerhavia repleta</i>	0.1	8	CRM60-05	
* <i>Cenchrus ciliaris</i>	0.1	3		
<i>Corymbia candida</i> subsp. <i>candida</i>	1.5	420	CRM60-01	
<i>Cullen</i> sp.	0.1	4	CRM57=	IM; seedling
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	0.1	45	CRM60-11	
<i>Dysphania</i> sp.	0.1	2		IM; sterile
<i>Eulalia aurea</i>	0.1	20		
<i>Euphorbia boophthona</i>	0.1	15		
<i>Goodenia forrestii</i>	0.1	25		
<i>Goodenia microptera</i>	0.1	15		
<i>Goodenia muelleriana</i>	0.1	20		
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	45	CRM60-03	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	50	CRM58/59=	
<i>Ipomoea muelleri</i>	0.1	20		
<i>Iseilema membranaceum</i>	0.1	8	CRM60-04	
<i>Polycarpaea</i> sp.	0.1	4		IM; seedling
<i>Polymeria ambigua</i>	0.1	8		
<i>Pterocaulon sphacelatum</i>	0.1	4		
<i>Ptilotus astrolasius</i>	0.1	45		
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Rhynchosia minima</i>	0.1	68		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	110	CRM60-07	
<i>Sida arsinata</i>	0.1	60	CRM60-10	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25	CRM60-09	
<i>Sporobolus australasicus</i>	0.1	15		
<i>Streptoglossa</i> sp.	0.1	2		IM; seedling
<i>Triodia epactia</i>	24	55		



**CZR Robe Valley Flora Site** CRM61  
**Described by** ALTH **Date** 26/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 388600 mE 7589356mN  
**Habitat** Stony undulating plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Quadratuartz.  
**Vegetation** *Acacia atkinsiana*, *A. bivenosa* tall open shrubland; over *Triodia wiseana* very open hummock grassland.  
**NVIS** M1+ ^*Acacia atkinsiana*,*Acacia bivenosa*\^*Acacia*\^shrub\4\r; G1 ^*Triodia wiseana*\^*Triodia*\^hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	7	250		
<i>Acacia bivenosa</i>	2	210		
<i>Cassynia capillaris</i>	0.1	10	CRM61-03	
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	10	CRM19=	
<i>Cynodon prostratus</i>	0.1	5	CRM19=	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		
<i>Goodenia forrestii</i>	0.1	25		
<i>Goodenia microptera</i>	0.1	15		
<i>Haloragis</i> sp.	0.1	5	CRM61-05	IM; sterile
<i>Hibiscus brachyachlaenus</i>	0.1	110	CRM19=	
<i>Hibiscus coatesii</i>	0.1	10	CRM19-04=	
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	10	CRM61-06	IM; sterile
<i>Maireana melanocoma</i>	0.1	50		
<i>Paraneurachne muelleri</i>	0.1	35		
<i>Paspalidium clementii</i>	0.1	20		
<i>Portulaca cyclophylla</i>	0.1		CRM61-01	
<i>Ptilotus calostachyus</i>	0.1	10		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Ptilotus polystachyus</i>	0.1	20		
<i>Scaevola spinescens</i>	0.1	70		
<i>Sclerolaena eriacantha</i>	0.1	20	CRM19=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	80	CRM20-08=	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	170		
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>	0.1	130	CRM61-02	
<i>Senna notabilis</i>	0.1	2		
<i>Sida echinocarpa</i>	0.1	20		
<i>Solanum cleistogamum</i>	0.1	25	CRM19=	
<i>Sporobolus australasicus</i>	0.1	15		
<i>Stemodia grossa</i>	0.1	2		
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Triodia epactia</i>	0.1	30		
<i>Triodia longiceps</i>	0.1	70		
<i>Triodia wiseana</i>	9	70		



**CZR Robe Valley Flora Site** CRM62  
**Described by** ALTH **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 394414 mE 7587472mN  
**Habitat** Flat plain.  
**Soil** Dark reddish brown (2.5YR 3/4) clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia atkinsiana*,  
*A. ancistrocarpa*, *A. inaequilatera* tall open shrubland; *A.*  
*bivenosa* scattered low shrubs; over *Triodia epactia* open hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia atkinsiana*,*Acacia*  
*ancistrocarpa*,*Acacia inaequilatera*\^*Acacia*\^shrub\4\r; M2 ^*Acacia*  
*bivenosa*\^*Acacia*\^shrub\2\bc; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\i  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	1	220		
<i>Acacia atkinsiana</i>	4	220		
<i>Acacia bivenosa</i>	1	50		
<i>Acacia inaequilatera</i>	0.5	350		
<i>Arivela viscosa</i>	0.1	15		
<i>Bonamia erecta</i>	0.1	40		
<i>Corymbia hamersleyana</i>	1.5	650		
<i>Cullen</i> sp.	0.1	5	CRM62-08	IM; seedling
<i>Dysphania kalpari</i>	0.1	3	CRM62-06	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	3		
<i>Euphorbia boophthona</i>	0.1	3		
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1		CRM62-10	
<i>Goodenia microptera</i>	0.1	5		
<i>Gossypium australe</i>	0.1	50		
<i>Gossypium robinsonii</i>	0.1	220		
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	0.1	200	CRM62-01	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	20	CRM07-11=	
<i>Paspalidium clementii</i>	0.1	5	CRM62-04	
<i>Ptilotus appendiculatus</i>	0.1	10		
<i>Ptilotus astrolasius</i>	0.1	30		
<i>Ptilotus calostachyus</i>	0.1	5		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	100	CRM62-07	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	100	CRM62-02	
<i>Solanum elatius</i>	0.1	60	CRM62-03	
<i>Streptoglossa</i> sp.	0.1	3	CRM62-05	IM; juvenile
<i>Tephrosia uniovulata</i>	0.1	80	CRM16=	
<i>Tribulus</i> sp.	0.1	1	CRM62-09	IM; sterile; seedling
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	10		
<i>Triodia epactia</i>	11	130		



**CZR Robe Valley Flora Site** CRM63  
**Described by** ALTH **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 395820 mE 7587200mN  
**Habitat** low floodplain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) clay loam.  
**Rock Type** None present.  
**Vegetation** *Eucalyptus victrix* open woodland; over *Corymbia candida* subsp. *candida* scattered low trees; over *Acacia atkinsiana*, *A. ancistrocarpa* tall open shrubland; *A. bivenosa* (*Chrysopogon fallax*) open shrubland; *Triodia epactia* hummock grassland.  
**NVIS** U1+ ^*Eucalyptus victrix*\^*Eucalyptus*\^tree\7\r; U2 ^*Corymbia candida* subsp. *candida*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia atkinsiana*,*Acacia ancistrocarpa*\^*Acacia*\^shrub\4\r; M2 ^*Acacia bivenosa*,*Chrysopogon fallax*\^*Acacia*\^shrub\3\r; G1 ^*Triodia epactia*\^*Triodia*\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.  
**Notes** Several *Eucalyptus victrix* saplings in landscape.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	2	210		
<i>Acacia atkinsiana</i>	3	220		
<i>Acacia bivenosa</i>	2	120		
<i>Acacia coleii</i>	0.1	250	CRM63-01	var. indet; IM; sterile
<i>Acacia synchronicia</i>	0.1	75		
<i>Acacia trachycarpa</i>	0.1	270		
<i>Alternanthera nana</i>	0.1	15		
<i>Bulbostylis turbinata</i>	0.1	3	CRM63-09	
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1		CRM01=	IM; Juvenile
<i>Calocephalus pilbarensis</i>	0.1	5	CRM63-04	
<i>Chrysopogon fallax</i>	1	110		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	20	CRM63-07	
<i>Corymbia candida</i> subsp. <i>candida</i>	1.5	450		
<i>Cyperus iria</i>	0.1		CRM63-05	
<i>Dendrophyllanthus erwinii</i>	0.1	3	CRM63-11	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	3		
<i>Eragrostis cumingii</i>	0.1	15	CRM63-12	
<i>Eucalyptus victrix</i>	3	1200		
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	0.1	10		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		
<i>Goodenia nuda</i>	0.1	20	CRM63-06	NI=6
<i>Gossypium australe</i>	0.1	20		
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	15	CRM07-11=	
<i>Ipomoea muelleri</i>	0.1	30	CRM63-08	
<i>Iseilema membranaceum</i>	0.1	3	CRM63-10	
<i>Pluchea ferdinandi-muelleri</i>	0.1	90	ALOP19=	
<i>Pterocaulon sphacelatum</i>	0.1	15		
<i>Ptilotus appendiculatus</i>	0.1	15		
<i>Ptilotus calostachyus</i>	0.1	10		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	110	CRM63-02	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25	CRM63-03	
<i>Triodia epactia</i>	65	140		
<i>Waltheria indica</i>	0.1	35		





**CZR Robe Valley Flora Site** CRM64  
**Described by** ALTH **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 396658 mE 7586397 mN  
**Habitat** Hill slope; very gentle slope to SE.  
**Soil** Dark reddish brown (2.5YR 2.5/4) clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Corymbia hamersleyana*, *C. candida* subsp. *candida* low open woodland; over *Acacia atkinsiana* (*Tephrosia uniovulata*) shrubland; over *Ptilotus astrolasius* scattered low shrubs; over *Triodia epactia* open hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*,*Corymbia candida* subsp. *candida*\^tree\6\r; M1 ^*Acacia atkinsiana*,*Tephrosia uniovulata*\^shrub\3\; G1 ^*Triodia epactia*\^hummock grass\2\; G2 ^*Ptilotus astrolasius*\^Ptilotus\2\bc  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	120		
<i>Acacia atkinsiana</i>	23	190		
<i>Acacia bivenosa</i>	0.1	100		
<i>Acacia inaequilatera</i>	0.1	150		
<i>Aristida contorta</i>	0.1	20	CRM64-09	
<i>Arivela viscosa</i>	0.1	40		
<i>Bonamia erecta</i>	0.1	55		
<i>Bonamia</i> sp. ( <i>pilbarensis/media</i> indet)	0.1	5	CRM18-04=	Sterile
<i>Bulbostylis barbata</i>	0.1	5		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	3	CRM01=	IM; juvenile
<i>Corchorus</i> ? <i>tectus</i>	0.1	30	CRM64-03	IM; sterile
<i>Corchorus</i> sp.	0.1	65	CRM64-01	IM
<i>Corymbia candida</i> subsp. <i>candida</i>	1	500		
<i>Corymbia hamersleyana</i>	7	600		
<i>Dysphania kalpari</i>	0.1	5	CRM62=	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5		
<i>Eragrostis crateriformis</i>	0.1	8	CRM64-08	
<i>Eriachne pulchella</i>	0.1	10		
<i>Evolvulus alsinoides</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	15		
<i>Gossypium australe</i>	0.1	190		
<i>Gossypium robinsonii</i>	0.1	15		
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	0.1	200	CRM62=	
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	20	CRM07-11=	
<i>Ipomoea muelleri</i>	0.1		CRM63-08=	
<i>Isotropis atropurpurea</i>	0.1	70		
<i>Paraneurachne muelleri</i>	0.1	60		
<i>Paspalidium clementii</i>	0.1	10		
<i>Pluchea ferdinandi-muelleri</i>	0.1	80	ALOP19=	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	ALOP10=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus astrolasius</i>	0.5	80		
<i>Ptilotus axillaris</i>	0.1	3	CRM64-05	
<i>Senna notabilis</i>	0.1	60		
<i>Sida arsiniata</i>	0.1		CRM64-02	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	100	CRM62=	
<i>Solanum diversiflorum</i>	0.1	25		
<i>Sporobolus australasicus</i>	0.1	5		
<i>Streptoglossa</i> sp.	0.1	5	CRM64-04	IM; juvenile
<i>Tephrosia uniovulata</i>	1	150	CRM16=	
<i>Trianthema triquetrum</i>	0.1	2		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	26	150		
<i>Triumfetta chaetocarpa</i>	0.1	20	CRM64-06	
<i>Triumfetta clementii</i>	0.1	80	CRM64-07	



**CZR Robe Valley Flora Site** CRM65  
**Described by** ALTH **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 408951 mE 7590844mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia inaequilatera*, *A. ancistrocarpa* tall open shrubland; *Ptilotus astrolasius* scattered low shrubs; over *Triodia wiseana* (*T. epactia*) very open hummock grassland.  
**NVIS** M1+ ^*Acacia inaequilatera*,*Acacia ancistrocarpa*\Acacia\^shrub\4\r; M1 ^*Ptilotus astrolasius*\Ptilotus\^shrubs\2\bc; G1 ^*Triodia wiseana*,*Triodia epactia*\Triodia\^hummock grass\2\r  
**Veg Condition** Very good.  
**Fire Age** Burnt 3-5 years ago.  
**Notes** *Corymbia hamersleyana* inconsistently scattered across landscape, tending to slightly lower depressions on the plain.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.5	220		
<i>Acacia bivenosa</i>	0.1	110		
<i>Acacia inaequilatera</i>	3	350		
<i>Acacia synchronicia</i>	0.1	160		
<i>Arivela viscosa</i>	0.1	5		
<i>Bonamia erecta</i>	0.1	30		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Cullen</i> sp.	0.1	5	CRM62-08=	IM; seedling
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	15		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euphorbia trigonosperma</i>	0.1	25	CRM65-02	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	1	CRM62=	
<i>Goodenia microptera</i>	0.1	5		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	120		
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	20	CRM62=	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	15	CRM07-11=	
<i>Paspalidium clementii</i>	0.1	10	CRM65-01	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	ALOP=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus appendiculatus</i>	0.1	10		
<i>Ptilotus astrolasius</i>	1	60		
<i>Ptilotus axillaris</i>	0.1	10	CRM64-05=	
<i>Ptilotus calostachyus</i>	0.1	60		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Senna notabilis</i>	0.1	15		
<i>Sida arsinata</i>	0.1	25	CRM64-02=	
<i>Streptoglossa</i> sp.	0.1	5	CRM64=	IM; juvenile
<i>Tribulus macrocarpus</i>	0.1	3		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	1.5	70		
<i>Triodia wiseana</i>	4.5	60		



**CZR Robe Valley Flora Site** CRM66  
**Described by** ALTH **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 409683 mE 7589823mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia inaequilatera*, *Hakea lorea* subsp. *lorea* tall open shrubland; over *Triodia epactia* very open hummock grassland; *Ptilotus astrolasius*, *Eragrostis desertorum* scattered low shrubs.  
**NVIS** M1+ ^*Acacia inaequilatera*,*Hakea lorea* subsp. *lorea*\*Acacia*\^shrub\4\r; G1 ^*Triodia epactia*\*Triodia*\^hummock grass\2\r; G2 ^*Ptilotus astrolasius*,*Eragrostis desertorum*\*Ptilotus*\^shrub\2\bc  
**Veg Condition** Very good.  
**Fire Age** Burnt 3-5 years ago.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia inaequilatera</i>	3	350		
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	60	CRM66-02	
<i>Arivela viscosa</i>	0.1	10		
<i>Boerhavia coccinea</i>	0.1	15		
<i>Bonamia erecta</i>	0.1	25		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Eragrostis desertorum</i>	0.5	55	CRM66-01	
<i>Eriachne aristidea</i>	0.1	20		
<i>Eriachne pulchella</i>	0.1	10		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euphorbia trigonosperma</i>	0.1	5	CRM65=	
<i>Goodenia microptera</i>	0.1	10		
<i>Goodenia prostrata</i>	0.1	5		
<i>Gossypium australe</i>	0.1	110		
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.5	230		
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	20	CRM07-11=	
<i>Paraneurachne muelleri</i>	0.1	60		
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	ALOP=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus appendiculatus</i>	0.1	15		
<i>Ptilotus astrolasius</i>	0.5	50		
<i>Ptilotus axillaris</i>	0.1	5	CRM64-05=	
<i>Ptilotus calostachyus</i>	0.1	80		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sida arsinata</i>	0.1	90	CRM64-02=	
<i>Solanum diversiflorum</i>	0.1	60		
<i>Tephrosia</i> ? sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	0.1	20	CRM66-03	IM
<i>Triodia epactia</i>	7	80		



**CZR Robe Valley Flora Site** CRM67  
**Described by** ALTH **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 411013 mE 7590140mN

**Habitat** low-lying area in an otherwise gently undulating stony plain.

**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.

**Rock Type** Ironstone.

**Vegetation** *Acacia bivenosa*, *A. inaequilatera*, *A. tumida* var. *pilbarensis*, *A. ancistrocarpa* tall open shrubland; *Senna artemisioides* subsp. *oligophylla*, *Tephrosia rosea* var. Fortescue creeks low open shrubland; *Triodia epactia* hummock grassland; *Indigofera bovipерda* subsp. *bovipерda* scattered low shrubs.

**NVIS** M1+ ^*Acacia bivenosa*,*Acacia inaequilatera*,*Acacia tumida* var. *pilbarensis*,*Acacia ancistrocarpa*\Acacia\^shrub\4\; M2 ^*Senna artemisioides* subsp. *oligophylla*,*Tephrosia rosea* var. Fortescue creek\Senna\^shrub\2\; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\c; G2 ^*Indigofera bovipерda* subsp. *bovipерda*\Indigofera\^shrub\2\bc

**Veg Condition** Excellent.

**Fire Age** No sign of recent fire.

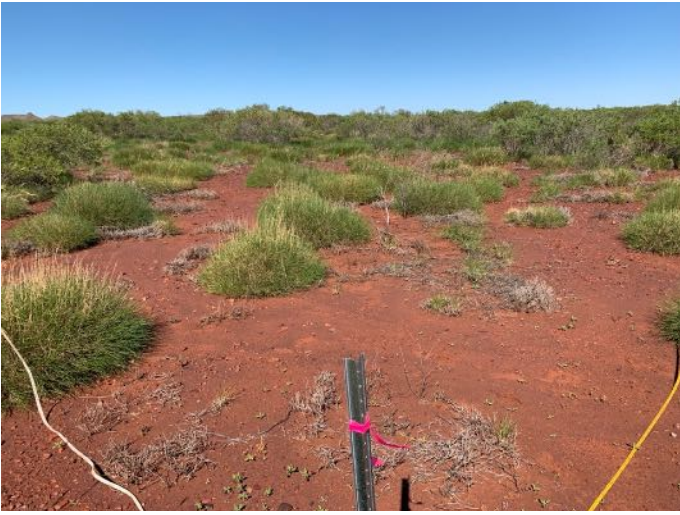
Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	70	CRM67-03	
<i>Acacia ancistrocarpa</i>	0.5	210		
<i>Acacia bivenosa</i>	1.5	210		
<i>Acacia inaequilatera</i>	1	300		
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1	270	CRM67-05	
<i>Alysicarpus muelleri</i>	0.1	20		
<i>Bonamia erecta</i>	0.1	90		
<i>Corchorus</i> ? <i>tectus</i>	0.1	90	CRM67-06	IM; sterile
<i>Corymbia hamersleyana</i>	0.1	80	CRM67-07	
<i>Cullen martinii</i>	0.1	120	CRM67-04	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	15		
<i>Eragrostis crateriformis</i>	0.1	25	CRM67-08	WAH ID
<i>Euphorbia boophthona</i>	0.1	10		
<i>Euphorbia trigonosperma</i>	0.1	50	CRM65-02=	
<i>Goodenia forrestii</i>	0.1	20		
<i>Goodenia microptera</i>	0.1	15		
<i>Gossypium australe</i>	0.1	210		
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	25	CRM65=	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	1	35	CRM07-11=	
<i>Indigofera monophylla</i>	0.1	90		
<i>Paraneurachne muelleri</i>	0.1	60		
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	ALOP=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus astrolasius</i>	0.1	60		
<i>Ptilotus axillaris</i>	0.1	5	CRM64-05=	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Rhynchosia minima</i>	0.1	70		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	1	120	CRM67-02	
<i>Sida arsinata</i>	0.1	50	CRM64-02=	
<i>Solanum diversiflorum</i>	0.1	60		
<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	1	120	CRM67-01	
<i>Tribulus macrocarpus</i>	0.1	2		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	10		
<i>Triodia epactia</i>	31	90		
<i>Triodia wiseana</i>	0.1	95		





**CZR Robe Valley Flora Site** CRM68  
**Described by** ALTH **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 409980 mE 7588341 mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia bivenosa*, *A. ancistrocarpa*, *A. inaequilatera* tall open shrubland;  
*Triodia wiseana*, *T. epactia* very open hummock grassland.  
**NVIS** M1+ ^*Acacia bivenosa*,*Acacia ancistrocarpa*,*Acacia inaequilatera*\*Acacia*\^shrub\4\r; G1  
^*Triodia wiseana*,*Triodia epactia*\*Triodia*\^hummock grass\2\r  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	5	CRM68-03	
<i>Acacia ancistrocarpa</i>	1.5	270		
<i>Acacia bivenosa</i>	6	240		
<i>Acacia inaequilatera</i>	1	250		
<i>Arivela viscosa</i>	0.1	2		
<i>Bonamia erecta</i>	0.1	50		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Cassutha capillaris</i>	0.1	50		
<i>Corchorus</i> ? <i>tectus</i>	0.1	15	CRM19-01=	IM; sterile
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Eragrostis desertorum</i>	0.1	30	CRM66-01=	
<i>Euphorbia boophthona</i>	0.1	5		
<i>Goodenia microptera</i>	0.1	10		
<i>Gossypium australe</i>	0.1	15		
<i>Haloragis</i> sp.	0.1	15	CRM68-02	IM; sterile
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	10	CRM65=	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	15	CRM07-11=	
<i>Ipomoea muelleri</i>	0.1	10	CRM68-01	
<i>Paraneurachne muelleri</i>	0.1	50		
<i>Paspalidium clementii</i>	0.1	5	CRM65-01=	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5		
<i>Ptilotus appendiculatus</i>	0.1	10		
<i>Ptilotus astrolasius</i>	0.1	25		
<i>Ptilotus axillaris</i>	0.1	10	CRM64-05=	
<i>Ptilotus calostachyus</i>	0.1	60		
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	130	CRM67-02=	
<i>Sida arsinata</i>	0.1	25	CRM64-02=	
<i>Sida echinocarpa</i>	0.1	40		
<i>Tribulus hirsutus</i>	0.1	5		
<i>Triodia epactia</i>	3	60		
<i>Triodia wiseana</i>	5	60		



**CZR Robe Valley Flora Site** CRM69  
**Described by** ALTH **Date** 29/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 382148 mE 7597363mN  
**Habitat** Gently undulating slope of low rocky ridge to the S; N aspect.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia xiphophylla* tall shrubland; *Triodia wiseana* very open hummock grassland; *Cynodon prostratus* very open tussock grassland.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\r; G2 ^*Cynodon prostratus*\Cynodon\^tussock grass\1\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia xiphophylla</i>	15	250		
<i>Aristida contorta</i>	0.1	20	CRM69-04	
<i>Cucumis variabilis</i>	0.1	3		
<i>Cynanchum viminale</i> subsp. <i>australe</i>	0.1	150		
<i>Cynodon prostratus</i>	2.5	3	CRM20-06=	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Eriachne pulchella</i>	0.1	10		
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	5	CRM69-02	IM; sterile
<i>Portulaca oleracea</i>	0.1	3		
<i>Ptilotus calostachyus</i>	0.1	10		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena costata</i>	0.1	20	CRM69-03	
<i>Sclerolaena densiflora</i>	0.1	3	CRM85-02=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	130	CRM69-01	
<i>Trianthema triquetrum</i>	0.1	3		
<i>Triodia wiseana</i>	2	80		



**CZR Robe Valley Flora Site** CRM70  
**Described by** ALTH **Date** 29/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 382020 mE 7597524mN

**Habitat** Minor flowline.

**Soil** Dark reddish brown (5YR 3/4) sandy clay.

**Rock Type** None present.

**Vegetation** *Corymbia hamersleyana* low open woodland; over *Acacia atkinsiana*, *A. tumida* var. *pilbarensis* (*A. bivenosa*, *A. ancistrocarpa*, *Eremophila longifolia*, *Grevillea wickhamii* subsp. *hispidula*) tall closed scrub; *Isotropis atropurpurea*, *Indigofera monophylla*, *Afrohybanthus aurantiacus* low open shrubland; *Triodia epactia* very open hummock grassland; over \**Cenchrus ciliaris*, \**C. echinatus*, *Paraneurachne muelleri* scattered tussock grasses.

**NVIS** U1+ ^*Corymbia hamersleyana*\^tree\6\r; M1 ^*Acacia atkinsiana*,*Acacia tumida* var. *pilbarensis*,*Acacia bivenosa*,*Acacia ancistrocarpa*,*Eremophila longifolia*,*Grevillea wickhamii* subsp. *hispidula*\^shrub\4\d; M2 ^*Isotropis atropurpurea*,*Indigofera monophylla*,*Afrohybanthus aurantiacus*\^shrub\2\r; G1 ^*Triodia epactia*,*Triodia*\^hummock grass\2\r; G2 ^\**Cenchrus ciliaris*,\**Cenchrus echinatus*,*Paraneurachne muelleri*\^\**Cenchrus*\^tussock grass\1\bc

**Veg Condition** Very good. \**Cenchrus* spp. present.

**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	50	CRM70-09	Sens. lat
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	CRM70-07		
<i>Acacia ancistrocarpa</i>	1	250		
<i>Acacia atkinsiana</i>	40	210		
<i>Acacia bivenosa</i>	1	210		
<i>Acacia sericophylla</i>	0.1	CRM70-23		
<i>Acacia trachycarpa</i>	0.1	210		
<i>Acacia tumida</i> var. <i>pilbarensis</i>	40	420	CRM70-22	
<i>Acacia wanyu</i>	0.1	160	CRM70-03	
<i>Afrohybanthus aurantiacus</i>	0.5	120		
<i>Alternanthera nana</i>	0.1	25		
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	80	CRM70-06	
<i>Bonamia erecta</i>	0.1	15		
* <i>Cenchrus ciliaris</i>	0.5	160		
* <i>Cenchrus echinatus</i>	0.5	90		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	20	CRM19=	
<i>Chrysopogon fallax</i>	0.1	90		
<i>Corchorus laniflorus</i>	0.1	110	CRM70-20	
<i>Corchorus tridens</i>	0.1	20	CRM70-16	
<i>Corymbia hamersleyana</i>	2.5	600		
<i>Cucumis melo</i>	0.1	100	CRM70-21	
<i>Cucumis variabilis</i>	0.1	180		
<i>Cymbopogon obtectus</i>	0.1	35	CRM70-13	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	0.1	50	CRM70-18	
<i>Digitaria brownii</i>	0.1	60	CRM70-10	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	7		
<i>Eragrostis cumingii</i>	0.1	20	CRM70-05	
<i>Eremophila longifolia</i>	1	220		
<i>Eriachne benthamii</i>	0.1	65	CRM70-04	
<i>Eulalia aurea</i>	0.1	90	CRM70-11	
<i>Euphorbia boophthona</i>	0.1	10		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		
<i>Goodenia microptera</i>	0.1	35		
<i>Goodenia stobbsiana</i>	0.1	55		
<i>Gossypium australe</i>	0.1	80		
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	1	450	CRM70-14	
<i>Heteropogon contortus</i>	0.1	170	CRM70-19	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	10	CRM16-09=	
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	30	CRM07-11=	

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Indigofera monophylla</i>	1	120		
<i>Iseilema membranaceum</i>	0.1	15	CRM70-01	
<i>Isotropis atropurpurea</i>	3	190		
<i>Nellica maderaspatensis</i>	0.1	15		
<i>Notoleptopus decaisnei</i>	0.1	20		
<i>Paraneurachne muelleri</i>	0.5	40		
<i>Perotis rara</i>	0.1	10		
<i>Pterocaulon sphacelatum</i>	0.1	8		
<i>Ptilotus astrolasius</i>	0.1	50		
<i>Ptilotus calostachyus</i>	0.1	120		
<i>Scaevola spinescens</i>	0.1	95	CRM70-17	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	210		
<i>Seringia nephrosperma</i>	0.1	60	CRM16-06=	
<i>Sida arsinjata</i>	0.1	60	CRM64-02=	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	190	CRM70-08	
<i>Solanum diversiflorum</i>	0.1	100		
<i>Tephrosia uniovulata</i>	0.1	110	CRM70-12	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	110		
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia epactia</i>	2	180		
<i>Triumfetta johnstonii</i>	0.1	40	CRM70-15	
<i>Waltheria indica</i>	0.1	80		



**CZR Robe Valley Flora Site** CRM71  
**Described by** ALTH **Date** 30/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 381252 mE 7599129 mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) silty clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia bivenosa*, *A. atkinsiana* tall open shrubland; *Triodia wiseana* very open hummock grassland.  
**NVIS** M1+ ^*Acacia bivenosa*,*Acacia atkinsiana*\Acacia\^shrub\4\r; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** Burnt 3-5 years ago.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	0.5	130		
<i>Acacia bivenosa</i>	2	120		
<i>Aristida contorta</i>	0.1	30	CRM72-06	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	45	CRM72-04	
<i>Bonamia</i> ? <i>alatisemina</i>	0.1	7	CRM71-04	IM; sterile
<i>Corchorus</i> ? <i>tectus</i>	0.1	25	CRM71-05	IM; sterile
<i>Dysphania kalpari</i>	0.1	5	CRM71-08	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	15	CRM71-07	
<i>Eriachne pulchella</i>	0.1	5		
<i>Euphorbia boophthona</i>	0.1	5		
<i>Goodenia microptera</i>	0.1	10	CRM71-02	
<i>Hibiscus brachychlaenus</i>	0.1	20	CRM71-01	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	10		
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus astrolasius</i>	0.1	20		
<i>Ptilotus calostachyus</i>	0.1	35		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Tribulus macrocarpus</i>	0.1	5		
<i>Triodia wiseana</i>	2.5	50		



**CZR Robe Valley Flora Site** CRM72  
**Described by** ALTH **Date** 30/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 381044 mE 7599505mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Corymbia zygophylla* scattered low trees; *Acacia atkinsiana*, *A. ancistrocarpa*, *A. inaequilatera* tall open shrubland; over *A. bivenosa* low open shrubland; *Triodia wiseana* hummock grassland.  
**NVIS** U1+ ^*Corymbia zygophylla*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia atkinsiana*,*Acacia ancistrocarpa*,*Acacia inaequilatera*\^*Acacia*\^shrub\4\r; M2 ^*Acacia bivenosa*\^*Acacia*\^shrub\2\r; G1 ^*Triodia wiseana*\^*Triodia*\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.  
**Notes** Borderline between scattered low trees and low open woodland.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	65	CRM72-12	
<i>Acacia ancistrocarpa</i>	1.5	250		
<i>Acacia atkinsiana</i>	7	250		
<i>Acacia bivenosa</i>	2.5	170		
<i>Acacia inaequilatera</i>	0.5	300		
<i>Bonamia alatisemina</i>	0.1	20	CRM72-11	
<i>Corchorus</i> ? <i>tectus</i>	0.1	25	CRM71=	IM; sterile
<i>Corymbia zygophylla</i>	1	500	CRM71-0x	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	15	CRM71-07=	
<i>Enneapogon caeruleus</i>	0.1	25	CRM72-02	
<i>Euphorbia boophthona</i>	0.1	10		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15	CRM72-13	
<i>Goodenia microptera</i>	0.1	15	CRM71-02=	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	300		
<i>Haloragis</i> sp.	0.1	5	CRM72-05	IM; sterile
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	50	CRM72-03	
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.1	25	CRM72-07	
<i>Ipomoea muelleri</i>	0.1	20	CRM72-04	
<i>Paraneurachne muelleri</i>	0.1	60		
<i>Paspalidium clementii</i>	0.1	15		
<i>Ptilotus astrolasius</i>	0.1	40		
<i>Ptilotus axillaris</i>	0.1	15		
<i>Ptilotus calostachyus</i>	0.1	120		
<i>Ptilotus exaltatus</i>	0.1	20		
<i>Ptilotus fusiformis</i>	0.1	25	CRM72-10	
<i>Senna notabilis</i>	0.1	40		
<i>Sida arsinata</i>	0.1	60		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	80		
<i>Solanum diversiflorum</i>	0.1	75		
<i>Streptoglossa bubakii</i>	0.1	75	CRM72-08	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	10		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	80		
<i>Triodia wiseana</i>	65	110	CRM72-06	Long lemma lobe form
<i>Triumfetta chaetocarpa</i>	0.1	45	CRM72-09	





**CZR Robe Valley Flora Site** CRM73  
**Described by** ALTH **Date** 30/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 380812 mE 7599975mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia ancistrocarpa*, *A. inaequilatera*, *A. atkinsiana*, *Hakea lorea* subsp. *lorea* tall open shrubland; *A. bivenosa* scattered shrubs; *Triodia wiseana* open hummock grassland.  
**NVIS** M1+ ^*Acacia ancistrocarpa*,*Acacia inaequilatera*,*Acacia atkinsiana*,*Hakea lorea* subsp. *lorea*\*Acacia*\^shrub\3\; M2 ^*Acacia bivenosa*\*Acacia*\^shrub\3\bc; G1 ^*Triodia wiseana*\*Triodia*\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	2	260		
<i>Acacia atkinsiana</i>	1	230		
<i>Acacia bivenosa</i>	1	170		
<i>Acacia inaequilatera</i>	0.5	320		
* <i>Cenchrus echinatus</i>	0.1	25		N=1
<i>Corchorus</i> ? <i>tectus</i>	0.1	30	CRM71=	IM; sterile
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM71-07=	
<i>Eriachne pulchella</i>	0.1	5		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	15	CRM73-01	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.5	210		
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	20	CRM72-07=	
<i>Paraneurachne muelleri</i>	0.1	40		
<i>Ptilotus astrolasius</i>	0.1	40		
<i>Ptilotus calostachyus</i>	0.1	5		
<i>Ptilotus exaltatus</i>	0.1	3		
<i>Ptilotus fusiformis</i>	0.1	35		
<i>Senna notabilis</i>	0.1	25		
<i>Solanum diversiflorum</i>	0.1	40		
<i>Streptoglossa bubakii</i>	0.1	2	CRM72-08=	
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia wiseana</i>	11	125		



**CZR Robe Valley Flora Site** CRM74  
**Described by** ALTH **Date** 30/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 380441 mE 7600230mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia ancistrocarpa*,  
*A. atkinsiana*, *A. bivenosa*, *A. adsurgens* tall shrubland; *Triodia*  
*wiseana* open hummock grassland.  
**NVIS** U1+ ^*Corymbia hamersleyana*\^*Corymbia*\^tree\6\bc\; M1 ^*Acacia ancistrocarpa*,*Acacia*  
*atkinsiana*,*Acacia bivenosa*,*Acacia adsurgens*\^*Acacia*\^shrub\4\i; G1 ^*Triodia*  
*wiseana*\^*Triodia*\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia adsurgens</i>	0.5	210	CRM74-03	
<i>Acacia ancistrocarpa</i>	6	350		
<i>Acacia atkinsiana</i>	2	230		
<i>Acacia bivenosa</i>	2	230		
<i>Corchorus</i> ? <i>tectus</i>	0.1	30	CRM71=	IM; sterile
<i>Corymbia hamersleyana</i>	1.5	550		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	5		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	20		
<i>Haloragis</i> sp.	0.1	5	CRM72=	IM; sterile
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	15	CRM72-07=	
<i>Paraneurachne muelleri</i>	0.1	50		
<i>Ptilotus appendiculatus</i>	0.1	7	CRM74-02	
<i>Ptilotus calostachyus</i>	0.1	5		
<i>Ptilotus fusiformis</i>	0.1	30	CRM72=	
<i>Senna notabilis</i>	0.1	1		
<i>Streptoglossa</i> sp.	0.1	5	CRM74-01	IM; juvenile
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	10		
<i>Triodia wiseana</i>	28	110	CRM74-04	Long lemma lobe form



**CZR Robe Valley Flora Site** CRM75R  
**Described by** JT **Date** 30/06/22 **Type** Relevé  
**MGA Zone** 50 382331 mE 7597307 mN  
**Habitat** stony plain sloping NW  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees; over *Acacia bivenosa* (*A. arida*) scattered shrubs; over *Triodia wiseana* very open hummock grassland.  
**NVIS** U1+ ^*Eucalyptus leucophloia* subsp. *leucophloia*\^*Eucalyptus*\^tree\6\bc; M1 ^*Acacia bivenosa*,*Acacia arida*\^*Acacia*\^shrub\3\i; G1 ^*Triodia wiseana*\^*Triodia*\^hummock grass\2\r  
**Veg Condition** Excellent  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)
<i>Acacia arida</i>	1	110
<i>Acacia bivenosa</i>	1	120
<i>Bulbostylis barbata</i>	0.1	10
<i>Bulbostylis turbinata</i>	0.1	15
<i>Dysphania</i> sp.	0.1	5
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	0.1	70
<i>Eriachne mucronata</i> (typical form)	0.1	25
<i>Eriachne pulchella</i>	0.1	10
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1	750
<i>Indigofera monophylla</i>	0.1	60
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	130
<i>Triodia wiseana</i>	6	90

**No photo.**

**CZR Robe Valley Flora Site** CRM81  
**Described by** ABSRH **Date** 26/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 384237 mE 7595096mN  
**Habitat** Flat stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia atkinsiana*, *A. ancistrocarpa* tall shrubland; *A. bivenosa* (*Senna glutinosa* subsp. *pruinosa*) open shrubland; *Triodia wiseana* (*T. epactia*) very open hummock grassland.  
**NVIS** M1+ ^*Acacia atkinsiana*,*Acacia ancistrocarpa*\Acacia\^shrub\4\i; M2 ^*Acacia bivenosa*,*Senna glutinosa* subsp. *pruinosa*\Acacia\^shrub\3\r; G1 ^*Triodia wiseana*,*Triodia epactia*\Triodia\2\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	2	210		
<i>Acacia atkinsiana</i>	11	200		
<i>Acacia bivenosa</i>	2	170		
<i>Acacia wanyu</i>	0.1	50	CRM81-02	
<i>Bonamia erecta</i>	0.1	45	CRM28-01=	IM; seedling
<i>Corchorus</i> sp.	0.1	2		
<i>Dysphania kalpari</i>	0.1	5	CRM81-01	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03	
<i>Eriachne pulchella</i>	0.1	8	CRM34R-01=	
<i>Goodenia tenuiloba</i>	0.1	5	CRM33-08=	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	20	CRM81-05	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	20	CRM81-04	
<i>Paraneurachne muelleri</i>	0.1	55		
<i>Ptilotus astrolasius</i>	0.1	25	CRM30-03=	
<i>Ptilotus calostachyus</i>	0.1	70	CRM34R-06=	
<i>Ptilotus exaltatus</i>	0.1	25		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	90	CRM39-04=	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.5	170	CRM39-01=	
<i>Senna notabilis</i>	0.1	2		
<i>Sida echinocarpa</i>	0.1	90		
<i>Tephrosia uniovulata</i>	0.1	35	CRM38-13=	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Trigastrotheca molluginea</i>	0.1	8		
<i>Triodia epactia</i>	2	80		
<i>Triodia wiseana</i>	5	70		



**CZR Robe Valley Flora Site** CRM82R  
**Described by** ABSRH **Date** 26/06/22 **Type** Relevé 25 x 100 m  
**MGA Zone** 50 384467 mE 7594720mN

**Habitat** Minor drainage.

**Soil** Dark reddish brown (2.5YR 2.5/3) sandy clay loam.

**Rock Type** Ironstone, quartz.

**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia atkinsiana*, *A. tumida* var. *pilbarensis*, *Grevillea wickhamii* subsp. *macrodongta*, *Sida* sp. spiciform panicles (E. Leyland s.n. 14/8/1990) tall open scrub; over *Triodia epactia* open hummock grassland; over *Isotropis atropurpurea*, *Afrohybanthus aurantiacus*, *Chrysopogon fallax*, *Rhynchosia minima* low open shrubland; over *Alternanthera nana*, *Indigofera boviparda* subsp. *boviparda* scattered herbs.

**NVIS** U1+ ^*Corymbia hamersleyana*\^tree\6\bc; M1 ^*Acacia atkinsiana*,*Acacia tumida* var. *pilbarensis*,*Grevillea wickhamii* subsp. *macrodongta*,*Sida* sp. spiciform panicles (E. Leyland s.n. 14/8/1990)\^shrub\4\c; G1 ^*Triodia epactia*\^hummock grass\2\i; G2 ^*Isotropis atropurpurea*,*Afrohybanthus aurantiacus*,*Chrysopogon fallax*,*Rhynchosia minima*\^shrub\2\i; G3 ^*Alternanthera nana*,*Indigofera boviparda* subsp. *boviparda*\^forb\1\bc

**Veg Condition** Very good. \**Cenchrus ciliaris* present.

**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	35	CRM82R-23	
<i>Acacia ancistrocarpa</i>	0.1	220		
<i>Acacia atkinsiana</i>	16	210		
<i>Acacia tumida</i> var. <i>pilbarensis</i>	2	220	CRM82R-01	
<i>Afrohybanthus aurantiacus</i>	2	40		
<i>Alternanthera nana</i>	0.5	15	CRM38-19=	
<i>Amaranthus cuspidifolius</i>	0.1	15	CRM21-18=	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30	CRM82R-13	
<i>Aristida pruinosa</i>	0.1	110	CRM82R-12	
<i>Bonamia erecta</i>	0.1	40	CRM28-01=	
<i>Bonamia pannosa</i>	0.1	20	CRM82R-22	
* <i>Cenchrus ciliaris</i>	0.1	50		
<i>Chrysopogon fallax</i>	1	80		
<i>Corchorus</i> sp. (tectus/sidoides; indet)	0.1	50	MBS24=	IM
<i>Corymbia hamersleyana</i>	2	510		
<i>Cucumis variabilis</i>	0.1	5		
<i>Dendrophyllanthus erwinii</i>	0.1	10	CRM82R-07	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1		CRM81-03=	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	90	CRM82R-21	
<i>Eriachne mucronata</i> (typical form)	0.1	30	CRM82R-03	
<i>Euphorbia boophthona</i>	0.1	15		
<i>Euphorbia</i> sp.	0.1	5		IM; sterile
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	0.1	30		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	30		
<i>Goodenia forrestii</i>	0.1	30	CRM82R-20	
<i>Goodenia stobbsiana</i>	0.1	20	CRM82R-17	
<i>Goodenia tenuiloba</i>	0.1	15	CRM33-08=	
<i>Grevillea wickhamii</i> subsp. <i>macrodongta</i>	1	310	CRM82R-09	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	40	CRM82R-14	
<i>Indigofera boviparda</i> subsp. <i>boviparda</i>	0.5	20	CRM81-05=	
<i>Ipomoea muelleri</i>	0.1	10	CRM82R-16	
<i>Isotropis atropurpurea</i>	2	60	CRM82R-02	
<i>Paraneurachne muelleri</i>	0.1	40		
<i>Paspalidium clementii</i>	0.1	20	CRM82R-11	
<i>Pterocaulon sphacelatum</i>	0.1	5	CRM30-11=	
<i>Ptilotus astrolasius</i>	0.1	40	CRM30-03=	
<i>Ptilotus calostachyus</i>	0.1	50	CRM34R-06=	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Rhynchosia minima</i>	1	40		

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Senna notabilis</i>	0.1	10		
<i>Seringia</i> ? <i>nephrosperma</i>	0.1	50	CRM82R-04	IM
<i>Sida arsinata</i>	0.1	45	CRM82R-08	
<i>Sida echinocarpa</i>	0.1	90		
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1		CRM82R-06	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	15	CRM82R-05	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	1	210	CRM38-04=	
<i>Solanum cleistogamum</i>	0.1	25	CRM82R-15	
<i>Solanum diversiflorum</i>	0.1	40		
<i>Streptoglossa</i> sp.	0.1	5	CRM82R-10	IM; seedling
<i>Tephrosia uniovulata</i>	0.1	45	CRM38-13=	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	12	CRM18=	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	10		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	24	110		
<i>Triumfetta</i> ? <i>chaetocarpa</i>	0.1	50	CRM82R-18	



**CZR Robe Valley Flora Site** CRM83R  
**Described by** ABSRH **Date** 26/06/22 **Type** Relevé 25 x 100 m  
**MGA Zone** 50 384578 mE 7594561 mN  
**Habitat** low rocky rise.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Senna glutinosa* subsp. *glutinosa*, *Senna glutinosa* subsp. *pruinosa* open shrubland; *Triodia wiseana* open hummock grassland.  
**NVIS** M1+ ^*Senna glutinosa* subsp. *glutinosa*, *Senna glutinosa* subsp. *pruinosa* \ *Senna* \ ^shrub \ 3 \ r; G1 ^*Triodia wiseana* \ *Triodia* \ ^hummock grass \ 2 \ i  
**Veg Condition** Excellent to Very Good.  
**Fire Age** Very long unburnt.  
**Notes** *Acacia bivenosa* on toeslope only.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	30	CRM83R-01	Sens. lat
<i>Acacia ancistrocarpa</i>	0.1	140		
<i>Acacia atkinsiana</i>	0.1	160		
<i>Acacia bivenosa</i>	0.1	100		
<i>Acacia synchronicia</i>	0.1	110		
<i>Acacia tumida</i> var. <i>pilbarensis</i>	0.1	160	CRM82R-01=	
<i>Acacia wanyu</i>	0.1	100	CRM81-02=	
<i>Bonamia erecta</i>	0.1	30	CRM28-01=	
<i>Bonamia pannosa</i>	0.1	15	CRM83R-04	
<i>Cassutha capillaris</i>	0.1	30	CRM83R-07	
* <i>Cenchrus ciliaris</i>	0.1	40		
<i>Corchorus</i> sp. ( <i>tectus/sidoides</i> ; indet)	0.1	20	CRM82R=	
<i>Cymbopogon ambiguus</i>	0.1	80	CRM83R-09	
<i>Cynodon prostratus</i>	0.1	5	CRM35R-05=	
<i>Dodonaea coriacea</i>	0.1	60	CRM83R-08	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	80		
<i>Eriachne helmsii</i>	0.1	40	CRM83R-11	
<i>Eriachne mucronata</i> (typical form)	0.1	CRM83R-02		
<i>Eriachne pulchella</i>	0.1	5	CRM34R-01=	
<i>Euploca heterantha</i>	0.1	2	CRM83R-10	
<i>Goodenia stobbsiana</i>	0.1	20	CRM82R-17=	
<i>Hibiscus coatesii</i>	0.1	75	CRM83R-03	
<i>Ptilotus calostachyus</i>	0.1	30	CRM34R-06=	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	1	170		
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	1	140	CRM81=	
<i>Seringia</i> ? <i>nephrosperma</i>	0.1	110	CRM82R-04=	IM
<i>Sida echinocarpa</i>	0.1	35		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	45	CRM83R-06	
<i>Themeda triandra</i>	0.1	70	CRM83R-05	
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	0.5	70		
<i>Triodia wiseana</i>	26	60		





**CZR Robe Valley Flora Site** CRM84  
**Described by** ABSRH **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 389824 mE 7588822mN  
**Habitat** Flat sandy floodplain.  
**Soil** Reddish brown (10R 3/4) sandy clay loam.  
**Rock Type** Quadratuartz.  
**Vegetation** *Corymbia deserticola* subsp. *deserticola* scattered low trees; *Acacia atkinsiana* scattered shrubs; *Triodia epactia* very open hummock grassland; *A. bivenosa*, *Ptilotus astrolasius* scattered low shrubs.  
**NVIS** U1+ ^*Corymbia deserticola* subsp. *deserticola*\^tree\6\bc; M1 ^*Acacia atkinsiana*\^shrub\3\bc; G1 ^*Triodia epactia*\^hummock grass\2\bc; G2 ^*Acacia bivenosa*,*Ptilotus astrolasius*\^shrub\2\bc  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp.	0.1	2		IM; sterile
<i>Acacia ancistrocarpa</i>	0.1	80		
<i>Acacia atkinsiana</i>	0.5	150		
<i>Acacia bivenosa</i>	1	70		
<i>Bonamia erecta</i>	0.1	20	CRM84-04	
<i>Bonamia erecta</i>	0.1	20	CRM84-02	
<i>Bulbostylis barbata</i>	0.1	5		
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	0.5	550		
<i>Cynodon prostratus</i>	0.1	5	CRM35R-05	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Eriachne pulchella</i>	0.1	10	CRM34R-01	
<i>Euphorbia boophthona</i>	0.1	5	CRM22-07=	
<i>Goodenia tenuiloba</i>	0.1	10	CRM33-08=	
<i>Indigofera monophylla</i>	0.1	20	CRM84-05	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM84-03	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus astrolasius</i>	0.5	40	CRM30-03=	
<i>Ptilotus exaltatus</i>	0.1	3		
<i>Senna notabilis</i>	0.1	5		
<i>Solanum diversiflorum</i>	0.1	30		Dead
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5	CRM18=	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	10		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	4	80		
<i>Triodia wiseana</i>	7	100	CRM84-01	



**CZR Robe Valley Flora Site** CRM85  
**Described by** ABSRH **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 391468 mE 7588347 mN  
**Habitat** Flat stony plain, gentle slope to SW.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay.  
**Rock Type** Quadratuartz; high quartz rock content.  
**Vegetation** *Triodia longiceps* open hummock grassland; over *Sclerolaena densiflora*,  
*Maireana melanocoma* very open herbland.  
**NVIS** G1+ ^*Triodia longiceps*\*Triodia*\^hummock grass\2\i; G2 ^*Sclerolaena densiflora*,*Maireana melanocoma*\*Sclerolaena*\^forb\1\  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.  
**Notes** Very scattered mixed *Acacia* spp. (*bivenosa*, *synchronica*, *atkinsiana*) across the plains.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia synchronica</i>	0.1	90		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	20	CRM85-04	
<i>Cynodon prostratus</i>	0.1	5	CRM84-0? =	
<i>Dendrophyllanthus erwinii</i>	0.1	5	CRM82R =	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03 =	
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	5	CRM85-01	IM; sterile
<i>Maireana melanocoma</i>	0.25	30		
<i>Portulaca oleracea</i> / <i>intraterranea</i>	0.1	2	MBS30-01	
<i>Ptilotus exaltatus</i>	0.1	4		
<i>Sclerolaena densiflora</i>	2	20	CRM85-02	
<i>Solanum cleistogamum</i>	0.1	40	CRM85-06	
<i>Stemodia grossa</i>	0.1	20	CRM85-05	
<i>Streptoglossa</i> sp.	0.1	2	CRM85-07	IM; juvenile
<i>Tribulus astrocarpus</i>	0.1	2		
<i>Triodia longiceps</i>	14	80	CRM85-03	



**CZR Robe Valley Flora Site** CRM86  
**Described by** ABSRH **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 392511 mE 7587925mN

**Habitat** Flat clay plain.

**Soil** Dark red (10YR 3/6) sandy clay to medium clay.

**Rock Type** None present.

**Vegetation** *Corymbia candida* subsp. *candida* scattered low trees; over *Acacia bivenosa*, *A. atkinsiana* tall shrubland; over *A. ancistrocarpa*, *Senna artemisioides* subsp. *oligophylla* (thinly sericeous form MET 15,035) open shrubland; *Triodia epactia* hummock grassland; over *A. wanyu* low open shrubland.

**NVIS** U1+ ^*Corymbia candida* subsp. *candida*\^tree\6\bc; M1 ^*Acacia bivenosa*,*Acacia atkinsiana*\^shrub\4\i; M2 ^*Acacia ancistrocarpa*,*Senna artemisioides* subsp. *oligophylla* (thinly sericeous form MET 15,035)\^shrub\3\r; G1 ^*Triodia epactia*\^hummock grass\2\c; G2 ^*Acacia wanyu*\^shrub\2\r

**Veg Condition** Very good.

**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	80	CRM86-04	Sens. lat
<i>Abutilon otocarpum</i>	0.1	40	CRM86-09	
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	40	CRM86-10	
<i>Acacia ancistrocarpa</i>	6	180		
<i>Acacia atkinsiana</i>	6	210		
<i>Acacia bivenosa</i>	8	200		
<i>Acacia wanyu</i>	2	90	CRM81-02=	
<i>Alternanthera nana</i>	0.1	15	CRM38-19=	
<i>Arivela viscosa</i>	0.1	80		
<i>Chrysopogon fallax</i>	0.1	70		
<i>Corchorus</i> sp.	0.1	30	CRM86-08	IM
<i>Corymbia candida</i> subsp. <i>candida</i>	1	500		
<i>Cullen</i> sp.	0.1	10	CRM86-03	IM; juvenile
<i>Dendrophyllanthus erwinii</i>	0.1	20	CRM82R-07=	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Euphorbia</i> sp.	0.1	15	CRM86-07	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		
<i>Goodenia tenuiloba</i>	0.1	10	CRM33-08=	
<i>Gossypium australe</i>	0.1	70		
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	40	CRM86-02	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	5	CRM81-05=	
<i>Ipomoea muelleri</i>	0.1	10	CRM82R-16=	
* <i>Malvastrum americanum</i>	0.1	50		
<i>Portulaca oleracea</i>	0.1	5		
<i>Pterocaulon sphacelatum</i>	0.1	2		
<i>Ptilotus appendiculatus</i>	0.1	20	CRM86-06	
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Rhynchosia minima</i>	0.1	70		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.5	130	CRM86-01	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	20	CRM86-05	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	50		
<i>Triodia epactia</i>	55	80	CRM=	



**CZR Robe Valley Flora Site** CRM87  
**Described by** ABSRH **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 397441 mE 7586539 mN  
**Habitat** Flat stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia synchronica* scattered tall shrubs; over *A. xiphophylla* tall shrubland; over *Triodia epactia* open hummock grassland.  
**NVIS** M1+ ^*Acacia synchronica*\Acacia\^shrub\4\bc; M2 ^*Acacia xiphophylla*\Acacia\^shrub\4\i; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\i  
**Veg Condition** Very good. Weeds present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	50	CRM86-04=	Sens. lat
<i>Acacia synchronica</i>	0.5	470		
<i>Acacia xiphophylla</i>	13	290		
<i>Alternanthera nana</i>	0.1	8	CRM38-19=	
<i>Amaranthus cuspidifolius</i>	0.1	5	CRM21-18=	
<i>Boerhavia coccinea</i>	0.1	5		
<i>Bulbostylis barbata</i>	0.1	10		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	5	CRM87-11	IM; juvenile
* <i>Cenchrus setiger</i>	0.1	60		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	25	CRM87-05	
<i>Cucumis variabilis</i>	0.1	100		
<i>Cynodon prostratus</i>	0.1	5	CRM35R-05=	
<i>Cyperus squarrosus</i>	0.1	10	CRM87-02	
<i>Dactyloctenium radulans</i>	0.1	20		
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	110	CRM87-04	
<i>Enteropogon ramosus</i>	0.1	60	CRM87-13	
<i>Eragrostis cumingii</i>	0.1	20	CRM87-10	
<i>Eragrostis dielsii</i>	0.1		CRM87-06	N= 1
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	25		
<i>Goodenia tenuiloba</i>	0.1	30	CRM33-08=	
<i>Gossypium robinsonii</i>	0.1	150		
<i>Maireana planifolia</i>	0.1	80	CRM87-07	
<i>Paspalidium clementii</i>	0.1	30	CRM87-01	
<i>Pluchea rubelliflora</i>	0.1	20	CRM87-09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM21-12=	
<i>Portulaca oleracea</i>	0.1	5		
<i>Portulaca oleracea</i> /intra <sup>ter</sup> anea	0.1	5	MBS30-01	
<i>Pterocaulon sphacelatum</i>	0.1	5		
<i>Ptilotus astrolasius</i>	0.1	40	CRM30-03=	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Rhagodia eremaea</i>	0.1	60	CRM87-14	
<i>Sclerolaena costata</i>	0.1	5	CRM88-01=	
* <i>Setaria verticillata</i>	0.1	45	CRM27-10=	
<i>Sida arsinata</i>	0.1	60	CRM87-12	
<i>Solanum cleistogamum</i>	0.1	40	CRM85-06=	
<i>Sporobolus australasicus</i>	0.1	10		
<i>Trianthema triquetrum</i>	0.1	3	CRM87-03	
<i>Triodia epactia</i>	14	80		



**CZR Robe Valley Flora Site** CRM88  
**Described by** ABSRH **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 399342 mE 7586912mN  
**Habitat** Stony plain; very gentle (1%) slope to W.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia xiphophylla* tall shrubland; over *A. synchronica* scattered shrubs; over *Triodia epactia* very open hummock grassland; over *Sclerolaena costata* scattered herbs.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\i; M2 ^*Acacia synchronica*\Acacia\^shrub\3\bc; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\r; G2 ^*Sclerolaena costata*\Sclerolaena\^forb\1\bc  
**Veg Condition** Very good. \**Malvastrum americanum* present.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia synchronica</i>	0.5	190		
<i>Acacia xiphophylla</i>	11	290		
<i>Corchorus</i> sp.	0.1	25	CRM88-02	IM
<i>Cynodon prostratus</i>	0.1	5	CRM35R-05=	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	110	CRM87-04	
<i>Eriachne pulchella</i>	0.1	10	CRM34R-01=	
<i>Goodenia tenuiloba</i>	0.1	30	CRM33-08=	
<i>Gossypium robinsonii</i>	0.1	15		
<i>Gossypium</i> sp.	0.1	5		IM; seedling
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	20	CRM86-02=	
<i>Maireana melanocoma</i>	0.1	40		
<i>Maireana planifolia</i>	0.1	80	CRM87-07	
* <i>Malvastrum americanum</i>	0.1	50		
<i>Paspalidium clementii</i>	0.1	30	CRM87-01	
<i>Portulaca oleracea</i>	0.1	5		
<i>Pterocaulon sphacelatum</i>	0.1	5		
<i>Ptilotus astrolasius</i>	0.1	40	CRM30-03=	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Sclerolaena costata</i>	0.5	20	CRM88-01	
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>	0.1	190	CRM88-04	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	15	CRM88-03	
<i>Solanum cleistogamum</i>	0.1	40	CRM85-06=	
<i>Sporobolus australasicus</i>	0.1	10		
<i>Trianthema triquetrum</i>	0.1	3	CRM87-03	
<i>Tribulus astrocarpus</i>	0.1	2		
<i>Triodia epactia</i>	5	80		
<i>Triodia wiseana</i>	0.1	20		



**CZR Robe Valley Flora Site** CRM89  
**Described by** ABSRH **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 401685 mE 7587306mN  
**Habitat** Flat stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia xiphophylla* tall shrubland; over *A. synchronica* open shrubland;  
over *Triodia epactia* open hummock grassland.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\i; M2 ^*Acacia synchronica*\Acacia\^shrub\3\r;  
G1 ^*Triodia epactia*\Triodia\^hummock grass\2\i  
**Veg Condition** Excellent to Very Good.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	80		
<i>Acacia atkinsiana</i>	0.1	50		
<i>Acacia synchronica</i>	4	160		
<i>Acacia xiphophylla</i>	11	310		
<i>Amaranthus cuspidifolius</i>	0.1	5	CRM21-18=	
<i>Boerhavia coccinea</i>	0.1	5		
<i>Bulbostylis barbata</i>	0.1	10		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	5	CRM87-11	Juvenile
<i>Calocephalus pilbarensis</i>	0.1	3	CRM89-01	
<i>Cucumis variabilis</i>	0.1	110		
<i>Cynodon prostratus</i>	0.1	5	CRM35R-05=	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Eragrostis cumingii</i>	0.1	20	CRM87-10	
<i>Eragrostis dielsii</i>	0.1	5	CRM87-06	
<i>Euphorbia boophthona</i>	0.1	10		
<i>Goodenia forrestii</i>	0.1	10	CRM89-02	
<i>Goodenia tenuiloba</i>	0.1	30	CRM33-08=	
<i>Gossypium robinsonii</i>	0.1	2		
<i>Paspalidium clementii</i>	0.1	30	CRM87-01	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	5	CRM21-12=	
<i>Portulaca oleracea</i>	0.1	5		
<i>Portulaca oleracea/intraterranea</i>	0.1	5	MBS30-01	
<i>Pterocaulon sphacelatum</i>	0.1	5		
<i>Ptilotus astrolasius</i>	0.1	40	CRM30-03=	
<i>Ptilotus calostachyus</i>	0.1	50		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Salsola australis</i>	0.1	10		
<i>Sclerolaena costata</i>	0.1	5	CRM88-01=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	110	CRM89-02	
<i>Sida arsinata</i>	0.1	60	CRM87-12=	
<i>Sporobolus australasicus</i>	0.1	10		
<i>Trianthema triquetrum</i>	0.1	3	CRM87-03	
<i>Tribulus astrocarpus</i>	0.1	2		
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	5		
<i>Triodia epactia</i>	12	80		





**CZR Robe Valley Flora Site** CRM90R  
**Described by** ABSRH **Date** 28/06/22 **Type** Relevé 50 x 50 m  
**MGA Zone** 50 402401 mE 7587201 mN

**Habitat** Top of rocky ridge.

**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.

**Rock Type** Ironstone, quartz.

**Vegetation** *Corymbia hamersleyana* scattered low trees; over *Acacia inaequilatera* scattered tall shrubs; over *Tephrosia* sp. B Kimberley Flora (C.A. Gardner 7300), *Indigofera rugosa* low shrubland; over *Triodia wiseana* open hummock grassland; *Boerhavia coccinea* very open herbland.

**NVIS** U1+ ^*Corymbia hamersleyana*\^*Corymbia*\^tree\6\bc; M1 ^*Acacia inaequilatera*\^*Acacia*\^shrub\4\bc; M2 ^*Tephrosia* sp. B Kimberley Flora (C.A. Gardner 7300)\^*Indigofera rugosa*\^*Tephrosia*\^shrub\2\i; G1 ^*Triodia wiseana*\^*Triodia*\^hummock grass\2\i; G2 ^*Boerhavia coccinea*\^*Boerhavia*\^forb\1\r

**Veg Condition** Excellent.

**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	110		
<i>Acacia atkinsiana</i>	0.1	60		
<i>Acacia inaequilatera</i>	0.5	270		
<i>Acacia synchronicia</i>	0.1	60		
<i>Amaranthus undulatus</i>	0.1	70	CRM90R-12	
<i>Arivela viscosa</i>	0.1	40		
<i>Boerhavia coccinea</i>	3	10		
<i>Bonamia pilbarensis</i>	0.1	3	CRM90R-08	
<i>Bulbostylis barbata</i>	0.1	10		
<i>Corchorus ? tectus</i>	0.1	70	CRM90R-05	IM; sterile
<i>Corchorus laniflorus</i>	0.1	70	CRM90R-11	
<i>Corymbia hamersleyana</i>	0.5	490		
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	0.1	CRM21-02		
<i>Enneapogon caerulescens</i>	0.1	15	Rhop15=	
<i>Eriachne pulchella</i>	0.1	15	CRM88=	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	CRM90R-06	Euphorbia aus;	
<i>Gomphrena cunninghamii</i>	0.1	15	CRM90R-01	
<i>Gossypium australe</i>	0.1	60		
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	0.1	260	CRM90R-07	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	40	CRM86=	
<i>Indigofera colutea</i>	0.1	25	CRM90R-09	
<i>Indigofera rugosa</i>	2	50	Absop35	
<i>Notoleptopus decaisnei</i>	0.1	20	CRM90R-10	
<i>Paspalidium clementii</i>	0.1	20	CRM87-01=	
<i>Polycarpaea longiflora</i>	0.1	15	Rhop13=	
<i>Ptilotus auriculifolius</i>	0.1	30	CRM90R-02	
<i>Ptilotus calostachyus</i>	0.1	75		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	90		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	70	CRM89-02=	
<i>Senna venusta</i>	0.1	110		
<i>Sida arsinata</i>	0.1	50	CRM87-12==	
<i>Sida echinocarpa</i>	0.1	90		
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	25	CRM90R-04	
<i>Sporobolus australasicus</i>	0.1	20		
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)	9	70	Rhop14	
<i>Tribulus hirsutus</i>	0.1	2		
<i>Tribulus suberosus</i>	0.1	45		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	0.1	80		
<i>Triodia wiseana</i>	26	60		
<i>Triumfetta clementii</i>	0.1	40		

**No Photo.**

**CZR Robe Valley Flora Site** CRM91  
**Described by** ABSRH **Date** 29/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 383538 mE 7596045mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia xiphophylla* tall open shrubland; *Triodia wiseana* (*T. epactia*) very open hummock grassland; over *Cynodon prostratus*, *Sclerolaena densiflora* open tussock grassland.  
**NVIS** M1+ ^*Acacia xiphophylla*\^*Acacia*\^shrub\4\r; G1 ^*Triodia wiseana*,*Triodia epactia*\^*Triodia*\^hummock grass\2\r; G2 ^*Cynodon prostratus*,*Sclerolaena densiflora*\^*Cynodon*\^tussock grass\1\i  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen
<i>Acacia synchronicia</i>	0.1	80	
<i>Acacia xiphophylla</i>	8	220	
<i>Cucumis variabilis</i>	0.1	5	
<i>Cynodon prostratus</i>	16	5	CRM35R-05=
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	8	CRM81-03=
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	0.1	110	CRM87-04=
<i>Eriachne pulchella</i>	0.1	10	CRM34R-01=
<i>Maireana planifolia</i>	0.1	50	CRM87-07=
<i>Paspalidium clementii</i>	0.1	15	CRM87-01=
<i>Portulaca oleracea</i>	0.1	2	
<i>Ptilotus exaltatus</i>	0.1	2	
<i>Salsola australis</i>	0.1	5	
<i>Sclerolaena costata</i>	0.1	10	CRM88-01=
<i>Sclerolaena densiflora</i>	0.5	25	CRM91-01
<i>Sclerolaena densiflora</i>	2	8	CRM91-03
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	130	CRM91-02
<i>Senna notabilis</i>	0.1	2	
<i>Sporobolus australasicus</i>	0.1	10	
<i>Trianthema triquetrum</i>	0.1	2	CRM87-03=
<i>Tribulus astrocarpus</i>	0.1	2	
<i>Triodia epactia</i>	0.5	60	
<i>Triodia wiseana</i>	3	80	



**CZR Robe Valley Flora Site** CRM92  
**Described by** ABSRH **Date** 29/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 383359 mE 7596202mN  
**Habitat** Flat plain.  
**Soil** Dark reddish brown (2.5YR 2.5/3) sandy clay loam to sandy clay.  
**Rock Type** Ironstone.  
**Vegetation** *Corymbia deserticola* subsp. *deserticola* scattered low trees; over *Acacia atkinsiana*, *A. ancistrocarpa*, *A. bivenosa* open shrubland; over *Triodia epactia* open hummock grassland.  
**NVIS** U1+ ^*Corymbia deserticola* subsp. *deserticola*\*Corymbia*\^tree\6\bc; M1 ^*Acacia atkinsiana*,*Acacia ancistrocarpa*,*Acacia bivenosa*\*Acacia*\^shrub\3\; G1 ^*Triodia epactia*\*Triodia*\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	2	170		
<i>Acacia atkinsiana</i>	0.5	220		
<i>Acacia bivenosa</i>	2	120		
<i>Acacia trachycarpa</i>	0.1	140	CRM92-06	
<i>Bonamia</i> sp.	0.1	1		IM; seedling
<i>Chrysopogon fallax</i>	0.1	90		
<i>Corchorus</i> sp.	0.1	2	CRM92-03	IM
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	1	480		
<i>Cullen</i> sp.	0.1	2	CRM92-04	IM; seedling
<i>Dysphania kalpari</i>	0.1	5	CRM92-05	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Eriachne pulchella</i>	0.1		CRM34R-01=	
<i>Goodenia tenuiloba</i>	0.1	15	CRM33-08=	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	140	CRM92-01	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	20	CRM92-02	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	8	CRM21-12=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus astrolasius</i>	0.1	40	CRM30-03=	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Streptoglossa</i> sp.	0.1	2		IM; seedling
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	15		
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia epactia</i>	22	120		



**CZR Robe Valley Flora Site** CRM93  
**Described by** ABSRH **Date** 30/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 383890 mE 7595456mN  
**Habitat** Stony plain.  
**Soil** Dark reddish brown (2.5YR 2.5/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia xiphophylla* tall open shrubland; over *Triodia wiseana* very open hummock grassland; over *Cynodon prostratus*, *Sclerolaena densiflora* very open grassland.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\r; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\r; G2 ^*Cynodon prostratus*,*Sclerolaena densiflora*\Cynodon\^tussock grass\1\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia atkinsiana</i>	0.1	110		
<i>Acacia xiphophylla</i>	9	250		
<i>Cynodon prostratus</i>	4	5	CRM35R-05=	
<i>Dysphania kalpari</i>	0.1	5	CRM92-0? =	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i> .	0.1	8	CRM81-03=	
<i>Eriachne pulchella</i>	0.1	10	CRM34R-01=	
<i>Euphorbia boophthona</i>	0.1	10	CRM22-07=	
<i>Euploca heterantha</i>	0.1	1	CRM93-02	
<i>Goodenia tenuiloba</i>	0.1	10	CRM92=	
<i>Lepidium</i> ? <i>pholidogynum</i>	0.1	5	CRM93-01	IM: sterile
<i>Maireana melanocoma</i>	0.1	30		
<i>Paspalidium clementii</i>	0.1	15	CRM87-01=	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus aevoides</i>	0.1	5	CRM93-03	
<i>Ptilotus calostachyus</i>	0.1	10		
<i>Ptilotus exaltatus</i>	0.1	2		
<i>Sclerolaena densiflora</i>	0.5	25	CRM91-01=	
<i>Sclerolaena densiflora</i>	0.1	8	CRM91-03=	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	1.5	130	CRM91-02=	
<i>Senna notabilis</i>	0.1	2		
<i>Streptoglossa</i> sp.	0.1	5	CRM92=	IM; seedling
<i>Trianthema triquetrum</i>	0.1	2	CRM87-03=	
<i>Tribulus astrocarpus</i>	0.1	2		
<i>Triodia epactia</i>	0.1	60		
<i>Triodia wiseana</i>	4	80		



**CZR Robe Valley Flora Site** CRM94  
**Described by** ABSRH **Date** 30/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 381644 mE 7597906mN  
**Habitat** Hill slope; NW-facing, 3% gradient  
**Soil** Dusky red (10R 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia inaequilatera* scattered tall shrubs; over *A. bivenosa* scattered shrubs; over *Triodia wiseana* open hummock grassland.  
**NVIS** M1+ ^*Acacia inaequilatera*\Acacia\^shrub\4\bc; M2 ^*Acacia bivenosa*\Acacia\^shrub\3\bc; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\i  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia bivenosa</i>	0.5	110		
<i>Acacia inaequilatera</i>	1	390	CRM94-01	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40	CRM94-04	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Eriachne pulchella</i>	0.1	10	CRM34R-01=	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	2	CRM94-08	
<i>Fimbristylis dichotoma</i>	0.1	30	CRM94-10	Sens. lat
<i>Fimbristylis simulans</i>	0.1	20	CRM94-03	
<i>Goodenia tenuiloba</i>	0.1	2	CRM33-08=	
<i>Paspalidium clementii</i>	0.1	15	CRM87-01=	
<i>Polycarpaea holtzei</i>	0.1	2	CRM94-06	
<i>Polygala</i> ? <i>glaucifolia</i>	0.1	2	CRM94-07	IM; sterile
<i>Ptilotus aervoides</i>	0.1	5	CRM93-03=	
<i>Ptilotus calostachyus</i>	0.1	10		
<i>Ptilotus exaltatus</i>	0.1	2		
<i>Ptilotus polystachyus</i>	0.1	15	CRM94-02	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	170	CRM94-09	
<i>Senna glutinosa</i> subsp. <i>x luerssenii</i>	0.1	170	CRM94-05	
<i>Streptoglossa</i> sp.	0.1	2	CRM92=	IM; seedling
<i>Triodia wiseana</i>	16	80		



**CZR Robe Valley Flora Site** CRM95  
**Described by** ABSRH **Date** 30/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 381759 mE 7597857 mN  
**Habitat** Rocky hill slope; SW-facing.  
**Soil** Dusky red (10R 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia atkinsiana*, *A. arida* (*A. tumida* var. *pilbarensis*, *A. bivenosa*) open shrubland; over *Triodia wiseana* open hummock grassland; over *Ptilotus calostachyus* scattered low shrubs.  
**NVIS** M1+ ^*Acacia atkinsiana*,*Acacia arida*,*Acacia tumida* var. *pilbarensis*,*Acacia bivenosa*\^*Acacia*\^shrub\3\; G1 ^*Triodia wiseana*\^*Triodia*\^hummock grass\2\; G2 ^*Ptilotus calostachyus*\^*Ptilotus*\^forb\2\bc  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	0.1	60		
<i>Acacia arida</i>	1.5	190	ABSOP-40	
<i>Acacia atkinsiana</i>	2	190		
<i>Acacia bivenosa</i>	0.5	140		
<i>Acacia tumida</i> var. <i>pilbarensis</i>	0.5	180	CRM95-03	
<i>Bonamia pannosa</i>	0.1	20	CRM95-05	
<i>Corchorus</i> ? <i>tectus</i>	0.1	40	CRM95-01	IM; sterile
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Eriachne pulchella</i>	0.1	10		
<i>Euploca heterantha</i>	0.1	2	CRM93-02=	
<i>Goodenia stobbsiana</i>	0.1	20		
<i>Goodenia tenuiloba</i>	0.1	10	CRM33-08=	
<i>Haloragis</i> sp.	0.1	10	CRM61-05=	IM; sterile
<i>Hibiscus leptocladus</i>	0.1	30	CRM95-04	Sens. lat
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	50	CRM95-02	
<i>Portulaca oleracea</i>	0.1	2		
<i>Ptilotus aevoides</i>	0.1	10	CRM93-03=	
<i>Ptilotus astrolasius</i>	0.1	30		
<i>Ptilotus calostachyus</i>	1	60		
<i>Ptilotus clementii</i>	0.1	5	CRM95-06	
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Ptilotus polystachyus</i>	0.1	10	CRM94-02=	
<i>Senna notabilis</i>	0.1	2		
<i>Seringia nephrosperma</i>	0.1	80	ABSOP-42	
<i>Sida echinocarpa</i>	0.1	20		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	60	ABSOP-41	
<i>Solanum diversiflorum</i>	0.1	20		
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	5	CRM=	
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia wiseana</i>	21	100		



**CZR Robe Valley Flora Site** CRM96R  
**Described by** JT **Date** 30/06/22 **Type** Relevé 50 x 50 m  
**MGA Zone** 50 381356 mE 7598549 mN  
**Habitat** Flat stony plain/floodplain.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia xiphophylla* tall open shrubland; over *A. synchronica* scattered shrubs; over *Triodia wiseana* hummock grassland.  
**NVIS** M1+ ^*Acacia xiphophylla*\Acacia\^shrub\4\r; M2 ^*Acacia synchronica*\Acacia\^shrub\3\bc; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	40	CRM-R96-03	Sens. lat
<i>Acacia synchronica</i>	0.5	200		
<i>Acacia xiphophylla</i>	5	400		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	50	CRM-R96-04	
<i>Cynanchum viminalis</i> subsp. <i>australe</i>	0.1	200	CRM-JT28	
<i>Dysphania</i> sp.	0.1	5		IM; sterile
<i>Euphorbia boophthona</i>	0.1	5		
<i>Goodenia microptera</i>	0.1	30		
<i>Maireana planifolia</i>	0.1	130	CRM-R96-02	
<i>Paspalidium clementii</i>	0.1	25	CRM-R96-05	
<i>Ptilotus calostachyus</i>	0.1	60		
<i>Ptilotus exaltatus</i>	0.1	15		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	190		
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>	0.1	110	CRM-R96-01	
<i>Solanum diversiflorum</i>	0.1	25		
<i>Triodia wiseana</i>	37	65		





**CZR Robe Valley Flora Site** CRM97R  
**Described by** JT **Date** 30/06/22 **Type** Relevé 50 x 50 m  
**MGA Zone** 50 381852 mE 7597654mN  
**Habitat** Stony mid-slope of small hill; N aspect; between road and drainage line.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia arida* open shrubland; over *Triodia wiseana* very open hummock grassland.  
**NVIS** M1+ ^*Acacia arida*\Acacia\^shrub\3\r; G1 ^*Triodia wiseana*\Triodia\^hummock grass\2\r  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia arida</i>	2	190	CRM97-R01	
<i>Acacia atkinsiana</i>	0.1	120		
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40		
<i>Corchorus</i> sp.	0.1	10	CRM97-R02	IM
<i>Dysphania</i> sp.	0.1	4		IM; seedling
<i>Eriachne pulchella</i>	0.1	2		
<i>Goodenia microptera</i>	0.1	30		
<i>Haloragis</i> sp.	0.1	4	CRM97-R03	IM; sterile
<i>Ptilotus astrolasius</i>	0.1	40		
<i>Ptilotus calostachyus</i>	0.5	90		
<i>Ptilotus exaltatus</i>	0.1	4		
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	55		
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia wiseana</i>	6.5	60		



**CZR Robe Valley Flora Site** CRM98  
**Described by** ABSRH **Date** 30/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 381502 mE 7598230mN  
**Habitat** Broad plain; possibly a flow area.  
**Soil** Dark reddish brown (2.5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees; over *Acacia ancistrocarpa*, *A. atkinsiana* shrubland; over *Triodia wiseana* (*T. epactia*) very open hummock grassland; over *A. bivenosa* scattered low shrubs.  
**NVIS** U1+ ^*Eucalyptus leucophloia* subsp. *leucophloia*\^*Eucalyptus*\^tree\6\bc; M1 ^*Acacia ancistrocarpa*,*Acacia atkinsiana*\^*Acacia*\^shrub\3\i; G1 ^*Triodia wiseana*,*Triodia epactia*\^*Triodia*\^hummock grass\2\r; G2 ^*Acacia bivenosa*\^*Acacia*\^shrub\2\bc  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	8	110		
<i>Acacia atkinsiana</i>	7	170		
<i>Acacia bivenosa</i>	2	50		
<i>Acacia inaequilatera</i>	0.1	160	CRM98-06	
<i>Acacia synchronicia</i>	0.1	210		
<i>Acacia tumida</i> var. <i>pilbarensis</i>	0.1	90	CRM95-03=	
<i>Bonamia erecta</i>	0.1	25		
<i>Bonamia pannosa</i>	0.1	10	CRM95-05=	
<i>Corymbia hamersleyana</i>	0.1	250		
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	CRM81-03=	
<i>Eriachne helmsii</i>	0.1	40	CRM98-04	
<i>Eriachne pulchella</i>	0.1	10	CRM35R-0x=	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1.5	800	CRM98-01	
<i>Euphorbia boophthona</i>	0.1	15		
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	1	CRM94-08=	
<i>Goodenia tenuiloba</i>	0.1	5	CRM33-08=	
<i>Haloragis</i> sp.	0.1	5	CRM61-05=	IM; sterile
<i>Indigofera monophylla</i>	0.1	20	CRM98-05	
<i>Paraneurachne muelleri</i>	0.1	40		
<i>Ptilotus astrolasius</i>	0.1	25		
<i>Ptilotus calostachyus</i>	0.1	10		
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Ptilotus polystachyus</i>	0.1	10	CRM94-02=	
<i>Scaevola spinescens</i>	0.1	50	CRM98-03	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	105	CRM39-04=	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	210	CRM98-02	
<i>Senna notabilis</i>	0.1	2		
<i>Seringia nephrosperma</i>	0.1	40	ABSOPP42=	
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	2	50		
<i>Triodia wiseana</i>	3	60		



**CZR Robe Valley Flora Site** CRM101R  
**Described by** SWJT **Date** 27/06/22 **Type** Quadrat 20 x 125 m  
**MGA Zone** 50 398179 mE 7586587 mN  
**Habitat** Major riverbed; some water.  
**Soil** Dark reddish brown (5YR 3/4) sand.  
**Rock Type** Ironstone, riverstone.  
**Vegetation** *Eucalyptus victrix* open woodland; over *Melaleuca glomerata* low open woodland; over *Acacia pyrifolia* var. *pyrifolia* scattered tall shrubs; over *Acacia trachycarpa* scattered shrubs over *Eriachne benthamii*, *Tephrosia rosea* var. *Fortescue creeks* (M.I.H. Brooker 2186) very open tussock grassland; over *Triodia epactia* very open hummock grassland.  
**NVIS** U1+ ^*Eucalyptus victrix*\Eucalyptus\^tree\7\r; U2 ^*Melaleuca glomerata*\Melaleuca\^tree\6\r; M1 ^*Acacia pyrifolia* var. *pyrifolia*\Acacia\^shrub\4\bc; M2 ^*Acacia trachycarpa*\Acacia\^shrub\3\bc; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\r; G2^ *Eriachne benthamii*,*Tephrosia rosea* var. *Fortescue creeks*\Eriachne\^tussock grass\1\r  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.  
**Notes** Does not include vegetation on banks.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.5	220		
<i>Acacia trachycarpa</i>	1	160		
<i>Alternanthera</i> ? <i>nana</i>	0.1	5		IM; sterile
<i>Alternanthera denticulata</i>	0.1	8	CRM101R-8	
<i>Amaranthus undulatus</i>	0.1	20	CRM101R-10	Sens. lat
<i>Arivela viscosa</i>	0.1	10		
<i>Boerhavia repleta</i>	0.1	10	CRM60=	
<i>Corchorus</i> sp. ( <i>tectus</i> / <i>sidoides</i> ; indet)	0.1	140	CRM101R-5	
<i>Dysphania</i> sp.	0.1	1		IM; sterile
<i>Eriachne benthamii</i>	4	75	CRM101R-01	
<i>Eriachne pulchella</i>	0.1	30		
<i>Eriachne tenuiculmis</i>	0.1	60		
<i>Eucalyptus victrix</i>	9	1450		
<i>Euphorbia careyi</i>	0.1	20	CRM101R-6	Sens. lat
<i>Goodenia lamprosperma</i>	0.1	25	CRM101R-4	
<i>Gossypium australe</i>	0.1	180		Burru Peninsula form
<i>Gossypium robinsonii</i>	0.1	220		
<i>Ipomoea muelleri</i>	0.1	10		
<i>Melaleuca glomerata</i>	7	550	CRM101R-7	
<i>Nelica maderaspatensis</i>	0.1	50		
<i>Paspalidium clementii</i>	0.1	20	CRM101R-09	
<i>Pluchea rubelliflora</i>	0.1	10		
<i>Sesbania cannabina</i>	0.1	25		
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	0.1	10	CRM101R-3	
<i>Tephrosia rosea</i> var. <i>Fortescue creeks</i> (M.I.H. Brooker 2186)	2	80	CRM101R-2	
<i>Themeda triandra</i>	0.1	60		
<i>Triodia epactia</i>	2	50		



**CZR Robe Valley Flora Site** CRM102  
**Described by** SWJT **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 398727 mE 7586775mN  
**Habitat** Rocky/clayey plain.  
**Soil** Dark reddish brown (5YR 3/4) sandy clay loam; mosaic of sand with ironstone and cracking light clay.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia ancistrocarpa*, *A. synchronica*, *A. atkinsiana* open shrubland; over *Ptilotus astrolasius* low open shrubland; over *Triodia epactia* very open hummock grassland.  
**NVIS** M1+ ^*Acacia ancistrocarpa*,*Acacia synchronica*,*Acacia atkinsiana*\Acacia\^shrub\3\r; M2 ^*Ptilotus astrolasius*\Ptilotus\^shrub\6\r; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\r  
**Veg Condition** Very good.  
**Fire Age** No sign of recent fire.  
**Notes** Just past 5 years fire age.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	3	180		
<i>Acacia atkinsiana</i>	1	110		
<i>Acacia bivenosa</i>	0.1	140		
<i>Acacia synchronica</i>	3	150		
<i>Boerhavia burbridgeana</i>	0.1	1	CRM102-4	
<i>Boerhavia coccinea</i>	0.1	2		
<i>Bonamia erecta</i>	0.1	10		
<i>Bulbostylis barbata</i>	0.1	5		
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	40	CRM102-2	
<i>Digitaria ctenantha</i>	0.1	20	CRM102-3	
<i>Dysphania radinostachya</i> (subsp. not determined)	0.1	3		
<i>Eragrostis dielsii</i>	0.1	2	CRM102-6	
<i>Euphorbia boophthona</i>	0.1	10		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		
<i>Goodenia forrestii</i>	0.1	15		
<i>Goodenia microptera</i>	0.1	10		
<i>Gossypium australe</i>	0.1			Burrup Peninsula form.
<i>Gossypium australe</i>	0.1	50		Whim Creek form.
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	60	CRM102-7	
<i>Indigofera bovipera</i> subsp. <i>bovipera</i>	0.1	30	59-01=	
<i>Ipomoea muelleri</i>	0.1	3		
<i>Paraneurachne muelleri</i>	0.1	45		
<i>Polycarpaea</i> sp.	0.1	2		IM; sterile
<i>Portulaca oleracea</i> / <i>intraterranea</i>	0.1	1		
<i>Pterocaulon</i> sp.	0.1	1		IM; sterile
<i>Ptilotus astrolasius</i>	4	60	CRM102-5	
<i>Ptilotus exaltatus</i>	0.1	5		
<i>Rhynchosia minima</i>	0.1	65		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	70	CRM102-3	
<i>Sida arsinjata</i>	0.1	70	CRM102-01	
<i>Solanum diversiflorum</i>	0.1	50		
<i>Sporobolus australasicus</i>	0.1	10		
<i>Stemodia grossa</i>	0.1	1		
<i>Stylobasium spathulatum</i>	0.1	210		
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia epactia</i>	9	45		



**CZR Robe Valley Flora Site** CRM103  
**Described by** SWJT **Date** 27/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 400049 mE 7587007 mN  
**Habitat** Flat stony plain.  
**Soil** Dark reddish brown (5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone.  
**Vegetation** *Acacia atkinsiana*, *A. synchronica* (*A. inaequilatera*) tall shrubland; over *Senna glutinosa* subsp. *glutinosa* scattered shrubs; over *Triodia epactia* very open hummock grassland.  
**NVIS** M1+ ^*Acacia atkinsiana*,*Acacia synchronica*,*Acacia inaequilatera*\Acacia\^shrub\4\i; M2 ^*Senna glutinosa* subsp. *glutinosa*\Senna\^shrub\3\bc; G1 ^*Triodia epactia*\Triodia\^hummock grass\2\r  
**Veg Condition** Very good. \**Cenchrus ciliaris* present.  
**Fire Age** No sign of recent fire.  
**Notes** Patchily burnt in greater area; 4/5 years to 7+.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	75	CRM103-01	
<i>Acacia ancistrocarpa</i>	0.1	220		
<i>Acacia atkinsiana</i>	8	340		
<i>Acacia bivenosa</i>	0.1	160		
<i>Acacia inaequilatera</i>	0.5	240		
<i>Acacia synchronicia</i>	3	200		
<i>Alternanthera</i> ? <i>nana</i>	0.1	20	CRM46-03=	IM; sterile
<i>Boerhavia coccinea</i>	0.1	4		
<i>Bonamia erecta</i>	0.1	40		
<i>Bulbostylis barbata</i>	0.1	10		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	10	CRM103-9	IM; juvenile
* <i>Cenchrus ciliaris</i>	0.1	25		
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	40		
<i>Cucumis variabilis</i>	0.1	25		
<i>Cynodon prostratus</i>	0.1	10	CRM103-3	
<i>Dendrophyllanthus erwinii</i>	0.1	3		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		Sterile
<i>Eragrostis dielsii</i>	0.1	15	CRM103-6	
<i>Eriachne aristidea</i>	0.1	40		
<i>Euphorbia boophthona</i>	0.1	10		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		
<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>	0.1	25	CRM103-7	
<i>Goodenia forrestii</i>	0.1	40		
<i>Goodenia microptera</i>	0.1	20		
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	50	CRM103-2	
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	60	CRM=	
<i>Paraneurachne muelleri</i>	0.1	45		
<i>Paspalidium clementii</i>	0.1	20	CRM103-5	
<i>Polycarpaea</i> sp.	0.1	2		IM; sterile
<i>Portulaca oleracea</i> /intraterranea	0.1	1		IM; sterile
<i>Ptilotus astrolasius</i>	0.1	60		
<i>Ptilotus calostachyus</i>	0.1	20		
<i>Ptilotus exaltatus</i>	0.1	10		
<i>Salsola australis</i>	0.1	50		
<i>Sclerolaena densiflora</i>	0.1	30	CRM103-8	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	110		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.5	190		
<i>Senna notabilis</i>	0.1	25		
<i>Sida arsiniata</i>	0.1	25	CRM102-01=	
<i>Sida echinocarpa</i>	0.1	70		
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	30	CRM103-11	
<i>Sporobolus australasicus</i>	0.1	10		



Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Tribulus macrocarpus</i>	0.1		CRM103-4	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	110		
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia epactia</i>	9	50		
<i>Triumfetta chaetocarpa</i>	0.1	40	CRM103-10	



**CZR Robe Valley Flora Site** CRM104  
**Described by** SWJT **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 387899 mE 7586347 mN  
**Habitat** Paleodrainage.  
**Soil** Dark brown clayey sand.  
**Rock Type** None present.  
**Vegetation** *Triodia epactia* (*T. wiseana*) hummock grassland.  
**NVIS** G1+ ^*Triodia epactia*,*Triodia wiseana*\^*Triodia*\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** Very long unburnt.  
**Notes** Paleodrainage hummock grassland, verging very closely on a closed tussock grassland.

Species	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	0.1	110	
<i>Acacia trachycarpa</i>	0.1	90	
<i>Bulbostylis barbata</i>	0.1	5	
<i>Chrysopogon fallax</i>	0.1	65	
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	2	
<i>Eragrostis desertorum</i>	0.1	30	CRM104-01
<i>Indigofera monophylla</i>	0.1	50	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	10	
<i>Tephrosia supina</i>	0.1	45	CRM104-2
<i>Triodia epactia</i>	68	60	
<i>Triodia wiseana</i>	1	50	



**CZR Robe Valley Flora Site** CRM105  
**Described by** SWJT **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 387614 mE 7586424mN  
**Habitat** Paleodrainage.  
**Soil** Dark brown clayey sand.  
**Rock Type** None present.  
**Vegetation** *Triodia epactia* hummock grassland.  
**NVIS** G1+ ^*Triodia epactia*\^*Triodia*\^hummock grass\2\c  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire/Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	40	CRM105-11	
<i>Acacia inaequilatera</i>	0.1	110		
<i>Acacia synchronicia</i>	0.1	68		
<i>Acacia trudgeniana</i>	0.1	150		
<i>Alysicarpus muelleri</i>	0.1	40	CRM105-7	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	35		
<i>Arivela viscosa</i>	0.1	45	CRM105-4	
<i>Bonamia pannosa</i>	0.1	10	CRM105-8	
<i>Bulbostylis barbata</i>	0.1	5		
<i>Calandrinia</i> ? <i>ptychosperma</i>	0.1	3		IM; juvenile
<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>	0.1	25	CRM105-3	
<i>Cynodon prostratus</i>	0.1	10		
<i>Dysphania rhadinostachya</i> (subsp. not determined)	0.1	10		
<i>Eragrostis desertorum</i>	0.1	25	CRM104-01=	
<i>Eriachne aristidea</i>	0.1	8		
<i>Euphorbia biconvexa</i>	0.1	25	CRM105-12	
<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	0.1	6	CRM105-01	
<i>Euploca cunninghamii</i>	0.1	20	CRM105-2	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		
<i>Goodenia microptera</i>	0.1	10		
<i>Indigofera colutea</i>	0.1	15	CRM105-6	
<i>Panicum australiense</i> var. <i>australiense</i>	0.1	15		
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	10		
<i>Polycarpaea</i> sp.	0.1	4		IM; sterile
<i>Polymeria ambigua</i>	0.1	15		
<i>Portulaca oleracea</i> /intraterranea	0.1	5		IM sterile
<i>Pterocaulon sphacelatum</i>	0.1	4		
<i>Ptilotus astrolasius</i>	0.1	10		
<i>Ptilotus axillaris</i>	0.1	5		
<i>Ptilotus exaltatus</i>	0.1	2		
<i>Sida arenicola</i>	0.1	25		
<i>Sida arsinjata</i>	0.1	15	CRM105-9	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	0.1	15	CRM105-10	
<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)	0.1	20	CRM105-5	
<i>Tephrosia supina</i>	0.1	15	CRM104-02=	
<i>Trianthema glossostigmum</i>	0.1	4		
<i>Triodia epactia</i>	48	55		
<i>Triodia wiseana</i>	0.1	60		



**CZR Robe Valley Flora Site** CRM106R  
**Described by** SWJT **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 407436 mE 7588003mN  
**Habitat** Ridgeline with outcropping and large quartz boulders.  
**Soil** Dark reddish brown sandy clay loam.  
**Rock Type** Calcrete, quartz.  
**Vegetation** *Senna glutinosa* subsp. *pruinosa* open shrubland; over *Tephrosia* sp. B Kimberley Flora (C.A. Gardner 7300), *Acacia bivenosa*, *Tribulus suberosus* low open shrubland; over *Triodia wiseana* open hummock grassland.  
**NVIS** M1+ ^*Senna glutinosa* subsp. *pruinosa*\,*Senna*\^shrub\3\; M2 ^*Tephrosia* sp. B Kimberley Flora (C.A. Gardner 7300),*Acacia bivenosa*,*Tribulus suberosus*\,*Tephrosia*\^shrub\2\; G1 ^*Triodia wiseana*\,*Triodia*\^hummock grass\2\i  
**Veg Condition** Excellent to very good. \**Cenchrus ciliaris* present.  
**Fire Age** Very long unburnt.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Abutilon lepidum</i>	0.1	10	CRM106R-6	Sens. lat
<i>Acacia ancistrocarpa</i>	0.1	110		
<i>Acacia bivenosa</i>	2	65		
<i>Acacia synchronicia</i>	0.1	40		
<i>Acacia trachycarpa</i>	0.1	65		
<i>Amaranthus cuspidifolius</i>	0.1	10	CRM106R-11	
<i>Arivela viscosa</i>	0.1	10		
<i>Boerhavia coccinea</i>	0.1	5		
<i>Bonamia pilbarensis</i>	0.1	5	CRM106R-13	
<i>Bulbostylis barbata</i>	0.1	8		
* <i>Cenchrus ciliaris</i>	0.1	70		N=1
<i>Corchorus sidoides</i> subsp. <i>sidoides</i>	0.1	65		
<i>Corchorus</i> sp.	0.1	30	CRM106R-4	IM; sterile
<i>Corymbia hamersleyana</i>	0.1	220		
<i>Cymbopogon ambiguus</i>	0.1	100		
<i>Cyperus hesperius</i>	0.1	45	CRM106R-2	
<i>Dysphania</i> sp.	0.1	2		IM; sterile
<i>Enneapogon caeruleus</i>	0.1	20		
<i>Enneapogon polyphyllus</i>	0.1	15	CRM106R-5	
<i>Eriachne mucronata</i>	0.1	45		Typical form.
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	0.1	150		
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		
<i>Gomphrena cunninghamii</i>	0.1	10	CRM106R-7	
<i>Gossypium australe</i>	0.1	60		Burrup Peninsula form
<i>Gossypium robinsonii</i>	0.1	240		
<i>Grevillea wickhamii</i> subsp. <i>macrodonta</i>	0.1	210		
<i>Hibiscus sturtii</i>	0.1	35		IM; sterile
<i>Nicotiana karjini</i>	0.1	10	CRM106R-12	
<i>Notoleptopus decaisnei</i> var. <i>decaisnei</i>	0.1	15		
<i>Polycarpaea longiflora</i>	0.1	20		
<i>Ptilotus astrolasius</i>	0.1	45		
<i>Ptilotus calostachyus</i>	0.1	50		
<i>Ptilotus exaltatus</i>	0.1	25		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	120	CRM106R-9	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	120		
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	110		
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	6	180		
<i>Sida arsinata</i>	0.1	60	CRM106R-10	
<i>Sida echinocarpa</i>	0.1	80		
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	30	CRM106R-8	
<i>Solanum diversiflorum</i>	0.1	45		
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)	7	90	CRM106R-01	
<i>Tribulus suberosus</i>	1	80		

<b>Species</b>	<b>Cover (%)</b>	<b>Height (cm)</b>	<b>Specimen</b>	<b>Notes</b>
<i>Trigastrotheca molluginea</i>	0.1	15		
<i>Triodia wiseana</i>	18	56		
<i>Triumfetta maconochieana</i>	0.1	60	CRM106R-3, -14	

**No photo.**

**CZR Robe Valley Flora Site** CRM107  
**Described by** SWJT **Date** 28/06/22 **Type** Quadrat 50 x 50 m  
**MGA Zone** 50 405799 mE 7588210mN  
**Habitat** open plain.  
**Soil** Dark reddish brown (5YR 3/4) sandy clay loam.  
**Rock Type** Ironstone, quartz.  
**Vegetation** *Acacia ancistrocarpa*, *A. atkinsiana*, *A. bivenosa* open shrubland;  
over *Triodia wiseana* very open hummock grassland; over *Ptilotus*  
*astrolasius* scattered low shrubs.  
**NVIS** M1+ ^*Acacia ancistrocarpa*,*Acacia atkinsiana*,*Acacia bivenosa*\*Acacia*\^shrub\3\r; G1  
^*Triodia wiseana*\*Triodia*\^hummock grass\2\r; G2 ^*Ptilotus astrolasius*\*Ptilotus*\^shrub\2\bc  
**Veg Condition** Excellent.  
**Fire Age** No sign of recent fire.  
**Notes** Very scattered/isolated *Corymbia candida* in surrounds.

Species	Cover (%)	Height (cm)	Specimen	Notes
<i>Acacia ancistrocarpa</i>	3	190		
<i>Acacia atkinsiana</i>	3	170		
<i>Acacia bivenosa</i>	3	180		
<i>Acacia inaequilatera</i>	0.1	170		
<i>Acacia trachycarpa</i>	0.1	110		
<i>Bonamia pilbarensis</i>	0.1	10		
<i>Bulbostylis barbata</i>	0.1	10		
<i>Corchorus sidoides</i> (subsp. not determined)	0.1	10		
<i>Dysphania</i> sp.	0.1	4		IM; sterile
<i>Eriachne aristidea</i>	0.1	35		
<i>Goodenia microptera</i>	0.1	10		
<i>Gossypium australe</i>	0.1	60		Burrup Peninsula form
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	160		
<i>Hibiscus sturtii</i>	0.1	50		IM; sterile
<i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>	0.1	25	CRM=	
<i>Paspalidium clementii</i>	0.1	10	CRM107-6	
<i>Polycarpha</i> sp.	0.1	4		IM; sterile
<i>Portulaca oleracea/intraterranea</i>	0.1	4		IM; sterile
<i>Ptilotus appendiculatus</i>	0.1	15	CRM107-2	
<i>Ptilotus astrolasius</i>	1	40		
<i>Ptilotus axillaris</i>	0.1	20	CRM59-06=	
<i>Ptilotus exaltatus</i>	0.1	2		
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	60		
<i>Rhynchosia minima</i>	0.1	25		
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	120	CRM107-4	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	110		
<i>Senna notabilis</i>	0.1	10		
<i>Seringia ? nephrosperma</i>	0.1	75	CRM107-5	
<i>Sida arsinata</i>	0.1	60	CRM106=	
<i>Solanum diversiflorum</i>	0.1	15		
<i>Tribulus macrocarpus</i>	0.1	15	CRM107-3	
<i>Tribulus</i> sp.	0.1	3	CRM107-01	IM; sterile, seedling
<i>Trigastrotheca molluginea</i>	0.1	10		
<i>Triodia epactia</i>	0.1	50		
<i>Triodia wiseana</i>	6	65		







# Appendix 7

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## Vegetation Mapping










## Robe Mesa Project Detailed Flora and Vegetation Survey Vegetation Mapping Descriptions










### Vegetation of Drainages

-  E2 *Eucalyptus victrix* (*Eucalyptus camaldulensis* subsp. *refulgens*) and *Melaleuca* spp. over mixed *Acacia* spp. over \* *Cenchrus* spp.
-  C5 *Corymbia hamersleyana* over mixed *Acacia* over *Triodia epactia*.
-  T2 *Triodia epactia* hummock grassland.


### Vegetation of Hills and Slopes

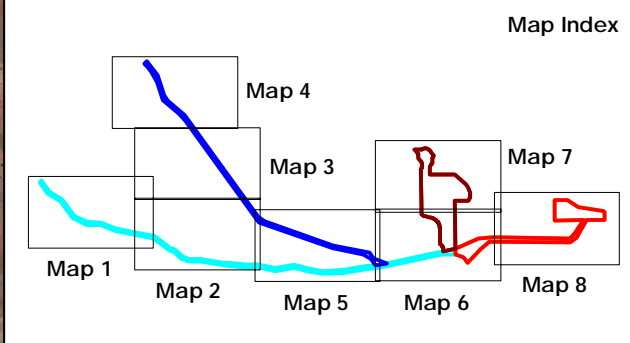
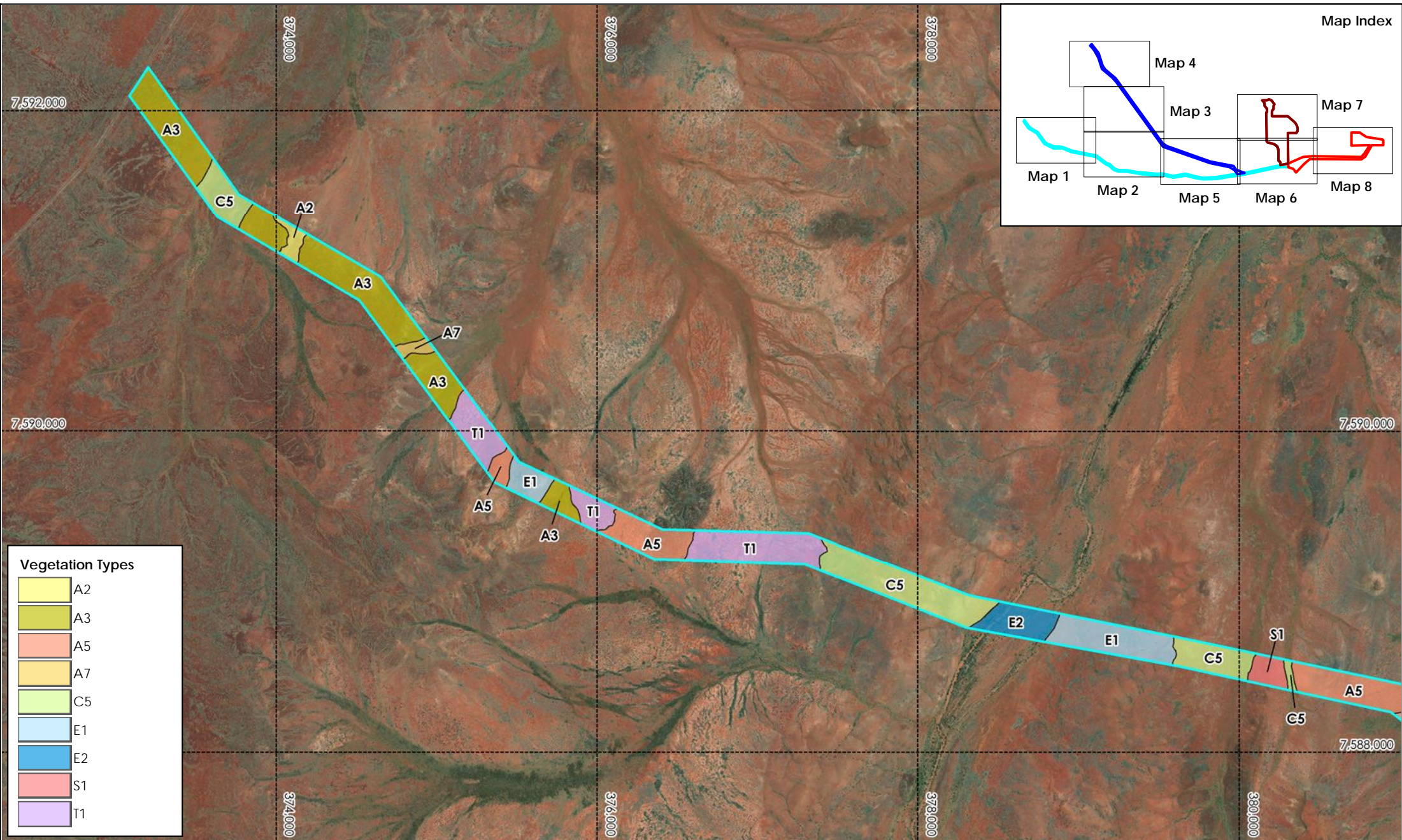
-  A6 *Acacia arida* over *Triodia wiseana*.
-  A7 *Acacia bivenosa* over *Triodia wiseana*.
-  E1 *Eucalyptus leucophloia* subsp. *leucophloia* over mixed *Acacia* spp. over *Triodia wiseana*.
-  S1 *Senna* spp. and *Acacia* spp. over *Triodia wiseana*.
-  T1 *Triodia longiceps* hummock grassland.

### Vegetation of Plains

-  A1 *Acacia xiphophylla* tall shrubland over *Triodia epactia* open hummock grassland.
-  A2 *Acacia xiphophylla* tall shrubland over *Triodia wiseana* very open hummock grassland.
-  A3 Mixed *Acacia* spp. over *Triodia wiseana*.
-  A4 Mixed *Acacia* spp. over *Triodia epactia*.
-  A5 Mixed *Acacia* spp. over *Triodia longiceps*.
-  C1 *Corymbia hamersleyana* over mixed *Acacia* spp. over *Triodia epactia*.
-  C2 *Corymbia candida* subsp. *candida* over mixed *Acacia* spp. over *Triodia epactia*.
-  C3 *Corymbia deserticola* subsp. *deserticola* over mixed *Acacia* spp. over *Triodia epactia*.
-  C4 *Corymbia zygophylla* over *Triodia* spp.

### Other Mapping Units

-  D1 Cleared areas.

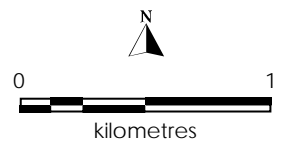


**Vegetation Types**

	A2
	A3
	A5
	A7
	C5
	E1
	E2
	S1
	T1

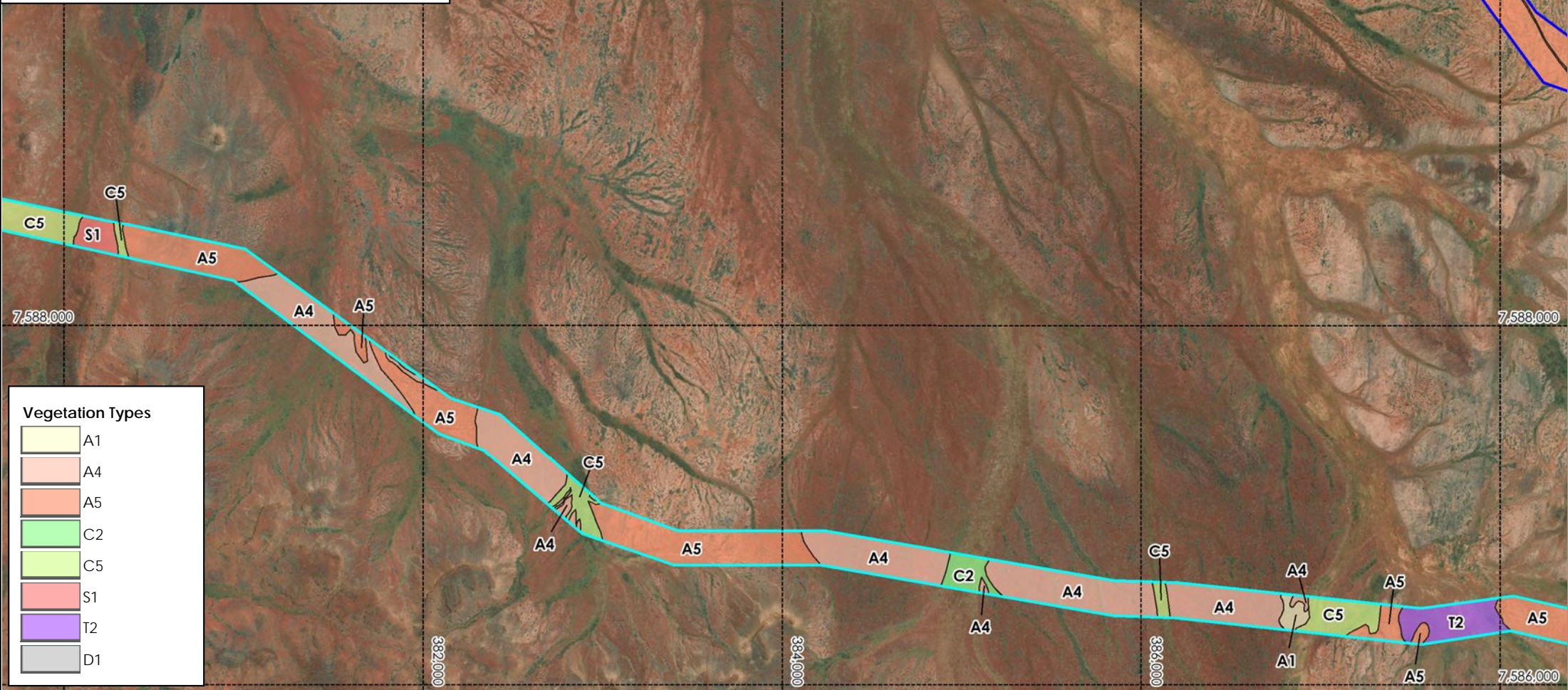
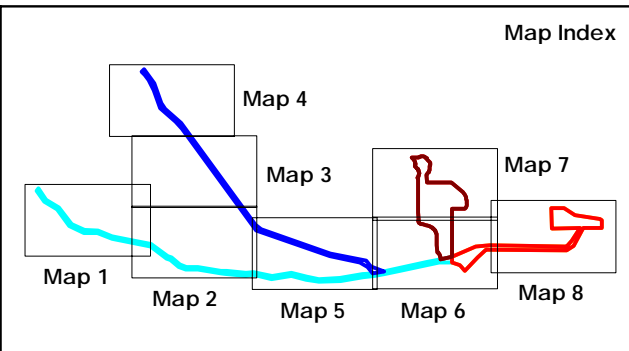


- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Map 1**



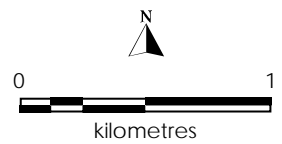


#### Vegetation Types

	A1
	A4
	A5
	C2
	C5
	S1
	T2
	D1

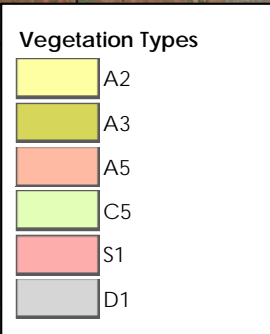
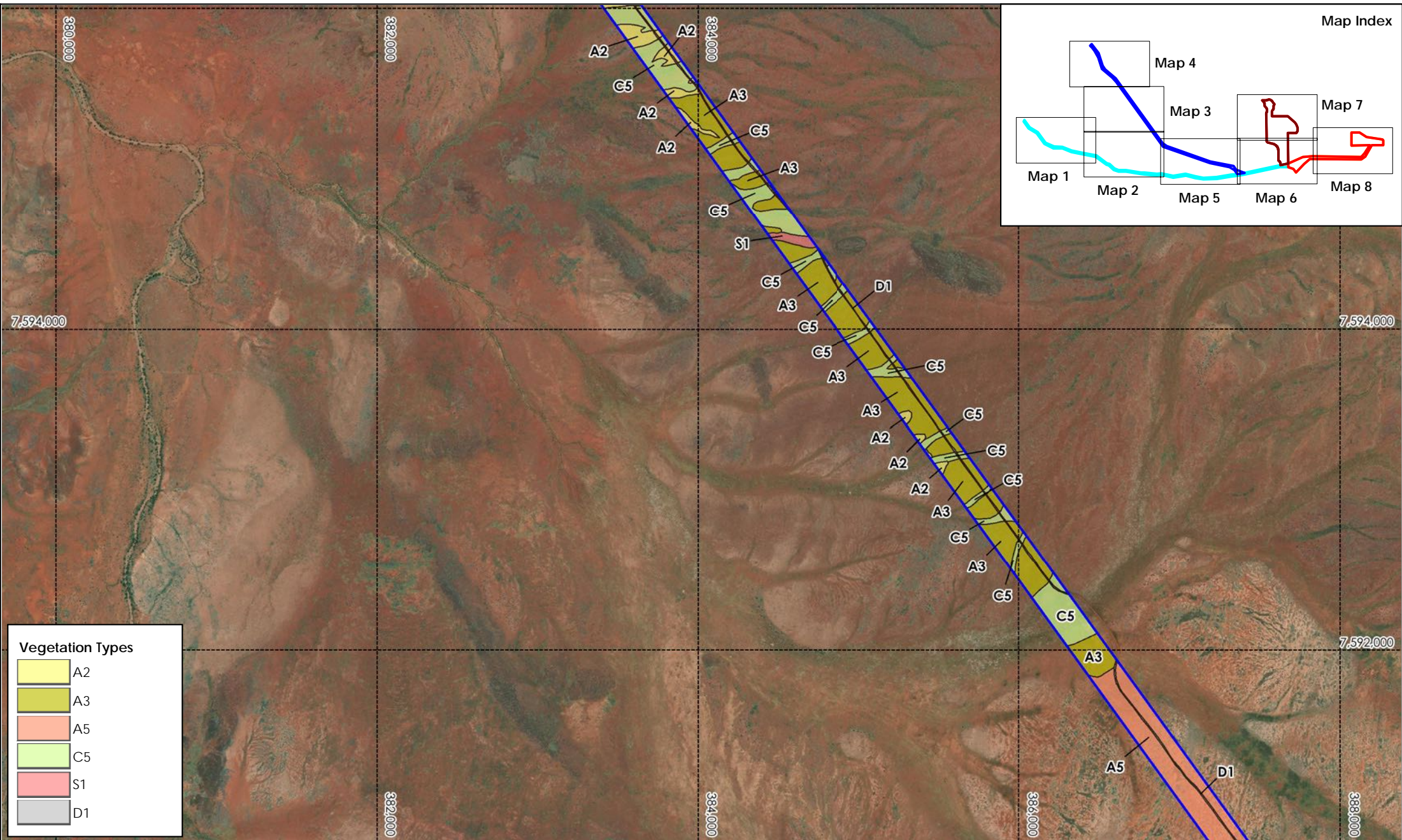
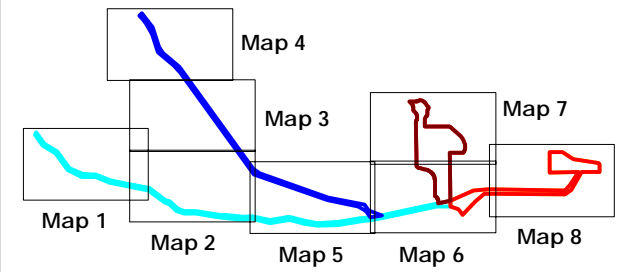


- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure

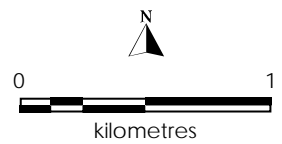


## Robe Mesa Project Vegetation Map 2

Biota  
Environmental  
Sciences

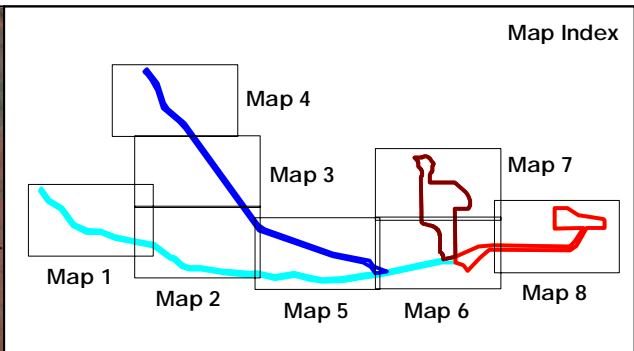
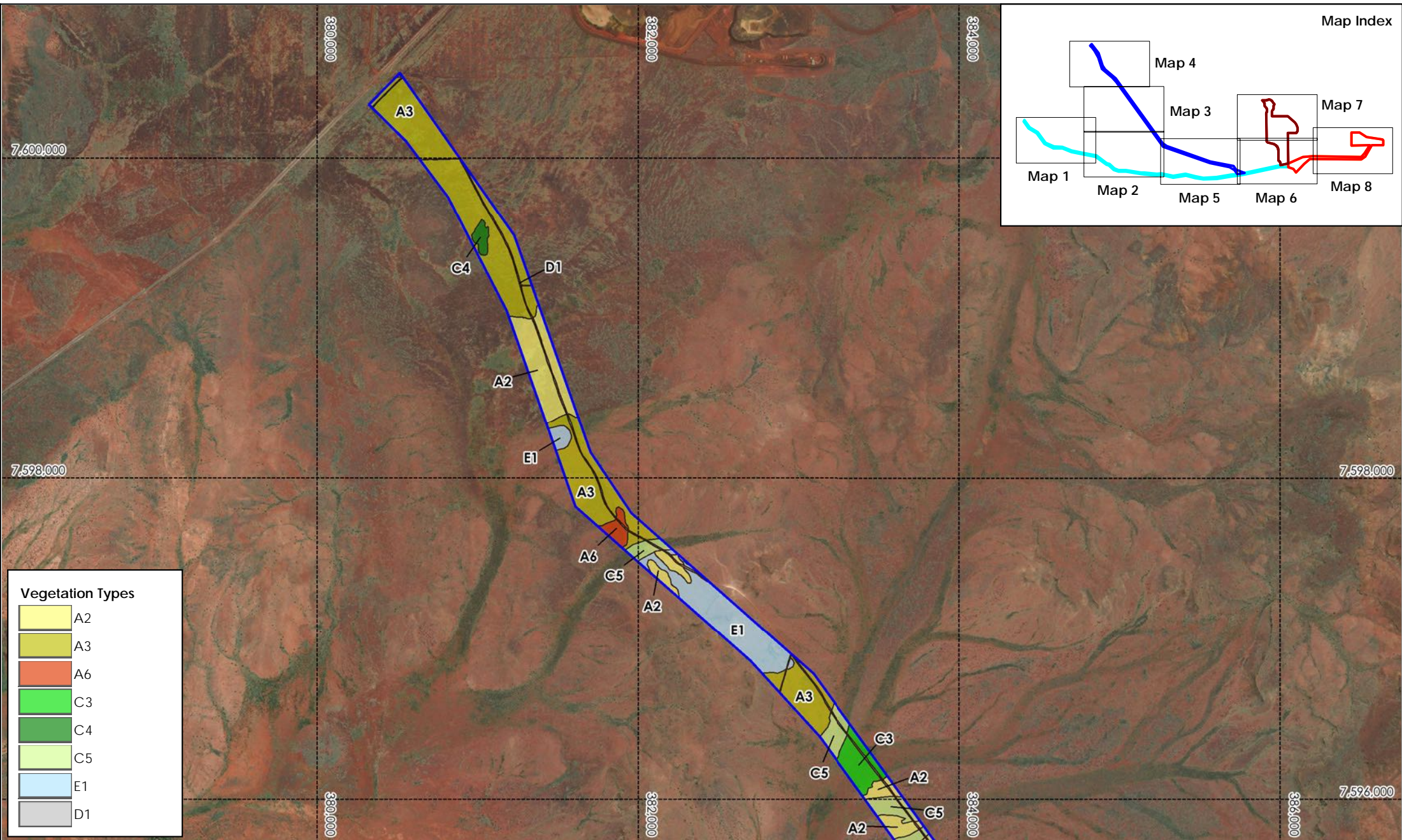


- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Map 3**



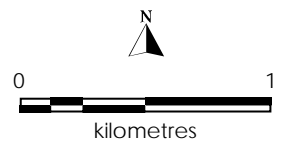


**Vegetation Types**

	A2
	A3
	A6
	C3
	C4
	C5
	E1
	D1



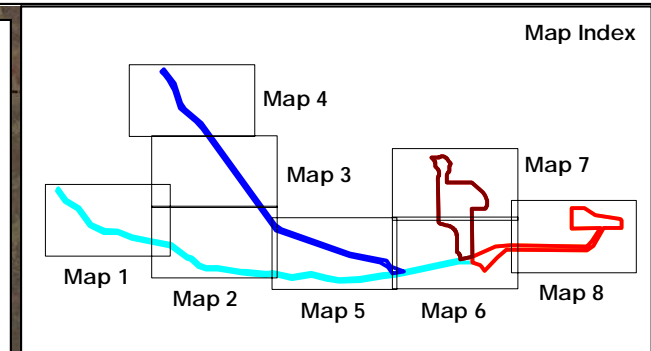
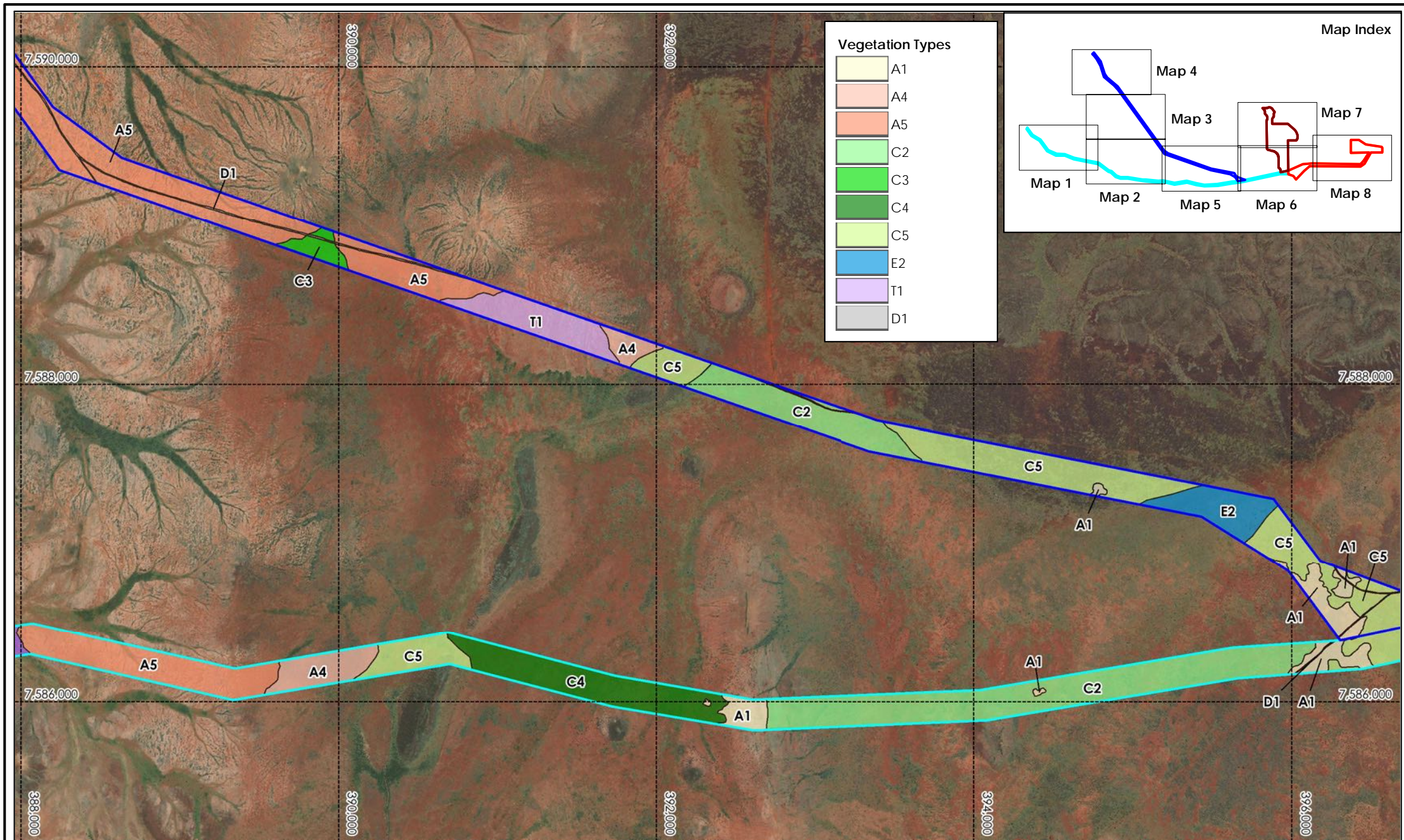
- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



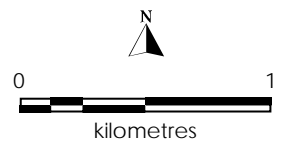
**Robe Mesa Project  
Vegetation Map 4**





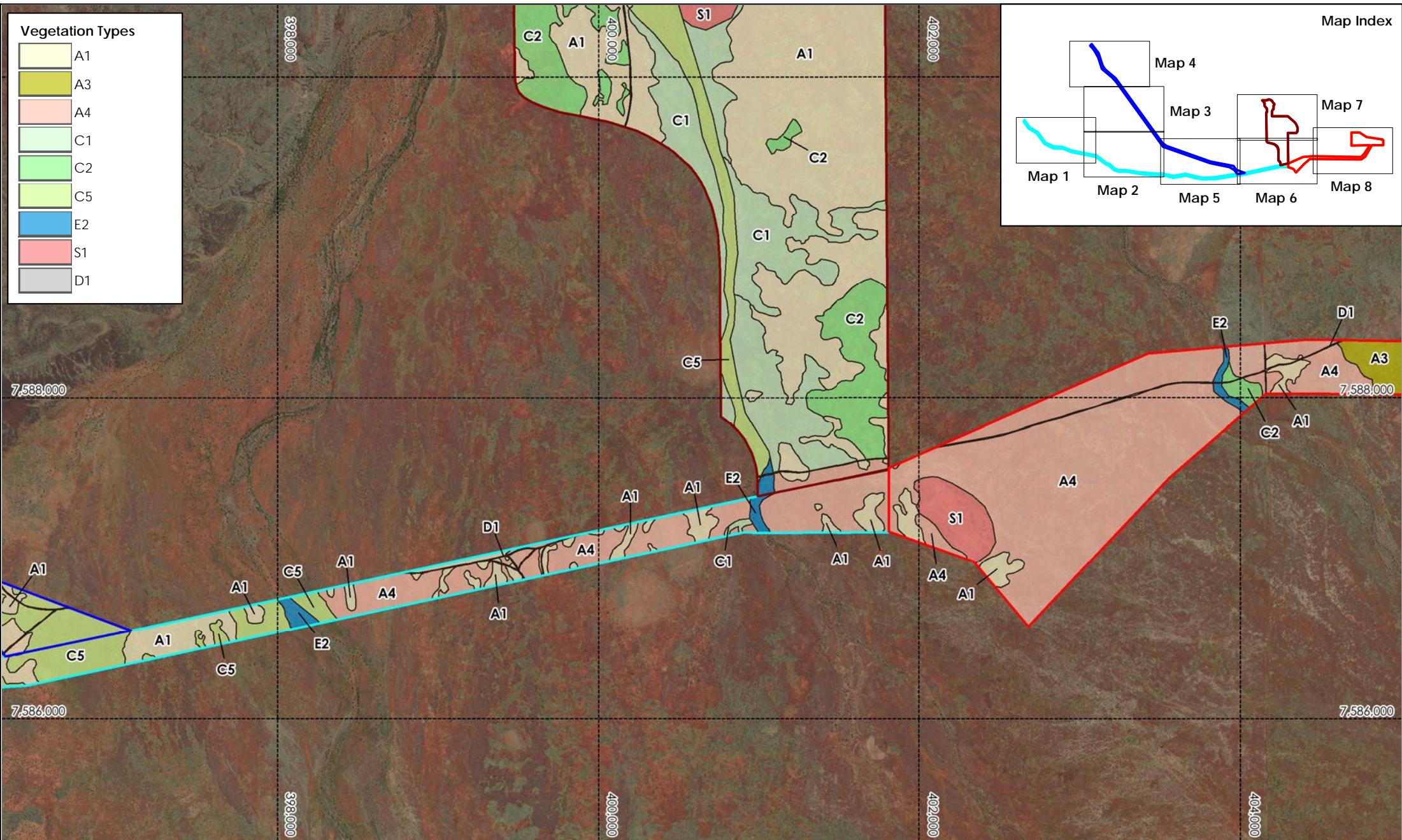


- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



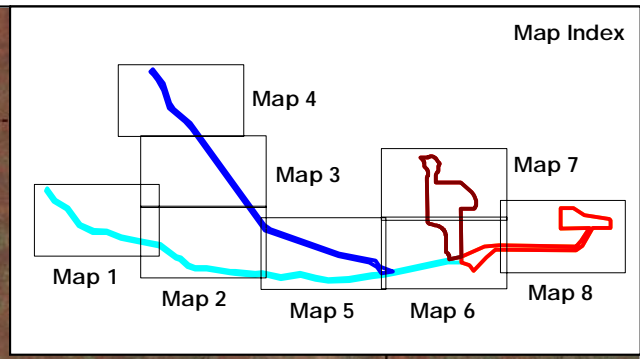
**Robe Mesa Project  
Vegetation Map 5**

Biota  
Environmental  
Sciences

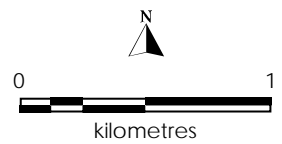


**Vegetation Types**

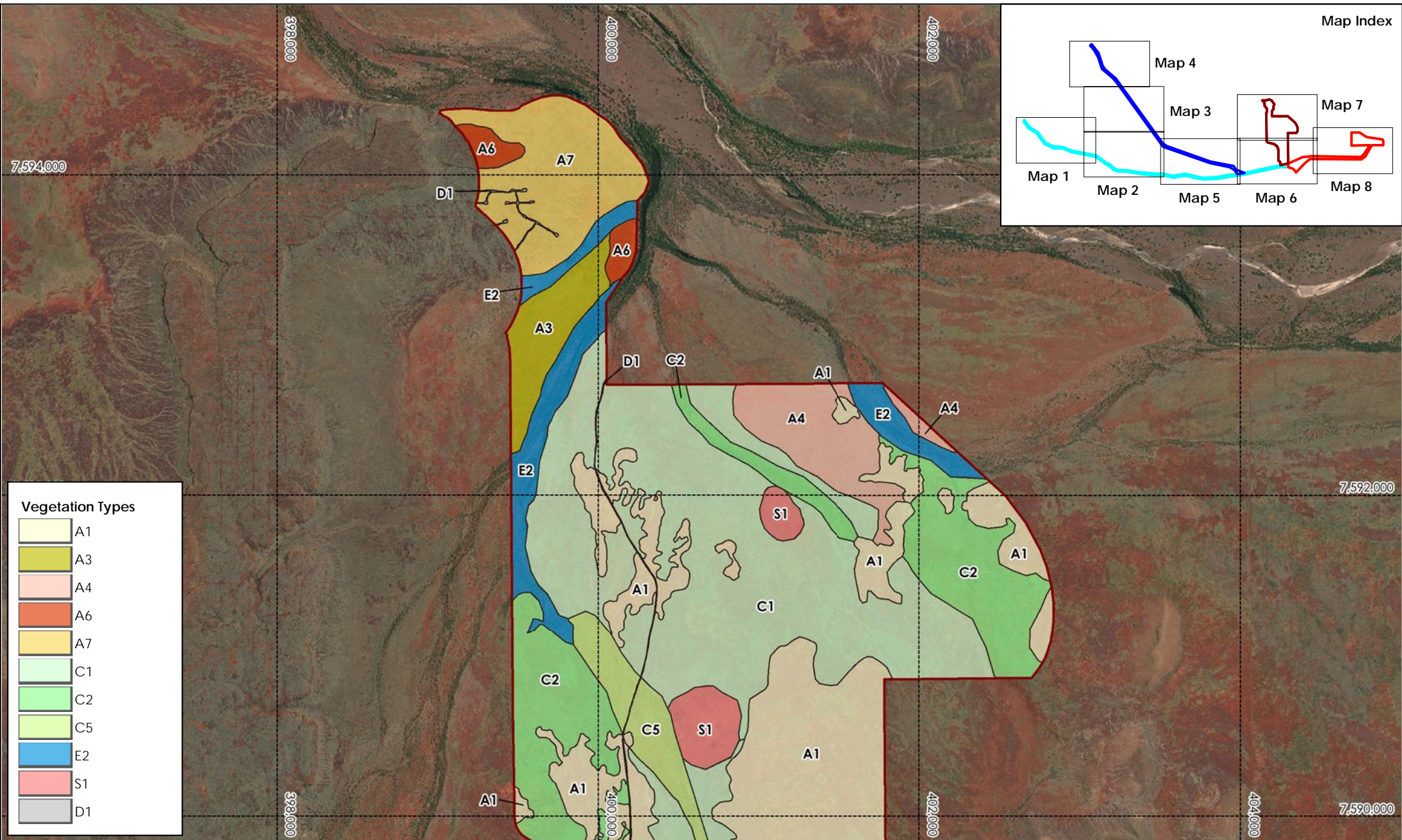
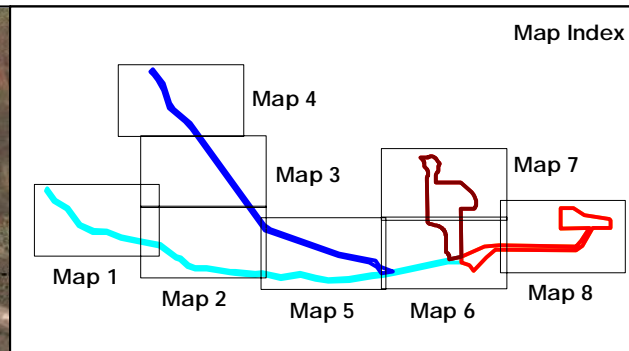
A1
A3
A4
C1
C2
C5
E2
S1
D1



- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Map 6**

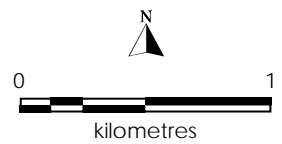


**Vegetation Types**

- A1
- A3
- A4
- A6
- A7
- C1
- C2
- C5
- E2
- S1
- D1



- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure

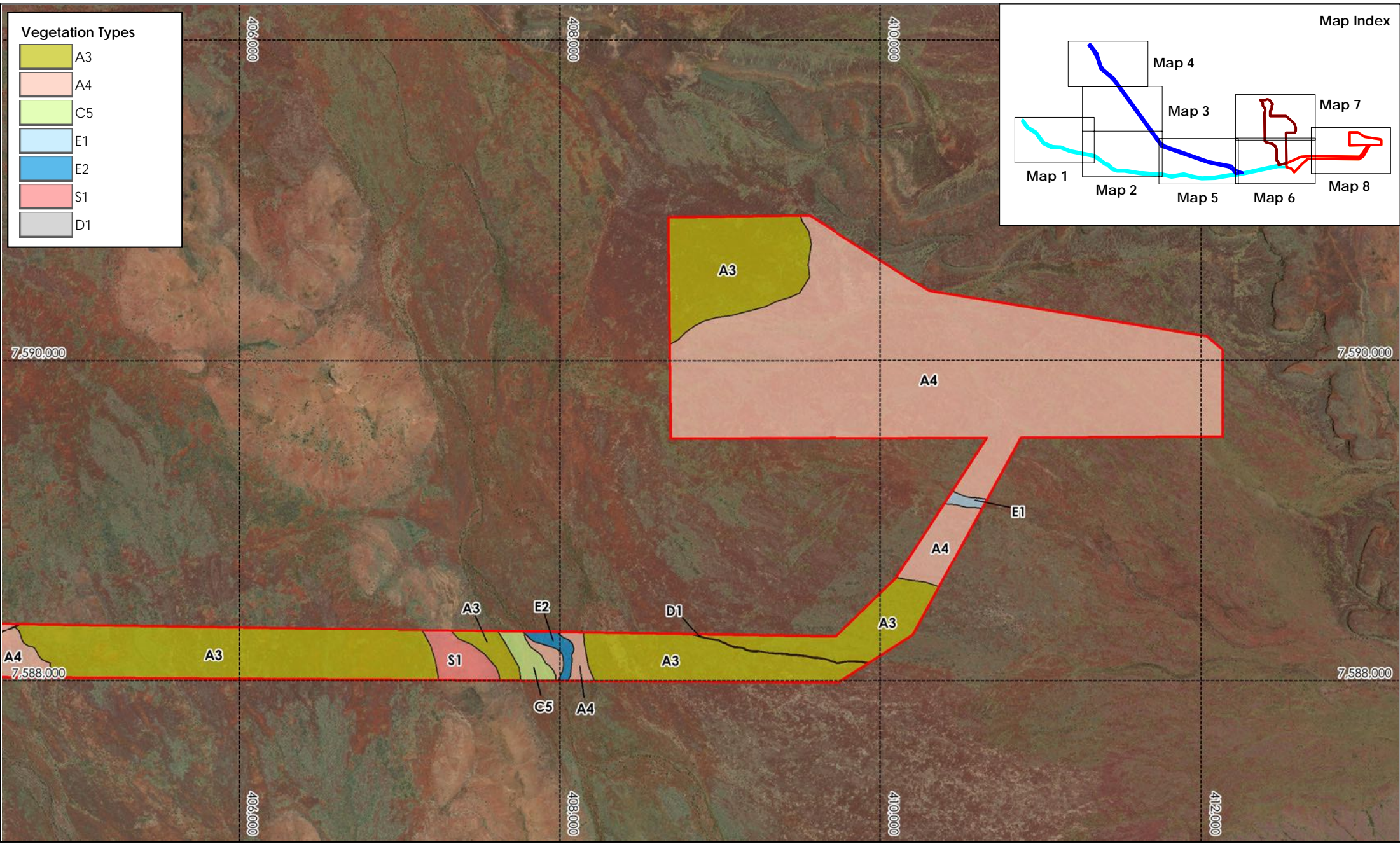
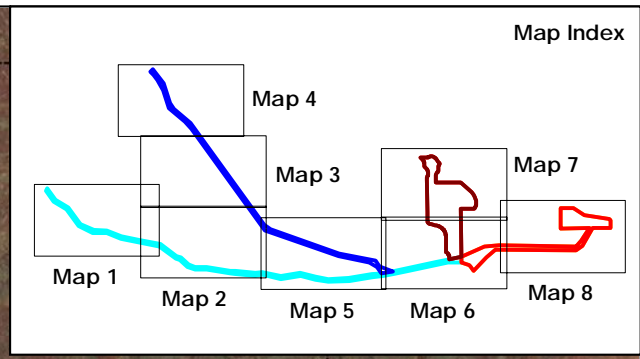


**Robe Mesa Project  
Vegetation Map 7**

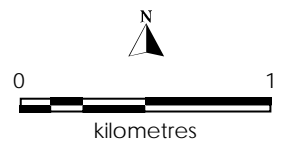


**Vegetation Types**

- A3
- A4
- C5
- E1
- E2
- S1
- D1



- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Map 8**

Biota  
Environmental  
Sciences



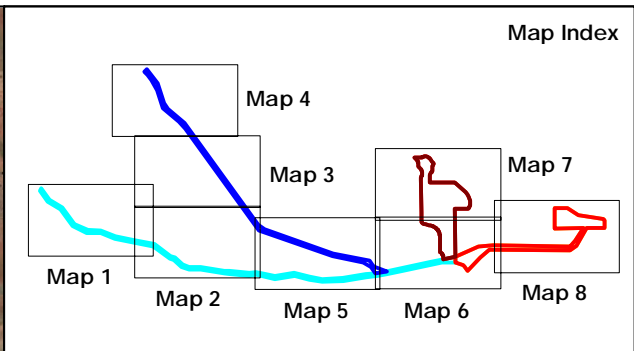
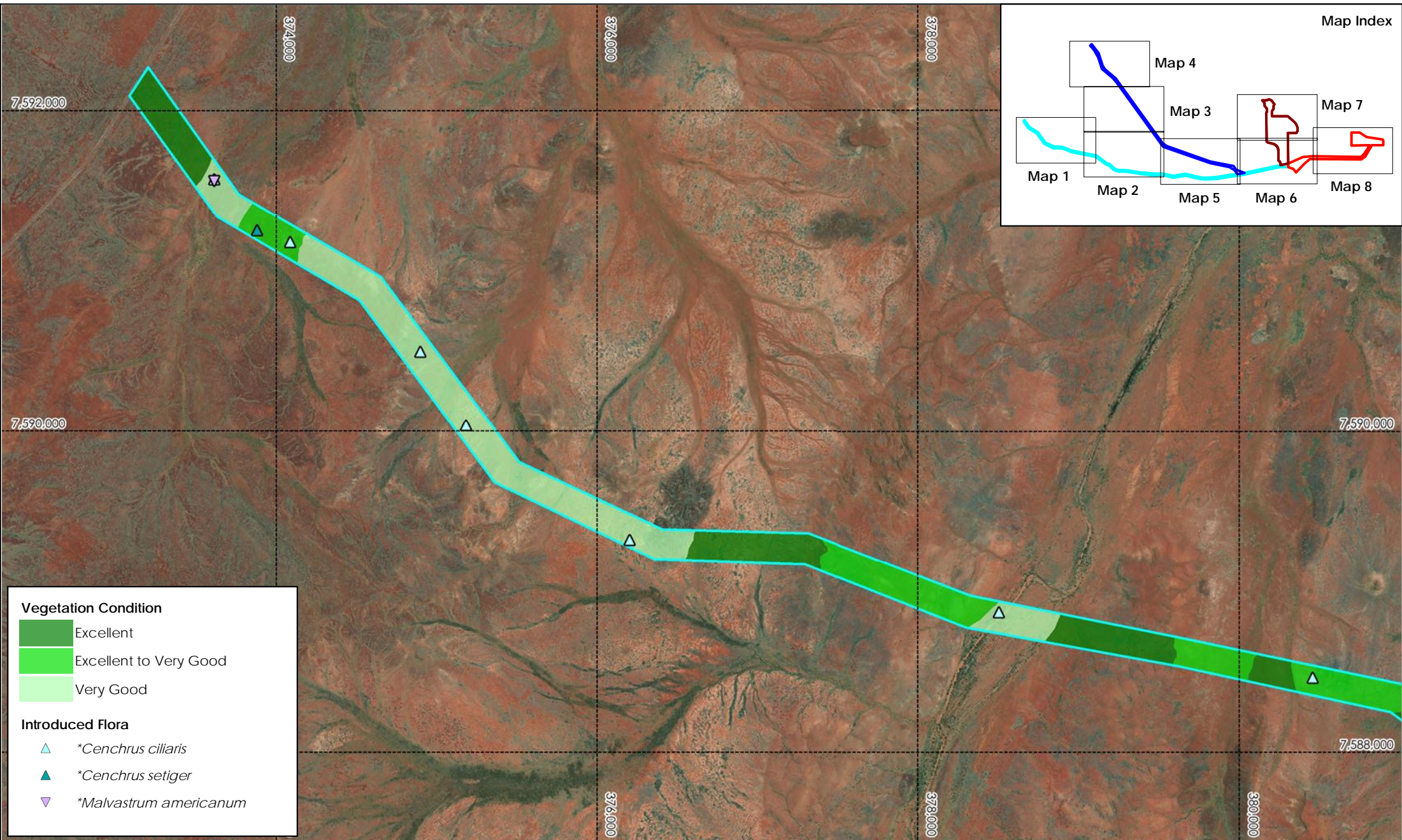
# Appendix 8

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## Vegetation Condition and Weed Location Mapping







**Vegetation Condition**

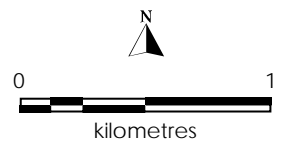
- Excellent
- Excellent to Very Good
- Very Good

**Introduced Flora**

- \**Cenchrus ciliaris*
- \**Cenchrus setiger*
- \**Malvastrum americanum*



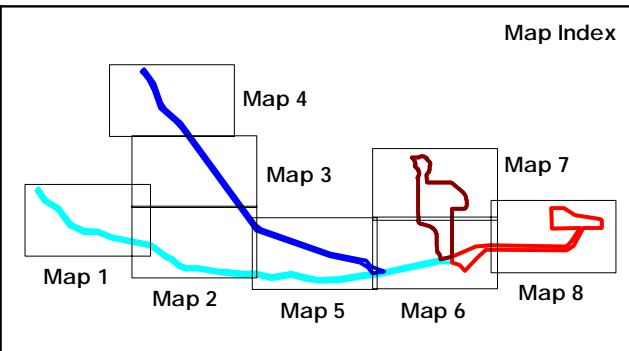
- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Condition Map 1**







#### Vegetation Condition

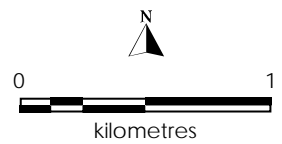
- Excellent
- Excellent to Very Good
- Very Good
- Completely Degraded

#### Introduced Flora

- \**Cenchrus ciliaris*
- \**Malvastrum americanum*

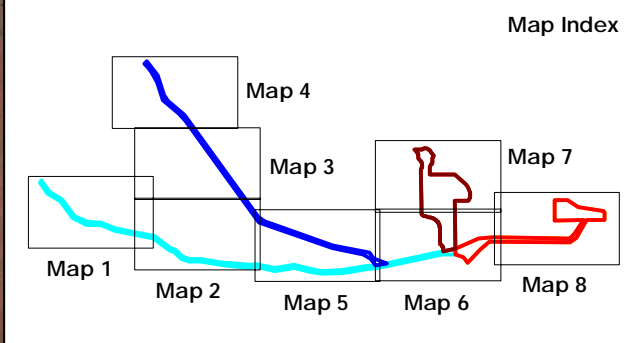
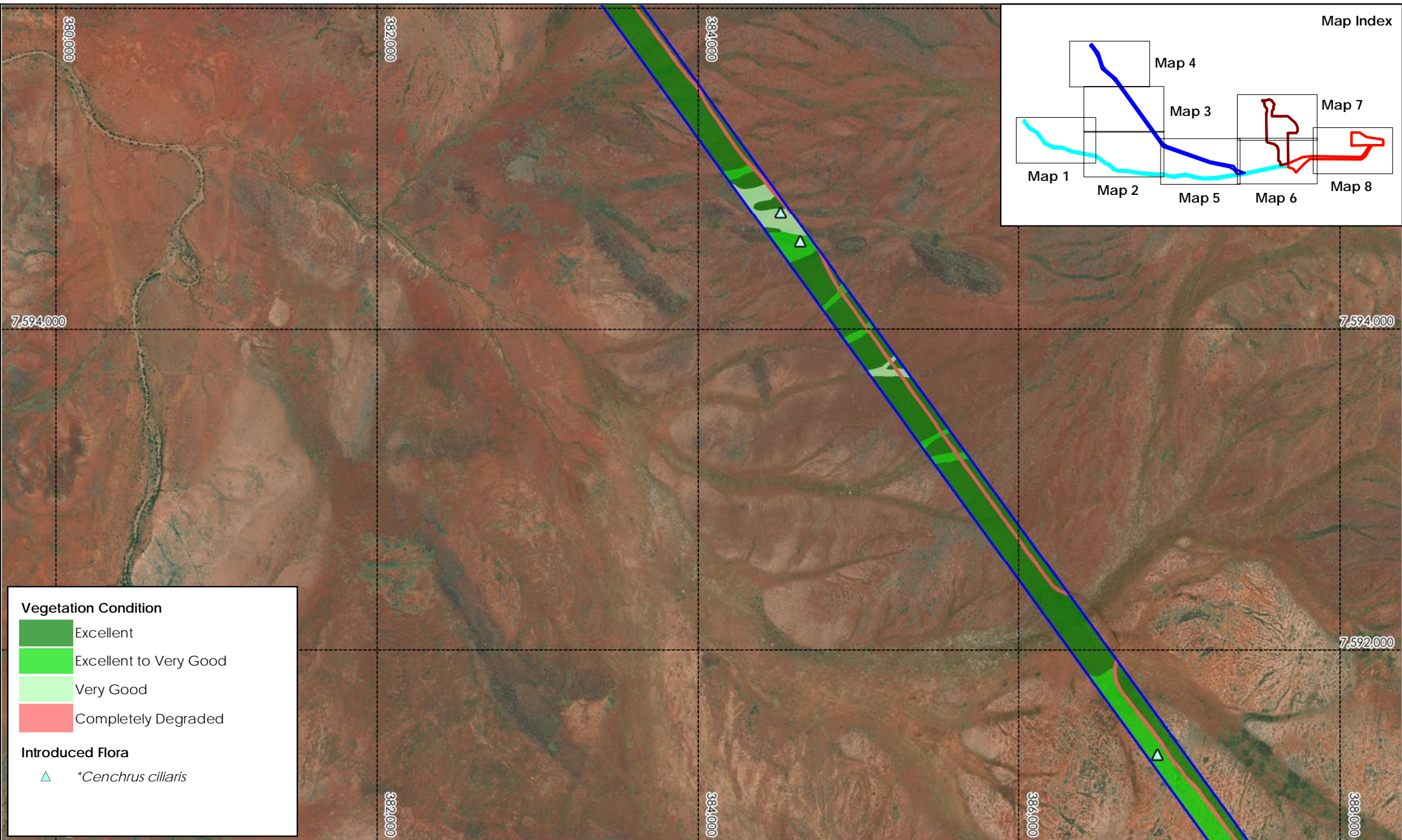


- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



## Robe Mesa Project Vegetation Condition Map 2





**Vegetation Condition**

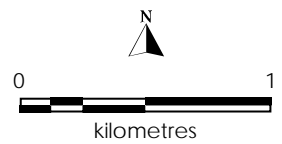
- Excellent
- Excellent to Very Good
- Very Good
- Completely Degraded

**Introduced Flora**

- \**Cenchrus ciliaris*

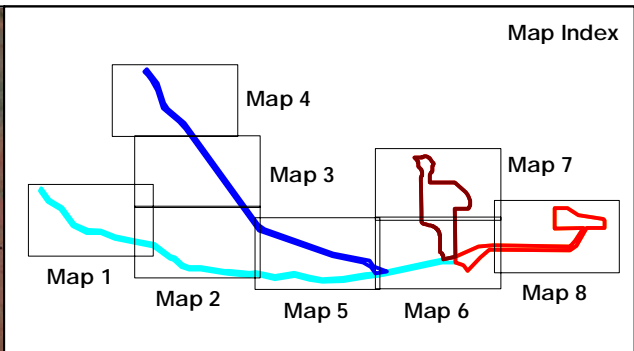
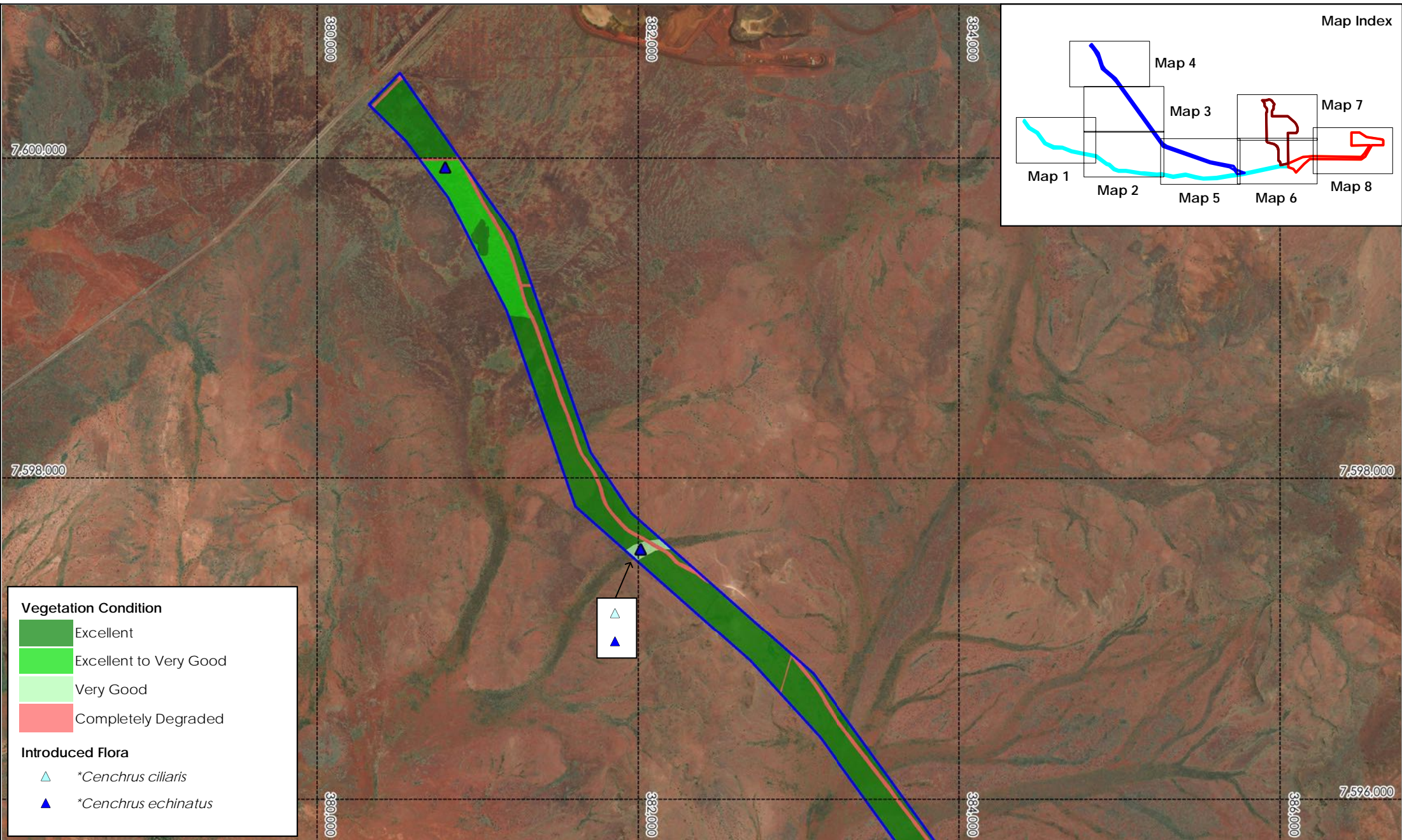


- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Condition Map 3**





**Vegetation Condition**

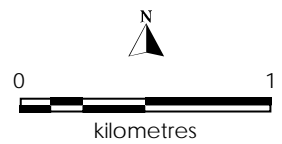
- Excellent
- Excellent to Very Good
- Very Good
- Completely Degraded

**Introduced Flora**

- \**Cenchrus ciliaris*
- \**Cenchrus echinatus*

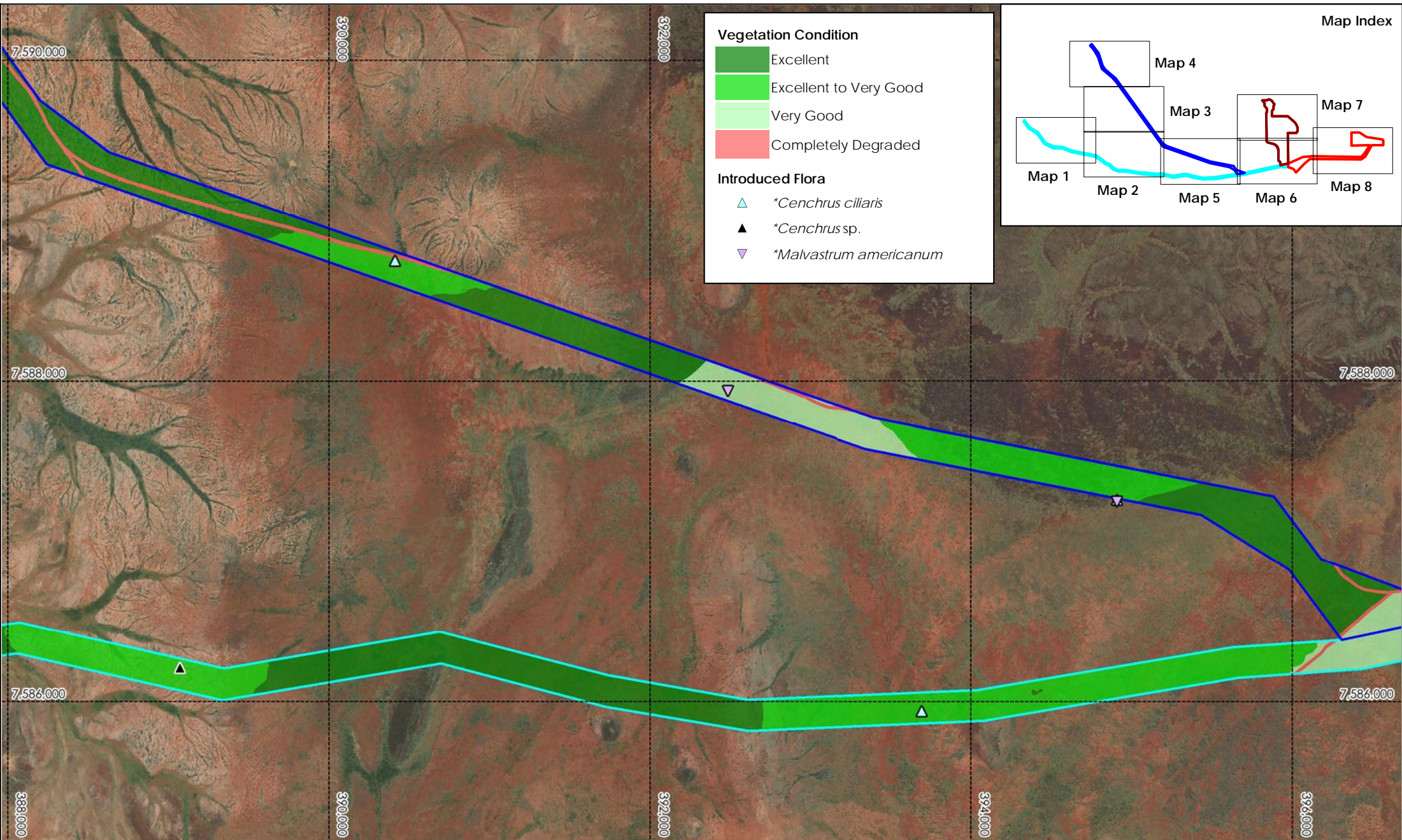


- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Condition Map 4**



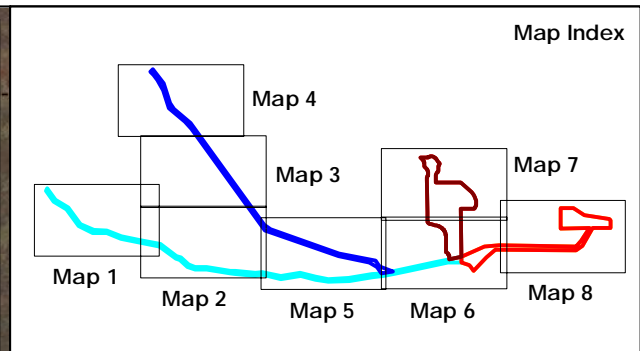


**Vegetation Condition**

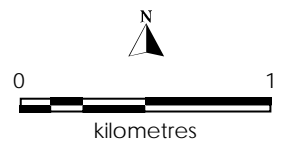
- Excellent
- Excellent to Very Good
- Very Good
- Completely Degraded

**Introduced Flora**

- \**Cenchrus ciliaris*
- \**Cenchrus* sp.
- \**Malvastrum americanum*



- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Condition Map 5**

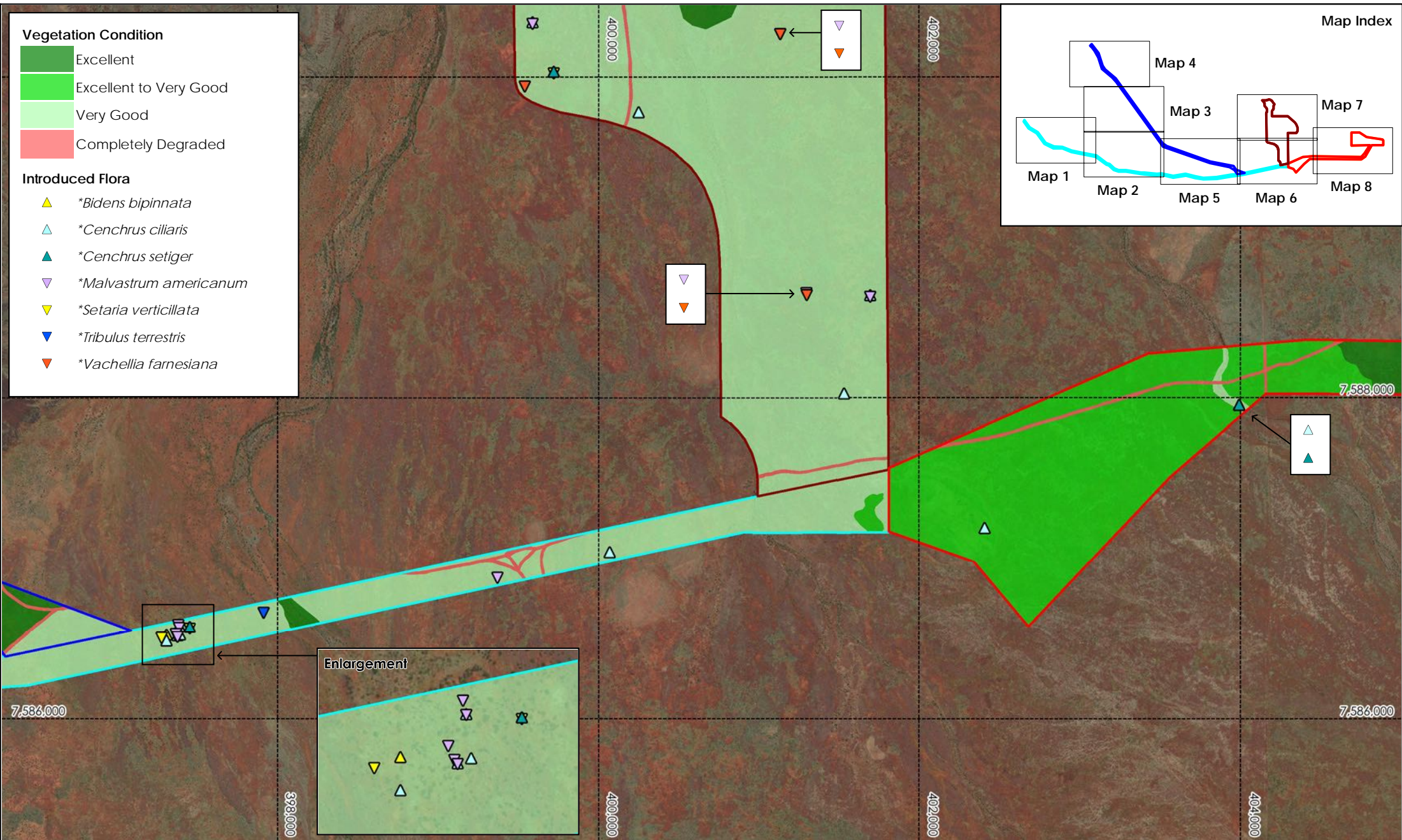
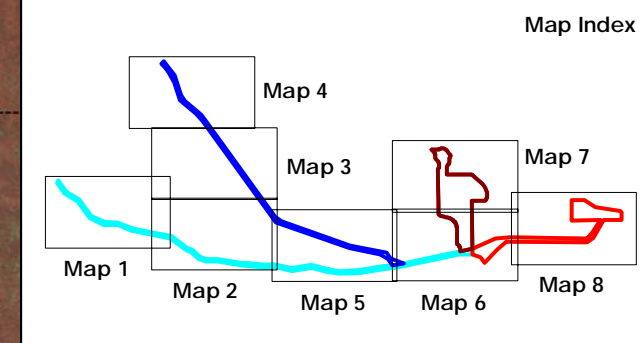
Biota  
Environmental  
Sciences

**Vegetation Condition**

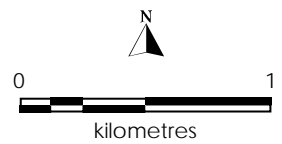
- Excellent
- Excellent to Very Good
- Very Good
- Completely Degraded

**Introduced Flora**

- \**Bidens bipinnata*
- \**Cenchrus ciliaris*
- \**Cenchrus setiger*
- \**Malvastrum americanum*
- \**Setaria verticillata*
- \**Tribulus terrestris*
- \**Vachellia farnesiana*

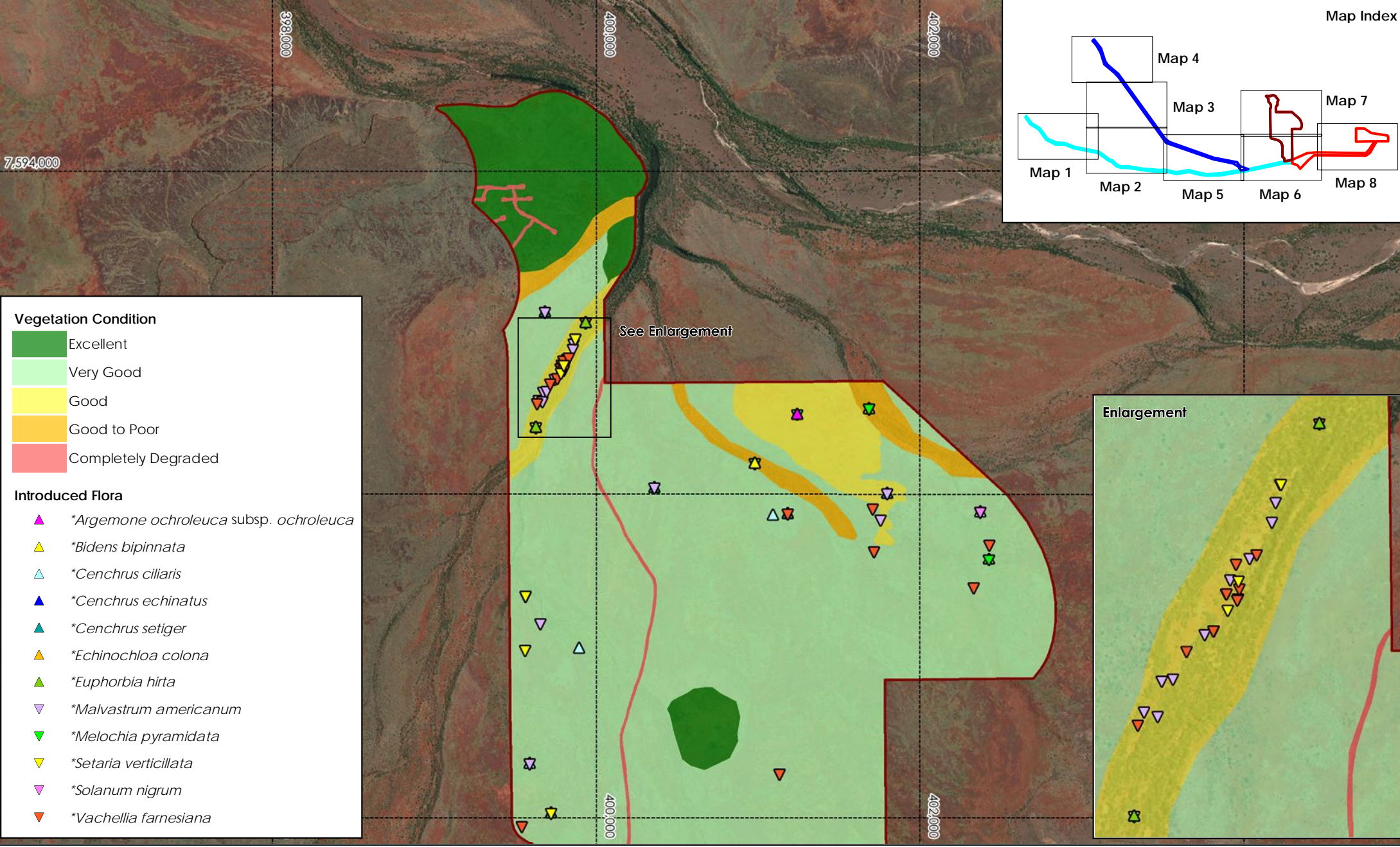
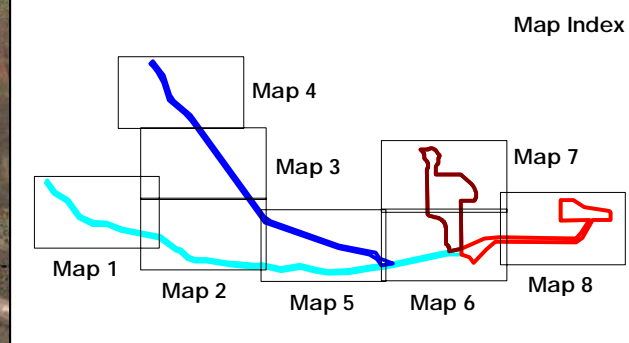


- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure

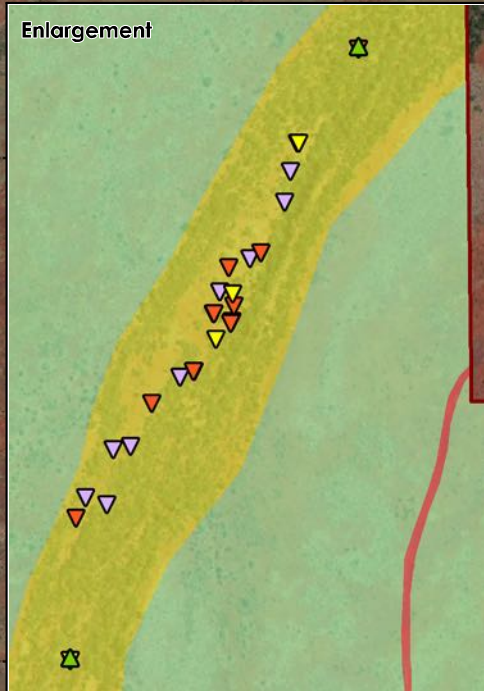


**Robe Mesa Project  
Vegetation Condition Map 6**

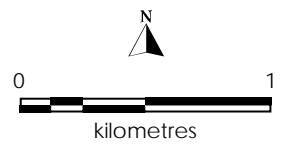




- Vegetation Condition**
- Excellent
  - Very Good
  - Good
  - Good to Poor
  - Completely Degraded
- Introduced Flora**
- \**Argemone ochroleuca* subsp. *ochroleuca*
  - \**Bidens bipinnata*
  - \**Cenchrus ciliaris*
  - \**Cenchrus echinatus*
  - \**Cenchrus setiger*
  - \**Echinochloa colona*
  - \**Euphorbia hirta*
  - \**Malvastrum americanum*
  - \**Melochia pyramidata*
  - \**Setaria verticillata*
  - \**Solanum nigrum*
  - \**Vachellia farnesiana*



- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



## Robe Mesa Project Vegetation Condition Map 7

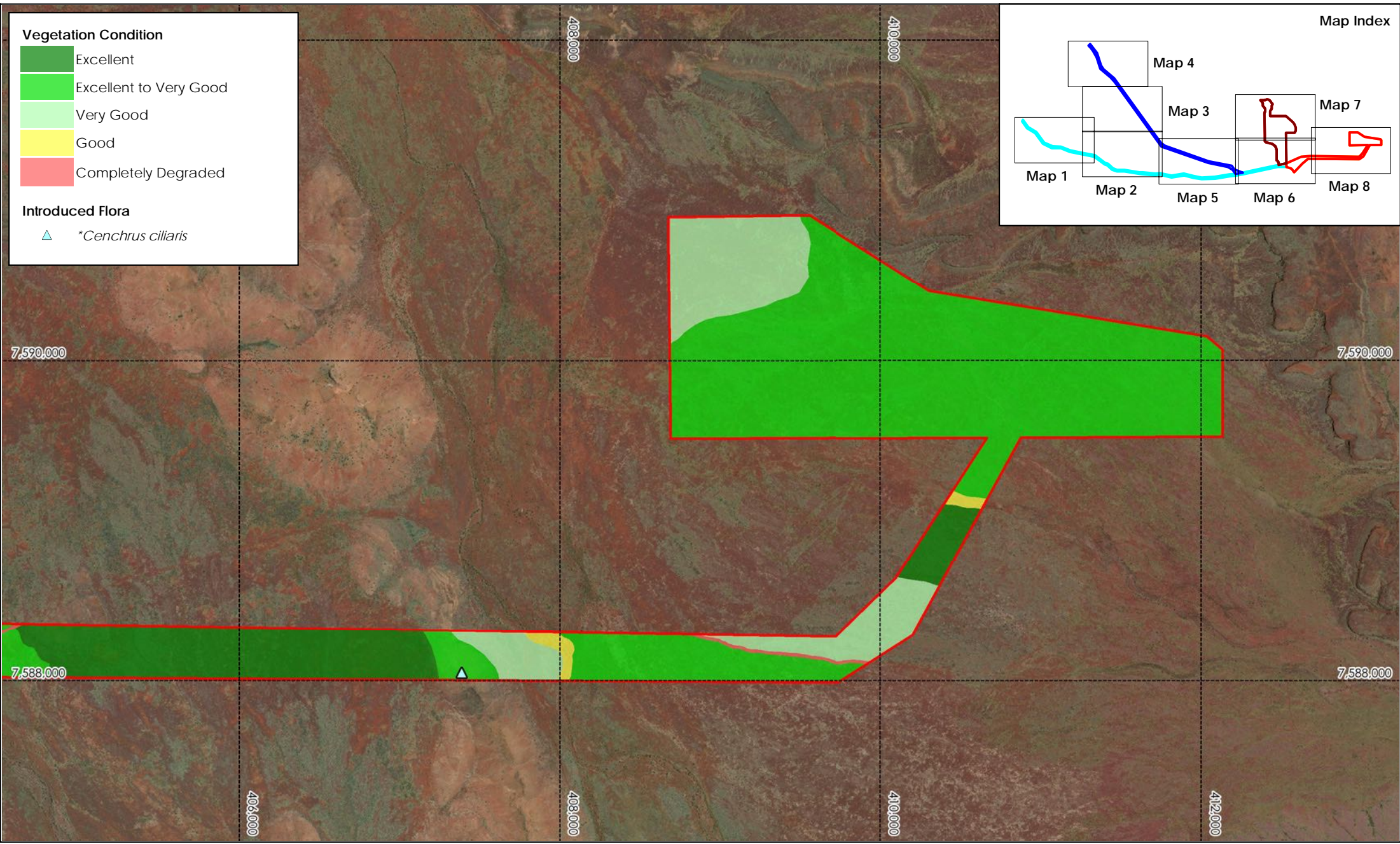
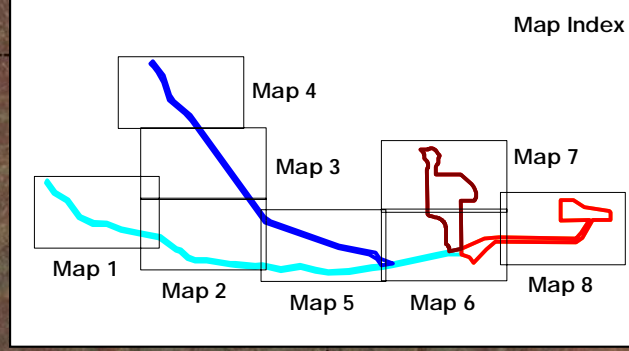


**Vegetation Condition**

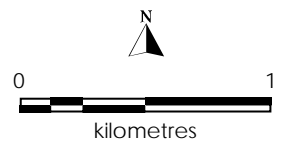
- Excellent
- Excellent to Very Good
- Very Good
- Good
- Completely Degraded

**Introduced Flora**

- \**Cenchrus ciliaris*



- Upper Haul Rd option (CZR)
- Lower Haul Rd option (CZR/RHI)
- East additional area (EAA)
- Mine associated infrastructure



**Robe Mesa Project  
Vegetation Condition Map 8**







## Appendix 9

### Significant Flora Locations Table





Site	Species	Date	Cover (%)	Height (cm)	Easting	Northing	No. Individuals
BOPP-JT	<i>Eragrostis crateriformis</i>	28/6/2022			397501	7586456	N=7
BOPP-JT	<i>Eragrostis crateriformis</i>	28/6/2022			397388	7586454	N=30
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399675	7591585	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399564	7591376	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	28/6/2022			397333	7586532	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399639	7590928	N=1
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399726	7591658	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397251	7586569	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397393	7586525	N=20
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399657	7591577	N=50
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399603	7591223	N=35
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397417	7586547	N=18
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397292	7586528	N=5
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399666	7591608	N=10
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399603	7590880	N=1
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397308	7586582	N=5
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399583	7590847	N=1
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397420	7586551	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397389	7586509	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399690	7591647	N=8
BOPP-JT	<i>Eragrostis crateriformis</i>	29/6/2022			397387	7586509	N=2
BOPP-JT	<i>Eragrostis crateriformis</i>	29/6/2022			397586	7586601	N=1
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399672	7591625	N=20
BOPP-JT	<i>Eragrostis crateriformis</i>	29/6/2022			399969	7589844	N=20
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399685	7591611	N=13
OPP-SW	<i>Eragrostis crateriformis</i>	21/6/2022			399624	7590114	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397382	7586513	N=15
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397259	7586580	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399658	7591591	N=15
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397328	7586540	N=2
OPP-SW	<i>Eragrostis crateriformis</i>	21/6/2022			399533	7589951	N=5
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399600	7590866	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397307	7586523	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399653	7591567	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399584	7590823	N=8
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399731	7591638	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397248	7586478	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399612	7590890	N=20
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399625	7590902	N=5
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397378	7586519	N=2
BOPP-JT	<i>Eragrostis crateriformis</i>	29/6/2022			399975	7589794	N=2
CRM64	<i>Eragrostis crateriformis</i>	27/6/2022	0.1	8	396687	7586377	
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397449	7586592	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397429	7586581	N=3
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397336	7586591	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399573	7590775	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397390	7586624	N=10
CRM67	<i>Eragrostis crateriformis</i>	28/6/2022	0.1	25	411013	7590175	
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397404	7586614	N=55
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397372	7586534	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399598	7590846	N=3
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399706	7591631	N=2

Site	Species	Date	Cover (%)	Height (cm)	Easting	Northing	No. Individuals
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397324	7586557	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397366	7586553	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397292	7586539	N=2
CRM07	<i>Eragrostis crateriformis</i>	22/6/2022	0.1	15	402428	7591601	
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399603	7591207	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397415	7586589	N=40
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397361	7586553	N=2
CRM42	<i>Eragrostis crateriformis</i>	21/6/2022	0.1	15	399551	7590030	
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399607	7590848	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397379	7586610	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397410	7586572	N=4
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399591	7590836	N=2
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397382	7586551	N=3
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397383	7586561	N=12
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399719	7591631	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397398	7586535	N=6
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397394	7586614	N=14
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397384	7586594	N=58
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399578	7590822	N=15
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			397388	7586578	N=30
BOPP-SW	<i>Eragrostis crateriformis</i>	29/6/2022			399704	7591664	N=3



# Appendix 10

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## Weed Locations Table





Site	Species	Date	Cover (%)	Height (cm)	Easting	Northing	No. Individuals
CRM28	* <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	22/6/2022	0.1	1	401240	7592498	
BOPP-SW	* <i>Bidens bipinnata</i>	29/6/2022			397309	7586525	N=6
CRM27	* <i>Bidens bipinnata</i>	22/6/2022	0.1	10	400978	7592193	N=30
BOPP-ABSRH	* <i>Cenchrus ciliaris</i>	27/6/2022			390410	7588749	
BOPP-ABSRH	* <i>Cenchrus ciliaris</i>	28/6/2022			402406	7587189	
BOPP-SW	* <i>Cenchrus ciliaris</i>	29/6/2022			397377	7586518	N=60
BOPP-SW	* <i>Cenchrus ciliaris</i>	29/6/2022			397309	7586486	N=2
BOPP-SW	* <i>Cenchrus ciliaris</i>	29/6/2022			397393	7586524	N=35
BOPP-SW	* <i>Cenchrus ciliaris</i>	29/6/2022			397387	7586576	N=25
CRM01	* <i>Cenchrus ciliaris</i>	21/6/2022	0.1	20	401533	7588027	
CRM01R	* <i>Cenchrus ciliaris</i>	23/6/2022	0.1	60	386957	7586432	
CRM02R	* <i>Cenchrus ciliaris</i>	26/6/2022	0.1	60	387705	7590210	
CRM03	* <i>Cenchrus ciliaris</i>	21/6/2022	0.0	60	401696	7588639	N=2
CRM05	* <i>Cenchrus ciliaris</i>	22/6/2022	0.5	70	401798	7592011	
CRM06	* <i>Cenchrus ciliaris</i>	22/6/2022	0.1	60	402373	7591896	
CRM103	* <i>Cenchrus ciliaris</i>	27/6/2022	0.1	25	400068	7587037	
CRM106R	* <i>Cenchrus ciliaris</i>	28/6/2022	0.1	70	407386	7588051	N=1
CRM17	* <i>Cenchrus ciliaris</i>	25/6/2022	0.1	60	378503	7588872	
CRM20	* <i>Cenchrus ciliaris</i>	26/6/2022	0.1	20	386863	7591350	
CRM25R	* <i>Cenchrus ciliaris</i>	21/6/2022	0.1	60	401182	7591882	
CRM26R	* <i>Cenchrus ciliaris</i>	22/6/2022	0.1	30	401090	7591874	
CRM27	* <i>Cenchrus ciliaris</i>	22/6/2022	0.1	40	400978	7592193	
CRM29	* <i>Cenchrus ciliaris</i>	23/6/2022	1	40	401688	7592530	
CRM31R	* <i>Cenchrus ciliaris</i>	23/6/2022	1.0	35	403991	7587954	
CRM35R	* <i>Cenchrus ciliaris</i>	24/6/2022	0.1	40	380456	7588464	
CRM38	* <i>Cenchrus ciliaris</i>	25/6/2022	6	40	373613	7591575	
CRM40R	* <i>Cenchrus ciliaris</i>	25/6/2022	0.1	30	374086	7591180	
CRM43	* <i>Cenchrus ciliaris</i>	21/6/2022	0.1	45	399588	7590341	N=25
CRM44	* <i>Cenchrus ciliaris</i>	22/6/2022	0.1	40	399894	7591050	N=3
CRM46	* <i>Cenchrus ciliaris</i>	22/6/2022	0.5	55	399934	7593065	
CRM47	* <i>Cenchrus ciliaris</i>	22/6/2022	18.0	60	399627	7592414	
CRM48	* <i>Cenchrus ciliaris</i>	23/6/2022	0.1	45	399681	7593131	
CRM54	* <i>Cenchrus ciliaris</i>	25/6/2022	0.1	45	374898	7590498	
CRM55	* <i>Cenchrus ciliaris</i>	25/6/2022	0.1		375181	7590038	
CRM56	* <i>Cenchrus ciliaris</i>	25/6/2022	0.1	45	376201	7589324	
CRM60	* <i>Cenchrus ciliaris</i>	27/6/2022	0.1	3	393695	7585942	
CRM70	* <i>Cenchrus ciliaris</i>	29/6/2022	0.5	160	382014	7597557	
CRM82R	* <i>Cenchrus ciliaris</i>	26/6/2022	0.1	50	384513	7594731	
CRM83R	* <i>Cenchrus ciliaris</i>	26/6/2022	0.1	40	384636	7594552	
OPP-ALTH	* <i>Cenchrus ciliaris</i>	27/6/2022			394910	7587261	N=50
OPP-SW	* <i>Cenchrus ciliaris</i>	21/6/2022			400248	7589782	N=2
CRM70	* <i>Cenchrus echinatus</i>	29/6/2022	0.5	90	382014	7597557	
CRM73	* <i>Cenchrus echinatus</i>	30/6/2022	0.1	25	380797	7599942	N=1
CRM05	* <i>Cenchrus setiger</i>	22/6/2022	0.1	75	401798	7592011	
CRM25R	* <i>Cenchrus setiger</i>	22/6/2022	0.1	80	401182	7591882	
CRM27	* <i>Cenchrus setiger</i>	22/6/2022	2	60	400978	7592193	
CRM28	* <i>Cenchrus setiger</i>	22/6/2022	0.1	40	401240	7592498	
CRM29	* <i>Cenchrus setiger</i>	23/6/2022	38	45	401688	7592530	
CRM30	* <i>Cenchrus setiger</i>	23/6/2022	0.1	80	400358	7592044	
CRM31R	* <i>Cenchrus setiger</i>	23/6/2022	0.1	40	403991	7587954	
CRM39	* <i>Cenchrus setiger</i>	25/6/2022	0.1	40	373881	7591255	
CRM46	* <i>Cenchrus setiger</i>	22/6/2022	0.5	70	399934	7593065	
CRM47	* <i>Cenchrus setiger</i>	22/6/2022	18	65	399627	7592414	
CRM48	* <i>Cenchrus setiger</i>	23/6/2022	0.1	45	399681	7593131	
CRM87	* <i>Cenchrus setiger</i>	28/6/2022	0.1	60	397453	7586572	



Site	Species	Date	Cover (%)	Height (cm)	Easting	Northing	No. Individuals
OPP-SW	* <i>Cenchrus setiger</i>	21/6/2022			399720	7590034	N=14
CRM57	* <i>Cenchrus sp.</i>	26/6/2022	0.1	35	389070	7586210	
CRM07	* <i>Echinochloa colona</i>	22/6/2022	0.1	30	402428	7591601	N=10
CRM27	* <i>Echinochloa colona</i>	22/6/2022	0.1	50	400978	7592193	
CRM29	* <i>Echinochloa colona</i>	23/6/2022	0.1	20	401688	7592530	
CRM07	* <i>Euphorbia hirta</i>	22/6/2022	0.1	10	402428	7591601	N=30
CRM27	* <i>Euphorbia hirta</i>	22/6/2022	0.1	5	400978	7592193	
CRM46	* <i>Euphorbia hirta</i>	22/6/2022	0.1	25	399934	7593065	
CRM47	* <i>Euphorbia hirta</i>	23/6/2022	0.1	20	399627	7592414	N=1
BOPP-SW	* <i>Malvastrum americanum</i>	29/6/2022			399655	7591206	N=40
BOPP-SW	* <i>Malvastrum americanum</i>	29/6/2022			399563	7591375	N=6
BOPP-SW	* <i>Malvastrum americanum</i>	29/6/2022			397383	7586594	N=35
BOPP-SW	* <i>Malvastrum americanum</i>	29/6/2022			397387	7586577	N=45
BOPP-SW	* <i>Malvastrum americanum</i>	29/6/2022			397373	7586524	N=12
BOPP-SW	* <i>Malvastrum americanum</i>	29/6/2022			397366	7586540	N=45
BOPP-SW	* <i>Malvastrum americanum</i>	29/6/2022			397377	7586519	N=20
CRM03	* <i>Malvastrum americanum</i>	21/6/2022	0.1	50	401696	7588639	N=2
CRM05	* <i>Malvastrum americanum</i>	22/6/2022	0.1	50	401798	7592011	N=5
CRM07	* <i>Malvastrum americanum</i>	22/6/2022	0.5	50	402428	7591601	N=100
CRM22	* <i>Malvastrum americanum</i>	21/6/2022	0.1	15	401131	7590277	
CRM27	* <i>Malvastrum americanum</i>	22/6/2022	2	90	400978	7592193	
CRM29	* <i>Malvastrum americanum</i>	23/6/2022	0.5	80	401688	7592530	
CRM30	* <i>Malvastrum americanum</i>	23/6/2022	0.1	20	400358	7592044	
CRM38	* <i>Malvastrum americanum</i>	25/6/2022	0.1	50	373613	7591575	
CRM43	* <i>Malvastrum americanum</i>	21/6/2022	0.1	40	399588	7590341	N=4
CRM47	* <i>Malvastrum americanum</i>	22/6/2022	0.1	45	399627	7592414	N=32
CRM48	* <i>Malvastrum americanum</i>	23/6/2022	0.1		399681	7593131	
CRM52	* <i>Malvastrum americanum</i>	24/6/2022	0.1	25	382882	7586940	N=1
CRM86	* <i>Malvastrum americanum</i>	27/6/2022	0.1	50	392485	7587950	
CRM88	* <i>Malvastrum americanum</i>	28/6/2022	0.1	50	399371	7586890	
OPP-AL	* <i>Malvastrum americanum</i>	22/6/2022			401758	7591848	N=30
OPP-AL	* <i>Malvastrum americanum</i>	21/6/2022			401295	7588663	N=10
OPP-ALTH	* <i>Malvastrum americanum</i>	27/6/2022			394910	7587261	N=20
OPP-JT	* <i>Malvastrum americanum</i>	22/6/2022			399786	7592806	N=1
OPP-JT	* <i>Malvastrum americanum</i>	22/6/2022			399779	7592783	N=10
OPP-JT	* <i>Malvastrum americanum</i>	22/6/2022			399643	7592588	N=4
OPP-JT	* <i>Malvastrum americanum</i>	22/6/2022			399673	7592639	N=1
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399818	7592842	N=4
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399666	7592580	N=6
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399691	7592642	N=20
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399869	7592965	N=3
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399744	7592716	N=5
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399759	7592722	N=2
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399861	7592935	N=5
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399855	7592902	N=2
OPP-SW	* <i>Malvastrum americanum</i>	22/6/2022			399799	7592775	N=1
CRM07	* <i>Melochia pyramidata</i>	22/6/2022	0.1	20	402428	7591601	
CRM27	* <i>Melochia pyramidata</i>	22/6/2022	0.1	80	400978	7592193	
CRM28	* <i>Melochia pyramidata</i>	22/6/2022	0.1	3	401240	7592498	
CRM29	* <i>Melochia pyramidata</i>	23/6/2022	0.1	60	401688	7592530	
BOPP-SW	* <i>Setaria verticillata</i>	29/6/2022			399563	7591376	N=4
BOPP-SW	* <i>Setaria verticillata</i>	29/6/2022			399561	7591040	N=1
BOPP-SW	* <i>Setaria verticillata</i>	29/6/2022			397278	7586514	N=20
CRM27	* <i>Setaria verticillata</i>	22/6/2022	0.1	30	400978	7592193	
CRM29	* <i>Setaria verticillata</i>	23/6/2022	0.1	60	401688	7592530	
CRM47	* <i>Setaria verticillata</i>	23/6/2022	0.1	40	399627	7592414	

Site	Species	Date	Cover (%)	Height (cm)	Easting	Northing	No. Individuals
CRM87	* <i>Setaria verticillata</i>	28/6/2022	0.1	45	397453	7586572	
OPP-SW	* <i>Setaria verticillata</i>	21/6/2022			399721	7590034	N=3
OPP-SW	* <i>Setaria verticillata</i>	22/6/2022			399870	7592965	N=2
OPP-SW	* <i>Setaria verticillata</i>	22/6/2022			399782	7592756	N=25
OPP-SW	* <i>Setaria verticillata</i>	22/6/2022			399800	7592804	N=2
CRM06	* <i>Solanum nigrum</i>	22/6/2022	0.1	5	402373	7591896	
BOPP-JT	* <i>Tribulus terrestris</i>	29/6/2022			397913	7586672	N=1
BOPP-ALRH	* <i>Vachellia farnesiana</i>	21/6/2022			401297	7588651	N=1
BOPP-ALRH	* <i>Vachellia farnesiana</i>	22/6/2022			401711	7591916	N=10
CRM06	* <i>Vachellia farnesiana</i>	22/6/2022	0.1	5	402373	7591896	
CRM07	* <i>Vachellia farnesiana</i>	22/6/2022	0.1	280	402428	7591601	N=10
CRM22	* <i>Vachellia farnesiana</i>	21/6/2022	0.1	15	401131	7590277	
CRM25R	* <i>Vachellia farnesiana</i>	22/6/2022	0.1	10	401182	7591882	
CRM27	* <i>Vachellia farnesiana</i>	22/6/2022	1.5	340	400978	7592193	
CRM29	* <i>Vachellia farnesiana</i>	23/6/2022	0.1	210	401688	7592530	N=8
CRM46	* <i>Vachellia farnesiana</i>	22/6/2022	0.1	45	399934	7593065	N=1
CRM47	* <i>Vachellia farnesiana</i>	22/6/2022	0.1	45	399627	7592414	N=3
OPP-AL	* <i>Vachellia farnesiana</i>	22/6/2022			402430	7591692	
OPP-AL	* <i>Vachellia farnesiana</i>	22/6/2022			402333	7591425	N=25
OPP-AL	* <i>Vachellia farnesiana</i>	22/6/2022			401719	7591651	N=30
OPP-JT	* <i>Vachellia farnesiana</i>	22/6/2022			399796	7592832	N=1
OPP-JT	* <i>Vachellia farnesiana</i>	22/6/2022			399780	7592783	N=3
OPP-JT	* <i>Vachellia farnesiana</i>	22/6/2022			399633	7592566	N=1
OPP-SW	* <i>Vachellia farnesiana</i>	21/6/2022			399539	7589953	N=1
OPP-SW	* <i>Vachellia farnesiana</i>	22/6/2022			399758	7592722	N=1
OPP-SW	* <i>Vachellia farnesiana</i>	22/6/2022			399714	7592688	N=4
OPP-SW	* <i>Vachellia farnesiana</i>	22/6/2022			399801	7592791	N=1
OPP-SW	* <i>Vachellia farnesiana</i>	22/6/2022			399798	7592773	N=3
OPP-SW	* <i>Vachellia farnesiana</i>	22/6/2022			399830	7592848	N=1



# Appendix 11

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## Vascular Flora Species List





Family	Species	Notes	
<b>Aizoaceae</b>	<i>Trianthema glossostigmum</i>		
	<i>Trianthema oxycalyptum</i> var. <i>oxycalyptum</i>		
	<i>Trianthema pilosum</i>		
	<i>Trianthema triquetrum</i>		
<b>Amaranthaceae</b>	<i>Alternanthera denticulata</i>		
	<i>Alternanthera</i> ? <i>denticulata</i>	Insufficient material.	
	<i>Alternanthera nana</i>		
	<i>Alternanthera</i> ? <i>nana</i>	Insufficient material, sterile.	
	<i>Alternanthera</i> sp.	Insufficient material, juvenile.	
	<i>Amaranthus cochleitepalus</i>		
	<i>Amaranthus cuspidifolius</i>		
	<i>Amaranthus undulatus</i>		
	<i>Amaranthus</i> sp.	Insufficient material, sterile.	
	<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>		
	<i>Gomphrena cunninghamii</i>		
	<i>Ptilotus aervoides</i>		
	<i>Ptilotus appendiculatus</i>		
	<i>Ptilotus astrolasius</i>		
	<i>Ptilotus auriculifolius</i>		
	<i>Ptilotus axillaris</i>		
	<i>Ptilotus calostachyus</i>		
	<i>Ptilotus clementii</i>		
	<i>Ptilotus exaltatus</i>		
	<i>Ptilotus fusiformis</i>		
	<i>Ptilotus helipteroides</i>		
	<i>Ptilotus obovatus</i> var. <i>obovatus</i>		
	<i>Ptilotus polystachyus</i>		
	<i>Ptilotus</i> sp.	Insufficient material, juvenile.	
	<b>Apocynaceae</b>	<i>Cynanchum viminale</i> subsp. <i>australe</i>	
	<b>Araliaceae</b>	<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	
	<b>Asteraceae</b>	* <i>Bidens bipinnata</i>	Weed
<i>Calocephalus pilbarensis</i>			
<i>Calotis</i> sp.		Insufficient material, sterile.	
<i>Pentalepis trichodesmoides</i> subsp. <i>trichodesmoides</i>			
	<i>Pluchea dentex</i>		

Family	Species	Notes
	<i>Pluchea dunlopia</i>	
	<i>Pluchea ferdinandi-muelleri</i>	
	<i>Pluchea rubelliflora</i>	
	<i>Pterocaulon sphacelatum</i>	
	<i>Pterocaulon ? sphacelatum</i>	Insufficient material, juvenile.
	<i>Pterocaulon sphaeranthoides</i>	
	<i>Pterocaulon</i> sp.	Insufficient material, sterile.
	<i>Streptoglossa bubakii</i>	
	<i>Streptoglossa decurrens</i>	
	<i>Streptoglossa</i> sp.	Insufficient material, juvenile.
<b>Boraginaceae</b>	Asteraceae sp.	Insufficient material, sterile.
	<i>Ehretia saligna</i> var. <i>saligna</i>	
<b>Brassicaceae</b>	<i>Euploca cunninghamii</i>	
	<i>Euploca heterantha</i>	
	<i>Euploca pachyphylla</i>	
	<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	
	<i>Lepidium ? pholidogynum</i>	Insufficient material, sterile.
<b>Capparaceae</b>	<i>Stenopetalum anfractum</i>	
	<i>Capparis spinosa</i> subsp. <i>nummularia</i>	
<b>Caryophyllaceae</b>	<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	
	<i>Polycarpaea holtzei</i>	
	<i>Polycarpaea longiflora</i>	
	<i>Polycarpaea</i> sp.	Insufficient material, sterile.
<b>Chenopodiaceae</b>	<i>Dysphania kalpari</i>	
	<i>Dysphania melanocarpa</i> (form not determined)	
	<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	
	<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	
	<i>Dysphania rhadinostachya</i> (subsp. not determined)	Insufficient material, sterile.
	<i>Dysphania</i> sp.	Insufficient material, sterile.
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	
	<i>Maireana ? georgei</i>	Insufficient material, sterile.
	<i>Maireana melanocoma</i>	
	<i>Maireana ? melanocoma</i>	Insufficient material, sterile.
	<i>Maireana planifolia</i>	
	<i>Rhagodia eremaea</i>	

Family	Species	Notes	
<b>Cleomaceae</b>	<i>Salsola australis</i>		
	<i>Sclerolaena costata</i>		
	<i>Sclerolaena ? costata</i>	Insufficient material, sterile.	
	<i>Sclerolaena densiflora</i>		
	<i>Sclerolaena eriacantha</i>		
<b>Convolvulaceae</b>	<i>Arivela viscosa</i>		
	<i>Bonamia alatisemina</i>		
	<i>Bonamia ? alatisemina</i>	Insufficient material, sterile.	
	<i>Bonamia erecta</i>		
	<i>Bonamia pannosa</i>		
	<i>Bonamia pilbarensis</i>		
	<i>Bonamia</i> sp. ( <i>pilbarensis</i> / <i>media</i> indet)	Insufficient material, sterile.	
	<i>Bonamia</i> sp.	Insufficient material, juvenile.	
	<i>Convolvulus clementii</i>		
	<i>Duperreya commixta</i>		
	<i>Evolvulus alsinoides</i>	Insufficient material.	
	<i>Evolvulus alsinoides</i> var. <i>decumbens</i>		
	<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		
	<i>Ipomoea coptica</i>		
	<i>Ipomoea muelleri</i>		
	<i>Polymeria ambigua</i>		
	<i>Polymeria</i> sp. nov. (KTF39-05)	Considered undescribed (M. Hislop, WA Herbarium)	
	<b>Cucurbitaceae</b>	<i>Polymeria</i> sp.	Insufficient material, sterile.
		<i>Cucumis melo</i>	
		<i>Cucumis variabilis</i>	
<b>Cyperaceae</b>	<i>Bulbostylis barbata</i>		
	<i>Bulbostylis turbinata</i>		
	<i>Cyperus bifax</i>		
	<i>Cyperus dactyloides</i>		
	<i>Cyperus hesperius</i>		
	<i>Cyperus iria</i>		
	<i>Cyperus pulchellus</i>		
	<i>Cyperus squarrosus</i>		
	<i>Cyperus vaginatus</i>		
	<i>Fimbristylis dichotoma</i>		
	<i>Fimbristylis</i> aff. <i>dichotoma</i>	Insufficient material, sterile.	



Family	Species	Notes
<b>Elatinaceae</b>	? <i>Fimbristylis dichotoma</i>	Insufficient material, sterile.
	<i>Fimbristylis littoralis</i>	
	<i>Fimbristylis simulans</i>	
<b>Euphorbiaceae</b>	<i>Bergia</i> sp.	Insufficient material, sterile.
	<i>Euphorbia australis</i>	Insufficient material, sterile.
	<i>Euphorbia australis</i> var. <i>subtomentosa</i>	
	<i>Euphorbia biconvexa</i>	
	<i>Euphorbia boophthona</i>	
	<i>Euphorbia careyi</i>	
	* <i>Euphorbia hirta</i>	Weed
	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	
	<i>Euphorbia trigonosperma</i>	
	<i>Euphorbia vaccaria</i> var. <i>vaccaria</i>	
<i>Euphorbia</i> sp. ( <i>biconvexa/coghlanii/trigonosperma</i> ; sterile)		
<i>Euphorbia</i> sp. ( <i>boophthona/tannensis</i> )	Insufficient material, sterile.	
<i>Euphorbia</i> sp.	Insufficient material, sterile.	
<b>Fabaceae</b>	<i>Acacia adsurgens</i>	
	<i>Acacia ampliceps</i>	
	<i>Acacia ancistrocarpa</i>	
	<i>Acacia</i> ? <i>ancistrocarpa</i>	Atypical nodes.
	<i>Acacia aptaneura</i>	
	<i>Acacia arida</i>	
	<i>Acacia atkinsiana</i>	
	<i>Acacia bivenosa</i>	
	<i>Acacia citrinoviridis</i>	
	<i>Acacia colei</i>	Insufficient material, sterile.
	<i>Acacia colei</i> var. <i>ileocarpa</i>	
	<i>Acacia elachantha</i>	
	<i>Acacia inaequilatera</i>	
	<i>Acacia ligulata</i>	
	<i>Acacia pyrifolia</i> var. <i>morrisonii</i>	
	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	
	<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>	
	<i>Acacia sericophylla</i>	
	<i>Acacia synchronicia</i>	
	<i>Acacia tetragonophylla</i>	
<i>Acacia trachycarpa</i>		

Family	Species	Notes
	<i>Acacia trachycarpa</i> x <i>tumida</i> var. <i>pilbarensis</i>	
	<i>Acacia trudgeniana</i>	
	<i>Acacia tumida</i> var. <i>pilbarensis</i>	
	<i>Acacia wanyu</i>	
	<i>Acacia xiphophylla</i>	
	<i>Alysicarpus muelleri</i>	
	<i>Crotalaria cunninghamii</i>	
	<i>Cullen leucochaites</i>	
	<i>Cullen martinii</i>	
	<i>Cullen</i> sp.	Insufficient material, juvenile.
	<i>Indigofera boviperda</i> subsp. <i>boviperda</i>	
	<i>Indigofera</i> ? <i>boviperda</i>	Insufficient material.
	<i>Indigofera colutea</i>	
	<i>Indigofera linifolia</i>	
	<i>Indigofera monophylla</i>	
	<i>Indigofera rugosa</i>	
	<i>Isotropis atropurpurea</i>	
	<i>Petalostylis labicheoides</i>	
	<i>Rhynchosia minima</i>	
	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	
	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	
	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	
	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	
	<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	
	<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>	
	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	
	<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x subsp. x <i>luerssenii</i>	
	<i>Senna notabilis</i>	
	<i>Senna venusta</i>	
	<i>Senna</i> sp.	Insufficient material, juvenile.
	<i>Sesbania cannabina</i>	
	<i>Swainsona</i> sp.	Insufficient material, sterile.
	<i>Tephrosia clementii</i>	
	<i>Tephrosia</i> aff. <i>remotiflora</i> 'Peedamulla form'	Potential new taxon (M. Hislop, WA Herbarium).
	<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	
	<i>Tephrosia supina</i>	
	<i>Tephrosia uniovulata</i>	

Family	Species	Notes	
Goodeniaceae	<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)	Insufficient material.	
	<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)		
	<i>Tephrosia</i> ? sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)		
	<i>Tephrosia</i> sp.		
	* <i>Vachellia farnesiana</i>		Weed
	<i>Vigna lanceolata</i> var. <i>lanceolata</i>		
	<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)		
	<i>Goodenia forrestii</i>		
	<i>Goodenia lamprosperma</i>		
	<i>Goodenia microptera</i>		
	<i>Goodenia muelleriana</i>		
	<i>Goodenia nuda</i>		
	<i>Goodenia prostrata</i>		
	<i>Goodenia stobbsiana</i>		
<i>Goodenia tenuiloba</i>			
Gyrostemonaceae	<i>Scaevola spinescens</i>		
	<i>Scaevola spinescens</i> (broad form)		
Haloragaceae	<i>Codonocarpus cotinifolius</i>		
	<i>Haloragis</i> sp.	Insufficient material, sterile.	
Lamiaceae	<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>		
Lauraceae	<i>Cassytha capillaris</i>		
Malvaceae	<i>Abutilon cunninghamii</i>	Insufficient material, juvenile.	
	<i>Abutilon lepidum</i>		
	<i>Abutilon otocarpum</i>		
	<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)		
	<i>Abutilon</i> sp.		
	<i>Corchorus laniflorus</i>		
	<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>		
	<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>		
	<i>Corchorus sidoides</i> (subsp. not determined)		
	<i>Corchorus sidoides</i> subsp. <i>sidoides</i>		
	<i>Corchorus</i> ? <i>sidoides</i> subsp. <i>sidoides</i>		Insufficient material.
	<i>Corchorus sidoides</i> subsp. <i>vermicularis</i>		
	<i>Corchorus tectus</i>		

Family	Species	Notes
	<i>Corchorus</i> ? <i>tectus</i>	Insufficient material, sterile.
	<i>Corchorus tridens</i>	
	<i>Corchorus</i> sp. ( <i>tectus/sidoides</i> ; indet)	Insufficient material.
	<i>Corchorus</i> sp.	Insufficient material, sterile/juvenile.
	<i>Gossypium australe</i>	
	<i>Gossypium robinsonii</i>	
	<i>Gossypium</i> sp.	
	<i>Hibiscus brachychlaenus</i>	
	<i>Hibiscus burtonii</i>	
	<i>Hibiscus</i> ? <i>burtonii</i>	Insufficient material, juvenile.
	<i>Hibiscus coatesii</i>	
	<i>Hibiscus leptocladus</i>	
	<i>Hibiscus sturtii</i>	Insufficient material, juvenile.
	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	
	<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	
	<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	
	<i>Hibiscus</i> sp.	Insufficient material, juvenile.
	<i>Lawrenca densiflora</i>	
	* <i>Malvastrum americanum</i>	Weed
	<i>Melhaniania oblongifolia</i>	
	* <i>Melochia pyramidata</i>	Weed
	<i>Seringia nephrosperma</i>	
	<i>Seringia</i> ? <i>nephrosperma</i>	Insufficient material.
	<i>Sida arenicola</i>	
	<i>Sida arsiniata</i>	
	<i>Sida</i> ? <i>arsiniata</i>	Insufficient material.
	<i>Sida echinocarpa</i>	
	<i>Sida</i> ? <i>echinocarpa</i>	Insufficient material, sterile.
	<i>Sida fibulifera</i>	
	<i>Sida platycalyx</i>	
	<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	
	<i>Sida</i> sp. L (A.M. Ashby 4202)	
	<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	
	<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	
	<i>Triumfetta appendiculata</i>	
	<i>Triumfetta chaetocarpa</i>	
	<i>Triumfetta</i> ? <i>chaetocarpa</i>	Insufficient material.
	<i>Triumfetta clementii</i>	
	<i>Triumfetta johnstonii</i>	
	<i>Triumfetta maconochieana</i>	

Family	Species	Notes
<b>Marsileaceae</b>	<i>Waltheria indica</i>	
	<i>Marsilea hirsuta</i>	
	<i>Marsilea ? hirsuta</i>	Insufficient material, sterile.
<b>Menispermaceae</b>		
	<i>Tinospora smilacina</i>	
<b>Molluginaceae</b>		
	<i>Trigastrotheca molluginea</i>	
<b>Moraceae</b>		
	<i>Ficus brachypoda</i>	
<b>Myrtaceae</b>		
	<i>Corymbia candida</i> subsp. <i>candida</i>	
	<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	
	<i>Corymbia hamersleyana</i>	
	<i>Corymbia zygophylla</i>	
	<i>Corymbia</i> sp.	Insufficient material.
	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	
	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	
	<i>Eucalyptus victrix</i>	
	<i>Melaleuca argentea</i>	
	<i>Melaleuca glomerata</i>	
	<i>Melaleuca lasiandra</i>	
<b>Nyctaginaceae</b>		
	<i>Boerhavia burbidgeana</i>	
	<i>Boerhavia coccinea</i>	
	<i>Boerhavia repleta</i>	
<b>Oleaceae</b>		
	<i>Jasminum didymum</i> subsp. <i>lineare</i>	
<b>Papaveraceae</b>		
	* <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	Weed
<b>Phrymaceae</b>		
	<i>Peplidium muelleri</i>	
<b>Phyllanthaceae</b>		
	<i>Cathetus exilis</i>	
	<i>Dendrophyllanthus erwinii</i>	
	<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>	
	<i>Nellica maderaspatensis</i>	
	<i>Notoleptopus decaisnei</i>	Inadequate material.
	<i>Notoleptopus decaisnei</i> var. <i>decaisnei</i>	
<b>Plantaginaceae</b>		

Family	Species	Notes
<b>Poaceae</b>	<i>Stemodia grossa</i>	
	<i>Aristida contorta</i>	
	<i>Aristida holathera</i> var. <i>holathera</i>	
	<i>Aristida pruinosa</i>	
	* <i>Cenchrus ciliaris</i>	Weed
	* <i>Cenchrus echinatus</i>	Weed
	* <i>Cenchrus setiger</i>	Weed
	* <i>Cenchrus</i> sp.	Weed
	<i>Chloris pectinata</i>	
	<i>Chrysopogon fallax</i>	
	<i>Cymbopogon ambiguus</i>	
	<i>Cymbopogon oblectus</i>	
	<i>Cynodon prostratus</i>	
	<i>Dactyloctenium radulans</i>	
	<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	
	<i>Digitaria bicornis</i>	
	<i>Digitaria brownii</i>	
	<i>Digitaria ctenantha</i>	
	* <i>Echinochloa colona</i>	Weed
	<i>Enneapogon caeruleus</i>	
	<i>Enneapogon polyphyllus</i>	
	<i>Enneapogon robustissimus</i>	
	<i>Enteropogon ramosus</i>	
	<i>Eragrostis crateriformis</i>	Priority 3
	<i>Eragrostis cumingii</i>	
	<i>Eragrostis desertorum</i>	
	<i>Eragrostis dielsii</i>	
<i>Eragrostis eriopoda</i>		
<i>Eragrostis tenellula</i>		
<i>Eragrostis</i> sp.	Insufficient material.	
<i>Eriachne aristidea</i>		
<i>Eriachne benthamii</i>		
<i>Eriachne helmsii</i>		
<i>Eriachne mucronata</i> (typical form)		
<i>Eriachne obtusa</i>		
<i>Eriachne pulchella</i>		
<i>Eriachne tenuiculmis</i>		
<i>Eriachne</i> sp.	Insufficient material.	
<i>Eulalia aurea</i>		

Family	Species	Notes
	<i>Eulalia simonii</i>	
	<i>Heteropogon contortus</i>	
	<i>Iseilema dolichotrichum</i>	
	<i>Iseilema membranaceum</i>	
	<i>Panicum australiense</i> var. <i>australiense</i>	
	<i>Paraneurachne muelleri</i>	
	<i>Paspalidium clementii</i>	
	<i>Paspalidium rarum</i>	
	<i>Paspalidium</i> sp.	Insufficient material, sterile.
	<i>Perotis rara</i>	
	<b>*Setaria verticillata</b>	<b>Weed</b>
	<i>Sporobolus australasicus</i>	
	<i>Themeda triandra</i>	
	<i>Triodia epactia</i>	
	<i>Triodia longiceps</i>	
	<i>Triodia wiseana</i>	
	<i>Tripogonella loliiformis</i>	
	<i>Urochloa occidentalis</i> var. <i>occidentalis</i>	
<b>Polygalaceae</b>		
	<i>Polygala</i> ? <i>glaucifolia</i>	Insufficient material, sterile.
<b>Portulacaceae</b>		
	<i>Portulaca cyclophylla</i>	
	<i>Portulaca filifolia</i>	
	<i>Portulaca oleracea</i>	
	<i>Portulaca oleracea</i> /inraterranea	Insufficient material, sterile.
<b>Proteaceae</b>		
	<i>Grevillea eriostachya</i>	
	<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	
	? <i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	Insufficient material, juvenile.
	<i>Grevillea wickhamii</i>	Insufficient material, sterile.
	<i>Grevillea wickhamii</i> subsp. <i>aprica</i>	
	<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	
	<i>Grevillea wickhamii</i> subsp. <i>macrodongta</i>	
	<i>Hakea chordophylla</i>	
	<i>Hakea lorea</i> subsp. <i>lorea</i>	
<b>Pteridaceae</b>		
	<i>Cheilanthes austrotenuifolia</i>	
	<i>Cheilanthes contigua</i>	
	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	
<b>Rubiaceae</b>		

Family	Species	Notes
<b>Sapindaceae</b>	<i>Dolichocarpa crouchiana</i>	
	<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	
<b>Scrophulariaceae</b>	<i>Dodonaea coriacea</i>	
	<i>Eremophila cuneifolia</i>	
	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	
	<i>Eremophila longifolia</i>	
	<i>Eremophila</i> sp.	Insufficient material; sterile juvenile.
	<b>Solanaceae</b>	
	<i>Nicotiana karijini</i>	
	<i>Nicotiana</i> sp.	Insufficient material; sterile/juvenile.
	<i>Solanum cleistogamum</i>	
	<i>Solanum diversiflorum</i>	
	<i>Solanum elatius</i>	
	<i>Solanum horridum</i>	
	* <i>Solanum nigrum</i>	Weed
	<i>Solanum</i> sp.	Insufficient material, sterile/dead.
<b>Surianaceae</b>		
	<i>Stylobasium spathulatum</i>	
<b>Violaceae</b>		
	<i>Afrohybanthus aurantiacus</i>	
<b>Zygophyllaceae</b>		
	<i>Tribulus astrocarpus</i>	
	<i>Tribulus hirsutus</i>	
	<i>Tribulus macrocarpus</i>	
	<i>Tribulus suberosus</i>	
	* <i>Tribulus terrestris</i>	Weed
	<i>Tribulus</i> sp.	Insufficient material, sterile.





# Appendix 12

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## Results of the Floristic Analysis





**List of taxa that were omitted or treated as other taxa for the purpose of the floristic analysis**

<b>Taxon</b>	<b>Name Referred to for Analysis</b>
Acacia ? ancistrocarpa	Acacia ancistrocarpa
Acacia colei var. ileocarpa	Acacia colei
Acacia pyrifolia var. morrisonii	Acacia pyrifolia
Acacia pyrifolia var. pyrifolia	Acacia pyrifolia
Acacia trachycarpa x tumida var. pilbarensis	Acacia trachycarpa
Alternanthera ? denticulata	Alternanthera denticulata
Alternanthera ? nana	Alternanthera nana
Bonamia ? alatisemina	Bonamia alatisemina
*Cenchrus ciliaris	Cenchrus spp.
*Cenchrus echinatus	Cenchrus spp.
*Cenchrus setiger	Cenchrus spp.
*Cenchrus sp.	Cenchrus spp.
Corchorus lasiocarpus subsp. lasiocarpus	Corchorus lasiocarpus
Corchorus lasiocarpus subsp. parvus	Corchorus lasiocarpus
Corchorus ? sidoides subsp. sidoides	Corchorus sidoides
Corchorus sidoides (subsp. not determined)	Corchorus sidoides
Corchorus sidoides subsp. sidoides	Corchorus sidoides
Corchorus sidoides subsp. vermicularis	Corchorus sidoides
Corchorus ? tectus	Corchorus tectus
Dysphania melanocarpa (form not determined)	Dysphania melanocarpa
Dysphania rhadinostachya (subsp. not determined)	Dysphania rhadinostachya
Dysphania rhadinostachya subsp. inflata	Dysphania rhadinostachya
Dysphania rhadinostachya subsp. rhadinostachya	Dysphania rhadinostachya
Euphorbia australis var. subtomentosa	Euphorbia australis
Evolvulus alsinoides var. decumbens	Evolvulus alsinoides
Evolvulus alsinoides var. villosicalyx	Evolvulus alsinoides
? Fimbristylis dichotoma	Fimbristylis dichotoma
Gossypium australe (Burrup Peninsula form)	Gossypium australe
Gossypium australe (Whim Creek form)	Gossypium australe
Grevillea wickhamii subsp. aprica	Grevillea wickhamii
Grevillea wickhamii subsp. hispidula	Grevillea wickhamii
Grevillea wickhamii subsp. macrodonta	Grevillea wickhamii
Hibiscus sturtii var. campylochlamys	Hibiscus sturtii
Hibiscus sturtii var. grandiflorus	Hibiscus sturtii
Hibiscus sturtii var. platychlamys	Hibiscus sturtii
Indigofera ? bovipерda	Indigofera bovipерda
Indigofera bovipерda subsp. bovipерda	Indigofera bovipерda
Maireana ? melanocoma	Maireana melanocoma
Marsilea ? hirsuta	Marsilea hirsuta
Notoleptopus decaisnei var. decaisnei	Notoleptopus decaisnei
Portulaca oleracea/intraterranea	Portulaca oleracea
Pterocaulon ? sphacelatum	Pterocaulon sphacelatum
Sclerolaena ? costata	Sclerolaena costata

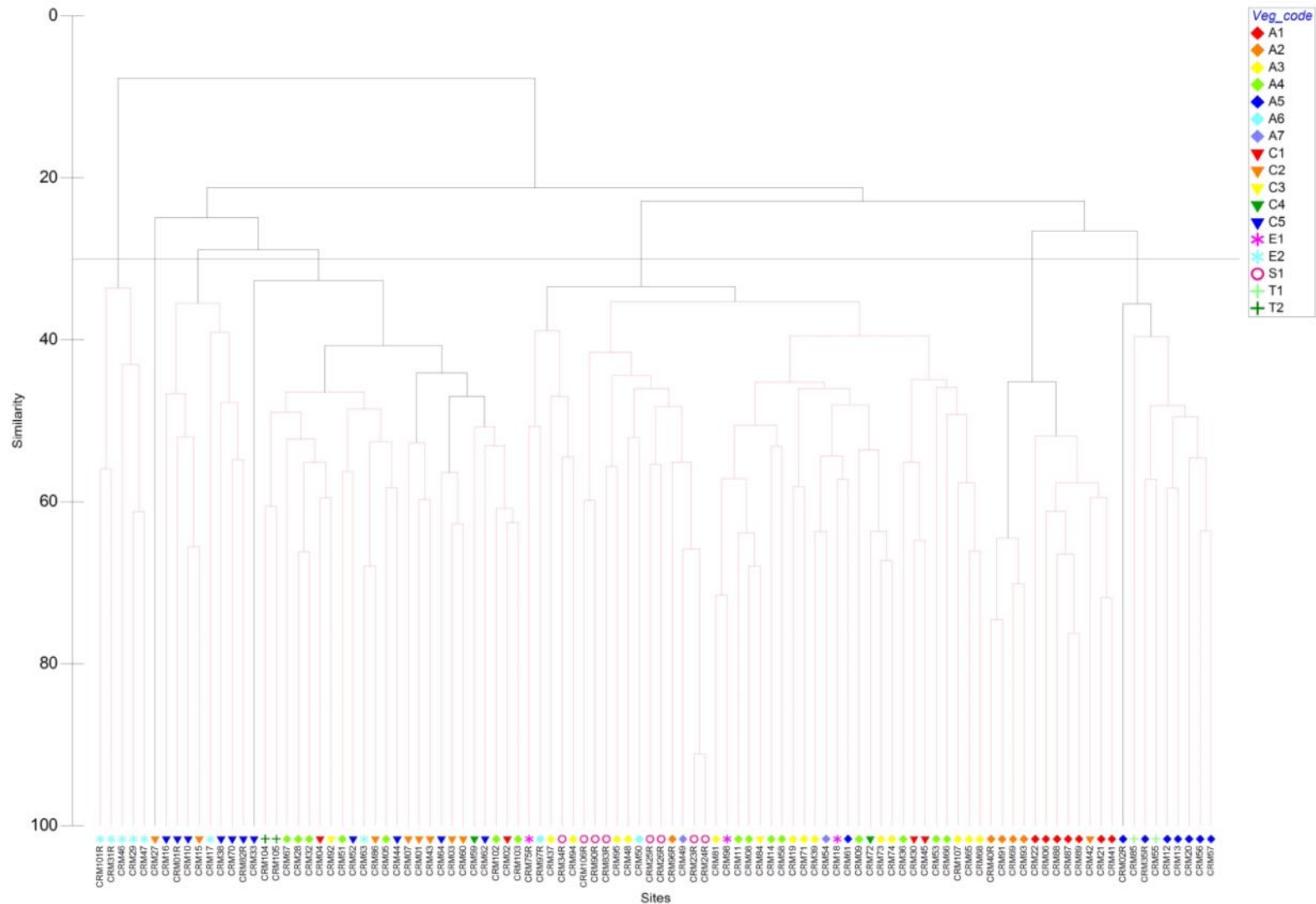
<b>Taxon</b>	<b>Name Referred to for Analysis</b>
Senna artemisioides subsp. oligophylla (thinly sericeous form MET 15,035)	Senna artemisioides subsp. oligophylla
Senna artemisioides subsp. oligophylla x subsp. helmsii	Senna artemisioides subsp. oligophylla
Senna glutinosa subsp. glutinosa x subsp. x luerssenii	Senna glutinosa subsp. glutinosa
Senna glutinosa subsp. pruinosa x subsp. x luerssenii	Senna glutinosa subsp. pruinosa
Senna glutinosa subsp. x luerssenii x S. stricta	Senna glutinosa subsp. x luerssenii
Seringia ? nephrosperma	Seringia nephrosperma
Sida ? arsiniata	Sida arsiniata
Sida ? echinocarpa	Sida echinocarpa
Triumfetta ? chaetocarpa	Triumfetta chaetocarpa
Abutilon sp.	Omitted; indeterminate taxon
Alternanthera sp.	Omitted; indeterminate taxon
Amaranthus sp.	Omitted; indeterminate taxon
Asteraceae sp.	Omitted; indeterminate taxon
Bergia sp.	Omitted; indeterminate taxon
Bonamia sp.	Omitted; indeterminate taxon
Bonamia sp. (pilbarensis/media indet)	Omitted; indeterminate taxon
Calandrinia sp.	Omitted; indeterminate taxon
Calotis sp.	Omitted; indeterminate taxon
Corchorus sp.	Omitted; indeterminate taxon
Corchorus sp. (tectus/sidoides; indet)	Omitted; indeterminate taxon
Cullen sp.	Omitted; indeterminate taxon
Dysphania sp.	Omitted; indeterminate taxon
Eragrostis sp.	Omitted; indeterminate taxon
Eremophila sp.	Omitted; indeterminate taxon
Eriachne sp.	Omitted; indeterminate taxon
Euphorbia sp.	Omitted; indeterminate taxon
Euphorbia sp. (biconvexa/coghlanii/trigonosperma; sterile)	Omitted; indeterminate taxon
Euphorbia sp. (boophthona/tannensis)	Omitted; indeterminate taxon
Gossypium sp.	Omitted; indeterminate taxon
Haloragis sp.	Omitted; indeterminate taxon
Hibiscus sp.	Omitted; indeterminate taxon
Nicotiana sp.	Omitted; indeterminate taxon
Paspalidium sp.	Omitted; indeterminate taxon
Polycarpaea sp.	Omitted; indeterminate taxon
Polymeria sp.	Omitted; indeterminate taxon
Pterocaulon sp.	Omitted; indeterminate taxon
Ptilotus sp.	Omitted; indeterminate taxon
Senna sp.	Omitted; indeterminate taxon
Solanum sp.	Omitted; indeterminate taxon
Streptoglossa sp.	Omitted; indeterminate taxon
Swainsona sp.	Omitted; indeterminate taxon
Tephrosia sp.	Omitted; indeterminate taxon

<b>Taxon</b>	<b>Name Referred to for Analysis</b>
Tribulus sp.	Omitted; indeterminate taxon
Abutilon cunninghamii	Omitted; singleton
Acacia adsurgens	Omitted; singleton
Acacia ampliceps	Omitted; singleton
Acacia aptaneura	Omitted; singleton
Acacia citrinoviridis	Omitted; singleton
Acacia elachantha	Omitted; singleton
Amaranthus cochleitepalus	Omitted; singleton
Aristida pruinosa	Omitted; singleton
Cheilanthes austrotenuifolia	Omitted; singleton
Chloris pectinata	Omitted; singleton
Convolvulus clementii	Omitted; singleton
Corchorus tridens	Omitted; singleton
Cucumis melo	Omitted; singleton
Cyperus dactyloides	Omitted; singleton
Cyperus hesperius	Omitted; singleton
Cyperus pulchellus	Omitted; singleton
Digitaria bicornis	Omitted; singleton
Digitaria brownii	Omitted; singleton
Dodonaea coriacea	Omitted; singleton
Ehretia saligna var. saligna	Omitted; singleton
Enneapogon polyphyllus	Omitted; singleton
Eriachne tenuiculmis	Omitted; singleton
Eulalia simonii	Omitted; singleton
Euphorbia biconvexa	Omitted; singleton
Euploca cunninghamii	Omitted; singleton
Euploca pachyphylla	Omitted; singleton
Fimbristylis littoralis	Omitted; singleton
Goodenia muelleriana	Omitted; singleton
Grevillea eriostachya	Omitted; singleton
Hakea chordophylla	Omitted; singleton
Hibiscus ? burtonii	Omitted; singleton
Indigofera rugosa	Omitted; singleton
Ipomoea coptica	Omitted; singleton
Jasminum didymum subsp. lineare	Omitted; singleton
Lawrencia densiflora	Omitted; singleton
Maireana ? georgei	Omitted; singleton
Melaleuca argentea	Omitted; singleton
Nicotiana karijini	Omitted; singleton
Peplidium muelleri	Omitted; singleton
Pluchea dunlopia	Omitted; singleton
Polygala ? glaucifolia	Omitted; singleton
Pterocaulon sphaeranthoides	Omitted; singleton
Ptilotus auriculifolius	Omitted; singleton
Rhagodia eremaea	Omitted; singleton

<b>Taxon</b>	<b>Name Referred to for Analysis</b>
<i>Senna venusta</i>	Omitted; singleton
<i>Sida arenicola</i>	Omitted; singleton
<i>Solanum elaeagnifolium</i>	Omitted; singleton
<i>Stenopetalum anfractum</i>	Omitted; singleton
<i>Streptoglossa decurrens</i>	Omitted; singleton
Tephrosia ? sp. NW Eremaean (S. van Leeuwen et al. PBS 0356) PN	Omitted; singleton
<i>Trianthema glossostigmum</i>	Omitted; singleton
<i>Tripogonella loliiformis</i>	Omitted; singleton
<i>Triumfetta maconochieana</i>	Omitted; singleton
<i>Urochloa occidentalis</i> var. <i>occidentalis</i>	Omitted; singleton
* <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	Omitted; weed
* <i>Bidens bipinnata</i>	Omitted; weed
* <i>Echinochloa colona</i>	Omitted; weed
* <i>Euphorbia hirta</i>	Omitted; weed
* <i>Malvastrum americanum</i>	Omitted; weed
* <i>Melochia pyramidata</i>	Omitted; weed
* <i>Setaria verticillata</i>	Omitted; weed
* <i>Solanum nigrum</i>	Omitted; weed
* <i>Vachellia farnesiana</i>	Omitted; weed

Dendrogram of site similarity based on percentage cover  
(Group average method)

Transform: Square root  
Resemblance: S17 Bray Curtis similarity



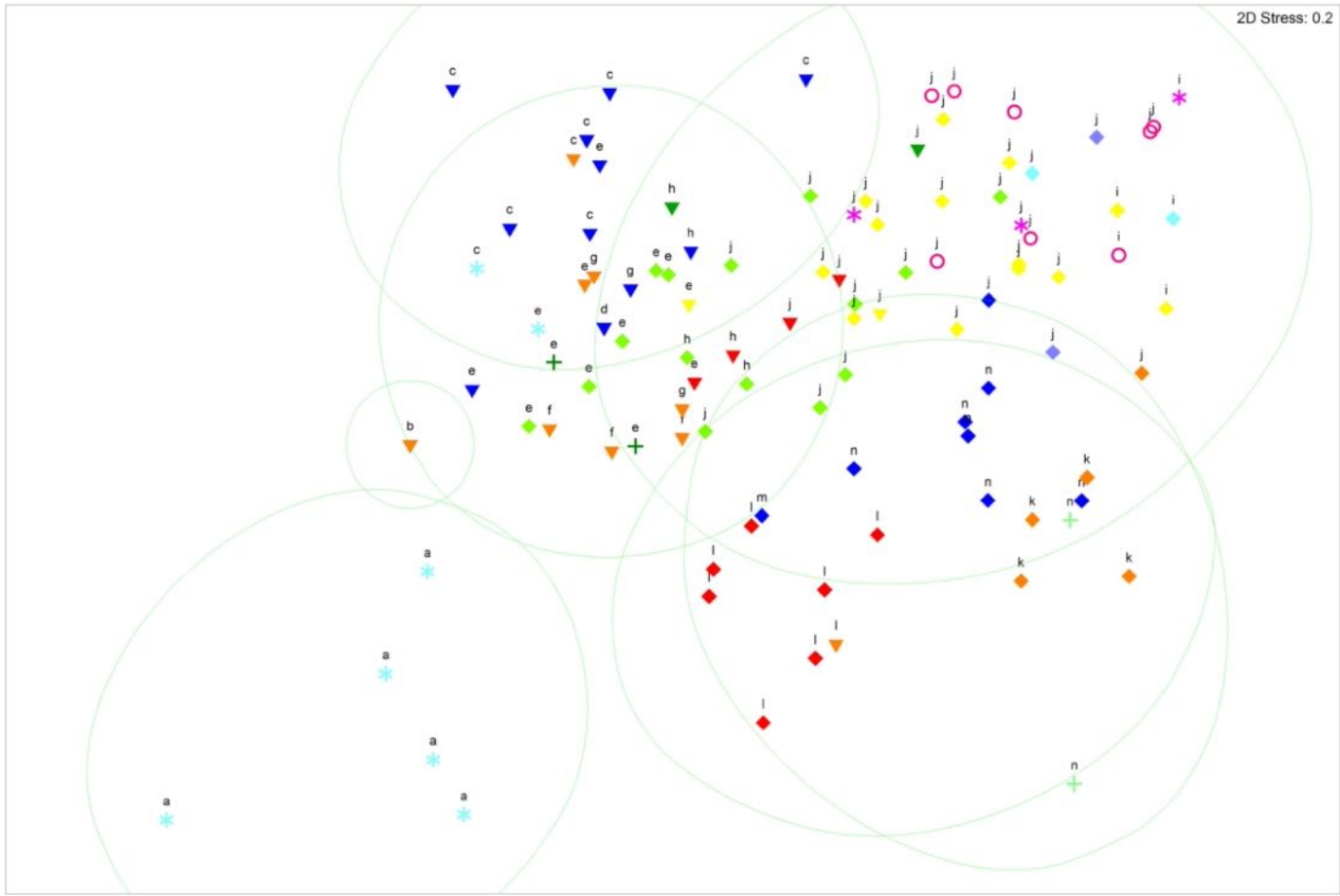


Transform: Square root  
Resemblance: S17 Bray Curtis similarity

2D Stress: 0.2

- Veg\_code**
- ◆ A1
  - ◆ A2
  - ◆ A3
  - ◆ A4
  - ◆ A5
  - ◆ A6
  - ◆ A7
  - ▼ C1
  - ▼ C2
  - ▼ C3
  - ▼ C4
  - ▼ C5
  - ✱ E1
  - ✱ E2
  - S1
  - ✱ T1
  - ✱ T2

*Similarity*  
30



Number of sites from the current survey in each floristic unit at 30% similiarity (based on cover of all species)

Veg Code	Floristic Group													
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>
A1												7		
A2										1	4			
A3									2	11				
A4					5			2		8				
A5										1			1	6
A6									1	1				
A7										2				
T1														2
T2					2									
S1									1	7				
E1									1	2				
E2	5		1		1									
C1					1			1		2				
C2		1	1		1	3	2					1		
C3					1					1				
C4								1		1				
C5			6	1	2		1	1						

Indicator species for the floristic groups identified from the current survey (based on the cover of all species), together with sites in each vegetation type.

Floristic Group	SIMPER Indicator Species (maximum of top 5) (Cumulative Similarity)	Veg Code	Sites
a	<i>Eucalyptus victrix</i> , <i>Melaleuca glomerata</i> , <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , <i>Cenchrus</i> spp., <i>Acacia trachycarpa</i> (68%)	E2	5 (CRM29, CRM31R, CRM46, CRM47, CRM101R)
b	NA (<2 samples)	C2	1 (CRM27)
c	<i>Acacia tumida</i> var. <i>pilbarensis</i> , <i>Triodia epactia</i> , <i>Corymbia hamersleyana</i> , <i>Chrysopogon fallax</i> , <i>Isotropis atropurpurea</i> (55%)	C2 C5 E2	1 (CRM15) 6 (CRM01R, CRM10, CRM16, CRM38, CRM70, CRM82R) 1 (CRM17)
d	NA (<2 samples)	C5	1 (CRM33)
e	<i>Triodia epactia</i> , <i>Acacia ancistrocarpa</i> , <i>Acacia bivenosa</i> , <i>Dysphania rhadinostachya</i> , <i>Indigofera boviparda</i> (75%)	A4 C1 C2 C3 C5 E2 T2	5 (CRM05, CRM28, CRM32, CRM51, CRM67) 1 (CRM04) 1 (CRM86) 1 (CRM92) 2 (CRM44, CRM52) 1 (CRM63) 2 (CRM104, CRM105)
f	<i>Triodia epactia</i> , <i>Corymbia candita</i> subsp. <i>candita</i> , <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Acacia synchronicia</i> , <i>Acacia atkinsiana</i> (62%)	C2	3 (CRM01, CRM07, CRM43)
g	<i>Triodia epactia</i> , <i>Acacia atkinsiana</i> , <i>Corymbia candita</i> subsp. <i>candita</i> , <i>Goodenia microptera</i> , <i>Indigofera boviparda</i> (74%)	C2 C5	2 (CRM03, CRM60) 1 (CRM64)
h	<i>Triodia epactia</i> , <i>Acacia atkinsiana</i> , <i>Acacia synchronicia</i> , <i>Acacia ancistrocarpa</i> , <i>Ptilotus astrolasius</i> (63%)	A4 C1 C4 C5	2 (CRM102, CRM103) 1 (CRM02) 1 (CRM59) 1 (CRM62)
i	<i>Triodia wiseana</i> , <i>Eriachne pulchella</i> , <i>Aristida holathera</i> var. <i>holathera</i> , <i>Ptilotus calostachyus</i> , <i>Ptilotus exaltatus</i> (75%)	A3 A6 E1 S1	2 (CRM37, CRM94) 1 (CRM97R) 1 (CRM75R) 1 (CRM34R)
j	<i>Triodia wiseana</i> , <i>Acacia bivenosa</i> , <i>Acacia atkinsiana</i> , <i>Triodia epactia</i> , <i>Dysphania rhadinostachya</i> (64%)	A2 A3 A4 A5 A6 A7 C1 C3 C4 E1 S1	1 (CRM96R) 11 (CRM19, CRM39, CRM48, CRM65, CRM68, CRM71, CRM73, CRM74, CRM81, CRM95, CRM107) 8 (CRM08, CRM09, CRM11, CRM14, CRM36, CRM53, CRM58, CRM66) 1 (CRM61) 1 (CRM50) 2 (CRM49, CRM54) 2 (CRM30, CRM45) 1 (CRM84) 1 (CRM72) 2 (CRM18, CRM98) 7 (CRM23R, CRM24R, CRM25R, CRM26R, CRM83R, CRM90R, CRM106R)
k	<i>Acacia xiphophylla</i> , <i>Cynodon prostratus</i> , <i>Triodia wiseana</i> , <i>Sclerolaena densiflora</i> , <i>Dysphania rhadinostachya</i> (76%)	A2	4 (CRM40R, CRM69, CRM91, CRM93)
l	<i>Acacia xiphophylla</i> , <i>Triodia epactia</i> , <i>Acacia synchronicia</i> , <i>Sclerolaena costata</i> , <i>Trianthema triquetrum</i> (65%)	A1 C2	7 (CRM06, CRM21, CRM22, CRM41, CRM87, CRM88, CRM89) 1 (CRM42)
m	NA (<2 samples)	A5	1 (CRM02R)
n	<i>Triodia longiceps</i> , <i>Triodia wiseana</i> , <i>Acacia synchronicia</i> , <i>Maireana melanocoma</i> , <i>Cynodon prostratus</i> (44%)	A5 T1	6 (CRM12, CRM13, CRM20, CRM35R, CRM56, CRM57) 2 (CRM55, CRM85)